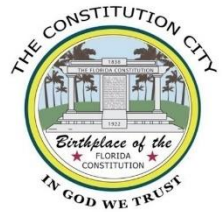


RESILIENT URBAN DESIGN AND FLOOD MANAGEMENT STRATEGY

Prepared for:

City of Port St. Joe, Florida



Hyunji Yoon – College of Journalism and Communications
Neisha Pierre – College of Design, Construction and Planning
Oscar Lafontaine – Herbert Wertheim College of Engineering
Rama Hiba – College of Design, Construction and Planning

EXECUTIVE SUMMARY

In the beginning of this class, all the students came together wanting to help communities that have faced natural disasters recover in an effective way and attain resilience economically, socially and environmentally. It is important to help communities adapt to the changing environment and create a more effective community design, a better public policy, and useful applied science.

Apon arrival to the city of Port St. Joe, it was easy to see the amount of damage and the different issues that were caused by the flood waters brought in by Hurricane Michael. The storm highlighted both the city's vulnerabilities to flooding, especially along Reid avenue, as well as showing parts of the city that did not encounter much in the way of flood damage, namely North Port St. Joe. However, while North Port St. Joe did not encounter much in the way of flood damage, there was a great amount of damage caused by the wind and rain. Unfortunately, there has always been a physical and economic divide between North and South Port St. Joe, and that became exacerbated in the aftermath of the storm. Furthermore, the paper mill that used to supply a large amount of the jobs in the area closed in the early 2000s, which greatly increased the amount of unemployment in the city. This caused many more of the residents to move elsewhere as they could not see a prosperous future for Port St. Joe. This team has put together a long-term adaption plan to address the climate struggles the town will encounter.

Currently, the city of Port St. Joe is utilizing the former paper mill site and has bought the lease on the empty land along the the old railroad corridor that is right between Martin Luther King Boulevard in North Port St. Joe and Reid Avenue in downtown Port St. Joe. The marina, the corridor and the surrounding areas are all at different stages of development, which presents a unique opportunity for the residents of Port St. Joe. This project intends to create an axis within Port St. Joe and create a linkage throughout the city. It is the team's plan to reconnect these sections of the city to improve connectivity, equity, community cohesion, storm drainage, and park recreation. This project will help build the city's sense of place as well as help the city adapt to the changing circumstances.

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1 INTRODUCTION AND BACKGROUND

This project seeks to create a resilient urban design and flood management strategy that will reconnect North and South Port St. Joe for the betterment of all areas of the city. The city of Port St. Joe feels like a divided city, despite the need for cities to be places of connection between people and their needs. When traveling from North Port St. Joe to downtown areas, after driving along David Langston Drive and crossing First Street, there is a sudden shift in the feel of the city. Whereas downtown Port St. Joe appears as a revitalized, cozy, small town, North Port St. Joe seems starkly abandoned and economically empty. These two city sections exist seemingly independently of each other and there is little interaction that happens between the two city sections. This is harmful in that the residents of North Port St. Joe lack their own town center and have less access to public meetings and governmental spaces. This is especially harmful since the school that catered to North Port St. Joe has closed down and there are only a few businesses opened there. As such, this project will target connectedness, while also considering Port St. Joe's natural vulnerability within the context of hurricane and flooding relief since it close to the coastline. The team's goal for Port Saint Joe is to create a civic center with a new police station, city hall and fire station, with stormwater improvements, and pedestrian and bicyclist centered walkways. This will foster connectedness by uniting North Port St. Joe to downtown and to the marina, improving congruent traffic and fostering community resiliency. By doing so, this project will give North Port St. Joe access to businesses in the area, as well as access to civic infrastructure, like parks and fire stations.

Some of the difficulties that Port St. Joe is dealing with can traced back to its history. It was founded along a region known as the "forgotten coast", as it had been largely underdeveloped compared to the rest of the Florida coastline. Despite being surrounded by tourist beach towns, the primary economy in Port St. Joe was heavily based in industry. The Port St. Joe Company owned a paper mill that was responsible for most of the jobs in Port St. Joe until the mill closed in 1999. Because of this, twenty percent of the population was left unemployed. Today, the city is trying to shift its economy away from industry and to cattle ranching, fishing, and tourism. In 2018 however, Hurricane Michael left a trail of devastation throughout the Florida Panhandle and the city of Port St. Joe was one of the cities that was heavily affected by the storm, though these effects were felt differently across North Port St. Joe and downtown Port St. Joe.

Interviews performed by members of our group to community members show the city's underlying issues were brought to light once Hurricane Michael struck. Racism and segregation are still issues today, and their effects can be seen in the rows of blue-tarp houses, untouched wreckage, and abandoned shops and streets. The hurricane itself did not divide the North and South side communities (downtown areas), but it added stressors that continued to keep both areas from fully working together to recoup and recover from the damage caused. Everyone in the city wants to build up Port St. Joe again and it is one of the city's strengths; it is simply a matter of how and when. And perhaps that is why the residents feel an outsider's push is what the city needs.

There is no doubt that all areas of Port St. Joe would benefit from this project. It will matter most to the city's long-time residents, and it will encourage those who have come from outside the city to stay for the long run. Port St. Joe is a town with a lot of history attached to it, which all residents there love and acknowledge, even those who have lived in blighted areas. It is a source of pride for the city but has led some to believe that it has held it back from growth and development, particularly when it comes to tourists. However, even some of the most prominent residents agree that Port St. Joe would lose its essence if it were to become a tourist hub like Walt Disney World or Miami Beach. They wish to see the Port St. Joe they know, and love prosper but maintain its historic qualities.

Other communities across Florida reveal further complexities and nuances in tackling the issues facing Port St. Joe. Several cities in the panhandle have struggled with damage from Hurricane Michael, especially since the damage was large and costly. However, there is evidence that building codes such as the Florida Building Code (2017) do in fact help; fewer insurance claims have been reported since its implementation in 2002. Plans including overhauling city drainages, elevating new roads and homes, and adding stormwater pumps have helped cities deal with challenges. The following sections of this proposal evaluate some of these challenges for Port St. Joe, present options that contribute to solutions and discusses how they can be implemented.

2 PROBLEM STATEMENT CHALLENGES AND CONCERNS

This proposal seeks to reconnect the main axes of the city of Port St. Joe which are Reid Avenue and Martin Luther King Boulevard and create a linkage throughout the city. The main areas for development that would enable this reconnection area David Langston Drive, Martin Luther King Blvd, Reid Avenue, Williams Avenue, Port St. Joe Marina, and other connecting streets (Second St., Third St., Fourth St.). Because of Port St. Joe's proximity to the coastline, the areas previously mentioned are subjected to both wind related and flooding risks. This section presents these risks and how they impacted Port St. Joe after Hurricane Michael.

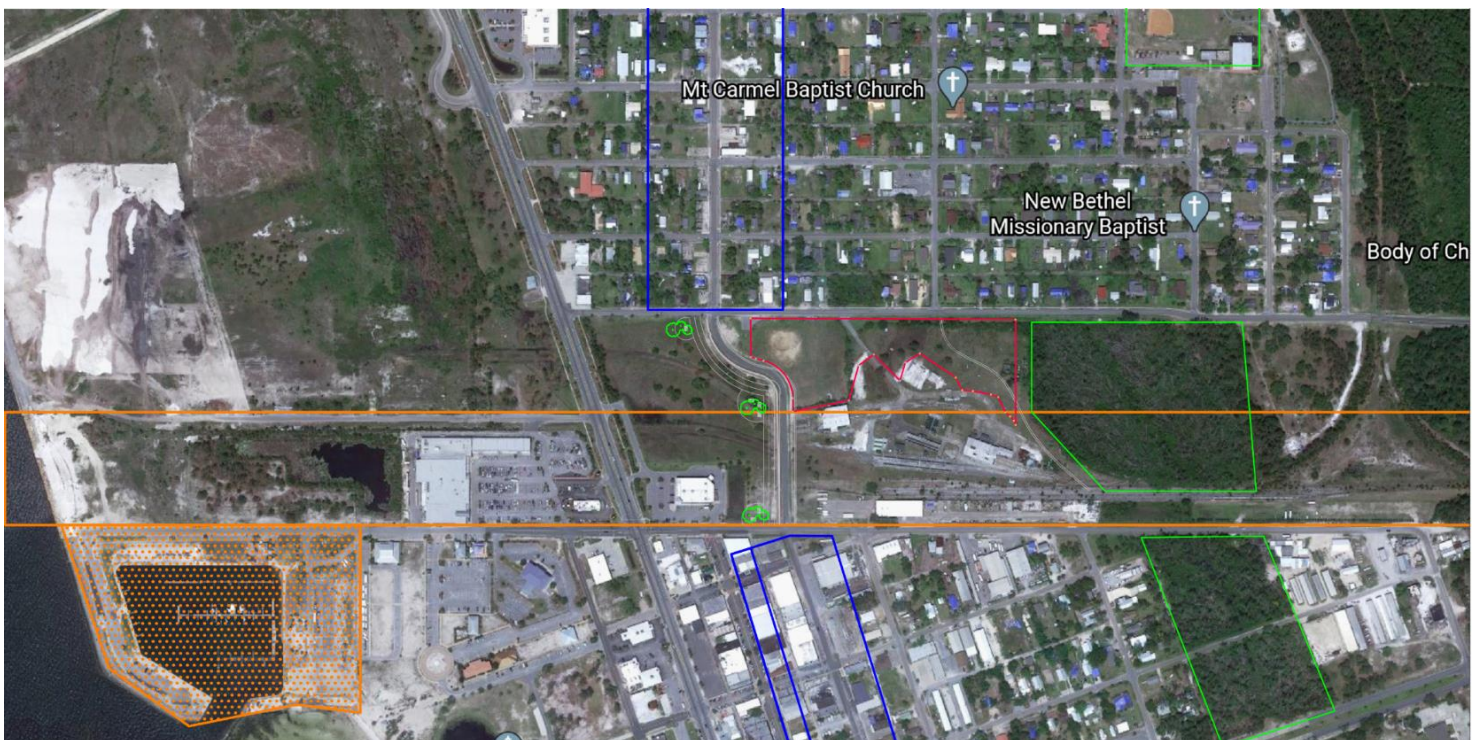


Figure 1. Project site with areas of interest in the city of Port St. Joe

2.1 Sources of Flooding

Most parts of Port St. Joe are in a storm surge zone since it is close the coast. Sources for flooding are St. Joseph Bay, Apalachicola River, and the large number of wetlands. Figure 2 shows a section of the FEMA 100-year flood map with areas with at least a 1% chance of being flooded. Downtown areas are close to these flood zone areas and did received around 2-3 feet of flooding according to residents that were interviewed in the city of Port St. Joe. North Port St. Joe is at a

higher elevation compared to downtown areas and is subjected to less flooding risk. The water management system of the city drives the waterflow direction to the surrounding wetlands and creeks. The marina is prone to flooding due to its proximity to the coast.



Figure 2. 100-year flood map in the city of Port St. Joe (From FEMA)

Warming of oceans and melting of glaciers have been proven to raise global sea levels every year. Figure 3 shows the projected water level height under a medium sea level scenario and while a major flood level event occurs. Sea level projections and extreme water level statistics from historic events are used in a peer reviewed model based on (Kopp et al., 2017; Kopp et al., 2014). The statistical tool is available at (Climate Central) and shows water levels of more than 10 feet for the city of Port St. Joe. A 10 feet benchmark was selected to determine which areas, structures and infrastructure would be affected by flooding of this level. Results from the statistical tool suggest that there is 49% risk of at least one flood over 10 feet taking place between today and 2050 in the Port St. Joe area. Furthermore, the model utilizes raw roads data, US census data and lidar elevation data to determine what infrastructure and buildings would be below the selected water level benchmark if this event occurred. Table 1 shows results obtained from (Climate Central) statistical tool.

Table 1. Infrastructure and buildings below 10 ft. water level in Port St. Joe.

Infrastructure	Quantity (miles)	Buildings	Unit (structures)
Local roads	28	Homes	1147
Secondary roads	6	Government Buildings	5
Federal roads	5	Houses of worship	5
Non-mainline rail	2	Public safety facilities	2
Railroads	2	City halls	1
Intermodal freight terminals	1	Hospitals	1



Figure 3. Projected sea level + major flood event; parts of Port St. Joe below a 10 feet water level projection (Data from (Climate Central))

2.2 Vulnerable Structures and Infrastructure

During the one-week field trip, our group identified residential structure vulnerabilities mainly in North Port St. Joe due to Hurricane Michael. In residential structures, the costliest losses are related to building envelope components of the exterior walls and cladding failing. Components (fasteners, purlins, studs, roof deck, etc.) and cladding (curtain walls, roof covering and wall covering, etc.) work together to basically shield the building's structure (Prevatt, 2003) and their failure allow internal pressurization of structures and subsequent structural member collapse (Miller et al., 2017). Figure 5 shows examples of the described type of damage in North Port St. Joe. Damage assessments performed by FEMA's Mitigation Assessment Team (MAT) also highlighted this issue with residential structures with roof cover damage. Furthermore, the MAT observed structures that were constructed at grade level had significant more damage (flooding and storm surge) than structures that were elevated above the Base Flood Elevation (BFE). Commercial businesses in downtown areas of Port St. Joe were also affected by both wind and flood damage; around 2-3 feet of flooding reached Reid Avenue according to interviews of local business owners.



Figure 4. Example of wind damage caused by Hurricane Michael in North Port St. Joe; roof cover damage (left) and roof cover damage and structural collapse (right)



Figure 5. Comparison of residential structures in Port St. Joe elevated above BFE (a) and built at grade (b). (From (FEMA, 2020))

Damage to Port St. Joe's infrastructure was also extensive due to Hurricane Michael. According to Croft (2019), damage to roads, sewer infrastructure needed repairs related to engineering, installation, pumps and control panels of at least 11 lift stations; one is located in First Street which crosses our project site. Dooder Park, Clifford Sims and Frank Pate Park were also damaged as well as three key bridges within these parks were destroyed. Most of the infrastructure for these services have natural vulnerability due to their proximity to the coastline.

2.3 Overall Vulnerability

Social vulnerability Index (SVI) is utilized to measure social vulnerability utilizing US census data for every tract. Rankings are assigned to each tract of different social factors grouped withing related themes. The rankings consider several aspects of a society such as population, infrastructure, economic funds, physical risks, etc. Thus, the SVI can be used to determine which parts of this community are most vulnerable and will need support after an event. Figure 6 shows that most of our project site is in the medium range of vulnerability.

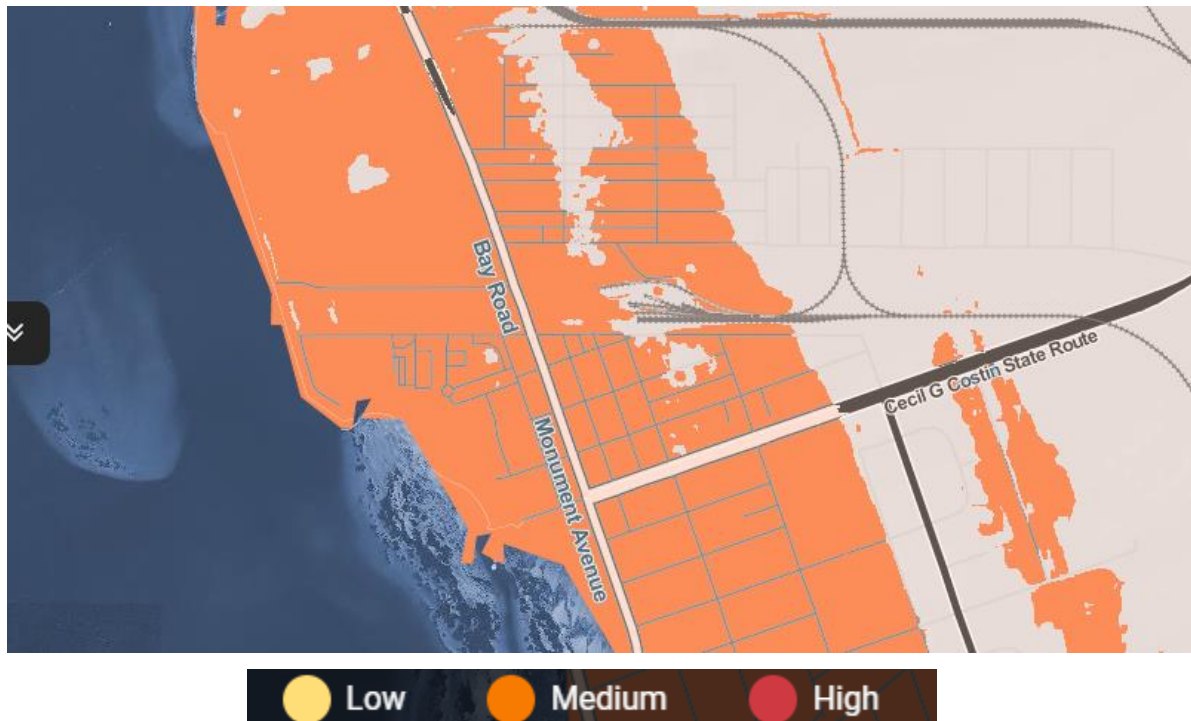


Figure 6. Social vulnerability in Port St. Joe (From (Climate Central))

2.4 Policy, Legal Constraints and Residents Input

Besides natural hazard risks, our project site areas are subjected to policy and legal constraints regarding zoning and land ownership. Residents called out the need for downtown areas to be more accommodating to bicyclists, and pedestrians and as mentioned before our proposal seeks to improve connectivity in the city with civic buildings as its center. The city of Port St. Joe currently owns 5 acres of land within our project site for the relocation of civic buildings. However, the rest of the surrounding land is owned by private entities such as the St. Joe company. The acquisition of these terrains would help to develop a more complete civic center and provide opportunities for stormwater retention as this report presents in latter sections.

Another policy challenge in the areas surrounding the project site is zoning. Currently, some of the areas that are key for development remain for industrial use. The city has been making progress into converting some of these areas for residential and mixed-use types, but work is still being done according to David Ashbrook. For our project proposal the zoning in David Langston Drive and Williams Avenue would be needed as mixed use (commercial/ residential).

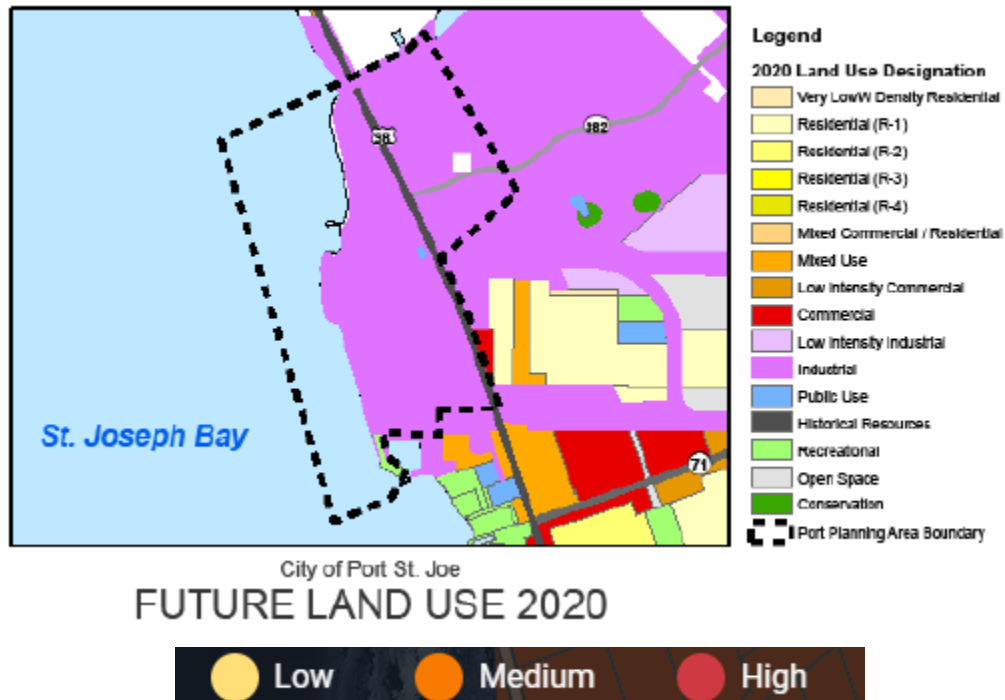


Figure 7. Future land use in the city of Port St. Joe

2.5 Remaining Challenges

Some of the risks and challenges related to hurricane and flood damage can be addressed by following stricter building code recommendations. For the case of wind damage, the design wind speed for Port St. Joe was indeed exceeded and this will be corrected in future versions of ASCE. FEMA has also mitigation options for existing buildings (i.e. hurricane straps, types of fasteners, etc.). Flooding is a more complicated issue, because of sea level rise thus it would take consideration from the city leadership to include stormwater retention options capable of mitigating projected risks or elevating newer construction to the required levels. Our proposed project contributes to these issues creating uniform streets that allow citizens to walk around the city, while also proposing the use of stormwater retention with development of bio-swales and resilient infrastructure. The acquisition of the privately owned lands as well as zoning issue will require community engagement.

3 ADAPTATION OBJECTIVES

As previously mentioned, the goal is to reconnect the downtown, Marina, and North Port St. Joe areas enhancing the communication and walkability throughout the city. Some of the ways this proposal seeks to accomplish this task are:

- Adoption of North Port St. Joe masterplan and the search for possible funding options.
- Development of David Langston Drive to serve as the connector between North Port St. Joe, the Marina, and downtown areas.
- Proposal of a performance form base code.
- Development of Williams Avenue to serve as a compliment to the existing commercial businesses in Reid Avenue, with a focus on professional and trade businesses.
- Emphasis on mixed use zoning to also provide housing opportunities.
- Connection of the Marina to the civic center through First Street and Marina Drive on Constitution Drive.

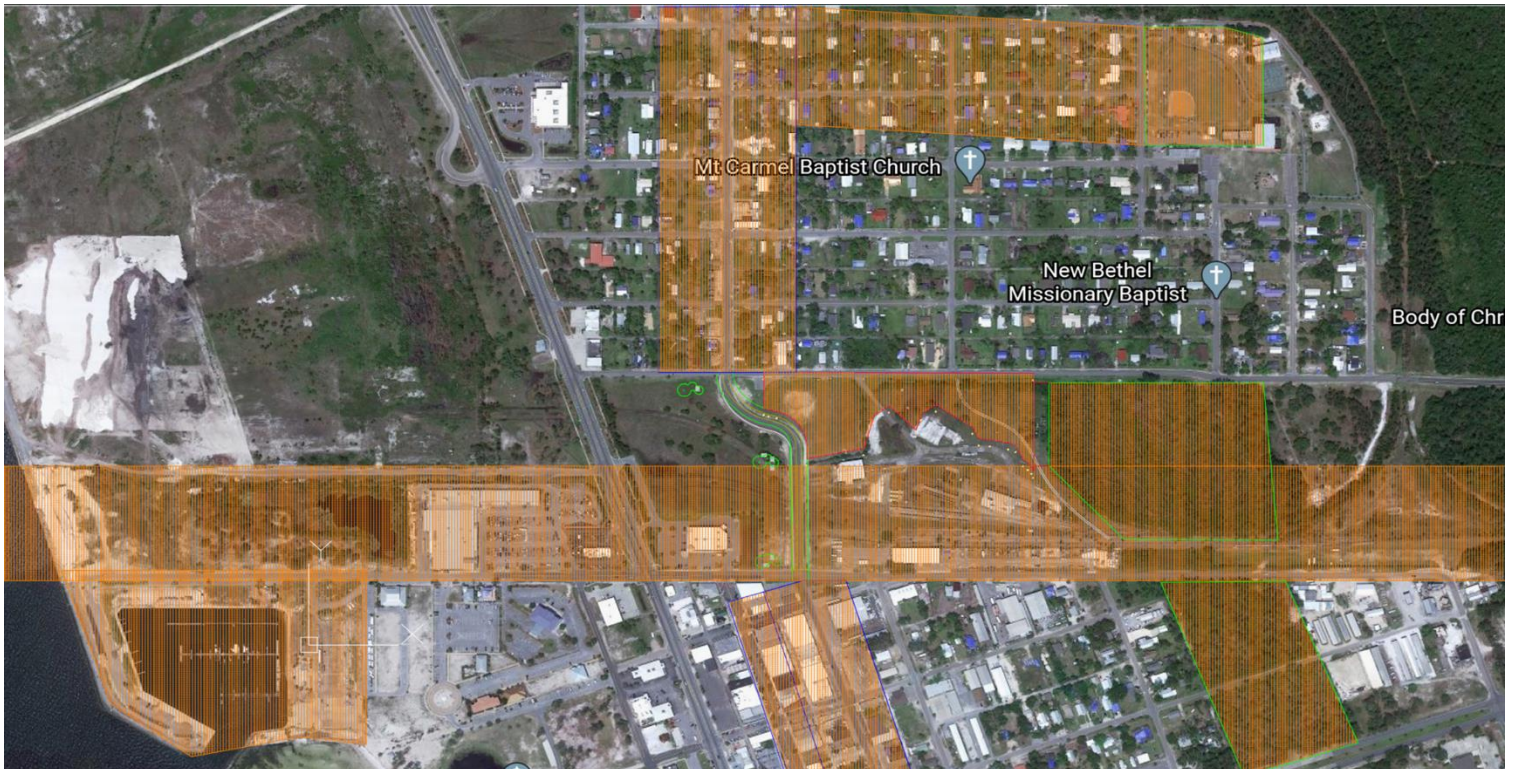


Figure 8. Port St. Joe areas to be connected

4 RECOVERY, ADAPTATION OPPORTUNITIES, DESIGN SOLUTIONS

4.1 Physical Design Solutions

The areas we are focusing on are currently zoned as MU- mixed use, R-2B Medium Density Residential, and Industrial (figure 8). Our goal is to change most the zoning to a mixed use residential with high density area with a form base code. Seeing as the City does not own the land between Avenue A, First Street, we are suggesting implementing a form-based code to regulate the overall look of the civic site. A form base code, according to the official planning definition is “a land development regulation that fosters predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. A form-based code is a regulation, not a mere guideline, adopted into city, town, or county land and offers a powerful alternative to conventional zoning regulation.” This form code would regulate the overall look the cite without restricting the uses, it would allow for seamless transformation between MLK Blvd. and Williams Ave.

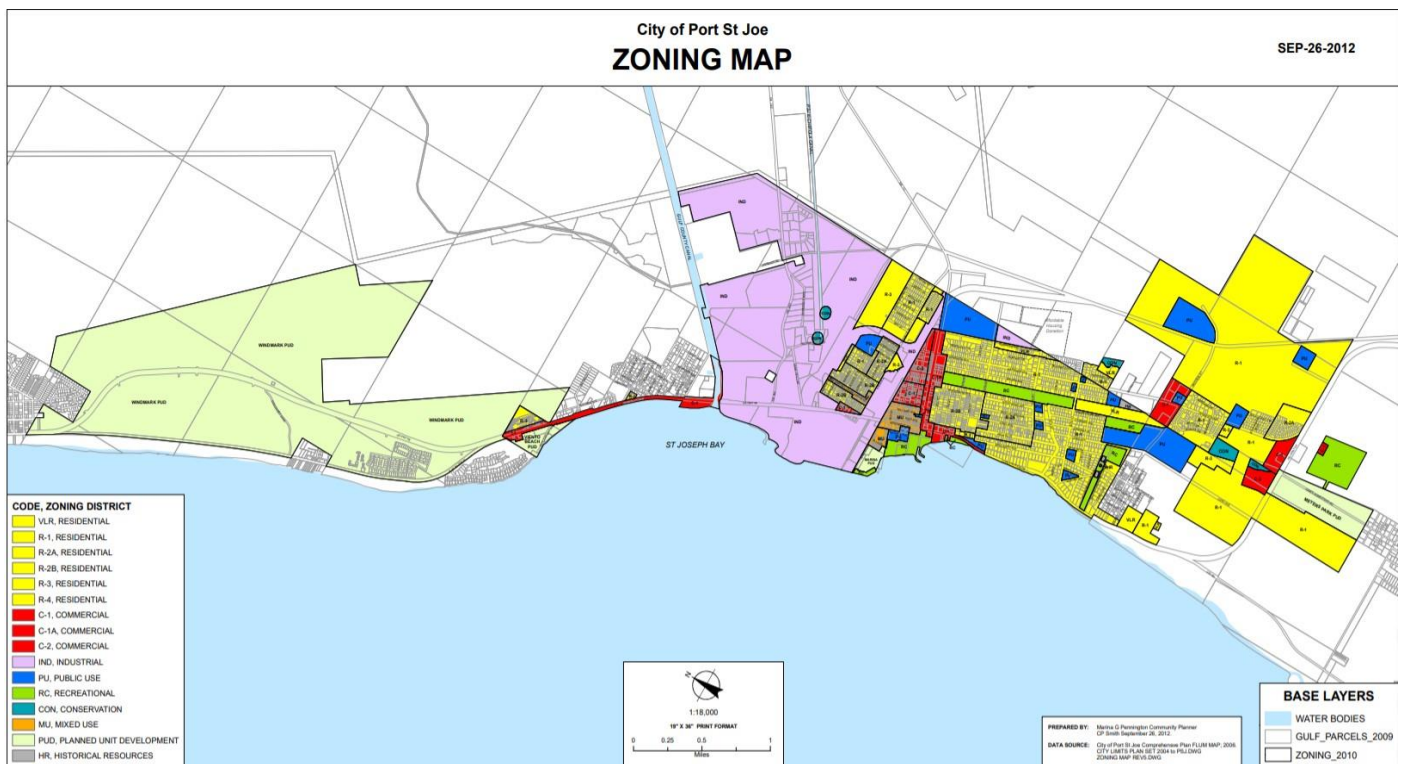


Figure 9. Port St. Joe zoning map

Using the existing plans, we have created versions of what this form base code could be, from MLK Blvd to David Langston drive to William Avenue (figure 9). This code allows for not only the used of the building but also the aesthetics on the corridor; it allows to city to regulate the design flow from. Buildings should be multi-stories, with retail on the bottom floor and housing and offices on the upper floors. The streets are two lanes, with bike lines and streetlights, with plans as medians between the cars and the bicyclist and the pedestrians. Form based code gives priority to placemaking, all the technical specializations are contributing to, rather than controlling, the final result of the street, creating a complete environment. This code will also focus on the connecting streets, running east to west, for example between Williams and Reid Avenue (figure 10). While looking at more solutions we are also introducing the concept of bioswales.



Figure 10 Example of proposed cross section design for David Langston Drive



Figure 11 Example of proposed cross section design of the connecting streets

To combat the inevitable storms surges from hurricanes and tropical storms, we are suggesting creating more permeable surfaces for the water to trickle through instead of dwelling on and flooding the streets. A bioswale is, according to the USDA Natural Resources Conservation Service, “a storm water runoff conveyance system that provide an alternative to storm sewers. They can absorb low flows or carry runoff from heavy rains to storm sewer inlets or directly to surface waters. Bioswales improve water quality by infiltrating the first flush of storm water runoff and filtering the large storm flows they convey” (figure 11). The bioswales will be placed along the street, they can be in long stretches or place here and there. They offer services above and below the surface; on the surface we can have the pedestrian walkways, greenery, benches, buffer between traffic and the sidewalk., etc. and below it will filter the water and allow for better control of water coming in from storms (figure 12).

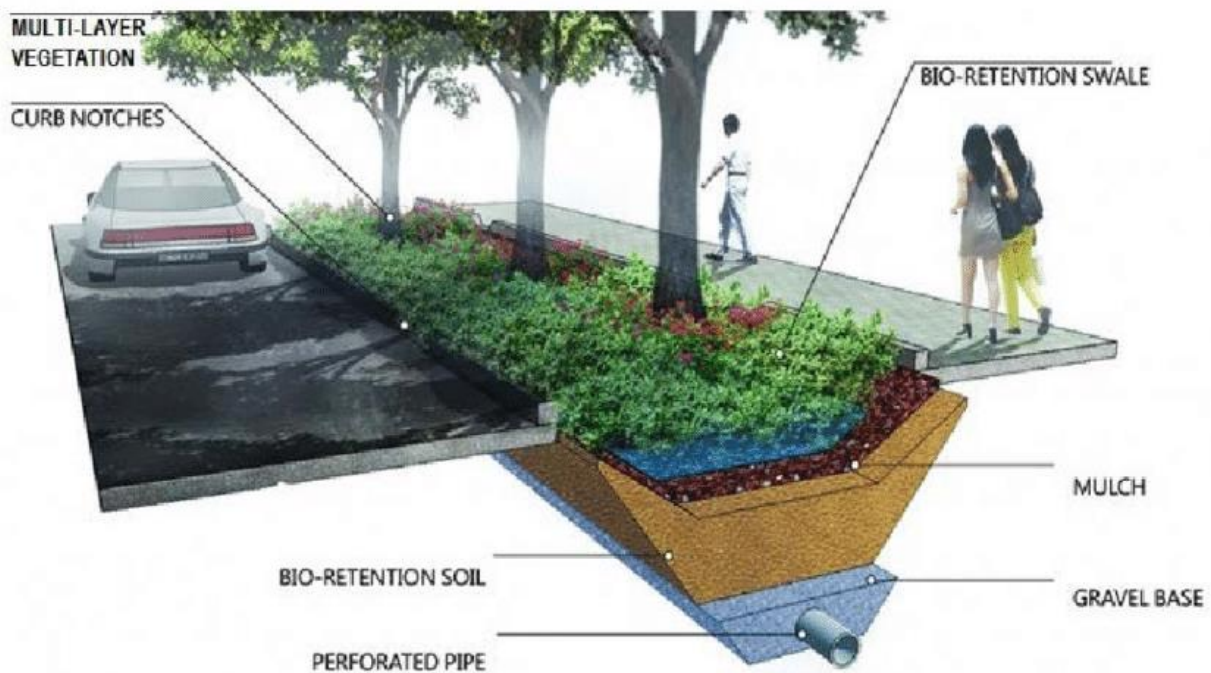


Figure 12. Cross section of a bioswale



Figure 13 Example of a biowale in sections

4.2 Communications Strategy for Public Education and Engagement

Communication strategies would include education and engagement through platforms such as social media, television and the local newspaper (e.g., The Star). Locals in the city acknowledge that outside help is needed in order to help Port St. Joe's economy flourish, despite internal divisions that make cooperation difficult in some areas, such as aid for flood and wind damage from Hurricane Michael. The goal would be to encourage cooperation and discussion by garnering excitement through this design plan. However, physical reconnection of the North and South side through David Langston Drive would first require mental and emotional reconnection as well as increased communication about expectations from the communities in both areas.

There are several ways that this communication can take place. One possible suggestion would be campaigns to encourage the coming of third-party groups of volunteers or organizations that could spur communication. The Star would cover such meetings to encourage people to follow the issue and participate in such matters through discussion and voting. Similarly, positive coverage on such issues on social media could encourage tourism. This would involve the city's younger population as a force to instigate change. As most young people in Port St. Joe tend to leave the city to attend college, social media platform targeting would be best on applications that are frequently used by younger generations, such as TikTok, Instagram and SnapChat. Social media challenges on these applications can be part of a campaign to unite all people living in Port

St. Joe over these issues. It would also be an opportunity to positively reframe the city as a historical town rather than “the Forgotten Coast.” The marketing of the city would target both tourists and residents to maximize engagement and allow for resident participation and involvement. It would not only unite residents but also encourage them to reach out to outside parties with increased fervor about what Port St. Joe has to offer and why bringing their businesses to the town would benefit them. These campaigns would be part of a bigger campaign, such as “One Port St. Joe,” which would aim to encourage conversation among all residents and demonstrate the appeal of operating a business in or visiting a more united Port St. Joe.

Segregation and discrimination must also be addressed internally in order for communication strategies to work. Videos and events created to increase awareness of issues on the North side and provide solutions on how to solve such issues would also be necessary to make sure needs are met. The videos our group has made were created in an effort to spark discussion on issues of division due to segregation and racism. It is not enough to simply confront the issues; we have attempted to demonstrate how crucial addressing them is to the revitalization of Port St. Joe. Outside parties can also contribute positively to improvement in this area by becoming more involved with the community or bringing professionals who can offer unbiased opinions on ways to encourage the sharing of information, opinions and ideas. However, this is where resident engagement matters most; resolving matters of discrimination cannot simply happen between city and county officials.

It is not impossible for physical manifestations of re-connectivity, such as the structures in our proposed design plan, to be a symbol of a more open and honest line of communication in Port St. Joe. Events already often do this. Such events that regularly encourage interaction among not just officials but also residents, such as the annual Juneteenth celebration, should be covered and openly promoted among both residents and officials in Port St. Joe to highlight the desire of North side residents to unite but not assimilate. It is important to establish an open line of communication that addresses issues that have affected blighted areas. Regular meetings are suggested among both officials and residents to educate people on such issues and build empathy and understanding between both parties. As previously mentioned, Hurricane Michael was responsible for simply exacerbating such issues of discrimination in the Port St. Joe community. There have been long-time problems with communication for years now, including the exclusion of North side representatives in past Port St. Joe Redevelopment Agency meetings and overall lack of

responsiveness to concerns from North side residents. It is essential that marketing and communications strategies demonstrate why a revitalized and flourishing North side of Port St. Joe will become a tremendous benefit economically and mentally to all.

Once those issues have started to be addressed and the people of the North side begin to receive the necessary aid they need to help physically recover, the focus would continue to shift toward everyone working toward the overall betterment of Port St. Joe. This plan would bring attention to those issues by emphasizing benefits that result from creating structural designs that could mitigate damage for both areas. It also highlights ways in which residents can be encouraged to contribute to a stronger, more united community. At the core of our proposition, we suggest that physical reconnection in the form of new infrastructure and revitalization of businesses along with aid to blighted areas and more open communication that addresses issues of racism and segregation will be for the benefit of Port St. Joe overall. These strategies could take months or years, but they are essential to make sure the communities are united over common issues and solutions.

5 IMPLEMENTATION

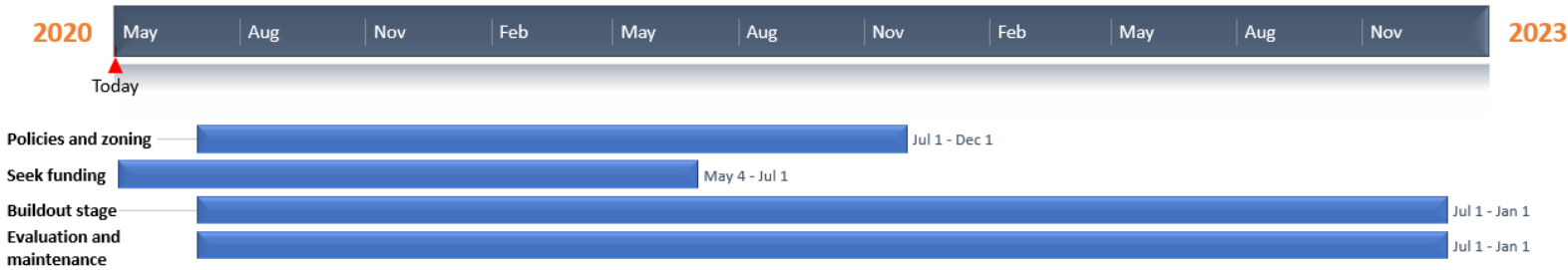
To start the project and bring it to execution, multiple departments and entities will have to come together to continue the great work put forth and bring it to fruition. The city of Port St Joe (PSJ) has previously adopted a comprehensive plan with an established future land use map that will show where development is to occur. This project is broken down into four parts coming together as one, North Port St Joe, the new civic corner, downtown (Reid, William and Long) and the Marina. One of the biggest challenges this proposal might face is the funding and the coming together of all relevant parties. All officials and stakeholders are encouraged to join in the discussion and implementation. From the Dupont Foundation for helping the Project Area Coalition, in creating the North PSJ 2009 Master Plan and updates to the city of Port St Joe official's mayors, commissioners, the planning departments. The business owners on MLK Blvd, Reid Avenue, Williams, David Langston Dr. The Community Development Corporation (CDC) is a 501c3 not-for-profit organization. Its primary role is to implement the community's redevelopment plans; its volunteer Board of Directors comprises local residents and property owner's intent on reversing the deterioration of North Port St. Joe. We are also looking at future land use development plan of PSJ, use maps to highlight all the interesting features of the land and look at the Golf County Building code and zoning.

5.1 Budget Summary

Implementing the plan will require a budget, in addition to the city's budget there are other possible incentives and funding sources. Gulf County special opportunity incentives are a great place to start, the Economic Development Transportation Fund, Local Government Distressed Area Matching Grant Program (LDMG) which stimulates investment in Florida's economy by assisting local governments in attracting and retaining targeted businesses. The Florida Main Street which provides training and technical assistance to local organizations in support of their efforts to revitalize their traditional downtown and neighborhood commercial districts which could be combined with the city's plan to move its City Hall to the civic corner.

5.2 Schedule

We propose this project be done in phases. Phase 1 will include the policies and zoning changes, and funding research. Phase two will be the buildout stage and Phase 3 the evaluation and maintenance of the project. The first two stages are long processes that require a great length of time, and every step of the way will require public engagement, and feedback. Phase 3 will be a part of the proposed budget since the beginning.



6 TEAM BIOS



Hyunji Yoon

Masters Student in Mass Communications and
Journalism
College of Journalism and Communications



Oscar Lafontaine

Ph.D. Student in Structural Engineering
University of Florida- Herbert Wertheim College of
Engineering



Neisha Pierre

Master Student in Urban and Regional Planning
University of Florida- College of Design,
Construction and Planning



Rama Hiba

Master Student in Architecture and Urban Planning
University of Florida- College of Design,
Construction and Planning

7 CONCLUSION

All in all, cities are centers of connection, they connect us to each other and to the greater society we live in. Oftentimes people are products of their environment, therefore it is imperative to recreate a better Port St. Joe not only for the current residents of Port St. Joe but for the future generations to come. The Port St. Joe community is very invested in revitalizing their city and this is one of strongest advantages. This project seeks to use this investment from the community to ultimately increase the overall resilience of the city. By increasing the interconnectedness of the city and uniting the community, more engagement will lead to advancements in policies and ideas to solve the highlighted issues.

Connectivity within the city is proposed to be addresses by focusing on the main axes of the city of Port St. Joe which are Reid Avenue and Martin Luther King Boulevard and create a linkage throughout the city. The accomplishment of this task will include the development of David Langston Drive, Williams Avenue and other connecting streets following a form-based code which ensure that community members feel in the same environment when transitioning between areas. Pedestrian and bicycle lanes are a big focus of the proposed developed cross sections which was important to community members.

Besides connectivity, the project seeks to contribute to the overall resilience of the city by proposing bio-swales which increase the stormwater capacity for these areas and provide stormwater recreational parks. Sea level rise is an issue to be considered for future development, and the location the civic center agrees with this since the topography is at a higher elevation.

Communication is big part of uniting the community. Campaigns can help to encourage the coming of third-party groups of volunteers or organizations to get involved in community discussions. Positive coverage on such issues on social media could encourage tourism. Discrimination must also be addressed internally for communication strategies to work. Videos and events created to increase awareness of issues on the North side and provide solutions on how to solve such issues would also be necessary to make sure needs are met. At the core of our proposition, we suggest that physical reconnection in the form of new infrastructure and revitalization of businesses along with aid to blighted areas and more open communication that addresses issues of racism and segregation will be for the benefit of Port St. Joe overall.

Appendix A: Acknowledgments

We would like to take this time and thank the University of Florida Team dedicated to Port St Joe research; the Dupont Foundation for Sponsoring the research; the City of Port ST Joe for welcoming us into their homes.

Appendix B: References

- Climate Central. *Surging Seas Risk Finder*.
- Commission, F. B. (2017). *Florida Building Code- Residential, Sixth Edition*.
- Croft, T. (2019). PSJ Seeks Infrastructure Funding. *The Port St. Joe Star*.
- FEMA. (2020). *FEMA P-2077 Hurricane Michael in Florida*.
- Kopp, R. E., DeConto, R. M., Bader, D. A., Hay, C. C., Horton, R. M., Kulp, S., Oppenheimer, M., Pollard, D., & Strauss, B. H. (2017). Evolving understanding of Antarctic ice-sheet physics and ambiguity in probabilistic sea-level projections. *Earth's Future*, 5(12), 1217-1233.
- Kopp, R. E., Horton, R. M., Little, C. M., Mitrovica, J. X., Oppenheimer, M., Rasmussen, D. J., Strauss, B. H., & Tebaldi, C. (2014). Probabilistic 21st and 22nd century sea-level projections at a global network of tide-gauge sites. *Earth's future*, 2(8), 383-406.
- Miller, C. S., Kopp, G. A., Morrison, M. J., Kemp, G., & Drought, N. (2017). A Multichamber, Pressure-Based Test Method to Determine Wind Loads on Air-Permeable, Multilayer Cladding Systems. *Frontiers in Built Environment*, 3, 7.
- Prevatt, D. O. (2003). *Wind Load Design and Performance Testing of Exterior Walls: Current Standards and Future Considerations*
- Performance of Exterior Building Walls* (P. Johnson, Ed.). ASTM International. <https://doi.org/10.1520/STP10925S>
- Streetmix. (n.d.). Retrieved from <https://streetmix.net/>
- The 2016 Plan - Redeveloping North Port St. Joe The 2016 Plan - Gallery. (n.d.). Retrieved from <https://redevelopingnpsj.org/projects>
- City of Port St. Joe, Florida. (n.d.). Retrieved from <https://www.cityofportstjoe.com/>
- National Resource Conservation Service, NRCS (2005). Bioswales absorb and transport large runoff events https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_029251.pdf
- Madden, M., & Russell, J. (2014, December 23). Part 1: What Is a Form-Based Code? Retrieved from <http://plannersweb.com/2014/12/fbc1/>
- US National Resources Planning Board. (1937). *Our Cities: Their Role in the National Economy*. Washington DC.: Government Printing Office.
- Allen, G. (2019, October 10). Recovery Is Slow In The Florida Panhandle A Year After Hurricane Michael. NPR, pp. 3-5.
- Contorno, S. (2019, October 9). The Two Florida Republicans Who Voted Against Hurricane Michael Disaster Aid Explain Why. Tampa Bay Times, pp. 1-5.
- News Herald Staff. (2019, December 28). Year End: Hurricane Michael Recovery Still a Struggle. Panama City News Herald, pp. 3-4.
- Schneider, M. (2019, October 9). A Year After Hurricane Michael, Panama City and Other Florida Communities Still Struggling. Associated Press, pp. 2-4.