



**FLORIDA HURRICANE LOSS MITIGATION
PROGRAM
2020 ANNUAL REPORT**

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Prepared by
Florida Division of Emergency Management

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EXECUTIVE SUMMARY

Pursuant to Subsection 215.559 (6), Florida Statutes (F.S.), this document provides a full report and accounting of activities and evaluation of such activities conducted by the Hurricane Loss Mitigation Program. The time period covered by this report is July 1, 2019 through June 30, 2020, or State Fiscal Year (FY) 2020. Based on Section 215.559 (1), F.S., the Hurricane Loss Mitigation Program is established in the Division of Emergency Management (Division). The Division receives an annual appropriation of \$10 million from the investment income of the Florida Hurricane Catastrophe Fund, authorized under the Florida General Appropriation Act and Section 215.555 (7) (c), F.S. The Public Shelter Retrofit Program, Tallahassee Community College's (TCC) Mobile Home Tie-Down Program, Florida International University's (FIU) Hurricane Research Program and Mitigation Program account for a combined \$6.5 million, or sixty-five (65%) percent of the FY 2020 \$10 million appropriation. The remaining thirty-five (35%) percent is used to distribute a community mitigation grant that includes both flood and wind retrofits of Florida residences and public outreach and education about retrofits to citizens and local government officials and their staff.

The Shelter Retrofit Program and TCC's Mobile Home Tie-Down Program have separate reporting requirements under Section 252.385, F.S., and Section 215.559(2)(a), F.S., respectively. Included in this report is a project analysis of the Public Shelter Retrofit Program, expenditure report for the Tallahassee Mobile Home Tie-Down Program, summary of FIU's Hurricane Research Program progress, and programmatic analysis of the Hurricane Loss Mitigation Program.

BACKGROUND

In the aftermath of Hurricane Andrew, the Florida Legislature created a series of programs to stabilize the economy and insurance industry. These programs consist of the following:

- Citizens Property Insurance Corporation (formed from a merger of the Florida Windstorm Underwriting Association and the Florida Residential Property and Casualty Joint Underwriting Association), the state insurance plan for residents unable to obtain a conventional homeowners insurance policy;
- The Florida Hurricane Catastrophe Fund, Section 215.555 F.S., a re-insurance fund established to limit insurance exposure after a storm;
- The Bill Williams Residential Safety and Preparedness Act, which in 1999 created the Hurricane Loss Mitigation Program, Section 215.559 F. S., with an annual appropriation of \$10 million.

Pursuant to Section 215.559 (1) F. S., the Hurricane Loss Mitigation Program is established within the Division of Emergency Management. The Division receives an annual appropriation of \$10 million from the investment income of the Florida Hurricane Catastrophe Fund authorized under the Florida General Appropriation Act and Section 215.555 (7) (c) F. S. The purpose of the \$10 million annual appropriation is to provide funding to local governments, state agencies, public and private educational institutions, and nonprofit organizations to support programs that improve hurricane preparedness, reduce potential losses in the event of a hurricane, and to provide research and education on how to reduce hurricane losses.

The funds are also to be used for programs that will assist the public in determining the suitability of upgrades to structures and in the financing of such upgrades, or to protect local infrastructure from potential damage from a hurricane. Section 215.559 F.S., establishes minimum funding

levels for specific program areas and creates an Advisory Council to make recommendations on developing programs.

Specific Program Areas and Funding Levels

Shelter Retrofits - Pursuant to Section 215.559(2)(a), F. S., \$3 million of the annual \$10 million appropriation for the Hurricane Loss Mitigation Program is directed to retrofit existing public facilities to enable them to be used as public shelters. An annual report of the state's shelter retrofit program, entitled the Shelter Retrofit Report, is prepared annually and separately submitted to the Governor and the Legislature pursuant to Section 252.385, F.S. The remaining \$7 million of the appropriation is allocated according to different subsections in Section 215.559, F. S., as described below.

Tallahassee Community College (TCC) – Pursuant to Section 215.559(2)(a), F. S., TCC is given an annual allocation of \$2.8 million or 40 percent of the remaining \$7 million. These funds are administered by TCC and are to be used to mitigate future losses for mobile homes and to provide tie-downs for mobile homes in communities throughout the State of Florida. Please see Appendix A for TCC's 2019-2020 Annual Report.

Florida International University (FIU) – Pursuant to Section 215.559(3), F. S., FIU is allocated \$700,000, or 10 percent, of the remaining \$7 million. The funds are administered by FIU and dedicated to hurricane research at the Type I Center of the State University System to support hurricane loss reduction devices and techniques. Please see Appendix B for FIU's 2019-2020 progress report.

Hurricane Loss Mitigation Program (HLMP) – The remaining \$3.5 million provides grant funding to governmental entities, nonprofit organizations, and qualified for-profit organizations as a means to improve the resiliency of residential, community, and government structures within their communities. The HLMP advertises funding through a Request for Proposal (RFP) which utilizes a benefit-cost analysis (BCA) for each of the submitted projects in order to ensure that the recommended mitigation retrofits remain cost-effective.

Hurricane Loss Mitigation Program

PROGRAM ACTIVITIES

HLMP Funding Distribution -

In June 2019, the Division issued a Request for Proposal (RFP) for projects funded during the FY 2020 for the annual amount of \$3.5 million as appropriated by Section 215.559, F.S. A review panel appointed by the Division selected eligible applicants based on priority, need, benefit, and alignment with local mitigation strategy projects. Based on this evaluation process, the Division contracted with 16 grant recipients to conduct wind mitigation retrofits to homes. These grant recipients are: the City of North Lauderdale, City of Bradenton, City of Deerfield Beach, Rebuild Northwest Florida, St. Lucie County, Centro-Campesino, Crisis Housing Solutions, Flagler County, Lake and Sumter County Emergency Response, City of Lauderdale Lakes, Broward County, Miami-Dade County, City of Pompano, City of Carrabelle, Franklin County, and Emerald Coast Regional Planning Council. There were 7 projects that did not involve residential wind retrofitting. Those include: Vizcaya Museum (flood mitigation), City of Plantation (public wind retrofit), ARC Tampa Bay (group home wind mitigation), Eckerd College (public wind retrofit), City of Sunrise (public wind retrofit), Town of Southwest Ranches (stormwater drainage), and Coral Springs Improvement (water-pump station hardening). The project agreements were funded with an initial period of performance closeout date of June 30, 2020.

Due to statewide concerns surrounding the COVID-19 pandemic, extensions were made as needed for December 31, 2020. The extensions were granted due to the halting of many projects and the supply chain bottlenecks of construction equipment and materials.

HLMP Outreach - Due to recent outreach success, the Division decided to keep outreach in-house. The HLMP focused mainly on the floridadisaster.org website for public outreach. This

site provides citizens and potential recipients all the information and forms needed to apply to the HLMP program. It also includes an additional hurricane retrofit guide to help citizens make informed decisions on how to prepare their homes from potentially hazardous weather.

Funding -

The HLMP is working towards adopting processes that have proven success in the Mitigation Bureau's federal grant programs. HLMP project and grant management training programs are continuously evolving to include the best practices experienced by the state funded grant program and federal grant management programs. Additionally, custom scope templates have been designed for the various newly permissible mitigation project types that are being managed by HLMP. These new scopes are Florida specific, project specific, and provide clear instruction on the compliance requirements set forth by the State of Florida, the Division of Emergency Management, and the Bureau of Mitigation.

PROGRAM ANALYSIS

Awarded Recipient	Award Amount	Spent to Date	Project Type
DEM-HL00008 Vizcaya Museum	\$ 194,000.00	\$ 110,816.00	Historical Preservation Flood Mitigation
DEM-HL00009 City of Plantation	\$ 194,000.00	-	Public Building Wind Retrofit
DEM-HL00010 City of North Lauderdale	\$ 194,000.00	\$ 181,361.27	Residential Wind Mitigation
DEM-HL00011 City of Bradenton	\$ 194,000.00	\$ 122,190.22	Residential Wind Mitigation
DEM-HL00012 The ARC Tampa Bay INC	\$ 194,000.00	\$ 1,312.75	Group Home Wind Mitigation
DEM-HL00013 Eckerd College INC	\$ 194,000.00	\$ 194,000.00	Wind Mitigation
DEM-HL00014 City of Deerfield Beach	\$ 194,000.00	-	Residential Wind Mitigation
DEM-HL00015 Rebuild Northwest Florida	\$ 194,000.00	\$ 194,000.00	Residential Wind Mitigation
DEM-HL00016 St Lucie County	\$ 194,000.00	\$ 158,016.79	Residential Wind Mitigation
DEM-HL00018 Centro Campesino Farmworker	\$ 194,000.00	\$ 142,230.00	Residential Wind Mitigation
DEM-HL00019 Adopt a Hurricane Family	\$ 194,000.00	\$ 128,788.70	Residential Wind Mitigation
DEM-HL00020 Flagler CO Wind Retrofit	\$ 194,000.00	-	Residential Wind Mitigation
DEM-HL00021 Laser Wind Retrofit	\$ 194,000.00	\$ 62,081.92	Residential Wind Mitigation
DEM-HL00022 Town of SW Ranches	\$ 194,000.00	-	Storm Water Drainage Project
DEM-HL00023 City of Sunrise	\$ 194,000.00	\$ 194,000.00	Public Wind Mitigation
DEM-HL00024 City of Lauderdale Lakes	\$ 194,000.00	\$ 3,139.00	Residential Wind Mitigation
DEM-HL00025 Broward Co	\$ 194,000.00	-	Residential Wind Mitigation
DEM-HL00026 Miami Dade	\$ 194,000.00	-	Residential Wind Mitigation
DEM-HL00027 City of Pompano	\$ 194,000.00	\$ 194,000.00	Residential Wind Mitigation
DEM-HL00028 City of Carrabelle	\$ 194,000.00	\$ 14,603.15	Residential Wind Mitigation
DEM-HL00029 Coral Springs Improvement	\$ 194,000.00	\$ 50,246.47	Storm water Pump Station Hardening/Elevation

DEM-HL00030 Franklin Co	\$ 194,000.00	\$ 59,783.42	Residential Wind Mitigation
DEM-HL00032 Emerald Coast Regional	\$ 194,000.00	\$ 466.50	Residential Wind Mitigation
Total	\$ 4,462,000.00	\$ 1,811,036.19	

Figure 1

Benefit Cost Analysis

Project Designation	BCA Generated Benefits	Cost	Return on Investment (ROI)
Residential			
DEM-HL00010 City of North Lauderdale	\$280,744.00	\$155,713.00	80%
DEM-HL00011 City of Bradenton	\$174,002.00	\$194,000.00	-10%
DEM-HL00014 City of Deerfield Beach	\$94,932.00	\$146,303.00	-35%
DEM-HL00015 Rebuild Northwest Florida	\$539,363.00	\$154,911.00	248%
DEM-HL00016 St Lucie Co Board of Co	\$185,328.00	\$143,725.00	29%
DEM-HL00017 Empowerment Academy Inc	N/A	N/A	N/A
DEM-HL00018 Centro Campesino Farmworker	\$208,432.00	\$180,975.00	15%
DEM-HL00019 Adopt a Hurricane Family	\$661,234.00	\$194,000.00	241%
DEM-HL00020 Flagler CO Wind Retrofit	\$195,030.00	\$187,928.00	4%
DEM-HL00021 Laser Wind Retrofit	\$64,324.00	\$111,630.00	-42%
DEM-HL00024 City of Lauderdale Lakes	\$122,201.00	\$110,152.00	11%
DEM-HL00025 Broward Co	\$155,993.00	\$123,950.00	26%
DEM-HL00026 Miami Dade	\$263,299.00	\$165,650.00	59%
DEM-HL00027 City of Pompano	\$210,110.00	\$139,985.00	50%
DEM-HL00028 City of Carrabelle	\$7,307.00	\$90,043.00	-92%
DEM-HL00030 Franklin Co	\$75,736.00	\$192,493.00	-61%
DEM-HL00032 Emerald Coast Regional	\$92,615.00	\$90,051.00	3%
SUBTOTAL	\$3,330,650.00	\$2,381,509.00	40%
Non-Residential			

DEM-HL00008 Vizcaya Museum	N/A	N/A	N/A
DEM-HL00009 City of Plantation	\$631,276.00	\$194,000.00	225%
DEM-HL00012 The ARC Tampa Bay INC	\$273,684.00	\$191,270.00	43%
DEM-HL00013 Eckerd College INC	\$481,471.00	\$194,000.00	148%
DEM-HL00022 Town of SW Ranches	\$298,289.00	\$194,000.00	54%
DEM-HL00023 City of Sunrise	\$776,740.00	\$194,000.00	300%
DEM-HL00029 Coral Springs Improvement	N/A	N/A	N/A
SUBTOTAL	\$ 2,461,460.00	\$ 967,270.00	154%
TOTAL	\$5,792,110.00	\$3,348,779.00	73%

Figure 2

Growth

Return on Investment							
	HLMP16	HLMP17	Percent Change from Previous Year	HLMP18	Percent Change from Previous Year	HLMP20	Percent Change from Previous Year
Cost	\$2,581,016.22	\$3,097,060.35	19.99%	\$5,919,492.95	91.13%	\$3,348,779.00	-43.43%
Benefit	\$2,783,460.20	\$3,585,554.18	28.82%	\$8,942,064.83	149.39%	\$5,729,110.00	-35.93%
Return on Investment	7.84%	15.77%	101.09%	51.06%	223.73%	71.08%	39.21%

Figure 3

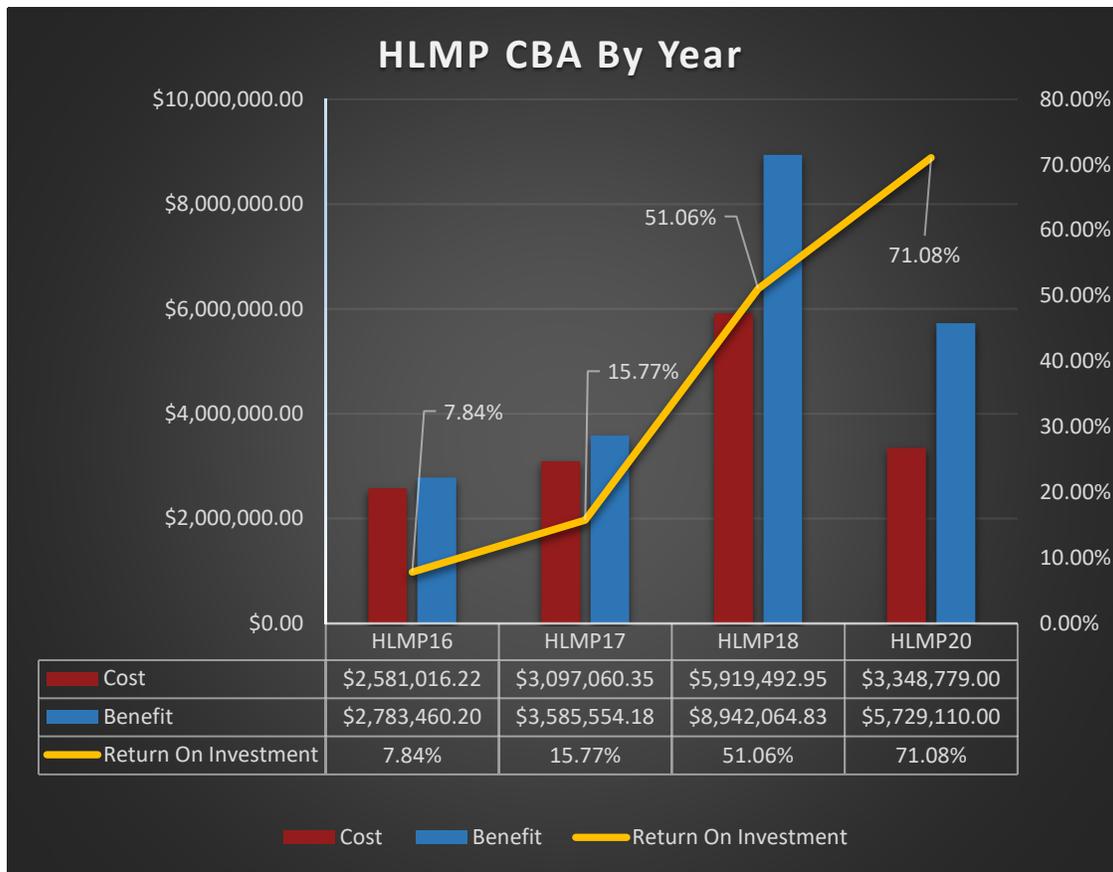


Figure 4

Analysis Discussion- Figure 1 shows all HLMP awards for FY 2020. Of these 23 projects, 7 used new scopes of work and were not residential wind mitigation projects. Figure 1 also shows the award amount vs the amount spent to date. Due to COVID-19, many of these projects were extended to December 31, 2020. Due to these extensions, the current amount spent is much lower than in previous years. All currently active projects are proceeding on schedule and are projected to close with most, if not all funds spent.

Figure 2 shows the non-residential mitigation projects yielded a much greater return on investment than the residential wind retrofits (154% vs 40%). This suggests that the transition to additional types of mitigation projects has been successful. This increase is one of driving factors that increased the program’s ROI between 2018 and 2020. Please note, no HLMP award was issued in 2019. The return on investment (ROI) of the program has greatly increased from FY 2016-2020 (Figures 3 & 4). FY 2018 was awarded additional funding, so the net appropriation was double that of previous and subsequent years. Due to this, there were fewer net benefits and net costs

associated with 2020 than 2018. The ROI has dramatically increased from 51% to 71%. This rise is a net increase of 39% (Figure 2). The HLMP is continuing to learn and improve practices to better help meet the ever-changing needs of Florida's residents.

PROGRAM GOALS AND RECOMMENDATIONS

The Division of Emergency Management is committed to developing programs to educate the public on ways to reduce the impact of a disaster. The Hurricane Loss Mitigation Program educates the public and local communities on wind-mitigation programs that will increase structural survivability for residences and to aid Florida homeowners in obtaining a financial discount for insurance. Through a comprehensive outreach campaign, additional communities will have an opportunity to participate in the grant program.

The Division has the following goals to increase participation in the program:

- Successfully migrate existing grant management practices into Salesforce platform in order to improve reporting and streamline approval processes.
- Conduct more Community Education Visits (CEV) across the state to promote a partnership strategy that includes the whole community. This whole community strategy seeks to bring together representatives from county government, municipal government, local non-profit entities, and qualified for-profit entities.
- Moving forward, the Division would like to focus on more community-based mitigation.
- Introduction of more pamphlets and digital material to better educate citizens and localities about the HLMP.

- Re-engage the Division’s relationship with other Mitigation units including Hazard Mitigation Grant Program (HMGP), Floodplain and External Affairs, specifically in outreach events, seminars, and conferences, with the aim and purpose of cross-promoting mitigation resources across the State of Florida.

Shelter Retrofit Program

PROGRAM ACTIVITIES

Shelter Retrofit Funding

In 2017, the Hurricane Loss Mitigation Program began managing the Shelter Survey and Retrofit Program's grants and contracting responsibilities. HLMP applied current grant management processes to both existing and new projects being managed by the Shelter Retrofit Program. With the resources available to the Mitigation Bureau's Finance Unit, tracking shelter payments, contracting, and reporting have become streamlined processes within HLMP's daily operations.

The Hurricane Loss Mitigation Program has worked with the Mitigation Bureau's Technical Unit to design and streamline processes for the project management of the Shelter Retrofit Program. Modernized Scopes of Work have been finalized with the collaboration of the Shelter Retrofit Program, Technical Unit, and Hurricane Loss Mitigation Program. New review processes and detailed requirements within the Scope of Work will strengthen regulation and monitoring while providing the recipient with a clearer understanding of their goals and objectives.

Funding that had not been expended in previous fiscal years is made available in following years without requiring a request to re-appropriate funding. For this reason, the activities reported in the previous two fiscal years will reflect an increase in spending that exceeds the \$3 million annual appropriation.

Fourteen new shelter retrofit agreements were executed in FY 2020, totaling \$7,666,492.69. Because these projects exceeded the allocated annual appropriation by \$4,666,492.69, excess funds from previous fiscal years were reallocated for these agreements.

FY 2020 Recipients		Award Amount
DEM-SR00013 Bay County-Deer Point		\$ 409,500.00
DEM-SR00014 Bay County-Bozeman		\$ 244,965.00
DEM-SR00015 UF IFAS Generator		\$ 43,495.10
DEM-SR00017 School Board of Lafayette County		\$ 252,762.42
DEM-SR00018 School Board of Sarasota County		\$ 1,057,700.00
DEM-SR00012 School Board of Lee County		\$ 1,218,922.00
DEM-SR00021 School Board of Desoto County		\$ 255,300.00
DEM-SR00022 School Board of Brevard County		\$ 489,534.42
DEM-SR00023 Village of Indiantown		\$ 9,700.00
DEM-SR00024 School Board of Jefferson		\$ 370,440.00
DEM-SR00025 Walton County Emergency Management		\$ 126,000.00
DEM-SR00026 School Board of Marion County-Engineering Study		\$ 8,800.00
DEM-SR00027 School Board of Marion County-Shelter Retrofit		\$ 2,780,373.75
DEM-SR00028 Indian River State College		\$ 399,000.00
TOTAL	14	\$ 7,666,492.69

Sixteen project lists were closed in FY 2020, totaling in \$4,142,085.79.

Recipient	Amount Spent
HLMPSR17-019	\$ 1,233,452.60
HLMPSR17-020B Clay County Thrasher	\$ 101,440.00
HLMPSR17-021	\$ 440,000.00
HLMPSR18-001 South Bay Emergency Shelter	\$ 332,501.00
HLMPSR18-003 Indian River Shores	\$ 737,500.00
HLMPSR18-007	\$ 412,188.00
HLMPSR18-008	\$ 60,711.00
HLMPSR18-009 Putnam County BOCC	\$ 25,000.00
HLMPSR18-013 Martin Co School District	\$ 47,016.90
DEM-SR00003 Indian River State College	\$ 37,600.00
DEM-SR00008 Flagler County-Engineering	\$ 23,278.77

	DEM-SR00011 City of Palatka	\$	15,000.00
	DEM-SR00015 UF IFAS Generator	\$	43,495.10
	DEM-SR00017 Lafayette County	\$	252,762.42
	DEM-SR00023 Village of Indiantown	\$	9,700.00
	DEM-SR00024 Jefferson County School Board	\$	370,440.00
TOTAL			16
			\$4,142,085.79

Nineteen projects were active at the year of FY 2020. Nine of these projects were opened in previous fiscal years.

Active Projects at end of FY 2020	
	HLMPSR17-020 A Multi Clay County BOCC
	HLMPSR19-001 Seminole County BOCC
	HLMPSR19-004 Orange County BOCC
	HLMPSR19-005 Orange County BOCC
	HLMPSR19-006 Orange County BOCC
	DEM-SR00007 South Florida State College
	DEM-SR00009 University of Florida
	DEM-SR00010 Walton County BOCC
	DEM-SR00012 Lee County
	DEM-SR00013 Bay County-Deer Point
	DEM-SR00014 Bay County-Bozeman
	DEM-SR00018 School Board of Sarasota County
	DEM-SR00012 School Board of Lee County
	DEM-SR00021 School Board of Desoto County
	DEM-SR00022 School Board of Brevard County
	DEM-SR00025 Walton County Emergency Management
	DEM-SR00026 School Board of Marion County-Engineering Study
	DEM-SR00027 School Board of Marion County-Shelter Retrofit
	DEM-SR00028 Indian River State College
TOTAL	19

PROGRAM GOALS AND RECOMMENDATIONS

Shelter Retrofit Program

Under the guidance of the Hurricane Loss Mitigation Program, The Shelter Retrofit Program has grown in scope and efficiency. Moving forward, the Division would like to keep this momentum and continue to grow the Shelter Retrofit Program.

The Division has the following goals to accomplish in the next Fiscal Year:

- Successfully migrate existing grant management practices into Salesforce platform in order to improve reporting and streamline approval processes.
- Strengthen the relationship between the Shelter Retrofit Staff and HLMP Staff.
- Tour final inspections with the Technical Unit to gain a better understanding of the methodology used when performing inspections.
- Continue to award the full allocation every year, to guarantee another under-allocation does not occur.

Appendix A

2019-2020 Annual Report Tallahassee Community College Mobile Home Tie-Down program

The Mobile Home Tie-Down Program continued to be a popular and a successful program during the 2019-2020 fiscal year.

Program Highlights:

- Multiple vendor contracts were renewed as allowed and stated in the 2017 RFP.
- The Individual Component of the program was renewed, but expanded to \$183,540 due to increased individual interest, and the ability to complete additional individual homes during COVID park delays.
- The use of Quality Assurance Inspectors was continued, but only for the Individual Component.
- The Florida Department of Highway Safety and Motor Vehicles (D.H.S.M.V), Division of Motor Vehicles, Manufactured Housing Section completed a random inspection of a minimum of 10% of the homes for the Parks Component. This inspection verifies the items were actually installed by the vendor and installed according to the manufacturer's specifications.
- TCC adapted outreach material and forms in Spanish.
- An office assistant continued to address the majority of homeowner phone calls, and answered general homeowner questions in a timely manner.
- Correspondence for application acceptance and vendor award notification moved to a mostly electronic format, and a Hurricane Season information flyer was sent at the start of the program year.
- The online application site was updated to include additional data points: county, park manager and park HOA contact details.
- 337 new applications were accepted, including 70 park applications and 261 individual applications.
- Public Record Requests from a Florida resident requesting information on parks served and parks on the waiting list were shared with communities and brought additional attention to the program.
- A new RFP was required and incorporated the following:
 - The RFP requested a price point for non-removable skirting as recommended by the advisory council. Service to non-removable skirting will be reviewed based on the information received in the RFP.
 - The RFP incorporated a limitation of 10% price variance between approved vendors.

- A number of parks on the waiting list do not or no longer have established, functioning HOAs requiring more direct individualized services. These parks are now classified as individuals. One RFP was issued rather than two, allowing for a single contract to provide services to individuals or parks.
- The RFP allowed for vendors to select a region rather than statewide service. Additionally, as in years past, the RFP information was distributed to all licensed mobile home installers. These steps were done to encourage smaller, local vendors to participate in the program. This did not provide the results expected as three state-wide vendors submitted proposals.

Impact of COVID-19:

COVID restrictions impacted in the final quarter of the program year allowing for little recovery to address the impact. COVID risks and parks closure to public access almost halted mitigation. DHSMV Inspections on mitigation conducted were also delayed in March/April due to state COVID travel restrictions, but were fortunately completed allowing for the vendors to invoice TCC for services in June. Most parks canceled HOA meetings, although some allowed for multiple HOA meetings with small groups. Homeowners who were outside the state were not traveling back to participate in the program. TCC stopped mitigation on two parks and will continue service in the next grant year in hopes to maximize number of homes served.

Final Numbers:

One hundred twenty-one (121) site visits were completed throughout the year. These visits include community evaluations utilizing the comprehensive assessment tool and the following deliverables were completed during this process:

- Interviews with management and/or homeowner association representatives.
- Visual inspections of all homes within the community.
- Intake training for the homeowners' association representatives.

During the 2019-2020 program year twenty (20) initial resident meetings were conducted by the Program Contractors. In several parks, meetings had to be repeated to maximize resident participation. These meetings were conducted with homeowner's association board members, volunteers and, on many occasions, most residents of a particular community.

TCC completed one thousand seven hundred two (1,702) homes this past year as compared to two thousand and seventy-four (2074) homes this past year. The program was successfully completed in fourteen (14) mobile home communities (with two more partially

completed due to COVID) across ten (10) different Florida counties. In all two million two hundred seventeen thousand seven hundred ten dollars (\$2,217,710) dollars were expended on the grant spending 79.20% of the allocated funds. Program was unable to expend \$582,290.00 primarily due to the cessation of mitigation activities due to the COVID travel, inspection and community access restrictions.

Community/Park Name	Address	City	County	# Homes Served
Westwinds Village MHP	5316 53rd Ave E	Bradenton	Manatee	163
Magnolia Manor	4190 71st St. N	St. Petersburg	Pinellas	107
Lakeshore Villas	115401 Lakeshore Villas St	Tampa	Hillsborough	88
Strawberry Ridge	3419 FL-60	Valrico	Hillsborough	75
Briarwood	5644 Regency Blvd	Port Orange	Volusia	61
Briny Breezes	5000 N Ocean Blvd	Boynton Beach	Palm Beach	224
Fairhaven Pt 1	5757 66th Street North	St. Petersburg	Pinellas	21
Fairhaven Pt 2	5757 66th Street North	St. Petersburg	Pinellas	62
Harborview MHP	24325 Harborview Rd	Punta Gorda	Charlotte	47
Lamplighter MHC (pt 2)	3202 Nova Rd. S	Port Orange	Volusia	89
Maplewood Village MHP	201 Cape Ave.	Cocoa	Brevard	61
Maranatha Village	11 Maranatha Blvd	Sebring	Highlands	48
Park Hill	10101 Burnt Store Road	Punta Gorda	Charlotte	33
Riviera Golf Estates / Riviera Village	425 Charlemagne Blvd	Naples	Collier	282
Suncoast	6010 Ridge Road	Port Richey	Pasco	67
Tropical Breeze Estates Pt 1	4820 Mockingbird Dr	Boynton Beach	Palm Beach	96
Palm Beach MHP Pt 1	300 Cypress Dr	Lake Worth	Palm Beach	79
Individual Homes	Details provided in program reports			99

Moving Forward

- TCC requested the continuation of this project in order to utilize the remaining \$582,290. The remaining funding will be included in the annual report for FY21.
- Currently the database has a listing of 143 outstanding parks and over 300 individual applications. This increases the estimated wait time to 5-7 years. With that in mind TCC is not accepting new applications until the waiting list is a more manageable size.
- Two vendors were selected through the RFP: Storm Ready Services (current) and Timberline Construction Group (new). Windstorm Mitigation participated in the RFP but did not submit a proposal.
- Restricted access and concern over community health will likely continue to impact the program. TCC is developing additional handouts. Rather than large community group meetings the expansion to small group or individualized coordination has been discussed with vendors.

- Currently the program sunsets on June 30, 2021. TCC has reached out the DEM to express support for the continuation of the program and reinforce the widespread state-wide interest as evident by the extensive waiting list for services.

Please refer any questions relating to this report or the Program in general to:

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Appendix B

Florida International University Grant Progress Report

During Fiscal year 2019-2020 Florida International University (FIU) conducted research for the Florida Division of Emergency Management (Division) in major areas that were identified by the International Hurricane Research Center (IHRC) team. Due to the COVID-19 pandemic, a No-Cost Extension was requested and received. As a result, all work is still on going. Final reports will be delivered to the State in April 2021.

Research Area 1: Experimental and Analytical Assessment of Effects of Leakage around Doors, Windows, and Other Openings on Internal Pressures in Residential Buildings (PI: Dr. Arindam Gan Chowdhury)

The objective of the proposed research was to experimentally and analytically assess wind-induced internal pressure changes due to leakage around doors, windows, and other openings in residential buildings. The internal pressure coefficients as obtained from holistic experiments were compared with those based on the ASCE-7 building standard. Large scale testing was performed using model of a residential building with leak paths subjected to strong and turbulent wind at the FIU Wall of Wind (WOW) Experimental Facility (EF) (<https://fiu.designsafe-ci.org/>). The WOW can generate a boundary layer flow with design level wind speeds (as high as Hurricane Category 5), with appropriate wind profile and turbulence, over a cross section of approximately 20 ft. by 14 ft. Testing was performed by using large-scale model representing residential building model with the most common deficiencies areas in the exterior envelope that lead to air leakage. Wind direction dependent wind effects were studied using the WOW turntable. Pressure taps were needed to obtain wind loading information. Partial turbulence simulation code were used to estimate the peak internal pressure coefficients. The WOW results will be compared to ASCE-7 based coefficients during Spring 2021 and a final report submitted to the Division in April 2021.

This research effort will generate new knowledge regarding (1) wind loads for the most common types of deficiencies and leakages in residential buildings, and (2) the accuracy of ASCE 7 based estimates for internal pressurization. This will have significant impact in terms of providing effective internal pressure coefficients for common residential houses in coastal regions. Thus the research is important for the coastal state of Florida and safety to the Florida residents. The expected contributions are: safer designs, enhanced built environment sustainability, development of hurricane-resilient communities, reduced risk to life and property, and greater economic competitiveness of Florida. The research activities will also help in developing a trained work-force of professionals with needed expertise in hurricane damage mitigation. The research will help in providing useful information for improving the Florida Public Hurricane Loss Model. The team will facilitate the dissemination of project results through publications and reports to improve building practices for the state of Florida.

Research Area 2: Numerical and Experimental Investigation to Codify Wind Pressure Distribution of Elevated House (PI: Dr. Amal Elawady)

In Florida, the damage recorded after the passage of 2017 and 2018 hurricanes resulted in insured losses estimated to be \$12B for Irma and \$6B for Michael. The reoccurring destruction to the US coasts and the Caribbean Islands by hurricane storms together with the recent increase in number of land-falling hurricanes of large geographic extent warrant the need to achieve more resilient coastal communities by investing in Building Resiliency as recommended by the National Science Board. The past testing of elevated structures at the WOW facility (Phase I and II) indicates the dependency of the wind pressure localization and the amount of suction on the floor on the elevation height. Moreover, it was found that piles used to elevate the building trigger more suction to the floor and therefore, the distribution of the

piles is of high importance. For the FY 2019-20 period researchers conducted an extensive parametric study to test a wide spectrum of elevated structure configurations of different geometries. The study included numerical simulations using Computational Fluid Dynamics (CFD) methods that are validated using wind testing methods. Utilizing the CFD Fluent software and the High Performance Computing (HPC) capabilities available at FIU, the PI and her PhD student conducted CFD simulations on single (isolated) elevated structures while varying the following: floor aspect ratio, wall to elevation height ratio, pile distribution. These parameters were identified previously from the experimental studies conducted at the WOW as the most influencing parameters. The experimental and numerical study enabled producing a database of pressure coefficients for the surfaces of elevated buildings that could be implemented in building codes and standards. Missing information includes, among others, the dependency of wind pressure on the variations of the following: column size, columns pattern, building aspect ratio, stilt height to building width/length ratios, pressure coefficients using zoning approach given in ASCE 7-16, etc. The ultimate goal of the research is to enhance the current design standards and consequently improving the construction practice and minimizing the damage losses during extreme wind events.

Research Area 3: Codification Wind-induced Loads on Irregular Shaped Buildings (PI: Dr. Ioannis Zisis)

The research team continued efforts to assess codification of win-induced loads on irregular buildings. The proposed research aims at addressing this gap by using a high efficiency framework that will create sustainable experimental tools that can generate the necessary data volume for the proposed and future codification efforts. Artificial Intelligence (AI) was used to analyze typical residential communities in the State of Florida and identify dominant residential building and roof geometries. This information was then considered in the selection of the building models tested at the WOW Facility during Fall 2021. The experimentally derived data is currently being reviewed, analyzed and will generate codified wind design loads that can be directly compared to those in existing wind standards and building codes. Ultimately, this research will contribute to improved building codes and windstorm resilient residential construction.

Research Area 4: Development of integrated storm tide and freshwater flooding model Phase 3 (PI: Dr. David Kelly and Dr. Yuepeng Li)

Storm surges, large waves, and freshwater flooding are the major causes of the loss of life and property damage during hurricanes. Information on maximum inundation depth, flow velocity, and hydrodynamic loads are essential for mitigating and insuring the property damage caused by freshwater and storm surge flooding. This information is often obtained through the use of numerical models. Overland flooding from freshwater and storm surge floods can interact with each other to enhance or reduce overall impact. The separate treatment of freshwater and storm surge floods is often inappropriate and can result in significant uncertainty in assessing and predicting damage to property and infrastructure from combined coastal and inland flooding events.

The purpose of continued research effort was to develop a directly coupled model combining storm surge with overland flooding caused by rainfall. A pilot study to develop an integrated storm surge and freshwater flood model for coastal urban areas was developed in FY 2017-18 by leveraging an existing and well established hydrodynamic model. Phase 2 of the model development during FY 2018-19 focused on verifying rainfall-runoff module and producing maps of any areas identified as being high risk in terms of vulnerability to storm surge and freshwater overland flooding in the South Florida Basin. In addition the model grid was refined by improving the boundaries of rivers extracted from LiDAR data and water depths of the canals from Miami-Dade County data. The result was the newly developed SSFOF (Storm Surge and Freshwater Overland Flooding) model, based on the TELEMAC-2D model, represents a cutting-edge storm surge model which can simulate fully coupled storm tides and overland flooding (due to storm rain) on the same computational domain including head losses due to infiltration.

During Fiscal Year 2019-2020 Phase 3 of the SSFOF model development focused on 1) investigating the hurricane impact to the Lake Okeechobee and surrounding Herbert Hoover Dike (HHD) with the South Florida Mesh, 2) develop a North Florida Basin covering Apalachicola and Panhandle Bay, with specific emphasis on simulating the surge due to Hurricanes Michael (2018) and Ivan (2004). At the time of this report all three tasks are in the final stages of development.

Research Area 5: Investigation and Incorporation of WOW testing outputs in the Florida Public Hurricane Loss Model (PI: Jean-Paul Pinelli (Florida Institute of Technology; Kurt Gurley (University of Florida)

One of the key components of a better mitigated and therefore more disaster-resilient Florida involves recovery and reconstruction funding for homeowners, and a key element of that funding derives from insurance coverage, which is increasingly driven by cost considerations. The Florida Public Hurricane Loss Model (FPHLM) which has been supported by the State, provides a means of evaluating hazard insurance rate requests independently of the proprietary models used by private insurers. The model is continually refined to both satisfy the standards issued by the Florida Commission on Hurricane Loss Projection Methodology, and incorporate the current state-of-knowledge in the methodologies employed by the meteorological, engineering, actuarial, statistical, and computer science teams.

Wall of Wind (WOW) research is largely focused on filling critical gaps in the engineering state-of-knowledge on building performance in hurricane winds via experimental methods. On-going research efforts address the influence of construction defects and their associated leakage paths on the building internal pressure during high winds. During Fiscal Year 2019-2020 the team focused on 1) roof to wall connection uplift research; 2) investigation of non-breach associated leakage paths on building internal pressure; 3) pressure loads on non-rectangular building research. At the time of this report submittal testing was still on going.

Research Area 6: Education and Outreach Programs to Convey the Benefits of Various Hurricane Loss Mitigation Devices and Techniques (PI: Erik Salna)

The IHRC developed and coordinated education and outreach activities to build on the foundation of previous work under this grant. Unfortunately, many of the planned activities were affected by the travel and occupation restrictions imposed by the pandemic. The Hurricane Mitigation & Preparedness at FIU, NOAA's Hurricane Hunter Awareness Tour: Get Ready, America!, and The National Hurricane Survival Initiative were all cancelled due to the COVID-19 pandemic. The Wall of Wind Mitigation Challenge (WOW! Challenge) scheduled for FY 2019-20 was also cancelled. During FY 2020-21 this STEM education event involving high school science clubs will become a virtual event currently schedule for April 2021..

The Eye of the Storm (Science, Mitigation & Preparedness) in-person event at the Museum of Discovery and Science in Fort Lauderdale was cancelled due to the pandemic. Upon consultation with DEM funds were rededicated towards a virtual hurricane preparedness series. This allowed the audience footprint to expand beyond South Florida to other states on the Gulf of Mexico and the eastern seaboard at risk of a hurricane landfall. MODS' President & CEO Joe Cox, Erik Salna, IHRC's Associate Director for Education and Outreach and representatives from partner organizations, agencies and corporations created 12 video episodes on topics from forecasting the storm to emergency management, each video ran 10-12 minutes in length - representatives shared the work they do and discussed potential career fields that youth can pursue such as meteorology, climatology, oceanography, aeronautical engineering and aviation. A full report was provided to the DEM in August 2020.

The 2020 Eye of the Storm virtual event was an outstanding success, with a reach of more than 96,378,050 impressions for the entire digital marketing and public relations campaign as of July 14, 2020. Social media channels included Facebook, Twitter, Instagram, LinkedIn and YouTube. The Museum utilized Google Display and Search Ads and My Business Posts. Museum marketing included

slides in the Autonation IMAX Theater, article in the Museum's Explorations magazine, emails to 64,700 subscribers, webpage with link to videos and Facebook event page. Calendar listings and articles were featured in 32 publications and media with a circulation of 91,011,910. An impressive article was featured in the Washington Post, with a monthly circulation of 54,129,570.

Wrap-up Report



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Additional Partners

National Oceanic and Atmospheric Administration (NOAA), Atlantic Oceanographic and Meteorological Laboratory (AOML), National Hurricane Center (NHC), National Weather Service - Miami, Florida Power & Light, Techtronic Industries, Advanced Roofing, Global Protection Products, Broward Emergency Management, Brown & Brown Insurance, State Farm Insurance, Humane Society of Broward County, Pier Sixty-Six Hotel & Marina, WSVN, NBC 6, Broward County American Red Cross, Bergeron Emergency Services, Louisiana Children's Museum and the Science Museum of Virginia.

This year, the **2020 Eye of the Storm** event typically held on-site annually at the Museum of Discovery and Science (MODS) was reimagined as a virtual hurricane preparedness series, allowing the footprint to expand beyond South Florida to other states on the Gulf of Mexico and the eastern seaboard at risk of a hurricane landfall. MODS' President & CEO Joe Cox, Erik Salna, IHRC's Associate Director for Education and Outreach and representatives from partner organizations, agencies and corporations created 12 video episodes on topics from forecasting the storm to emergency management, each video ran 10-12 minutes in length - representatives shared the work they do and discussed potential career fields that youth can pursue such as meteorology, climatology, oceanography, aeronautical engineering and aviation.

The **2020 Eye of the Storm** virtual series is FREE to all viewers, providing valuable information and tips on how to safely prepare for hurricane season. Episodes air on the Museum's YouTube channel and Facebook page, plus direct links from the Museum's website at www.mods.org/eyeofthestorm. The number of viewers will keep growing as these videos are evergreen.

Videos were distributed every Tuesday, Thursday and Saturday throughout the month of June as follows:

Videos Produced and Distribution Dates

- | | |
|---------------------------------------|---------------|
| • Hurricane Hunters | June 2, 2020 |
| • Forecasting the Storm | June 4, 2020 |
| • Weather Tech | June 6, 2020 |
| • Wall of Wind | June 9, 2020 |
| • Protecting Your Home + Air Cannon | June 11, 2020 |
| • Emergency Management & Preparedness | June 13, 2020 |
| • Powered Up! Storm Tech & Tools | June 18, 2020 |
| • Insurance Check-Up and Boat Safety | June 20, 2020 |
| • Pet Prep | June 23, 2020 |
| • Tracking & Relief | June 25, 2020 |
| • After the Storm | June 27, 2020 |
| • Connected & Prepared | June 30, 2020 |

In addition to providing valuable information and tips on how to safely prepare for hurricane season, each video featured a MODS Brainstorm, a weather-related science demonstration conducted by the Museum's President & CEO and Museum educators. Demonstrations included creating a liquid nitrogen cloud, the power of air pressure, the force of an air cannon and creating plasma.

Digital Marketing and Public Relations Campaign

The **2020 Eye of the Storm** virtual event was an outstanding success, with a reach of **more than 96,378,050 impressions** for the entire digital marketing and public relations campaign as of July 14, 2020. Social media channels included Facebook, Twitter, Instagram, LinkedIn and YouTube. The Museum utilized Google Display and Search Ads and My Business Posts. Museum marketing included slides in the Automation IMAX Theater, article in the Museum's *Explorations* magazine, emails to 64,700 subscribers, webpage with link to videos and Facebook event page. Calendar listings and articles were featured in **32 publications and media with a circulation of 91,011,910**. An impressive article was featured in the *Washington Post*, with a monthly circulation of **54,129,570**.

Attached is a detailed **Marketing and Social Media** report as of July 14, 2020.

2020 Eye of the Storm Budget

Video Production	\$17,500
Public Relations	\$5,000
Social	\$4,200
Tech/Graphics	\$3,750
Programs/Project Management	\$3,050
Communications	\$1,500
TOTAL	\$35,000

Eye of the Storm
July 14, 2020

SOCIAL MEDIA & DIGITAL PLATFORMS

Top Target Audience Demographics

- Gender: 56.8% Female, 43.2% Male
- Age: 47.9% between the ages of 25 - 44

Top Locations

- Puerto Rico: 64.2%
- Florida: 48.9%
- Texas: 23.6%
- Louisiana: 4.4%
- Virginia: 1.7%
- North Carolina: 1.4%
- South Carolina: 1.2%

SOCIAL CHANNEL BREAKDOWN

Digital Marketing Campaign Summary

- Views: 272,190
- Impressions: 5,366,139
- Engagements and Clicks: 13,515

Facebook

- Views: 157,400
- Engagements: 9,040 (Reactions, Comments, Post Saves, Shares, Clicks Page Follows)
- Boosted Posts: \$856.48
 - Impressions: 465,903
 - ThruPlays: 39,921
 - CPM (Cost Per 1,000 Impressions): \$1.84 (Industry Average \$7.17)

Twitter

- Impressions: 10,815
- Engagements: 165
- Tweets: 13

- Retweeted by 30+ Community Partners including: FIU, NWS Miami, Mayor Dean Trantalis, DDA of Fort Lauderdale, Federal Alliance (FLASH), South Florida Red Cross, and Humane Society of Broward County.

Instagram

- Engagements: 205
- Views: 3,502
- Impressions: 30K

Linkedin

- Engagements: 50
- Impressions: 996

YouTube

- Views: See Google Display Ads below
- Engagements: 689 (Likes and Comments)

Google Display Ads (Using budget attributed to this campaign)

- Impressions: 4,807,924
- Video Ad Views: 108,168
- YouTube Subscribers: 689 increase

Google Search Ads (Using MODS' Google Grant)

- Clicks: 2,677
- Impressions: 50,501
- CTR: 5.30%

Google My Business Post

- Post Views: 3.12K

Good Engagements



MUSEUM MARKETING

- **IMAX Preview Slide**
- **[Explorations Magazine](#) (May through September).** More than 12,500 postcards were mailed that we have gone digital; 256 reads with an average read time of 6:59

ONLINE

MODS Website (1,234 pageviews; 3:09 average time spent on webpage)

<https://mods.org/events/eyeofthestorm/>

MODS Facebook Event

<https://www.facebook.com/events/museum-of-discovery-and-science/eye-of-the-storm-2020/2667625003562637/>

EMAILS (Distributed to more than 64,700 subscribers)

- **[Hurricane Hunters](#)** (Distributed: June 2, 2020)

- [Forecasting the Storm](#) (Distributed: June 4, 2020)
- [Weather Tech](#) (Distributed: June 6, 2020)
- [Wall of Wind](#) (Distributed: June 9, 2020)
- [Protecting Your Home + Air Cannon](#) (Distributed: June 11, 2020)
- [Emergency Management & Preparedness](#) (Distributed: June 13, 2020)
- [Powered up! Storm Tech & Tools](#) (Distributed: June 18, 2020)
- [Insurance Check-Up and Boat Safety](#) (Distributed: June 20, 2020)
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- [Tracking and Relief](#) (Distributed: June 25, 2020)
- [After the Storm](#) (Distributed: June 27, 2020)
- [Connected and Prepared](#) (Distributed: June 30, 2020)

PUBLIC RELATIONS/CALENDAR LISTINGS/ARTICLES

Public Relations Campaign Summary

- Media Pickup: 31
- Circulation: 91,011,910

[Florida International University's International Hurricane Research Center and the Museum of Discovery and Science Present Eye of the Storm Virtual Series Press Release](#), May 28, 2020

South Florida Family Life, "The Perfect Storm," June 2020. The publication has a circulation of 31,900.

[South Florida Family Life, "The Perfect Storm: Pandemic Pushes Hurricane Prep Online,"](#) June 1, 2020. The website has a monthly circulation of 4,400.

Broward Family Life, "The Perfect Storm: Pandemic Pushes Hurricane Prep Online," June 3, 2020. The newsletter has a monthly circulation of 4,000.

[The Boca Raton Observer, "Prep For Hurricane Season With Eye of the Storm,"](#) June 2, 2020. The website has a monthly circulation of 2,230.

[News Break, "Prep for Hurricane Season With Eye of the Storm,"](#) June 2, 2020. The website has a monthly circulation of 22,500,000.

[The Published Reporter, "Florida International University's International Hurricane Research Center, Museum of Discovery and Science Present Eye of the Storm Virtual Series,"](#) June 2, 2020. The website has a monthly circulation of 14,700.

[SouthFloridaReporter.com, "Eye of the Storm: Hurricane Hunters,"](#) June 4, 2020. The website has a monthly circulation that is to be determined.

[North Palm Beach Life, "Eye of the Storm: Hurricane Hunters,"](#) June 4, 2020. The website has a monthly circulation that is to be determined.

[The Palm Beach Post, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 3,006,000.

[South-Sentinel.com, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 5,270,000.

[Sunny.org, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 116,000.

[WPLG, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 3,910,000.

[NBC 6, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 1,510,000.

[Yelp, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 74,400.

[Eventcrazy.com, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 43,500.

[Eventful, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 5,860.

[Parkbench.com, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 133,980.

[SpinGo.com, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 25,700.

[South Florida Reporter, "Eye of the Storm Virtual Series,"](#) June 4, 2020. The website has a monthly circulation of 47,500.

[Miami on the Cheap, "Eye of the Storm Virtual Series,"](#) June 6, 2020. The website has a monthly circulation of 37,500.

[Fort Lauderdale on the Cheap, "Eye of the Storm Virtual Series,"](#) June 6, 2020. The website has a monthly circulation of 24,000.

[The Published Reporter, "Eye of the Storm Virtual Series,"](#) June 6, 2020. The website has a monthly circulation of 14,700.

[On Miami, "Eye of the Storm Virtual Series,"](#) June 6, 2020. The website has a monthly circulation that is to be determined.

[CitySpark.com, "Eye of the Storm Virtual Series,"](#) June 23, 2020. The website has a monthly circulation of 5,160.

[PalmBeach.com, "Eye of the Storm Virtual Series,"](#) June 23, 2020. The website has a monthly circulation of 1,090.

[enjoyFortLauderdaleFl.com, "Eye of the Storm Virtual Series,"](#) June 23, 2020. The website has a monthly circulation that is to be determined.

[enjoyHollywoodFl.com, "Eye of the Storm Virtual Series,"](#) June 23, 2020. The website has a monthly circulation that is to be determined.

[enjoyDelrayBeach.com, "Eye of the Storm Virtual Series,"](#) June 23, 2020. The website has a monthly circulation of 10,000.

[Evensi, "Eye of the Storm Virtual Series,"](#) June 23, 2020. The website has a monthly circulation of 121,620.

[Bergeronemergencyservices.com, "Eye of the Storm After the Storm,"](#) June 29, 2020. The website has a monthly circulation that is to be determined.

[The Washington Post, "Eye of the Storm' gives you a better understanding about hurricanes, their power and their deadliness,"](#) July 11, 2020. The website has a monthly circulation of 54,129,570.

June 2020

BROWARD **beyond**

The perfect storm



With the start of hurricane season this month, South Florida families are turning their attention to the tropics.

The Eye of the Storm, a family event usually held in May at the Museum of Discovery and Science (MODS) in Fort Lauderdale, is taking its hurricane education online this year to help South Florida prepare.

Meteorologist Erik Salna, an associate director at FIU's Extreme Events Institute and International Hurricane Research Center in Miami, is the force behind Eye of the Storm. He started the event five years ago.

"We live in the hurricane capital of the United States, so who needs to be most prepared?" Salna said. "It has to be a way of life, it has to be a culture of preparedness that kids are brought up with and understand."

He worked with the Florida Division of Emergency Management to move hurricane preparation information into a family-friendly setting.

"At the science museum, we wanted to bring in this new flair of interactivity and fun. ... It was just a different way to present the content."

With the pandemic closing museums, Salna now plays host to the Eye of the Storm virtual series. "All the content that you would see and hear at the event here at MODS, now we're just translating all that content to the series of videos."

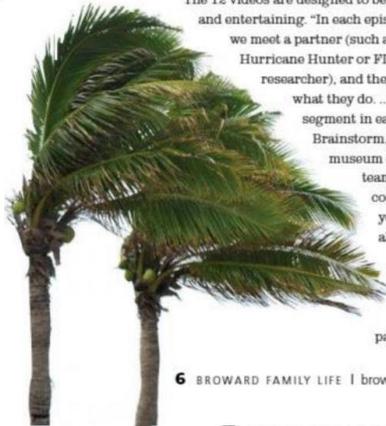
The 12 videos are designed to be educating and entertaining. "In each episode,

we meet a partner (such as a NOAA Hurricane Hunter or FIU Wall of Wind researcher), and they talk about

what they do. ... There's a segment in each one called Brainstorm, where the museum education

team creates a cool thing that you can do that aligns with

what you just learned," he said, such as making paper airplanes.



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LINE



Not everything can be done at home. "One of the highlights of the physical event was launching planks of wood at windows," Cox said. "With the Brainstorm piece, we actually built an air cannon of our own and put it out in the science park and destroyed a watermelon."

Cox credits Salna and the museum education team with keeping the message family-friendly. "It's important, but let's make it fun so it's really engaging," he said.

Salna said each episode introduces an expert who talks about science. "But then we purposefully switch gears on the questions. How did you get interested in meteorology? What's your most memorable experience?"

That aspect is something the physical event couldn't deliver, Cox said. "You can definitely get a lot more insight into the hurricane process," as well as different STEM careers, he said. "It's really well done."