

COASTAL AREA ACTION PLAN COMMUNITY LIFELINES REPORT

11/30/2023



TERMS

Coastal High Hazard Area (CHHA): For growth management purposes, Florida Statute 163.3178 defines this as: "The area below the elevation of the category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model."

For regulating construction in a flood zone, FEMA and Florida Statute defines it as: "An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The coastal high hazard area is identified as Zone V on Flood Insurance Rate Maps (FIRMs). Special floodplain management requirements apply in V Zones including the requirement that all buildings be elevated on piles or columns."

Coastal Planning Area: The city's comprehensive plan defines this area as all five evacuation zones.

Community Lifeline: Lifelines are the system of services, facilities, or other aspects of daily life that are part of a community's response to a hazardous event. A lifeline enables the continuous operation of critical government and business functions and is essential to human health and safety or economic security (FEMA, 2023).

Special Flood Hazard Area (SFHA): Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded).

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INTRODUCTION

Project Description

Task 2 of the Coastal Area Action Plan (CAAP) includes the objective to “Strengthen ties with key community lifelines and identify specific projects to mitigate impacts of tropical and severe flooding.” This task included a review of the “lifelines” topic, as described by FEMA, and outreach to agencies and personnel involved in emergency management within the City of Tampa and Hillsborough County. The following summary describes the current status of lifeline categories and includes contacts for future reference and communication.

The project specifically addresses lifeline needs in Palmetto Beach and South of Gandy, in Tampa. This study will assist policy-makers and planners in their pursuit of strengthening these two communities to coastal hazards.

Community Lifelines

Community lifelines are the system of services, facilities, or other aspects of daily life that are part of a community’s response to a hazardous event. Lifelines can be categorized in different ways. For example, the Federal Emergency Management Agency (FEMA) has created seven groupings of lifelines with a total of 28 individual sub-topics. Lifelines can also be considered as Emergency Support Functions, a standard that has been developed by FEMA and is used in Hillsborough County emergency management. Each framework overlaps with the other, however it is useful to explore the topic by using one of them to guide research.

FEMA has categorized “lifelines” as follows:

- **Safety and Security:** Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
- **Food, Water, Shelter:** Food, Water, Shelter, Agriculture
- **Health and Medical:** Medical Care, Public Health, Patient Movement, Medical Supply Chain, Fatality Management
- **Energy:** Power Grid, Fuel
- **Communications:** Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch
- **Transportation:** Highway/Roadway/Motor Vehicle, Mass Transit, Railway, Aviation, Maritime
- **Hazardous Material:** Facilities, HAZMAT, Pollutants, Contaminants

Emergency Support Functions (ESF) are listed as:

1. **Transportation**
2. **Communications**
3. **Public Works and Engineering**
4. **Firefighting**
5. **Information and Planning**
6. **Mass Care, Emergency Assistance, Temporary Housing, and Human Services**
7. **Logistics**
8. **Public Health and Medical Services**
9. **Search and Rescue**
10. **Oil and Hazardous Materials**
11. **Agriculture and Natural Resources Annex**
12. **Energy**
13. **Public Safety and Security**
14. **Cross-Sector Business and Infrastructure**
15. **External Affairs**

Lifelines should also be considered for their connections and dependencies as a system. Their functionality can often depend on regional, rather than local, access and function. For example, roadways - used for evacuation - are important to consider within a project boundary. However, the use of a roadway for a lifeline may also depend on access to regional destinations or the ability of a citizen to purchase an automobile.

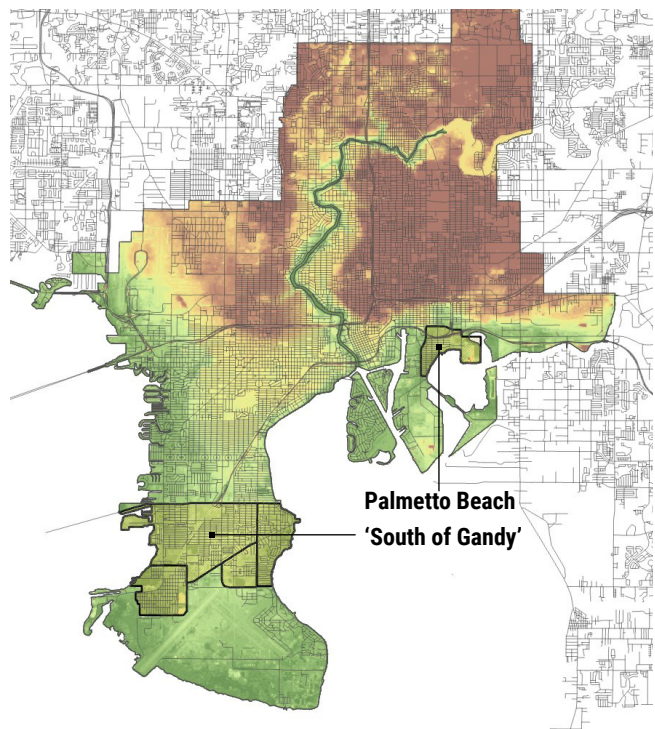


Image: Project areas.



COMMUNITY LIFELINES

The 'lifelines' framework was used to identify strategic agencies for outreach, so that an understanding of needs could be developed. Information gathered is used to formulate recommendations to the City of Tampa, to support lifelines and emergency management.

Targeted outreach engaged the following personnel (highlighted in orange in the chart below):

**Safety and Security
Sheltering**

**Food Distribution
Health and Medical**

Power, Fuel and Hazardous Materials

**Community Outreach and Communication
Social Aspects of Emergency Management**

Transportation and Evacuation

Hazardous Materials

Governance and Planning

City of Tampa Police Department
 Katja Miller, Section Chief, Hillsborough County Emergency Management Operations
 Feeding Tampa Bay, Metropolitan Ministries
 Tampa General Hospital
 Jose DeJesus, Port of Tampa; James Adcock, TECO
 Janelle McGregor, Community Engagement & Partnerships Department
 Dr. Robin Erasing, University of South Florida (Planning)
 Richard Campbell, Chief Safety Officer, HART
 Hillsborough County Emergency Services
 Shawn College, City-County Planning Commission

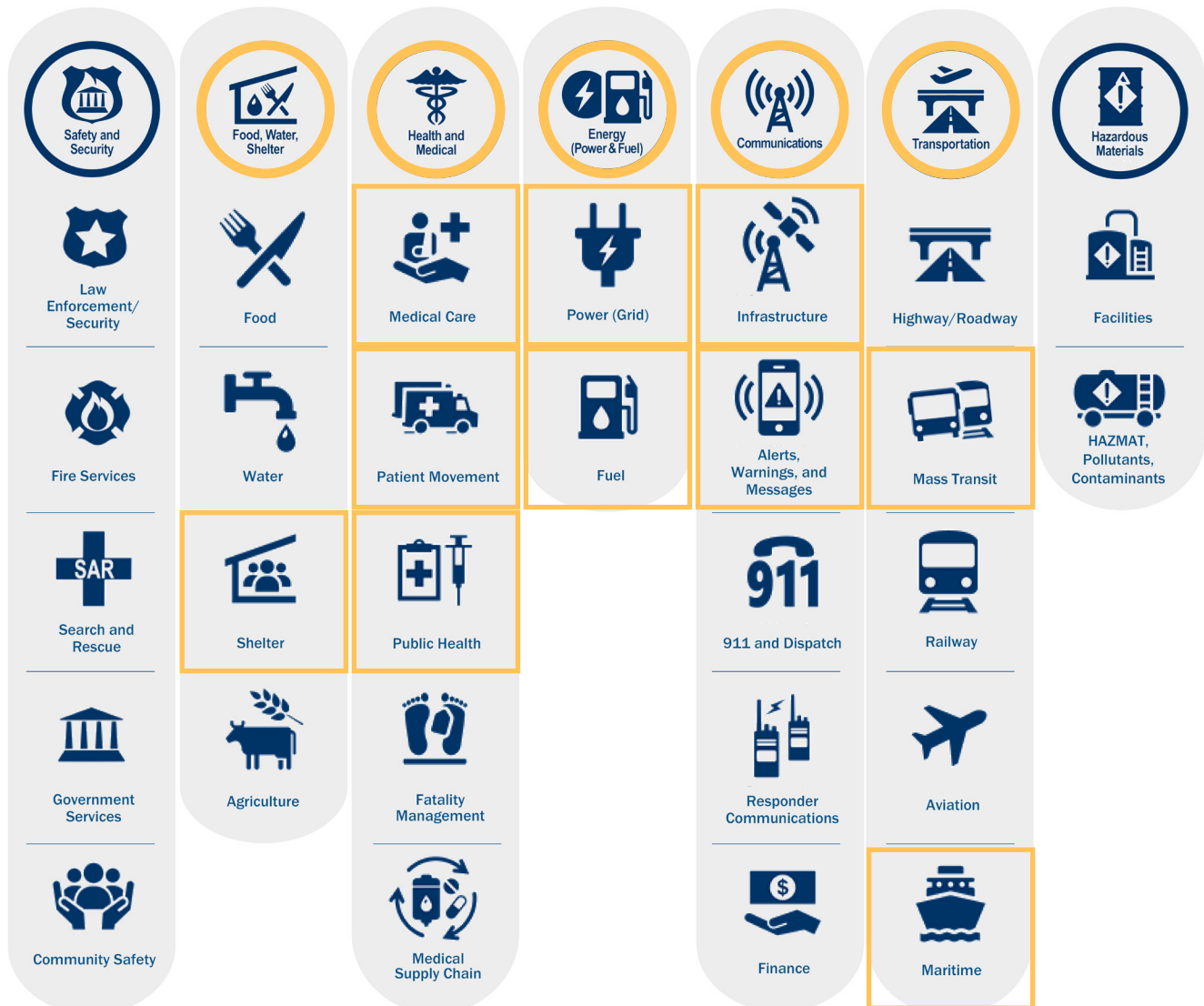


Image: FEMA's Community Lifelines Poster (2021). See <https://www.fema.gov/emergency-managers/practitioners/lifelines-toolkit>. Components of lifeline services addressed by this study are outlined in orange.



SUMMARY

The following pages describe the information gained through multiple stakeholder meetings. Each is related to a specific category of lifeline services. A summary analysis of opportunities and recommendations is provided at the end.

Safety and Security

Correspondence was not returned by administrators within this lifeline category.

Food, Water, Shelter

Primary shelter, such as a person's home, should be considered as the starting point for hazard mitigation and response. It is the most familiar mode of maintaining safety and security, and is the typical location where water, food, and shelter are accessed on a daily basis. It is also the preferred location during hazardous events. Many Tampa homes have been constructed to higher standards, which were established by a statewide Building Code adopted in 2002 in response to Hurricane Andrew (1992) and multiple subsequent amendments. These rules have been shown to reduce windstorm losses by up to 72% (Simmons, Czajkowski, and Done, 2017). Alternatively, structures not built to this standard may be more vulnerable. Upgrades to homes, such as roof fortifications, window replacements, or even raising of the bottom floor can be costly but increase resilience. Structure updates are promoted through insurance programs, but major renovations usually occur through redevelopment. When repairs exceed 50% of the value of the structure, which includes instances of complete tear-down, permitting requirements demand that the most current building codes must be met.

Financial security is a major factor for creating resilience. One must have the economic capacity to make updates to one's home, or to renovate one to the current standards. It is also the lifeline that can enable a swift bounce-back from a hazardous event. For flood-prone areas, participation in the National Flood Insurance Program (NFIP), through FEMA, can increase resilience by providing appropriate economic support after a disaster. Communicating this to residents is an important step to building community resilience. Higher enrollments in the NFIP can also count toward the city's Community Rating System (CRS) score, which reduces overall premium costs for those structures located within the Special Flood Hazard Area.

Beyond one's home, Hillsborough County Emergency Management has established a sheltering system for people to secure themselves during hazardous events. Currently, all 48 shelters utilize school facilities. According to state statute, shelters must be placed outside of the Evacuation Zones A-C.

When an emergency is declared, schools close to prepare for hosting evacuees. Only three of those are within the most dense areas of Tampa, and they are all located within East Tampa neighborhoods. An additional shelter is at the University of South Florida, with a few located in New Tampa. For the majority of Tampa residents, this does not provide a familiar or comfortable option.

Eight of the 48 Hillsborough County shelters are pet friendly. Six accommodate special needs. All special needs facilities are pet friendly. Recently, the populations served by Hillsborough County shelters has grown. The county updated its evacuation zone maps in 2021, adding approximately 11,000 parcels to previous evacuation zone areas. (Miller Interview, see reference) New areas, such as in East Tampa, were included because they were surrounded by other evacuation and flood zones and may not have been accessible during a tropical storm event.

A recent Hillsborough Transportation Planning Organization (TPO) report found that 63% of respondents cited a comfortable, familiar place to stay as a primary concern. (Hillsborough Transportation Planning Organization, 2022) Other discussions, which were part of this study, identified that people determine their evacuation strategy based on concerns for safety and "being welcome." Other factors noted in the study that have caused hesitancy to sheltering are differences in speaking language and pet ownership. Residents have also expressed a desire to gain immediate access to one's personal home after the storm (Ersing, 2023). Combined, these criteria point to a need to develop localized sheltering in familiar places.



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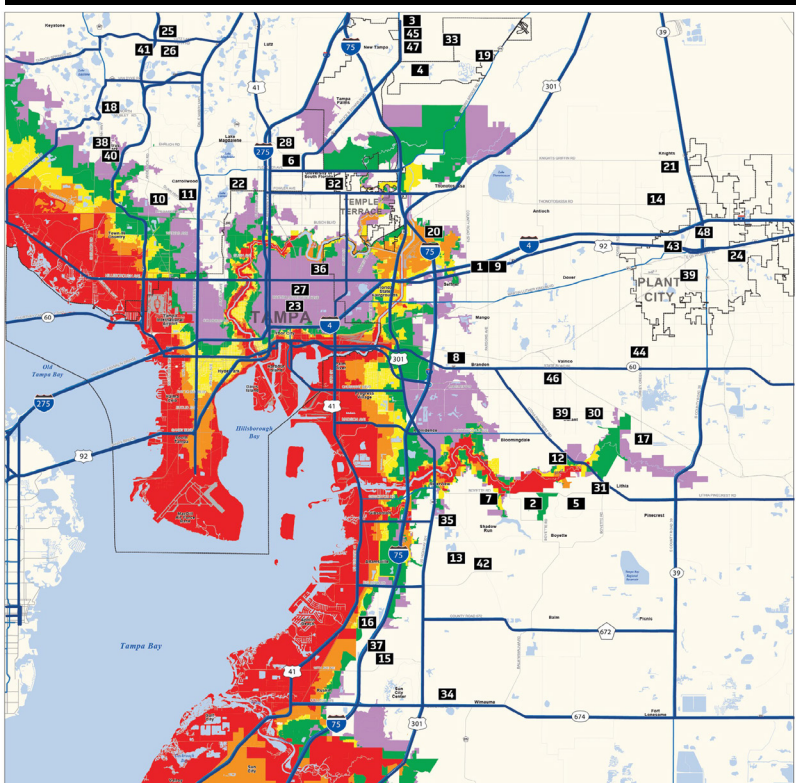
The connection between sheltering and schools creates many efficiencies. For example, shelter facilities include food distribution, which is operated by the Hillsborough County Public School District. Conversely, the use of schools for sheltering can create a disruption for children and parents may be without their typical source of childcare. Development of a shelter system outside of the public school system may create increased opportunities, and lessen issues for parents and children, but it would require leadership and management, a difficult impediment to overcome.

Section 27-282.19 of the Code of Ordinances attempted to establish a mitigation fee for shelter space in the event a re-zoning would result in additional dwelling units in the “coastal planning area.” There are a number of issues with this law. First, Coastal Planning Area is not defined in the code. The city should define it in the code or reference the Comprehensive Plan. Second, the cost by which to multiply the number of dwelling units is not established. It relies on a calculation that the county emergency management department does not seem to have. Third, it’s a fee adopted in the regulations for specified uses in the LDC versus in the fee section of the code. Fourth, it implies that the fee only applies to re-zonings that are site plan controlled, not all re-zonings. Fifth, the county does not have a deficit for which to justify a fee– the fee should be based on data collected that describes a need, such as the Statewide Emergency Shelter Plan, which is updated every two years by the Florida Department of Emergency

Shelters

	Shelter Names	Address	Pets
1	Armwood High	12000 US Highway 92	
2	Barrington/Stowers	5925 Village Center Dr	✓
3	Bartels Middle	9190 Imperial Oaks Blvd	✓
4	Benito Middle	10101 Cross Creek Blvd	
5	Bevis Elementary	5720 Osprey Ridge Dr	
6	Bowers-Whitley / Muller	13609 N. 22nd St	
7	Boyette Springs Elementary	10141 Sedgebrook Dr	
8	Brandon High	1101 Victoria St	
9	Burnett Middle	1010 N Kingsway Rd	✓
10	Cannella Elementary	10707 Nixon Rd	
11	Carrollwood Elementary	3516 McFarland Rd	
12	Cimino Elementary	4329 Culbreath Rd	
13	Collins Elementary	12424 Summerfield Blvd	
14	Cork Elementary	3501 N Cork Rd.	
15	Cypress Creek Elementary	4040 19TH Ave. NE	
16	Dorothy York Elementary	5995 Covington Garden Drive	
17	Durant High	4748 Cougar Path	✓
18	Hammond Elementary	8008 N Mobley Rd	
19	Heritage Elementary	18201 East Meadows Rd	
20	Jennings Middle	9325 Govenors Rd	
21	Knights Elementary	4815 N Keene Rd	
22	Lake Magdalene Elementary	2002 Pine Lake Dr	
23	Lockhart Elementary	3719 N 17TH St	
24	Marshall Middle	18 S Maryland Ave	
25	Martinez Middle	5601 W Lutz Lake Fern Rd	
26	McKittrick Elementary	5503 Lutz Lake Fern Rd	
27	Middleton High	4801 N 22nd St	✓
28	Mort Elementary	1806 Bearss Ave	
29	Mulrennan Middle	4215 Durant Rd	
30	Nelson Elementary	5413 Durant Rd	
31	Newsome High	16550 Fishhawk Blvd	
32	Pizzo Elementary	11701 Bull Run	
33	Pride Elementary	10310 Lions Den Dr	
34	Reddick Elementary	325 West Lake Dr	
35	Sessums Elementary	11525 Ramble Creek Dr	
36	Sheehy Elementary	6402 N 40TH St	
37	Shields Middle	15732 Beth Shields Way	✓
38	Sickles High	7950 Gunn Highway	✓
39	Simmons Career Center	1202 W Grant St	
40	Smith, SGT Paul Middle	14303 Citrus Pointe Dr	

Hillsborough County Evacuation Zones



	Shelter Names	Address	Pets
41	Steinbrenner High	5575 W. Lutz Lake Fern Rd	✓
42	Summerfield Elementary	11990 Big Bend Rd	
43	Tomlin Middle	501 N Woodrow Wilson St	
44	Turkey Creek Middle	5005 Turkey Creek Rd	
45	Turner Elementary	9020 Imerial Oaks Blvd	
46	Valrico Elementary	609 S Miller Rd	
47	Wharton High	20150 Bruce B Downs Blvd	
48	Wilson Elementary	702 English St	

Image: Evacuation zones and sheltering facilities in Hillsborough County (2023).
 See <https://www.hillsboroughcounty.org/library/hillsborough/media-center/documents>



Management. There may be other funding options to explore, but the city would need to determine criteria and work within legal frameworks to justify the collection of funds. Finally, it's unclear if the School Board has a fund set up to accept such fees. Because of these issues, this fee has never been charged. The statewide shelter study is updated every two years, and the city should closely monitor these updates and work with the county and the school board to develop a mitigation fee in the event a deficiency occurs.

Outreach for this project identified that post-hazard food and water distribution could use additional support (Ersing, 2023; and Miller, 2023). Food is mostly connected to shelters, which within city limits are concentrated in East Tampa. In addition to kitchens run by the Hillsborough County School District, Metropolitan Ministries and Feeding Tampa Bay are entities that participate in post-hazard food distribution activities.

Recommendations

- Increase building code standards within special flood hazard areas.
- Provide post disaster administrative services at shelters, so that community members can understand the process of filing insurance claims or other necessary filings for post disaster support.
- Support or initiate sheltering and/or food distribution services at more locations within the City of Tampa in post-hazard scenarios.
- Communicate the importance of flood insurance and promote the National Flood Insurance Program (NFIP) to Tampa property owners.
- Define the Coastal Planning Area in the Code, or reference the Comprehensive Plan in Section 27-282.19

Contacts

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Health and Medical

Hospitals and ambulatory services are a major part of the health and medical lifeline. In Tampa, Tampa General Hospital (TGH) is a focus, since it is the only Level 1 Trauma treatment facility in Tampa Bay, and it serves the South Tampa area. The hospital has fortified its facilities, including temporary flood protection structures, generators, and many other measures to keep it secure. Generally, administrators at the hospital feel as though their facility is protected and not vulnerable to flooding, with one exception. The road/bridge leading to Davis Islands, where the hospital is located, is the only access to the facility. This is an older bridge and could be renovated at a higher elevation. Contextual roads should also be studied to ensure access. There have been discussions with the City of Tampa about this in the past, but the group agreed that this may be something to incorporate into the upcoming Tampa Vulnerability Assessment, and to address in the future.

Recommendations

- Apply for federal critical infrastructure funds to renovate the bridge and roadways to Tampa General Hospital.

Contacts

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Additional contacts can be found within the Tampa Bay Health and Medical Preparedness Coalition
<https://www.tampabayhmpc.org/meet-the-team/>



Energy

The Tampa Electric Company (TECO) is the energy utility that services both study areas within the City of Tampa. TECO submitted to the Public Service Commission (PSC) in 2020 to initiate a Storm Protection Plan (SPP), which includes strengthening power lines with stronger poles, under-grounding lines, trimming trees, and increasing durability of substations. Since 2021, TECO has and will spend \$150 million per year toward increasing reliability and resilience until the program is completed in 2029. In the Palmetto Beach neighborhood, and in those neighborhoods south of Gandy Boulevard, there are three primary efforts underway related to resilience. Upgrades are planned for an existing power line from the Marion Street substation to Hookers Point (the Port). A resilience project is also planned for MacDill Airforce Base (AFB). Nearby, in the neighborhoods between MacDill AFB and Gandy Boulevard, 13 corridors are in the planning phase to bury approximately 8.75 miles of overhead lateral power lines. TECO has strategically designated these areas for lateral under-grounding (LUG) projects, which are based on multiple criteria related to performance and maintaining service. Urban design factors are not included among the criteria. However, some communities in the past, such as Dana Shores and nearby San Jose, have created special tax districts within the county to pay for community-wide infrastructure modifications, allowing them to bury their lines through this special funding mechanism, and improve their urban character.

Port Tampa Bay is the primary fuel delivery mechanism for central Florida and delivers 35 million tons of cargo each year. For example, the Port supplies Lowe's and Home Depot, as well as other building supply stores. It is also a major cruise home-port. The operation of the Port is critical to maintaining daily life for the City of Tampa, and for responding to hazardous events.

The Port has an emergency operations plan, which focuses on filling fuel reserves as much as possible prior hurricane landfall. There is a vulnerability assessment underway to evaluate the security of the tanks and other port components that maintain continuity of services.

During a hurricane, ships are sent out to sea to avoid potential impacts to the Port and city.

Recommendations

- Coordinate city capital projects with TECO's storm prevention plan.

Contacts

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Communication

Similar to other lifeline categories, it is important to consider the lifeline of communication before, during, and after a hazardous event. When considering strategies used prior to an event, both long- and short-term applications apply.

Long-term delivery of information and messaging to a community can build cultural awareness towards a shock-type event, such as a hurricane. With environmental concerns in mind, resilience can be constructed over time, with ongoing projects and preparation. Community events, meetings, workshops, and regular messaging are all tools that can be employed. The City of Tampa has recently adopted this strategy by initiating neighborhood specific hurricane preparedness events - the first one was in River Grove. These events include Community Emergency Response Team (CERT) and emergency management professionals and are open to the public.



To help with short-term messaging, the City of Tampa has established a messaging platform ('Alert Tampa') that sends text alerts to community members that sign up for the service. This is different than the system used by Hillsborough County, which can send messages to all phones within a specified radius. A challenge for the Alert Tampa system is connecting with the homeless population or connecting with immigrant communities, who would have to have registered their phone number for the program. New legislation at the state level has intensified immigration regulations, which could deter some populations from submitting their information for alerts. The city also has access to 'Peach Jar,' a messaging application that is coordinated through Hillsborough County Schools. This platform can send alerts to school-enlisted families.

The city's messaging services are also the primary means of communication *after* a hazardous event. During this phase of the process there may be place-specific issues, depending on the incurred damage. It may be useful to create communication channels that can distribute localized, or neighborhood-level, messaging. Currently, the Community Engagement and Partnerships Department (CEPD) is using data to create targeted communication strategies during "blue-sky" events. CEPD has access to socio-demographic information but does not have data about vulnerable populations such as populations lacking access to transit or that are homeless. A partnership with the College of Public Health at the University of South Florida may be useful in developing these data sets.

In the past, the city has attempted to use primary points of contact for each neighborhood. So far, this has been an unsuccessful strategy. Re-distribution of information has not occurred because of fractured community groups (McGregor, 2023).

Cell service is especially important to consider for post-storm communication. This was evident after Hurricane Michael, which hit the Florida Panhandle. A week after that storm, more than 46% of cell sites in Bay County were non-functional, and in adjacent Gulf County 35% of cell sites were out. Three reasons were identified for the lack of infrastructure resilience: insufficient backhaul connectivity (the intermediate links between the core network and smaller sub-networks on the periphery), lack of coordination between wireless providers, power crews, and municipalities (including debris removal), and inadequate reciprocal roaming arrangements. Restoration efforts were thwarted by damage associated with road clearing and electric pole replacements, which sometimes damaged new underground fiber (Schweers, 2019).

Utility service, including cell phone infrastructure, is not regulated federally. The Florida Public Service Commission provides oversight and establishes standards. It would be useful for the city to coordinate with providers to avoid similar problems to what occurred after Hurricane Michael.

Recommendations

- Provide funding for billboard or other broad community market messaging about hazards.
- Disclose flood evacuation requirements during real estate transactions.
- Create a community-wide hurricane-related event or ceremony to mark the beginning of the season
- Upgrade the city's messaging platform to use a system that directly connects to all phones within a specified radius.
- Utilize personnel, whether from the city or associated with Volunteer Organizations Active in Disasters (VOADs), to target homeless or non-English speaking in-person communication using the social vulnerability index (SVI) and other community research.
- Consider neighborhood level distribution of communication in post-storm activities.
- Ensure that the sheltering process is communicated through multiple language channels, to reach the diverse members of Tampa's population, and that personnel at sheltering facilities can accommodate



populations who speak different languages.

- Work with the College of Public Health at the University of South Florida to gather data and distribute information to marginalized population groups.
- Create emergency preparedness starter kits for vulnerable and hard to reach populations.
- Host a telecommunications workshop with cellular providers.

Contacts

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Transportation

Mobility is a primary concern when considering emergency services “lifelines.” This includes roads and automobile traffic, and evacuation and transit services. A recent study conducted by the Transportation Planning Organization (TPO) concluded that Hillsborough County would require 24 hours to evacuate its population to shelters if a level C evacuation were to occur, which corresponds to a Category 3 hurricane (Hillsborough Transportation Planning Organization, 2022). For all areas south of Gandy Boulevard, clearance times do not exceed 12 hours (Benesch, 2023).

The system of transit mobility is administered by HART, the Sunshine Line, the school district buses, and private ambulance services. Combined, administrators feel they are able to accommodate the evacuation needs of the county - there are not currently any capacity limitations, nor do they expect there to be with increased density and development within the CHHA (Campbell, 2023). They noted that most people using their service during a hazardous event are lower income, which is a different population than those who can afford to purchase new construction in a flood zone.

One of HART’s first priorities is securing their mobile infrastructure so that it is not impacted by the storm or event. They provide adequate time to lock down the fleet, moving many of the buses to the University of South Florida Campus or to one of their properties near I-75. HART offers continuous service during evacuations. They provide para-transit specialty service for all areas within 1.5 miles of a fixed route, by appointment, and maintain operations until the last possible moment. This can be difficult for facility operators, who have families and other personal situations that need to be addressed. In the case that enough drivers are not available, fire fighters will operate the bus service.

During an emergency event, HART provides service to transfer centers. From there, evacuees are distributed to shelters. HART also provides pickup from main community points, such as churches or community centers. Something noted in discussions was recognition that residents are hesitant to leave their property during an evacuation event - especially when longer distances are involved. One of the primary concerns is returning to an individual’s property after the event.

Last hour evacuation is the most problematic aspect of the process for HART. They recognize that businesses may remain open in the lead up to a storm and workers are not able to leave sooner. As a result, these employees may need continued service to their place of employment and return service home. For these reason’s, HART keeps their services operational until the last possible moment.

HART has an evacuation plan, which is currently in the process of being updated.

Recommendations

- Continue to develop transit familiarity for coastal communities.
- Help coastal communities understand their transit options during a hazardous event, not only before a storm but also after.



Contacts

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Hazardous Materials

The Port is responsible for a large contingent of hazardous materials in Tampa. This facility is currently conducting a vulnerability study to determine potential outcomes from future environmental hazards. The Port has its own emergency management plan, which includes sending all ships out to sea before a hurricane. Any hazardous leak or spill at the Port could cause damage to the surrounding environment and communities, especially Harbour Island, Davis Islands, the Channel District, Downtown and Palmetto Beach, which are nearby.

Other requested correspondence was not returned by County administrators within this lifeline category.

Additional Information

Hillsborough County has a list of volunteer organizations that assist during disasters (VOADs). This group would be useful when considering lifelines and lifeline support. This group has monthly meetings to prepare for hazard events and to coordinate.

COMMUNITY-SPECIFIC LIFELINE RECOMMENDATIONS

Task 3 of the Coastal Area Action Plan included community profiles for each of the Palmetto Beach and South of Gandy areas. South of Gandy Boulevard there are multiple neighborhoods, each with unique profiles. In the analysis below individual community profiles are cross-referenced with lifeline recommendations to suggest opportunities particular to each place.

South of Gandy Neighborhoods

The geographic area that is south of Gandy Boulevard is comprised of multiple neighborhoods, with widely varying social vulnerability outlooks. For example, Ballast Point East has low scores (.13) for their composite social vulnerability, whereas Rembrandt Gardens ranks high, with a score of .89. Other neighborhoods include Sun Bay South (.61, with medium to high rank), Ballast Point West (.37), Rattlesnake Key East (.37), Port Tampa City (.33), Rattlesnake Key (.24), and Ballast Point South (.17). These defined census tracts are broken up into four neighborhood groups: Gandy Civic Association, Interbay - South of Gandy, Ballast Point, Port Tampa City Civic Association. When considering lifelines, there are not many specific social identifiers that point to distinctions that should be made, or extra resources to be allocated beyond what has been suggested for all areas within the Study Area. Rembrandt Gardens may be an exception, where low income challenges may warrant increased support.

Community discussions suggested that two other problems persist, or could pose a problem for the South of Gandy area: traffic and stormwater. County analysis of evacuation times and the Benesch traffic analysis show that car trips in the South of Gandy area have maintained a consistent count over time since 2006, if not reduced in some areas, and that adequate evacuation times are met (Benesch, 2023, citing the Shelter In Place Study conducted by the Hillsborough TPO). Primary bottlenecks occur on major highways that collect traffic from the region, as was shown during the TPO's analysis of Hurricane Ian evacuation speeds. (Ibid.) The Benesch report states:

"The results of the (TPO's) evaluation indicated that adding capacity for evacuation purposes may not be an



effective strategy. Clearance times were reduced when residents responded more quickly to evacuation orders, highlighting the importance of enhancing communications around evacuation information.”

South of Gandy Boulevard there are not any sheltering opportunities. The state will not fund their facilities within evacuation zones A to C, and all shelters are at public schools. There may be an opportunity to increase resilience if the city were to create an alternative system of sheltering at city-owned facilities, such as recreation centers. Mitigation fees, special district assessments, or other mechanisms could be instituted to support such a system, which could be targeted towards individual communities. In outreach discussions pertaining to lifelines, distance from home and familiarity with the sheltering destination were noted as two primary indicators of whether a person would go to a shelter facility or not. There are not currently any shelters within the South Tampa peninsula, and many homes were built prior to the adoption of the statewide Building Code or the National Flood Insurance Program. Developing a localized and familiar network of sheltering opportunities is a primary recommendation for this area.

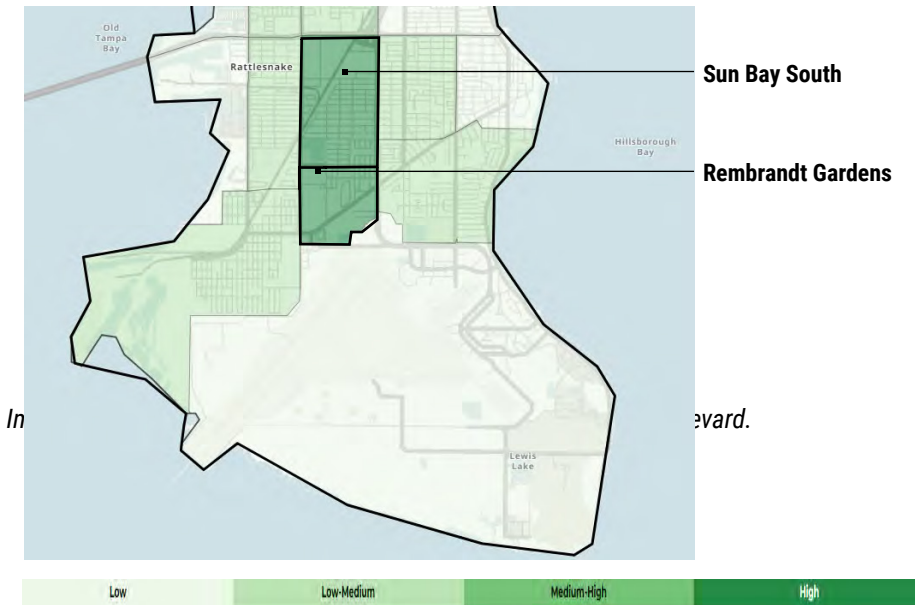
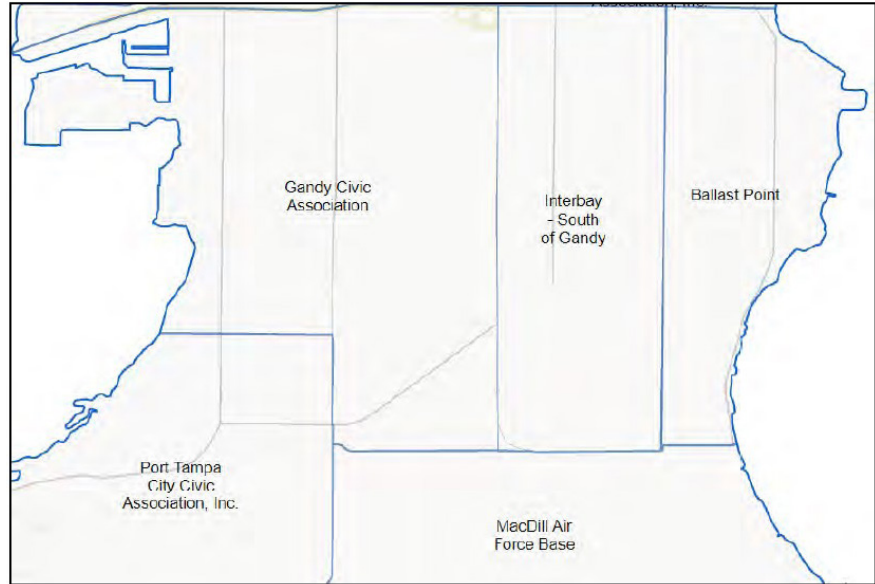


Image: Socioeconomic status. Analysis by Jacobs.

Palmetto Beach

The Florida Building Code has proved to substantially mitigate storm damage since the adoption of a statewide code in 2002 and updated every three years since. These building standards include raised building elevations and increased structural integrity. Within Palmetto Beach, many if not most all the buildings were built before 2002. The community may also not have the means to renovate, to meet such standards. The composite score for social and economic vulnerability in Palmetto Beach is high, with a subset class of social vulnerability ranking very high. This alludes to low financial capacity to address resilience issues. With this in mind, adaptation in Palmetto Beach may only occur through transfer of ownership to people with the ability to afford updates the structures that meet the flood resistant requirements of the



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Florida Building Code unless funding for this is made available to current property owners.

Rather than rely on displacement of the existing community, the city could direct funds, whether from grants or otherwise, toward home upgrades, post-disaster support, or increased sheltering opportunities. Another option would be to define a district boundary and create other financial instruments that would support the local population. Especially when considering the surrounding communities, Palmetto Beach is an area in transition with

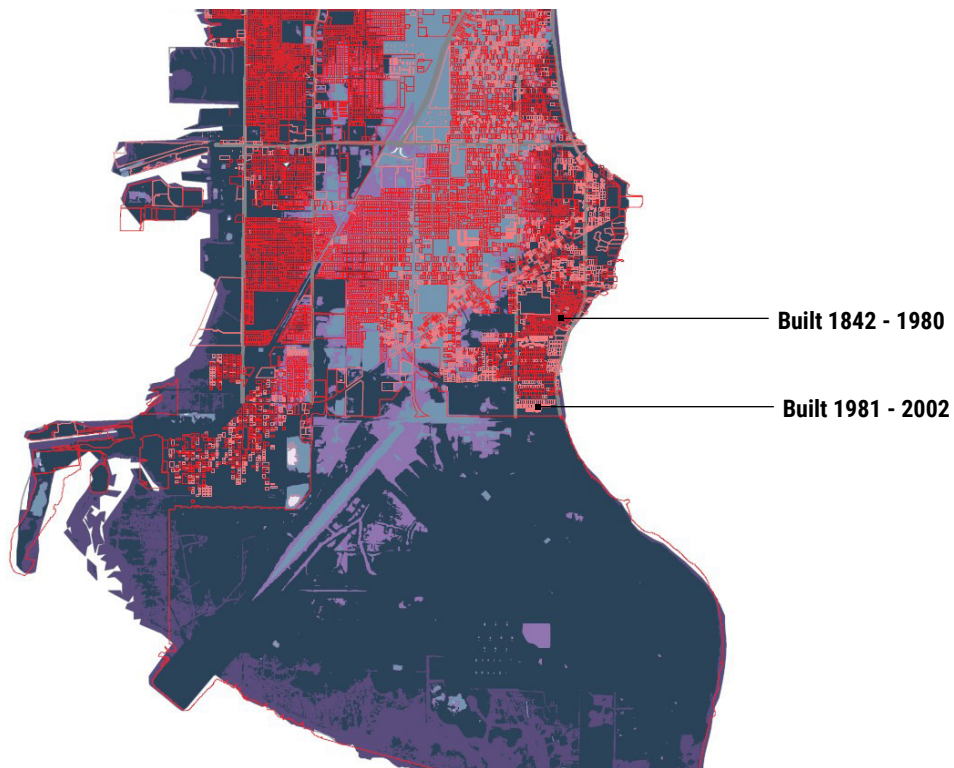


Image: Coded map showing the year that structures were built in the neighborhoods south of Gandy Boulevard. Map taken from the Community Vulnerability Study, 2020.

opportunities for development and increased property values.

Task 3 of the Coastal Area Action Plan also identified that Palmetto Beach has a population with a high rate of limited English proficiency. This should be considered for communication strategies, as should homelessness. Specialized outreach in Spanish or other languages may be beneficial, as would be communication to connect non-English-speaking residents to phone notification services and other outreach to explain sheltering options, transit services, and evacuation processes.

CONCLUSION

A suite of general recommendations were provided to support lifelines. Recommendations were also provided to meet the unique needs of Palmetto Beach and areas south of Gandy Boulevard. Some lifelines, such as energy, are not able to be directly addressed by the city since they are managed by outside operators. The Local Mitigation Strategy Working Group would be an appropriate place to coordinate these and other lifelines, and to use the frameworks provided to develop ongoing planning efforts toward securing lifelines before, during, and after an emergency response event.



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COASTAL AREA ACTION PLAN – ENGAGEMENT MEMO

The following memo is a list of engagement meetings conducted by Applied Sciences Consulting, Inc. for the Coastal Area Action Plan (CAAP).

HART

Subject: Meeting with HART
Meeting Date: Thursday, June 13
Time: Afternoon
Location: Phone Call

Attendance: Brian Cook (Applied Sciences)
Richard Campbell (HART) + 1 (HART)
CampbellR@gohart.org, (813) 384-6518

CITY OF TAMPA OUTREACH AND COMMUNICATIONS

Subject: Meeting with Janelle McGregor (Outreach COT)
Meeting Date: Wednesday, June 21
Time: Morning
Location: Phone Call

Attendance: Brian Cook (Applied Sciences)
Janelle McGregor (COT), janelle.mcgregor@tampagov.net, (813) 310-5545

USF SOCIAL VULNERABILITY

Subject: Meeting with Robin Ersing (USF Social Vulnerability)
Meeting Date: Thursday, June 29
Time: Afternoon
Location: TEAMS

Attendance: Brian Cook (Applied Sciences)
Robin Ersing (USF), rsing@usf.edu



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CITY-COUNTY PLANNING COMMISSION

Subject: Meeting with Shawn College (City-County Planning Commission)

Meeting Date: Monday, July 10

Time: Afternoon

Location: Phone

Attendance: Brian Cook (Applied Sciences)
Shawn College (City-County Planning Commission), colleges@plancom.org

HILLSBOROUGH COUNTY EMERGENCY MANAGEMENT

Subject: Meeting with Katja Miller (Emergency Management, Hillsborough County)

Meeting Date: Tuesday, July 11

Time: Morning

Location: TEAMS

Attendance: Brian Cook (Applied Sciences)
Katja Miller (Hillsborough County), MillerKa@hillsboroughcounty.org

TAMPA GENERAL HOSPITAL

Subject: Meeting with Tampa General Hospital

Meeting Date: Thursday, August 3

Time: 11 a.m.

Location: TEAMS

Attendance: Brian Cook (Applied Sciences)
Tony Venezia (Tampa General Hospital), tvenezia@tgh.org
Erinn Skiba (Tampa General Hospital), eskiba@tgh.org
Brian Beers (Tampa General Hospital), bbeers@tgh.org



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TECO

Subject: Meeting with Tampa Electric Company

Meeting Date: Friday September 1

Time: 1 p.m.

Location: TEAMS

Attendance: Brian Cook (Applied Sciences)
David Plusquellic (TECO), DLPlusquellic@tecoenergy.com
Kristy Baksh (TECO), KBaksh@tecoenergy.com

TECO

Subject: Meeting with Tampa Electric Company

Meeting Date: Monday September 18

Time: 2:30 p.m.

Location: Phone Call

Attendance: Brian Cook (Applied Sciences)
Jimmy Adcock (TECO), JDAdcock@tecoenergy.com



COASTAL AREA ACTION PLAN – MEETING MINUTES

The following memo is the meeting minutes from engagement meetings conducted by Applied Sciences Consulting, Inc. for the Coastal Area Action Plan (CAAP).

HART**Notes**

1. HART collaborates with the Hillsborough County Office of Emergency Management.
 - a. Contact: Jim Barr. 727.430.0002. BarrJ@hillsboroughcounty.org. He is responsible for transportation and also works with the Transportation Planning Organization (TPO).
2. HART's process is closely aligned with Hillsborough County Public Schools.
 - a. When an emergency situation is activated, schools close to prepare for sheltering.
3. One of HART's first priorities is securing their mobile infrastructure so that it is not impacted by the storm/event. They provide adequate time to lock down the fleet, moving many of the buses to USF or one of their properties near I-75.
4. HART offers continuous service during evacuations. They offer a para-transit specialty service for all areas within 1.5 miles of a fixed route, by appointment.
5. HART provides service to transfer center, which then distributes travelers to shelters.
 - a. They are able to provide pickup for people from main community points such as churches.
6. HART has an evacuation plan, but updates are in process. The existing plan could not be found on the website.
7. Constraints
 - a. The primary issue is last hour evacuation. HART recognizes that businesses are open and employees are not able to leave sooner, or need continued service to their employment.
 - b. HART currently does not have carrying capacity issues during a hazardous event, nor do they expect to if there was increased density within the Coastal High Hazard Area (CHHA). They noted that most people using their service during a hazardous event are lower income, which is a different population that would be purchasing redevelopment near the coastline.
 - c. The TPO's Storm Evacuation Forecast & Shelter-in-Place Scenarios Study report suggests that an issue for HART is capacity related to workers/drivers, and that one area to address is consistency of routes before, during, and after a storm event.

END OF NOTES



CITY OF TAMPA OUTREACH AND COMMUNICATIONS

Notes

1. Janelle's department (the Community Engagement & Partnerships Department - CEPD) is responsible for emergency and hurricane event/preparedness communication. She assumes that role for the EOC also.
2. CEPD has used the following **communication strategies** for hazardous events:
 - a. Before:
 - i. Neighborhood Specific Hurricane Preparedness events (first one with River Grove). This included CERT and Emergency Management professionals and was open to the community. They will continue to enhance the program by evaluating successes and challenges with each event.
 - b. During
 - i. 'Alert Tampa' provides text alerts to those that sign up. A challenge is connecting with homeless, or with the new state legislation immigrant communities.
 - ii. 'Peach Jar' messaging through Hillsborough County Schools.
 - c. After
 - i.
 - d. Use of primary points of contact for each neighborhood has not been a successful approach due to the 'clique-y' nature of community groups.
3. **Data** is useful to creating targeted communication strategies. CEPD has access to neighborhood level socio-demographic data, but does not have data about vulnerable populations such as those lacking access to transit or that are homeless.
4. CEPD could use **support** with the following:
 - a. Emergency preparedness starter kits for vulnerable and hard to reach populations. This could potentially be accomplished through a collaboration with USF.
 - b. Funds for strategic communications, such as billboards.

END OF NOTES

USF SOCIAL VULNERABILITY

Notes

1. Importance of three factors: **Density, Diversity, Dependability**
 - a. Found that density is not that great of a factor – the density of social connections. What is more important is dependability (reliability). This relates to the accuracy of information and amount of support from a social structure. Diversity is also important, so that multiple perspectives are being provided – for example, when a storm is coming and there is the question of whether to evacuate or not.



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2. Outreach is best accomplished when sensitive to **unique community attributes**.
 - a. Homelessness presents a difficult situation.
 - b. Seniors in public housing.
3. **VOADs** – Voluntary Organizations Active in Disasters: This group has monthly meetings to prepare and coordinate for disasters.
 - a. This would be an excellent list of ‘community lifelines.’
4. **Sheltering**
 - a. In the past, there was documented hesitancy about sheltering because of **language**, or because the shelter did not accommodate **pets**.
 - b. Concerns of being **safe and welcome**.
 - c. The **timing** of evacuation is difficult – people wait until very late to make a decision. The information and advertising about how early to leave is not dependable. People involved with businesses that are not closed cannot leave early.
 - d. **Schools:**
 - i. Hillsborough County schools has done a great job onboarding evacuees from other disasters, such as Maria and Irma in Puerto Rico. This includes language translations, housing, and processing.
 - ii. Sheltering in schools can put stress on parents because schools are closed, but businesses may not be. Children need care.
 - e. **Idea 1:** Developing a system of sheltering outside of the school system may help to alleviate the burden placed on parents during times of evacuation.
 - f. **Idea 2:** Would be beneficial if the sheltering facility could help initiate paperwork for claims.
5. **Transportation**
 - a. For those that depend on transit, there is a concern that they cannot get back to their house if they leave.
 - b. It costs money to evacuate.

Actions:

1. **Provide SVI information for Robin and her class**
2. **Create a roundtable of experts to discuss localizing shelter opportunities outside of the school system (or not).**
 - a. Hillsborough County Schools
 - b. County official
 - c. VOAD group?
 - d. Outreach

END OF NOTES



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CITY-COUNTY PLANNING COMMISSION

Notes

1. The City is not currently collecting a mitigation fee, which is most likely because it is not able to apply the funds toward sheltering, which is the County's responsibility.
2. Ideas / Opportunities
 - a. An increased building code may provide a method to allow self-sheltering during a storm event.
 - i. *What is the regulation that stipulates transportation allowances for evacuation, and are the criteria being met?*
 - b. Shawn is looking to add language to the coastal management element, in regard to development in the Coastal High Hazard Area. They would like to designate areas for increased density through a standardized methodology, but with a determined mitigation impact.
 - c. Use the mitigation fee for resilience efforts, and to assist local residents.

END OF NOTES

HILLSBOROUGH COUNTY EMERGENCY MANAGEMENT

Notes

1. John Antapasis is the emergency management leader for City of Tampa.
2. Evacuation
 - a. 11,000 parcels have been added with the latest round of map revisions. This includes some areas that are 'islands' – areas that are completely surrounded by other evacuation zones. This occurs in East Tampa.
 - b. HART, the Sunshine Line, the School District, and private ambulances are all part of the evacuation system. Combined, they can accommodate the evacuation needs of the county.
 - i. If bus drivers are not available, fire fighters are able to assist.
3. Shelters
 - a. Shelters are run by Hillsborough County emergency management, by trained EOC personnel.
 - b. The county accounts for approximately 300,000 people for evacuation, or approximately 20% of the population. This meets state inventory list requirements (SESP). By state standards, Hillsborough County meets the criteria. Hillsborough County EOC staff does not think that there are sufficient special needs shelters.
 - c. The county has 48 shelter facilities. 8 are pet friendly. 6 are special needs. All special needs facilities are pet friendly.
 - d. The School District is responsible for feeding people at the shelter.



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- e. Backup power generation is needed for additional sheltering facilities, to supply energy for air conditioning and power
- 4. Needs / Opportunities
 - a. Increased growth needs to be addressed, especially for special needs sheltering
 - i. Note: Disallow special needs facilities in the CHHA.
 - b. Increased building code requirements could help to mitigate the need for sheltering. This data could be used for targeted evacuation notices.
 - c. A mitigation fee could be used to support pre-disaster resilience measures, and to assist in home fortification (possibly lessening sheltering requirements), to add to the amount of special needs sheltering, and to increase food distribution locations.
 - d. The City needs to manage where special needs communities are located, for example low income and elderly.
 - e. New development should disclose that the property is within a flood zone or evacuation zone. (“Many people are not in a flood zone, and don’t realize they are in an evacuation zone”)
- 5. Notes
 - a. Review Statute 252 for more detail about emergency management
 - b. Tampa Bay Refugee task force may be a good contact. Hillsborough County has the 2nd most refugees in the state of Florida.

END OF NOTES

TAMPA GENERAL HOSPITAL

Notes

- 1. Tampa General Hospital (TGH) is the only Level 1 Trauma treatment facility in Tampa Bay.
- 2. TGH has to meet many different standards that are imposed by other entities, associated with their certifications.
- 3. TGH has fortified its facilities, including temporary flood protection structures, generators, and many other measures to keep it secure. Generally, the group feels that their facility is protected and not vulnerable to flooding.
- 4. One exception: The road/bridge leading to Davis Islands, where the hospital is located, is the only access to the facility. This is an older bridge and could be renovated at a higher elevation. Contextual roads should also be studied to ensure access. There have been discussions with the City of Tampa about this in the past, but the group agreed that this may be something to incorporate into the upcoming Tampa Vulnerability Assessment, and to address in the future.

END OF NOTES



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TECO (09/18)

Notes

1. There are currently three projects underway for TECO related to resilience in the project areas:
 - a. Upgrades to existing power lines that connect the Marion Street substation to Hooker’s Point, for the Port of Tampa. There is an upcoming community meeting Tuesday October 3 from 5:30pm to 7pm. Property owners within 250’ of the project area have been or will be notified.
 - b. MacDill power resilience project – this is only for areas within the base.
 - c. 13 projects in the area south of Gandy Boulevard to underground lateral power lines. This will involve 2,500 customers and approximately 8.75 miles of overhead power lines. TECO selects the areas, they are not influenced by urban design or aesthetic considerations – they are related to line performance and maintenance.
 - i. Dana Shores and nearby San Jose opted to create a special tax district within the county to raise funds for power line burial.
2. Projects are typically defined by TECO. The current resilience projects were submitted to the Public Service Commission (PSC) in 2019 and approved April of 2020.

END OF NOTES

