

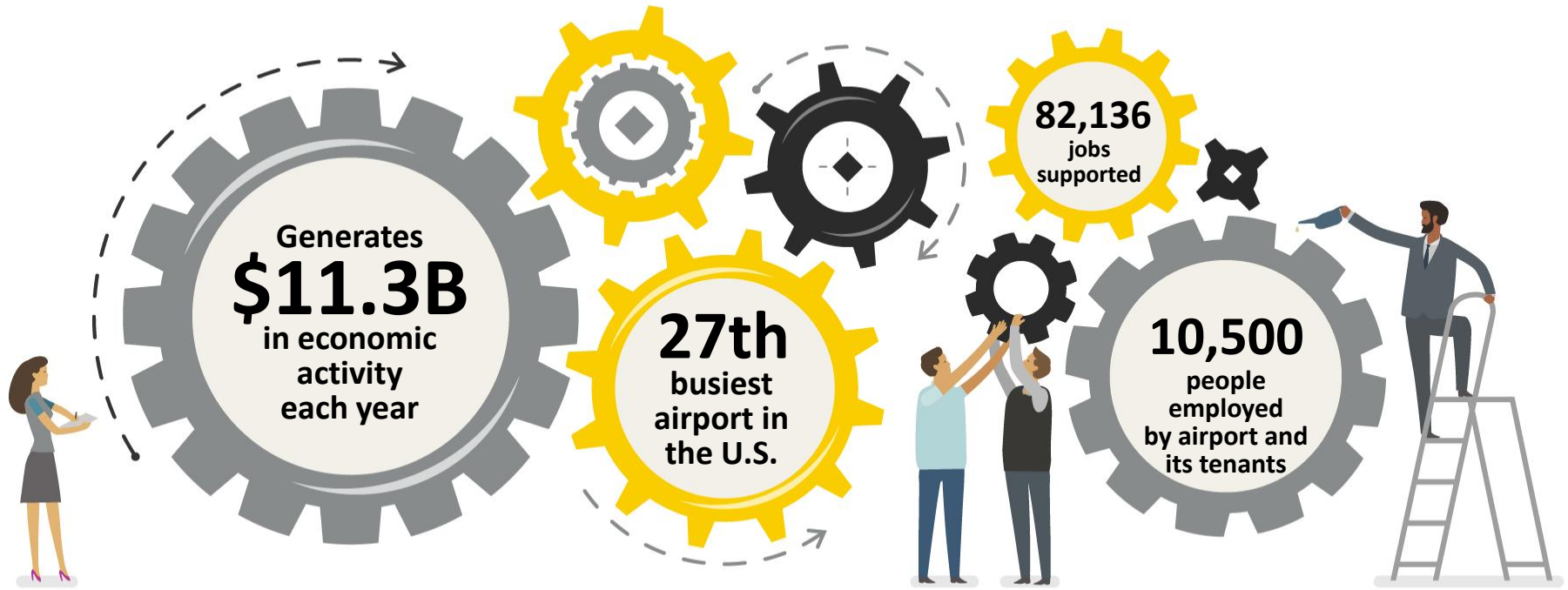


# Success in “Resilience” Planning

Tampa International Airport



Hillsborough County Aviation Authority  
Tampa International, Peter O. Knight,  
Plant City and Tampa Executive Airports



\*Sources: FDOT Aviation Economic Impact Study 2022; FAA CY23 Enplanement Data

# TAMPA INTERNATIONAL AIRPORT



Annual Passengers  
**25,912,550**  
(Projected for FY25)  
Daily Average **70,993**



Highest Traffic Month  
**March**  
**2,590,358**  
Calendar Year 2024



Lowest Traffic Month  
**October**  
**1,598,408**  
Calendar Year 2024

**4 Airsides / 58 Gates**



**66**  
Shops and Restaurants

**23,000**

Approx. Parking Spaces



**229,000,959**

Pounds of Cargo and Mail  
Calendar Year 2024




**3 General  
Aviation Airports**

Peter O. Knight, Plant City,  
Tampa Executive






Annual Operations  
**150K**




Hangars  
**335**

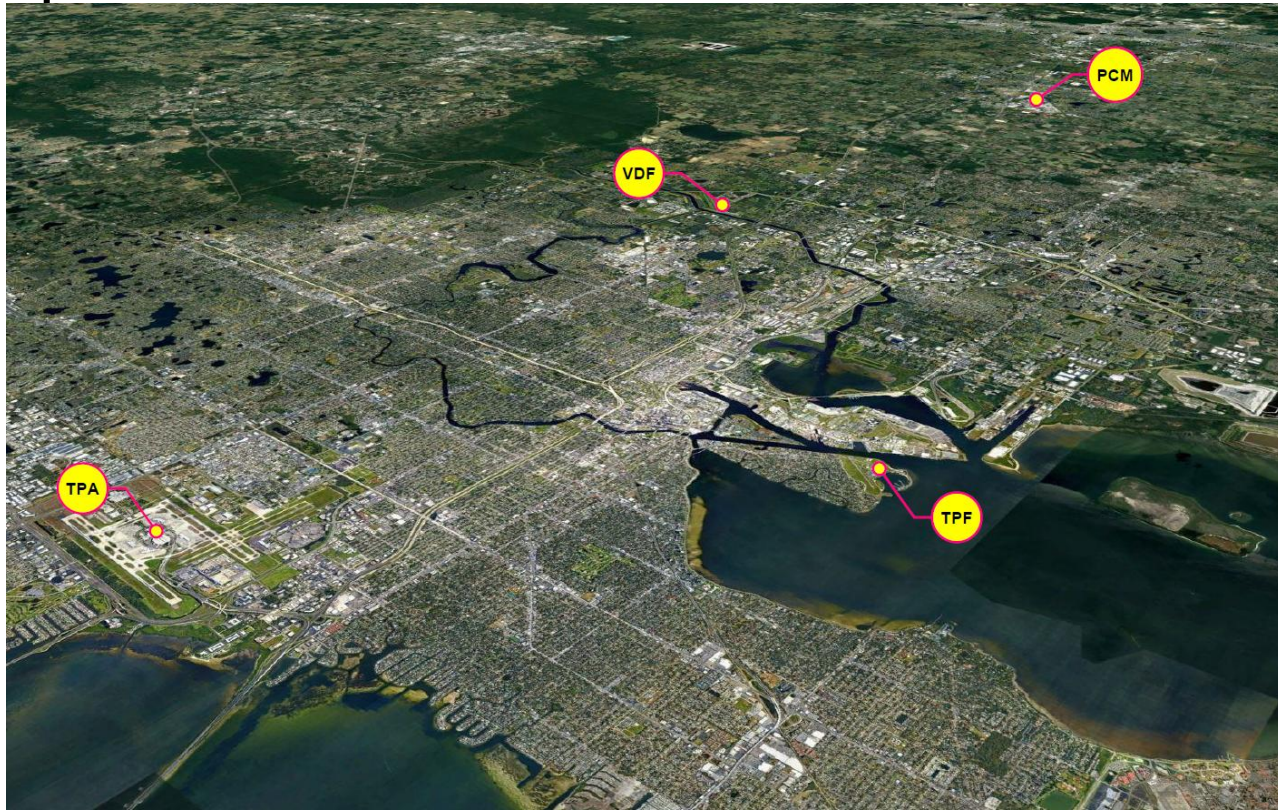



Based Aircraft  
**425**

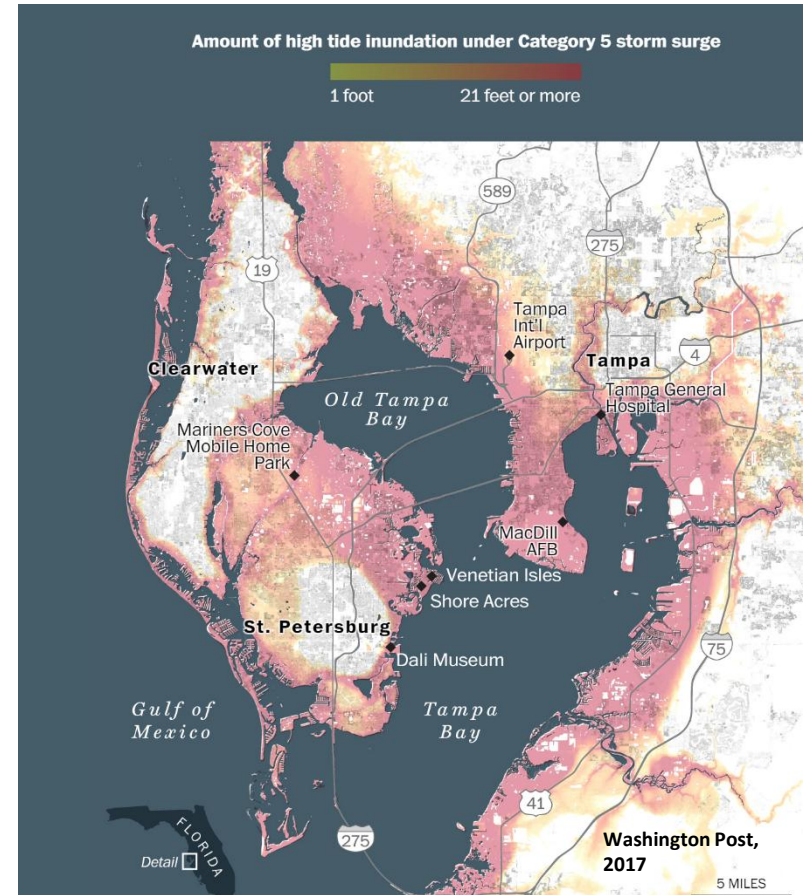
Economic Impact  
**\$563.4M**

# HCAA Airport Locations



# Genesis of Resilience Work

- 2014: Sustainable Management Plan (SMP) Evaluate Infrastructure Resilience
- 2017: Washington Post Article – Tampa Bay is one of Country’s Most Vulnerable
- 2018: ACI Publishes Resilience and Adaptation Policy Brief
- 2018: TPA Initiates Resilience Assessment
- 2019: Tampa Bay Regional Resiliency Coalition (TBRPC) Formed
- 2019: TPA Climate Change Resilience Assessment and Action Plan Completed
- 2022-present: Resiliency Action Plan Implementation



# TPA Climate Resilience Adaptive Management Approach



Identify TPA assets and operations that are susceptible to climate stressors

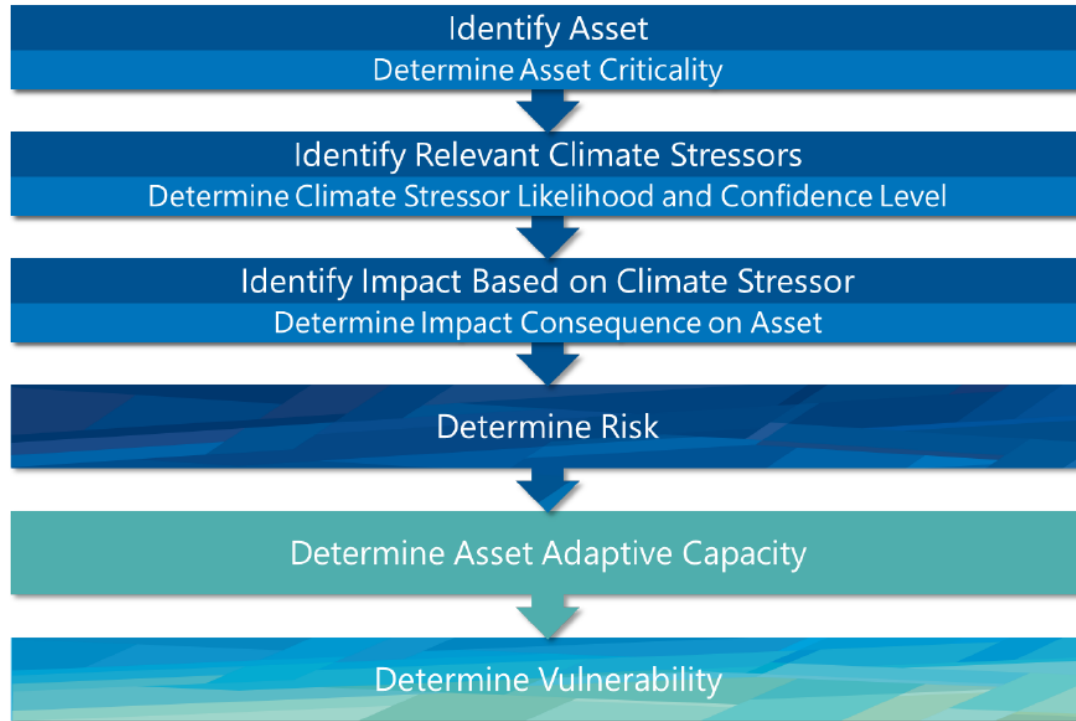


Raise awareness of staff and engage them in identifying and evaluating vulnerabilities



Provide a roadmap for adaptive management of highly vulnerable assets and operations

# Risk and Vulnerability Assessment Process



# Characterize Assets



Factor of Criticality

**CRITICALITY:** The importance of the asset or operation to the overall function of the Airport.



Airfield Electrical Vault (East)	Airfield Electrical Vault (West)	Airside A and A Sort	Airside C	Airside D (Future)	Airside E	Airside F	Aircraft Fire Fighting and Rescue (ARFF) Station
Airport Surveillance Radar	Air Traffic Control Tower (ATCT)	Central Utility Plant (Future)	Commercial Passenger Apron and Assoc. Taxiways	Distributed Antenna System (DAS) - Future	Fiber Network	Fleet Fuel Farm	Fuel Farm
SkyCenter Admin/AOC/NOC (Future)	George J. Bean Parkway	Main Terminal	Spruce Street Drainage System	Terminal Drainage System	Airport Parkway/Spruce Street Interchange Drainage System	Airside Shuttles	APM Maintenance Station 4
Cargo Tunnel	Central Receiving and Distribution Center (CRDC)	East Runway Drainage System (Runway 1R-19L)	Economy Parking Garage	Inner and Outer Markers	Long Term Parking Garage	Reclaimed Water Pump Station	Red and Blue Curbsides
Rental Car Center (RCC) and Support Facilities	Runway 10-28 and Associated Taxiways and NAVAIDs	Runway 1L-19R and Associated Taxiways and NAVAIDs	Runway 1R-19L and Associated Taxiways and NAVAIDs	Sanitary Lift Stations and System	Short Term Parking Garage	SkyConnect	West Runway Drainage System (Runway 1L-19R)
Airport Maintenance and Equipment Storage	FedEx/UPS Cargo Apron	FedEx/UPS Cargo Buildings	SkyCenter Hotel (Future)	General Aviation Apron	General Aviation Terminal Facilities	Ground Transportation Center	GSE Maintenance/Belly Cargo Facilities
International Plaza Drainage System	Maintenance Warehouse	Marriott Hotel	MRO Hangars and Apron	North Air Cargo	North Airport Drainage System	North Employee Parking Lot	Sweetwater Creek Drainage System

Criticality	Definition
High	Loss of asset significantly impairs or shuts down the airport until replacements are secured
Medium	Loss of asset disrupts airport function
Low	Loss of asset is negligible to airport function

# Determine Vulnerability



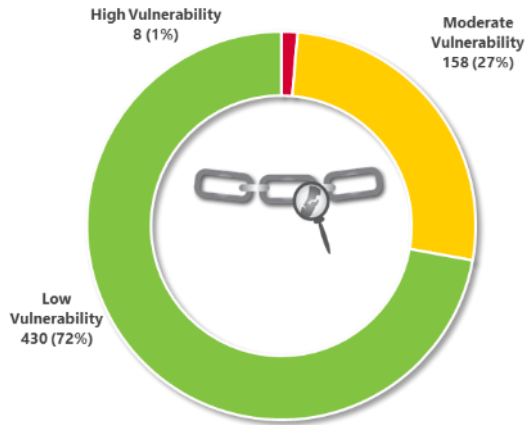
## Adaptive Capacity

The ability of the existing asset or operation to accommodate potential changes in climate.



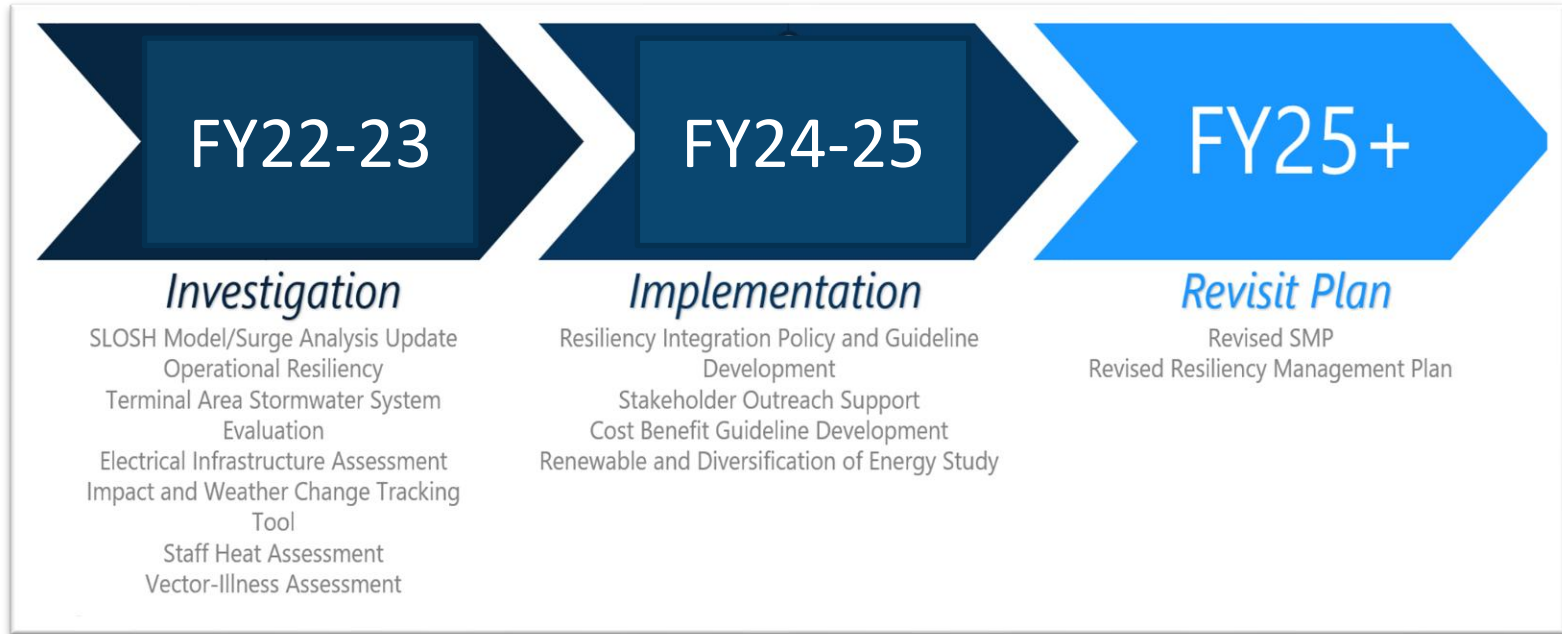
Adaptive Capacity	Definition
Good	Asset/operation can adjust to climate changes without disruption
Moderate	Asset/operation can adjust to climate change with little disruption
Poor	Asset/operation cannot adjust without significant disruption

# TPA Vulnerability Results - High

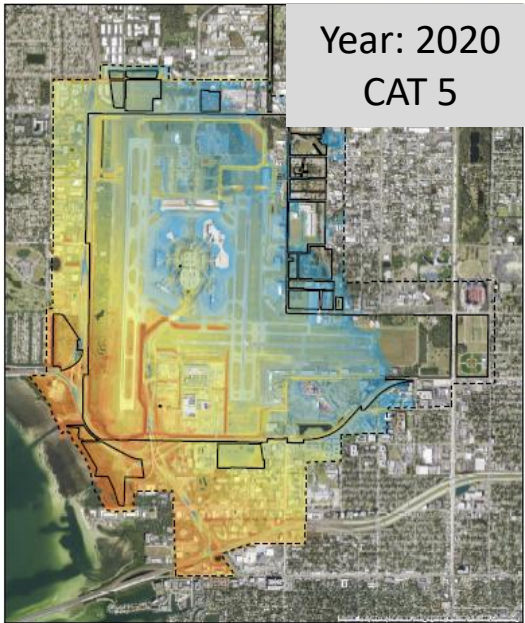


<b>Airfield Electrical Vaults</b>	Transformer Failure	<b>Spruce Street Drainage System</b>	Flooding
			Increased Discharge Quantity and Degraded Quality
<b>ATCT and TRACON</b>	Disruption in Operation	<b>Terminal Drainage System</b>	Flooding
			Increased Discharge Quantity and Degraded Quality
<b>CNG Station / Fleet Fuel Farm</b>	Lifting and Rupturing of Underground Tanks	<b>TECO Electric Supply</b>	Insufficient Capacity Due to Increased Demand
<b>Fuel Pipeline -Port Facilities</b>	Flooding	<b>TECO Natural Gas Supply</b>	Lifting and Rupturing of Underground Tanks
<b>Inner and Outer Markers</b>	Flooding		
	Potential Corrosion from Sea Water		

# Resilience Action Plan Implementation (Post COVID)

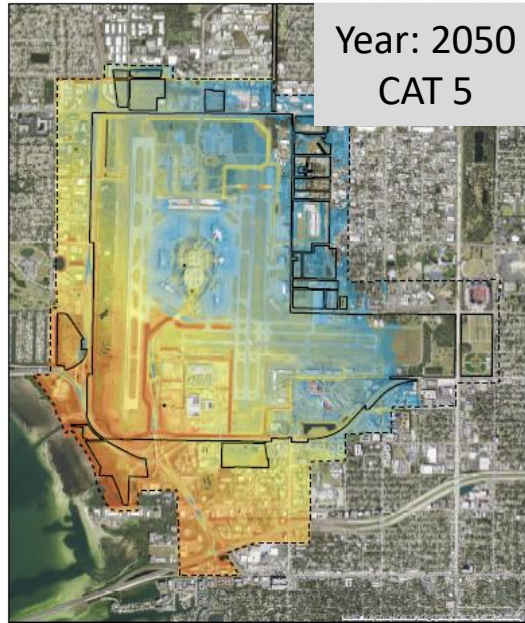


# SLOSH Model



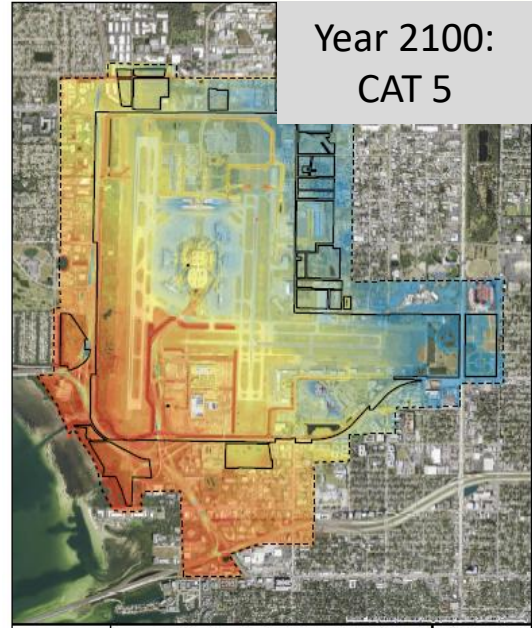
Year: 2020  
CAT 5

Exhibit 13: Landfalling Category 5 MOM High Tide Year 2020	<b>2020 Cat 5 Inundation Depth (ft.)</b> 0-2    12-14    24-26 2-4    14-16    26-28 4-6    16-18    28-30 6-8    18-20    30-32 8-10    20-22    32-34 10-12    22-24 —Property Boundary -- Study Area	
	Hurricane Surge Analysis Update Tampa International Airport, Tampa, FL Date: 9/9/2022 Project: 204-6061-137	



Year: 2050  
CAT 5

Exhibit 14: Landfalling Category 5 MOM High Tide Year 2050	<b>2050 Cat 5 Inundation Depth (ft.)</b> 0-2    12-14    24-26 2-4    14-16    26-28 4-6    16-18    28-30 6-8    18-20    30-32 8-10    20-22    32-34 10-12    22-24 —Property Boundary -- Study Area	
	Hurricane Surge Analysis Update Tampa International Airport, Tampa, FL Date: 9/9/2022 Project: 204-6061-137	



Year 2100:  
CAT 5

Exhibit 16: Landfalling Category 5 MOM High Tide Year 2100	<b>2100 Cat 5 Inundation Depth (ft.)</b> 0-2    12-14    24-26 2-4    14-16    26-28 4-6    16-18    28-30 6-8    18-20    30-32 8-10    20-22    32-34 10-12    22-24 —Property Boundary -- Study Area	
	Hurricane Surge Analysis Update Tampa International Airport, Tampa, FL Date: 9/9/2022 Project: 204-6061-137	

# Storm-Surge Planning (2023)

- Storm-Surge Vulnerability Assessment
  - Priority Assets:
    - Main Terminal
    - Airsides A, C, E, F, A-Sort
    - SkyCenter One
    - Airfield Maintenance Complex
    - Fuel Farm
    - ATC Tower
    - Central Utility Plant
    - ARFF Station
    - Airfield Vaults



# Storm-Surge Planning (2023)

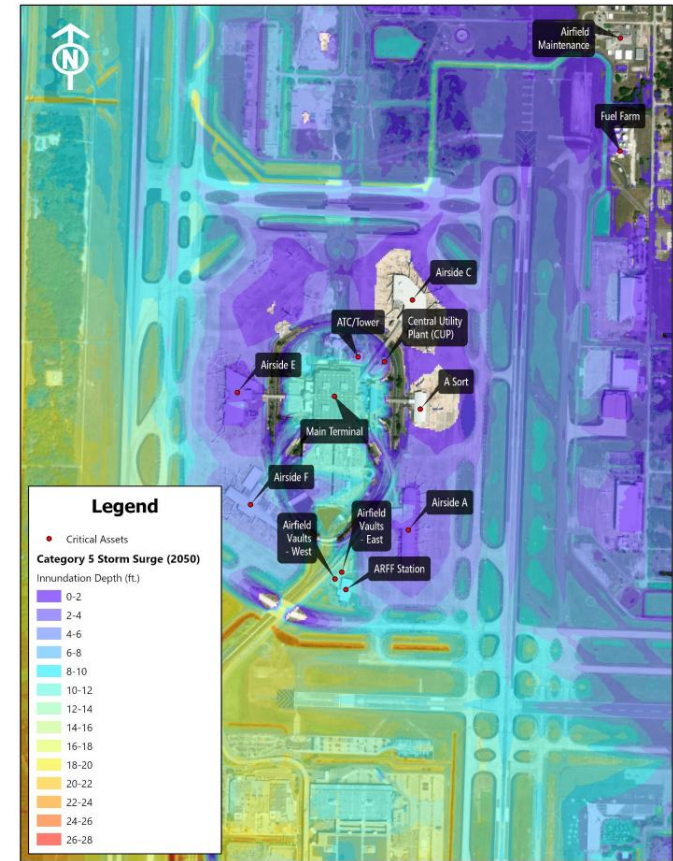
- Critical Sub-Systems:
  - Back-up power generation
  - Electrical Infrastructure
  - HVAC Systems
  - Life Safety Systems
  - Communications
  - Baggage Handling
  - Drainage/Lift Stations



Figure 1:  
Category 5 hurricane, 2020 timeframe inundation depth

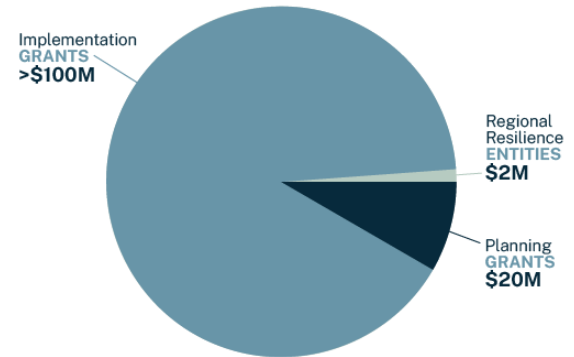
# Storm-Surge Planning (2024)

- Storm-Surge Adaptation Action Strategy:
  - Prioritize assets the need protection
  - High priority storm-surge protection strategies
  - Feasibility level cost opinion for up to 10 protection concepts
- FEMA Study: Peter O. Knight (FDOT)
  - Analyze latest FEMA designation of campus
  - Review topographic data to investigate an opportunity to reduce flood risks
  - Develop alternative projects and associated costs to reduce flood risks



# 2025 & Beyond

- Presenting projects for on-going CIP consideration
  - First “Resilience” CIP Project Funded:
    - » Airfield Electrical Vaults
- Resilience Action Plan
  - Terminal Area Stormwater Analysis & Stormwater Master Plan
  - Regional Collaboration
- Resilient Florida Grant Program: Established 2021
  - Resilience-related planning & infrastructure projects
  - Available to Cities, Counties, & Special Districts





Hillsborough County Aviation Authority  
Tampa International, Peter O. Knight,  
Plant City and Tampa Executive Airports

Tampa International Airport

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# Success in “Resilience” Planning