



NBV100 REPORT

DPZ
CODESIGN

PREPARED FOR:
NORTH BAY VILLAGE

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PREPARED BY:
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IN COLLABORATION WITH:
IWPR GROUP
CDS ARCHITECTURE & PLANNING

***Charting the path for a more
Livable, Resilient and Prosperous
North Bay Village in the 21st Century***

NORTH BAY VILLAGE, FLORIDA

CHARRETTE: OCTOBER 2019

NORTH BAY VILLAGE

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MASTER PLAN AND LDRs REPORT

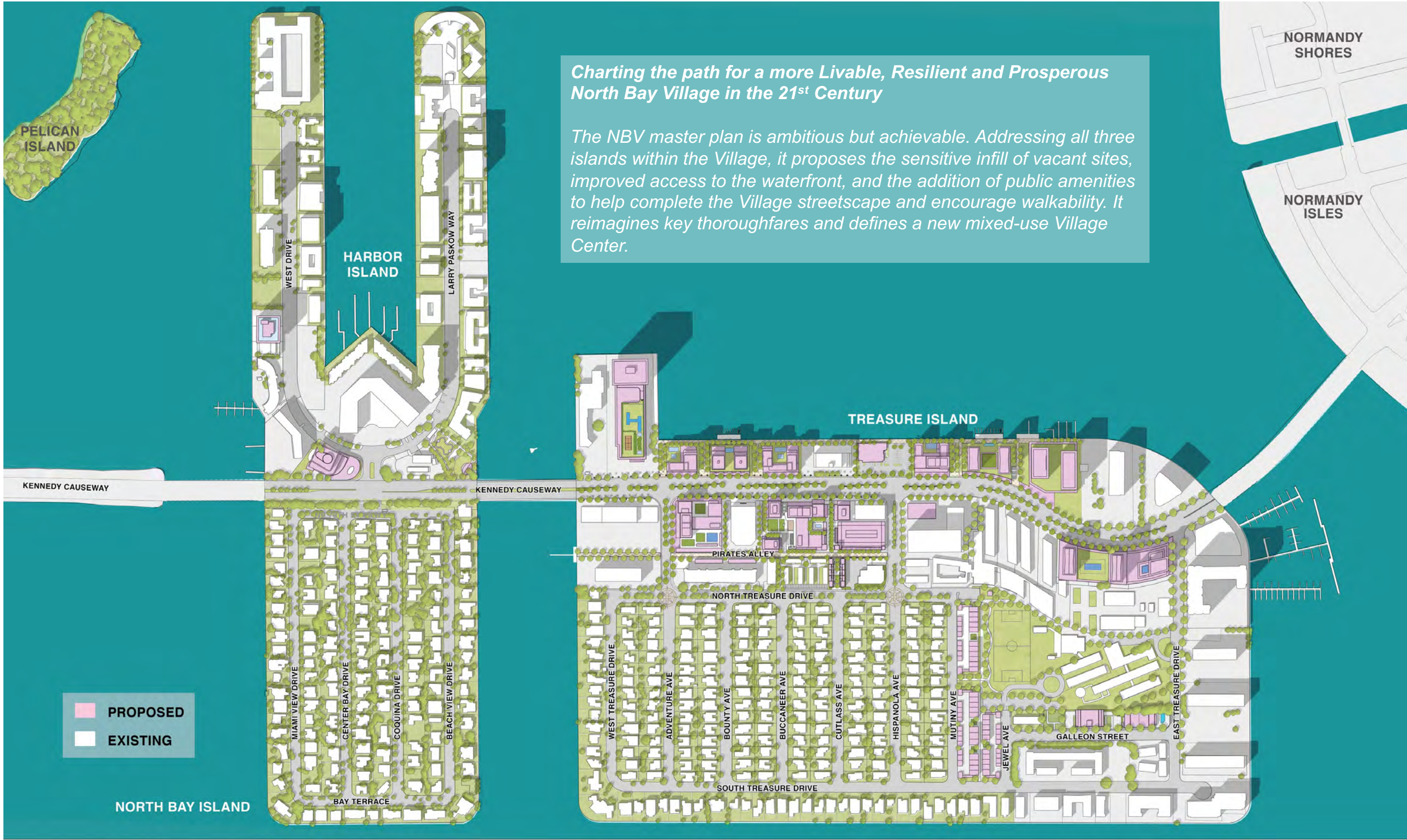
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NBV100 INTRODUCTION



NBV100 MASTER PLAN



NBV100 VISION SUMMARY

North Bay Village (NBV) is celebrating its 75th anniversary in 2020. There is a strong sentiment that the time has come for this diverse, engaged and knowledgeable community to have a serious, candid discussion on the issues that will shape the Village's next 25 years. From this desire, the **NBV100** (i.e., 75 + 25 = 100) **Charrette** was born.

The charrette was an intensive, five-day urban design workshop held in NBV beginning on October 2, 2019. Lead by the urban design firm DPZ CoDesign, the charrette was well attended by city officials, staff and – most importantly – residents. Over the course of many lively conversations with stakeholders and late-nights of work in the temporary studio, a large number of ideas were put on the table, explored and discussed frankly. From these, the NBV100 master plan began to emerge. Refined over the subsequent weeks at multiple meetings with neighbors, village leaders, and public agencies (listed on the following pages), the DPZ recommendations have coalesced into this NBV100 Report.

The aim of **NBV100** is to equip North Bay Village with the tools to become a more **complete, sustainable, and economically successful community** that can adapt to the challenges of a changing climate. Helping to structure the master plan's vision are three guiding principles, all emanating from the common concerns of residents: **Livability, Resilience, and Prosperity**. To help implement the goals of this vision, a new form-based code will provide a clear and enforceable regulatory instrument.

The **Livability** principle focuses on the desire by the three-island community to have a stronger sense of place to more accurately reflect the existing civic pride, create

a more people-centered public realm, and leverage the value of NBV's privileged but underutilized bay frontage. Key goals in making NBV a more livable home to its residents involve greater walkability; more public access to the waterfront; additional gathering spaces and services; and projecting a renewed and art-infused village image to the world.

A series of infill islands reclaimed from Biscayne Bay, NBV was originally born out of the water and today faces the challenges of rising tides and a challenged drainage system. In order to ensure its **Resilience**, NBV must address how to secure the perimeter of the islands to keep the bay water out while efficiently managing the water that does come ashore. Adjusting sea walls, raising grades, good infrastructure planning and maintenance, as well as responsible stewardship of the bayfront edge's natural ecosystem, will be primary objectives.

The desire for **Prosperity** speaks to the shared goal to see the Village Center attract more retail, businesses and services that have found homes elsewhere in the region and bypassed NBV during prior boom years. The key to changing this pattern is linked to reinventing Kennedy Causeway as a welcoming pedestrian-oriented and business-friendly mixed-use main street and getting away from the existing car-oriented highway with disconnected shopping centers and isolated towers.

Weaving together these three pillars, the new **Form-Based Code** will provide a supporting framework for building sensibly, encouraging sustainable streetscapes, and providing transparent and predictable rules for the benefit of new developers and investors, as well as existing residents.



Village center



*Galleon street
Neighborhood center*

NBV100 VISION SUMMARY

This NBV100 Report summarizes the charrette process, presents the proposed master plan, and illustrates numerous recommendations and interventions. It is organized around three pillars that emerged from the charrette: Livability, Resilience and Prosperity. The report also includes a Land Development Regulations (LDRs) assessment consisting of an analysis of the existing zoning code with recommendations for replacing it with a form-based code organized around transect zones. The LDRs chapter includes, among other elements, summary tables of the existing and proposed regulations as well as a preliminary regulating plan.

The photographs on this page illustrate the Charrette process.



Charrette work being done on site in a temporary studio in the Village Hall



Meetings during the charrette with residents, designers and public officials



One of several presentation to residents

NBV100 CHARRETTE PUBLIC PRESENTATIONS

- OCTOBER 02, 2019 – OPENING PRESENTATION
- OCTOBER 03, 2019 – PROGRESS PRESENTATION 1
- OCTOBER 04, 2019 – PROGRESS PRESENTATION 2
- OCTOBER 15, 2019 – CLOSING PRESENTATION



NBV100 POST-CHARRETTE PRESENTATIONS AND WORKSHOPS

- OCTOBER 28, 2019 – FDOT- DISTRICT 6 (AT FDOT’S OFFICES)
- OCTOBER 29, 2019 – STEERING COMMITTEE (MEETING #2)
- NOVEMBER 04, 2019 – WORKSHOP WITH THE RESIDENT SERVICES BOARD – FOCUSED ON LIVABILITY
- NOVEMBER 26, 2019 – WORKSHOP WITH THE SUSTAINIBILITY AND RESILIENCY TASK FORCE – FOCUSED ON RESILIENCY
- DECEMBER 18, 2019 – WORKSHOP WITH THE BUSINESS DEVELOPMENT ADVISORY BOARD – FOCUSED ON PROSPERITY
- JANUARY 22, 2020 – NBV100 WORKSHOP
- JANUARY 30, 2020 – PLANNING AND ZONING BOARD MEETING



The Livability, Resiliency, and Prosperity presentations were unanimously endorsed by the various boards

HISTORY



NORTH BAY VILLAGE HISTORY

Located in Biscayne Bay between Miami Beach and Miami, the islands that today comprise North Bay Village were created in the 1940s along the 79th street Causeway, which was later renamed in honor of President John F. Kennedy. The community's three islands were built around an existing five-acre island called Broadcast Key where a radio station had operated since 1926 and where today's WSVN TV station is presently headquartered. Work began with North Bay Island just before the Second World War. Harbor Island and Treasure Island were constructed just after the war. North Bay Village was incorporated in 1945.

By the 1950s, the community consisted of a few palm-lined residential streets, the Harbor Island Spa, and a Causeway dotted with small eateries and nightclubs. By the 1960s, entertainers such as Dean Martin and Frank Sinatra, who were performing in the nearby Miami Beach hotels, were frequenting the restaurants and drive-in cafes like Fun Fair. Martin had a supper club called Dino's on the Causeway for awhile. Other popular evening restaurants included such places as Chary's, Luau, A Place for Steak, Nick & Arthur's, and eventually Benihana's.

By the time Miami Beach's renaissance was taking off in the late 1980s, many of the NBV landmark restaurants began disappearing as small strip centers, office and multi-family buildings took their place. Whereas the Village started off as the wintertime home of many snowbirds and a playground for some celebrities, today a large percentage of its diverse population of just over 7,000 residents live there year-round, many of them working in surrounding communities.



Dino's Lodge



Fun Fair

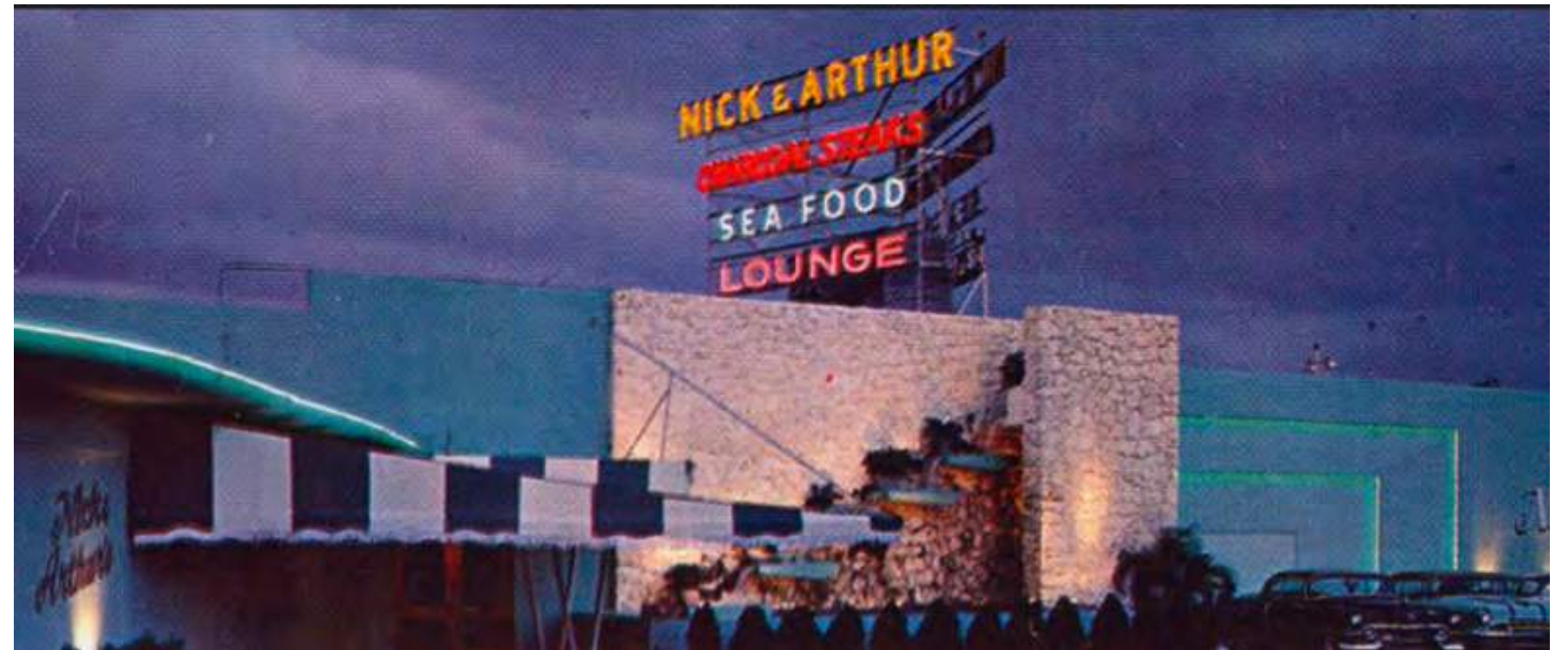


Harbor Island Spa

NORTH BAY VILLAGE HISTORY

In recent decades, a sizable inventory of empty parcels, surface parking lots, and marginal shopping centers has accumulated, especially along Kennedy Causeway, leaving passersby on the way to Miami Beach without any clear sense of the distinct identity of this place. This underutilized property provides a rare cache of prime land, much of it with water views, available for future opportunities. NBV100 seeks to unlock these by equipping the Village with the tools to become a more complete, economically successful and sustainable community that can adapt to the challenges of the 21st century.

Thanks go to North Bay Village residents who helped highlight many of the special locations and provided historic images.

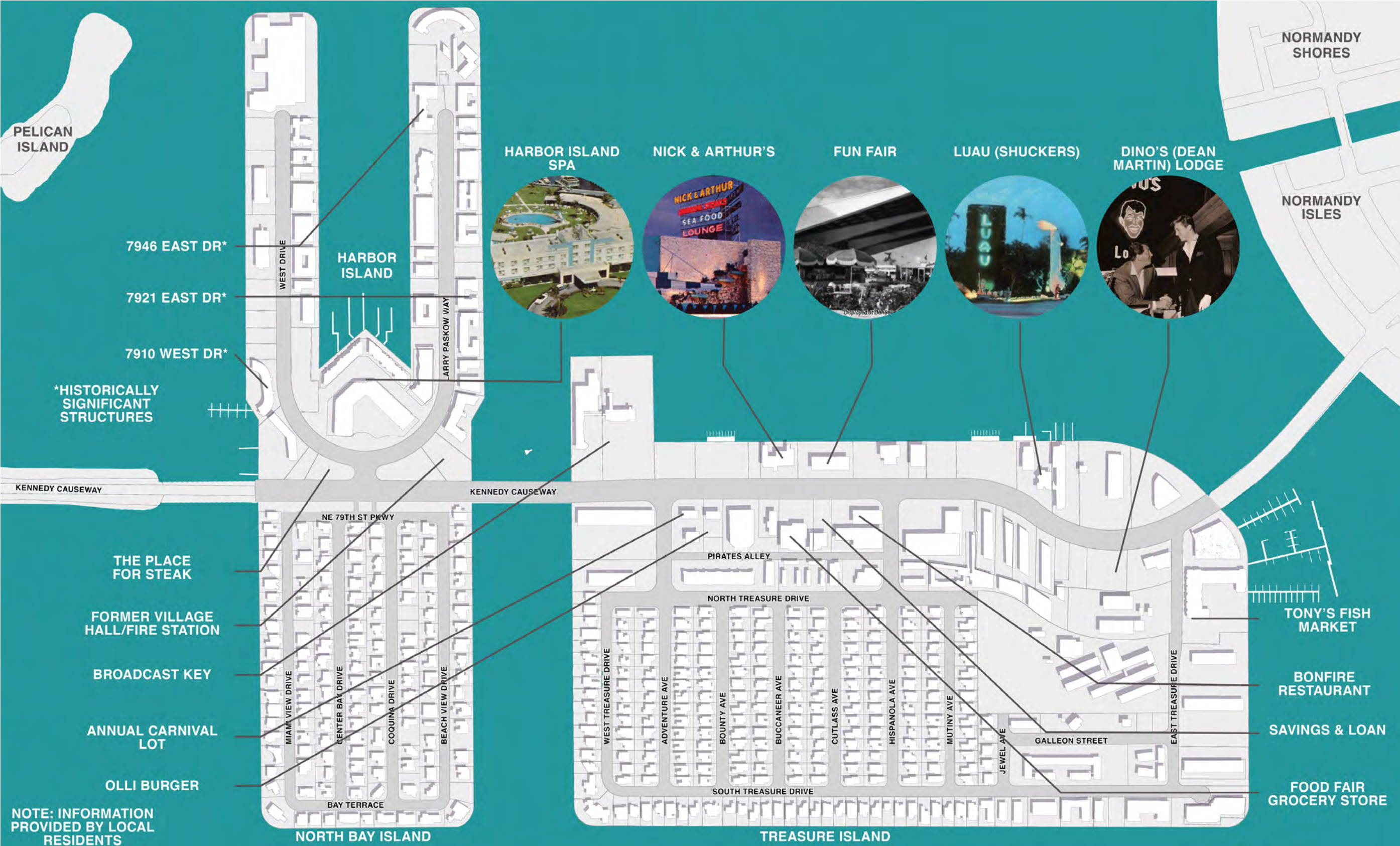


Nick & Arthur



Luau

NORTH BAY VILLAGE HISTORY

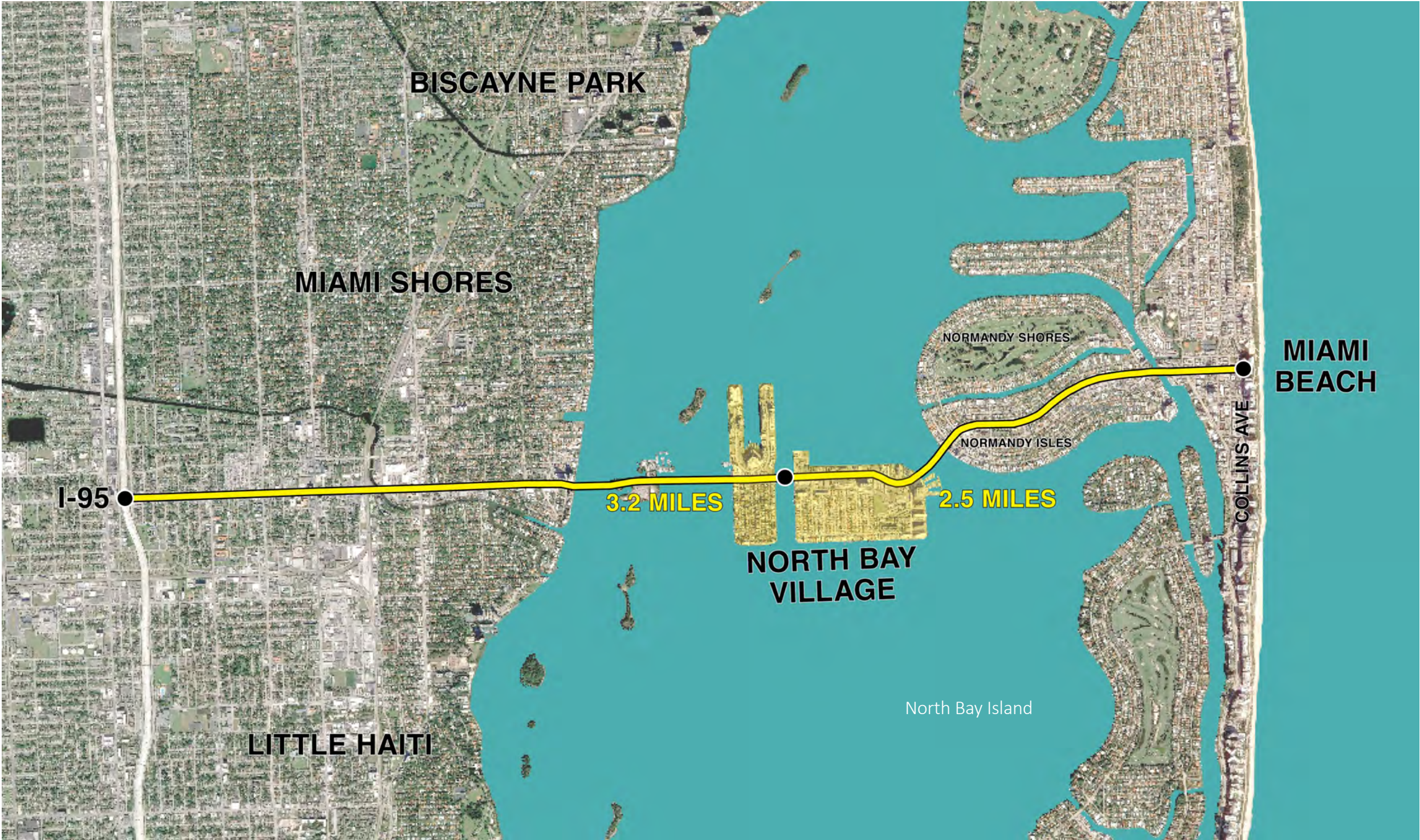


Sites significant to NBV's history

NBV100 CONTEXT

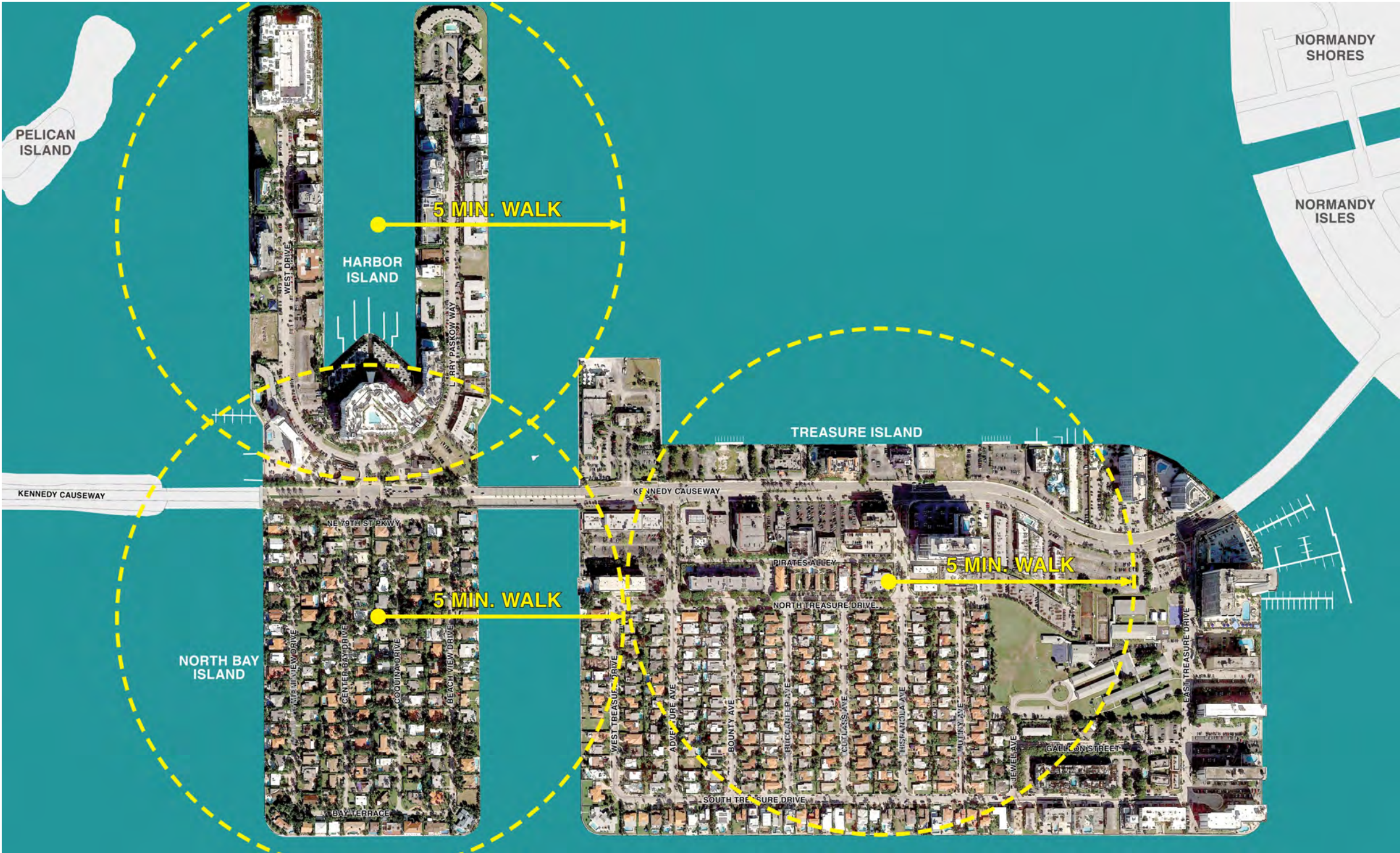


NBV CONTEXT



The position of the Village is a privileged one, both in terms of its convenient location and its beautiful setting. NBV's three islands are about three miles from the North Beach neighborhood of Miami Beach as well as the I-95 Corridor at the northern boundary the City of Miami. Set within Biscayne Bay, the Village's northern edge offers the last opportunity for major waterfront development in the region.

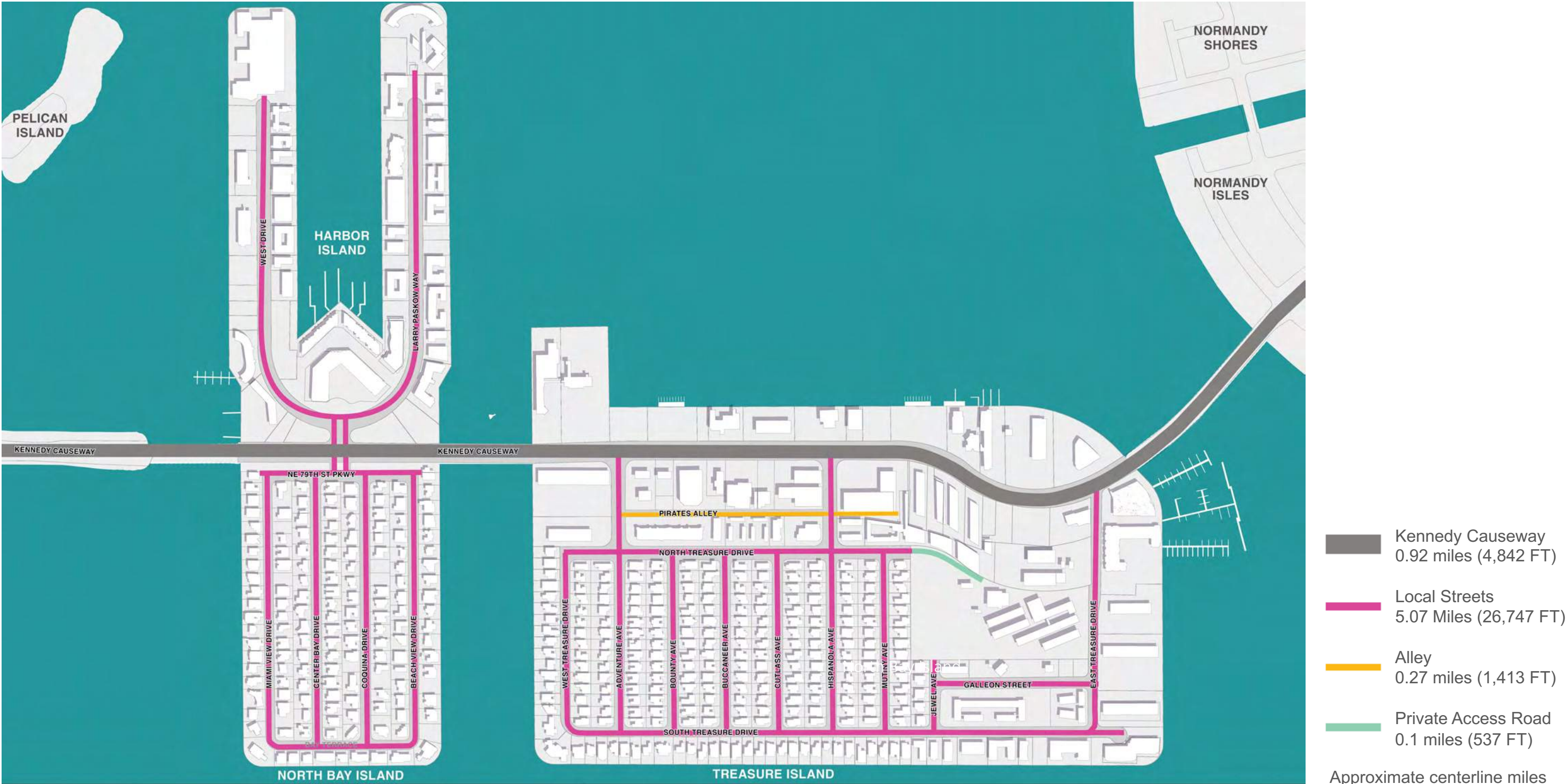
NBV WALKABILITY



NBV has the scale of three very walkable pedestrian sheds. A quarter mile is approximately a five-minute walk, which is the distance that most people will gladly walk for basic errands without hopping in their car.

Most of Treasure Island is within a five-minute walk of the current Village Hall. Most of Harbor and North Bay Islands are within a five to seven-minute walk to the Causeway.

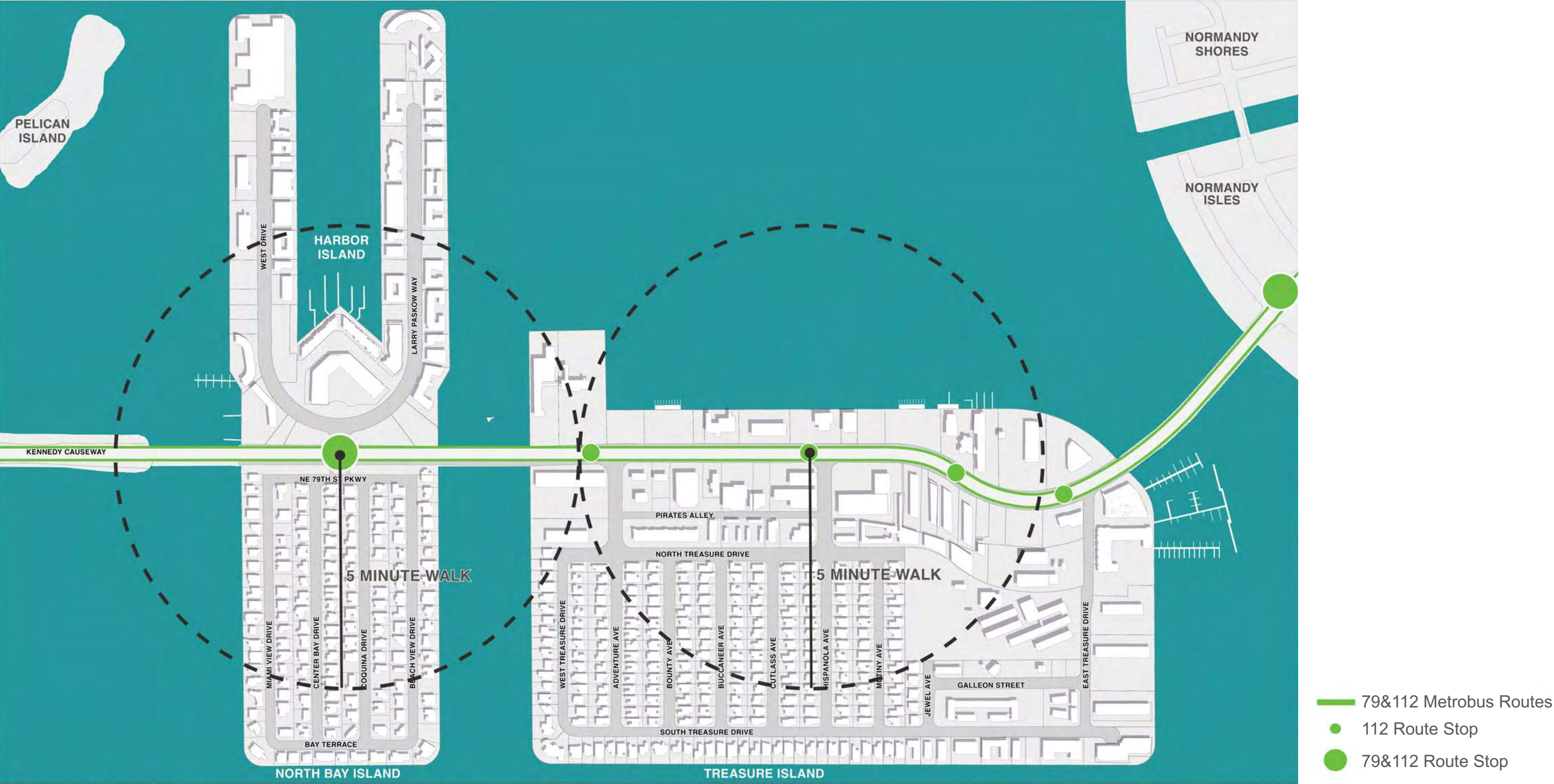
NBV STREET NETWORK



Unlike much of contemporary suburban sprawl, which is built around dead-end cul-de-sacs, large parts of the Village are blessed with networks of interconnected streets that disperse traffic and foster walkability. However, many of the blocks are too long, the connections to Kennedy are too limited, and, like most of America in the latter half of the twentieth century, the Village gave its streets over to the automobile.

Fortunately, the Village has already taken a number of early steps to restore a balance between the automobile and other modes of transportation. These include the bike lanes that were added on Kennedy Causeway, an improved major crosswalk between North Bay Island and Harbor Island, as well some attempts to improve signage, street lighting, and bus infrastructure. Additional work will be needed to increase safety and comfort for pedestrians and bicyclists.

NBV ISLAND CURRENT METROBUS ROUTES



NBV is well positioned along major transit routes that run between Miami and Miami Beach. Every resident is within a short walk of a transit stop along the Kennedy Causeway. However, residents have expressed frustration with the frequency and reliability of bus service.

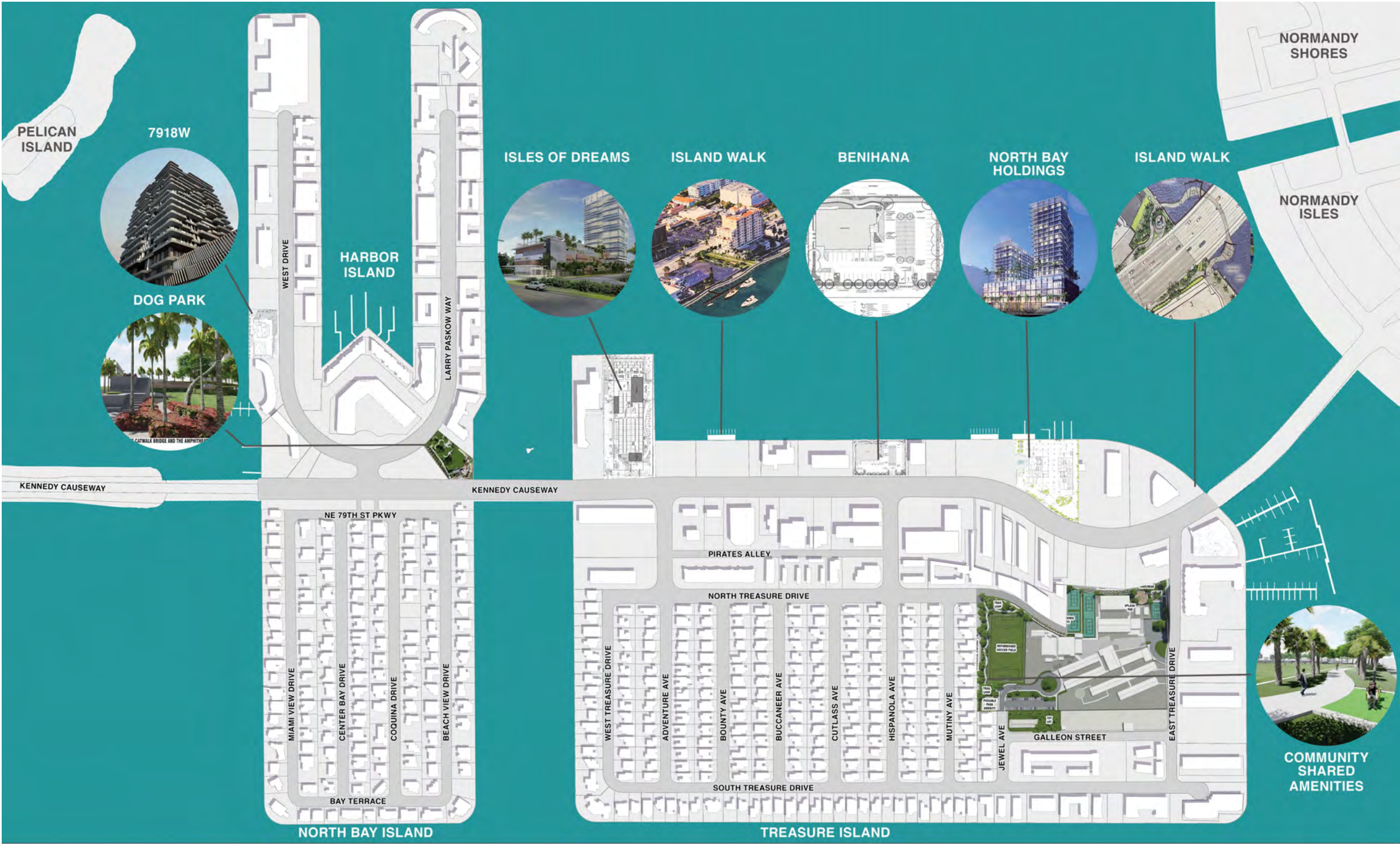
NBV OPTIMIZATION OF UNDERUSED LAND AND PARKING



NBV100 seeks to unlock the potential from a substantial amount of underdeveloped land, making it available for future opportunities. Primarily found along the Causeway, and much of it with water views, this sizable inventory includes empty parcels

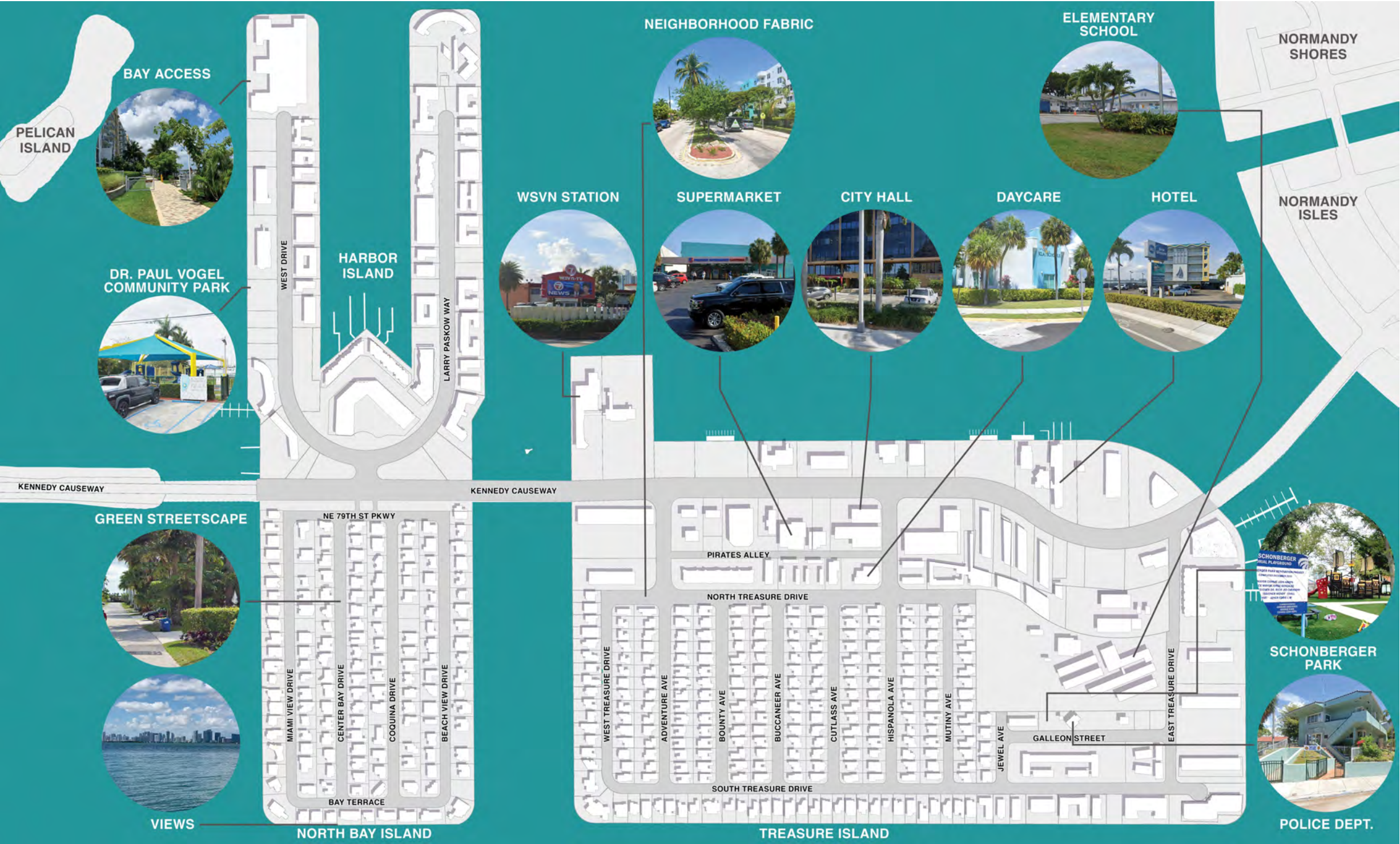
where restaurants and other uses from past decades once stood, the many visible surface parking lots, and underutilized single-use, single-story properties.

NBV PROJECTS UNDERWAY OR PROPOSED



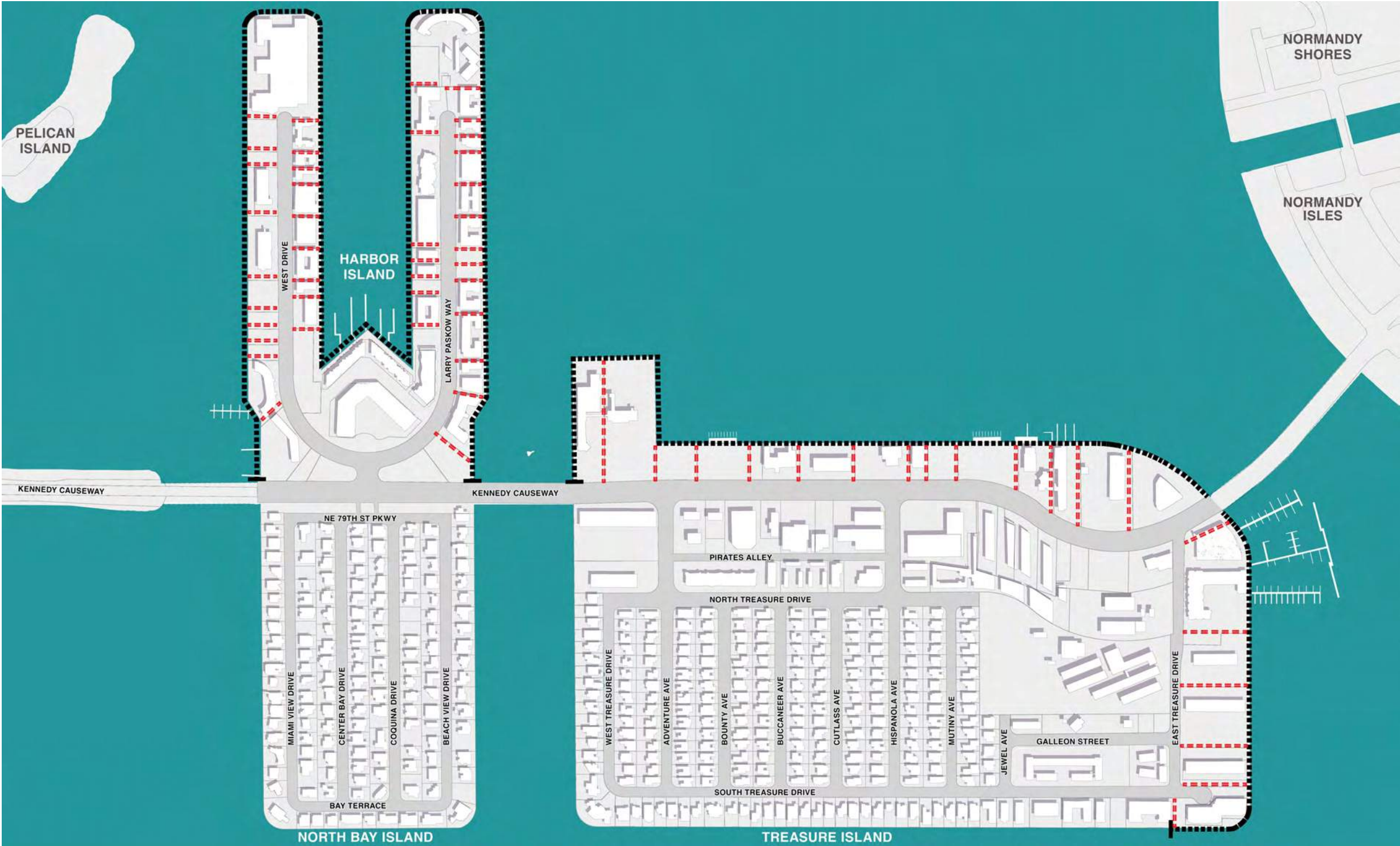
NBV needs to effectively address the current market context, while retaining the ability to evolve over time into a more resilient community. The projects above are already underway or are proposed, accommodating a variety of uses and building types. These developments will shape and enrich growth along Kennedy Causeway and may be influenced by the vision created by the NBV 100 Charrette.

NBV EXISTING ASSETS



NBV features a compelling mix of housing options, amenities, and services. The large stock of underutilized properties available is a unique opportunity to leverage existing assets with new infrastructure improvements, public art, and private redevelopments to reassert NBV's image as a complete, walkable and resilient community.

NBV SHORELINE WALKWAY



NBV has been seeking to create more connections with Biscayne Bay for several years. Under the existing land use regulations, as properties get redeveloped, a public easement along the water is granted to the Village for a public shoreline walkway. In addition, each property must provide a 5-foot wide public access connection walkway from the street. A number of easements are already on record with the Village. Eventually, much of Harbor Island and Treasure Island will be

ringed. This incremental approach is similar to that of the Riverwalk and to the waterfront access required by Maimi21, the zoning regulations of the City of Miami.

As part of NBV100, shoreline access is being reenvisioned as the Island Walk with improved standards and amenities. The Village is seeking grants to expedite its implementation. See Livability for a full description.

NBV ISLAND WALK FEASIBILITY



This is a preliminary study carried out by DPZ during the charrette of existing conditions based on observations of Google Earth and Google Maps imagery. More research needs to be conducted to determine the feasibility of a continuous Island Walk. This work should be coordinated with existing easements on record with the Village.

The Village is now seeking grants to fund the construction of a continuous stretch of the Island Walk north of Kennedy on Treasure Island as a single coordinated project. EAC Consulting will assess the existing conditions and provide design standards.

LIVABILITY



ENHANCE A SENSE OF COMMUNITY AND FOCUS ON PLACEMAKING



PRIORITIZE PEOPLE OVER CARS



EMBRACE THE WATERFRONT



IMPROVE THE QUALITY OF LIFE



SYNERGIZE PUBLIC SPACE TO REFRESH NBV IDENTITY

PRIORITIZE PEOPLE OVER CARS

Transform NBV thoroughfares into complete streets committed to the comfort, safety and convenience of pedestrians and bicyclists of all ages



Precedent – West Palm Beach, FL



Precedent – Naples, FL



Precedent – Galleon St., NBV, FL

PRIORITIZE PEOPLE OVER CARS

KENNEDY CAUSEWAY TRANSFORMATION FROM HIGHWAY TO BOULEVARD

An important goal of NBV100 is to modify the Kennedy/79th Street Causeway into a complete street that better serves the Village's core, prioritizing the safety of its residents, the coherence of its multi-modal network, and the success of local businesses. The character of this thoroughfare will be transformed from that of a highway into that of a boulevard.

As with other east-west corridors connecting the Miami mainland with the barrier island that is Miami Beach, Kennedy Causeway is the community's main commercial hub. However, unlike Kane Concourse in Bay Harbor Islands to the north and Arthur Godfrey Road in Miami Beach to the south, Kennedy Causeway has not enjoyed the same success as a retail or business address. The problems are twofold: a roadway design that is not pedestrian-friendly and a zoning code that has precluded the creation of a well-defined, continuous, and coherent walking experience.

At Kane Concourse in Bay Harbor Islands, the 1,300-foot long commercial zone is primarily defined by two-story, mixed-use buildings that are allowed to sit side by side. Continuous frontages on both sides of the street create the sense of being in an outdoor room. Separated by a landscaped median, the four travel lanes permit an efficient, high-volume of traffic that nevertheless coexists comfortably with shoppers, diners and pedestrians because the traffic is not high-speed. The broad sidewalks encourage walking, while a layer of on-street parking protects pedestrians from the travel lanes. A similar condition exists on Arthur Godfrey Road/41st Street in Miami Beach's Mid-Beach neighborhood. A 1,000-foot stretch of retail features mostly two-story buildings and on-street parking. Both neighborhood centers provide ample parking in rear lots or garages behind the shopfronts. This parking is easily accessible but screened from view.

In North Bay Village, the 2,000-foot stretch of Kennedy Causeway on Treasure Island should be a bustling, walkable Village center. However, its six high-speed travel

lanes, narrow sidewalks, deep building setbacks, and parking in large exposed lots provide an unsafe pedestrian experience. In addition, its discontinuous, uncoordinated series of building fronts are not aligned and are too far apart to contain the space around them. The result is an unpleasant physical environment that does not create a memorable sense of place. It does not invite residents to stroll or entice passers-by to stop and visit.

NBV100 addresses this two-fold problem along Kennedy. Every effort will be made to reshape the roadway so that it includes on-street parking and fewer travel lanes. At the same time, the zoning rules for building placement will be rewritten so that, as Kennedy is redeveloped, it will be framed with continuous, active frontages and wide sidewalks.

As seen in higher density communities like Brickell and Sunny Isles Beach, a walkable, human scale is a challenge amidst high-rise towers. A comfortable pedestrian environment typically requires a street or plaza to be within certain proportions. Ideally, the space should be at least two stories in height, but no taller than it is wide. To create this experience along Kennedy, the form-based revisions to the NBV Zoning Code will coordinate the height, orientation, and placement of high-rises to ensure that the towers are set back from Kennedy. Stepping forward to define the smaller-scale street edge, a required transitional podium of two to five stories would provide the base for each tower. In addition, mandatory habitable ground floor spaces, wider sidewalks, as well as galleries, awnings and shade trees, would work in concert to provide to a more continuous, active, and pleasant public realm.

Reshaping the Street:

Kennedy is a state road and is not controlled by the Village, so it has been important to engage FDOT from the outset. Through the NBV100 process, there have been several meetings with the regional leadership of FDOT in District 6. These revealed some surprising good news, namely that FDOT has already assigned Kennedy a context

classification of a C-4 Urban General² roadway as per FDOT's Context-Sensitive system of Complete Streets.¹ This means that, in spite of Kennedy's current condition, FDOT intends Kennedy to be a pedestrian and bicycle-friendly neighborhood street, along the lines of Kane Concourse and Arthur Godfrey Road. At least on paper, FDOT's goals for Kennedy therefore already support the NBV100 vision.

Among other things, a curb-to-curb restriping of the Causeway is proposed. The goal is to accommodate current traffic capacity, but at a slower speed, and possibly permit a reduction in travel lanes. One travel lane in each direction would be converted to on-street parking, which is so vital to successful retail and helpful to walkability. The Village has already initiated a traffic study to confirm whether this is feasible.⁴

Pending further analysis, it may even be possible to have Kennedy reassigned to a C-5 Urban Center context classification.³ This is desirable because it would be even more in the spirit of the NBV100 master plan. The C-5 standards would help foster the type of walkable, mixed-use, small-block urban fabric that is characteristic of a downtown, such as that called for in the master plan.

¹ For more information on this subject, please visit the interactive FDOT Website, *ConnectPed Public*(<https://fdot.maps.arcgis.com>), which contains data for all major roadways.

² C-4 is a context consisting of a mix of uses set within small blocks with a well-connected roadway network. It may extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.

³ C-5 is a context consisting of a mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.

⁴ Because the changes would be created through restriping, all lanes will be available for hurricane evacuation.

PRIORITIZE PEOPLE OVER CARS

KENNEDY CAUSEWAY TRANSFORMATION FROM HIGHWAY TO BOULEVARD

Key changes to accomplish the transformation would be the following:

Inside the R.O.W.: Lane reductions, parallel parking, protected bicycle lanes, and improved intersections.

To make the Causeway easier to cross, help slow down traffic speeds, and make bicycling safer, the master plan proposes a lane reduction in each direction. This would allow for on-street parallel parking, which would afford protection to both pedestrians and the underutilized bicycle lane currently deemed unsafe by residents. This on-street parking is also vital for ground-floor retail. At key intersections, coloring and restriping would increase awareness and clarify the path of travel for all users. Other improvements will include delayed left turns, audible beaconing, better synchronization of streetlights, and replacement and relocation of bus shelters.

Outside the R.O.W.: Wider sidewalks.

For greater pedestrian comfort, the Causeway needs sidewalks that are wider than the current 5 ft. One way to expand them is to reduce the existing setbacks, which are currently excessive (40 ft. on the north side and 60 ft. on the south side) to 20 ft. on both sides. As properties get redeveloped, a 20 ft. easement would be dedicated for public access that could in effect widen the sidewalk to at least 25 ft. With parking primarily located in lots or structured decks behind and above the shopfronts, the businesses would have more continuous shopfronts and, thus, greater visibility along the Causeway.

An added benefit of the reduced setbacks is that it would help spur development by allowing significantly more buildable area, making development more attractive on the remaining empty lots, many of which are shallow. The Village would benefit from filling empty lots and increasing the tax base.



Precedent:
Kane Concourse,
Bay Harbor Islands, FL



Existing:
Kennedy Causeway
Inside the R.O.W.



Proposed:
Kennedy Causeway
Inside the R.O.W.



Historical:
Kennedy Causeway



Existing:
Kennedy Causeway
Outside the R.O.W.



Proposed:
Kennedy Causeway
Outside the R.O.W.

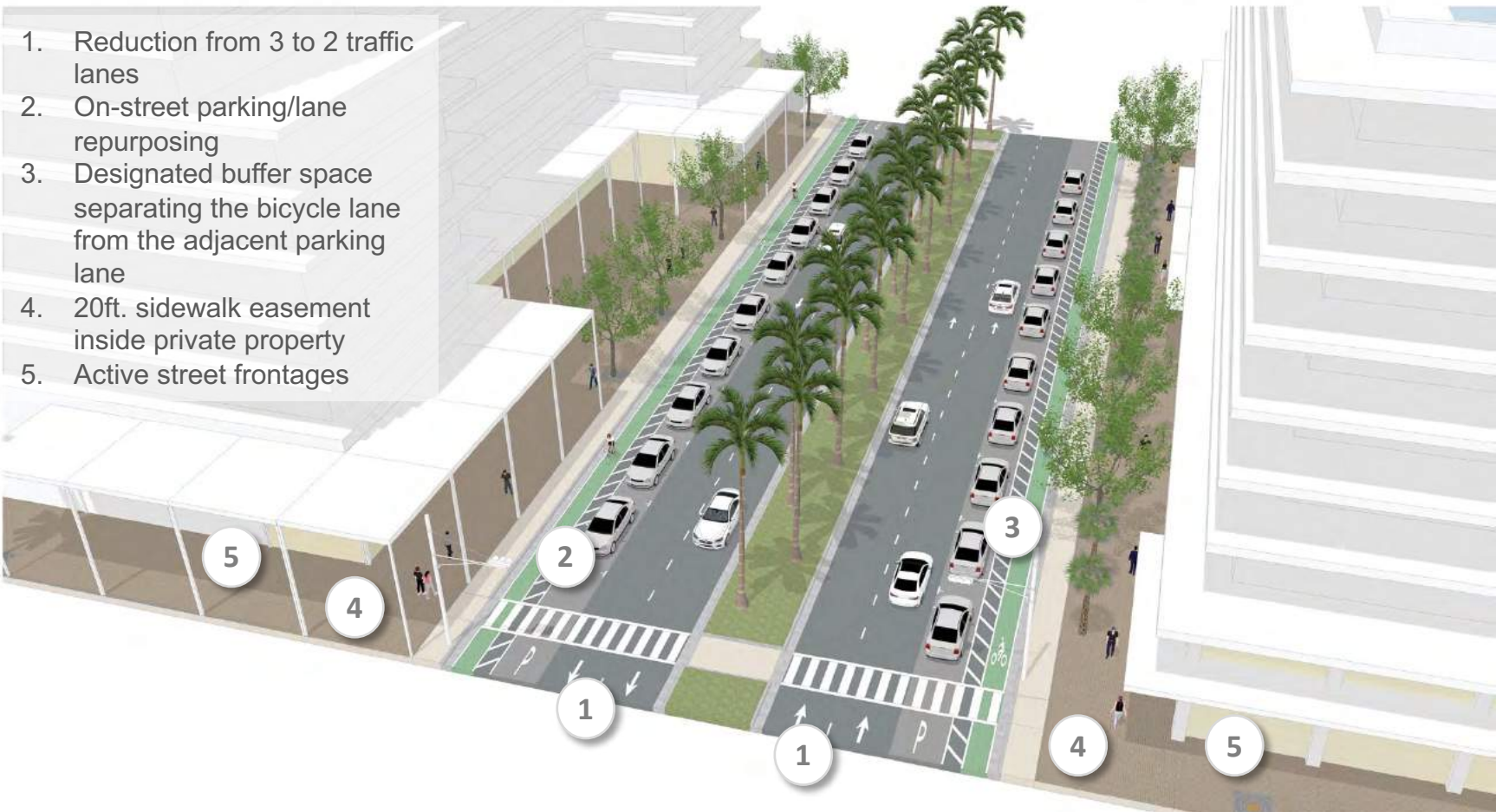
PRIORITIZE PEOPLE OVER CARS

KENNEDY CAUSEWAY AT TREASURE ISLAND

As described on the preceding pages, a primary goal of NBV100 is to transform the Kennedy Causeway into Kennedy Boulevard – a complete street that prioritizes walkability, a diverse range of transportation options, and the success of local businesses. Illustrated below are the Causeway’s existing conditions. To the right is a schematic representation of what the Causeway could become. The following pages show renderings of this proposed scenario and recommended improvements to intersections on Treasure Island.



Existing Conditions



Proposed Scenario: On-street Parking Protecting Bicycle Path

PRIORITIZE PEOPLE OVER CARS

COMPLETE STREET TRANSFORMATION – FROM HIGHWAY TO BOULEVARD



Existing conditions along Kennedy:
High-speed road, unsafe for pedestrians and bicycles.



Short, thick bollards protect a bicycle lane in NYC



Half-wheels protect a bicycle lane in Seville, Spain

Short-term transformation – bicycle and pedestrian safety improvements:

Safety bollards, delayed left-turn, audible beaconing, and synchronization of traffic lights.

<https://peopleforbikes.org/blog/tech-talk-19-beautiful-ways-to-protect-bike-lanes-photos/>



Mid-term transformation of Kennedy – landscape and streetscape improvements:

Lane repurposing to provide on-street parking, designated buffer space separating the bicycle lane from the adjacent parking lane, LED street lighting that is scaled for the sidewalks – not for the roadway, increased tree canopy and vegetation.

PRIORITIZE PEOPLE OVER CARS

COMPLETE STREET TRANSFORMATION – FROM HIGHWAY TO BOULEVARD



Long-term transformation of Kennedy – creating a boulevard:
20ft. sidewalk easement inside private property, active street frontages, and sidewalk dining.

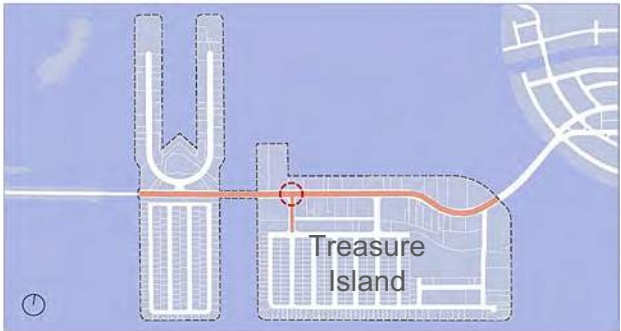
PRIORITIZE PEOPLE OVER CARS

MAKE KENNEDY CAUSEWAY INTERSECTIONS SAFER – SCENARIO ONE

The two scenarios illustrated on this and the facing page have several things in common. In both, the bus stop is relocated away from the intersection. In so doing, vehicular movements are improved and pedestrian crossings are made easier. And in both, substantial improvements are achieved simply with a restriping, i.e., paint. This low-cost approach does not involve the relocation of curbs and pavements. Regardless of which direction NBV chooses to follow, there will be the opportunity to try out the new design. Down the road a few years, if there is consensus that this is an improvement, the Village may decide to make more substantial investments in relocating curbs and narrowing the pavement.

Before NBV decides on a particular direction, we recommend that both scenarios be investigated. Consult city records or a surveyor to determine the precise boundaries of the right-of-ways. Refer to the design options presented in this report for the bus shelter. Note that both scenarios are concept designs only. Either would need to be reviewed and adjusted by the appropriate professionals including a traffic and civil engineers.

In Scenario One, the bus stop remains west of the intersection. This option may be slightly less disruptive, especially if the project is carried out in the short term before any redevelopment takes place. It appears that there is extra space in the right-of-way as Kennedy jogs slightly before crossing the bridge. This is helpful because the typical existing sidewalks along Kennedy are too narrow to accommodate a bus shelter within the width of the sidewalk without encroaching on private property. The extra space is likely the reason that the bus stops were located on this block in the first place.



Existing Conditions

Scenario One: Bus Stop Remains On West Side Of Intersection

1. Bus shelters moved away from intersections and other significant vehicle entrances
2. Bikes must yield to pedestrians and buses
3. Smaller curb radii to slow vehicles turning across the bicycle path and pedestrian crosswalk
4. Protected intersection, also known as a Dutch intersection
5. Merge lane (from 3 to 2 lanes)
6. On-street parking to protect bicycle path and pedestrians
7. Pedestrian safety islands

Note: Bus stop locations are in accordance with current conditions and space available.

PRIORITIZE PEOPLE OVER CARS

MAKE KENNEDY CAUSEWAY INTERSECTIONS SAFER – SCENARIO TWO



In Scenario Two, the bus stop is relocated to the other side of the intersection. In some ways, this scenario is preferable because the bus stop will be located closer to existing services such as the grocery store and closer to the anticipated future Village Center.

Scenario Two may be slightly more challenging to implement in the short term because the existing right-of-way appears to be narrower on this block. As noted previously, the existing sidewalks are too narrow to accommodate a bus shelter. Also, curb

cuts may need to be relocated. However, the adjacent property owners may be happy to locate the bus shelter on their properties because of the increased foot traffic and because the proposed designs would draw positive attention.

It is anticipated that many of the properties along Kennedy will be redeveloped. When this happens, implementation should be easy. Under the new code, new easements will allow the sidewalks to be expanded twenty feet onto the adjacent properties. There will plenty of space for a bus shelter.

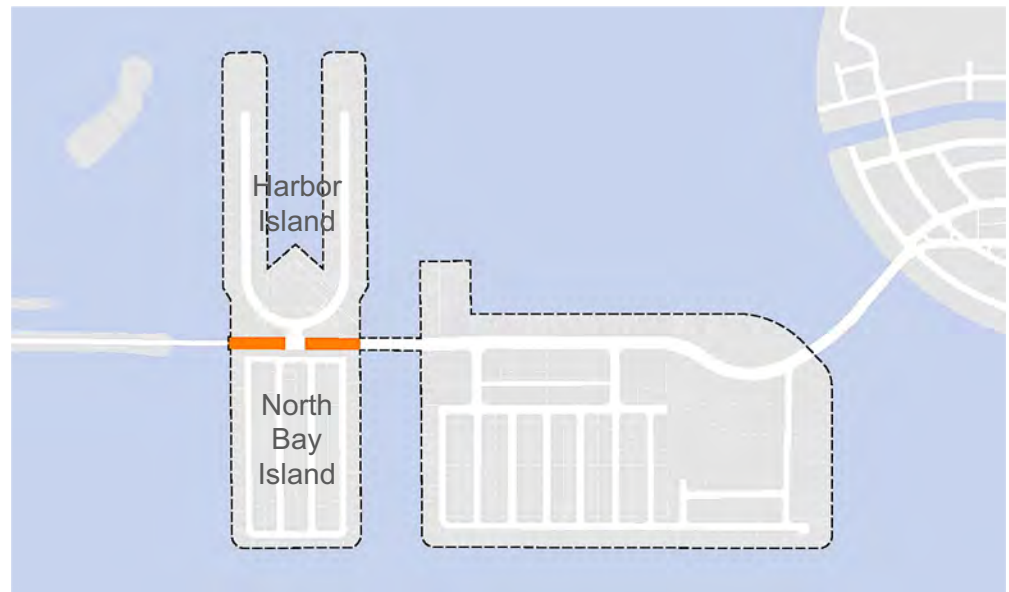
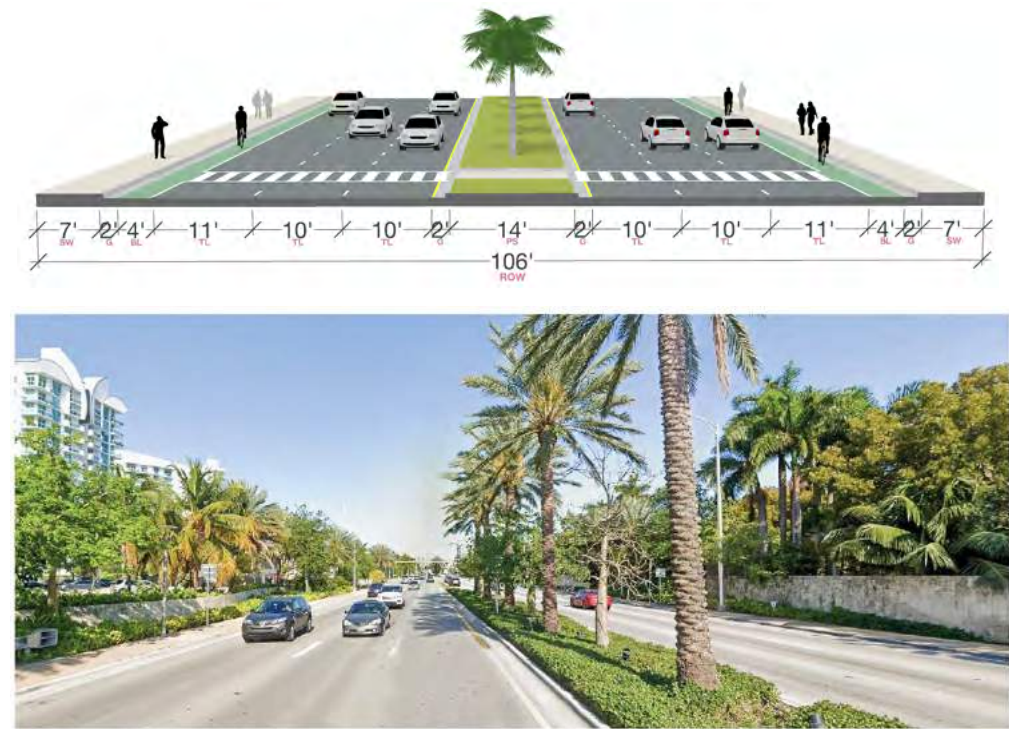
- Scenario Two: Bus Stop Relocated To East Side Of Intersection**
1. Existing bus shelters
 2. Bus shelters to be moved to east side of the intersection
 3. Bicycles must yield to pedestrians and buses
 4. Smaller curb radii to slow vehicles turning across the bicycle lane and pedestrian crosswalk
 5. Protected intersection, also known as a Dutch intersection
 6. Merge lane (from 3 to 2 lanes)
 7. On-street parking to protect bicycle lane and pedestrians
 8. Pedestrian safety islands

Note: Proposed bus stops east of Adventure Ave. are only possible if existing parking lot entrances are reconfigured.

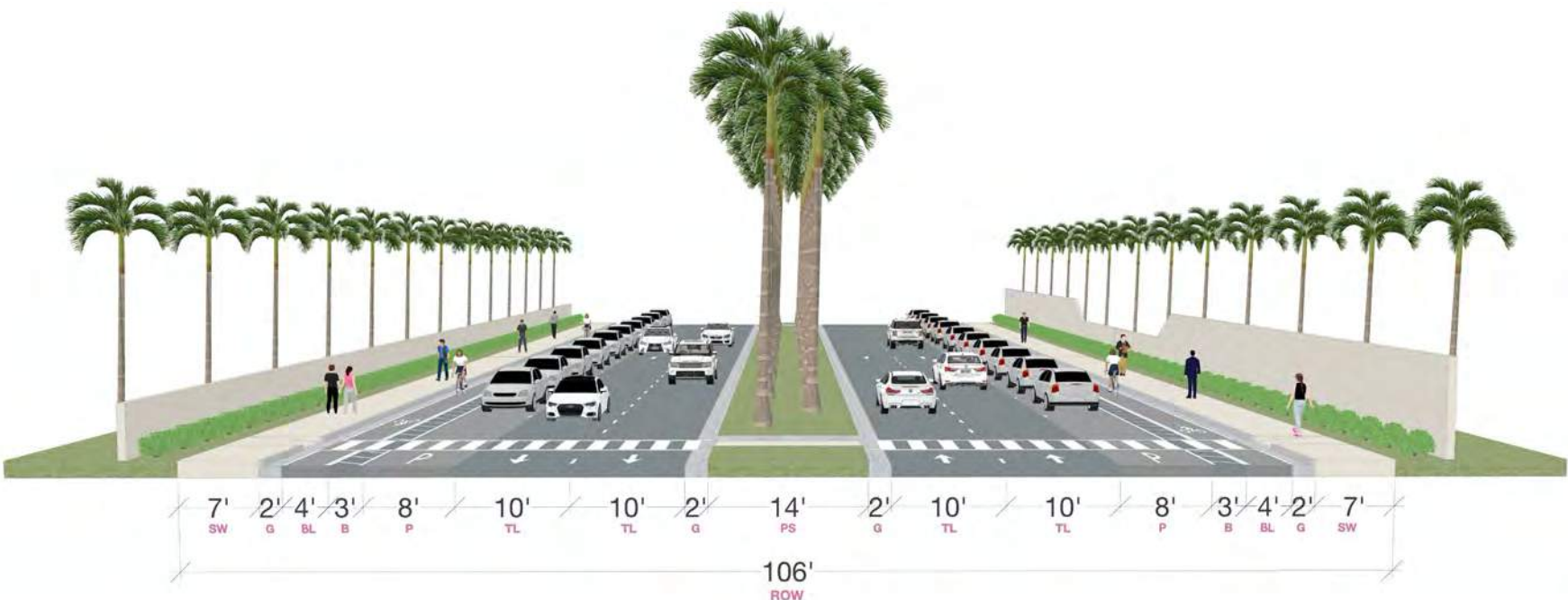
PRIORITIZE PEOPLE OVER CARS

KENNEDY CAUSEWAY AT HARBOR AND NORTH BAY ISLANDS

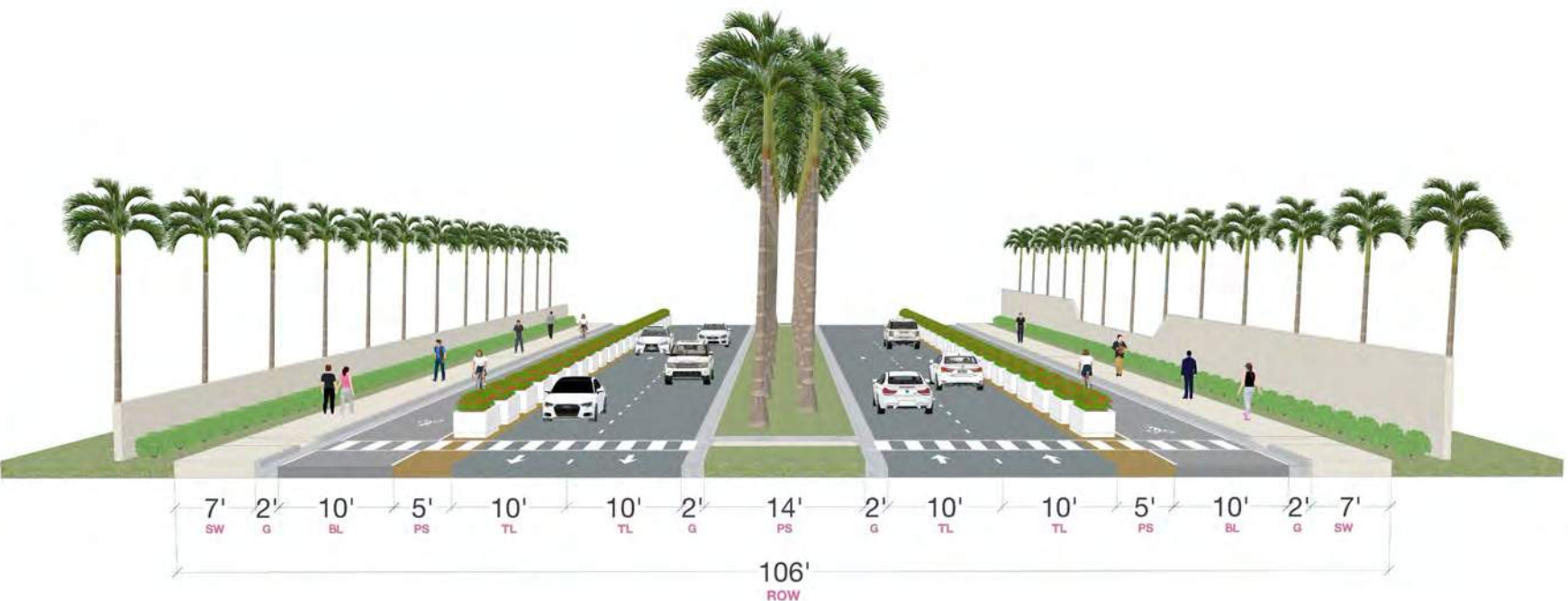
Illustrated below are the Causeway’s existing conditions as it crosses Harbor and North Bay Islands. To the right are proposed scenarios for the retrofit of this section of road.



Existing Conditions



Proposed Scenario One: On-street Parking Protecting Bicycle Path.
This scenario includes the following strategies: lane repurposing to provide on-street parking; designated buffer space separating the bicycle lane from the adjacent parking lane; increased tree canopy and vegetation.

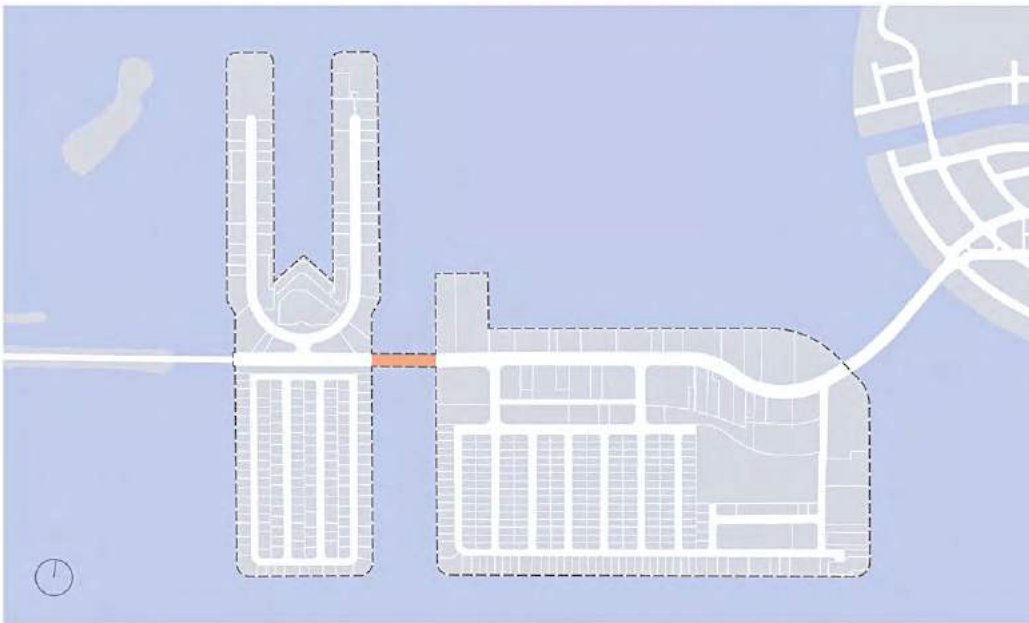


Proposed Scenario Two: Planters Protecting Bicycle Path.
This scenario includes the following strategies: lane repurposing to provide a more generous bicycle lane and buffer zone; increased tree canopy and vegetation. Bicycle lanes have been provided with enough width to accommodate car traffic when necessary.

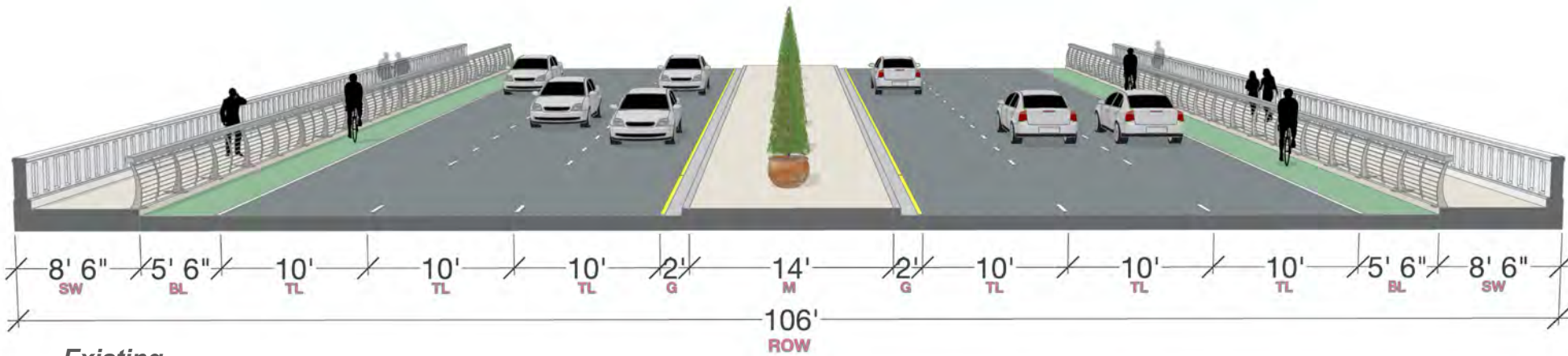
PRIORITIZE PEOPLE OVER CARS

KENNEDY CAUSEWAY BRIDGE

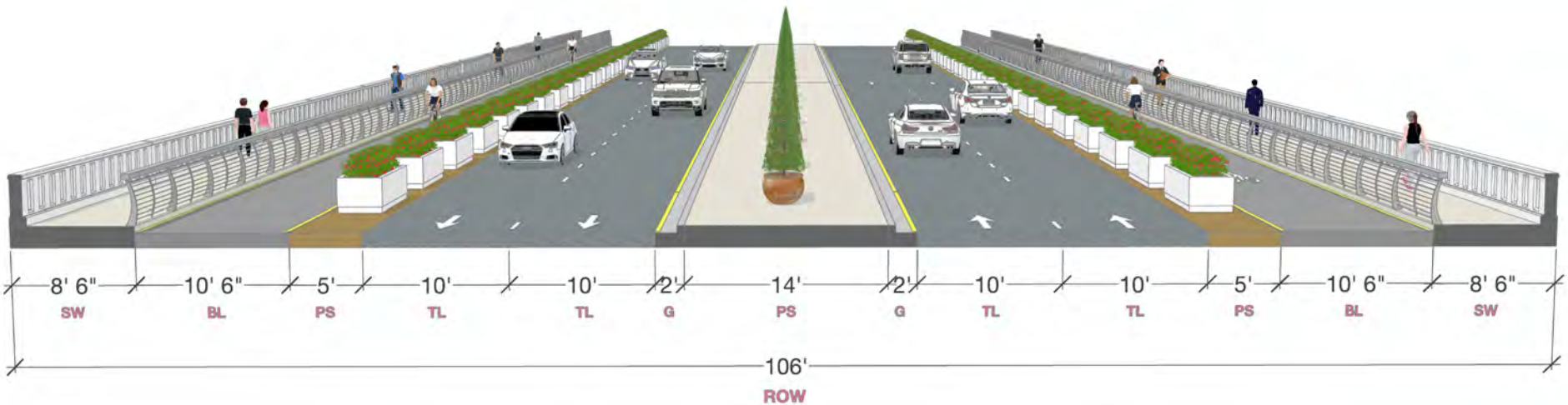
Illustrated below are the Causeway’s existing conditions as it approaches Treasure Island. To the right is the proposed retrofit for this bridge.



Existing Conditions



Existing



Proposed Scenario: Planters Protecting Bicycle Path
This scenario includes the following strategies: lane repurposing to provide a more generous bicycle lane and buffer zone, and semi-permanent planters within the buffer zone. Bicycle lanes have been equipped with enough width to accommodate car traffic when necessary.

EMBRACE THE WATERFRONT

Enable public accessibility and walkability of
NBV's privileged island waterfront



Treasure Island Waterfront



Harbor Island Waterfront

EMBRACE THE WATERFRONT

PRIOR AND EXISTING INITIATIVES FOR PUBLIC SHORELINE ACCESS: THE BAY WALK

The Village has been seeking to improve connections with Biscayne Bay for a number of years. For some time, existing NBV zoning regulations have required that new developments provide a shoreline walkway. Within the 25-foot setback mandated by the County on all waterfront properties, a 10-foot wide easement for public shoreline access has been required. This applies whenever waterfront properties get redeveloped with multi-family or mixed-use projects. In 2018, this requirement was extended to purely commercial waterfront projects as well, which includes hotels. As properties get redeveloped over time, this will eventually result in a continuous path around most of Treasure Island and all of Harbor Island – indeed, everywhere in NBV, except in the single-family districts. Previously, this initiative was sometimes called the Bay Walk.

A number of properties have complied over the years and the Village maintains a list of all easements on record. Unfortunately, many of them are still discontinuous, and, according to some residents who raised their concerns during the charrette, not all are open to the public, as they should be. Complaints were made about enforcement.

In addition to these zoning requirements, the Village has previously attempted to find funding to expedite the construction of a continuous stretch of the shoreline walkway north of Kennedy. This ambitious scheme would have run continuously both on land and over water with numerous boat docks. While this effort appears to have received some preliminary blessings from local regulators, who generally recognize that NBV is in need of greater public access to the water,

adequate funding was never located. In any case, it is not clear that locating so much of the project within the riparian right-of-way would ever have been approved by the County.

It turns out that the existing requirement for a 10-foot wide easement is a bit narrow. Take, for example, the Biscayne Bay Path in Miami Beach. (See photo this page.) Though a nice amenity, it is close to 10 feet in width and feels a bit tight. It lacks space for plantings and benches, let alone outdoor restaurant seating. (See photo.) It can afford to be narrow because Miami Beach already offers so much public access to the water in the form of the beaches, Lummus Park, South Pointe Park and the Boardwalk. By contrast, it is widely acknowledged that NBV is starved for water access. The Island Walk needs to shine.



The recently opened Benihana implemented the existing shoreline access requirements, which is 10 feet wide.



Biscayne Bay Path in Miami Beach features a narrow easement without adequate space for plantings and benches.

EMBRACE THE WATERFRONT

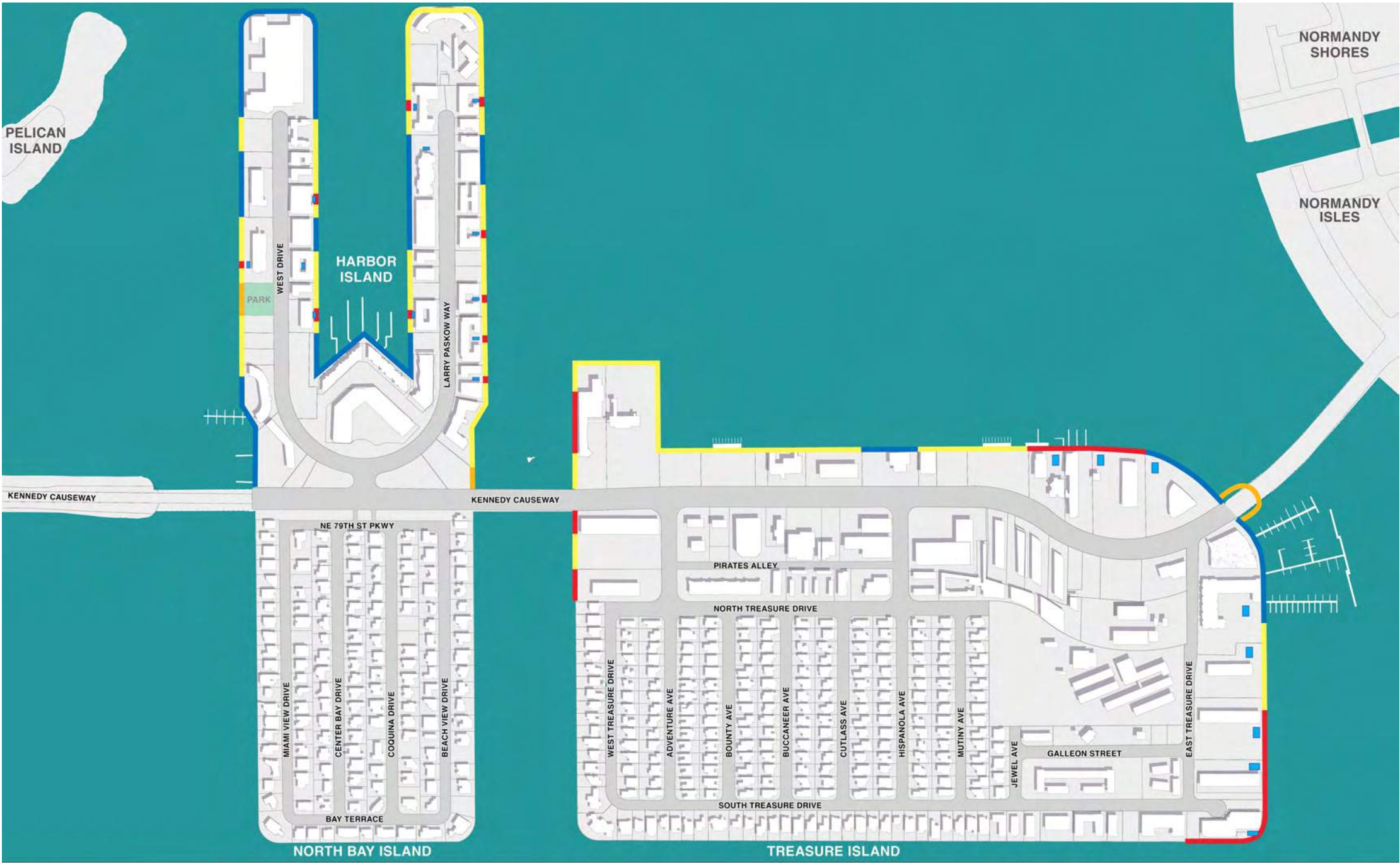
PRIOR AND EXISTING INITIATIVES FOR PUBLIC SHORELINE ACCESS: THE BAY WALK

Several developers who have been interested in investing in NBV for years have expressed positive sentiments about the idea of a public shoreline walkway. In fact, they view it as a positive amenity that would increase the value of their properties. Indeed, they produced renderings in recent years for some hypothetical projects along Kennedy that feature an on-land version of the walkway prominently.

NBV secured funding for the design of a waterfront pedestrian bridge under the Causeway that would make a difficult connection between two portions of a future walkway.



*Preliminary Design for Waterfront Pedestrian Bridge under the Causeway to connect future sections of the Island Walk.
Design by Kimley Horn.*



Note: This diagram has been prepared based on observations of Google Earth and Google Maps imagery. As such, some properties may be mischaracterized. Actual conditions should be verified.

- Private Land - Completely Built
- Public Land - Completely Built
- Private Land - Unobstructed Implementation
- Public Land - Unobstructed Implementation
- Private Land - Difficult to Implement
- Public Land - Difficult to Implement
- Pool

EMBRACE THE WATERFRONT

ISLAND WALK: INTRODUCTION

The Village has decided to take a well-intentioned initiative for shoreline access and make it better, weaving it into the NBV100 vision. Even before the charrette began, the Village rebranded the shoreline walkway as the Island Walk. The previous name was too similar to amenities offered by neighboring communities. The new name calls attention to the distinct nature of North Bay Village as a collection of three small islands.

The proposed design for the new Island Walk builds on the Miami21 Waterfront Design Guidelines written in 2009 and the current North Bay Village Waterfront Standards. The width of the Island Walk easement will be increased from 10 feet to 18 feet overall so that it will afford a more pleasant pedestrian experience as well as

a variety of other experiences that are desired by the residents of NBV.

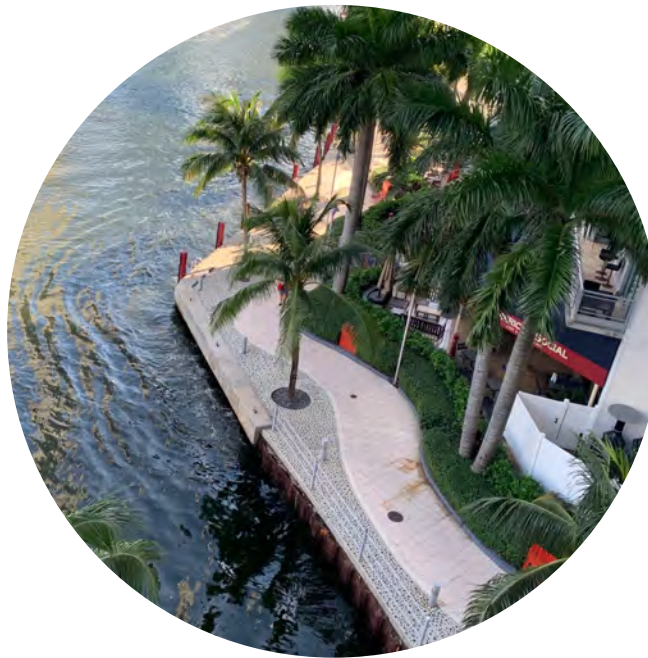
Restaurants and retail will be encouraged to front the new Island Walk. Outdoor seating for restaurants will enliven the experience. To facilitate this and other creative uses of the space, flexibility on the placement of the 18 ft. easement within the 25 ft. setback will be allowed. The default location of the easement will typically be adjacent to the water, but it can meander anywhere within the setback. This will allow for other supporting uses, such as small kiosks for food and retail. In some cases, there may be restaurant seating along the water's edge.

In addition, property owners will be encouraged to secure underwater land leases from the State of Florida to construct docks which can be used for restaurant seating, while kitchens and other facilities will remain in the buildings behind the setback, similar to Shuckers, an NBV institution and one of the oldest and most beloved waterfront restaurants in the area.

It is always preferable to construct the Island Walk on land, but this may not be possible in some cases because of existing obstructions. These might include buildings or swimming pools built within the setback. In these cases, an over-water version may be proposed.



*Precedent –
South Pointe Bay Walk, FL*



*Precedent –
Riverwalk in Miami*



*Precedent –
Riverwalk in Miami*

EMBRACE THE WATERFRONT

ISLAND WALK: PRECEDENT IMAGES – SEATING SEPARATED BY A PEDESTRIAN PATH

Both locally and around the world, some of the best places to eat are restaurants with outdoor seating that happens to be separated from the kitchen by a pedestrian path. Waitstaff routinely cross the path without incident. The eateries along Lincoln Road and Smith & Wollensky in South Pointe Park are excellent examples. Note that, in addition to pedestrians, bicyclists and skateboarders routinely use the path in South Pointe, and vehicles use the street in the Sicilian example below. They instinctively slow down in these zones. Private docks with boat slips can also be accessed easily from the Island Walk. Access can be controlled with simple chains or gates.



*Lincoln Road,
Miami Beach*



*South Pointe Park,
Miami Beach*



Sicily, Italy



Venice, Italy



*Giralda Avenue,
Coral Gables*

EMBRACE THE WATERFRONT

THE ISLAND WALK: DETAILING AND DIMENSIONING OF WATERFRONT PROMENADE

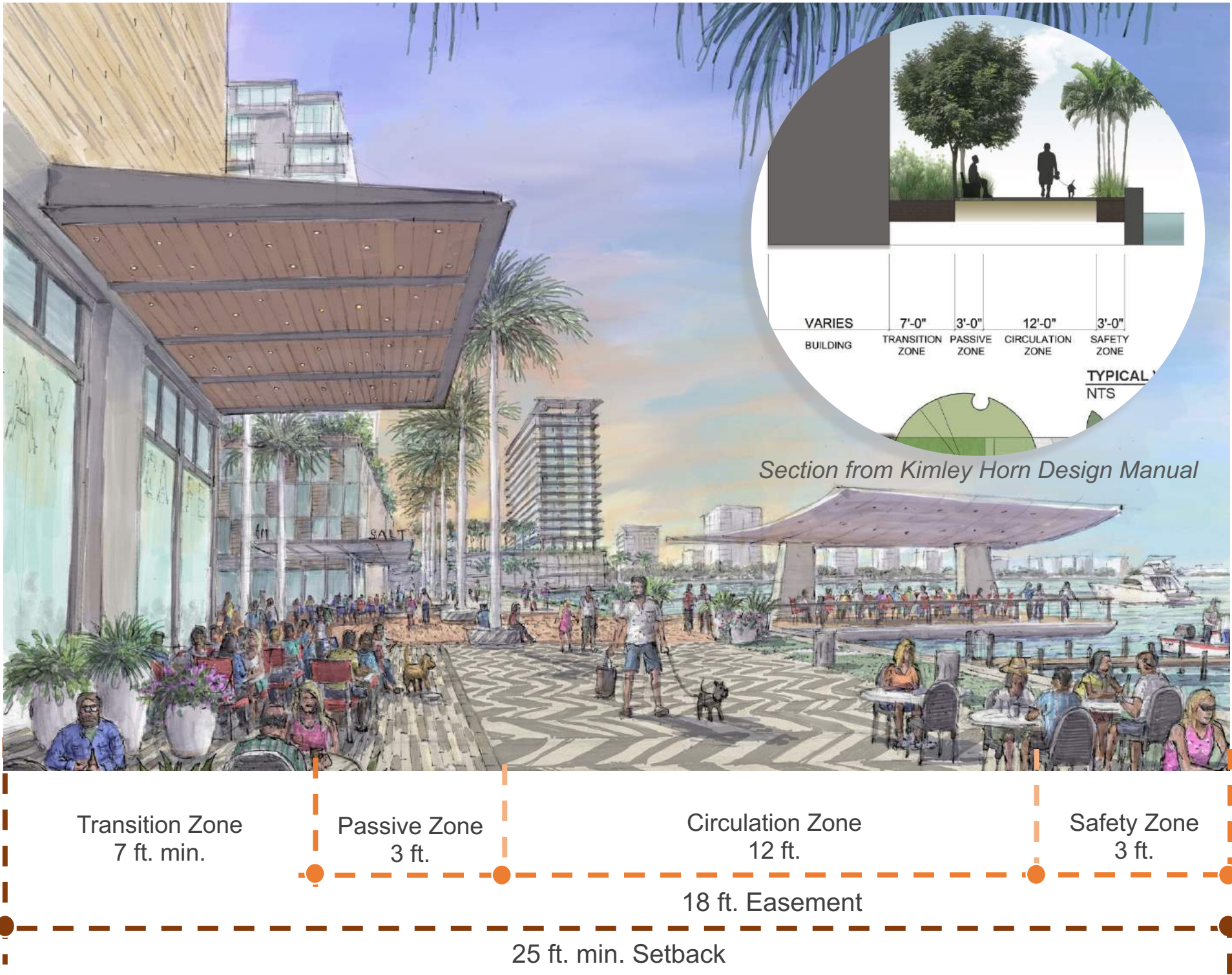
The overall easement is 18 ft. wide, set within a 25 ft. setback. The easement consists of three zones.

The **Circulation Zone** is in the center of the easement and is 12 ft wide (min.) To provide a memorable identity, it is paved with a distinctive design in the spirit of the patterns of Ipanema and Copacabana Beaches in Rio de Janeiro, which are recognized the world over. It may be used by walkers, joggers, and non-motorized, wheeled forms of transportation, such as bicycles, skateboard, rollerblades, and scooters. No electric motors are permitted.

Because railings and walls are not desirable along the water's edge, there is a 3 to 4-foot wide **Safety Zone**. It has planting beds or paving flush with the Circulation Zone. If paved, the paving will have a rougher texture to let pedestrians know they are approaching the edge. The cap of the seawall is 18-24 inches wide and 6 to 8 inches above the paving. Lighting in the Safety Zone will be provided by 8-inch diameter bollards that are 24 to 30 inches high and spaced 20 feet apart.

On the land side of the Circulation Zone, there is a **Passive Zone** that is at least 3 feet wide for benches, low planters, trees, light fixtures, and benches. Benches must face the water. It connects the Circulation Zone to the Transition Zone.

The remainder of the 25-foot setback is the **Transition Zone**. Though not technically part of the easement, it is continuous with the Island Walk and typically flush with it. The Transition Zone can be paved or landscaped, and it can be treated as an extension of the Passive Zone or the Circulation Zone. It should feature active frontages, ideally with restaurants and retail. It may be differentiated from the easement by its paving material, but this is not required.



Island Walk Illustrative Design

EMBRACE THE WATERFRONT

THE ISLAND WALK: SEAWALL PROMENADE

All the thought and planning behind the Island Walk and other related aspects of the NBV100 master plan will eventually come together to create a compelling **seawall promenade**, as imagined by an artist in the illustration on this page.

The Village has already received a grant to devise standards for the Island Walk based on the NBV100 vision. EAC consulting has been engaged to do this work as it works simultaneously on the seawall standards. With this design work in hand, the Village will be in a position to apply for much larger grants that would allow the Village to complete a large portion of the new Island Walk along the north side of Treasure Island in conjunction with replacement of the seawalls.



Existing condition along the northern edge of Treasure Island prevent the public from enjoying the water

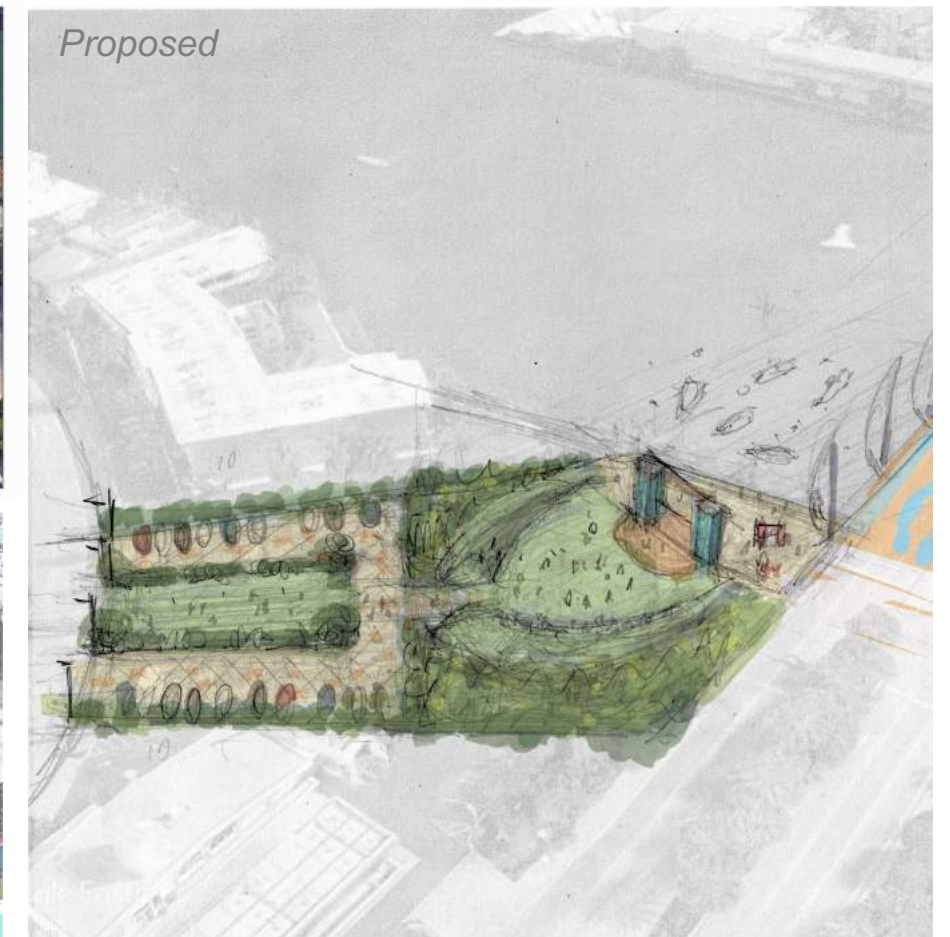


A transformed waterfront featuring a seawall promenade

EMBRACE THE WATERFRONT

HARBOR ISLAND POCKET PARK: DOG AND EVENT PARK

Prior to the NBV100 charrette, a design had been prepared for a dog park at the former Village Hall site on Harbor Island. During the charrette that design was embellished to include additional programming ideas to accommodate outdoor festivals, small concerts and food-related events. A couple of the charrette sketches envisioned the water's edge activated with boating and kayak rentals and related activities.



Preliminary Dog Park designs by DPZ CoDesign



Source: Calvin, Giordano & Associates, Inc.

Dog Park design by Calvin, Giordano & Associates, Inc.
(Currently under construction)



In late December, NBV broke ground on the long-awaited Dog Park.

IMPROVE THE QUALITY OF LIFE

Identify catalytic opportunities to add community services, amenities and places for social interaction



Precedent – Outdoor seating and active storefronts along Lincoln Road, Miami Beach



Precedent – Public gatherings and art performances at the New World Symphony, Miami Beach

Source: <http://www.miaminewtimes.com/>



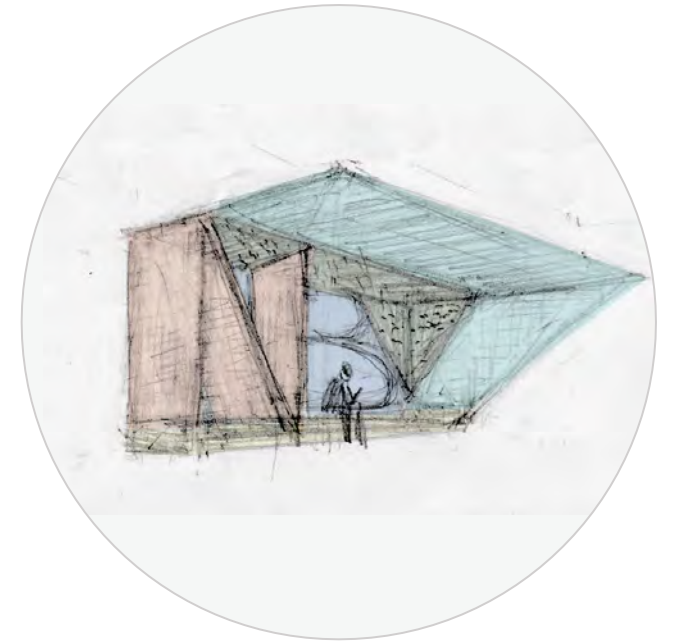
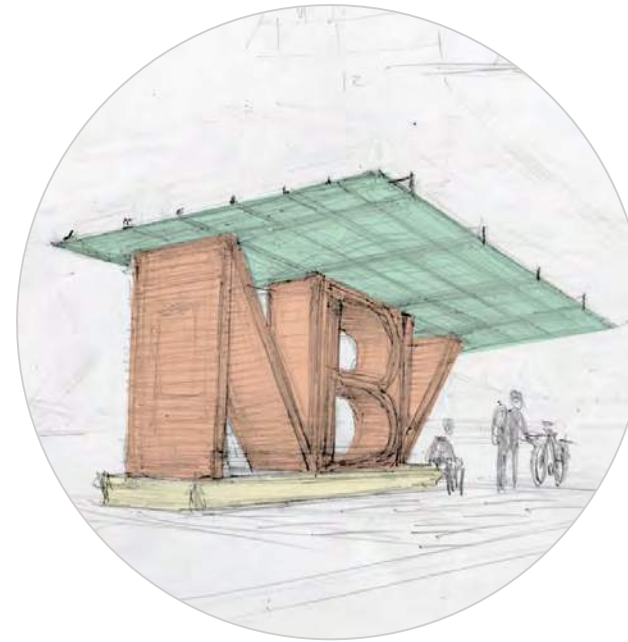
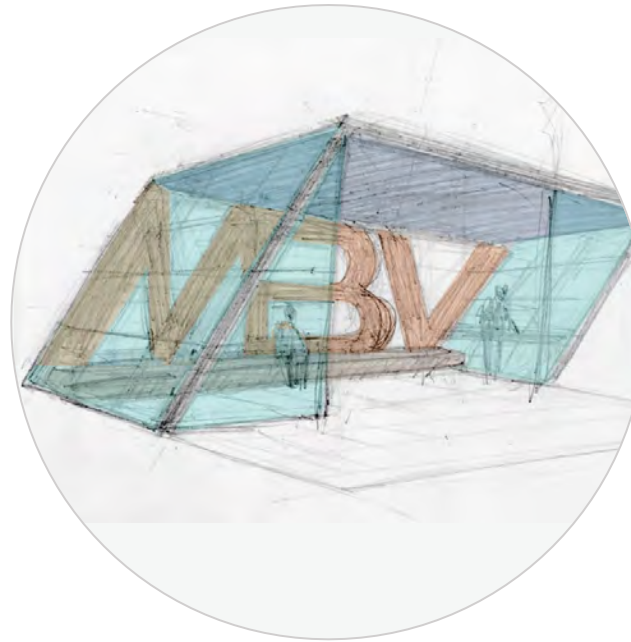
Precedent – Activation of an existing alley in Lincoln Lane N., Miami Beach

IMPROVE THE QUALITY OF LIFE

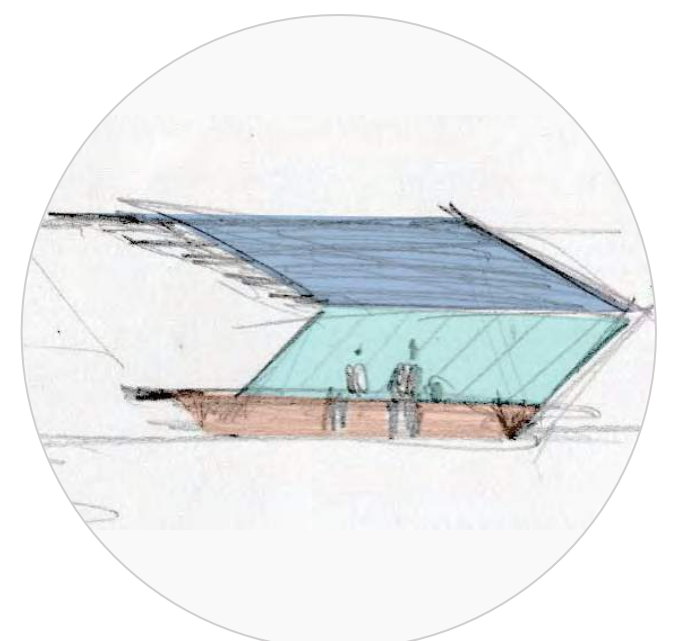
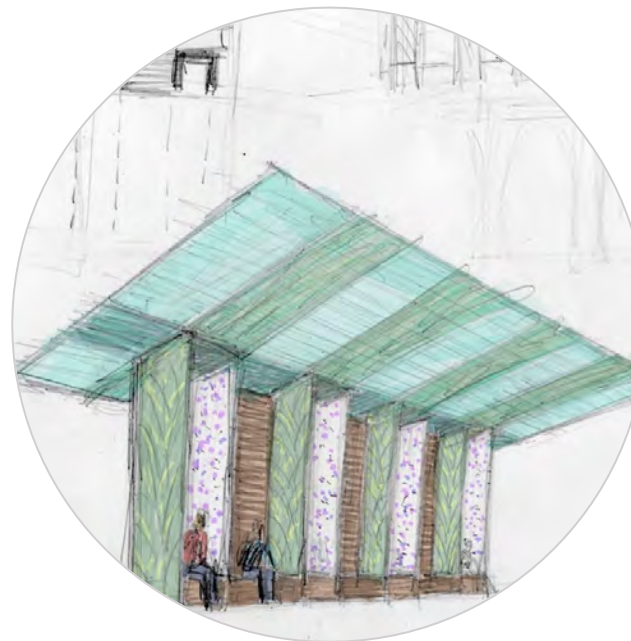
KENNEDY CAUSEWAY TRANSFORMATION: BUS SHELTERS AS PUBLIC ART

NBV is well positioned along a **major transit route** between Miami Beach and the mainland, and efforts are underway to improve frequency of metro-buses and the refinement of routes. Other transit options include the Mini-Bus shuttle that is routed through the Village and the recent Freebee electric car service app that both operates within the Village and connects to the Miami Beach Trolley Station on Normandy Isle.

The **bus shelters** along the Causeway are due for a refresh, and there is a desire by many residents not to have them continue as places to post advertising. While primarily serving a functional purpose in protecting transit riders from the rain and sun, they are also an opportunity for public art. Whether all sporting the same cohesive look, or conversely each having a distinctive look, the dozen or so shelters can serve as canvases for artists to **express some aspect of NBV's character**.



Preliminary studies using NBV letters as inspiration



Preliminary studies using nature as inspiration

IMPROVE THE QUALITY OF LIFE

BUS SHELTERS AS PUBLIC ART: CHARRETTE ILLUSTRATIONS



Proposed bus shelter



Proposed bus shelter



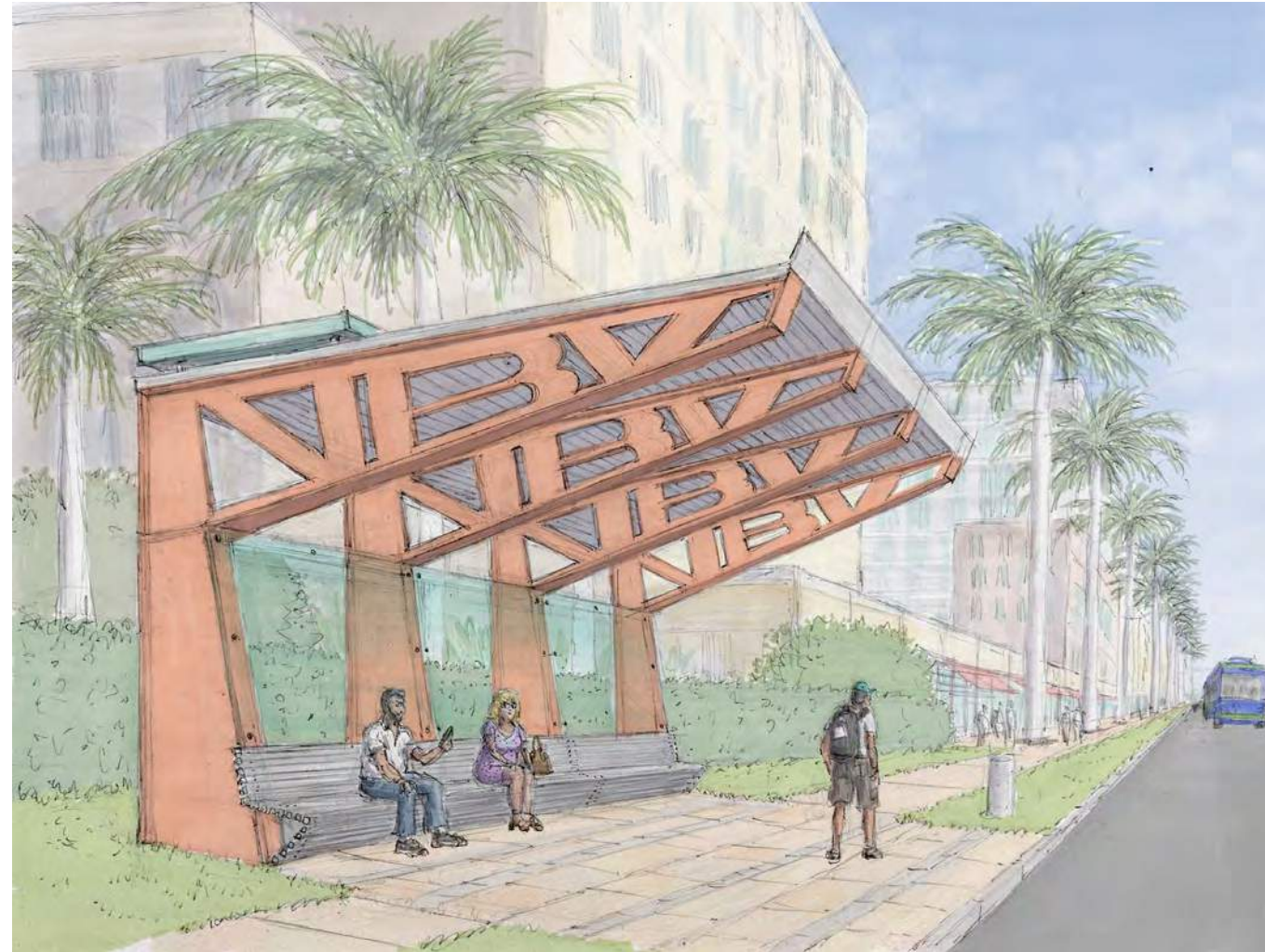
Existing bus shelter

IMPROVE THE QUALITY OF LIFE

BUS SHELTERS AS PUBLIC ART: USING THE LOCAL HISTORY AS INSPIRATION



Proposed bus shelter



Proposed bus shelter



Fun Fair (demolished)

IMPROVE THE QUALITY OF LIFE

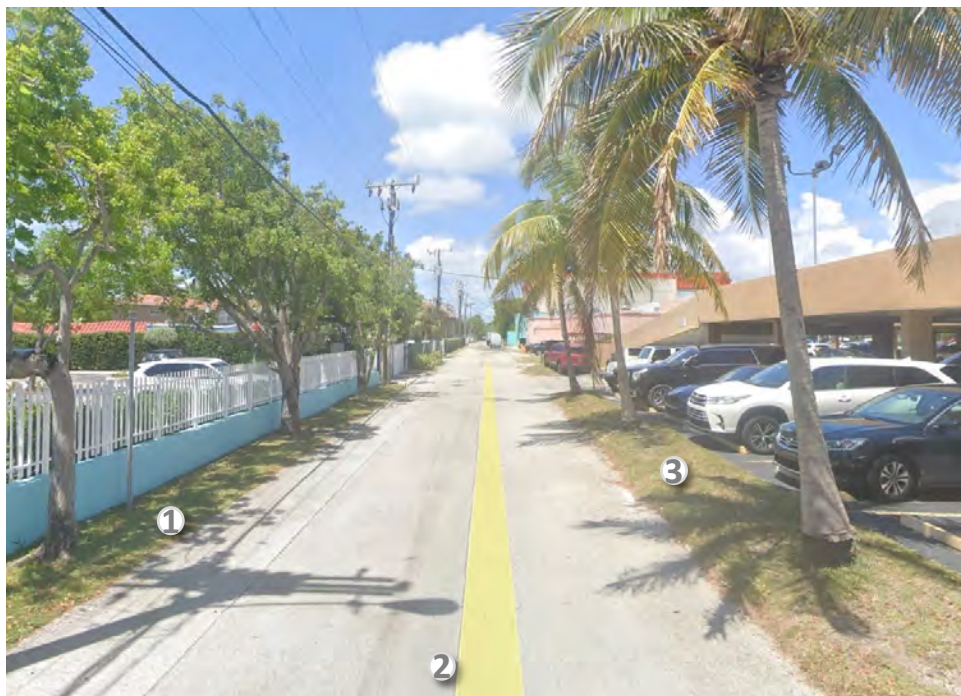
PIRATES ALLEY TRANSFORMATION: INCREMENTAL ACTIVATION

NBV's network of streets and blocks has limited connections to Kennedy, presenting a significant barrier to walkability. One suggestion by a resident that surfaced during the charrette was to make the Village's one alley, Pirates Alley, a more useful public amenity. It represents an opportunity to turn a minimally-used service lane into a shared place that adds to the pedestrian network on Treasure Island. It could become increasingly active as the North Bay Village downtown evolves.

Depending on the degree of community acceptance, the transformation could begin with a simple makeover of landscaping, lighting, painting, and repaving to become a shared-use path (S.U.P.) for walking, jogging and biking. As a tactical way to incubate more activity in the

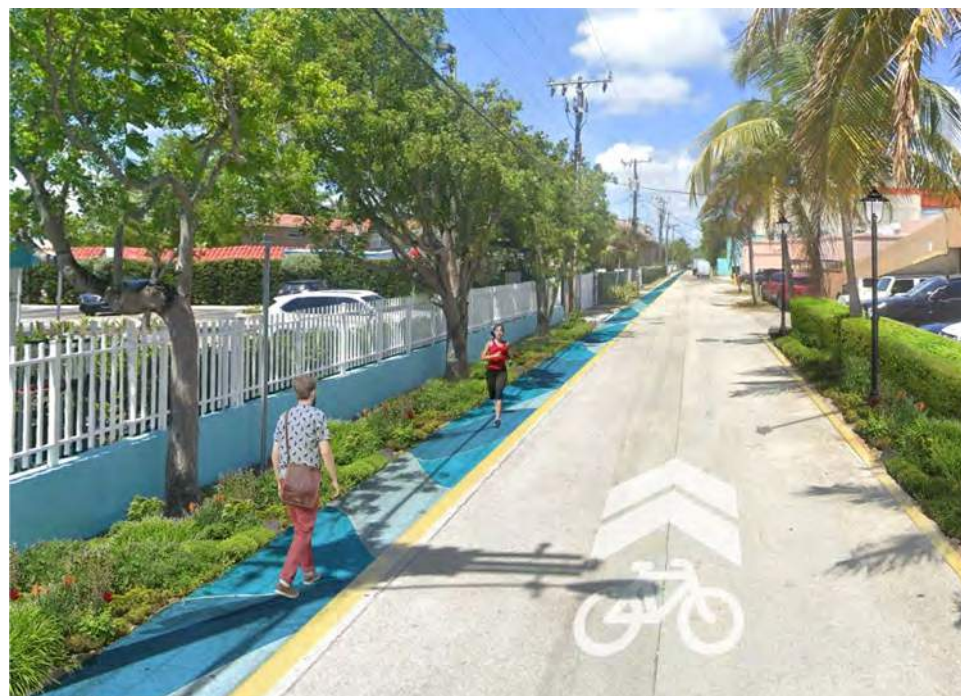
heart of North Bay Village, this alley could be part of a temporarily activated community space around the Village Hall parking deck. Using shipping containers, trucks, vans and tents, the east end of the Alley could operate at certain times as a yard or gathering place for special events such as food and seasonal festivals, or for more regular uses such as a weekday farmers market.

As the NBV Village center takes off with more ambitious redevelopments, the Alley could transition into a more urbane, formally activated pedestrian paseo with food and beverage options and entertainment destinations. The Alley's tenant mix could be curated to offer a progression in character and programming to transition seamlessly from day to night.



Existing Conditions:

1. Lack of privacy for the school
2. Asphalt surface typical of service alley
3. The parking lot is a major part of the experience



Short-term Transformation:

Simple landscape improvements, minimal lighting design, tactical use of paint, and repaving to become a shared use path (S.U.P.) for walking, jogging and biking.

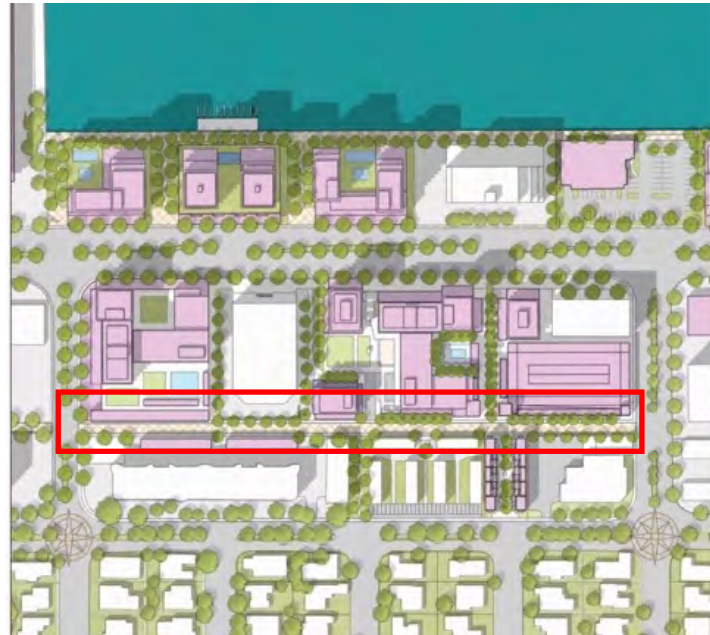


Mid-term Transformation:

Community space around the Village Hall parking deck temporarily activated using shipping containers, trucks, vans and tents.

IMPROVE THE QUALITY OF LIFE

PIRATES ALLEY TRANSFORMATION INTO A PASEO



Long-term Transformation:

As the Village center takes off with more ambitious redevelopments, Pirates Alley could transition into a more urban, formally activated pedestrian paseo with food and beverage options and entertainment destinations.



SYNERGIZE PUBLIC SPACE TO REFRESH NBV IDENTITY

Leverage existing assets with new infrastructure improvements, public art, and private redevelopments as opportunities to reassert NBV's image as greener, smarter and more connected



*Coordinate with Miami-Dade County
Aesthetic Master Plan*

[https://www.miamidade.gov/parks/library/aesthetics_master_plan.
pdf](https://www.miamidade.gov/parks/library/aesthetics_master_plan.pdf)



*Enhance gateways at the
Kennedy Causeway bridges*



*Leverage existing assets such as the
Butterfly Garden at Paul Vogel Park*

<https://www.facebook.com/pages/Paul-Vogel-Park>

SYNERGIZE PUBLIC SPACE TO REFRESH NBV IDENTITY

ASPHALT ART INITIATIVE

There are many strategies to enliven public spaces and encourage a shared civic identity. One well-developed idea is to organize neighborhood art and placemaking events, such as the one sponsored by Bloomberg Philanthropies' Asphalt Art Initiative. This charity offers grants to small cities to implement their own arts-driven transportation projects. The Public Art Master Plan (p. 60) shows eight potential sites for civic art projects. Asphalt Art is a great way to bring neighbors together to help create artwork that beautifies their shared public space, builds civic engagement, and has been shown to make roads and intersections safer by slowing traffic on the artistically treated surfaces. To boot, asphalt art can be implemented immediately.

Two potential projects are featured on the following pages:

Downtown Gateway Bridge: This proposal flanks the bridge with helix wind turbines designed as beautiful spinning sculptures, creates a water jet feature in the bay on the existing concrete structure just north of the bridge, and lays bright, colorful patterns down the length of the bridge on both roadways.

Neighborhood Roundabouts: Two special roundabouts are proposed where North Treasure Dr. meets Adventure Ave. and Hispanola Ave. This compass star design improves street landscaping while creating safer pedestrian-oriented intersections by providing pedestrian safety islands and clearly marked crosswalks. The reduced turning radii slow cars down, while the increased visual stimulation makes drivers proceed more cautiously.



Precedent – Local example of asphalt art at Treasure Island Elementary School



*Precedent – Butterfly mural in Asheville, NC, by Sound Mind Creative. Photo by Justin Mitchell.
<https://asphaltart.bloomberg.org>*



Downtown Gateway Bridge



Neighborhood Roundabouts

SYNERGIZE PUBLIC SPACE TO REFRESH NBV IDENTITY

DOWNTOWN GATEWAY BRIDGE



Concept for windmill sculptures and roadway mural

1. Water jet fountain
2. Helix wind turbines
3. Asphalt art



Identify opportunities to incorporate asphalt-art and energy generating infrastructure to enhance the overall experience along Kennedy Causeway and other key thoroughfares.

SYNERGIZE PUBLIC SPACE TO REFRESH NBV IDENTITY

NEIGHBORHOOD GATEWAY ART



Existing intersection at N. Treasure Drive and Hispanola Dr.

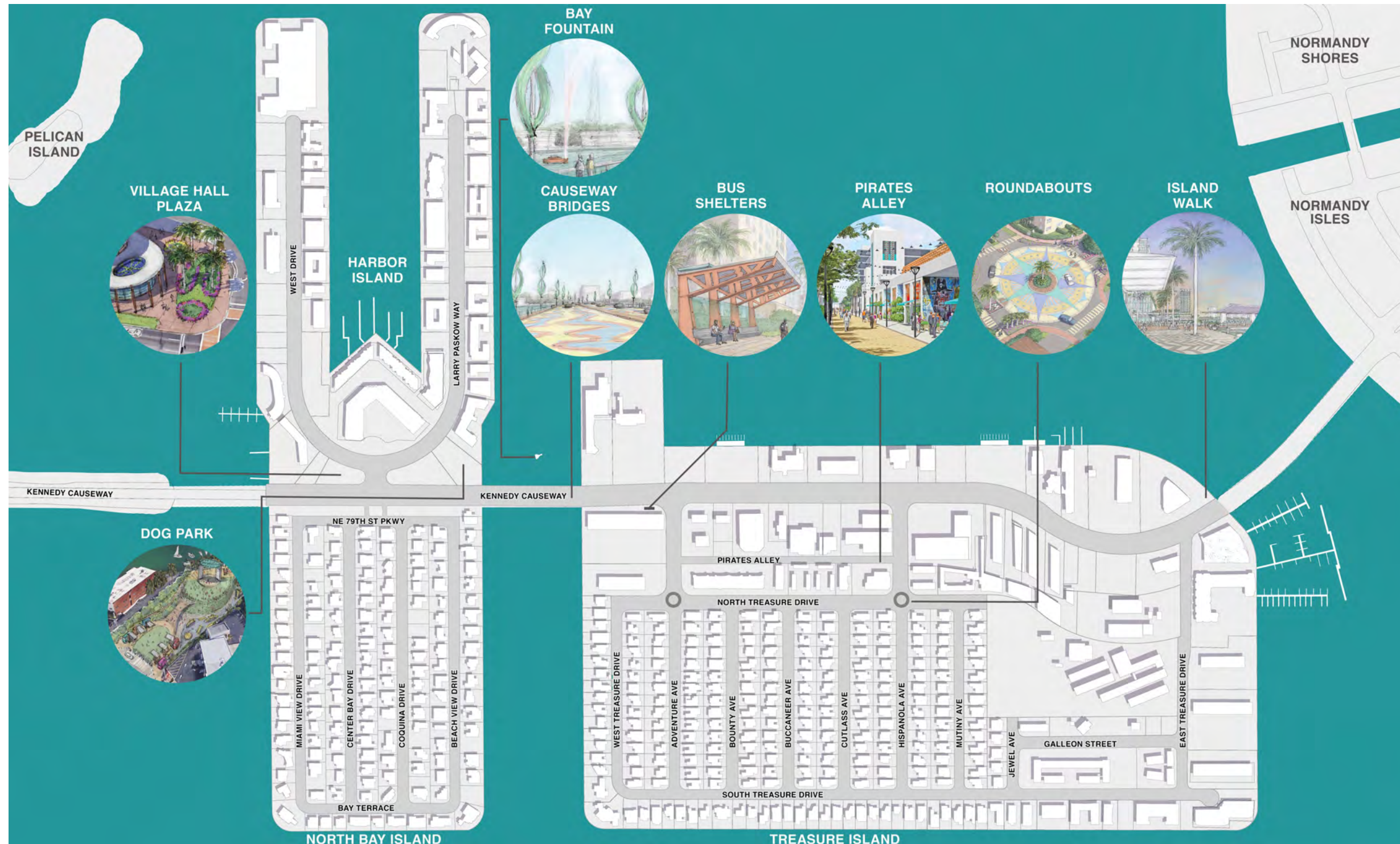
1. Roundabout with asphalt art
2. Narrowed turning radii
3. Improved pedestrian crosswalks
4. Pedestrian safety island
5. Improved Streetscape



Proposed roundabout at N. Treasure Drive and Hispanola Dr. The intersection of N. Treasure Drive and Adventure Dr. would be similar.

SYNERGIZE PUBLIC SPACE TO REFRESH NBV IDENTITY

PUBLIC ART MASTER PLAN



This map identifies opportunities to add art in public spaces and reassert NBV's image as a destination for culture and entertainment.



RESILIENCY



PREPARE FOR 21ST CENTURY ENVIRONMENTAL CHALLENGES



CREATED IN WATER



PROTECTED FROM WATER



THRIVING WITH WATER

RESILIENCY

INTRODUCTION

Resilient Communities

Climate changes – including changes in storm patterns, sea temperature, ocean acidification, and sea level rise – are expected to continue, and will present significant planning and engineering challenges for coastal areas. The most severe and direct impacts are the increased risk of flooding and the increased duration of flood events, especially in low-lying island communities, such as North Bay Village. (See images on next page.)

Our charrette visioning process examined three approaches to climate change:

- **Mitigation** - How to contribute to efforts to slow climate change.
- **Adaptation** - How to live with climate change, e.g., fortifying the built environment and accommodating increased need for water and stormwater management.
- **Uncertainty** - How to respond to the unpredictability of the pace of change, degree of severity, and adjustments to knowledge.

Sustainability and Infrastructure

The broad range of potential impacts from climate change present significant challenges for the design of infrastructure in coastal areas. For North Bay Village, these include:

- Increasing air and sea water temperature
- Sea level rise (i.e., rise in mean sea level)
- Changing storm surge conditions due to potential wind changes and sea level rise
- Potential changing wave conditions both in terms of intensity and direction due to changing wind conditions
- Changes in precipitation, which will affect (increase/decrease) runoff to the sea
- Increased acidity in the water due to increased CO₂ in the atmosphere

An in-depth understanding of key design parameters for the civil infrastructure within NBV is required for current and future hydrologic and climate conditions.

During the visioning charrette and in the months thereafter, the DPZ Team has been discussing and addressing the engineering aspects of planning challenges related to future hydrologic and climate conditions. The Team has also acknowledged the need for coordination and integration of planned civil infrastructure upgrades (stormwater, roads, seawalls)

with the urban planning visioning for the coming decades. The goal is to provide a master plan that can accommodate the most sustainable adaptive civil infrastructure with minimized financial impacts.

The DPZ Team has studied the latest projections for the region and examined strategies adopted by neighboring communities. In the process, the most pertinent techniques have been extracted.

The DPZ Team recommends the coordination of the following aspects:

- Stormwater upgrades, green engineering infrastructure, and the allocation of additional storage for stormwater management to reduce flooding and improve water quality discharges into the Bay
- Elevation of civil infrastructure, including roads, seawalls, and the Island Walk, all of which should be integrated with planning proposals
- Addressing potential environmental degradation caused by climate change

The analysis of NBV's vulnerabilities to climate and hydrology and the pertinent recommendations addressing these issues are illustrated and explained on the following pages.

RESILIENCY

INTRODUCTION

The images on this page dramatically illustrate the threat of rising water levels, regardless of whether the cause is temporary – such as a king tide or a storm surge – or permanent – such as sea level rise -- and underscore the importance of addressing resiliency issues as a major part of the planning process.

These 3D visualizations provided by the Miami-Dade County Office of Resilience show the impact of flooding at different heights on buildings.

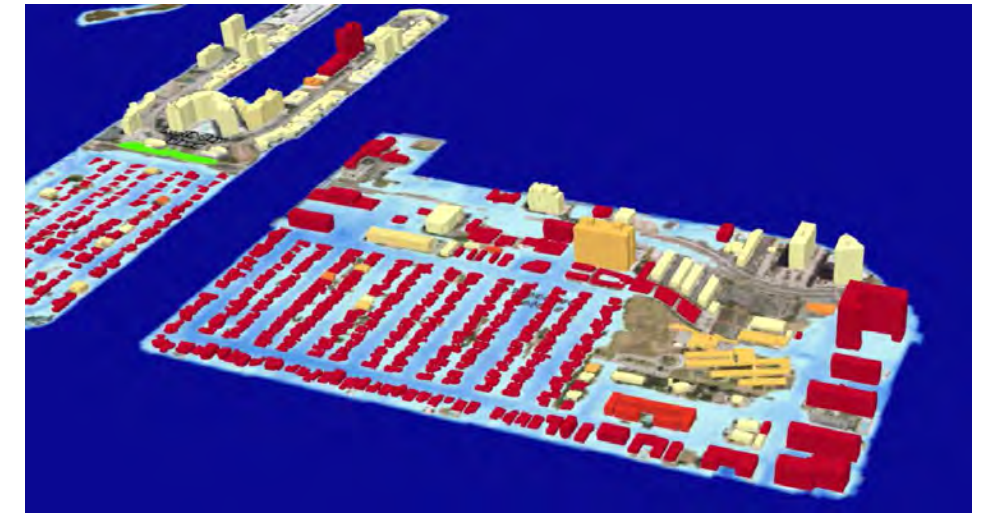
Key

Red buildings are at the highest risk.

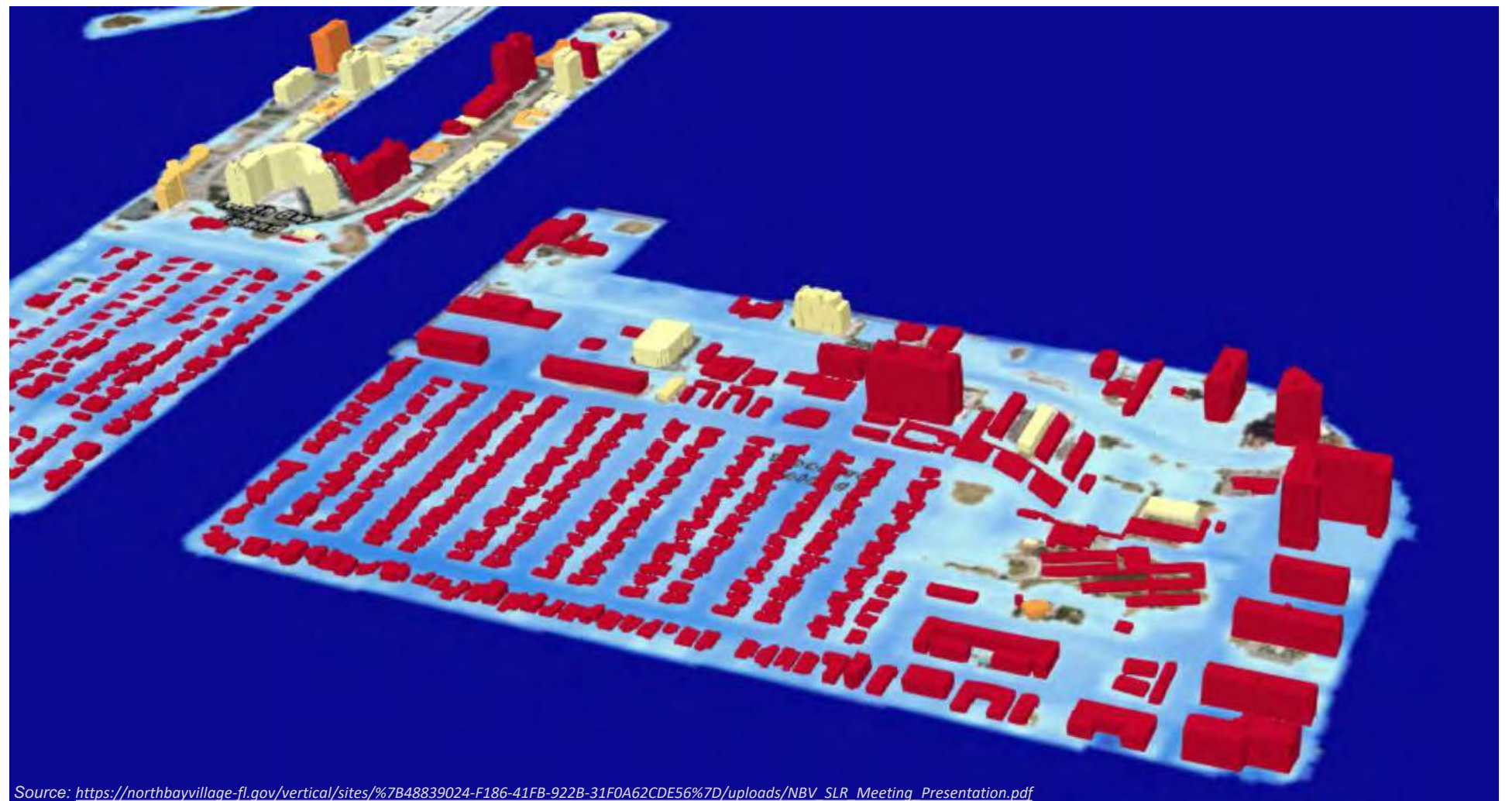
MHHW = Mean Higher High Water, roughly the average of high tides over the tidal epoch (19 year period).



+2 ft.: Parcels impacted by water levels 2 feet higher than MHHW



+3 ft.: Parcels impacted by water levels 3 feet higher than MHHW



Source: https://northbayvillage-fl.gov/vertical/sites/%7B48839024-F186-41FB-922B-31F0A62CDE56%7D/uploads/NBV_SLR_Meeting_Presentation.pdf

+4 ft.: Parcels impacted by water levels 4 feet higher than MHHW

CREATED IN WATER

Identify responsible and self-sustaining policies that reflect NBV's commitment to the stewardship of its waterfront and the water quality of Biscayne Bay



Harbor Island Waterfront



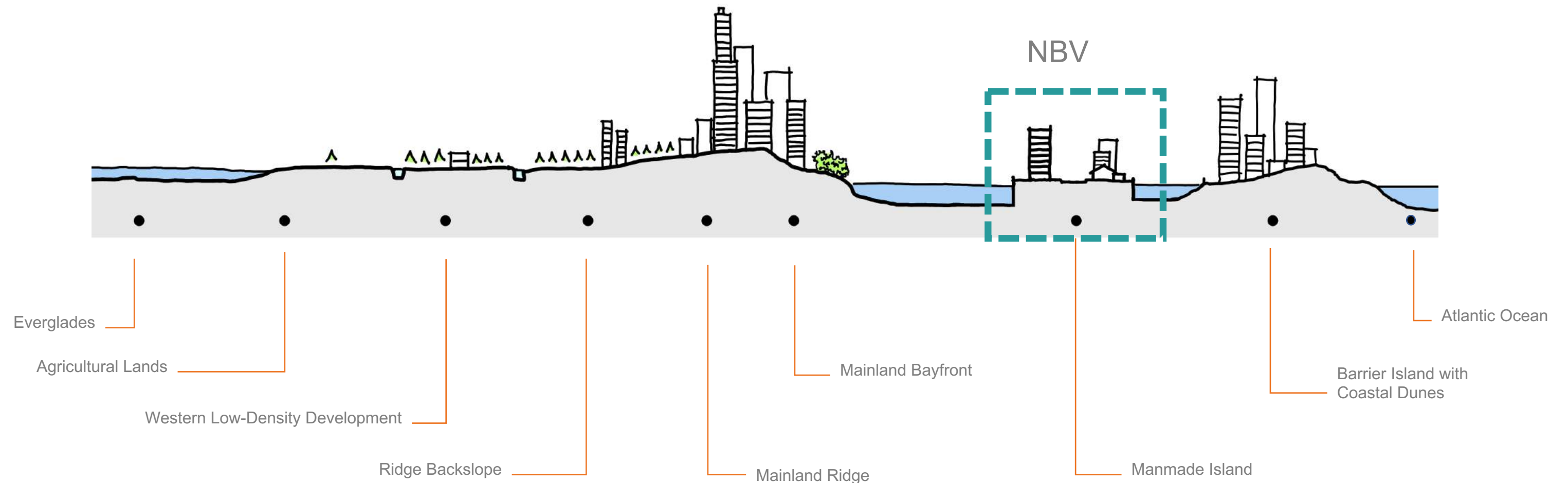
North Bay Island Waterfront



Treasure Island Waterfront

CREATED IN WATER

CONTEXT AND THE NEED FOR ADAPTATION AND RESILIENCY



NBV was created in water only a few decades ago. The Village consists of three man-made islands in the middle of Biscayne Bay. Concrete seawalls were erected and filled with material extracted from the shallow bay as it was dredged for navigation.

The diagram to the right is a regional site section from the Atlantic on the right to the Everglades on the left. It places NBV in its regional context between the barrier islands to the east and the mainland to the west.

The diagram reveals how low the land is in South Florida. The average elevation of Miami-Dade County is only four feet above sea level. Unlike most places in the country, the land does not rise as it gets further from the ocean. To the contrary, the ridges close to the water are some of the highest land. From there, the ground slopes *down* to the Everglades.

The islands are no exception to this low-lying condition. They are only a few feet above sea level, and the

seawalls that made them possible are aging quickly. The islands are vulnerable to short-term extreme events and long-term changes of natural hydrology, climate and sea level. One of the biggest challenges that NBV faces in the coming years is increased flooding from storm events and rising sea levels. Long-term viability depends on planning and implementation of resilient infrastructure capable of safekeeping the island's prosperity.

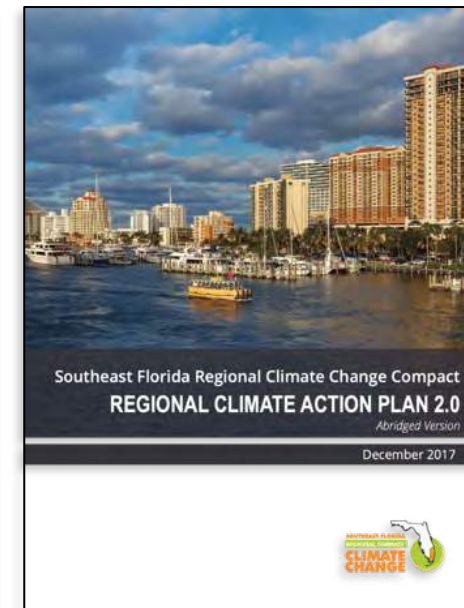
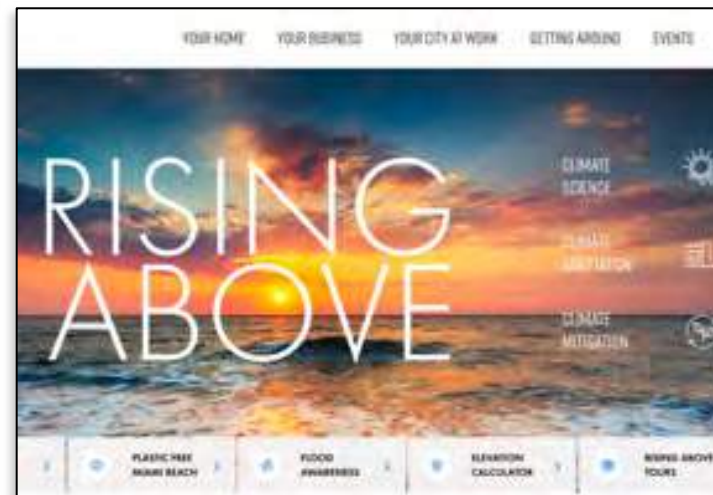
CREATED IN WATER

REGIONAL RESILIENCE PLANNING EFFORTS

The NBV100 process has been informed by the extensive efforts of neighboring communities throughout the region to address the issues of resiliency and sea level rise. We have taken into consideration many recommendations and lessons learned, incorporating the best elements into the overall vision for this community.

The following are some of the studies that preceded and informed the work of NBV100:

- Southeast Florida Regional Climate Change Compact – *Regional Climate Action Plan 2.0*
- The Rockefeller Foundation (100RC) – *100 Resilient Cities – Resilient Greater Miami and the Beaches*
- Miami-Dade County, City of Miami, and City of Miami Beach – *Resilient 305*
- Monroe County – *Green Keys*
- City of Miami Beach – *Miami Beach Rising Above*
- Office of Resilience of Miami-Dade County – *Sea Level Rise: North Bay Village*



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MIAMI-DADE COUNTY OFFICE OF RESILIENCE – ADAPTATION RECOMMENDATIONS

In December 2018, North Bay Village hosted a Town Hall Meeting on Climate Change. The Miami-Dade County Office of Resilience prepared a report for the meeting on the anticipated impacts of sea level rise in North Bay Village. It includes a useful list of options available for various property types to adapt to changing flood risks. These recommendations, which are summarized in the table on this page, formed a starting point for the Team’s work. Many were incorporated directly into NBV100. Others were modified to the needs and context of NBV.



Report by the Miami-Dade County Office of Resilience, December 2018

WHAT OPTIONS ARE AVAILABLE TO ADAPT TO CHANGING FLOOD RISKS?

LOW-RISE MULTI-FAMILY

Short-term

- Elevate key equipment (generators, etc.)
- Install flood barriers (doors)
- Salt-tolerant landscaping

Long-term

- Requirements for rebuilding
 - Higher freeboard above current BFEs
 - Higher seawalls
 - Higher elevation above crown of road

HIGH-RISE MULTI-FAMILY

Short-term

- Flood-proof ground floor
 - (elevate generators, protect elevator shafts, etc.)
- Flood barriers (first floor doors)
- Salt-tolerant landscaping & enhance drainage

Long-term

- Requirements for rebuilding
 - Higher freeboard
 - Higher seawalls
 - Higher elevation above crown of road

LOW SINGLE-FAMILY

Short-term

- Elevate key equipment (HVAC, etc.)
- Salt-tolerant landscaping
- Grants/incentives for rebuilding higher

Long-term

- Requirements for rebuilding
 - Freeboard (higher)
 - Elevation well above crown of road

NEW (HIGHER) SINGLE-FAMILY

Short-term

- Elevate key equipment (HVAC etc.)
- Salt-tolerant landscaping

Long-term

- Requirements for rebuilding
 - Elevation of property (driveways, yards)
 - Higher freeboard for buildings
 - Elevation above crown of road
 - Elevation on stilts

PUBLIC RIGHT OF WAY

Short-term

- Salt-tolerant streetscape
- Upgrade water/wastewater to be submersible
- Design new drainage based on future groundwater levels (avoid saturated French drains)

Long-term

- Elevation of roadways
- Moving away from exfiltration trenches

COMMERCIAL

Short-term

- Don’t allow building below the Base Flood Elevations (BFE) (commercial buildings currently allowed to flood-proof below the BFE)
- Elevation of key equipment (HVAC, electrical, etc.)

Long-term

- Elevation of lot
- Higher seawalls
- Drainage built to accommodate SLR

Adaptation recommendations from Miami-Dade County Office of Resilience

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FEMA FLOOD ZONES FOR NBV

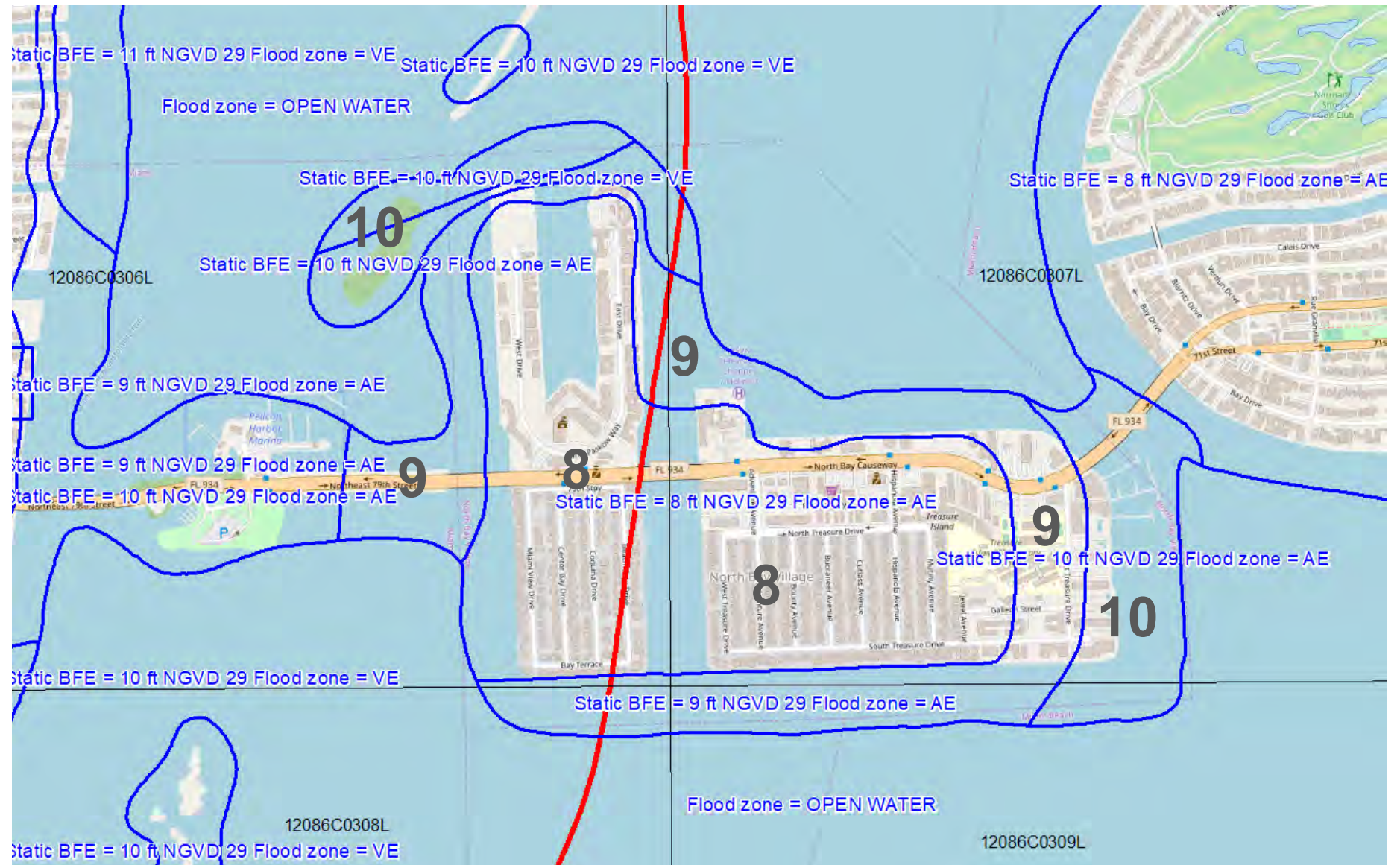
All of NBV is subject to a high degree of flood risk in the form of a storm surge during a hurricane or other tropical storm. Because of this, NBV has participated in the National Flood Insurance Program (NFIP) since 1972. For buildings to qualify for flood insurance, they must meet certain minimum standards. The most significant in terms of planning is that new structures must be built high enough to avoid flood damage to habitable interior space:

- For new **residential structures**, the first floor must be set above the Base Flood Elevation (BFE) plus freeboard. (See definitions below.)
- **Non-residential structures** must either comply with the same rule or provide certified flood-proofing for interior spaces below the BFE.

The BFE is the elevation of the Base Flood, often referred to as the 100-year flood or the 1% flood. This is the flood having a one percent chance of being equaled or exceeded in any given year. In this coastal context, a flood would take the form of a storm surge. The 100-year flood has long been established as the threshold for determining flood risk.

The BFE is determined by FEMA (the Federal Emergency Management Agency.) To support the NFIP, FEMA produces flood maps for flood-prone areas of the U.S. FEMA is continually updating its flood maps based on new data and improved technology. These maps are the foundation for most U.S. coastal analysis, whether it is for insurance purposes or municipal planning. This particular analysis is based on the most recent map for Miami-Dade County, which was produced in 2009. FEMA will issue new maps in May of 2020 and will account for storm surge.

Most of NBV is in an AE flood zone with a BFE of 8 ft NGVD 29 (6.5 ft NAVD 88). Some areas have a BFE of 9 or 10 NGVD 29 (7.5 or 8.5 ft NAVD 88). A small area at the northwest end of Harbor Island may be in a VE flood zone. This would mean it is subject to wave action of over 3 feet on top of the base flood.



DEFINITIONS

Storm surge: A coastal flooding event caused by an abnormal rise of water generated by a storm, over and above the expected tides.

BFE: Base Flood Elevation, defined as the 100-year flood or 1% flood.

Freeboard: A factor of safety above the BFE. FEMA recommends that the first floor be constructed at least 1 ft. above BFE in A zones and 5 ft. in V zones. Local municipalities may require more.

AE flood zone: Areas at high risk for flooding and for which the BFE is provided.

VE flood zone: Coastal high hazard areas where, in addition to a high risk of flooding, wave action and/or high-velocity water can cause structural damage during the base flood. BFE is provided and additional freeboard is required.

NGVD 29: National Geodetic Vertical Datum of 1929

NAVD 88: North American Vertical Datum of 1988

FEMA Flood Map for NBV (2009)

Note:
Elev. NAVD 88 = Elev. NGVD 29 – 1.55 ft

REF: <https://bit.ly/2NTnkzy>

Accessed 11/12/2019

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SEA LEVEL RISE PROJECTIONS

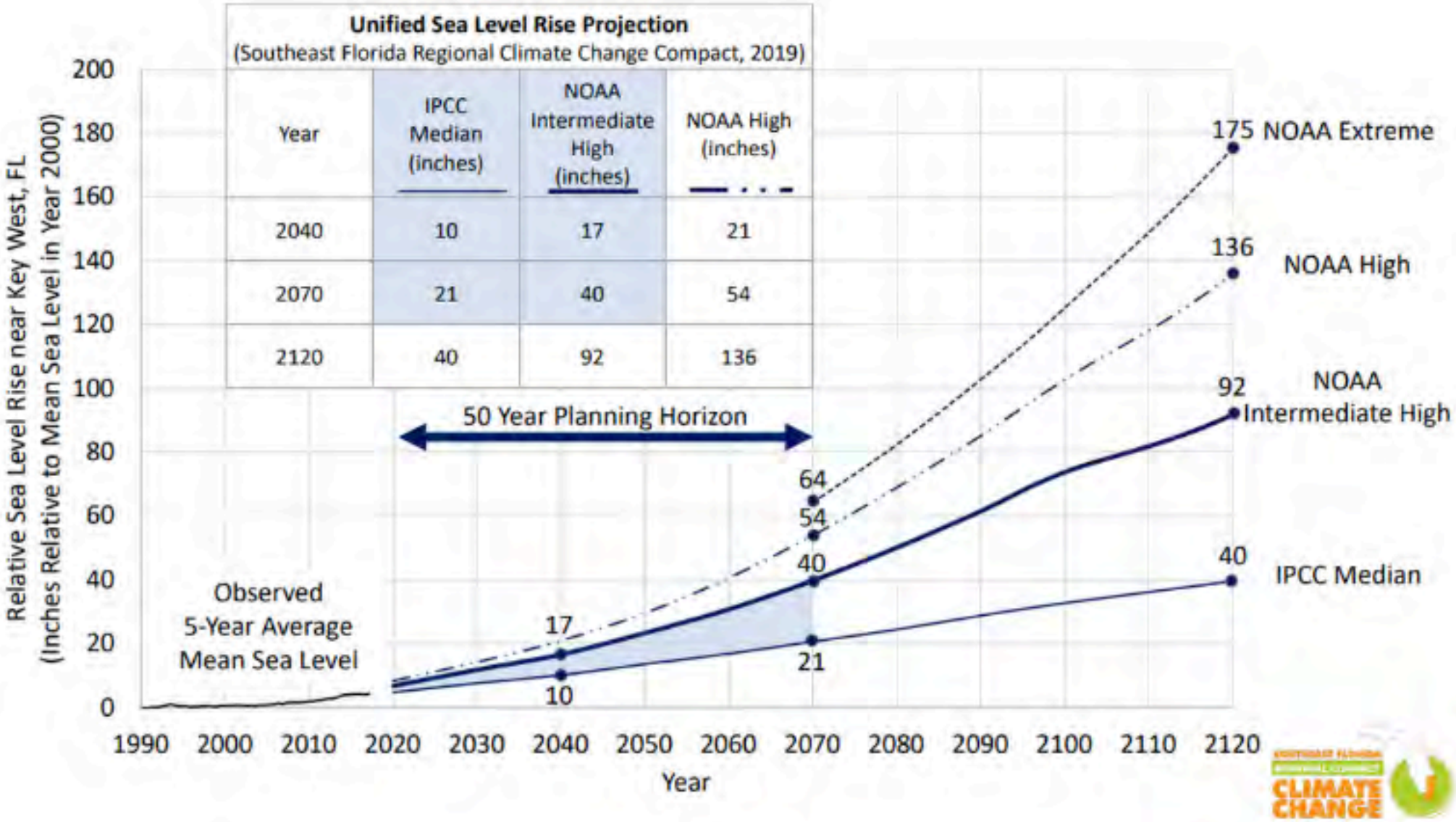
Scientists with the Southeast Florida Regional Climate Change Compact updated their 2015 sea level rise predictions for 2019, taking into account data and projections from multiple sources. These projections guide development in four counties: Broward, Miami-Dade, Monroe, and Palm Beach.

According to the NOAA Intermediate High projection curve (on the graph to the right,) sea level may increase approximately 1.5 feet by 2040, over 3 feet by 2070, and nearly 8 feet by 2120. (NOAA is the National Oceanic and Atmospheric Administration.)

Standards in the new NBV land use regulations should work in concert with these projections. For example, building heights will be measured from BFE plus freeboard* rather than from grade. FEMA* periodically updates the flood maps and adjusts BFE, usually upward, so new approach to measuring height will build much-needed flexibility into the NBV codes.

The maps on the following page illustrate the impact of potential increases in sea level.

* Terms are defined on the preceding page “FEMA Flood Zones for NBV.”



Unified Sea Level Rise Projection
Southeast Florida Regional Climate Change Compact, 2019

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EXTENT OF IMPACTS FROM ELEVATED WATER LEVELS

Similar to the 3D images at the beginning of this chapter, these 2D maps reveal how much of NBV would be impacted by various increases in water level, irrespective of whether such increases might be temporary (i.e., king tides and storm surges) or permanent (i.e., sea level rise.)

The solid blue zones show the areas which are below 2, 3, 4 and 5 feet (NAVD 88). These areas are expected to experience greater flood impact for rising sea levels. The blue contours delineate flood zones as per FEMA’s classification.

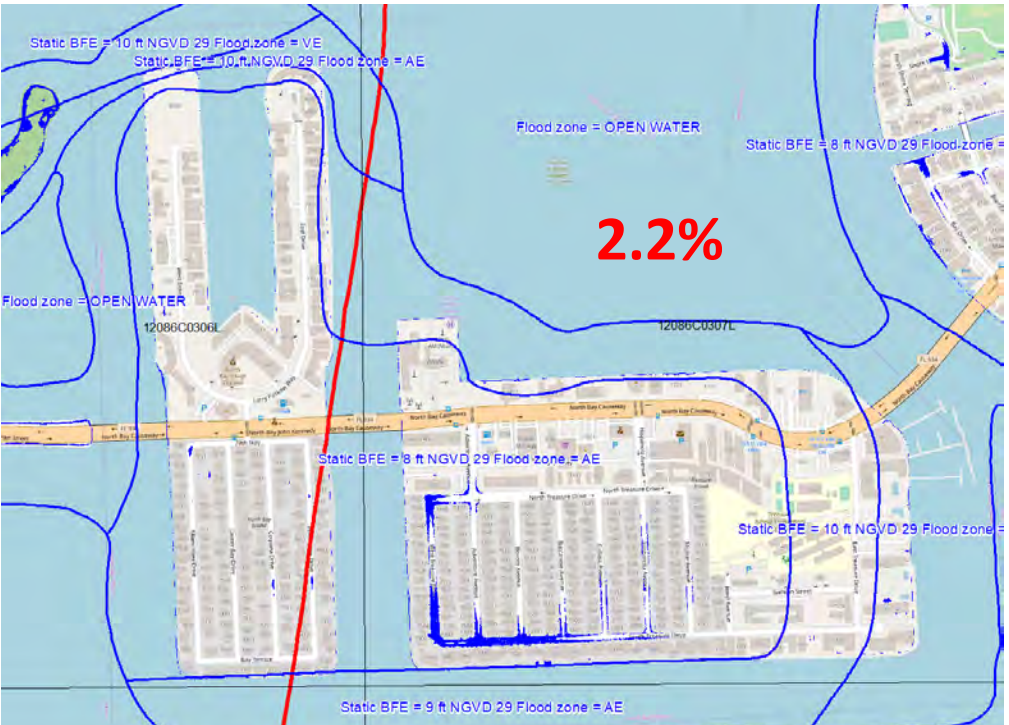
It is worth noting that the BFE* as determined by FEMA* currently stands at 6.5+/- feet (NAVD 88), with some areas at 7.5+/- and 8.5+/- feet. As the table below shows, approximately 90% to 99% of the NBV would be inundated during a Base Flood, or 100 year flood event.

Elevation, ft NAVD 88	NBV land area covered
Less than 2 ft	2.2%
Less than 3 ft	17.9%
Less than 4 ft	49.5%
Less than 5 ft	72.9%
Less than 6 ft	88.2%
Less than 7 ft	95.5%
Less than 8 ft	98.5%
Less than 9 ft	99.8%
Less than 10 ft	100.0%

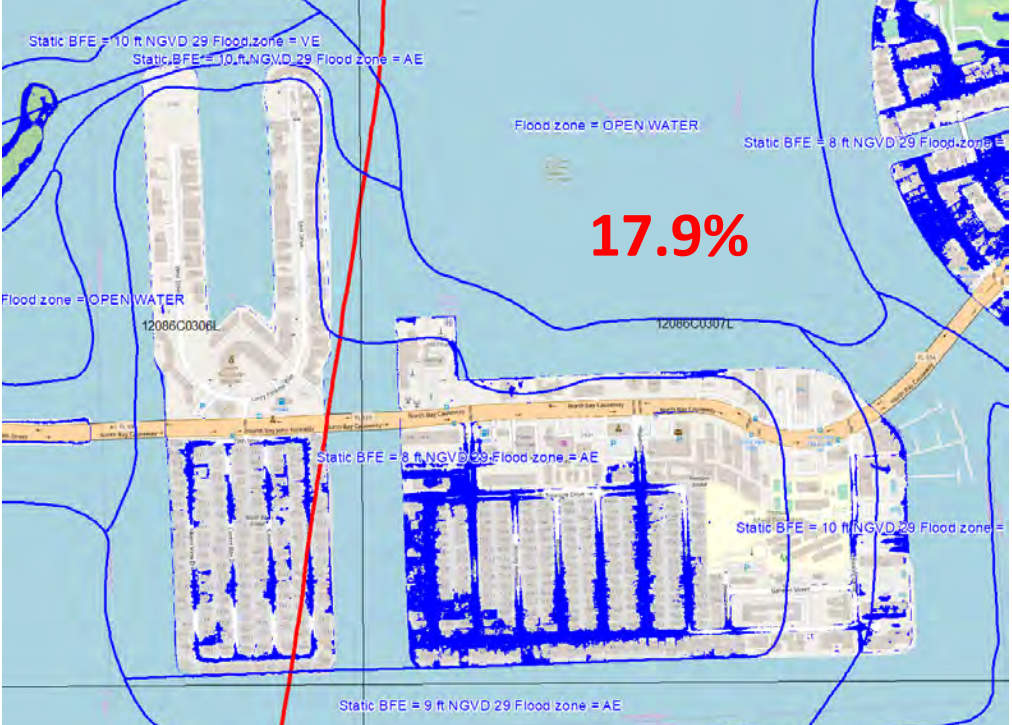
BFE (not pictured)

Elev. NAVD 88 = Elev. NGVD 29 – 1.55 ft
* See prior page “FEMA Flood Zones for NBV” for definitions.

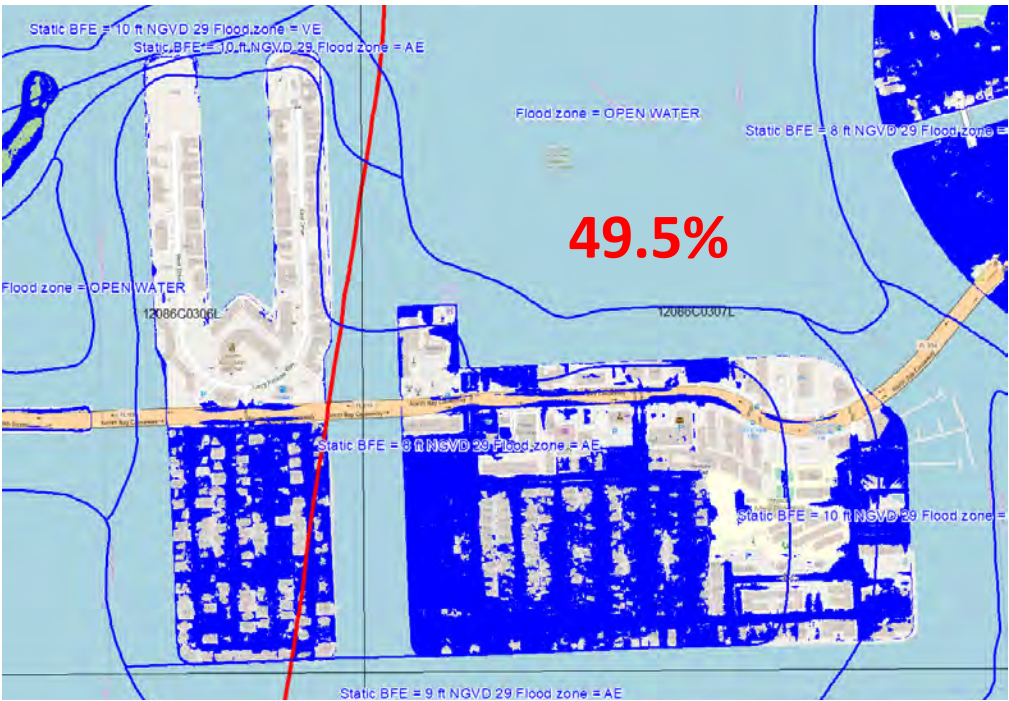
REF <https://bit.ly/2NTnkzy>
Accessed 11/12/2019



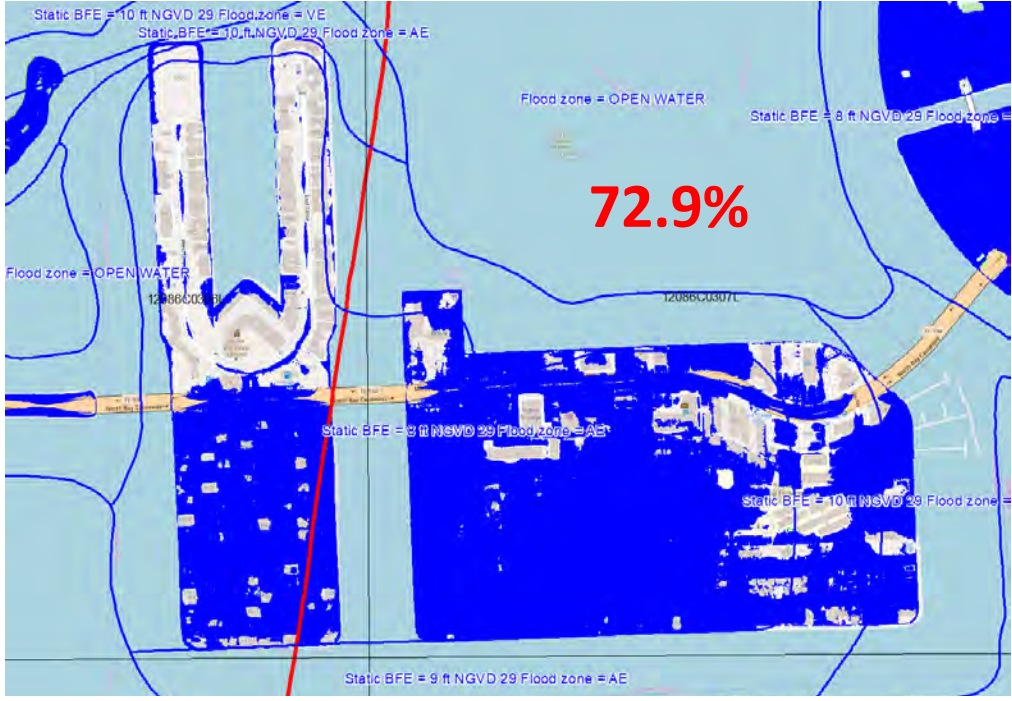
2 feet (NAVD 88): 2.2 % of NBV impacted



3 feet (NAVD 88): 17.9 % of NBV impacted



4 feet (NAVD 88): 49.5 % of NBV impacted



5 feet (NAVD 88): 72.9 % of NBV impacted

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NBV COMPREHENSIVE PLAN

Coastal management recommendations

Goals and objectives related to resiliency were extracted from the NBV Comprehensive Plan (July 10, 2018.) Many of these issues were discussed during the NBV100 Charrette and incorporated into the master plan.

Goals

- Protect human life and the environment and limit destruction in areas subject to natural disaster
- Provide use of natural coastal resources
- Provide for protection of coastal resources

Objectives to implement goals

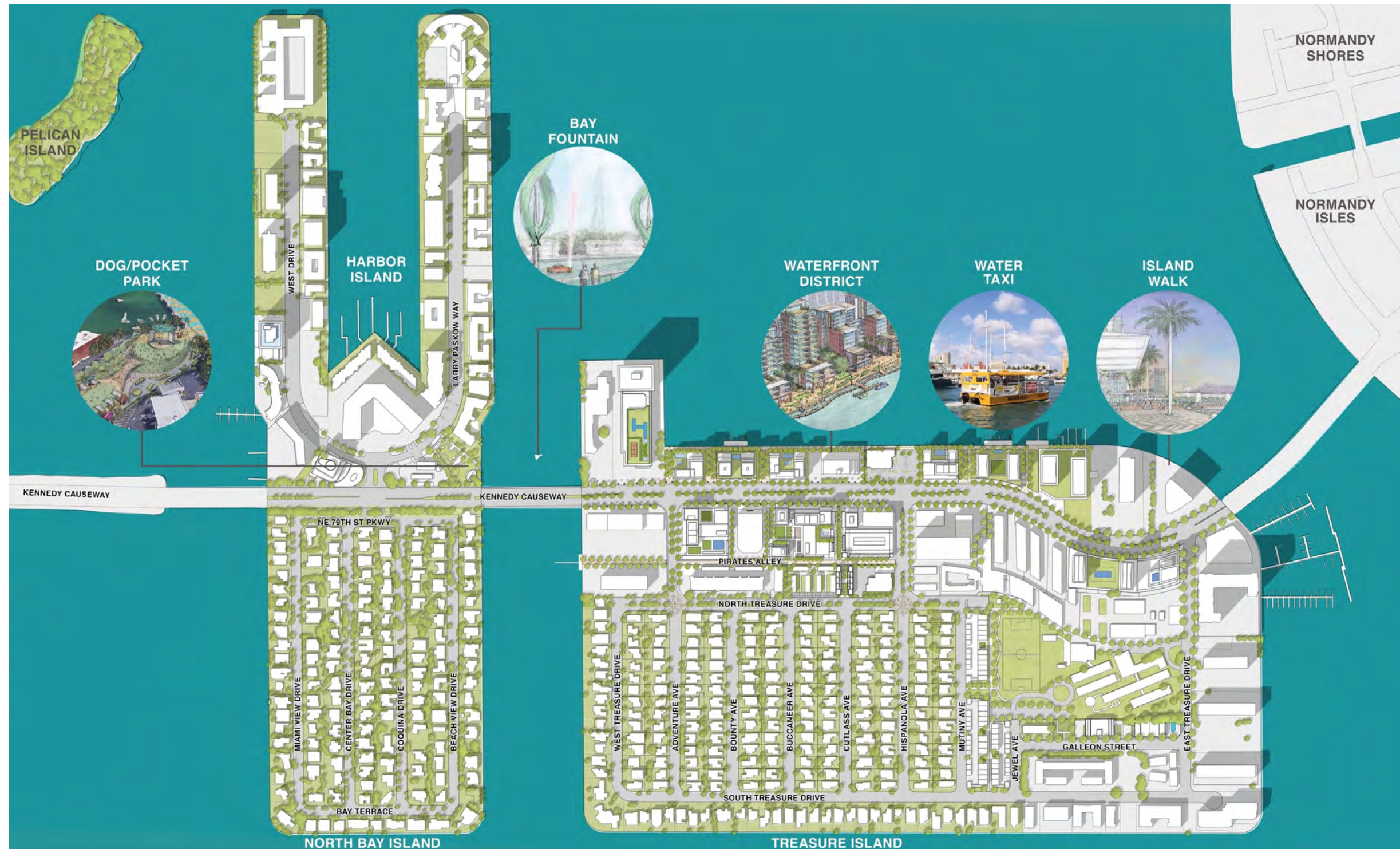
- Coordinate with Miami-Dade County Emergency Operations Center
- Increase public access to coastal views and recreational opportunities
- Regulate and encourage proper coastal management
- Reduce the amount of surface water runoff
- Prepare for the impacts of sea level rise
- Provide immediate response to post-hurricane situations
- Achieve a flood resilient community status

A response to the five major issues identified in *The 2006 Evaluation and Appraisal Report (EAR)* is provided in the LDRs chapter at the end of this report.



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WATER QUALITY AWARENESS AND NBV WATERFRONT PROJECTS



Connecting the NBV community more directly to its surrounding waterfront will have a profound effect on daily life. The projects already being discussed -- the dog park, public art projects, a waterfront district, a water taxi, and especially the Island Walk -- will transform the way residents experience living on an island.

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NBV & BISCAYNE BAY WATER QUALITY

Several NBV residents expressed interest in contributing time and effort to help preserve the shoreline and restore underwater vegetation. Below are critical issues and actions that can be addressed by the community in the immediate future.

- **NBV INITIATIVES FOR A CLEAN BAY**

Work with neighboring municipalities, the county and the state to put in place regulations that would encourage citizens to participate and help in the efforts to preserve a healthy environment.

Encourage Miami-Dade County to allow the installation of living shorelines and living seawalls within the riparian right-of-way. (See “Protected from Water: Seawalls – Resilient Structure” in this Chapter.)

- **POLLUTION IS KILLING BISCAYNE BAY**

Within NBV, take actions to help reduce the deterioration of the flora and fauna of Biscayne Bay. Additionally, help improve the water quality and reduce the amount of waste finding its way to the Bay. Organize trash collections efforts with volunteers

- **HOW NBV CAN HELP TO MAKE IT CLEAN AND FULL OF LIFE**

Ban harmful fertilizers

Ban single use plastics

Start a recycling and waste reduction campaign

Where space allows, replace existing seawalls with living seawalls installed on private property, and provide returns along interior lot lines. (Standards are being developed by EAC Consulting.)



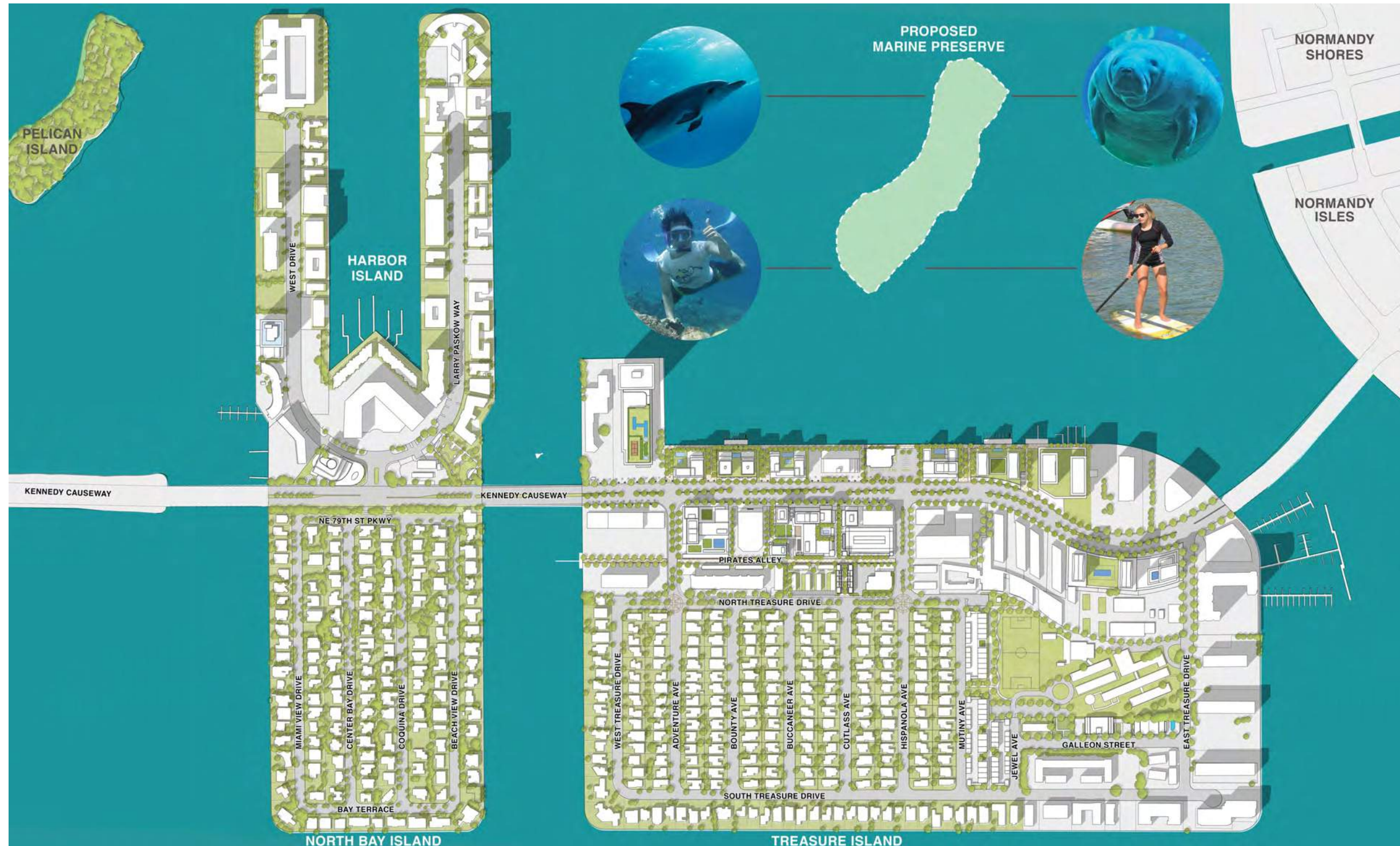
Trash along the shores in Biscayne National Park
<https://www.nps.gov>



Current conditions in NBV make it less likely for trash to collect on the shoreline. Nevertheless, NBV should work towards installing living seawalls wherever it is feasible.

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WATER QUALITY – MARINE PRESERVE AND SEAGRASS RESTORATION



One proposal voiced during the NBV Charrette was to create a marine preserve located off the northern shore of Treasure Island on submerged lands within the Village boundaries. Through seagrass restoration, this preserve would provide a new

habitat for marine life such as dolphins and manatees. The preserve would essentially become an underwater park easily accessible to the island's diving, kayak and paddle board enthusiasts, potentially bringing naturalist tourism to NBV as well.

A U-Link Team at the University of Miami that is working to develop the next generation of coastal infrastructure could field test prototypes in the preserve. A study is recommended to determine feasibility and costs.



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Help mitigate climate change through resource conservation and reductions in carbon emissions. Prepare for sea level rise and severe weather events by improving stormwater management, constructing stronger seawalls, and raising public infrastructure.



Inconsistent seawall standards



Seawalls at different states of repair



Discontinuous Island Walk

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BUILD STRONG SEAWALLS

The entire Village is surrounded by seawalls, also known as bulkheads. They were constructed in the mid-twentieth century in the middle of Biscayne Bay before there was any land here. As the Bay was dredged to make the waters navigable, the spoils were placed inside the seawalls to create real estate.

As such, the seawalls were designed primarily to keep land in – not to keep water out. Most of them are aging – the life-expectancy is approximately thirty years – and most are not high enough for the levels of ever-rising king tides, let alone for storm surges. The vast majority are on private property. In short, most need to be repaired or replaced.

The Village is approaching the challenge of seawalls in two ways:

1) Devise common standards that will be written into the code. A new height for seawalls will be established that exceeds the current County minimum requirement of 5.0 ft.* This will be expressed as a minimum, not as a fixed height, so that property owners have the option to construct them taller in anticipation of rising sea levels. New seawalls should be structured to accommodate height extensions in the future. Property owners will be encouraged to use new building technologies such as fiber-reinforced concrete. As in Ft. Lauderdale, a date will be set (e.g., 2030) by which all seawalls must come into compliance, and this will be strictly enforced. The Village has hired EAC Consulting to devise new standards.

* See Note 2 on Seawall Comparison Table.

2) Devise a coordinated strategy for the replacement of seawalls so that large sections of seawall can be replaced in several large, coordinated efforts, one push for each zone or neighborhood, as logic dictates. The advantages are many. By representing multiple property owners together, the Village may be able to negotiate a lower price based on the quantity of work. Also, the Village may find a mechanism for financing the work and spreading out the cost over many years, or the Village may secure grants. These strategies could substantially reduce the costs for property owners compared to what they would pay individually. In addition, the final product will be more uniform, which will make it both stronger and more attractive.

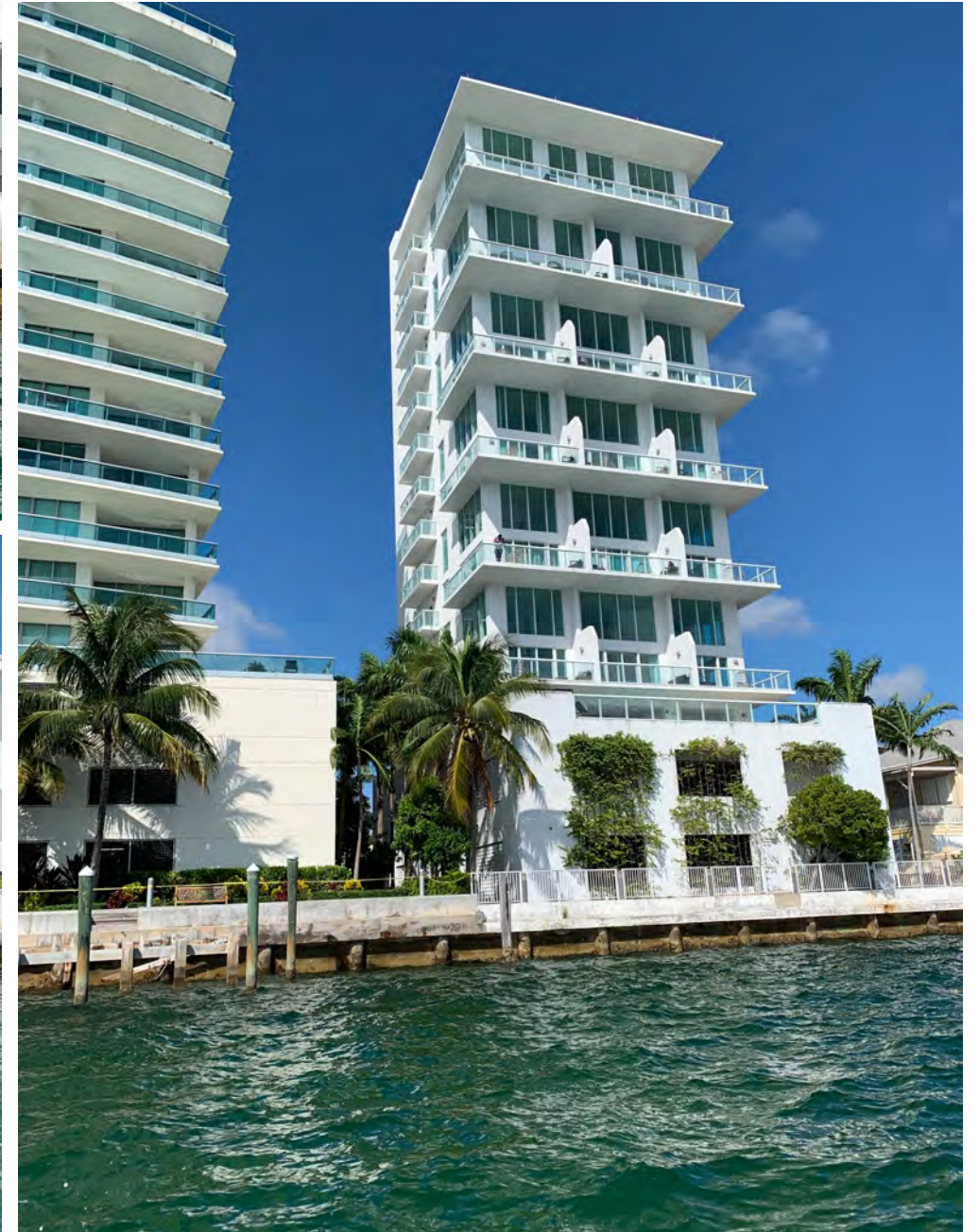


Current Condition of Seawalls



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SEAWALLS TODAY — NO ONE SIZE FITS ALL



Single-family Homes

10 to 15-year-Old Multi-Family Buildings

New Development

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SEAWALL COMPARISON TABLE

		Delta between NGVD-29 and NAVD-88 (in feet)	Regulation	Sea Wall Height (in feet above MSL)					Other Seawall Criteria	
				Current/Former Height		Proposed/ Recently Adopted Height			Width at top of wall	Height of cap above shoreline access walkway
				NGVD-29	NAVD-88	NGVD-29	NAVD-88	Adoption Date		
Miami	North of Rickenbacker		Miami21 - Appendix B: Waterfront Design Guidelines	6 min.		5 min.		By July 2012	18 - 24 inches	6 - 8 inches
	South of Rickenbacker			7 min.		6 min.				
Miami Beach	Private	-1.56 (Based on datums specified in City of Miami Beach Ordinance)	Public Works Manual, Section A.2 “General Requirements — Sea Wall Elevation”	?	?	5.56 min.	4.0 min. with foundations to accommodate height extension to 5.7 (5.7 considered ideal, but lower height allows for impact on view sheds from low-lying homes)	2016?	-	-
	Public			?	?	7.26 min.	5.7 min.			
Ft. Lauderdale		-1.6 (Based on datums specified in Fort Lauderdale Ordinance)	ULDR §47-19.3 -Boat slips, docks, boat davits, hoists and similar mooring structures.	5.5 max.	3.9 max.	5.5 min.	3.9 min. If < 5.0, foundations are encouraged to accommodate future height extension up to 5.0	June 21, 2016 updated Dec. 6, 2016	-	-
						BFE max. (to prevent rain water runoff from impacting the house)				
Bay Harbor Islands		-1.555 (From VERTCON)	Bay Harbor Code of Ordinances §23-12 General provisions 10.c (See Note 1)	5.5 above MSL (specified areas with more wave action may elect 6.0) (See Note 1)	3.945 above MSL	-	-	?	-	-
North Bay Village		-1.545 (From VERTCON)	Existing requirement: §D-5.03.1.c of the Miami-Dade County Public Works Manual requires that the elevation of the top of the cap should be above the official flood criteria. (See Note 2) Proposed standards will be specified in the new land use regulations.	5.0 min. based on County Flood Criteria; not currently specified in NBV ULDC (See Note 2)	3.455 min.	7.5 min. Proposed (See Note 3)	6.0 min. Proposed (See Note 3)	2020 Proposed (See Note 3)	18 - 24 inches Proposed (See Note 3)	6 - 8 inches Proposed (See Note 3)
Miami-Dade County		Varies	§D-5.03.1.c of the Miami-Dade County Public Works Manual (See Note 2)	The County requires that the elevation of the top of the cap should be above the official flood criteria. Local municipalities should have their own flood criteria requirements set at or above Miami-Dade County Flood Criteria (See Note 2)		-		?	-	-
			Biscayne Bay Shoreline Development Review Manual B.3.2	Not specified		-		?	Not specified	6 - 8 inches

In devising new seawall standards for NBV, it is helpful to refer to existing standards established in neighboring communities. EAC Consulting will review, correct and expand this research as necessary as part of their work for the Village.

Ft. Lauderdale and Miami Beach are well known for their efforts to address sea level rise. It is remarkable that existing standards in the area, which currently

average around 5.5 ft (NGVD-29), barely exceed the current County requirement for NBV of 5.0 ft.

By establishing a new minimum of 7.5 ft (NGVD-29), NBV will be setting an ambitious new standard for South Florida. An example at this height has already been constructed in the Village at the new Benihana Restaurant on Kennedy Causeway, and it has been well-received.

Notes:

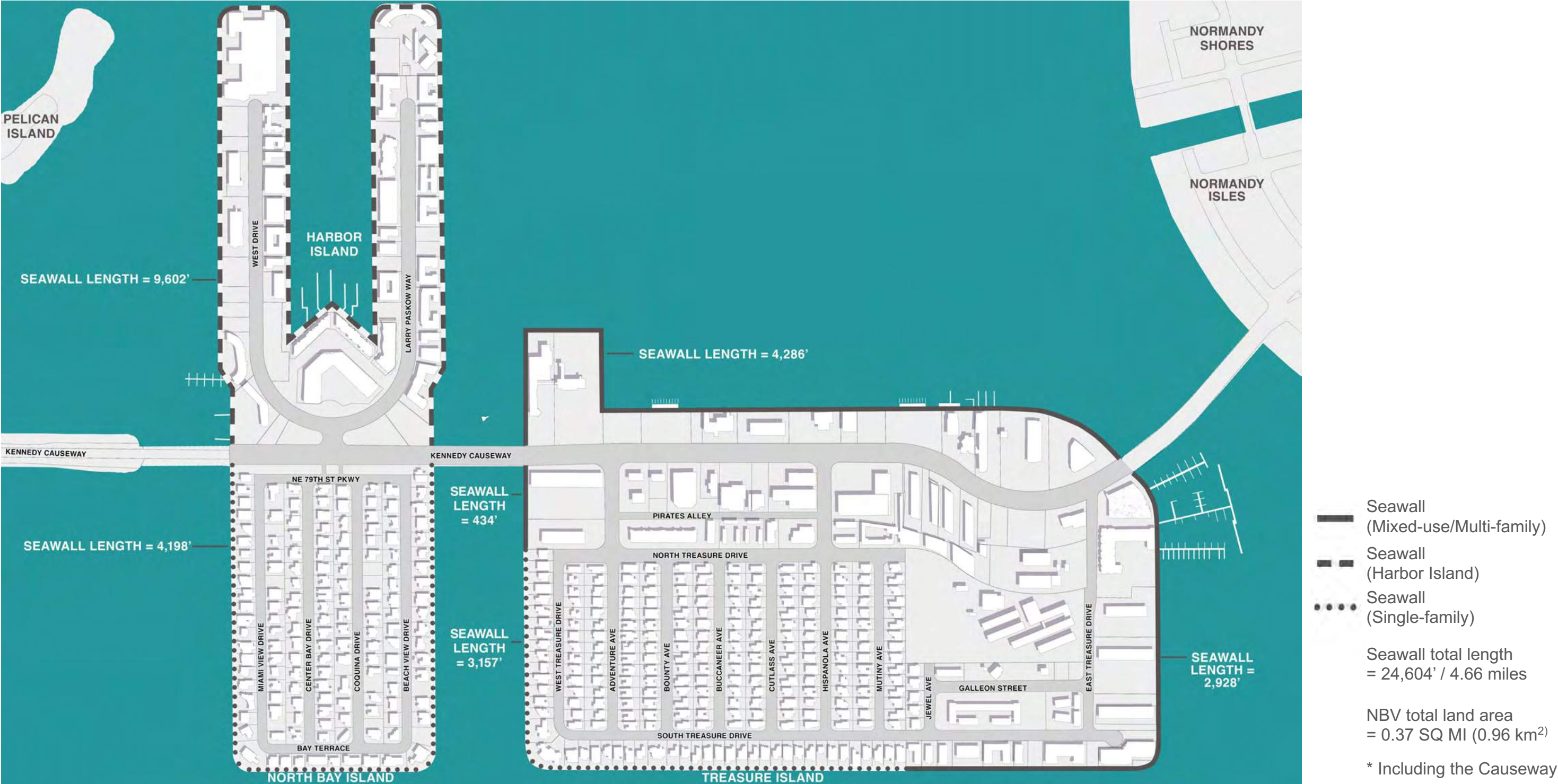
1. Information provided by Attn. Graham Penn of Bercow Radell Fernandez & Larkin, email to DPZ dated 10/11/2019.
2. Based on email to DPZ by Catherine Gray, Manager, Coastal Resources Section, Miami-Dade County, Department of Regulatory and Economic Resources, dated 10/18/2019. Note that the email did not specify the vertical datum. NGVD-29 is presumed, but should be verified.
3. EAC Consulting has been engaged by the Village to devise new seawall standards that support the NBV100 Master Plan. This table is for discussion purposes only. DPZ is not responsible for errors. EAC Consulting has been engaged to devise new standards for seawalls and the Island Walk. Their final recommendations are pending. EAC Consulting is solely responsible.

Terms:

NGVD-29: National Geodetic Vertical Datum of 1929
NAVD-88: North American Vertical Datum of 1988
MSL: Mean Sea Level

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NBV SEAWALL PERIMETER ANALYSIS



This is a preliminary assessment undertaken by the DPZ team during the charrette of seawalls and their connection to the current distribution of density and intensity.

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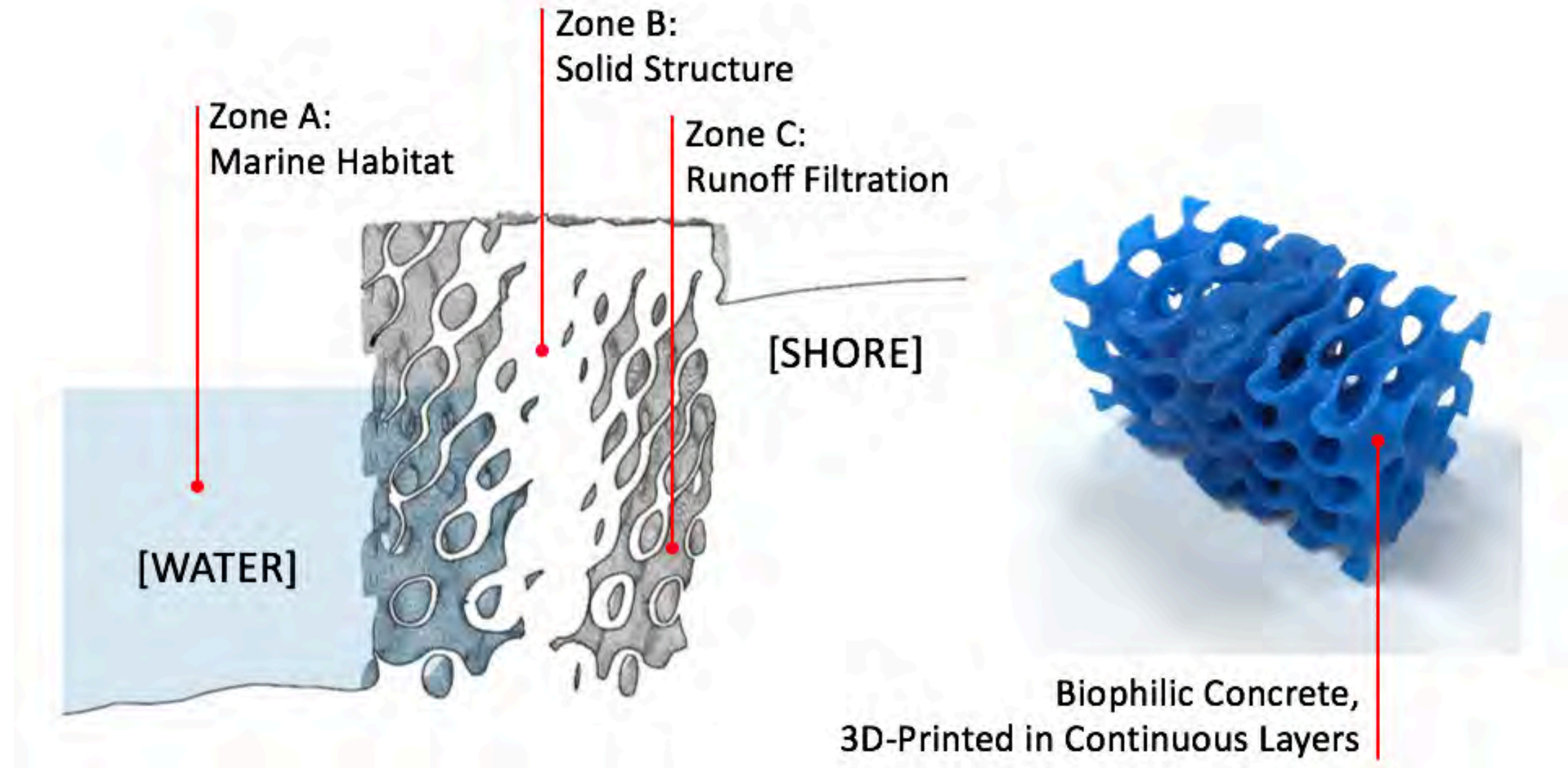
STRONG SEAWALLS – THE NEXT GENERATION OF COASTAL INFRASTRUCTURE

An early concept being developed by the U-LINK Team at the University of Miami is illustrated to the right. This and other concepts for the next generation of coastal infrastructure could be tested in a marine preserve area in NBV. (See “Created In Water Water Quality – Marine Preserve And Seagrass Restoration”, p. 70)

Potential first steps to implement emerging technologies for seawalls:

- Partnership with University of Miami Next Generation Coastal Structures Team.
- Update code specifications to allow for alternative technologies. (EAC Consulting has been engaged by the Village.)
- Explore financing mechanisms and possible public/private partnerships.

An innovative, alternative material for use in seawalls that has been pioneered by the University of Miami is discussed on the following page.



U-Link (University of Miami Laboratory for Integrative Knowledge)

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SEAWALLS – RESILIENT STRUCTURE

Many of the original seawalls (or bulkheads) in North Bay Village follow a design that relies on tie rods. The tie rods connect to deadmen or some other counterweight underground to hold the panels in place and prevent them from overturning. This configuration is structurally efficient and made sense when the walls were first put in place before there was any fill on the landward side.

Illustrated here is an updated version that makes use of an innovative building material, namely non-corrosive fiber reinforced polymer materials pioneered by the Civil, Architectural, and Environmental Engineering Department at the University of Miami. One of the major advantages of this material is that it contains little or no steel, a material that is prone to rusting, especially in a salt-water environment. The Department generously provided engineered design drawings to NBV for use by residents seeking to replace their aging seawalls. This design served as the basis for the 3D illustrations by DPZ on the following pages.

EAC Consulting has been engaged by the Village to devise new seawall standards. They will provide several options, one of which will rely on tie rods and specify the aforementioned specialized material. However, it is worth noting that, over time, many tie rods have been severed to accommodate swimming pools, leading to the premature failure of these walls.

One alternative (not pictured) is a living seawall. This can take many forms, but one

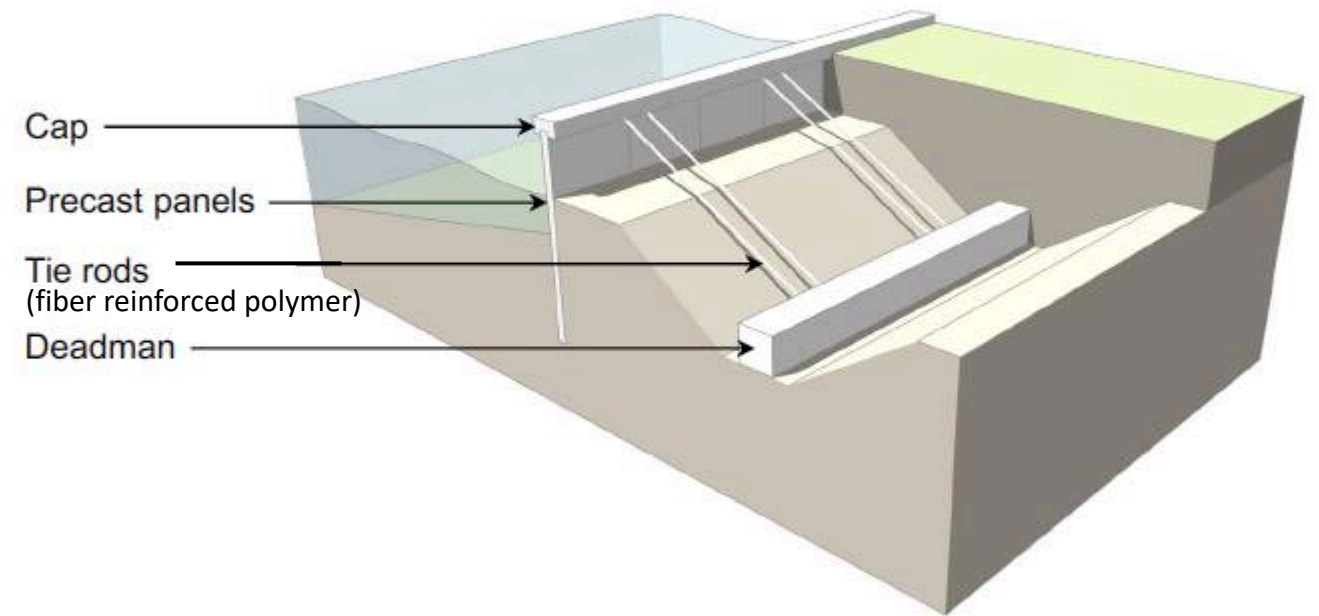
version consists of riprap placed in front of an aging seawall that needs repair or replacement. It is planted with mangroves and other native species. Living seawalls perform well in storm conditions and are easier to expand in the future than conventional seawalls. More stones are simply added to the top of the riprap, and the mangroves adjust their height naturally.

A living seawall typically involves the placement of riprap beyond the property line on submerged land in the riparian right-of-way. Unfortunately, the County does not at present allow property owners to encroach on submerged lands, which are technically owned by the State of Florida. However, individual property owners may elect to construct a living shoreline on their own property, as long as adequate height and protection to abutting properties are provided. EAC Consulting will provide standards for a range of options, including conventional approaches.

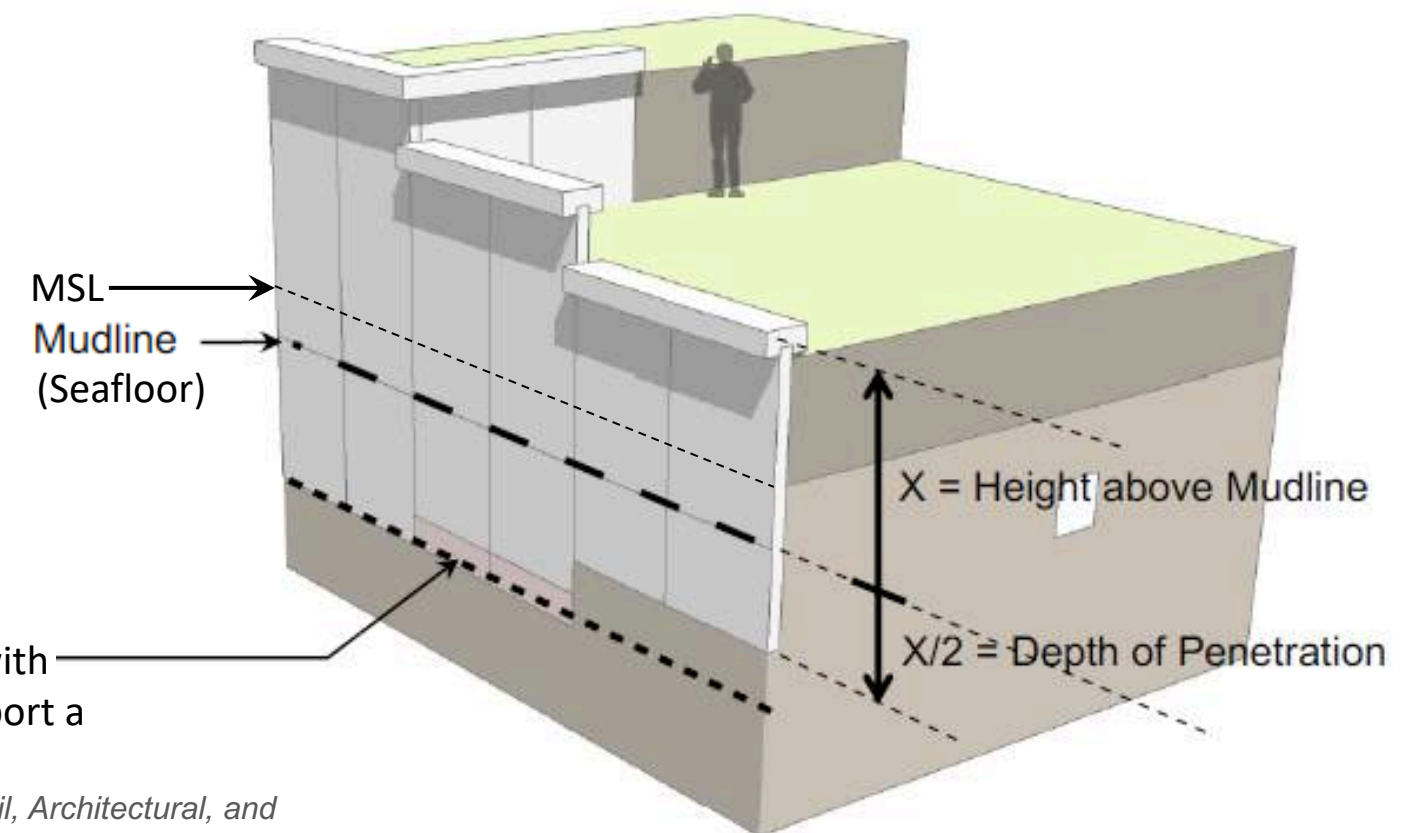
New seawalls must be built to a minimum height and be structured to accommodate later increases in height. The use of riprap will be encouraged wherever feasible, regardless of whether the riprap is planted as a living seawall.

New seawalls shall be built with foundation adequate to support a full-height seawall

3D illustrations by DPZ are based on designs by the Civil, Architectural, and Environmental Engineering Department at the University of Miami. These drawings are for illustrative purposes only. Dimensions and specifications are recommendations only. DPZ is not responsible for errors. EAC Consulting has been engaged by NBV to devise new standards for seawalls and the Island Walk. EAC Consulting is solely responsible for their final recommendations, which are pending.



Seawall with tie rods

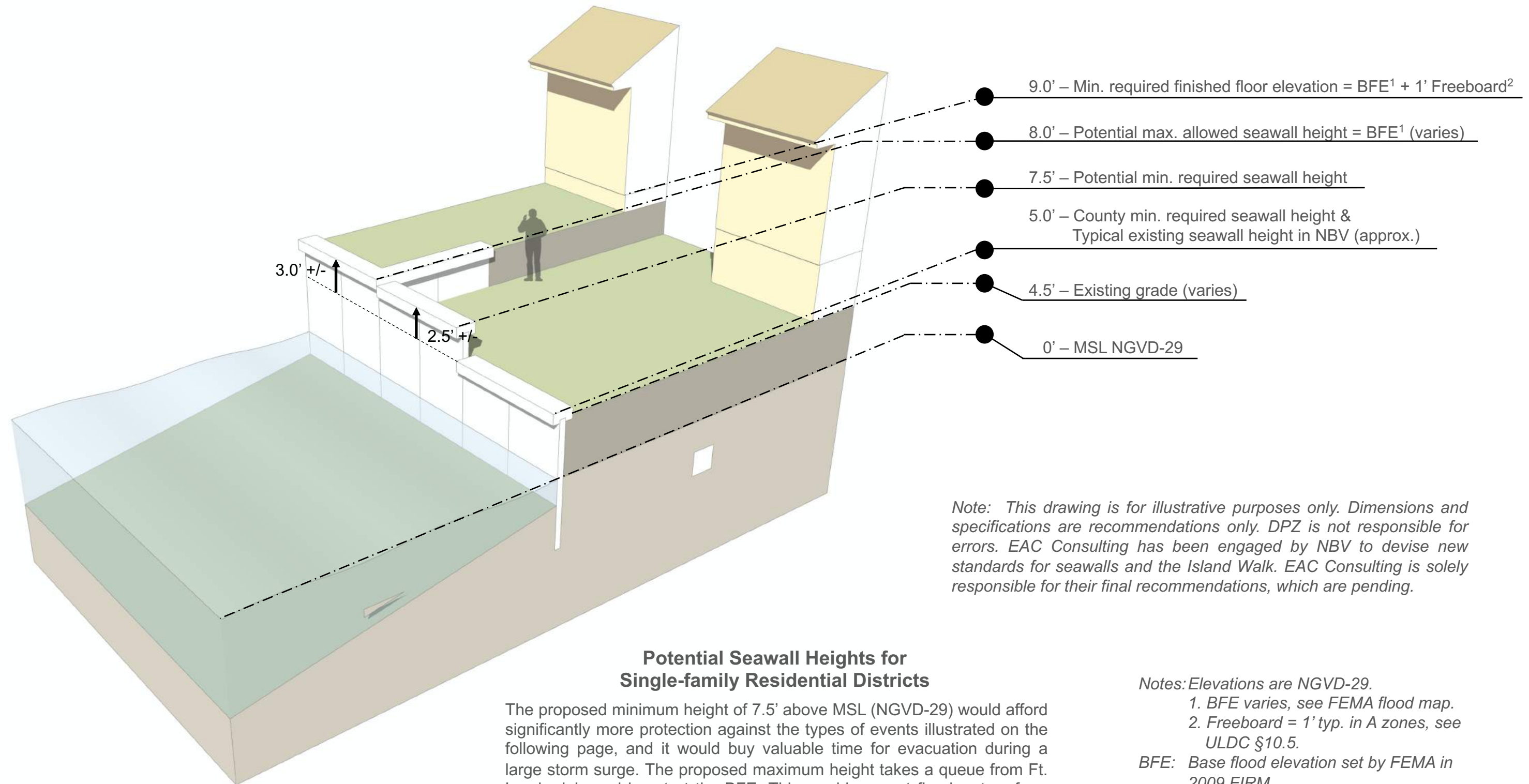


Seawall foundations

New seawalls in NBV will be required to be structured to allow future increases in height.

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SEAWALL HEIGHT FOR SINGLE-FAMILY RESIDENTIAL

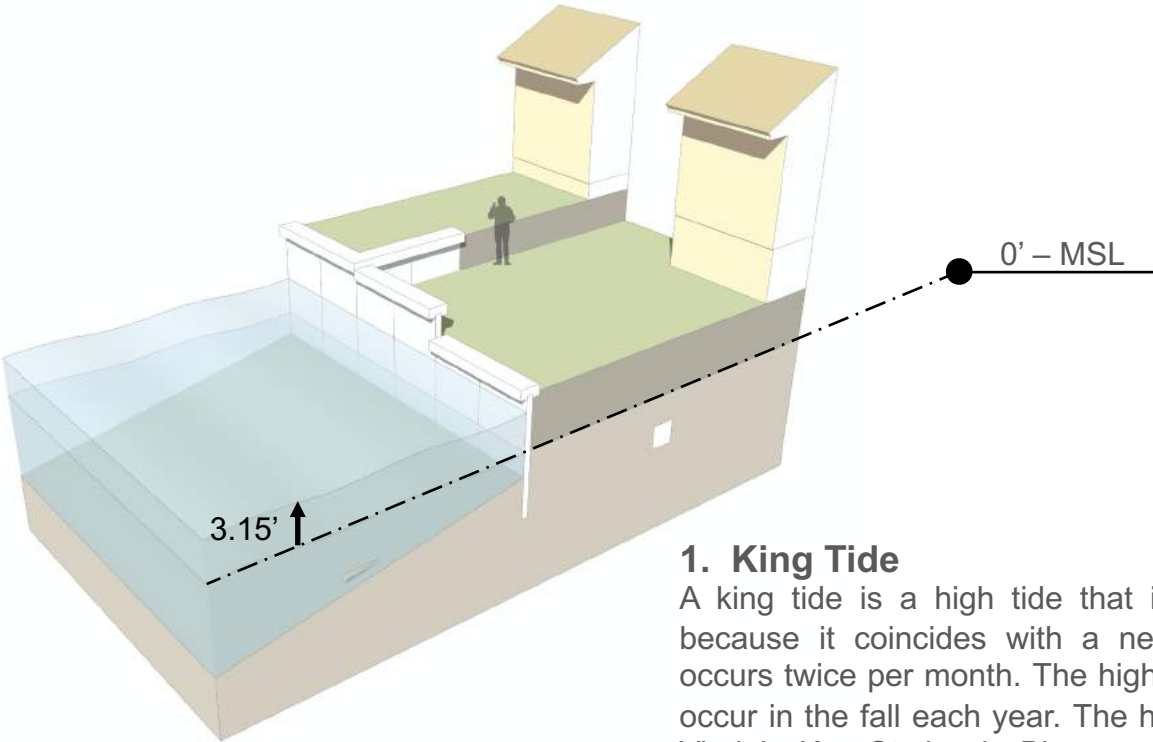


Notes: Elevations are NGVD-29.
 1. BFE varies, see FEMA flood map.
 2. Freeboard = 1' typ. in A zones, see ULDC §10.5.
 BFE: Base flood elevation set by FEMA in 2009 FIRM.
 MSL: Mean sea level.

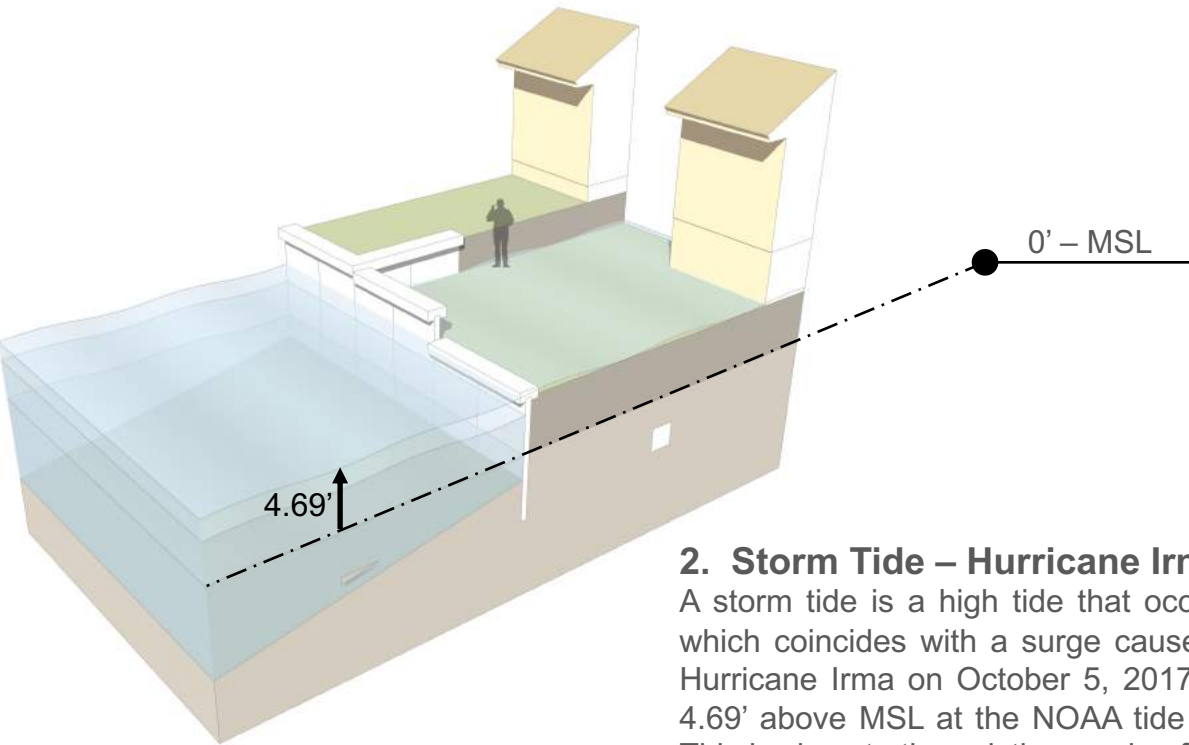
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SEAWALL HEIGHT FOR SINGLE-FAMILY RESIDENTIAL

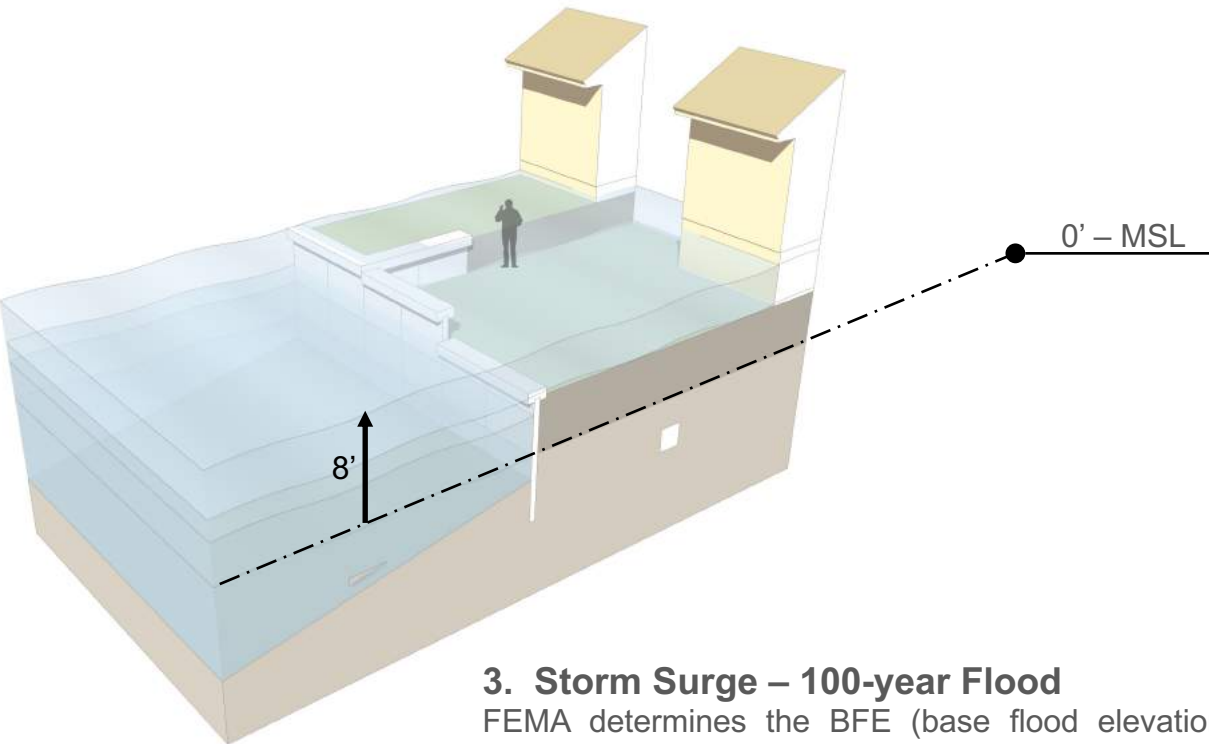
Note: These drawing are for illustrative purposes only. Dimensions and specifications are recommendations only. DPZ is not responsible for errors. EAC Consulting has been engaged by NBV to devise new standards for seawalls and the Island Walk. EAC Consulting is solely responsible for their final recommendations, which are pending.



1. King Tide
A king tide is a high tide that is higher than normal because it coincides with a new or full moon. This occurs twice per month. The highest king tides typically occur in the fall each year. The highest recorded at the Virginia Key Station in Biscayne Bay was 3.15' above MSL and occurred on October 15, 2017.



2. Storm Tide – Hurricane Irma
A storm tide is a high tide that occurs during a storm and which coincides with a surge caused by the storm. During Hurricane Irma on October 5, 2017, the sea level reached 4.69' above MSL at the NOAA tide station on Virginia Key. This is close to the existing grade of much of NBV. Note that this storm surge was below the 100-year flood level.

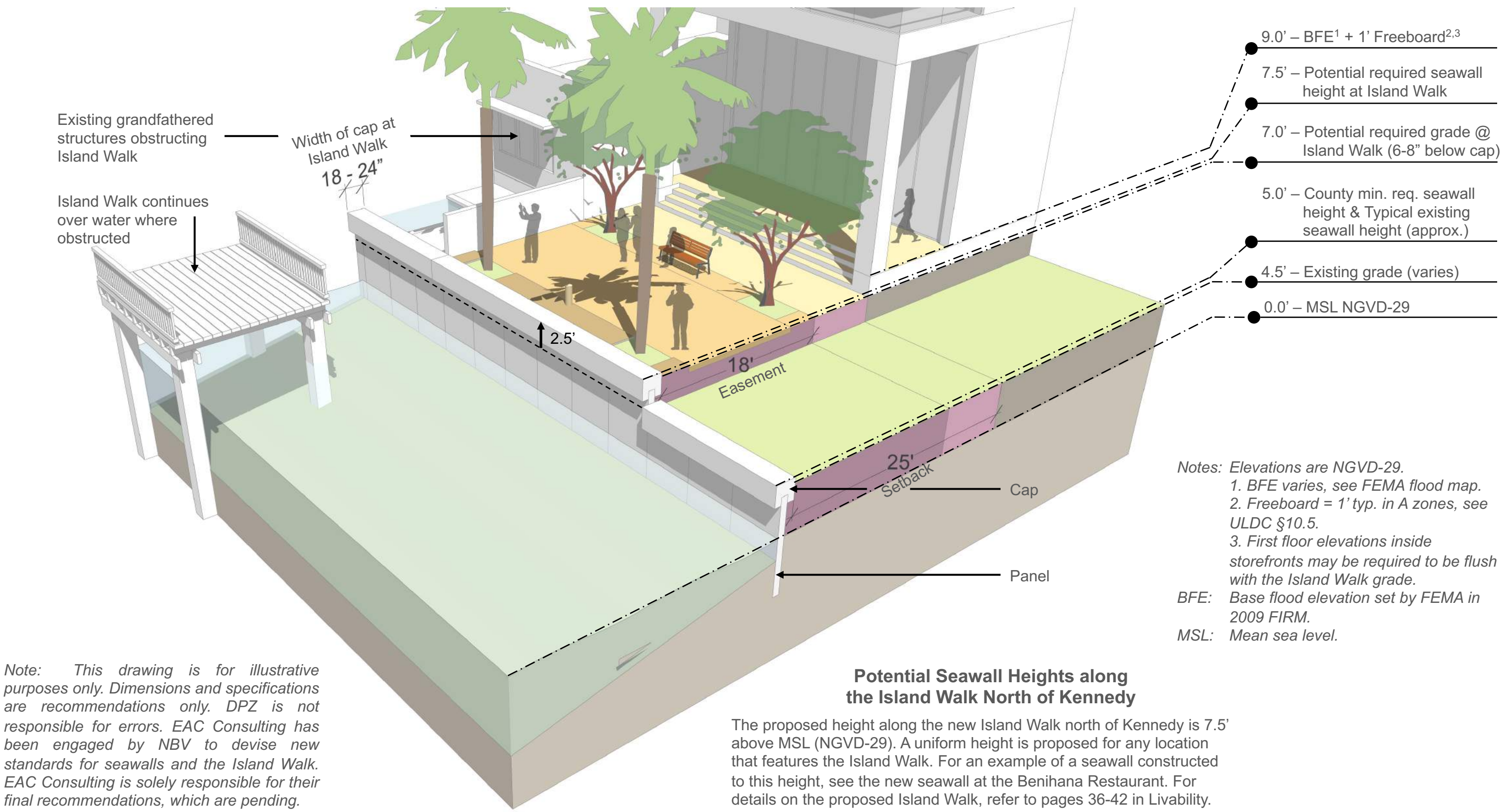


3. Storm Surge – 100-year Flood
FEMA determines the BFE (base flood elevation), which is based on the predicted 100-year flood. For most of NBV, the BFE is 8.0' (NGVD-29), though some areas are 9.0' and 10.0'. It is unlikely that a given storm surge will exactly match the parameters of the base flood as defined by FEMA; an actual flooding event will likely be higher or lower.

*Notes: Elevations are NGVD-29
Tide data is from the NOAA website for the Biscayne Bay Station on Virginia Key.
BFE = Base flood elevation set by FEMA
MSL = Mean sea level*

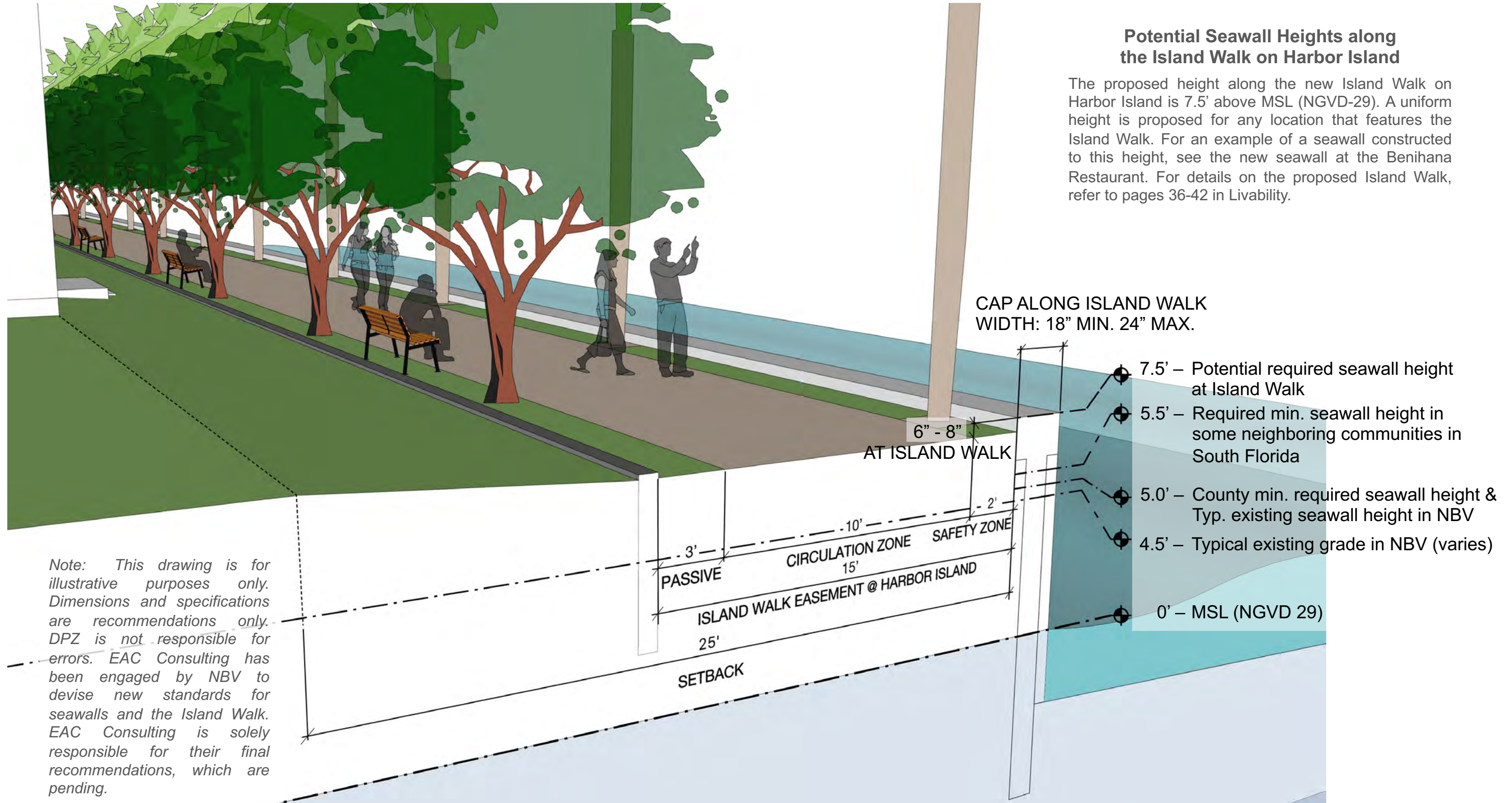
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STRONG SEAWALLS AND ISLAND WALK NORTH OF KENNEDY



PROTECTED FROM WATER

STRONG SEAWALLS AND ISLAND WALK ON HARBOR ISLAND



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RAISING PUBLIC INFRASTRUCTURE

NBV is already suffering from so-called nuisance flooding, which includes sunny day and king tide flooding, as illustrated in the photos on this page. (Undated images are available on the NBV website.)

The Miami-Dade County Office of Resilience has recommended that NBV elevate its roadways. Recognizing that this is an expensive and long-term project, the first step is to create a plan, which can be used to seek funding. In Miami Beach, this is part of their Stormwater Master Plan. Given that NBV will soon begin the process of creating its own Stormwater Management Plan and that the Village is currently devising the scope of work for this Plan, it is recommended that the Village incorporate a plan to elevate roadways into its new Stormwater Master Plan.

Though some places have raised their infrastructure high enough to remain dry during a major storm surge (e.g., Galveston, TX.), this is generally not considered practical in South Florida. However, it is practical to raise infrastructure high enough to reduce substantially or even eliminate nuisance flooding. This will be a boon to the local quality of life and help increase property values relative to other communities that have not solved such challenges. It will also lower ongoing maintenance costs. And it could buy precious time for evacuation and emergency access during a major storm.

Though resources are not currently in place to execute this project, putting a plan in place soon is important to the new form-based code and to facilitating development. For example, by establishing the benchmark “future crown of road”, it will make it clear for new projects where to set finish grade. The new form-based code will refer directly to this benchmark (or a similar benchmark.) This will allow redevelopment to harmonize over time, establishing a consistent elevation that anticipates future public improvements.

Creating a long-term plan will help NBV to prioritize infrastructure investments over the years. It may also help attract funding as a flagship project.



Adventure Avenue



North Treasure Drive



West Treasure Drive



West Treasure Drive

PROTECTED FROM WATER

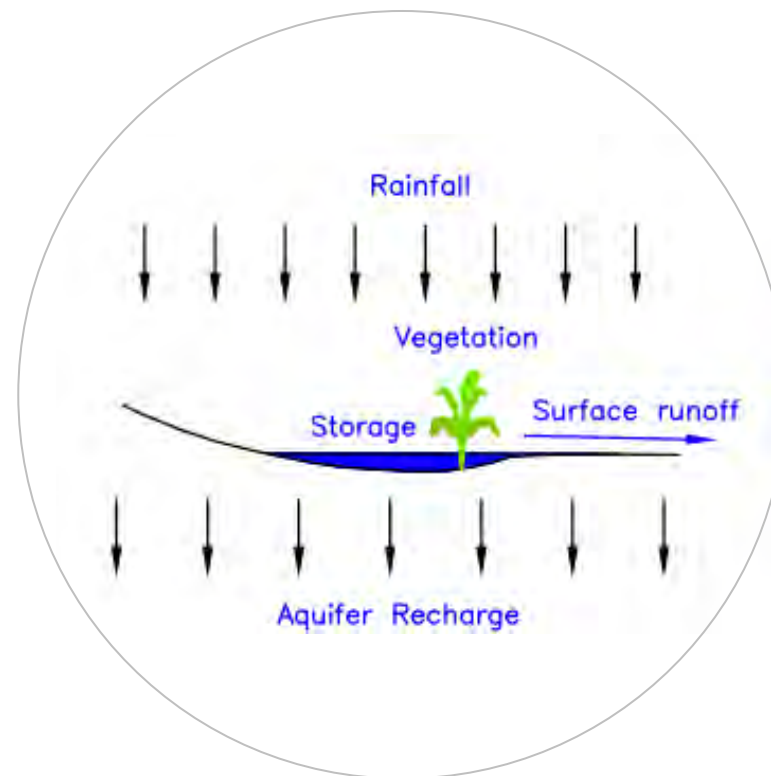
GREEN INFRASTRUCTURE

The Light Imprint (LI) initiative is a comprehensive development approach for the sensitive placement of development, calibrated across the different context zones. Light Imprint planning/engineering techniques balance environmental considerations with design objectives such as connectivity and a well-defined public realm. This toolkit offers a set of context-sensitive design solutions that result in a range of environmental benefits, and an aesthetic approach to green infrastructure.

This method uses:

- Vegetation and soil to manage rainwater where it falls
- Cost efficiency and high environmental performance infrastructure
- Rain-gardens, pervious pavements, natural drainage, gravel swales

Light Imprint – Landscaping & Paving



*Increased storage
and infiltration*



Pirates Alley



Potential Drainable Paving

PROTECTED FROM WATER

GREEN INFRASTRUCTURE – LIGHT IMPRINT

Channeling



Planting Strip Trench

Storage



Landscaped Tree Well

Filtration



Rain Garden



Masonry Trough



Pool/Fountain



Vegetative Purification Bed

THRIVING WITH WATER

Implement strategies that offer predictability to both current residents and future investors that help maximize the NBV waterfront potential while remaining open to modifications over time to address sea level rise and evolving climate patterns.



Boating in the Bay



Shuckers Waterfront Bar and Grill
<https://miamiandbeaches.com>



Private Docks

THRIVING WITH WATER

STORMWATER MANAGEMENT - THE WAY FORWARD

Stormwater management & green infrastructure goals:

- Ensure continuous monitoring of SLR science information including current observed data, projections, and adjust the Adaptation strategies accordingly.
- Conduct an integrated feasibility study of Hydrology, SLR, and Seawall Elevations considering inland (surface runoff and stormwater infrastructure) and coastal hydrology (storm surge, tidal changes of sea level and long-term sea-level rise considering 2060 and 2100 year).
- For selected alternatives (stormwater system and seawall upgrades) determine the financial impacts of implementation of new, refurbished or modified Seawalls for different risks of failure.
- Develop a multi-phase multi-year plan for SLR adaptation, which will be able to address the state of technology, current knowledge of SLR, and the cost of implementation.
- Develop a plan for the elevation of all roadways. This will include raising utilities or making them submersible. Establish “future crown of road” elevations for all streets (or an equivalent baseline criteria) and make it available to the public. Property owners refer to BFE when establishing the elevation of interior, habitable spaces. They need “future crown of road” as well

as the minimum height of seawall for site design, specifically for purposes of establishing final grade on their properties. As in Miami Beach, the new zoning code will refer property owners to the future crown of road as established by the Stormwater Master Plan. This is important to the Village so that work on different properties can be easily and automatically harmonized.

Stormwater master plan:

The Village’s upcoming stormwater master plan will be done with emphasis on determining the project improvements needed to implement proposed measures and systems to combat sea level rise, stormwater flooding and improve water quality. The Village anticipates starting in mid-2020 and completing within six months.

Short-term:

Replace valves, keep clean of garbage and debris, devise a plan for the elevation of roadways, etc.

Medium-term:

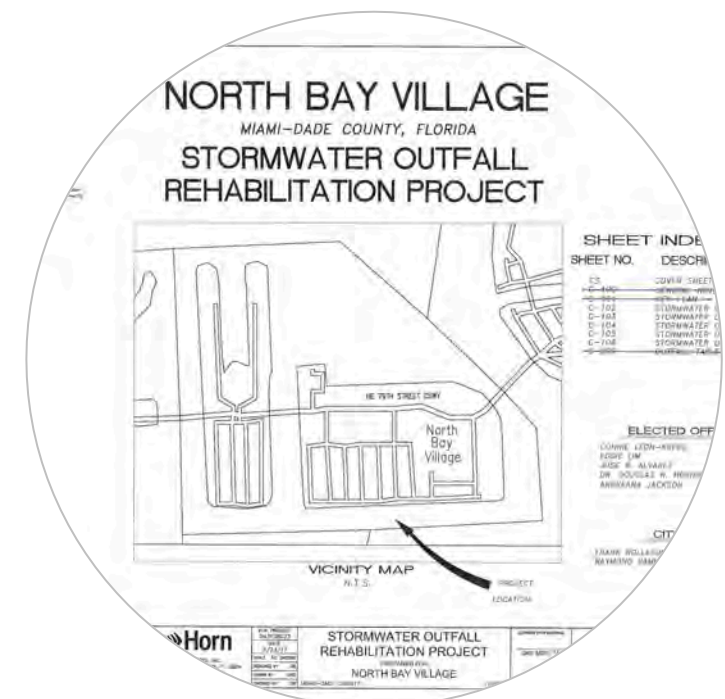
Replace pipes to increase capacity where needed, rain gardens to absorb water, search for funding for the elevation of roadways, etc.

Long-term:

Incorporate stormwater into a more holistic infrastructure management plan for sewer and water, implement plan to raise roadways.



Existing Stormwater System Map



North Bay Village Stormwater Outfall Rehabilitation Project

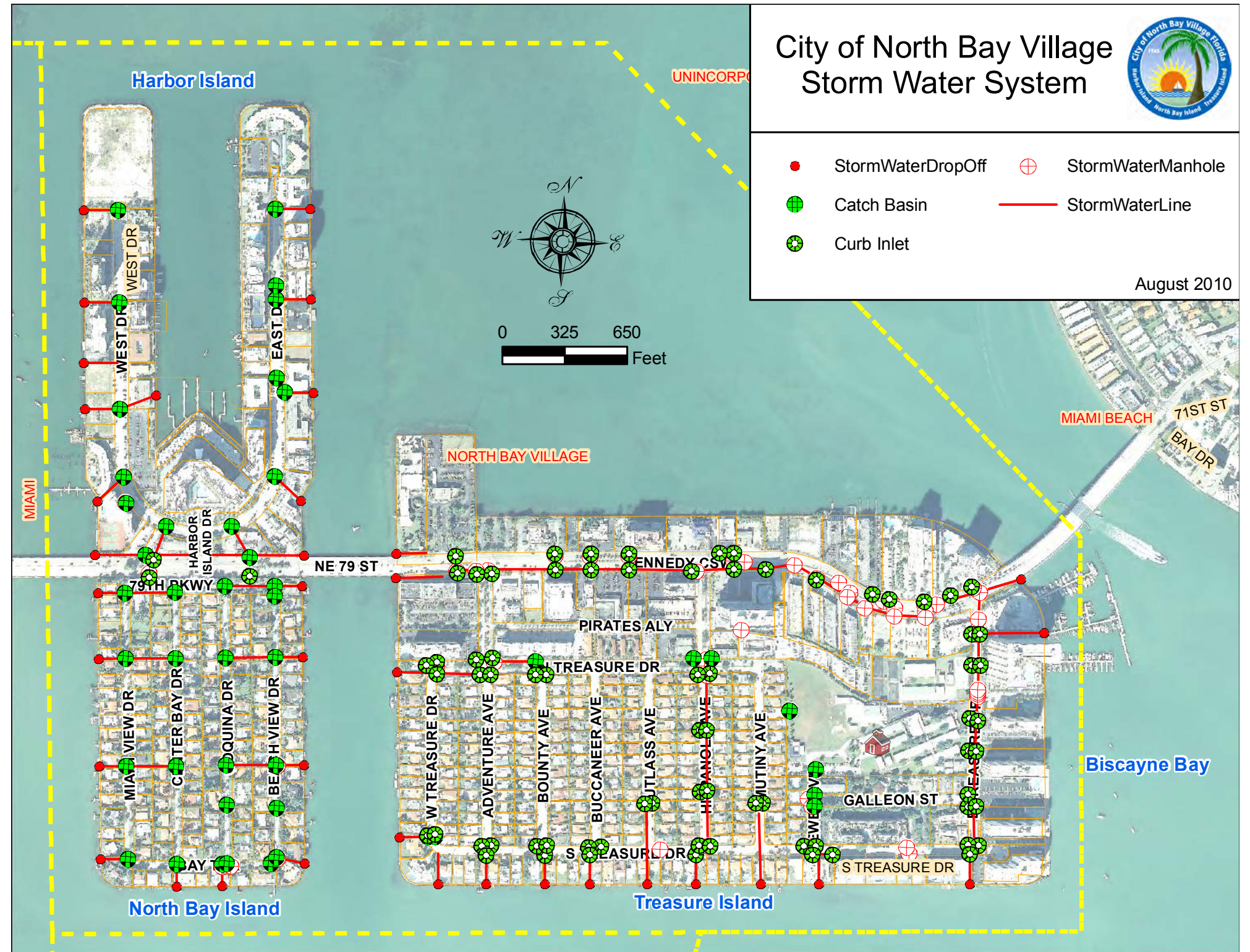
THRIVING WITH WATER

EXISTING STORMWATER SYSTEM MAP

The map shows the existing NBV stormwater system. A stormwater model should be created to analyze the performance of the system under various outfall conditions and storm events.

In addition, there should be an analysis of alternative mitigation strategies. Some of them are mentioned in the prior pages:

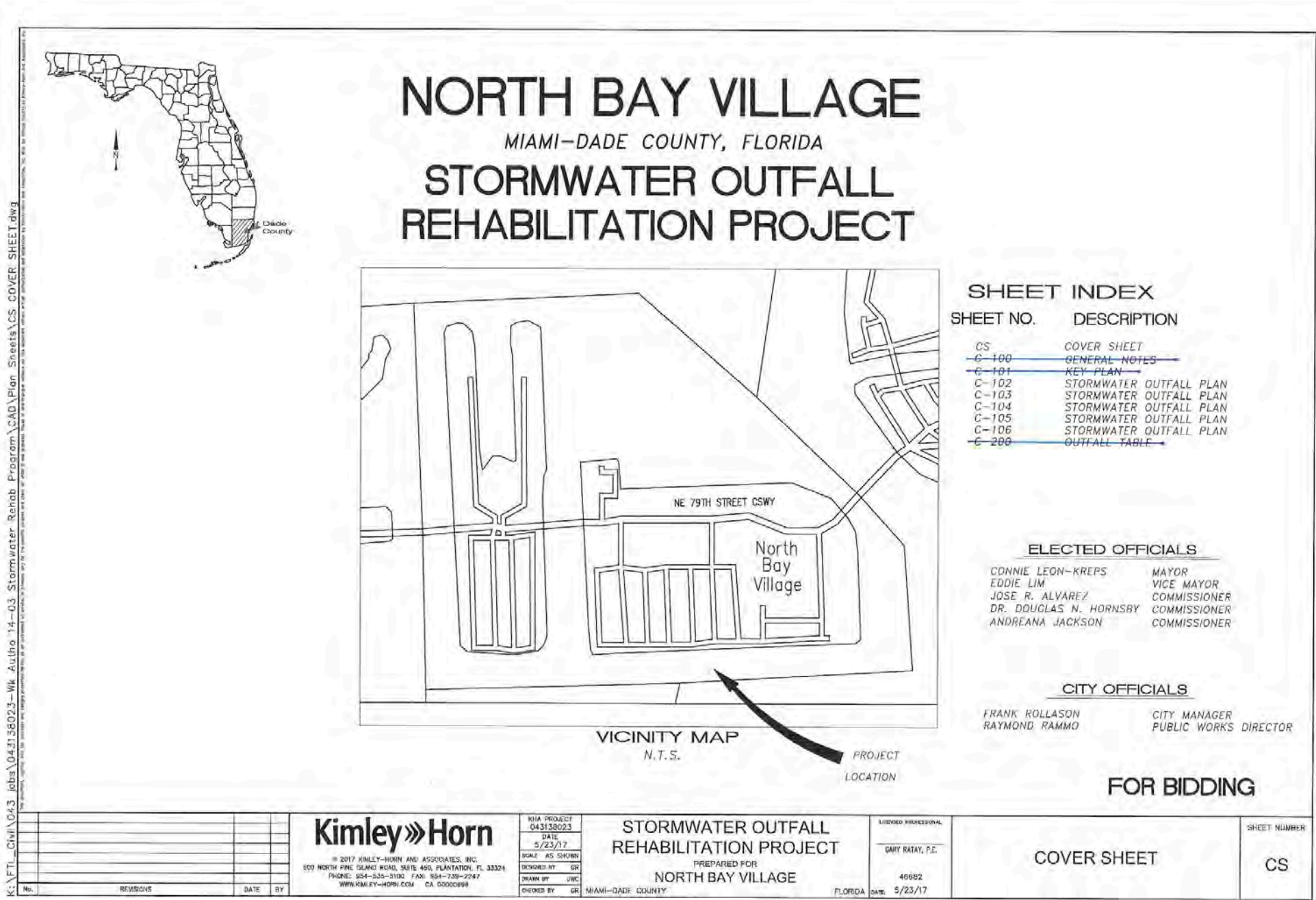
- Installation of backflow preventers
- Updates of seawalls
- Green infrastructure
- Improving interconnectivity of the stormwater system and installation of pumping components
- Plan to elevate roadways



THRIVING WITH WATER

STORMWATER MANAGEMENT

In 2017, Kimley Horn prepared plans for a stormwater outfalls rehabilitation project in NBV. 21 out of 37 drainage outfalls have been retrofitted with backflow preventers by the Village. These simple, but critical, devices prevent seawater from flowing backward up into the stormwater system, especially during king tides, thereby lessening sunny day flooding. Backflow preventers will be installed on the remaining outfalls.



Backflow preventers installed at drainage outfalls in NBV. Photos and plans courtesy of NBV Public Works.

THRIVING WITH WATER

PRECEDENTS – RAISING THE STREETS

Raising city streets has long been a strategy used to modernize cities when major infrastructure changes are required, as exemplified in the four precedents illustrated on this page.

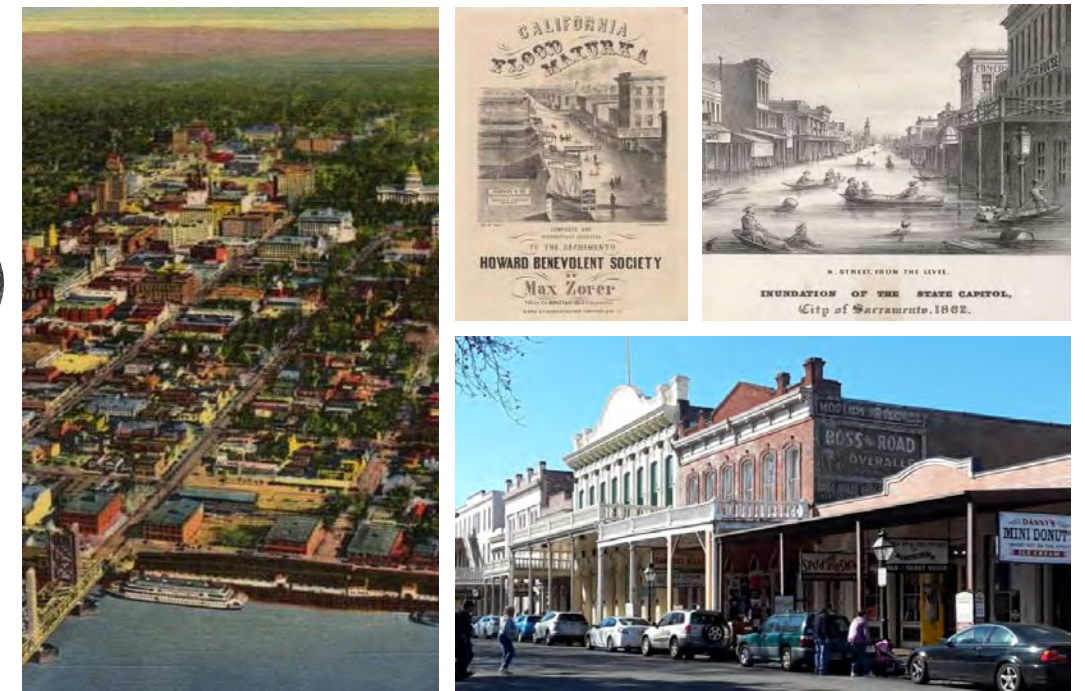
In some cases in South Florida, public streets have been raised to address flooding and sea level rise before private improvements could be made. For example, Miami Beach raised some streets and sidewalks, an important infrastructure improvement to prevent frequent neighborhood flooding. However, some property owners were dismayed to find that their yards and shopfronts were now below the new street level.

Conventional zoning codes do not anticipate these types of conflicts. The new NBV100 code will help facilitate investment in private properties before public infrastructure improvements are made through such mechanisms as keying building heights to base flood elevation (BFE) and finish grade to the planned future crown of road elevations.

CHICAGO 1850-60s



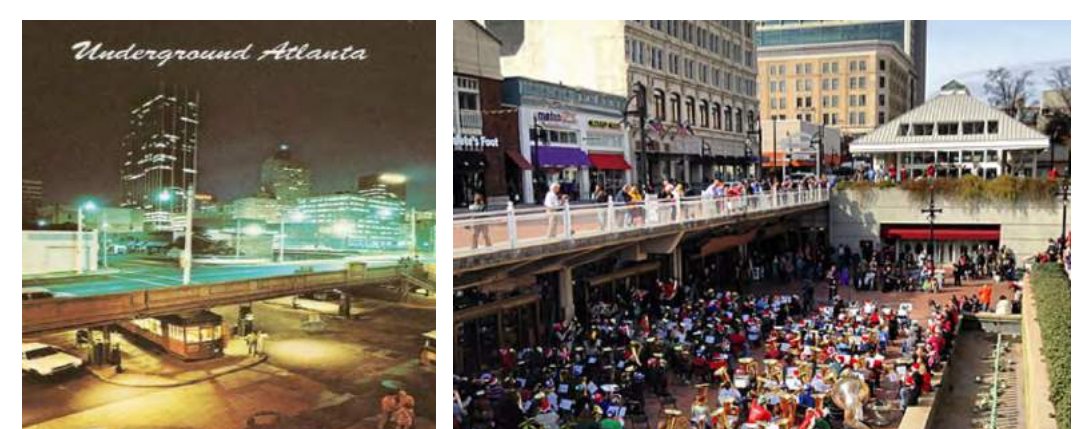
SACRAMENTO 1860s



SEATTLE 1890s



ATLANTA 1900 – '20s



THRIVING WITH WATER

PRECEDENT – GALVESTON, TX

Galveston, TX, provides a striking precedent for raising a city in response to the threats of coastal flooding. The physical situation of Galveston has strong similarities to South Florida. Galveston is located on a barrier island, similar to the island on which Miami Beach is located. Separating Galveston from the mainland is a shallow inland waterway called Galveston Bay, similar to Biscayne Bay.

In 1900, before hurricanes were given names, a tremendous storm devastated Galveston, then the leading city in Texas. The death toll remains the highest for any natural disaster in U.S. history. A majority of the city was destroyed. No building was left undamaged.

This cataclysm provoked the young city to take a radical step. They constructed a 15-foot high seawall along the beach that eventually stretched ten miles. Behind this seawall, they raised the City up to this new elevation. The new land was created in a manner similar to the way North Bay Village was created. Galveston dredged the shallow bay behind them. In one move, they improved the navigability of the Bay and produced dredge spoils that were used as fill.

What is striking about this example is that Galveston raised both the public rights-of-way and private property in one fell swoop. In the before photo on this page, a man points to a line painted on a telephone pole indicating the future grade line. Behind him, one of the structures that survived the storm has already been elevated to the new elevation. In the after photo, the entire ground plane has been filled in from below. Not only light wooden structures were raised. An enormous heavy stone church that survived the storm was raised.

With the knowledge that Galveston would be secure from future weather events, the City was rebuilt. This massive infrastructure investment protects Galveston to this day not just from nuisance flooding, but from storm surges and sea level rise. No doubt, it will outlast many communities in similar low-lying situations.



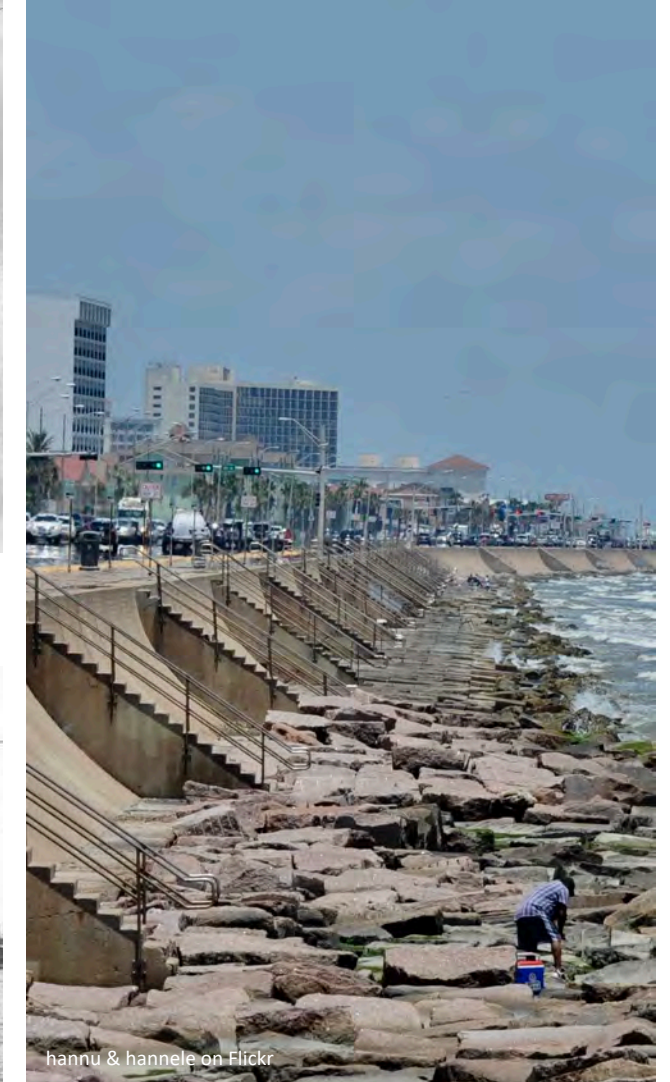
Devastation from the 1900 Hurricane.



New seawall under construction in 1906, 15 feet high. (17 above low tide.)



In the before photo, a surviving house has already been raised to the new elevation. A man points to this elevation painted on the utility pole high above his head. In the after photo, the ground level has been filled in below, creating a new, higher ground plane. The man points to the same mark.



Galveston seawall today. Large riprap protects the base of the seawall. A sandy beach is exposed at low tide. The promenade running along the top of the seawall is the longest continuous sidewalk in the world.

THRIVING WITH WATER

PRECEDENTS – RESILIENT BUILDINGS

Perez Art Museum Miami (PAMM)

This innovative and award-winning design by architects Herzog & de Meuron is an excellent example of adaptive and resilient design featuring an understory. Built with flooding and sea level rise in mind, the museum and its exhibit spaces are ten feet above the minimum elevation required for storm surges, leaving an extensive understory that serves conveniently for parking.

Special attention is paid to making the understory an inviting place to be -- not merely a functional afterthought. The concrete structure is carefully detailed and fabricated. The parking surface is paved with stabilized gravel that is both attractive and pervious, allowing water to penetrate directly into the ground. To better connect the upper and lower levels, stairs are located in oversized openings that allow sunlight into the lower level and plants to grow in rain gardens.



THRIVING WITH WATER

RESILIENT BUILDINGS – EXAMPLES

North Bay Village waterfront housing: New project, construction will begin shortly

This house has been designed for a waterfront property on Treasure Island. It anticipates flooding events such as storm surge and general sea level rise. The first floor, including the garage, will be built to the BFE plus one foot of freeboard.



North Bay Village waterfront housing: Charrette study

This house is even better prepared for storm surge and sea level rise. Instead of just meeting the minimum requirement for flood insurance (BFE + freedboard), the entire house is set up on an understory, far about BFE. The understory has enough clear height to allow it to be useable space, though it can never be enclosed. Because the understory is well-designed and tidy, it presents an attractive face to the street. This project is more fully illustrated in the Prosperity Chapter. A building section explaining heights is feature in the LDRs Chapter.



THRIVING WITH WATER

THE ELEVATED VILLAGE

One of the most important topics presented during the NBV100 Charrette was also one of the most difficult to address. In the next 25 years, NBV will need to confront seriously the matter of sea level rise (SLR). Though some of the data projections place the more dramatic impacts decades from now, some homeowners are already seeing their streets and bay front lawns flood during king tides and other severe weather events.

Construction of higher seawalls will be a welcome improvement, especially in terms of nuisance flooding and increasing the window for emergency access and evacuations during a major storm. However, it is difficult to conceive a scenario in which the seawalls were built

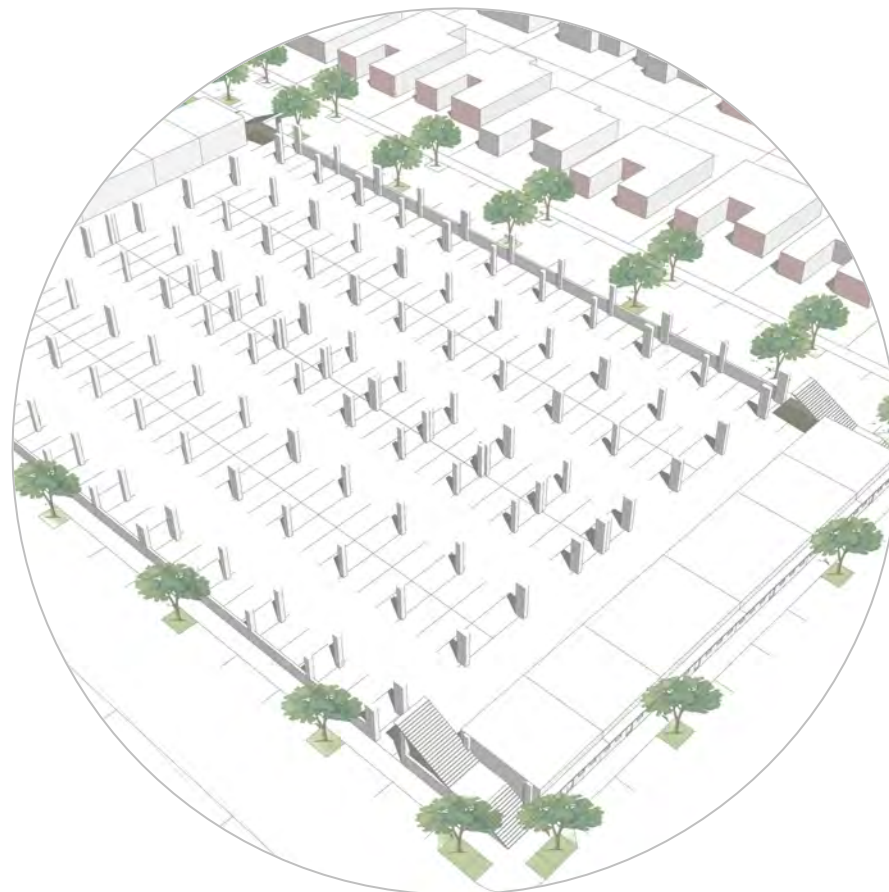
high enough to protect property against a major storm surge, such as the base flood as defined by FEMA. To protect against such an event, the seawalls would have to be constructed as tall as levees. FEMA defines a levee as three feet above the base flood elevation (BFE.) That would place the top of the seawall at eleven to thirteen feet above sea level. They are currently around five. Though effective, this would likely be infeasible politically given the premium placed on views of the water.

It is worth noting briefly that Galveston, Texas, undertook a project of this magnitude over a hundred years ago. The problem of views was solved because the ground

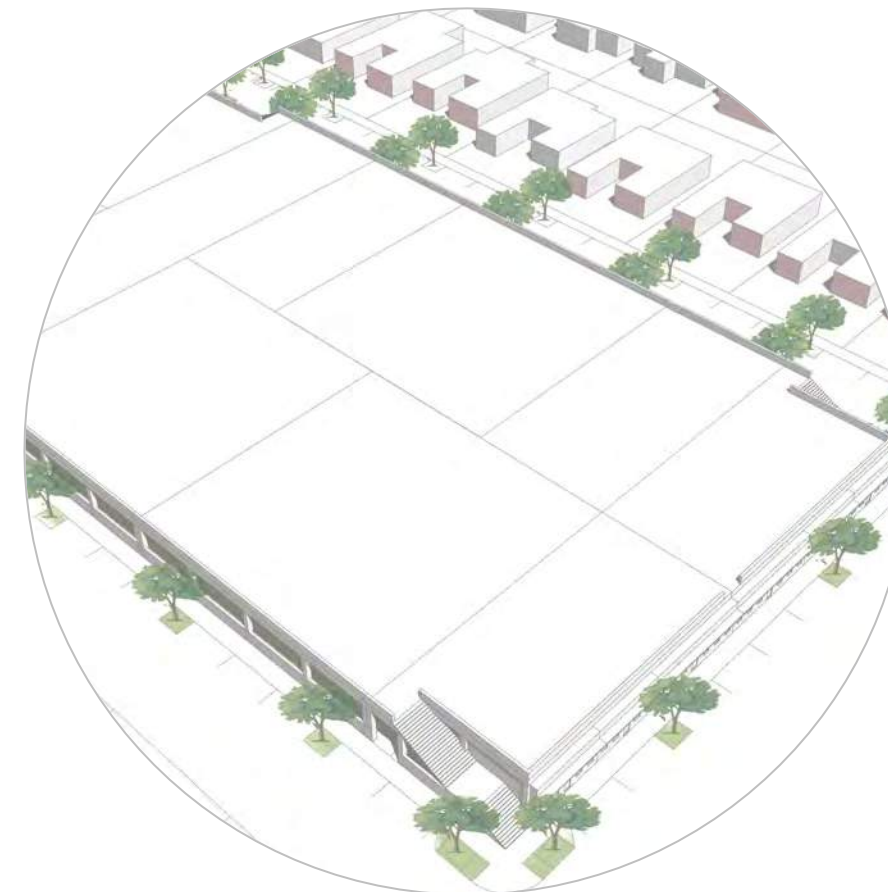
level of the entire city behind the new seawall was raised. However, they were in a unique situation, as most of the city had already been wiped out in a storm surge in 1900. (See the description earlier in this Chapter.)

Thus, the raising of individual structures is fast becoming inevitable and a list of best practice strategies must be assembled. While being vigilant of SLR predictions and avoiding an alarmist position are important, the Village must also encourage a robust discussion of this issue among the citizenry.

(Continued next page.)



A. Open ground level provides ample space for parking and services while allowing flood waters to flow through. A limited number of small units line the short end of the block.



B. Completed decks create a contiguous, elevated ground plane.

THRIVING WITH WATER

THE ELEVATED VILLAGE

(Continued from previous page.)

The minimal approach of raising the first-floor level to the BFE + freeboard is currently the most common. Indeed, it is already required in NBV, as it is in most coastal communities in the U.S. The problems are well known in NBV: the final grading often resembles a raised putting green and contributes in some cases to drainage problems on adjoining lots. More importantly, it is a minimal and temporary solution, and does not address the well-established trend that BFE is steadily being revised upward over time as FEMA collects new data and makes use of better measurement techniques.

An intermediate approach takes cues from the recent Understory Ordinance in Miami Beach, where the house is raised well above the BFE, leaving an open understory at the ground level that provides ample space for parking and services. This is the approach recommended in the new Code for the low-density residential districts, such as North Bay Island. (See the Prosperity Chapter for a description and the LDRs Chapter for a section drawing.)

A long-term approach is our proposal for the Elevated Village, illustrated on these pages, where not just the building is raised a full level, but the entire lot, including yards and sidewalks. Because the work is coordinated by the Code, the end result produces a new elevated ground plane – a complete pedestrian realm that connects all the properties well above the street level. On top of a new deck structure, the houses all relate in a pleasing way to the network of sidewalks. Homeowners

can walk out the back door into a yard. Many land-locked, non-waterfront properties will gain views and property value. Below the deck is a vast open level that can accommodate services and parking.

The new ground plane is established much higher than BFE, so the neighborhood is well prepared for sea level rise and large storm surges. In the event of a storm surge, the flood waters pass through, underneath the deck. The streets can remain as is. With so much parking provided below the decks, the need for on-street parking is greatly reduced. The verges can be widened and restored to grass, increasing the pervious surface in the public rights-of-way. The wider verges also allow for more street trees. As one perambulates the public walkways of the Elevated Village, the canopies of these trees will frame the view.

The higher elevation is achieved without the use of fill, which will become increasingly expensive as all of South Florida is in competition for the same scarce material. The type of large-scale dredging of the Bay that made NBV possible over seventy years ago is no longer allowed due to strict environmental regulations. Fill material is heavy, which makes it expensive to transport by truck. By elevating private property without the use of fill, fill is reserved for where it is essential, in roadways. If or when the streets in NBV are eventually raised, the Elevated Village will be well prepared; coordination between public and private property will be relatively simple.

(Continued next page.)



C. Half block completion

THRIVING WITH WATER

THE ELEVATED VILLAGE

(Continued from previous page.)

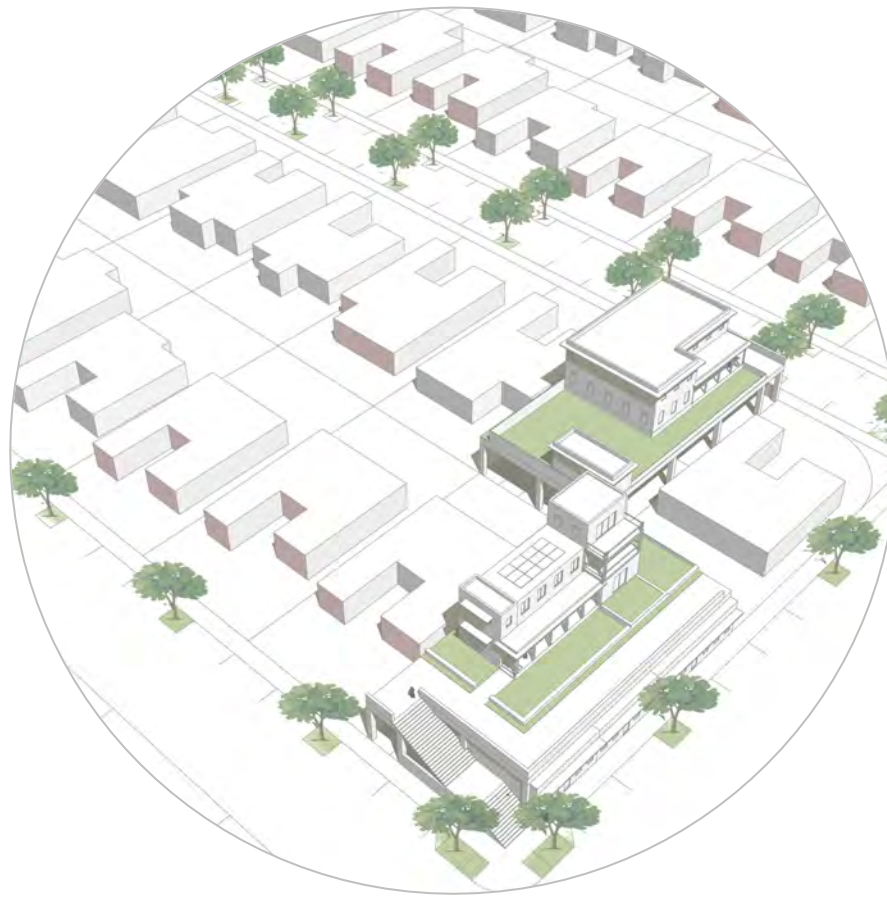
The Elevated Village is an approach that can be implemented in the near term by individual property owners before the municipality gets around to raising the streets and other public infrastructure improvements. (D) Recognizing that this approach will require a substantial investment in the deck, neighboring property owners may choose to collaborate and redevelop their properties simultaneously to split costs and take advantage of economies of scale. (Illustrations E and F) The NBV100 Master Plan and Code can coordinate these efforts so that, even if built incrementally, lot by lot,

the final result will be fully coordinated and produce a contiguous elevated ground plane, as illustrated in the sequence (D) through (F), culminating in (H).

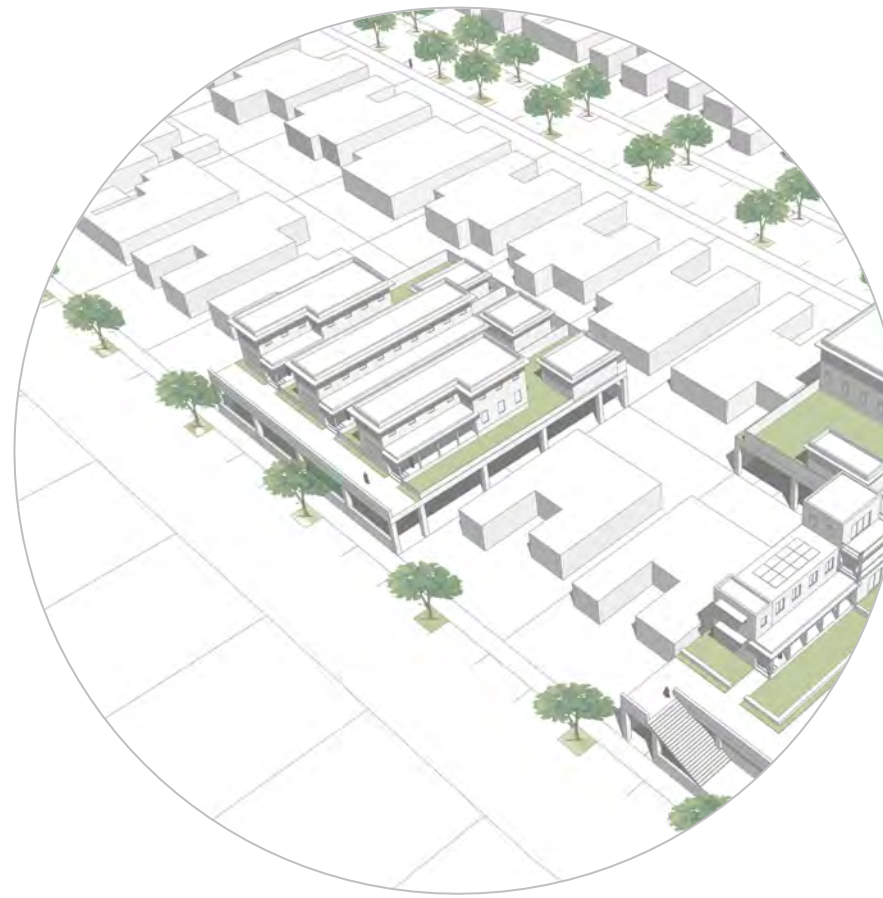
The infrastructure investment in the new deck will be substantial. To help finance the improvements, the new Code could allow property owners to add an accessory dwelling unit (ADU) when they rebuild, which would bring in rental income. Two adjacent property owners may collaborate and subdivide their two lots into three, yielding a total of six units: three single-family houses each with an ADU. (E) If more density is required to make this approach feasible, townhouses and small-

scaled apartment buildings may be allowed. These would fit well in the neighborhood because the building types will be restricted to those which are small in scale and have attractive frontages.

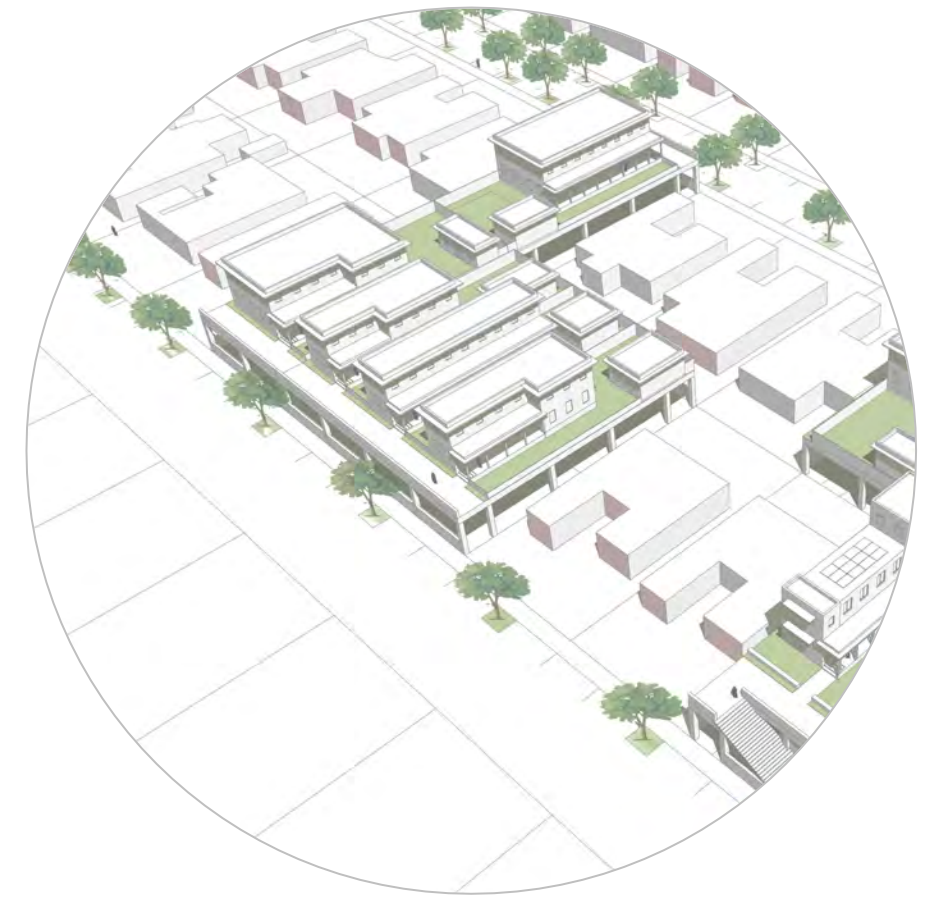
North Treasure Drive may be an especially auspicious place to start this process because it is already lined by a multi-family zoning district on the north side. A limited number of liner units could be allowed at the ground level facing the short ends of the blocks, as long as they comply with flood regulations. These could accommodate small live-work rental units or small-scale retail, like a corner store.



D. 2 individual lots are developed separately. Each lot has



E. 2 lots side-by-side are developed together and divided into 3 lots, receiving 3 Units with 3 ADUs.



F. 2 lots back-to-back receive 2 units with 2 ADUs

THRIVING WITH WATER

THE ELEVATED VILLAGE



G. Existing Conditions

See description on previous pages.



H. Artist's rendering of of the final result. (The numbers call out green strategies described on the next page.)

THRIVING WITH WATER

MITIGATION STRATEGIES

The premise of NBV100 has been that the climate is changing and that sea levels are rising, so the focus has been on resilience and adaptation. But mitigation is also important. The illustration to the right demonstrates how several green strategies relating to energy conservation and water management can be incorporated in the near term into the beautiful setting that is North Bay Village, in particular the single-family neighborhoods of North Bay Island and Treasure Island.

Solar panels (1) and wind turbines (2) produce energy without the use of fossil fuels that contribute to climate change and thereby to rising sea levels. The electricity is produced close to the point of consumption, so less is lost in transmission. Surplus electricity can be sold back to the grid, further reducing energy costs.

High Albedo roof materials (3) are light in color, reflecting the heat of the sun back into the atmosphere instead of absorbing it. This keeps the spaces below naturally cool and reduces HVAC costs.

Permeable pavers (4) are a light imprint strategy that replaces conventional paving materials like asphalt and concrete. Instead of channeling water into stormwater pipes, permeable pavers allow rainfall to be soaked back into the ground, helping to restore the water table. This strategy can also help alleviate nuisance flooding by reducing the burden on the stormwater infrastructure.

Two of these strategies also appear in the Elevated Village illustration on the previous page.

A complete version of this illustration appears in the LDRs Chapter where the waterview towers, a feature of the new zoning code, are discussed.




THRIVING WITH WATER

CODING FOR RESILIENCY IN THE 21ST CENTURY

A circular image showing a large array of solar panels installed on a rooftop or ground-mounted structure. The panels are tilted and reflect the sunlight. The background is a clear blue sky.

MITIGATION = SUSTAINABILITY

Slowing change

A circular image showing a garden path with various plants and trees. The path is made of light-colored material, possibly gravel or sand, and is surrounded by greenery. The background is slightly blurred.

ADAPTATION = RESILIENCE

Living with change

THRIVING WITH WATER

MITIGATION STRATEGIES

Many of the mitigation strategies below are embedded in the overall vision and master plan of NBV. For example, the reduction of carbon emissions from transportation will be achieved by making NBV more walkable, more diverse and mixed use.

Reduce carbon emissions of energy use

- Reduce energy needs in building systems
- Deploy solar collectors and wind turbines (storage battery space)
- Maximize daylighting
- LED lighting only
- Building systems automation for higher efficiency

Reduce carbon emissions of transportation

- Discourage vehicle dependence – prioritize parking for electrical vehicles (EVs)
- Encourage other modes of mobility – bicycles, safe, comfortable pedestrian access to public transportation
- Encourage transit use – incorporate transit stops for buses, circulators, freebies
- Make all surrounding streets pedestrian friendly – safe, comfortable and interesting.

Reduce carbon emissions of waste stream

- Reduce waste in construction and in building operations
- Easy to use recycling facilities and operations
- Collect organics
- Organize tenants re-use market (furnishings, products)

Reduce carbon emissions of water and wastewater treatment

- Water-saving plumbing and appliances
- Water treatment on site
- Grey water re-use (e.g., landscape irrigation, cool roofs, purple pipe system)

Sequester carbon

- Landscape materials, Marine Preserve with seagrass
- Re-used and recycled building materials
- Carbon sequestering building surface materials (developing technology)

Reduce heat island effect

- Maintain cool building surfaces, roofs, walls, and pavements – landscape surfaces, shade trees, shading devices, water on surfaces.

THRIVING WITH WATER

ADAPTATION STRATEGIES

Adaptation strategies will be included and incentivized in the regulatory language of the new NBV Land Development Regulations.

Heat reduction strategies

- Orient building to reduce heat load and maximize air flow
- Deploy smart surfaces (see next column), trees for shade, high-rated insulation
- Shade structures for public and other open spaces (e.g., galleries, arcades, BCC Climate Ribbon)
- Design for cross ventilation of exterior spaces, (channeling southeasterly breezes, Venturi effect)
- Design for cross ventilation of interior spaces, exhaust systems, operable windows (smartcard connection of window latch and HVAC)
- Transitional spaces to minimize heat load (e.g., arcades, balconies)
- Chimneys that draw air through exterior spaces
- Fans, water fountains and misters to reduce temperatures in exterior public spaces

Smart surfaces

The US Green Building Council recommends the incorporation of smart surfaces, which they describe in the following way:

“Smart surface technologies allow cities to better manage sun radiation and runoff through:

- Cool roofs and pavements that reflect away (instead of absorbing) sunlight—cutting temperatures and smog
- Green roofs and trees that provide shade and reduce flood risk
- Solar PV that converts sunshine into electricity and provides shade
- Porous pavements, sidewalks and roads that reduce water runoff, flooding and cut the cost of managing stormwater”

– US Green Building Council (www.USGBC.org) and Smart Surfaces Coalition (www.staycoolsavecash.com)

Rainfall

- Catchment of all rainfall on site
- Green roofs
- Landscape ground surface
- Permeable pavements

- Cisterns for stormwater storage
- Stormwater treatment on site

Sea level rise

- Design the first story with adequate height to allow for raising the floor level in the future
- Provide an understory that can be flooded (e.g., PAMM parking garage)
- Provide flood-proofing for habitable spaces below the BFE
- Set first floor and final grading elevations in anticipation of raising of street elevations

Storm surge

- Design first floor to allow flood and enable quick and easy restoration of use – e.g., materials that can withstand flooding and are easily cleaned, utilities and equipment raised or water-proofed
- Design levels at grade to accommodate temporary/moveable uses that can be removed in storm preparation

Pests and diseases

- Avoid standing water in landscape and water features to preclude mosquito breeding

PROSPERITY



Caribbean Towers
Condominium

Grandview Palace
Condominium

Treasure Island
Elementary School

North Bay
White House

Lexi
Condominium
Complex



Benihana

Kennedy House
Condominium

Shuckers
Waterfront
Bar & Grill

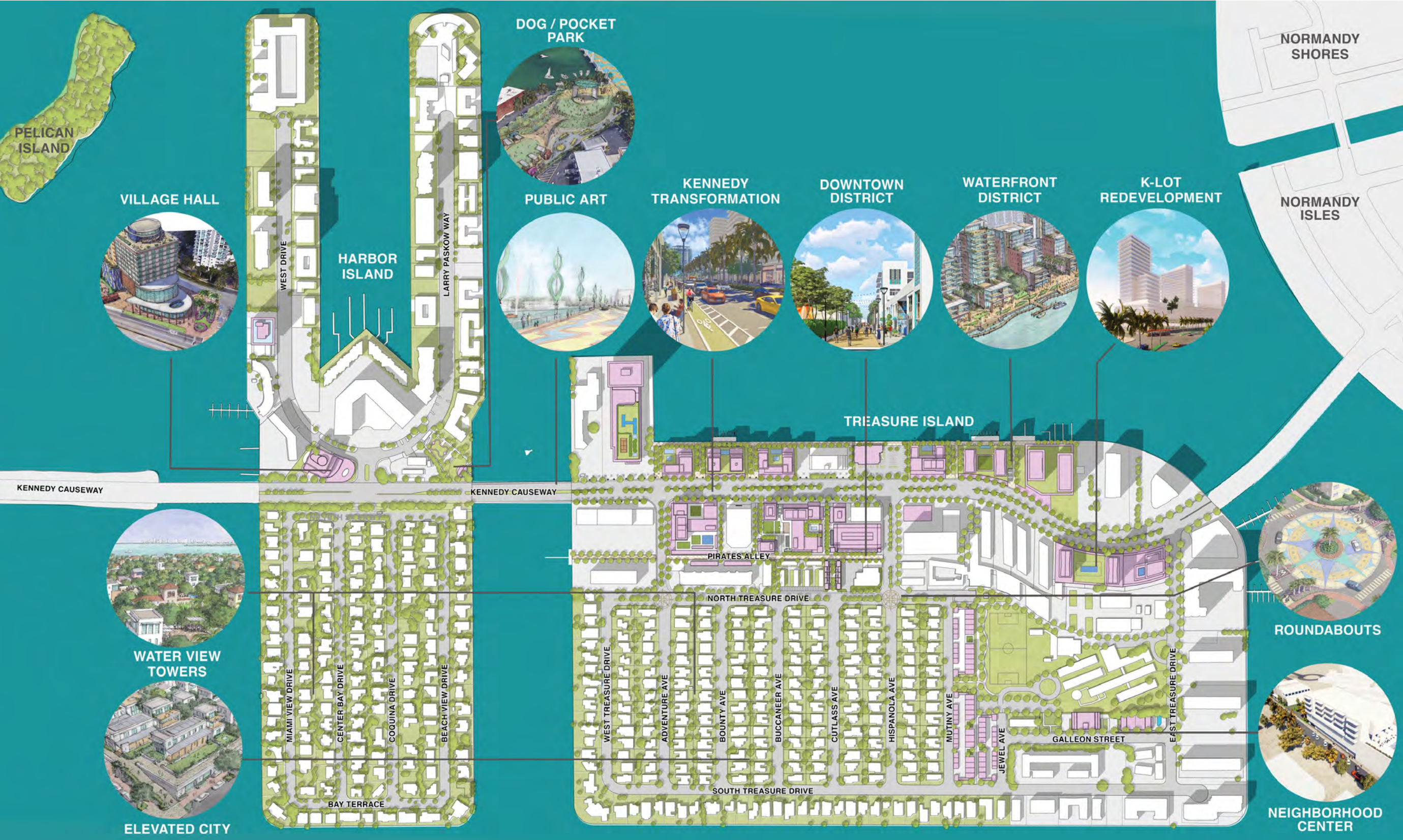
Bridgewater

ATTRACT ECONOMIC DEVELOPMENT & CREATE A COMPELLING DESTINATION

-  CAPITALIZE ON EXISTING RESOURCES
-  INCREASE PRIVATE PROPERTY VALUE
-  OPTIMIZE & MANAGE PARKING
-  INCENTIVIZE FLEXIBILITY & PREDICTABILITY

ATTRACT INVESTMENT AND CREATE A COMPELLING DESTINATION

CATALYTIC PROJECTS



ATTRACT INVESTMENT AND CREATE A COMPELLING DESTINATION

NBV100 ACTION PLAN

NBV100 is organized around a series of catalytic projects that range from those that may be implemented immediately to those requiring more coordination and funding. As the Village approaches its centennial in 2045, this recommended list of short-term, mid-term and long-term action steps are projected to occur during the next 25 years, and beyond towards the mid-century mark.



SHORT-TERM
0-2 YEARS



MID-TERM
2-5 YEARS



LONG-TERM
5-10 YEARS



BEYOND
10-25+ YEARS

ATTRACT INVESTMENT AND CREATE A COMPELLING DESTINATION

PHASING OF CATALYTIC PROJECTS



Short-term Catalytic Projects (0 - 2 years)



Mid-term Catalytic Projects (2 – 5 years)



Long-term Catalytic Projects (5 - 10 years)



Long-term Catalytic Projects (5 - 10 years)

ATTRACT INVESTMENT AND CREATE A COMPELLING DESTINATION

NBV100 ACTION PLAN

	PROJECT NAME	PRODUCT	IMPLEMENTORS	FEASIBILITY ANALYSIS	FINANCING, GRANTS & FUNDS	TIMING
1	KENNEDY INTERSECTION IMPROVEMENTS	Audible Beaconing / Traffic Lights Synchronization / Delayed Left-turn / 5-Second Pedestrian Headstart	FDOT / County	FDOT / County	FDOTFDOT / CITT	In progress
2	ROUNDAABOUTS	Vehicular Infrastructure/ Public Art	NBV	NBV	CIP / CITT / NBV	In progress
3	DOG PARK HARBOR ISLAND	Open Space / Waterfront Access	NBV	NBV	State of Florida / FIND / NBV	In progress
4	BUS SHELTERS	Transit Infrastructure/ Public Art	NBV	NBV	CIP / CITT	In progress
5	ISLAND WALK	Waterfront Access	Property Owners / NBV	NBV	Property Owners / NBV / P3 / FIND	In progress
6	SEA WALLS	New and/or Repaired Sea Walls	Property Owners / NBV	Property Owners / NBV	Property Owners / NBV / P3 / FIND	In progress
7	GALLEON STREET NEIGHBORHOOD CENTER	Street Redesign / One-Way/On-Street Parking / Community Center / Police Station	NBV	NBV	NBV / Adjacent Property Owners	In progress
8	ELECTRIC VEHICLES PRIORITIZATION	Charging Stations / Priority Parking	NBV	NBV	CIP / Florida Dep Electric Vehicle Charging Stations	Short-term
9	PUBLIC ART MASTER PLAN	Art in Public Spaces	NBV	NBV	Set % of private projects	Short-term
10	KENNEDY CAUSEWAY TRANSFORMATION	Complete Street Boulevard	FDOT / NBV	FDOT	FDOT / NBV / Property Owners	Short to Mid-term
11	PIRATES ALLEY TRANSFORMATION	Complete Street Shared Space	NBV	NBV	NBV / others TBD	Short to Mid-term
12	NBV CENTER	Village Center	Property Owners / NBV	Property Owners / NBV	Property Owners / P3	Mid to Long-term
13	WATER VIEW TOWERS	Optional Viewing Tower	Property Owners	N/A	Property Owners	Mid to Long-term
14	VILLAGE HALL	City Hall / County Fire Station / Potential Mixed-Use Components	P3	NBV	NBV / County Fire Rescue / Private Builder	Mid to Long-term
15	ELEVATION OF PUBLIC RIGHTS-OF-WAY	Higher streets to avoid flooding	NBV	NBV	NBV	Long-term to Beyond
16	ELEVATED VILLAGE	Resilient Housing	Property Owners / NBV	Private Sector / NBV	Property Owners / CIP	Long-term to Beyond

ABBREVIATIONS:
NBV - NORTH BAY VILLAGE
FIND - FLORIDA INLAND NAVIGATION DISTRICT
CIP - VILLAGE CAPITAL IMPROVEMENT FUNDS
CITT - COUNTY TRANSIT FUNDS
FDOT - FLORIDA DEPARTMENT OF TRANSPORTATION
P3 - PUBLIC-PRIVATE PARTNERSHIP

OTHER POTENTIAL FUNDING SOURCES FOR WATERFRONT AND GREENSPACE IMPROVEMENTS:
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
COASTAL PARTNERSHIP INITIATIVE
FLORIDA DEP LAND AND WATER GRANT
FLORIDA DEP FRDAP
USEPA - LOCAL FOODS, LOCAL PLACES
BROWNFIELD GRANTS
FLORIDA DEP ELECTRIC VEHICLE CHARGING STATIONS
FDOT TRANSPORTATION ALTERNATIVES PROGRAM
PUBLIC SPACE CHALLENGE

ITEMS IN RED ARE IN PROGRESS.

THIS TABLE IS PROVIDED FOR GENERAL PLANNING AND PRIORITIZATION PURPOSES ONLY. THIS TABLE SHOULD BE UPDATED AS DECISIONS ARE MADE ON IMPLEMENTATION, FEASIBILITY, AND FUNDING SOURCES FOR FUTURE PROJECTS.

CAPITALIZE ON EXISTING RESOURCES

Transform NBV's business district from a series of shopping centers, parking lots and vacant sites on a highway into a walkable, complete urban center with a vital, mixed-use boulevard as its Main Street spine.



*Precedent – Lincoln Road,
Miami Beach, FL*

Source: Google Earth street view



*Precedent – Biscayne Blvd.,
Downtown Miami, FL*

Source: Google Earth street view



*Precedent – Miracle Mile,
Coral Gables, FL*

CAPITALIZE ON EXISTING RESOURCES

NBV CENTER

THREE PHASES OF ACTIVATION

Initial Phase: Pirates Alley, reinvented as a shared space with repaving/striping, landscaping and new lighting, could jumpstart the Village Center renaissance. The area around the existing office building where the current Village Offices reside could be used as a catalyst with improvements made to the parking deck along Pirates Alley. Events could be scheduled along the refreshed/rebranded Pirates Alley.

Second Phase: Kennedy Causeway streetscape improvements (from Pirates Alley to North Waterfront) could serve as the second wave of transformations. New developments with the 20 ft sidewalk and frontage galleries will reinforce the emergence of the new Village Center.

Third Phase: Multiple owners should be encouraged to work together to create places such as The Elevated Plaza where new gathering spaces/venues away from the waterfront could begin to take shape, bringing energy south of the Causeway with new destinations and community services for the Village Center.

Pirates Alley



Before



After

Kennedy Causeway



Before



After

Village Center



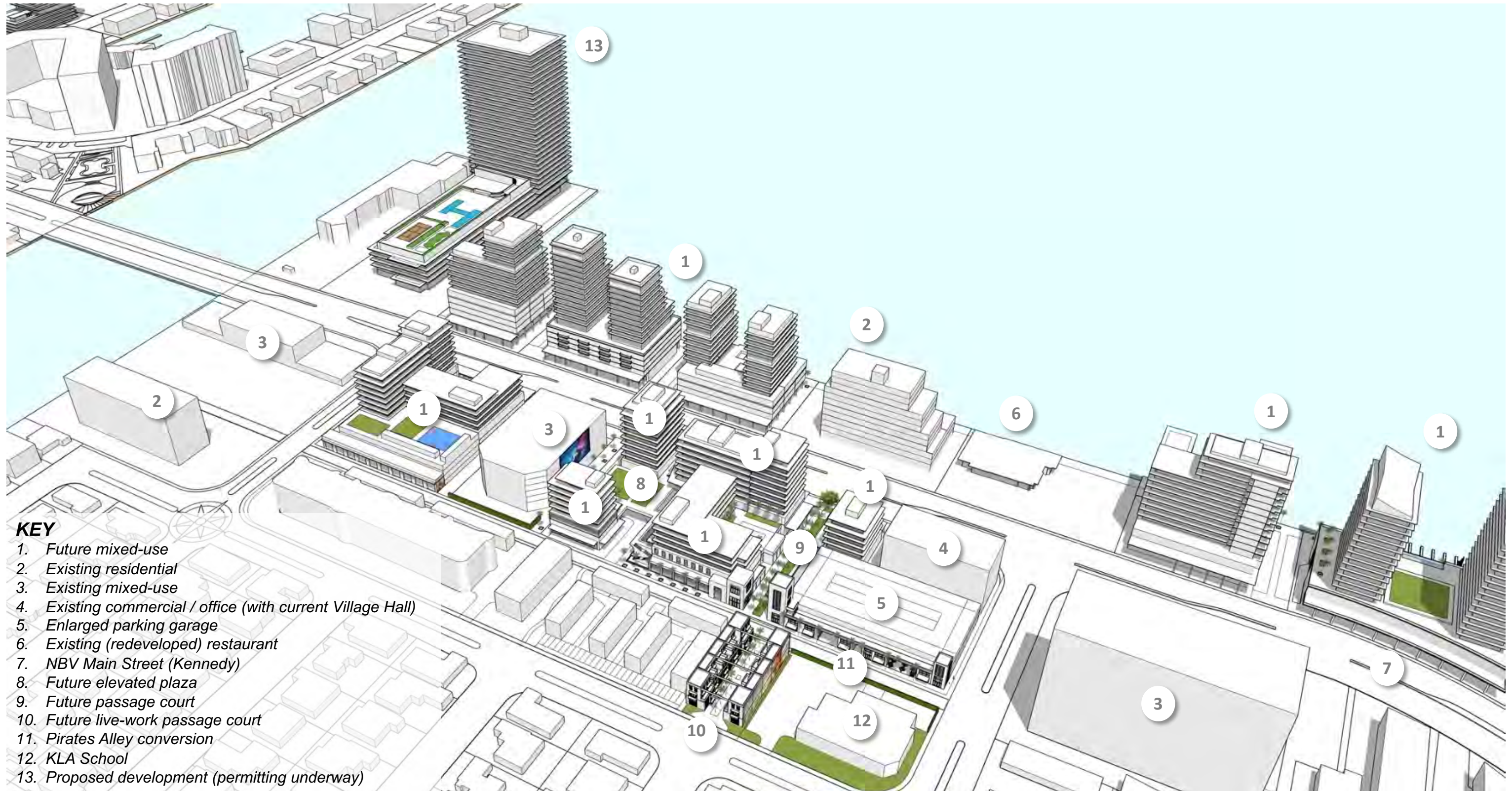
Before



After

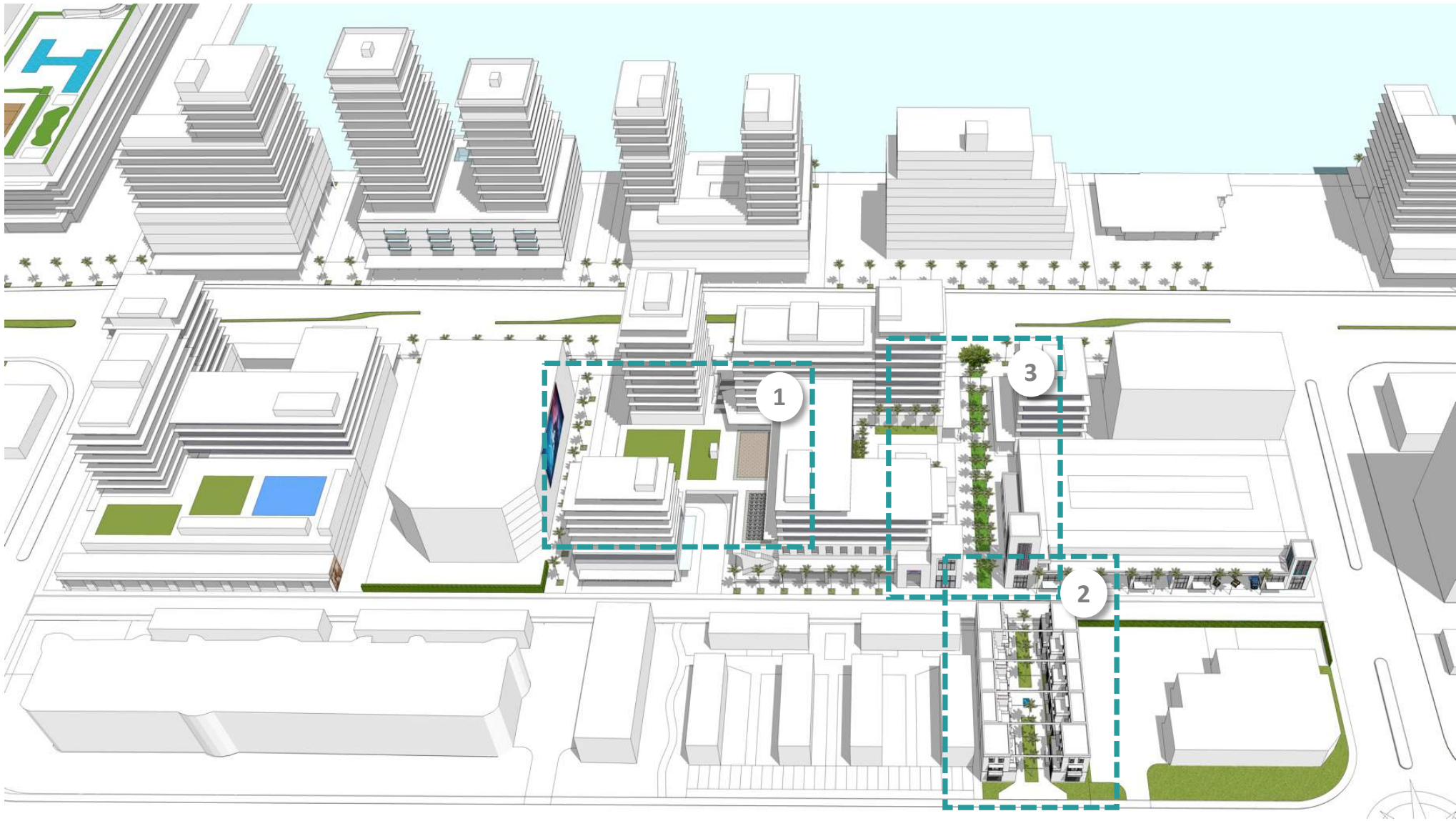
CAPITALIZE ON EXISTING RESOURCES

TRANSFORM NBV'S BUSINESS DISTRICT INTO A GREAT URBAN CENTER



CAPITALIZE ON EXISTING RESOURCES

TRANSFORM NBV'S BUSINESS DISTRICT INTO A GREAT URBAN CENTER



1. Future Elevated Plaza



3. Mid-block passage



2. Live-work Passage Court

CAPITALIZE ON EXISTING RESOURCES

TRANSFORM NBV'S BUSINESS DISTRICT INTO A GREAT URBAN CENTER

KEY

- 1. Main plaza court
- 2. Plaza retail and restaurants
- 3. Outdoor cafe seating
- 4. Future mixed-use development
- 5. Mid-block access drive & drop-offs (at street grade)
- 6. Projection Screen (on side of existing storage building)
- 7. Pirates Alley conversion
- 8. Passage court (at street grade)
- 9. Future mixed-use along NBV Main Street (Kennedy)
- 10. Existing residential
- 11. NBV Main Street (Kennedy)



Elevated Plaza

CAPITALIZE ON EXISTING RESOURCES

LEVERAGING VILLAGE-OWNED PARCELS INTO AMENITIES

VILLAGE HALL

Previously located on Harbor Island, the former Village Hall was demolished after storm damages were sustained earlier this decade. During the charrette it was suggested that a new Village Hall be erected on a nearby Village-owned lot. It was also mentioned that this location would be ideal for a new fire station that needs access to the Causeway. The proposed design takes advantage of the western approach into the Village to create an iconic civic structure signaling the arrival into NBV. The ground floor features a glass-fronted commission chamber enveloped in a grand portico at the most prominent corner across from North Bay Island. Behind the chamber, the firehouse and its garage bays open out to both the Causeway and West Drive. In between is the Village Hall lobby that accesses several

levels of parking garage and the administrative office floors. If deemed desirable, the design depicted here also shows how these civic functions might share the building in a public-private partnership with several more floors of office space, residential, and a rooftop restaurant.

GALLEON STREET NEIGHBORHOOD CENTER

A new civic building is proposed to address Village needs for a dog park, a police station and a community space. The location is a series of Village properties being considered for redevelopment along Galleon St. south of the elementary school. Also housed in this new structure could be the Village’s first public library.

Further enhancing this location as a new neighborhood center is the more visionary proposal for the corner of

Galleon Street and East Treasure Drive. On a parking lot owned by a nearby condominium association looking for ways to expand capacity, a public-private partnership in the form of a multi-level, mixed-use building is proposed. Incorporating the current Public Works parcel, this new building offers a ground floor of retail or community space lining the sidewalk, a multi-level parking structure, and a number of condominiums above.

Galleon Street is reimagined as a one-way, westbound thoroughfare that accommodates additional angled parking along the north side.



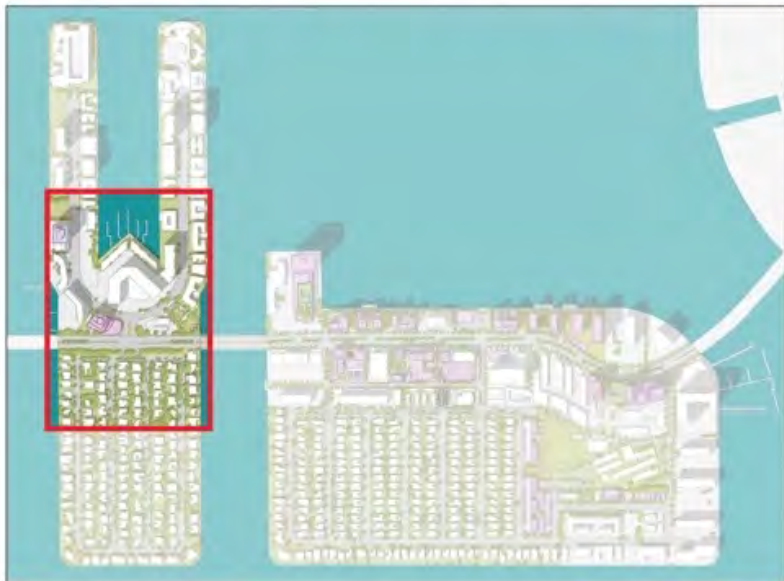
Village Hall



Galleon Street Neighborhood Center

CAPITALIZE ON EXISTING RESOURCES

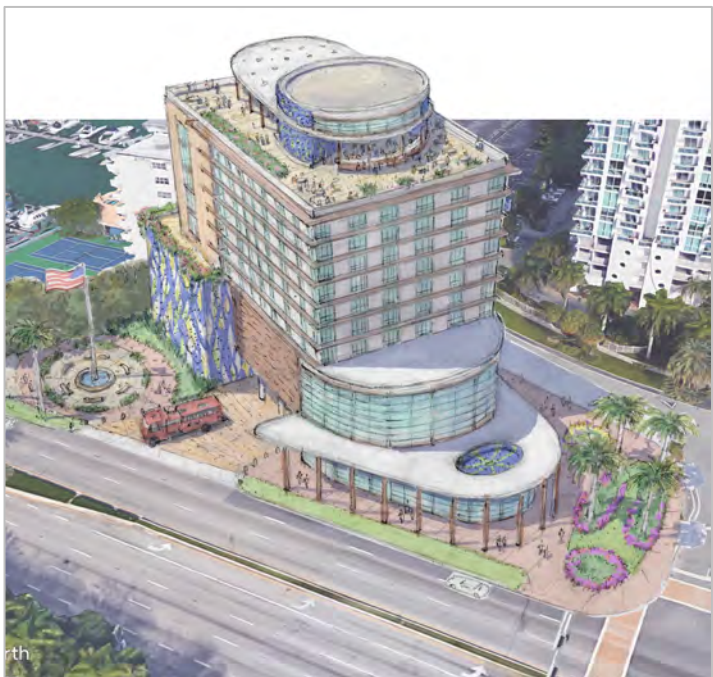
LEVERAGING VILLAGE-OWNED PARCELS INTO AN ICONIC GATEWAY



KEY

- 1. Commission chambers
- 2. Fire station
- 3. Village Administration
- 4. Parking levels
- 5. Office
- 6. Residential
- 7. Rooftop restaurant
- 8. Skylight

Commission chambers, Village offices and fire station with mixed-use tower above



Charrette rendering of Village Hall



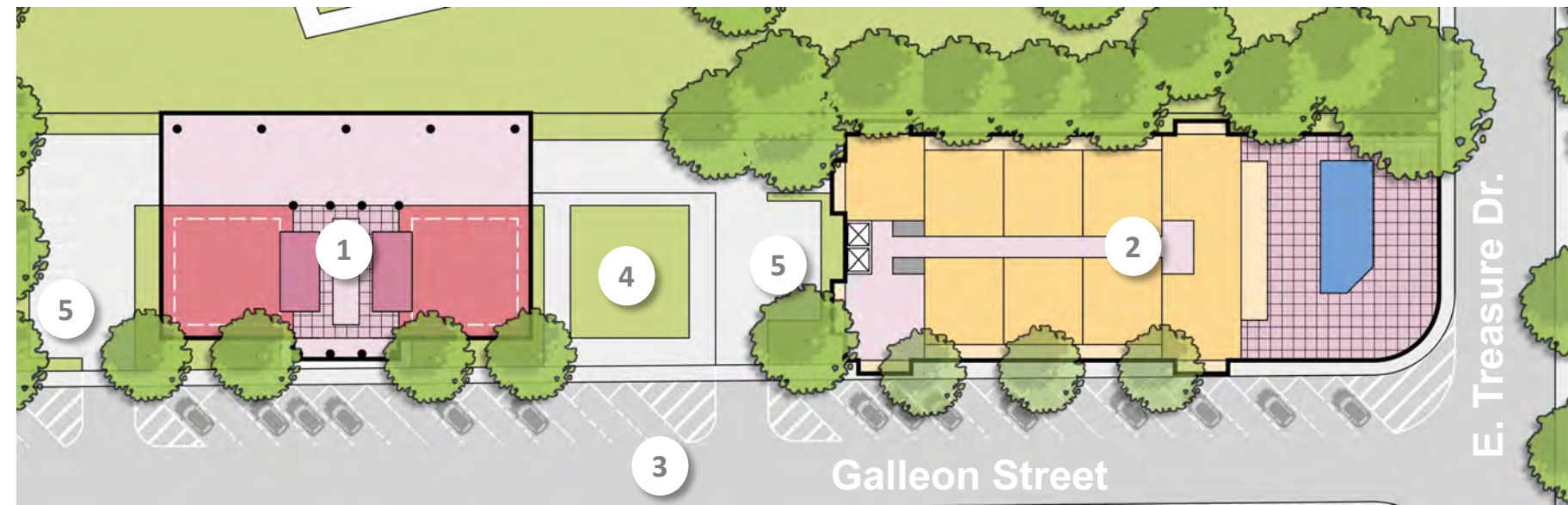
Detail view of Fire Station entrance



Detail view of potential civic plaza

CAPITALIZE ON EXISTING RESOURCES

LEVERAGING VILLAGE-OWNED PARCELS INTO A NEIGHBORHOOD CENTER



1. Civic building
2. Mixed-use building
3. Galleon street
4. Dog park
5. Additional parking off-street

1. Civic Building

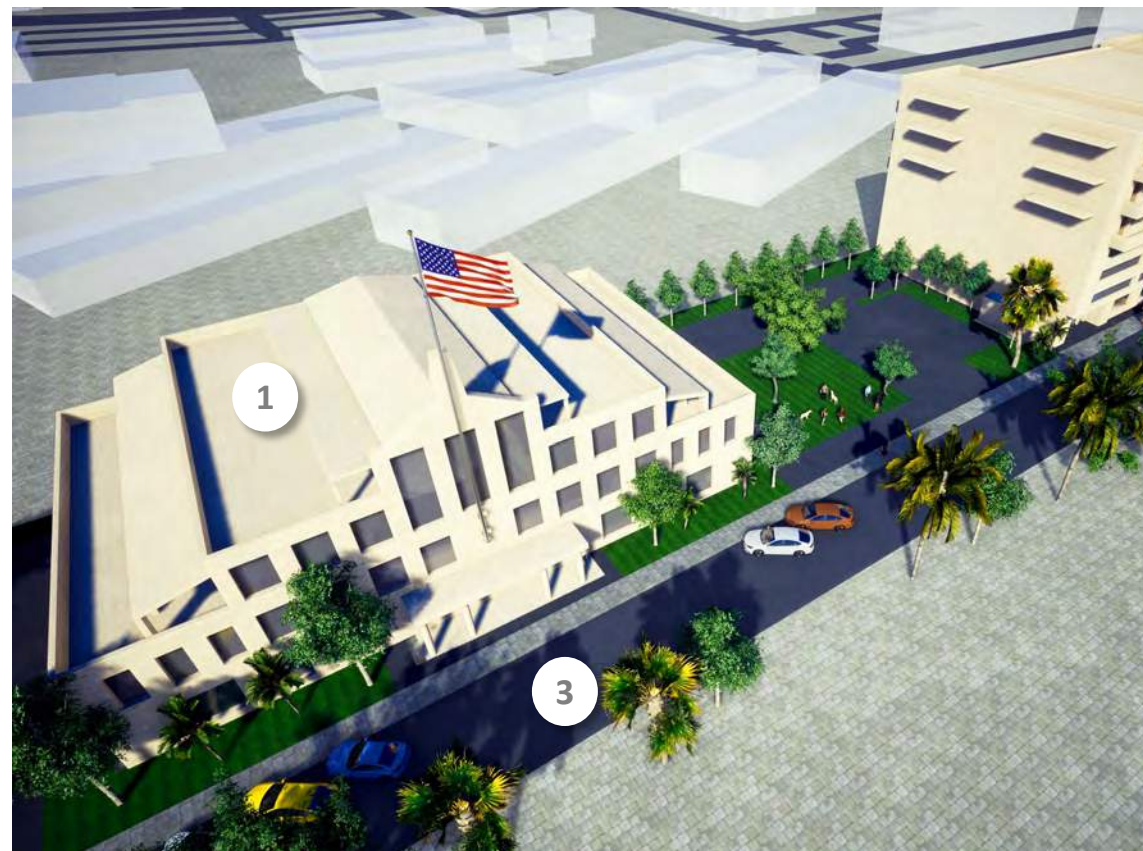
- Activity room
- Community space or library
- Police station (upper levels)
- Community hall

2. Mixed-Use, Public-Private Venture with Condo

- Retail, community space or library
- Garage levels
- Condominium levels
- Amenity deck

3. Galleon Street

- One-way, westbound lane
- Angled parking on north side



Dog park, community services building, angled parking & mixed-use building





INCREASE PRIVATE PROPERTY VALUE

Encourage and enable homeowners to build sustainably and resiliently while also maximizing the potential of their homesteads creatively



Harbor Island



North Bay Island



Treasure Island

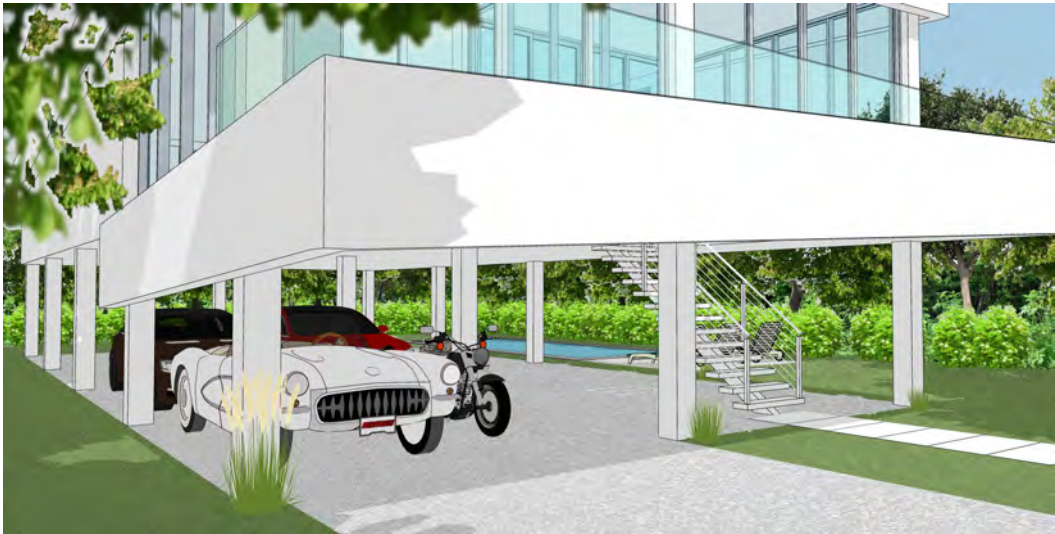
INCREASE PRIVATE PROPERTY VALUE

CATALYTIC PROJECT – SINGLE-FAMILY HOUSE

Single-family homes can prepare for eventual sea level rise by building a usable understory at ground level and locating the living spaces above. This will provide confidence to home-owners that their house is ready for climate change. A new form-based code would regulate the height, functionality and quality of this understory level to ensure that the streetscape remains a pedestrian-friendly environment. See LDRs Chapter for a building section that explains how the height can be regulated. An additional illustration appears in the Resiliency Chapter.



Perspective from street
CDS Architecture/Planning



View of Understory
CDS Architecture/Planning



Bird's-Eye Perspective
CDS Architecture/Planning

INCREASE PRIVATE PROPERTY VALUE

PRECEDENTS – SINGLE-FAMILY HOUSES

These existing homes in NBV are already using several features described in the Resiliency and LDRs Chapters that make them well adapted for the anticipated effects of climate change. The two houses pictured on the left side are elevated a few feet above street level with fill. The house pictured on the right side features an understory that is primarily garage and storage with the main living spaces located above. These features help create and preserve property value, which contribute to the tax base.

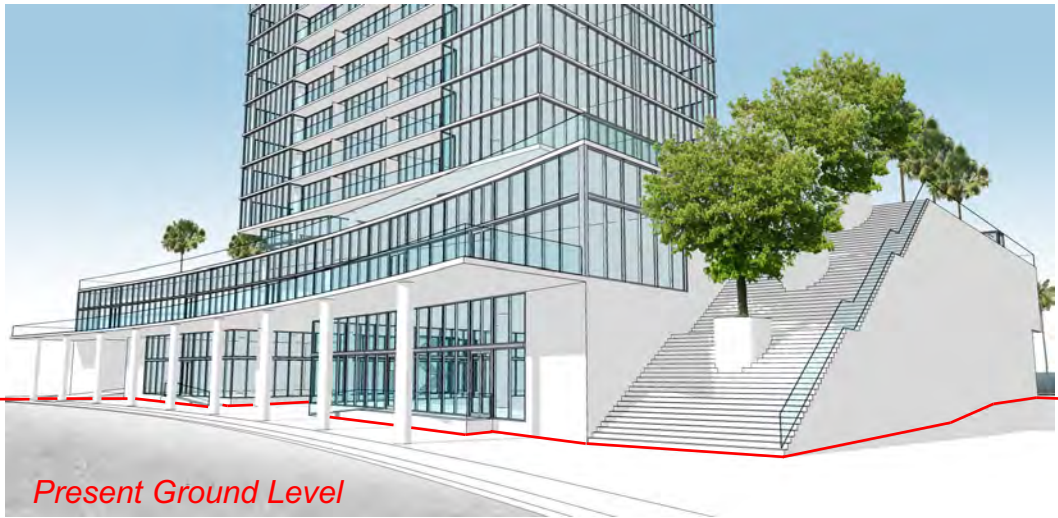


INCREASE PRIVATE PROPERTY VALUE

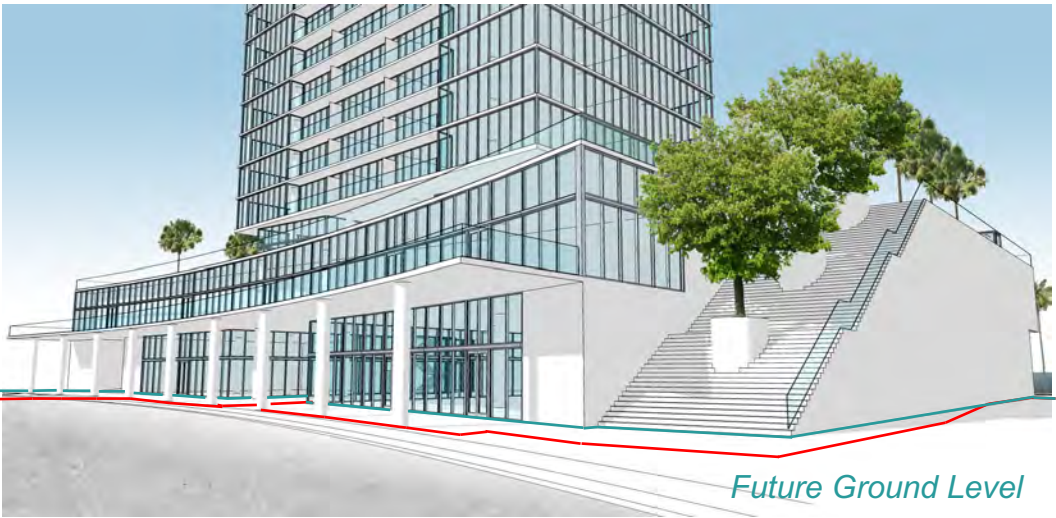
CATALYTIC PROJECT - MIXED-USE TOWER

Property values of mixed-use towers can be greatly increased by adding resiliency features, as well as providing integrated connections to important neighborhood amenities. For example, the ground floor of this tower (at right) is designed with tall ceilings. This would allow the internal level to be raised with fill and refinished in order to accommodate any raising of the level (to the waterfront and Kennedy Causeway) due to sea level rise.

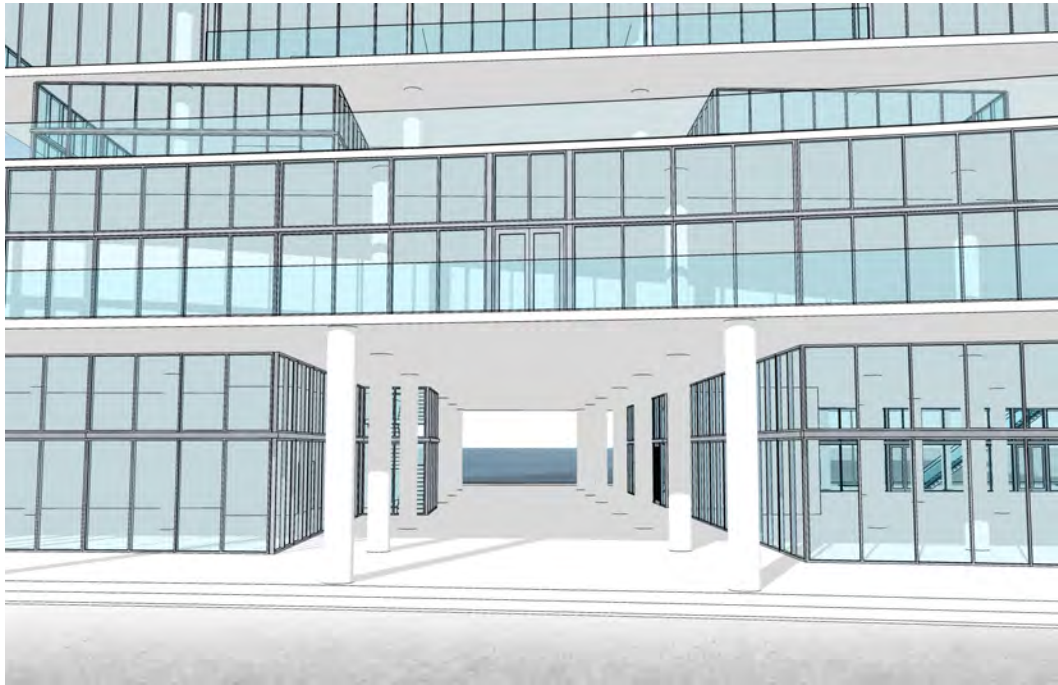
The Island Walk will eventually become one of the premier destinations of North Bay Village. Any properties that connect directly to it will have a distinct advantage in this real estate market, providing residents with direct access to the future dining and entertainment options that will occur on the Island Walk.



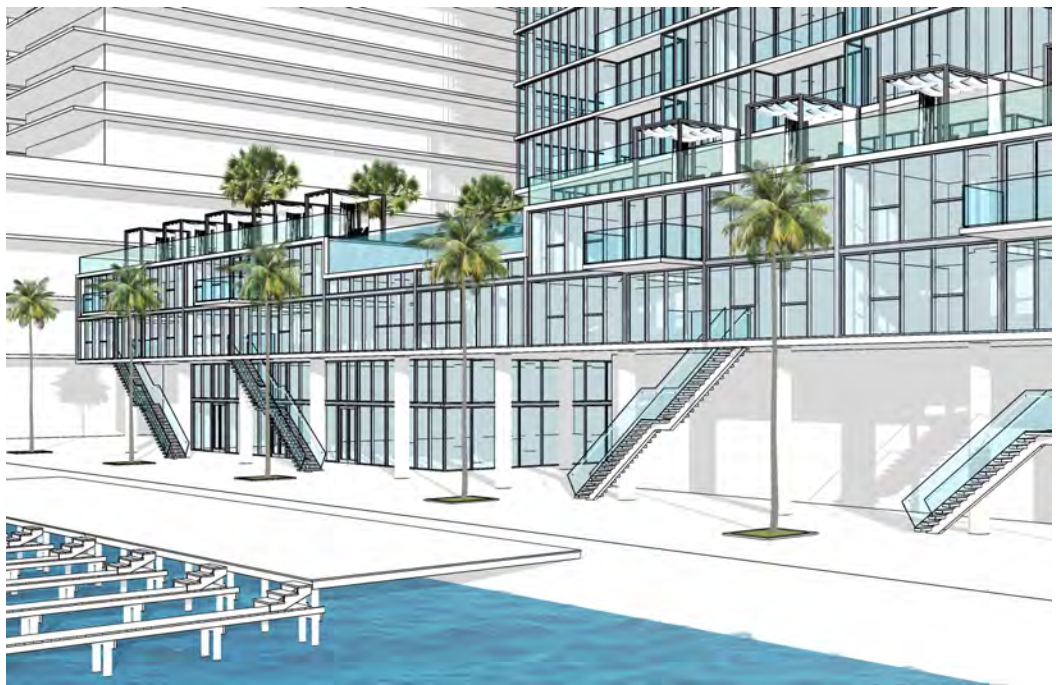
Present Ground Level
Frontage Facing Kennedy Causeway –
Before raising street level
CDS Architecture/Planning



Future Ground Level
Frontage facing Kennedy Causeway –
After raising street level
CDS Architecture/Planning



Paseo connects Kennedy Causeway to the
Island Walk with a view of the water beyond
CDS Architecture/Planning



Frontage facing the Island Walk
CDS Architecture/Planning

OPTIMIZE AND MANAGE PARKING

Make parking an efficient and convenient shared asset that is screened from street view, preferably by layers of habitable/active space



Precedent – Miami Beach, FL

Source: Google Earth street view



Precedent – Bay Harbor Islands, FL

Source: Google Earth street view



Precedent – Coral Gables, FL

Source: Google Earth street view

OPTIMIZE AND MANAGE PARKING

HARBOR ISLAND: STREETSCAPE TRANSFORMATION

East and West Drives were not envisioned as pedestrian-friendly streets. Nevertheless, they comprise the principal public realm of Harbor Island. Large residential towers have been required to provide off-street parking for their residents and guests. On-street parking mostly serves the older, lower-density multi-family structures. Over time, landscape standards have been put in place requiring new buildings to provide sidewalks, trees, and green areas along their frontages. This is a move in the right direction, but Harbor Island still suffers from a lack of sidewalk continuity, a lack of tree cover, and excessive paved surface area. The following pages illustrate the existing conditions as well as recommendations on how to improve the public realm and create a better sense of place.



West Drive existing conditions



East Drive existing conditions

OPTIMIZE AND MANAGE PARKING

HARBOR ISLAND EXISTING CONDITIONS: PUBLIC SPACE OVERWHELMED BY PARKING



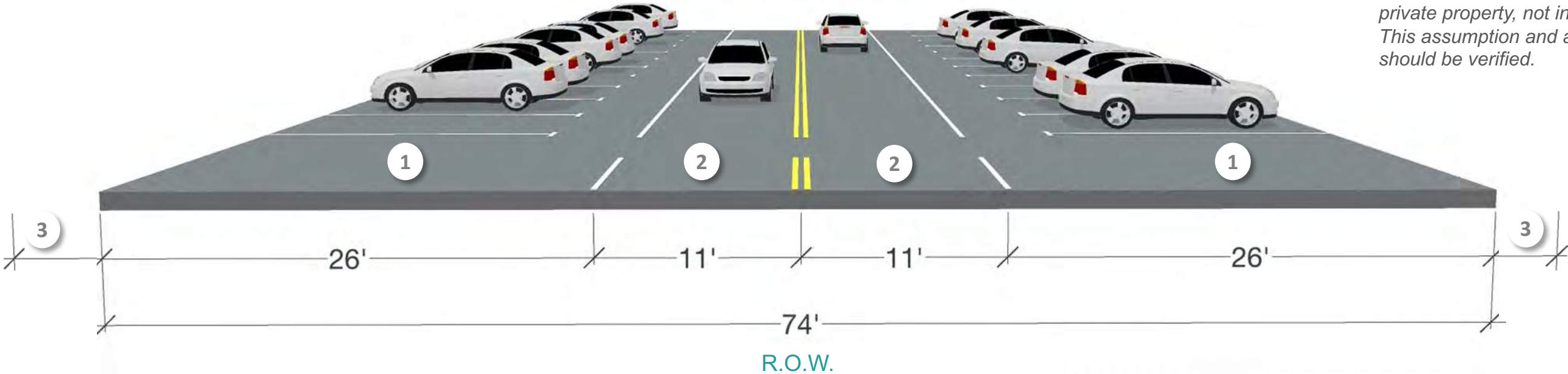
West Drive existing conditions



East Drive existing conditions

- 1. Head-in parking
- 2. One travel lane per direction
- 3. Inconsistent sidewalks

Note: In the absence of an up-to-date survey, it is assumed based on field observations that sidewalks, where they exist on Harbor Island, are located on private property, not in the right-of-way. This assumption and all dimensions should be verified.



West and East Dr. typical section

OPTIMIZE AND MANAGE PARKING

HARBOR ISLAND TRANSFORMATION

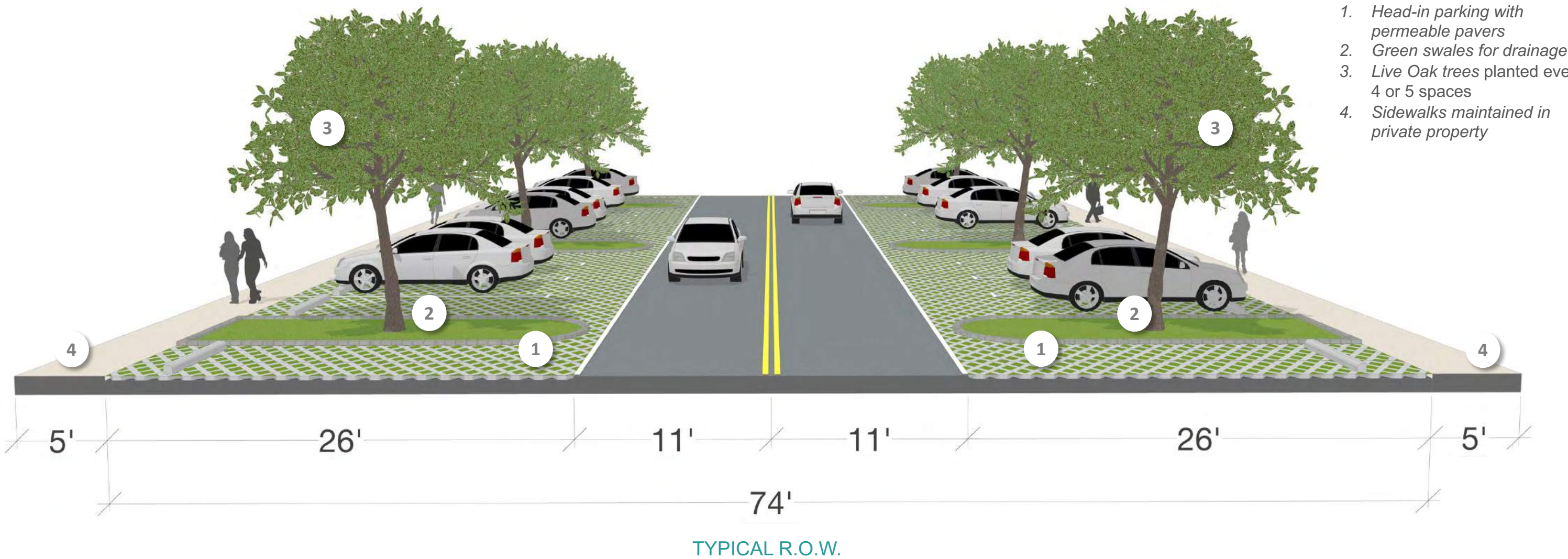
Several street section reconfigurations were explored for East and West Drives. Residents expressed the desire to maintain the current level of on-street parking. It is worth noting that, in the future, as properties are redeveloped and provide their own off-street parking, the need for on-street parking may diminish. In the meantime, the following approach is recommended.

The asphalted head-in parking areas should be repaved with permeable or turf-block pavers, and trees should be planted every four or five spaces. As sites are

developed or redeveloped, these new projects should be required to make these improvements to the public right-of-way in front of their properties. If the Village can find funding, it may choose to improve the remainder of the right-of-way. This will help with stormwater management, reduce the heat island effect, and enhance walkability.

Sidewalks on Harbor Island seem to have been provided on private property. Because of the stated desire to maintain head-in parking, we recommend that this practice continues and that easements be recorded with

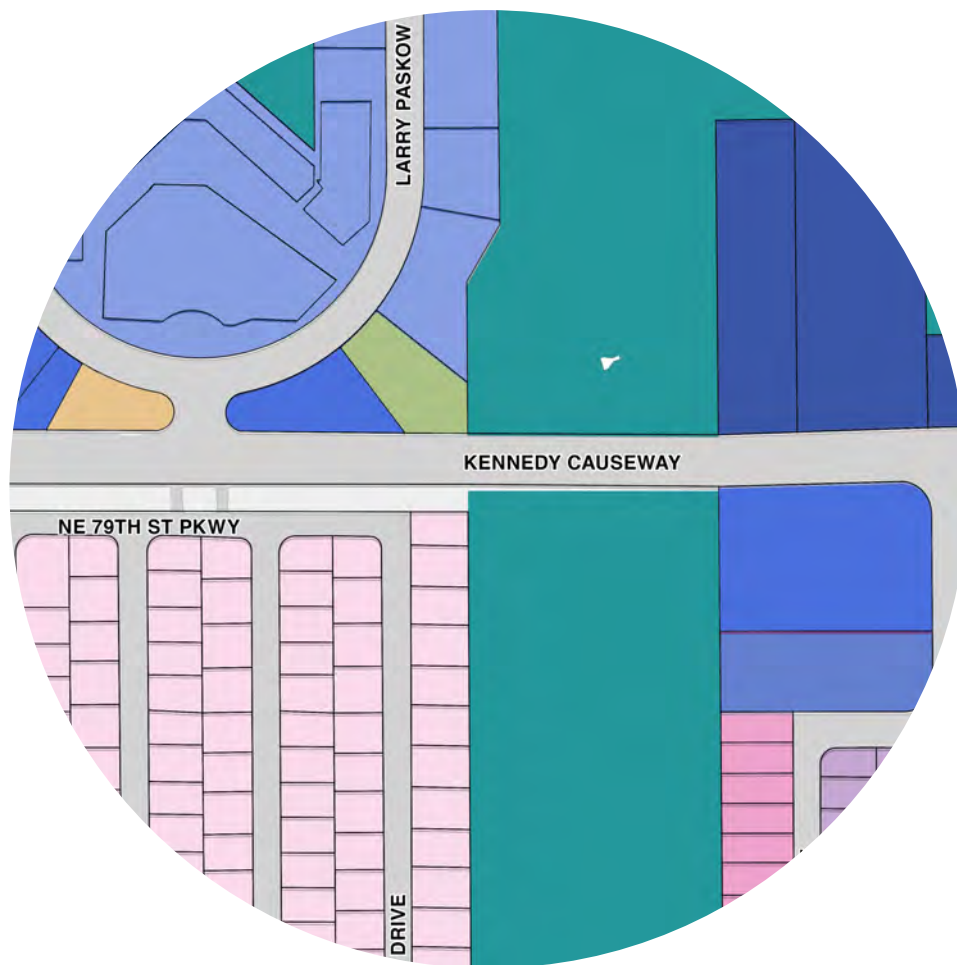
the Village. Sidewalks should be at least five feet wide, ideally more. The remainder of private frontages should be landscaped. If on-street parking is eventually reduced, there will be an opportunity to convert this area into green space with wider sidewalks.



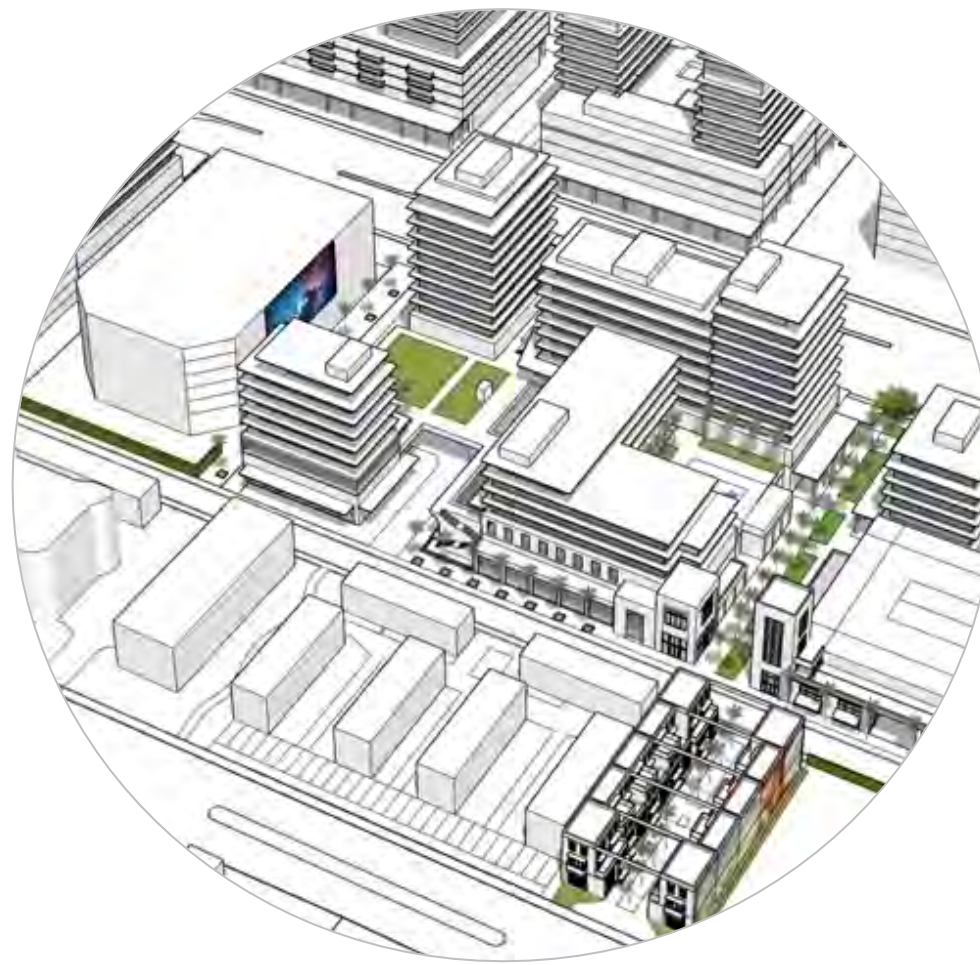


INCENTIVIZE FLEXIBILITY AND PREDICTABILITY

Employ a form-based code to accommodate a wide variety of uses and building types that compatibly shape and enrich growth within well-defined parameters



Establishing a New Form-Based Code



Creating a Vision for a NBV Center



Making NBV more Resilient

INCENTIVIZE FLEXIBILITY AND PREDICTABILITY

Over time, the NBV100 master plan and form-based code will lead to a more cohesive built environment, making the Village an even more attractive place to live.

- **Buildings** will define streets as public places rather than being isolated and surrounded by parking.
- **Walkability** will be improved through the implementation of a new form-based code along with tools provided by the NBV100 master plan.
- **Sidewalks** will be widened along Kennedy. In exchange for reduced setbacks, new developments will be required to improve the public realm by providing active frontages at the ground floor.
- **Surface lots** will be removed from the building frontages and on-street parking will be encouraged along major thoroughfares.
- **Access to the water** will be improved through the Island Walk, which will have a wider easement with better amenities when implemented in future developments
- **View corridors** to the water will continue to be required, but their form and the relationship of adjacent buildings will be improved.
- **Public art** will be encouraged and facilitated by an Article in the Zoning Code for Art in Public Places Program, similar to Miami21.



Kennedy Causeway Transformation



The Island Walk

INCENTIVIZE FLEXIBILITY AND PREDICTABILITY

The NBV100 will facilitate approaches by private property owners to address resiliency issues.

Establishing a consistent height for seawalls.

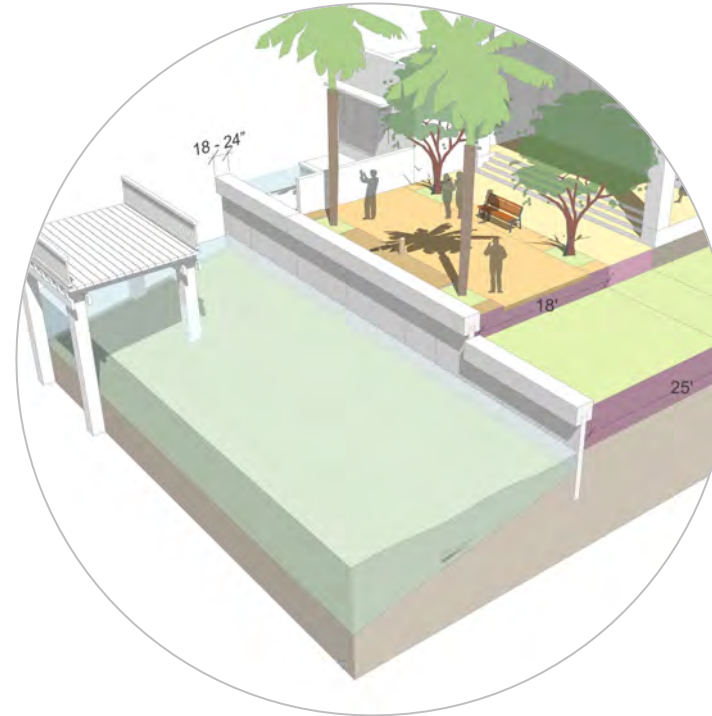
- Express this as a minimum, not as a fixed height, so that property owners have the option to raise them later.
- Require foundations be built to accommodate higher seawalls in the future.
- Encourage the use of innovative building materials that resist degradation.

Establishing standards for understories.

- Allow property owners that rebuild to exceed the minimum standard of BFE plus freeboard by establishing consistent standards for useable and aesthetically-pleasing understories.
- Preserve pleasing, pedestrian-friendly frontages by requiring screening of understories, and appropriate placement of entrances and landscape.

Considering implementing the Elevated Village.

- Allow property owners in selected single-family districts on Treasure Island the option to elevate their entire lot on a concrete framework without fill, including yards and sidewalks, as opposed to just raising the buildings.



Seawall and Island Walk



House Understory



Elevated Village

INCENTIVIZE FLEXIBILITY AND PREDICTABILITY

LDRs FACILITATING PROSPERITY

- Introduce a form-based code to implement the master plan. The NBV code will be organized around transect zones that prioritize built form over use.
- Introduce a wide variety of building types and uses to form more harmonious streets and public places.
- Update regulations to facilitate the transformation of Kennedy Causeway into a more pedestrian-friendly corridor that supports mixed-use development, multi-modal transportation systems, and on-street parking.
- Similarly, the regulations will facilitate the possible development of the proposed Village Center.
- Improve the existing pedestrian network through the introduction of better guidelines for sidewalks, mid-block passages, view corridors and the Island Walk.
- Introduce regulations that support shared and remote parking.
- Reduce current parking requirements to facilitate the development of existing underutilized lots.
- Reduce or eliminate minimum unit sizes to spur development.
- Allow accessory dwelling units (ADUs) for single-family properties. These can be used for guests or aging parents. Only if the primary house is owner-occupied may the ADU be rented out. The extra income may help pay for improvements or property taxes.
- Devise standards for seawalls and establish minimum heights to address flooding and prepare for sea level rise. (Work by EAC Consulting.)



Island Walk

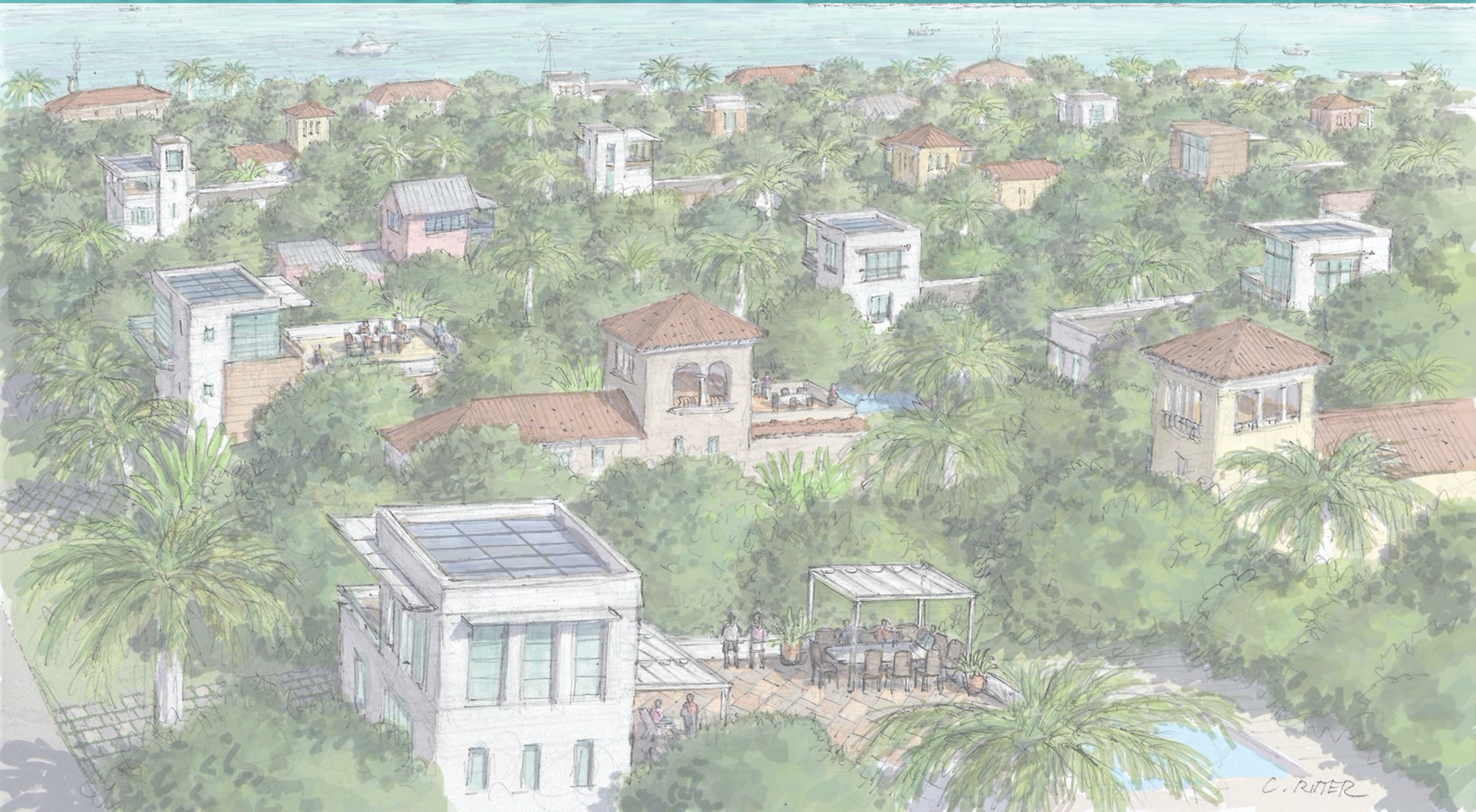


Pirates Alley



Downtown

NBV100 LDRs



NBV COMPREHENSIVE PLAN

RESPONSE TO MAJOR ISSUES RAISED IN THE E.A.R.



NBV COMPREHENSIVE PLAN:

Prior to NBV100, the *The 2006 Evaluation and Appraisal Review* (EAR) summarized successes and failures of the Comprehensive Plan and identified five major issues of concern.

1. **Hurricane evacuation for permanent and seasonal residents**
2. **Affordable housing**
3. **Redevelopment**
4. **Replacement of existing water and sewer infrastructure**
5. **Transportation (reassessment of parking standards)**

In 2007, NBV adopted the recommended amendments.

NBV100 Proposed Responses

The proposed Form-Based Code will address these five major issues in the following ways.

1. Hurricane evacuation

The proposed improvements along Kennedy Causeway, which include a central planting strip with trees, on-street parking, and dedicated bicycle lanes, will not impede hurricane evacuation. New bicycle lanes and on-street parking will be achieved with striping only (i.e., paint), and the existing curbs will not be moved (i.e., no bulb-outs.) In the event of an evacuation, all lanes will be open.

2. Affordable housing

The new code will promote housing affordability. Unlike the existing zoning, which severely limits housing types and unit sizes within each district, the new code will promote a more complex mixture of each within all transect zones. This will give residents a wider range of options. The existing code sets minimum unit sizes that are unrealistically large – so large that they are a major impediment to development. These minimums will be significantly reduced, and possibly eliminated, allowing the market to decide. This will give residents a greater range of options and will be a spur to development, thereby increasing supply and potentially increasing affordability.

3. Redevelopment

It is widely recognized that the existing code has become an impediment to redevelopment. The new code will remove barriers that are unhelpful while promoting a better built environment. Reduction or elimination of minimum unit sizes, as mentioned previously, will be a significant spur.

The code will support the NBV100 vision of transforming Kennedy Causeway into Kennedy Boulevard, a complete street that is mixed-use and walkable. For example, the existing setbacks along Kennedy are excessively large and undermine the spatial definition of the street. These setbacks will be reduced in exchange for wider sidewalks and galleries. In addition to making the street more appealing and desirable for investment, this change will increase the buildable area, making redevelopment more feasible.

The new code will also allow for the type of short-term tactical approaches that are often critical in the early stages of a project, such as the proposals to activate Pirates Alley with a farmer's market, food trucks and various pop-up venues. The NBV100 master plan also lays out a long-term vision for a Village Center adjacent to Pirates Alley, and the new code will facilitate it.

Another impediment to development are the onerous and outdated parking requirements that have resulted in some areas of the Village being significantly overparked. By reducing parking requirements and introducing better shared parking standards, the new code will facilitate several catalytic projects on existing areas of underutilized parking throughout NBV.

NBV COMPREHENSIVE PLAN

RESPONSE TO MAJOR ISSUES RAISED IN THE E.A.R.

4. Replacement of existing water and sewer infrastructure

Apart from NBV100, the Village installed discharge valves on 21 of 37 stormwater outfalls to prevent backflow, and they are planning to do the same for the remainder. A stormwater management plan will be carried out in 2020. It is expected to take approximately six months. We recommend that a long-term plan to elevate the streets be incorporated into the scope of work. This will provide a useful benchmark for establishing finished grade levels in new developments, especially in low-density residential districts.

5. Transportation (reassessment of parking standards)

NBV100 recognizes that while the automobile remains the predominant means of transportation, there is a pent-up demand to improve other means of transportation ranging from public transit to bicycling to walking. The transportation infrastructure of the Village has favored of the automobile since the Village was establish. NBV100 seeks a balance with the other modes.

The new code will improve the pedestrian network through better standards for sidewalks, the Island Walk, and mid-block passages. Bicycle infrastructure will be improved through better standards for bicycle lanes, and standards for bicycle parking will be incorporated into the new code. Public transportation will be improved by better designs and locations for bus shelters.

Recognizing that many parts of NBV are overparked, shared parking regulations will be introduced. This will make better use of the finite resource of land on the

islands. In support of the redesign of Kennedy Causeway into a more pedestrian-friendly corridor that supports multiple forms of transportation, it is recommended that some off-street parking be relocated to Kennedy. This would have the effects of calming traffic and improving walkability and bicycle safety.

Proposed Amendments to the Comprehensive Plan

For the new form-based code to take effect, amendments will be required to the Comprehensive Plan. The most significant change will be to replace the existing zoning districts with the new transect zones along with proposed changes to density or FAR. (See Equivalency Table on the next page.)

We recommend that the Village consider the possibility of eliminating both density and intensity (FAR). This would eliminate much redundancy and complexity in the code. After all, buildings are already limited by numerous other restrictions on form in the code, including setbacks, stepbacks, and height limits. By simplifying the code and making it more transparent, this would be an encouragement to redevelopment.

However, there may be considerable political pressure to maintain one or both, and Florida State Law seems to require at least one. The new code language for NBV proposed thus far contains limits on density, which could be easily eliminated if there is consensus in the community. So far, it does not contain references to intensity (FAR.)

If NBV choses to maintain restrictions on intensity, we recommend that NBV uses the metric of FLR (Floor Lot Ratio) instead, which was made the standard in the City of Miami with the adoption of Miami21. FAR typically

excludes parking, which has the effect of subtly incentivizing overparking. In the past in Miami, before FLR was adopted, FAR also included land in the public right-of-way. FLR includes all built area, including parking, so there is no incentive to provide excess parking, and it applies only to the lot area, not any area in the public right-of-way.

In addition, depending on which provisions are adopted in the new form-based code, numerous other policies, goals, and objectives will have to be amended. Here are a few possibilities:

- Eliminate requirement that Commercial (Mixed-Use) Buildings be at least 25% commercial. A mostly residential building should be allowed. Only the ground floor frontages on the primary street, the view corridor and facing the water must be commercial. (Building entrances and lobbies are allowed.)
- Allow commercial uses along the Island Walk on Treasure Island, especially outdoor restaurant seating and retail; restaurant seating adjacent to the water between the Island Walk and the water; the obtainment of submerged land leases by private property owners for the purpose of providing outdoor seating over the water; and piers with boat slips accessed from the public right of way.
- Allow ADUs in low-density residential districts.
- Allow vehicles approaching a loading dock to make some turning movements on the street, including Kennedy. Remove language that prohibits any interference whatsoever. (This recommendation may need to be studied and validated by a traffic engineer and FDOT.)

EQUIVALENCY TABLE

TRANSLATING EXISTING ZONING DISTRICTS INTO TRANSECT ZONES

Existing Future Land Use (from Comprehensive Plan)					➤	Existing Zoning Districts (from Unified Land Development Code)		➤	Proposed Transect Zones (for new Form-Based Code)					➤	Proposed Future Land Use Categories (for revisions to the Comprehensive Plan)	
	Categories		Density (for residential uses)	F.A.R. (for non-residential uses)					Transect Zone	Location	Density (for residential uses)	F.L.R. See definitions below. Potential to eliminate.				
1	Residential	Low Density / Single Family	6 DU/acre	-	➔	RS-1 Single-Family Residential	➔	1	T3-R Sub-urban	North Bay Island	6 du/acre (Miami21: 9 or 18)	-	1	Residential	Low Density	
					➔	RS-2 Single-Family Residential	➔	2	T3-L Sub-urban							Treasure Island, waterfront properties
		➔		➔	3	T4 General urban	Treasure Island, non-waterfront properties	18 du/acre (Miami21: 36)	-	2		Medium Density				
2		Medium Density / Multi-Family	40 DU/acre	-	➔	RM-40 Medium Density Multi-Family Residential	➔	4	T5 Urban center	Treasure Island	40 DU/acre (Miami21: 65)	TBD (Miami21 FLR: not specified)	3	Mixed Use	Medium Density	
3		High Density / Multi-Family	70 DU/acre	0.5 (for ancillary commercial)	➔	RM-70 High Density Multi-Family Residential	➔	5	T6-16 Urban core	Harbor Island	TBD	TBD (Miami21 FLR for T6-12: 8)	4	Mixed Use	High Density	
							➔	6	T6-24-R Urban core							Treasure Island
4	Commercial (Mixed Use)	70 DU/acre	3.0 (for a broad range of general and professional office, retail, banking, hotel, and service establishments)	➔	CG General Commercial (not BVO)	➔	7	T6-24-O Urban core	Along Kennedy on Treasure Island and Harbor Island	150 DU/acre (Miami21: 150)	TBD (Miami21 FLR: 7)					
						➔	8	T6-30 Urban core	Treasure Island, north of Kennedy	150 DU/acre (Miami21: 150)	TBD (Miami21 FLR for T6-36: 8)					
5	Educational	-	2.0 (for public schools and ancillary facilities)	➔	RS-2	➔	9	CI Civic Institutional	Treasure Island and Harbor Island	-	Shall conform to regulations of the most restrictive abutting Transect Zone (Miami21: same)	5	Civic Institutional			
6	Public Buildings and Grounds	-	2.0 (for government provided uses and facilities primarily serving the public)	➔	RM-40 (on Treasure Island) RM-70 (on Harbor Island)	➔										
7	Institutional	-	2.0 (a non-profit or quasi-public use, including, but not limited to religious facilities, nursing homes, community centers, public or private schools or colleges, and hospitals or clinics)	➔	RM-40 Medium Density Multi-Family Residential	➔										
8	Recreation and Open Space	-	0.25 (for “urban buffers)	➔	RS-2 and RM-40 (on Treasure Island) RM-70 (on Harbor Island)	➔	10	CS Civic Spaces/Parks	Treasure Island and Harbor Island	-	TBD (Miami21: 0.25)	6	Civic Spaces and Parks			
9	Marina	-	0.5 (areas where boat docking facilities are offered for rent including docks and dry storage facilities)	➔	Category not assigned on Future Land Use Map	➔										

Definitions (from Miami21)

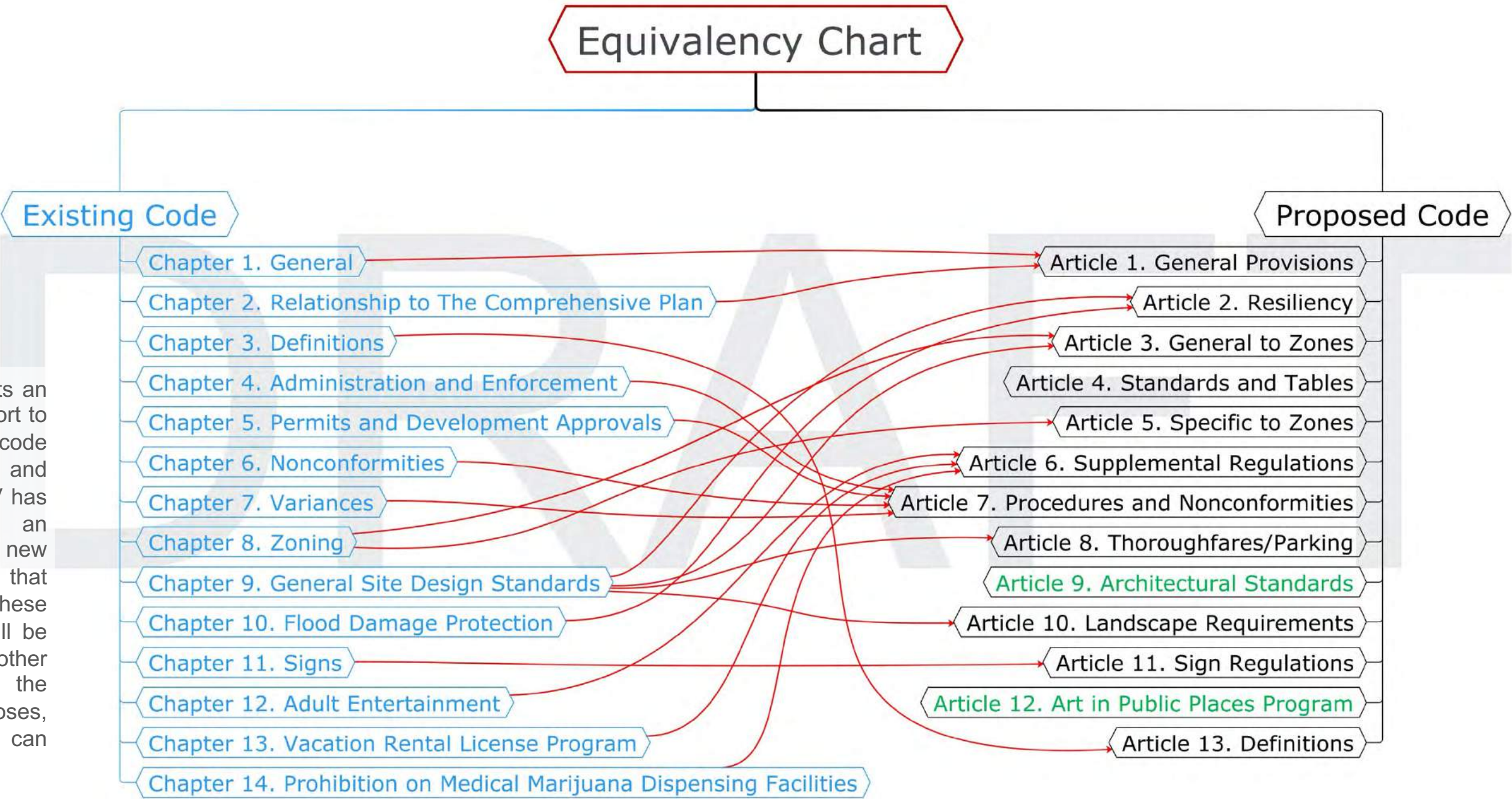
Floor Lot Ratio (FLR): The multiplier applied to the Lot Area that determines the maximum Floor Area allowed above grade in a given Transect Zone.

Floor Area: The floor area within the inside perimeter of the outside walls of the Building including hallways, stairs, closets, thickness of walls, columns and other features, and parking and loading areas, and excluding only interior Atria and open air spaces such as exterior corridors, Porches, balconies and roof areas. Also means Building or Development Capacity.

EQUIVALENCY CHART

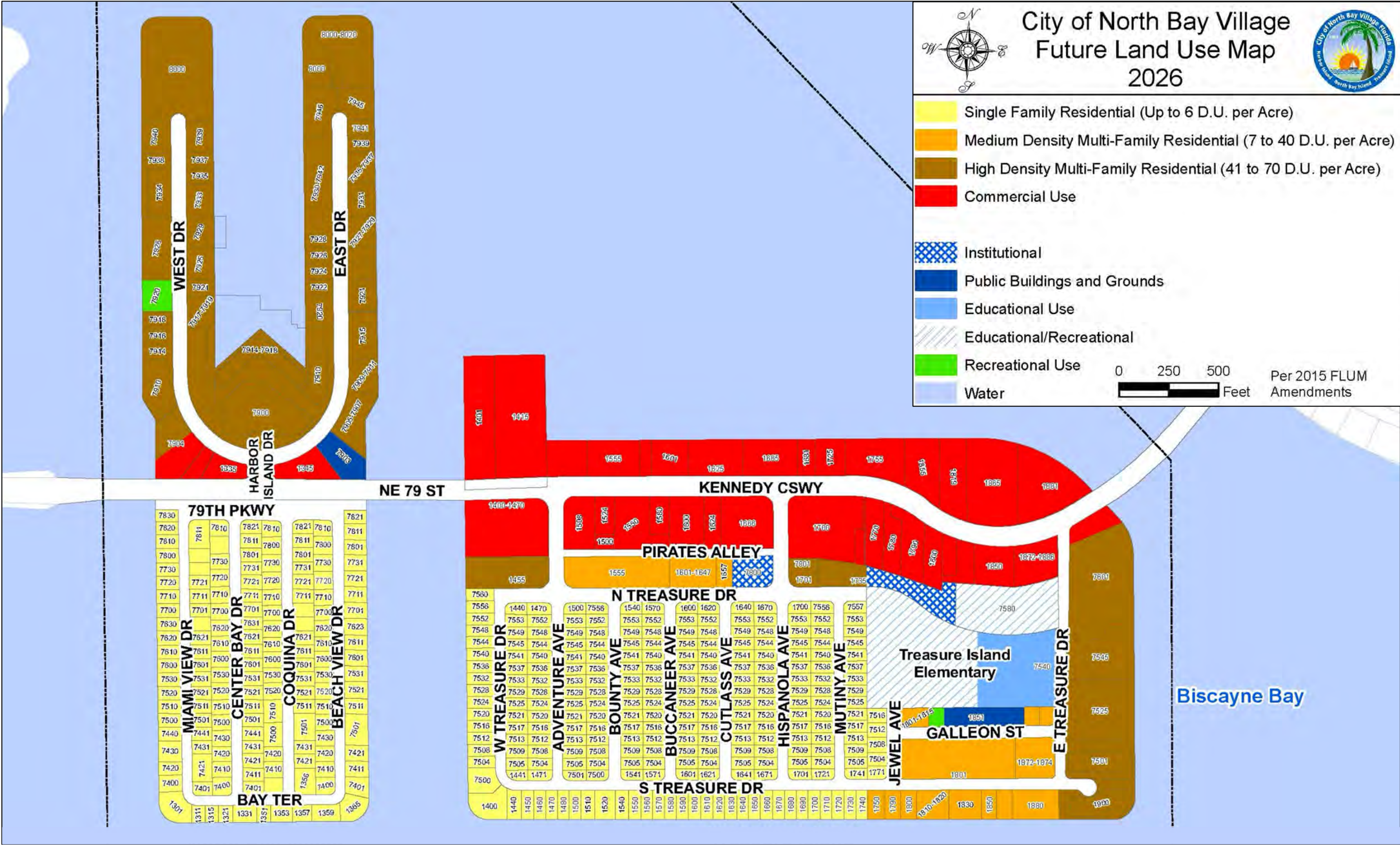
TRANSLATING EXISTING TABLE OF CONTENTS INTO A NEW FORM-BASED CODE

Note that this chart represents an early analysis in the initial effort to replace the entire existing code with a new form-based code, and it has been superseded. NBV has since elected to pursue an incremental approach, adding new sections to the existing code that address specific districts. These new sections of the code will be structured in such a way that other districts can be added in the future. Eventually, if NBV choses, the form-based sections can supersede the existing code.

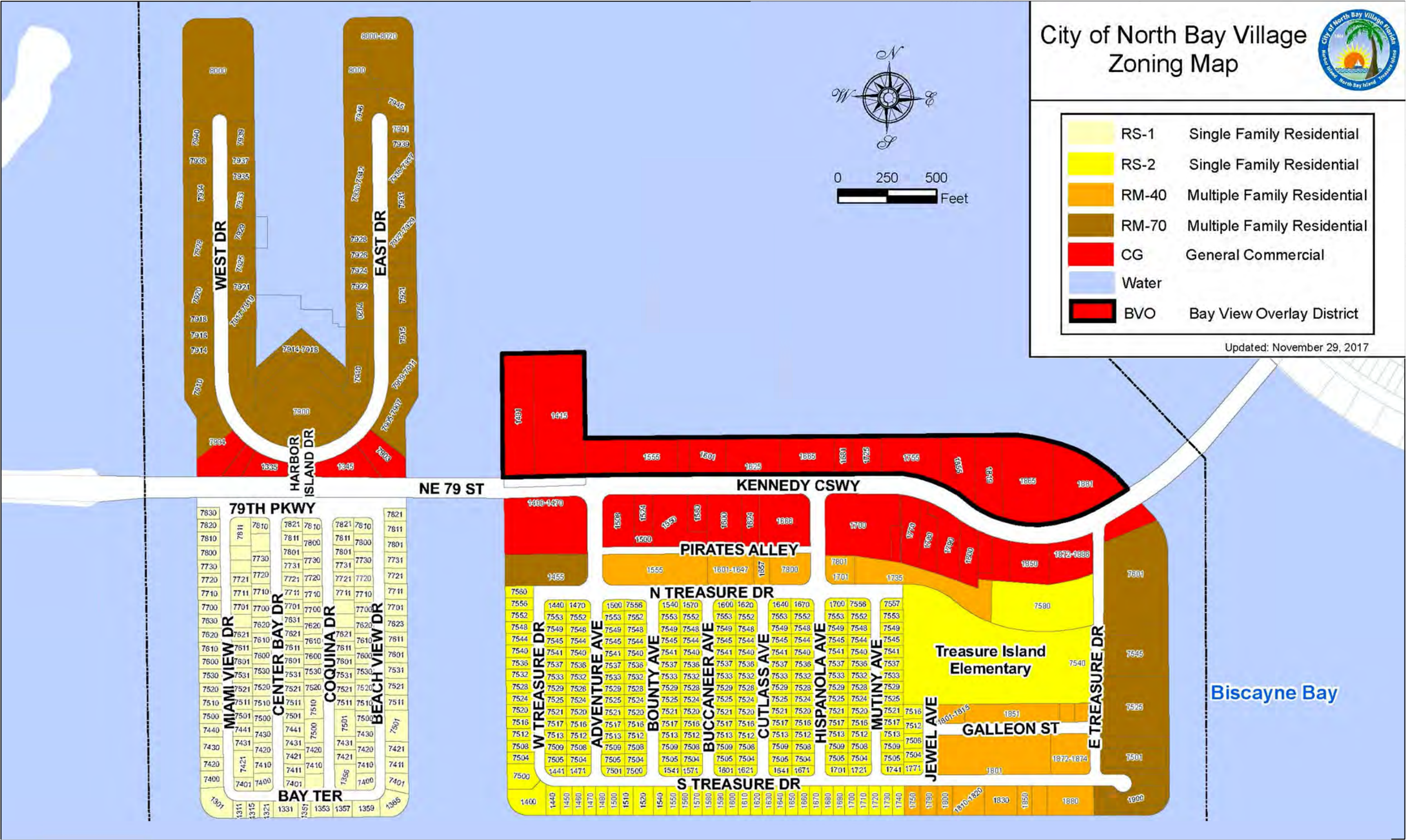


- KEYS:** BLACK TEXT: PROPOSED CODE
BLUE TEXT: EXISTING CODE
GREEN TEXT: RESERVED CONTENT
- NOTES:** 1. THE TABLE ABOVE SHOWS A PRELIMINARY DISTRIBUTION OF EXISTING AND PROPOSED COMPONENTS FOR THE NEW NBV100 ZONING CODE.
2. RESERVED CHAPTERS, GREEN TEXT, ARE TO BE PUT IN PLACE FOR FUTURE CONTENT INCLUSION.
3. RED CALL-LINES SYMBOLIZE CONTENT MOVING FROM CURRENT CODE INTO FUTURE FORM-BASED CODE. SOME OF THIS CONTENT WILL HAVE TO BE COORDINATED/EDITED TO BE IN ACCORDANCE WITH NEW FORM-BASED STANDARDS.

FUTURE LAND USE MAP – 2026 (COMPREHENSIVE PLAN)

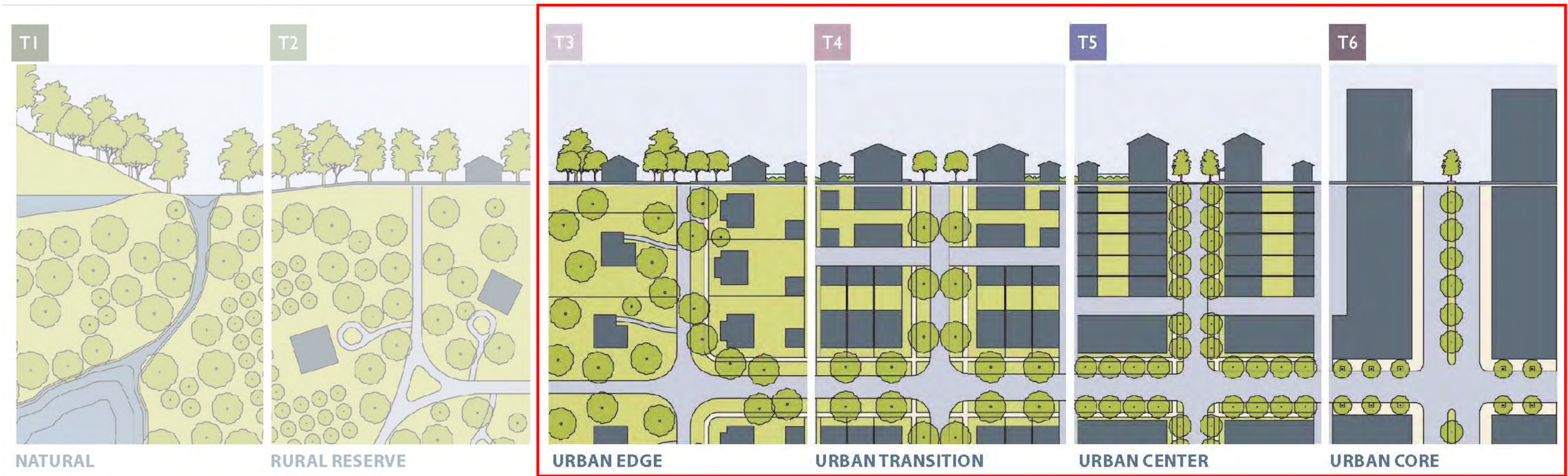


EXISTING ZONING MAP (UNIFIED LAND DEVELOPMENT CODE)



RURAL TO URBAN TRANSECT

Transect Zones relevant to NBV



One of the principles of Transect-based planning is that certain forms and elements belong in certain environments. For example, an apartment building belongs in a more urban setting, whereas a farm belongs in a more rural setting. The Rural-to-Urban Transect is a means for considering and organizing the human habitat according to intensities that range from the most rural condition to the most urban. The Transect zones are primarily classified by the physical intensity of the built form, the relationship between nature and the built environment, and secondly by the complexity of uses within the zone.

To arrange the analysis and coding of traditional patterns, a prototypical Rural-to-Urban Transect has been divided into six Transect Zones, or T-zones, for

application on zoning maps. (See illustration above.) These six habitats vary by the level and intensity of their physical and social character, providing immersive contexts within each T-Zone.

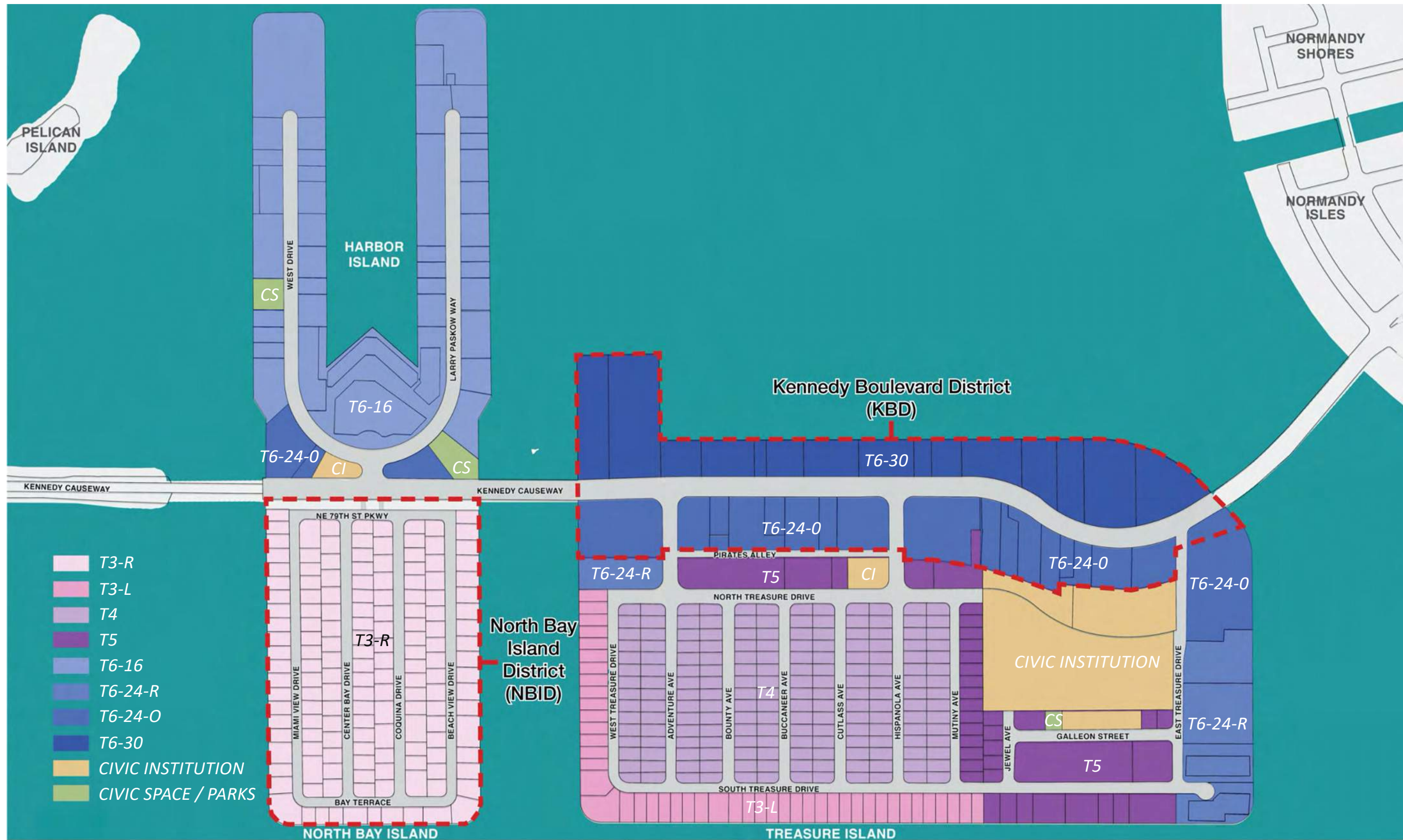
This zoning system replaces the conventional single-use zoning system that has encouraged a car-dependent culture and land-consuming sprawl. The six Transect Zones instead provide the basis for real neighborhood structure, which requires walkable streets, mixed use, transportation options, and housing diversity.

The Transect must always be calibrated to reflect local character and form. While the full Transect includes six T-zones, ranging from Natural Zone (T1) to Urban Core (T6), North Bay Village contains four, ranging from T3

through T6. Where further distinctions are required, each of these Transect Zones can be further refined by the subcategories of open (O), limited (L), or restricted (R), as required. The Equivalency Table in this Chapter proposes how to translate the existing zoning districts into Transect Zones. The proposed boundaries of these Transect Zones are documented on the Transect Zones Regulating Plan on the next page.

The new form-based code is structured around these specific Transect Zones. Criteria such as building disposition, configuration, function, parking, landscape, and architectural standards are all calibrated for each Transect Zone to ensure that built form results in good, walkable, mixed-use neighborhoods.

PROPOSED TANSECT ZONES REGULATING PLAN



NBV may elect to implement the form-based code incrementally by district. Each district would be made up of one or more transect zones. Shown here are proposals for a Kennedy Boulevard District (KBD) and a North Bay Island District (NBID.)

PARKING ANALYSIS

EXISTING REQUIREMENTS FOR RESIDENTIAL AND COMMERCIAL USES

NBV Existing Parking Requirements for Commercial Uses Per ULDC §9.3.C.3 (July 2019)

	# of Spaces	Per # SF	Of Area Type	Additional Requirements	Spaces per 1,000 SF
Banks and financial institutions	1	300	Gross Floor Area	+ 8 stacking spaces per drive-thru window	3.33 : 1,000 SF
Business, vocational, and trade schools	1	100	Gross Floor Area	-	10 : 1,000 SF
Lodges, fraternal organizations, and union halls	1	100	Gross Floor Area	-	10 : 1,000 SF
Offices (business, professional)	1	300	Gross Floor Area	-	3.33 : 1,000 SF
Personal service establishments (dry cleaners, laundromats, gym, fitness center, etc.)	1	200	Gross Floor Area	-	5 : 1,000 SF
Repair service establishments (shoe, watches, appliances, etc.)	1	200	Gross Floor Area	-	5 : 1,000 SF
Restaurants, lounges, and nightclubs	1	75	Customer Service Area	-	13.33 : 1,000 SF
Retail sales establishments	1	200	Gross Floor Area	+ 4 stacking spaces per drive-thru window	5 : 1,000 SF
Service stations	3	-	Per Service Station	+ 3 spaces per service bay	-
Theaters/Auditoriums	1	-	Per 3 Seats (See Note 1)	-	-
Vehicle sales, rental, repair, and service operations	1	400	Enclosed Floor Area for Sales or Rental Display	+ 2 spaces per service bay	2.5 : 1,000 SF
Offices (medical, dental, clinic)	1	150	Gross Floor Area	-	6.67 : 1,000 SF
Barber shops, hair salon, nail salon, spa, therapeutic massage center	2	-	Per Station (Chair, Bed, etc.)	-	-
Drugstores and pharmacies	1	200	Gross Floor Area	-	5 : 1,000 SF
Funeral home or mortuary	1	-	Per 4 Seats (See Note 1)	-	-
Animal hospital, grooming, and/or kennel	1	300	Gross Floor Area	-	3.33 : 1,000 SF
Hotels, motels, and other tourist accommodations	1	-	Per Rental Sleeping Unit < 100 Units	+10% of total	-
	1	-	Per Rental Sleeping Unit above 100 Units (See Note 2)		

NBV Existing Parking Requirements for Residential Uses Per ULDC §9.3.C.2 (July 2019)

		Unit Type Unspecified	Efficiency	1 and 2-bedroom	3-bedroom and Larger (See Note 1)	Additional Requirements
Single-Family		2	-	-	-	
Multi-Family	CG north of Kennedy on Treasure Island	-	1.5	2	2	+10% of total for guests
	All Other Areas	-	1.5	2	3	+10% of total for guests

Notes

- Includes 2-bedroom units with a den or similar space that can be converted to a third bedroom.

Notes

- For benches, pews, etc., 18” = 1 seat.
- Requires agreement in writing to provide hotel shuttle service and employee parking plan. See code for details. In addition for hotels over 100 units, parking requirements for restaurants, retail and other services may be reduced by 25%.

PROPOSED REQUIREMENTS FOR RESIDENTIAL AND COMMERCIAL USES

NBV100 Proposed Parking Requirements

Use		Vehicular Spaces						Bicycle Rack Spaces per Vehicular Spaces Provided	Miami21 Comparison
		Spaces	Per	Additional Requirements	Shared Parking Allowed (Note 2)	Remote Parking Allowed (Note 3)	Electric vehicle charging stations (prioritization TBD)		
Residential	Single Family	2	Per house	1 per ADU	x	x	x	-	Similar
	Multi-Family	1.5	Per unit (Note 1)	10% for visitors	✓	✓	1 per 50	1 per 20	Similar
Commercial		3	1,000 SF	-	✓	✓	1 per 50	1 per 20	Similar
Lodging (Note 4)		0.5	Per unit	10% for visitors	✓	✓	1 per 50	1 per 20	Similar

Notes

1. Efficiencies, studios, and micro units count as 1/2 unit.
2. Parking requirements may be reduced according to the Shared Parking Standards Table.
3. Remote parking only allowed in T5 and T6. Remote parking must be within 1,000' and may not be located in T3 and T4.
4. Short-term vacation rentals not included in Lodging.

SHARED PARKING STANDARDS TABLE.

a. Sharing Factor		
Function	with	Function
RESIDENTIAL		RESIDENTIAL
LODGING		LODGING
OFFICE		OFFICE
COMMERCIAL		COMMERCIAL

The shared Parking Standards Table provides the method for calculating shared parking for buildings with more than one Use type. It refers to the parking requirements that appear in [§15.5.G](#).

The parking required for any two Functions on a Lot is calculated by dividing the number of spaces required by the lesser of the two uses by the appropriate factor from this Table and adding the result to the greater use parking requirement.

For instance: for a building with a Residential Use requiring 100 spaces and a Commercial Use requiring 20 spaces, the 20 spaces divided by the sharing factor of 1.2 would reduce the total requirement to 100 plus 16 spaces. For uses not indicated in this chart on a mixed-use lot a sharing factor of 1.1 shall be allowed. Additional sharing is allowed by Warrant.

FORM-BASED CODE PRECEDENT – MIAMI21

ULI RECOMMENDATIONS FOR MIAMI21

Form-based codes have been adopted all over the U.S. When the City of Miami adopted Miami21 in 2009, it became the largest U.S. municipality to do so. Because so many in the construction, design, real estate, and development industries in South Florida are already so familiar with the structure, organization, and terminology of Miami21, it is a logical precedent for NBV. The NBV Form-Based Code will be distinct in two ways. First, it will be calibrated to the local context, which is distinct from Miami. Second, it will address issues of resiliency and adaptation to sea level rise, which were discussed in the Resiliency Chapter.

It has been nearly ten years since Miami21 has been adopted. It is widely viewed as successful, but of course there are lessons to be learned. In April 2019, the Southeast Florida/Caribbean District Council of the Urban Land Institute (ULI) issued a thoughtful report entitled Miami21: Good to Great: Adapting Miami’s Form-Based Code.

There are many interesting recommendations in the report. Some are being incorporated into the new code for NBV. Below are excerpts (in green) from that report related to two issues of particular importance to NBV, namely density and parking. (We have underlined key recommendations.) In a nutshell, they advocate eliminating density caps and eliminating or reducing parking requirements.

Allowed Density [From ULI Report on Miami21]

Density maximums – particularly in T4 and T5 – reduce housing supply and increase housing prices. Allowing more units while retaining existing allowed building envelopes (lot coverage, setbacks, height) will allow developers to provide more apartments sized for a more mid-market price range.

The city has fixed this problem for select areas like Wynwood (custom T5 zoning with density increased from 65 to 150 units per acre) and has allowed other areas to pay their way out of the problem (near train stations you can buy density from historic properties). However, such select area exceptions undermine the fundamental purpose and benefits of Miami 21: to create predictability for residents and developers. We believe all neighborhoods of Miami deserve right-size density and shouldn’t be forced to pay for it.

We Recommend deleting density maximums for T4, T5, and T6 in Article 4 Table 4 and Article 5 or significantly increasing such density maximums city-wide, e.g.: T4 to 100 units per acre and T5 to 150. We also recommend removing any requirement to pay to increase density. [ULI Recommendation for Miami21]

Parking [From ULI Report on Miami21]

Parking is a lingering issue with Miami 21, since new transit patterns in car-sharing, mobility, and the proliferation of alternatives to private car ownership are vastly changing urban environments in major cities across the US.

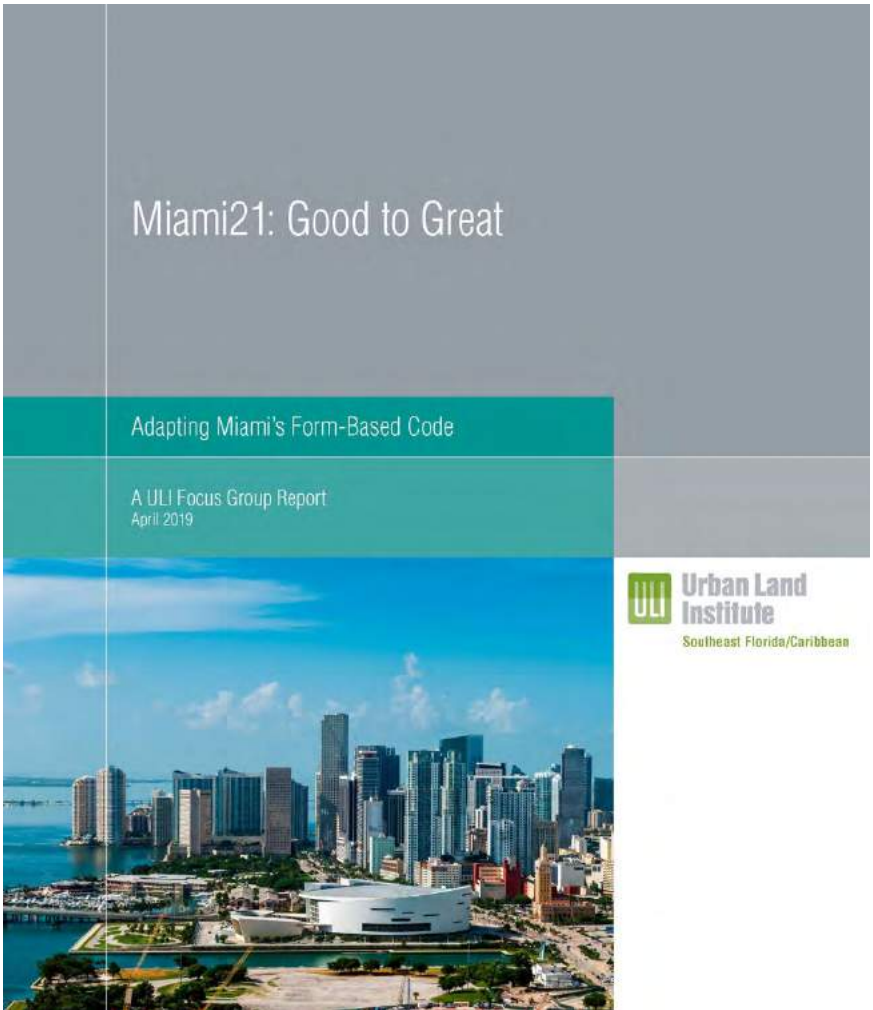
Miami 21 retained standard parking minimums from the previous code, but added provisions for reduced parking minimums in key areas and situations. However, these allowances are not widespread enough throughout the city, and are preventing desired infill development in many of Miami’s residential areas.

We Recommend [ULI Recommendation for Miami21]

1. Working with Miami Parking Authority to make on-street parking in T3 areas “resident only” at no cost to residents
2. After establishing this “resident only” initiative,

changing all parking minimums for T4, T5, and T6 in Article 4 Table 4 into maximums or deleting/significantly reduce parking requirements. For example: further reductions near train stations and bus corridors. Or further reductions for shared parking. Or change parking requirements per apartment size (measured by bedrooms or square feet).

3. Deleting all existing parking impact fees (“fees in lieu”) and do not require payment to reduce parking.
4. Requiring a parking demand study to renew Business Tax Receipt for projects larger than 200,000 square feet.



EXISTING & PROPOSED ZONING REGULATIONS

INTRODUCTION

Analysis of Existing Zoning

In order to make recommendations for the new form-based code, it was important first to understand what is possible under the existing ULDC (Unified Land Development Code). Many experienced developers have complained about how difficult this document is to interpret. Our first step was to translate the basic parameters into easy-to-read summary tables, which are provided on the following pages. Then, for each zoning district, we undertook an analysis of what is possible to build by-right on a typical lot. Zoning districts vary in their requirements, but a typical progression, as illustrated on the following pages, includes the following:

- Lot dimensions
- Setbacks and easements
- Buildable area
- Maximum building envelope, based on heights
- Density and maximum allowed units
- One or more hypothetical scenarios that take into consideration most of the basic design and use constraints as well as parking and pervious area requirements.

This exercise revealed what is already possible. Here are some significant take-aways:

- In the single-family districts, where residents have been concerned about over-scaled new houses threatening the character of their neighborhoods, the permissible zoning envelopes are remarkably large. It is already allowable to tear down an existing house and replace it with a voluminous structure. At least two factors contribute to this: 1) unlike many neighboring municipalities, which typically allow at most two habitable stories, NBV allows three; and 2) pervious area is minimally regulated.
- In RM-70 and CG, the allowable building envelopes are quite large and tall. Within RM-70, it is not possible to fill the zoning envelope because of the limits on density. Within CG, it is possible to fill the large envelope with a mixture of residential and commercial uses. However, there are several reasons why development has stagnated in NBV in recent years: 1) minimum unit sizes

are too large and do not relate to actual market demands; 2) the density limits are low; 3) the setbacks along Kennedy are excessive and adversely affect the shallower lots in particular; and 4) the TDR program is opaque and the prices do not reflect market realities.

Depending on the neighborhood, down-zoning may prove to be a challenge. However, it is possible to dramatically improve the character of every neighborhood in NBV by adopting code provisions that focus on improving how buildings meet the street at the sidewalk level. Over time, this will lead to better walkability, stronger retail, and more vibrant, memorable places.

Some General Recommendations

- Adopt a form-based code to replace the existing code. Instead of focusing primarily on separating use, the emphasis should be on built form. This will allow NBV to transform over time into a collection of appealing, walkable, mixed-use neighborhoods with a clear center. The graphic elements of a form-based code include easy-to-read tables and illustrations that will make for a more user-friendly document. This will simplify permitting and encourage both renovations and new development. The new code can be modelled on Miami21, an excellent local precedent that is already familiar to many in the region, but it should be adjusted for the NBV context. It should also be updated to address the threats of coastal flooding and sea level rise.
- Adjust setbacks in favor good street frontages.
- Measure building height from BFE plus freeboard instead of from grade. Measure building height by the number of stories, not in feet, to allow for more varied and higher quality design.
- If Florida State regulations allow, dispense with density and intensity limits, which are redundant as the form should be well-controlled with various limits on building disposition and configuration, including setbacks, stepbacks, and height limits. If limits to intensity are

retained, use FLR (floor-area ration) instead of FAR, thus eliminating an incentive to provide excessive parking. If density or intensity is retained, carefully calibrate the limits to correspond closely with the allowed building envelopes.

- To encourage development, eliminate the existing bonus programs for height and density or make them more transparent. If a bonus program is retained, structure it to provide funds for resiliency improvements or public art or to protect historic structures on Harbor Island.
- Reduce and simplify parking requirements. Encourage shared parking.
- Specify minimum pervious area for all zones.
- Provide standards that will protect buildings from flood damage and sea level rise.
- Institute basic architectural design standards. These will not enforce a particular style, but they will ensure that building massing and frontages reinforce the public realm and encourage walkability. This should include the following:
 - Percentage of glass on frontages
 - Location of primary entries on the primary street with a visible front door
 - Shopfront and awning standards
 - Sidewalk dining standards
 - Gallery and arcade standards
 - Architectural screening on unlined parking structures
 - Sign standards
- Provide uniform seawall standards that anticipate rising sea levels.
- Allow some truck turning movements on streets to improve building frontages and sidewalks.
- Expand and improve public access to the water.

Specific recommendations for a Kennedy Boulevard District (KBD) and a North Bay Island District (NBID) have been provided to the Village. Recommendations for other areas may be forthcoming.

EXISTING ZONING REGULATIONS

HEIGHT SUMMARY TABLE (BASED ON ULDC §8.10 & §8.12)

Zoning District or Overlay		Height Allowed By Right Under Base Zoning (§8.10)	Bonus Height (§8.12) <small>(note 1)</small>	BVO Height Bonuses	
				Front Setback Bonus (§8.10.F.3) <small>(notes 1 & 2)</small>	Side Setback Bonus (§8.10.F.4) <small>(notes 1 & 3)</small>
RS-1	Low Density Single-Family Residential District	3 Stories or 35'	-	-	-
RS-2	Medium Density Single-Family Residential District	3 Stories or 35'	-	-	-
RM-40	Medium Density Multiple Family Residential District	4 Stories or 45' + 1 Story of Parking <10'	-	-	-
RM-70	High Density Multiple Family Residential District	150'	+ 90' = 240'	-	-
RM-70 Undersized Parcel		3 Stories or 36' <small>(Note 4)</small>	-	-	-
RM-70 PRD	Planned Residential Development Zoning Overlay	Roof of top residential story: 150' Top of structure: 160' Max overall including elevator: 170' Pedestal: 30'	-	-	-
CG	General Commercial District	150'	+ 90' = 240'	-	-
BVO	Bay View Overlay District	150'	+ 90' = 240'	+ 60' = 300'	+ 100' = 400'
GU	Government Use District	150'	-	-	-

- Notes**
1. If the bonus is approved by the Village Planning and Zoning Board, a community contribution fee is paid to North Bay Village.
 2. For lots greater than 500' in depth:
Above 240', the building must set back from the front property line by at least half the height above 240'.
For lots less than 500' in depth: Above 240', the building must set back at least 60' from the front property line.
 3. For lots greater than 500' in depth: If the building exceeds 300' in height, setbacks equal to 20% of the lot width are required along both side property lines.
For lots less than 500' in depth: If the building exceeds 300' in height, setbacks equal to 30% of the lot width are required along both side property lines.
 4. See §8.10.D.6.c.4 for full requirements.
 5. The table and notes summarize existing requirements described in the North Bay Village Unified Land Development Code (LDC) from July 2019. This information has been compiled by DPZ CoDesign for analysis purposes only and does not supersede the LDC.

EXISTING ZONING REGULATIONS

ZONING STANDARDS SUMMARY TABLE (BASED ON ULDC §8.10)

Zoning District or Overlay	Density / Units Per Acre	FAR	Min. Lot Size	Min. Frontage	Min. Pervious Area
RS-1	6	-	7,000 SF	70'	-
RS-2	6	-	6,000 SF	60'	-
RM-40	40 (Note 1)	-	10,000 SF	100'	25%
RM-70	70 (Note 1)	-	27,000 SF	75'	20%
RM-70 Undersized Parcel	6+ Unit Count	-	10,800 SF	30'	25%
RM-70 PRD	70 (Note 1)	One lot: 3.0 Two lots: 3.75 Three lots: 4.0	-	-	See base zoning, i.e., RM-70
CG	70 (Note 1)	Non-residential uses: 3.0 (Note 2)	10,000 SF	75'	20%
BVO	-	-	-	-	See base zoning, i.e., CG
GU	-	-	-	-	15%

Notes

1. Efficiency or one-bedroom units per acre. See LDC for two- and three-bedroom units per acre.
2. Parking not counted towards FAR.
3. The table and notes summarize existing requirements described in the North Bay Village Unified Land Development Code (LDC) from July 2019. This information has been compiled by DPZ CoDesign for analysis purposes only and does not supersede the LDC.

EXISTING ZONING REGULATIONS

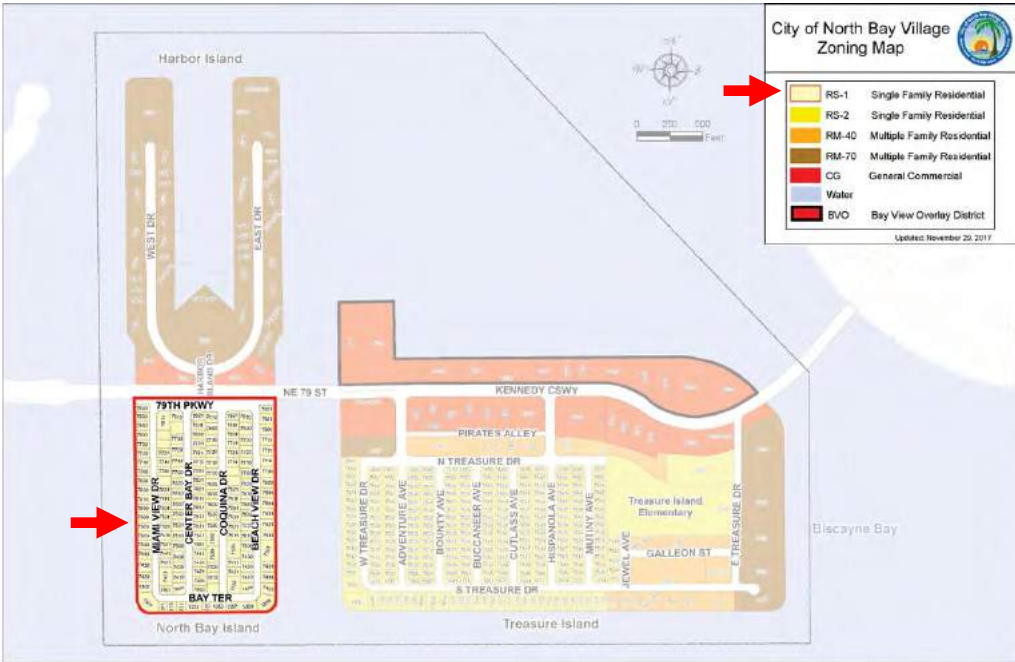
SETBACKS SUMMARY TABLE (BASED ON ULDC §8.10)

	Zoning District or Overlay	Front				Side					Rear	Other			
		Front	Kennedy Causeway North Side	Kennedy Causeway South Side	Other Street Frontages	Corner	Interior	One Side (Interior)	Second Side (Interior)	Total Side Setback Area Free of Structures at Ground Level		Waterfront	Abutting a Single-Family District	Abutting Commercial District	Abutting Multi-Family District
Zoning Districts	RS-1	20	-	-	-	20	10	-	-	H	15	25	-	-	-
	RS-2	20	-	-	-	15	7.5	-	-	-	15	25	-	-	-
	RM-40	25	-	-	-	25	20	-	-	-	15	25	100	-	-
	RM-70	-	40	60	25	-	-	15 (Note 1)	20% lot width (Note 1)	60	25	Note 2	100	-	-
	RM-70 PRD without pedestal and tower design	-	40	60	25	-	-	15 (Note 1)	20% lot width (Note 1)	60	25	Note 2	100	-	-
	RM-70 PRD with pedestal and tower design	Pedestal 20 Tower 25	-	-	-	-	Pedestal 10 (both sides)	Tower 15	Tower 20% of Frontage	-	Pedestal & Tower 25	-	-	-	-
	CG	-	40	60	25	-	-	15	20% lot width	-	25	Note 2	-	-	-
	GU	-	20	20	10	-	-	-	-	-	10	-	15	5	7
Overlay Districts	BVO	-	See Note 2 on Height Summary Table	-	-	-	-	See Note 3 on Height Summary Table		-	-	-	-	-	-
	Miami-Dade County Bay Shoreline Review (Note 4)	-	-	-	-	-	25	-	Visual corridor: 20% lot width, 20' min.	-	25, up to 75 max. for portion above 35' (Note 5)	-	-	-	-

Notes

1. Total side setback area free of structures at ground level is 60’.
2. A 10’ wide public access shoreline walkway must be provided and maintained, as well as a 5’ wide public access walkway from the public right-of-way. (§8.14) See diagram.
3. The table and notes summarize existing requirements described in the North Bay Village Unified Land Development Code (LDC) from July 2019. This information has been compiled by DPZ CoDesign for analysis purposes only and does not supersede the LDC.
4. Miami-Dade County Bay Shoreline Review applies to all waterfront properties in North Bay Village except single-family houses and duplexes. (§33D-34) County regulations supersede municipal regulations.
5. For building elevations exceeding 35’ in height from the mean water line to the top of the building parapet, the setback shall be increased by 50% of the height over 35’ up to a maximum of 75’. (§33D-38.1.b) If public shoreline walkways are provided, the shoreline setback may be reduced by recommendation of the Shoreline Review Committee. (§33D-38.1.c)

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1 SINGLE-FAMILY RESIDENTIAL DISTRICT ON NORTH BAY ISLAND



Zoning map

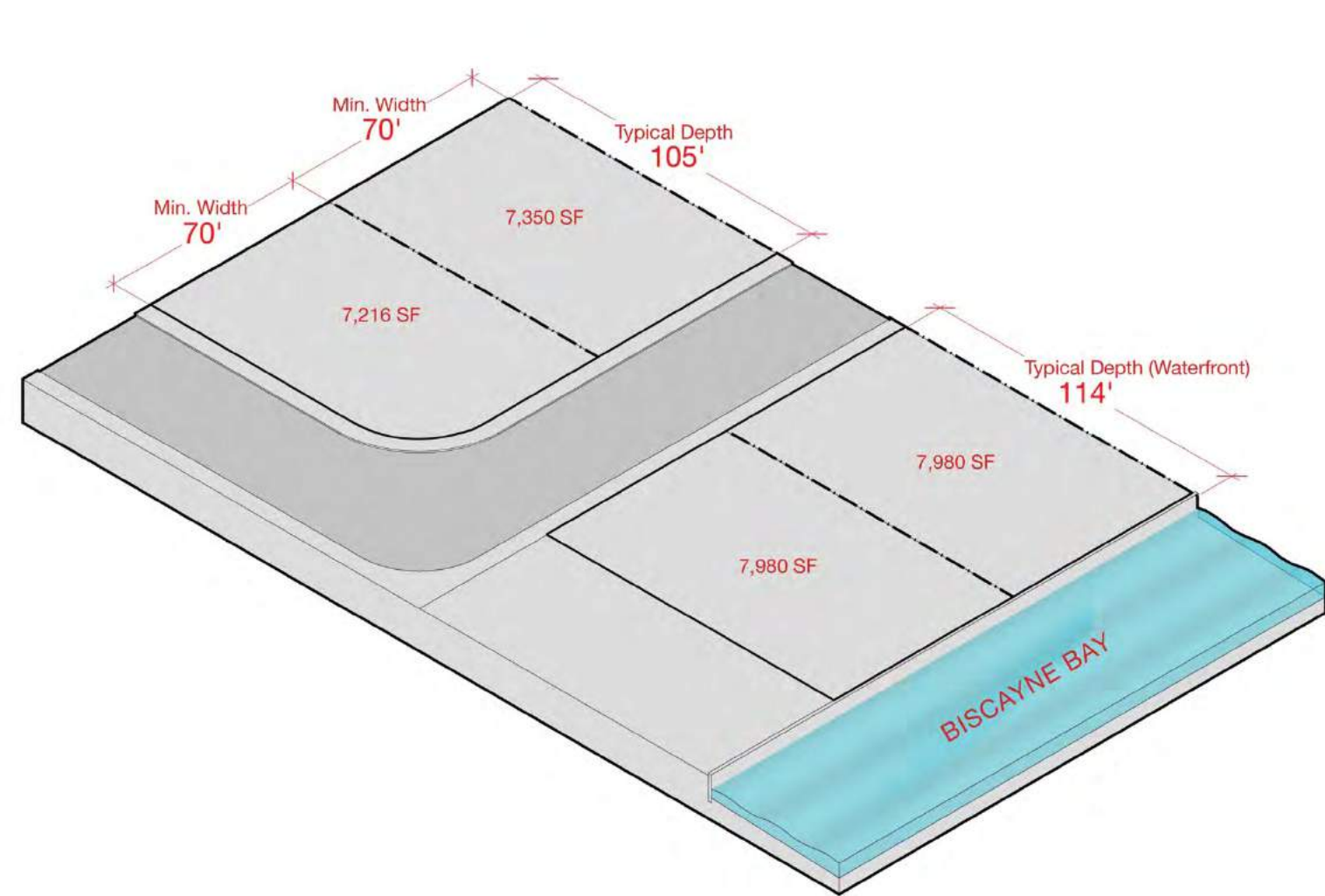
Note: The following pages present an analysis of existing zoning regulations for illustrative purposes only. The drawings, dimensions, and notes do not supersede the NBV Unified Land Development Code (ULDC.)



Typical conditions

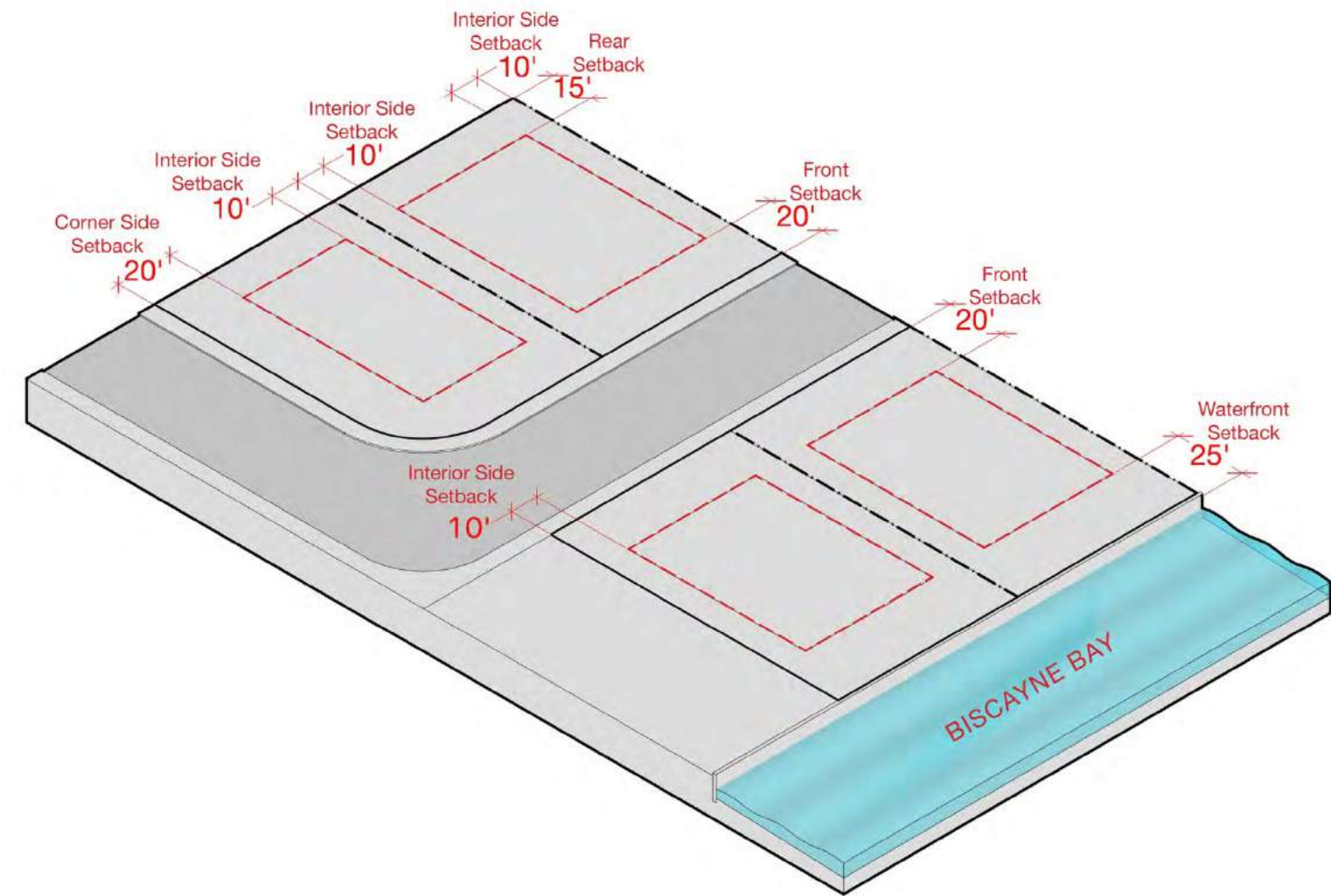
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1

SINGLE-FAMILY RESIDENTIAL DISTRICT ON NORTH BAY ISLAND



1. Typical lots

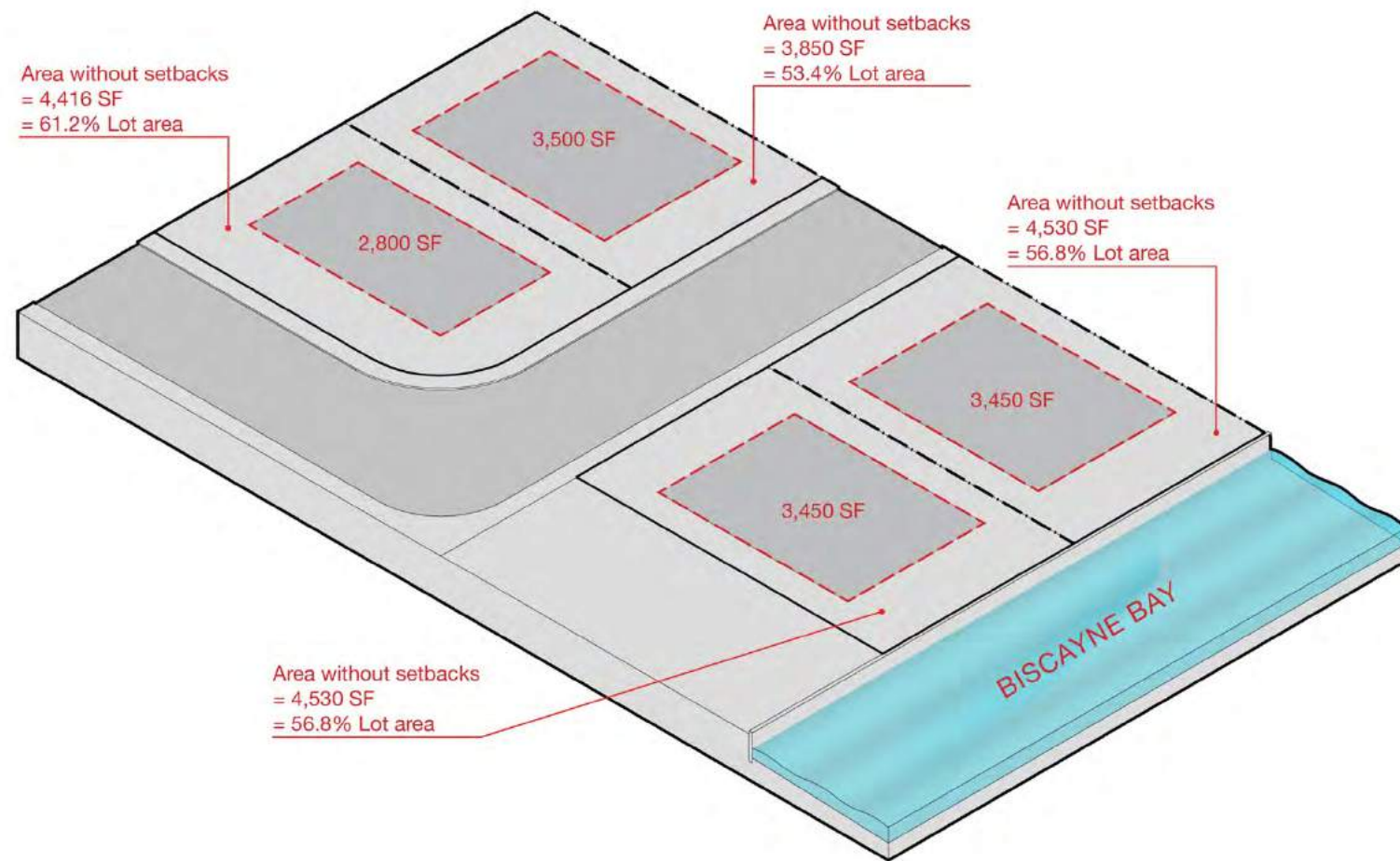
Note:
Actual lot dimensions vary.



2. Setbacks

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1

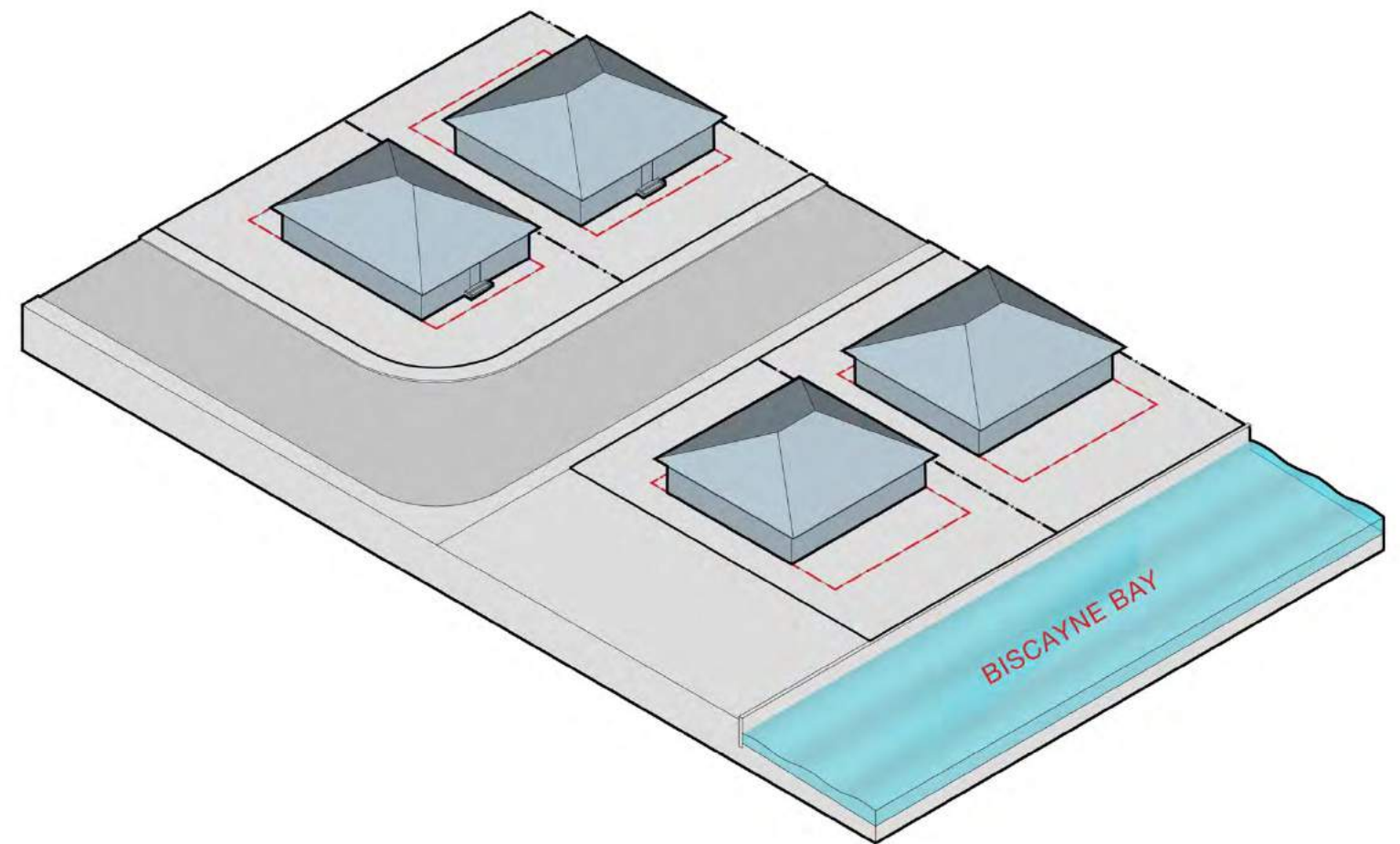
SINGLE-FAMILY RESIDENTIAL DISTRICT ON NORTH BAY ISLAND



3. Buildable area

Notes:

Min. pervious area is not specified in low-density residential districts. Therefore, in RS-1, buildable area equals the total area inside setbacks.
Actual lot dimensions and buildable areas vary.



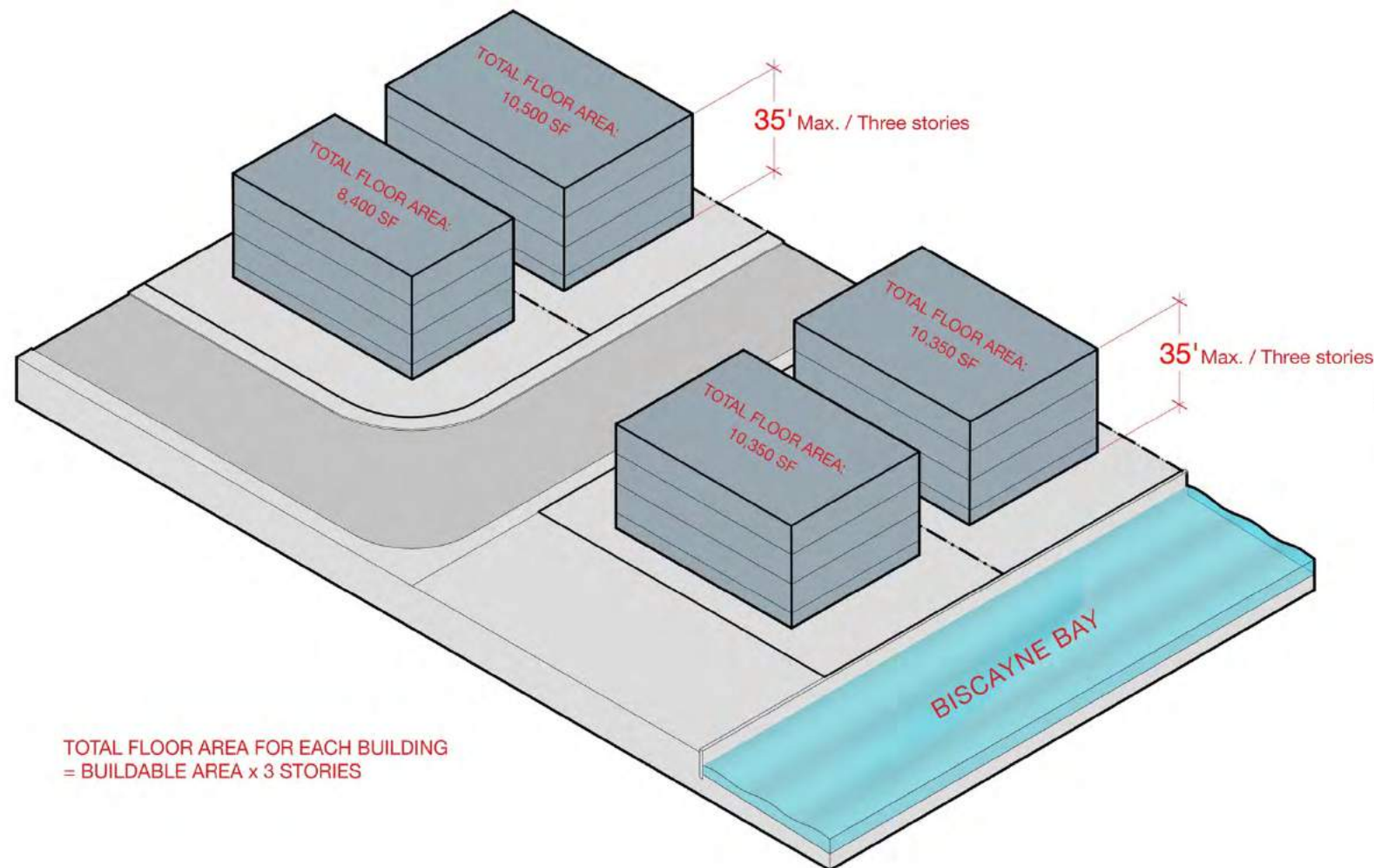
4. Typical existing buildout

Note:

Houses shown are one-story, 2,400 SF.

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1

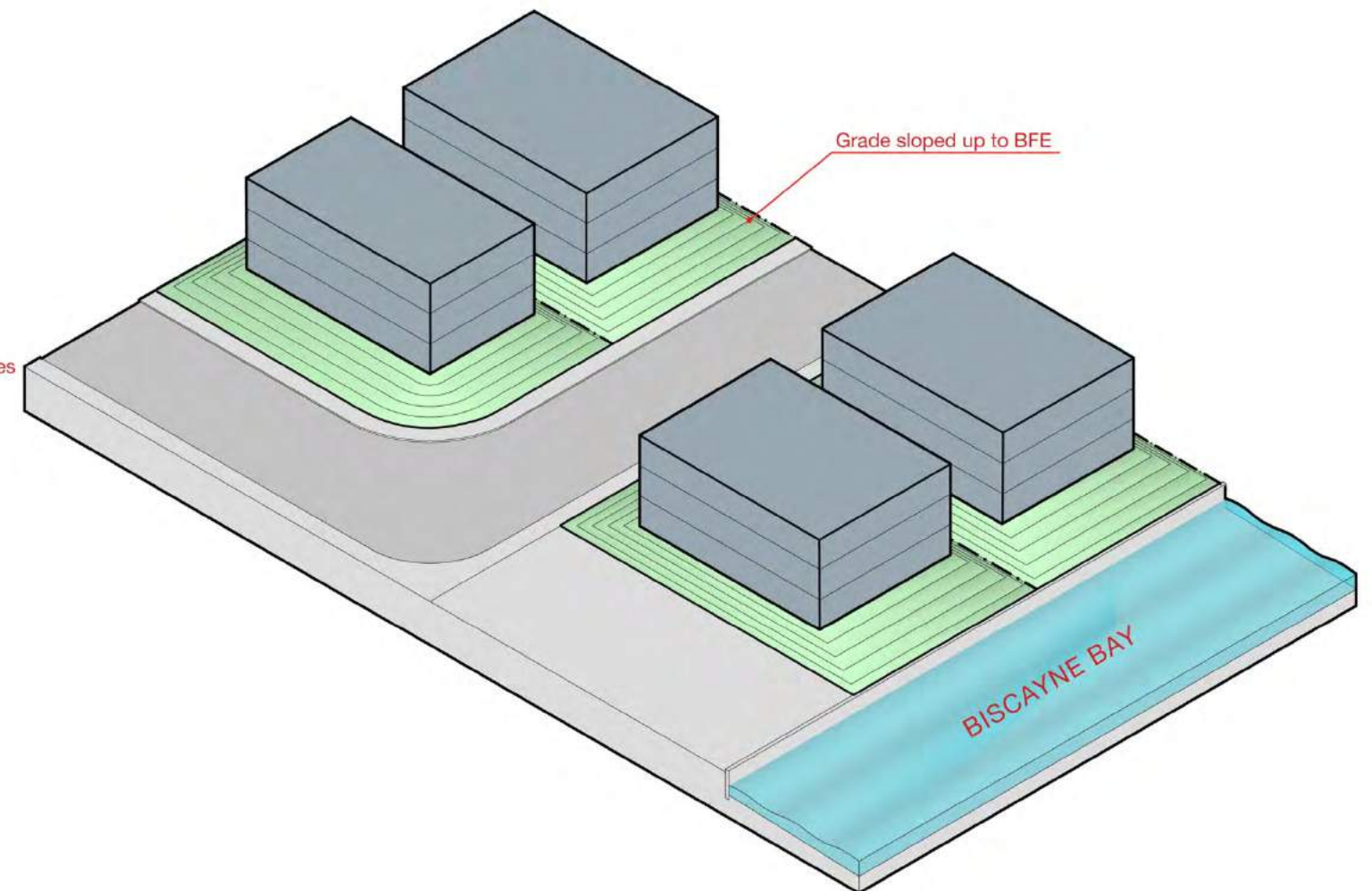
SINGLE-FAMILY RESIDENTIAL DISTRICT ON NORTH BAY ISLAND



5. Max. building envelope permitted by right under existing code

Note:

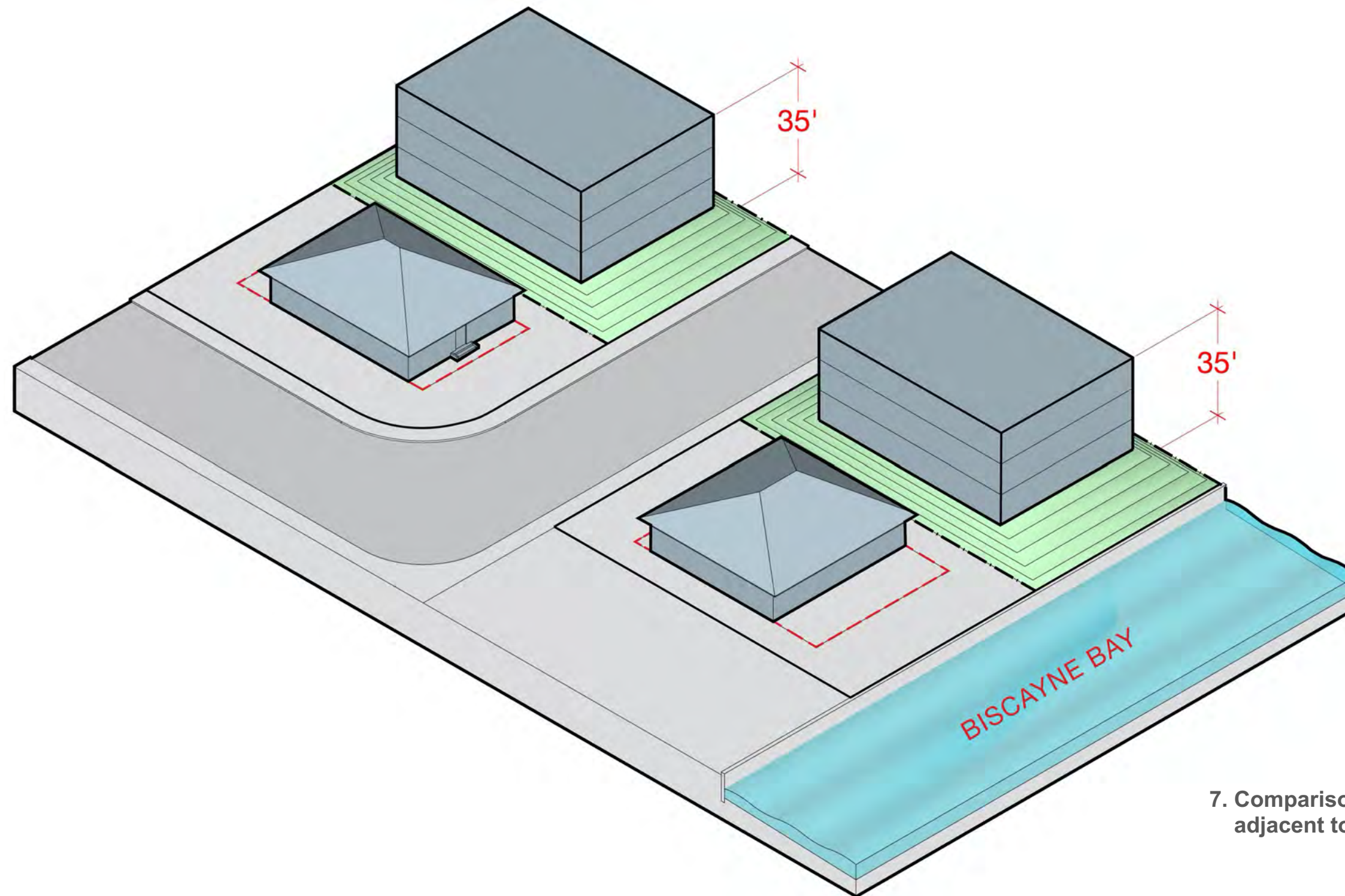
*In RS-1, min. floor area for one-story house is 2,000 SF,
min. floor area for two-story house is 2,600 SF.
F.A.R. is not specified in low and medium-density
residential districts.*



6. Final grading allowed in new construction

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1

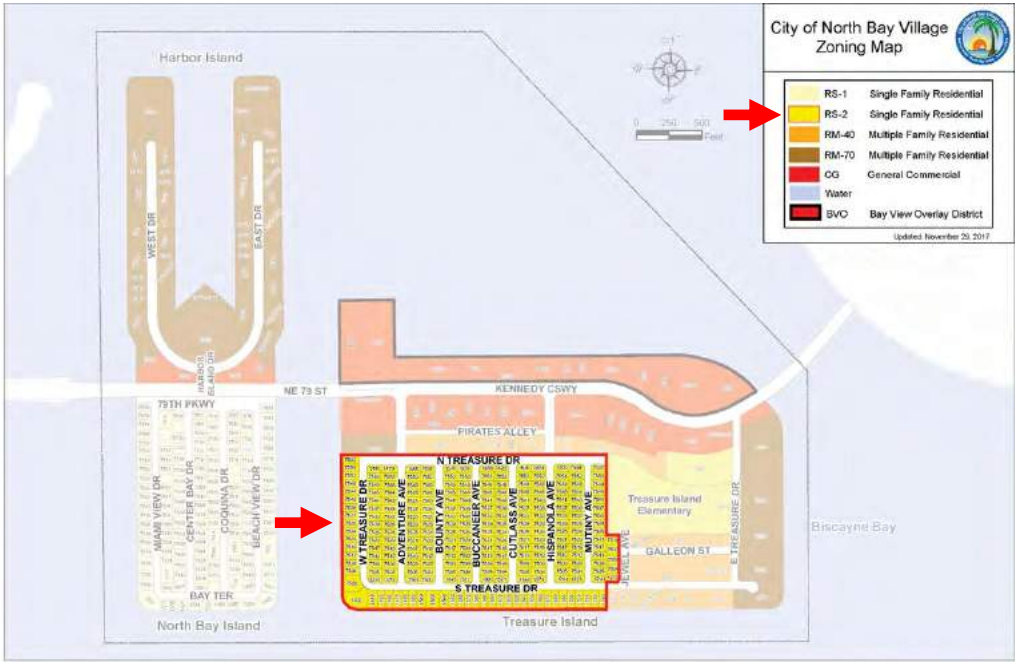
SINGLE-FAMILY RESIDENTIAL DISTRICT ON NORTH BAY ISLAND



7. Comparison of max. building envelope adjacent to existing typical buildout

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

SINGLE-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



Zoning map

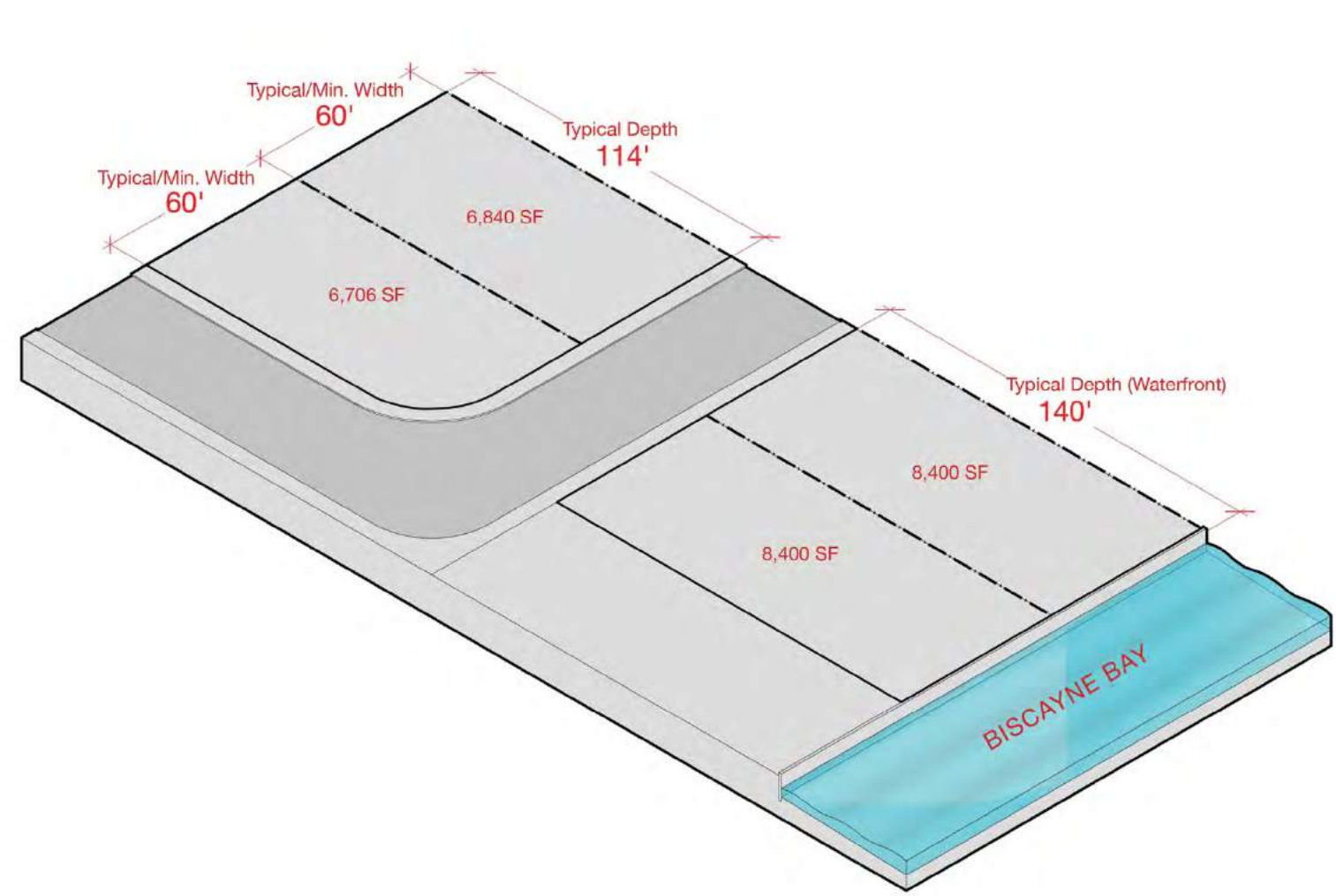


Typical conditions

Note: The following pages present an analysis of existing zoning regulations for illustrative purposes only. The drawings, dimensions, and notes do not supersede the NBV Unified Land Development Code (ULDC.)

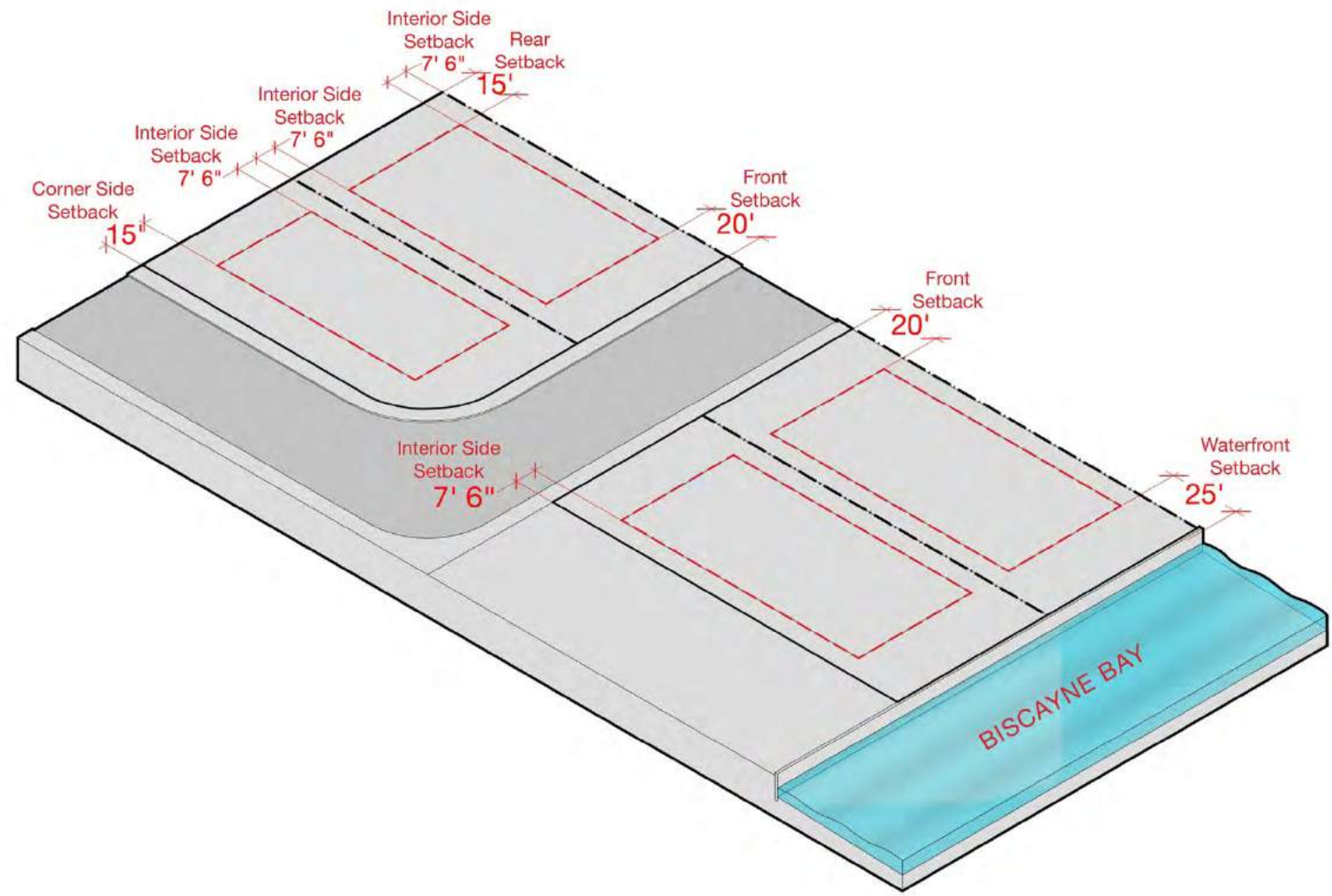
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

SINGLE-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



1. Typical lots

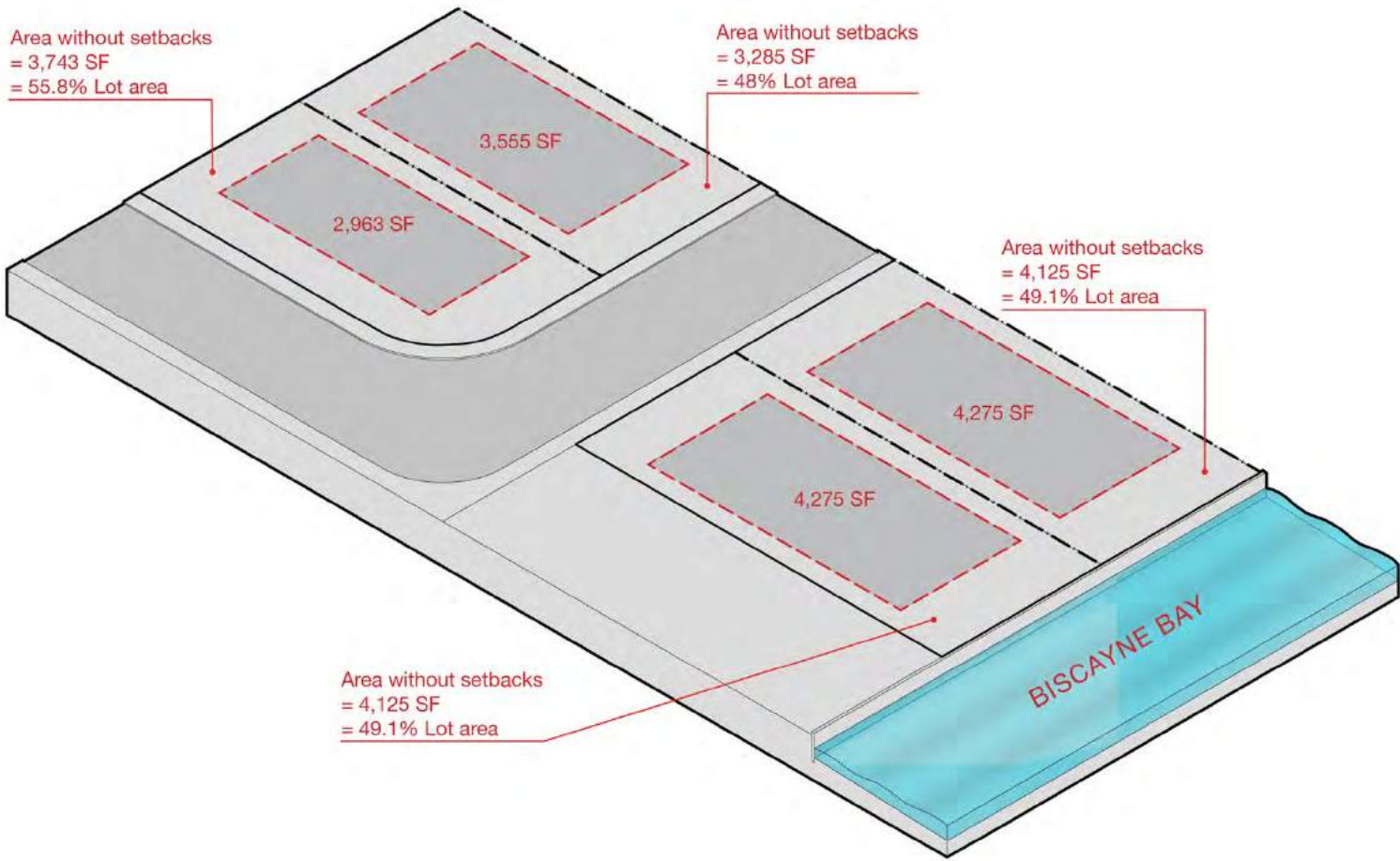
*Note:
Actual lot dimensions vary.*



2. Setbacks

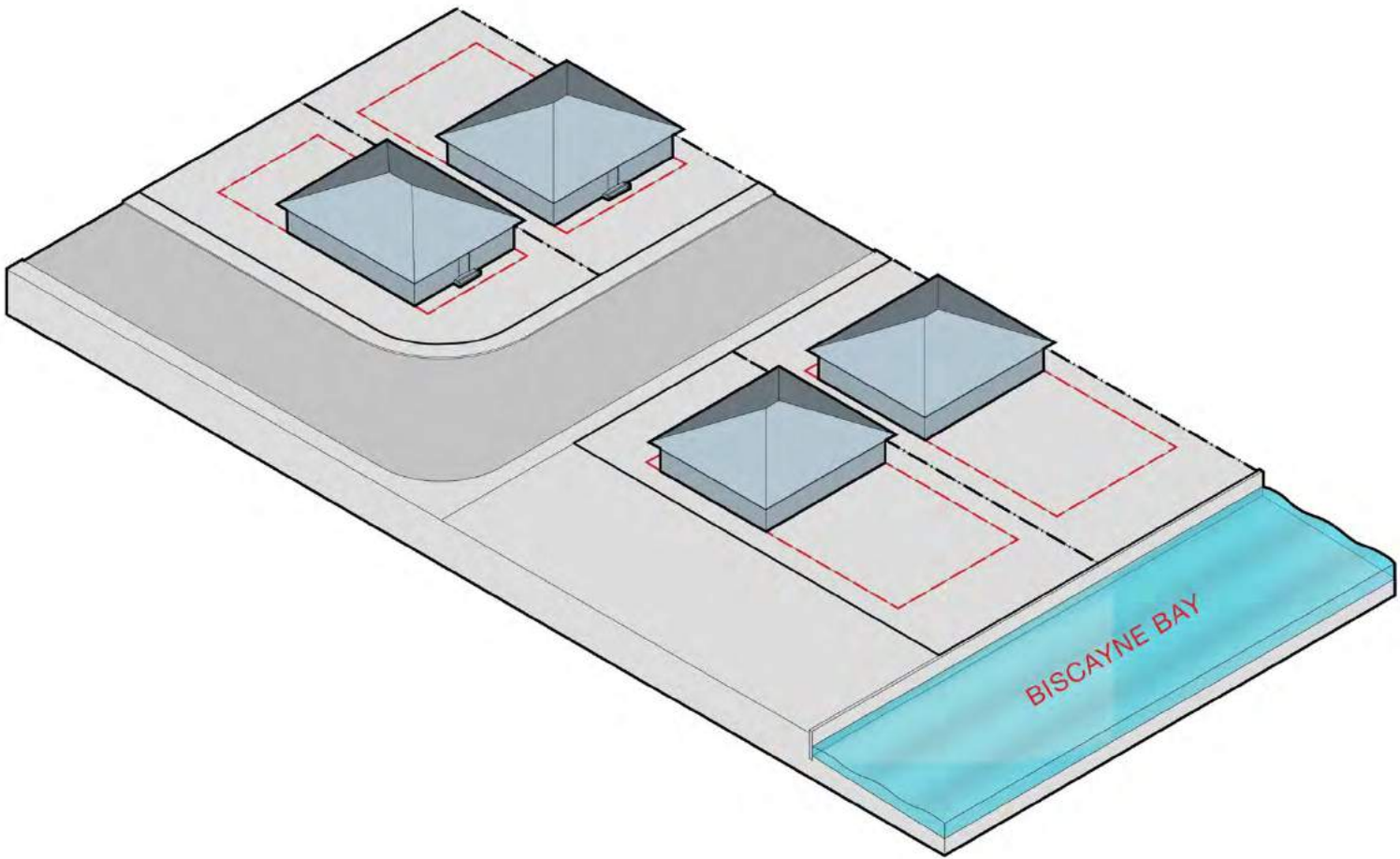
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

SINGLE-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



3. Buildable area

Notes:
 Min. pervious area is not specified in low-density residential districts. Therefore, in RS-2, buildable area equals the total area inside setbacks.
 Actual lot dimensions and buildable areas vary.

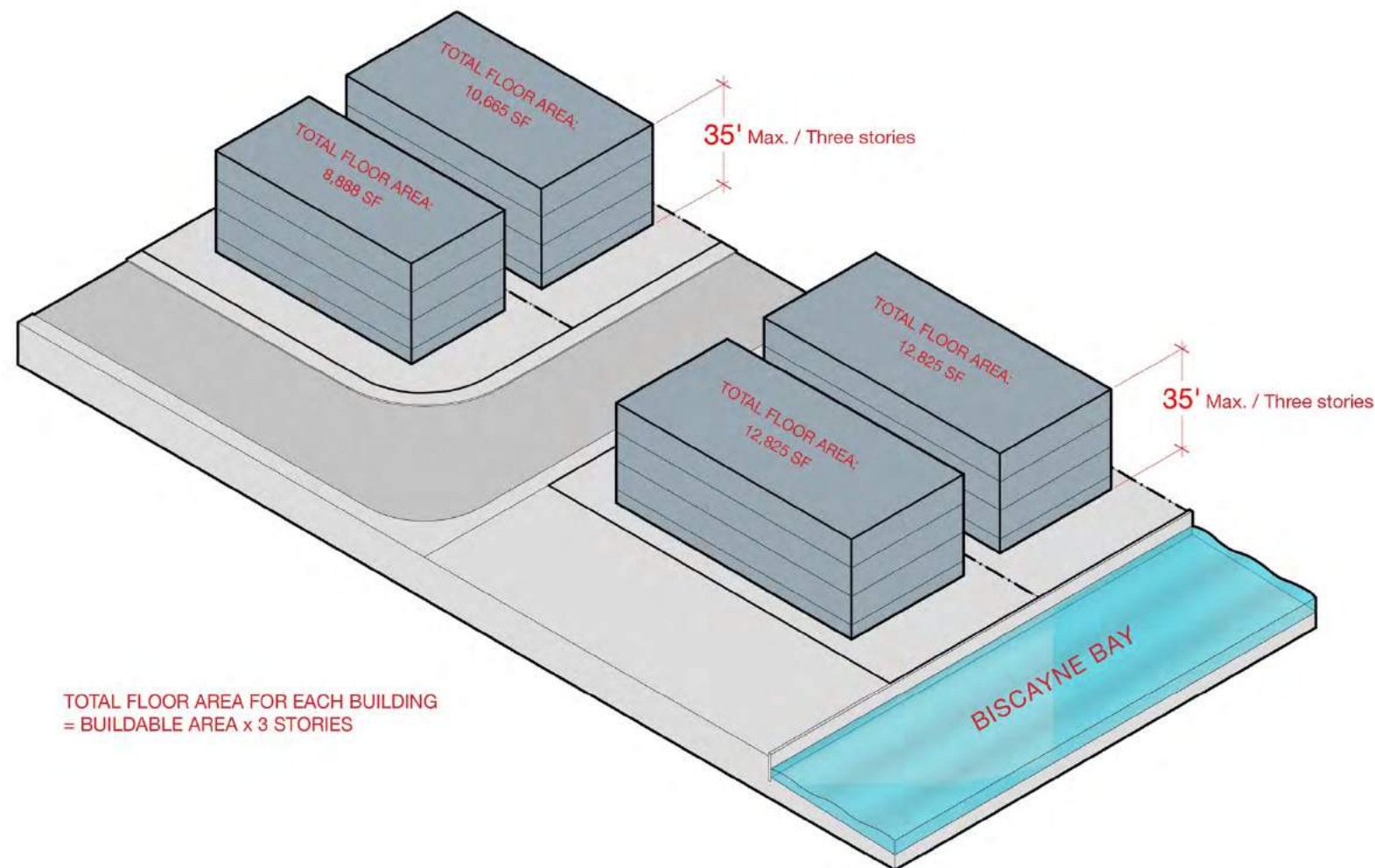


4. Typical existing buildout

Note:
 Houses shown are one-story, 1,800 SF.

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

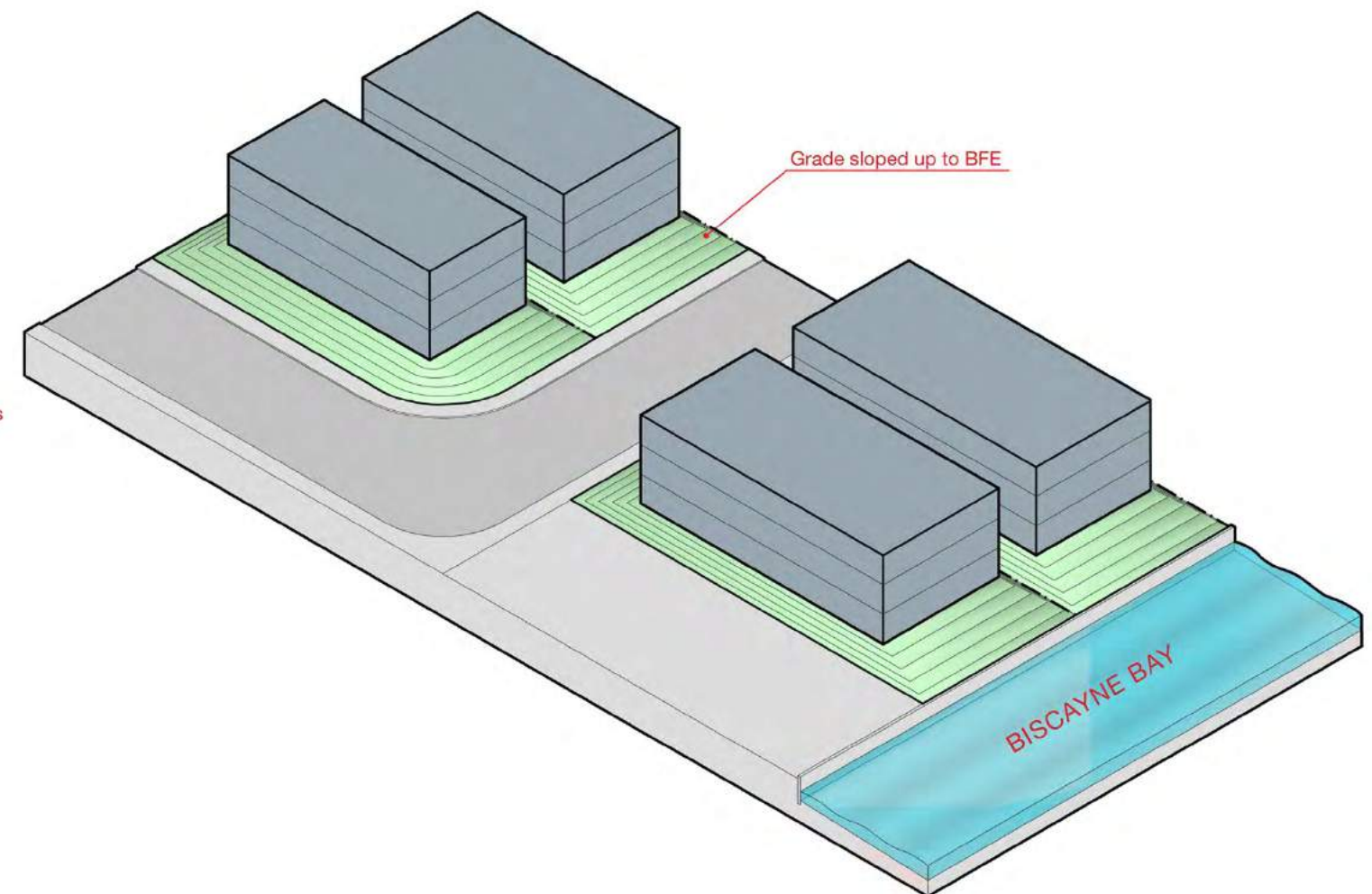
SINGLE-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



5. Max. building envelope permitted by right under existing code

Notes:

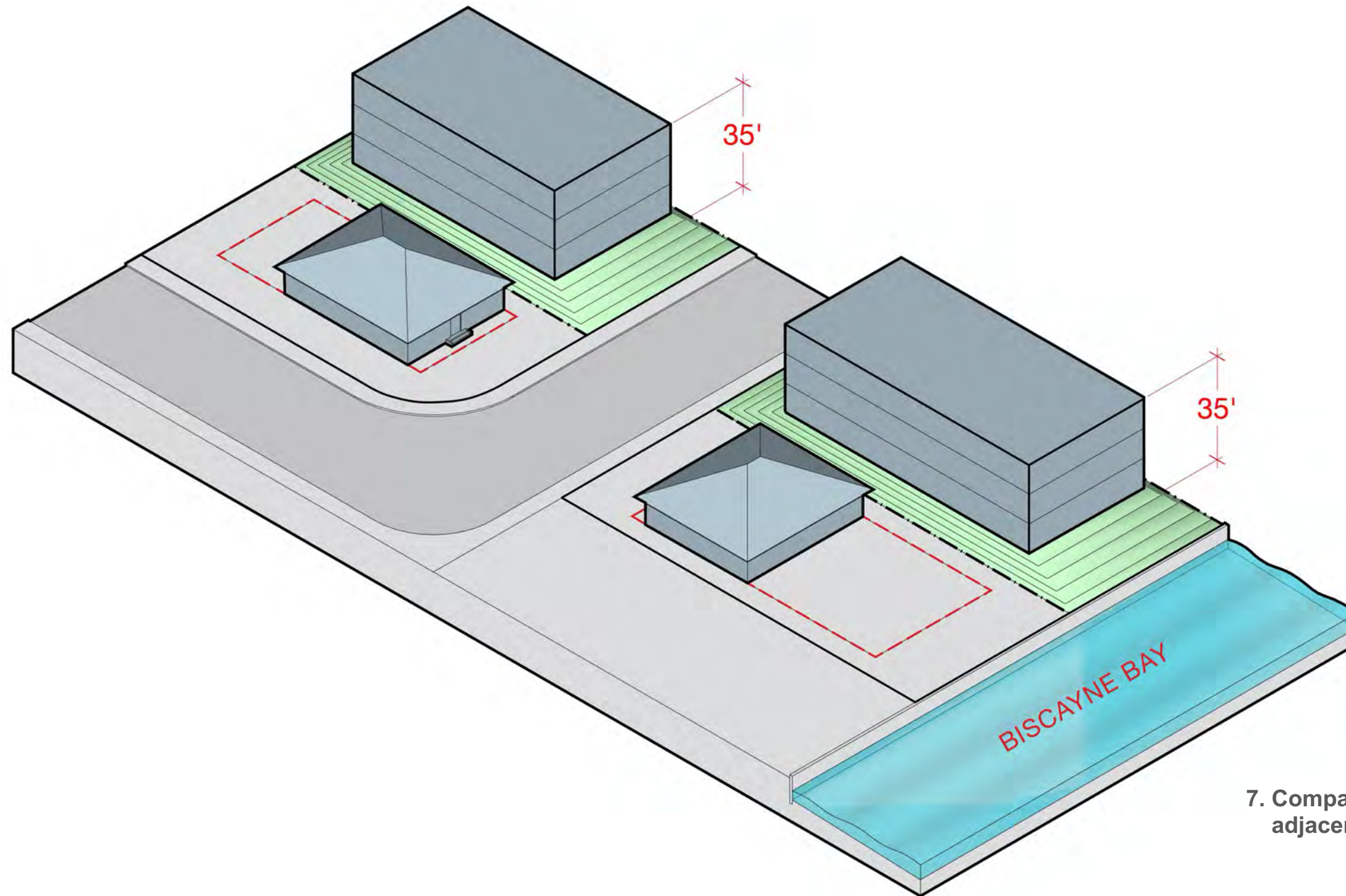
In RS-2, min. floor area for one-story house is 1,500 SF,
min. floor area for two-story house is 2,000 SF.
F.A.R. is not specified in low and medium-density residential districts.



6. Final grading allowed in new construction

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

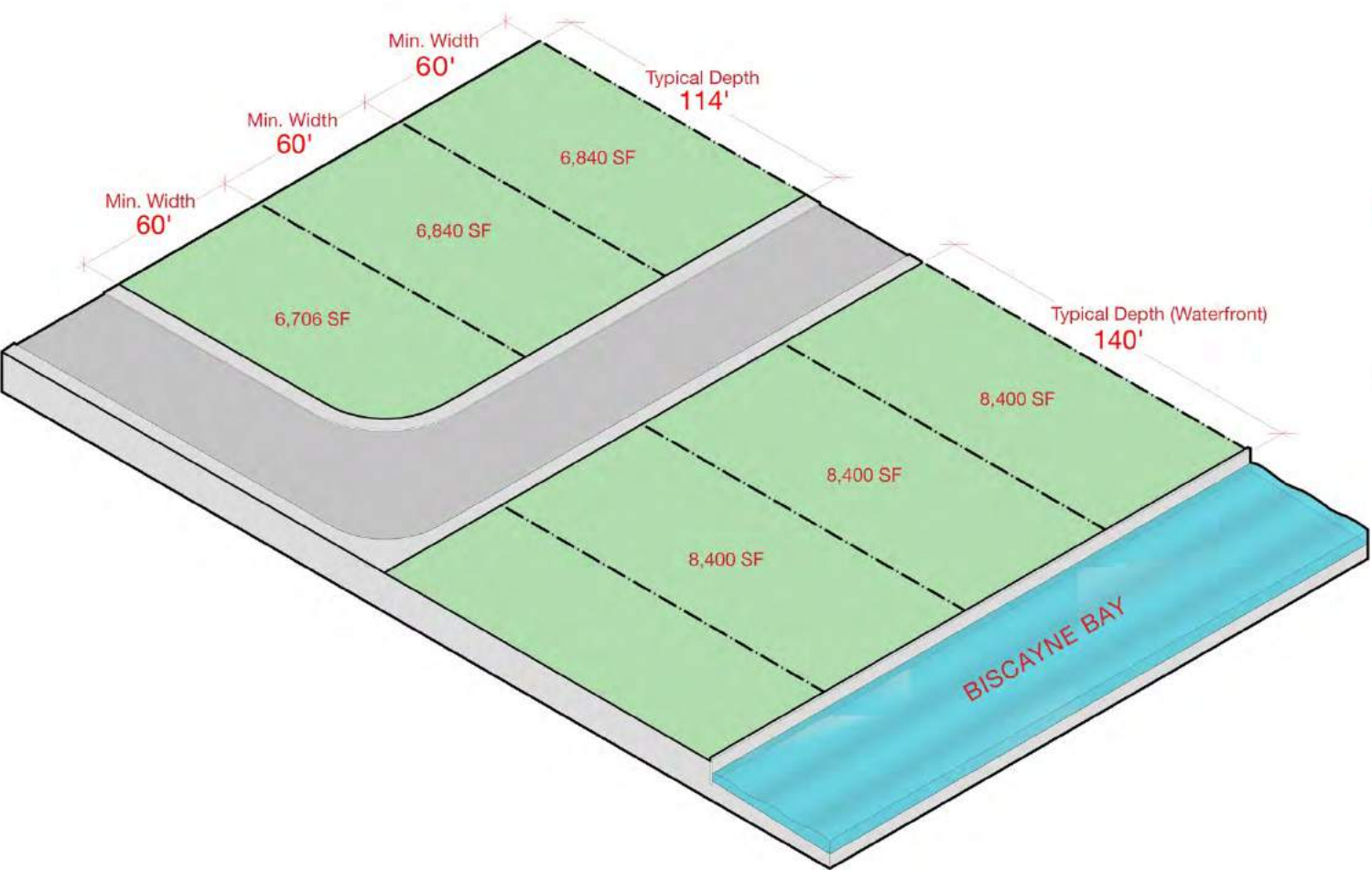
SINGLE-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



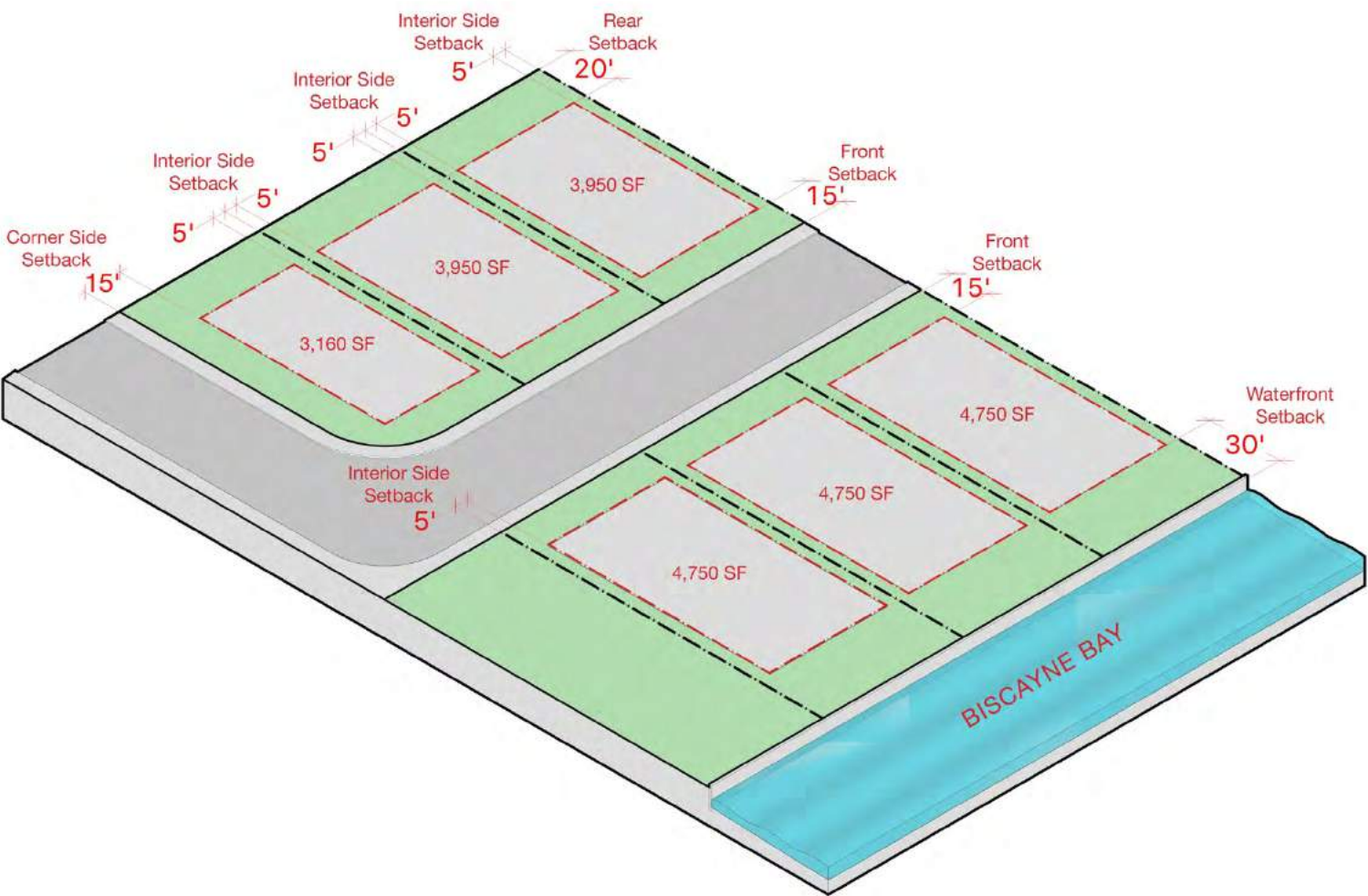
7. Comparison of max. building envelope adjacent to existing typical buildout

PROPOSED ZONING REGULATIONS: T3 AND T4

UNDERSTORY STANDARDS



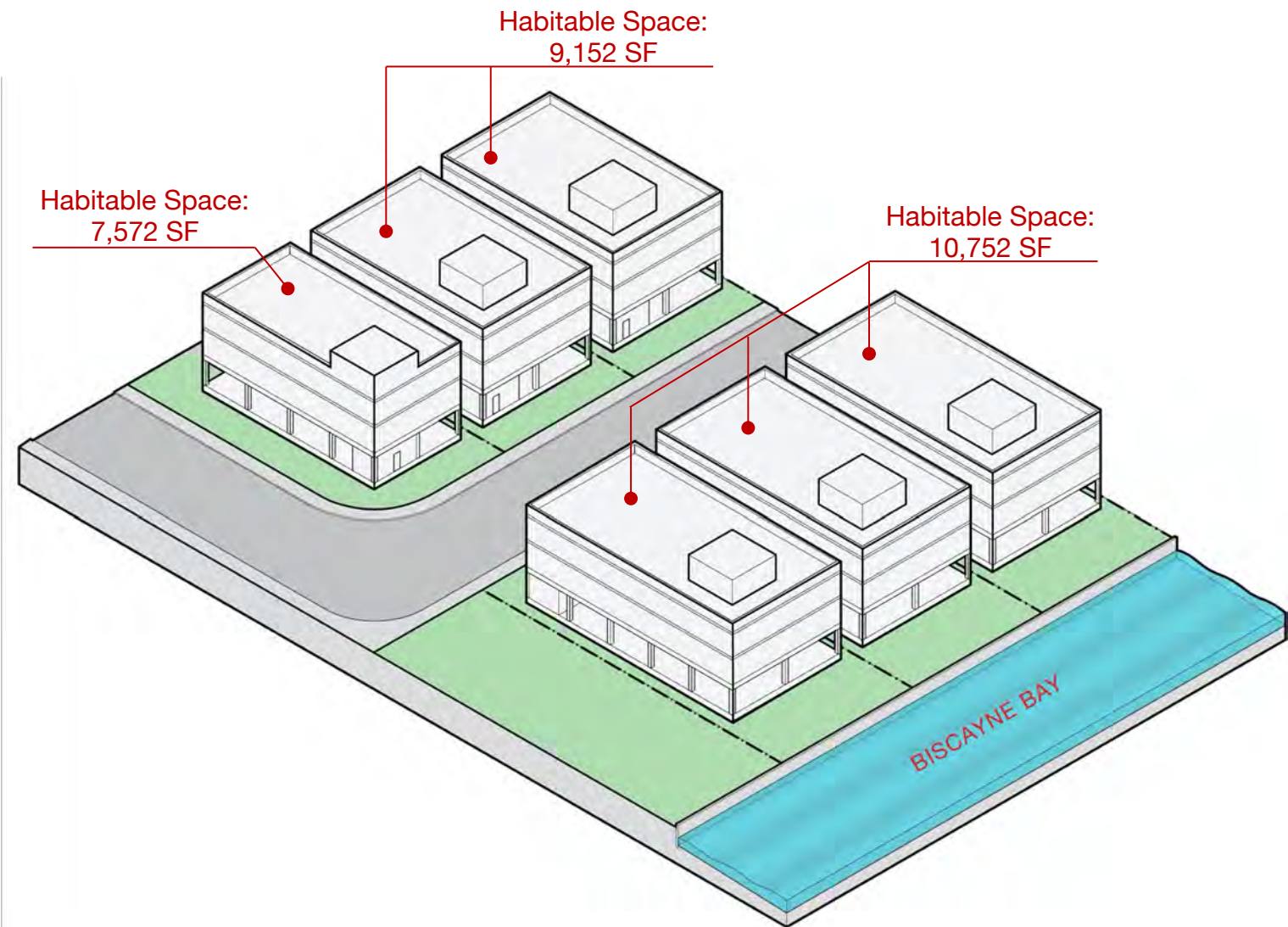
1. Typical Existing Single-Family Lots on Treasure Island



2. Proposed Setbacks

PROPOSED ZONING REGULATIONS: T3 AND T4

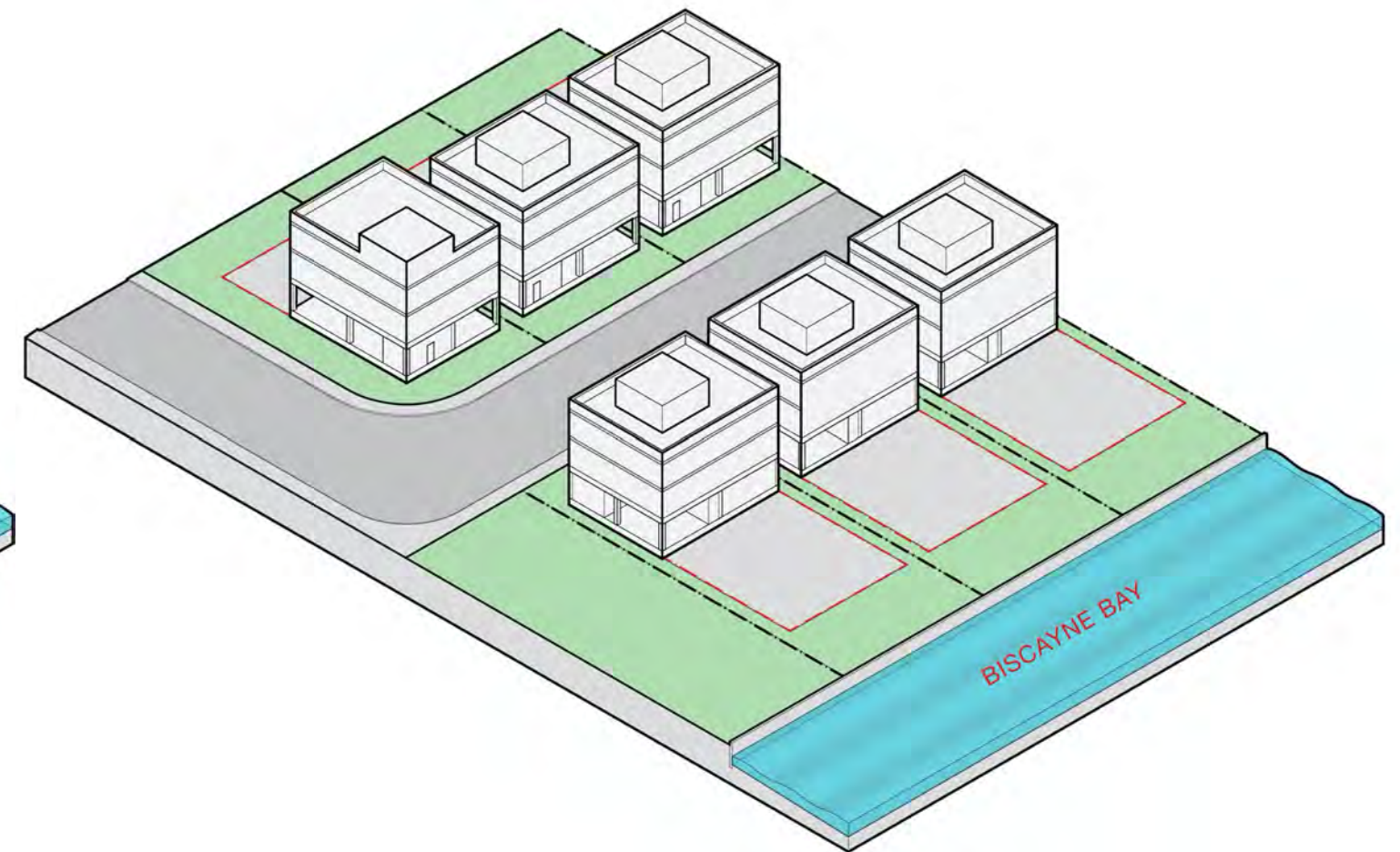
UNDERSTORY STANDARDS



3. Building Envelope

Note:

These represent the maximum allowed buildings for various lot sizes, filling the zoning envelope. Note that even though one of the three allowed levels is now an understory with very little habitable space and the building envelope is slightly smaller than under current regulations, the proposed building envelope still far exceeds anything the market would likely support.



4. 5,200 SF Houses

Note:

This represents a more realistic build-out, based on a 2,000 SF floorplate. Total floor area includes 2 habitable stories (2,000 SF each), a waterview tower (400 SF max.), an understory vestibule (200 SF max.), and a garage enclosure (600 SF max.)

PROPOSED ZONING REGULATIONS: T3 AND T4

UNDERSTORY STANDARDS

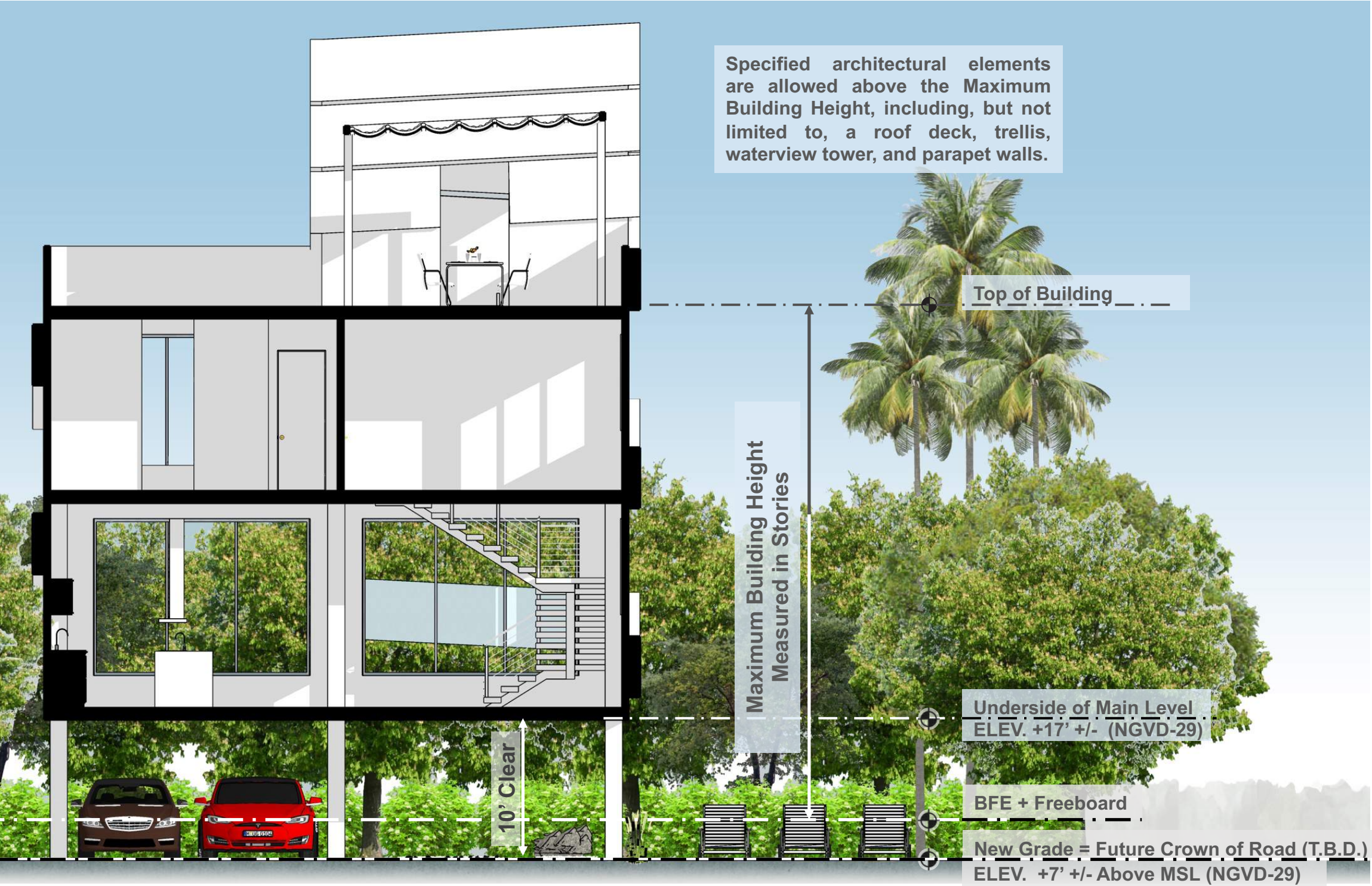
Habitable space is located above an understory well above the BFE, where it is protected not just from nuisance flooding, but from storm surge. Flood waters are allowed to flow through the open space below.

A small vestibule (200 SF max.) is allowed in the Understory for stair or elevator access to the living space above. It must front the street. All parking must be located in the Understory. A parking area may be enclosed up to 600SF, but the walls must allow flood water to flow through or to break away in flood conditions. The rest of the Understory can be screened, but must remain open.

To ensure that the streetscape remains a pedestrian-friendly environment, the Understory must be finished attractively. Mechanical systems and light sources must be shielded from view by a finished ceiling. In anticipation that the streets will be raised eventually, the finished grade in the Understory will be equal to the future crown of road.

As in the rest of the code, building height will be measured in stories, not from grade, but from the BFE + freeboard, giving more freedom to designers to make interesting and varied spaces. Specified architectural elements are allowed above the maximum building height, including, but not limited to, a roof deck, trellis, waterview tower, and parapet walls.

See the Prosperity Chapter for more illustrations of this project. An additional illustration appears in the Resiliency Chapter.



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PROPOSED ZONING REGULATIONS: T3 AND T4

UNDERSTORY PRECEDENT – BEACHTOWN, GALVESTON, TX

Just outside outside the Galveston, Texas, is a new town project called Beachtown that fronts on the Gulf. Originally designed in 1997 by DPZ, it was the first New Urbanist project in Galveston or Houston. It was intended as a continuation of the Galveston street grid, but adjusted to local circumstance as it came up against the ocean.

Construction started in 2005 in the wake of Hurricanes Katrina and Rita. The devastation that those storms brought to the Gulf Coast was on everyone's minds. The project is notable because all of the structures are elevated on top of high understories. It was necessary to elevate individual structures well above flood levels because the site is outside the seawall. (For more on the seawall, see the Resiliency Chapter.)

When Hurricane Ike stuck in 2008, Beachtown stood up remarkably well. Breakaway panels screening the understories were damaged, but that was to be expected. The habitable parts of the structures above were almost untouched. So little damage occurred that local and national news outlets ran stories on how unusual it was.

The buildings were built to a higher standard called Fortified Construction. However, simply setting a structure to this height and constructing it according to the current building codes – which are quite stringent in South Florida – should achieve much the same thing.

What is striking about this project is that, in spite of the height of the structures, the neighborhood manages to maintain both good architecture and good walkability. The architectural style borrows heavily from the local traditions in Galveston, but any style could be used. Walkability was achieved by creating good street frontages at the sidewalk level. In spite of their height, the buildings all have clear fronts and front doors. The tall porches create an inviting feel, bridging the public and private realms. The understories are well screened from view and conceal parking.



PROPOSED ZONING REGULATIONS: T3 AND T4

PROPOSED WATERVIEW TOWERS



To facilitate better views of the water, each property would be permitted to construct a 400 SF waterview tower above the maximum building height.

PROPOSED ZONING REGULATIONS: T3 AND T4

WATERVIEW TOWER PRECEDENT – SEASIDE IN WALTON COUNTY, FL



PROPOSED ZONING REGULATIONS: T3 AND T4

THE ELEVATED VILLAGE

A potential long-term approach that NBV might consider is our proposal for the Elevated Village, where structures are raised a full level. Though it may seem radical because it proposes to raise entire lots, including yards and sidewalks, not just habitable structures, it provides a complete, usable lower level for parking, storage, and covered porch space.

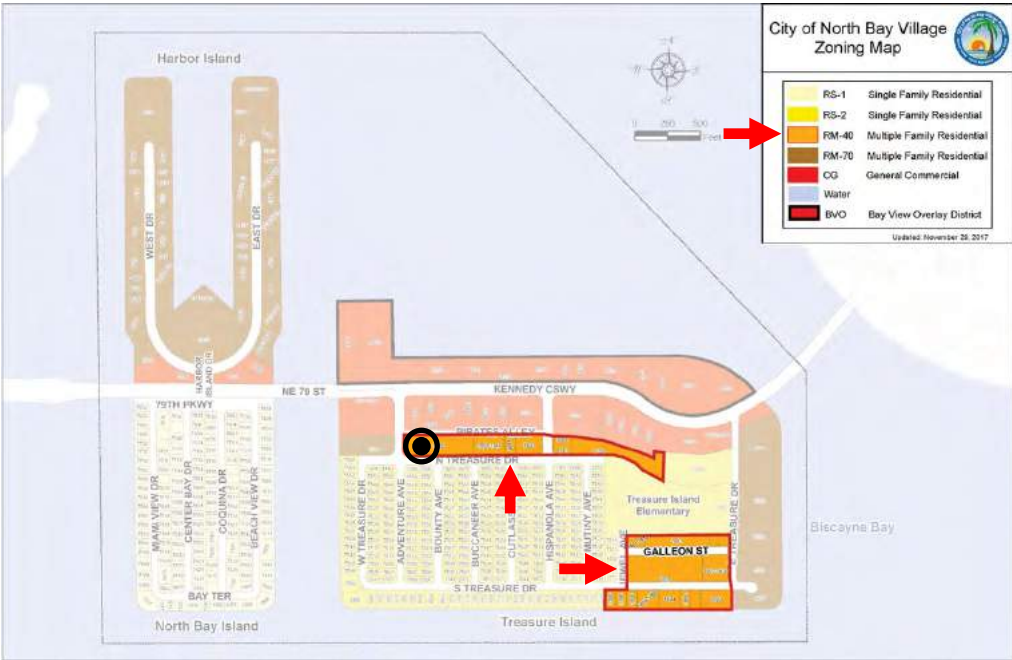
For a fuller discussion, see pages on the Elevated Village in the Resiliency Chapter.



Proposed

ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



Zoning map

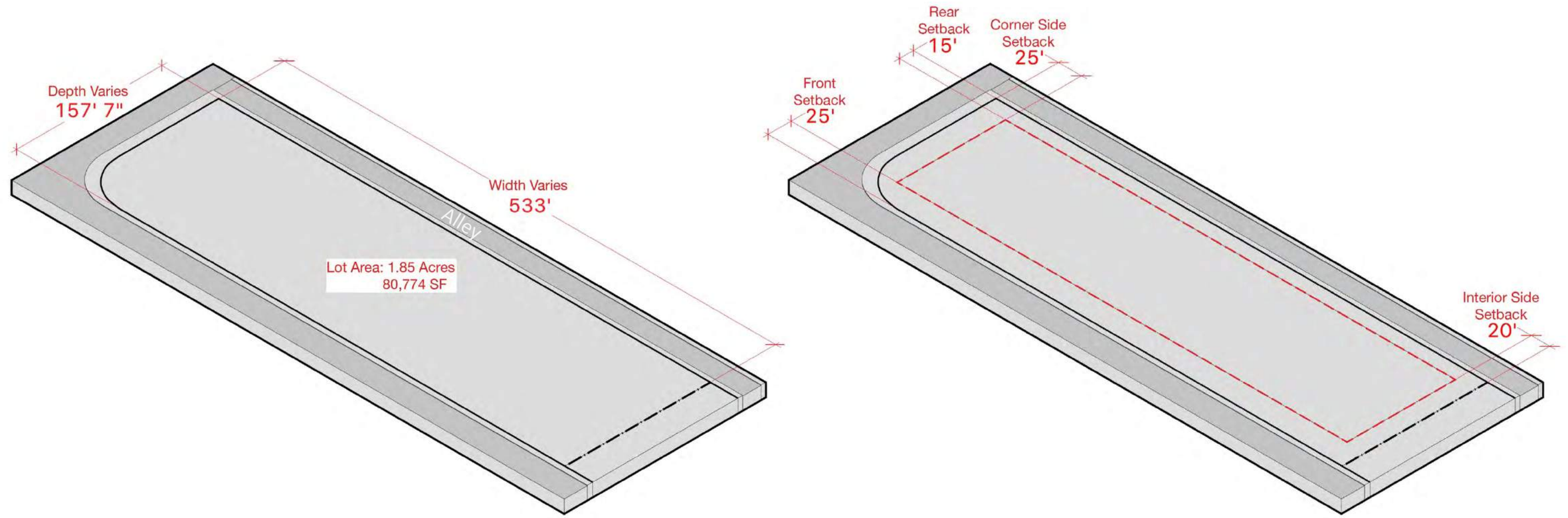


Existing conditions on North Treasure Dr.

Note: The following pages present an analysis of existing zoning regulations for illustrative purposes only. The drawings, dimensions, and notes do not supersede the NBV Unified Land Development Code (ULDC.)

ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



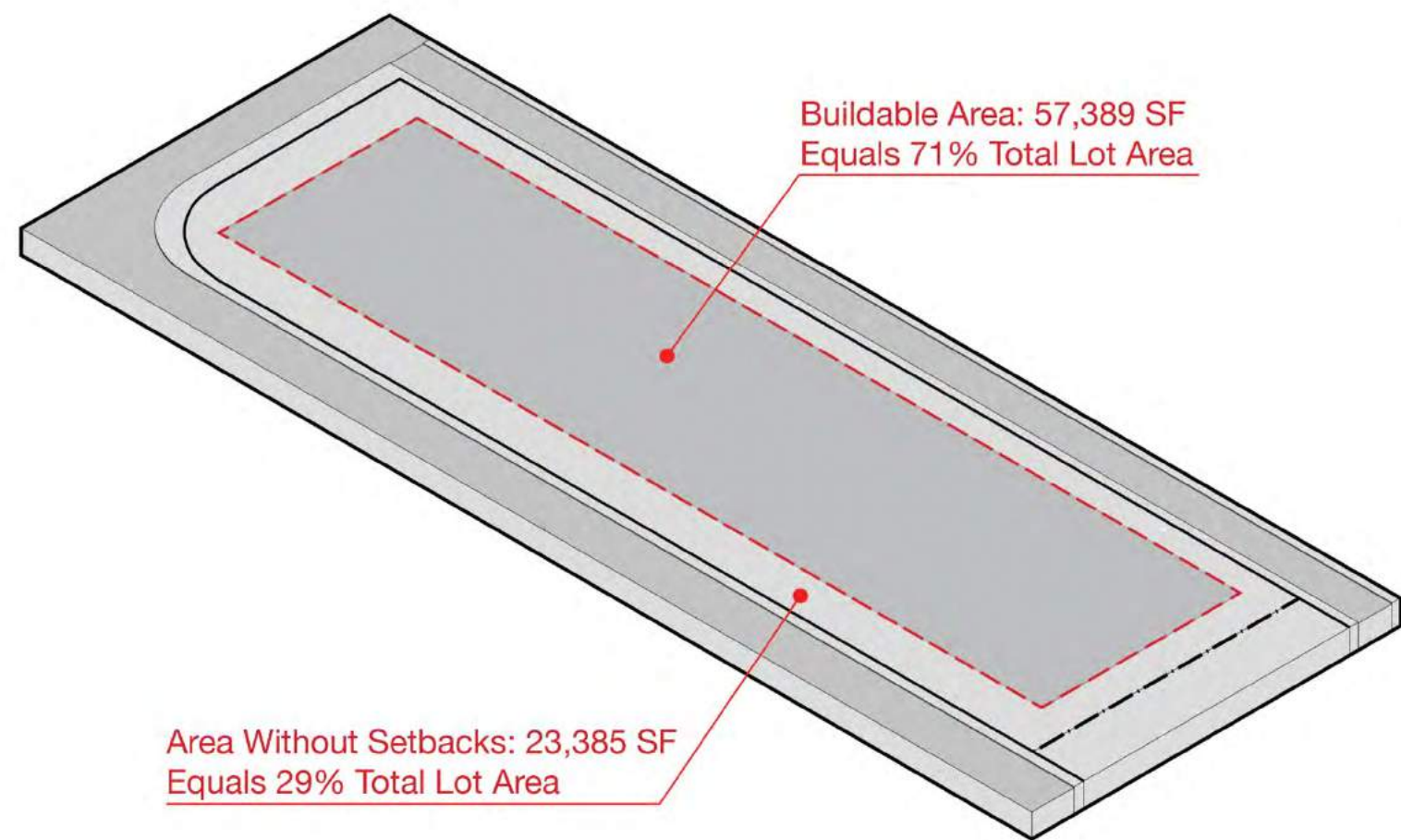
1. Lot

Note:
Actual lot dimensions and sizes vary.

2. Setbacks

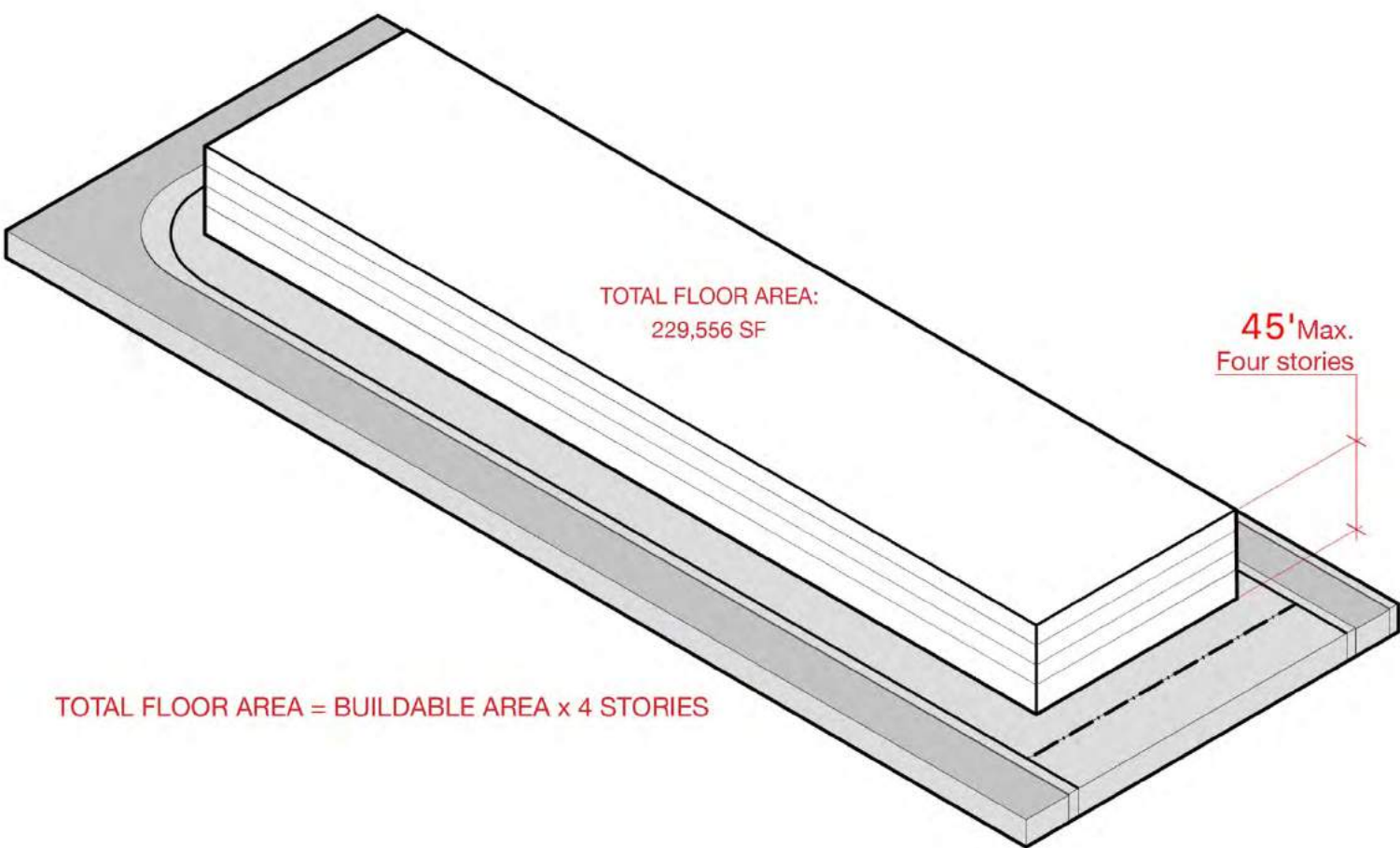
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



3. Buildable area

Notes:
RM-40 requires 25% min. pervious area. Therefore, buildable area can not exceed 75% of total lot area. Actual lot dimensions and buildable areas vary.

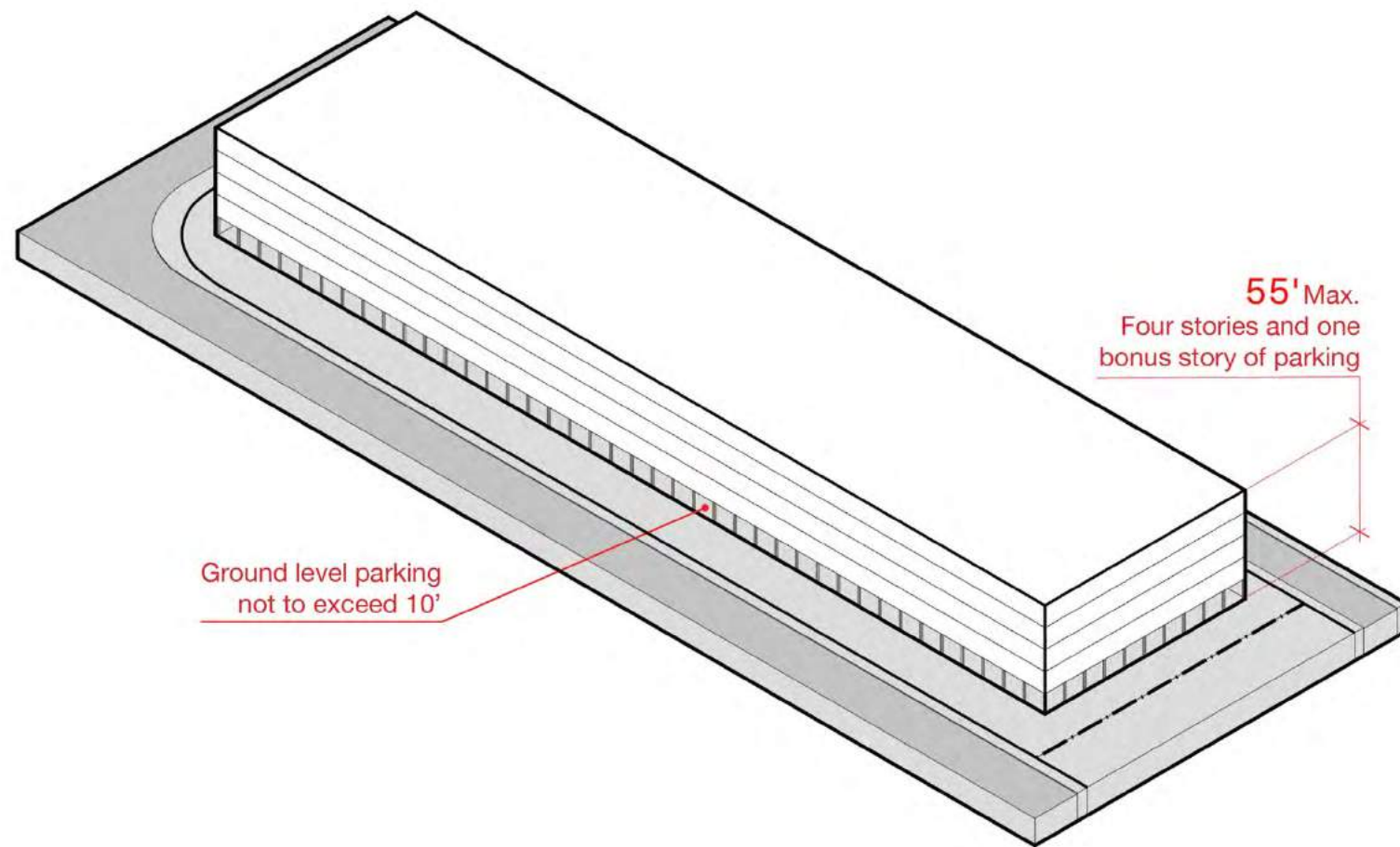


4. Max. building envelope permitted by right under existing code

Note:
No parking shown.
F.A.R. is not specified in low and medium-density residential districts.
A residential building is typically less than 65' in depth for light and air.

ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

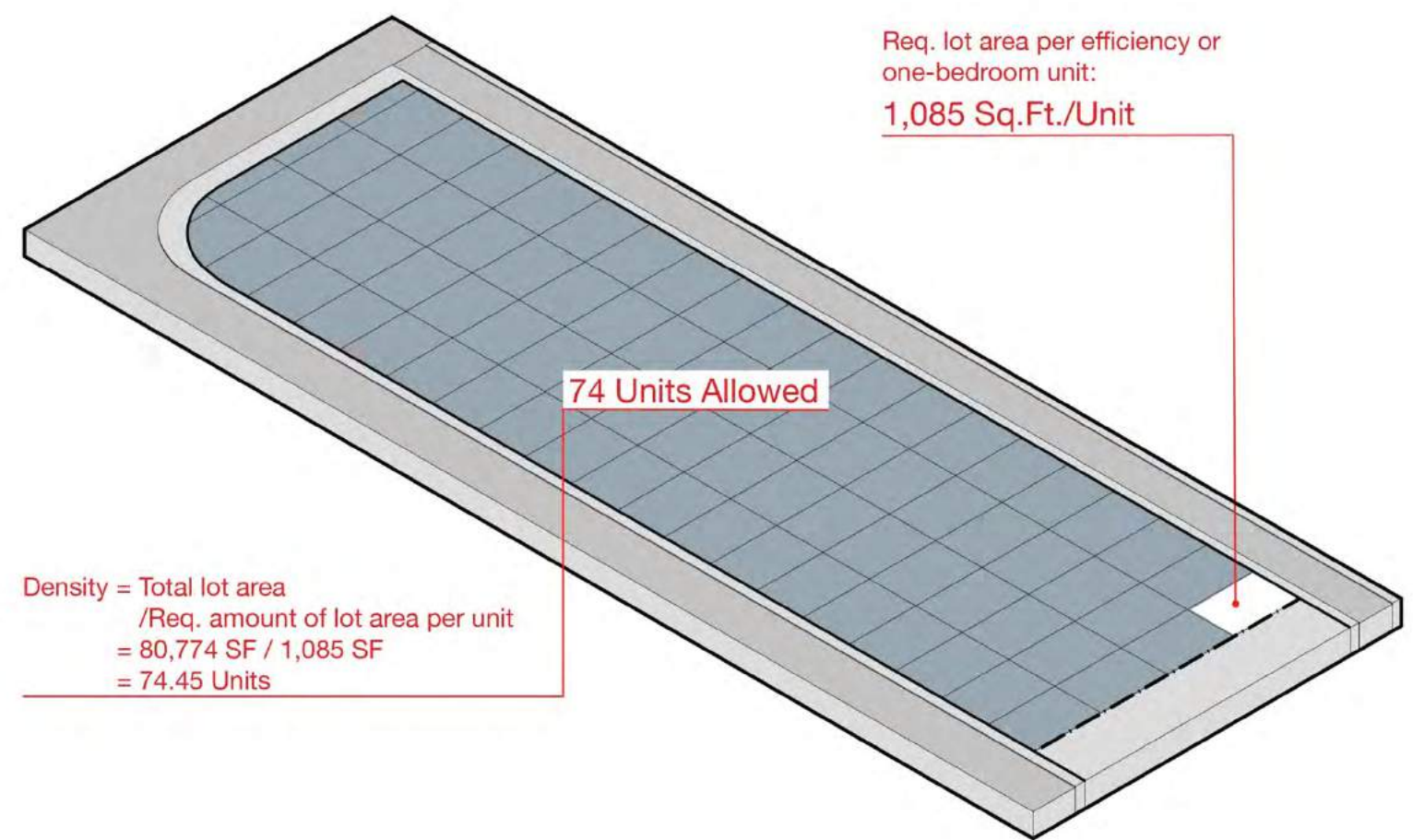
MULTI-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



5. Max. Building envelope with one-story parking level allowed by right

Notes:

A residential building is typically less than 65' in depth for light and air.



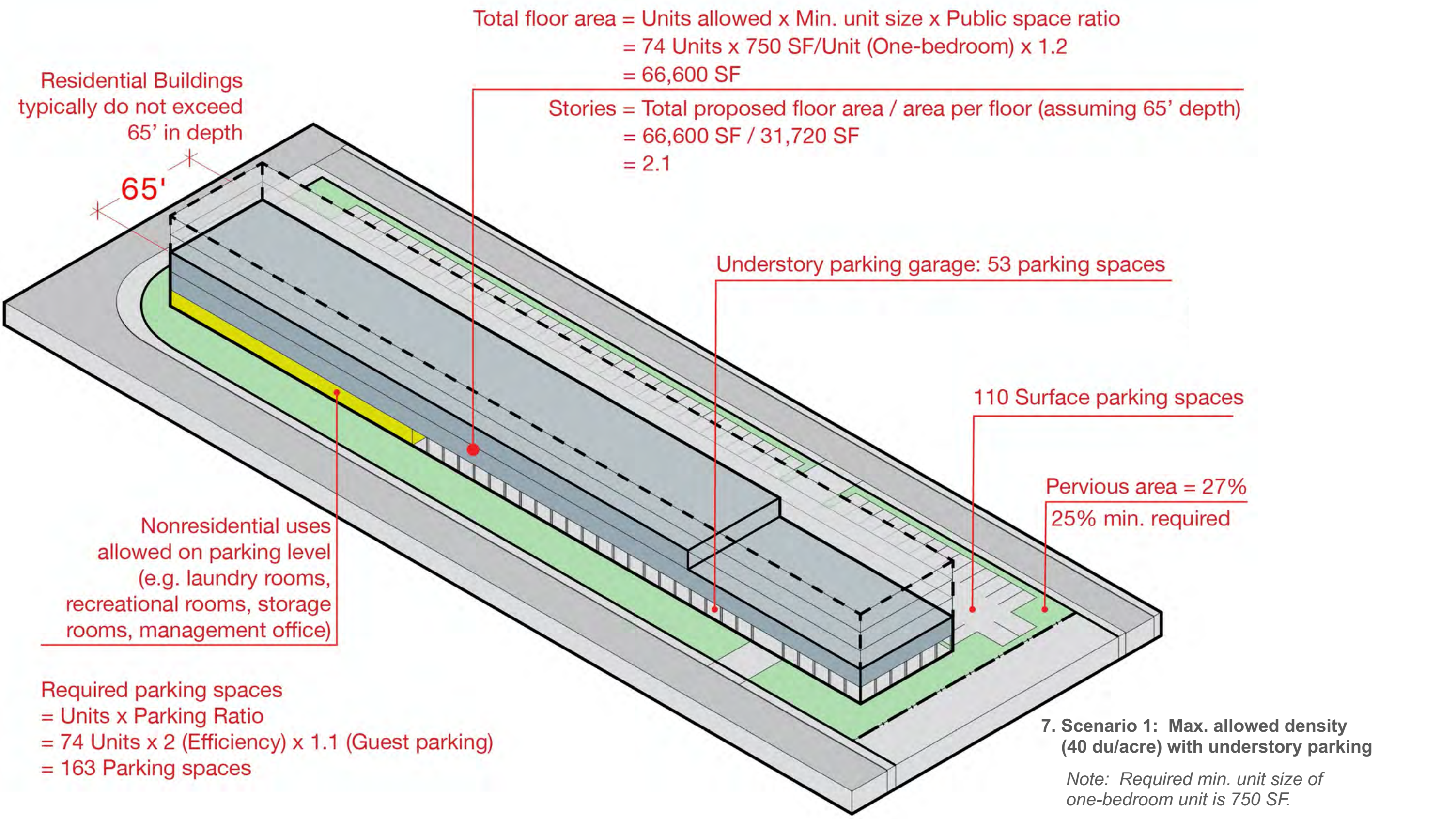
6. Density

Note:

*Max. allowed density is 40 du/acre.
RM-40 is not eligible for TDR bonus.*

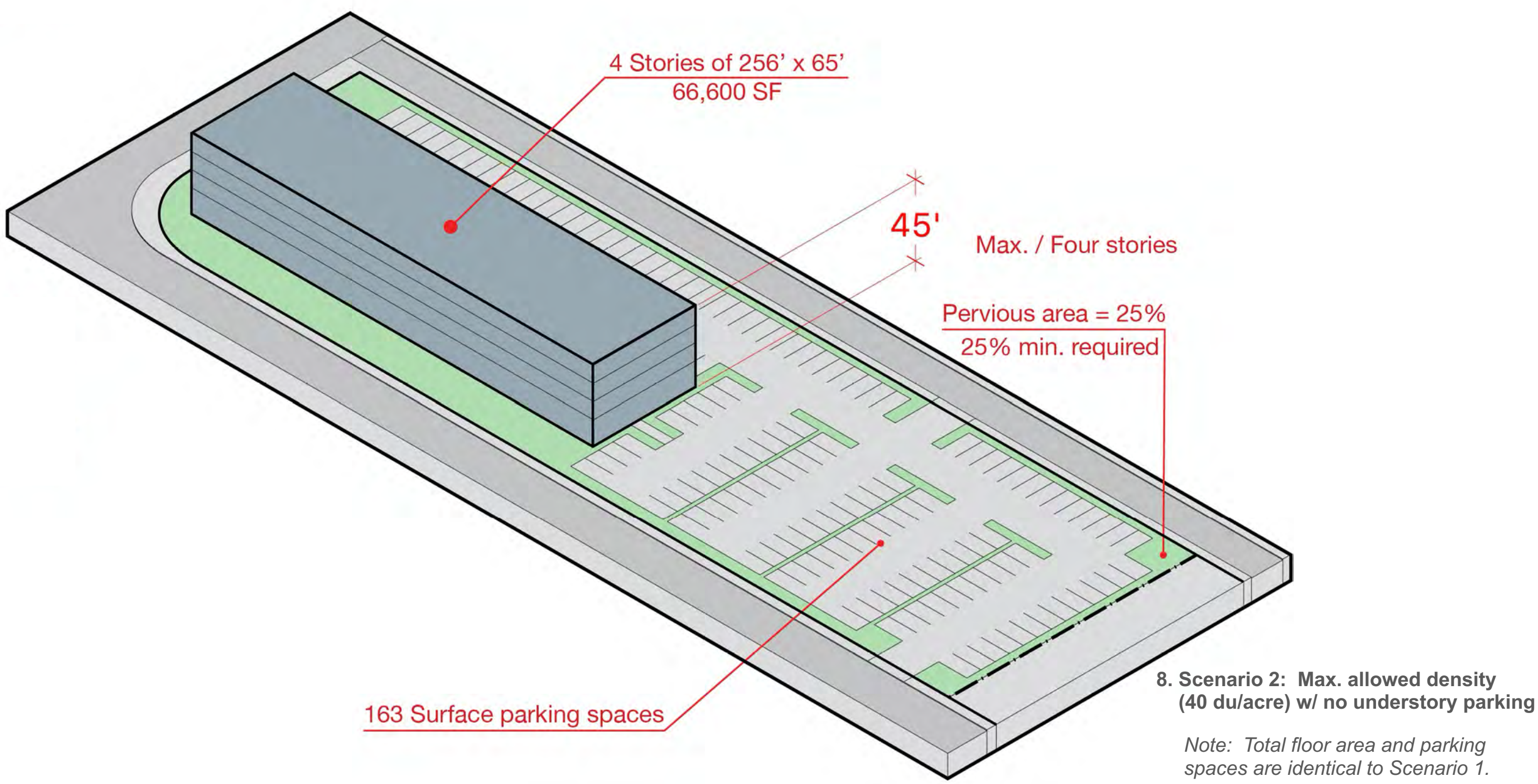
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



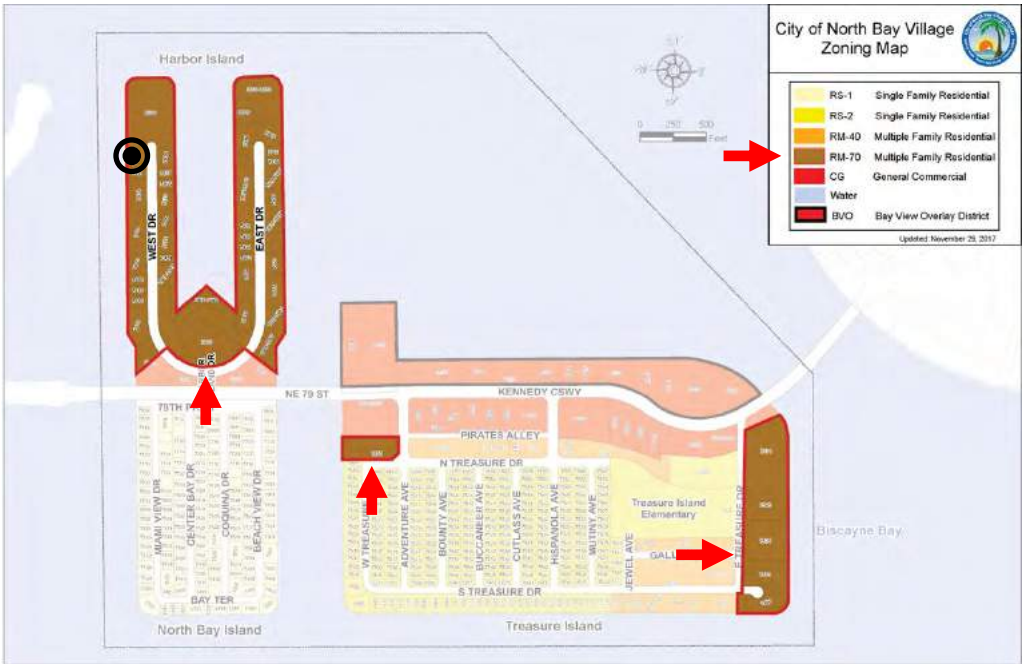
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



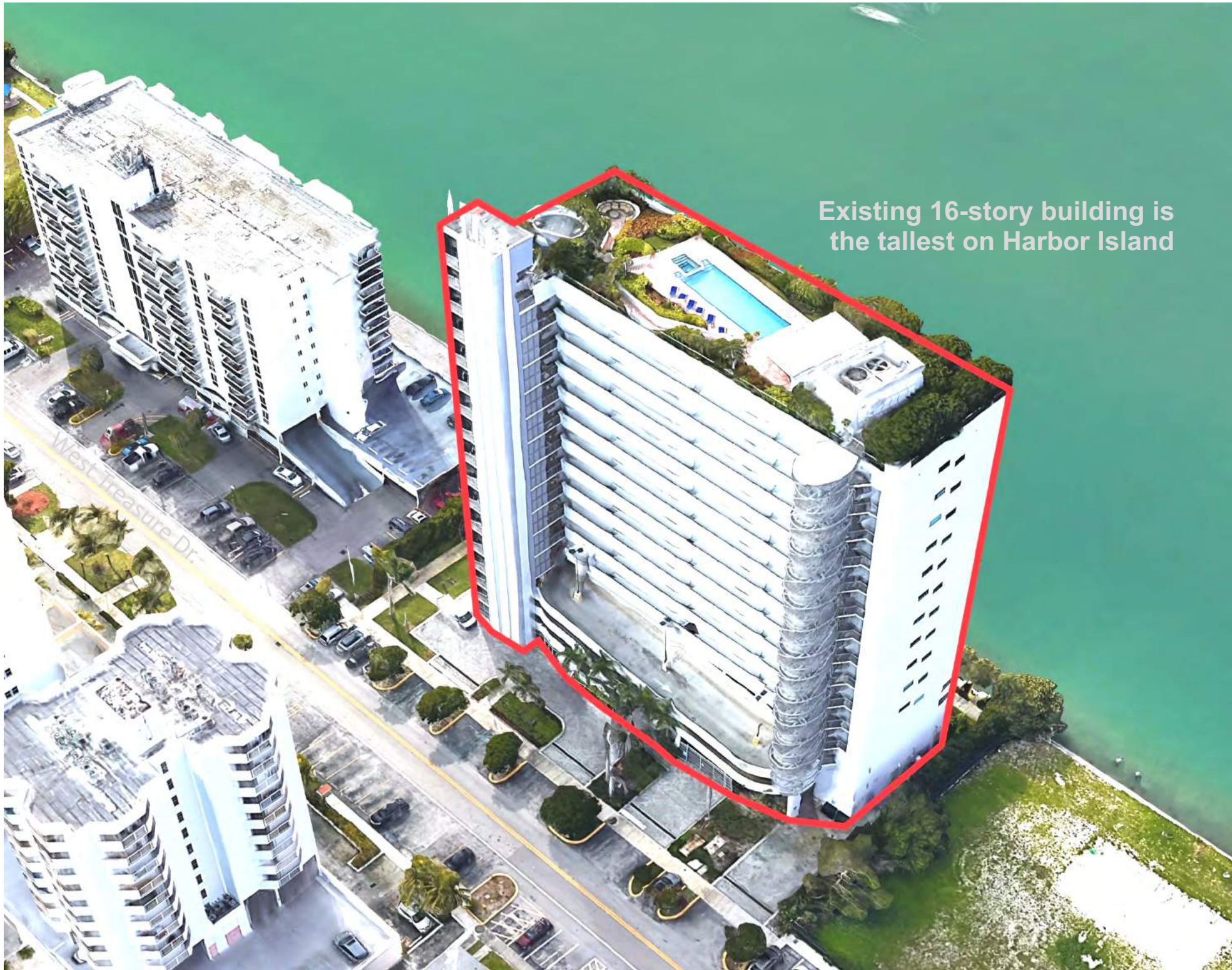
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY DISTRICT ON HARBOR ISLAND AND TREASURE ISLAND



Zoning map

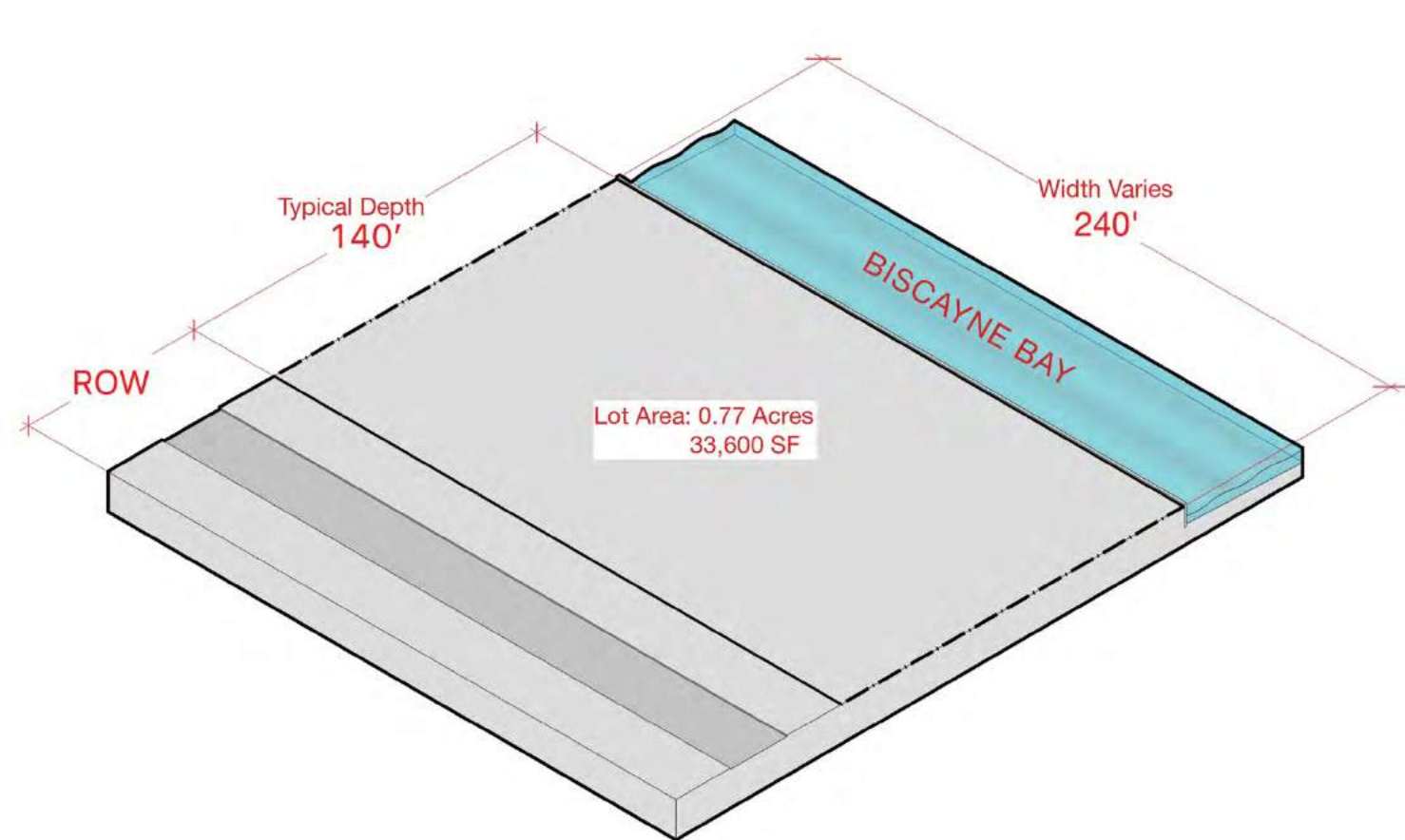
Note: The following pages present an analysis of existing zoning regulations for illustrative purposes only. The drawings, dimensions, and notes do not supersede the NBV Unified Land Development Code (ULDC.)



Existing conditions

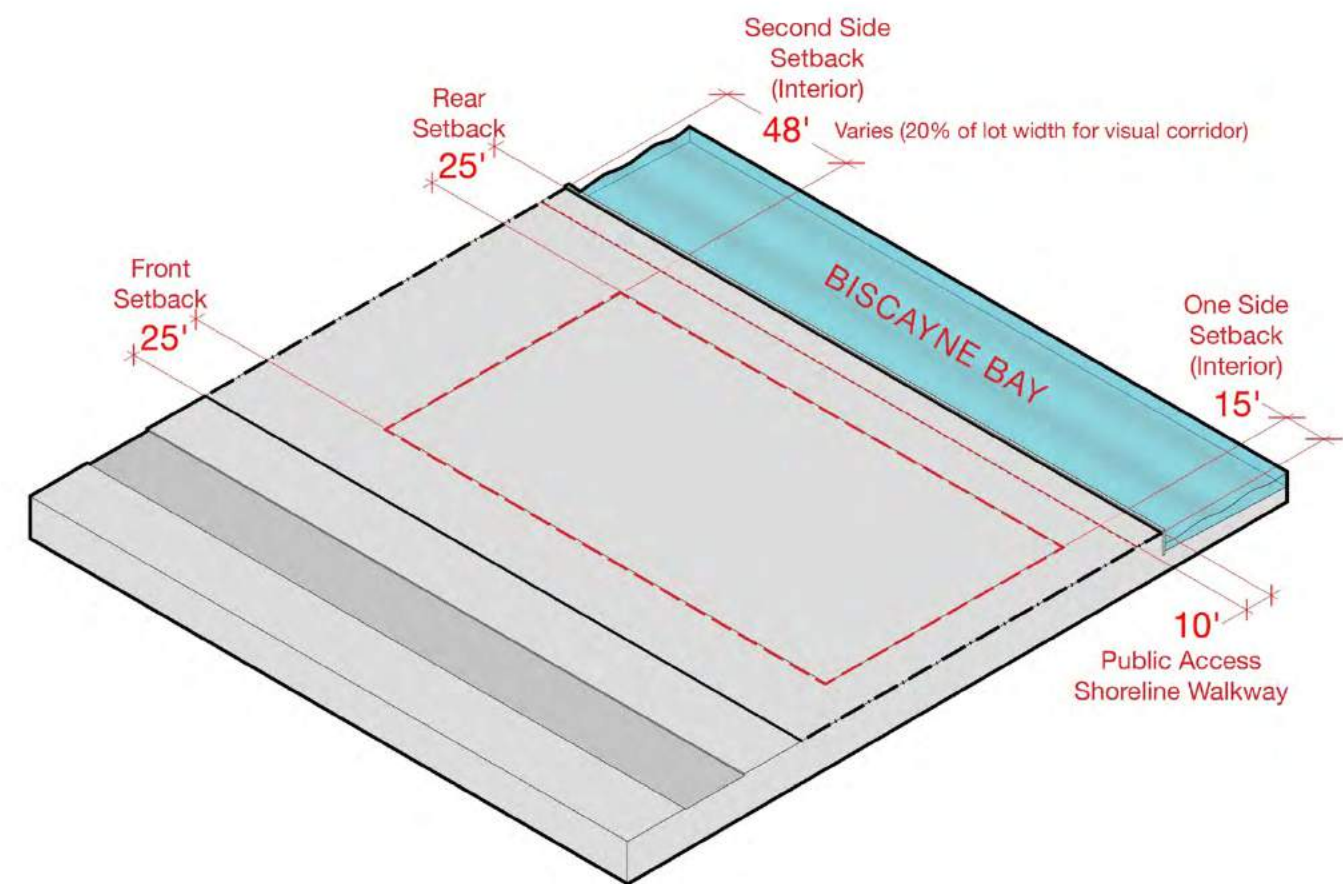
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY DISTRICT ON HARBOR ISLAND AND TREASURE ISLAND



1. Lot

Note:
In the original plat, typical lots were approximately 80' wide and 140' deep. Many lots have been aggregated.

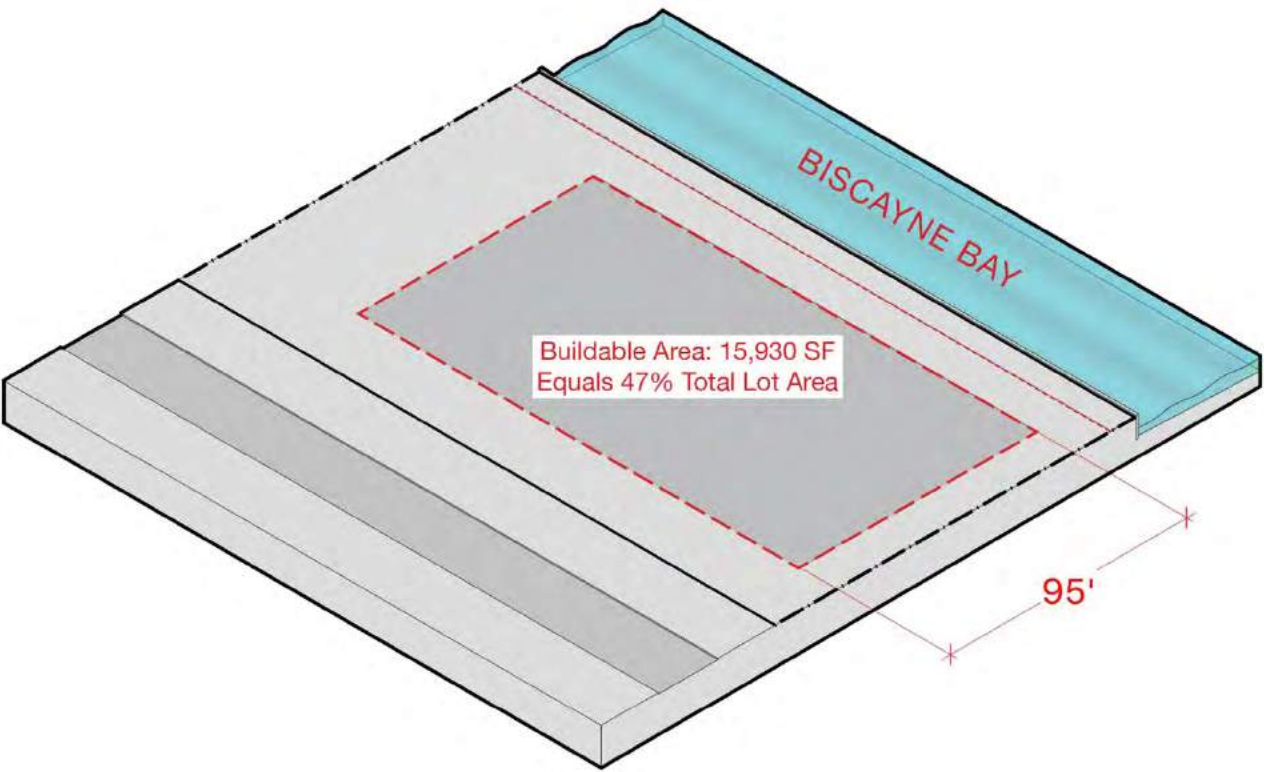


2. Setbacks

Note:
60' min. total side setback area free of structures at ground level is required in RM-70.

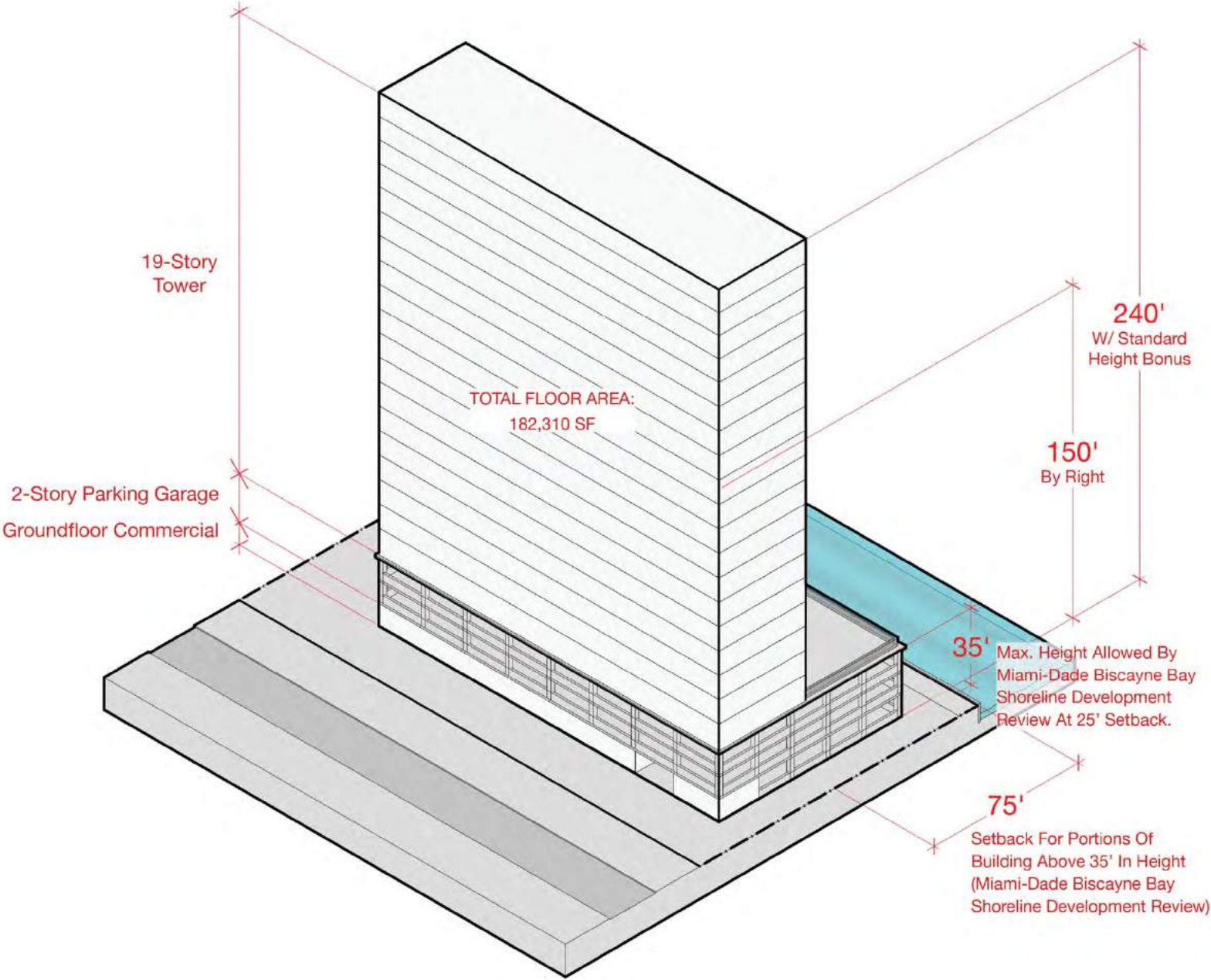
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY DISTRICT ON HARBOR ISLAND AND TREASURE ISLAND



3. Buildable area

Note:
20% min. pervious area is required. Therefore, buildable area cannot exceed 80% of total lot area.
Actual lot dimensions and buildable areas vary.

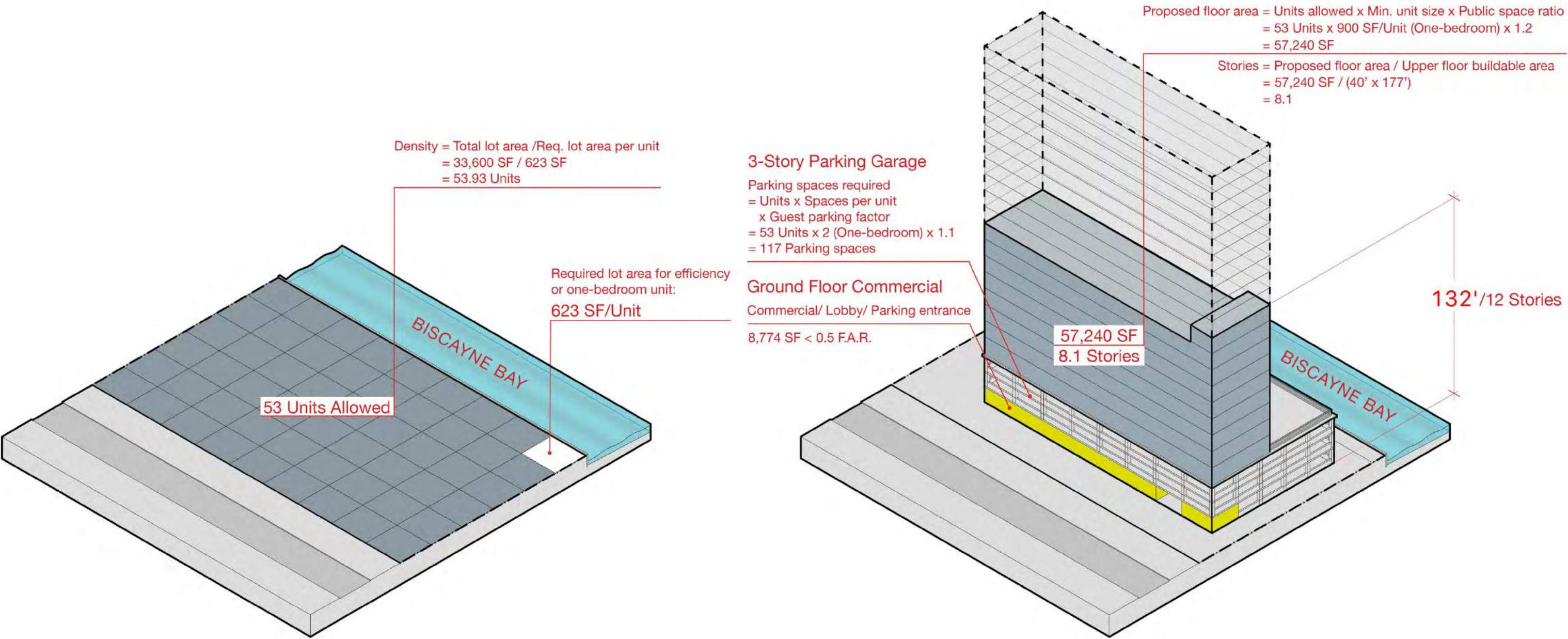


4. Max. building envelope permitted under existing code

Note:
Ground floor retail required on parking structures facing the street.

ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY DISTRICT ON HARBOR ISLAND AND TREASURE ISLAND



5. Density

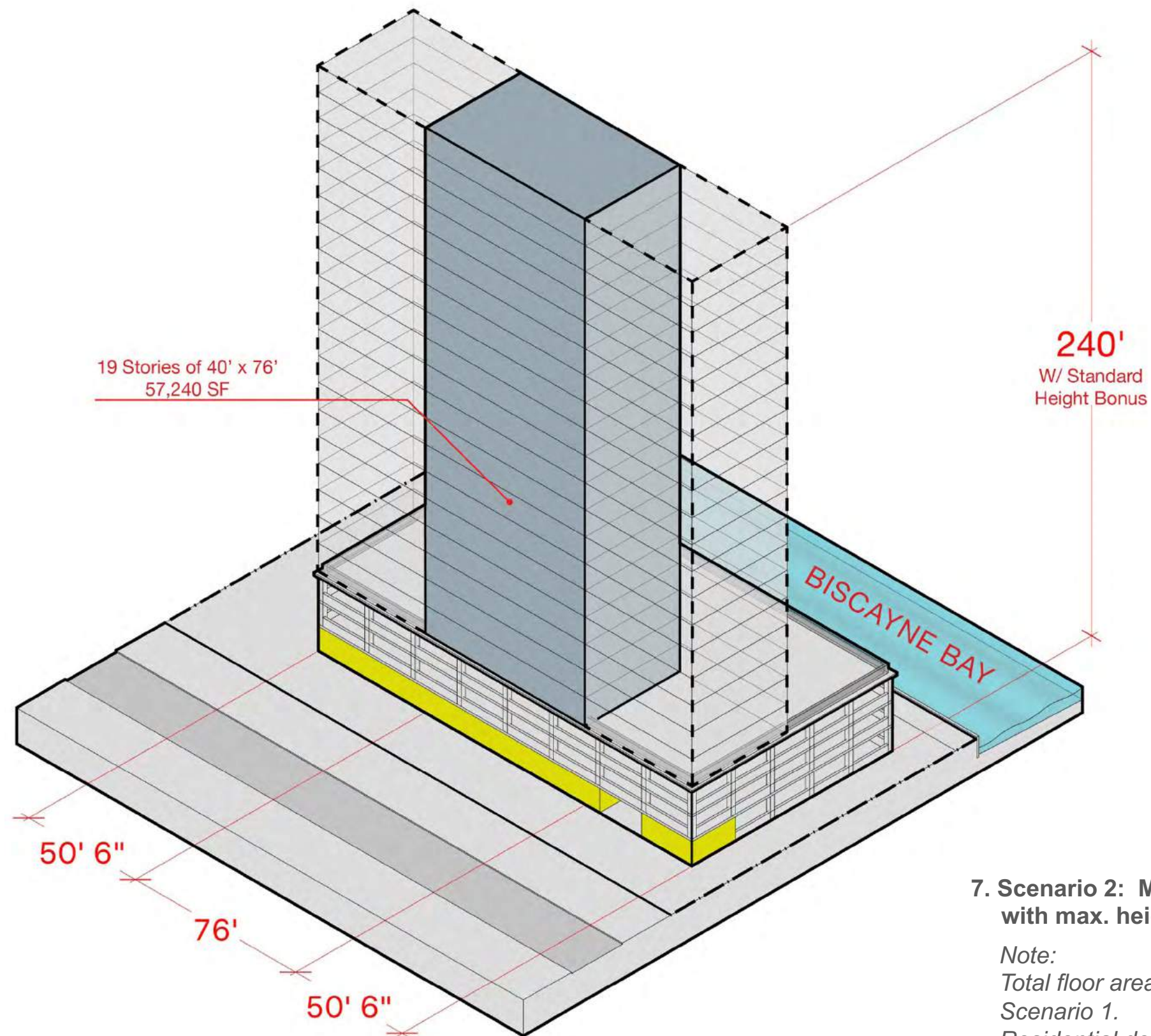
Note:
Max. allowed density is 70 du/acre.
RM-70 is not eligible for TDR bonus.

6. Scenario 1: Max. allowed density (70 du/acre) and low height

Note:
Max. allowed density fits within the height limit of 150'.
Ground floor commercial space facing the street is required in all parking structures in NBV.

ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY DISTRICT ON HARBOR ISLAND AND TREASURE ISLAND



7. Scenario 2: Max. allowed density (70 du/acre) with max. height

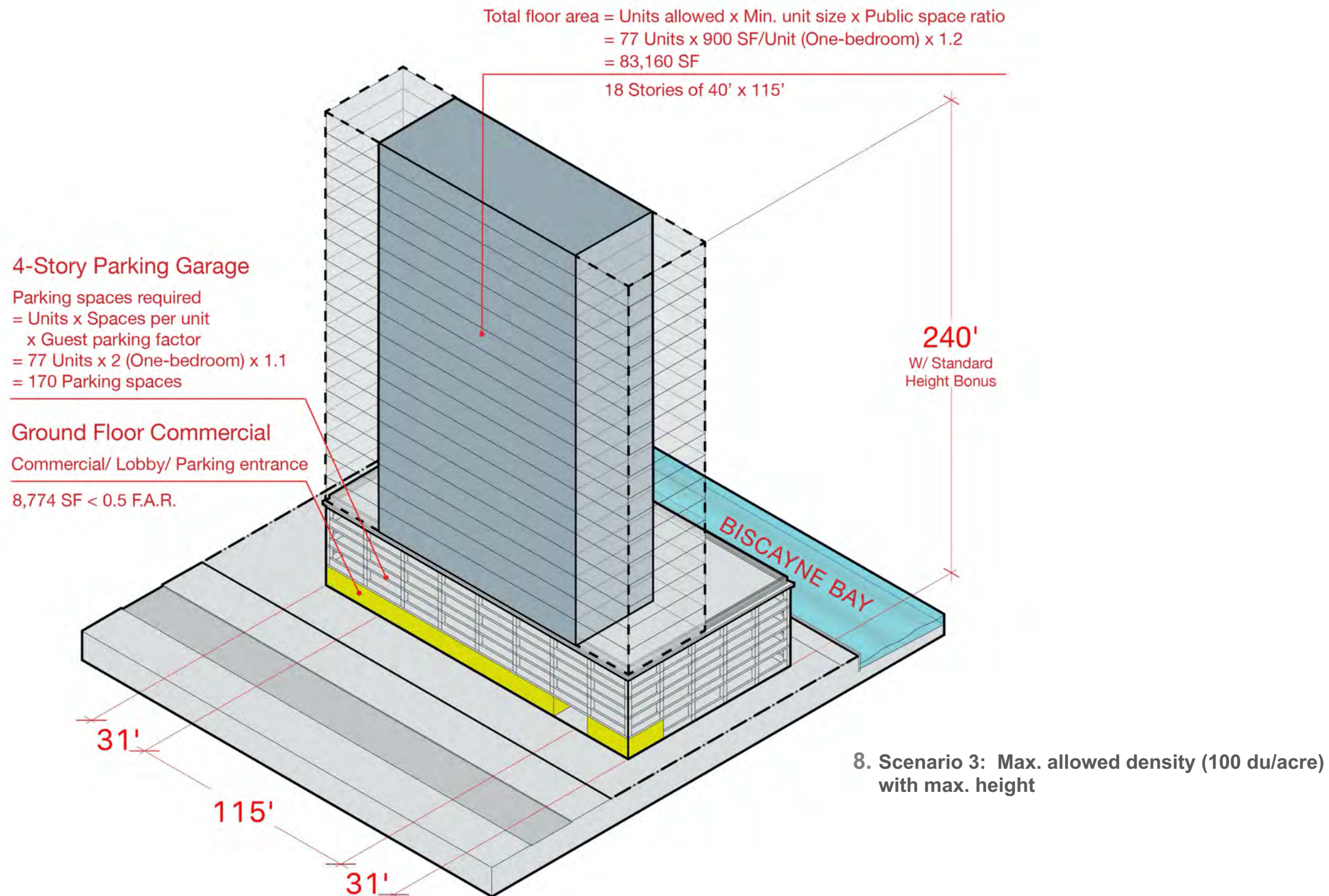
Note:

*Total floor area and parking spaces are identical to
Scenario 1.*

Residential developments may maximize height for views.

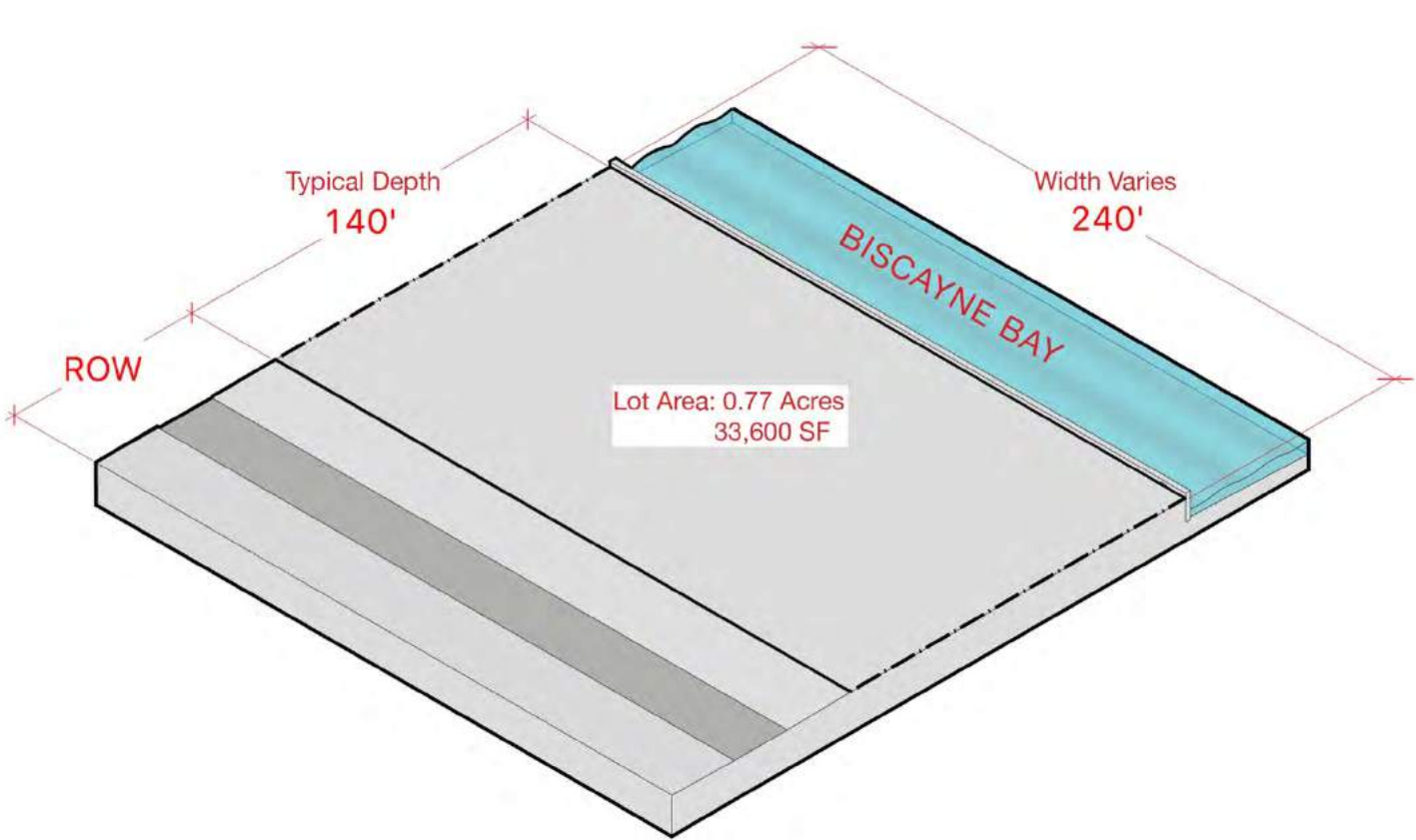
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY DISTRICT ON HARBOR ISLAND AND TREASURE ISLAND

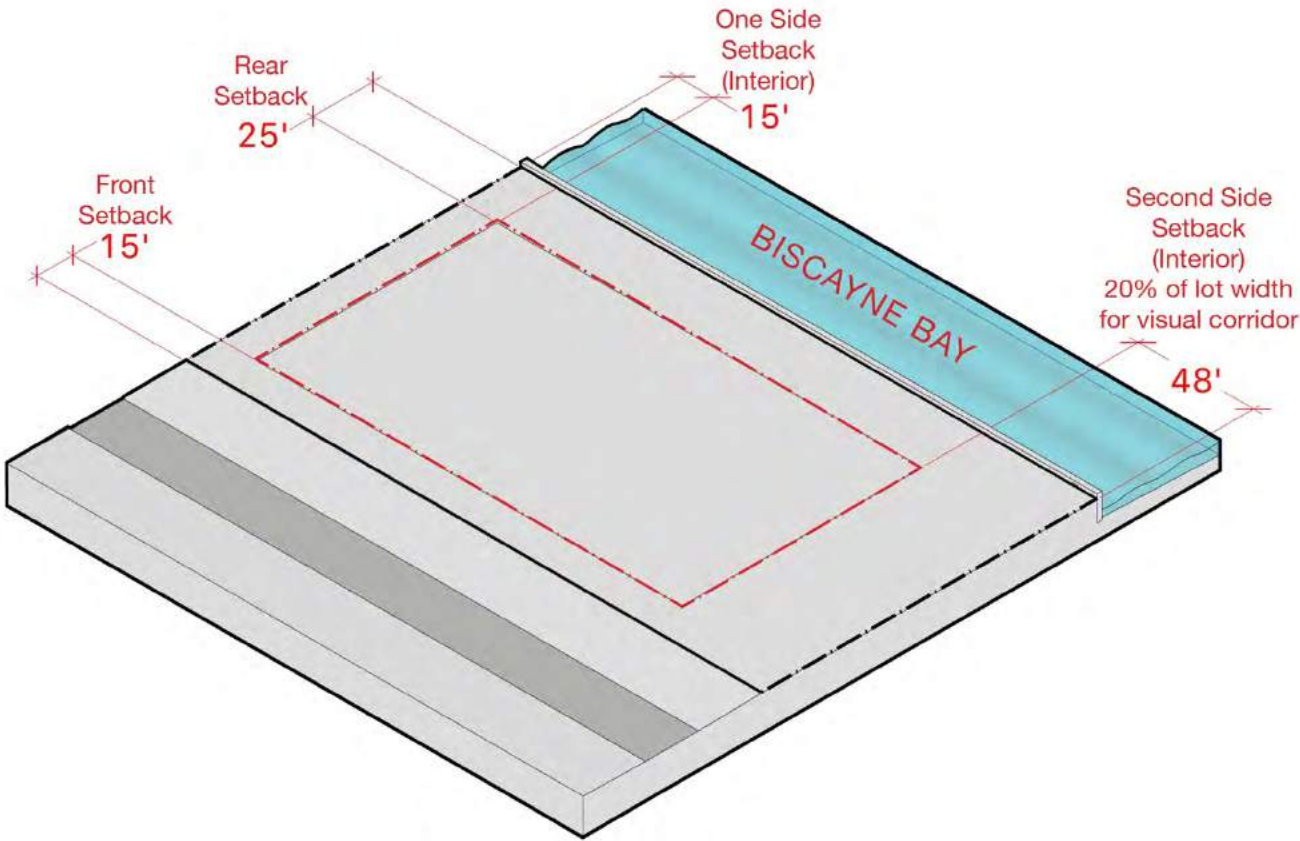


PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



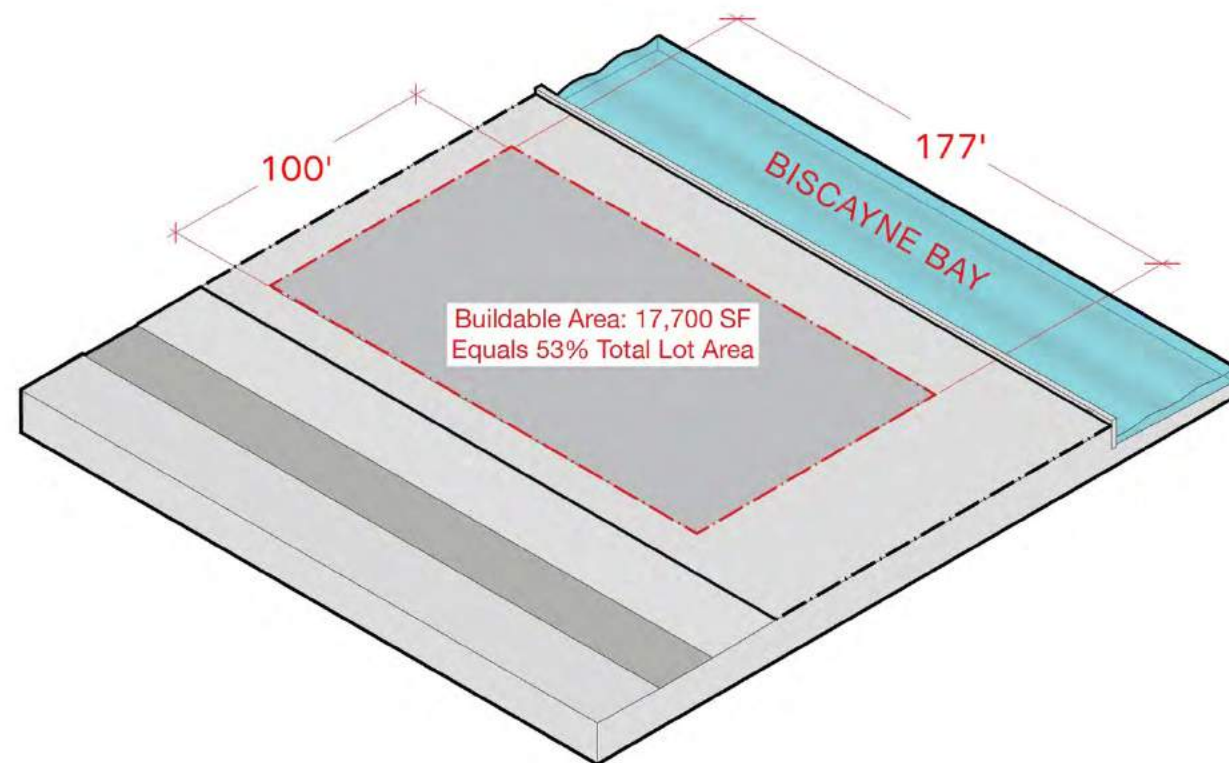
1. Lot



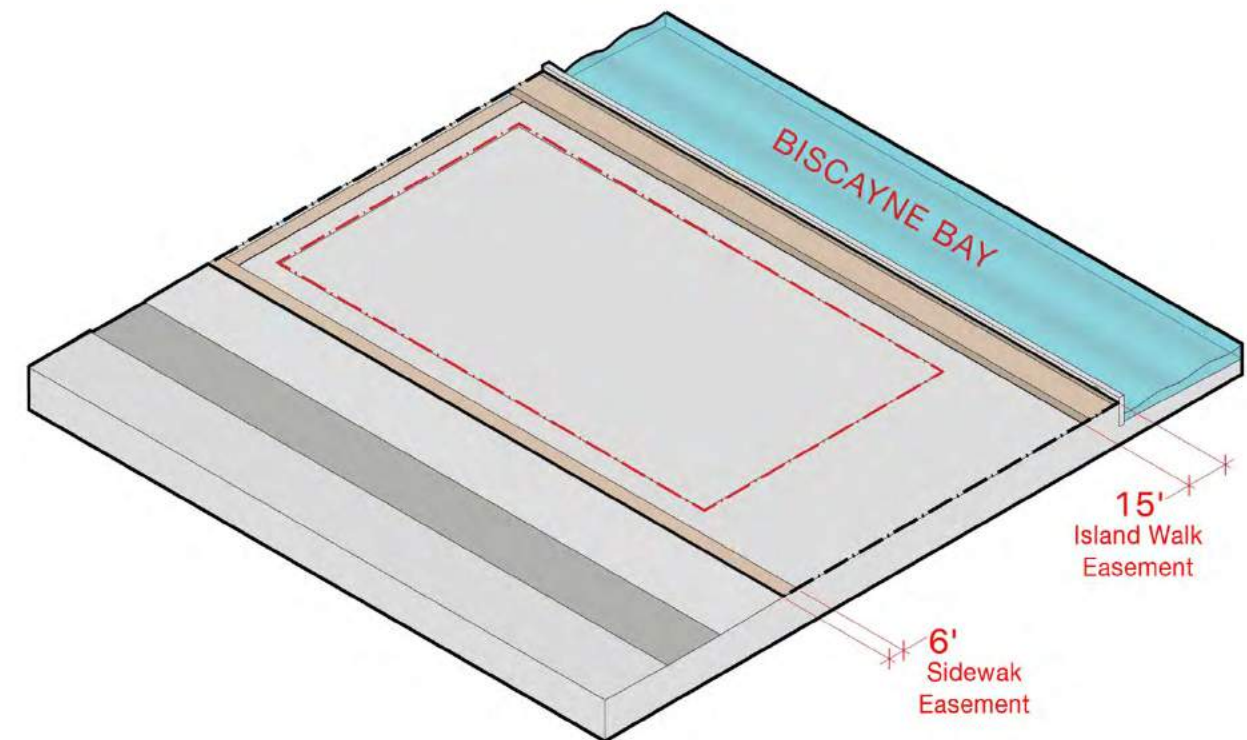
2. Setbacks

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



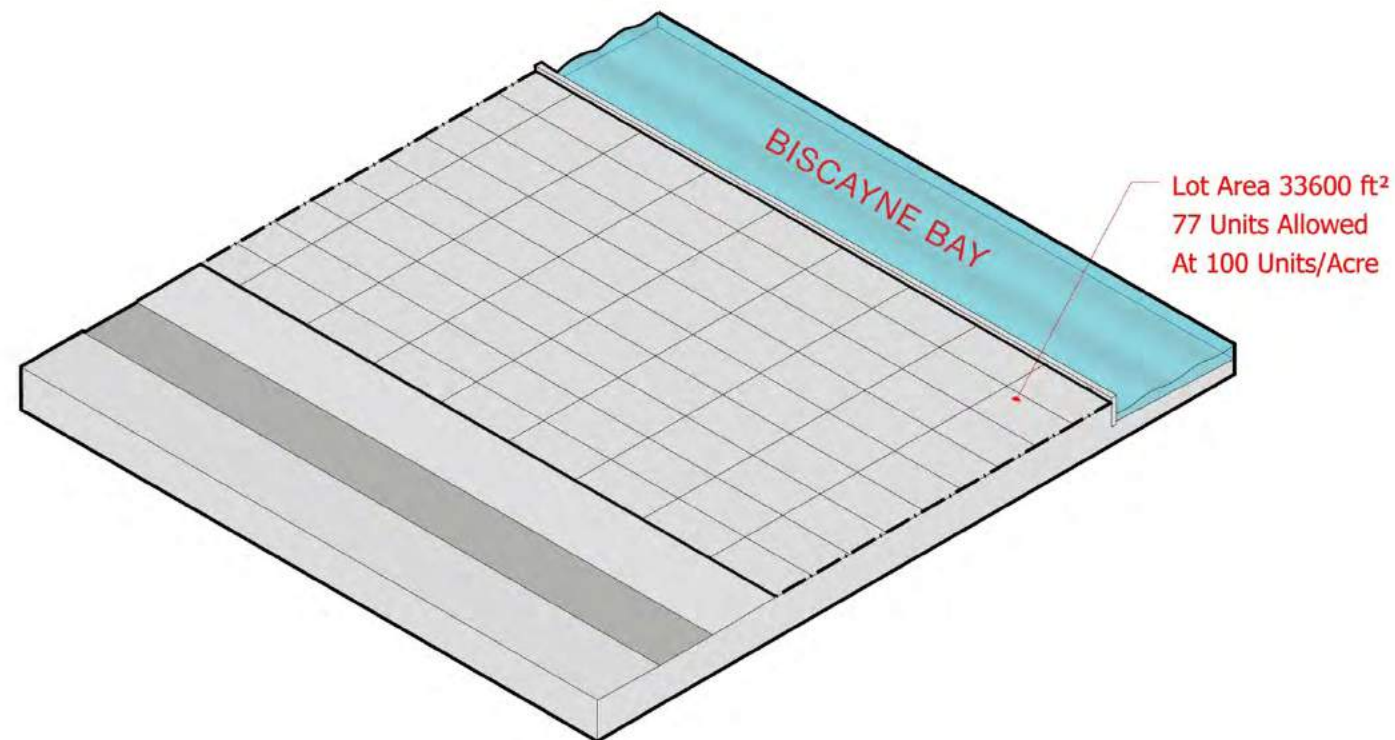
3. Buildable area



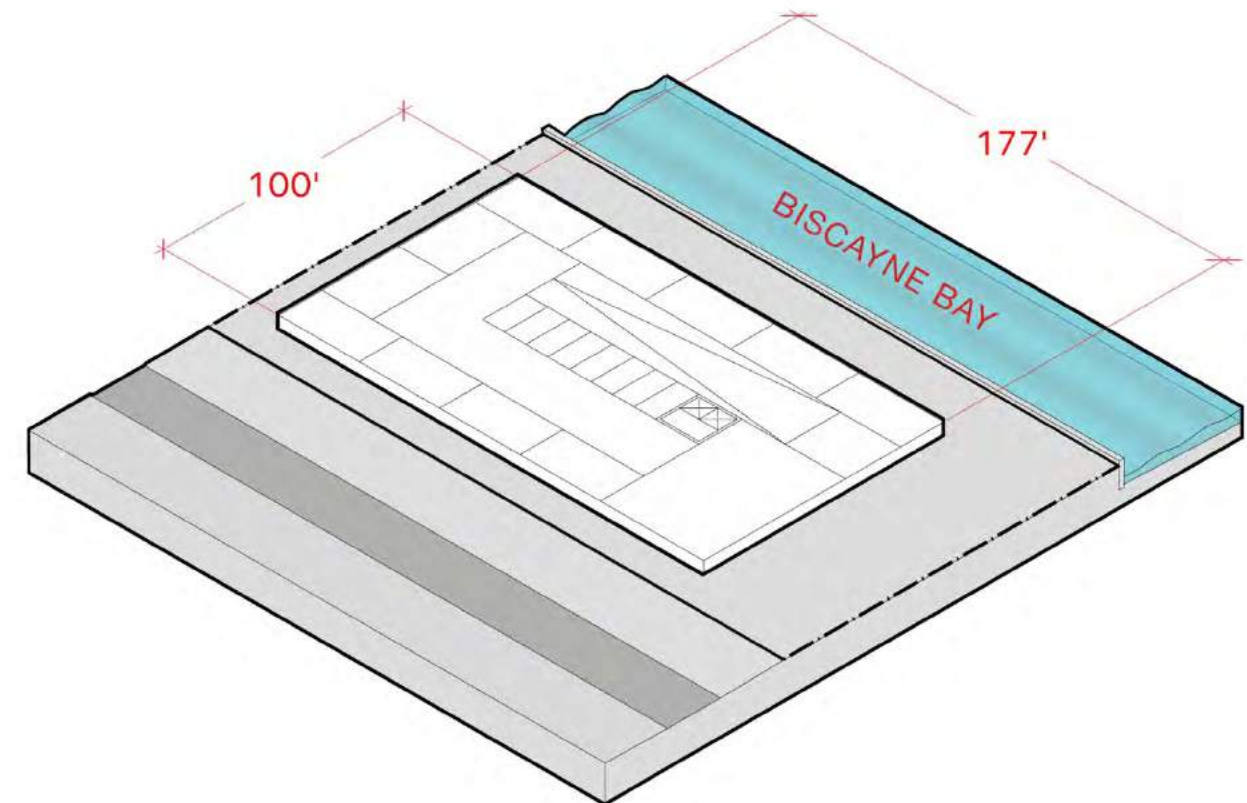
4. Easements

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



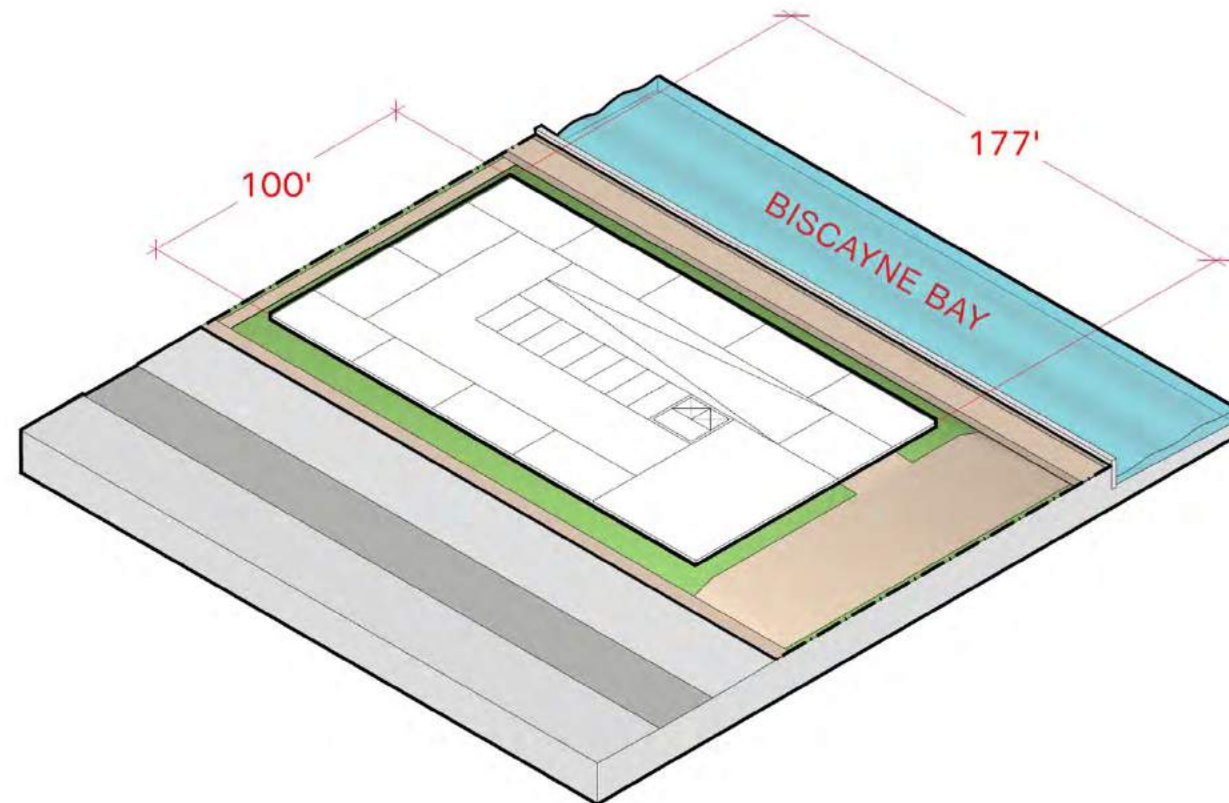
5. Density



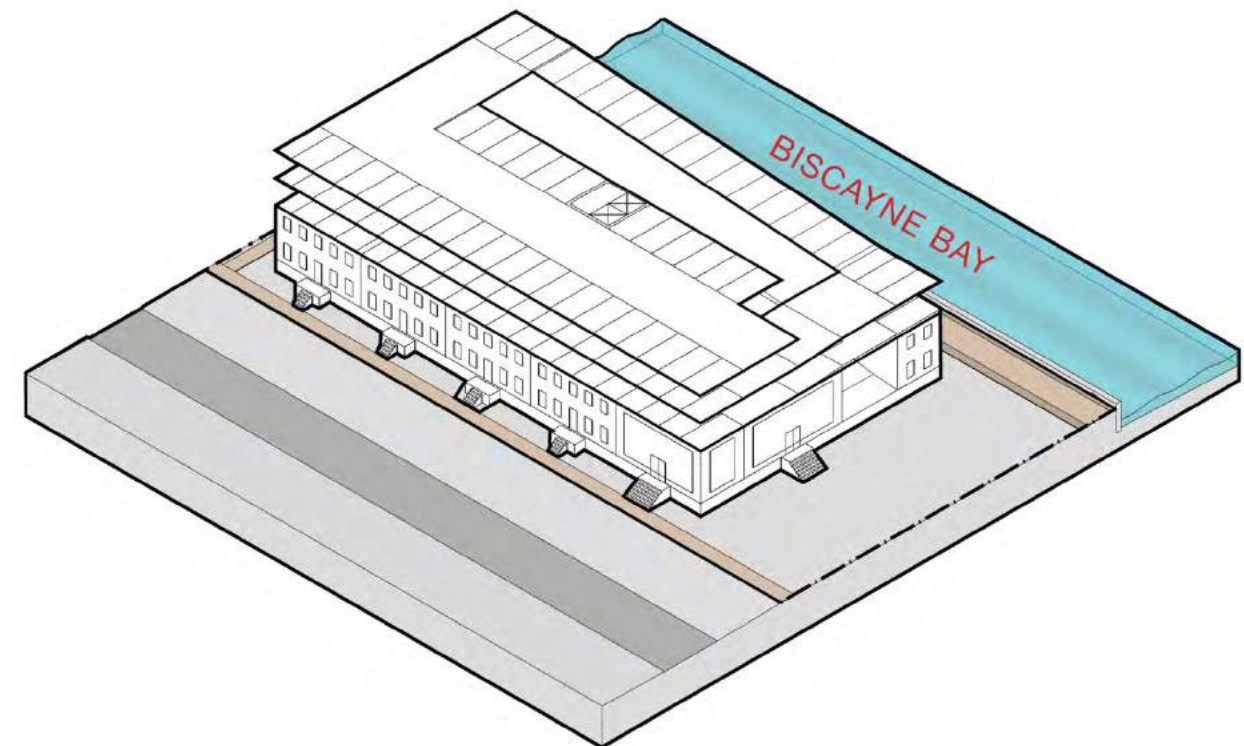
6. Building footprint

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



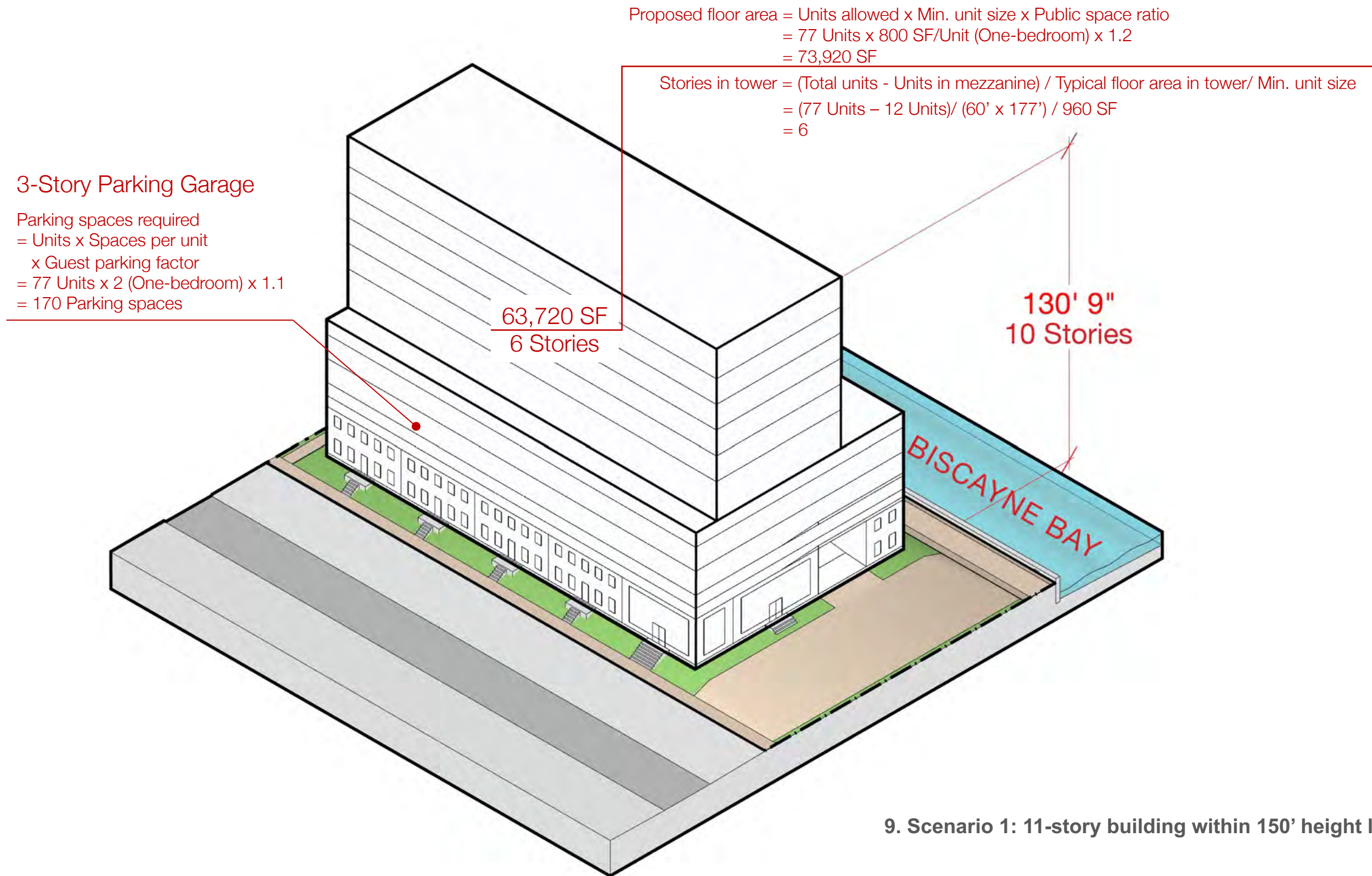
7. Grading



8. Parking

PROPOSED ZONING REGULATIONS: T6-16

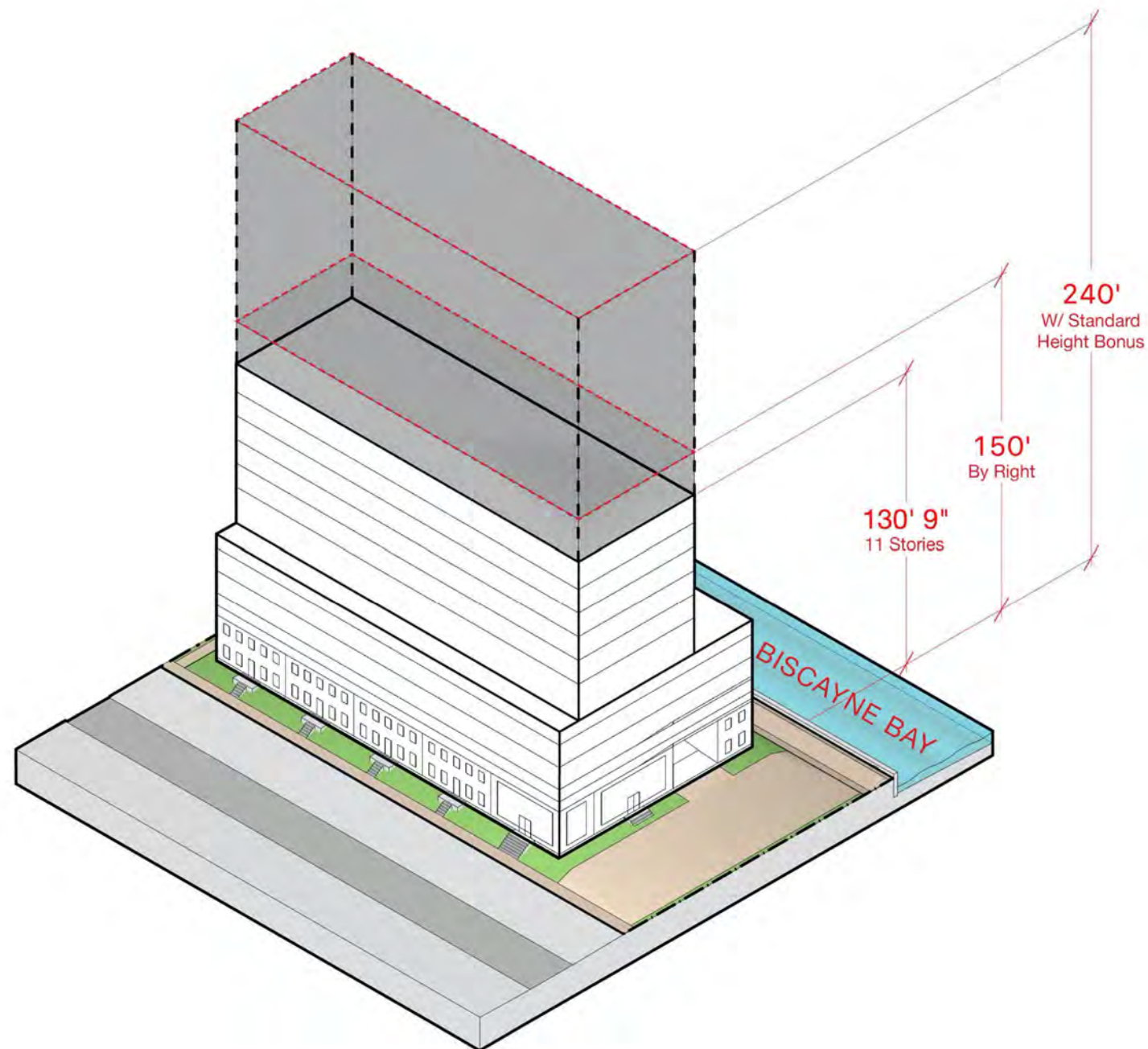
MIXED-USE DISTRICT ON HARBOR ISLAND



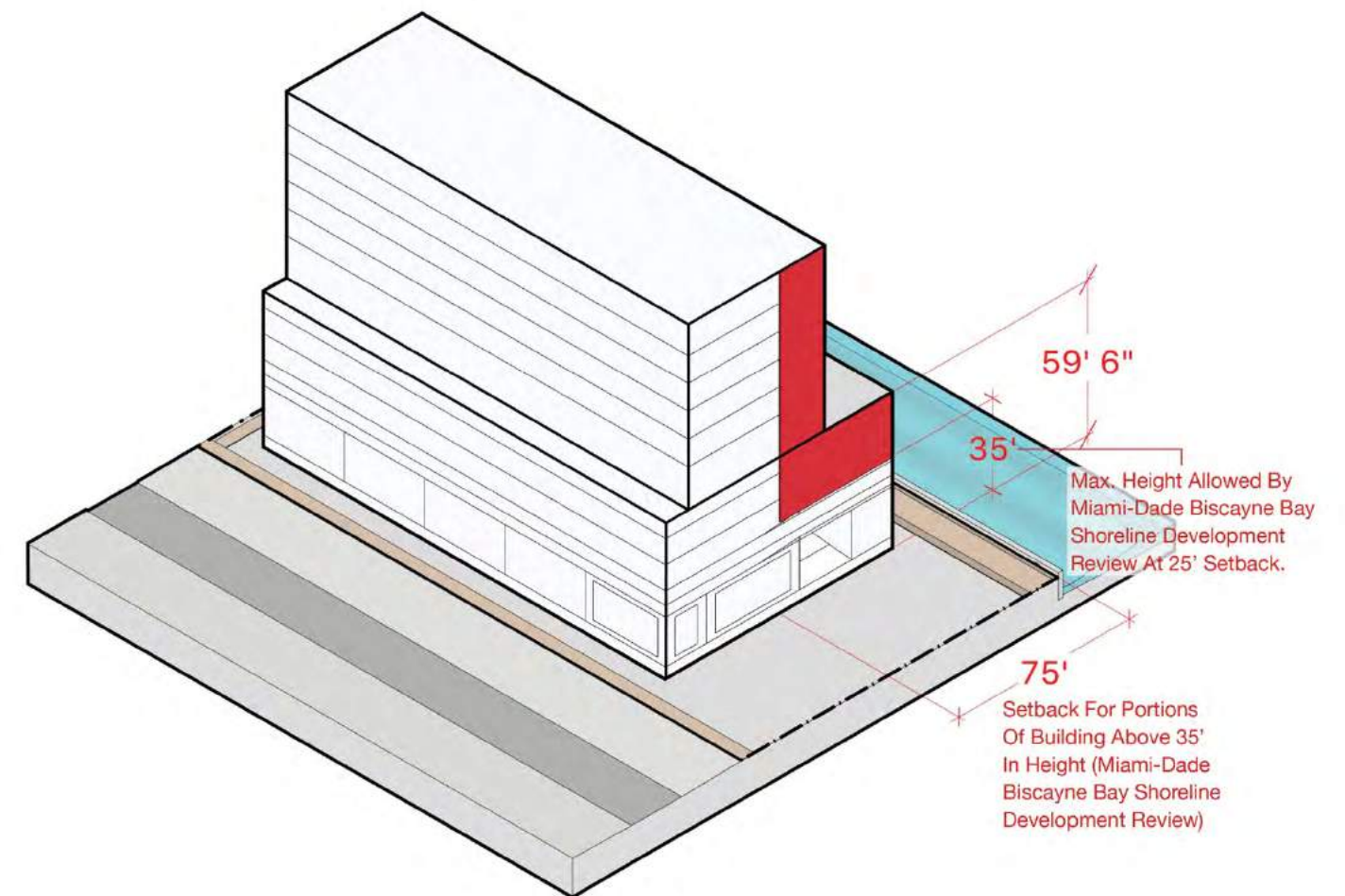
9. Scenario 1: 11-story building within 150' height limit

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



10. Scenario 1: Unbuilt massing



11. Scenario 1: County setback violations

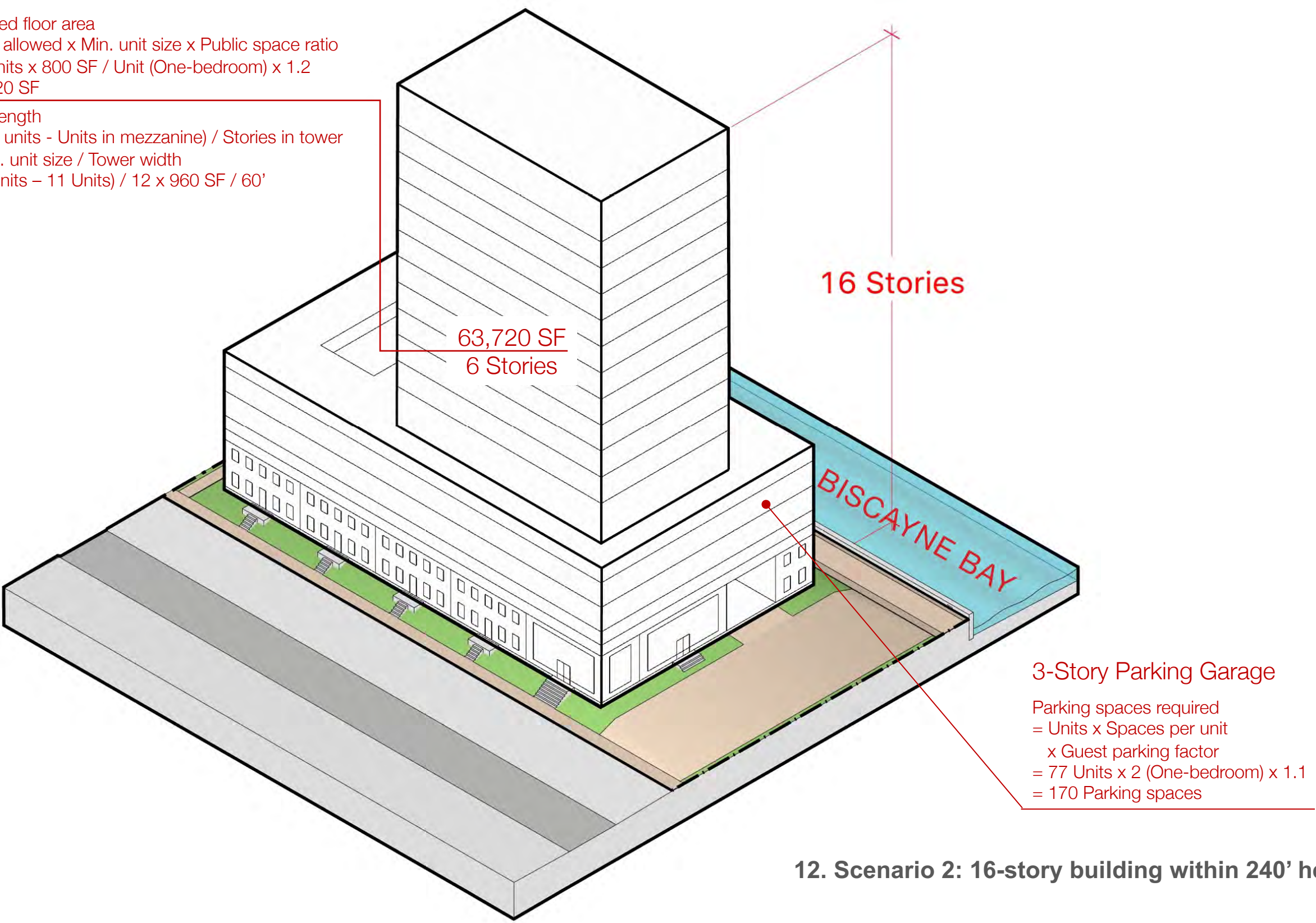
*Note:
The County typically allows some violations of their setback requirements if a public shoreline walkway (e.g., the Island Walk) is provided.*

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND

Proposed floor area
= Units allowed x Min. unit size x Public space ratio
= 77 Units x 800 SF / Unit (One-bedroom) x 1.2
= 73,920 SF

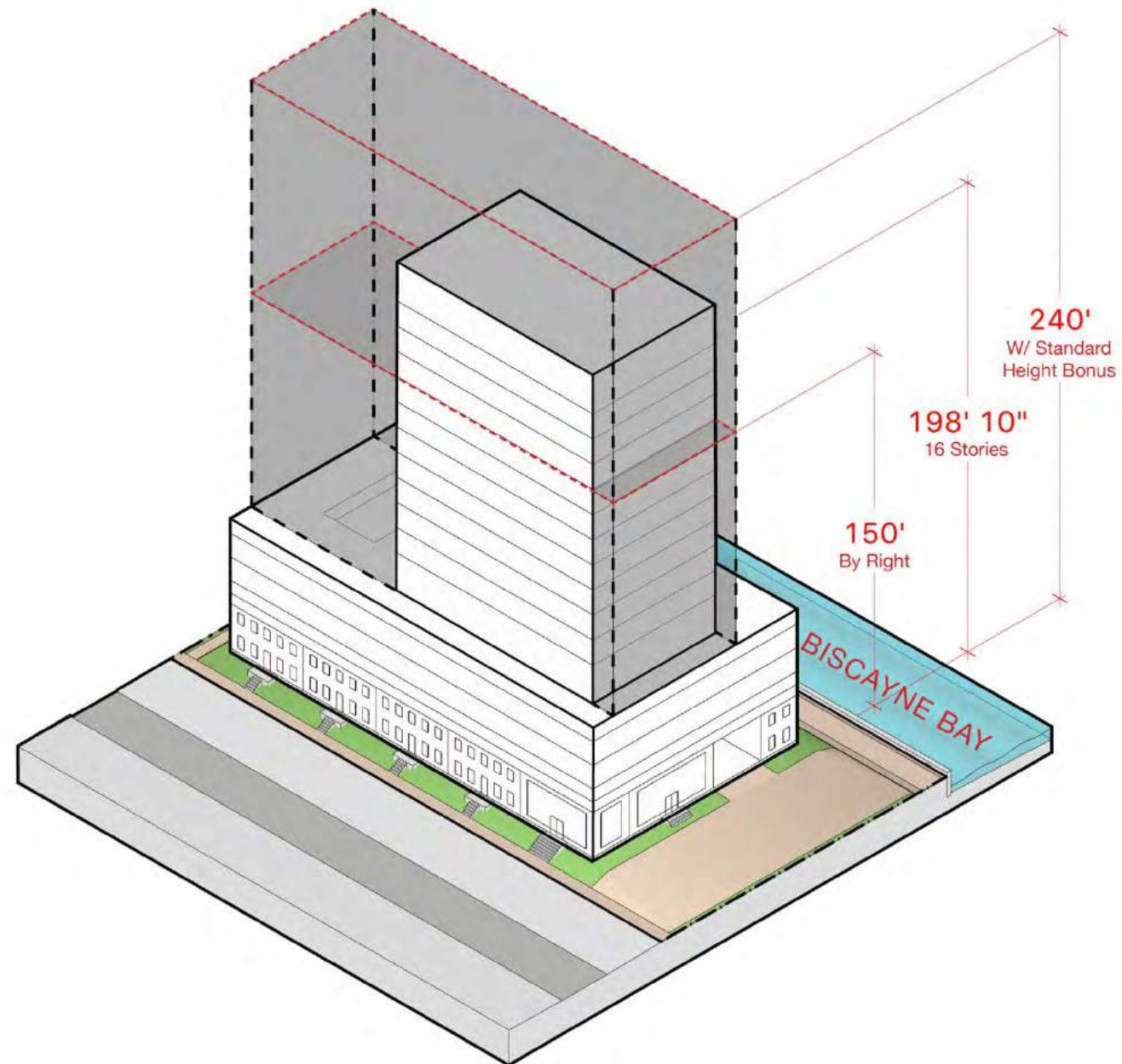
Tower length
= (Total units - Units in mezzanine) / Stories in tower
x Min. unit size / Tower width
= (77 Units - 11 Units) / 12 x 960 SF / 60'
= 88'



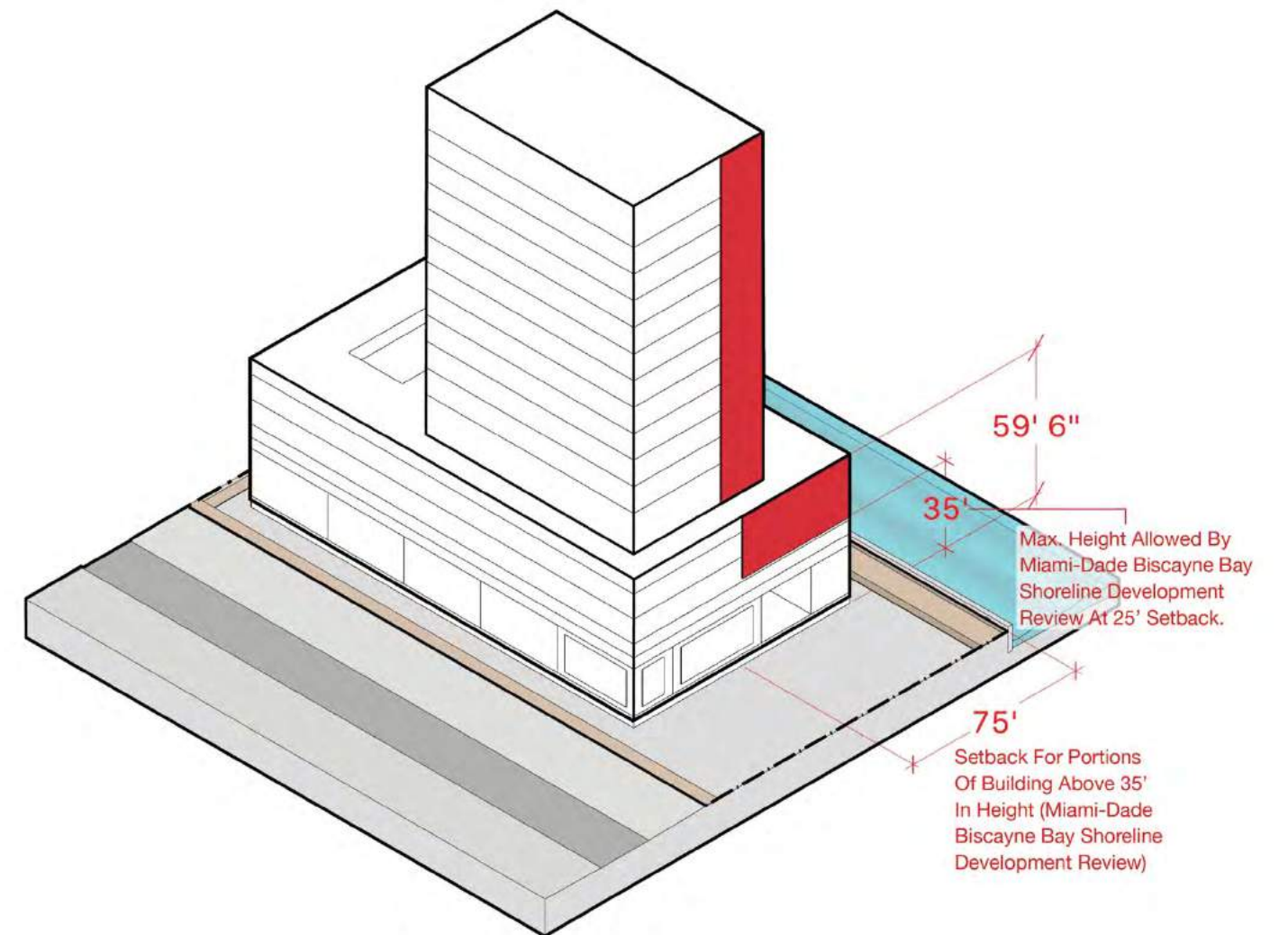
12. Scenario 2: 16-story building within 240' height limit

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



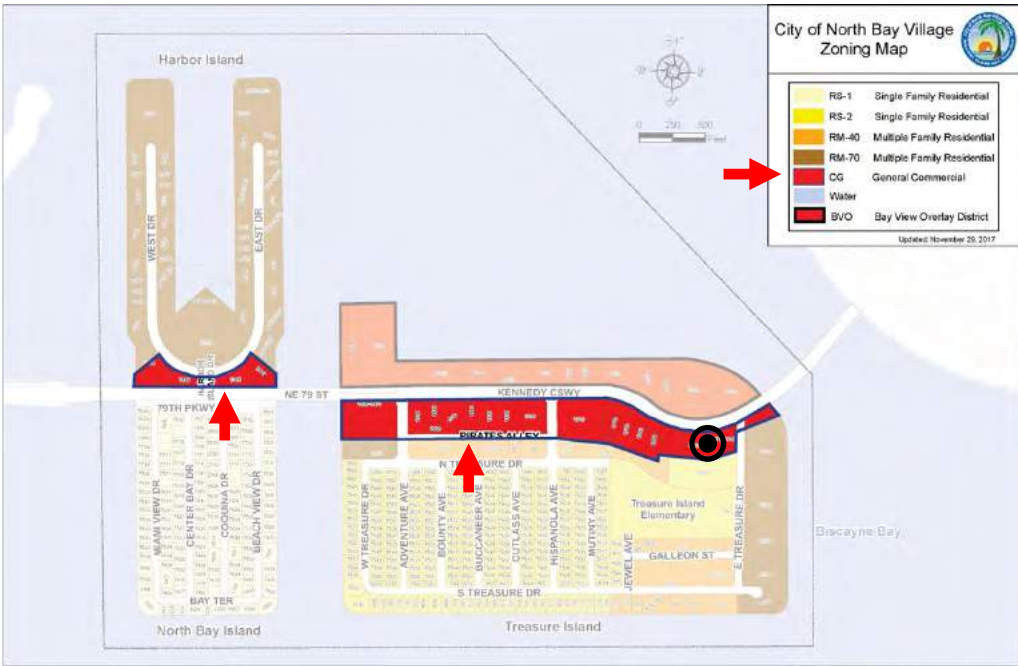
13. Scenario 2: Unbuilt massing



14. Scenario 2: County setback violations

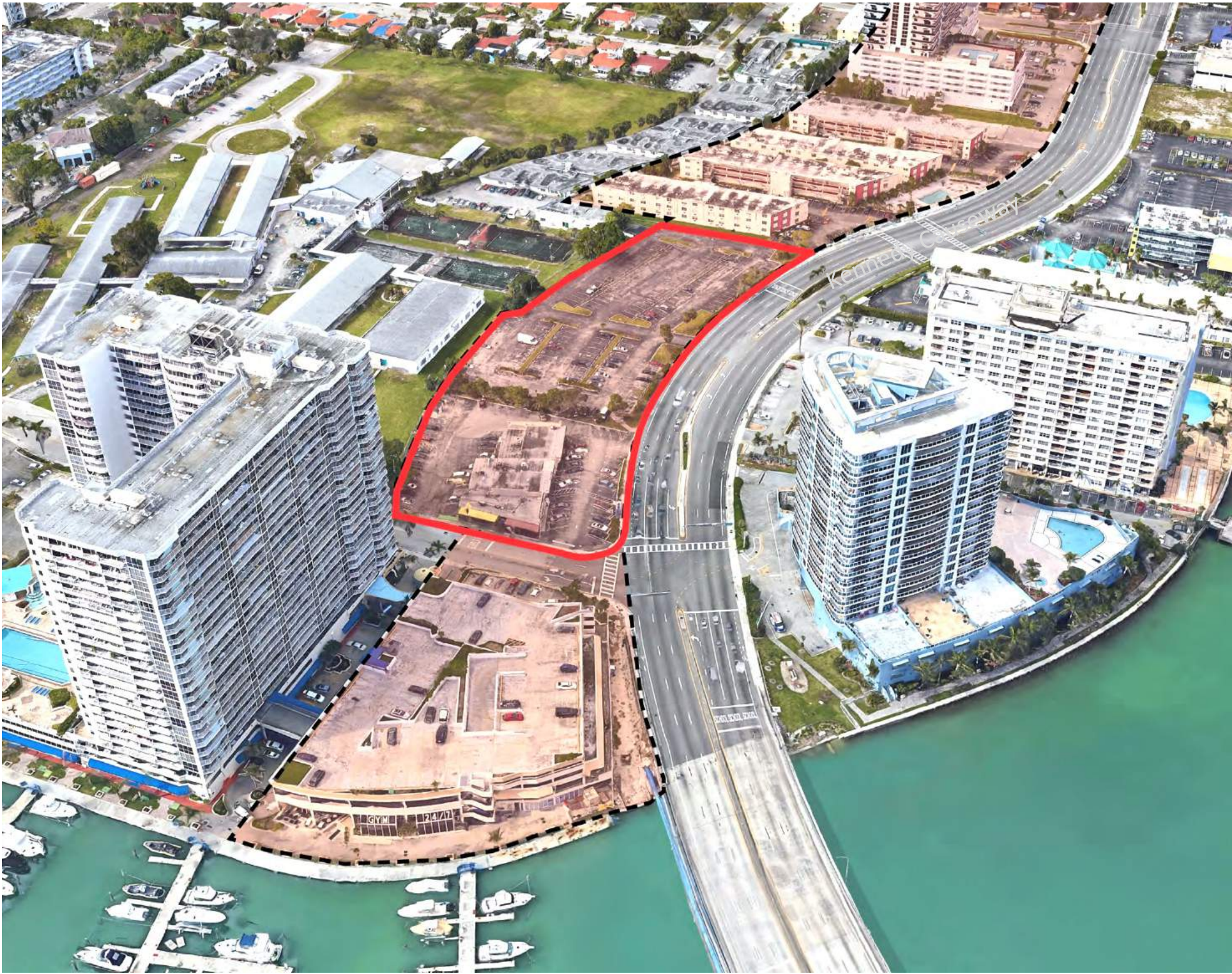
*Note:
The County typically allows some violations of their setback requirements if a public shoreline walkway (e.g., the Island Walk) is provided.*

ANALYSIS OF EXISTING ZONING REGULATIONS: CG GENERAL COMMERCIAL DISTRICT



Zoning map

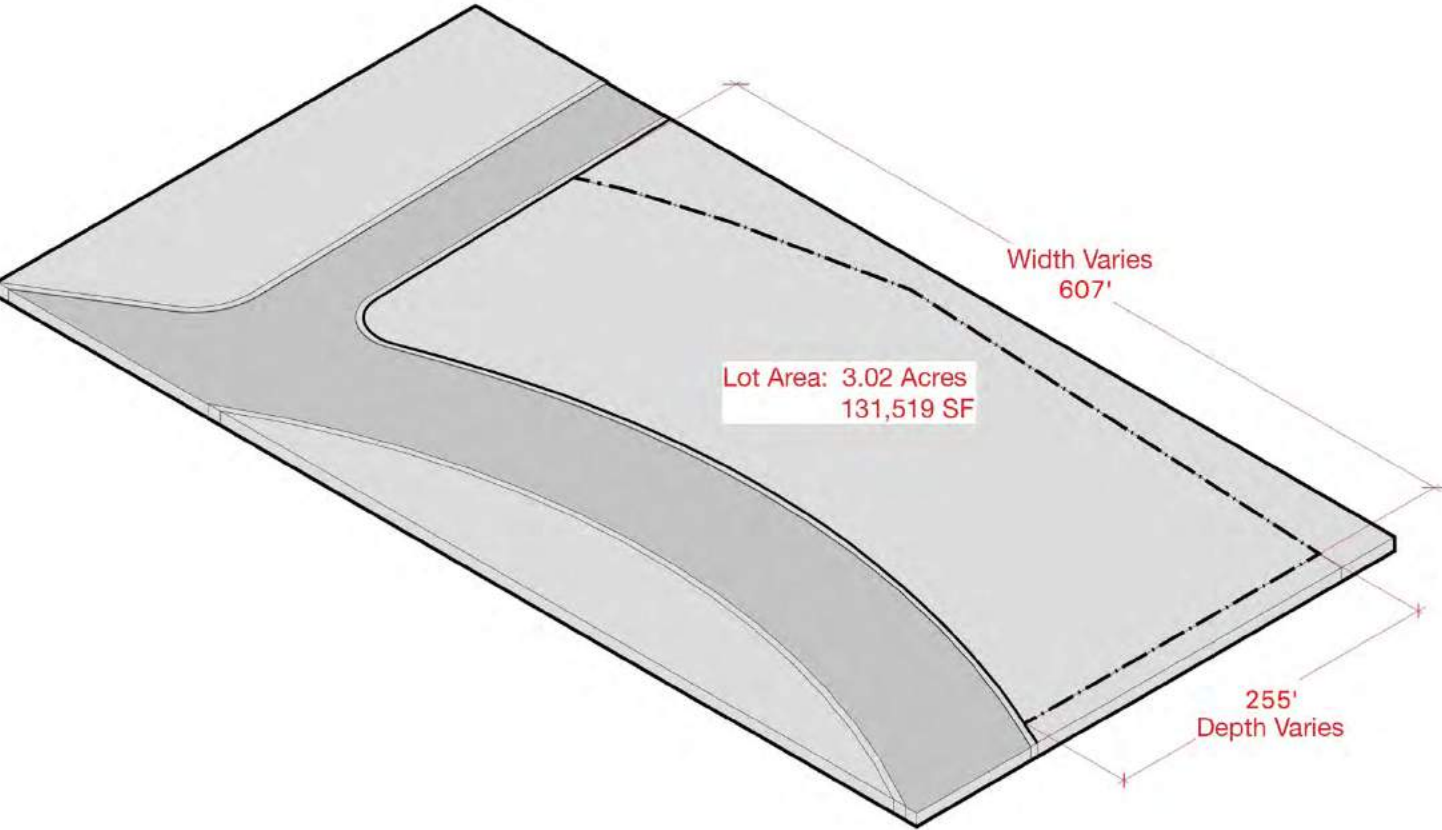
Note: The following pages present an analysis of existing zoning regulations for illustrative purposes only. The drawings, dimensions, and notes do not supersede the NBV Unified Land Development Code (ULDC.)



Existing conditions

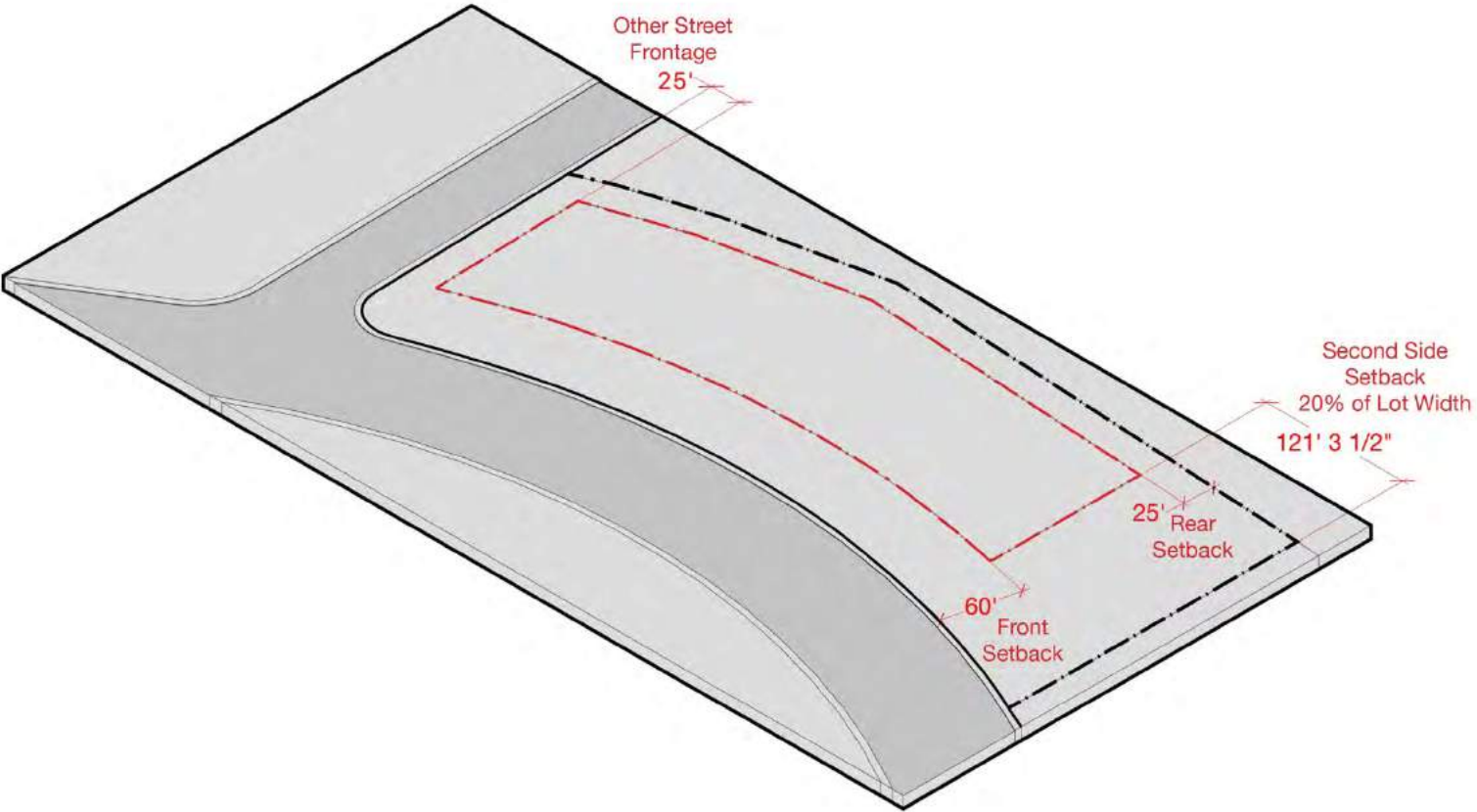
ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT



1. Lot

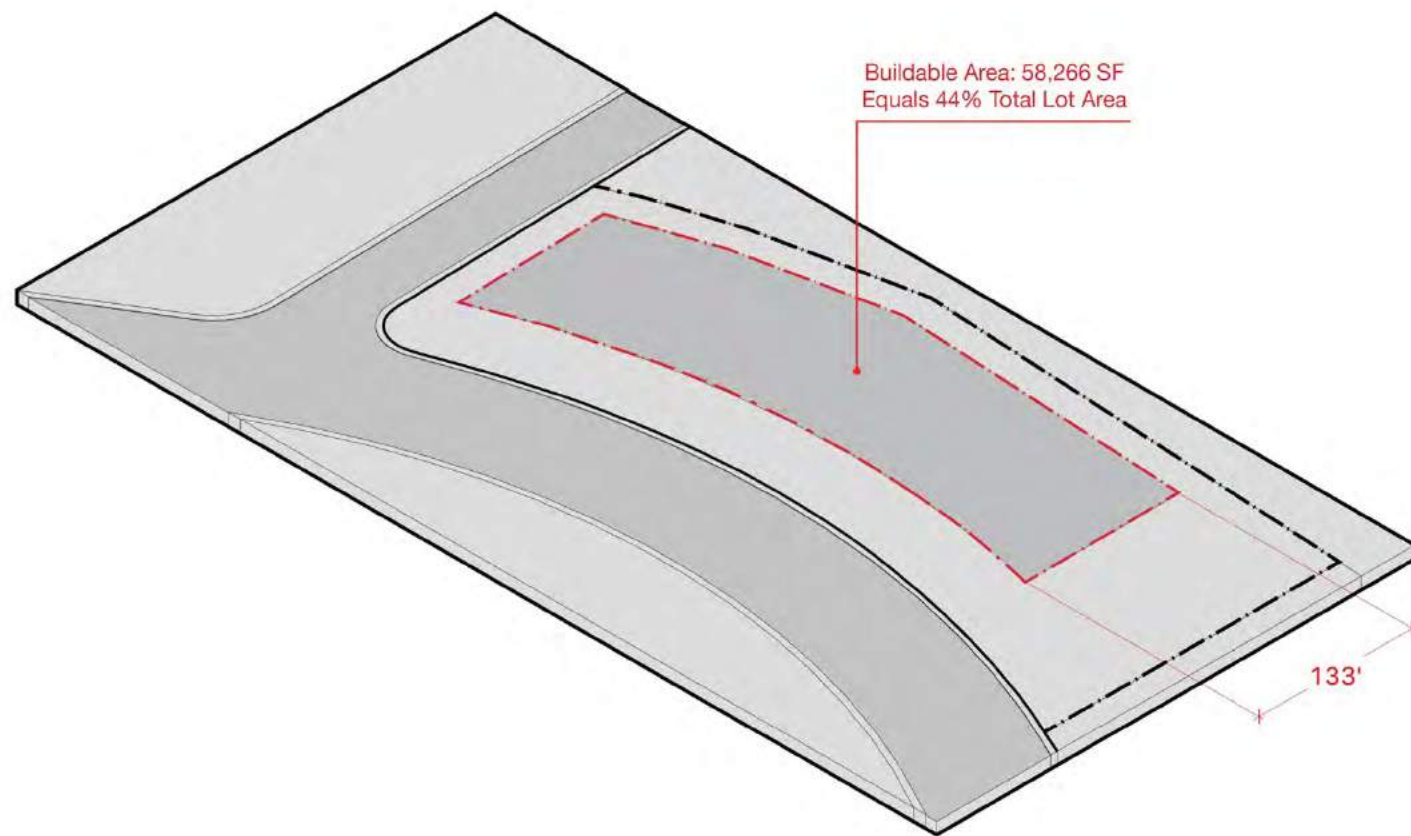
*Note:
Actual lot dimensions vary.*



2. Setbacks

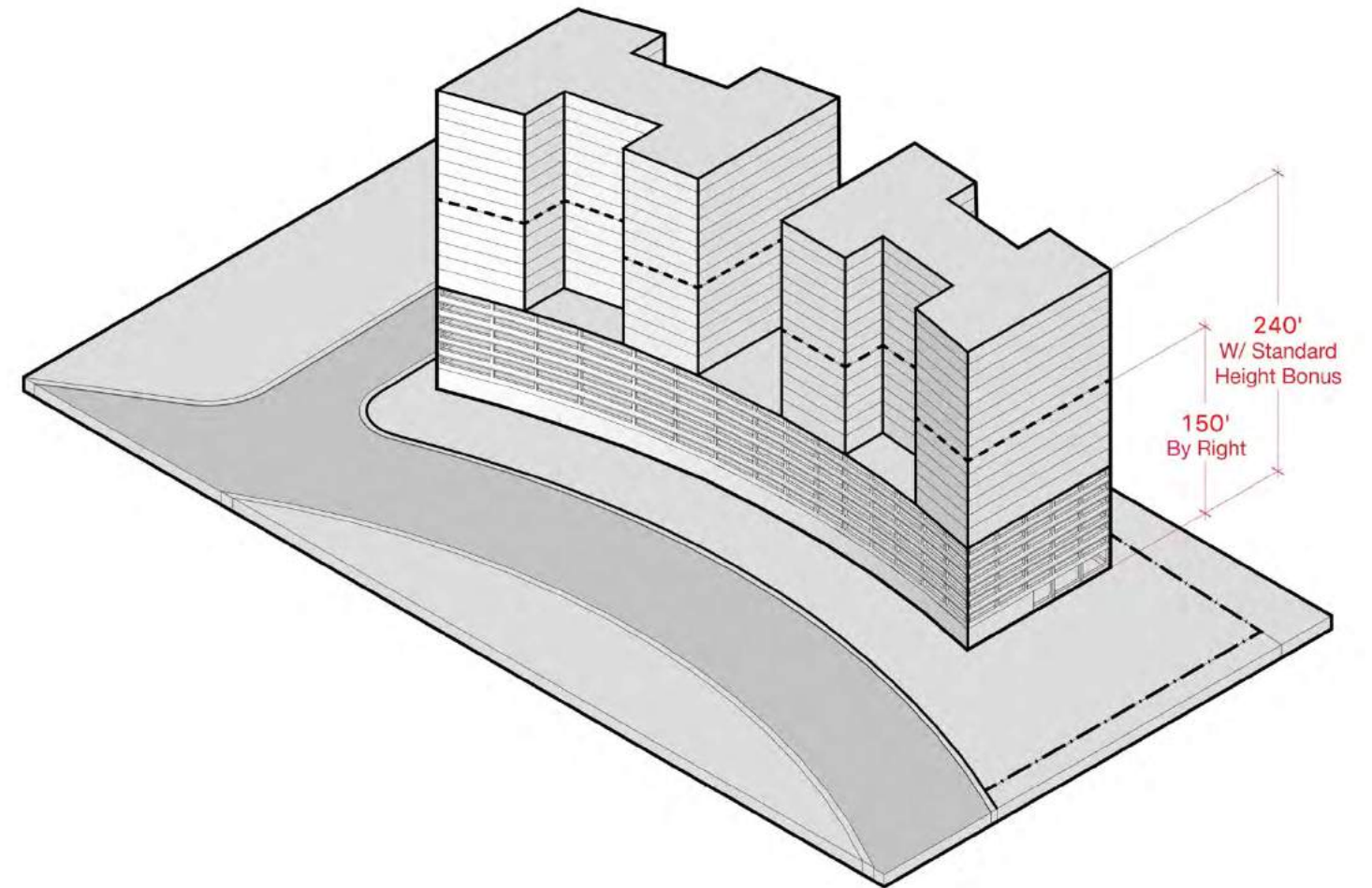
ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT



3. Buildable area

Note:
CG requires 20% min. pervious area. Therefore, buildable area can not exceed 80% of total lot area. Actual lot dimensions and buildable areas vary.

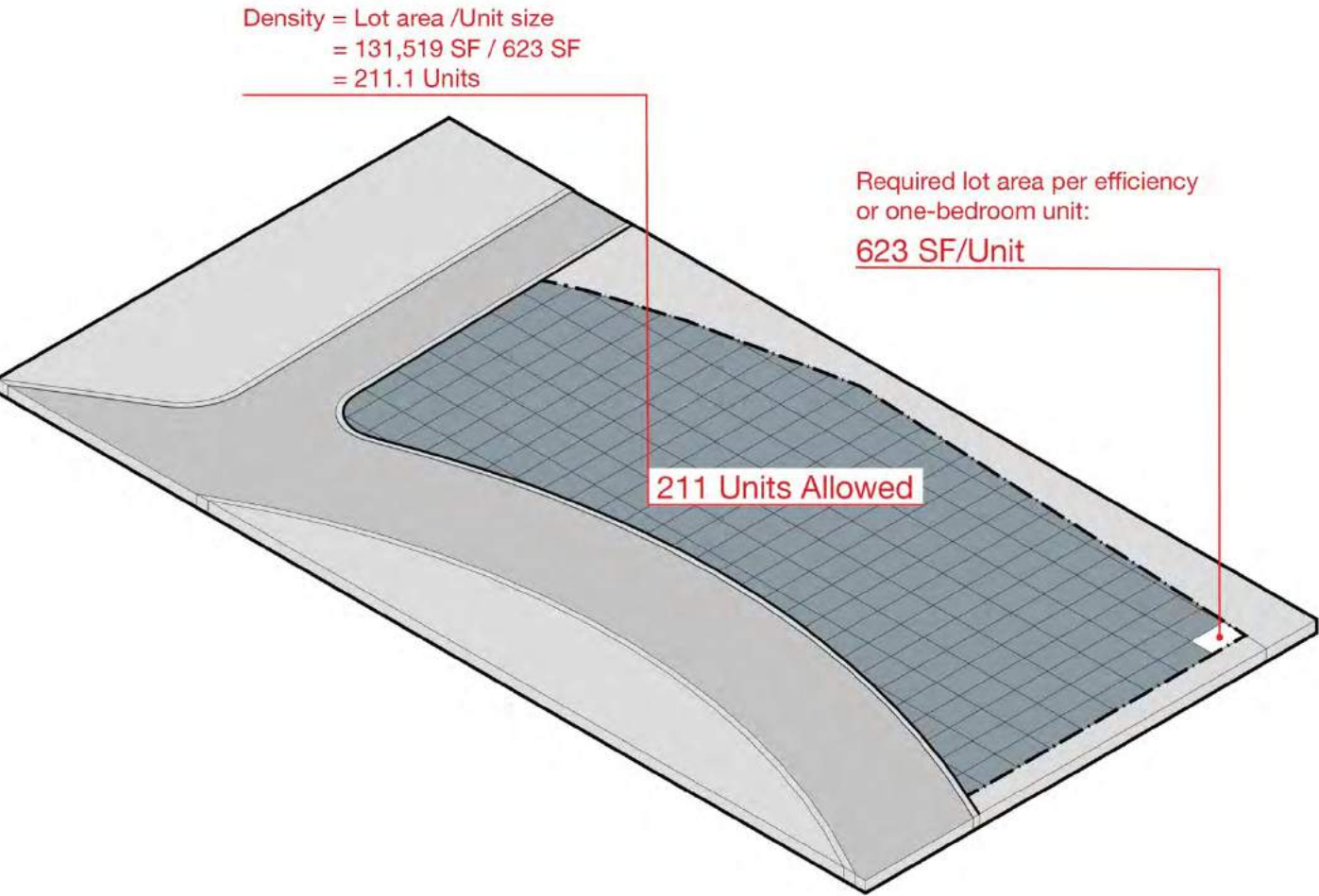


4. Max. building envelope with standard height bonus

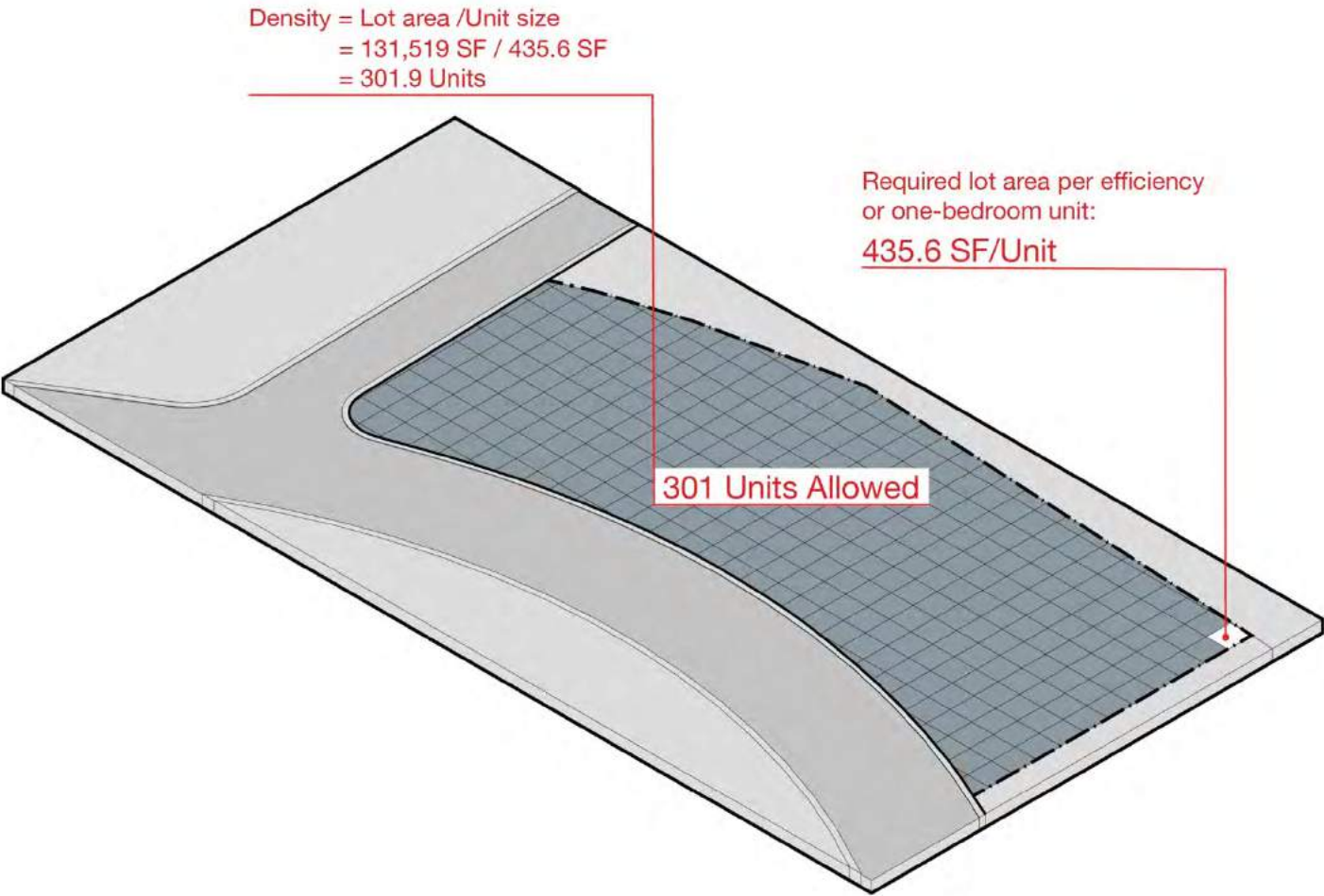
Note:
Ground floor retail required on parking structures facing the street.

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT



5. Max. Allowed Density (70 du/acre)



6. Eligible TDR Bonuses Density (100 du/acre)

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT

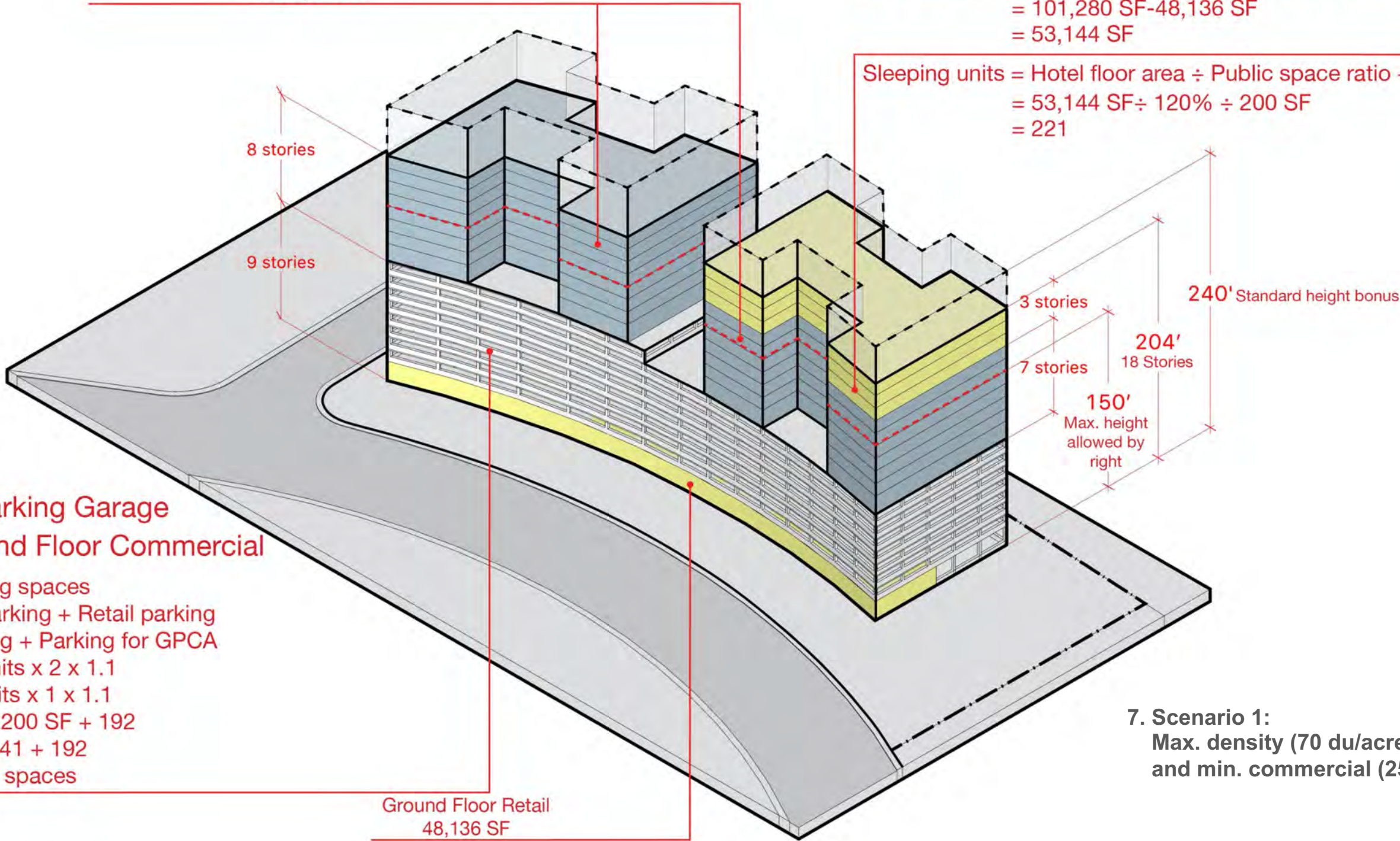
Residential

$$\begin{aligned} \text{Max. floor area} &= \text{Units} \times \text{Min. unit size} \times \text{Public space ratio} \\ &= 211 \text{ Units} \times 1200 \text{ SF/Unit (Two-bedroom)} \times 1.2 \\ &= 303,840 \text{ SF} \end{aligned}$$

Hotel

$$\begin{aligned} \text{Max. floor area} &= \text{Residential floor area} \div 75\% \times 25\% - \text{Retail} \\ &= 101,280 \text{ SF} - 48,136 \text{ SF} \\ &= 53,144 \text{ SF} \end{aligned}$$

$$\begin{aligned} \text{Sleeping units} &= \text{Hotel floor area} \div \text{Public space ratio} \div \text{Unit size} \\ &= 53,144 \text{ SF} \div 120\% \div 200 \text{ SF} \\ &= 221 \end{aligned}$$



7.4-Story Parking Garage Above Ground Floor Commercial

$$\begin{aligned} \text{Required parking spaces} &= \text{Residential parking} + \text{Retail parking} \\ &\quad + \text{Hotel parking} + \text{Parking for GPCA} \\ &= \text{Residential units} \times 2 \times 1.1 \\ &\quad + \text{Sleeping units} \times 1 \times 1.1 \\ &\quad + 48,136 \text{ SF} / 200 \text{ SF} + 192 \\ &= 464 + 234 + 241 + 192 \\ &= 1,131 \text{ Parking spaces} \end{aligned}$$

7. Scenario 1:
Max. density (70 du/acre)
and min. commercial (25%)

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT

Residential

$$\begin{aligned} \text{Max. floor area} &= \text{Units} \times \text{Min. unit size} \times \text{Public space ratio} \\ &= 301 \text{ Units} \times 1200 \text{ SF/Unit (Two-bedroom)} \times 1.2 \\ &= 433,440 \text{ SF} \end{aligned}$$

Hotel

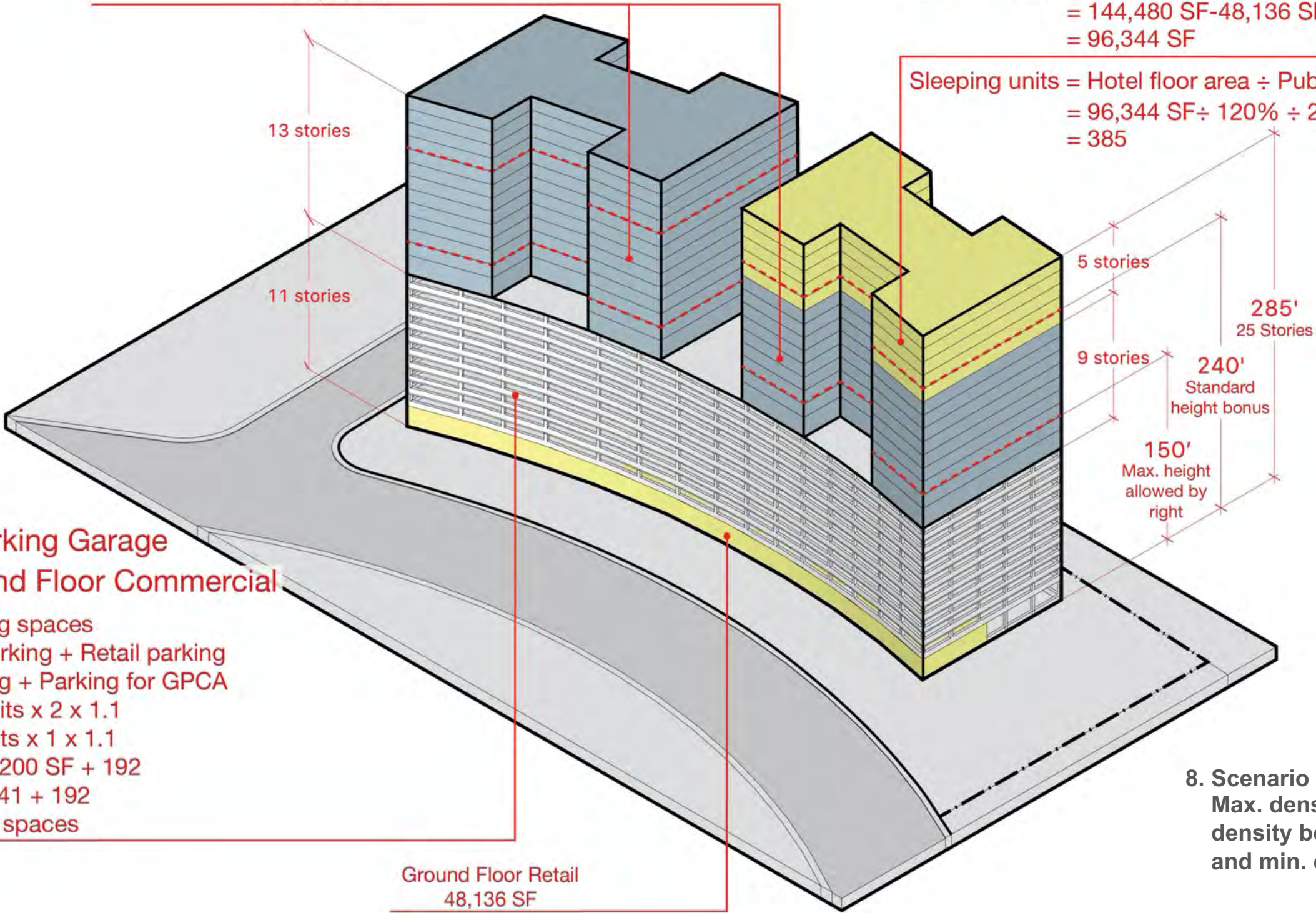
$$\begin{aligned} \text{Max. floor area} &= \text{Residential floor area} \div 75\% \times 25\% - \text{Retail} \\ &= 144,480 \text{ SF} - 48,136 \text{ SF} \\ &= 96,344 \text{ SF} \end{aligned}$$

$$\begin{aligned} \text{Sleeping units} &= \text{Hotel floor area} \div \text{Public space ratio} \div \text{Unit size} \\ &= 96,344 \text{ SF} \div 120\% \div 200 \text{ SF} \\ &= 385 \end{aligned}$$

10-Story Parking Garage Above Ground Floor Commercial

$$\begin{aligned} \text{Required parking spaces} &= \text{Residential parking} + \text{Retail parking} \\ &\quad + \text{Hotel parking} + \text{Parking for GPCA} \\ &= \text{Residential units} \times 2 \times 1.1 \\ &\quad + \text{Sleeping units} \times 1 \times 1.1 \\ &\quad + 48,136 \text{ SF} / 200 \text{ SF} + 192 \\ &= 663 + 385 + 241 + 192 \\ &= 1,520 \text{ Parking spaces} \end{aligned}$$

Ground Floor Retail
48,136 SF



8. Scenario 2:
Max. density with full TDR
density bonus (100 du/acre)
and min. commercial (25%)

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT

Residential

Max. floor area = Lot size x 50 du/acre x Min. unit size x Public space ratio
 = 151 Units x 1200 SF/Unit (Two-bedroom) x 1.2
 = 217,440 SF

Hotel

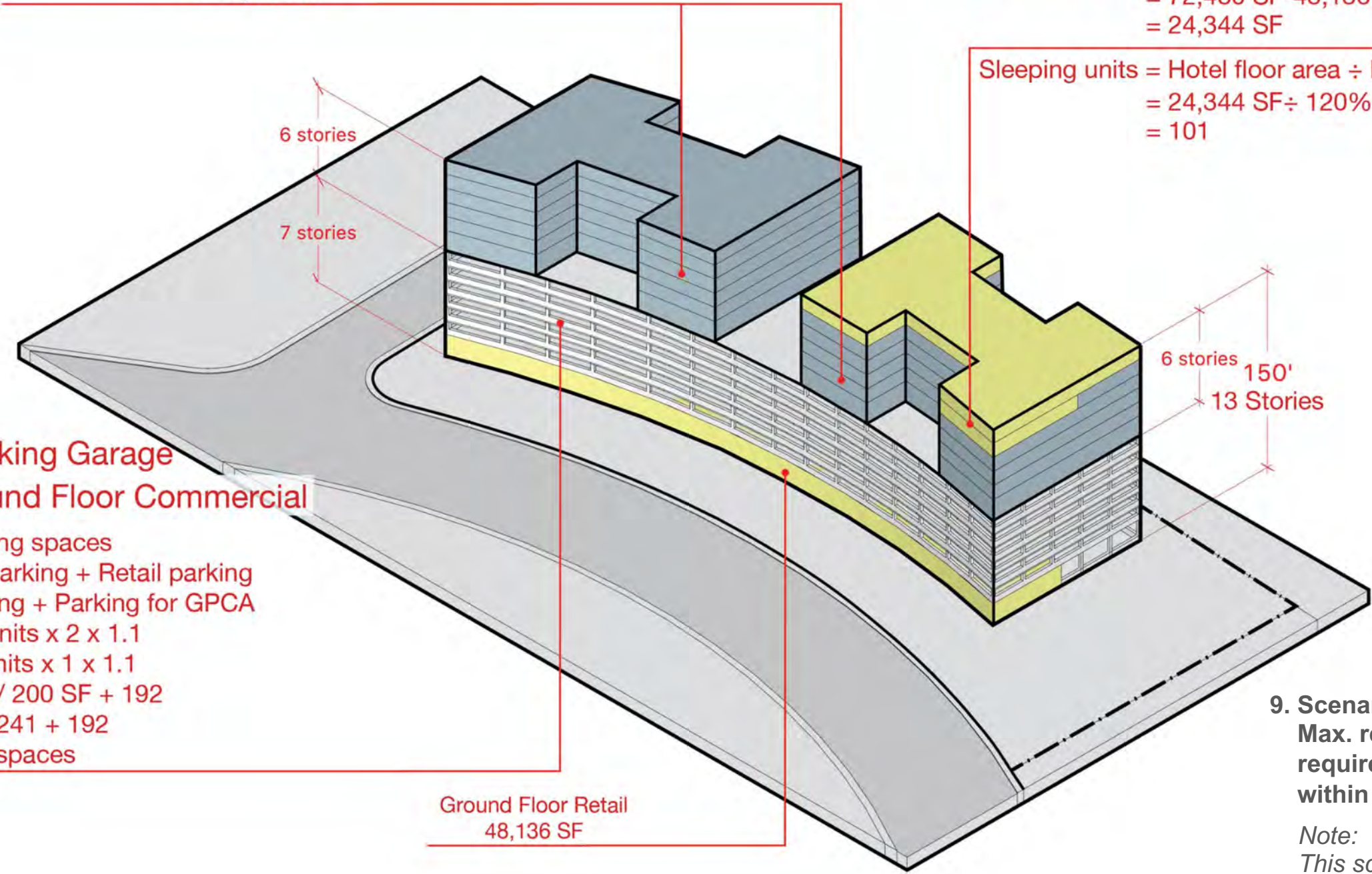
Max. floor area = Residential floor area ÷ 75% x 25% - Retail
 = 72,480 SF-48,136 SF
 = 24,344 SF

Sleeping units = Hotel floor area ÷ Public space ratio ÷ Unit size
 = 24,344 SF ÷ 120% ÷ 200 SF
 = 101

6-Story Parking Garage Above Ground Floor Commercial

Required parking spaces
 = Residential parking + Retail parking
 + Hotel parking + Parking for GPCA
 = Residential units x 2 x 1.1
 + Sleeping units x 1 x 1.1
 + 48,136 SF / 200 SF + 192
 = 333 + 111 + 241 + 192
 = 877 Parking spaces

Ground Floor Retail
48,136 SF



9. Scenario 3:
 Max. residential units and
 required commercial uses (25%)
 within 150' height limit

Note:
 This scenario yields 50 du/acre.

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT

Residential

$$\begin{aligned} \text{Max. floor area} &= \text{Lot size} \times 85 \text{ du/acre} \times \text{Min. unit size} \times \text{Public space ratio} \\ &= 256 \text{ Units} \times 1200 \text{ SF/Unit (Two-bedroom)} \times 1.2 \\ &= 368,640 \text{ SF} \end{aligned}$$

Hotel

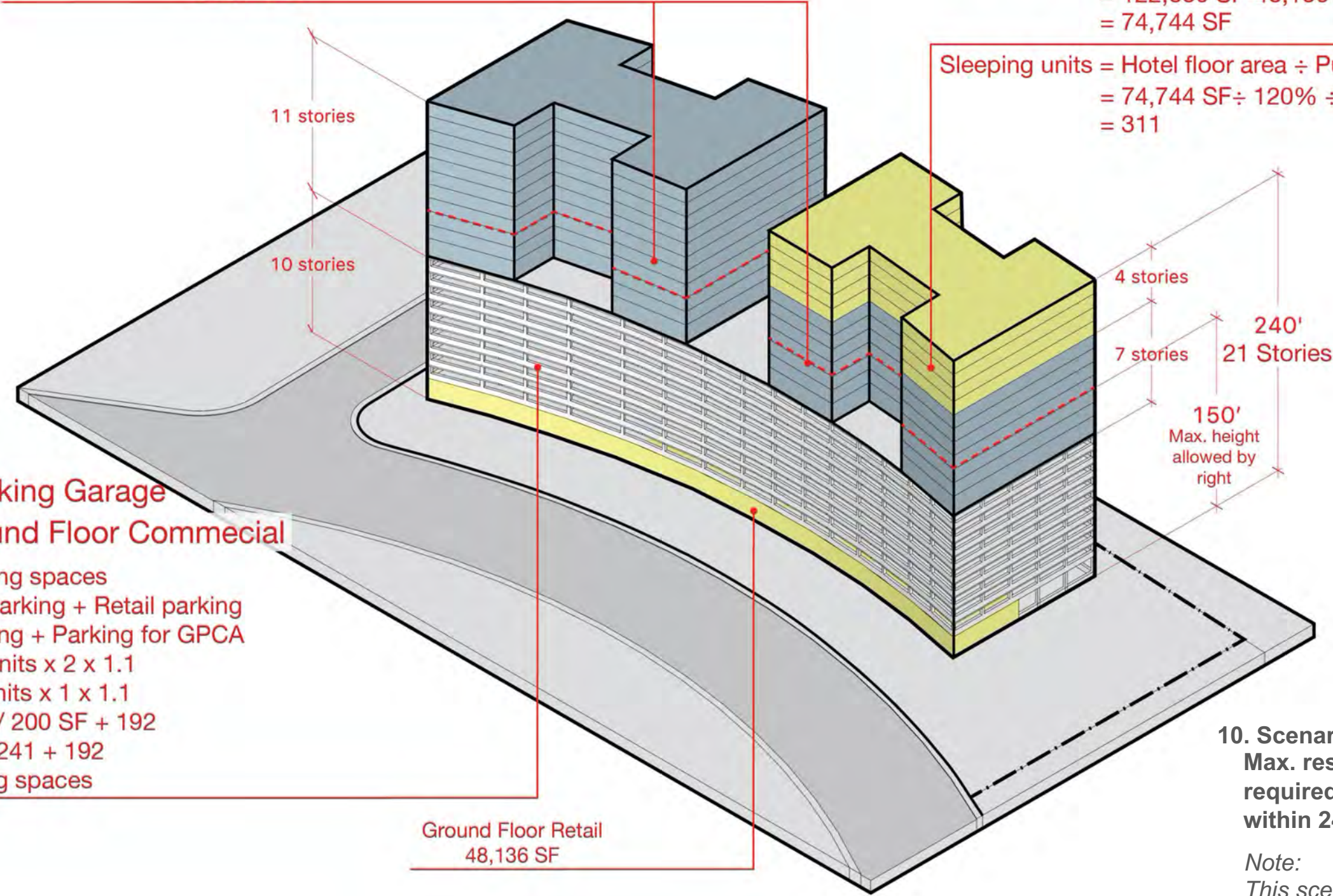
$$\begin{aligned} \text{Max. floor area} &= \text{Residential floor area} \div 75\% \times 25\% - \text{Retail} \\ &= 122,880 \text{ SF} - 48,136 \text{ SF} \\ &= 74,744 \text{ SF} \end{aligned}$$

$$\begin{aligned} \text{Sleeping units} &= \text{Hotel floor area} \div \text{Public space ratio} \div \text{Unit size} \\ &= 74,744 \text{ SF} \div 120\% \div 200 \text{ SF} \\ &= 311 \end{aligned}$$

9-Story Parking Garage Above Ground Floor Commercial

$$\begin{aligned} \text{Required parking spaces} &= \text{Residential parking} + \text{Retail parking} \\ &\quad + \text{Hotel parking} + \text{Parking for GPCA} \\ &= \text{Residential units} \times 2 \times 1.1 \\ &\quad + \text{Sleeping units} \times 1 \times 1.1 \\ &\quad + 48,136 \text{ SF} / 200 \text{ SF} + 192 \\ &= 564 + 342 + 241 + 192 \\ &= 1,339 \text{ Parking spaces} \end{aligned}$$

Ground Floor Retail
48,136 SF



10. Scenario 4:
Max. residential units and
required commercial uses (25%)
within 240' height limit

Note:
This scenario yields 85 du/acre.

ANALYSIS OF POTENTIAL CATALYTIC PROJECT

PROPOSED TRANSFORMATION OF ATKINSON TRUST PROPERTY



Existing Conditions



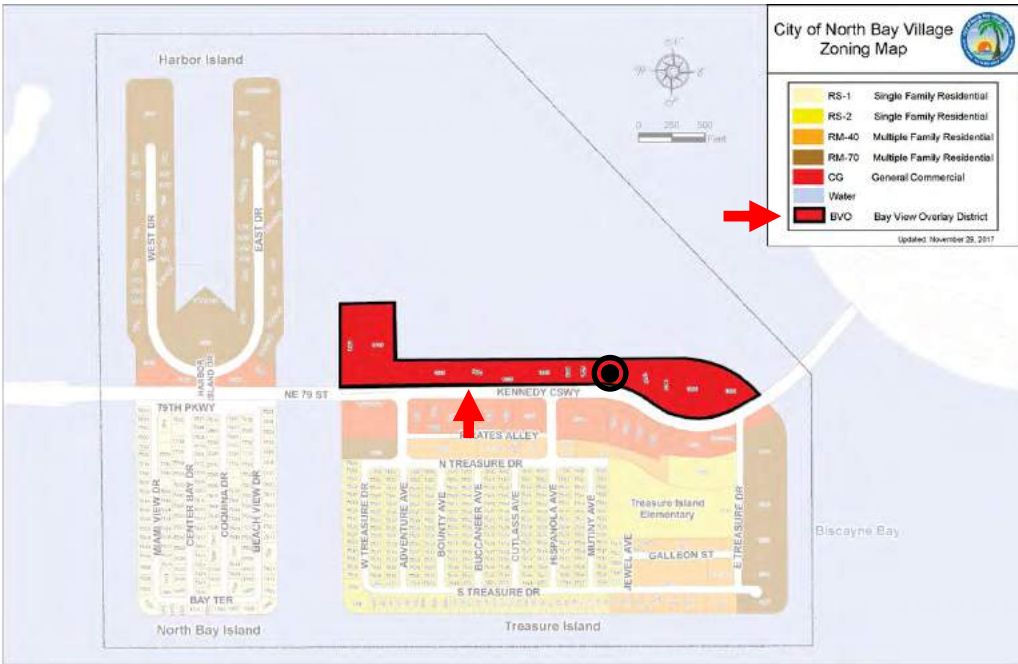
NBV100 Master Plan



Conceptual Design

ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY



Zoning map

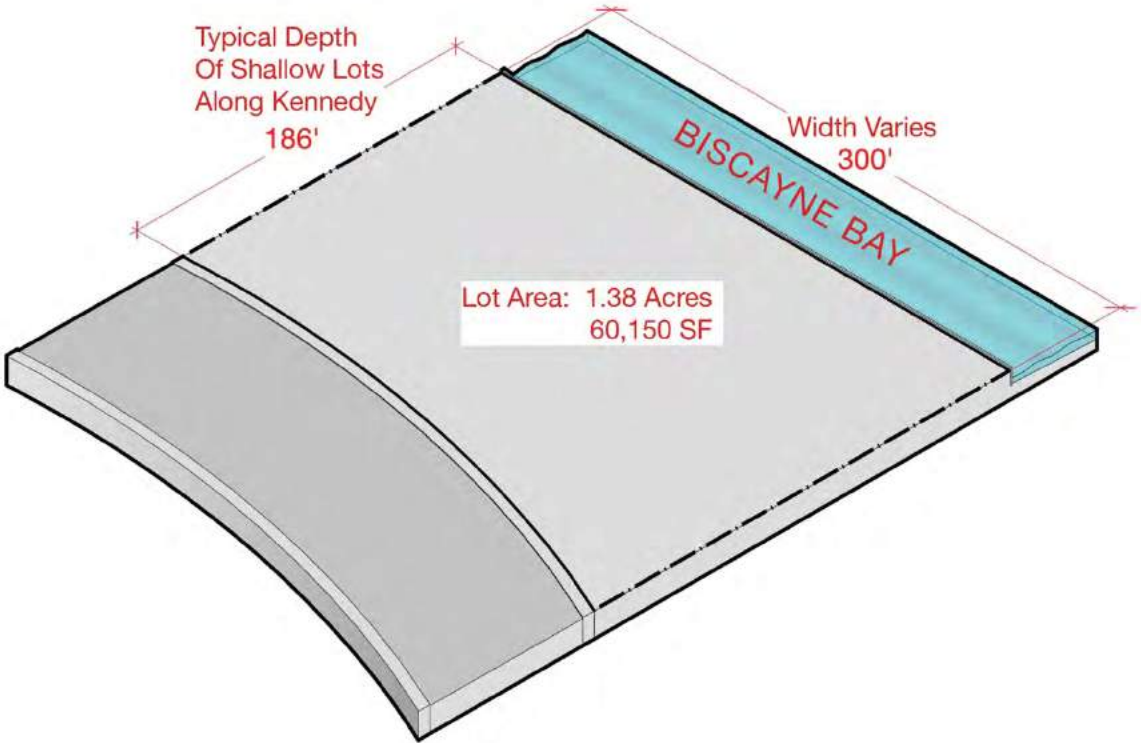


Note: The following pages present an analysis of existing zoning regulations for illustrative purposes only. The drawings, dimensions, and notes do not supersede the NBV Unified Land Development Code (ULDC.)

Typical conditions

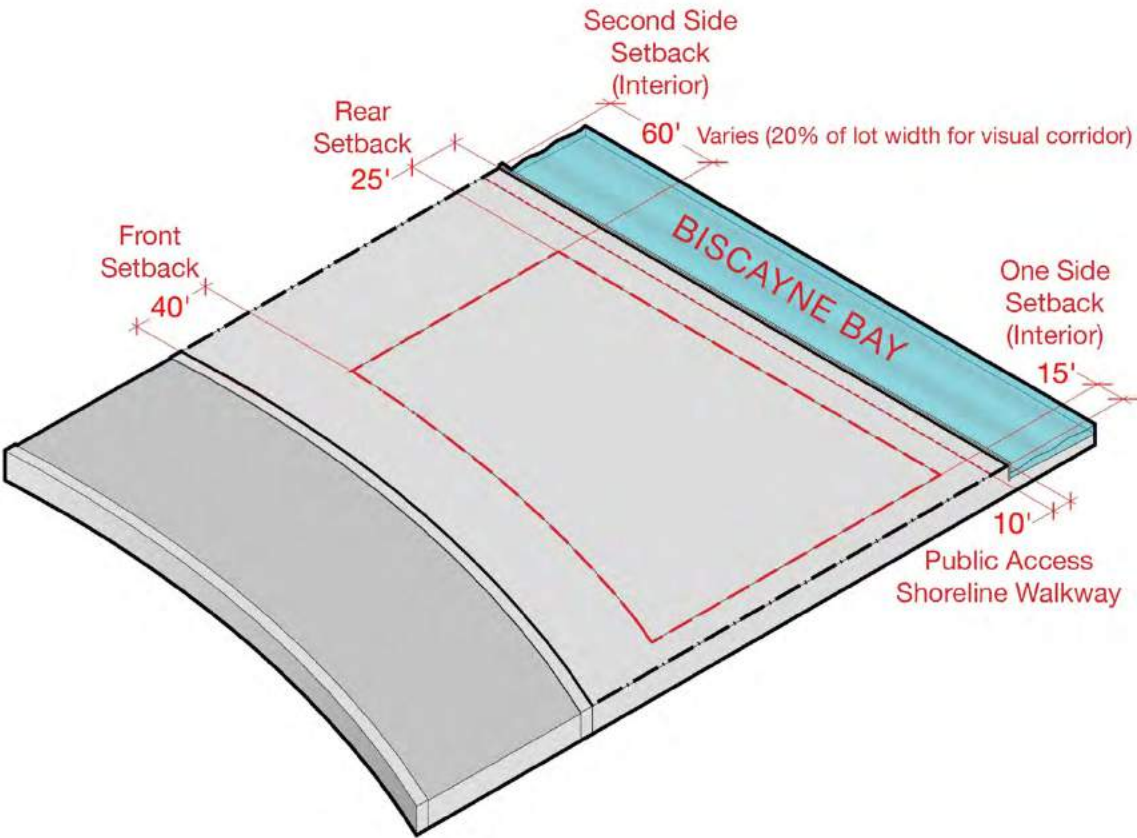
ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY



1. Lot

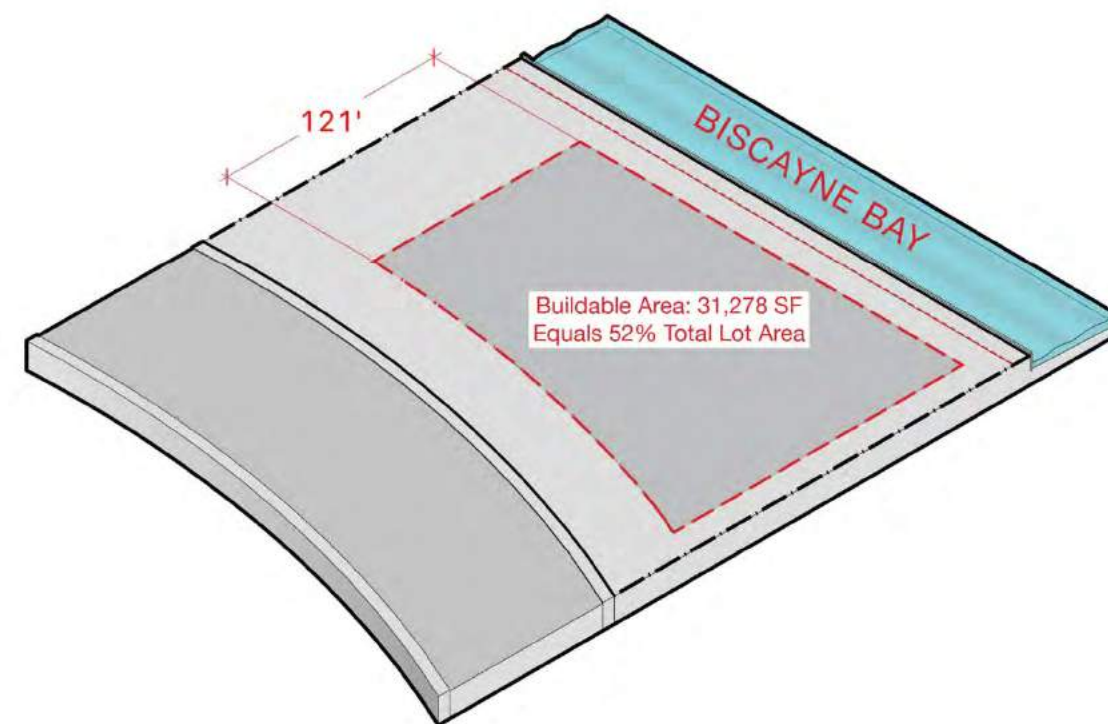
Note:
Actual lot dimensions vary.



2. Setbacks

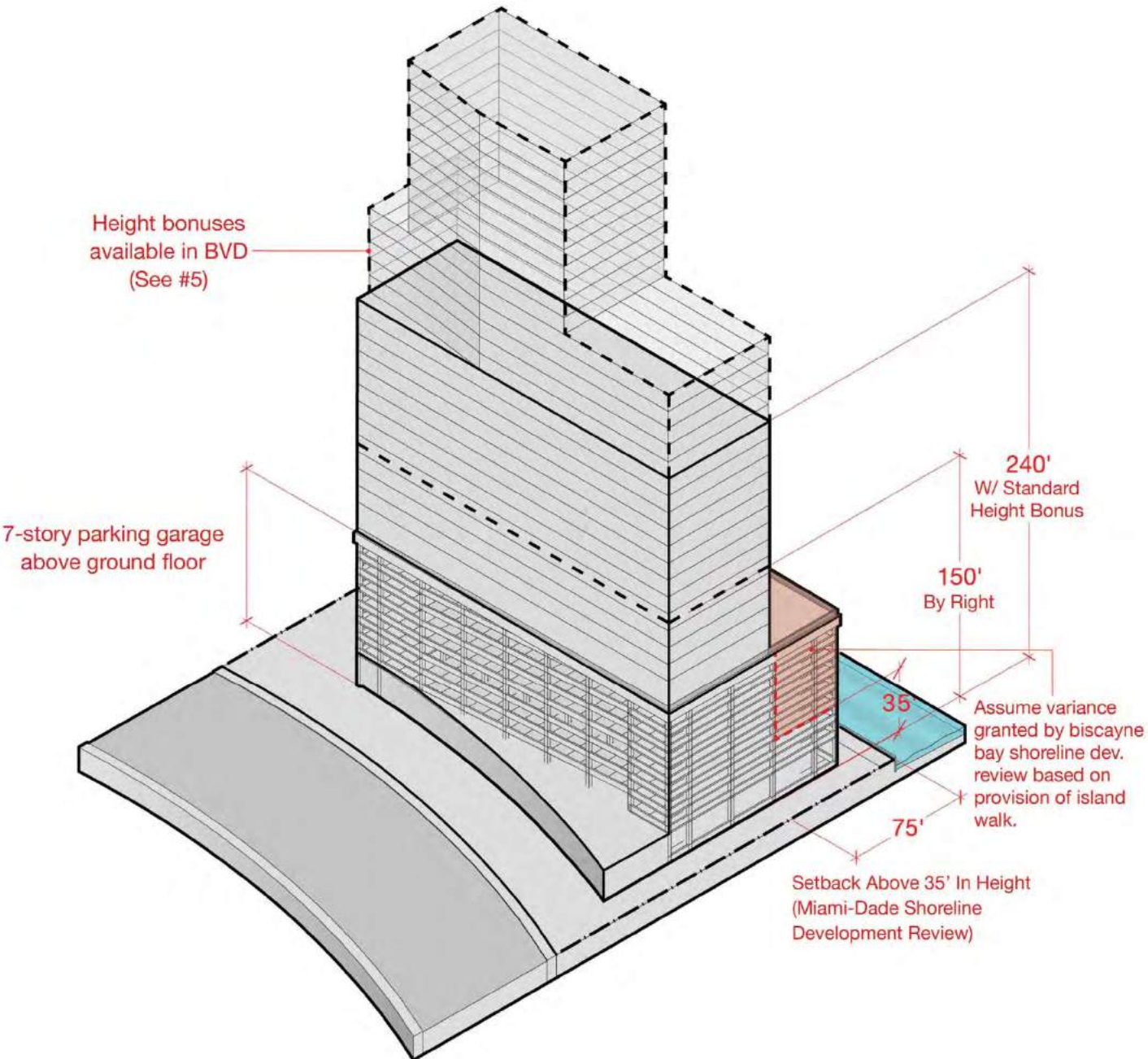
ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY



3. Buildable area

Note:
CG-BVO requires 20% min. pervious area. Therefore, buildable area can not exceed 80% of total lot area. Actual lot dimensions and buildable areas vary.

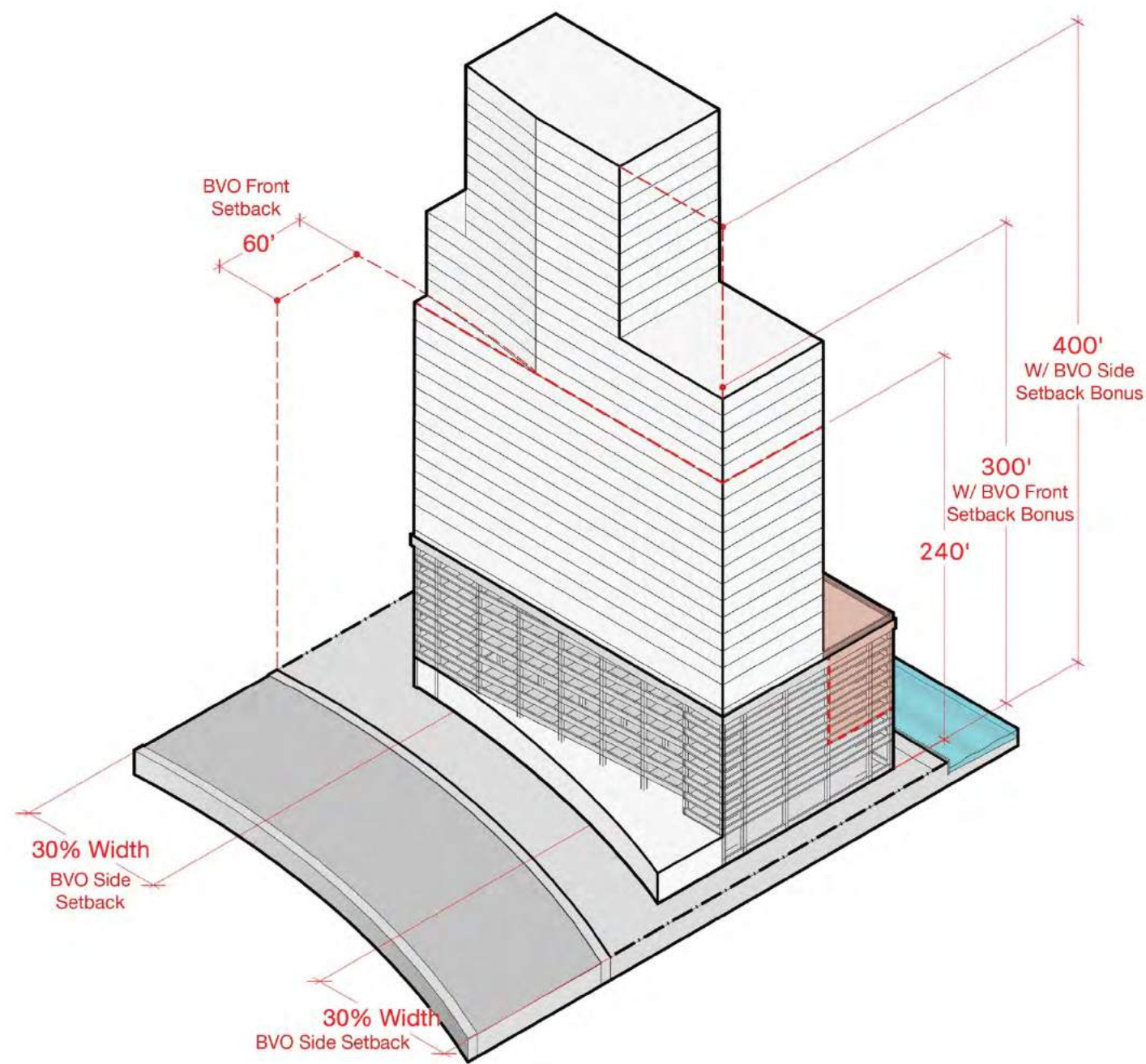


4. Max. building envelope with standard height bonus

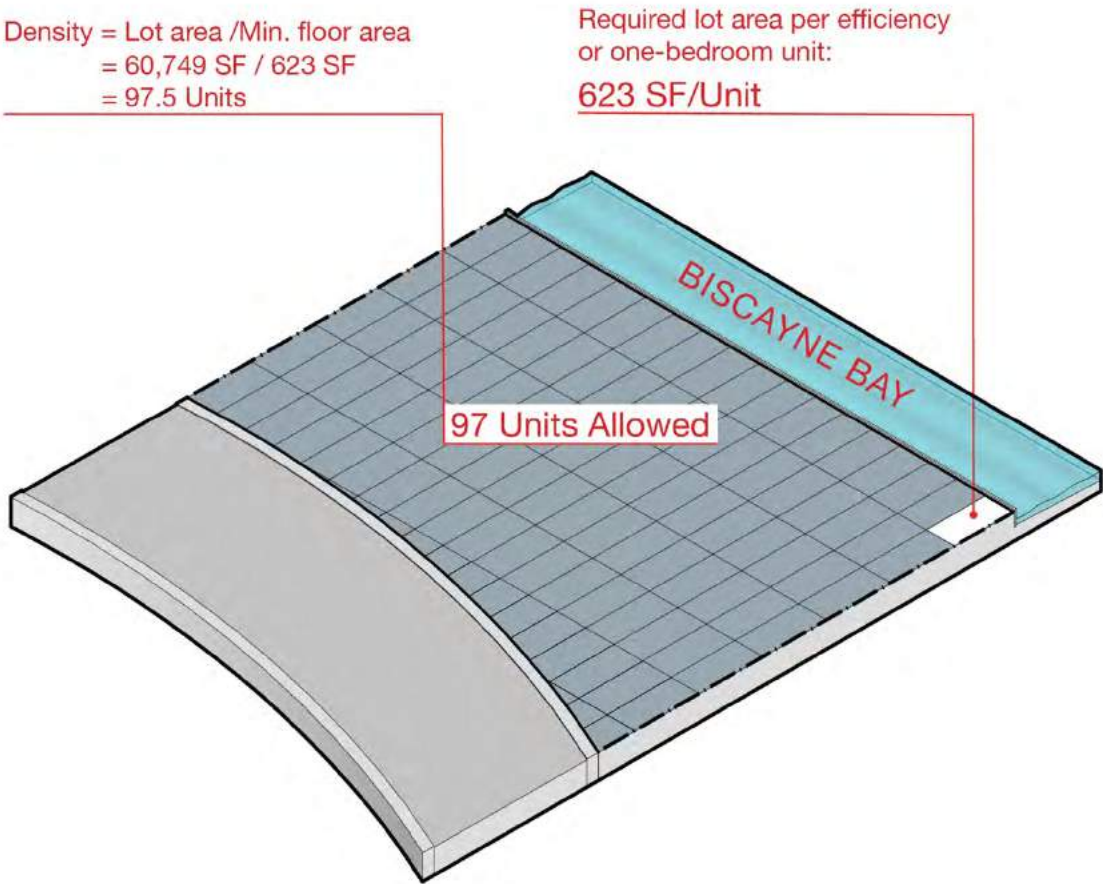
Notes:
Parking garage based on conventional rectangular footprint with two 60' wide bays.
Ground floor retail required on parking structures facing the street.

ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY



5. Max. building envelope with both BVO setback bonuses

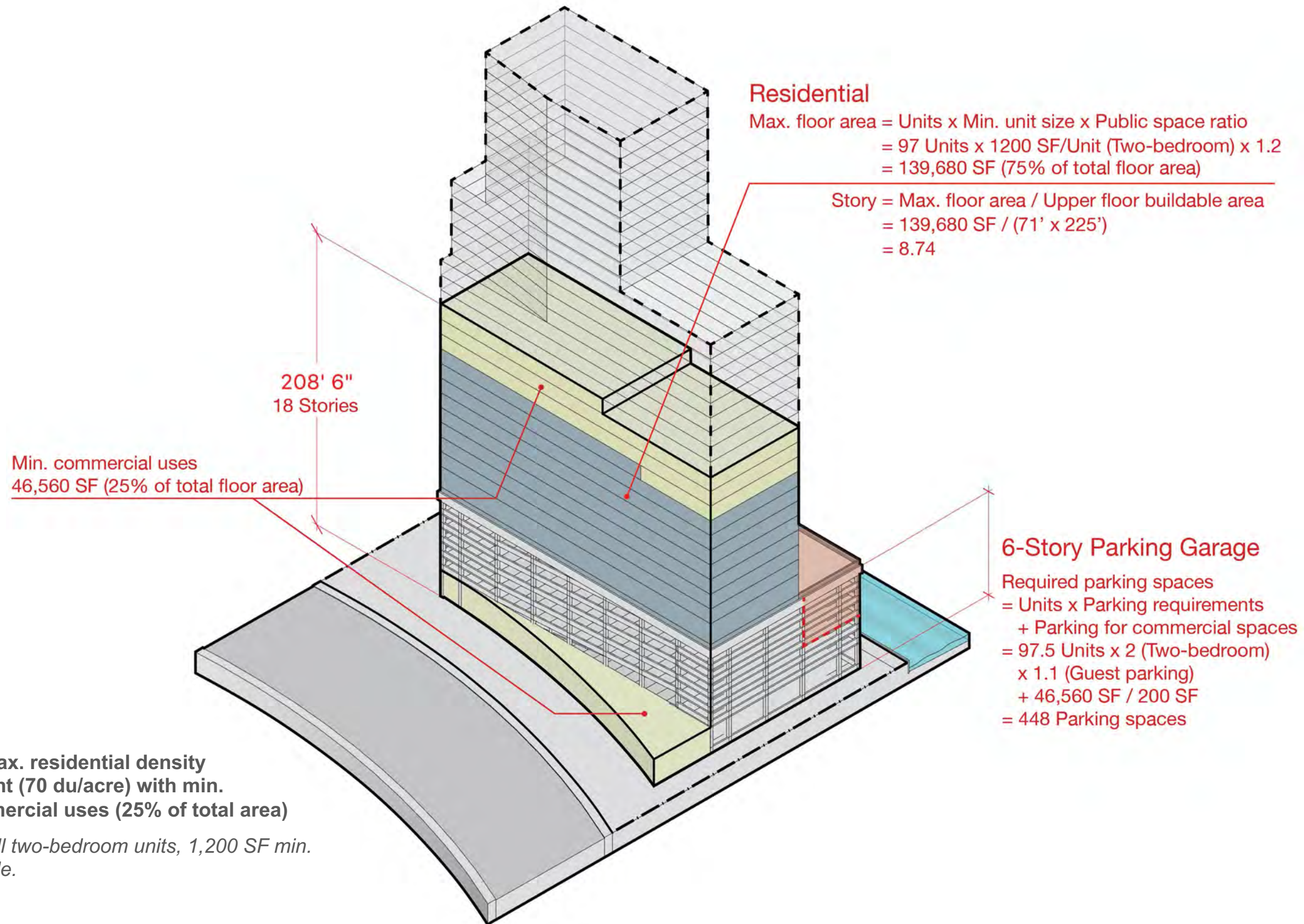


6. Density

Note:
 Max. allowed density is 70 du/acre.
 CG is eligible for TDR bonuses up to 100 du/acre.

ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY

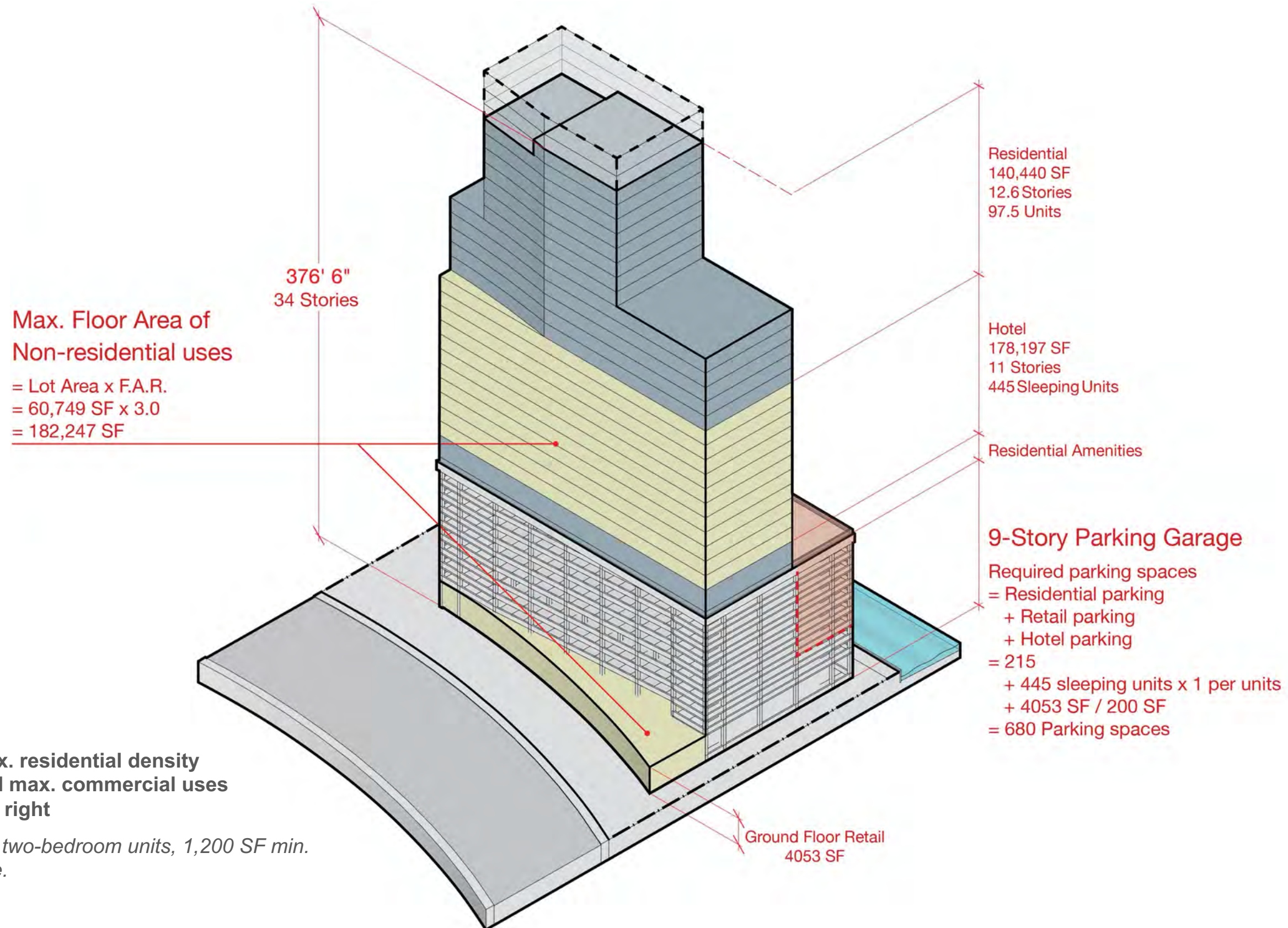


7. Scenario 1: Max. residential density allowed by right (70 du/acre) with min. required commercial uses (25% of total area)

Assumption: All two-bedroom units, 1,200 SF min. required by code.

ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY



8. Scenario 2: Max. residential density (70 du/acre) and max. commercial uses (3.0) allowed by right

Assumption: All two-bedroom units, 1,200 SF min. required by code.

ANALYSIS OF PROPOSED CATALYTIC PROJECT

MIXED-USE TOWER AT TREASURE ISLAND, NORTH SIDE OF KENNEDY CAUSEWAY



Podium and tower engage thoroughfare frontage



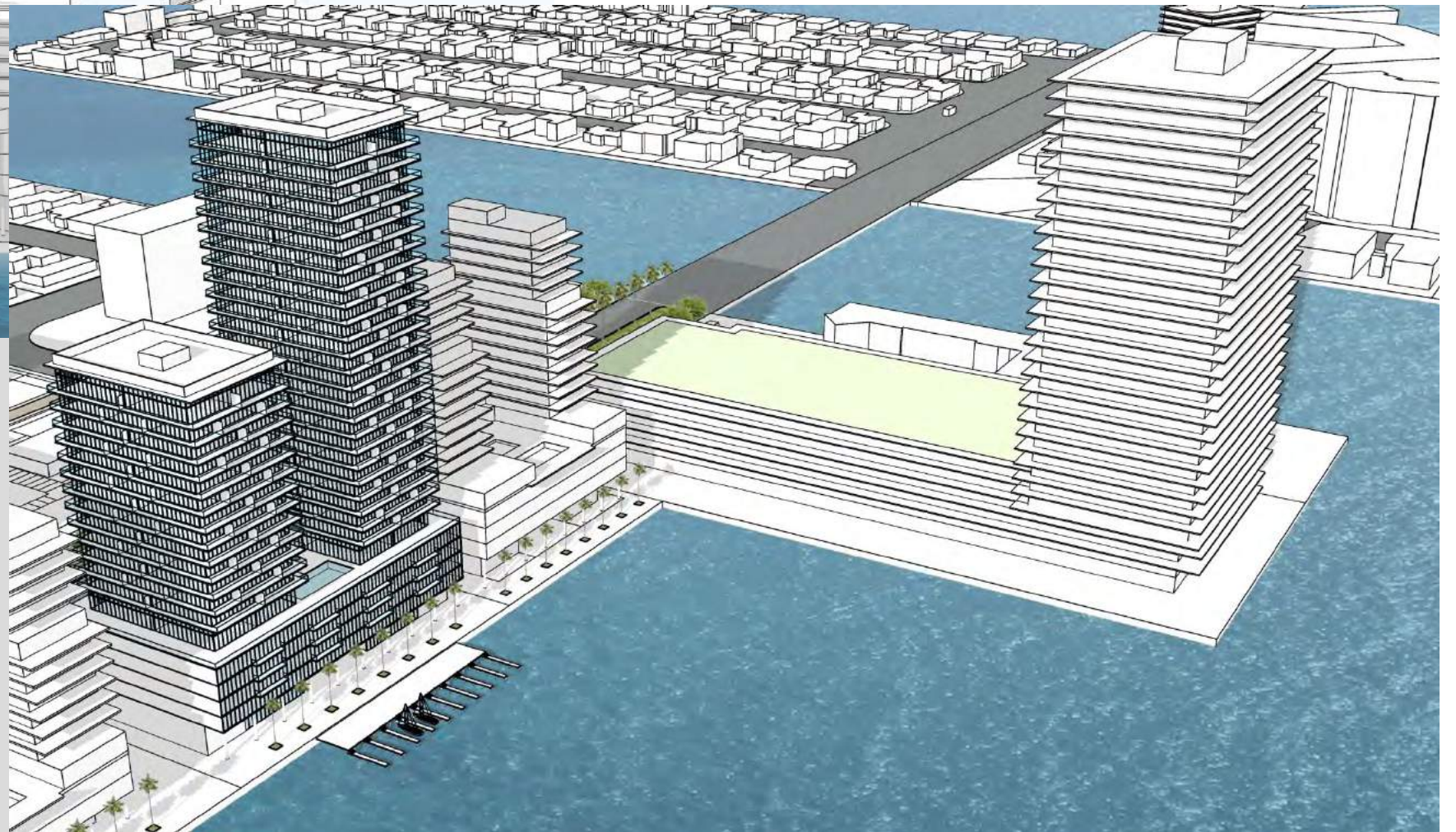
Elevated liners cover parking levels at waterfront

ANALYSIS OF PROPOSED CATALYTIC PROJECT

MIXED-USE TOWER AT TREASURE ISLAND, NORTH SIDE OF KENNEDY CAUSEWAY



Alternate project with two thinner towers on shared podium

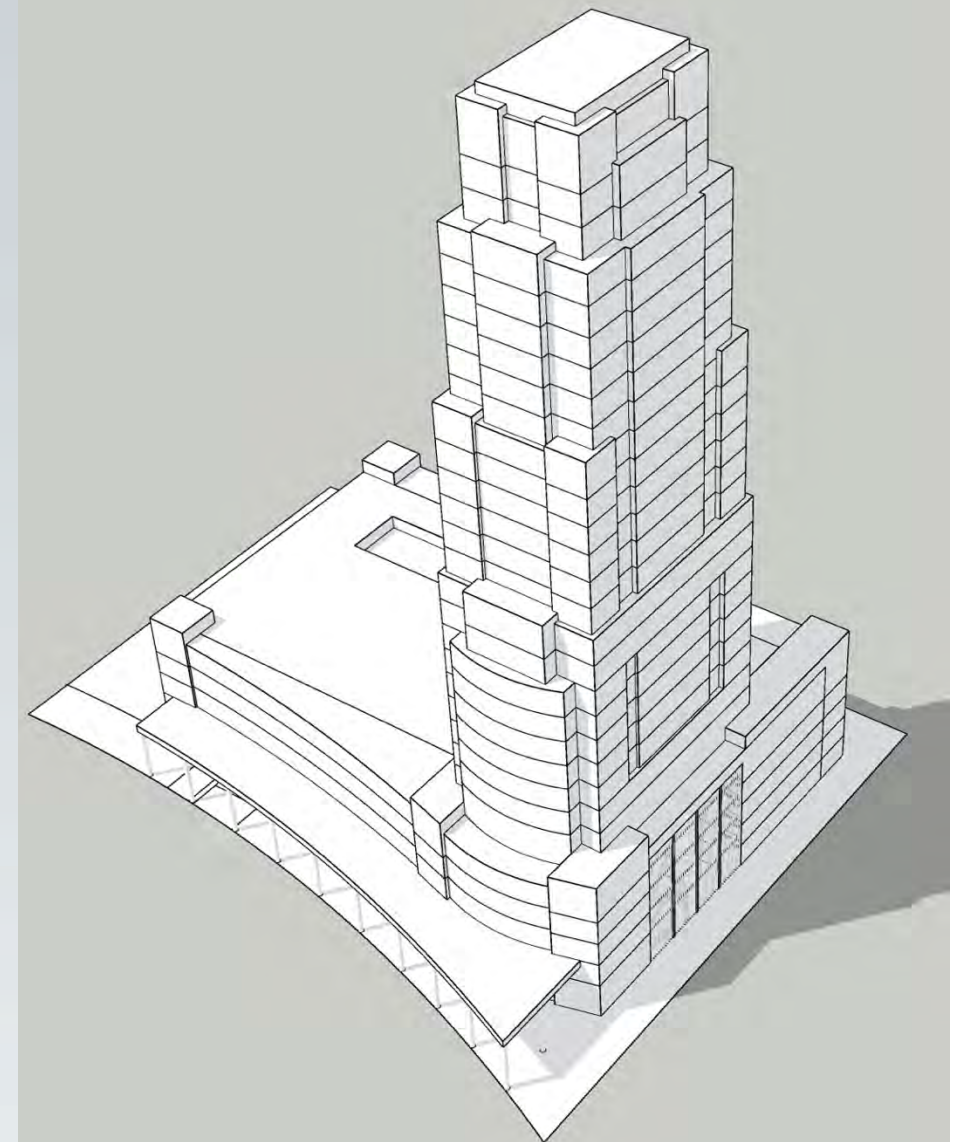
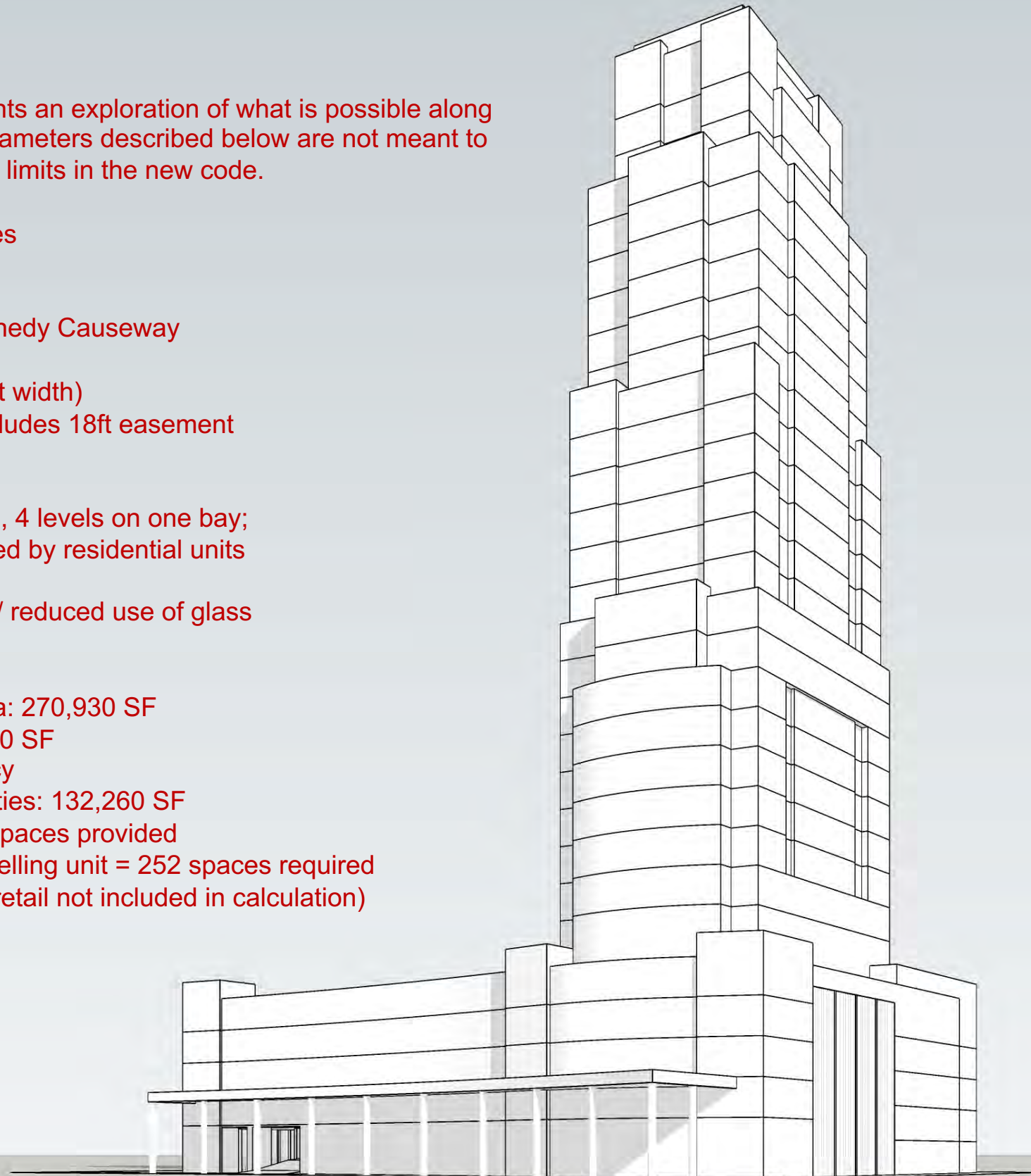


Elevated liners cover parking levels at waterfront

PROPOSED DEVELOPMENT FOR A CG-BVO LOT

Note: This proposal represents an exploration of what is possible along Kennedy Boulevard. The parameters described below are not meant to translate literally into specific limits in the new code.

- **Height:** 325ft → 28 stories
- **Setbacks**
 - Front: 20ft - along Kennedy Causeway
 - Side 1: 15ft
 - Side 2: 60ft (20% of lot width)
 - Rear: 25ft Setback, includes 18ft easement
- **Parking:**
 - Split structured parking, 4 levels on one bay;
 - 5 on the other, both lined by residential units
- **Style:** Art Deco-inspired / reduced use of glass
- **Program Areas:**
 - Gross Building Area: 270,930 SF
 - Residential: 161,240 SF
 - 86% Efficiency
 - Parking and Amenities: 132,260 SF
 - 346 parking spaces provided
 - 1.5 space/dwelling unit = 252 spaces required (ground floor retail not included in calculation)
- **FLR** = 4.5
- **Density:** 121 DU/Acre





<https://northbayvillage-fl.gov/nbv100>