

TOWN OF PALM BEACH

Information for Town Council Meeting on: February 8, 2022

TO: Mayor and Town Council

VIA: Kirk. W. Blouin, Town Manager

FROM: H. Paul Brazil, P.E., Director of Public Works
Wayne Bergman, Director of Planning, Zoning and Building

RE: Implementation Plan for Coastal Resiliency

DATE: January 20, 2022

STAFF RECOMMENDATION

Town staff requests that Town Council review the summary of recommendations made by Woods Hole Group in their resiliency study as described below and to provide any policy or guidance to develop a multi-year implementation plan. Staff recommends that the discussion at this meeting be limited to (a) Town Facility Infrastructure and (b) Lake Worth Shoreline. The remaining sections can be discussed at future meetings.

GENERAL INFORMATION

The Woods Hole Group submitted their report in November 2021 with suggestions and recommendations associated with the Coastal Resilience Implementation Plan (“Level-Up Palm Beach”). The plan is organized into four (4) components (Town Facilities and Infrastructure, Lake Worth Shoreline, Floodplain Development, and Comprehensive Planning). Within each component there are recommendations and suggested action items that are near-term and medium-term, as well as long-term. Adaptation pathways and key decision points are also provided to allow for flexibility and adapting strategies as actual conditions dictate in the future. A monitoring program is also outlined to assist with the Town’s decision making in the future. The four (4) components are summarized below along with policy or guidance that is necessary in beginning to implement the plan.

A. Town Facilities and Infrastructure

Objective: Adapt Town assets to mitigate risks of damage and failure from future coastal flooding

Recommendations: (based on CFVA Risk-Based Prioritization Method)

1. Near-term adaptations are focused on critical facilities and assets already in the five-year Capital Improvement Plan (CIP) – these are listed in Table 3 of the Level-Up Palm Beach Report and will be accomplished by the Public Works Department as part of the annual budgeting process.
2. These near-term adaptations for Town assets are listed in Table 4 of the report to include the recommended adaptation measures and the interim design flood elevation (DFE).
3. Florida Statutes require the use of sea level rise projections for 2040 and 2070 (with intermediate-low projections of 0.7 feet and 1.3 feet respectively, and intermediate-high projections of 1.4 feet and 3.3 feet).
4. Other Town assets at present risk of flooding based on PB-FRM are prioritized in Table 6 of the report and should be considered medium-term adaptation targets.
5. Town assets at future risk of flooding only with storm intensification are noted in Table 7 of the report.

Previous Town Council Direction: Staff to address these projects in future budget requests in the Capital Improvement Program. Mitigation component to be completed opportunistically with planned Capital Projects for each asset. Staff to report incremental cost increase for mitigation work.

B. Lake Worth Shoreline

Objective: Mitigate neighborhood and Town-wide exposure to future coastal flooding, emanating primarily from the Lake Worth shoreline

Recommendations: (based on CFVA Risk-Based Prioritization Method and FEMA FIRM maps)

1. Bulkhead construction specifications to amend the Town Code of Ordinances include a recommendation to require FEMA base flood elevation plus 2 feet (BFE + 2.0') for top elevation of any bulkheads or cut-off walls. Flexibility to raise the top elevation another 2.0' in the future is also recommended. Information required in permit applications is standardized and expanded, along with inspection requirements of work done. Table 8 of the report includes suggested text revisions to the Ordinance Sec. 62-75. The current BFE per the 2019 FIRM maps is +6.0 NAVD.

Staff Comment: Current requirement is minimum +5.0 NAVD. Many existing walls are lower than +5.0 NAVD.

Staff Recommendation: Staff should develop renderings at typical locations to help the community visualize the impacts of raising walls to +6.0 NAVD, +8.0 NAVD and +10.0 NAVD.

2. New specifications are also recommended to add higher standards including flood design requirements, reinforced concrete caps for all bulkheads, and to design/construct adjoining bulkheads in manner to mitigate leakage between them.

The elevations of adjacent grades also needs to be addressed to mitigate potential impacts to accessibility and scenic vistas from Lake Trail and private property. Surrounding grades are recommended to be raised to within 30 inches of new seawall cap elevation. Temporary waivers or easements may be considered when no mutually agreeable alternatives are found for situations where the accessibility or adjacent grade requirements cannot be met. Table 9 of the report includes recommended language for these new standards for bulkhead construction.

Staff Recommendation: Stricter standards for design requirements should be adopted. Staff to obtain an order of magnitude cost per liner foot of redevelopment (seawall, grade, and trail). Possible redevelopment alternatives include:

- Accept the Woods Hole recommendation of grade transitions as private seawalls are raised due to redevelopment or code related deficiencies (see item 3 below). Grade changes would have to meet ADA requirements. This requires the property owner to raise both the grades adjacent to the seawall and the Lake Trail elevation when the adjacent seawall is raised. Staff should develop renderings at typical locations to help the community visualize the impacts of these transitions.
- The Town raises the privately owned seawalls, the surrounding grades and the Lake Trail by assessment to the adjacent property owners. Town owned sections would be constructed at the expense of all of the tax payers of the Town.
- The Town raises the seawalls, the surrounding grades and the Lake Trail at the expense of all of the tax payers of the Town.

3. An amendment to the Code of Ordinances is recommended to establish more robust maintenance and certification standards of all bulkheads and seawalls. Condition surveys and corrective repairs to address bulkheads or seawalls in disrepair are included for citations and Code Enforcement Board actions, as well as certification and re-certification requirements. **The property owner would be required to raise the seawall elevation if 25% of the existing wall length is in need of repair.** Table 10 of the report includes suggested text revisions to the Ordinance Sec. 62-77.

Staff Recommendation: This is a significant change and staff recommends approval.

4. Neighborhood-scale flood control systems may be beneficial in completion of the higher standards proposed, and may be efficient and effective in delivering these infrastructure changes systematically by the Town rather than incrementally by individual property owners. To provide flexibility for such actions, the Town should consider amending the Code of Ordinances (Chapter 90, Article II, Division 5 – Municipal Services District) to include “Coastal Flood Control” in the list of services, programs, and improvements that the entity is authorized to provide. These changes should be reflected in an amendment to the Comprehensive Plan since there are multiple sections of Division 5 that would need to be modified.

Thirteen (13) potential neighborhood-scale flood control units are shown in Figure 8 of the report. Prioritization criteria should be developed to address phasing, risk mitigation, and cost effectiveness for these flood control units.

Staff Recommendation: Staff recommends that we work with a consultant to develop priorities, refine scope, and develop preliminary costs. At that point, The Town Council could consider how these projects would be funded and when they may be implemented.

5. It is recommended that in the near-term, the Town should conduct a high-resolution survey of shoreline infrastructure to better inform planning of potential flood control system alignments, to include the top elevations of shoreline structures, adjacent grades, and condition ratings.

Staff Recommendation: Staff to investigate alternatives and present to Town Council. Include in FY 2023 budget.

6. Storm surge barriers at the Lake Worth Inlet should be considered to mitigate coastal flooding of Lake Worth shoreline due to Atlantic Ocean storm surge passing through the inlet. This would be a major infrastructure undertaking and would involve a large and multi-jurisdictional group of stakeholders. U.S. Army Corps of Engineers (USACE) has constructed such storm surge barriers elsewhere, and a Coastal Storm Risk Management (CSRМ) feasibility study would be necessary to pursue this type of initiative. The Town should take the following steps towards obtaining a CSRМ feasibility study: (1) Conduct preliminary evaluation using PB-FRM model to determine effectiveness of a surge barrier at the inlet and (2) Conduct regional outreach with all stakeholders to introduce the concept and discuss potential roles and (3) Engage federal and state elected officials to raise awareness of the study and potential benefits and request legislative support and funding and (4) Support the submittal of feasibility study proposal by the Project Sponsor to USACE for inclusion in their annual report to Congress and (5) Advocate with elected officials for feasibility study authorization and appropriations, and grant support.

Staff Recommendation: Staff recommends that we retain a consultant to outline the process and cost to implement this mitigation alternative. The consultant should also address the probability of success before any final decisions are made.

7. Lake Worth water level monitoring would be very beneficial in documenting local water level information. Only one active NOAA tide gauge is present in the area at the Lake Worth Pier, and doesn't directly reflect water levels experienced within the Lake Worth Lagoon. It is recommended that the Town contact the Center for Operational Oceanographic Products and Services (CO-OPS) stakeholder services branch to explore options for water level monitoring. It may be possible for the Town to partner with other local stakeholders and commercial/government interests in pursuing accurate water level information. Alternative technologies for collecting water level measurements are also evolving rapidly and may offer lower-cost options and allow for more locations to be measured (e.g. at bridge locations, etc.). It is recommended that a water-level monitoring program be developed to include both the NOAA and alternative options.

Previous Town Council Direction: Staff to investigate alternatives and present to Town Council. Include in FY 2023 budget.

C. Floodplain Development

Objective: Improve the safety of buildings and their occupants from future coastal flooding

Recommendations:

1. The Town should consider a more stringent definition of substantial improvement and substantial damage over a longer cumulative time and at a lower percent of market value threshold to increase the speed at which existing buildings are brought into compliance with higher standards for flood-resistant construction. These higher standards are recommended to be any substantial improvements over a ten (10) year period and cumulative cost of 25% or greater of the market value, or for any substantial damage that exceeds 25% of the market value. Table 11 of the report includes suggested text revisions to the Ordinance Sec. 18-232 (Ref: Code of Ordinances, Chapter 18, Article IV, Division 1). Note that these recommended amendments would earn the Town additional CRS credit points.

Staff Comment: Staff recommends a slight increase of the cumulative period to two (2) years, but no change to the 50% value threshold in use today. This topic will be addressed at a future meeting.

2. Higher elevation requirements for non-residential structures and non-residential areas of mixed use structures should be set, than the minimum requirements in the 2020 Florida Building Code (FBC) 7TH Edition Buildings. Amendments to the FBC should be coordinated with the Florida Department of Emergency Management (FDEM) before any first reading of a revised Ordinance. Table 12 of the report includes suggested text revisions to the ordinance Sec. 18-244 (Ref: Code of Ordinances, Chapter 18, Article IV, Division 2). Note that these recommended amendments would earn the Town additional CRS credit points.

Staff Comment: Staff recommends BFE, plus 2 feet. This topic will be addressed at a future meeting.

3. Higher elevation requirements for residential structures should be set than the minimum requirements in the 2020 Florida Building Code (FBC) 7TH Edition Buildings. Amendments to the FBC should be coordinated with the Florida Department of Emergency Management (FDEM) before any first reading of a revised Ordinance. Table 13 of the report includes suggested text revisions to the Ordinance Sec. 18-244, R322.2.1 and R322.3.2 (Ref: Code of Ordinances, Chapter 18, Article IV, Division 2). Note that these recommended amendments would earn the Town additional CRS credit points. Also note that a related topic is the modification of residential zoning to limit the height of fill that can be used to meet minimum elevation requirements (i.e., half the distance from the crown of the road to the first habitable floor level); this is intended to mitigate stormwater runoff impacts to neighboring properties.

Staff Comment: Staff recommends BFE, plus 2 feet. This topic will be addressed at a future meeting.

4. Building heights should be defined in reference to the minimum flood elevation, and the zero datum for the purposes of calculating building height for new construction and substantial improvements should be defined in all districts to include the term “or the minimum flood elevation as defined in Sec. 134-2 of the Code.” A definition for the term “minimum flood elevation” should be added to this section to clarify that it includes the base flood elevation plus freeboard heights required in Chapter 18 as applied to flood hazard areas in Chapter 50. Such a potential definition is “the minimum elevation requirements defined in Chapter 18 for new construction or substantial improvements, applicable within flood hazard areas defined in Chapter 50”. It is also noted that this term should be consistently used and referenced across the building height definitions, throughout Chapter 134 and, if needed, in Chapter 50.

Staff Comment: Staff recommends approval, at BFE, plus 2 feet. This topic will be addressed at a future meeting.

5. Flood hazard areas are those within which floodplain management regulations and flood-resistant construction standards of the FBC (as amended) apply in Town. Those flood hazard areas should be expanded to include areas lower than the base flood elevation plus the minimum freeboard height adopted in Chapter 18 elevation requirements. This will require that new development and substantial improvements meet a consistent minimum standard of flood-resistance, regardless of whether they are located within the present FEMA 100-year floodplain boundary or just beyond it. Table 14 of the report includes suggested text revisions to the Ordinance Sec. 50-38 (Ref: Code of Ordinances, Chapter 50, Article II, Division 2). Note that cross references between Chapter 18 and Chapter 50 need to be reviewed and verified, to identify where the FBC is referenced and amended, to also reference Chapter 18 amendments to the FBC (i.e., “this chapter is intended to be administered and enforced in conjunction with the Florida Building Code, as amended in Chapter 18). Expanding the area of special flood hazards can increase the CRS credit points.

Staff Comment: Staff recommends approval, at BFE, plus 2 feet. This topic will be addressed at a future meeting.

D. Comprehensive Planning

Objective: Integrate future coastal flood risk mitigation with other Town planning, policy, and infrastructure funding priorities.

Recommendations:

1. The Town should consider amending the Future Land Use Element of the Comprehensive Plan to integrate the findings and recommendations from the previous objectives for Lake Worth Shoreline and Floodplain Development. The Executive Summary should be updated and expanded for the Provision of Public Services section, and the Development of Coastal and Flood-Prone Areas section, per the recommendations in the report. Table 15 of the report includes recommended changes in the Objectives and Policies for the Future Land Use Element.

Staff Comment: Staff recommends approval.

2. The Town should consider amending the Transportation Element of the Comprehensive Plan to integrate the findings and recommendations from the previous objectives for Town Facilities and Infrastructure and Lake Worth Shoreline. The Executive Summary should be updated and expanded for the Regionally Significant Roadways section, and the Existing System Deficiencies section, per the recommendations in the report. A discussion of adaptation strategies affecting transportation rights-of-way should also be included. Table 16 of the report includes recommended changes in the Objectives and Policies for the Transportation Element.

Staff Comment: This topic will be addressed at a future meeting.

3. The Town should consider amending the Infrastructure Element of the Comprehensive Plan to integrate the findings and recommendations from the previous objectives for Town Facilities and Infrastructure and Lake Worth Shoreline. The Executive Summary should be updated and expanded for the Sanitary Sewer Services and Drainage section, and a new Coastal Flood Control section should be added, per the recommendations in the report. Table 17 of the report includes recommended changes in the Goals, Objectives and Policies for the Infrastructure Element. [Note that this is where design storm criteria and level of service are referenced.]

Staff Comment: This topic will be addressed at a future meeting.

4. The Town should consider amending the Coastal Management/Conservation Element of the Comprehensive Plan to integrate the findings and recommendations from the previous objectives for Town Facilities and Infrastructure and Lake Worth Shoreline. The Executive Summary should be updated and expanded for the Floodplains section, the Comprehensive Coastal Management Plan section, the Remedies for Existing Pollution section, the Infrastructure and Natural Disaster Planning section, and a new Adaptation Action Areas section should be added, per the recommendations in the report. Table 18 of the report includes recommended changes in the Objectives and Policies for the Coastal Management/Conservation Element.

Staff Comment: This topic will be addressed at a future meeting.

5. The Town should consider amending the Intergovernmental Coordination Element of the Comprehensive Plan to integrate the findings and recommendations from the previous objective for Lake Worth Shoreline. The Executive Summary should be updated and expanded for the Analysis section, the Transportation Element section, the Infrastructure Element section, the Coastal Management/Conservation Element section, and the Capital Improvements section, per the recommendations in the report. The Intergovernmental Coordination Matrix should be updated to include Lake Worth Coastal Flood Mitigation in the list of program work tasks and the USACE in the list of governmental entities. Table 19 of the report includes recommended changes in the Goals, Objectives and Policies for the Intergovernmental Coordination Element.

Staff Comment: This topic will be addressed at a future meeting.

6. The Town should consider amending the Capital Improvements Element of the Comprehensive Plan to integrate the findings and recommendations from the previous objectives for Town Facilities and Infrastructure and Lake Worth Shoreline. The Executive Summary should be updated and expanded for the Capital Improvements Program Project Descriptions section, per the recommendations in the report. Table 20 of the report includes recommended changes in the Objectives and Policies for the Capital Improvements Element. [Note that this is also where design storm criteria and level of service are referenced.]

Staff Comment: This topic will be addressed at a future meeting.

Town staff recommends that the Town Council review the suggestions and provide policy guidance and direction as to priority of given tasks and desired timeline for future consideration of those tasks.

FUNDING/FISCAL IMPACT:

There would be an impact to the budget for public property projects, resulting consultant actions, and private property impacts would be borne by those property owners.

cc: John Randolph, Town Attorney
Jay Boodheshwar, Deputy Town Manager
Eric B. Brown, P.E., Assistant Director of Public Works/Operations
Patricia Strayer, Town Engineer
Jason Debrincat, P.E., Senior Project Engineer
Dean Mealy, Purchasing Manager
Rob Weber, Coastal Program Manager