

The Daily Dispatch

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JANUARY 24, 2100 (AP) This year marks the full realization of a vision born decades ago for a plan to remake Boston’s North End Waterfront as a resilient and sustainable neighborhood in the face of rising sea levels and heightened storm surges. In 2015 the Boston Redevelopment Authority established an overlay zoning district known as “Article 90: the North End Waterfront FUN(d)”. An acronym for “Future Underwater Neighborhood district,” FUN(d) also conveyed both the means (revenue from various sources to fund resilient development) and the goal (a vibrant urban neighborhood that evolves seamlessly amidst the ongoing challenges of climate change).

ARTICLE 90

NORTH END WATERFRONT FUN(d) OVERLAY DISTRICT (^Article inserted on February 1 2016)

SECTION 90-1. Statement of Purpose. The purpose of this article is to (a) facilitate the resilient adaptation of the North End’s unique cultural, architectural, social and infrastructural fabric in the face of sea-level rise and increased storm surge impacts; (b) provide a mechanism by which residents of the North End waterfront can manage their own adaptation to changing conditions with respect to the Waterfront and Boston Harbor; and (c) enhance the livability and visit-ability of this area in order to promote economic vitality.

SECTION 90-2. Definitions. For the purposes of this article only, the following words and phrases, when capitalized, shall have the meanings indicated:

1. “Mezzo” shall refer to the raised street plane network of walkways, ducts, places of assembly, and renewable energy generation facilities that provide for resilience of infrastructure and a basis for adaptation to changing sea-levels.
2. “FUN(d)” shall be the term used for a specific intervention that will create a new living environment within the waterfront area of Boston’s North End. It is an acronym (“Future Underwater Neighborhood Development”), a mechanism (funding for this intervention will be generated by the utilities and amenities created), and a goal (sea-level rise is an opportunity to thrive in an urban environment that provides recreation and enjoyment).

SECTION 90-3. General Requirements and Procedures. A special overlay district, to be known as the North End Waterfront Fun(d) Overlay District, shall be established pursuant to Section 3-1A. All projects within this district are subject to the review and approval of the North End/Waterfront Neighborhood Council (the “Council”). The Council shall oversee the funding and construction of a mezzo system that will provide a resilient infrastructure for all participating neighborhood buildings.

Establishment of the FUN(d) in the early years of the 21st century enabled building owners within the district to organize collectively in what became known as “Block Coops,” or confederations of neighbors who combined resources for investment in resilient infrastructure and renewable energy. The FUN(d) also conveyed certain air rights and other development opportunities to these “Block Coops” in order to facilitate revenue generation for infrastructure improvements. A unique experiment in private/public partnership, the FUN(d) was overseen by a Board of local residents, property owners, and city officials. This Board was known as the “FUN(d) Council” and was empowered to issue bonds backed by the Commonwealth of Massachusetts. Modeled after the popular “social impact bond” of the day, this innovative mechanism used private investment to mitigate public risk. The FUN(d) Council combined the responsibilities of a corporate board and the authority of an administrative agency. The Council was delegated planning authority over the new district, including an on-going role in evaluating

progress and establishing new goals. The council has also served as a representational governing body for the Block Coops, facilitating coordinated activities between the various groups.

The first of the Block Coops formed around Commercial Wharf and the Prince Building in 2017. This cleared the way for the first air rights development - a vertical addition of four stories on top of the former Spaghetti factory, completed in 2021. Simultaneous development of the intertidal area for marine activities coincided with the first stages of a living breakwater, consisting of submerged berms to reduce wave intensity. By 2025, a new layer of wharf development with a raised elevation to accommodate predicted sea-level rise was interspersed with created intertidal wetlands which served as sponges for flood events - a bold continuation of Boston’s tradition of land-making in the face of rising sea levels.

During this early stage of adaptation, the construction of a newly sited Harbor Walk with expanded recreational amenities along a Living Shoreline began to attract visitors to the changing waterfront. The early stages of a planned elevation of circulation and infrastructure required the erection of support pylons, used initially for street lighting. By 2040, utilities and mechanical infrastructure had been relocated to the new “Mezzo” level and the next stage of construction (walkways and elevated amenities) had begun.

The Living Breakwater provided a harmonic buffer to absorb wave energy on the Harbor side and minimize turbulence on the city side. The result was calmer water for recreation and protection against storm surge and wave action for the waterfront. The Living Shoreline, a created wetland with a high degree of bio-diversity, provided the ability to further modulate storm energy. These measures proved to be critical during the major storm events of the 20’s and 30’s, and, along with the creation of canals both under and in vehicular roadways, spared the neighborhood from major damage while enhancing the quality of life for area residents.

By 2050, the ground-plane was elevated and extended throughout the new district and out over the harbor, creating a distinctive and unique urban experience. The “Mezzo” proved extremely popular with tourists who flocked to the North End to experience it after its construction. The created wetlands were biologically stable, overseen by a state-of-the-art research and education center that continues to draw visitors today. Several former streets, now fully converted to canals, offered boat rides and waterfront dining. The Prince Building had converted its below grade floors to marine industrial activity and created an open terrace at base flood elevation.

The 19th C. urban fabric was modified over time to facilitate the channeling and temporary storage of storm water and the collection and reuse of rainwater. Basements were converted to water storage sites where heat exchangers were used to extract thermal energy. The Mezzo system created a new platform for social activity, generating significant investment in new uses located on the second and third floors of existing buildings. The resulting shopping and dining “streets” created a unique urban experience.

A major goal from the inception of the FUN(d) was to facilitate the Block Coops’ attempts to create a more robust and resilient utility infrastructure that could be self-sufficient and sustainable. The rising waters made the existing public utility infrastructure more vulnerable to flooding and prolonged

outages. The FUN(d) sought to install a utility system that could produce and distribute electricity, heat, and hot water locally for consumption by the Block Coop members. The availability of off-shore winds, tidal flows, and solar energy for the production of sustainable power led to the creation of a local micro-grid, with co-generation heating and power micro-turbines, as a way to achieve energy independence and financial stewardship for the cooperatives. The Prince Building initially acted as system center for this expandable neighborhood micro-grid that ultimately provided electrical power, heating, hot water, and domestic hot water for the first “Block Coop” using waste heat from the micro-turbines and summertime chilled water. Renewable energy, such as wind and tidal turbine power, were harvested by the “utility light houses” at the end of the seascape Mezzo. This energy was stored via the micro-grid, and sold for charging electric water taxis, electric personal transportation vehicles, and Mezzo lighting.

As new Block Coops emerged, the increasing number of participants expanded the capacity and distribution capabilities of the micro-grid through block grants and financial incentives. Additional investment provided funding for more micro turbines as well as wind and solar plants, resulting in an expansion of the micro grid to adjoining neighborhoods.

Block Coops are responsible for sustainable practices such as rainwater harvesting, storage and treatment, and grey water reuse. Communications, public utility domestic cold water connections, sewer connections and pumping lift stations, etc. remained the responsibility of individual building owners. Decentralized micro turbine co-generation plants all interconnect to the Mezzo distributed micro grid. This strategy of redundancy provides infrastructure resilience and reinforces a sense of cooperation and community.

With localized control of energy production/consumption, the Block Coops were able to develop a certain level of autonomy and identity that reinforced patterns of behavior change. The result has been the evolution of semi-autonomous sustainable neighborhoods participating in a shared vision of the future.

While rising sea levels have long since submerged the 19th century wharfs and ground floors have been converted to marine use, continued vertical expansion and a growing Mezzo network ensure the neighborhood’s continued vibrancy. The canal network provides recreation and transportation, flowing through the former ground floor and basement areas of certain building and diverting flood waters from the remaining grade level activities.

The final decades of the 21st century have seen the North End Waterfront continue to thrive and expand as a model of resilient urban planning. While increased temperatures and ecosystem degradation have had catastrophic consequences for populations around the globe, the FUN(d) effort stands out as an example of how careful foresight and skillful implementation can preserve, and even enhance, the quality of a unique urban neighborhood.

FUN(d)

North End Waterfront Preliminary Prospectus

This document describes the investment opportunity and funding mechanism known as the “FUN(d)” (North End Waterfront Fun(d), as regulated under City of Boston Zoning Code Article 90.

The FUN(d) provides funding for integrated resiliency and development projects, with the goal of enhancing economic activity, quality of life, and safety for residents of the North End in the face of increased storm intensity and rising sea levels anticipated over the course of the next 85 years. FUN(d) specializes in infrastructure projects that integrate renewable energy generation. A typical FUN(d) project will seek full payback within 15-20 years, with an expected service life of 100 years. FUN(d) is offering Inaugural Investor opportunities that will mature within this 20- year window. The value of the initial investors’ shares is expected to increase as the payback date approaches based on an anticipated 60-75 years of profitability. City of Boston Zoning Article 90 grants FUN(d) certain incentives that will also accrue to investors, as well as to North End residents. For instance, vertical additions of up to 5 stories on existing buildings can receive expedited approvals within the FUN(d) Overlay District. Proposals for residential development will receive preferred treatment. All development under Zoning Article 90 is entitled to property tax rebates from the City of Boston based on the extent of compliance with FUN(d) standards of resiliency and sustainability.

FUN(d) will also be empowered through Massachusetts Chapter 91 to undertake offshore development. Such development can include:

- A floating hotel
- Walkways and bike paths that offer access to aquaculture sites and marinas.
- Boat marinas

PROJECT FUNDING SOURCES	INVESTOR FUNDING	PUBLIC FUNDING	COOP FUNDED
Inter-modal “Mezzo” system for solar and wind generation platform, retail and tourism development, and eventual personal rapid transit and bicycling support	Solar Component Wind Component Rental of Deck Space	Raised Platform Street Lighting Provision for Emergency Medical Services and Firefighting	Where integrated with building functions
Porous solar paving surfaces for roads and sidewalks	Solar Component	Basic paving cost is public	
Rain/storm water capture and reuse systems	Water reuse will be a function of the FUN(d)	Street/deck portion is a public expense	As part of any new development project
Integrated road/waterway design and construction that can be adapted to changing circumstances	Partner	Partner	
Aquaculture facilities and development	Yes		
Eco-tourism facilities	Yes		
Green roof agricultural production	Yes		Yes
Vertical Gardening	Yes		Yes
Highwater bonus floors- with money going to FUN(d)	Yes	Public grants FAR in exchange for linkage	Yes