



Improving Resiliency to Coastal Flooding Seawall Ordinance Options

City of Delray Beach

City Commission Workshop

April 9, 2019

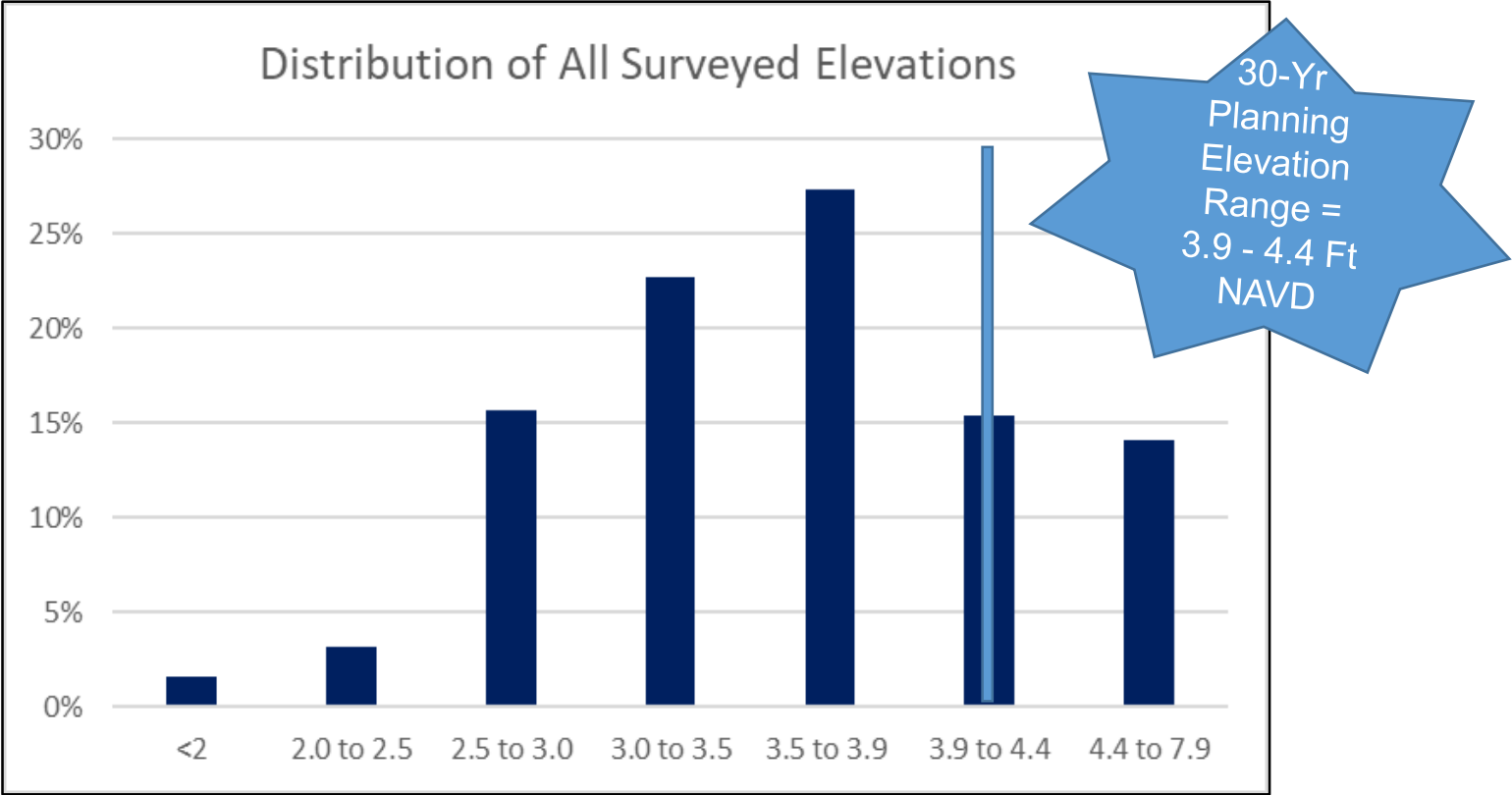


Study Goals and Objectives

- Intracoastal Waterway (ICW) Water Level and Infrastructure Vulnerability Study completed October 2018
 - Presented findings to commission February 2019
- Study
 - Area
 - 1 Mile of Public Seawalls & 20 Miles of Private Seawalls
 - Assessed vulnerability to future seasonal flooding along ICW
 - Water level prediction for 30 years & current conditions of seawalls
 - Identified options to protect infrastructure and citizen's property
 - Compared current conditions against water level predictions



Seawall Findings & Recommendations



	Good	Satisfactory	Fair	Poor	Serious	Critical
Public	1	16	9	3	0	0
Private	48	170	450	152	41	7
Total %	4%	19%	53%	18%	5%	1%

Implementation Strategies

- Public
 - 50% of seawalls either already raised or under way
 - Remainder will be planned in future projects
- Private Implementation Strategies
 - Ordinances to Protect City and Residents from Projected Sea Level Rise:
 - 1) Public/Private Partnership – Uses Existing Code of Ordinance
 - 2) Ordinance with Minimum Elevation and Timeline Requirement
 - 3) Ordinance with Elevation Requirement only
 - 4) City Implementation – Assess Significant Fees, Take Ownership

2018 Veteran's Park Seawall Improvement





Public / Private Partnership Option

Responsibility to maintain, raise, repair and replace private seawalls remains with private owners, enforced through existing City Code of Ordinances.

- Section 100.04 Seawalls

“Construction of a seawall or repair or maintenance of an existing seawall shall be deemed necessary when the lack of seawall...causes a situation that threatens or endangers the public health, safety and welfare...”

- Seawalls that cause flooding during elevated tidal waters could be in violation

PROS	CONS
Ease of implementation	Timeline to improve resiliency is indefinite
	Burden on Code Enforcement & City Attorney's Office



Ordinance with Elevation and Timeline Requirements Option

City enacts ordinance requiring seawall elevation standards be implemented on a timeline to ensure Citywide goals are met.

PROS	CONS
Improvements are time certain as determined by the City	Residents with low seawall elevations could be required to act years before their seawall needs repair or replacement
	Some residents may not be financially ready to do improvements within the timeframe
	Burden on Code Enforcement & City Attorney's Office



● ● ● Ordinance with Elevation Requirements

Option

City adopts seawall elevation standards that all new seawalls and seawall repairs would be required to meet or if impacting other properties.

- No timeline, private owner determines when to perform improvements
- Only triggered when private resident submits permit application for seawall improvement, or when improvements to upland property exceed 50% of the existing value
- Citation if tidal waters are entering property and impacting other properties or public right-of-way

PROS	CONS
City determines seawall elevation	Timeline to improve resiliency is indefinite
Improvements are triggered by resident's actions	

City Implementation of Seawalls



●●● Improvements Option

City assumes maintenance responsibilities of both public and private seawalls through the creation of a special assessment district, funded by public funds collected as annual assessments from affected residents.

PROS	CONS
City control of elevation and quality	Coordination of the removal and replacement of private docks that are on public seawalls
Possible homeowner's insurance decrease	Increase in City staffing to manage program
Construction cost savings	Increase in City liability
Maintained on a regular schedule	Standardized appearance for all
	To keep program costs low, improvements may be stretched out over a longer term

Other Municipal Implementations

- Ordinance with Elevation Requirements – included language putting a timeline on repairs once a property is cited
 - City of Miami Beach - Elevation guidelines of 5.7 ft NAVD
 - Interim elevation of 4.0 ft NAVD where raising the seawall would cause negative consequences to private views for low lying homes
 - City of Fort Lauderdale - Elevation guidelines of 3.9 ft NAVD
 - Ordinance contains two provisions under which a property owner may receive a code violation
 - Failing to maintain a seawall in good repair
 - Requiring owners to prevent tidal water entering their property from impacting other properties or the public right-of-way
- City Implementation
 - City of Punta Gorda
 - City assumes maintenance responsibilities for all seawalls
 - Developed a Municipal Service Taxing Unit (MSTU)

Staff Recommendation

Ordinance with Elevation Requirements

- Elevation guidelines of 4.2 ft NAVD
- Ordinance similar to Fort Lauderdale
 - Ordinance contains two provisions under which a property owner may receive a code violation
 - Failing to maintain a seawall in good repair
 - Prevent tidal water entering on their property from impacting other properties or the public right-of-way
 - If cited, the property owner has 60 days to demonstrate progress toward making a repair and 365 days to fully remedy the situation
 - The ordinance also states that if there is any required seawall repair that meets the substantial repair threshold, it must be constructed to meet the minimum elevation requirements



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30-Year Planning Elevation



3.9 to 4.4 ft. NAVD

Freeboard

0.5 ft.

5-year Return Period Event

1.8 ft.

30 years of SLR

0.6-1.1 ft.

Average Daily Maximum
Water Level 2017

1.0 ft.

City of Delray Beach

Current Seawall Ordinance



Sec. 100.04. - SEAWALLS.



- (A) It shall be unlawful and constitute a public nuisance for any property owner to maintain or allow to be maintained property owned by him located adjacent to any natural or artificial canal, stream or other body of water in a condition requiring construction of a seawall or maintenance or repair of an existing seawall.
- (B) Construction of a seawall or repair or maintenance of an existing seawall shall be deemed necessary when the lack of a seawall or need for maintenance or repair of an existing seawall causes a situation that threatens or endangers the public health, safety or welfare, or that impedes the navigability of any canal, stream or other body of water, or that endangers swimming or other water sports.

(Code 1980, § 13-14; Ord. No. 69-78, passed 10/9/78)

Cross reference— Penalty, [§ 100.99](#).

City of Fort Lauderdale

Seawall Ordinance Excerpt



- (3) Seawall improvements constituting substantial repair at the time of permit application shall meet the minimum elevation and consider the design recommendations (see subsection (f) above) for the continuous seawall for the length of the property. For the purposes of this section, the substantial repair threshold shall mean the following:
- (i) Any improvement to the seawall of more than fifty percent (50%) of the length of the structure, which for the purposes of this section, shall include both the seawall and cap; or
 - (ii) Any improvement to the seawall which results in an elevation change along more than fifty percent (50%) of the length of the structure.
- (4) All property owners must maintain their seawalls in good repair. A seawall is presumed to be in disrepair if it allows for upland erosion, transfer of material through the seawall or allows tidal waters to flow unimpeded through the seawall to adjacent properties or public right-of-way. Property owners failing to maintain their seawalls may be cited. The owner of the property on which the seawall is constructed is required to initiate a process, including but not limited to hiring a contractor or submitting a building permit, and be able to demonstrate progress toward repairing the cited defect within sixty (60) days of receiving notice from the city and complete the repair within three hundred sixty-five (365) days of citation. If the required repair meets the substantial repair threshold, the property owner shall design, permit, and construct the seawall to meet the minimum elevation requirement and design requirement (see subsection 47-19.3(f)) within three hundred sixty-five (365) days of citation.