Buried Treasure: Transforming Pirates Alley into North Bay Village's Crown Jewel

By: Urban Land Institute, Leadership Institute

June 2024

Contents

1. OVERVIEW OF APPROACH

North Bay Village ("NBV" or the "Village") enlisted the Urban Land Institute ("ULI") Leadership Institute with transforming the underutilized Pirates Alley ("Pirates Alley" or the "Alley") service road on Treasure Island by providing creative solutions to an otherwise challenging topic. The members of our Team who were tasked with developing this plan consisted of six (6) individuals with diverse backgrounds in the development and real estate sector. Our Team members are:

- Haley Boatright, Research Manager, Colliers;
- Alex Leon, Partner, Partner, Haber Law LLC;
- Arthur Noguera, Owner/Broker, Urbannic LLC;
- Benji Power, Director, Real Estate Development & Social Impact, Procida Development Group;
- Chris Wang, Managing Director, Investments, Parkway Properties, Inc.; and
- Alex Arostegui, Vice President of Development, Pinnacle.[1]

In developing a transformative plan for NBV, our team was tasked with addressing certain questions. Those questions were as follows:

- What are creative solutions for activating urban alleys into lively pedestrian places?
- How can the design attract tourists and help create "Downtown North Bay Village"?
- What policies and strategies can enable the Alley's transformation?
- How can the Alley be designed to seamlessly blend commercial and residential areas?

In formulating a plan to address these questions, the Team visited the Alley on several occasions, met with various key stakeholders, engaged consultants, surveyed the neighboring community, and studied other comparable municipal projects and alley revitalization programs. The following Report will address the questions posed in the scope of work and provide recommendations related to the furtherance of the stated goals of NBV.

This Report provides for both short-term and long-term improvement suggestions for the revitalization of Pirates Alley. Notwithstanding budgetary constraints, our Team believes the short-term improvements can be achieved within two (2) years. The long-term improvements will likely require at least five (5) to ten (10) years to achieve with the exact timing dependent on the specific improvement project.

[1] The bios of each of the Team members are included in this Report as Exhibit "A".

2. BACKGROUND

North Bay Village

NBV is a residential island community situated between the cities of Miami and Miami Beach, along the 79th Street Causeway, in the middle of Biscayne Bay. It is a three-island paradise consisting of North Bay Island, Treasure Island and Pelican Harbor Marina. NBV began forming in the mid-1940s, with dredging and bulk-heading that created Harbor Island and Treasure Island. Shortly after, in 1945, NBV was incorporated.

The Village offers a variety of residential options from high-rise condos, single-family homes, and MiMo-style (Miami Modern) garden apartments and bungalows. Boasting sprawling waterfront views and easy boat access to Biscayne Bay and the ocean, NBV provides residents with a unique coastal living experience. Additionally, the Village features two family-friendly playgrounds, a dog park, and a variety of restaurants and amenities, making it an ideal destination for families and individuals alike.

What initially served as a winter haven for residents transformed into a year-round homestead for many in the 1970s. Since the 2000s, the predominant trend in NBV has been the construction of high-rise luxury condominiums, a trend that continues today. In fact, numerous mixed-use developments incorporating ground-floor retail and residential spaces are in the planning stages, reflecting the Village's commitment to sustainable growth and urban development.

With the population steadily increasing, NBV recognizes the importance of enhancing walkability and fostering community engagement across the entire island. Therefore, the transformation of the underutilized and underappreciated Pirates Alley into a pedestrian walkway aligns with these goals and presents a unique opportunity for NBV to provide residents and visitors with a safe and inviting space to enjoy the island's scenic beauty and vibrant, community atmosphere.

Pirates Alley

Pirates Alley is currently a two lane, one-way, alleyway measuring 30 feet wide and 957 feet long without a designated sidewalk for pedestrians. Currently serving as a utilitarian, minimally used service lane, Pirates Alley is an access route for service and delivery vehicles. Figures 1 and 2 below show images of the current state of the Alley. The analysis area for this Report does not go beyond Adventure Avenue to the west or Hispanola Avenue to the east, as outlined in Figure 3 below.

Figure 1 - Current State of Pirates Alley, Street View

Figure 2 - Current State of Pirates Alley, Aerial View

Figure 3 - Analysis Area

North Bay Village Master Plan ("NBV100")

NBV's award winning Master Plan, approved in 2020, already outlines an incremental activation transformation on Pirates Alley to improve the quality of life of residents. Full plans can be seen on pages 46 and 47 of NBV100.[2] According to NBV100, residents want to see Pirates Alley turned into a pedestrian friendly public amenity that could become increasingly active as NBV evolves. NBV100 outlines three (3) transformation periods, short-term which includes landscape improvements, lighting, paint, and repaving a shared use path, mid-term which includes temporarily activated community space, and long-term which includes more ambitious redevelopments that activate food and beverage options.

NBV engaged ULI to assist with the following tasks:

- Research best practices
- Analyze data
- Engage stakeholders
- Develop recommendations including urban design proposals, strategies for phasing and zoning overlays to activate the Alley, and implement the additional recommendations; and

[2] NBV100, in its entirety, is attached to this Report as Exhibit "B."

- Create a presentation to the Village Commission, Village Manger, and relevant staff members.

North Bay Village's Ongoing Sustainability & Resilience Efforts

Our Team's engagement with NBV focused primarily on how to leverage Pirates Alley into a valuable public space for the community, but we also understood that any improvement work focused on the Alley needed to consider and incorporate NBV's existing environmental resiliency and sustainability strategies. The Village's islands are uniquely susceptible to the negative impacts of climate change and sea level rise, and much of its original infrastructure is still in place and not adequately equipped to handle these impacts.

The Village's elected leadership and staff have, in the past few years, focused significant energy and funds towards planning for and implementing infrastructure changes that will help it be more resilient in the face of the impacts of rising sea levels and increased weather-related events associated with climate change. Our Team reviewed the Village's existing efforts, applauds them for their proactive response and planning efforts, and, thus, strongly recommends that any infrastructure improvements along the Alley should be intentionally planned in synchronization with the Village's existing resiliency efforts.

The Village's "Sustainability and Resilience Task Force" and "Stormwater Capital Improvement Plan" are two key efforts that represent how the Village has taken on responding to its unavoidable vulnerability in the face of climate and environmental risks. These efforts have helped provide a strategic focus to the Village's master planning, public works and capital improvement plan budgeting efforts.

As the Pirates Alley improvements are planned, engaging with the elected leaders, staff, and residents that are involved with these efforts will ensure that investments associated with making the Alley into a more engaging public space will also directly support the Village's resiliency and sustainability goals and plans. The prioritization of green infrastructure components within the Alley's short-term improvements will help reduce how rain, flood and standing waters along the alley spill into neighboring streets and properties. Our Team's recommendations regarding resiliency are further outlined below in Section 8.B.

3. VILLAGE MEETING

On February 15, 2024, our Team met with the following key people from North Bay Village ("NBV Government"):

- Rachel Streitfeld – Commissioner
- Dr. Ralph Rosado – Village Manager
- Leonardo Cosio – Chief of Staff
- Christian Molina – Legislative Aide

This meeting was immensely productive, with the NBV Government providing candid observations of the current state of Pirates Alley, their hopes for what it could become, and an acknowledgement of its limitations. The NBV Government also provided an overview of NBV100 along with much needed background on how that vision was crafted between public and private stakeholders alike. Our Team was also privileged enough to participate in a walking tour of the Alley.

Figure 4 – Our Team's meeting with NBV and walking tour of the Alley

During this walking tour, our Team made the following observations:

- Walkability: Pirates Alley is currently used by pedestrians, but the user experience is, admittedly, suboptimal. Most of the activity observed was that of vehicular access, often at quite fast speeds, traveling in the wrong direction, and too close to pedestrians to be considered safe.
- Delivery Hours: NBV is supportive of restricting commercial trucks using Pirates Alley for deliveries/pick-ups to only certain hours of the day to reduce congestion and allow more pedestrians to utilize the Alley.

- Current Conditions: NBV acknowledges that the existing condition of Pirates Alley is not ideal and requires a staged approach to solutions.
- Zoning Overlay: Significant new development is slated to take place along the Alley's north side through multiple redevelopment projects, and the Village would like its current zoning code to incorporate an overlay zone for the Alley, informed by the guiding principles from the NBV100 Master Plan, so that new development along the Alley will be required to have first floor edges and facades that interact with the Alley in a way that supports it becoming a positive public space.

4. STAKEHOLDER MEETINGS

Our Team made efforts to communicate with four (4) key stakeholders: (1) Sunbeam Properties, the largest property owner of properties near Pirates Alley, including parcels that directly border the Alley; (2) KLA Schools, located on the corner of Pirates Alley and Hispanola Avenue; (3) NBV residents; and (4) the owner of the properties located at 1524 and 1500 79th Street Causeway. Summaries of these efforts are below:

1.) Sunbeam Properties ("Sunbeam") – As the largest property owner of land surrounding the Alley, our Team scheduled a time to speak with James Bry, EVP of Development for Sunbeam. During our conference with Mr. Bry, we learned more about the three (3) phases of development Sunbeam plans to undertake in NBV and their goal to make NBV a 15-minute city for everyone. Phase one, located at the corner of Adventure Avenue and the 79th Street Causeway, will be a multifamily development with ground floor retail (food and beverage) and a dog park. Demolition of the existing structure is planned for the end of 2025. Regarding Phase one, Sunbeam communicated a desire to extend Pirates Alley over Adventure Avenue, creating a harmonious connection between Pirates Alley and the water. Phase two focuses on Sunbeam's most northern NBV property across the 79th Street Causeway and will be less affected by changes to Pirates Alley. Phase three, which is not expected to take shape in the short term, abuts the alley to the North, and is currently occupied by Presidente Supermarket. Sunbeam was supportive of implementing service hours on the Alley so that it can serve primarily as a walkway. Generally, Sunbeam was open and receptive to ideas brought up by our Team. Moreover, they agreed that it is unlikely Pirates Alley will ever have heavy commercial use and shared the idea of the long-term vision of the Alley being transformed into a linear park/paseo/pedestrian walking area/public use.

2.) KLA Schools of North Bay Village ("KLA") – Our Team exchanged emails with Sophia Zamor Santa at KLA Schools of North Bay Village. KLA shared the Team's enthusiasm for creating a more vibrant and safer environment for residents that frequent Pirates Alley but had concerns about the possible negative impacts, primarily the traffic flow

during pick-up and drop-off times. KLA communicated that they chose that specific site for the school because of the access from two different streets.

3.) NBV Residents – The Team posted an explanation of some of the proposed short-term and long-term solutions for Pirates Alley in the *North Bay Village Residents Speak* Facebook group on Tuesday, June 24th, 2024, which has 4,000 members and asked residents for feedback in a survey format. As of the date of this Report, the NBV Residents were largely supportive of the recommendations and ideas proposed for the revitalization of the Alley.[3]

4.) Owner of 1524 & 1500 79th Street Causeway – The Team made several attempts to contact the current owner of 1524 & 1500 79th Street Causeway, but these attempts were unsuccessful. The northern parcel (1524), which does not abut the Alley, is currently occupied by a restaurant, Sushi Siam. In contrast, the southern parcel (1500), which abuts the Alley, is currently an undeveloped grass patch. The Team sees this southern parcel as an opportunity to provide a small green space for the community. We hoped to discuss the possibility of converting the 1500 parcel into a public green space, thereby integrating it into the proposed revitalization of the Alley.

5. CONSULTANT MEETINGS

Our Team engaged two (2) consultants: (1) Tony Garcia, Principal of Street Plans; and (2) Sylvia Beltre, Paola Davalos, and Ytve Guerrera from Ardurra Group, Inc. to ensure comprehensive coverage of all aspects, from planning and design to implementation. Summaries of these meetings below:

<u>Street Plans – Tony Garcia, RA, Principal</u>

Street Plans is an urban planning and urban design consulting firm, founded in Miami, Florida. It has offices in Miami and in other cities throughout the country, and its staff have extensive experience with activation and redevelopment projects for public spaces similar to Pirates Alley. Tony Garcia, one of its founders and principals, spoke with our team and provided insight pertaining to his views of how Pirates Alley can evolve into more of a public space for recreation.

Tony helped our team explore how the Village could leverage the powerful place-making effects of tactical urban design strategies, which involves using short-term, low-cost, and scalable interventions to catalyze long-term change to a place. The Street Plans team has used these design strategies throughout similar client projects in other cities, in which they have helped narrow streets and make alleyways become spaces that people enjoy using for recreation and congregation.

We also explored Street Plans' understanding of how a zoning overlay strategy could help ensure that future real estate development projects abutting the Alley also help

[3] The survey closes on July 3 and will be provided to the NBV Government in advance of our Team's presentation. The Survey is incorporated by reference in this Report as Exhibit "C."

improve the quality of public space that it offers. Because of the unique context of Pirates Alley, with it being a small, limited space, they advised that the Village should avoid creating an overlay zone that has very prescriptive guidelines, as there is not one right design that this overlay zone should require. Instead, a successful overlay zone for Pirates Alley should require that any new development project along the Alley consider the Village's goals of improving it as a public space and propose ways in which its buildings can be designed to interact with the public space.

The Village can then work with the development teams to have them design and incorporate connections between the Alley and any new abutting buildings, so that the pedestrian experience is also enhanced by the design of the buildings themselves and by the additional public spaces they create. Developers will also see a benefit to connecting their projects with the Pirates Alley public spaces, as these physical connections can enhance the success of their projects by making their first-floor retail more successful and adding to the quality of life they offer their occupants.

Ardurra Group – Sylvia Beltre, Paola Davalos, and Ytve Guerrera

Our team also met with Sylvia Beltre, Paola Davalos and Ytve Guerrera from Ardurra Group, Inc., a national engineering firm that specializes in civil engineering. The Ardurra team was familiar with the unique challenges associated with the Alley and NBV's goals. During the meeting, our team presented Ardurra with the proposed recommendations and the Ardurra team provided us with their technical insights into our team's ideas and comments as to the feasibility of some of the options.

Specifically, we discussed the pros and cons of a shared used path and pedestrianization of the Alley. The Ardurra Team provided us with the technical constraints of how this shared used path could work while maintaining vehicular access to the Alley and brainstormed the resiliency considerations that an elevated versus at grade pedestrian walkway would address. Notably, an elevated pedestrian walkway would provide a safe separation from vehicles in the Alley and give the Village a logistically efficient way to address drainage concerns in the Alley. However, a more comprehensive traffic analysis would be required to address how this elevated walkway would work with the vehicular traffic entering the Alley from KLA as well as other residential buildings on the south side of the Alley.

6. INSPIRATION

In addition to the inspirations for the Alley outlined in the NBV100, our Team sought both local and national inspiration for ideas on how to reimagine Pirates Alley. Locally, the revitalization of Giralda Plaza (formerly a portion of Giralda Avenue) in Coral Gables was instrumental in showing what is possible when there is a "Clustering of Complementing Uses within a Compact Setting" or CCC. The premise of CCC is to bring together people,

activities and uses in a pedestrian-friendly manner such that each facet feeds off one another, thereby stimulating further economic growth and activity in a virtuous cycle. Although Pirates Alley is not comparable to Giralda Plaza today given that the latter is much more commercialized with respect to office and retail density, the implementation of NBV100 over time should narrow this gap between the two destinations.

Prior to 2015, Giralda Avenue had been marketed as “Restaurant Row”, but the existing condition left much to be desired: it was a two-lane road with parallel parking and a narrow sidewalk that limited the prospects for outdoor dining and entertainment. Many businesses struggled and it seemed at times that there was a revolving door of concepts opening and closing due to the lack of activation on the street.

Figure 5 - A view of Giralda Avenue prior to redevelopment in 2015

Credit must be given to the City of Coral Gables for recognizing that this was a problem that needed solving. Coral Gables hired a world renown architectural firm out of New York City to implement a redesign for the portion of Giralda Avenue between Ponce de Leon Boulevard and Galiano Street. The reimagined paseo called for a single surface curb-free environment spanning the full width of the road. European plazas were a clear inspiration as trees and colorful granite pavers were implemented as seen in Figure 6 below. Not sacrificing form for function, these trees and pavers were also designed to maximize resiliency with respect to drainage. Movable bollards were also included which provided Coral Gables the optionality to allow for vehicular traffic at certain times (most notably for emergency vehicles) while restricting vehicular access most of the time.

Figure 6 - A view of Giralda Avenue in 2019

The $5 million redevelopment of Giralda Avenue was accomplished through a mix of State, nonprofit and local funding which included disbursements from the Sunshine State Financing program, General Obligation Bonds, Art in Public Places, and general capital improvements/special assessments. Completed in late 2017, "Giralda Plaza" has become a model of success in showing how it is possible to redevelop an urban core thoroughfare from a vehicular-dominant setting to a vibrant pedestrian-friendly paseo. After the opening in 2017, the Coral Gables City Commission approved a new zoning overlay for the Plaza which encourages the development of boutique hotels and residential on the upper floors of the commercial buildings nearby while encouraging the implementation of balconies and removing parking requirements for buildings three stories and under. Although different in many respects, the Giralda Plaza redevelopment provides several concepts that can be applied to Pirates Alley such as CCC, zoning overlays, and a phasing approach to minimize negative impacts while accomplishing long term vision.

Looking beyond local inspirations, our Team also researched alley revitalization projects in other cities including Chicago's Green Alleys program, Washington D.C.'s Cady Alley, and others.

Chicago's Green Alleys program began in 2001 by the Chicago's Department of the Environment[4] to utilize the more than 1,900 miles of paved impermeable alleyways to address, among other things, stormwater management, heat reduction, material recycling and energy conservation. The Green Alley program focused on a few main techniques, combined as appropriate to particular alleyway, to achieve their objectives: (1) drainage improvement through proper pitching and grading, which negated the need for more expensive sewer infrastructure; (2) installation of permeable pavement and green infrastructure such as rain gardens, green roofs, and bioswales; (3) installation of high

[4] Chicago's Department of the Environment was dissolved in 2012. The Green Alley program is now run by the Chicago Department of Transportation (CDOT).

albedo pavement to reflect more light and reduce surface temperature; (4) incorporation of recycled construction materials; and (5) use of energy efficient, dark sky compliant light fixtures.[5] Figure 7 below displays the dramatic difference in an alley with and without the Green Alley principles implemented in Chicago.

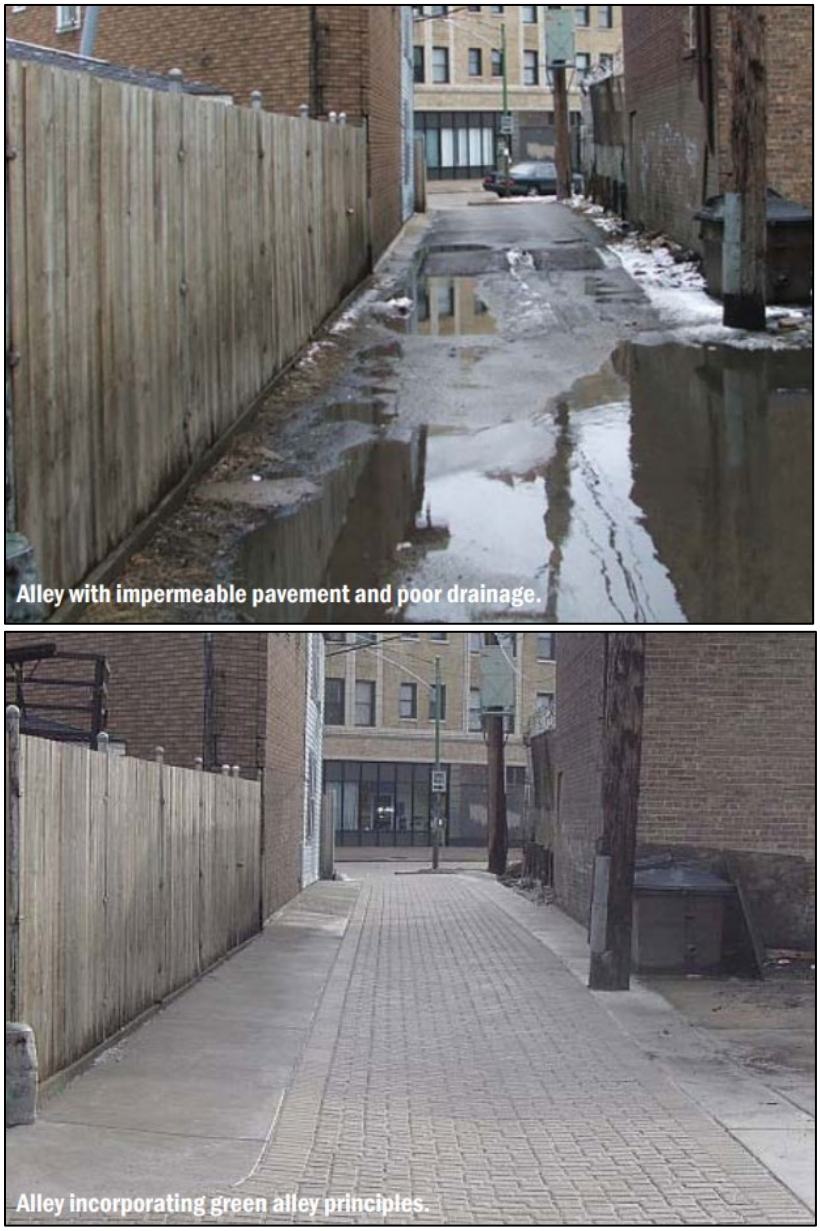

Figure 7 – Before and after of Chicago alley incorporating Green Alley principles

To date, Chicago has completed roughly 400 "Green Alleys". However, although popular, the program has had some challenges. Specifically, Green Alleys are expensive, costing up to $500,000 to convert one block, and the distribution of funding throughout the

[5] Chicago's Green Alley Handbook is attached to this Report as Exhibit "D".

various wards of Chicago has drawn criticism.[6] Through new policies implemented in 2021, Chicago was able to increase the number of Green Alleys built each year but funding remains an issue.

Other examples of redeveloped alleys that our Team came across as part of its research are pictured below:

Figure 8 – Cady's Alley, Washington D.C.

Cady's Alley was previously a utilitarian service alley that was repurposed into an active mixed-use retail and residential corridor in the Georgetown neighborhood. Although largely a pedestrian space, Cady's Alley still serves its service function, permitting truck drivers access for deliveries and trash removal.

[6] "'Green Alleys' Help Prevent Flooding, But Vulnerable Neighborhoods Must Wait in Line" by Alex Nitkin, Illinois Answers Project, Block Club Chicago, available at: https://blockclubchicago.org/2024/04/18/green-alleys-help-prevent-flooding-but-vulnerable-neighborhoods-must-wait-in-line/

Figure 9 - Umbrella Alley – Pittsfield, MA

Pittsfield, Massachusetts serves as an example of how activating an alleyway in creative, fun ways can help achieve a community's goal of "placemaking". "Placemaking is used as an incremental way to improve the quality of a place over a long period of time with many separate small projects and/or activities. . . placemaking can also be used to create and implement larger scale transformative projects and activities that can covert a place in a relatively short period of time to one with a strong sense of place that serves as a magnet for people and new development."[7] In Pittsfield, the phasing began with the installation of umbrella alley and expanded to the entire block including installation of public art. See Figures 10 and 11 below.

[7] "Definition of Placemaking: Four Different Types" by Mark A. Wyckoff, FAICP, Professor, MSU Land Policy Institute, available at: https://www.canr.msu.edu/uploads/375/65814/4typesplacemaking_pzn_wyckoff_january2014.pdf

Figure 10 – Before (above) and after (below) of Pittsfield's Better Block

Figure 11 – Activation at Pittsfield, Massachusetts

7. SUMMARY OF RECOMMENDATIONS

Pirates Alley truly is North Bay Village's buried treasure. Based upon our Team's research and analysis of everything outlined above, we believe that this treasure can be uncovered through the implementation of the following short-term and long-term recommendations.

Short-Term Recommendations:

(1) Beautify the Alley

(2) Incorporate Resiliency
(3) Activate the Alley

Long-Term Recommendations:

(1) Special Assessment District
(2) Zoning Overlay
(3) Obtaining Public Funds for Ongoing Improvements

Our team's recommendations provide opportunities for the NBV Government to address immediate, high-priority issues and produce a significant impact to NBV Residents with budget-friendly options, while also considering a longitudinal view to accomplish NBV's long term vision as outlined in NBV100. All our Team's recommendations are outlined below.

8. SHORT TERM RECOMMENDATIONS

With the NBV Government's goal of assimilating the Alley into the vision of a Downtown North Bay Village, NBV should first focus its efforts on beautifying the Alley to begin the process of placemaking. The Team's beautification recommendations include: (1) improvements to landscaping and dumpsters; (2) pavement improvements & pedestrianization; and (3) implementation of the Village's existing public art program.

A. Beautifying the Alley

Landscaping and Dumpster Improvements

Similar to the phasing approach outlined in NBV100 and used by the communities outlined above, beautification of the Alley can start with simple improvements to landscaping. See Figure 12 below.

Figure 12 – Pirates Alley with landscaping improvements

The improved landscaping not only beautifies the Alley but also provides the Stakeholders with valuable privacy. Additionally, the Alley currently has eight (8) dumpsters that are serviced multiple times a week, which will continue for the near future. However, these dumpsters can be upgraded to create a unified aesthetic appearance that is in line with the overall beautification efforts. See Figures 13 and 14.

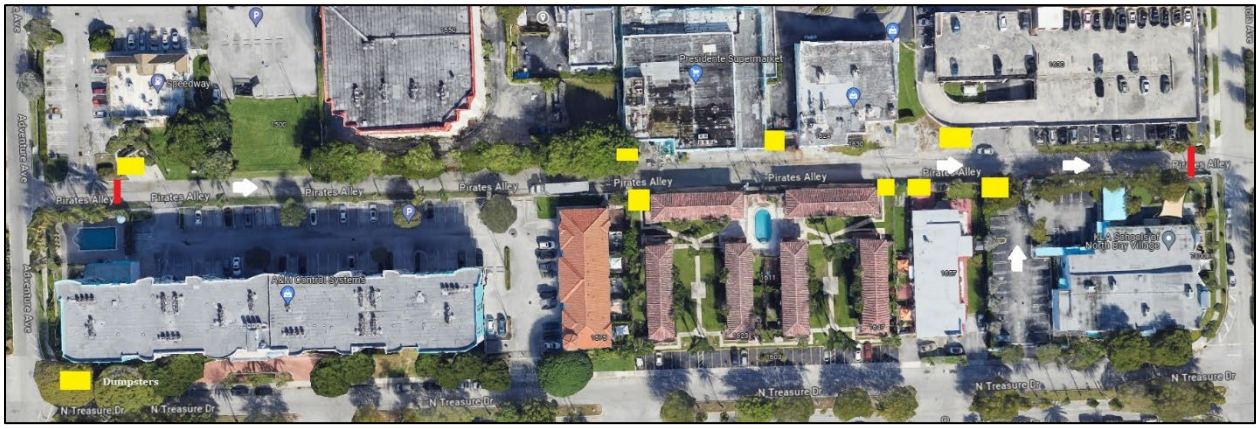

Figure 13 – Aerial photograph of the location of dumpsters in the Alley

Figure 14 – Before and after mockup of upgraded dumpsters

By improving the aesthetic of the Alley, it will welcome the residents and commercial businesses organically.

Pavement Improvements and Pedestrianization

The NBV Government has already allocated funds in the 2023-2024 Budget for a Roadway Improvement Fund. We propose to tap those funds to repave Pirates Alley and reduce it from two lanes of vehicular traffic to one. This reduction will have a negligible impact on the current uses of the Alley by vehicular traffic because it can still be used to service the properties adjacent to the Alley. Further, although currently used by Village residents as a walkway, Pirates Alley does not have a dedicated sidewalk, which presents an unnecessary risk to pedestrians. See Figure 12 above.

Therefore, we suggest that, as part of the repaving work, the Village use the newly created lane to create a sidewalk and accomplish pedestrianization of the Alley. The benefit of narrowing the street will not only provide additional space for pedestrians but will also slow the flow of traffic. Safety will be improved for pedestrians, while also providing better visibility to the potential future storefronts and businesses from the vehicles passing through. See Figure 15 below of the short-term transformation envisioned in NBV100 and Figure 16 of the Team's proposed mock-up. The size of the sidewalk must account for ADA compliance (minimum three (3) feet) and the lane adjacent to the sidewalk must be no less than 12 feet wide to account for clearance of delivery and garbage trucks. Given the 30-foot width of the Alley, there should be more than enough room to accommodate a pedestrian walkway and maintain access to commercial vehicular use. To address pedestrian safety with the new walkway, bollards could also be installed, to create a physical barrier between pedestrians and vehicles. See Figure 16.

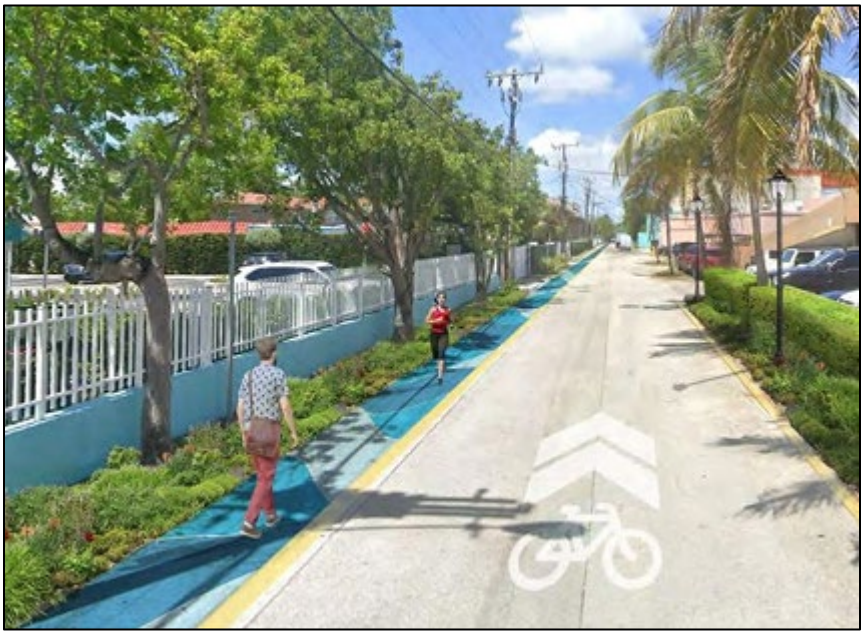

Figure 15 – NBV100 Short-Term Transformation

Figure 16 – Proposed Pedestrian Sidewalk with Bollards

Depending on budgetary concerns, the sidewalk can either be typical concrete or beautified with the installation of pavers or other form of street art. Pervious pavers are a great option to attract pedestrians and engage the Alley. Pavers or other forms of decorative pavement are often considered more “upscale” than poured in place concrete and can be

seen in other communities such as Detroit (see Figure 17 below) and nearby Lauderdale-by-the-Sea in Broward County (see Figure 18 below).

Figure 17 – Green alley in Detroit with pervious pavers

Figure 18 – Lauderdale by the Sea decorative pavement design

In addition to being more aesthetically appealing, pervious pavers or permeable pavement provide increased drainage capacity, reducing puddling, potential mildew growth, and reducing potential slipping hazards, which is discussed in more detail below in Section B - Resiliency. The downsides are that they are more expensive and may require more maintenance than a concrete sidewalk.

Public Art

Similar to the improved aesthetic upgrades outlined above, public art provides NBV with a valuable opportunity to create a community identity and engage local residents, further activating the Alley and incorporating it into the fabric of the Village. NBV already recognizes the power of public art as outlined in NBV100 and existing examples already in the Village such as the "Heart of the Bay" welcome mural by Rigo Leon and the Curb Appeal art installation on Harbor Island. See Figures 19 and 20 below.

Figure 19 – Heart of the Bay by Rigo Leon

Figure 20 – Curb Appeal by German Dubois

Therefore, we propose that NBV tap into the existing public art efforts and expand on them with the Alley serving as the figurative canvas. Public art in the Alley can be accomplished through decorative pavement such as Figure 18 above or an art installation identifying the Alley by way of a sign. Marking the Alley with an identifying sign will signal to visitors and residents alike that the Alley is cared for, safe, inviting, and accomplishes the placemaking goals outlined in NBV100. See Figure 21 of the Team's proposed archway sign.

Figure 21 – Team's mockup of Identifying Sign for Pirates Alley

Lastly, canopies can be installed throughout the Alley to provide the expected increased pedestrian presence with much needed protection from the sun and weather. See Figure 21. These canopies can also creatively double as a form of hanging art installation such as those pictured in Figure 22 below.

Figure 22 – Examples of Hanging Art Installations

B. Sustainability & Resilience Infrastructure Improvements

Based upon our Team's review of the existing resilience and flood reduction efforts made by the Village, along with our research of best practices, we recommend that all short-term and long-term improvements for the Alley prioritize the use of infrastructure

components that help reduce how flood and rain waters affect the Alley, properties along the Alley, and its surrounding neighborhoods. The funding and use of “green infrastructure”, such as permeable pavers, rain gardens, planter boxes and stormwater retention basins that double as public parks, will directly support the Village’s greater sustainability and resilience goals while also making the Alley more appealing and inviting for public uses.

The Alley’s continued evolution into an important public space for the Village will be driven by the different beautification and urban design efforts outlined herein. However, if these improvements are also made with resilient green infrastructure, the Alley can also become a space that showcases how the Village aspires to evolve following sustainable principles. As improvements are made to the Alley, the use of materials and designs that support proper drainage, help reduce flooding events, and allow for water retention and reabsorption into the ground will serve to not only beautify the Alley but to also showcase the Village’s resilient goals.

- **Permeable surface materials:** Many permeable hard surface materials exist that can be used for pedestrian and bicycle pathways, which support the natural reabsorption of waters into the ground and reduce pooling. These materials also allow for beautification of the Alley using a material that brings aesthetic uniqueness to the right of way, adding to the space’s specialness. In addition to hard surface materials, softer surface materials such as loose gravel, low maintenance grasses and other biomaterials can also be used in certain lower traffic areas of the improved Alley.
- **Rain gardens & planter boxes:** Integrate temporary or more permanent garden areas throughout the Alley’s design, in either the form of surface level rain gardens into which standing surface waters can flow and get reabsorbed into the ground, or as planter boxes that collect and hold rain waters. See Figure 23.
- **Stormwater retention basins that double as parks:** The two previous green infrastructure options are the appropriate components to include in a more traditionally redesigned pedestrian right of way, and they also play a more limited flood prevention role. Village leadership and residents can explore the idea of designing parts of the Alley or all of it as a natural stormwater retention basin park, which are built with all natural materials and planted areas, maximizing how much water absorption and retention they allow for. Retention basin parks offer areas for recreation that are dry and accessible when rain waters are low but are designed to collect water in specific retention ponds and pools that lead to more limited but still usable recreation areas or pathways. See Figure 24.

Figure 23 – Rain Garden, New York City

Figure 24 – Stormwater Park, City of North Miami

C. Activation

After spending time on NBV and the Alley, the Team has developed several ideas to activate the Alley, enhancing its appeal and usability for residents and visitors alike. To attract pedestrians to the Alley, we propose installing a container coffee shop on the open grass patch at the corner of Pirates Alley and Hispanola Way, adjacent to the office and parking garage. This temporary setup would serve as proof of concept for the future commercial viability of the Alley. In addition to a coffee shop, we also propose a community book drop/library and bike rack to serve the residents of NBV and create a sense of community. See Figure 25 below.

Figure 25 – Temporary Container Coffee Shop

Another temporary activation the Team proposes on the Alley is a dog park on the 1500 79th Street Causeway parcel. Given the Team's unsuccessful attempts to contact the current owner of the parcel, we propose that the Village reach out to the owner to discuss various ways to implement the activation. The Village could propose a temporary lease with the owner, offer incentives such as property tax reductions, or explore the possibility of purchasing the parcel. Assuming an agreement is reached, next steps would involve setting up a small fence, installing a water fountain, and providing pet waste bags and baskets. This activation would serve the immediate demand for a place for residents to walk their dogs until Phase one of Sunbeam's developments is completed with a permanent dog park. See Figure 26 below. Additionally, the dog park can be further activated by the installation of a temporary structure for visitors to sit and socialize. Figure 27 below is an example of a similar temporary activation utilized by the Underline in downtown Miami.

Figure 26 – Temporary Dog Park

Figure 27 – Temporary Activation at the Underline

Lastly, to maximize the use of the Alley, the Team recommends organizing temporary activations such as farmer's markets, group workouts, or other resident requested activities. Each of these has the potential to support local vendors and promote health and community. See Figure 28 below displaying the mid-term transformation envisioned in NBV100 via activation.

Figure 28 - NBV100 Mid-Term Transformation via Activation

9. LONG TERM RECOMMENDATIONS

The Team has formulated long-term recommendations for NBV to ensure the cohesive future of the Alley, including ideas on funding and maintaining improvements. Key proposals include establishing a Special Assessment District and implementing a Zoning Overlay.

Miami-Dade County, through Chapter 18 of its Code, has instituted Special Assessment Districts, previously known as Special Taxing Districts. There are over 1,041 active districts comprised of 263,671 households in unincorporated and municipal neighborhoods through-out Miami-Dade County. These districts offer various services such as street lighting, security, maintenance, and capital projects. They can be initiated through homeowner petitions or by developers during project inception. These services are beyond those traditionally provided by County government and are billed to property owners as non-ad valorem assessments included in their annual property tax bill. NBV can utilize a Special Assessment District to help finance and sustain improvements like street and pedestrian lighting, pavement upgrades, pedestrian and bike lane creation, and the design of a pedestrian-friendly one-way road system. This system aims to provide crucial back-of-house access for future developments while maintaining a pedestrian-friendly environment, similar to the approach utilized by the Grove Central Station development. Additionally, proposals include establishing a Public Art Fund to engage local artists in adding art along Pirates Alley, a Public Park Fund to support a future park as part of Pirates Alley redevelopment, and an Impact Fee Schedule for new developments to fund essential infrastructure maintenance. By creating these districts, communities have the opportunity

to make improvements in the public areas of their neighborhoods which could not be conveniently done otherwise.

As part of NBV100, the Village can expand its vision by introducing a specific zoning overlay for Pirates Alley. Zoning overlays are a regulatory tool which creates a special zoning district, placed over an existing base zone(s), which identifies special provisions in addition to those in the underlying base zone. The overlay district can share common boundaries with the base zone or cut across base zone boundaries. Regulations or incentives are attached to the overlay district to protect a specific resource or guide future development within a special area, like Pirates Alley. By incorporating a pedestrian overlay into NBV100 for Pirates Alley, NBV can promote redevelopment focused on pedestrian needs. Examples of potential overlays include density bonuses for pedestrian-oriented development, larger building setbacks, dedicated pedestrian and bike lanes, incorporation of Art in Public Places, and establishment of design standards encompassing landscaping and street design aesthetics.

10. POTENTIAL CHALLENGES

Our Team recognizes that there are a host of potential challenges that both our short-term and long-term improvement recommendations may pose to NBV stakeholders. However, we believe most of these challenges are surmountable so long as there is a willingness on the part of the NBV Government to procure the funds necessary to redevelop Pirates Alley. As the saying goes, "where there is a will, there is a way."

As mentioned above, Special Assessment Districts can be vital in raising money to fund a large portion of the improvements our Team has suggested. Additional funding could be supplemented by programs facilitated through the State of Florida such as the Sunshine State Financing program and General Obligation Bonds. Further, allocations from nonprofit institutions such as Art in Public Places may also be a useful source of funds. Our Team believes it is critical that the NBV Government signals to private stakeholders it has a credible path to securing the requisite budget needed to effectuate the redevelopment of Pirates Alley. This believability in NBV Government's ability to execute on the redevelopment will go a long way in placating NBV residents, KLA and Sunbeam, among other stakeholders into accepting some near-term inconveniences related to the implementation of the improvements. Below are some potential challenges our Team foresees and some suggestions for solutions on how to mitigate private stakeholder opposition.

- *KLA Traffic Flow Impact*
    - *Challenge*: KLA will likely face disruption and alteration to their current traffic patterns as it relates to how parents drop off and pick up their children as Pirates Alley is being redeveloped.
    - *Solution*: Conduct a traffic study to assess the impact that short-term and long-term improvements will have on KLA traffic flow. Analyze the

potential bottlenecks and added wait times that may occur. Devise potential stopgap measures such as assigned drop-off and pick-up times for parents to mitigate bottlenecks.

- *Florida Power & Light (FPL) Power Lines*
    - *Challenge*: Existing FPL power lines prohibit the NBV Government from maximizing the surface area of a redeveloped Pirates Alley. This ultimately detracts from the pedestrian experience and may pose constraints on future commercial development abutting the Alley.
    - *Solution*: The NBV Government should work with FPL to assess the cost and construction schedule for a replacement of the above-ground power lines with underground power lines.
- *Commercial User Bottlenecks*
    - *Challenge*: Adding a dedicated pedestrian walkway to Pirates Alley will likely affect the loading and unloading schedules that commercial users such as Presidente Supermarket rely on to run their businesses.
    - *Solution*: Provide commercial users with dedicated times of the day where loading and unloading is less likely to encounter heavy pedestrian activity near and on Pirates Alley. For long-term improvements, devise zoning overlay rules that provide alternative corridors for commercial loading and unloading that is separate and distinct from Pirates Alley.
- *Pedestrian Safety*
    - *Challenge*: A dedicated pedestrian walkway must have the proper precautions in place to ensure that the pedestrian experience is safe.
    - *Solution*: Bollards can be used to clearly delineate where the Alley starts and stops. A raised curb could also be a long-term improvement that deters automobiles from accessing the pedestrian walkway. Signage and speedbumps can also be placed at strategic locations within Pirates Alley to further ensure the prospects of any sort of pedestrian/automobile accident is greatly reduced.

10. CONCLUSION

The strategies outlined here are all with the goal of assimilating Pirates Alley into the communal fabric of North Bay Village and revitalizing the feel of what could eventually be Downtown North Bay Village. We believe these recommendations provide the Village with a menu of available options as well as a roadmap of how to execute them. With buy-in from the stakeholders and implementation of a long-term strategy, North Bay Village can uncover the buried treasure it has in Pirates Alley for the benefit of visitors and residents alike.

EXHIBIT A

TEAM BIOS

Alex Arostegui
Vice President of Development, Pinnacle
alex@pinnaclehousing.com
305-692-6861

Alex Arostegui serves as Vice President of Development at Pinnacle, where he is responsible for managing large-scale multifamily developments from concept to completion. Before Pinnacle, Alex served as Senior Development Manager for The Morgan Group, where he led a portfolio of four development projects totaling over 1,400 unit. Prior to The Morgan Group, he served as Development Manager for Stiles Residential Group, and was apart of notable projects which include Novo Las Olas, The Ellsworth, and Alluvion. Outside of work, Alex served as a member of the City of Plantation's Planning and Zoning Board until the beginning of 2023. Alex holds a Bachelor of Science in Economics from Florida State University and a Master's in Real Estate Development from Nova Southeastern University.

Haley Boatright
Research Manager
Colliers
Haley.Boatright@colliers.com
786-517-4998

As the Research Manager for Colliers in South Florida, Haley is dedicated to collecting and interpreting key market insights to guide strategic decisions in the commercial real estate sector. With a focus on the local area, she works alongside regional and national experts to develop thought leadership content that highlights emerging trends and opportunities. In her role, Haley leads a talented team of researchers, providing direction, motivation, and training to ensure the highest standards of quality and compliance with company initiatives. Haley collaborates with marketing and sales professionals to deliver research assistance and expertise in client meetings and presentations. By building strong relationships with local media, trade organizations, and government entities, she positions Colliers as a leading resource on the latest trends and development strategies. Haley's responsibilities extend to producing quarterly and annual market reports, as well as additional thought leadership pieces as needed. As well as partnering with corporate IT and research/marketing teams to enhance Colliers' proprietary software systems, ensuring the company's tools remain cutting-edge and effective.

In addition to her management role, she is committed to community service, serving as a Co-Chair of Colliers Gives | South Florida, where she facilitates opportunities for Colliers professionals to contribute to the community. Her leadership has been instrumental in initiating volunteer programs through partnerships with organizations such as Lotus House, HOPE South Florida, Kids in Distress, and Feeding South Florida. Furthermore, as the Southeastern Regional Vice President for the Colliers Women's Network Employee Resource Group (ERG), Haley plays a key role in refining processes and enhancing the regional recruitment and retention for the ERG. The Women's Network at Colliers aims to foster an environment of intersectional inclusion that supports the growth and empowerment of women, creating a sense of belonging where we can all thrive while serving our clients, communities, and one another.

Alex Leon
Partner,
Haber Law
aleon@haber.law
305-379-2400

Alexander G. Leon, a distinguished Partner within Haber Law's Construction Law & Real Estate Groups, boasts a wealth of experience in the legal landscape. As a Board-Certified Construction Lawyer, his practice is a testament to his expertise in navigating the intricacies of construction, development, and restoration projects. With a strong commitment to his clients, Alex diligently represents owners, developers, contractors, and associations in a diverse range of ventures, spanning a wide variety of asset classes single family residential, condominiums, and hotels to industrial and commercial/retail facilities, as well as affordable housing developments.

Beyond his professional accomplishments, Alex is a proud Girl Dad. His two daughters, Valentina and Mia, and wife, Christina, inspire and enrich his life daily. As a family-oriented individual, he knows the importance of balancing his legal career with the joys of parenthood. Hailing from a rich Cuban American heritage, Alex brings a multicultural perspective to his work, which often resonates with the diverse landscape of Miami. He embraces and celebrates the vibrant culture that infuses his community with a unique blend of traditions and values. A proud alumnus of Belen Jesuit, the University of Miami, and University of Florida's Levin College of Law, Alex's commitment to South Florida and his hometown of Miami shines through in both his professional and personal life. He not only serves his community as a trusted attorney but also contributes to the cultural tapestry of Miami, where he is deeply rooted.

Arthur Noguera
Owner/Broker,
Urbannic LLC
arthur.noguera@urbannic.com
305-978-8973

Arthur Noguera is a licensed real estate broker and investor with more than 20 years of experience in the real estate industry. In 2008, Arthur founded Synergy Consultants Group LLC (SCG), a property acquisition firm, and Urbannic LLC, a boutique real estate brokerage and management firm that specializes in managing and improving distressed assets to stabilization. He owns and operates a multifamily portfolio of 65 residential units in Miami, as well as commercial properties and vacant land for development. Arthur leads a team of eight realtors and has overseen hundreds of transactions through the years. Arthur's involvement in the real estate community extends far beyond his brokerage. He has been a licensed property appraiser, mortgage broker, building contractor, and appointed Receiver in various distressed condominium associations in Miami-Dade County. Arthur holds a Bachelor of Science in Electronics Engineering from Universidad Simon Bolivar and an M.B.A. in International Business Management from Florida International University.

Benji Power
Director, Real Estate Development,
Procida Development Group
dbenjipower@gmail.com
215-888-4417

Benji was born in Santiago, Chile, his family's homeland, and was raised in Miami. He is a trained urban planner and impact-focused real estate development professional. As NYC-based Procida Development Group's Director of Real Estate Development & Social Impact, he oversees the firm's multifamily development work throughout Florida. Prior to joining Procida Development Group, Benji led Miami-Dade County Public Housing's redevelopment of its public housing through public private partnerships that leveraged HUD's RAD conversion process.

Through eighteen years of professional experience, he has focused on urban redevelopment projects and public policy efforts. Benji has been deeply involved in urban redevelopment efforts in Miami through roles working with urban planning firms, the City of Miami's Downtown Development Authority, the non-profit Neighborhood Housing Services of South Florida, as COO for a design-build focused construction and fabrication firm, and as a consultant on innovative public policy, real estate and community development work in Miami. His academic and research experience is from the University of Pennsylvania, with a Bachelor's degree in Urban Studies/ Psychology, and from Massachusetts Institute of Technology with a Master in City Planning and Master of Science in Real Estate Development.

Chris Wang
Managing Director - Investments,
Parkway Properties, Inc.
cwang@pky.com
305-697-4898

Christopher ("Chris") Wang is a Managing Director at Parkway where he is responsible for sourcing new investment and development opportunities across the Sun Belt and Mountain West. He has over 13 years of experience in commercial real estate where he has closed on over $1 Billion of transactions across the multifamily, office, industrial and retail sectors. Chris has always had a deep appreciation for trying to understand how macroeconomic forces influence not only investments in real estate, but in equities, fixed income, commodities and currencies as well.

Previously, Chris has held positions at firms such as Five Mile Capital, Brookfield Property Partners and Brightline. He was also once a co-owner and general manager of the Vagabond Restaurant & Bar, a global fast-casual dining concept that was awarded Miami's Best New Restaurant by the Miami New Times in 2015. Chris is a proud alum of The Wharton School at the University of Pennsylvania where he received a B.S. in Economics with concentrations in Finance and Marketing. In his free time, Chris enjoys playing classical music on the piano, eating food from around the world, and watching sports such as the NBA and PGA.

EXHIBIT B

NBV100 MASTER PLAN

NBV100 REPORT

DPZ CoDESIGN

PREPARED FOR:
NORTH BAY VILLAGE

DATE:
04-10-20

PREPARED BY:
DPZ CoDESIGN

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

VILLAGE COMMISSION

Mayor Brent Latham
Vice Mayor Marvin Wilmoth
Commissioner Jose R. Alvarez
Commissioner Andreana Jackson
Commissioner Julianna Strout

NBV STAFF

Ralph Rosado, Village Manager
Mario Diaz, Chief of Staff
Jose Olivo, Public Works Director
Malarie Dauginikas, Comm. & S. Events

STEERING COMMITTEE

Dale Penn
Denise O'Brien
Luis Torrego
Paul Clapps
Paul Jacob
Rachel Streitfeld
Fred Murphy
Richard Chevorny
Sondra Shumaker
Riven Murphy
Robert Glidwell
Ryan Shaw

PLANNING & ZONING

J.F. "Bud" Farrey, Board Chair
Douglas Hornsby, Board Vice Chair
Richard Chervony
Timothy Dennis
Kip Dugal
Richard Holben
Doris O'Hare

BUSINESS DEVELOPMENT BOARD

Timothy Dennis, Chair
Nick Quay, Vice Chair
Paul Jacob, Secretary
Denise O'Brien
James Rosenberg

RESIDENT SERVICES BOARD

Indira Dejtiar, Chair
Lidia Cantave, Vice Chair
Kevin Vericker, Secretary
Sondra Shumaker
Priscilla Salvador

SUSTAINABILITY AND RESILIENCY TASK FORCE

Denise O'Brien, Board Chair
Rachel A. Streitfeld, Esq., Board Vice Chair
Richard Chervony
Nick Quay
Ryan Steckbeck

MASTER PLANNING

DPZ CoDESIGN, LLC

Galina Tachieva, DPZ Partner-in-Charge
Xavier Iglesias, Project Director
Judith I. Bell, Project Manager
Paul Genovesi, Senior Designer
Ben Northrup, Senior Designer
Xuan Bo, Designer
Chris Ritter, Illustrator

CDS ARCHITECTURE AND PLANNING

Eduardo Pardo-Fernandez, Principal

OUTREACH

IWPR GROUP

Irina Woelfle, Founder

MASTER PLAN AND LDRs REPORT

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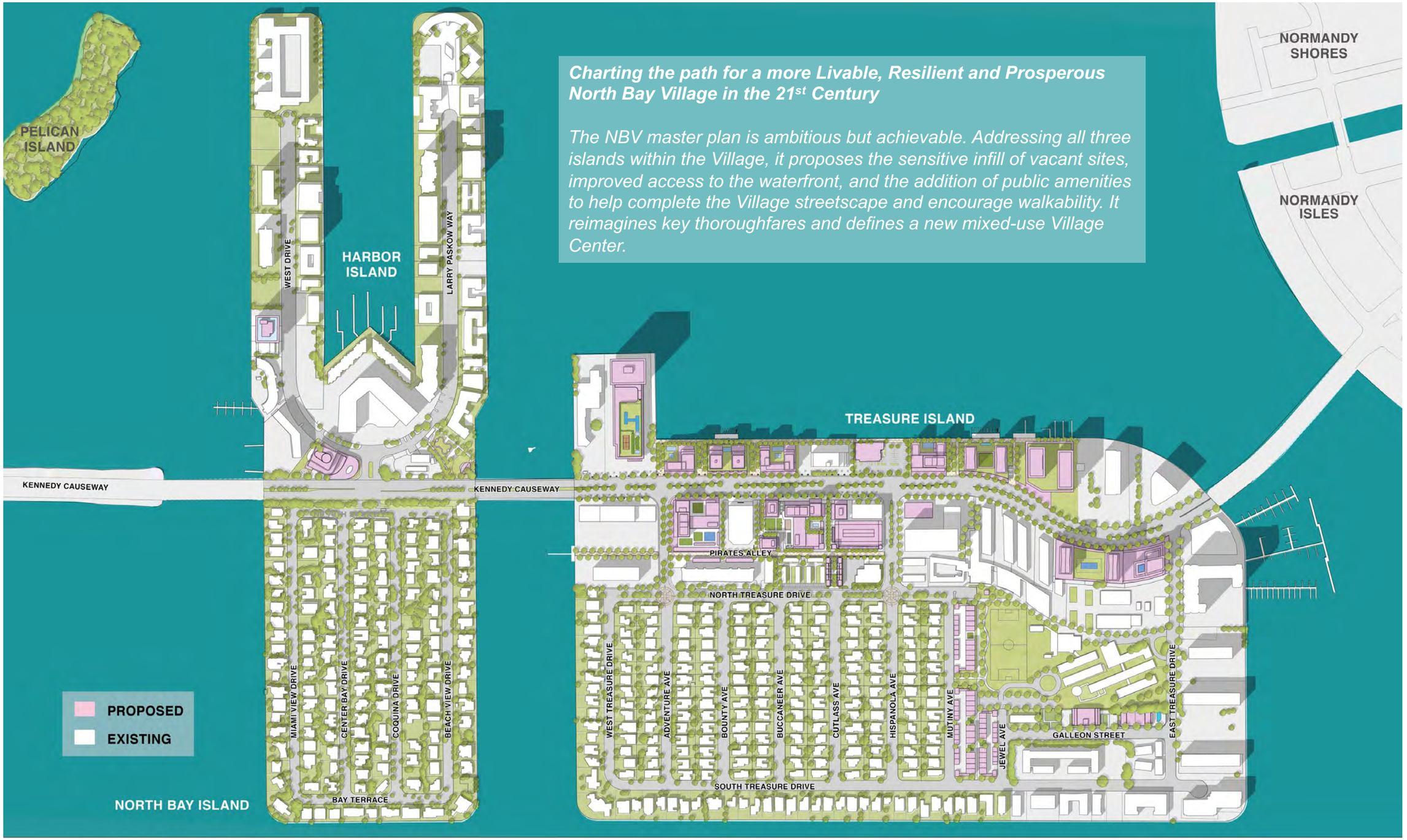
NBV100 INTRODUCTION

NBV100 MASTER PLAN



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

The NBV master plan is ambitious but achievable. Addressing all three islands within the Village, it proposes the sensitive infill of vacant sites, improved access to the waterfront, and the addition of public amenities to help complete the Village streetscape and encourage walkability. It reimagines key thoroughfares and defines a new mixed-use Village Center.

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.

Meetings during the charrette with residents, designers and public officials

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

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


BARN
Nick and Arthur's
RESTAURANT
Nick & Arthur's


Dean
Martin's
Pub

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

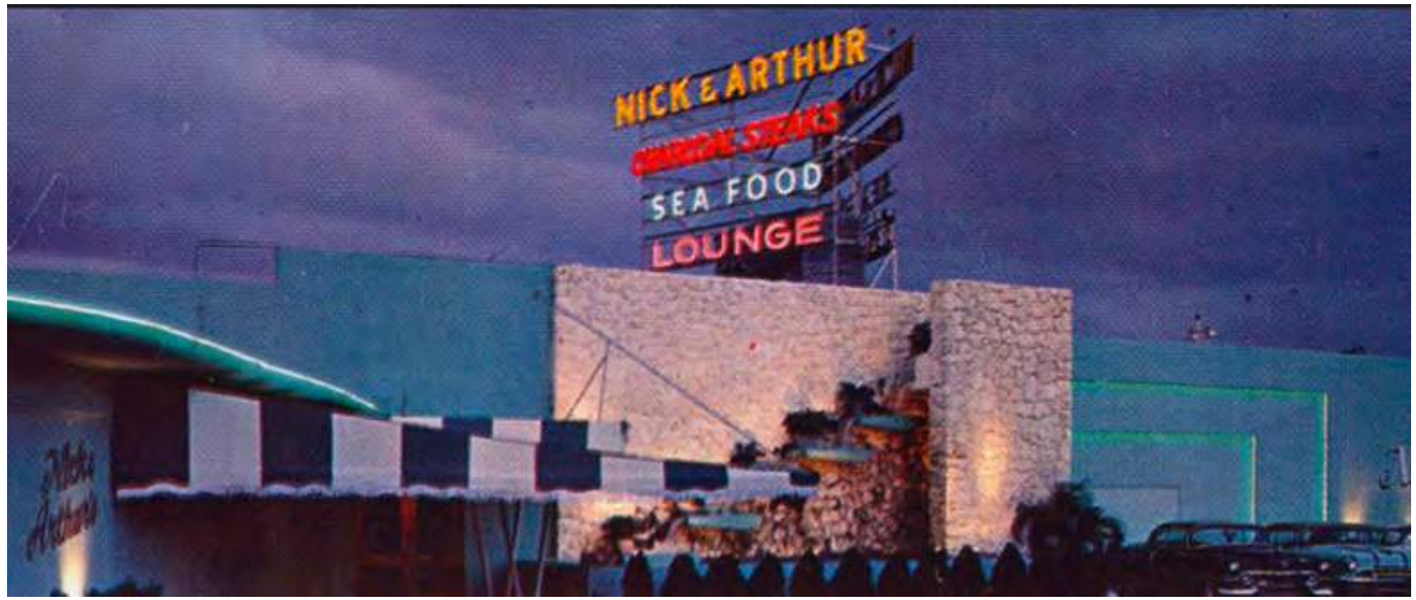
Fun Fair

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.

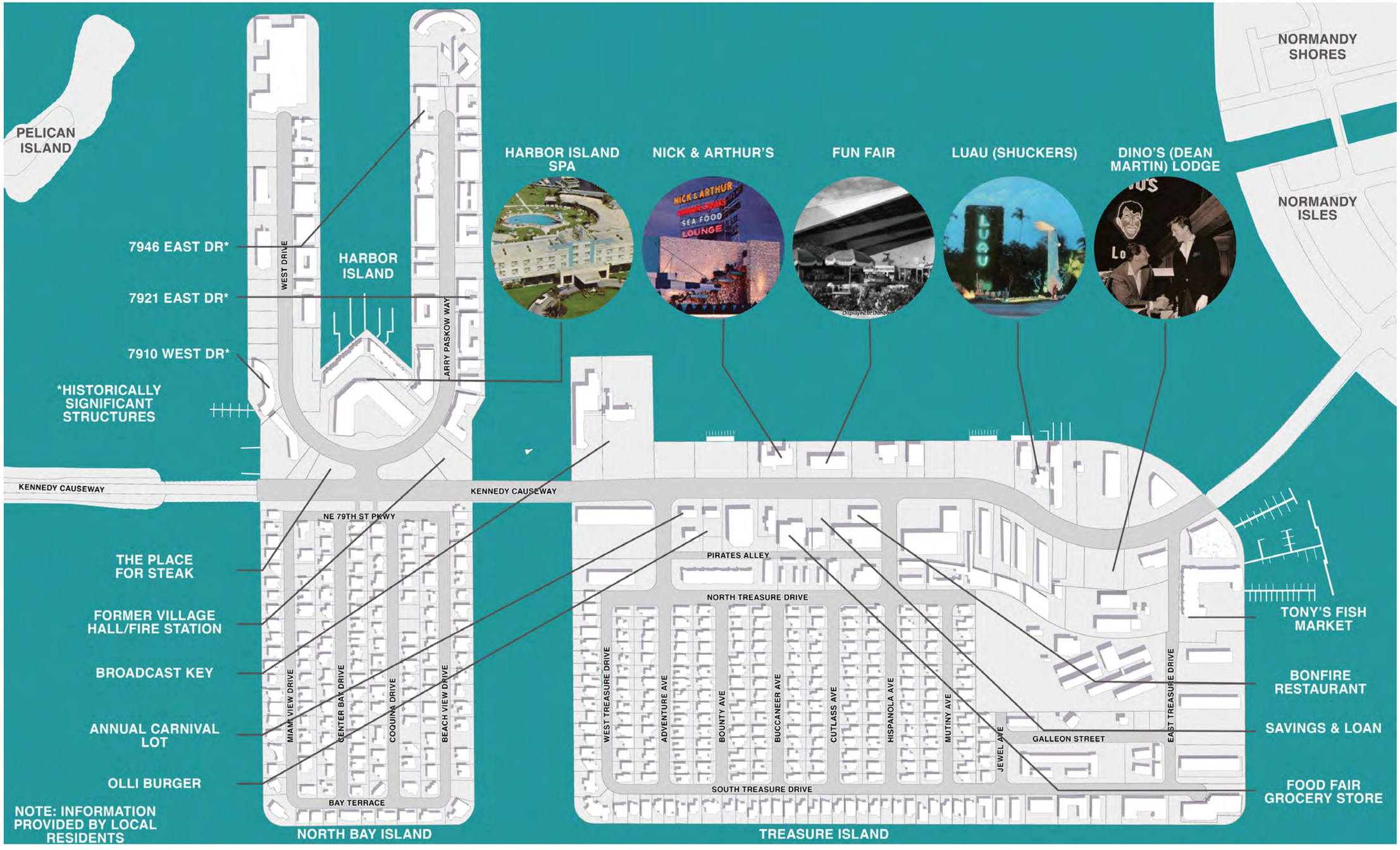
Thanks go to North Bay Village residents who helped highlight many of the special locations and provided historic images.



Nick & Arthur

Luau

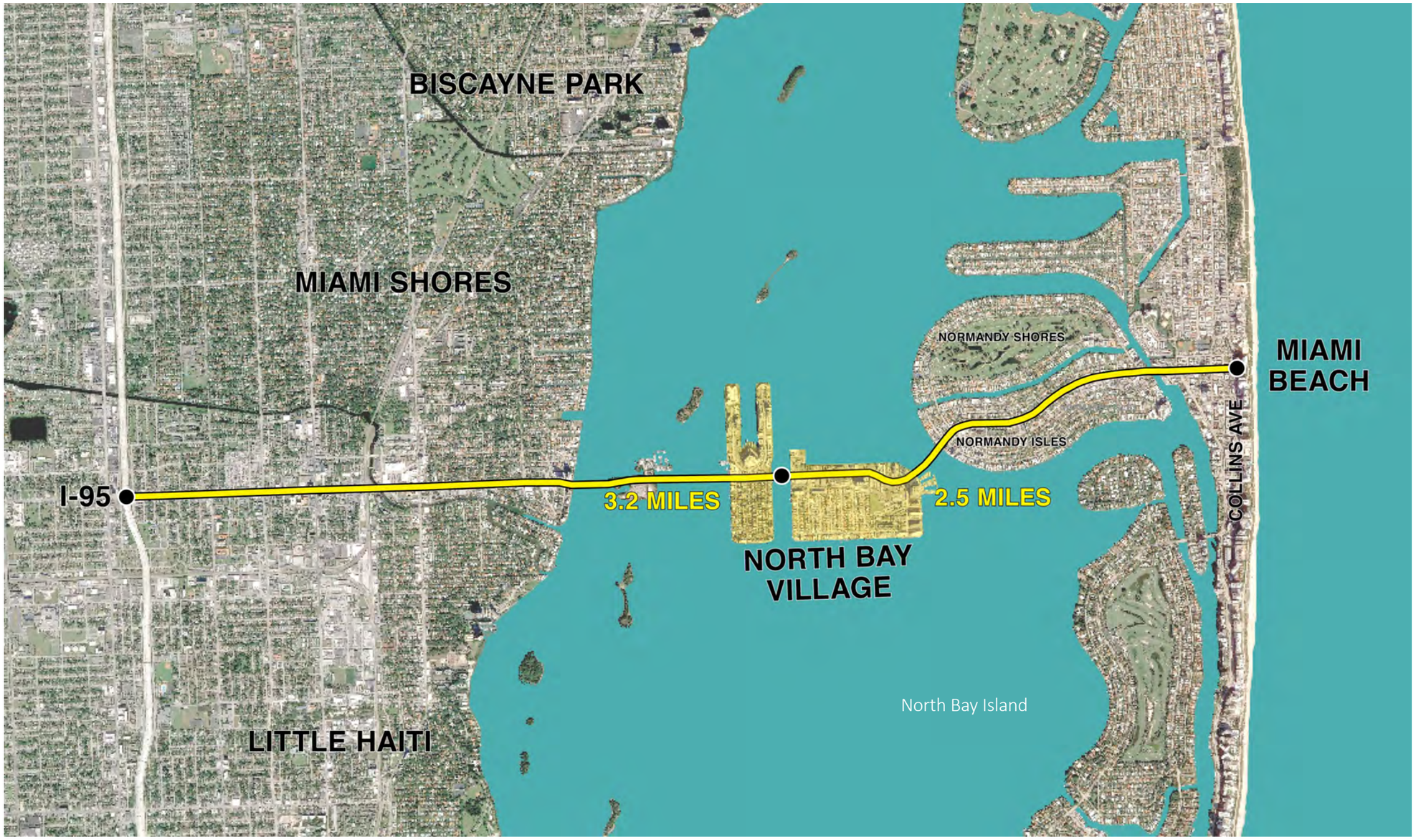
NORTH BAY VILLAGE HISTORY



Sites significant to NBV's history

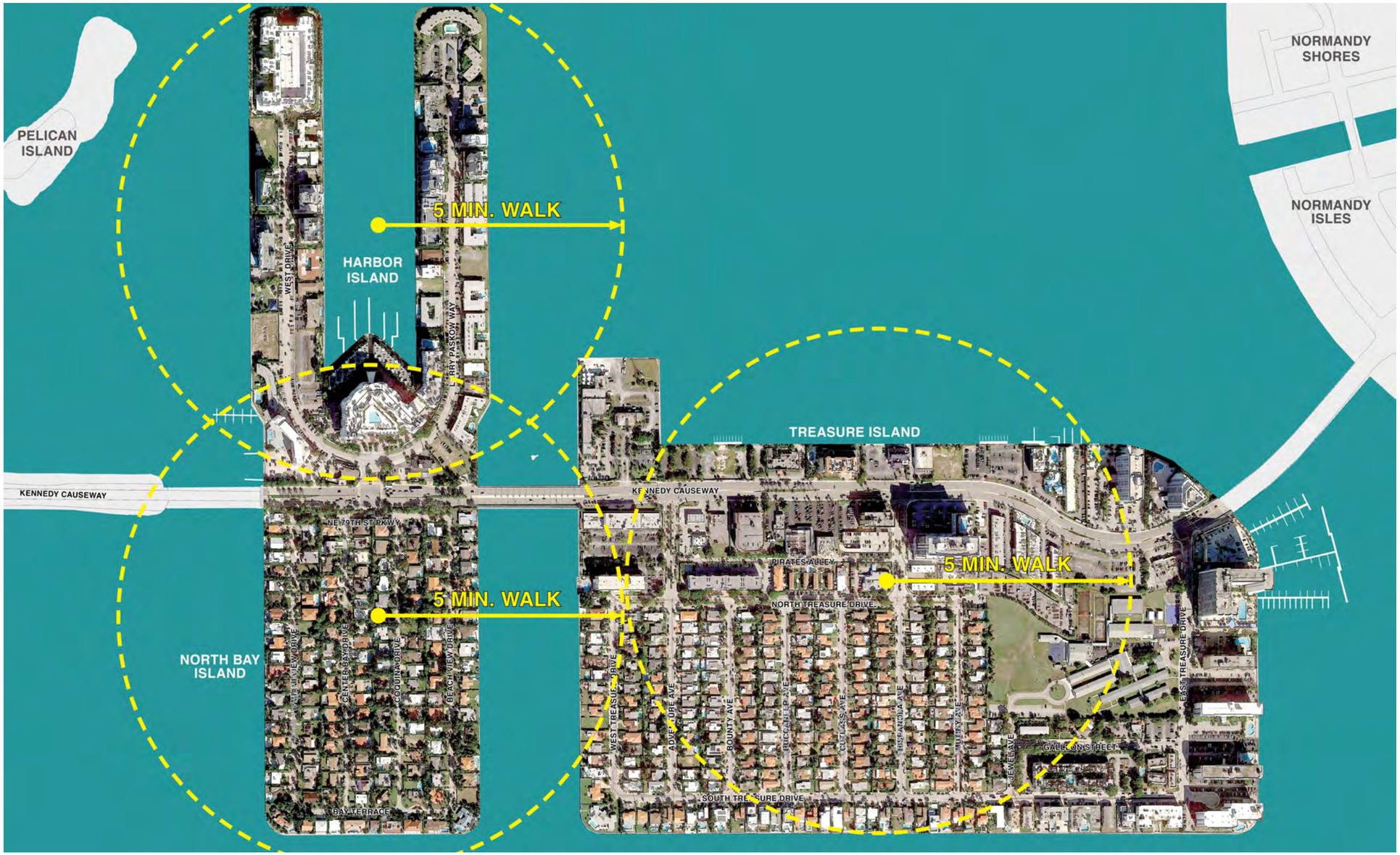
NBV100 CONTEXT

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.

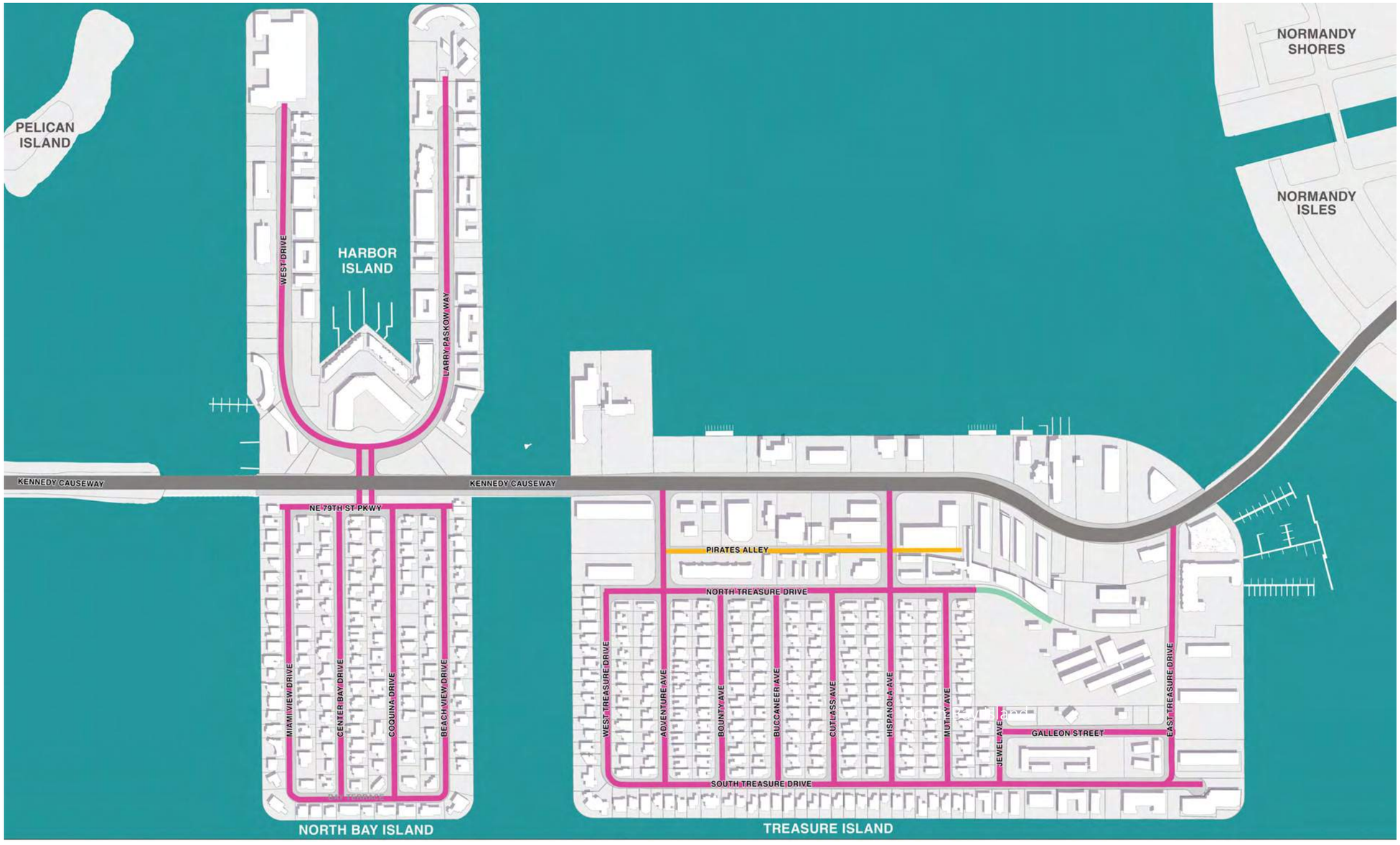
NBV WALKABILITY



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



Kennedy Causeway
0.92 miles (4,842 FT)

Local Streets
5.07 Miles (26,747 FT)

Alley
0.27 miles (1,413 FT)

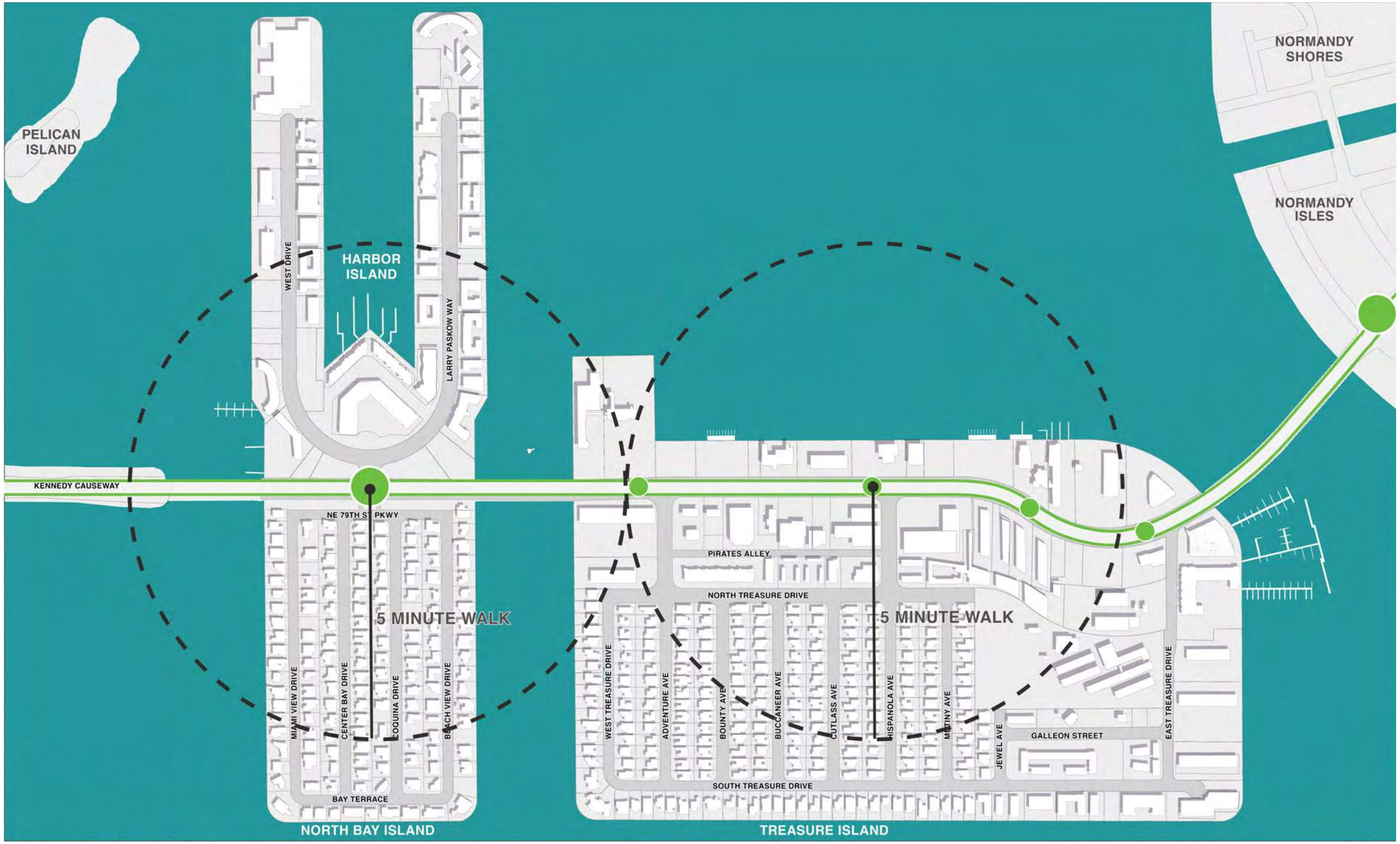
Private Access Road
0.1 miles (537 FT)

Approximate centerline miles

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.

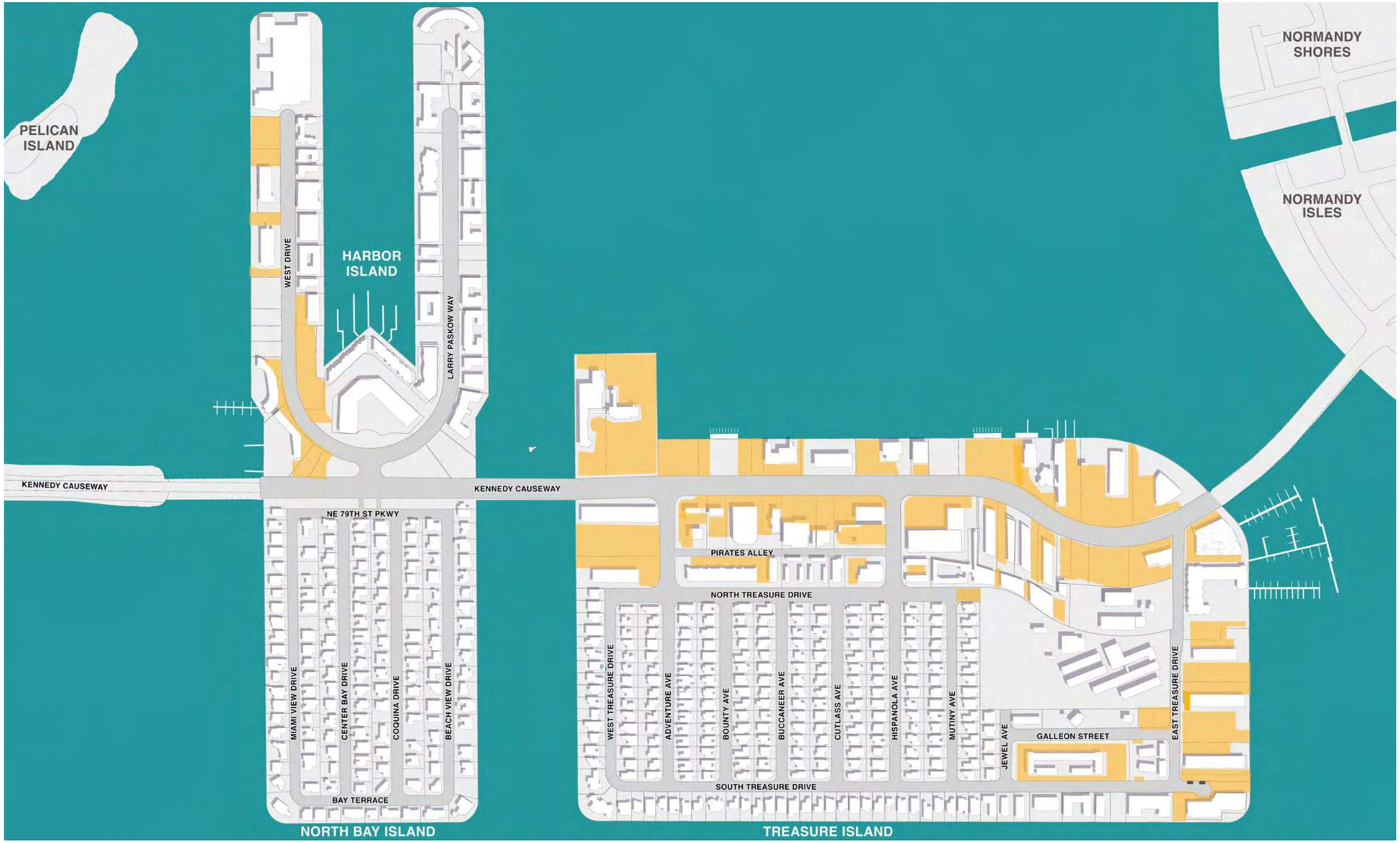
Fortunately, the Village has already taken a number of early steps to restore a balance between the automobile and other modes of transportation. These include the bike lanes that were added on Kennedy Causeway, an improved major crosswalk between North Bay Island and Harbor Island, as well some attempts 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.

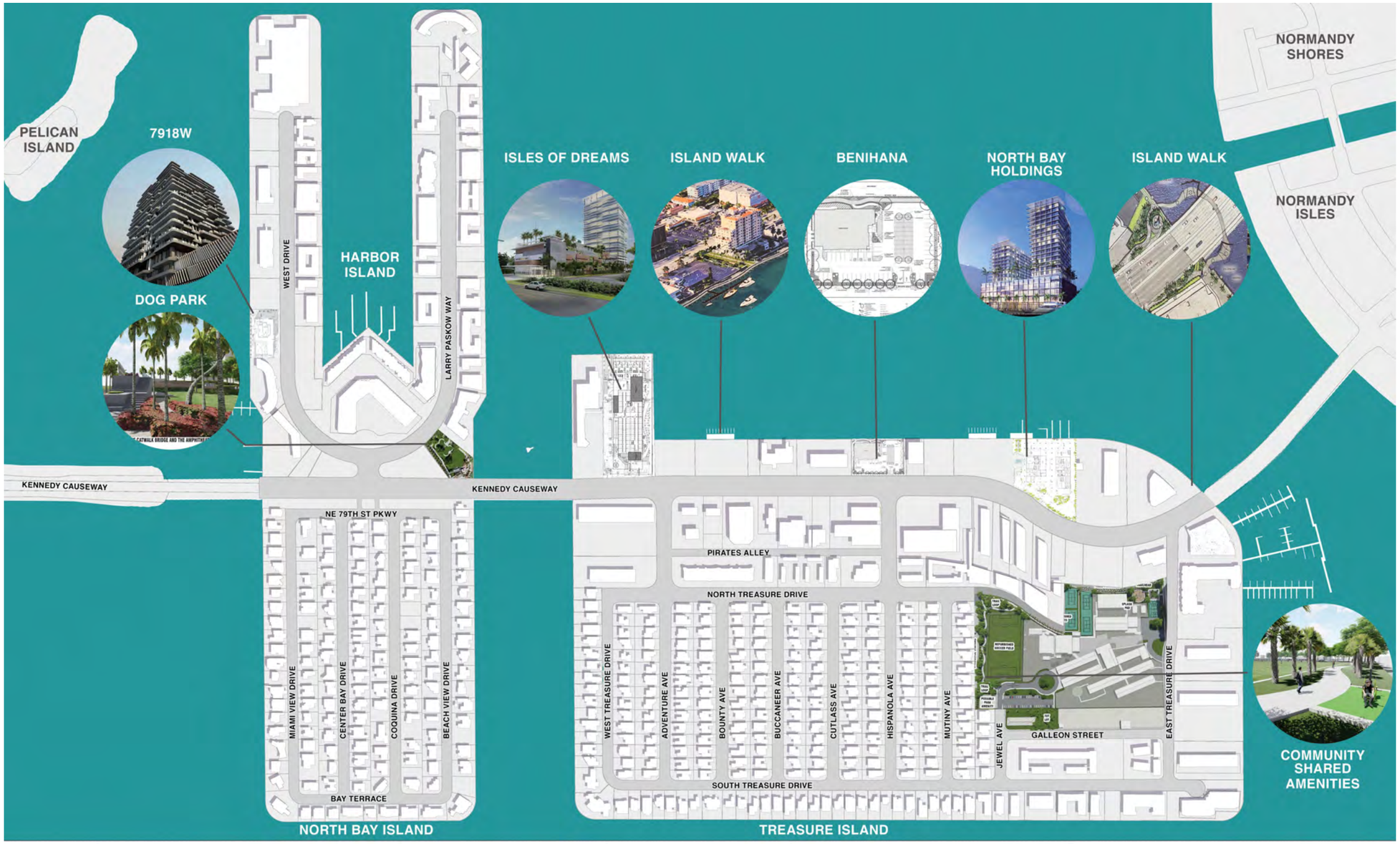
NBV OPTIMIZATION OF UNDERUSED LAND AND PARKING



Surface Parking

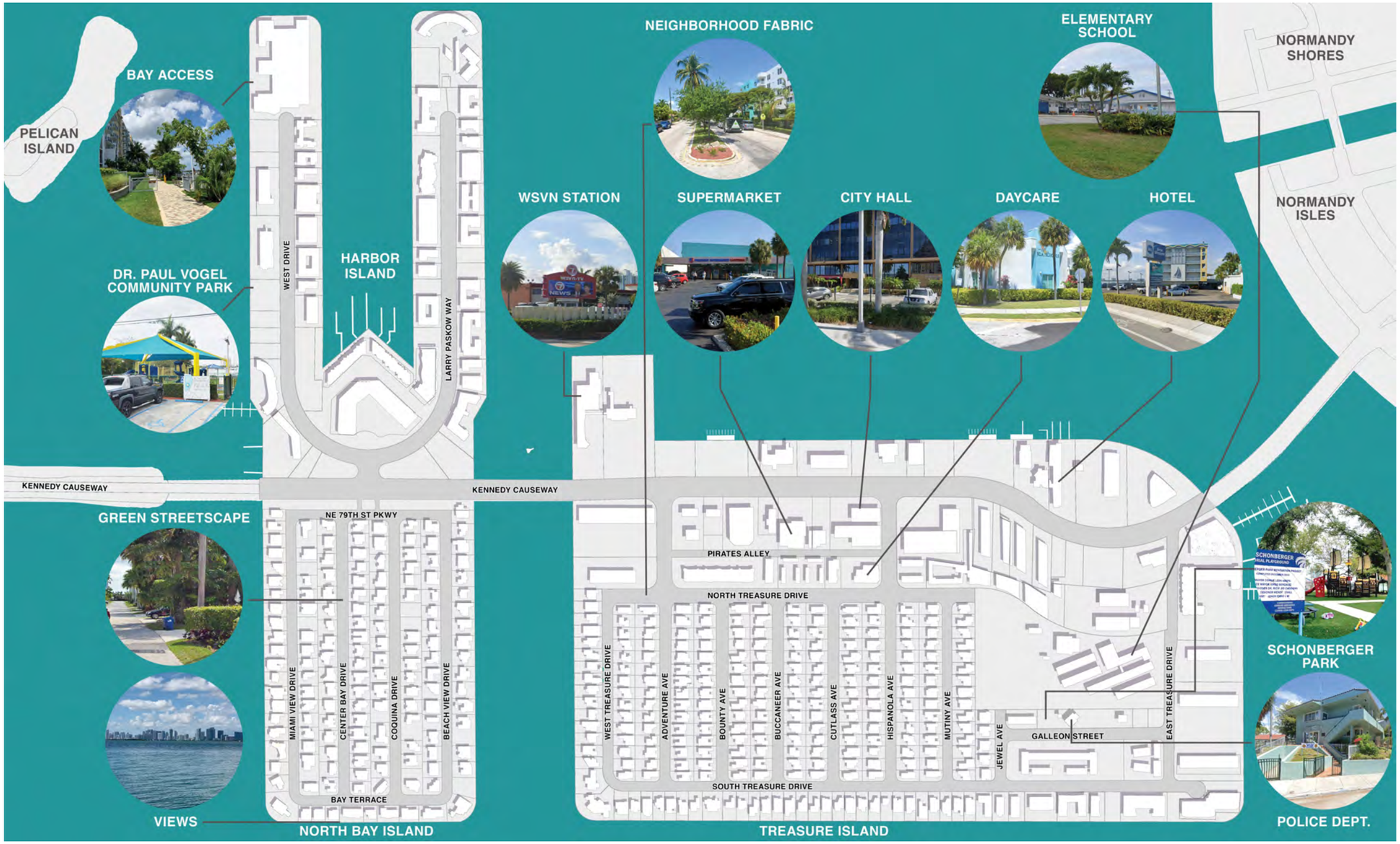
NBV100 seeks to unlock the potential from a substantial amount of underdeveloped land, making it available for future opportunities. Primarily found along the Causeway, and much of it with water views, this sizable inventory includes empty parcels where restaurants and other uses from past decades once stood, the many visible surface parking lots, and underutilized single-use, single-story properties.

NBV PROJECTS UNDERWAY OR PROPOSED



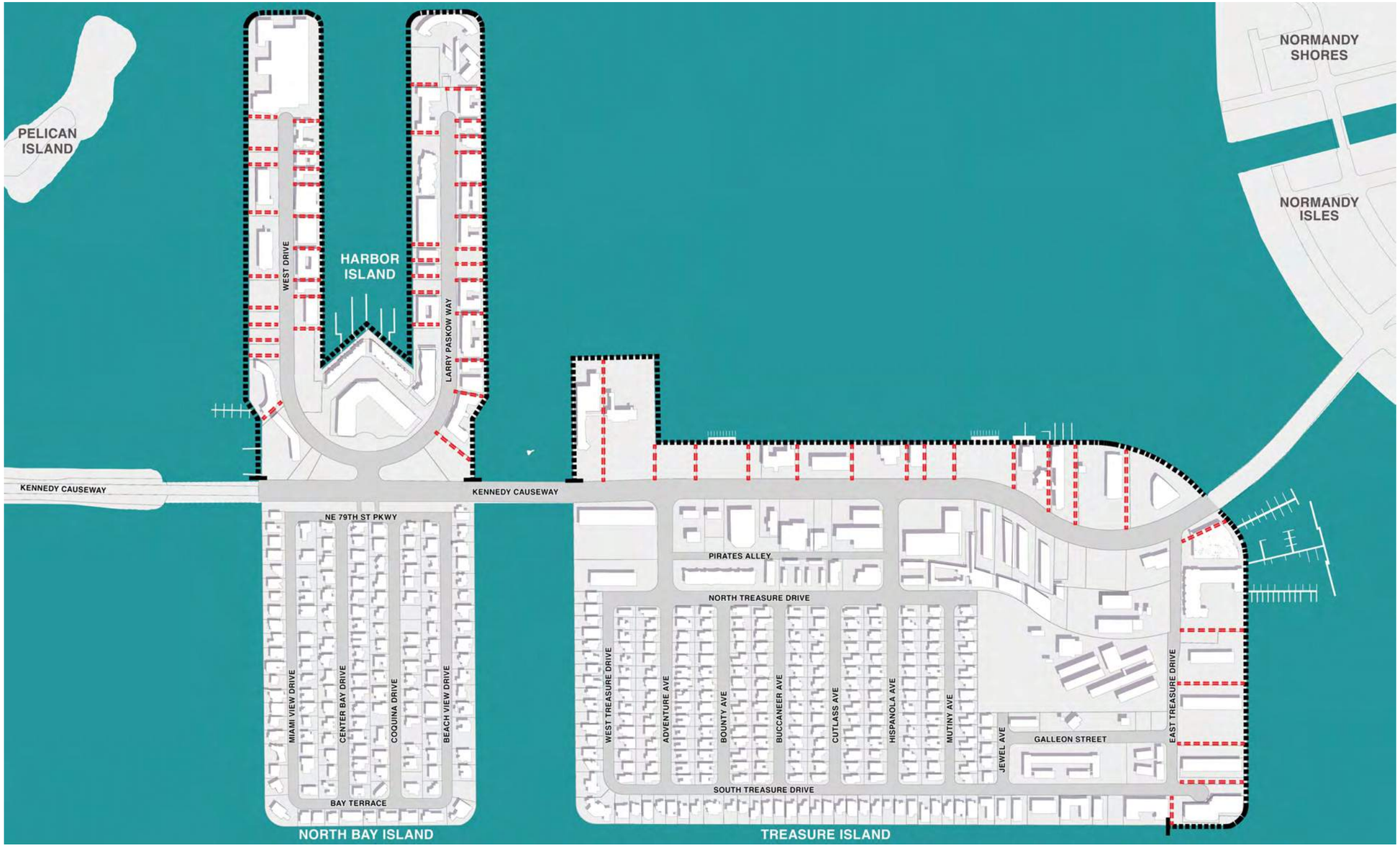
NBV needs to effectively address the current market context, while retaining the ability to evolve over time into a more resilient community. The projects above are already underway or are proposed, accommodating a variety of uses and building types. These developments will shape and enrich growth along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

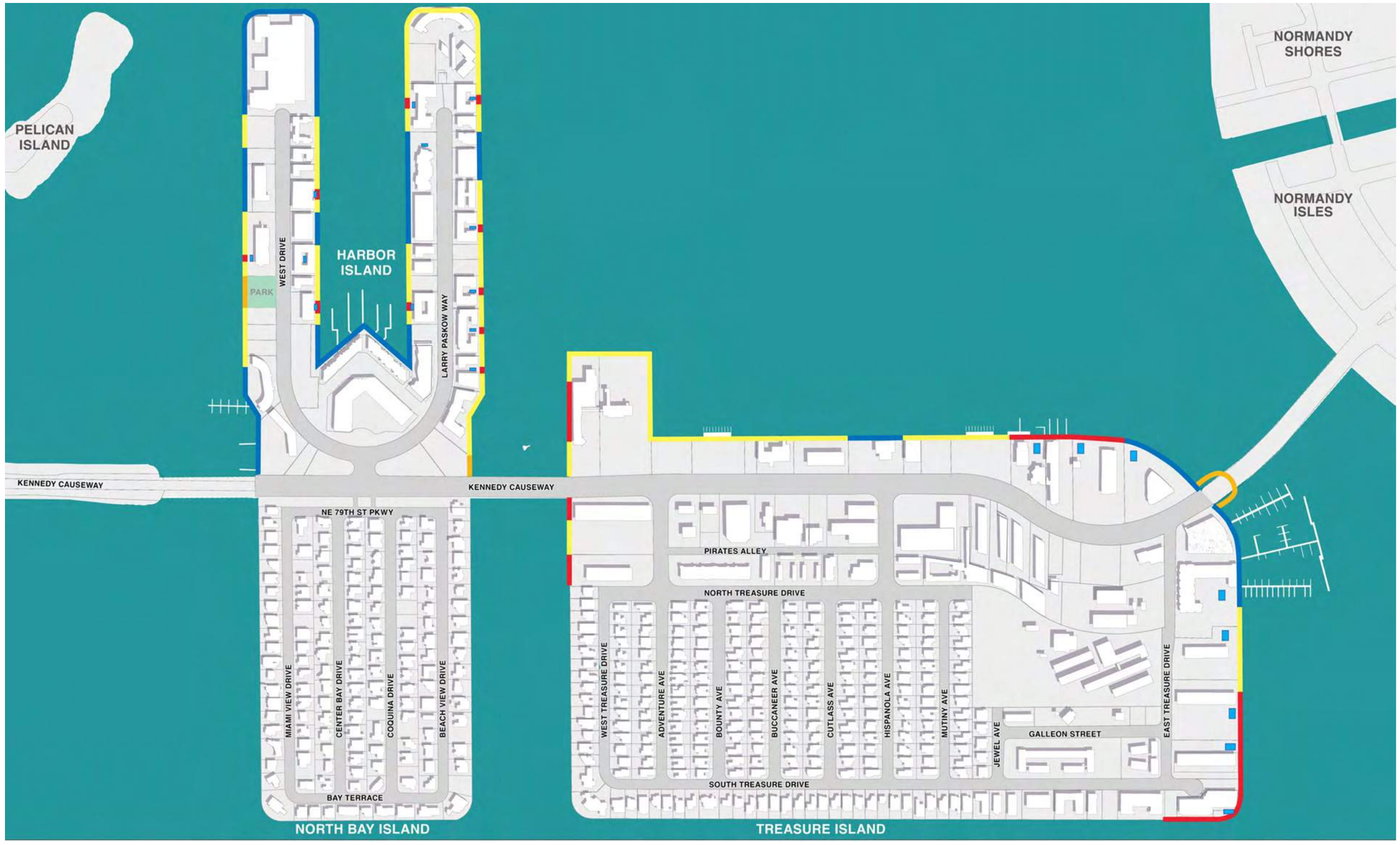
Shoreline Walkway –
Segment lengths when completed (approximate)

- Treasure Island north of Kennedy
  0.81 miles (4,296 FT)
- Treasure Island south of Kennedy
  0.45 miles (2,400 FT)
- Harbor Island
  1.81 miles (9,567 FT)

Shoreline Walkway (10')

Access Walkway on Each Property (5')

NBV ISLAND WALK FEASIBILITY



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

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 General[2] 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.

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[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.

Precedent:
Kane Concourse,
Bay Harbor Islands, FL

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

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

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.

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

1. Reduction from 3 to 2 traffic lanes
2. On-street parking/lane repurposing
3. Designated buffer space separating the bicycle lane from the adjacent parking lane
4. 20ft. sidewalk easement inside private property
5. Active street frontages

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.

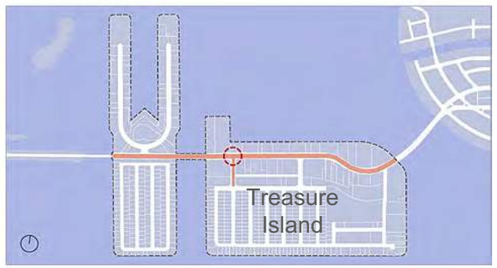
PRIORITIZE PEOPLE OVER CARS

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

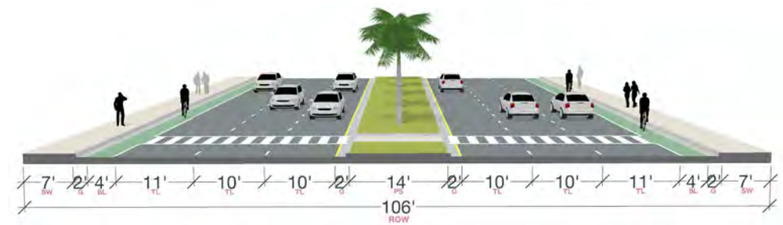
1. *Existing bus shelters*
2. *Bus shelters to be moved to east side of the intersection*
3. *Bicycles must yield to pedestrians and buses*
4. *Smaller curb radii to slow vehicles turning across the bicycle lane and pedestrian crosswalk*
5. *Protected intersection, also known as a Dutch intersection*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

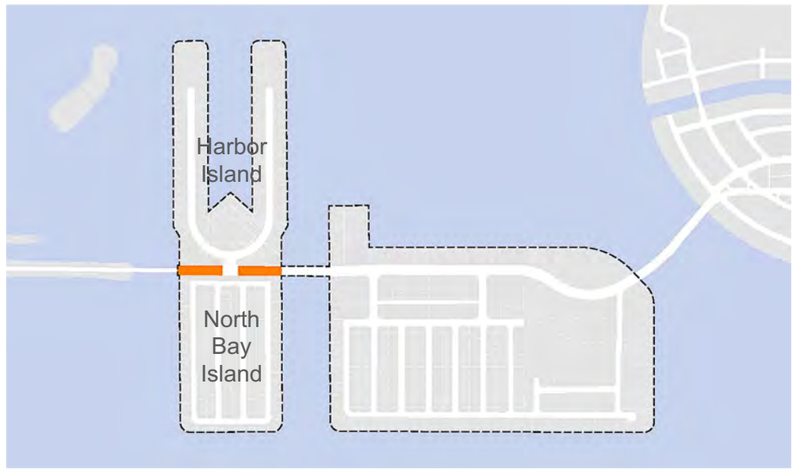
Note: Proposed bus stops east of Adventure Ave. are only possible if existing parking lot entrances are reconfigured.

PRIORITIZE PEOPLE OVER CARS

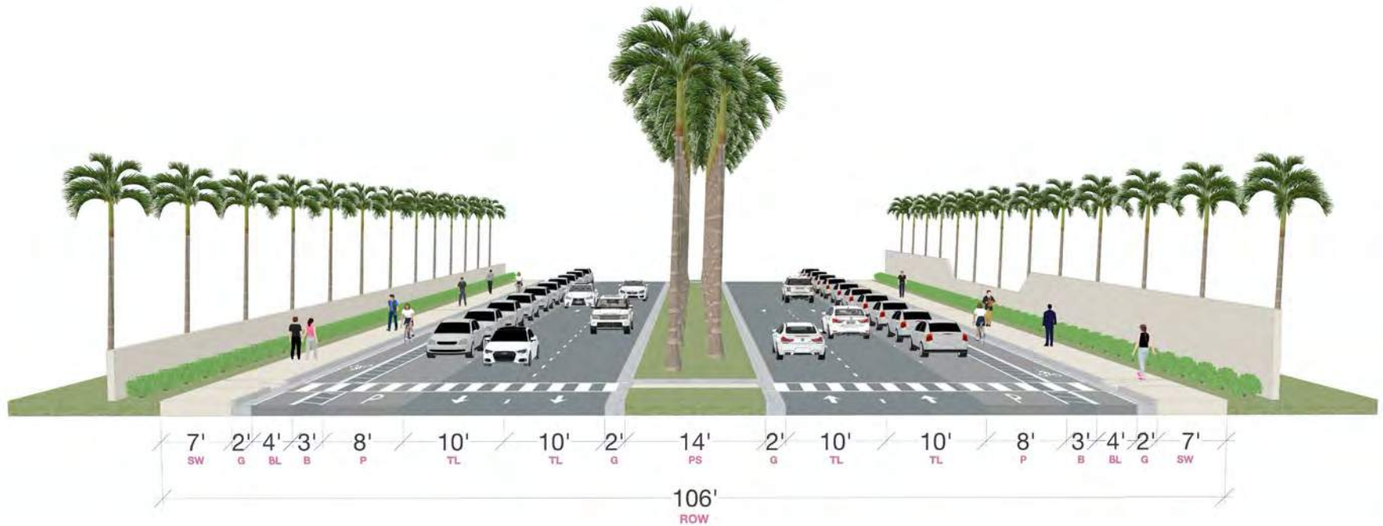
KENNEDY CAUSEWAY AT HARBOR AND NORTH BAY ISLANDS

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.

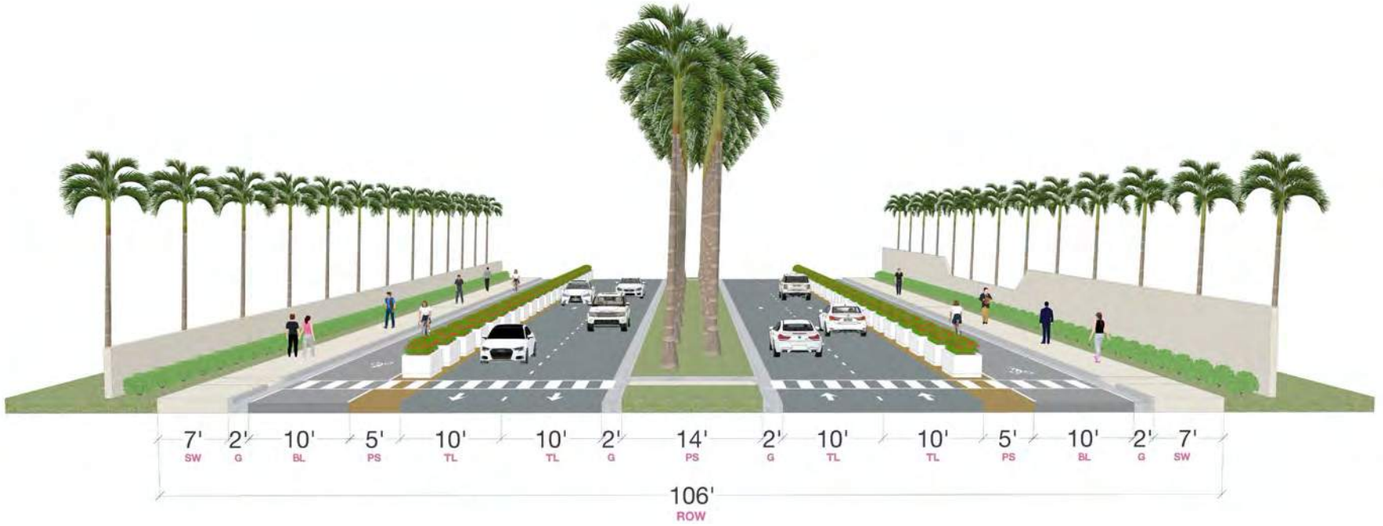




Existing Conditions



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.

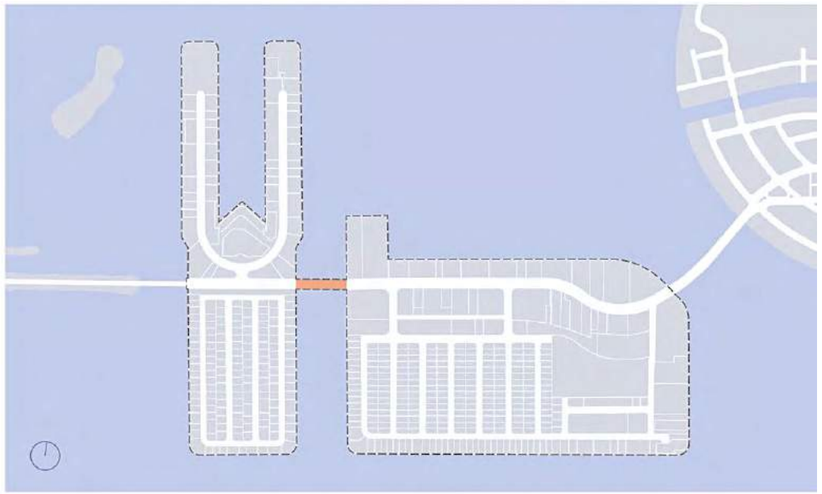


Proposed Scenario Two: Planters Protecting Bicycle Path.
This scenario includes the following strategies: lane repurposing to provide a more generous bicycle lane and buffer zone; increased tree canopy and vegetation. Bicycle lanes have been provided with enough width to accommodate car traffic when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

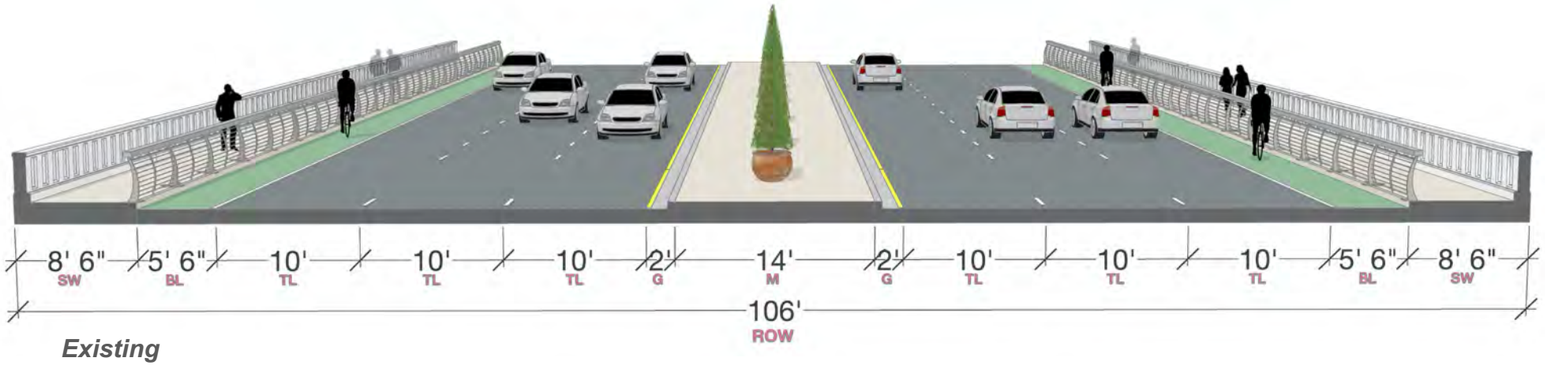
PRIORITIZE PEOPLE OVER CARS

KENNEDY CAUSEWAY BRIDGE

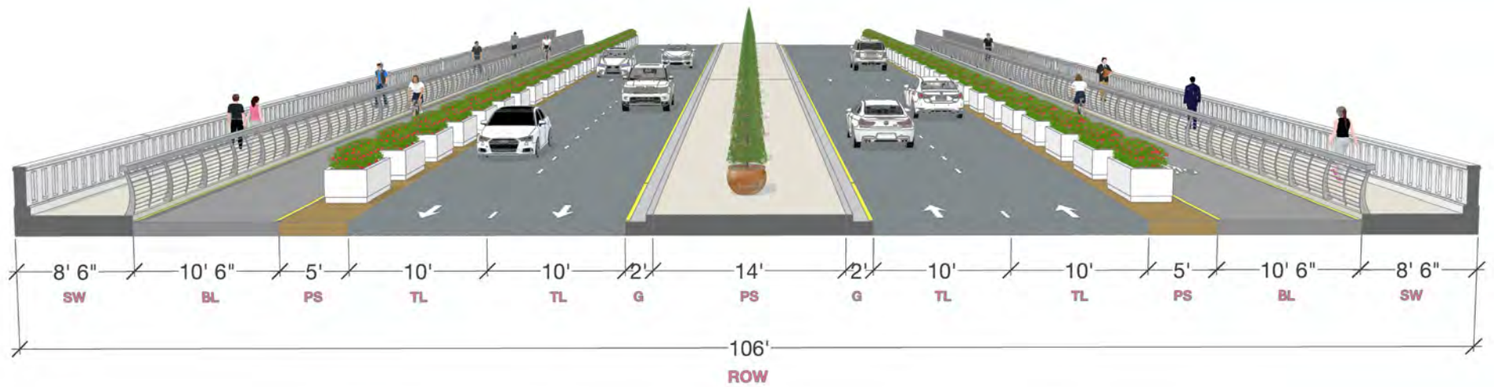
Illustrated below are the Causeway's existing conditions as it approaches Treasure Island. To the right is the proposed retrofit for this bridge.



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 at 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.

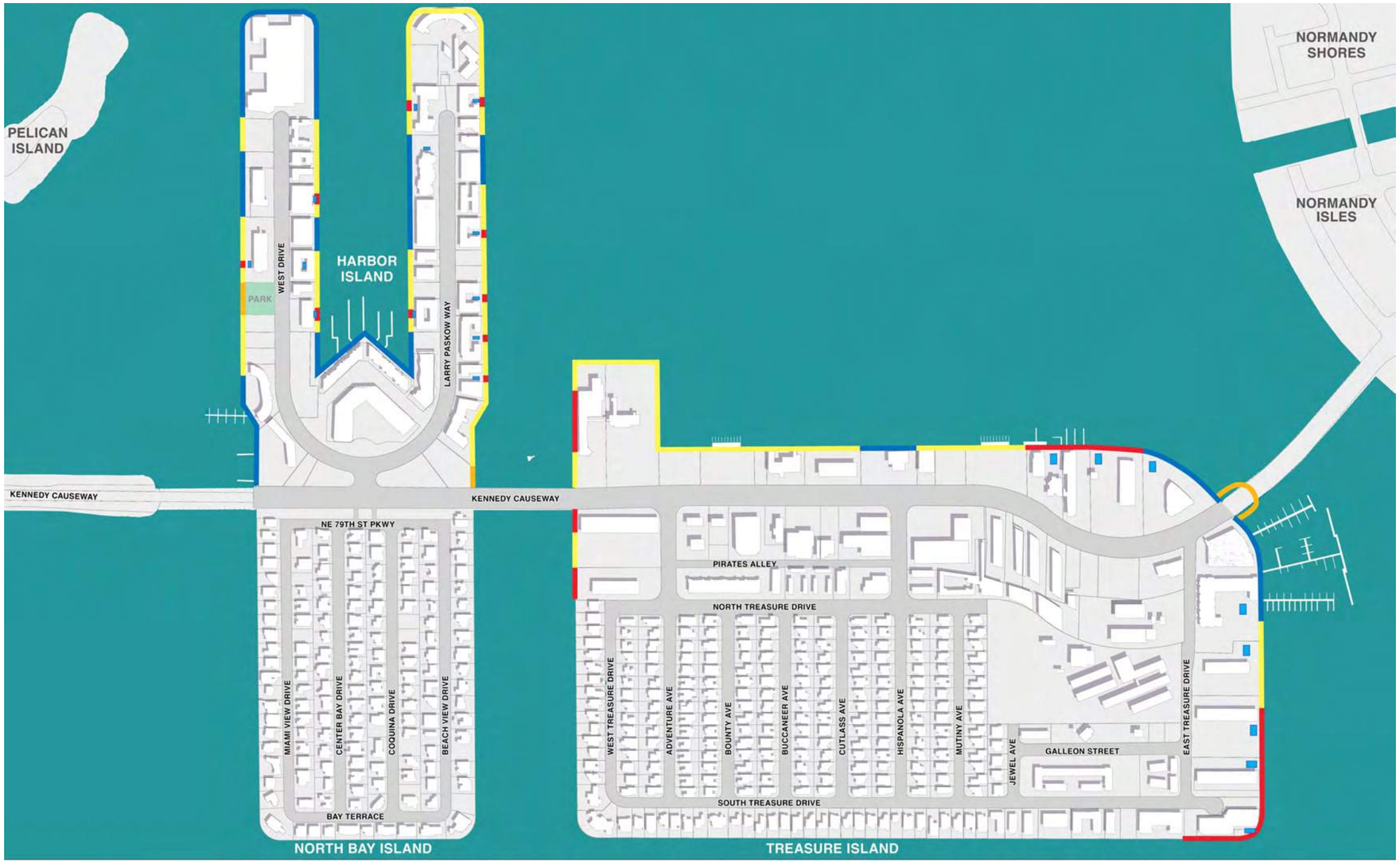
EMBRACE THE WATERFRONT

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.

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.

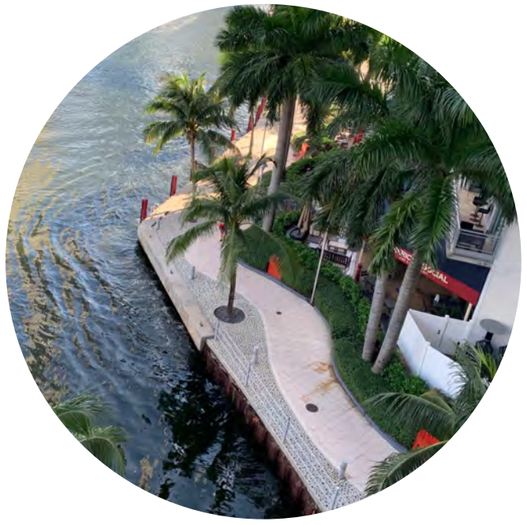
The proposed design for the new Island Walk builds on the Miami21 Waterfront Design Guidelines written in 2009 and the current North Bay Village Waterfront Standards. The width of the Island Walk easement will be increased from 10 feet to 18 feet overall so that it will afford a more pleasant pedestrian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

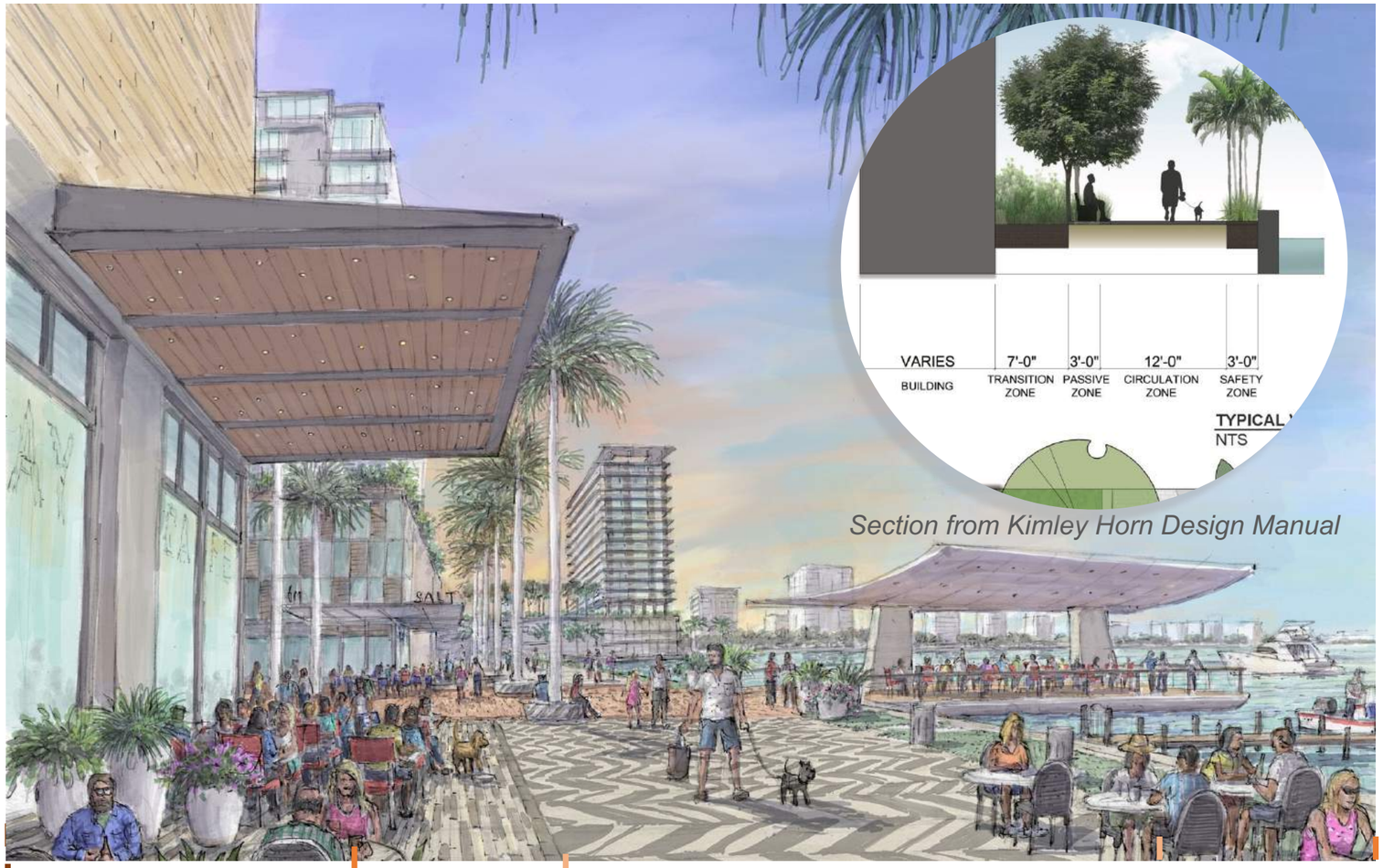
The overall easement is 18 ft. wide, set within a 25 ft. setback. The easement consists of three zones.

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.



Section from Kimley Horn Design Manual

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.

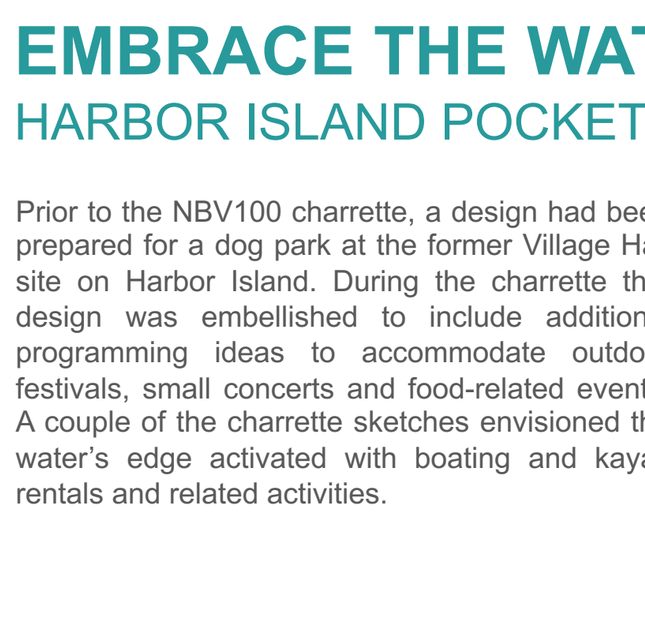
Existing condition along the northern edge of Treasure Island prevent the public from enjoying the water

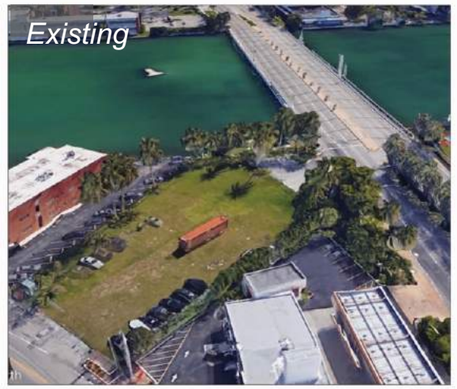
A transformed waterfront featuring a seawall promenade

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/

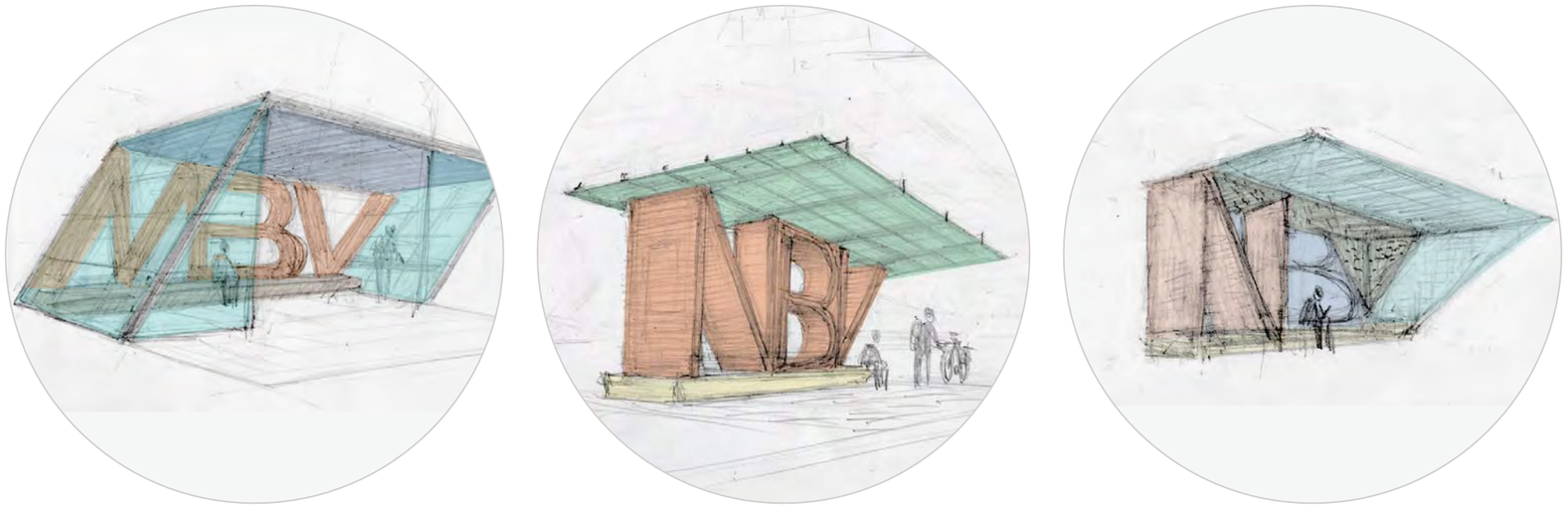
Precedent – Activation of an existing alley in Lincoln Lane N., Miami Beach

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

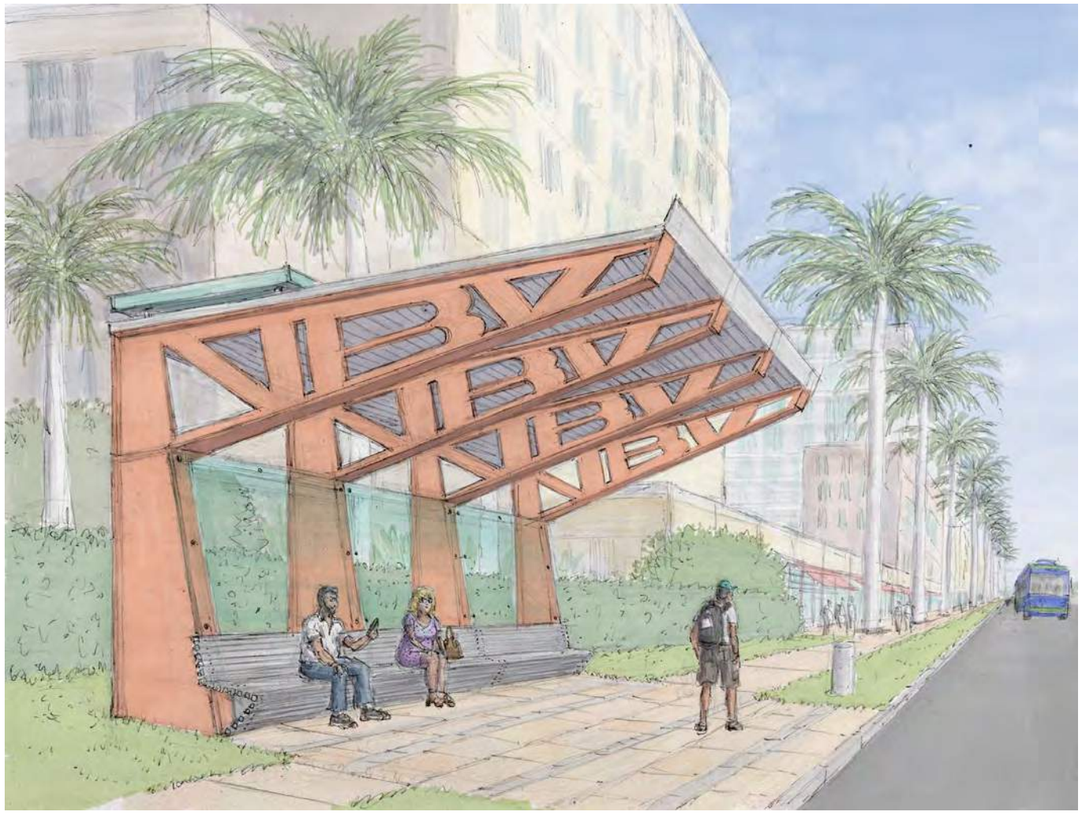
Proposed bus shelter

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)

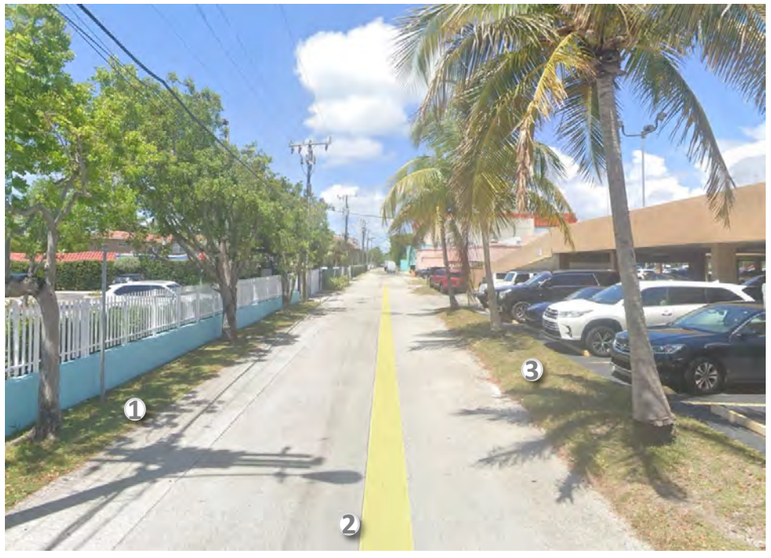
IMPROVE THE QUALITY OF LIFE

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.

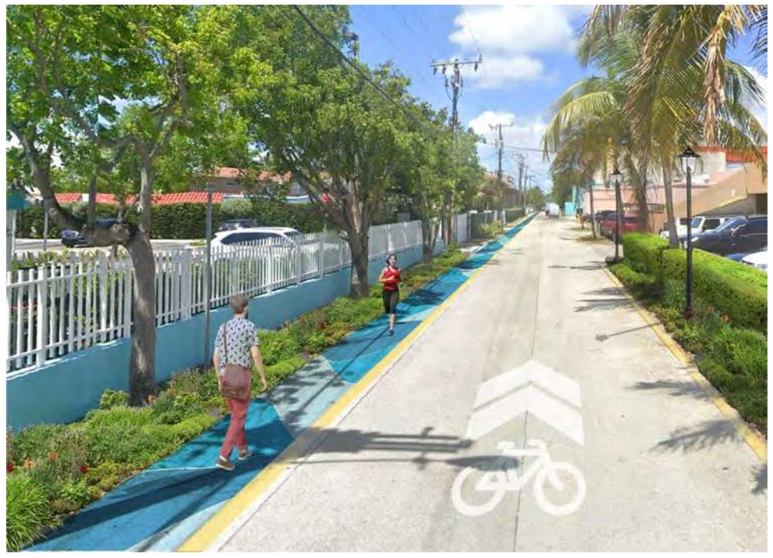
Depending on the degree of community acceptance, the transformation could begin with a simple makeover of landscaping, lighting, painting, and repaving to become a shared-use path (S.U.P.) for walking, jogging and biking. As a tactical way to incubate more activity in the heart of North Bay Village,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

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 round-abouts 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*

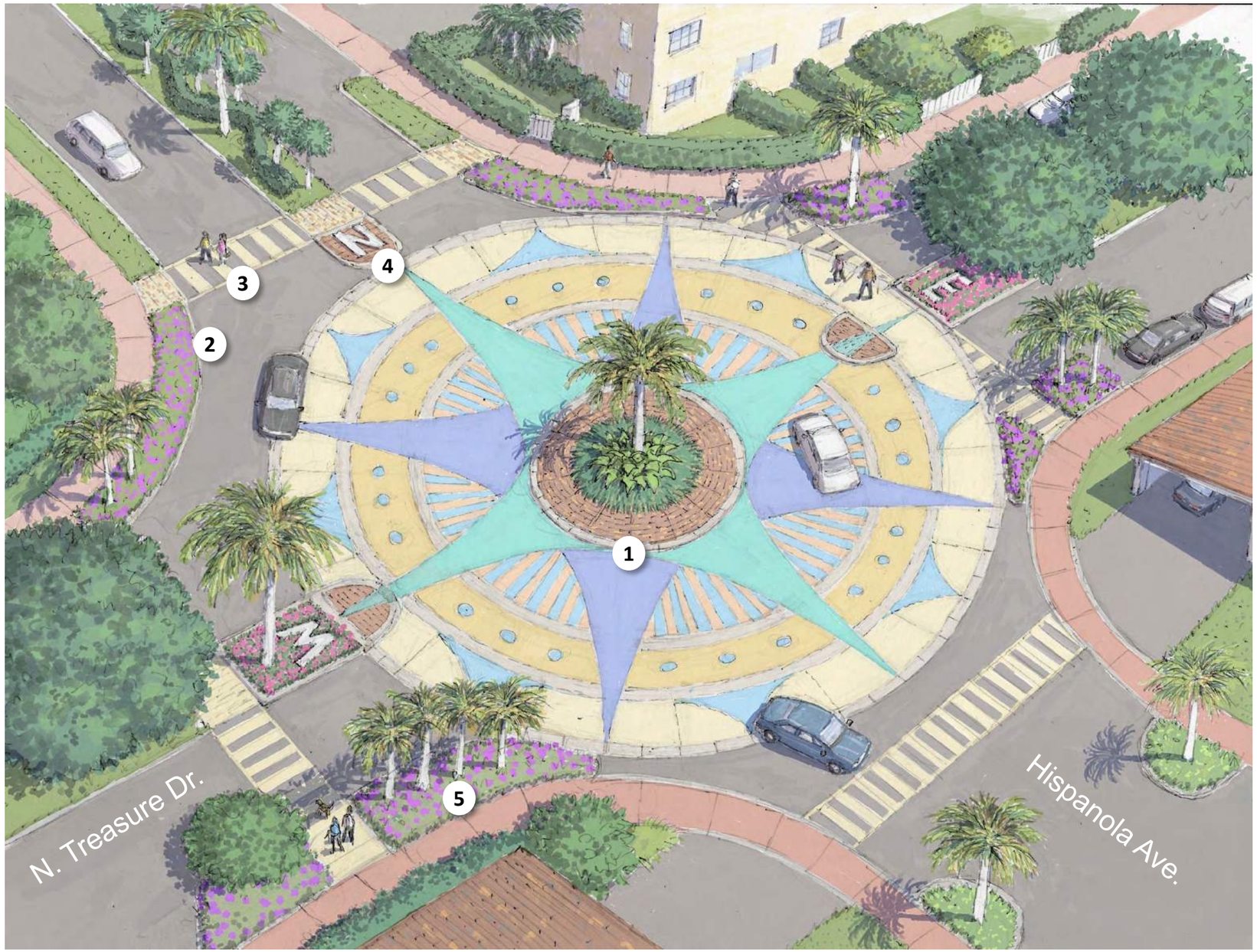
Identify opportunities to incorporate asphalt-art and energy generating infrastructure to enhance the overall experience along Kennedy Causeway and other key thoroughfares.

SYNERGIZE PUBLIC SPACE TO REFRESH NBV IDENTITY

NEIGHBORHOOD GATEWAY ART

Existing intersection at N. Treasure Drive and Hispanola Dr.

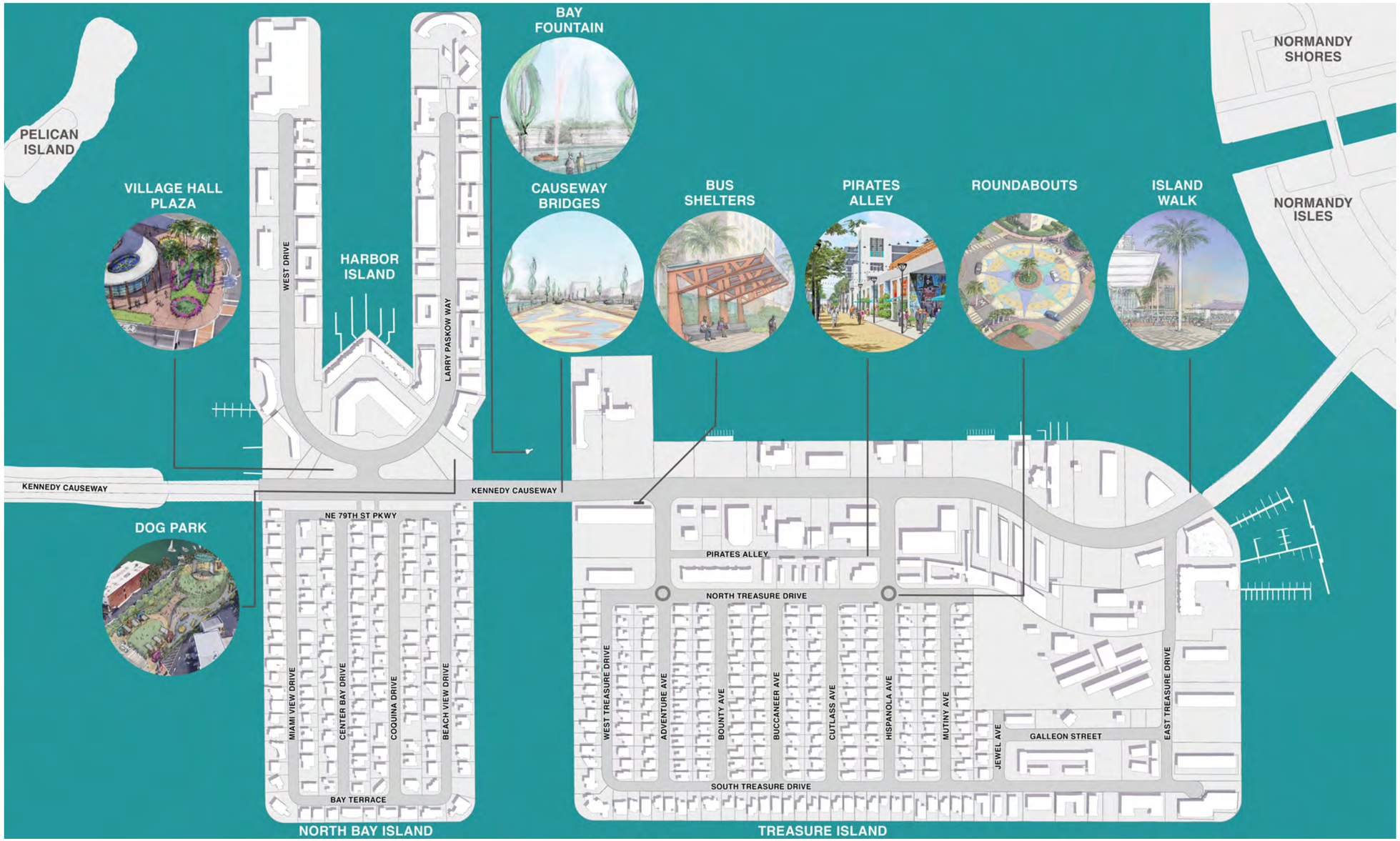
1. Roundabout with asphalt art
2. Narrowed turning radii
3. Improved pedestrian crosswalks
4. Pedestrian safety island
5. Improved Streetscape



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

Image: https://www.bienvenidoaflorida.com/north-bay-village/

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

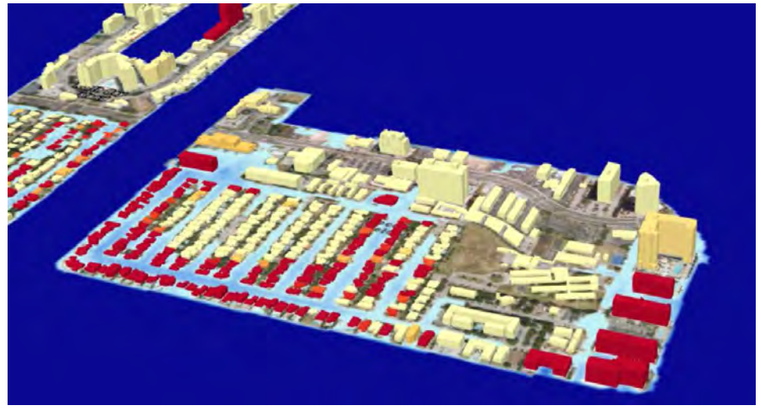
The images on this page dramatically illustrate the threat of rising water levels, regardless of whether the cause is temporary – such a king tide or a storm surge – or permanent – such as sea level rise -- and underscore the importance of addressing resiliency issues as a major part of the planning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

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

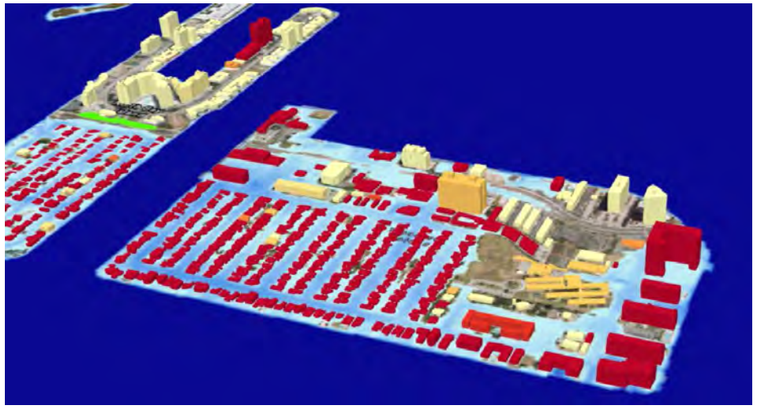
Key

Red buildings are at the highest risk.

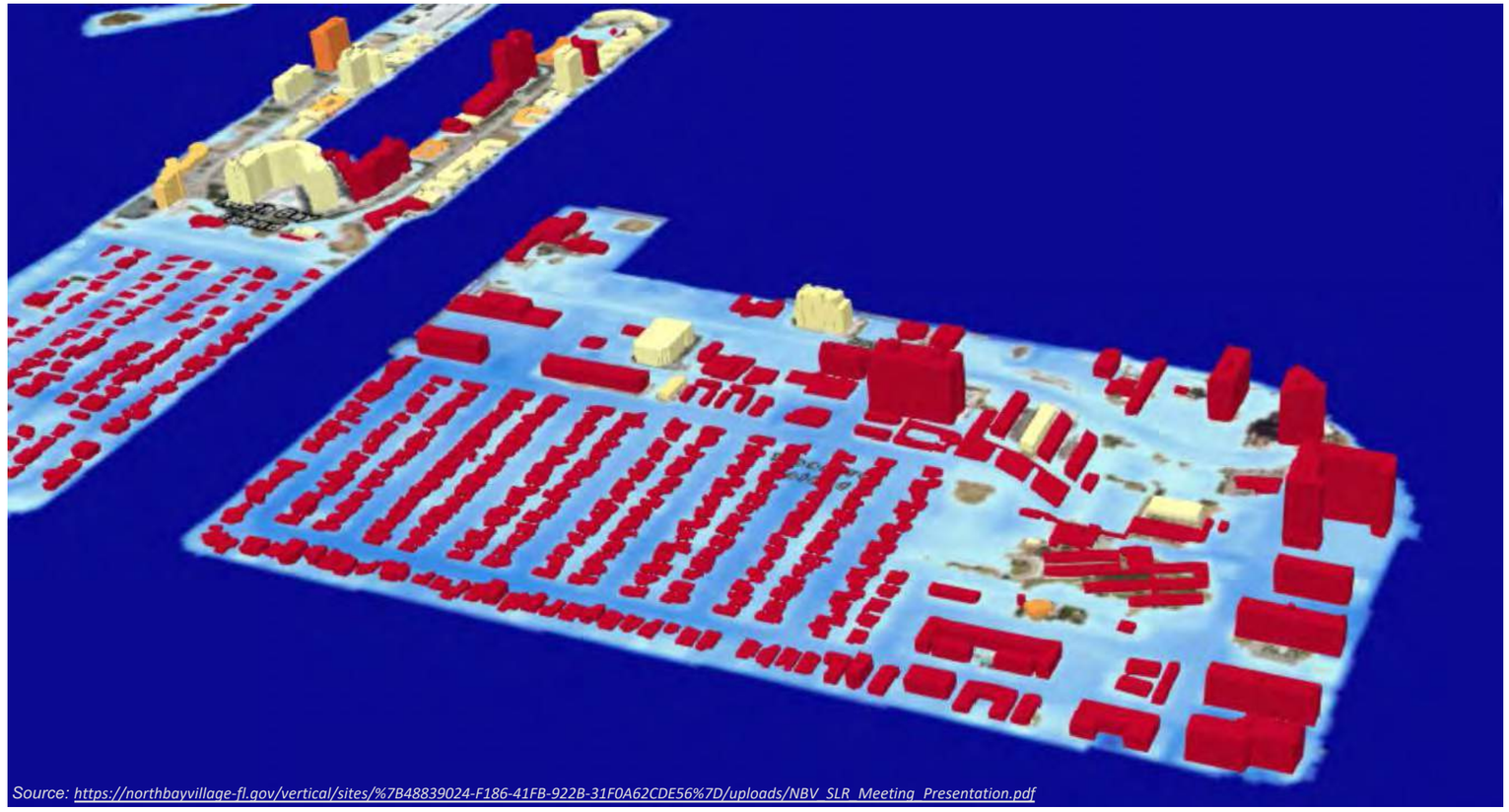
MHHW = Mean Higher High Water, roughly the average of high tides over the tidal epoch (19 year period).



+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

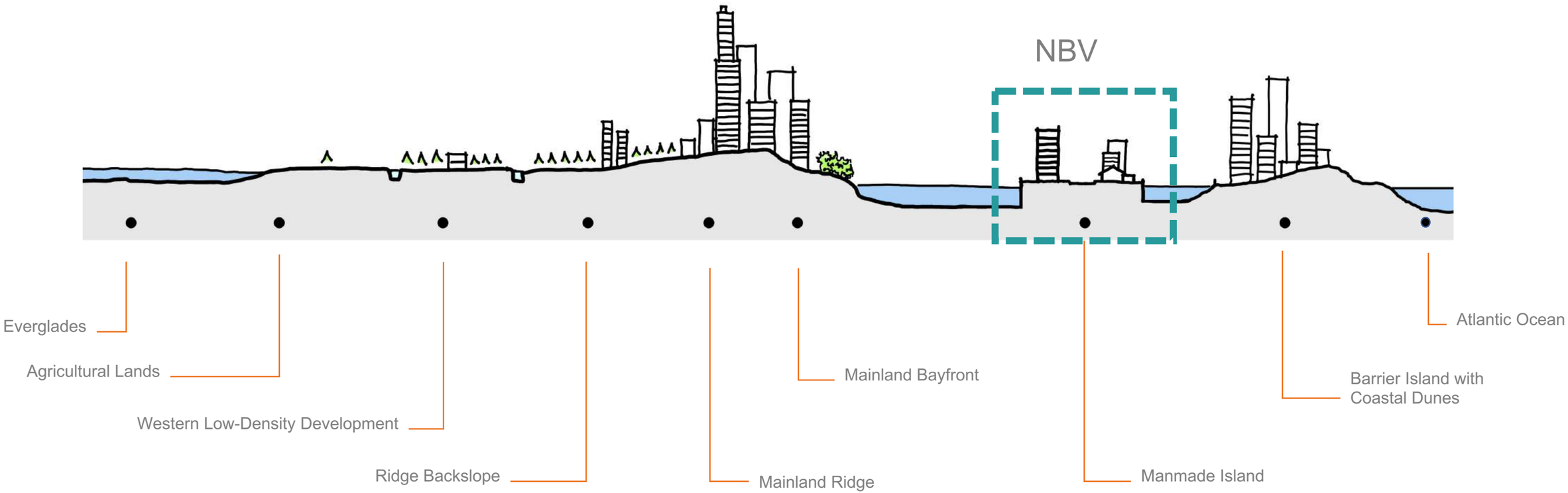
Harbor Island Waterfront

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.

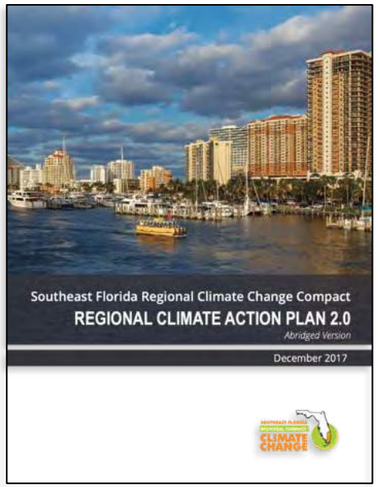
CREATED IN WATER

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*



CREATED IN WATER

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 recommend-dations, 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

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

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

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

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

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

CREATED IN WATER

FEMA FLOOD ZONES FOR NBV

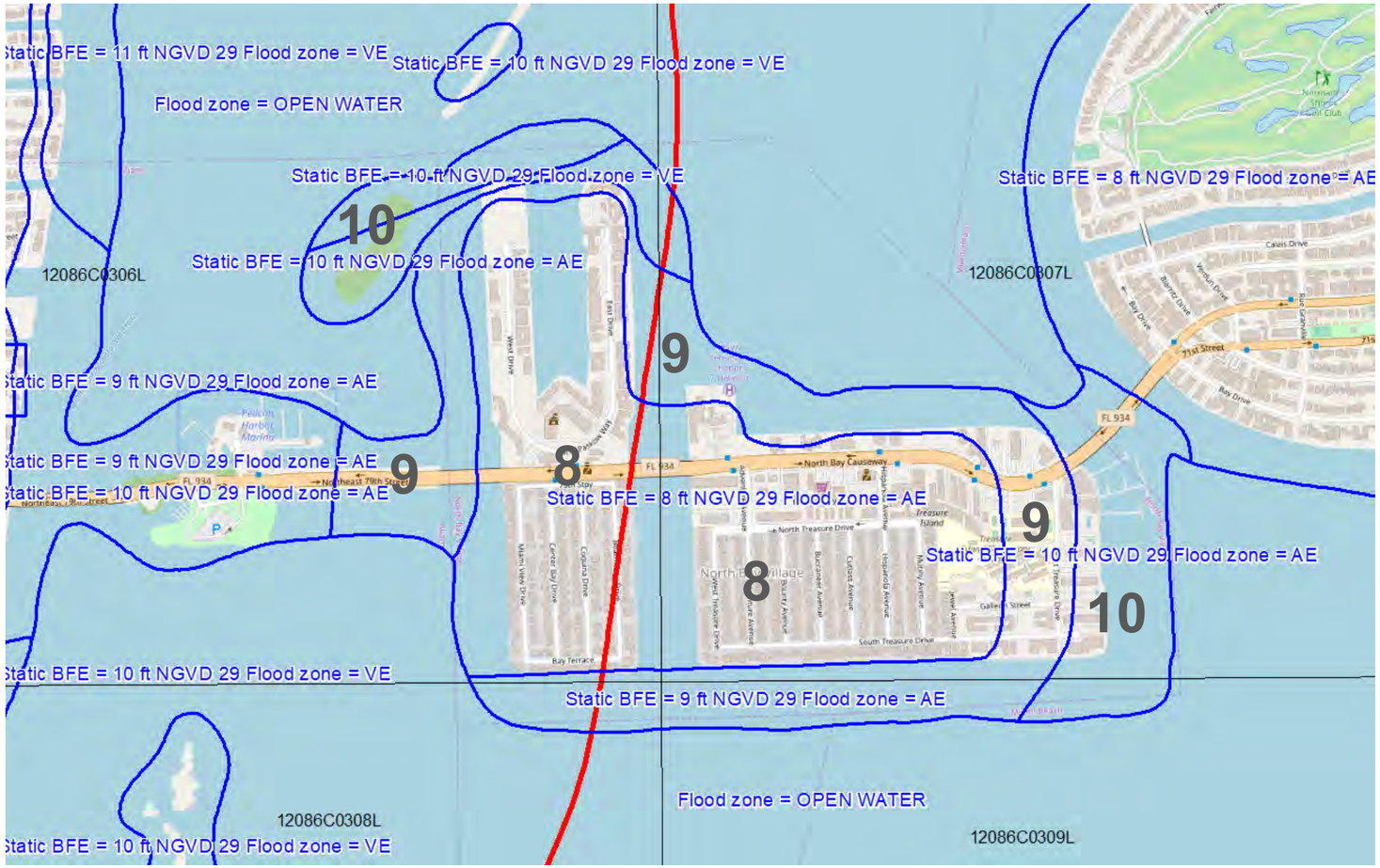
All of NBV is subject to a high degree of flood risk in the form of a storm surge during a hurricane or other tropical storm. Because of this, NBV has participated in the National Flood Insurance Program (NFIP) since 1972. For buildings to qualify for flood insurance, they must meet certain minimum standards. 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

CREATED IN WATER

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

CREATED IN WATER

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.

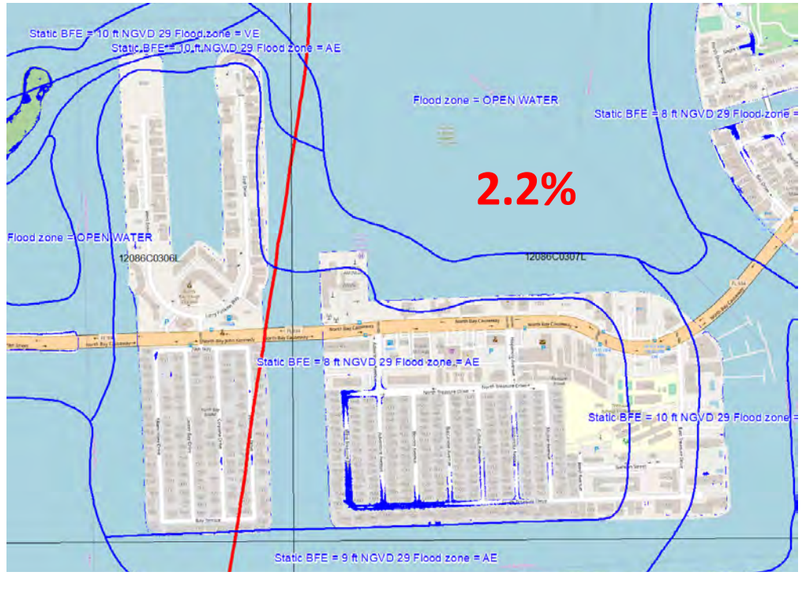
It is worth noting that the BFE* as determined by FEMA* currently stands at 6.5+/- feet (NAVD 88), with some areas at 7.5+/- and 8.5+/- feet. As the table below shows, approximately 90% to 99% of the NBV would be inundated during a Base Flood, or 100 year flood event.

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%

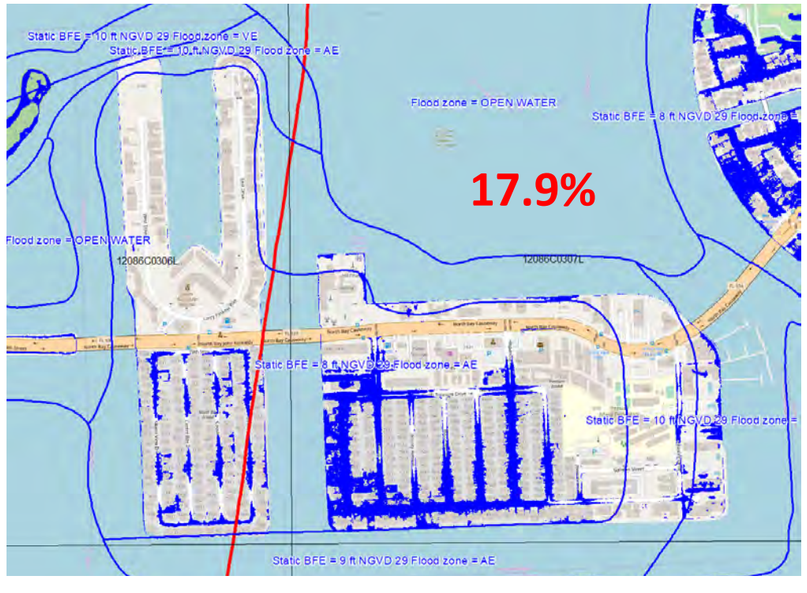
BFE (not pictured)

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

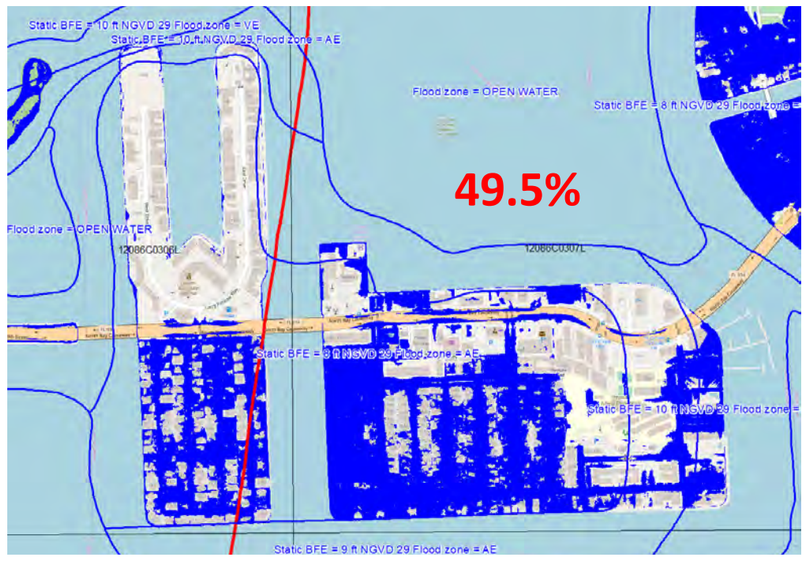
REF https://bit.ly/2NTnkzy
Accessed 11/12/2019



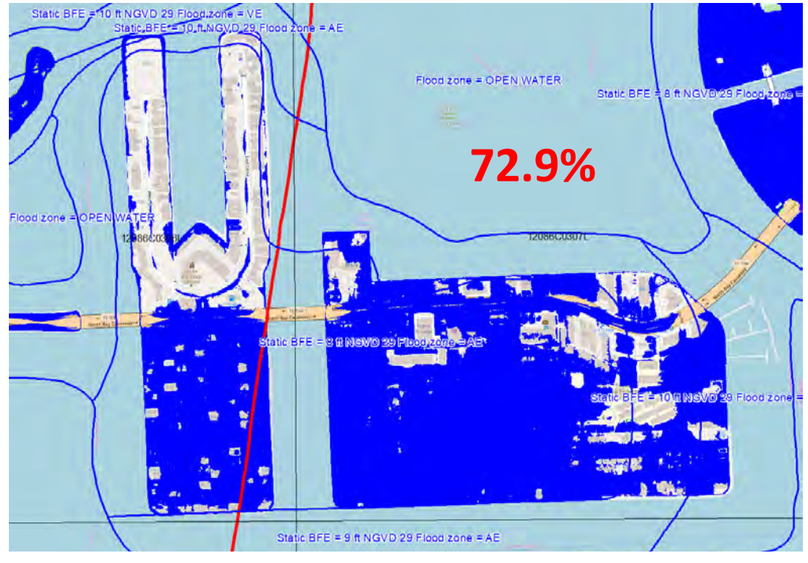
2 feet (NAVD 88): *2.2 % of NBV impacted*



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*

CREATED IN WATER
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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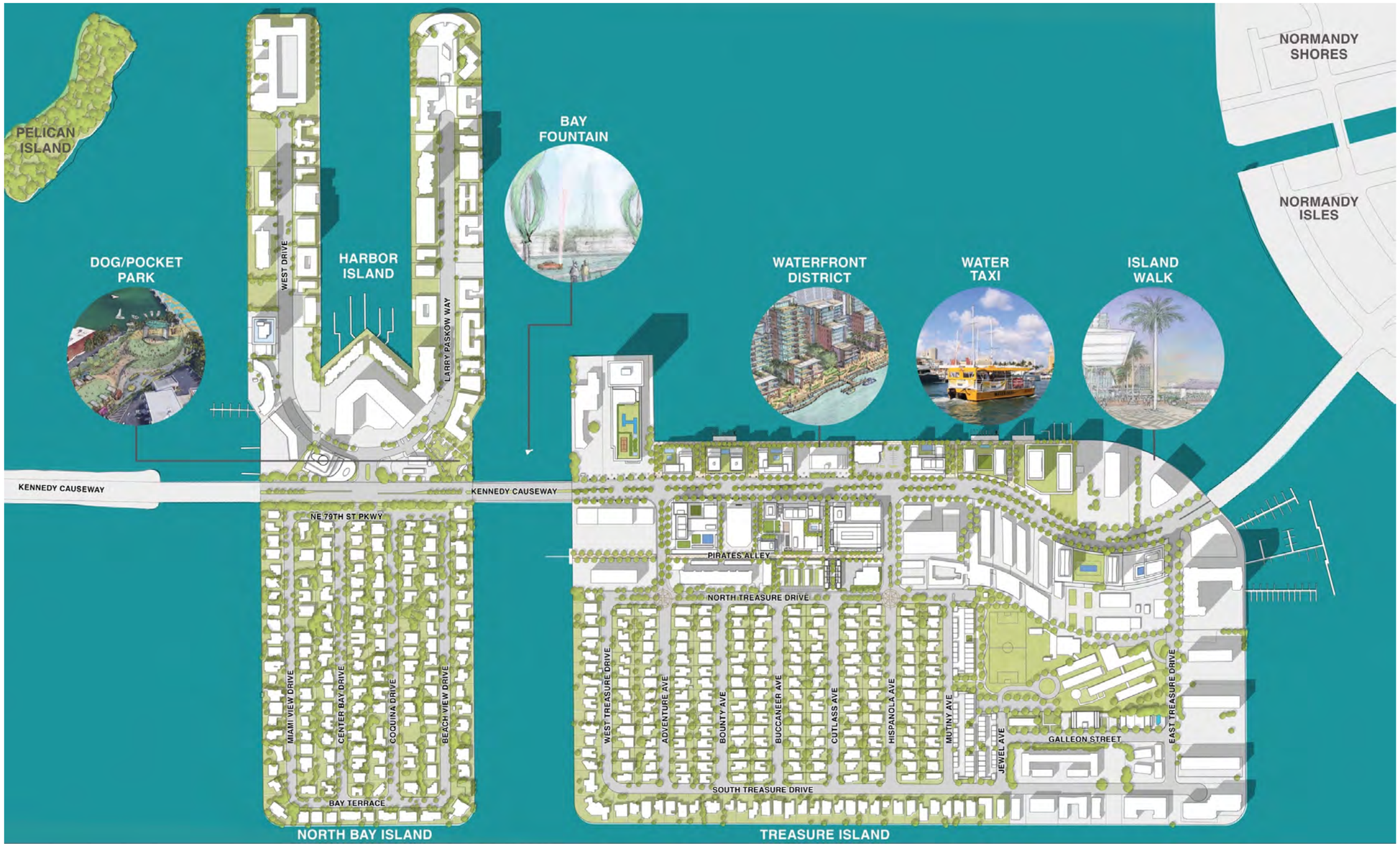
WATER QUALITY AWARENESS AND NBV WATERFRONT PROJECTS



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

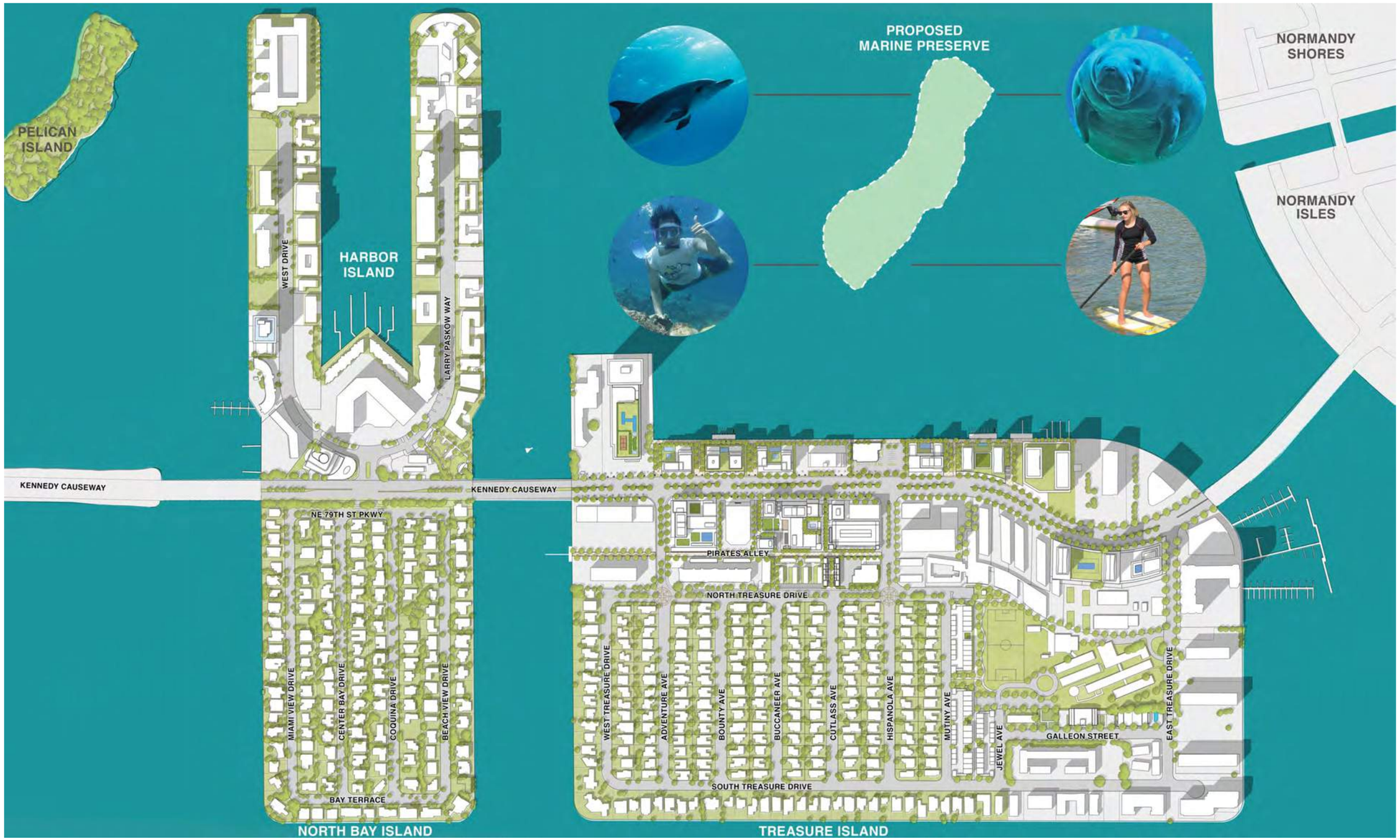
  Where space allows, replace existing seawalls with living seawalls installed on private property, and provide returns along interior lot lines. (Standards are being developed by EAC Consulting.)

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.

CREATED IN WATER

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.

PROTECTED FROM WATER

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

PROTECTED FROM WATER

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

PROTECTED FROM WATER

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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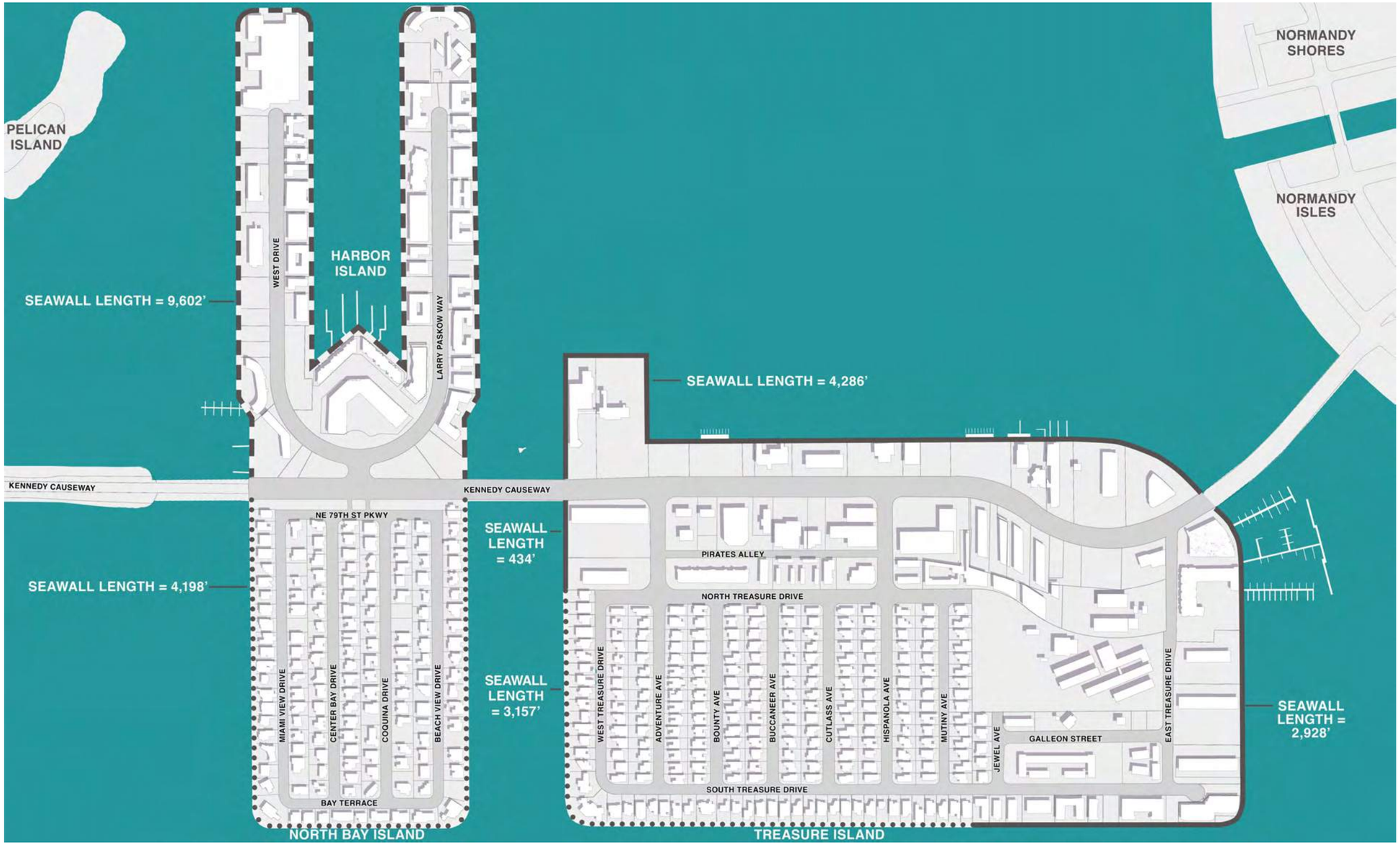
NBV SEAWALL PERIMETER ANALYSIS



Seawall (Mixed-use/Multi-family)

Seawall (Harbor Island)

Seawall (Single-family)

Seawall total length = 24,604' / 4.66 miles

NBV total land area = 0.37 SQ MI (0.96 $km^{2)}$

* Including the Causeway

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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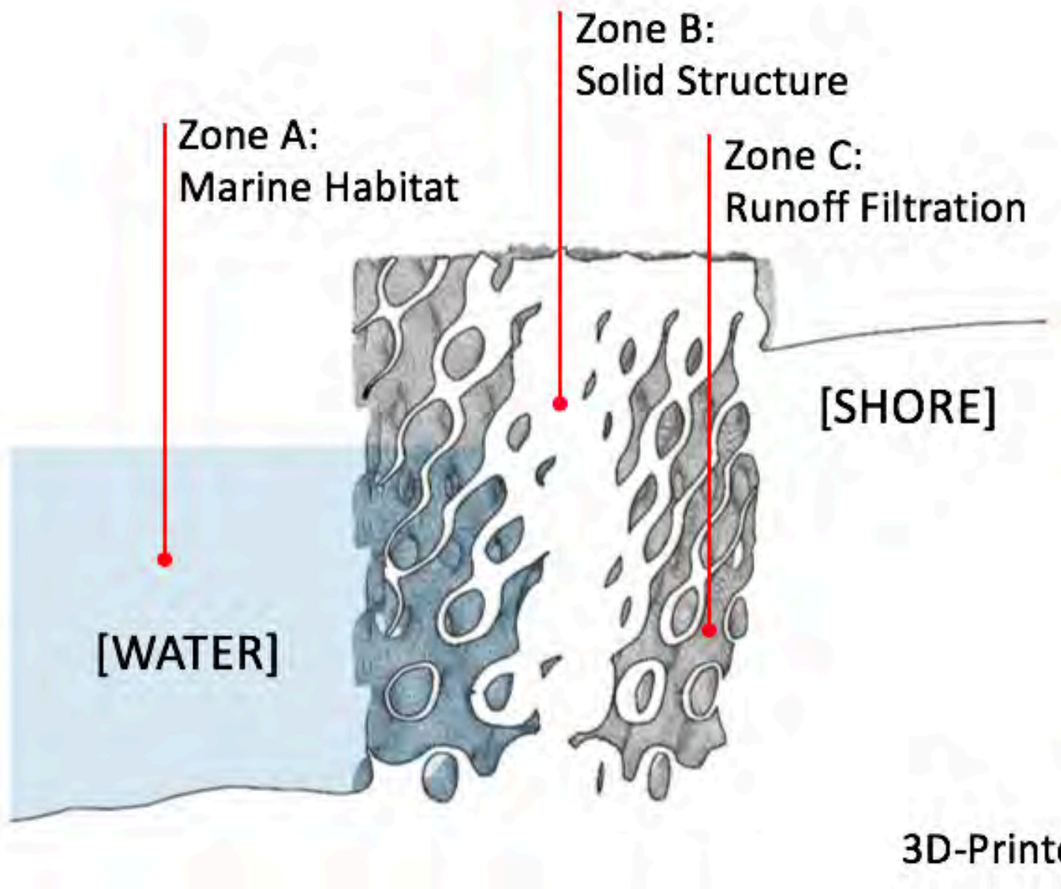
STRONG SEAWALLS – THE NEXT GENERATION OF COASTAL INFRASTRUCTURE

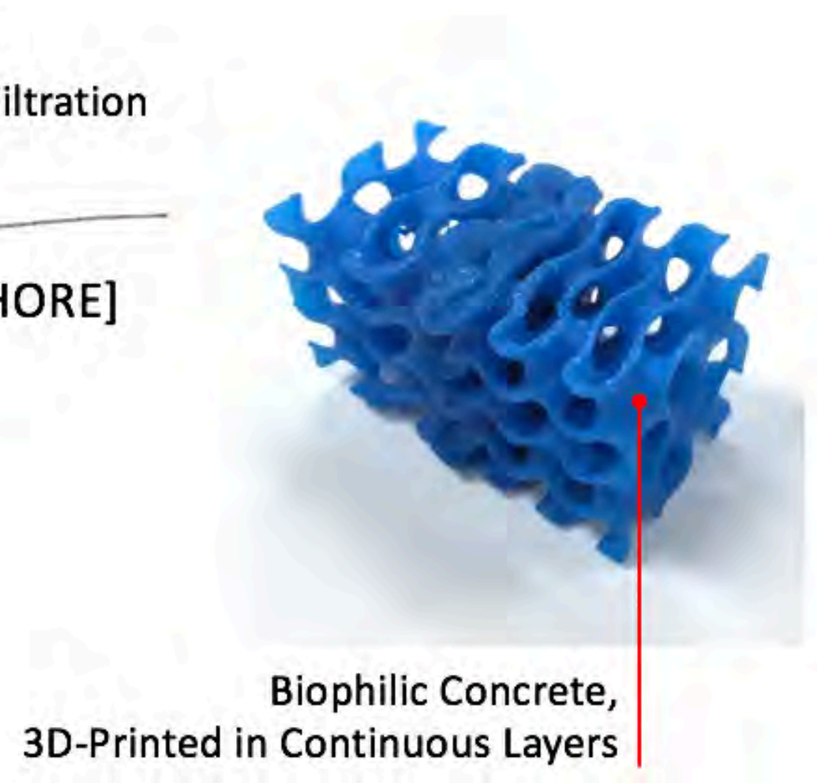
An early concept being developed by the U-LINK Team at the University of Miami is illustrated to the right. This and other concepts for the next generation of coastal infrastructure could be tested in a marine preserve area in NBV. (See “Created In Water Water Quality – Marine Preserve And Seagrass Restoration”,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

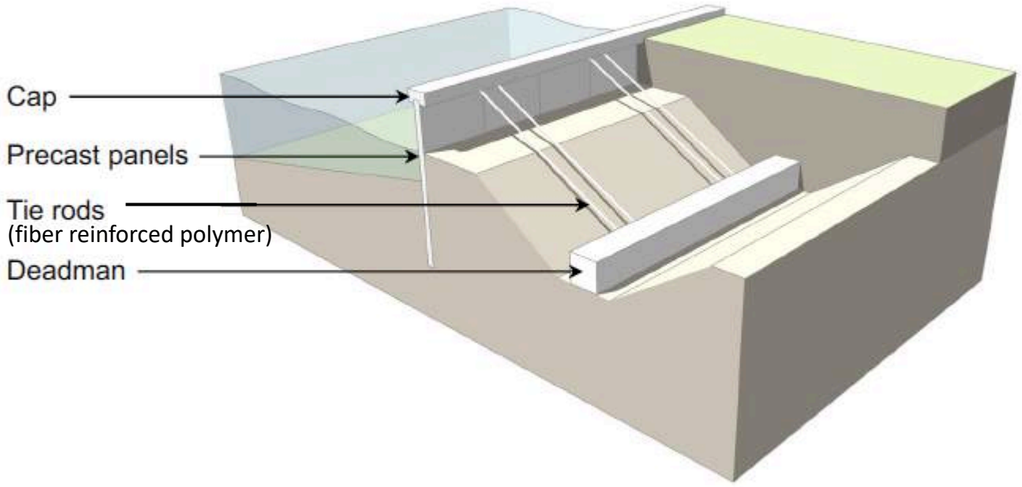
Illustrated here is an updated version that makes use of an innovative building material, namely non-corrosive fiber reinforced polymer materials pioneered by the Civil, Architectural, and Environmental Engineering Department at the University of Miami. One of the major advantages of this material is 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 afore-mentioned 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.

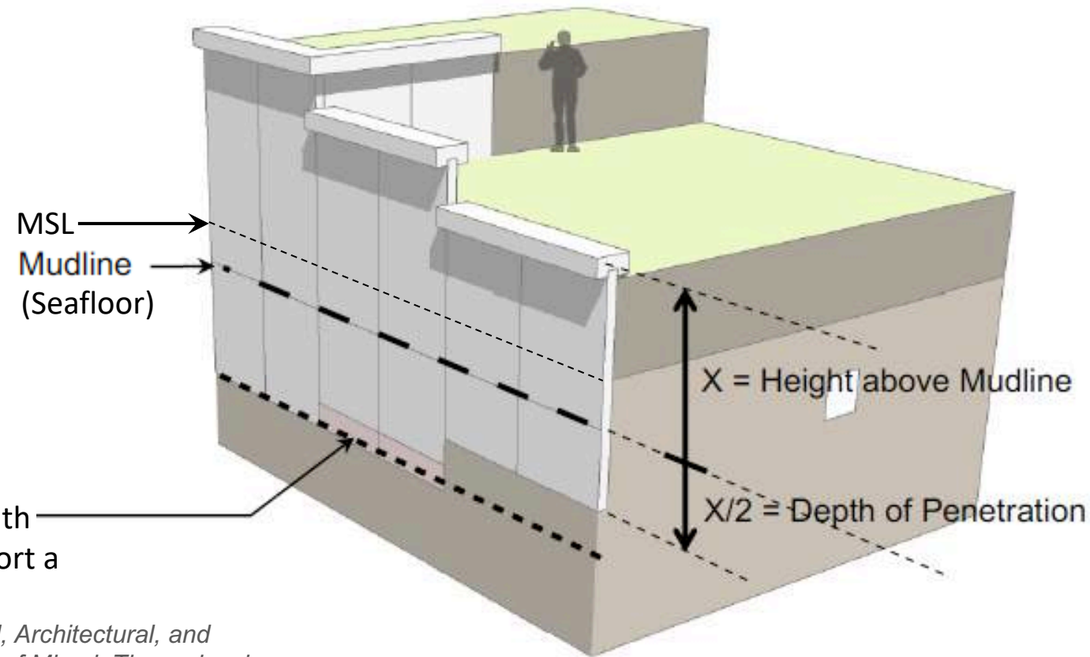
One alternative (not pictured) is a living seawall. This can take many forms, but one version consists of riprap placed in front of an aging seawall that needs repair or replacement. It is planted with mangroves and other native species. Living seawalls perform well in storm conditions and are easier 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.



Seawall with tie rods



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

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.

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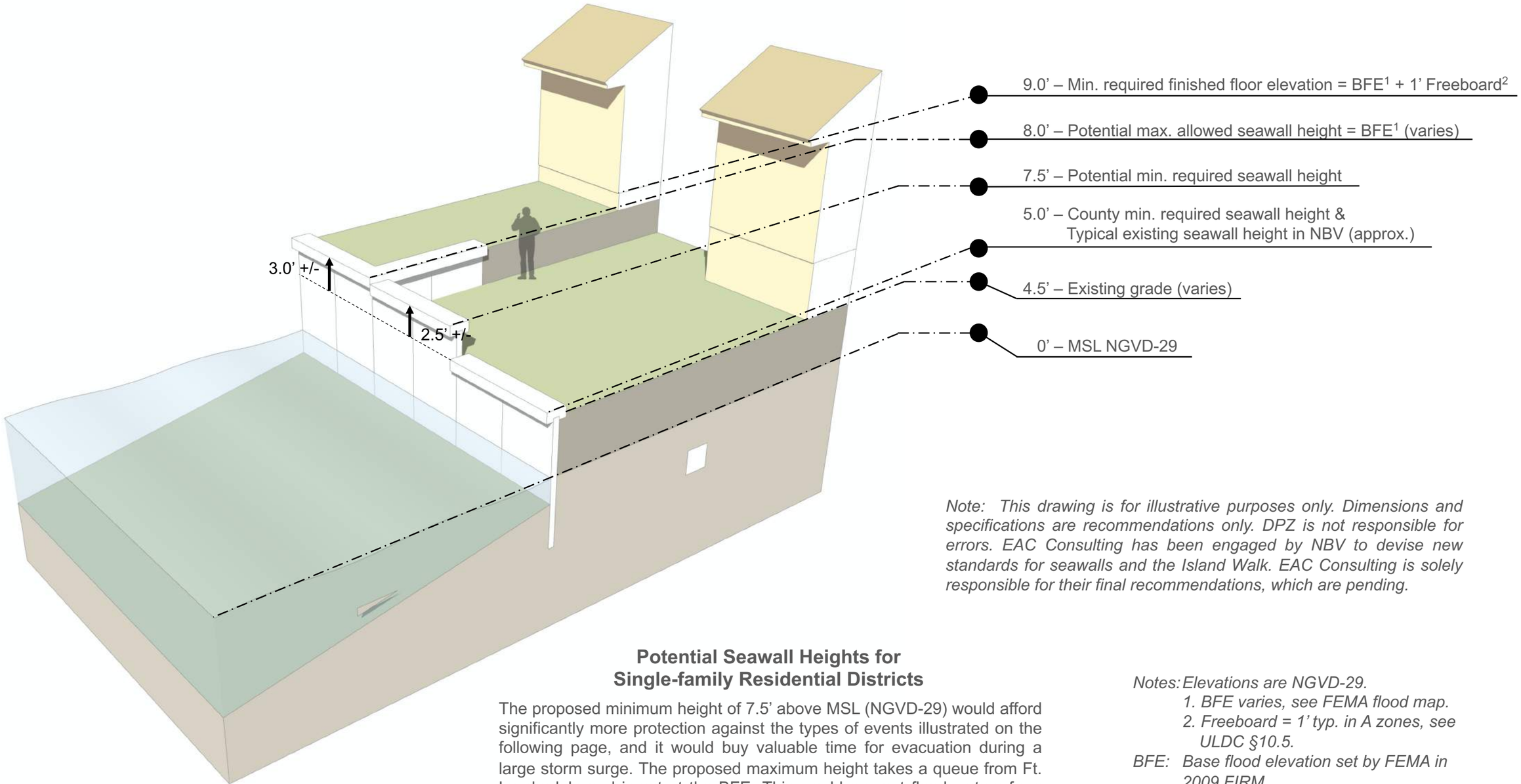
SEAWALL HEIGHT FOR SINGLE-FAMILY RESIDENTIAL



Note: This drawing is 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.

Potential Seawall Heights for Single-family Residential Districts

The proposed minimum height of 7.5' above MSL (NGVD-29) would afford significantly more protection against the types of events illustrated on the following page, and it would buy valuable time for evacuation during a large storm surge. The proposed maximum height takes a queue from Ft. Lauderdale and is set at the BFE. This would prevent flood waters from being trapped inside habitable building spaces during a major flood event.

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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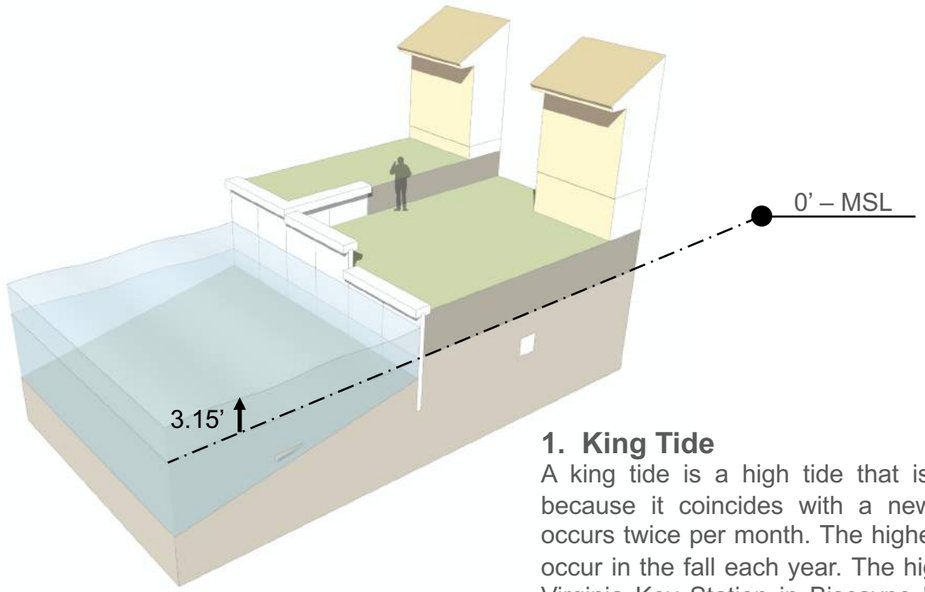
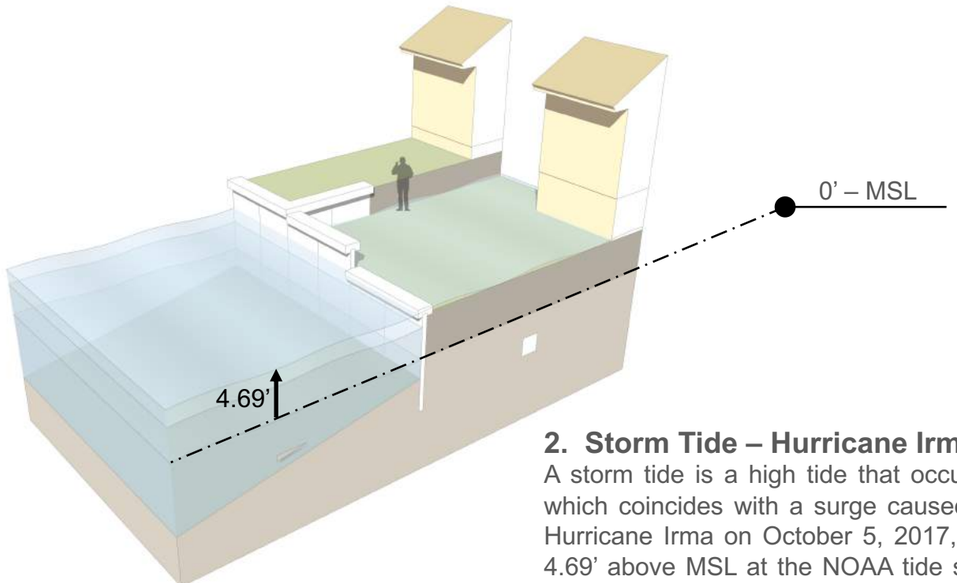
SEAWALL HEIGHT FOR SINGLE-FAMILY RESIDENTIAL

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.



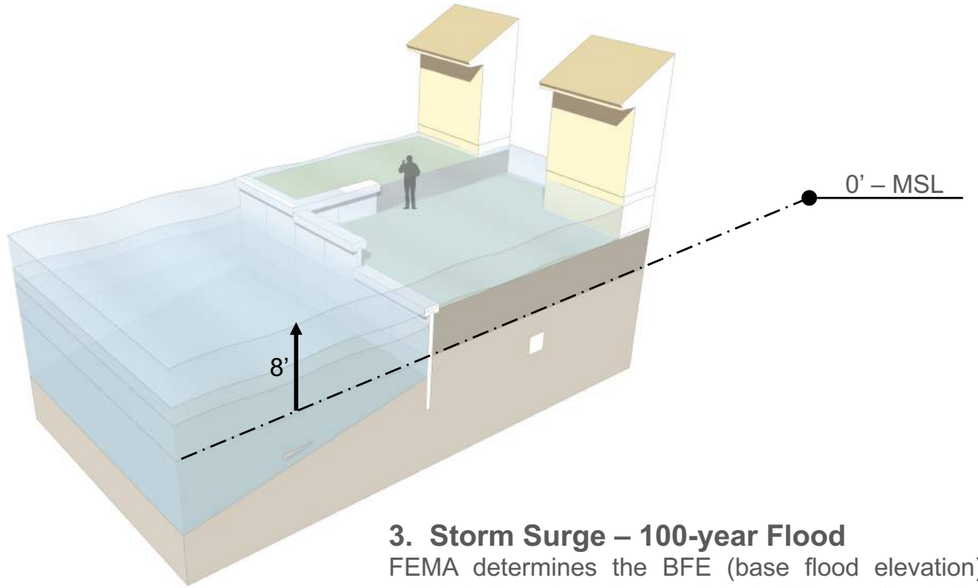
1. King Tide

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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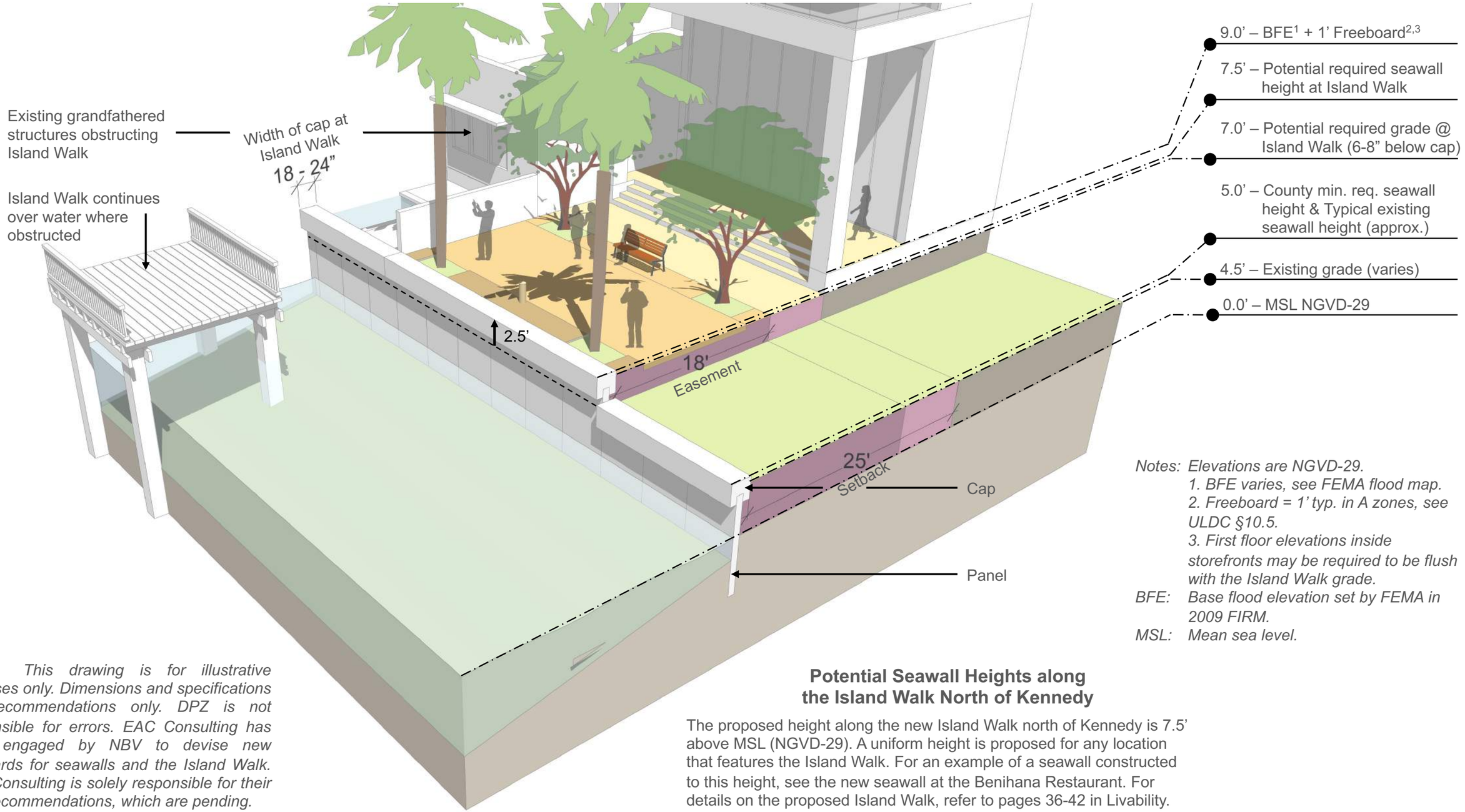
STRONG SEAWALLS AND ISLAND WALK NORTH OF KENNEDY



Notes: Elevations are NGVD-29.
1. BFE varies, see FEMA flood map.
2. Freeboard = 1’ typ. in A zones, see ULDC §10.5.
3. First floor elevations inside storefronts may be required to be flush with the Island Walk grade.
BFE: Base flood elevation set by FEMA in 2009 FIRM.
MSL: Mean sea level.

Note: This drawing is 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.

Potential Seawall Heights along the Island Walk North of Kennedy

The proposed height along the new Island Walk north of Kennedy is 7.5’ above MSL (NGVD-29). A uniform height is proposed for any location that features the Island Walk. For an example of a seawall constructed to this height, see the new seawall at the Benihana Restaurant. For details on the proposed Island Walk, refer to pages 36-42 in Livability.

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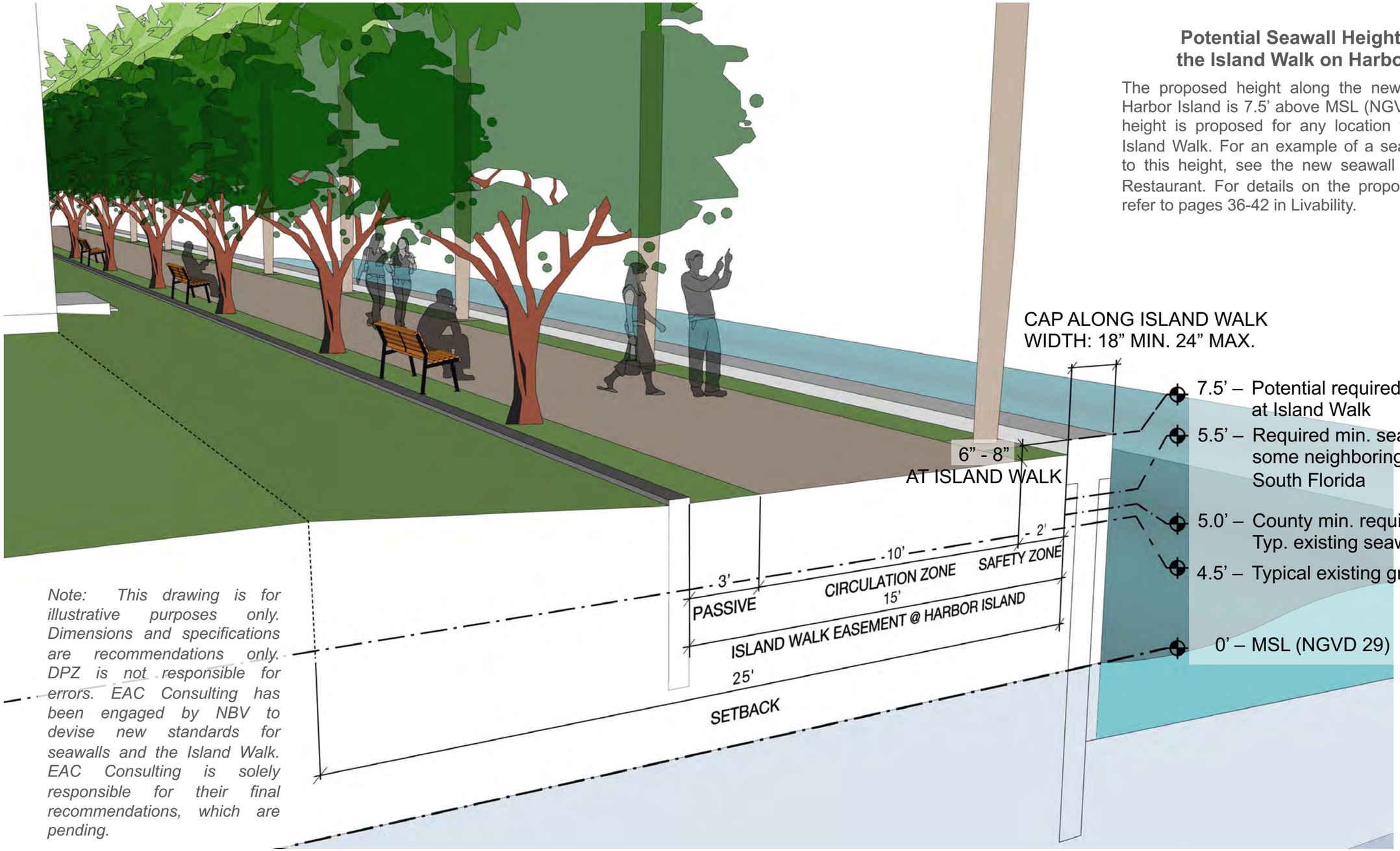
STRONG SEAWALLS AND ISLAND WALK ON HARBOR ISLAND



Potential Seawall Heights along the Island Walk on Harbor Island

The proposed height along the new Island Walk on Harbor Island is 7.5’ above MSL (NGVD-29). A uniform height is proposed for any location that features the Island Walk. For an example of a seawall constructed to this height, see the new seawall at the Benihana Restaurant. For details on the proposed Island Walk, refer to pages 36-42 in Livability.

Note: This drawing is 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.

PROTECTED FROM WATER
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

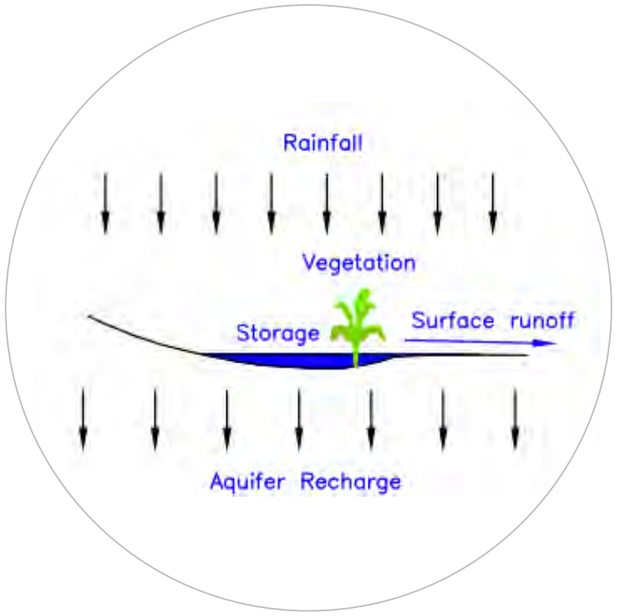
GREEN INFRASTRUCTURE

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.

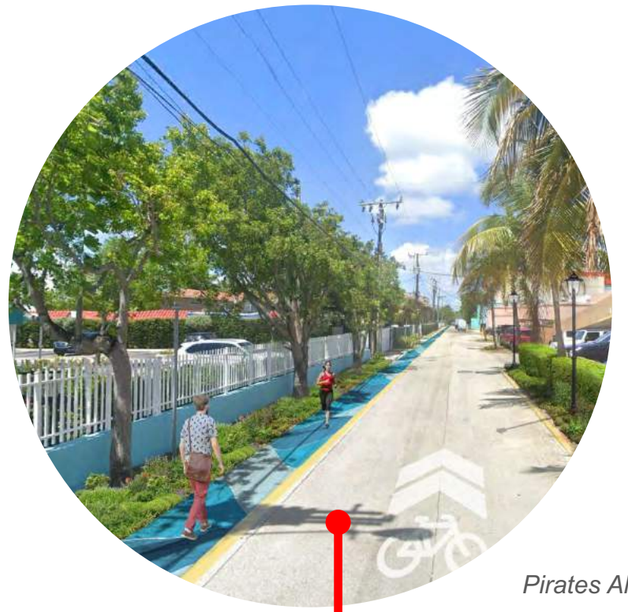
This method uses:

- 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

Masonry Trough

Storage

Landscaped Tree Well

Pool/Fountain

Filtration

Rain Garden

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 to 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:

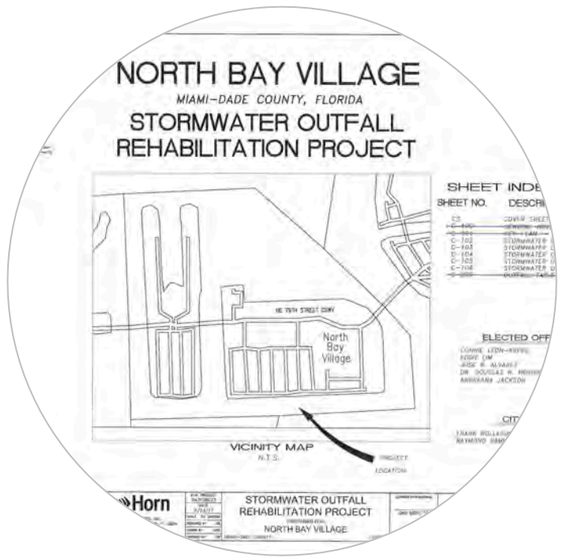
The Village’s upcoming stormwater master plan will be done with emphasis on determining the project improvements needed to implement proposed measures and systems to combat sea level rise, stormwater flooding and improve water quality. The Village anticipates starting in mid-2020 and completing within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

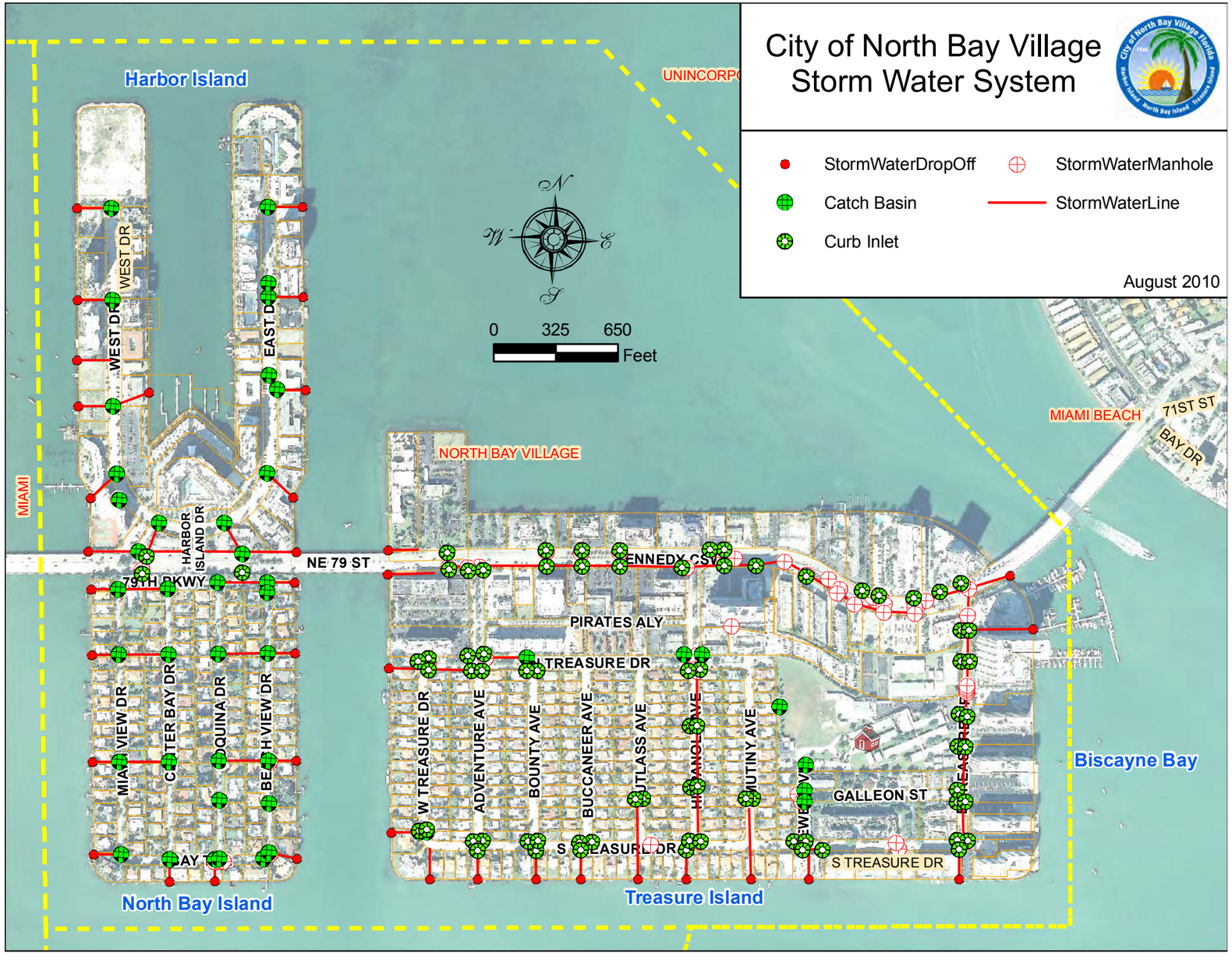
THRIVING WITH WATER

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

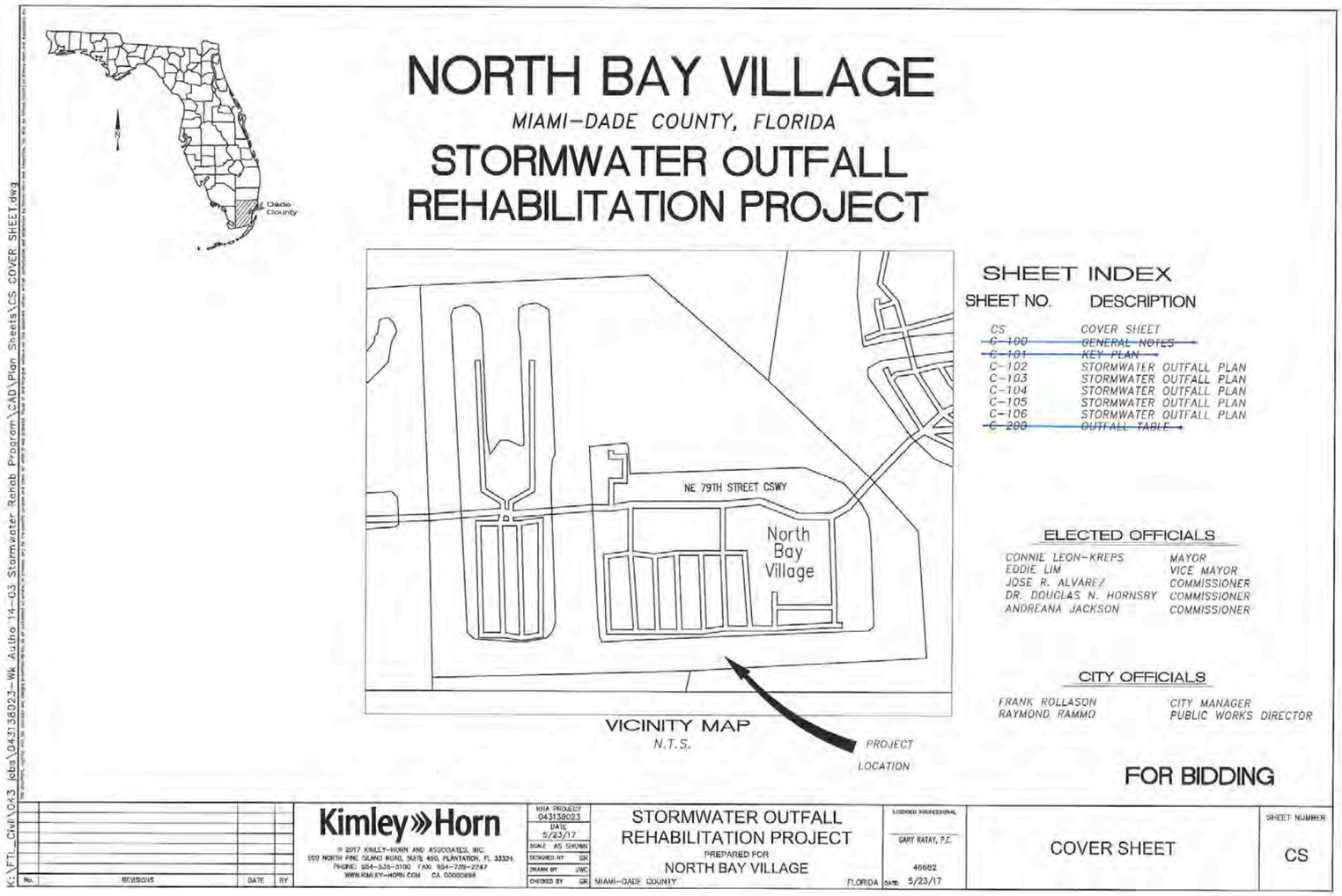


Provided by NBV Public Works

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

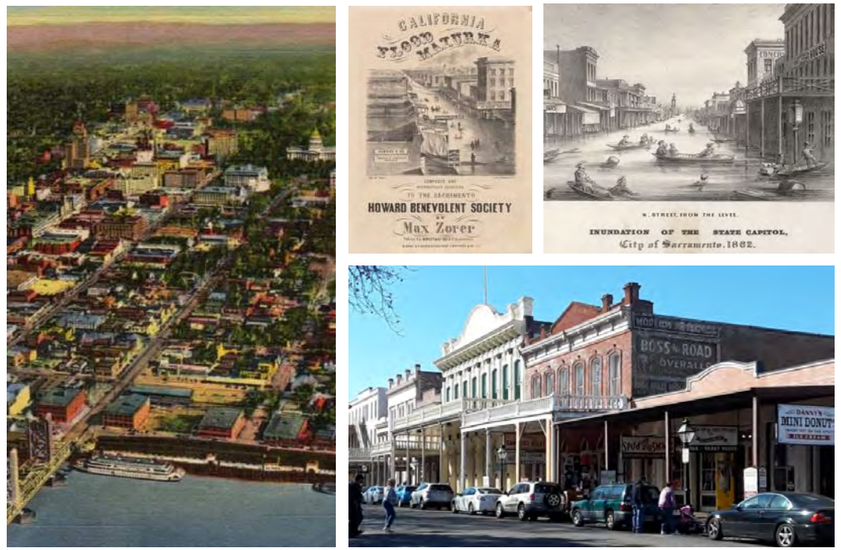
Raising city streets has long been a strategy used to modernize cities when major infrastructure changes are required, as exemplified in the four precedents illustrated on this page.

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.

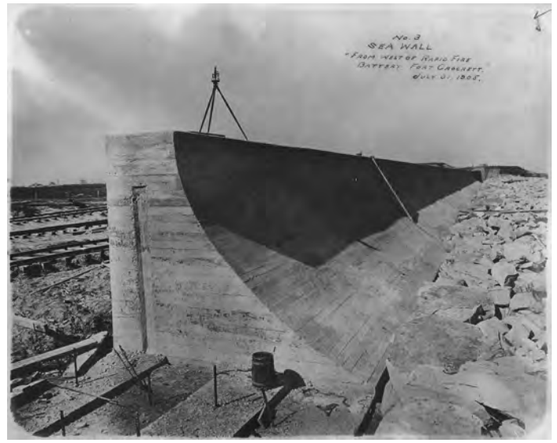
In 1900, before hurricanes were given names, a tremendous storm devastated Galveston, then the leading city in Texas. The death toll remains the highest for any natural disaster in U.S. history. A majority of the city was destroyed. No building was left undamaged.

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.

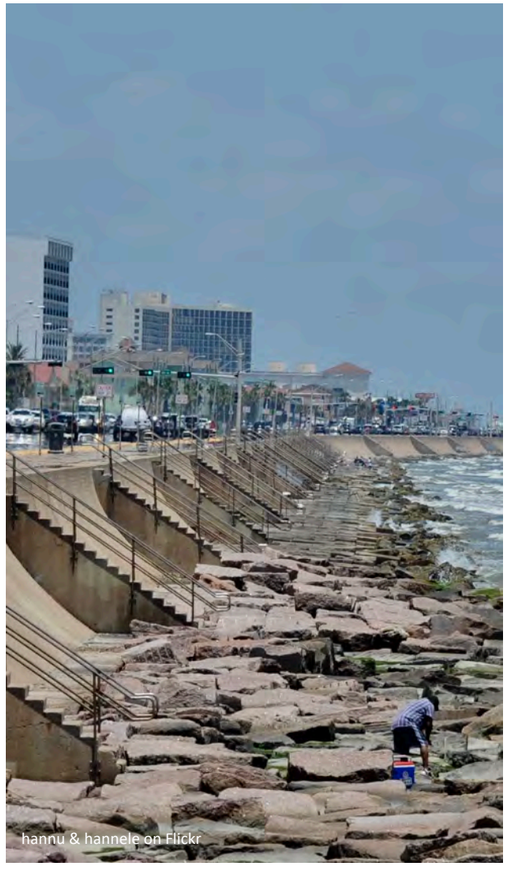
With the knowledge that Galveston would be secure from future weather events, the City was rebuilt. This massive infrastructure investment protects Galveston to this day not just from nuisance flooding, but from storm surges and sea level rise. No doubt, it will outlast many communities in similar low-lying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

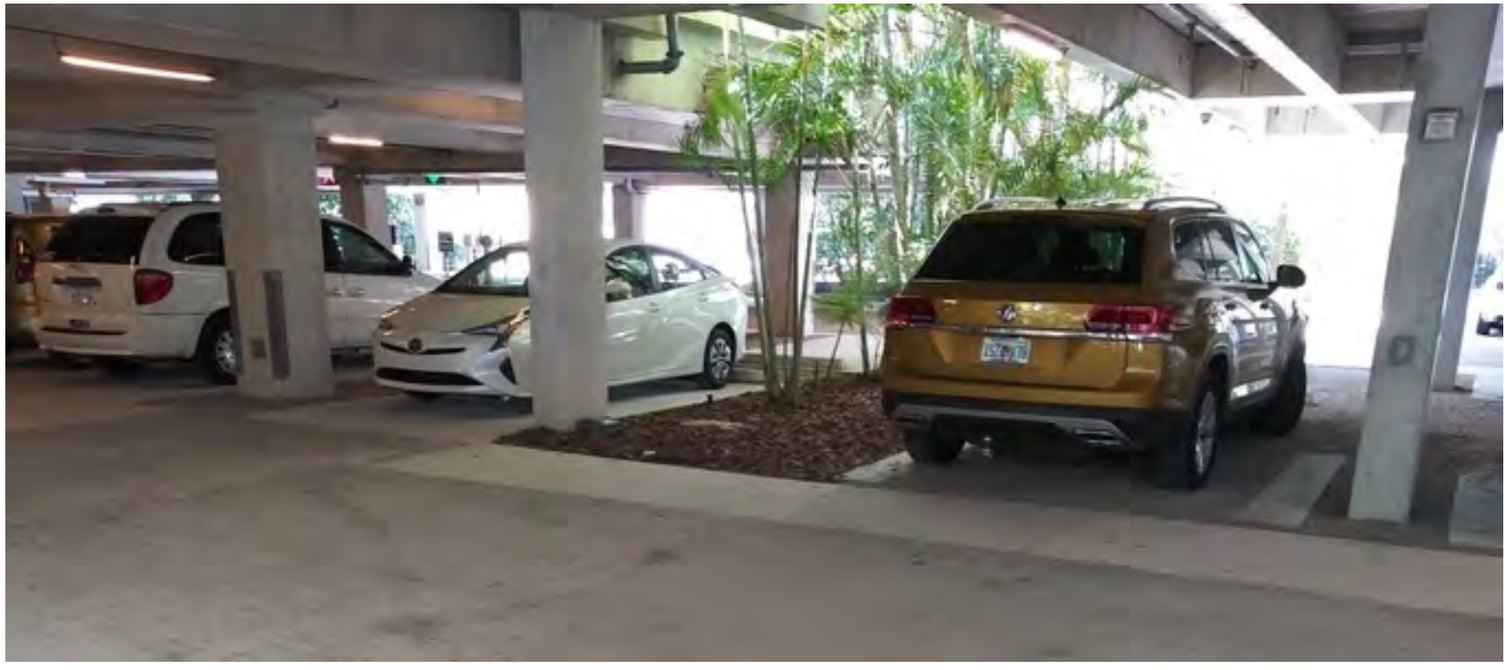
THRIVING WITH WATER

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 the 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.

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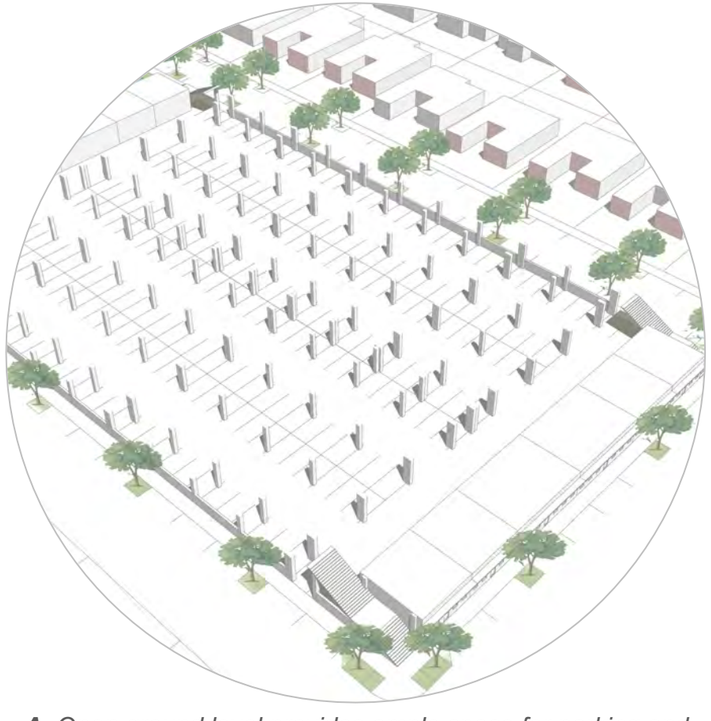
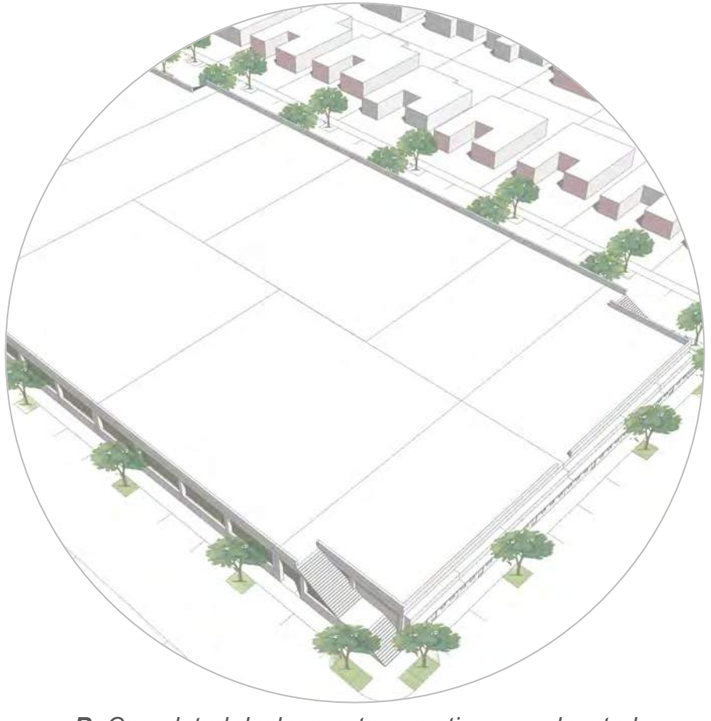


A. *Open ground level provides ample space for parking and services while allowing flood waters to flow through. A limited number of small units line the short end of the block.*



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.

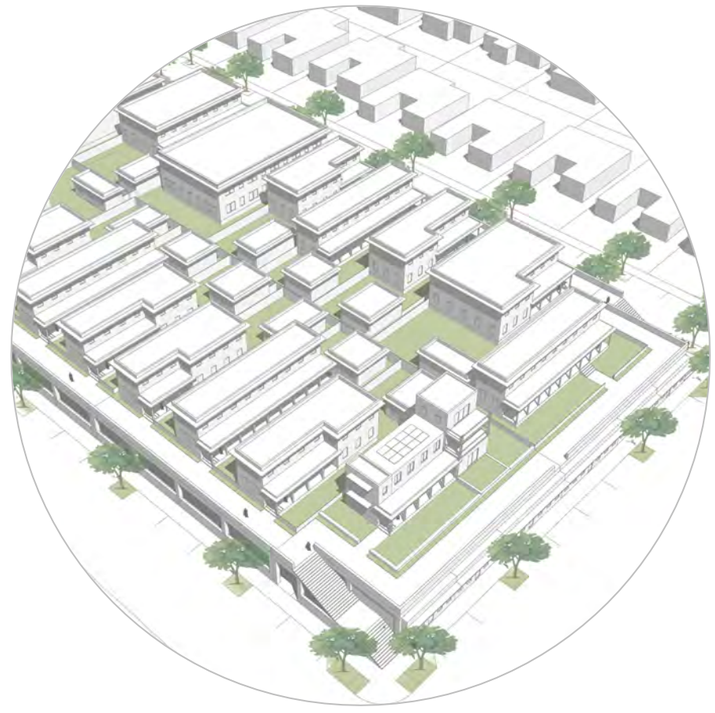
An intermediate approach takes cues from the recent Understory Ordinance in Miami Beach, where the house is raised well above the BFE, leaving an open understory at the ground level that provides ample space for parking and services. This is the approach recommended in the new Code for the low-density 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*

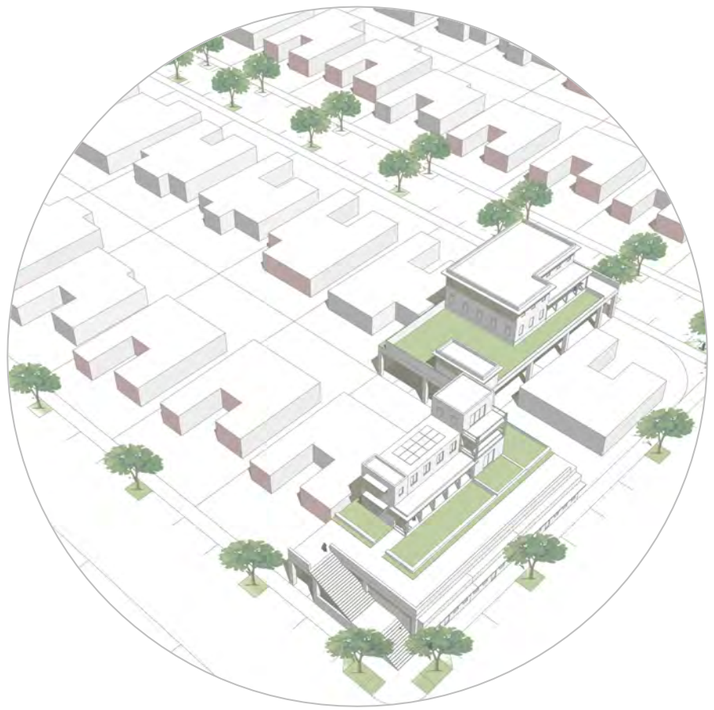
THRIVING WITH WATER
THE ELEVATED VILLAGE

(Continued from previous page.)

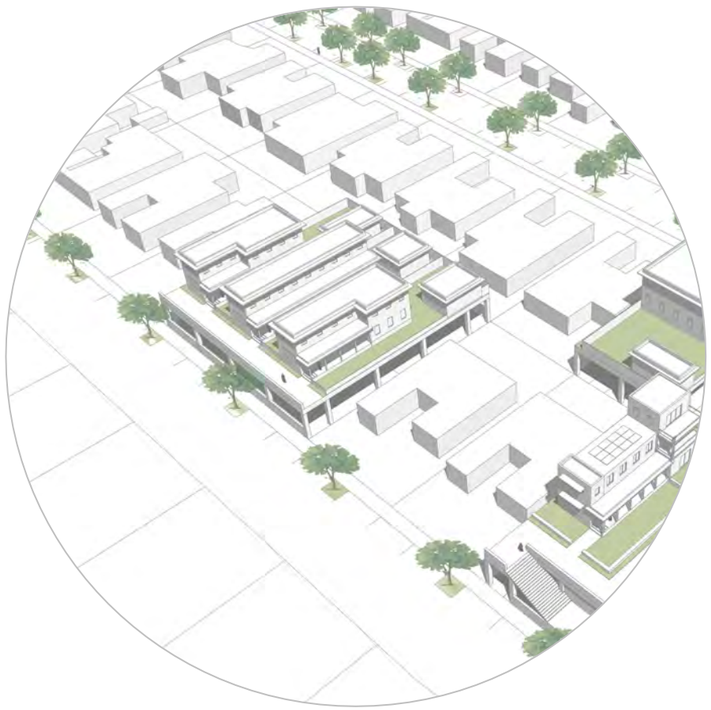
The Elevated Village is an approach that can be implemented in the near term by individual property owners before the municipality gets around to raising the streets and other public infrastructure improvements. (D) Recognizing that this approach will require a substantial investment in the deck, neighboring 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.

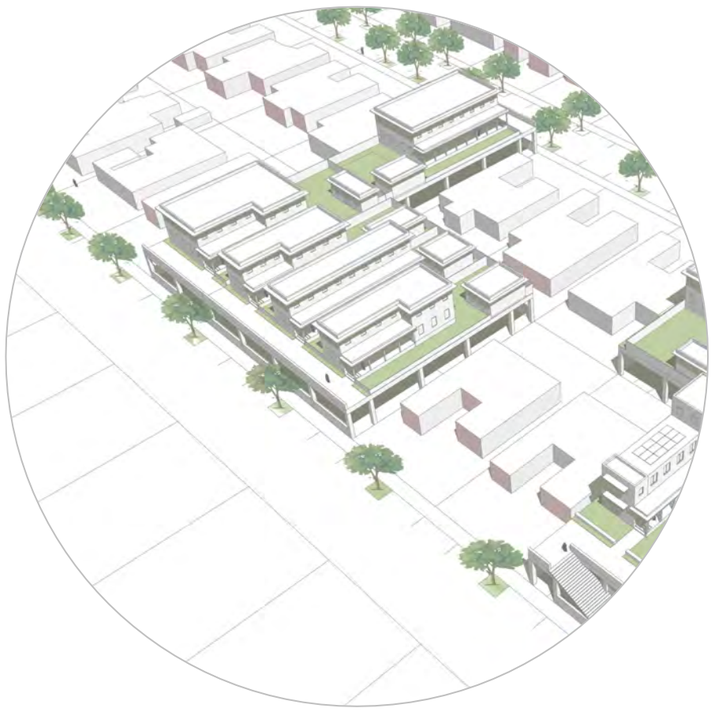
North Treasure Drive may be an especially auspicious place to start this process because it is already lined by a multi-family zoning district on the north side. A limited number of liner units could be allowed at the ground level facing the short ends of the blocks, as long as they comply with flood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

MITIGATION = SUSTAINABILITY

Slowing change

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

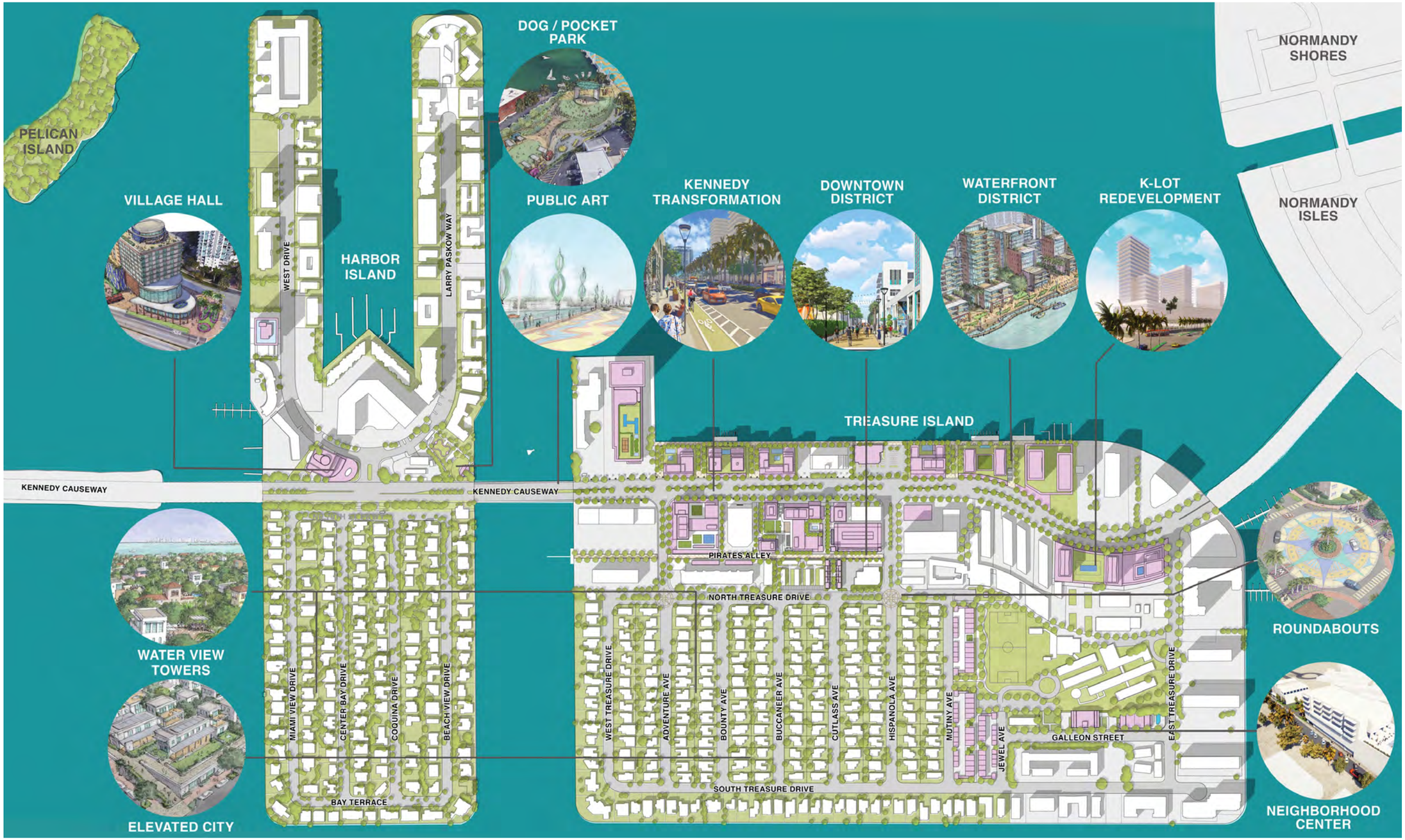

Treasure Island Elementary School
Lexi Condominium Complex
Benihana
North Bay White House
Shuckers Waterfront Bar & Grill
Caribbean Towers Condominium
Grandview Palace Condominium
Kennedy House Condominium
Bridgewater

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	ROUNDABOUTS	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

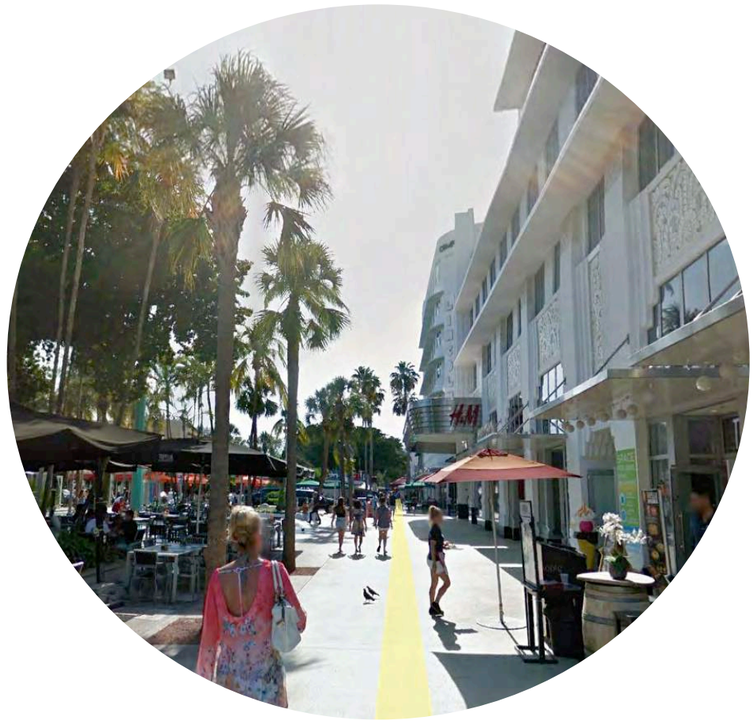
OTHER POTENTIAL FUNDING SOURCES FOR WATERFRONT AND GREENSPACE IMPROVEMENTS:
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
COASTAL PARTNERSHIP INITIATIVE
FLORIDA DEP LAND AND WATER GRANT
FLORIDA DEP FRDAP
USEPA - LOCAL FOODS, LOCAL PLACES
BROWNFIELD GRANTS
FLORIDA DEP ELECTRIC VEHICLE CHARGING STATIONS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

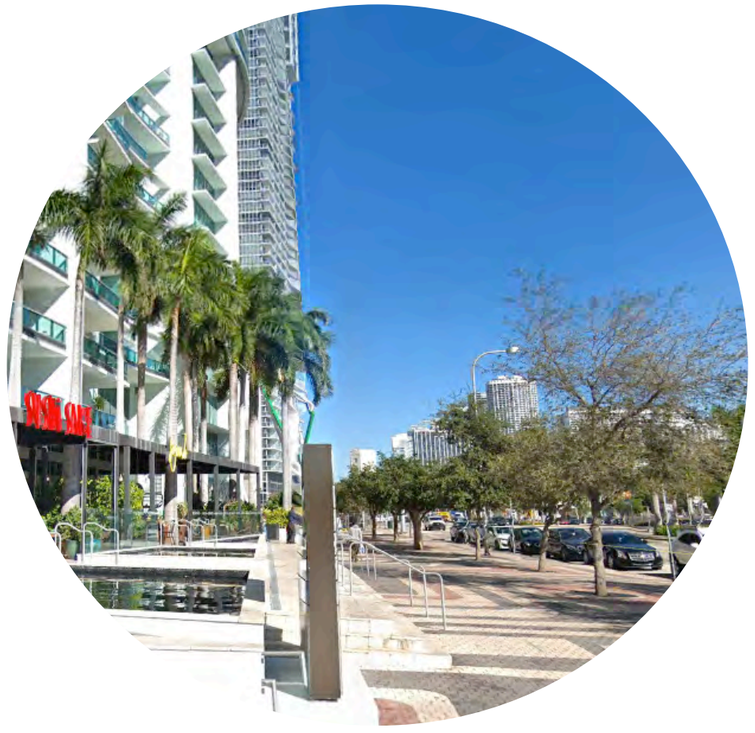
CAPITALIZE ON EXISTING RESOURCES

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

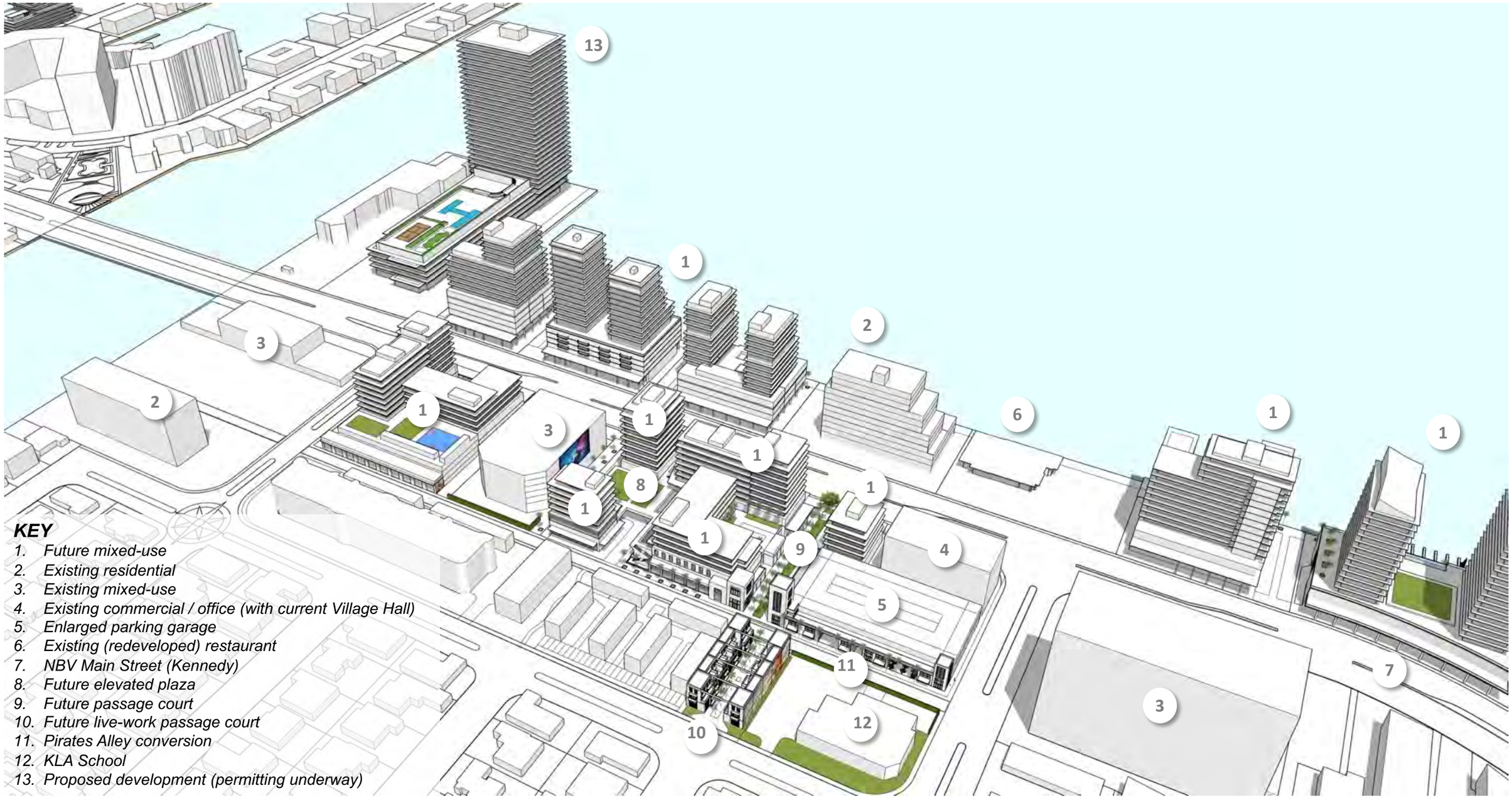
Village Center

Before

After

CAPITALIZE ON EXISTING RESOURCES

TRANSFORM NBV'S BUSINESS DISTRICT INTO A GREAT URBAN CENTER

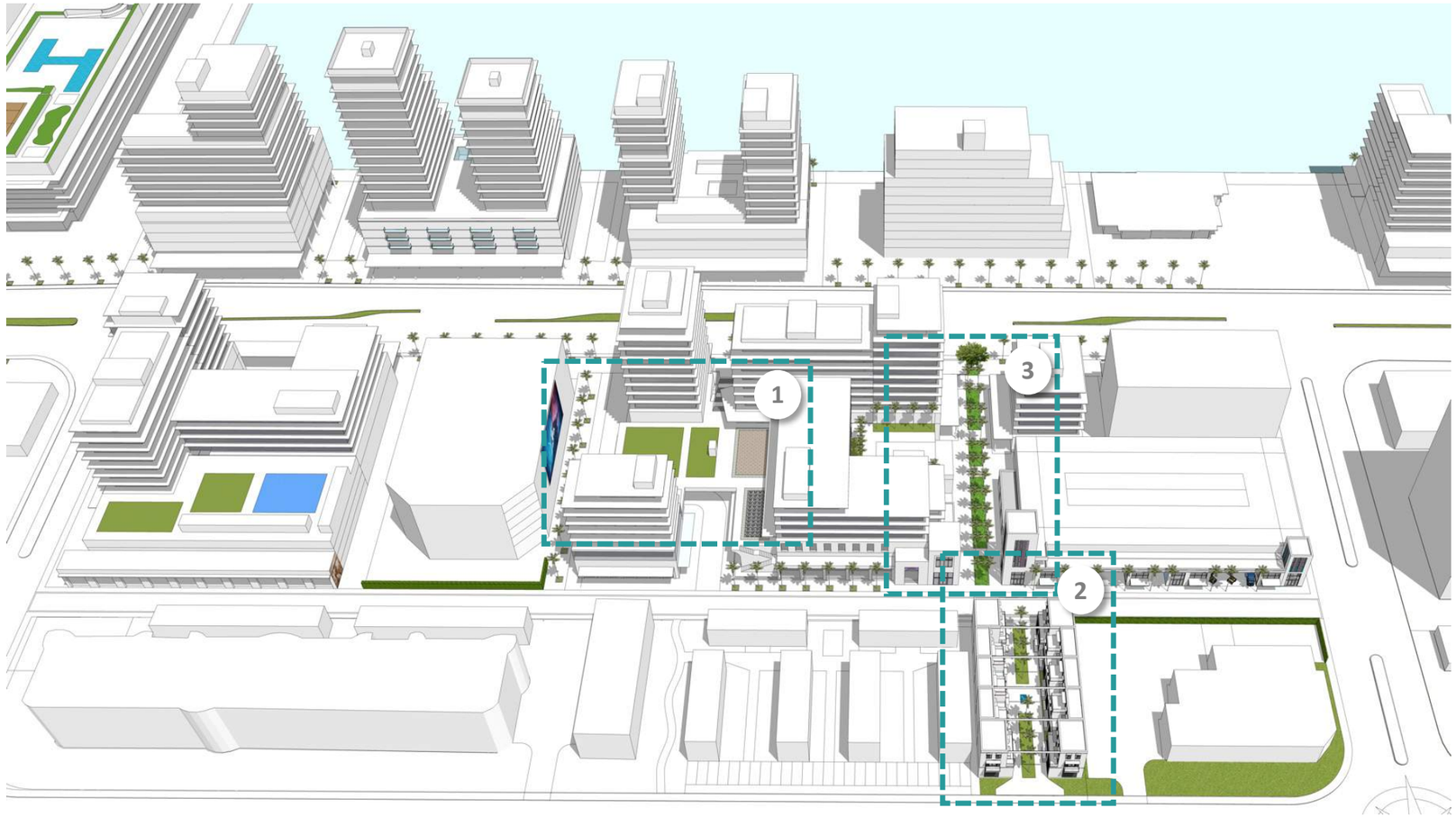


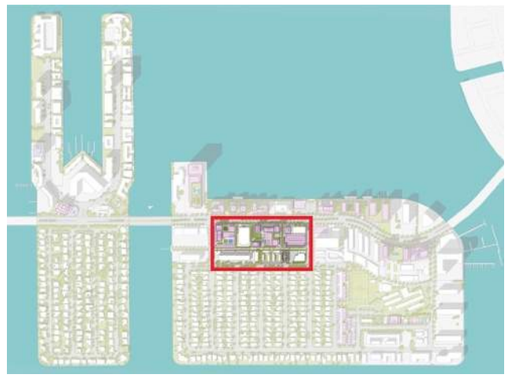
KEY

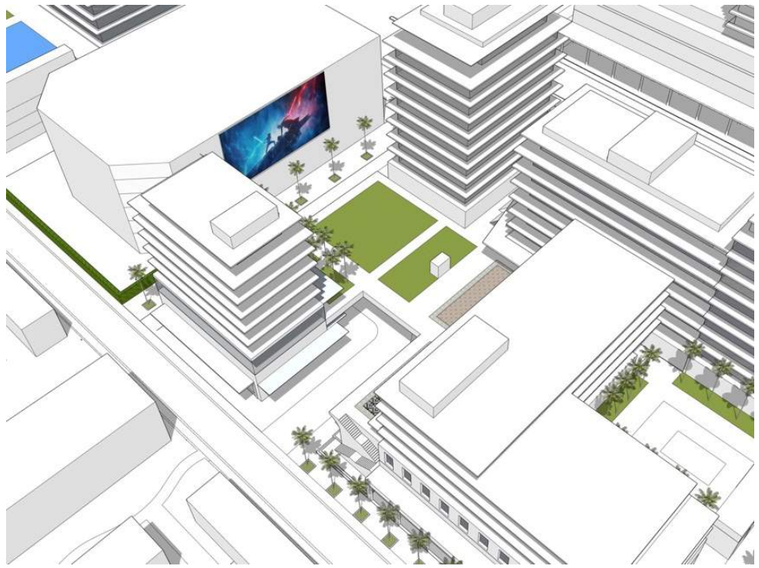
1. *Future mixed-use*
2. *Existing residential*
3. *Existing mixed-use*
4. *Existing commercial / office (with current Village Hall)*
5. *Enlarged parking garage*
6. *Existing (redeveloped) restaurant*
7. *NBV Main Street (Kennedy)*
8. *Future elevated plaza*
9. *Future passage court*
10. *Future live-work passage court*
11. *Pirates Alley conversion*
12. *KLA School*
13. *Proposed development (permitting underway)*

CAPITALIZE ON EXISTING RESOURCES

TRANSFORM NBV'S BUSINESS DISTRICT INTO A GREAT URBAN CENTER







1. Future Elevated Plaza

2. Live-work Passage Court

3. Mid-block passage

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.

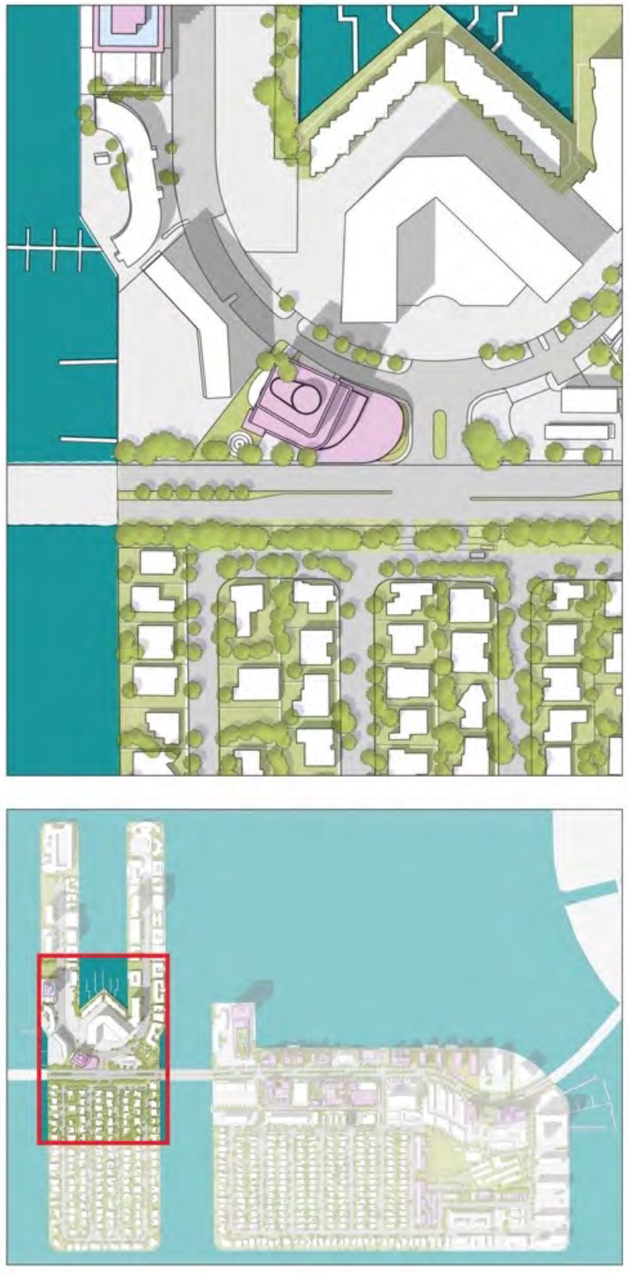
Galleon Street is reimagined as a one-way, westbound thoroughfare that accommodates additional angled parking along the north side.

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

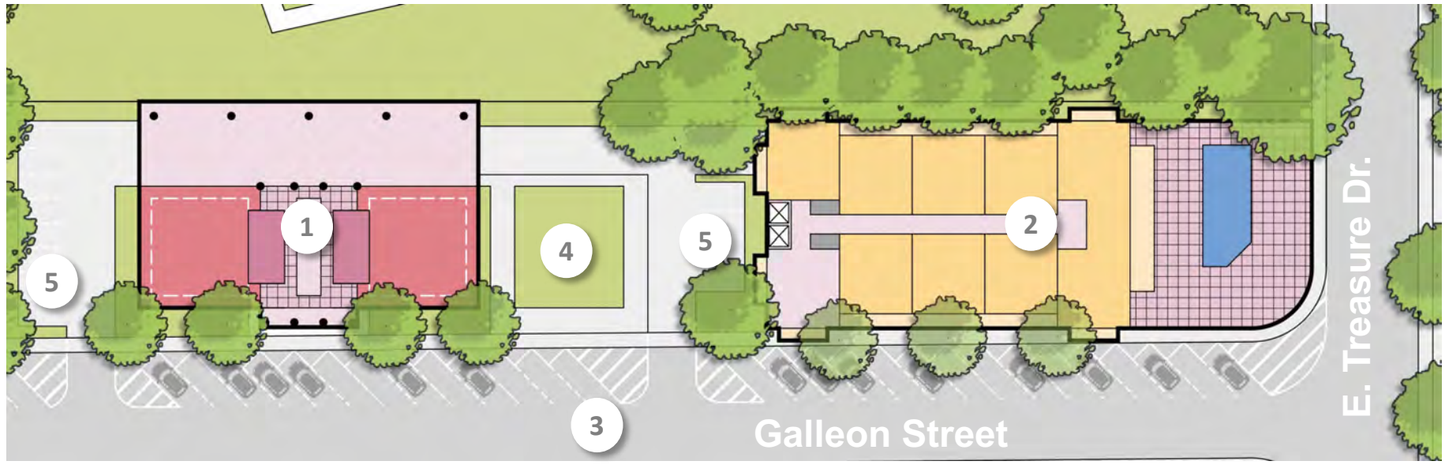
Charrette rendering of Village Hall

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

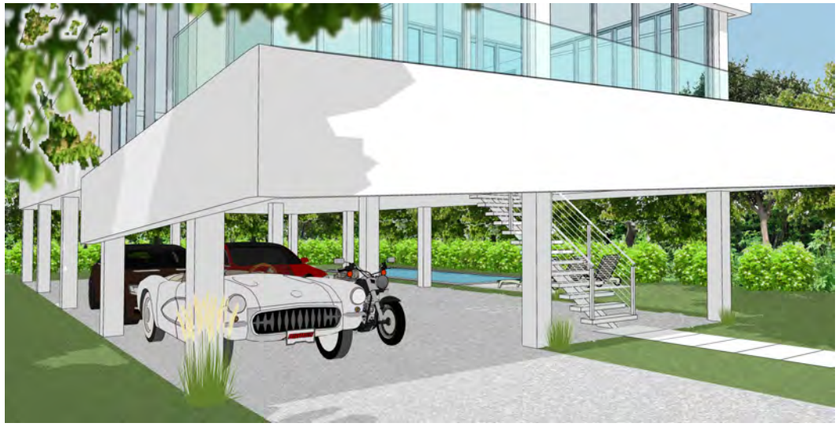
Treasure Island

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

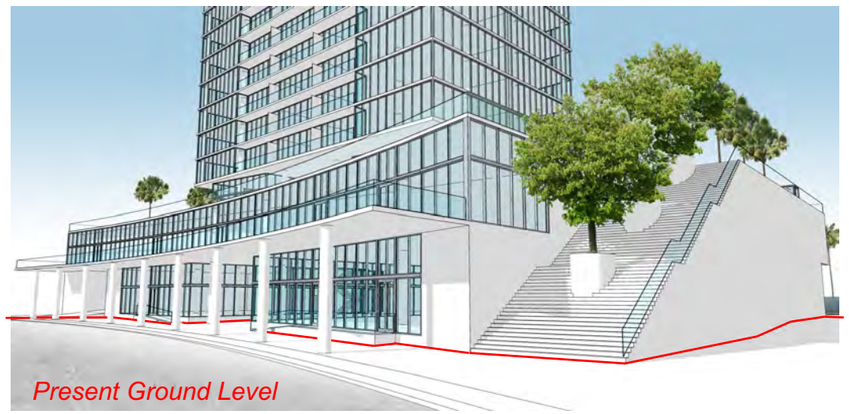
These existing homes in NBV are already using several features described in the Resiliency and LDRs Chapters that make them well adapted for the anticipated effects of climate change. The two houses pictured on the left side are elevated a few feet above street level with fill. The house pictured on 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

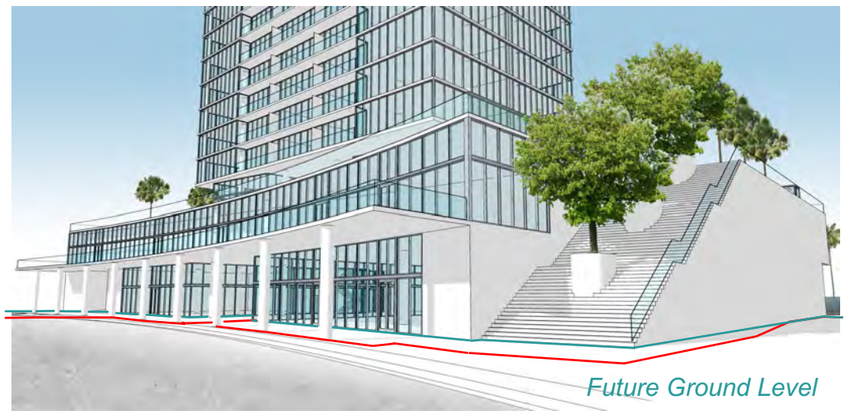
CATALYTIC PROJECT - MIXED-USE TOWER

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.

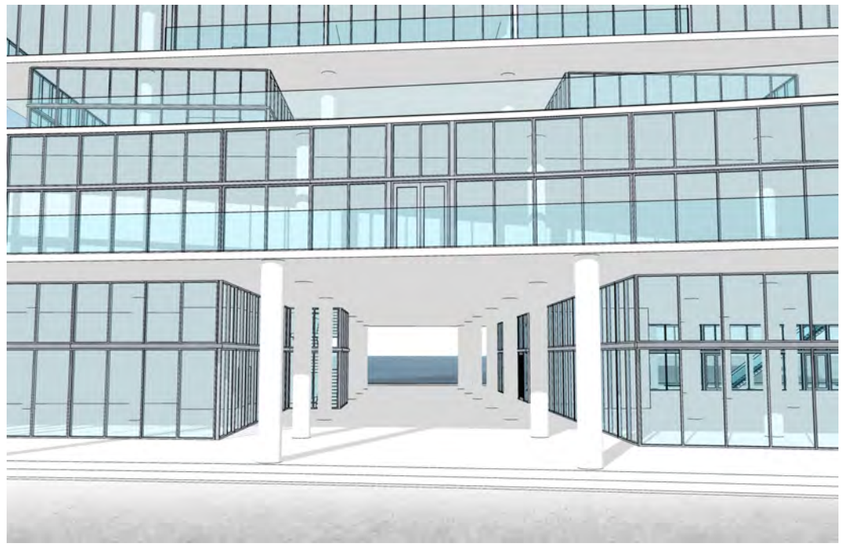
The Island Walk will eventually become one of the premier destinations of North Bay Village. Any properties that connect directly to it will have a distinct advantage in this real estate market, providing residents with direct access to the future dining and entertainment options that will occur on the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



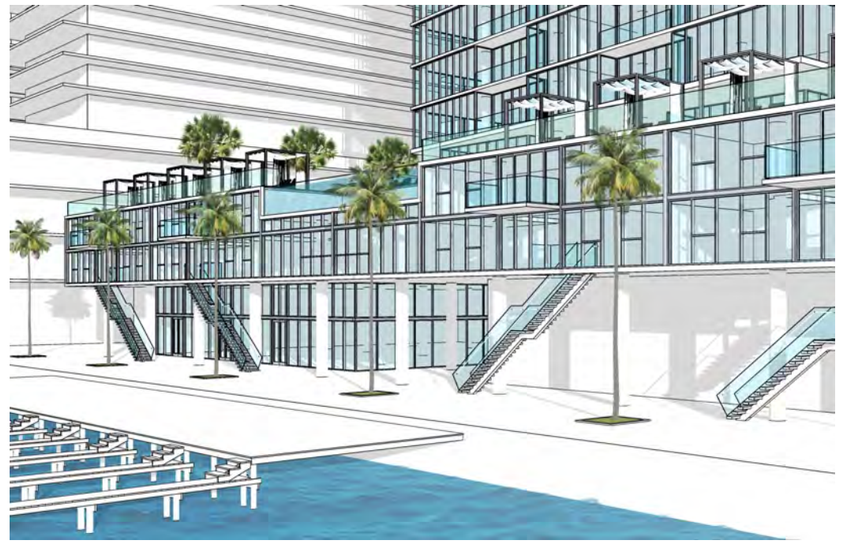
Frontage Facing Kennedy Causeway – Before raising street level
CDS Architecture/Planning



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

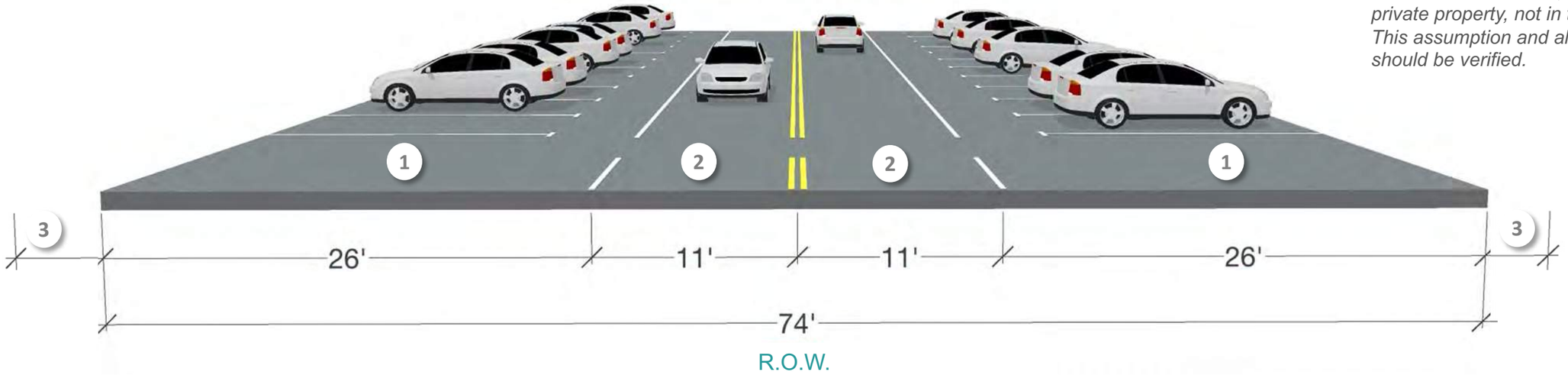
HARBOR ISLAND EXISTING CONDITIONS: PUBLIC SPACE OVERWHELMED BY PARKING

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

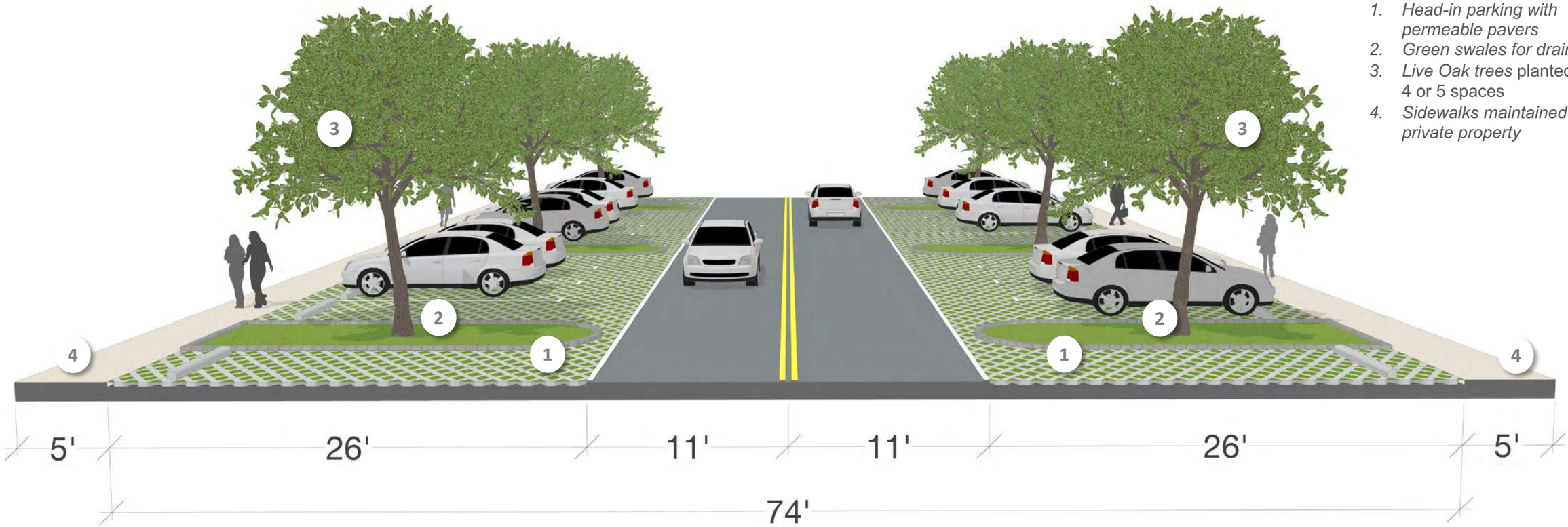
OPTIMIZE AND MANAGE PARKING

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.

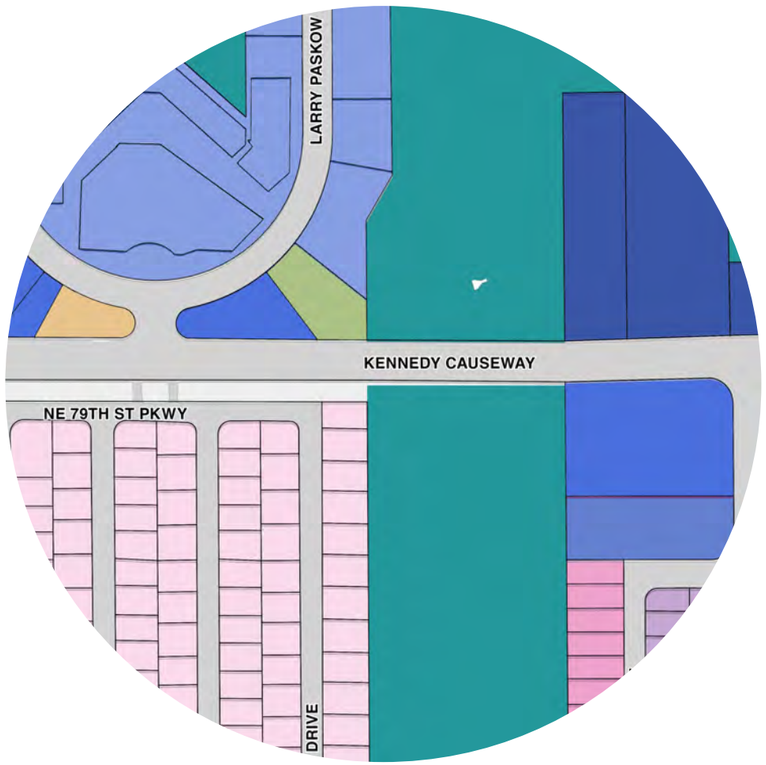


1. *Head-in parking with permeable pavers*
2. *Green swales for drainage*
3. *Live Oak trees* planted every 4 or 5 spaces
4. *Sidewalks maintained in private property*

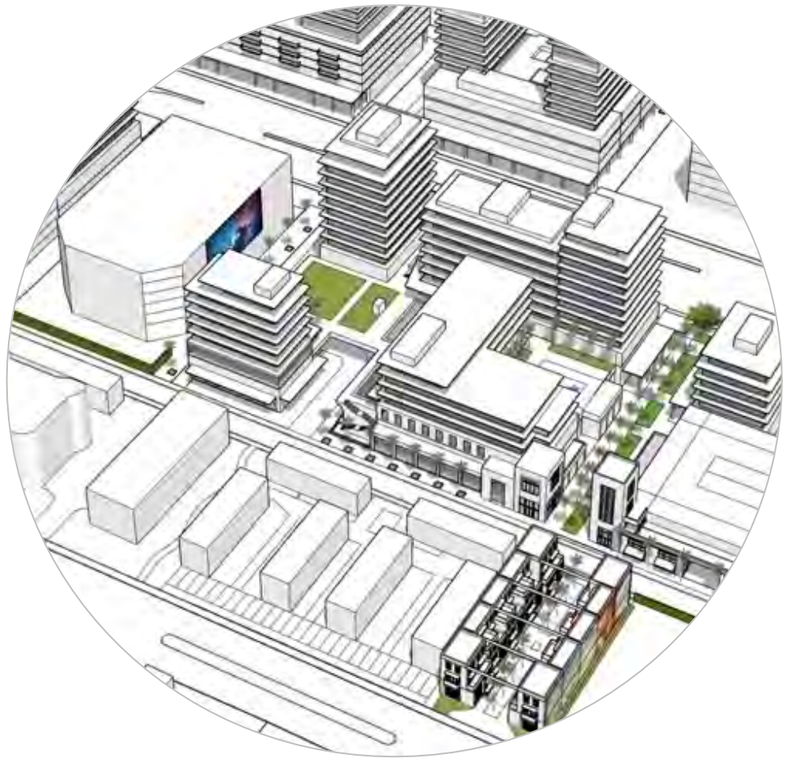
TYPICAL R.O.W.

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.

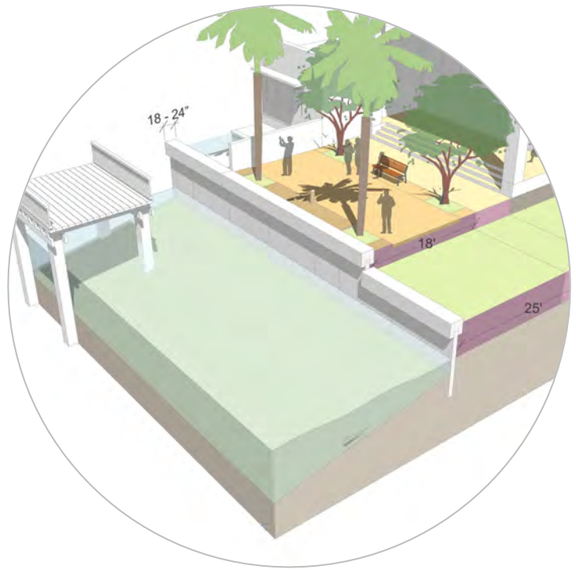
- Express this as a minimum, not as a fixed height, so that property owners have the option to raise them later.
- Require foundations be built to accommodate higher seawalls in the future.
- Encourage the use of innovative building materials that resist degradation.

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.


North Bay Village

Goals, Objectives, and Policies
of the
Comprehensive Plan

Amended:
April 13, 1999
May 16, 2000
November 25, 2003
December 11, 2007
October 14, 2008
March 10, 2009
May 10, 2016
October 24, 2017
July 10, 2018

LaRue Planning & Management Services, Inc.
1375 Jackson Street, Suite 206
Fort Myers, Florida 33901
239-334-3366

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	6 du/acre (Miami21: 9 or 18)	-			
							➔	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		**High Density**
							➔	6	**T6-24-R** Urban core	Treasure Island	150 DU/acre (Miami21: 150)	TBD (Miami21 FLR: 7)			
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)			
					➔	**CG-BVO** General Commercial with Bay View Overlay District	➔	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)

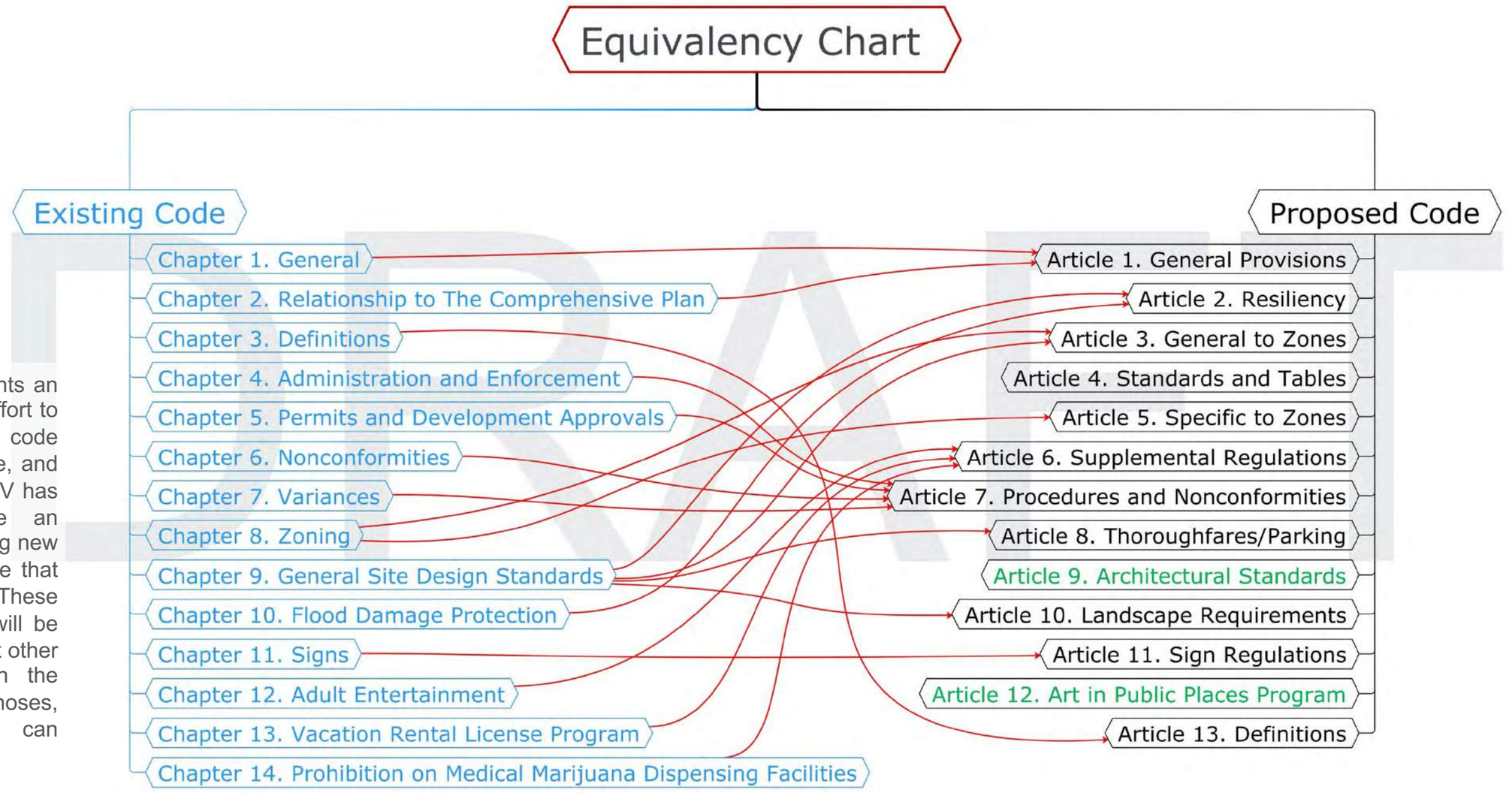
Floor Lot Ratio (FLR): The multiplier applied to the Lot Area that determines the maximum Floor Area allowed above grade in a given Transect Zone.

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

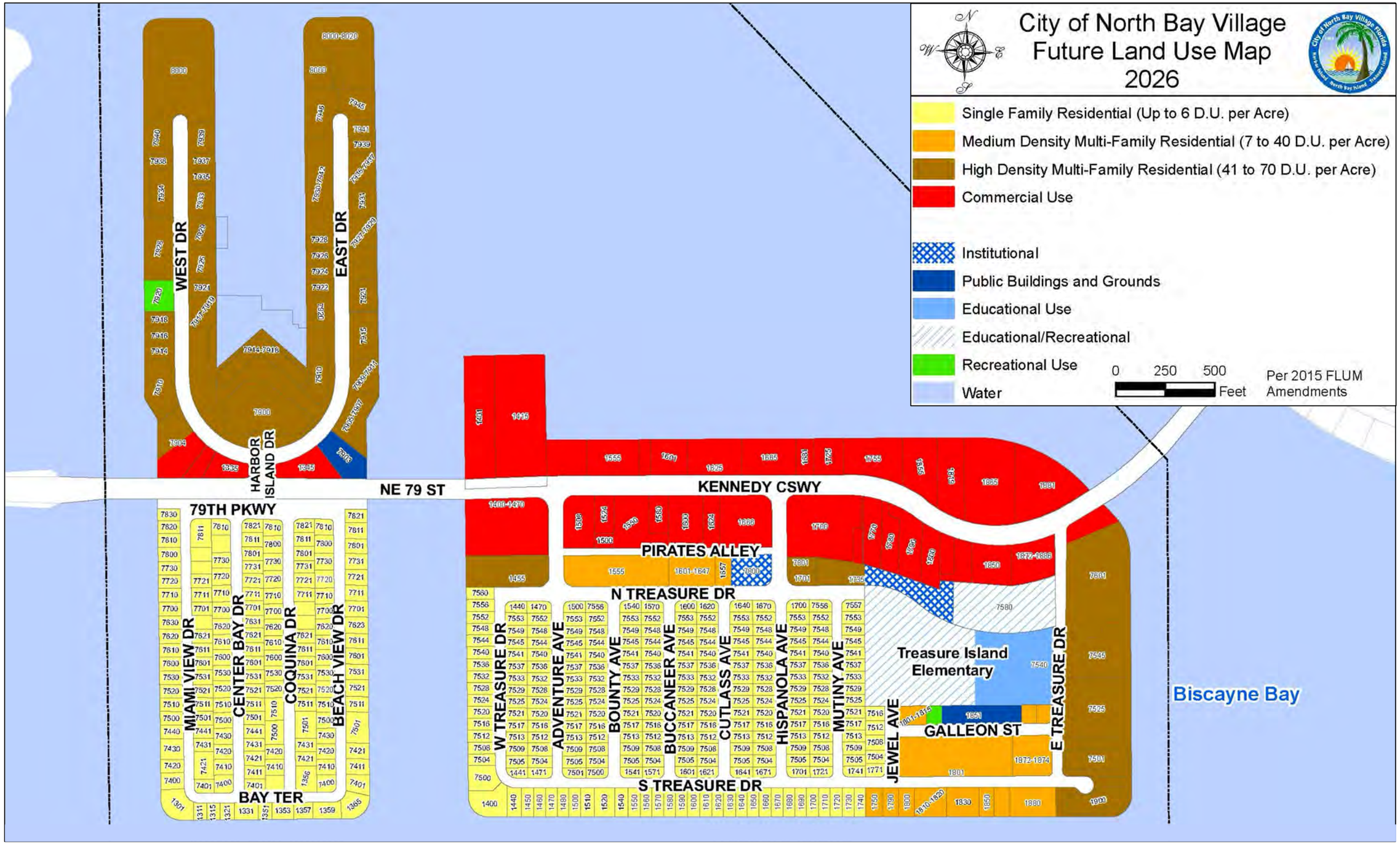
Note that this chart represents an early analysis in the initial effort to replace the entire existing code with a new form-based code, and it has been superseded. NBV has since elected to pursue an incremental approach, adding new sections to the existing code that address specific districts. These 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.



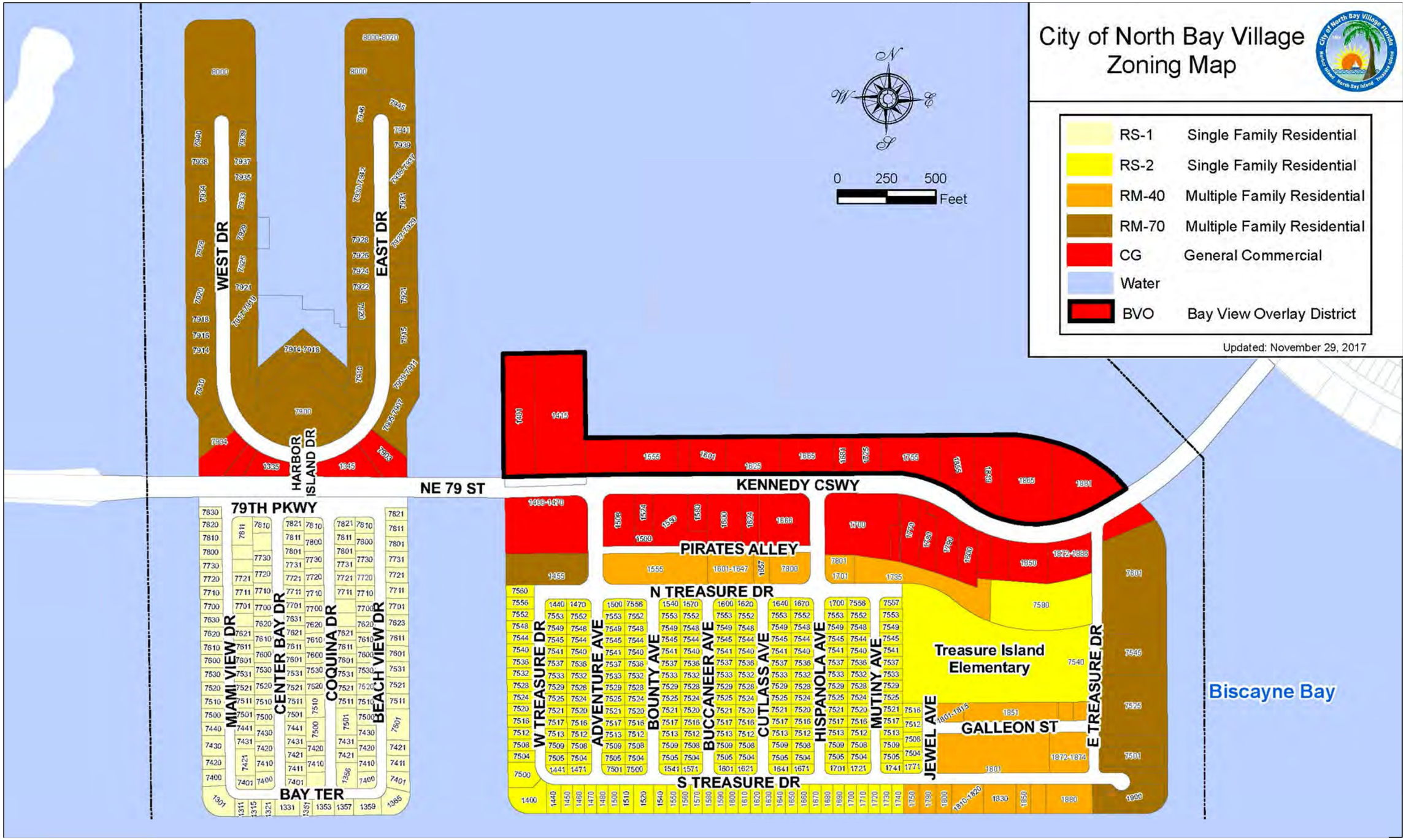
KEYS: BLACK TEXT: PROPOSED CODE
BLUE TEXT: EXISTING CODE
GREEN TEXT: RESERVED CONTENT

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)

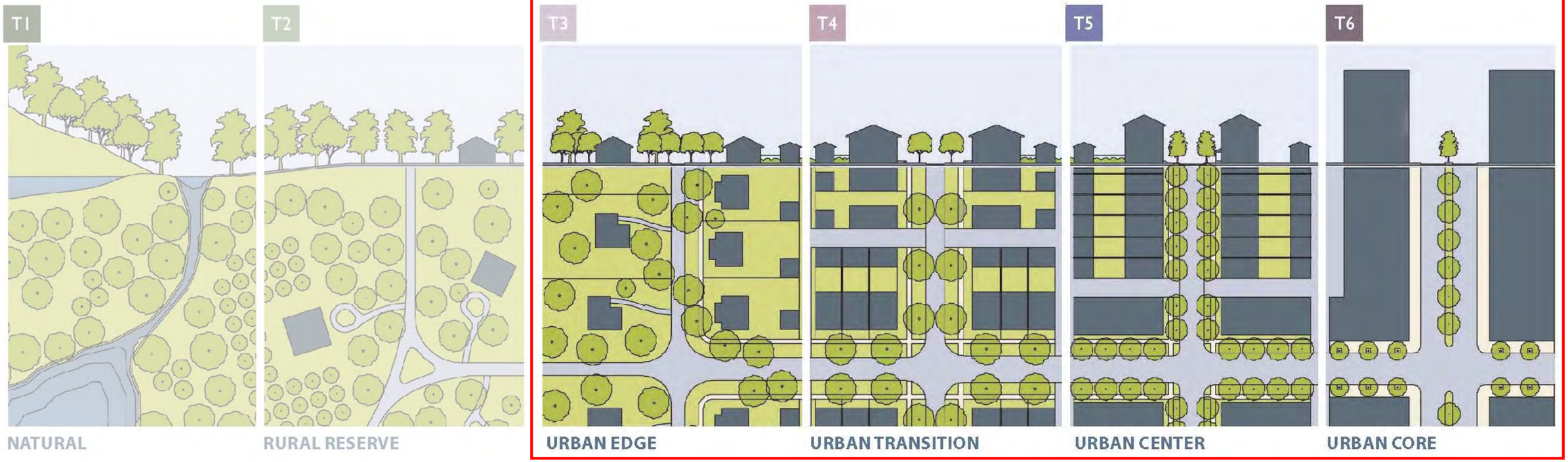


EXISTING ZONING MAP (UNIFIED LAND DEVELOPMENT CODE)



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.

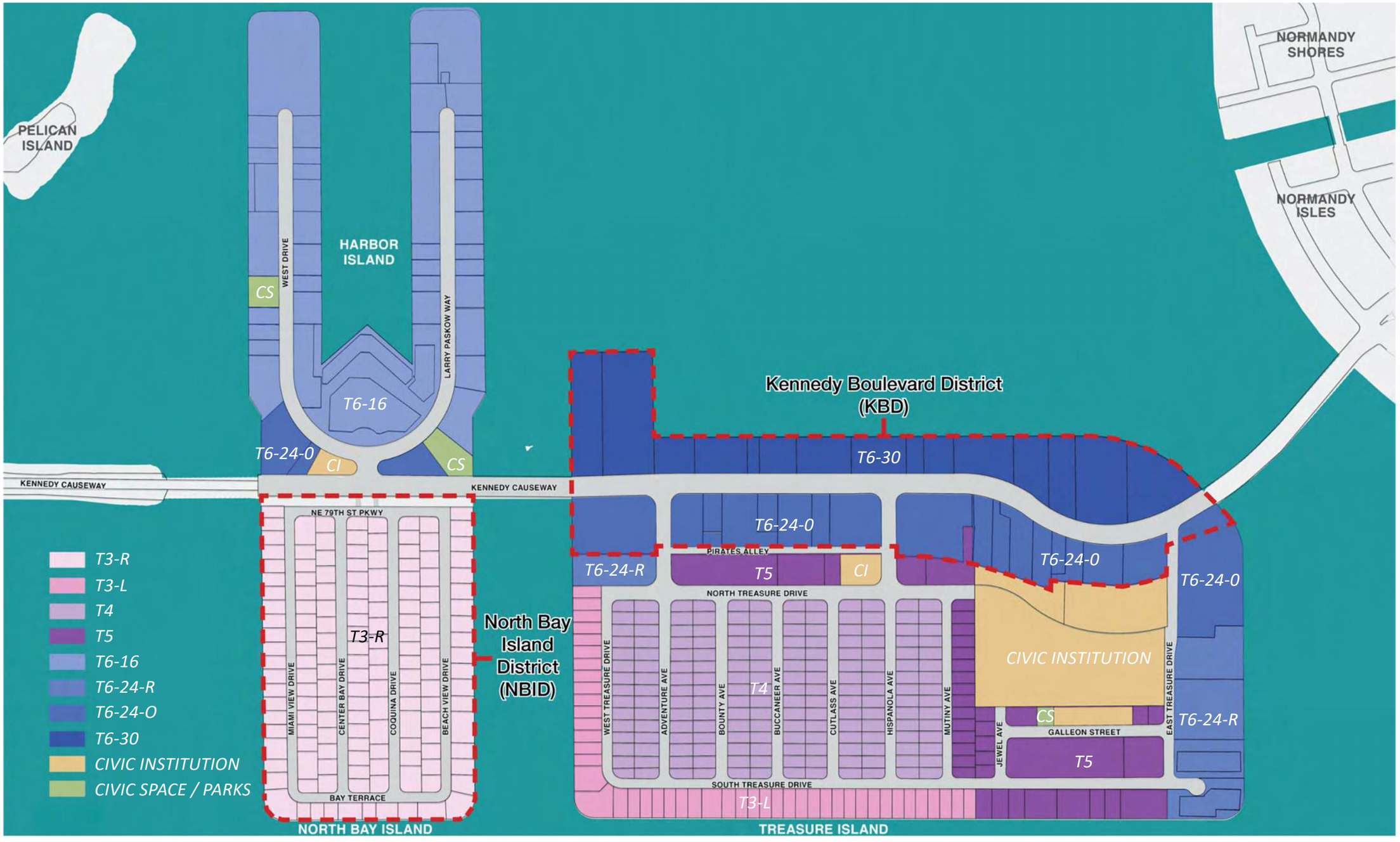
To arrange the analysis and coding of traditional patterns, a prototypical Rural-to-Urban Transect has been divided into six Transect Zones, or T-zones, for application on zoning maps. (See illustration above.) These six habitats vary by the level and intensity of their physical and social character, 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

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

Notes

1. For benches, pews, etc., 18” = 1 seat.
2. 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%.

PARKING ANALYSIS

PROPOSED REQUIREMENTS FOR RESIDENTIALAND COMMERCIAL USES

NBV100 Proposed Parking Requirements

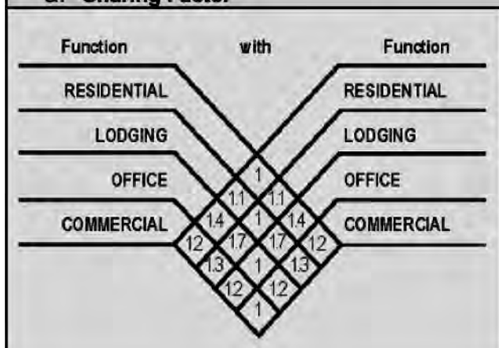
Use		Vehicular Spaces						Bicycle Rack Spaces per Vehicular Spaces Provided	Miami21 Comparison
		Spaces	**Per**	**Additional Requirements**	**Shared Parking Allowed** (Note 2)	**Remote Parking Allowed** (Note 3)	**Electric vehicle charging stations (prioritization TBD)**		
Residential	**Single Family**	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



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]

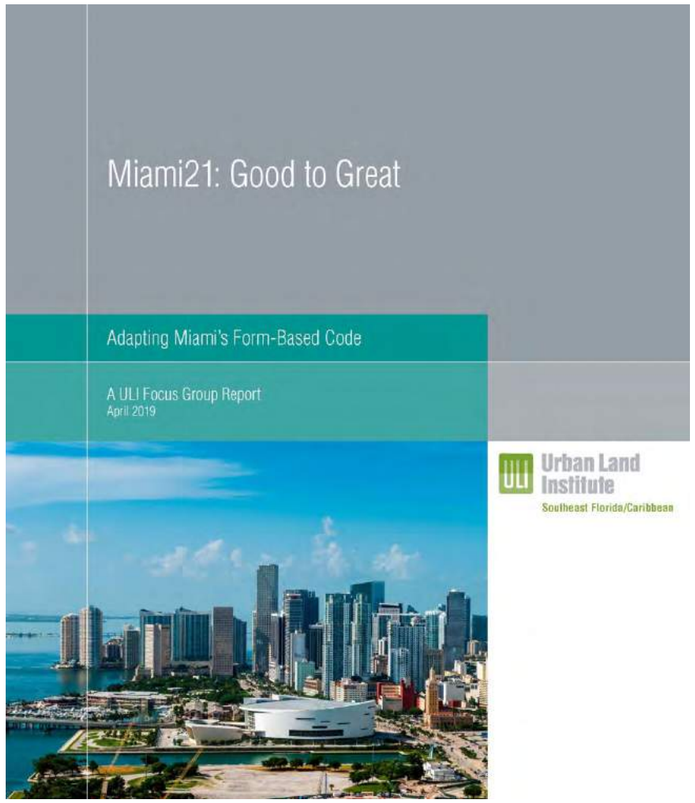
Parking *[From ULI Report on Miami21]*

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) (note 1)	BVO Height Bonuses	
				Front Setback Bonus (§8.10.F.3) (notes 1 & 2)	Side Setback Bonus (§8.10.F.4) (notes 1 & 3)
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'** (Note 4)	-	-	-
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)

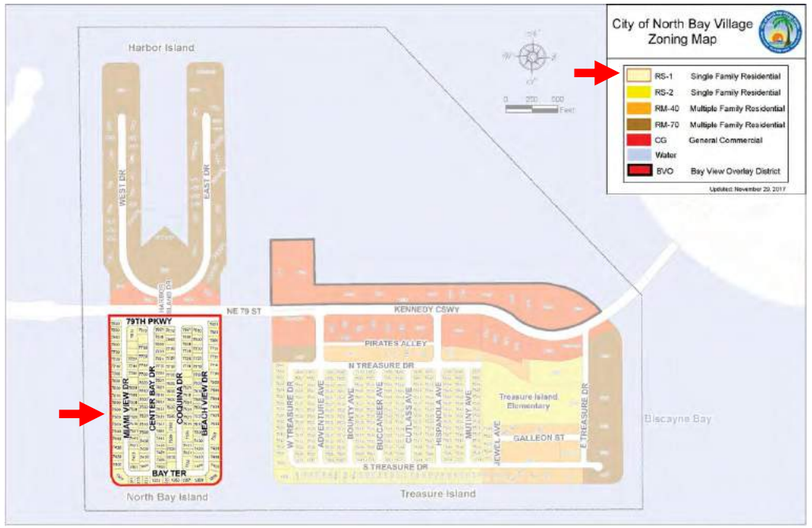
	Zoning District or Overlay	Front				Side					Rear	Other			
		Front	Kennedy Causeway North Side	Kennedy Causeway South Side	Other Street Frontages	Corner	Interior	One Side (Interior)	Second Side (Interior)	Total Side Setback Area Free of Structures at Ground Level		Waterfront	Abutting a Single-Family 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



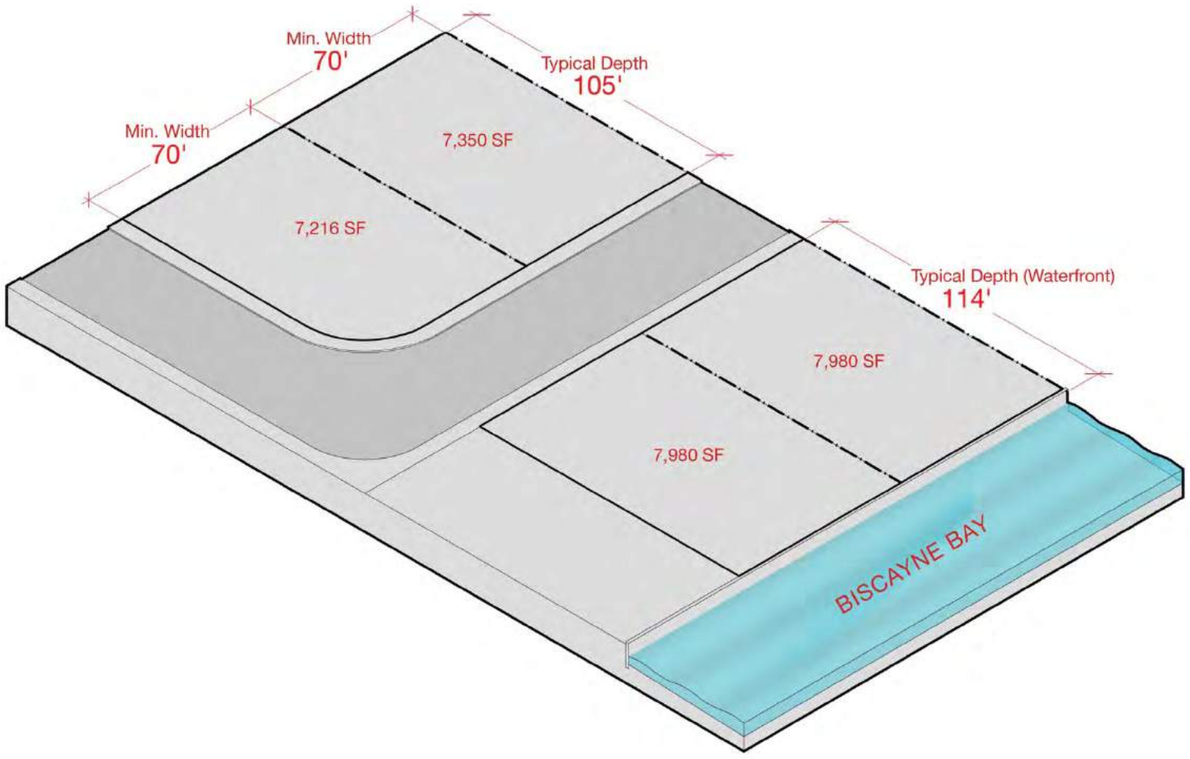
Zoning map

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

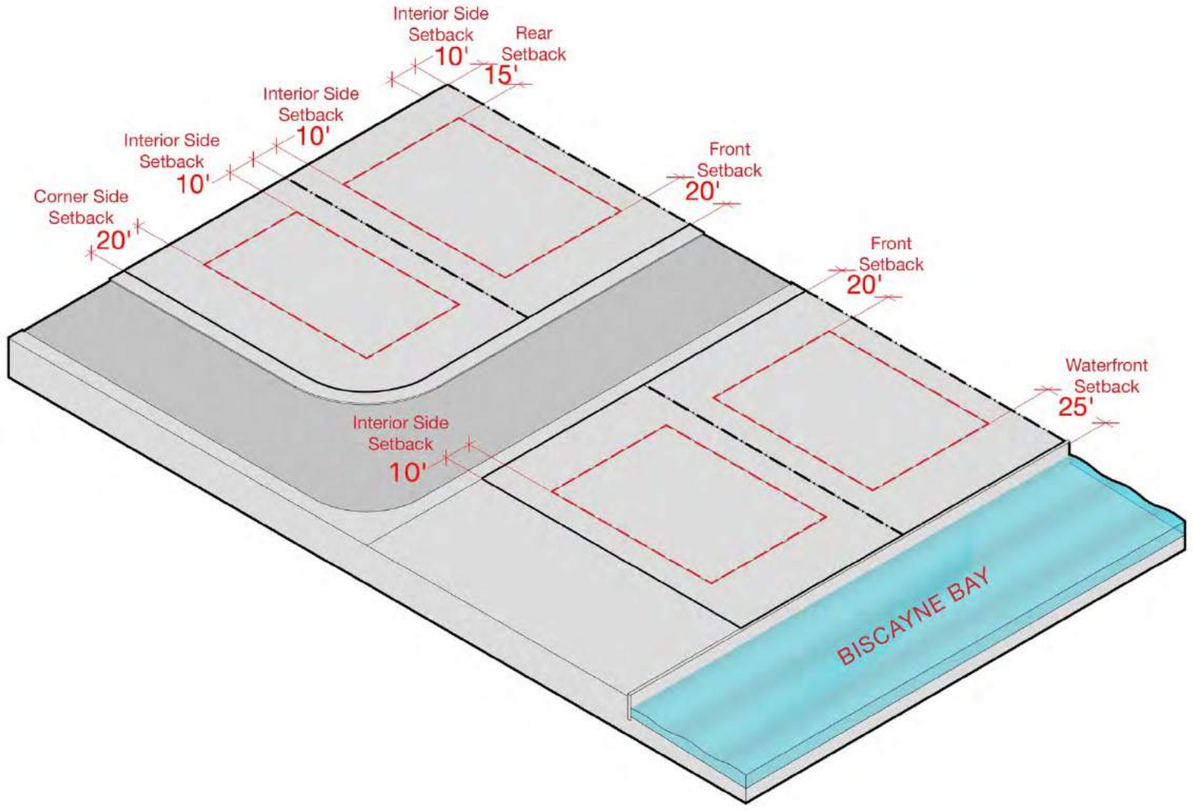
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1

SINGLE-FAMILY RESIDENTIAL DISTRICT ON NORTH BAY ISLAND



1. Typical lots

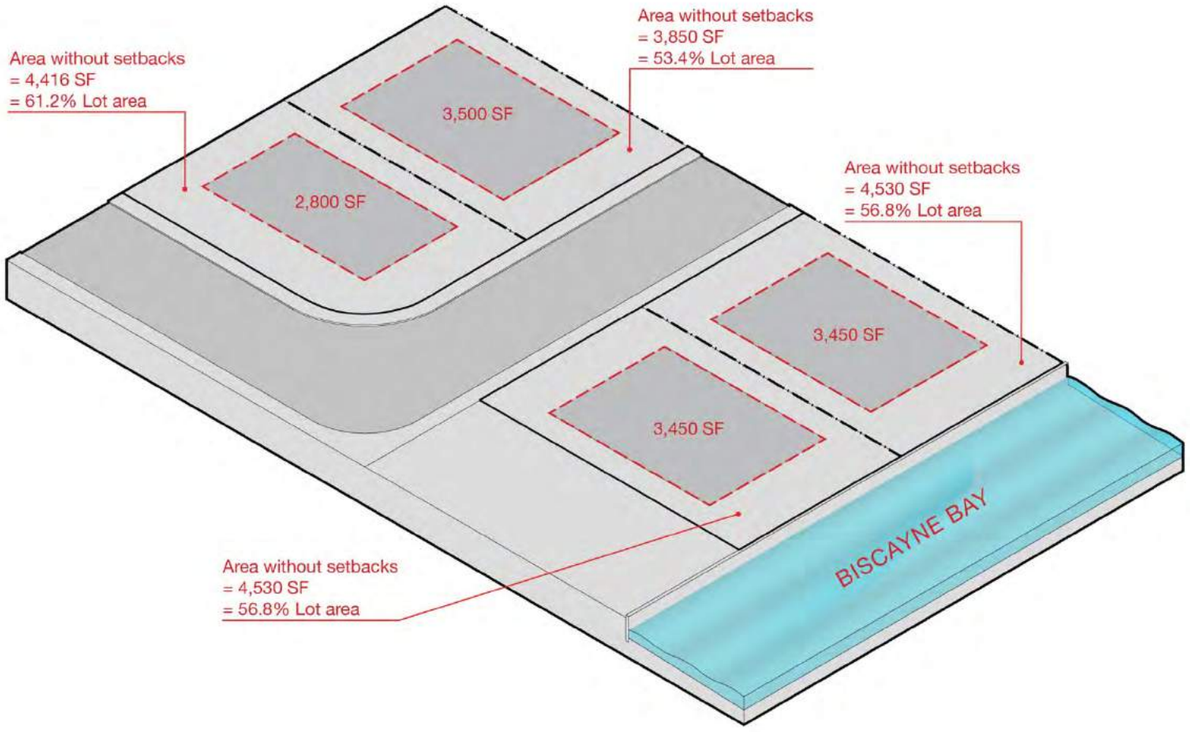
Note:
Actual lot dimensions vary.



2. Setbacks

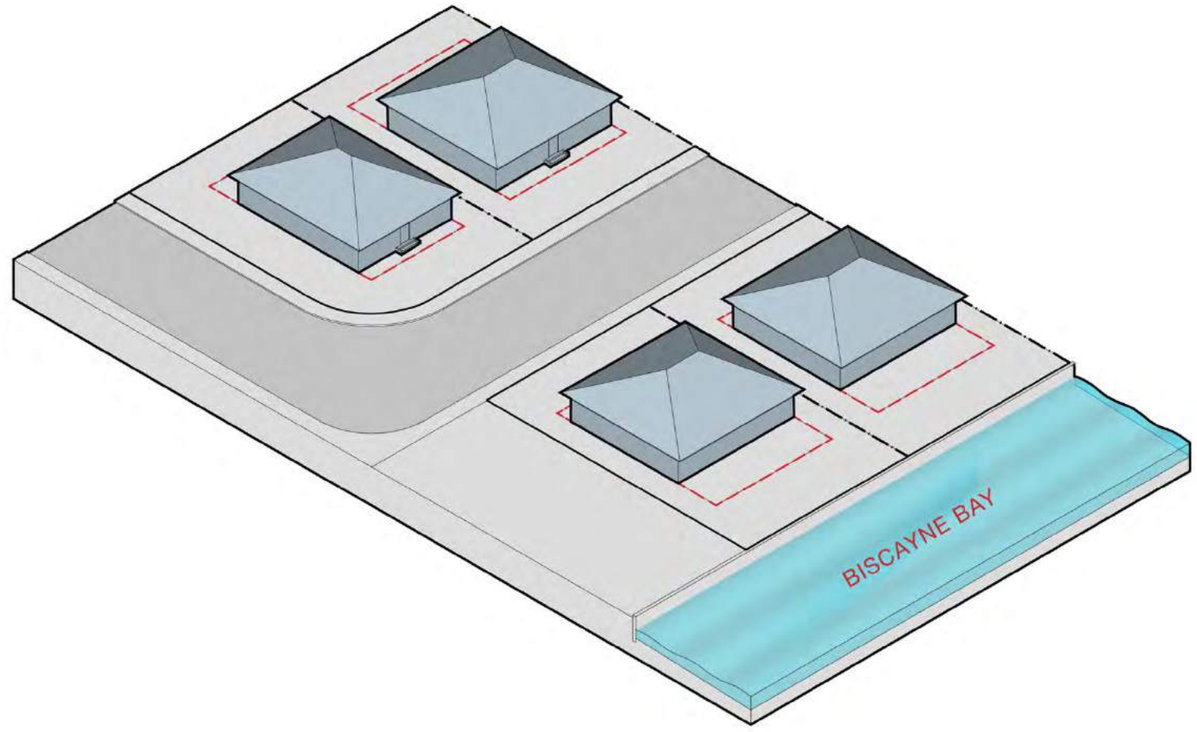
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1

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.

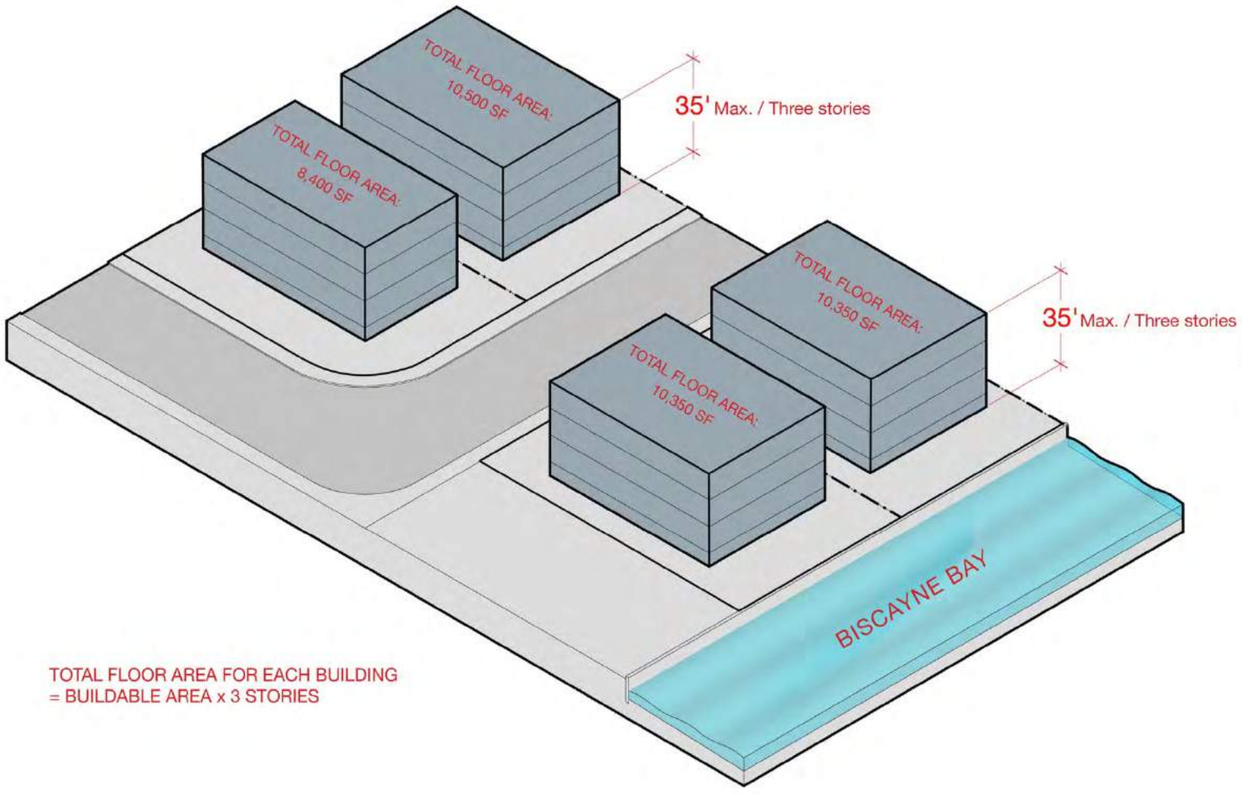


4. Typical existing buildout

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

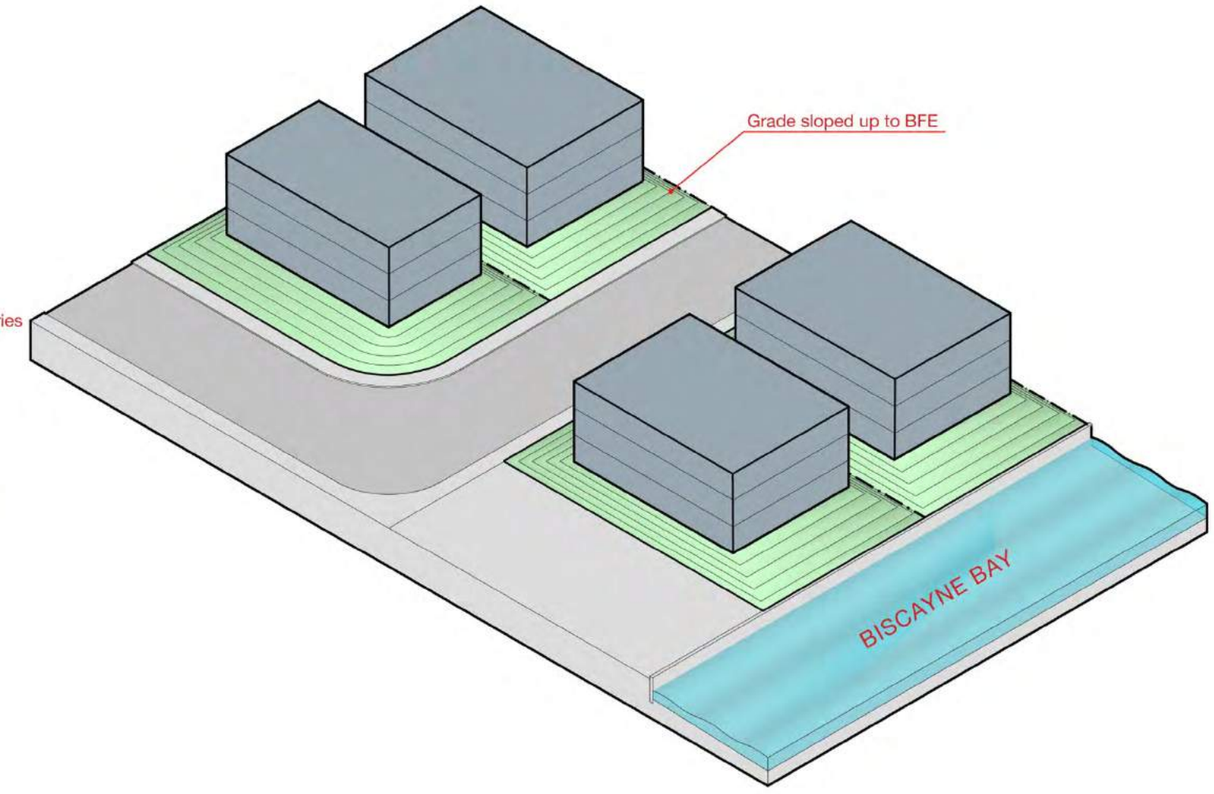
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1

SINGLE-FAMILY RESIDENTIAL DISTRICT ON NORTH BAY ISLAND



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

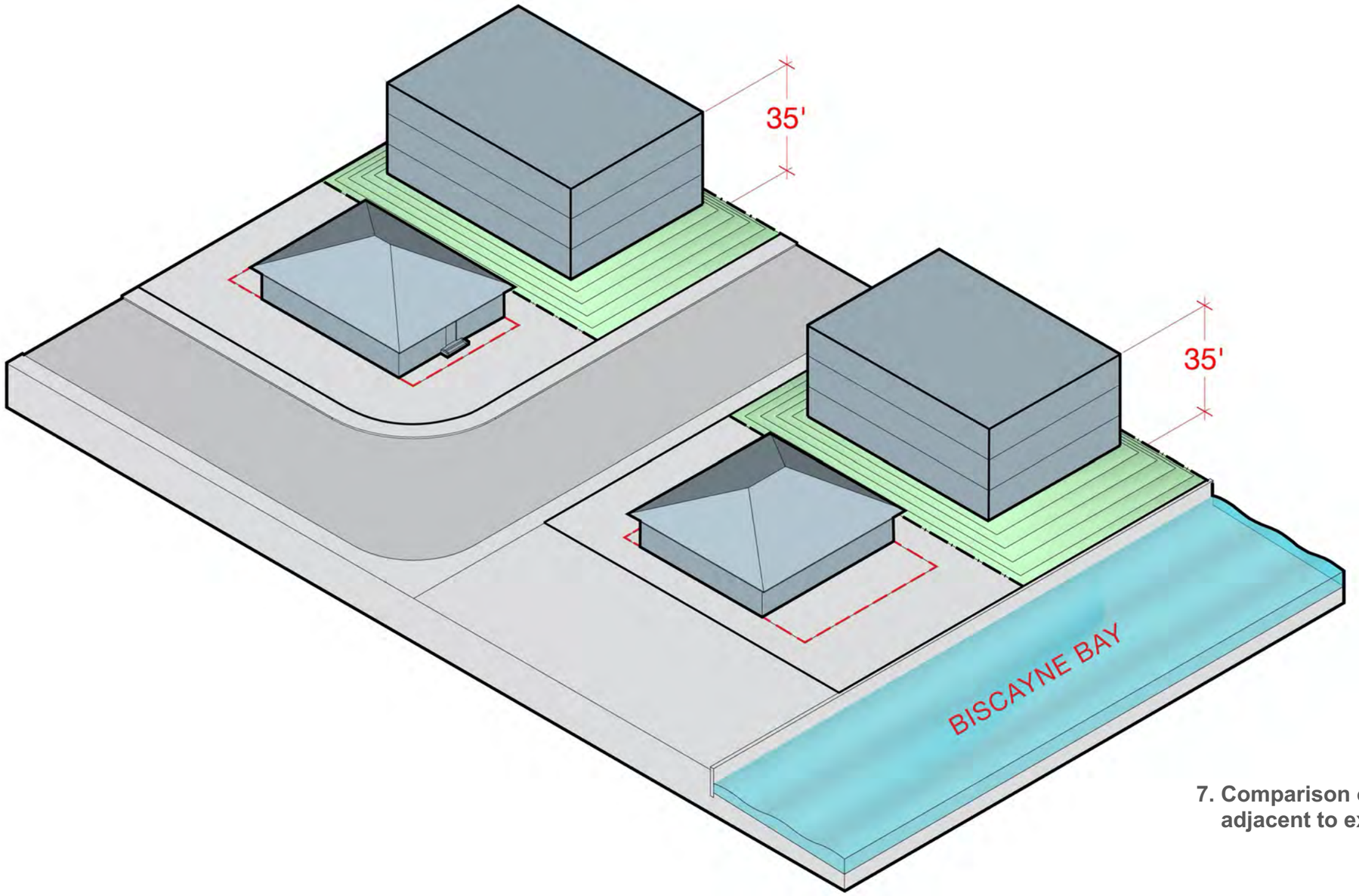
Note:
In RS-1, min. floor area for one-story house is 2,000 SF, min. floor area for two-story house is 2,600 SF.
F.A.R. is not specified in low and medium-density residential districts.



6. Final grading allowed in new construction

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-1

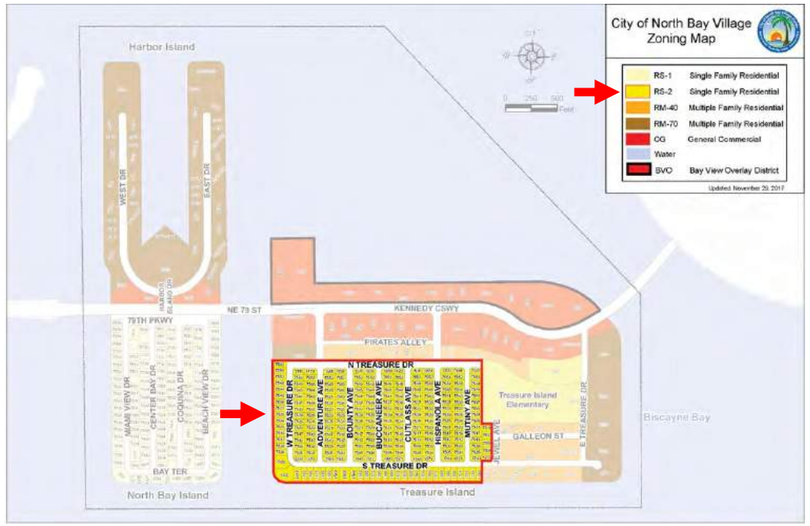
SINGLE-FAMILY RESIDENTIAL DISTRICT ON NORTH BAY ISLAND



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



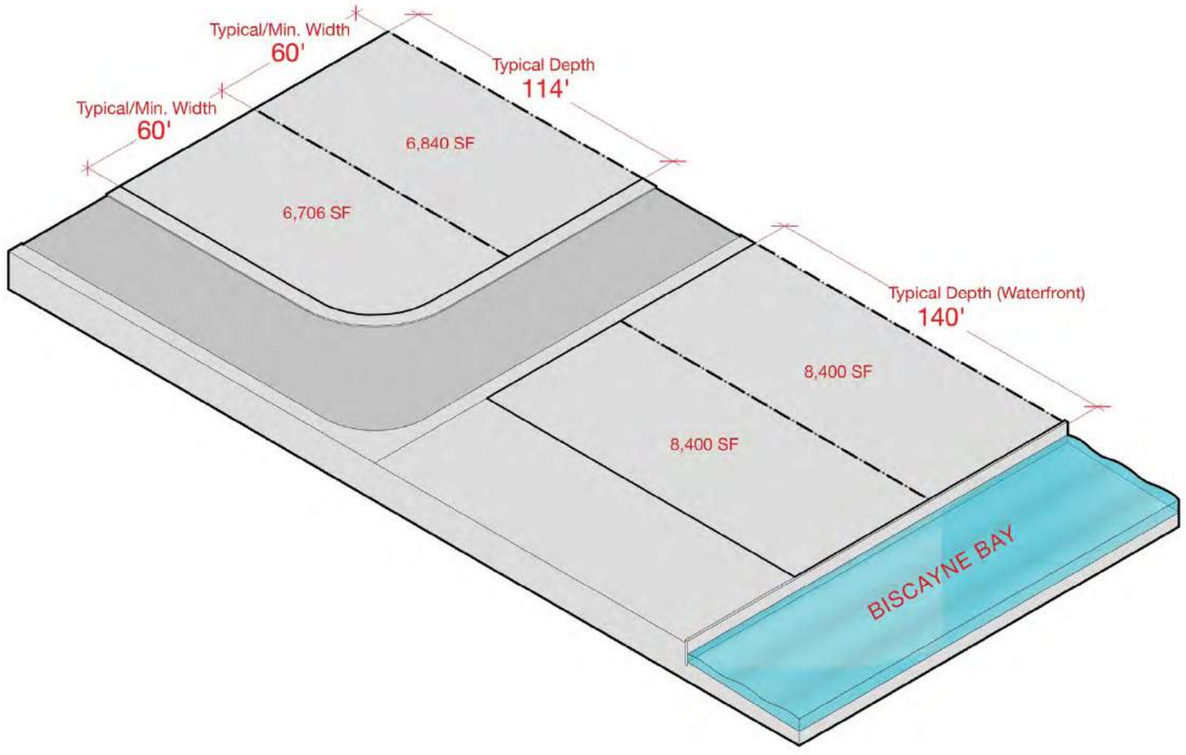
Zoning map

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

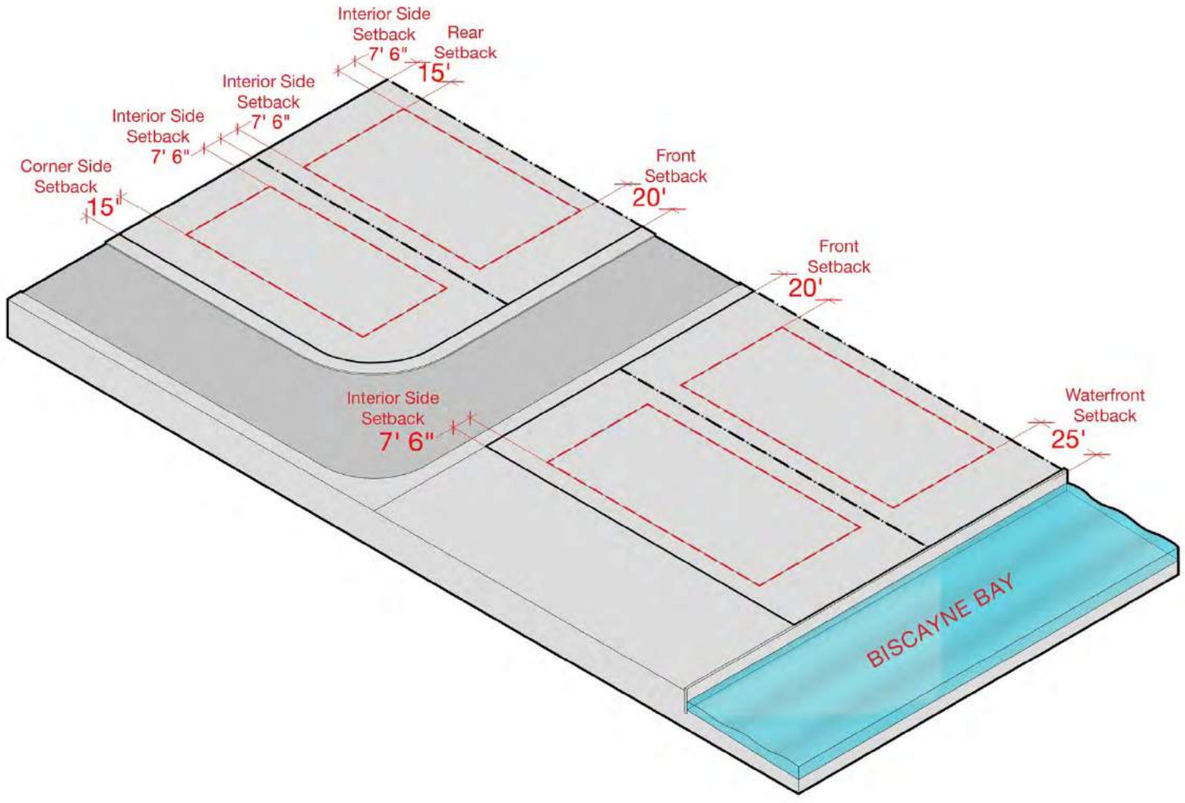
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

SINGLE-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



1. Typical lots

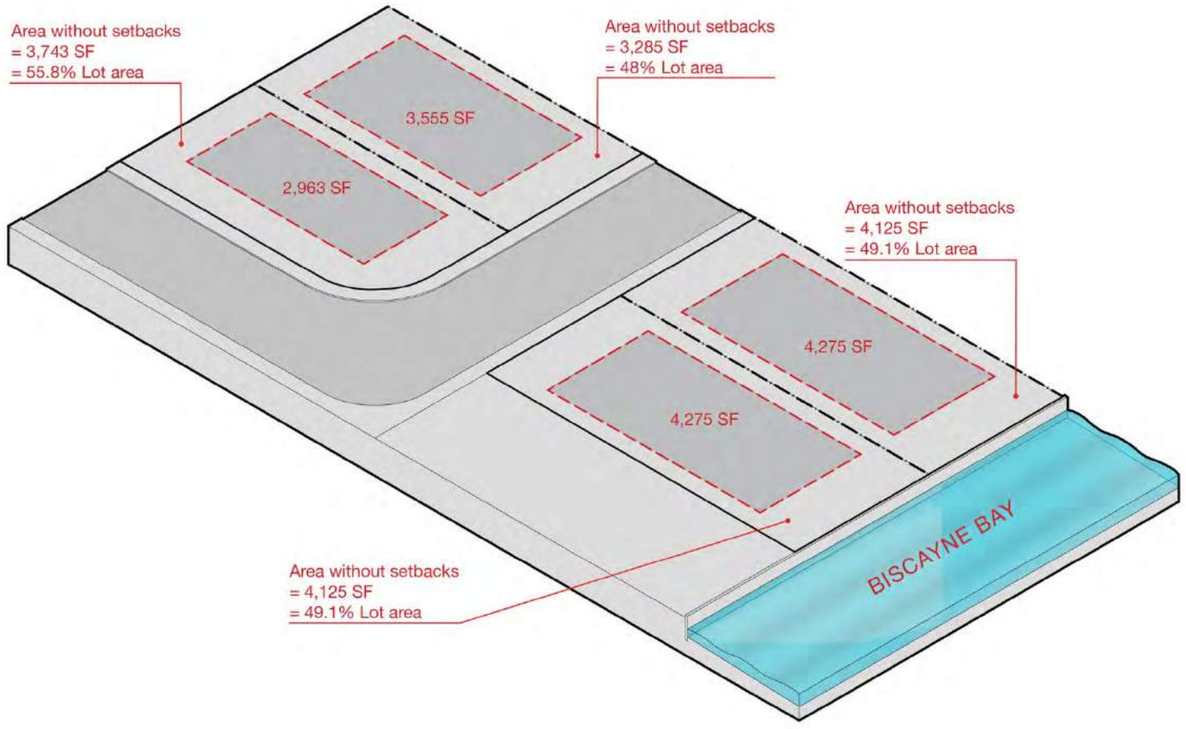
Note:
Actual lot dimensions vary.



2. Setbacks

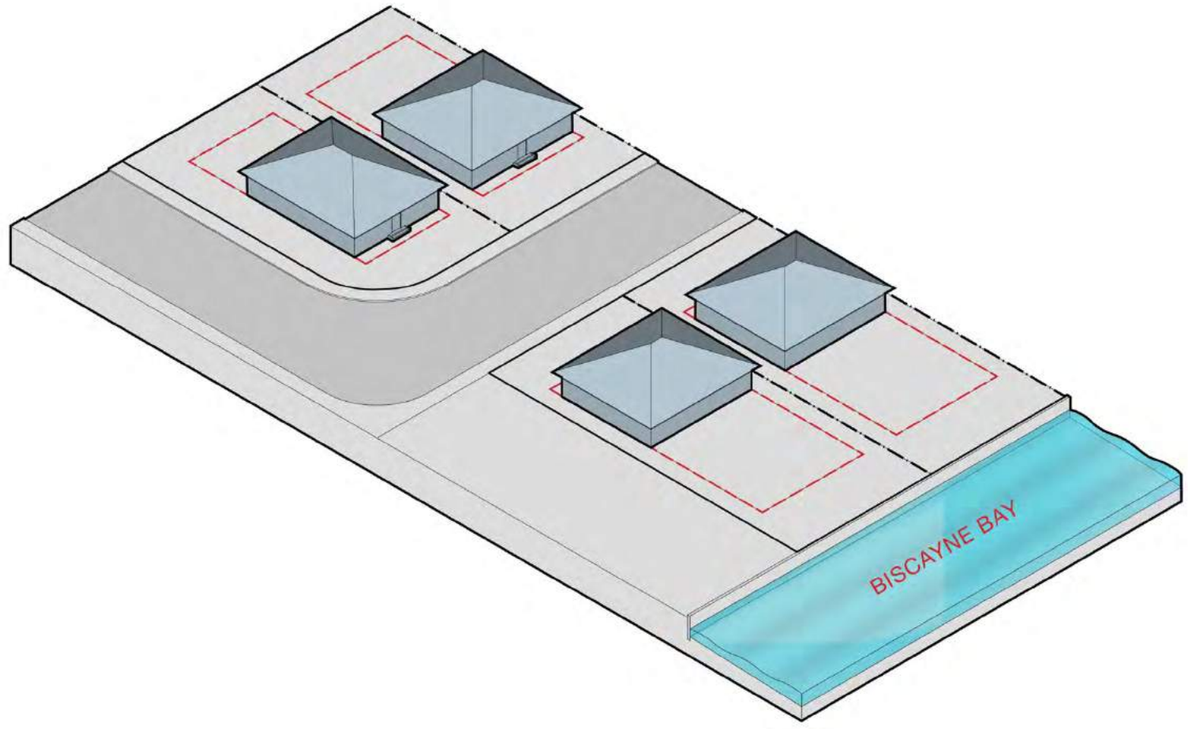
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

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.

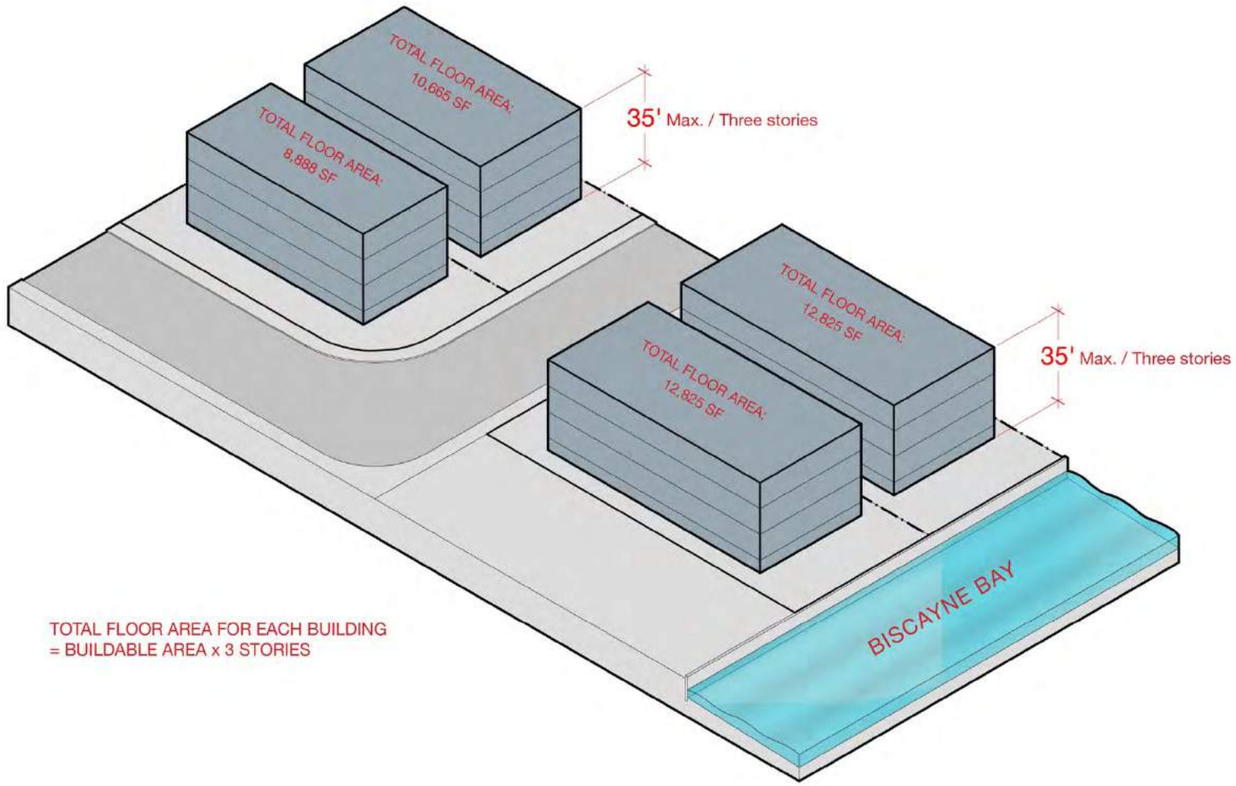


4. Typical existing buildout

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

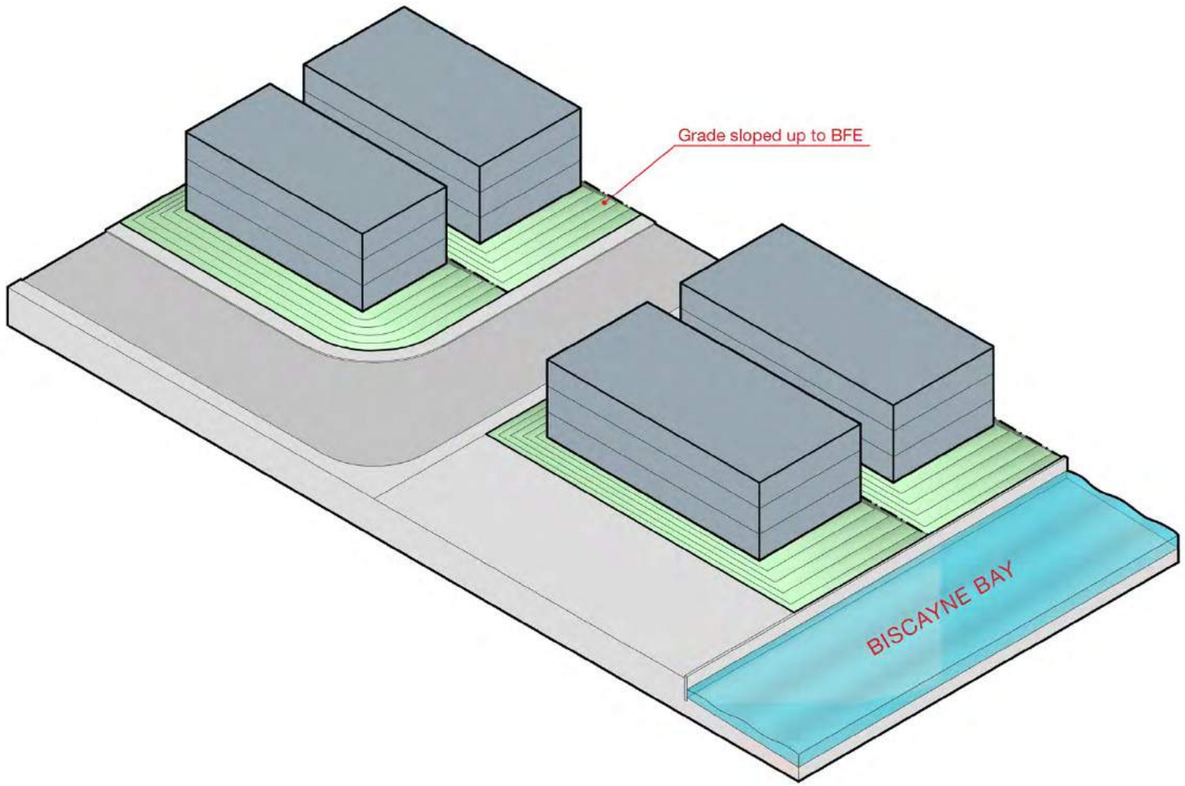
ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

SINGLE-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



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

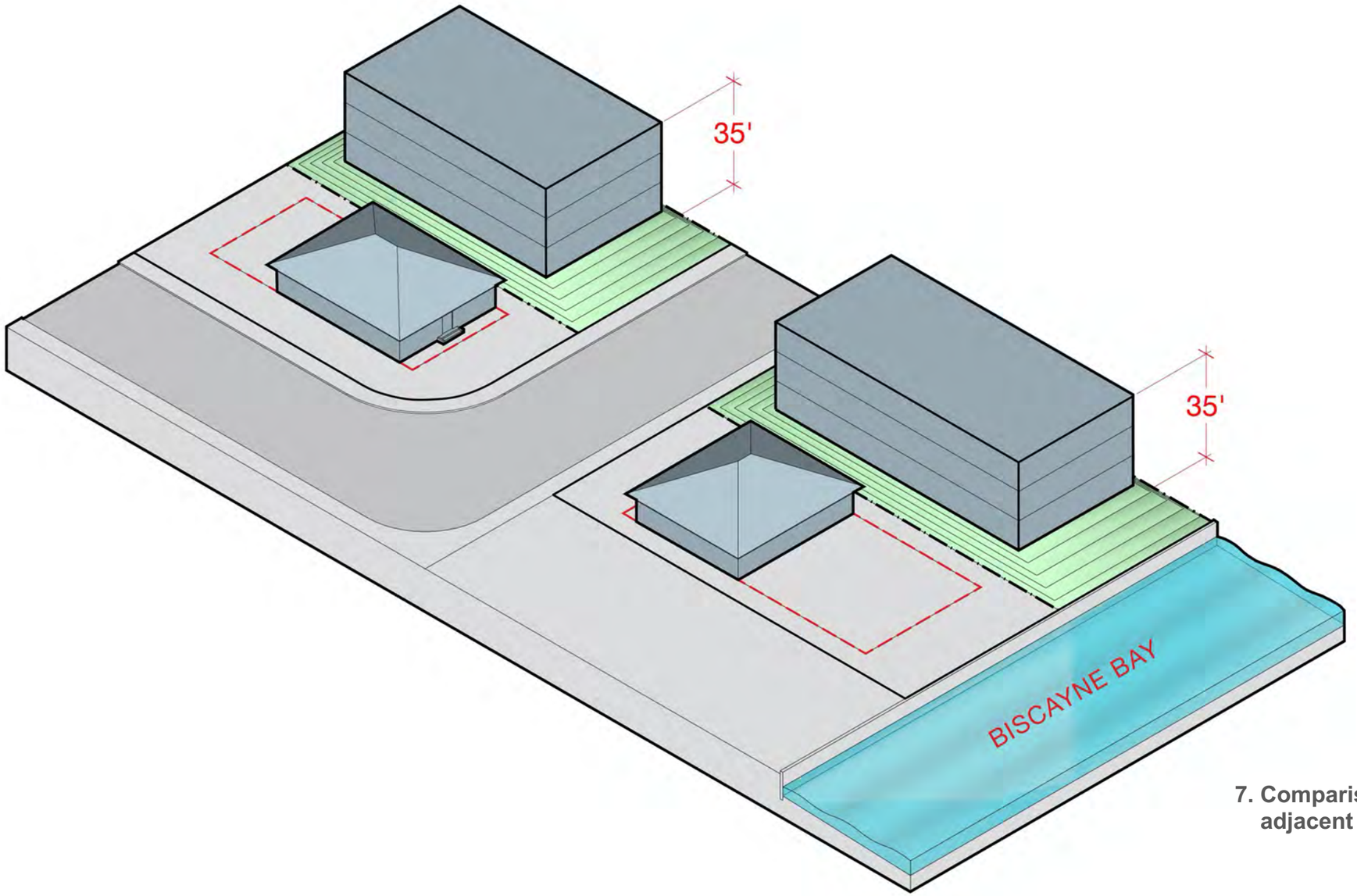
Notes:
In RS-2, min. floor area for one-story house is 1,500 SF, min. floor area for two-story house is 2,000 SF.
F.A.R. is not specified in low and medium-density residential districts.



6. Final grading allowed in new construction

ANALYSIS OF EXISTING ZONING REGULATIONS: RS-2

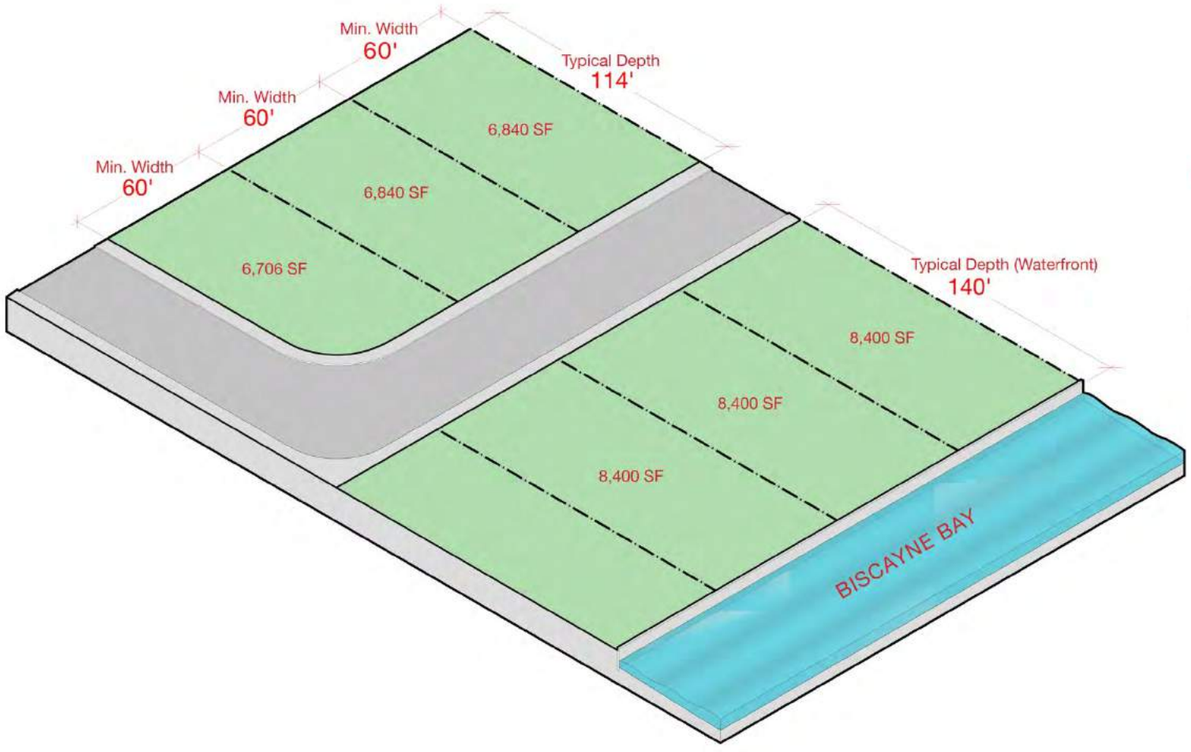
SINGLE-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



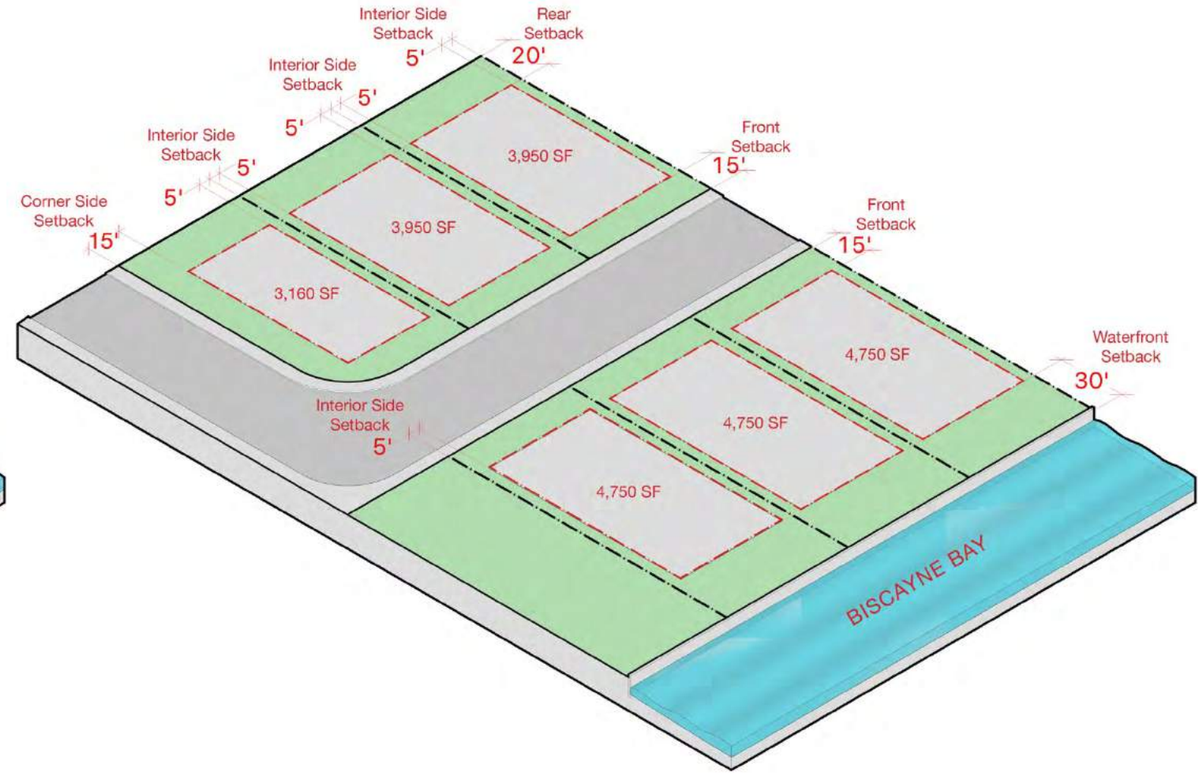
7. Comparison of max. building envelope adjacent to existing typical buildout

PROPOSED ZONING REGULATIONS: T3 AND T4

UNDERSTORY STANDARDS



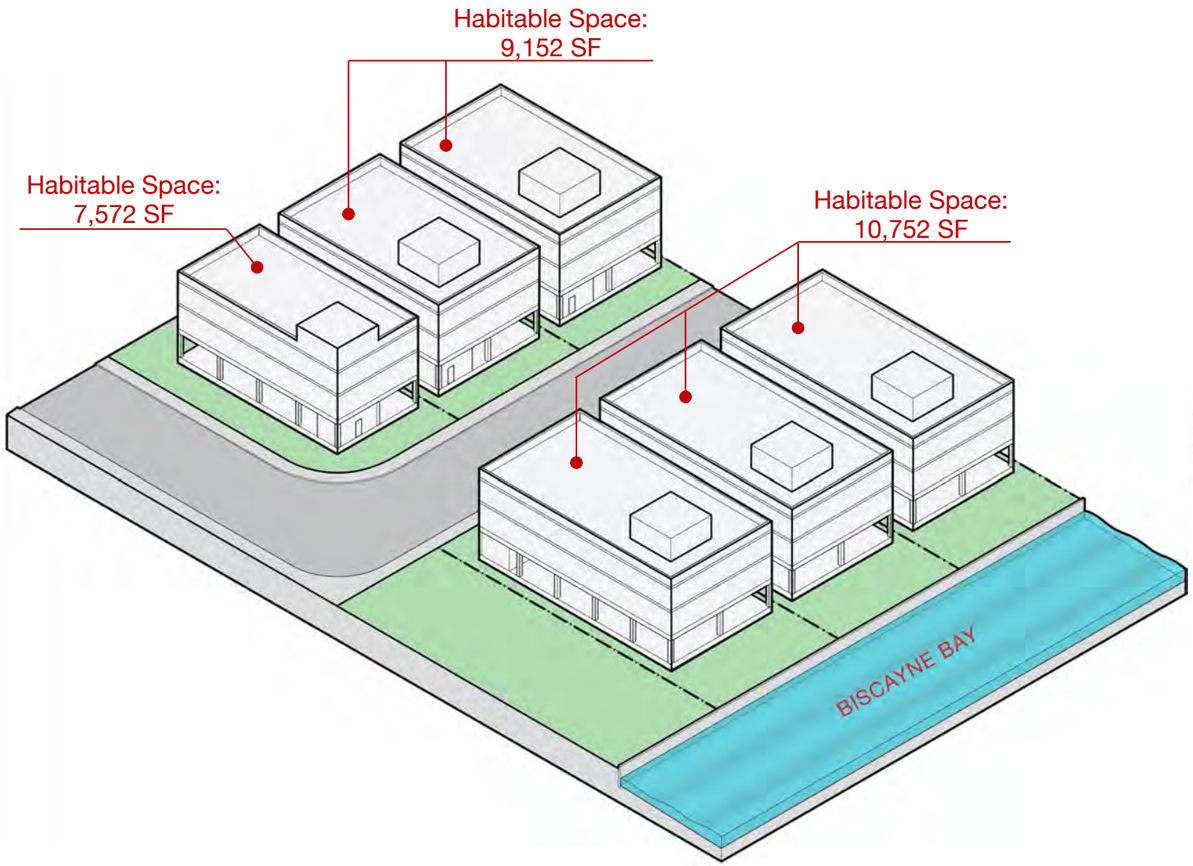
1. **Typical Existing Single-Family Lots on Treasure Island**



2. **Proposed Setbacks**

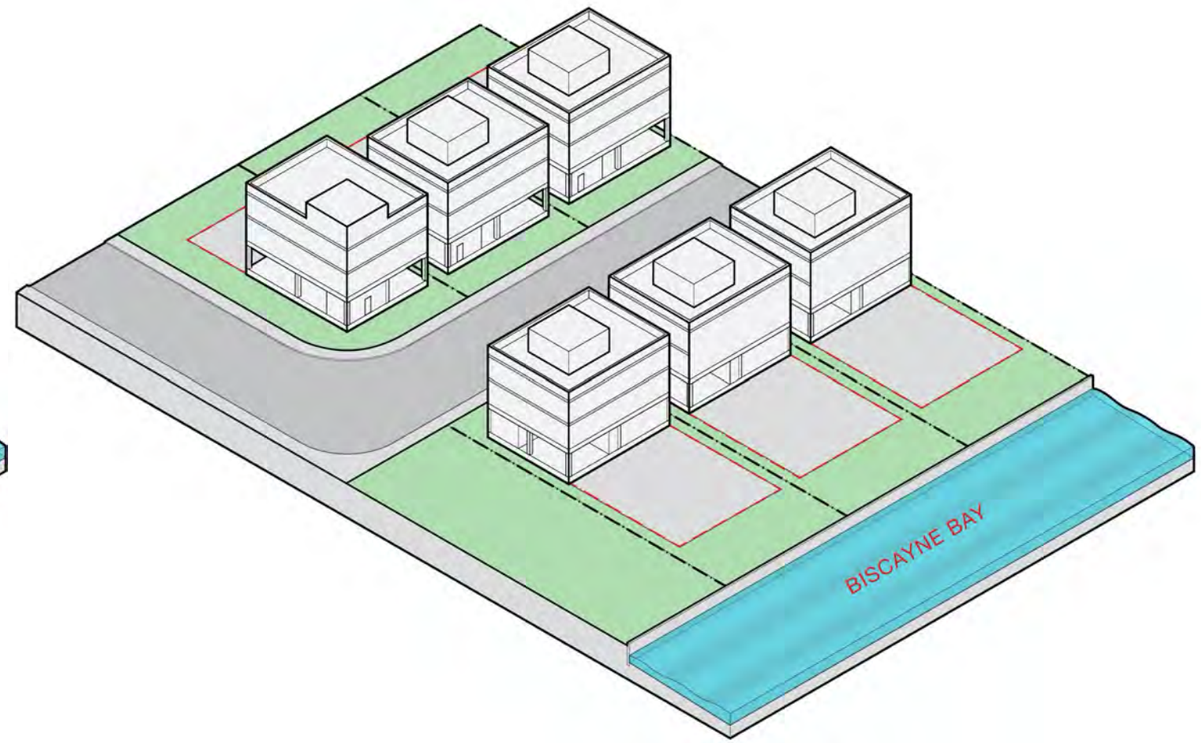
PROPOSED ZONING REGULATIONS: T3 AND T4

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

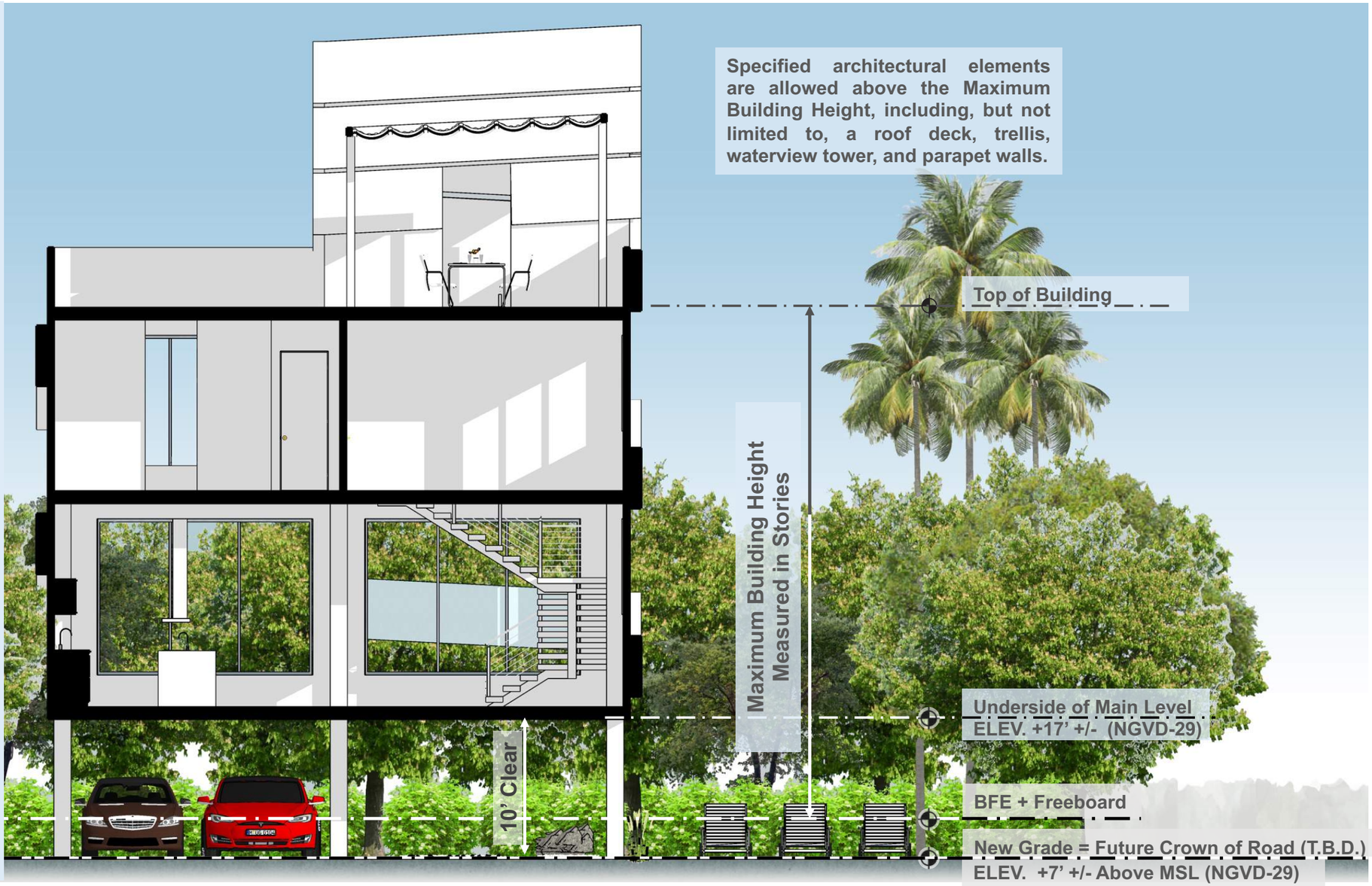
Habitable space is located above an understory well above the BFE, where it is protected not just from nuisance flooding, but from storm surge. Flood waters are allowed to flow through the open space below.

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.



Note: Understory not to scale.

CDS | Architecture and Planning

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.

Town Center

Beach access along a residential street

Inviting street frontage

Single-family house with understory

Images from https://www.beachtown.com/

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

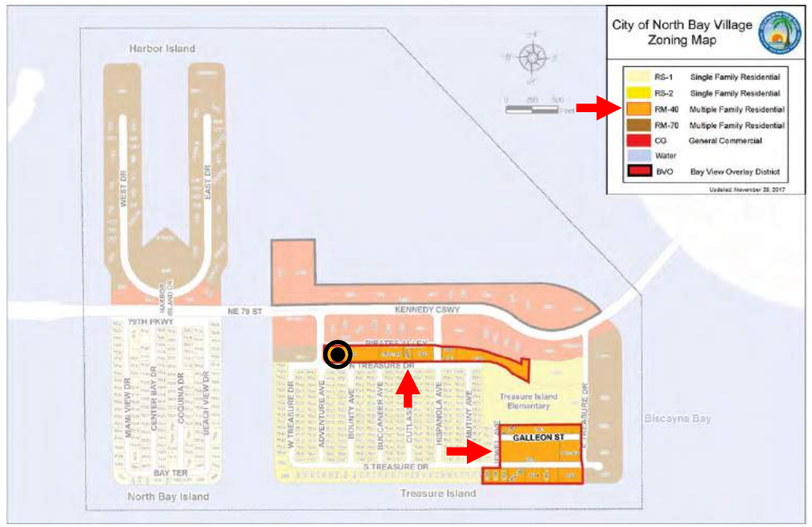
A potential long-term approach that NBV might consider is our proposal for the Elevated Village, where structures are raised a full level. Though it may seem radical because it proposes to raise entire lots, including yards and sidewalks, not just habitable structures, it provides a complete, usable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



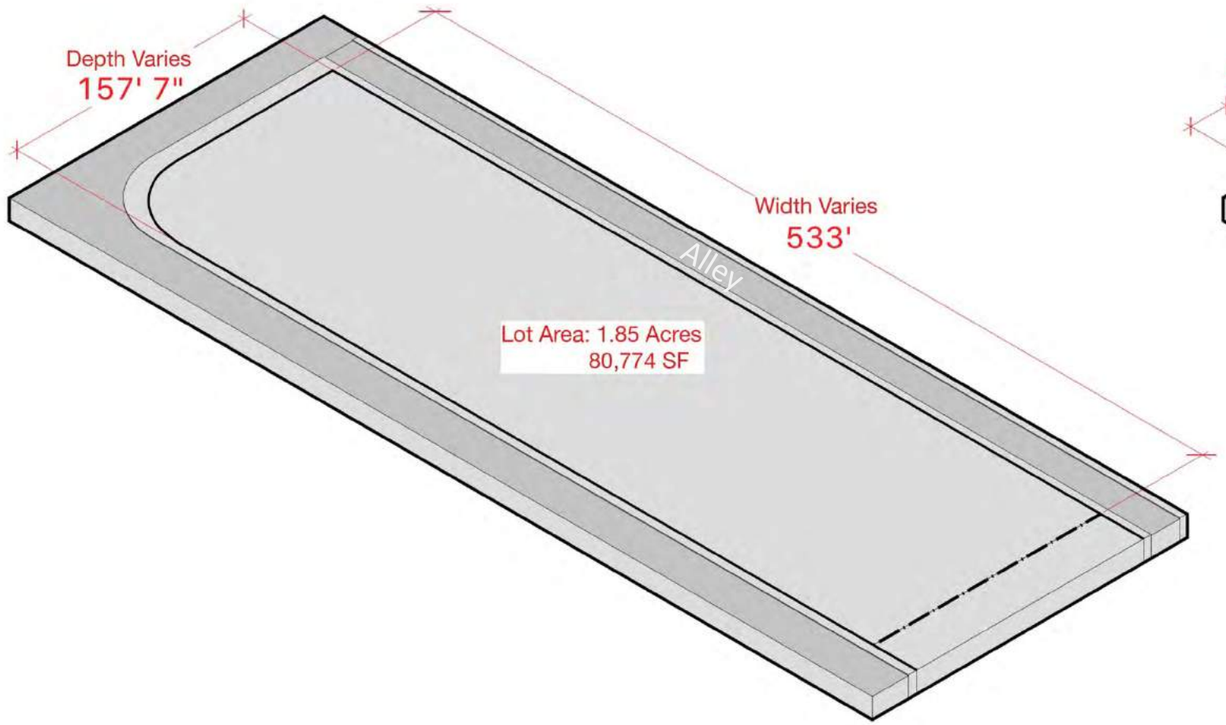
Zoning map

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 on North Treasure Dr.

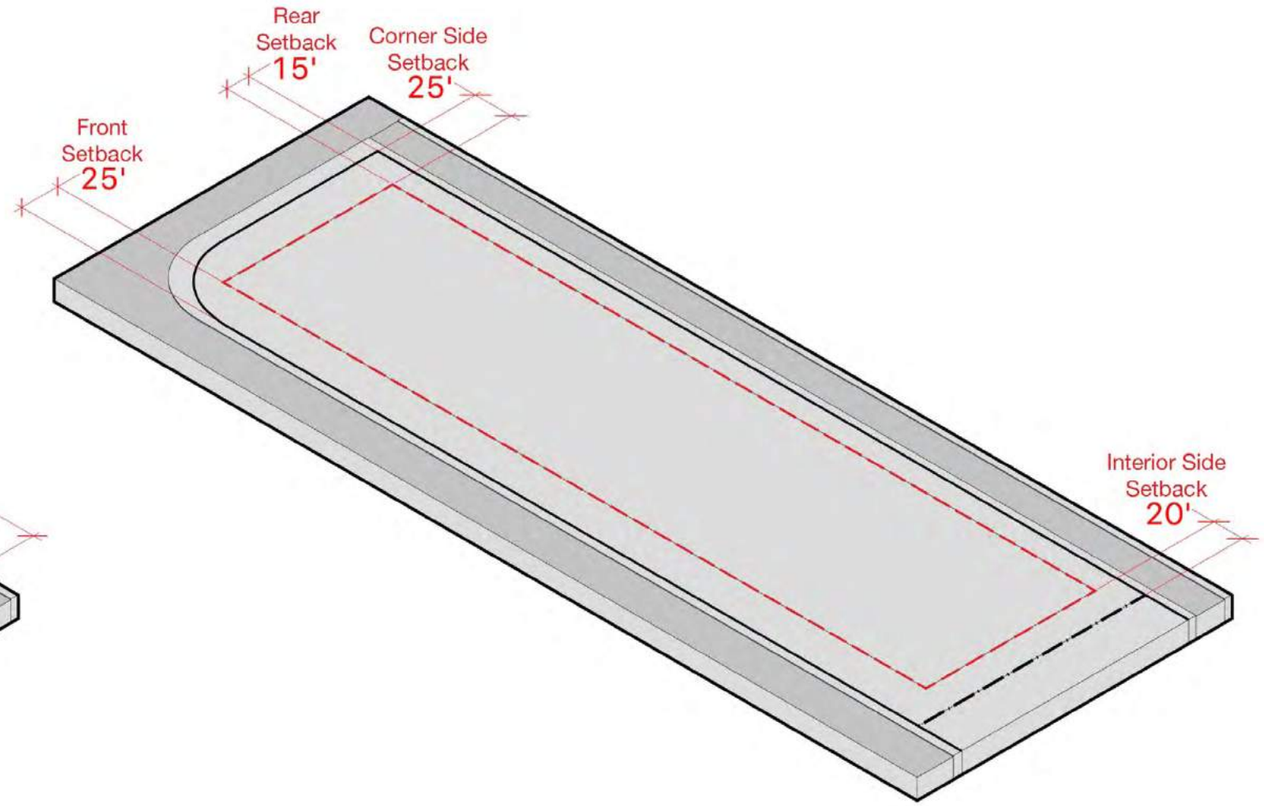
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND



1. Lot

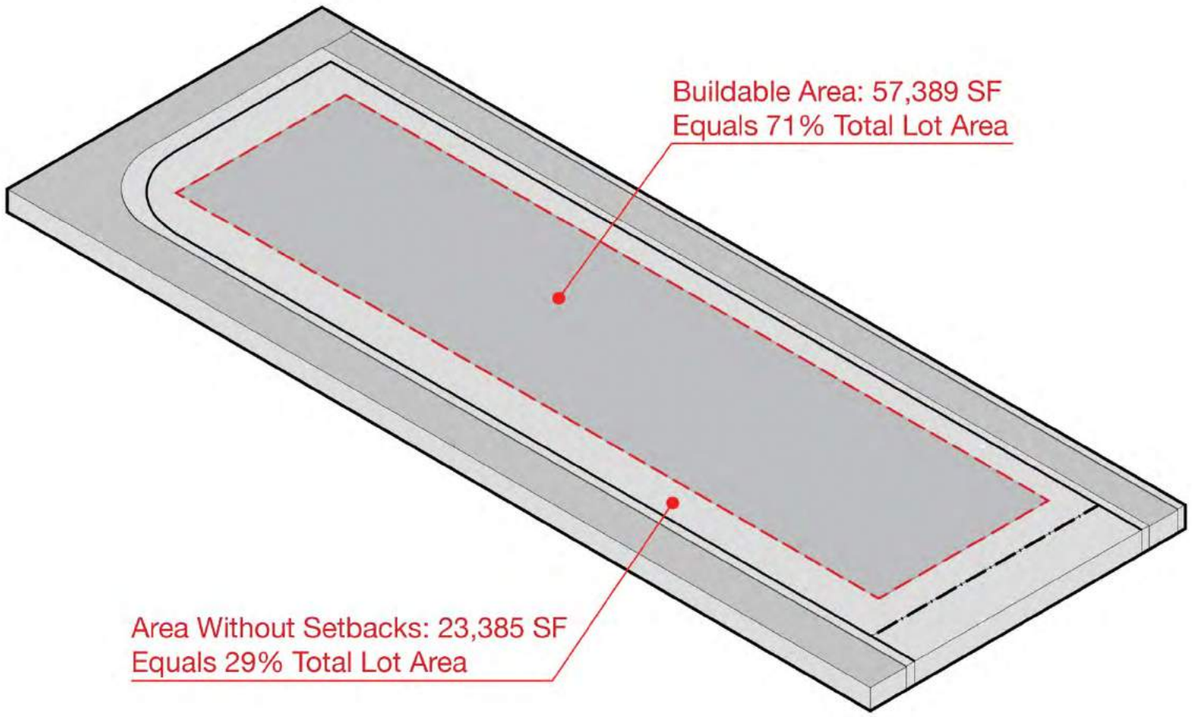
Note:
Actual lot dimensions and sizes vary.



2. Setbacks

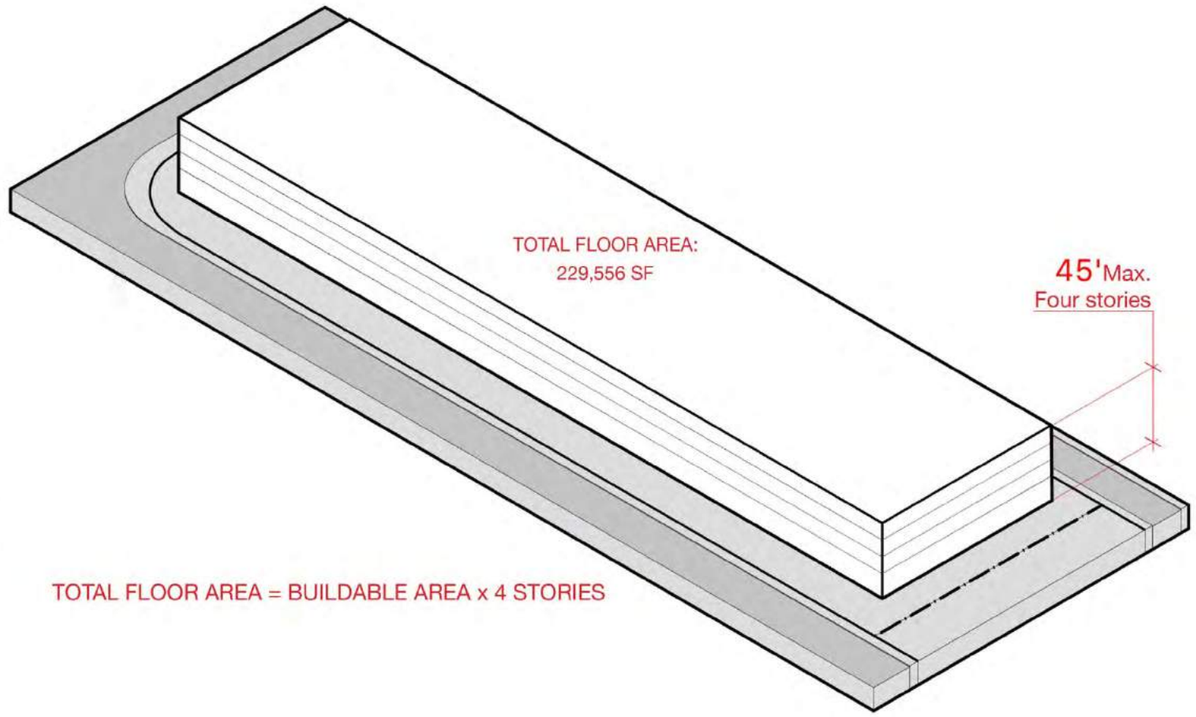
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

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.

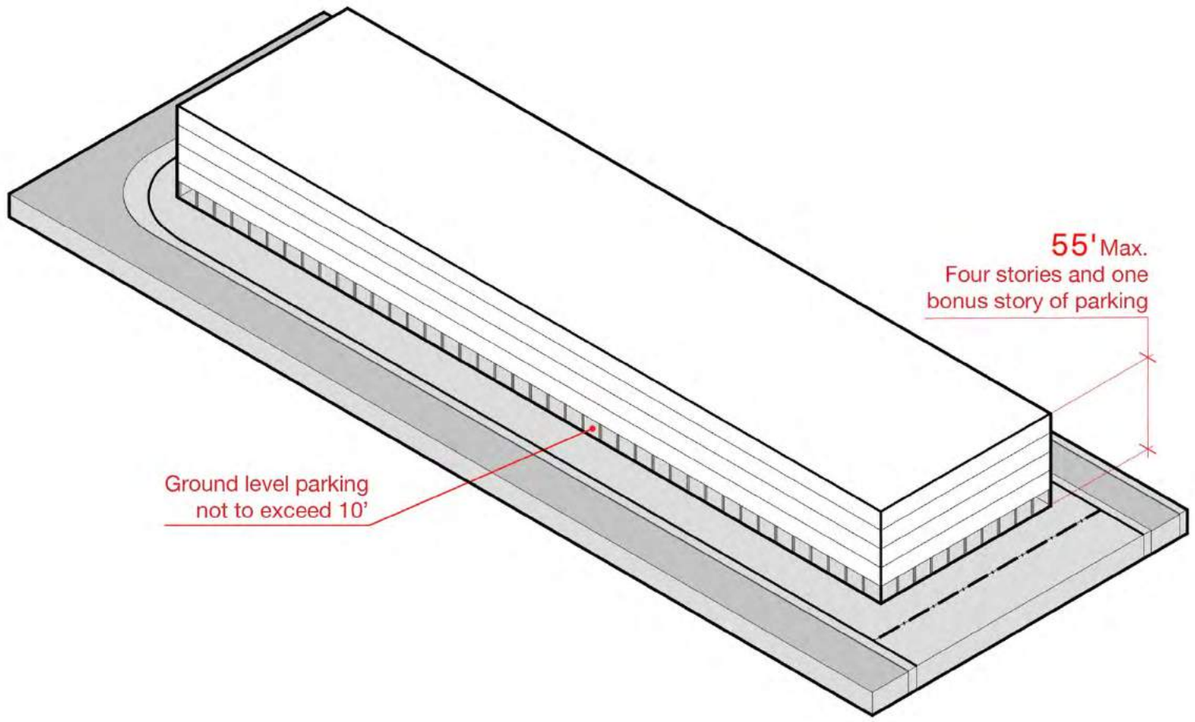


4. Max. building envelope permitted by right under existing code

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.

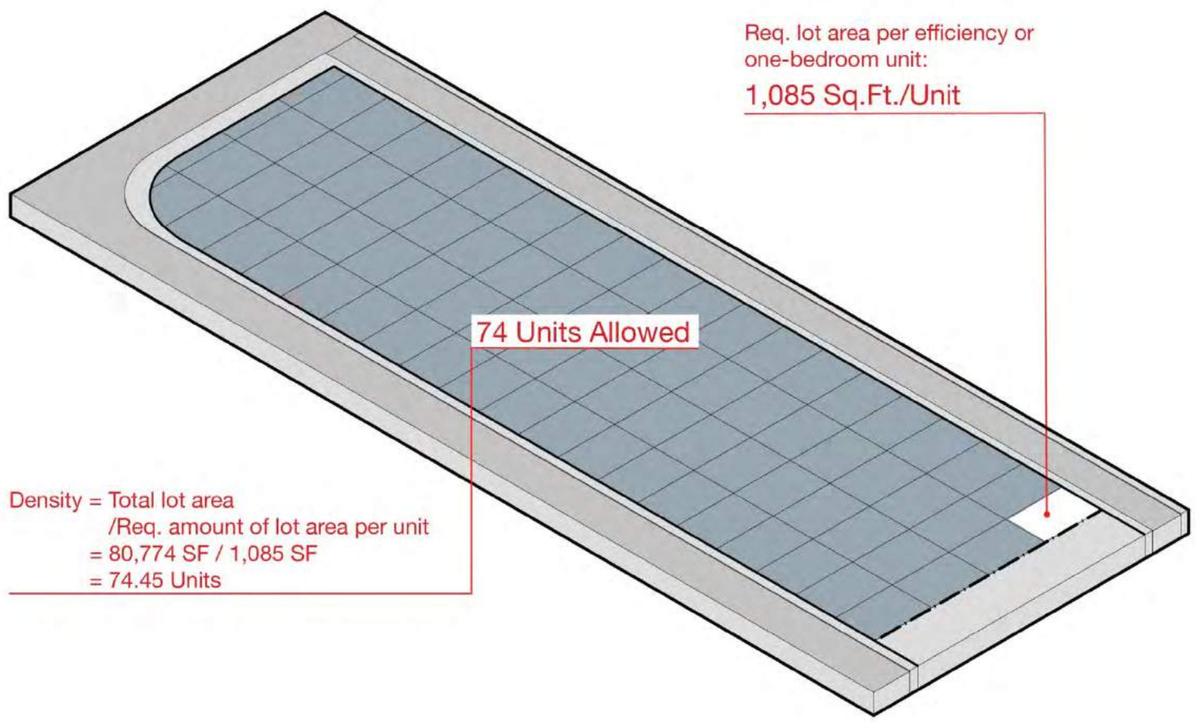
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

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.

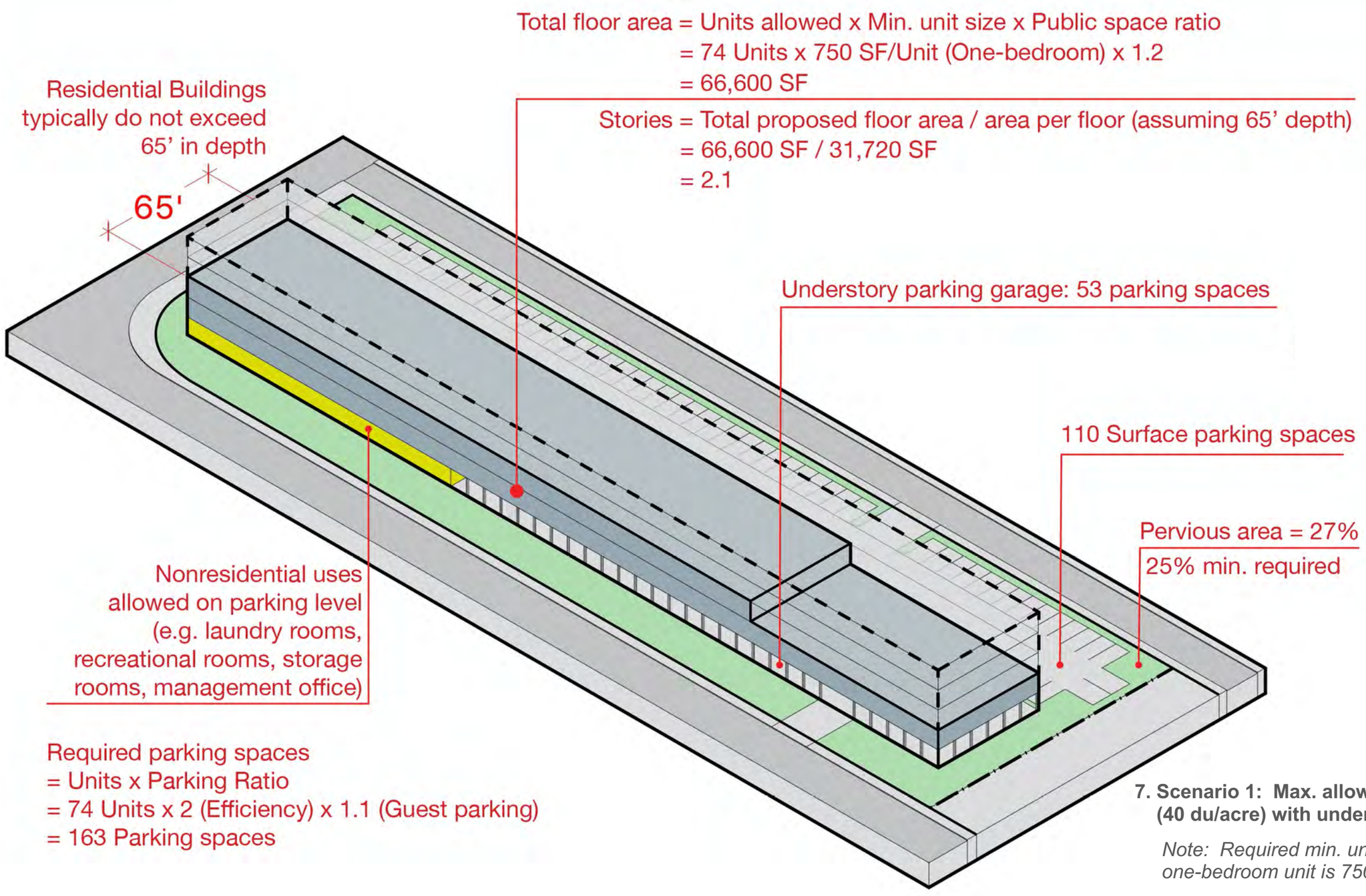


6. Density

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

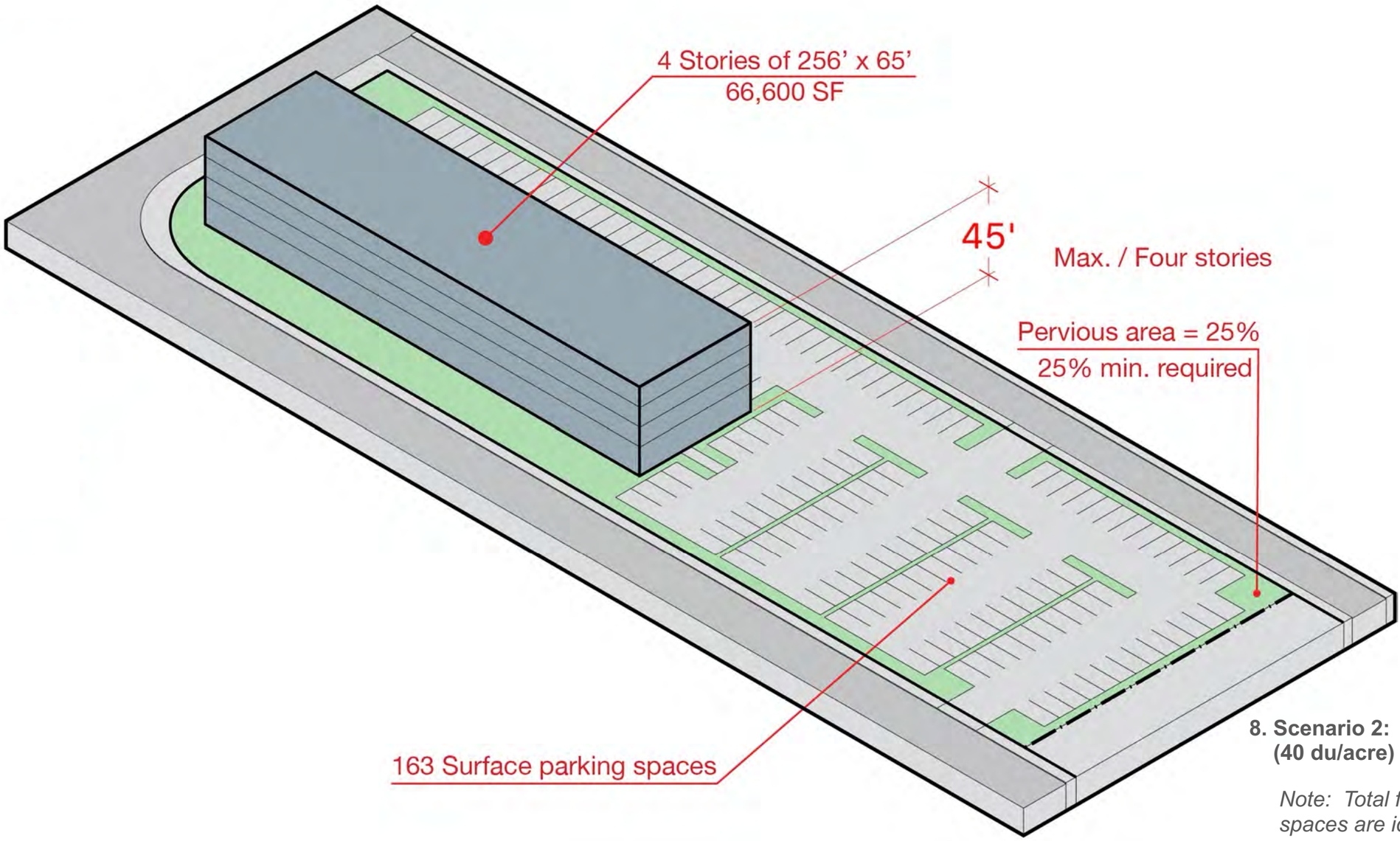


7. Scenario 1: Max. allowed density (40 du/acre) with understory parking

Note: Required min. unit size of one-bedroom unit is 750 SF.

ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY RESIDENTIAL DISTRICT ON TREASURE ISLAND

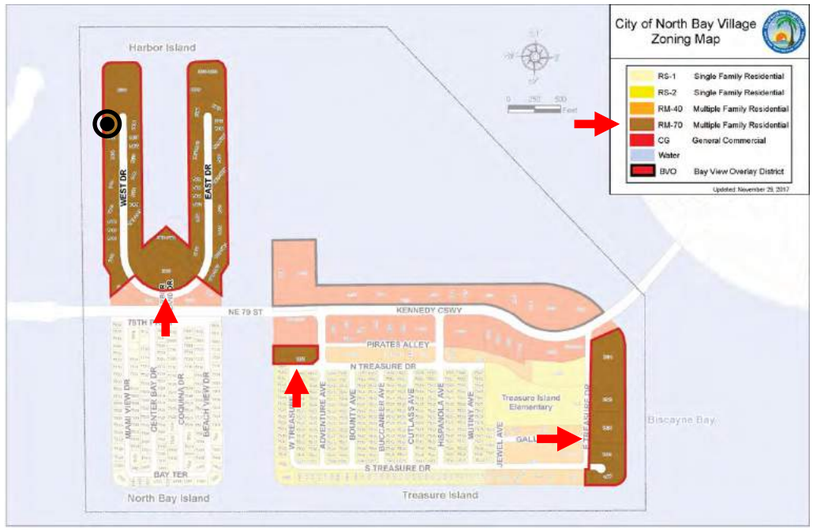


8. Scenario 2: Max. allowed density (40 du/acre) w/ no understory parking

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

ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

MULTI-FAMILY DISTRICT ON HARBOR ISLAND AND TREASURE ISLAND



Zoning map

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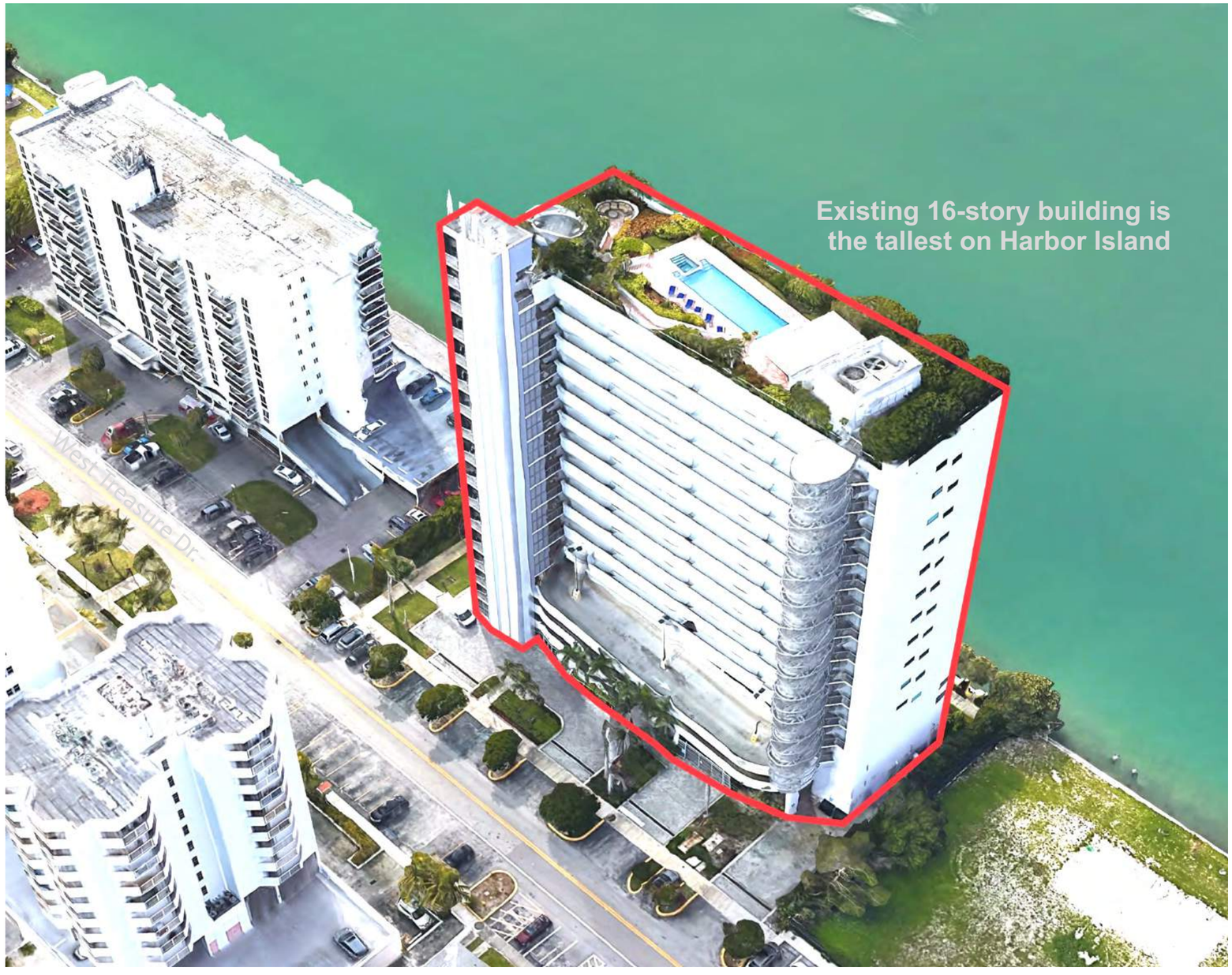
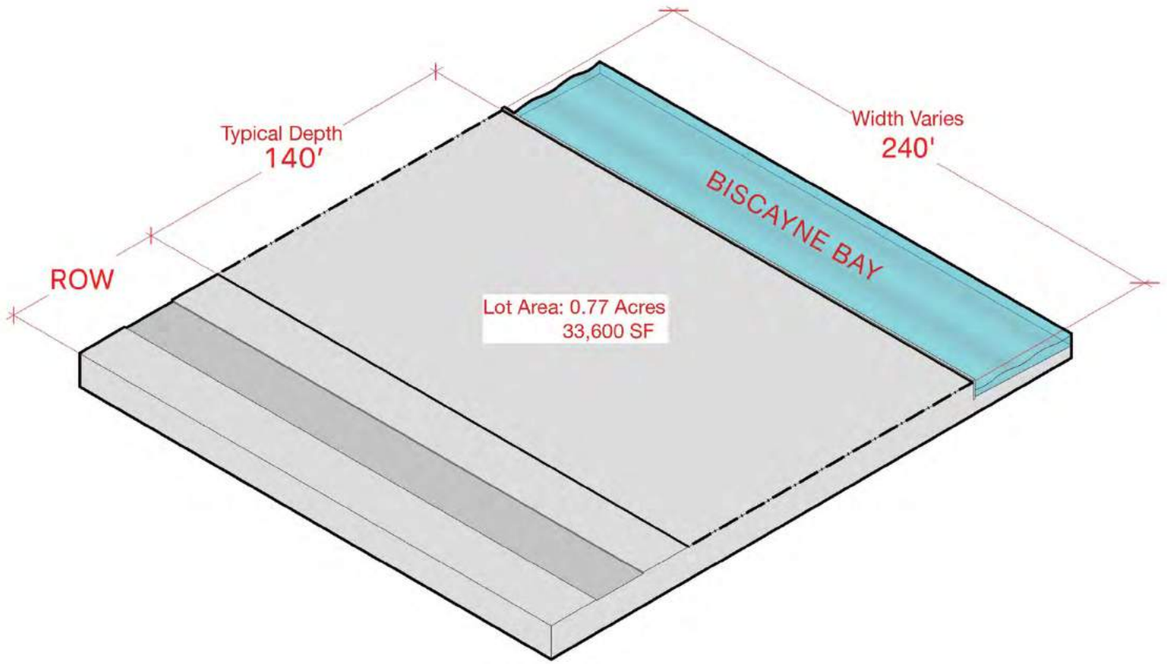


Existing conditions

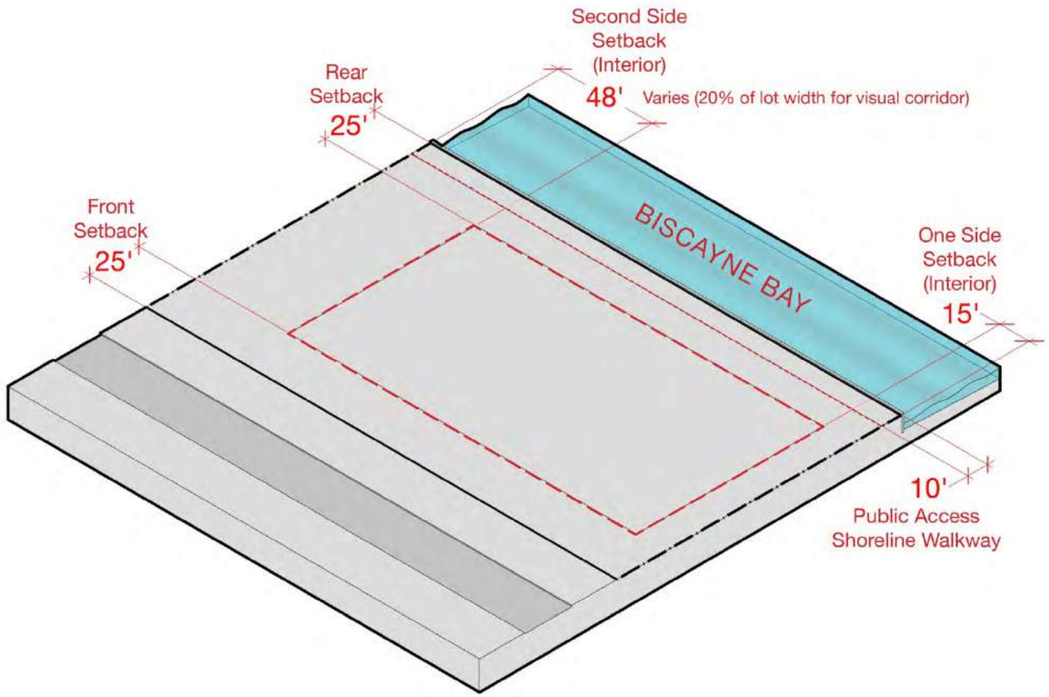
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

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.

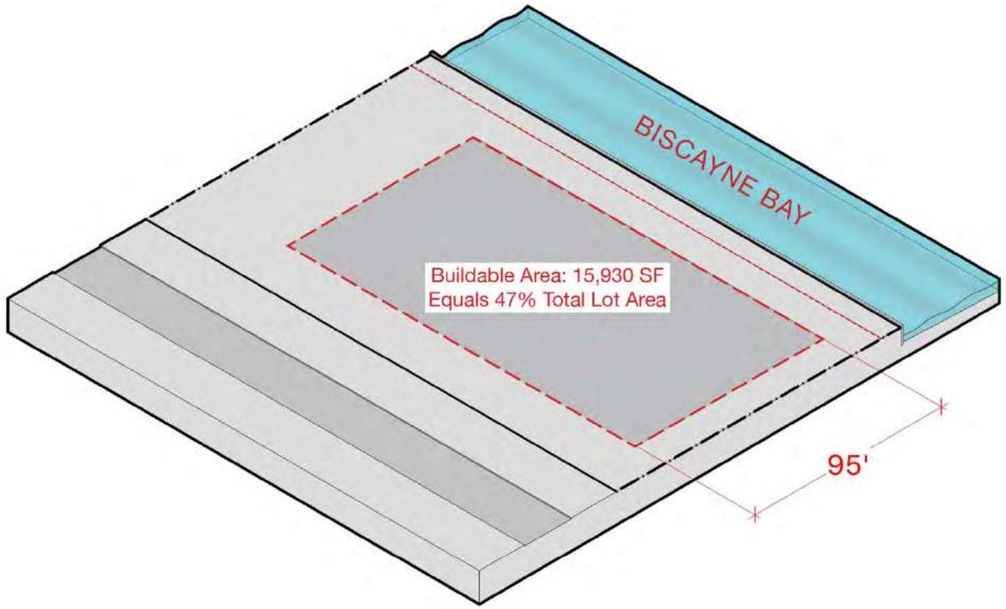


2. Setbacks

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

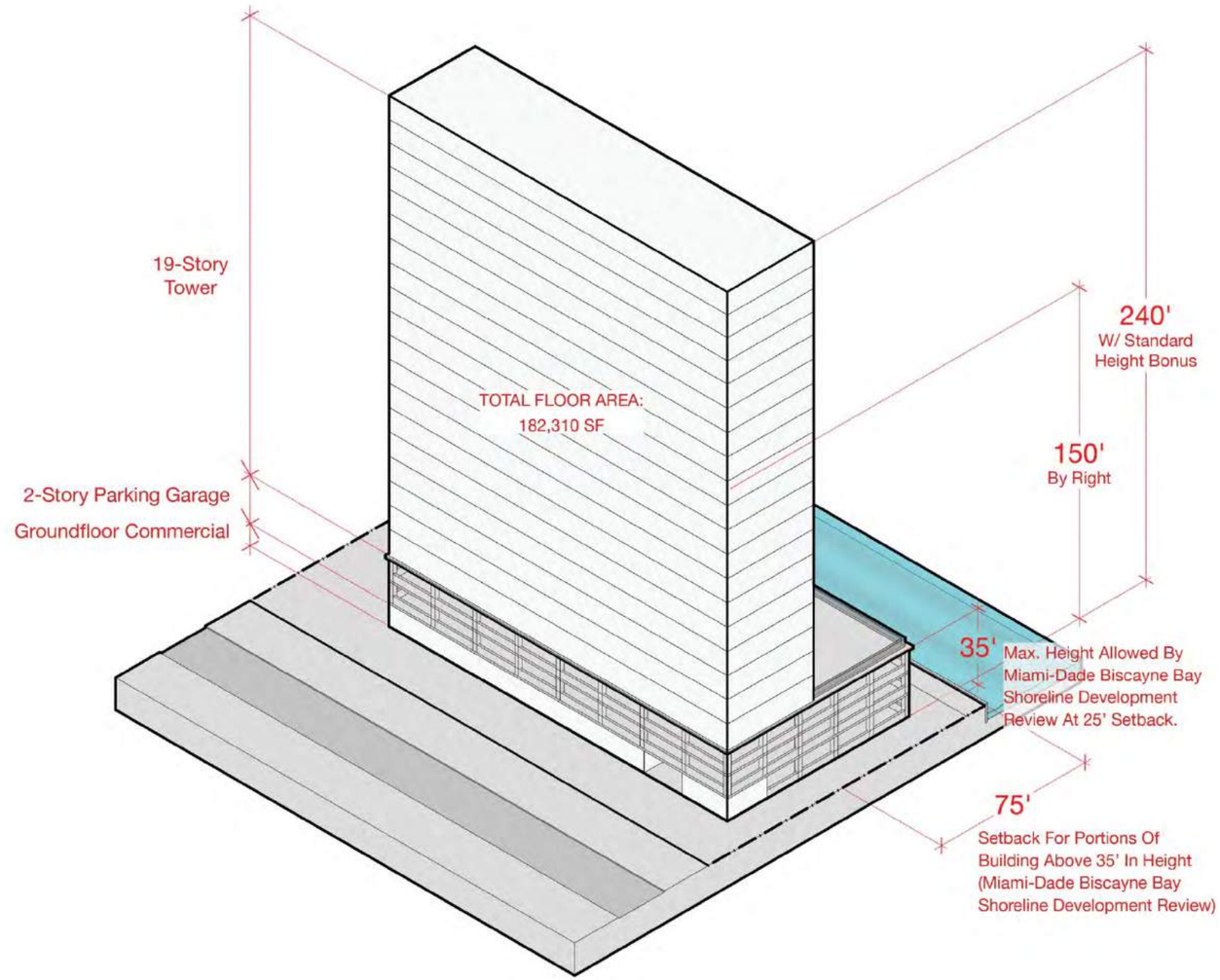
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

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.

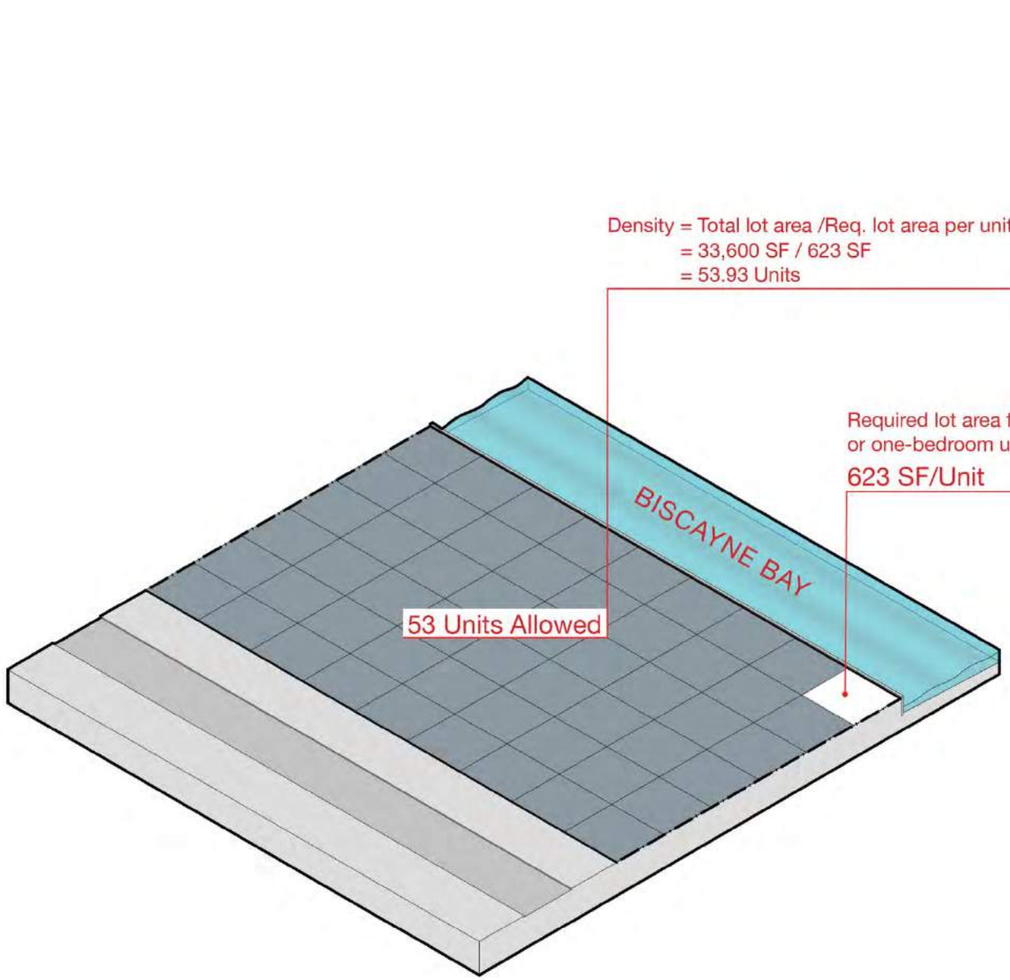


4. Max. building envelope permitted under existing code

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

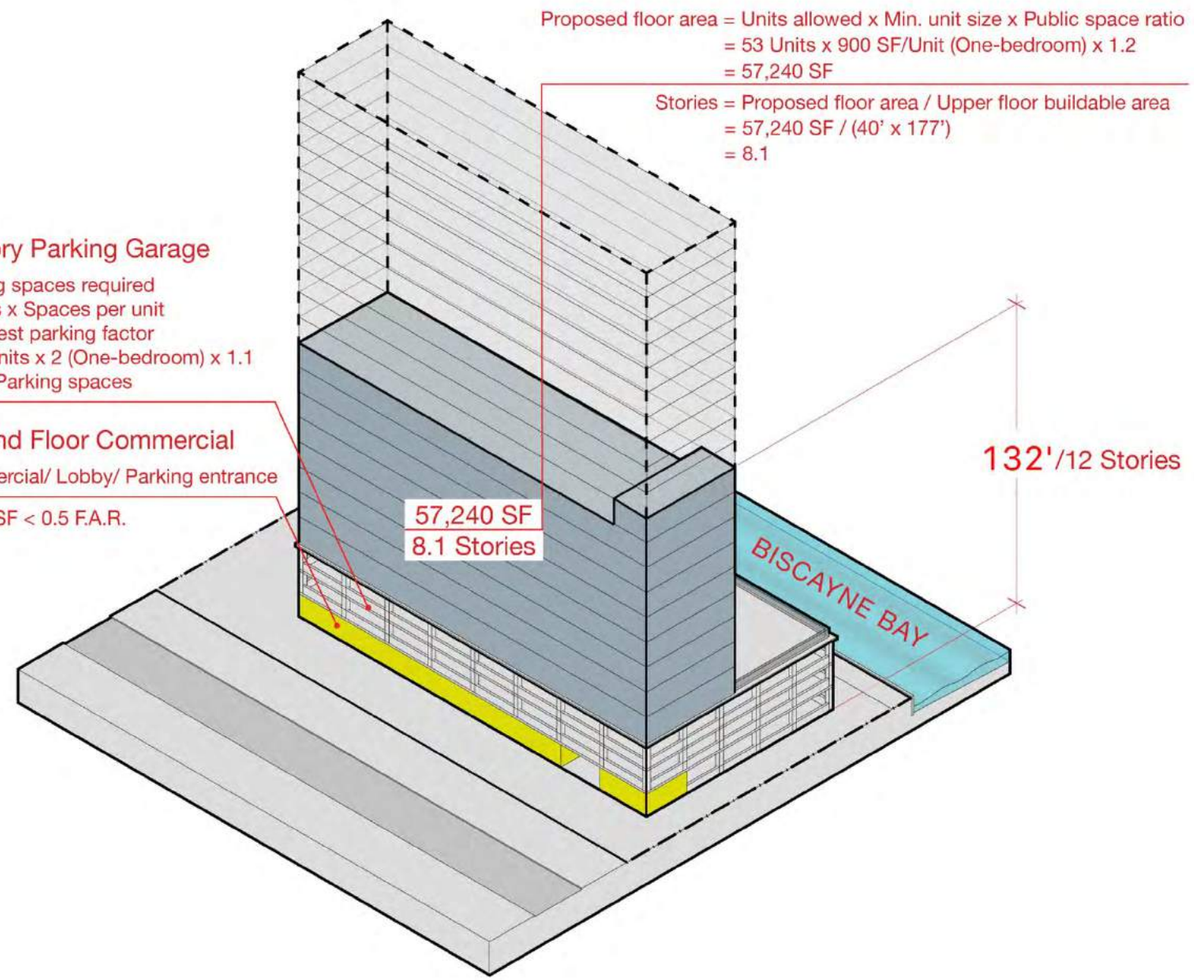
ANALYSIS OF EXISTING ZONING REGULATIONS: RM-40

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.

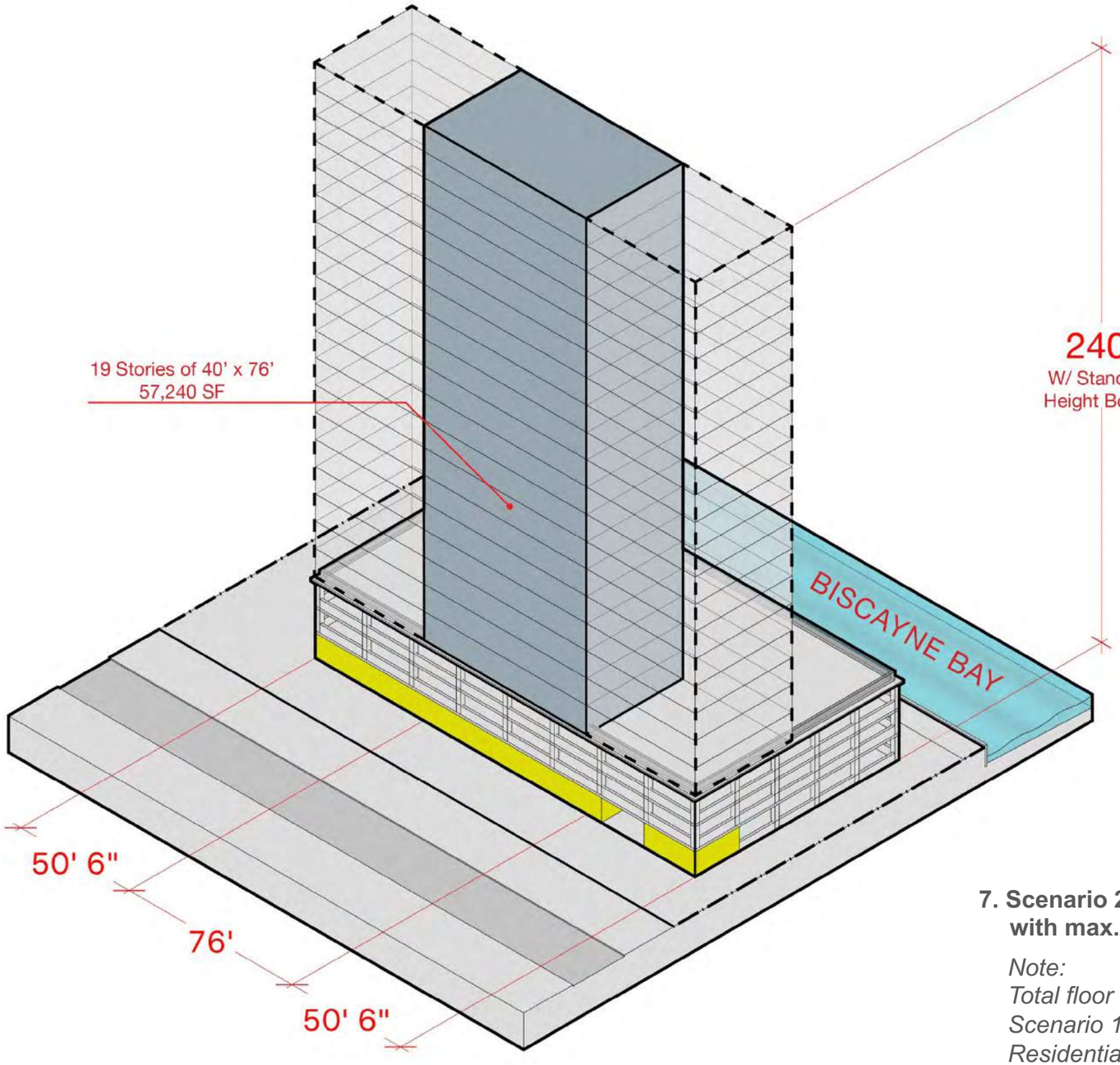


6. Scenario 1: Max. allowed density (70 du/acre) and low height

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

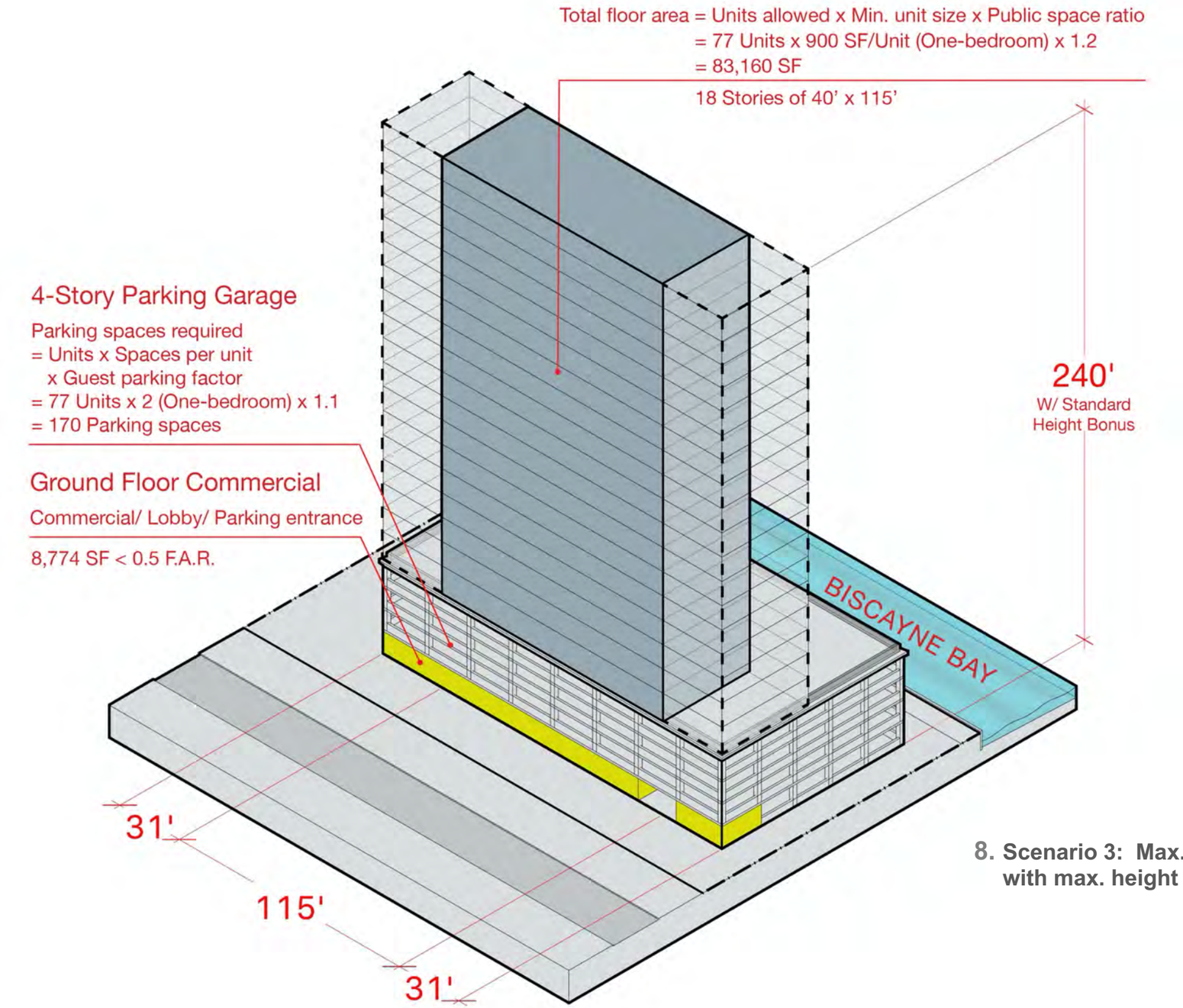


7. Scenario 2: Max. allowed density (70 du/acre) with max. height

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

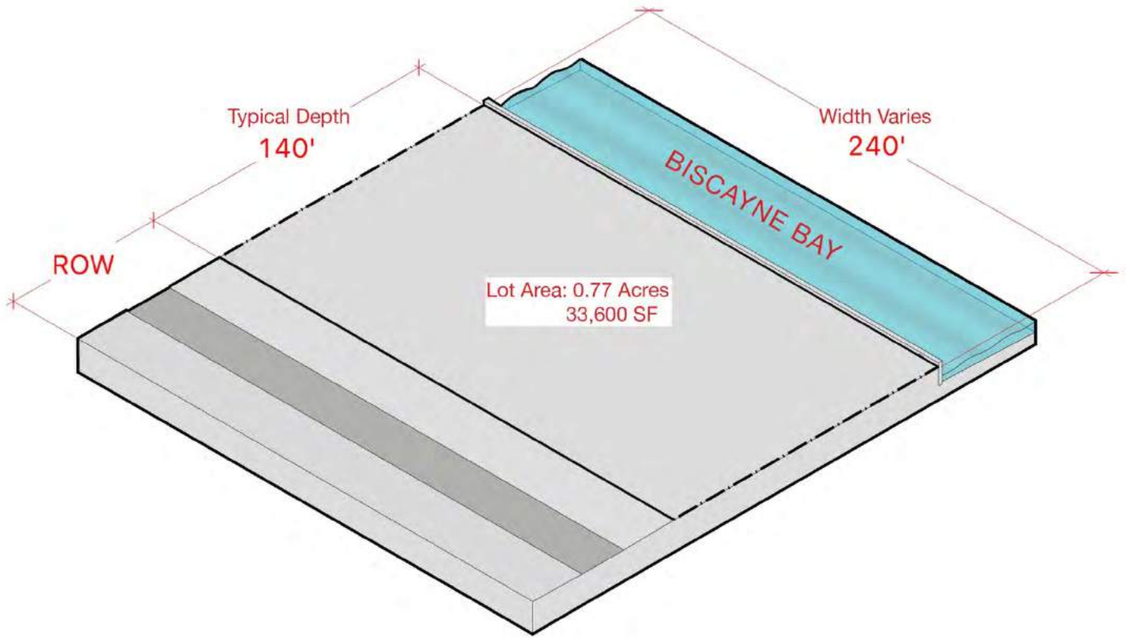
MULTI-FAMILY DISTRICT ON HARBOR ISLAND AND TREASURE ISLAND



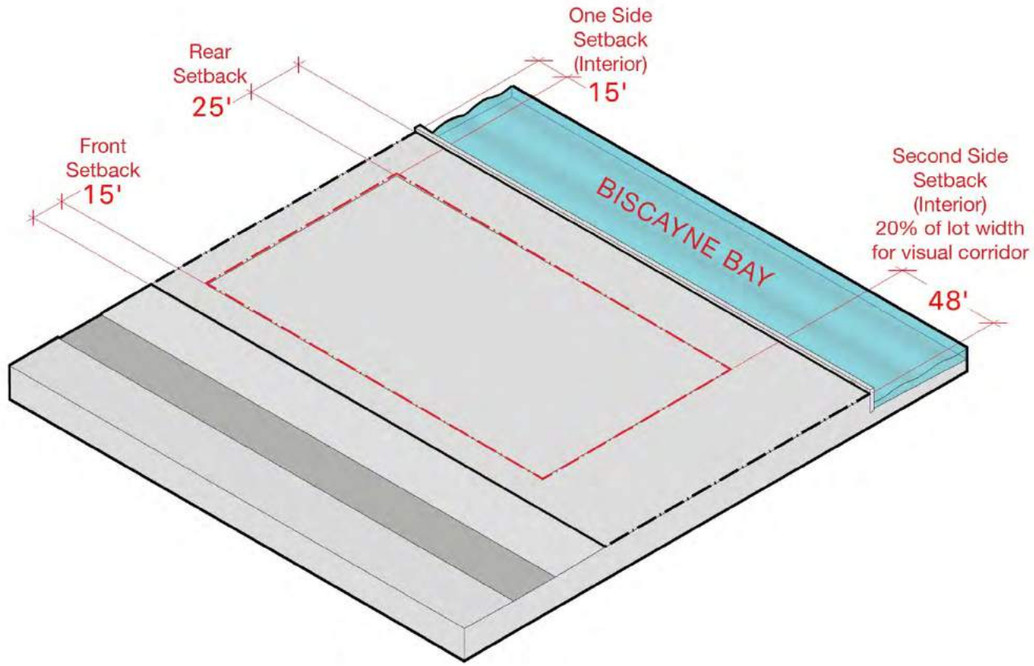
8. **Scenario 3: Max. allowed density (100 du/acre) with max. height**

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



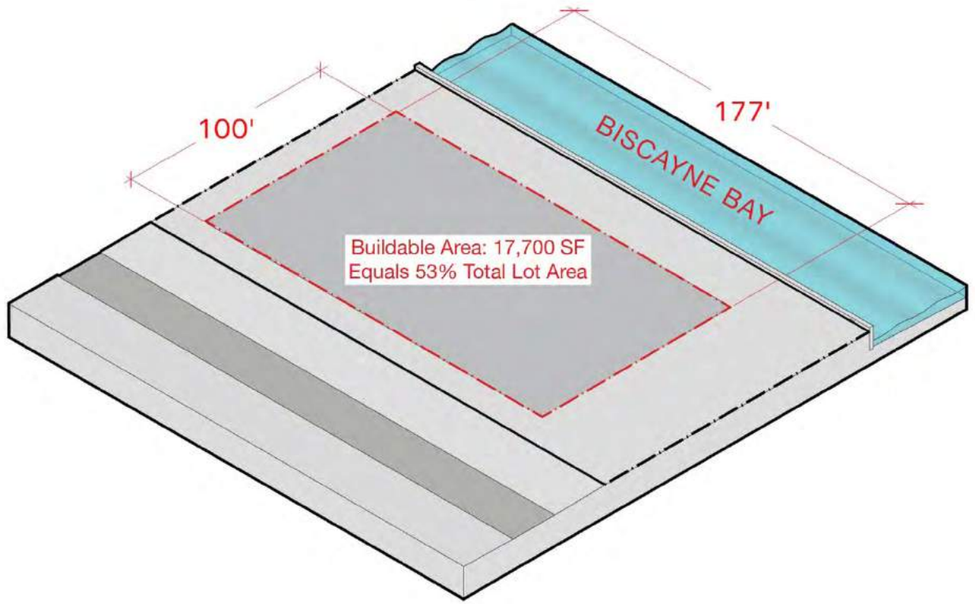
1. Lot



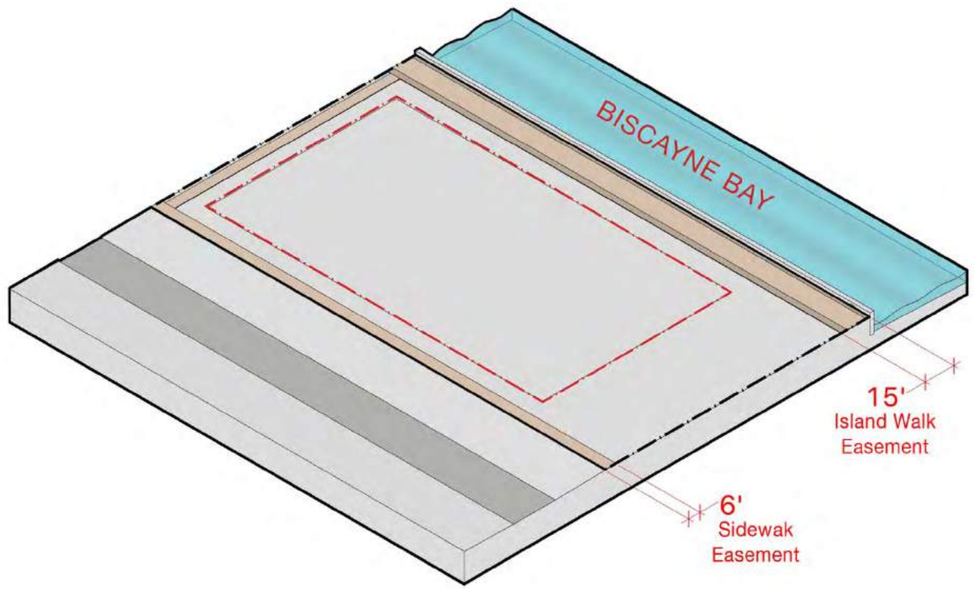
2. Setbacks

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



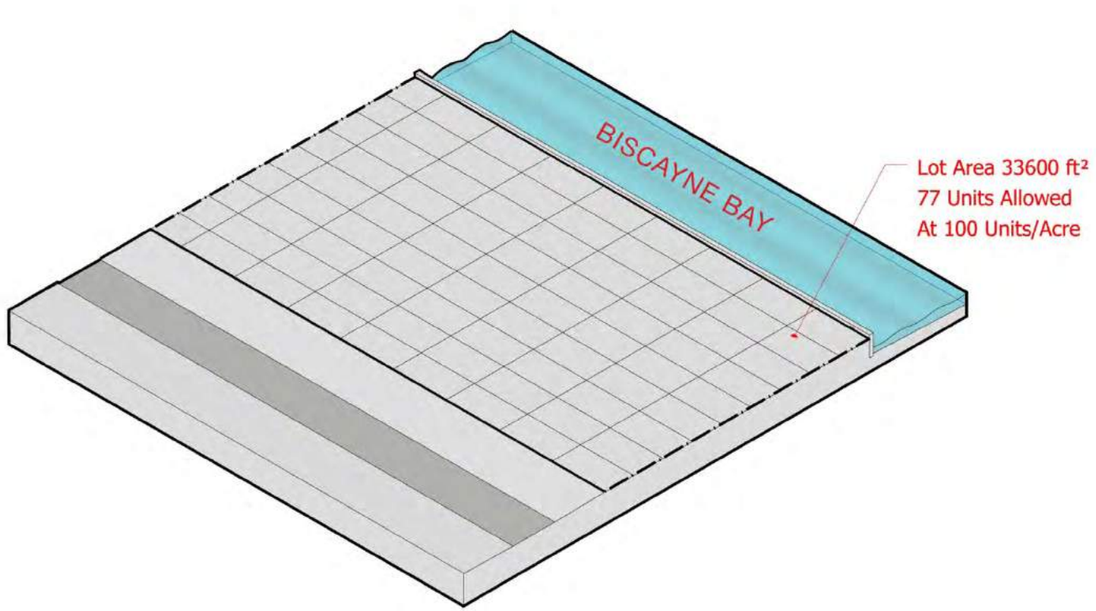
3. Buildable area



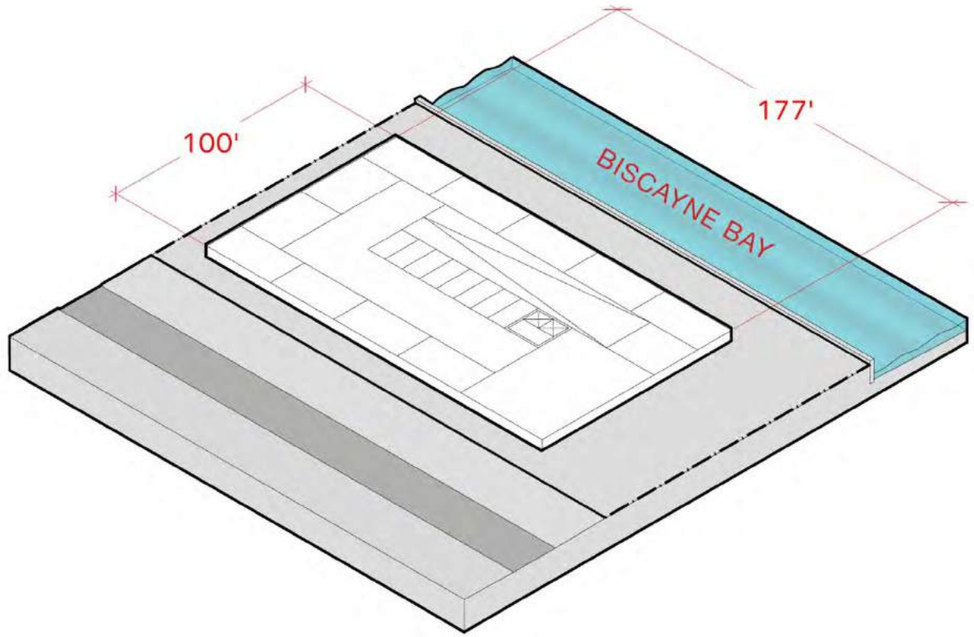
4. Easements

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



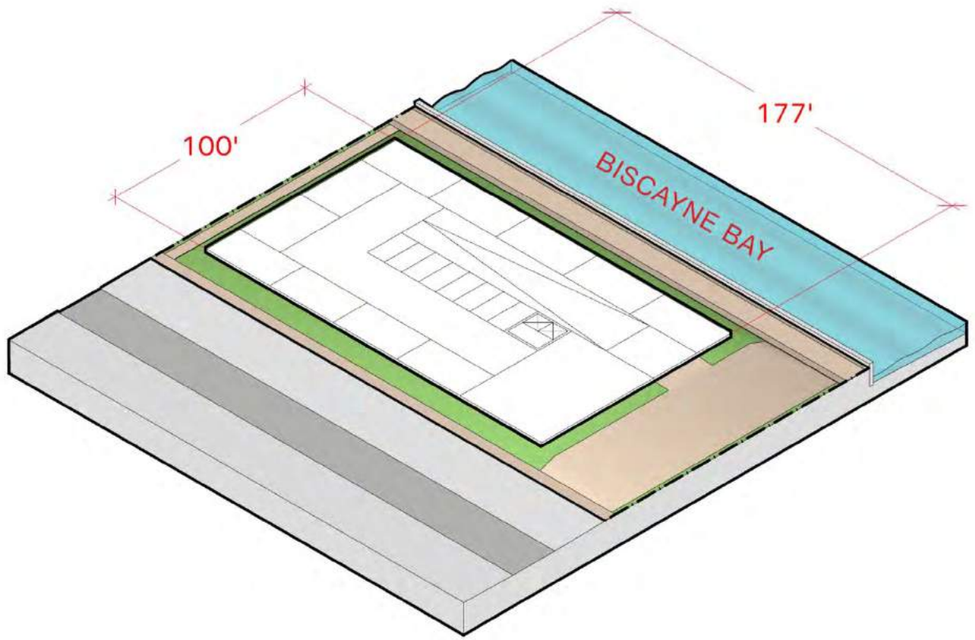
5. Density



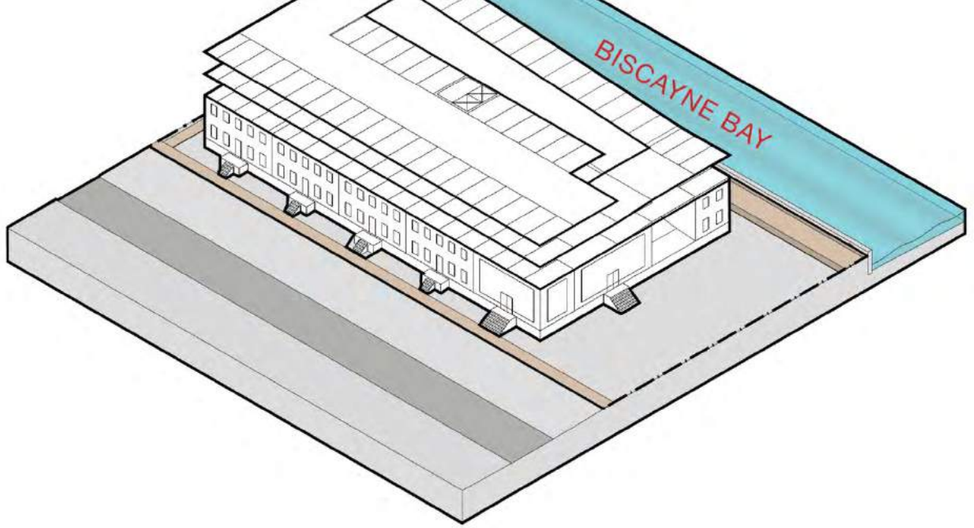
6. Building footprint

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



7. Grading



8. Parking

PROPOSED ZONING REGULATIONS: T6-16

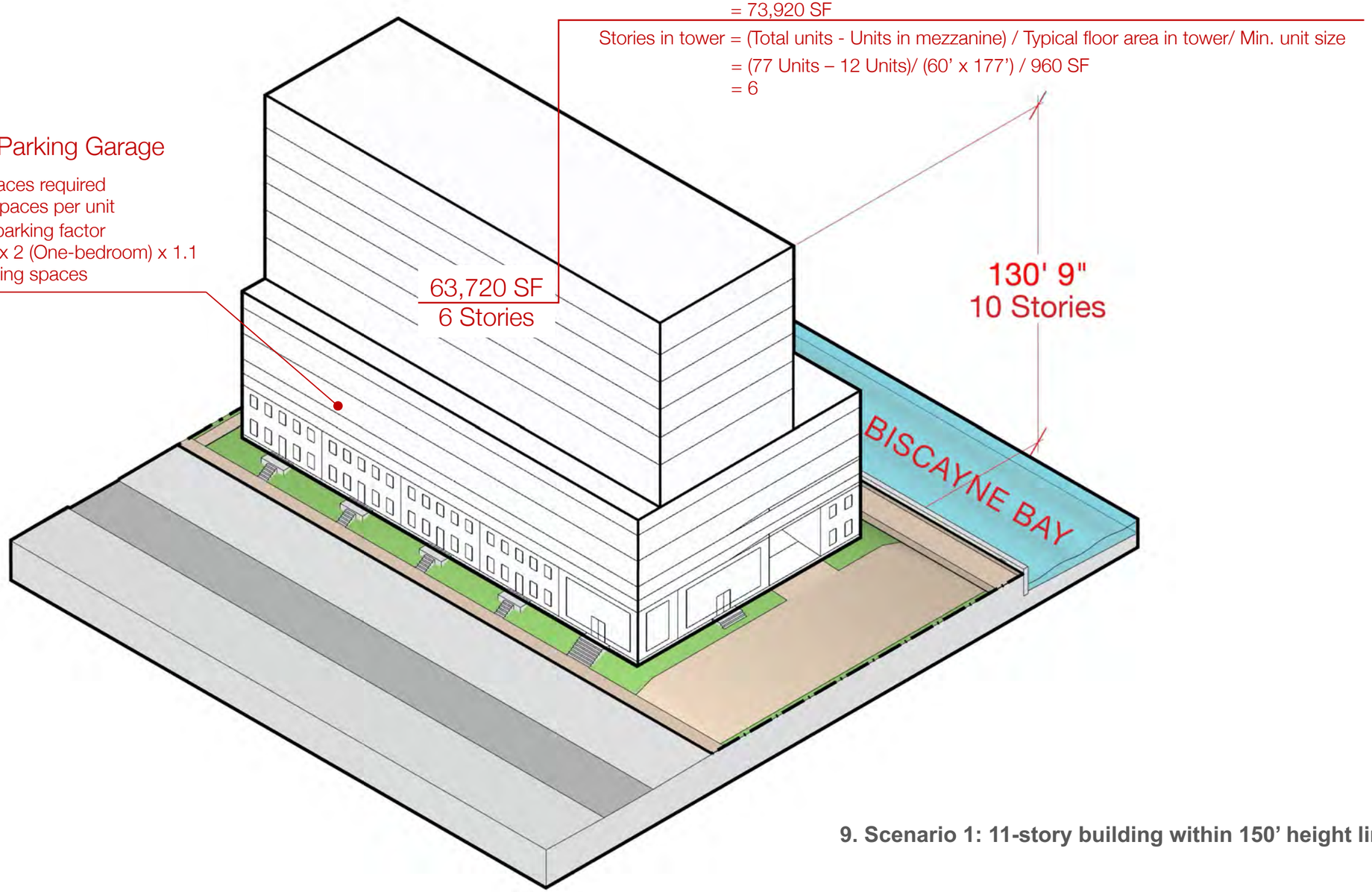
MIXED-USE DISTRICT ON HARBOR ISLAND

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

Stories in tower = (Total units - Units in mezzanine) / Typical floor area in tower/ Min. unit size
= (77 Units – 12 Units)/ (60’ x 177’) / 960 SF
= 6

3-Story Parking Garage

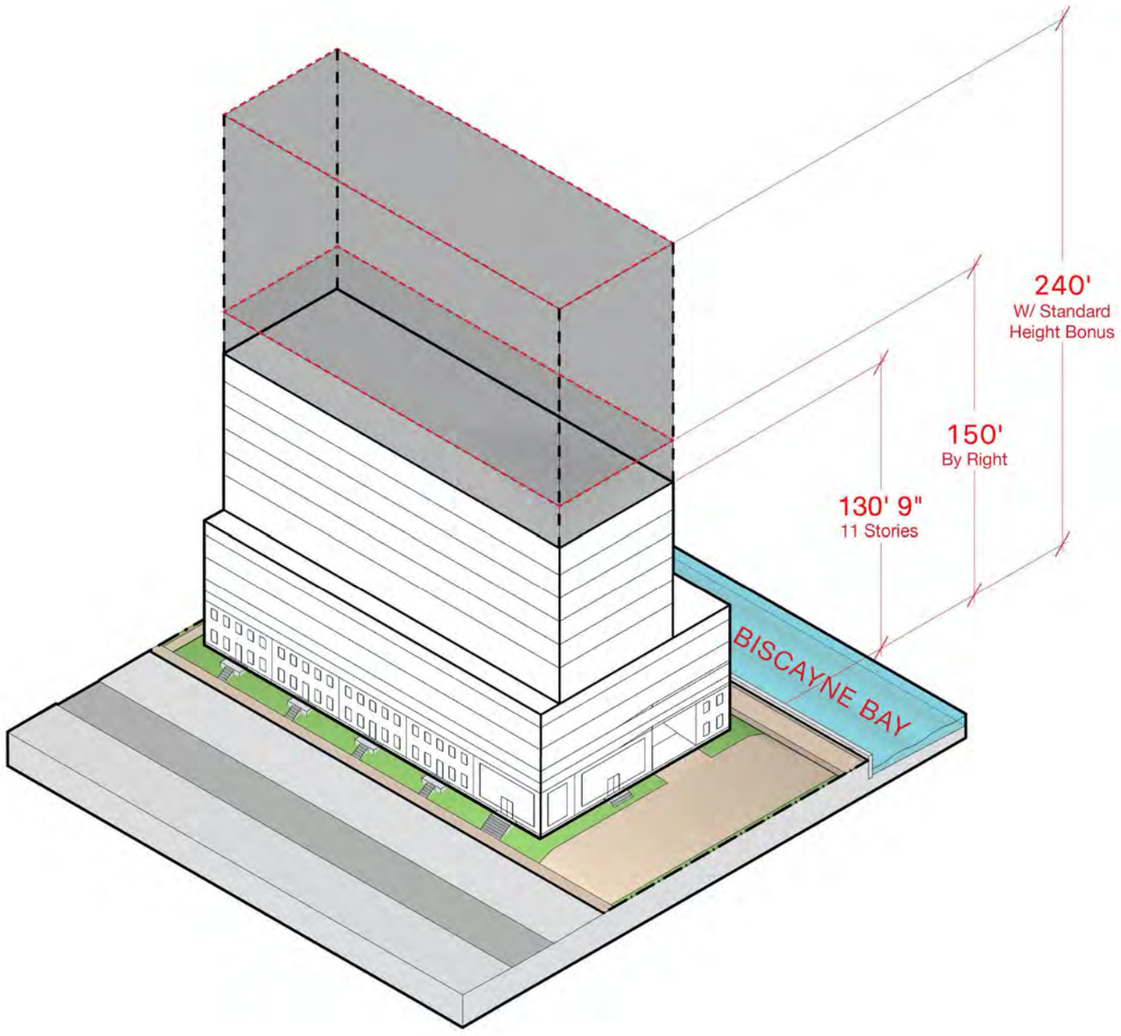
Parking spaces required
= Units x Spaces per unit
x Guest parking factor
= 77 Units x 2 (One-bedroom) x 1.1
= 170 Parking spaces



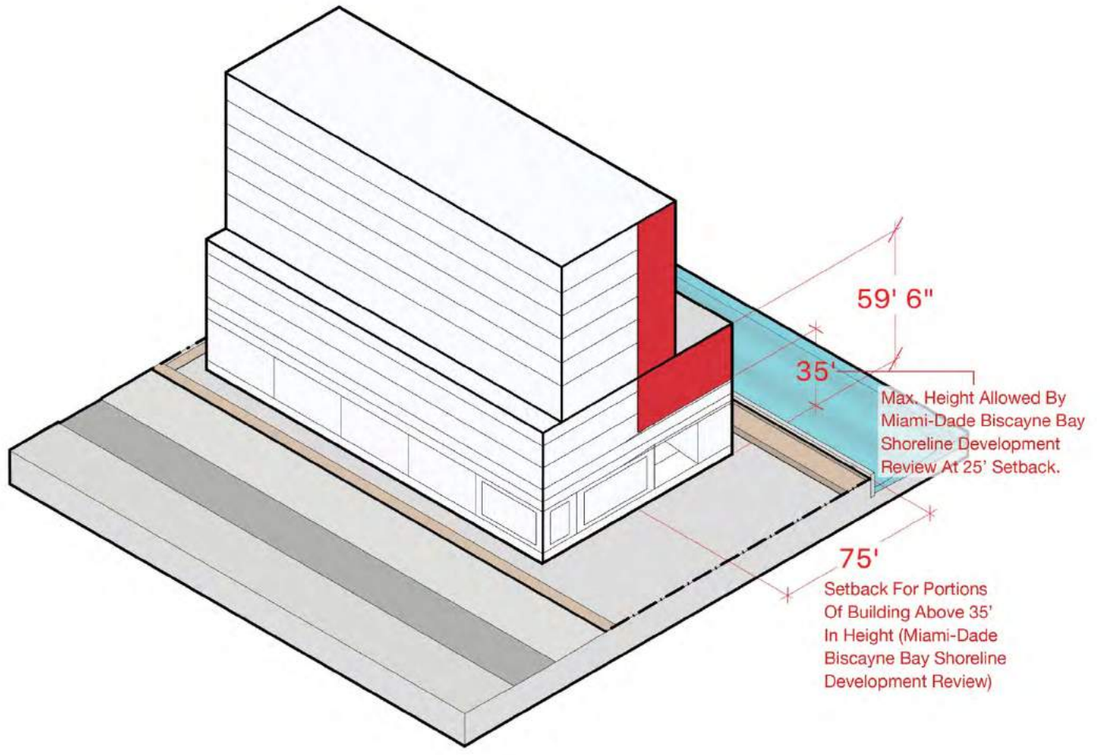
9. Scenario 1: 11-story building within 150’ height limit

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



10. Scenario 1: Unbuilt massing

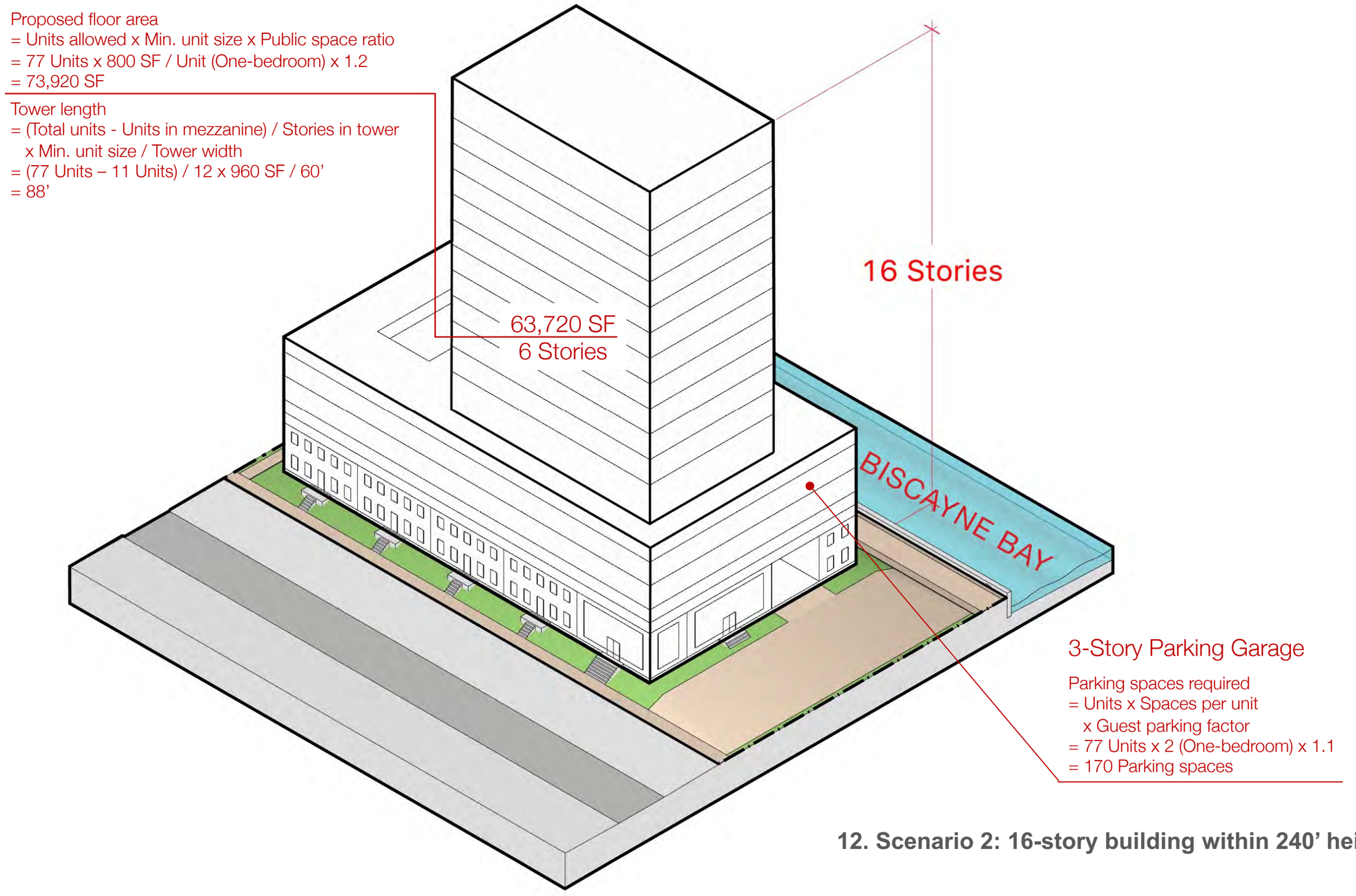


11. Scenario 1: County setback violations

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

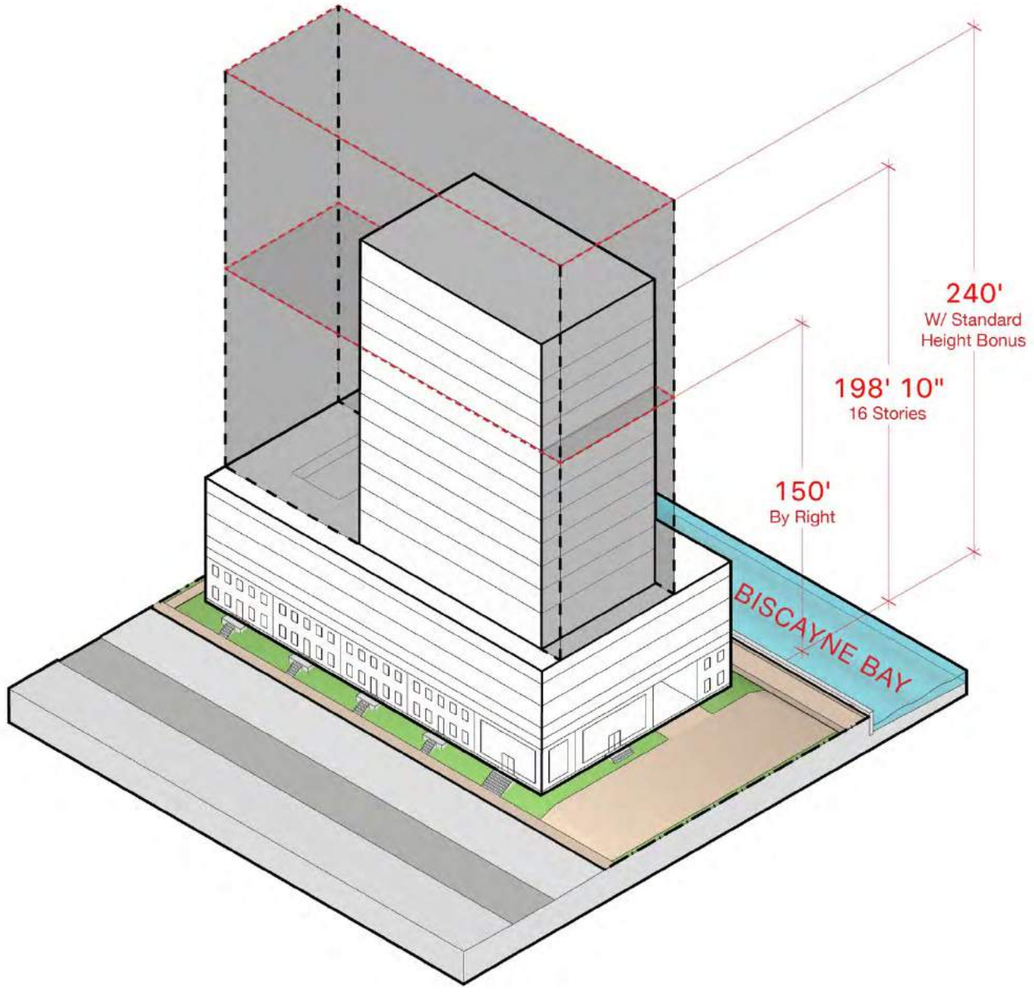
MIXED-USE DISTRICT ON HARBOR ISLAND



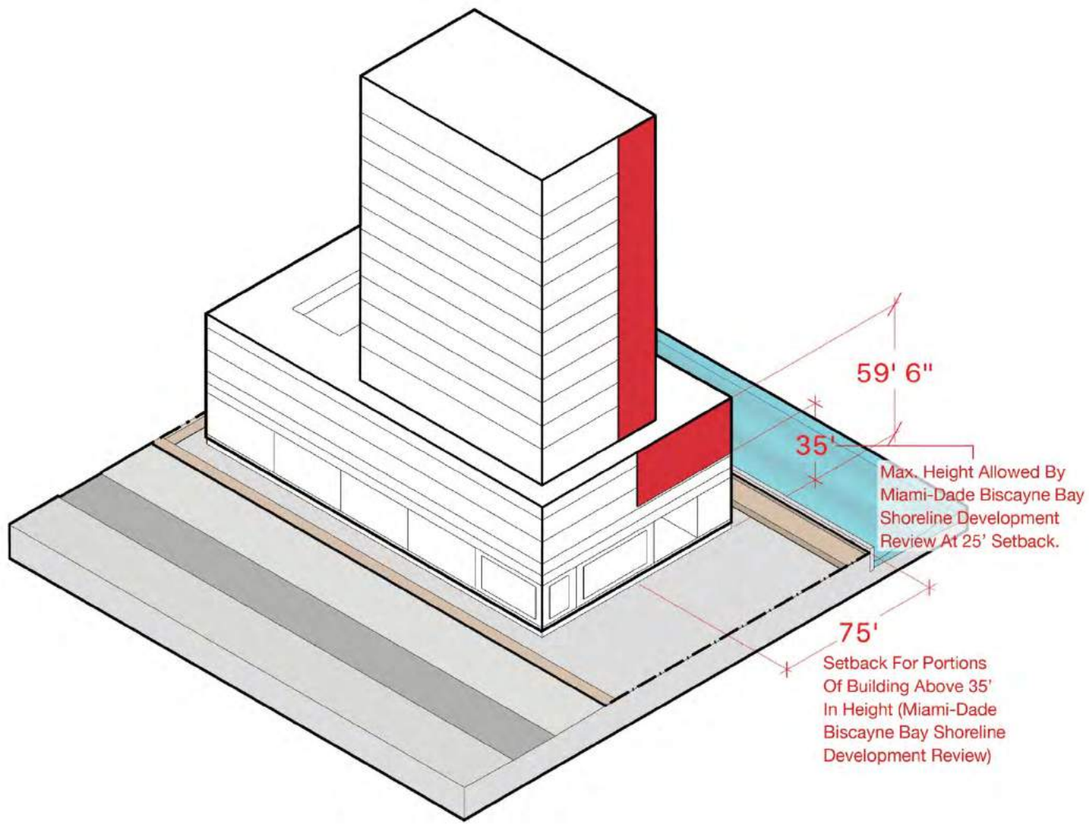
12. Scenario 2: 16-story building within 240’ height limit

PROPOSED ZONING REGULATIONS: T6-16

MIXED-USE DISTRICT ON HARBOR ISLAND



13. Scenario 2: Unbuilt massing

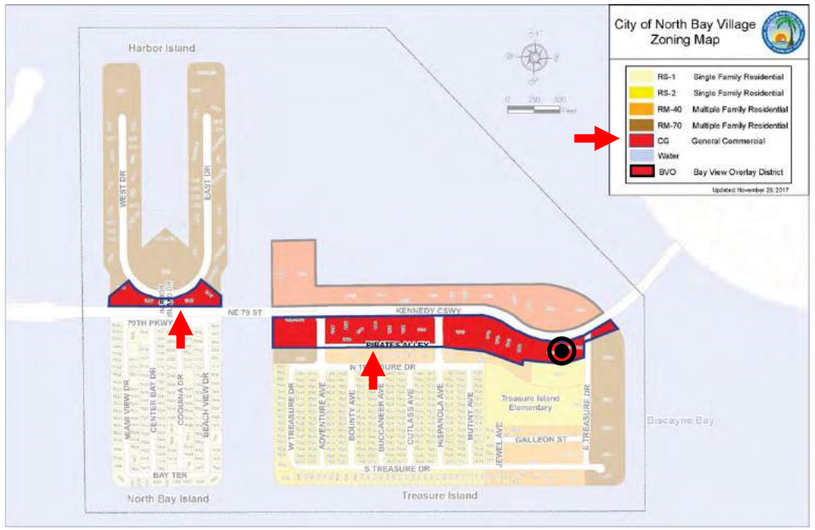


14. Scenario 2: County setback violations

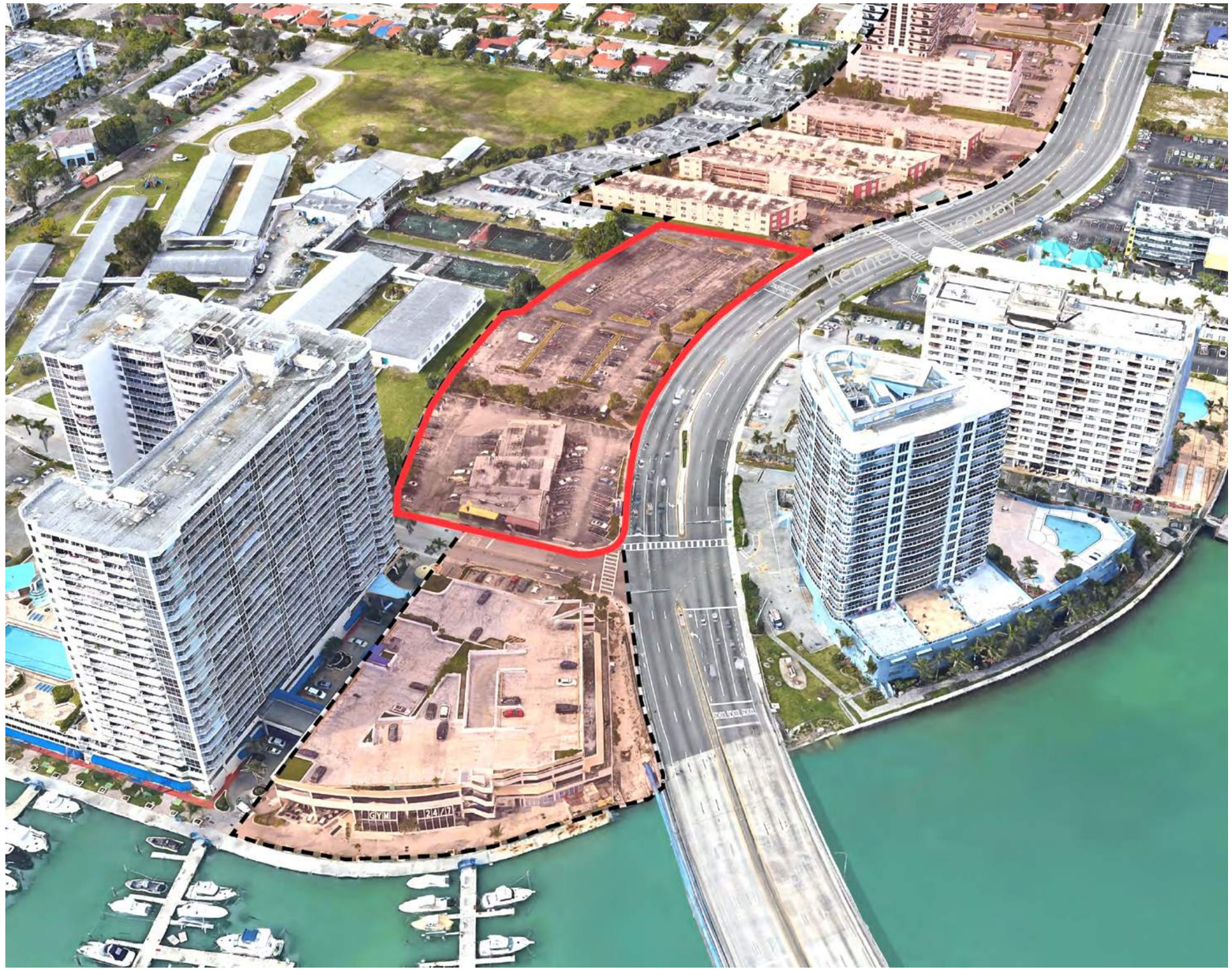
Note:
The County typically allows some violations of their setback requirements if a public shoreline walkway (e.g., the Island Walk) is provided.

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT



Zoning map

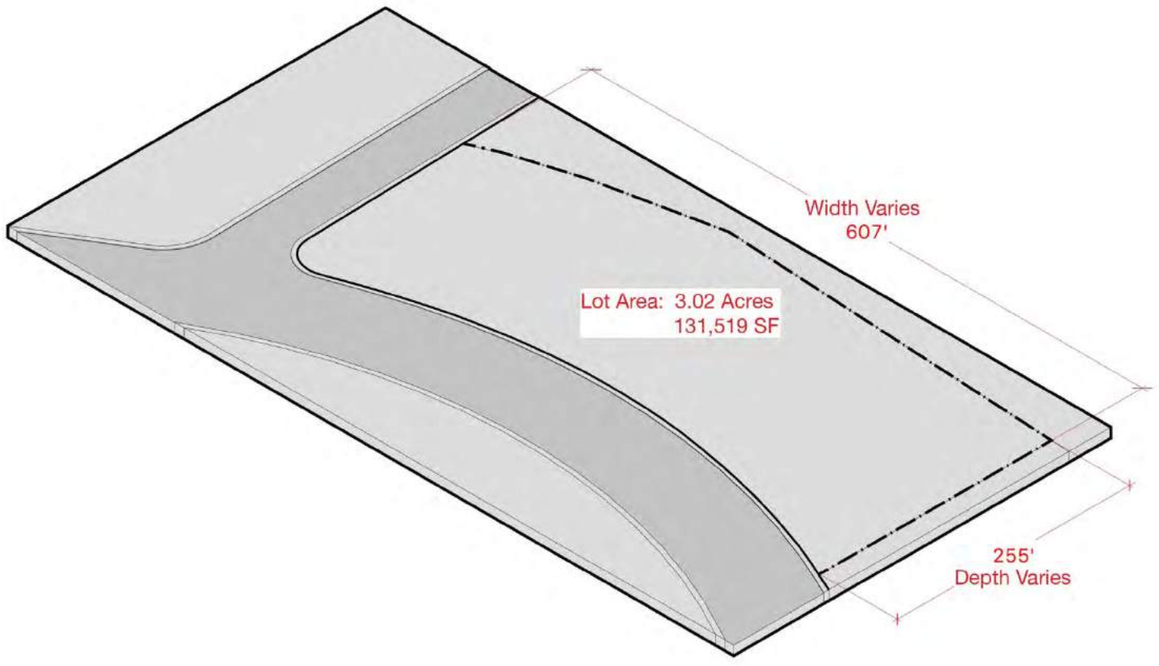


Existing conditions

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.)

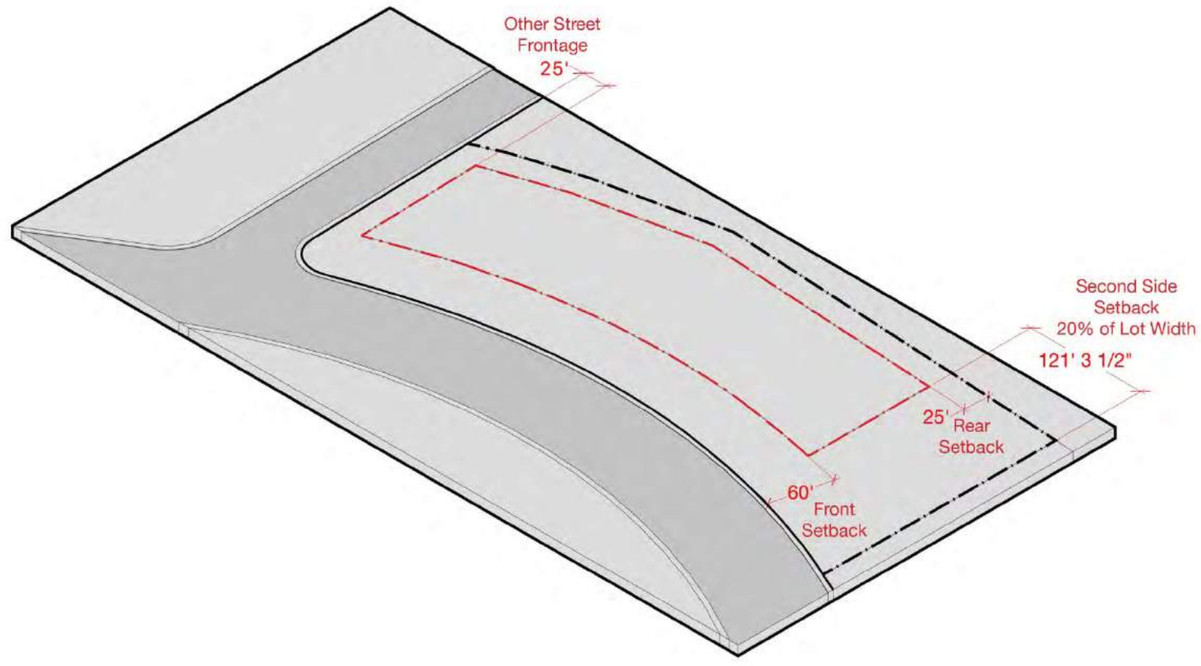
ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT



1. Lot

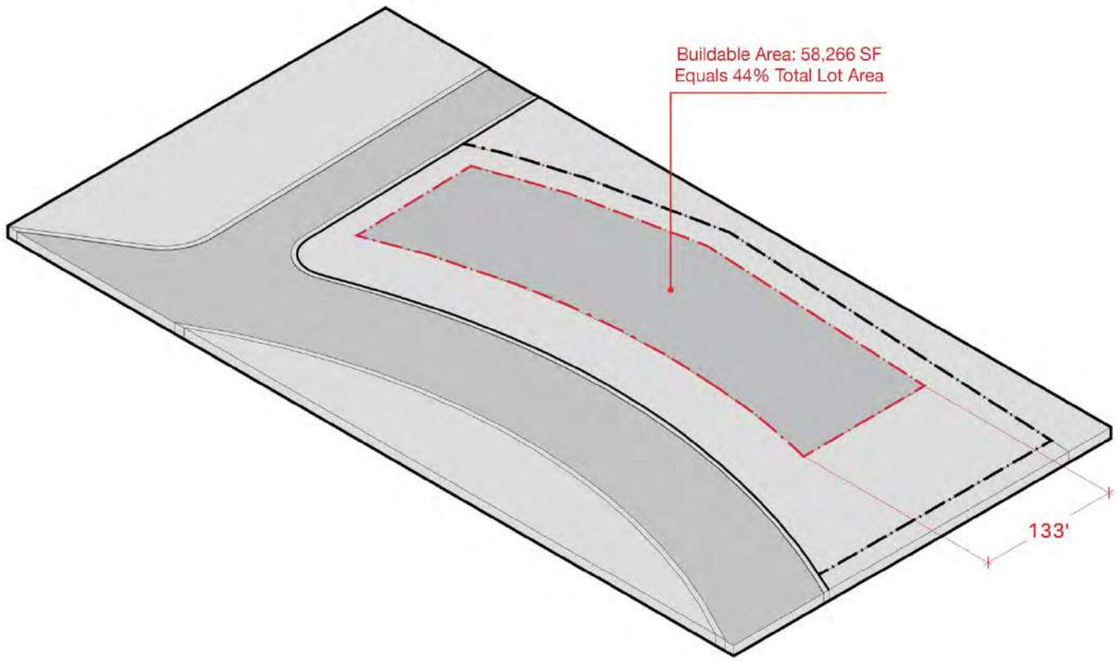
Note:
Actual lot dimensions vary.



2. Setbacks

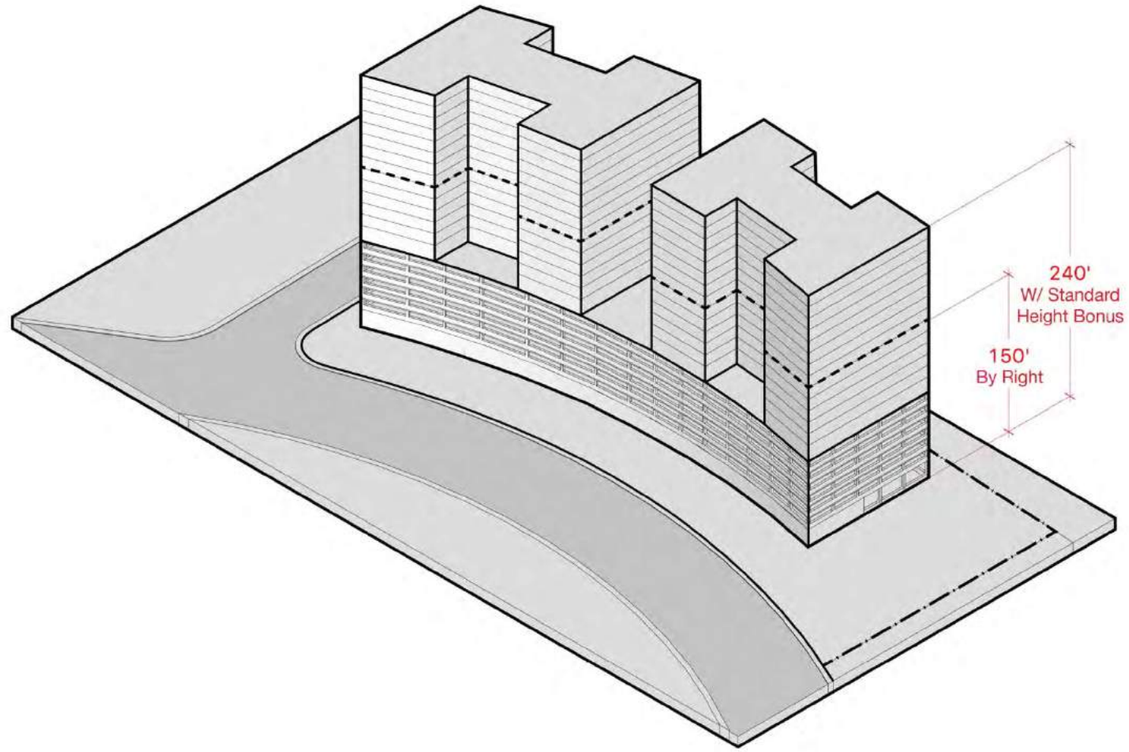
ANALYSIS OF EXISTING ZONING REGULATIONS: CG

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.

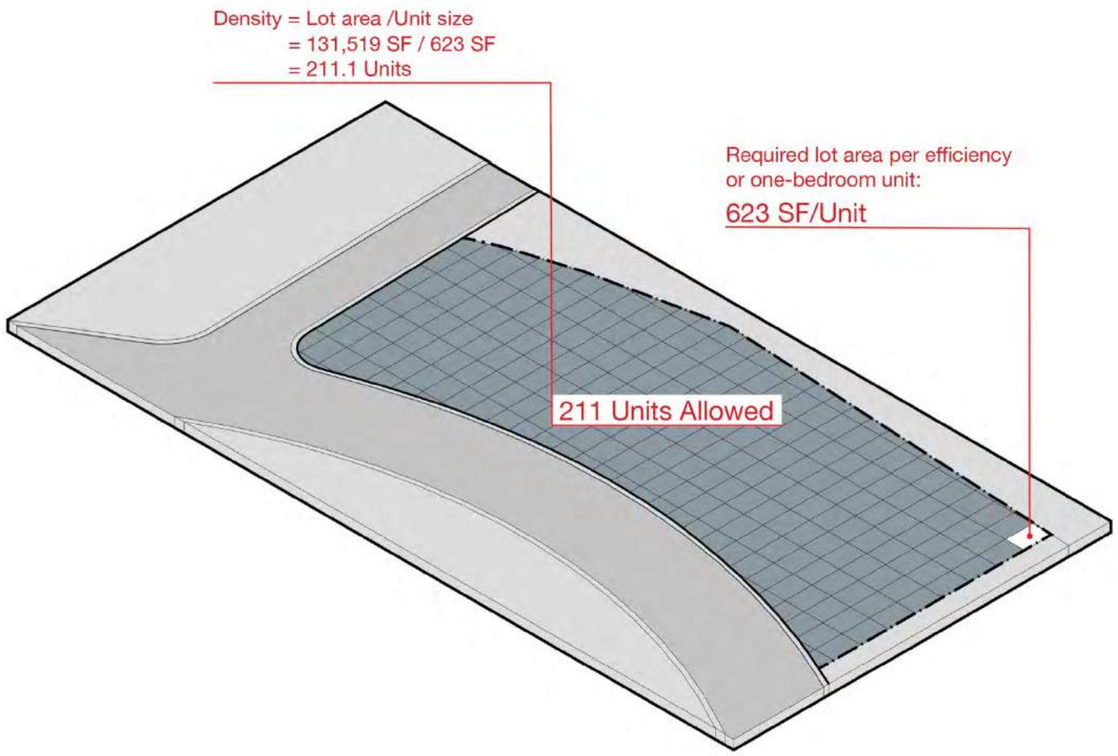


4. Max. building envelope with standard height bonus

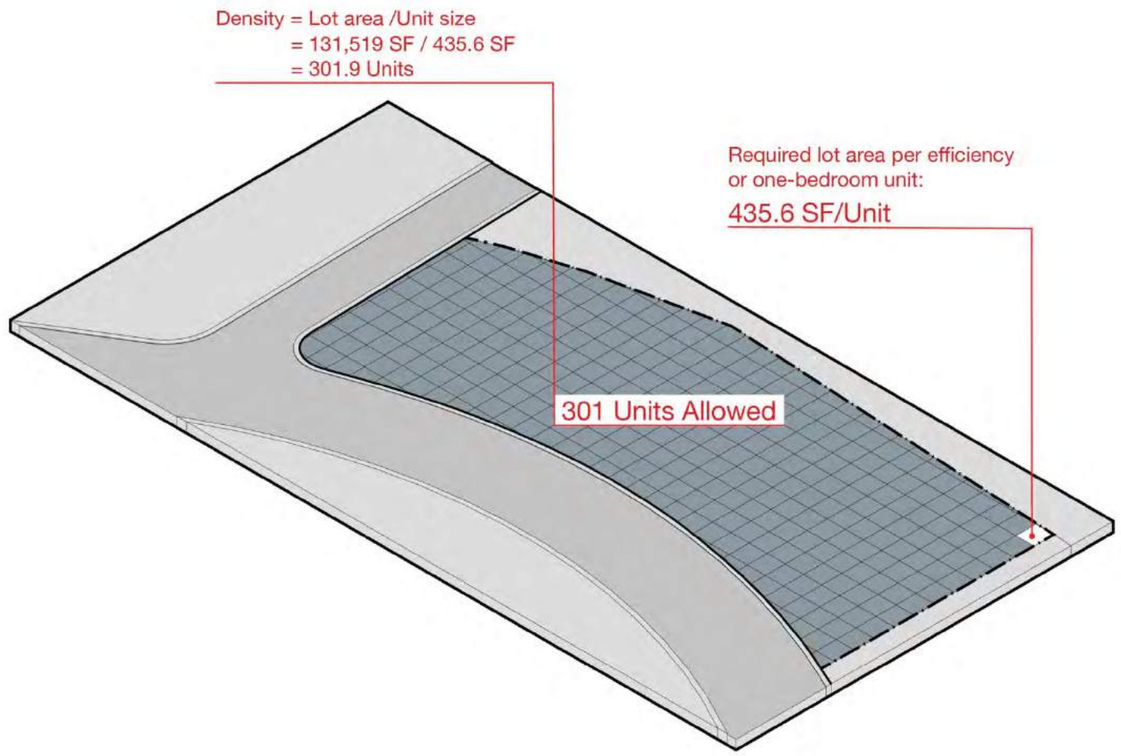
Note:
Ground floor retail required on parking structures facing the street.

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

GENERAL COMMERCIAL DISTRICT



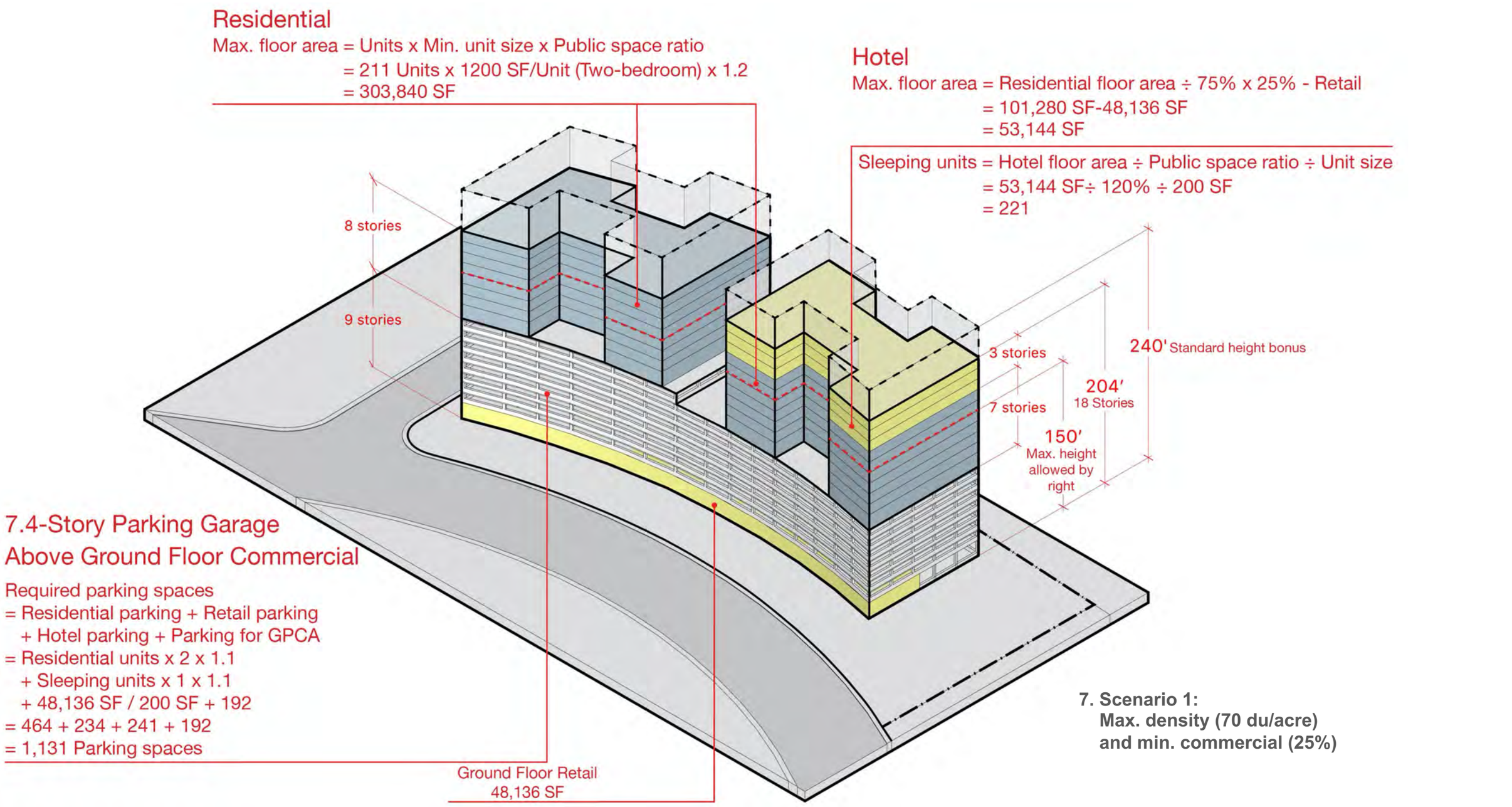
5. Max. Allowed Density (70 du/acre)



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

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

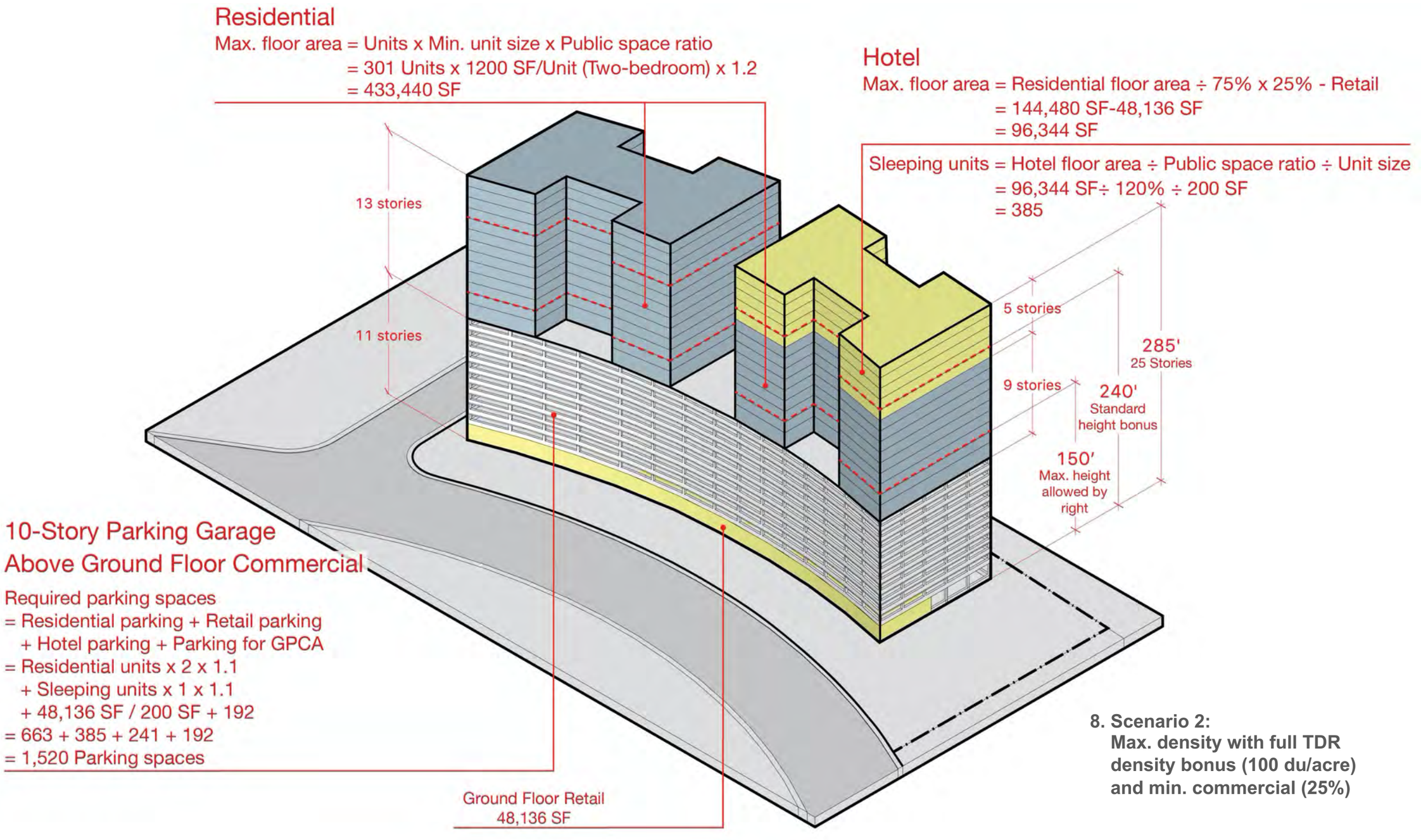
GENERAL COMMERCIAL DISTRICT



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

ANALYSIS OF EXISTING ZONING REGULATIONS: CG

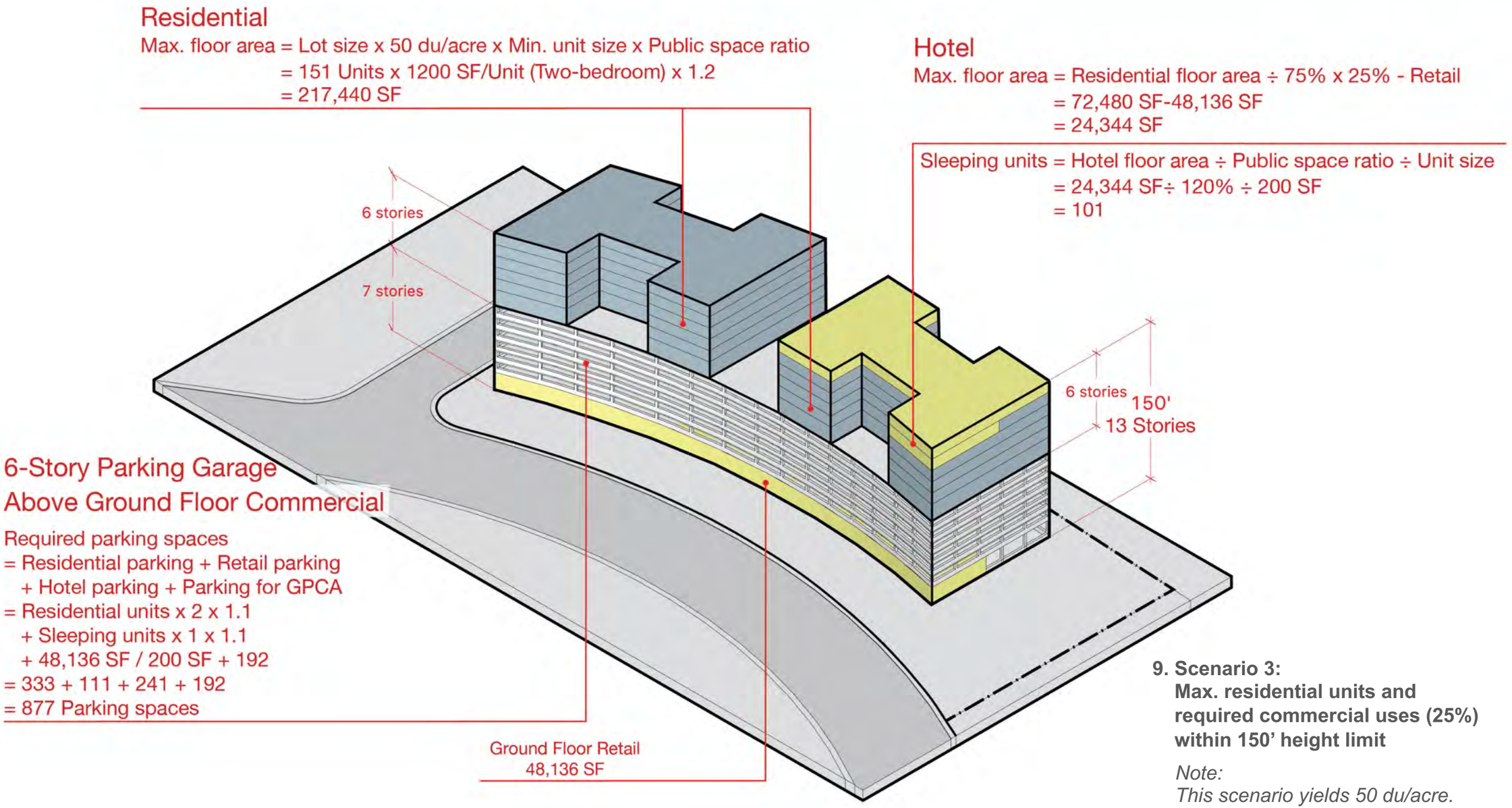
GENERAL COMMERCIAL DISTRICT



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



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

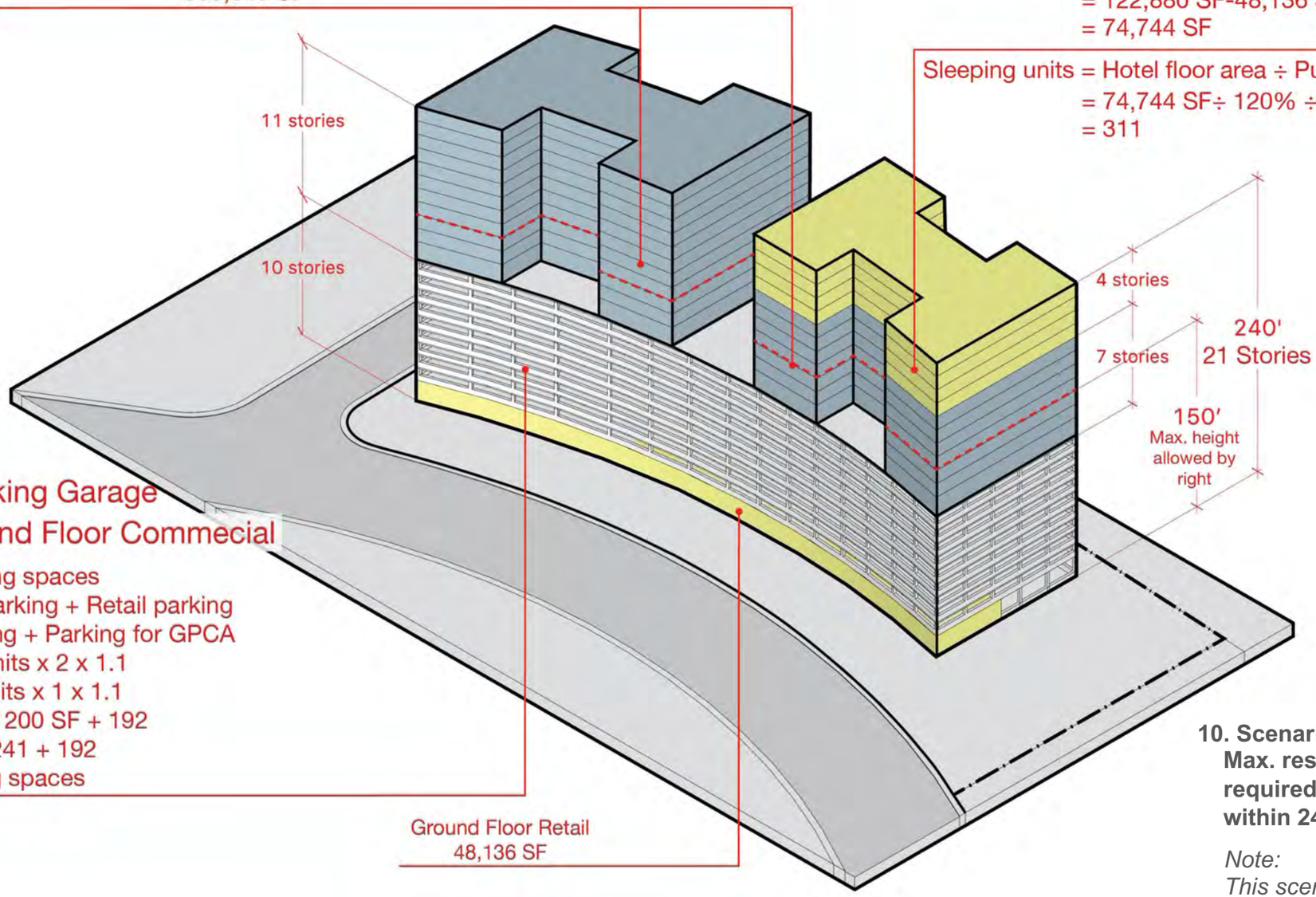
Residential

Max. floor area = Lot size x 85 du/acre x Min. unit size x Public space ratio
= 256 Units x 1200 SF/Unit (Two-bedroom) x 1.2
= 368,640 SF

Hotel

Max. floor area = Residential floor area ÷ 75% x 25% - Retail
= 122,880 SF-48,136 SF
= 74,744 SF

Sleeping units = Hotel floor area ÷ Public space ratio ÷ Unit size
= 74,744 SF÷ 120% ÷ 200 SF
= 311



9-Story Parking Garage Above Ground Floor Commecial

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
= 564 + 342 + 241 + 192
= 1,339 Parking spaces

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

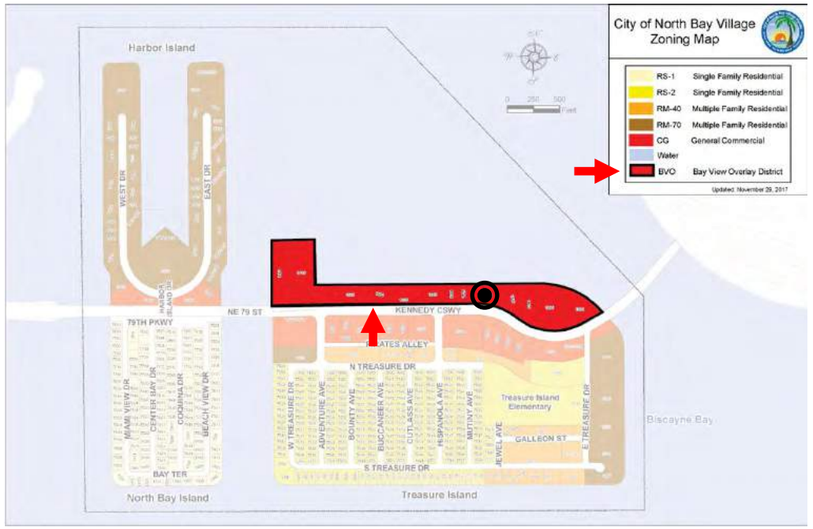
Existing Conditions

NBV100 Master Plan

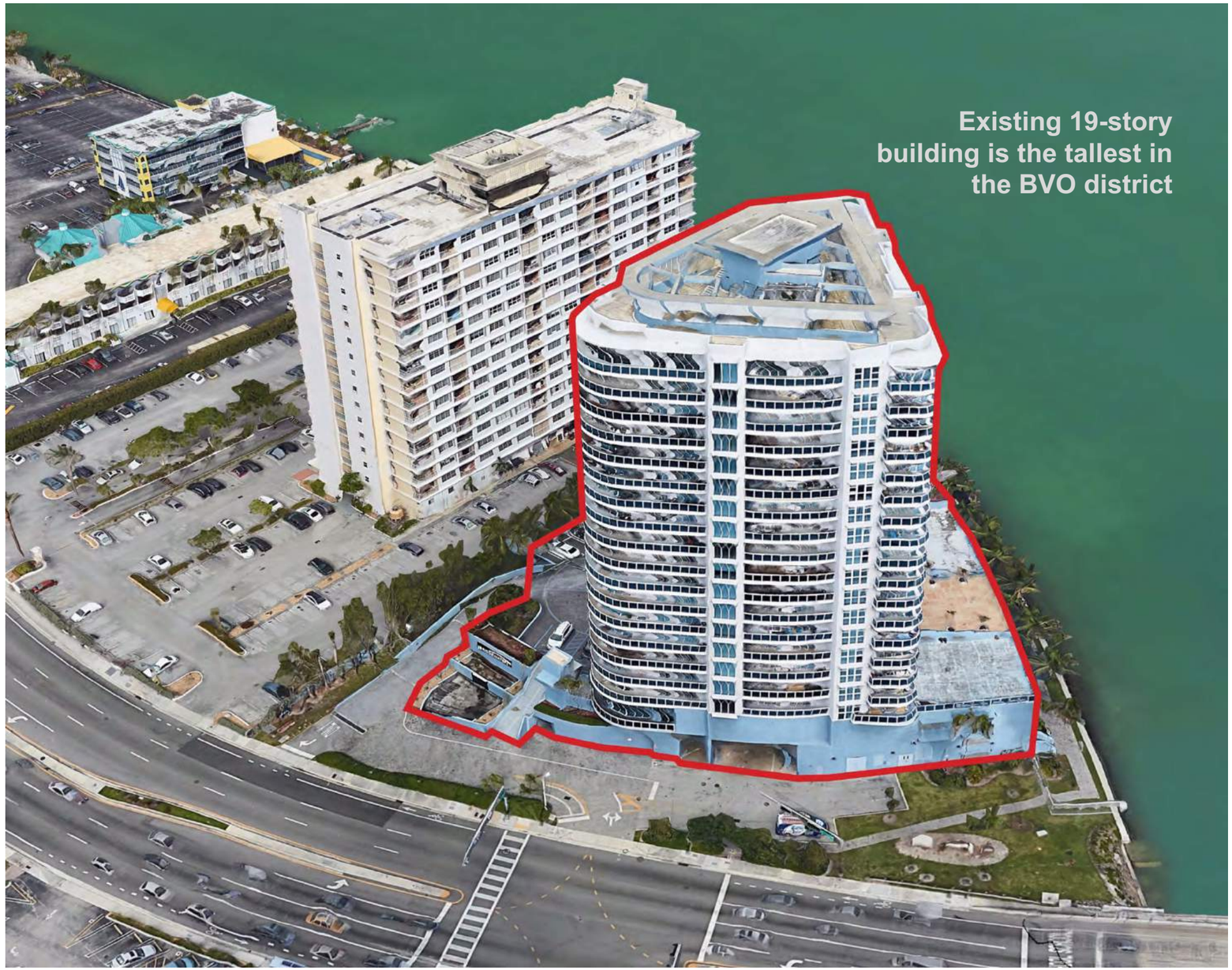
Conceptual Design

ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY



Zoning map

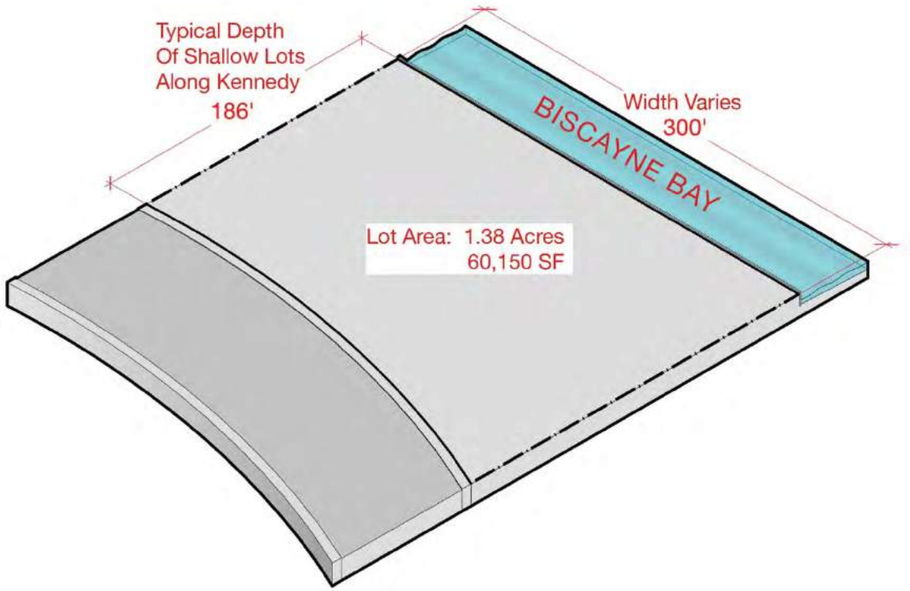


Typical conditions

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.)

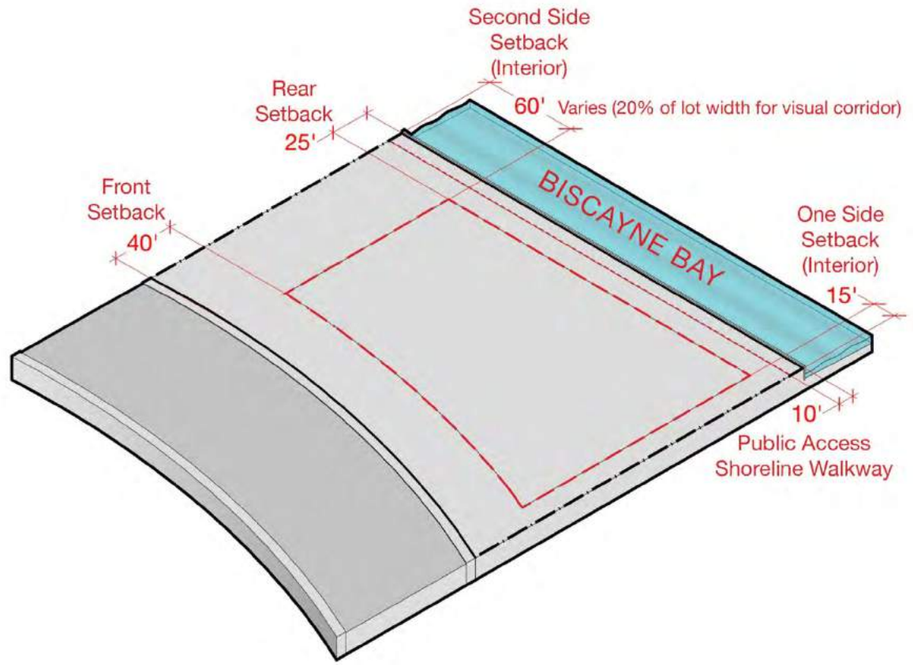
ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY



1. Lot

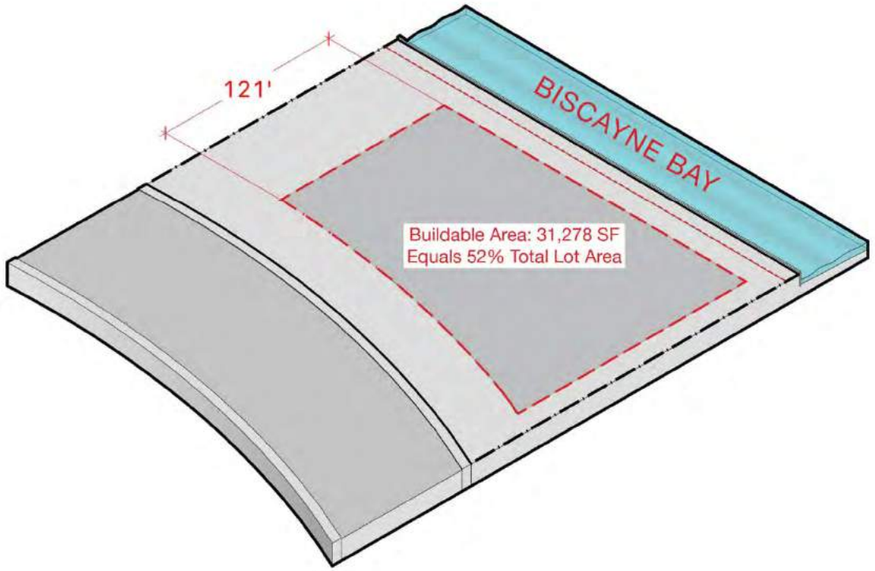
Note:
Actual lot dimensions vary.



2. Setbacks

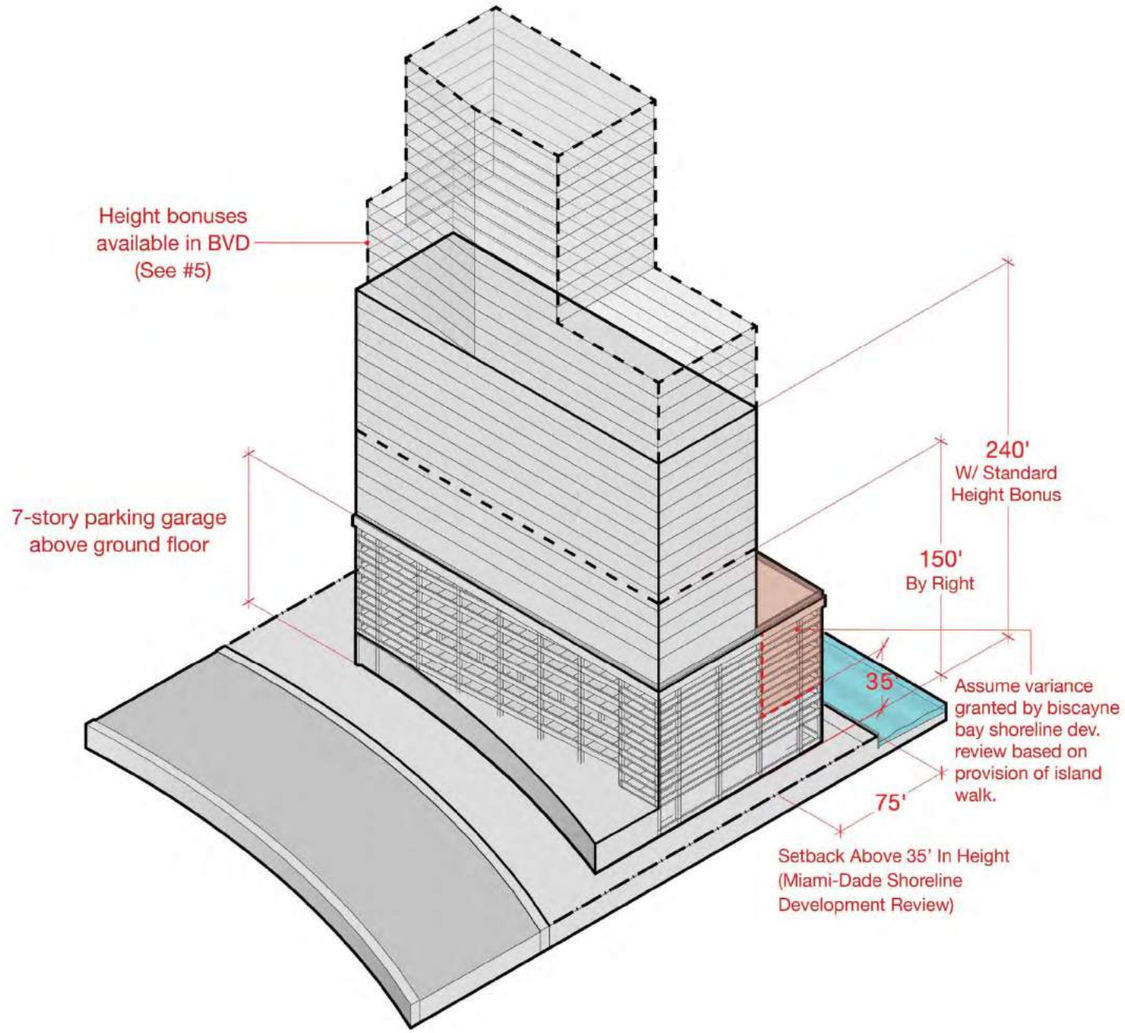
ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

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.

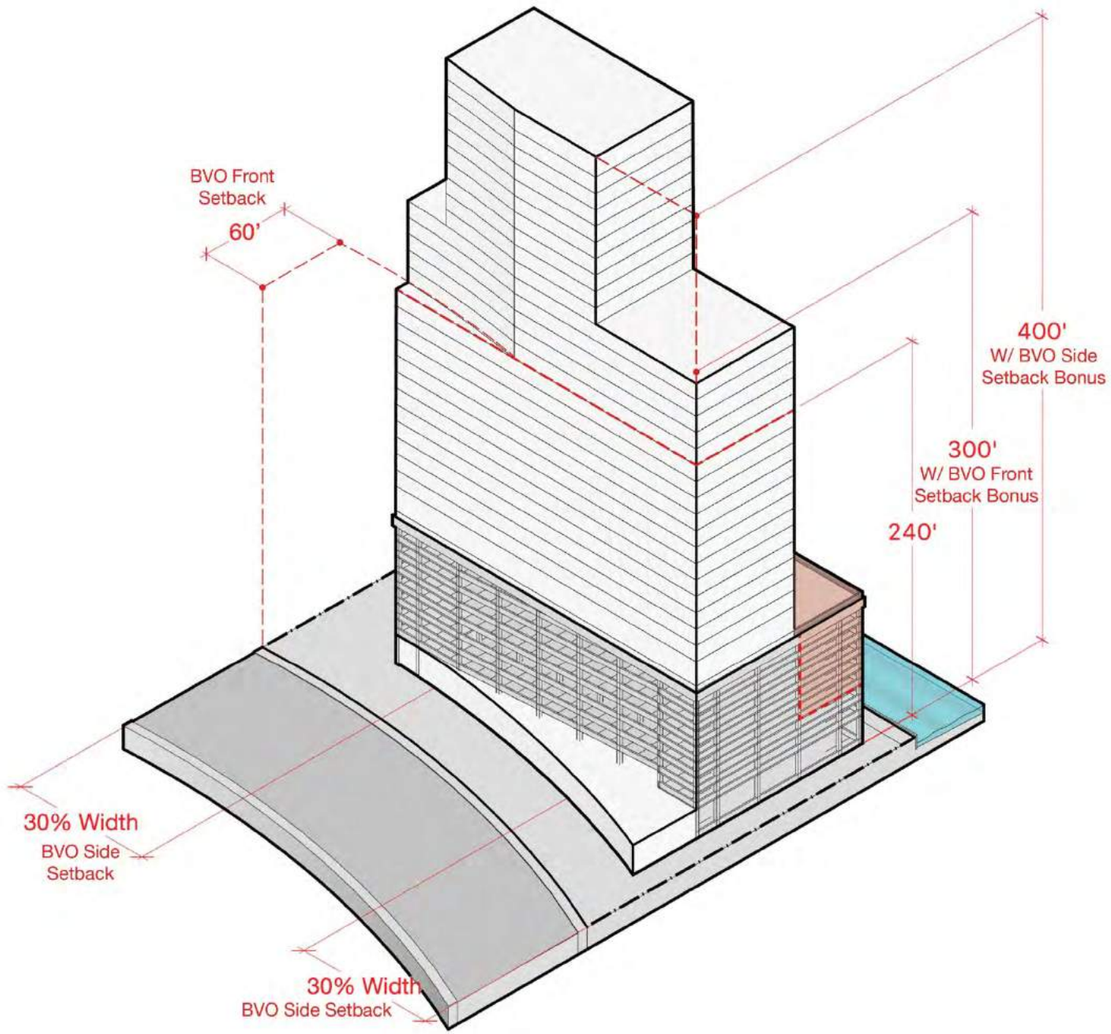


4. Max. building envelope with standard height bonus

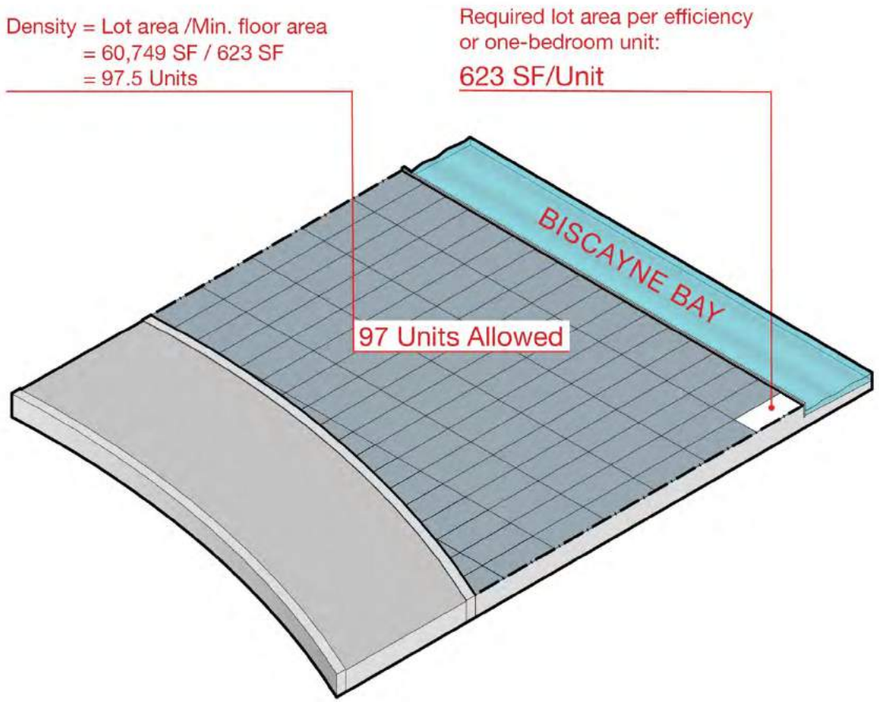
Notes:
Parking garage based on conventional rectangular footprint with two 60' wide bays.
Ground floor retail required on parking structures facing the street.

ANALYSIS OF EXISTING ZONING REGULATIONS: CG-BVO

GENERAL COMMERCIAL DISTRICT WITH BAY VIEW OVERLAY



5. Max. building envelope with both BVO setback bonuses

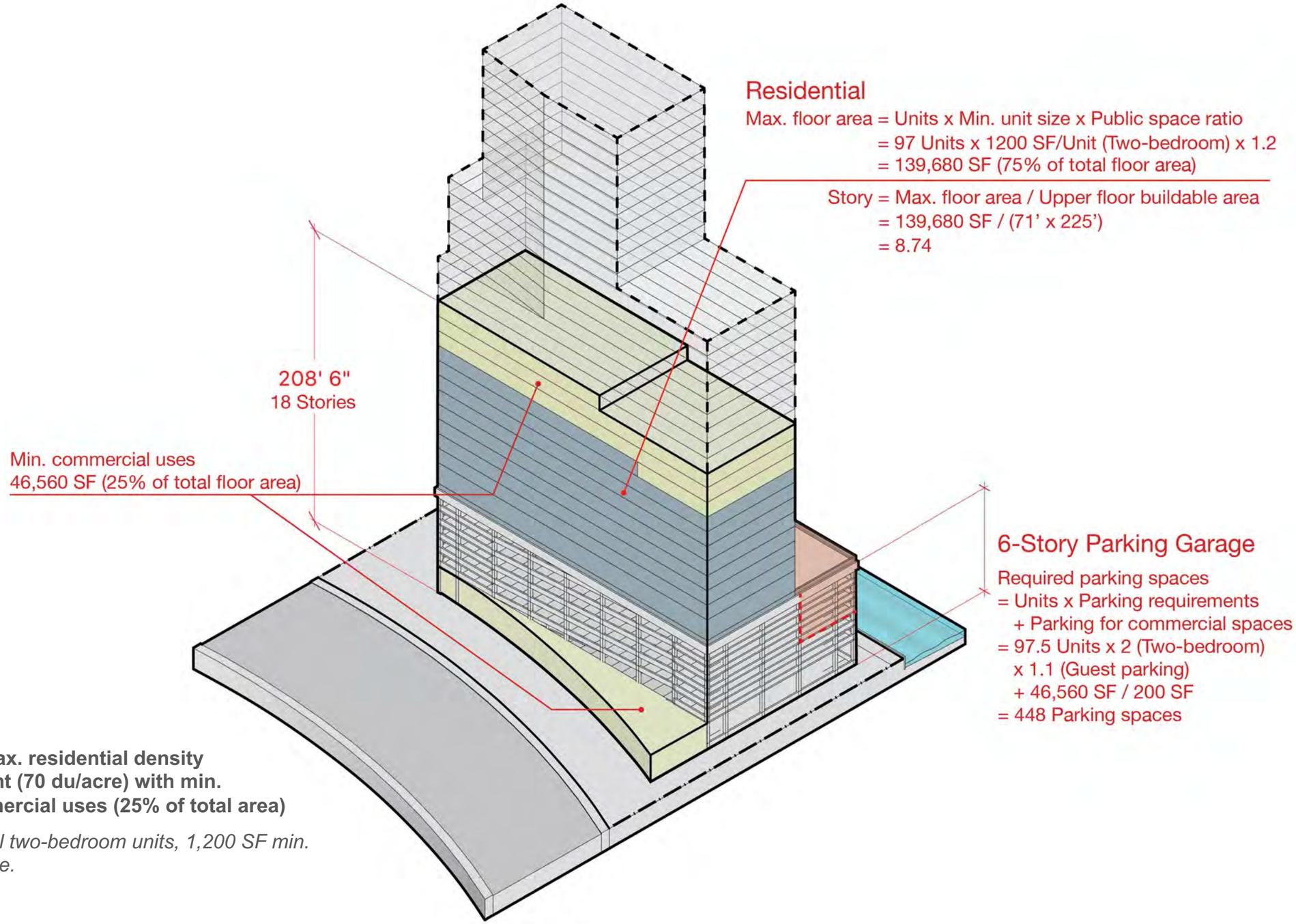


6. Density

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

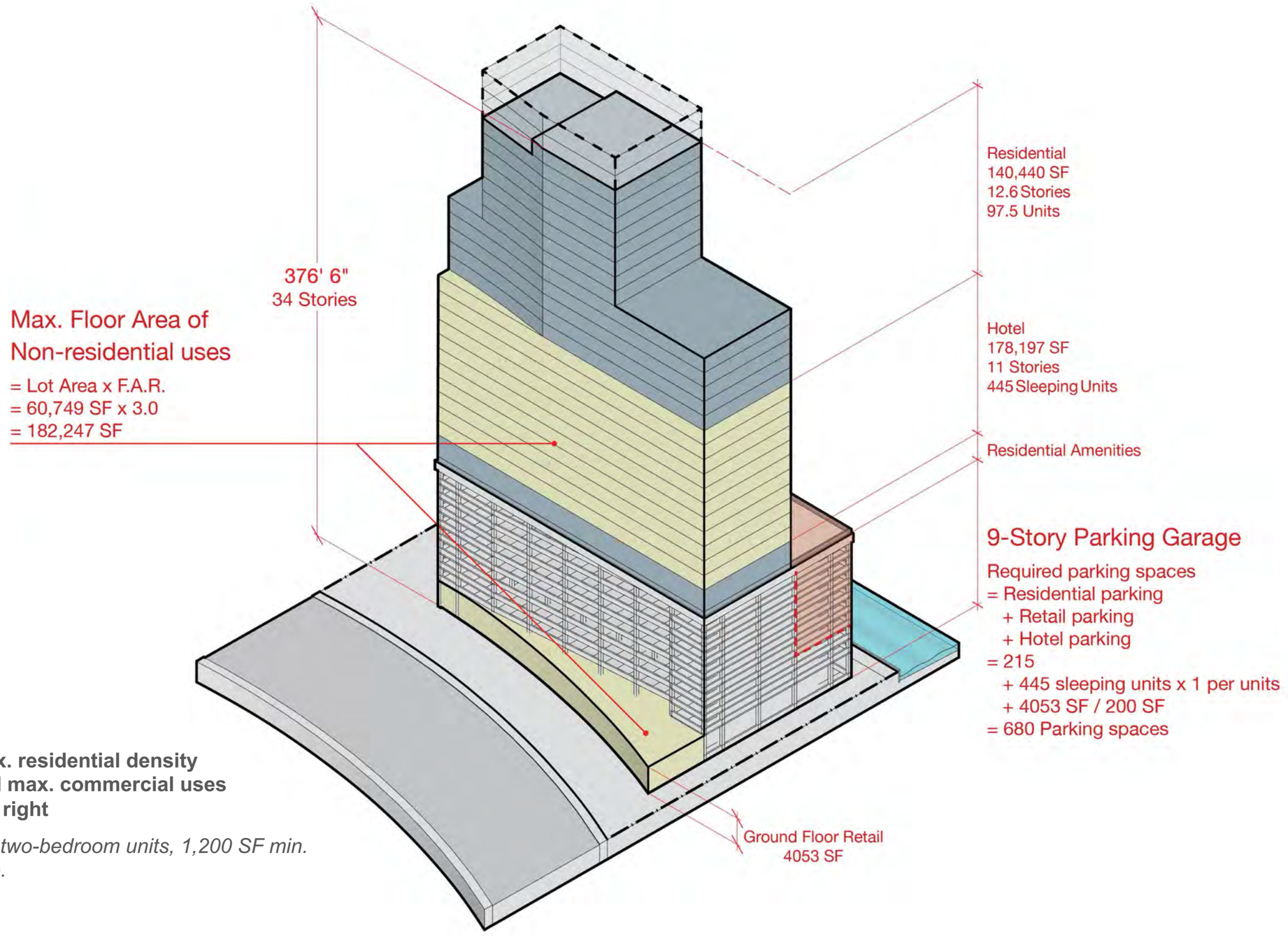


7. Scenario 1: Max. residential density allowed by right (70 du/acre) with min. required commercial uses (25% of total area)

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

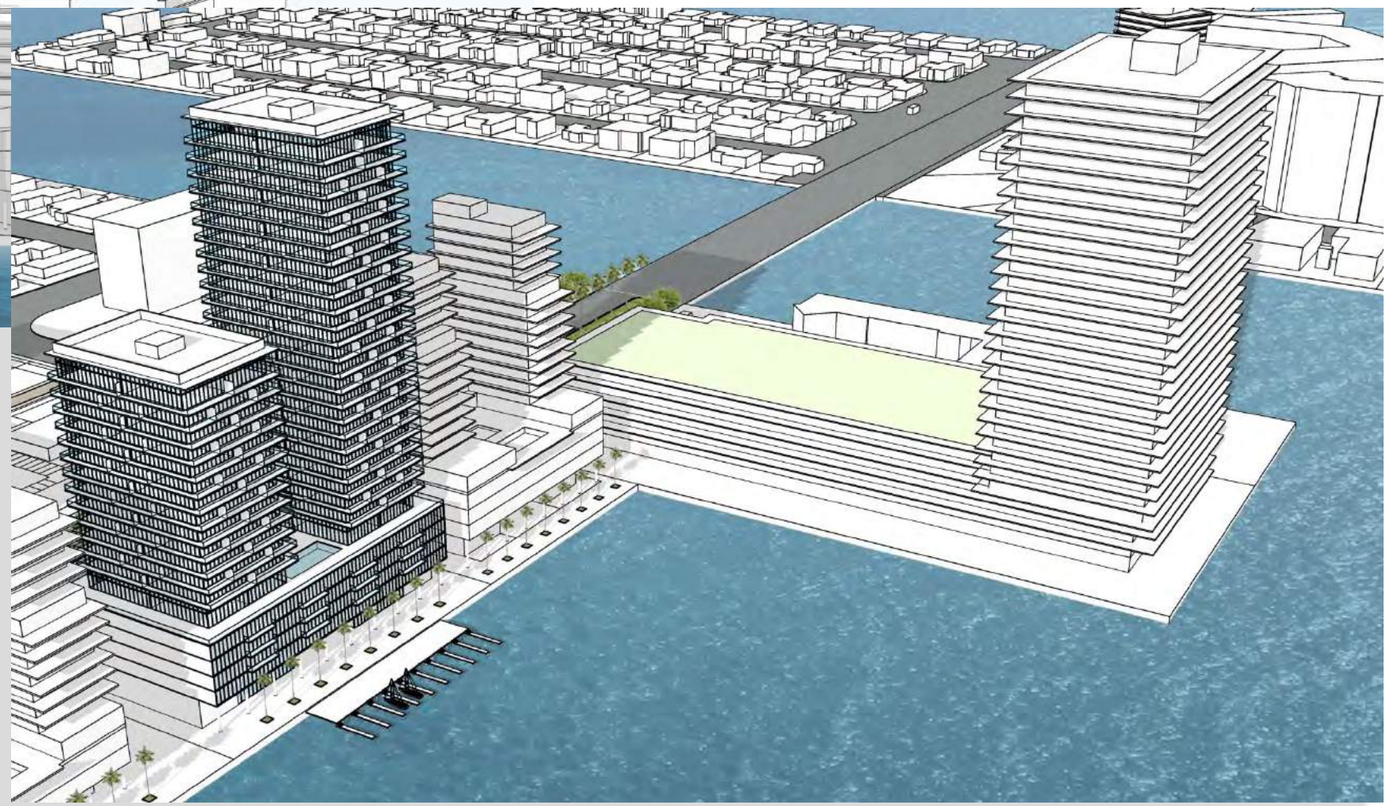
Podium and tower engage thoroughfare frontage

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

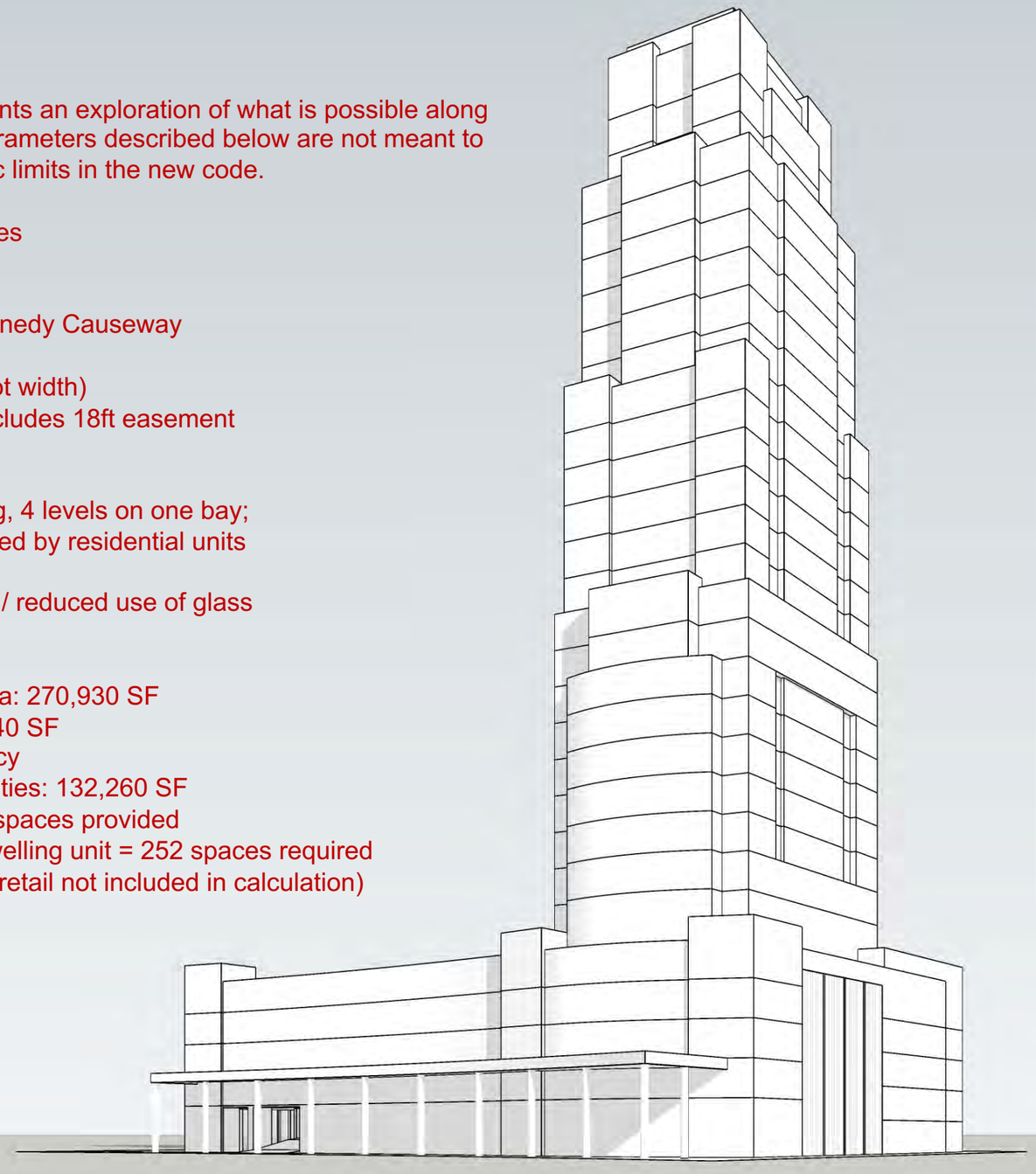


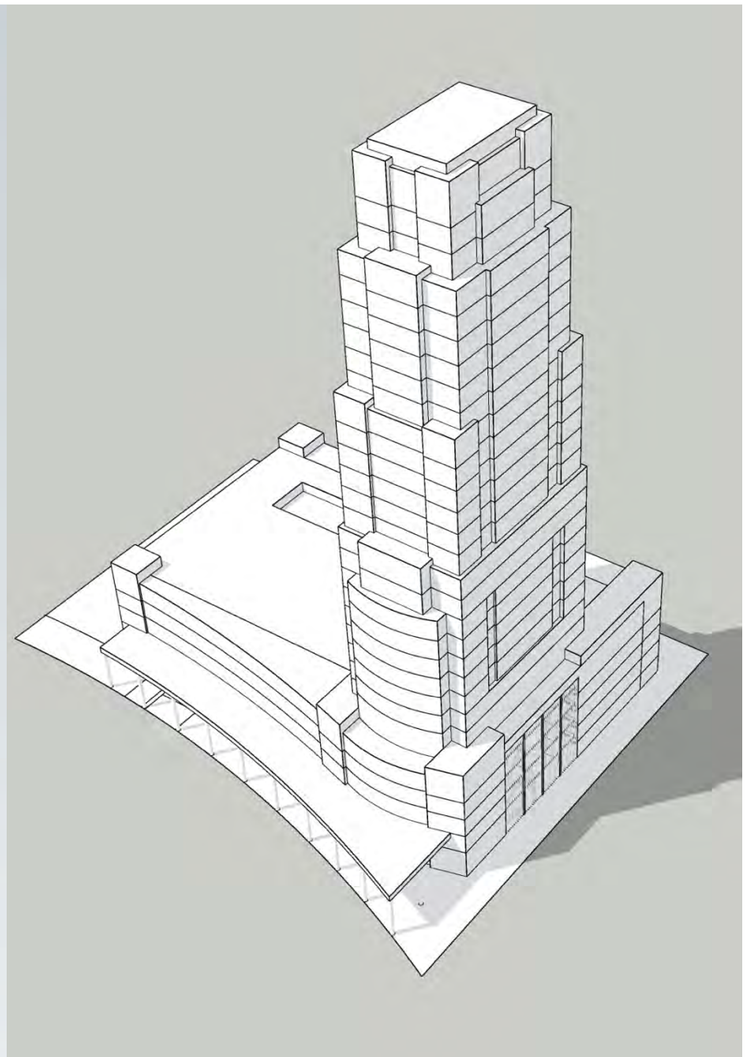
Elevated liners cover parking levels at waterfront

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





NBV100

https://northbayvillage-fl.gov/nbv100

EXHIBIT C
SURVEY RESULTS

Incorporated by Reference

EXHIBIT D

CHICAGO'S GREEN ALLEY HANDBOOK

The Chicago Green Alley Handbook

An Action Guide to Create a Greener, Environmentally Sustainable Chicago

Printed on recycled paper, 30% post-consumer waste

Richard M. Daley, Mayor
City of Chicago

Thomas G. Byrne, Commissioner
Department of Transportation

CDOT

Welcome to the Green Alley Program

OFFICE OF THE MAYOR
CITY OF CHICAGO

RICHARD M. DALEY
MAYOR

GREETINGS

Thank you for your interest in the Green Alley Handbook.

With more miles of alleyways than any other city in the world, Chicago has a unique network of infrastructure integrated into the very fabric of our city. Recognizing this advantage, we have established new alley designs that help conserve our resources and improve our environment.

Green Alley designs showcase innovative, environmental technologies to help manage stormwater, reduce heat in urban areas, promote recycling and conserve energy. The *Green Alley Handbook* will introduce you to each of these benefits while highlighting ideas that are applicable in varied parts of the city.

The Green Alley program is just one of the ways that the City of Chicago is working to protect the environment and improve the quality of life in our communities. I encourage you to investigate this handbook and take simple steps to benefit the environment on your property. Working together, we can conserve Chicago and build a sustainable city for generations to come.

Sincerely,

Richard M Daley

Mayor

About the Green Alley Program

The Green Alley Program is a new approach to CDOT's existing alley program. Alleys provide a great benefit for the City, but like all infrastructure, they also require maintenance and periodic reconstruction. Flooding is often an issue in alleys because many alleys in the City were built without a connection to the City's combined sewer and stormwater system.

While one solution to this problem is to install expensive connections to the City sewer system, the Green Alley Program also looks at other more sustainable solutions. In particular, where soil conditions are appropriate, water is allowed to infiltrate into the soils through permeable pavement or infiltration basins, instead of being directed into the sewer system or onto adjacent property. This not only solves a persistent problem, but it also provides an environmental benefit by cleaning and recharging the ground water. Furthermore, by not sending additional water to the combined sewer system a green alley can help alleviate basement and other flooding issues.

You, the adjacent property owner, can make a difference by instituting other best management practices (BMPs) on your property. These can range from recycling to installing your own rain garden, which can help alleviate flooding even further.

This handbook will explain why the city is interested in sustainable alley design, illustrate the BMP techniques the City will use in green alley design, and provide sample layouts of how these elements have been combined in pilot applications. In addition, information and resources are provided for property owners interested in implementing their own environmental BMPs.

Alley with impermeable pavement and poor drainage.

Alley incorporating green alley principles.

Why is the City Interested in Green Alleys?

With approximately 1,900 miles of public alleys, Chicago has one of the most extensive and important pieces of infrastructure of any city in the world. That's approximately 3,500 acres of paved impermeable surface that provides an opportunity to better manage our resources and improve our environment.

Stormwater Management

Imagine if all of the alleys in Chicago were green alleys. Up to 80% of the rainwater falling on these surfaces throughout the year could pass through permeable paving back into the earth, thereby reducing localized flooding, recharging groundwater and saving taxpayer money that would otherwise be spent treating stormwater.

Heat Reduction

Imagine if all the alleys had a light, reflective surface (high albedo) that reflected heat energy, staying cool on hot days and thereby reducing the "urban heat island effect", a condition where dense urban areas become several degrees warmer due to the density of buildings and amount of heat-absorbing paved areas.

Material Recycling

Imagine if all of the alleys were constructed with recycled materials, thereby reducing the amount of construction and industrial waste hauled to landfills and reducing the burden on our natural resources.

Energy Conservation and Glare Reduction

Imagine if the thousands of light fixtures that provide a safe environment in the alleys were energy efficient and reduced glare and light pollution to the point where you could see the stars at night.

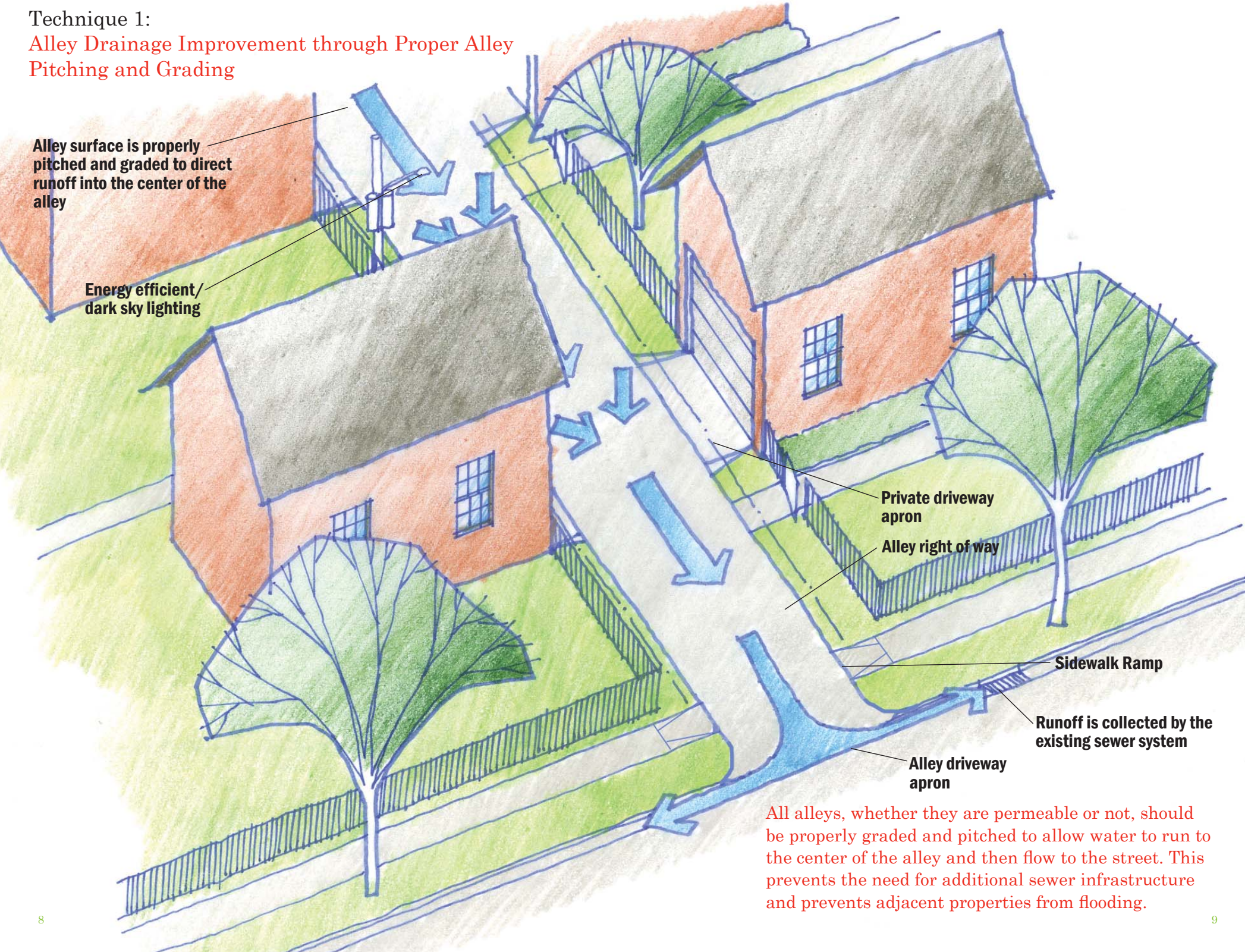
All of these benefits can be accomplished within the alley's right of way! In this document you can learn what you can do to increase the benefits of the green alley by implementing your own sustainable practices on your property.

Sustainable Solutions within the Alley Right of Way

The City is committed to creating a greener, more sustainable environment by using best management practices in alley improvements and construction. Some or all of the following techniques will be used when designing green alleys.

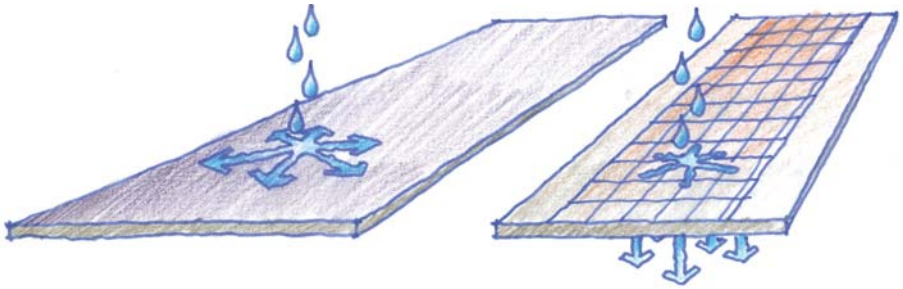
Technique 1:

Alley Drainage Improvement through Proper Alley Pitching and Grading



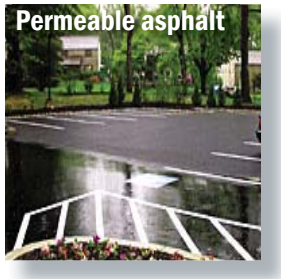
All alleys, whether they are permeable or not, should be properly graded and pitched to allow water to run to the center of the alley and then flow to the street. This prevents the need for additional sewer infrastructure and prevents adjacent properties from flooding.

Technique 2:
Permeable Pavement



Impermeable pavement

Permeable pavement

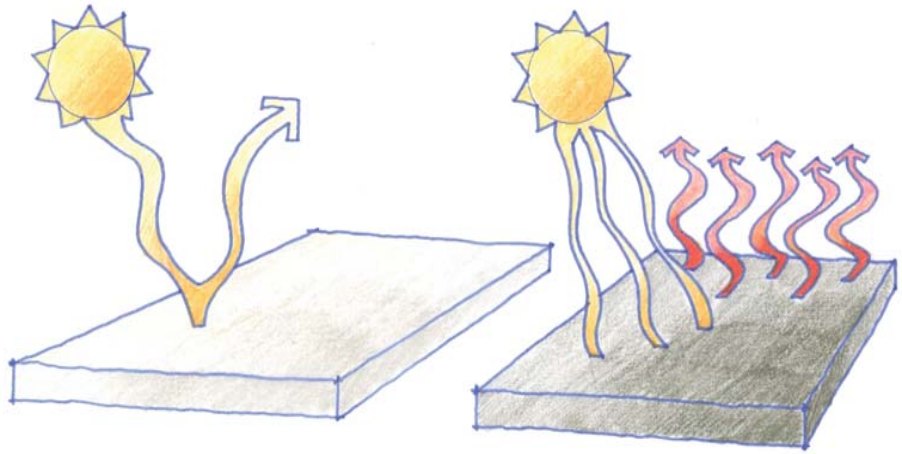


Permeable pavement has pores or openings that allow water to pass through the surface and percolate through the existing subsoil. Permeable pavement comes in the form of permeable asphalt, permeable concrete, and permeable pavers. In areas where soils do not drain freely, permeable pavement can be used in combination with subsurface drainage systems, like pipe underdrains or stormwater infiltration trenches to slow runoff and reduce stress on the combined sewer system.

Potential Benefits

- Reduces the rate and quantity of stormwater runoff
- Reduces stress on the sewer system
- Recharges ground water
- Filters silt, pollutants and debris

Technique 3:
High Albedo Pavement



High albedo pavement

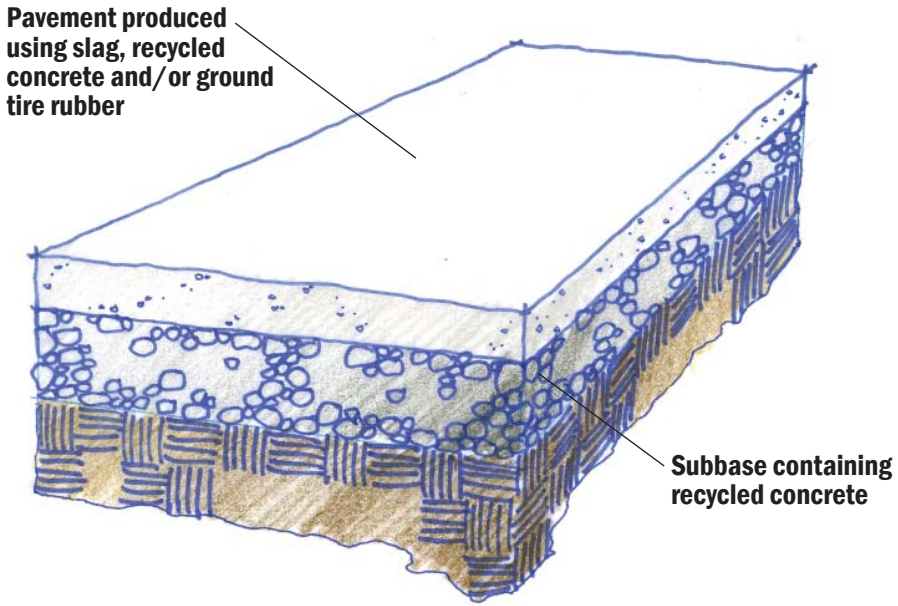
Conventional pavement

High albedo pavement material is light in color and reflects sunlight away from the surface. With less sunlight absorbed by pavement, less heat is radiated by the pavement. High albedo pavement therefore reduces the urban heat island effect. This reduces cooling costs, helps the survival of urban vegetation, and improves air quality, which can help reduce the symptoms of some respiratory diseases.

Potential Benefits

- Reduces the urban heat island effect
- Can be used under a wide variety of site conditions
- Conserves energy by reducing cooling costs
- Improves air quality

Technique 4:
Recycled Construction Materials

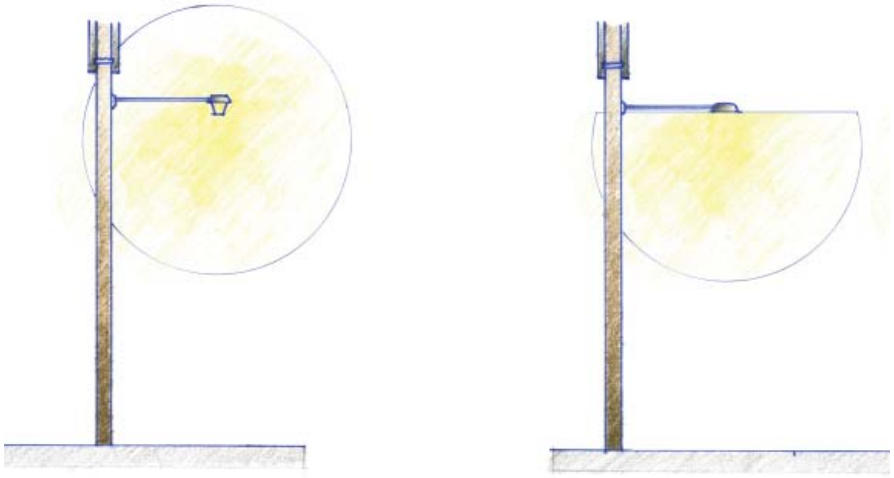


Recycled construction materials can be incorporated in a variety of ways in green alleys. Recycled concrete aggregate can be used in the concrete mix and as a base beneath surface paving. Also, slag, a by-product of steel production, can be used as a component of the concrete mix, reducing industrial waste. Ground tire rubber can be used in porous asphalt and reclaimed asphalt pavement in non-porous asphalt.

Potential Benefits

- Reduces waste hauled to landfills
- Reduces the need to extract virgin natural resources
- Develops new technologies and saves money

Technique 5:
Dark Sky Compliant Light Fixtures



Conventional alley light fixture

Dark sky compliant alley light fixture

Energy efficient, dark sky compliant light fixtures are specially designed to direct light downward, focusing light where it's needed. These fixtures can also incorporate the latest technologies in energy efficiency while maintaining adequate light levels. New alley fixtures will also use metal halide lamps, which produce white light, instead of the yellow light produced by the existing high-pressure sodium fixtures. This will help people to be able to distinguish color at night.

Potential Benefits

- Reduces light pollution from site
- Reduces glare and provides better light uniformity
- White light produced by metal halide fixtures has a high "color rendition index" and therefore allows people to perceive color more accurately

Green Alley Pilot Approaches

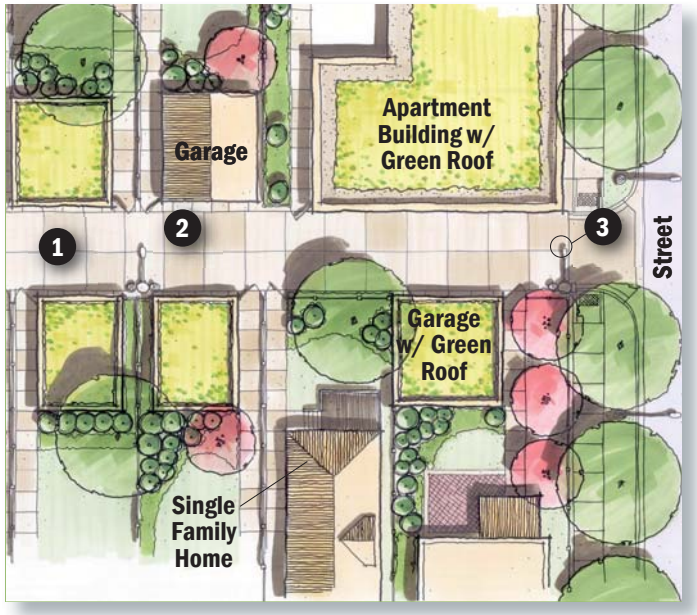
The following four pilot approaches illustrate how different combinations of green alley techniques can be used to suit a variety of site conditions.

Green Alley Pilot Approach #1:
Green Pavement Materials with Conventional Drainage

1 Properly graded and pitched alley surface directing stormwater towards the center of the alley, into adjacent streets, and finally into the existing sewer system

2 High albedo concrete paving with recycled aggregate and slag

3 Energy efficient dark sky compliant light fixture

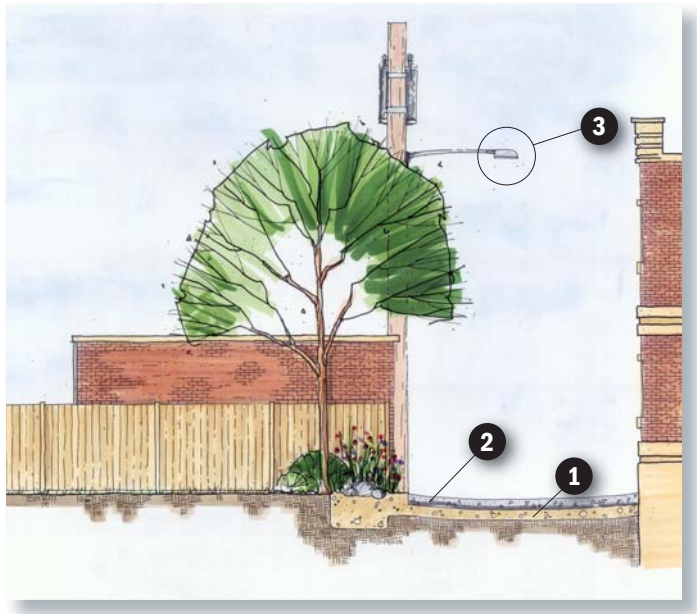


Plan

1 Recycled concrete base material

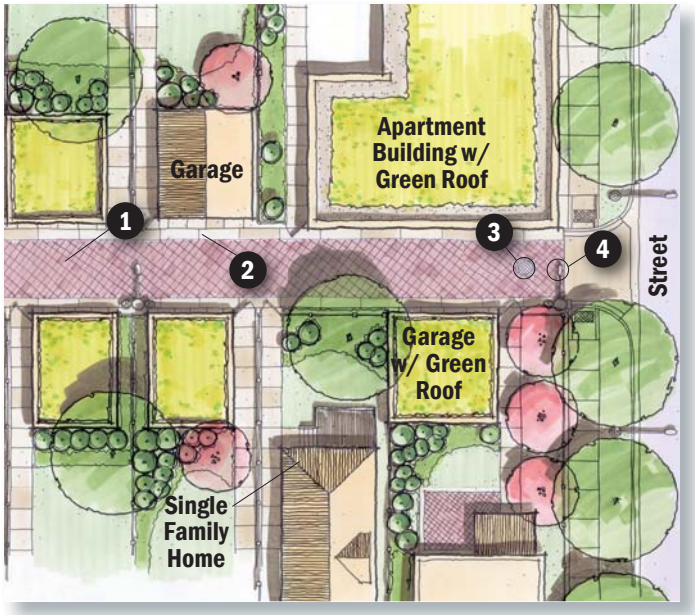
2 High albedo concrete paving with recycled aggregate and slag

3 Energy efficient dark sky compliant light fixture



Section

Green Alley Pilot Approach #2:
Full Alley Infiltration Using Permeable Pavement



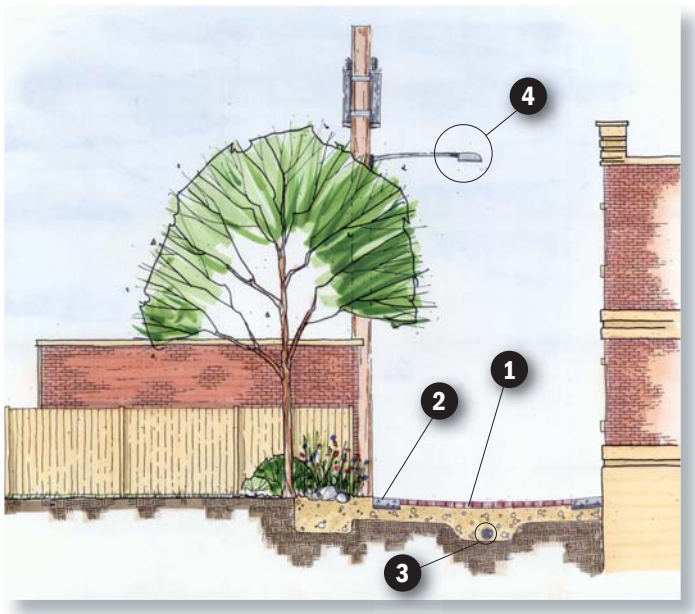
Plan

1 Permeable pavement material (permeable asphalt, permeable concrete, or permeable pavers)

2 High albedo concrete paving with recycled aggregate and slag

3 Optional inlet structure with pipe under drain

4 Energy efficient dark sky compliant light fixture



Section

1 Permeable pavement material (permeable asphalt, permeable concrete, or permeable pavers)

2 High albedo concrete paving with recycled aggregate and slag

3 Optional pipe under drain

4 Energy efficient dark sky compliant light fixture

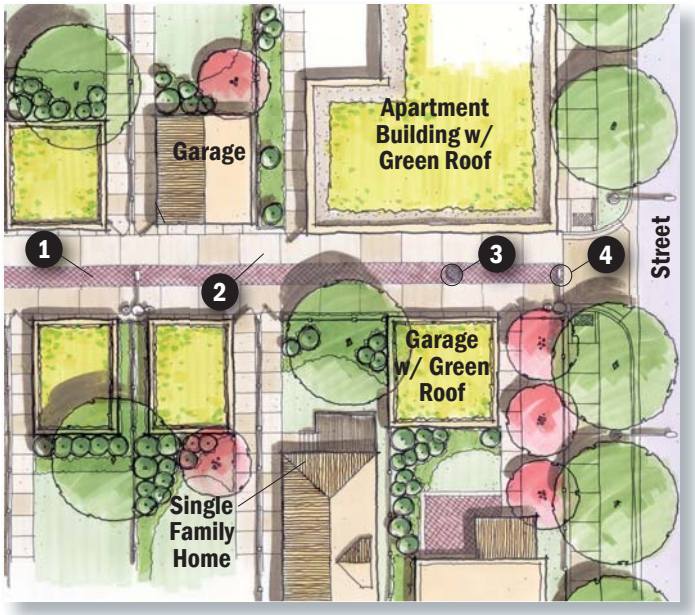
Green Alley Pilot Approach #3:
Center Alley Infiltration Using Permeable Pavement

1 Permeable pavement material (permeable asphalt, permeable concrete, or permeable pavers)

2 High albedo concrete paving with recycled aggregate and slag

3 Optional inlet structure with pipe under drain

4 Energy efficient dark sky compliant light fixture



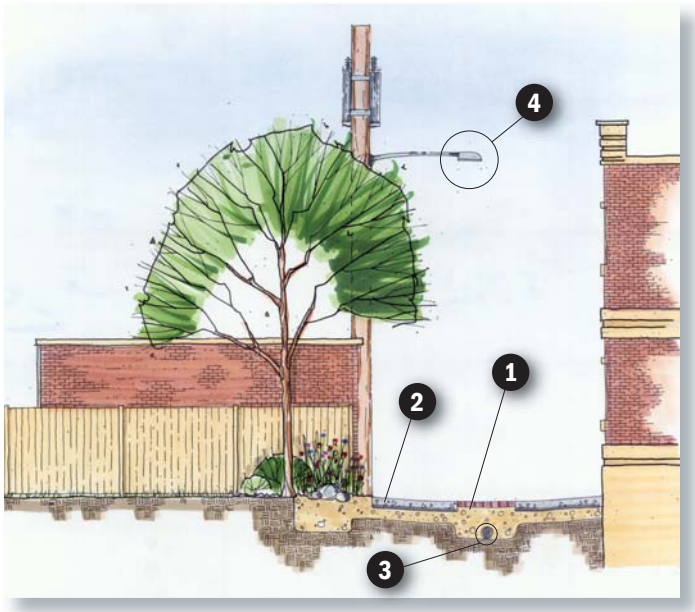
Plan

1 Permeable pavement material (permeable asphalt, permeable concrete, or permeable pavers)

2 High albedo concrete paving with recycled aggregate and slag

3 Optional pipe under drain

4 Energy efficient dark sky compliant light fixture



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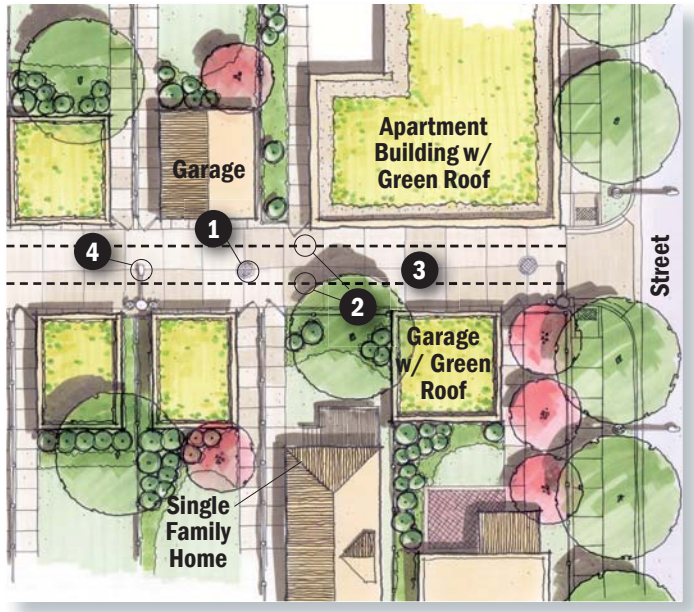
Green Alley Pilot Approach #4:
Green Pavement Materials with Subsoil Filtration System



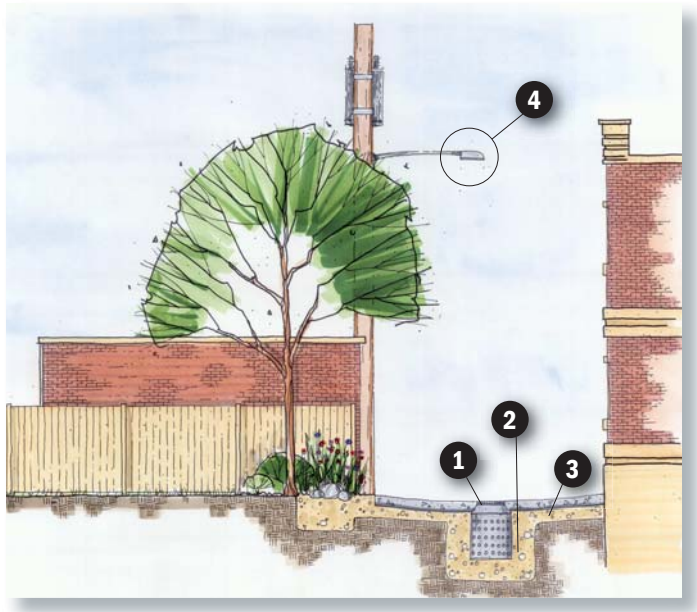
1 Inlet structure with perforated sides

2 Limits of infiltration trench below for additional storage capacity

3 High albedo concrete paving with recycled aggregate and slag

4 Energy efficient dark sky compliant light fixture

Plan



1 Inlet structure with perforated sides

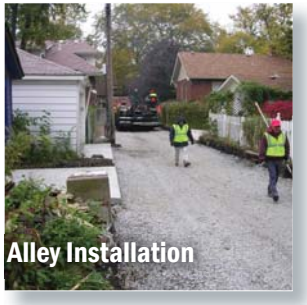
2 Stormwater infiltration trench

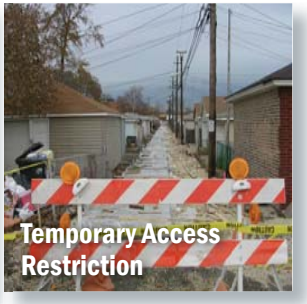
3 Recycled concrete base material

4 Energy efficient dark sky compliant light fixture

Section

What to Expect During Alley Construction





- The Chicago Department of Transportation will notify you in advance of an alley improvement project.
- Access to garages and driveways will be temporarily restricted.
- Garbage pickup will be temporarily relocated.

How Do I Identify a Green Alley?

You will be able to easily identify a green alley because this image will be stamped into the driveway aprons at either end. Furthermore, if a catch basin is open to the subsoils and not connected to the storm sewer system it will be labeled “infiltration: no dumping - only rain down the drain” for easy identification.

Green Alley Dos and Don’ts

Do:

- Keep your green alley clean of dirt and debris
- Install rain gardens and bioswales to absorb and filter water before reaching the alley
- Implement other sustainable BMPs on your own property to increase the performance of the green alley
- Shovel or plow alley as required, salt can be used in moderation

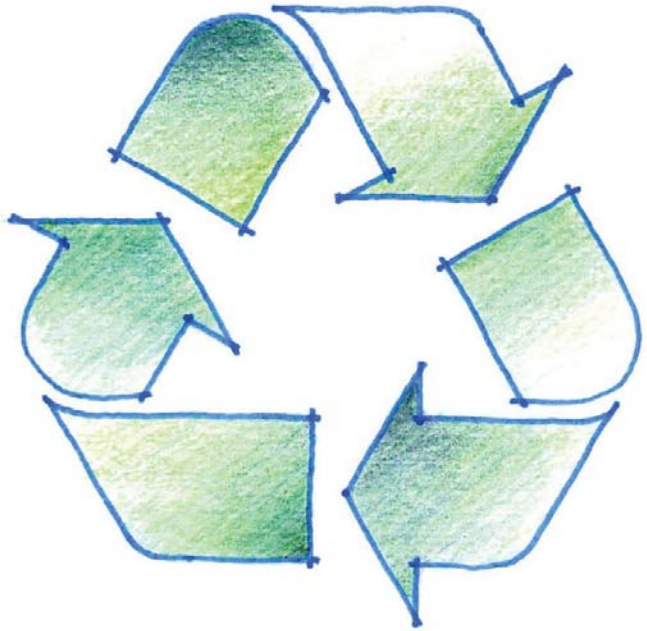
Don’t:

- Dump chemicals or toxic materials on or near the green alley
- Spread sand or dirt on or near permeable paving in the green alley
- Remove stone from between permeable pavers
- Seal permeable asphalt or concrete

Sustainable Solutions for Adjacent Properties

Property owners can play a significant role in helping to create a greener, more sustainable Chicago, and further enhance the performance of their green alley, by implementing the variety of best management practices illustrated on the following pages.

Technique 1	Recycling					
$5-$10 per month	✓	Residential	✓	Commercial	✓	Industrial

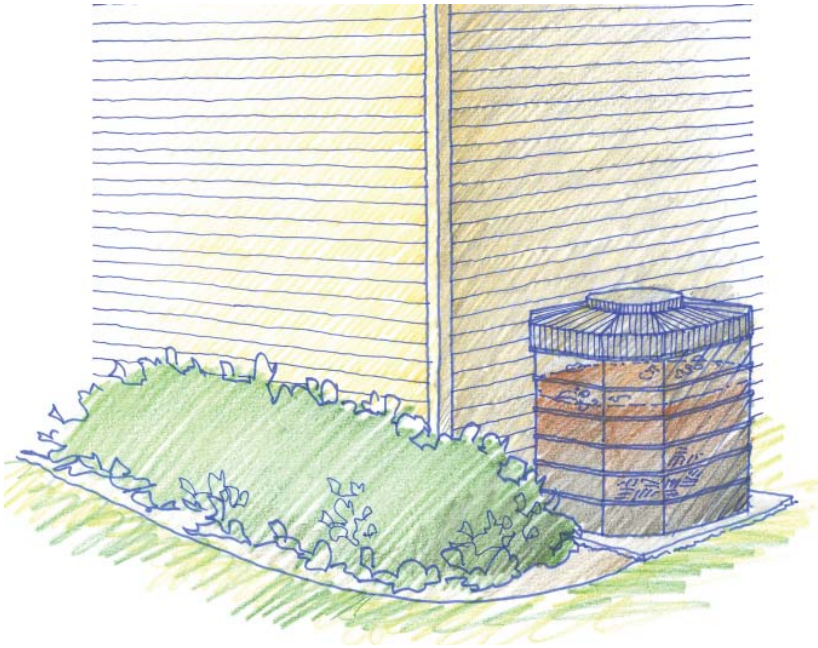


Recycling products like glass, plastic, and metal containers through the Chicago Blue Bag Recycling Program or through your local collection center, is a simple and inexpensive way to reduce waste hauled to landfills, while saving energy and natural resources.

Potential Benefits

- Reduces waste hauled to landfills
- Reduces the need to extract virgin natural resources
- Requires little cost to the homeowner

Technique 2	Composting					
$50-$250	✓	Residential		Commercial		Industrial



Kitchen scraps, yard waste and even some paper products can be placed into an inexpensive composting bin to decompose. With very little maintenance, the waste will soon break down into a rich, organic material that can be mixed directly into garden soil or used as fertilizer for trees and shrubbery. Not only does composting save space in our garbage trucks and landfills, but its product also provides a nutrient boost to poor urban soils.

Potential Benefits

- Reduces waste hauled to landfills
- Reduces the need to extract virgin natural resources
- Requires little or no cost to the property owner
- Improves soil structure
- Provides natural fertilizer to plants

Technique 3	Plant a Tree					
$50-$500 each	✓	Residential	✓	Commercial	✓	Industrial

Shade trees can play a large part in reducing the urban heat island effect and improving air quality. Planting a tree near the alley shades the alley and thereby reduces the amount of thermal energy emitted by the pavement.

Potential Benefits

- Reduces the urban heat island effect
- Provides habitat for birds and wildlife
- Reduces energy costs for heating and cooling if placed appropriately
- Improves air quality

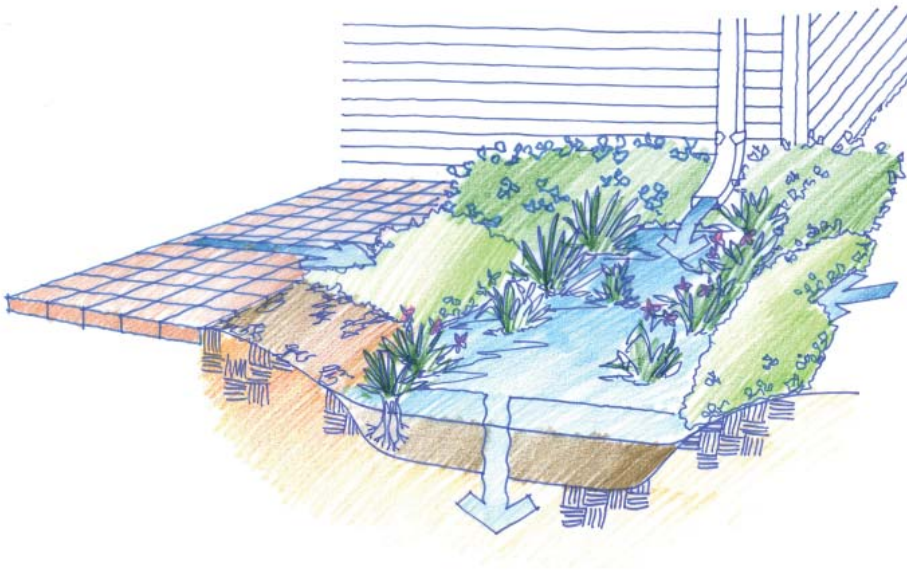
Technique 4	Native Landscaping					
$0.10-$5 per square foot	✓	Residential	✓	Commercial	✓	Industrial

Plants and trees native to northern Illinois are uniquely adapted to the local weather, water and soil conditions. Choosing these species for your landscaping can reduce the amount of watering, fertilizing and maintenance required on your property.

Potential Benefits

- Reduces the urban heat island effect
- Reduces energy costs for heating and cooling if placed appropriately
- Provides habitat for birds and wildlife
- Requires little or no irrigation once established
- Requires little or no fertilizer, pesticides or herbicides
- Low maintenance once established

Technique 5	Rain Garden					
$3-$6 per square foot	✓	Residential	✓	Commercial	✓	Industrial

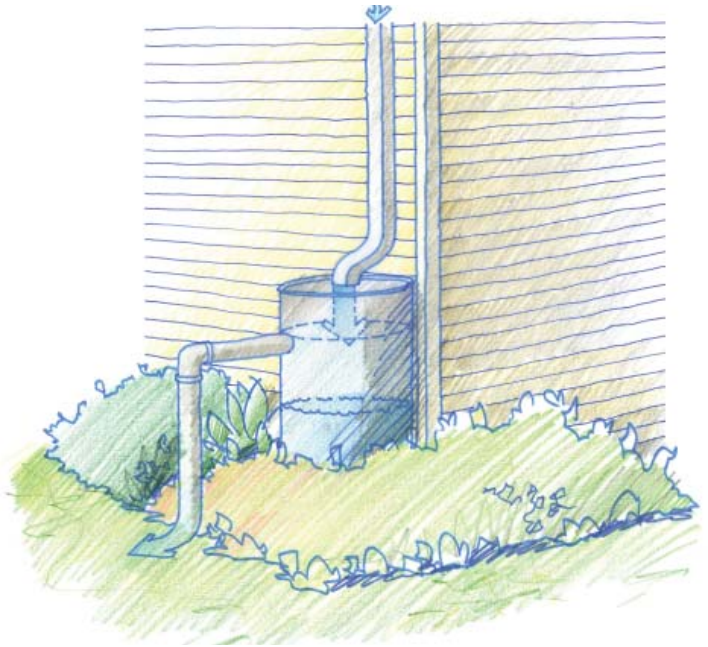


A rain garden is a landscape feature that is planted with native perennial plants used to slow down the stormwater runoff from impervious surfaces (such as roofs, sidewalks and parking lots) and allow it to infiltrate back into the soil.

Potential Benefits

- Provides attractive garden area to receive discharge from down spouts
- Filters silt, pollutants and debris
- Reduces rate and quantity of stormwater entering the sewer system
- Recharges ground water
- Provides habitat for birds and wildlife
- Can help reduce localized flooding

Technique 6	Rain Barrel / Cistern					
$10-$5,000	✓	Residential	✓	Commercial	✓	Industrial

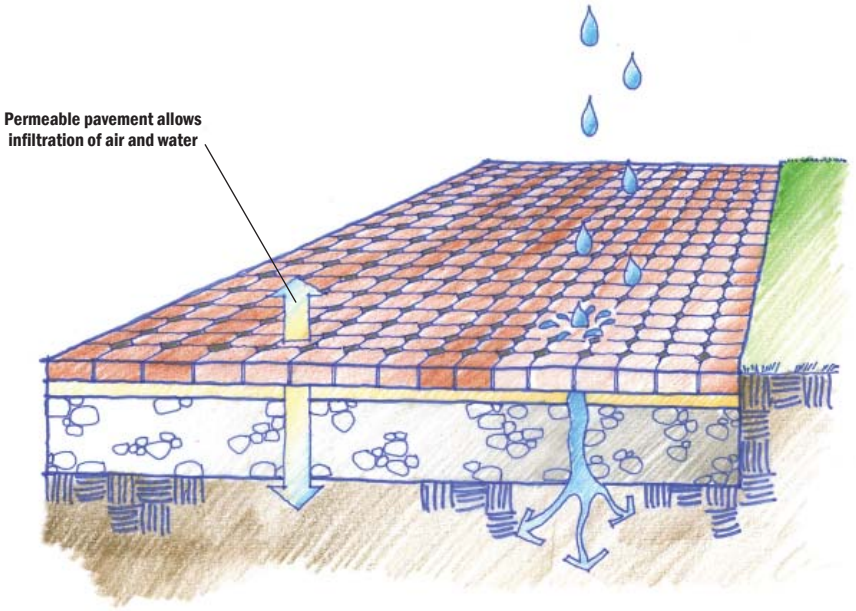


A rain barrel or cistern is a container used to collect and store rainwater from a building roof for various uses including irrigating plants.

Potential Benefits

- Recycles rain water
- Conserves water
- Reduces the quantity of stormwater runoff
- Can provide water for plant irrigation

Technique 7	Permeable Pavement					
$3-$15 per square foot	✓	Residential	✓	Commercial	✓	Industrial

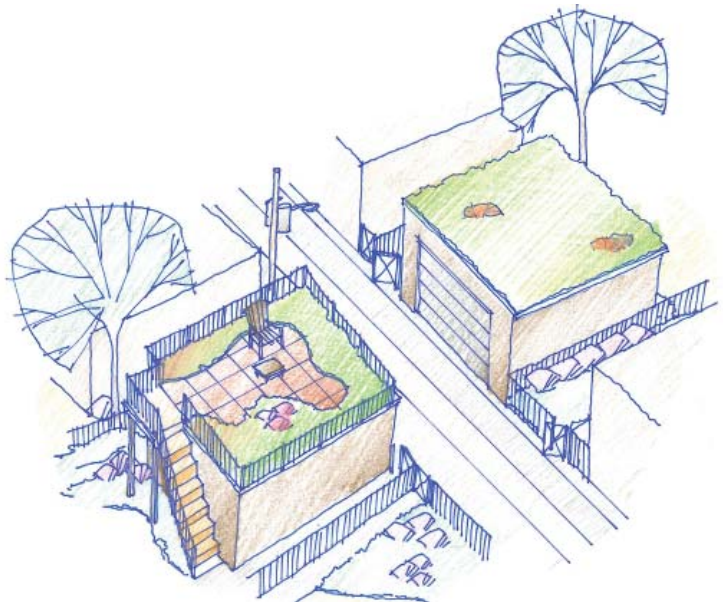


Permeable paving allows rainwater to penetrate through the surface and stone base material and infiltrate into the soil below. It is ideal for small areas of outdoor household paving such as patios, driveways and parking slabs.

Potential Benefits

- Reduces the rate and quantity of stormwater runoff
- Recharges ground water
- Filters silt, pollutants and debris
- Reduces the urban heat island effect
- Provides paving options for site specific applications

Technique 8	Green Roof					
$10-$30 per square foot	✓	Residential	✓	Commercial	✓	Industrial

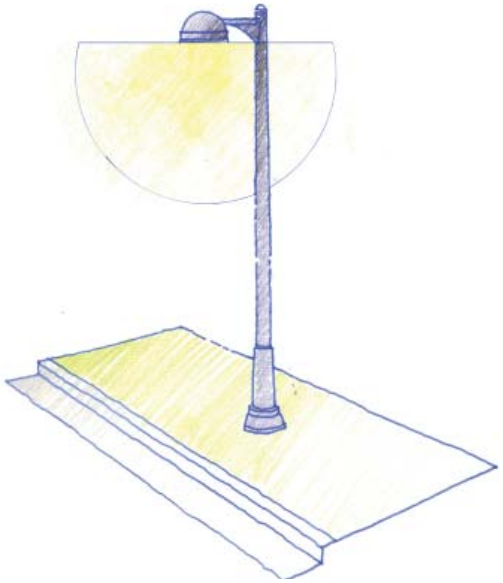


A “green roof” is a roof that is partially or completely covered with plants. A green roof system includes waterproofing, a drainage system, soil and plants. Green roofs can be installed on most flat roofs and are well-suited to garages, provided that they are constructed to accommodate the structural load.

Potential Benefits

- Reduces the rate and quantity of stormwater runoff
- Reduces the urban heat island effect
- Reduces energy costs for heating and cooling
- Increases longevity of roofing materials
- Provides habitat for birds and wildlife
- Provides opportunity for accessible garden space
- Increases rent or property value of units with views or access

Technique 9	Energy Efficient / Dark Sky Lighting					
$200-$5,000+ each	✓	Residential	✓	Commercial	✓	Industrial

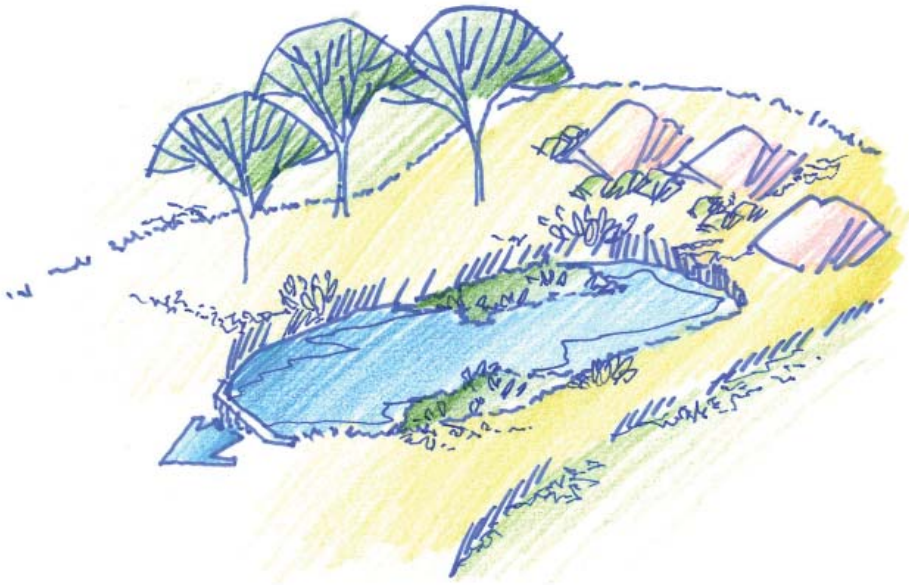


Energy efficient/dark sky light fixtures are designed to direct lamp light downward and outward where it is useful rather than upward where it wastes energy and contributes to glare and light pollution.

Potential Benefits

- Reduces energy costs
- Reduces light pollution from site
- Reduces glare and provides better light uniformity

Technique 10	Naturalized Detention					
$.07-$.14 per square foot		Residential	✓	Commercial	✓	Industrial

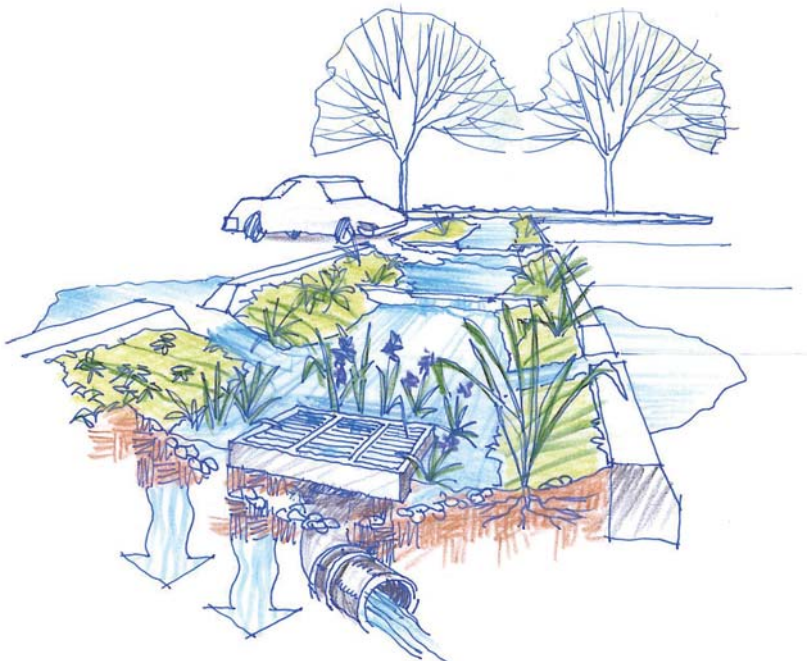


Naturalized detention is an area used to temporarily store stormwater on site and slowly release it at a controlled rate. These areas are intended to look and function as native wetlands and include native plants growing both above and below the normal water level.

Potential Benefits

- Reduces the rate and quantity of stormwater runoff
- Filters silt, pollutants and debris
- Reduces erosion of pond edges
- Provides an attractive amenity
- Provides habitat for birds and wildlife

Technique 11	Bioswales and Vegetated Swales					
$8-$30 per linear foot		Residential	✓	Commercial	✓	Industrial

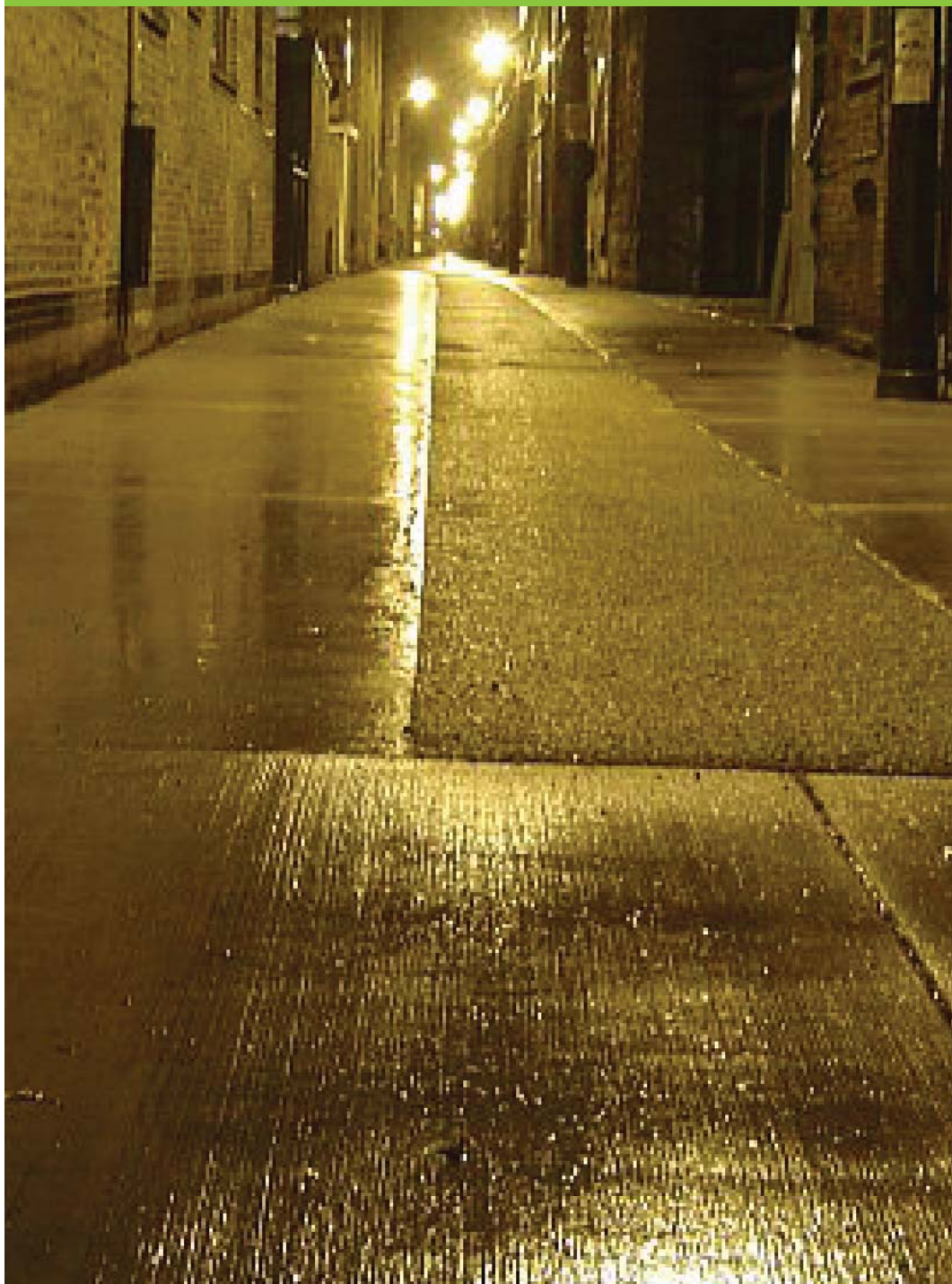


A bioswale or a vegetated swale is a shallow trench or shoulder landscape with native plants used to slow the speed of surface run-off and allow stormwater to infiltrate back into the ground instead of flowing directly into storm sewers.

Potential Benefits

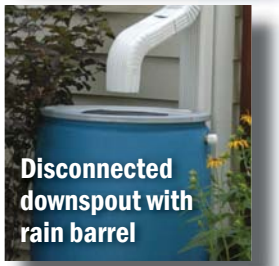
- Filters silt, pollutants and debris
- Reduces rate and quantity of stormwater entering sewer system
- Recharges ground water
- Reduces storm sewer piping and structures
- Can reduce detention requirements
- Provides opportunity for wildlife habitat

Example Applications

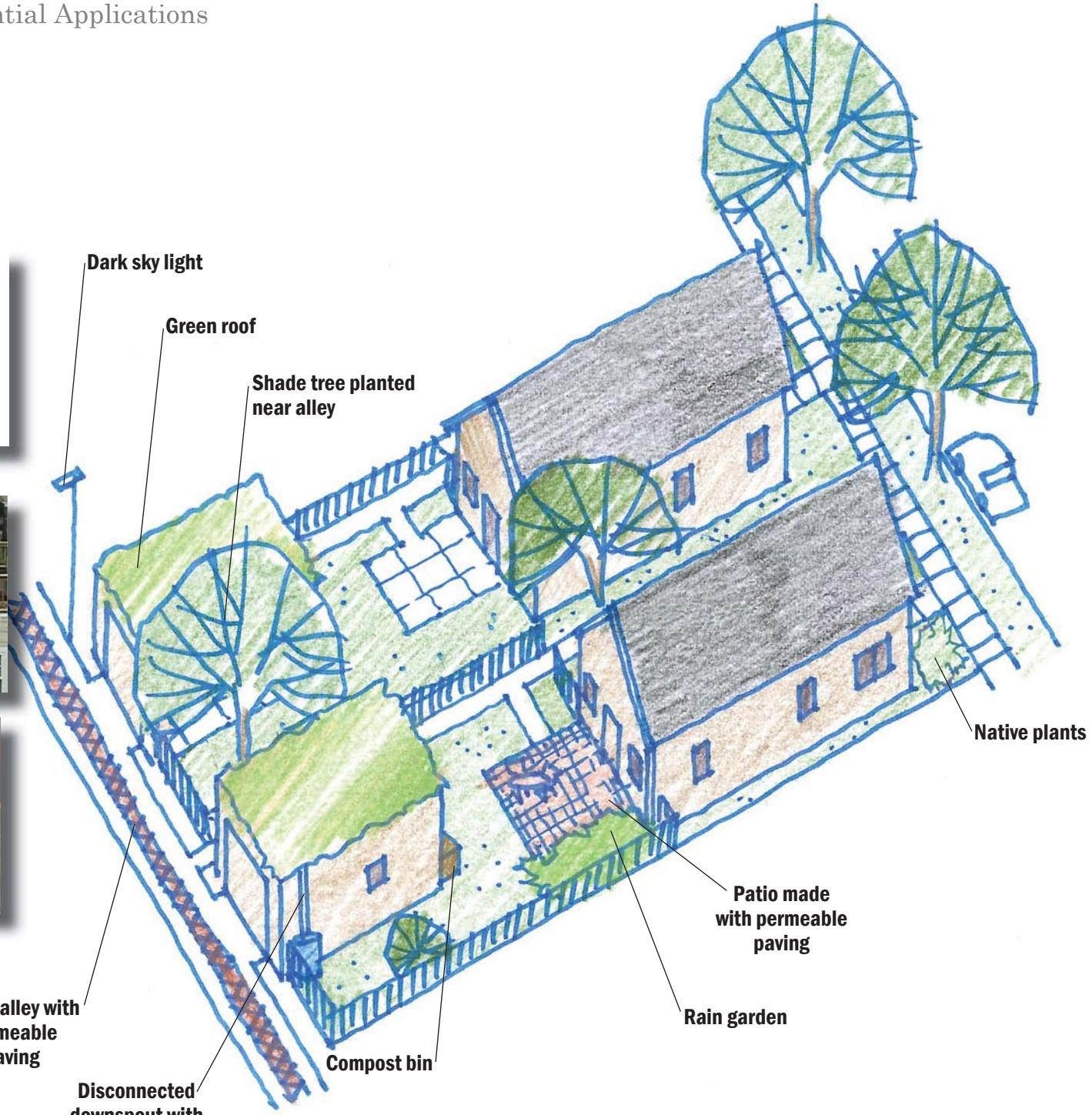


Dark sky light

Green roof



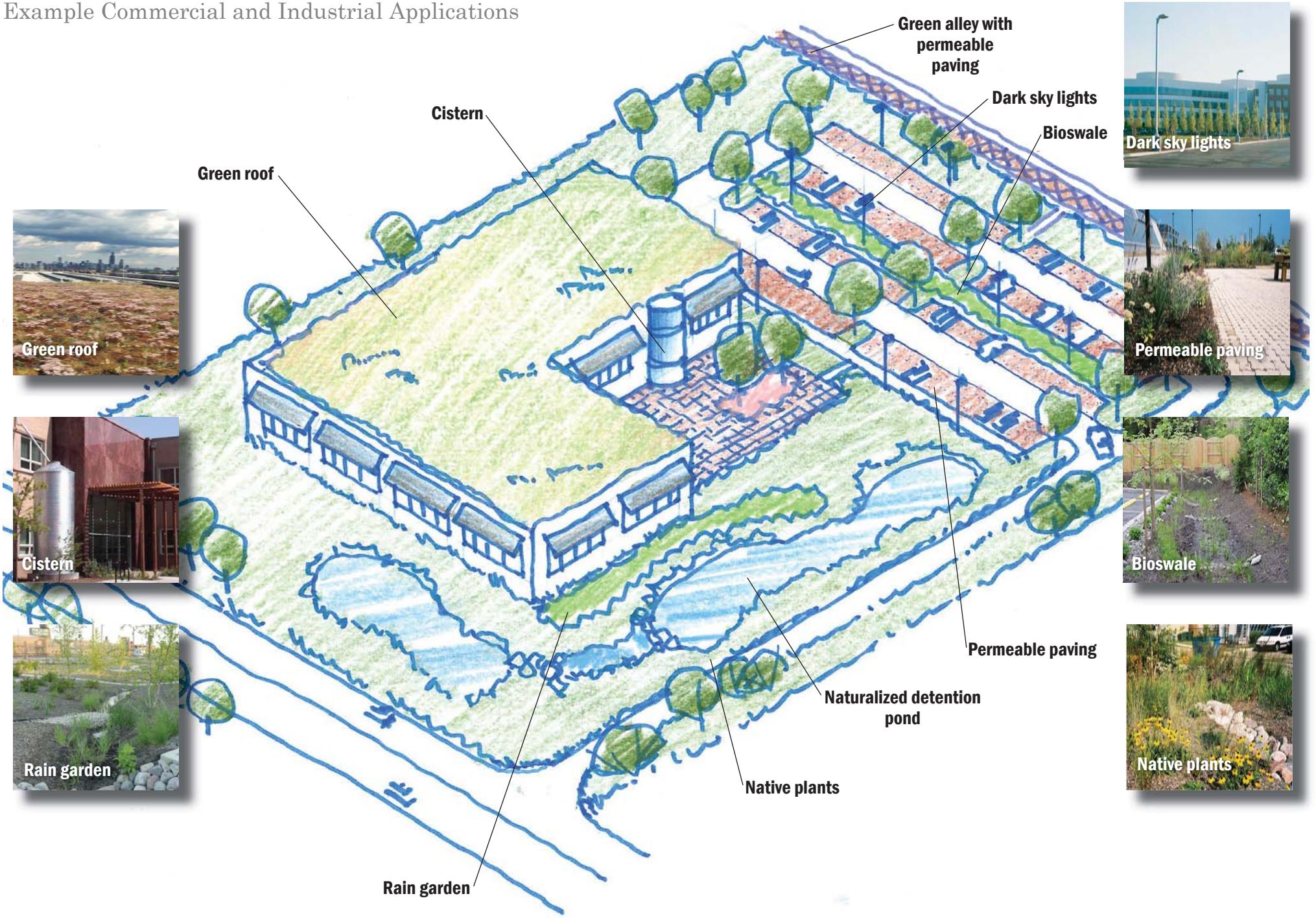
Disconnected downspout with rain barrel



Permeable paving

Rain garden

Compost bin


Green alley with permeable paving
Dark sky lights
Bioswale
Cistern
Green roof
Permeable paving
Naturalized detention pond
Native plants
Rain garden

Dark sky lights

Green roof

Permeable paving

Cistern

Bioswale

Rain garden

Native plants

Frequently Asked Questions

Q: What do I do if my green alley does not appear to be draining?
A: Contact your Alderman's office or call 3-1-1 to report any problem with your alley.

Q: Will my green alley overflow during large storms?
A: Each green alley is designed to allow almost all rainfall to infiltrate into the subsoil. In the case of an uncommonly large rain event, each alley is designed so that water will run into the adjacent streets and into the storm sewer.

Q: What will happen when it snows?
A: If needed, a green alley can be plowed like any other street. Rock salt can be used in the winter, however, fine particles such as sand, gravel or kitty litter can clog the openings in pervious pavement surfaces and should not be used.

Q: Will ice be a problem in the winter?
A: In most cases, icing will be reduced because melting snow can permeate through the alley pavement.

Q: Will water still infiltrate in freezing temperatures?
A: The voids in the permeable paving and sub-base will allow water to infiltrate even when the ground is frozen. In general, a permeable alley is "warmer" than a traditional alley in winter because it allows air to circulate to the earth below, which is a constant 55 degrees Fahrenheit.

Q: Will access to my alley be restricted during construction?
A: Yes, access will be restricted during construction. CDOT will work with your Alderman's office to ensure that all residents are notified in advance and parking and garbage needs are coordinated.

Q: Will my alley be darker with dark sky compliant full cutoff light fixtures?
A: No, the same number of alley lights and the same footcandles (brightness) will be provided, but the new fixtures will direct light downward and outward instead of upward. In addition, the light will be white (metal halide) instead of yellow (high pressure sodium). White light has a high "color rendition index," which means that it allows people to perceive colors more accurately.

Glossary of Terms

Best Management Practices (BMPs)
Design solutions used to reduce adverse effects of development such as pollution, the "urban heat island effect" and stormwater runoff.

Dark Sky Light Fixture
A light fixture designed to allow no light trespass beyond 90 degrees from the center line of the fixture.

Green Alley
An alley designed and constructed incorporating best management practices of environmentally sustainable design.

Green Roof
A planted roof system composed of waterproofing, a drainage system, planting soil and plants.

High Albedo Pavement
Pavement with a high level of light reflectance used to reduce the amount of thermal energy released from pavement materials contributing to the "urban heat island effect".

Permeable Pavement
Pavement that allows water to infiltrate into the subsoil. Materials can include concrete permeable pavers, concrete and asphalt.

Slag
A by-product of steel production that can be used as a component of concrete mix to reduce the amount of industrial waste that goes to the landfill and lighten the color of concrete.

Sustainability
The concept of meeting today's needs without compromising resources for future generations.

Urban Heat Island Effect
The phenomenon of higher temperatures in dense urban areas resulting from thermal energy given off by pavement and buildings.

Publications

Permeable Pavers
Paver Search.
www.paversearch.com/permeable-pavers-menu.htm

High Albedo Pavement
Lawrence Berkeley National Laboratory. *Cool Pavements Lower Temperatures*
http://eetd.lbl.gov/HeatIsland/

Dark Sky Lighting
International Dark Sky Association
www.darksky.org

Green Roofs
City of Chicago Department of Environment. *Chicago's Green Rooftops: A Guide to Rooftop Gardening*
www.cityofchicago.org/Environment

City of Chicago Rooftop Garden
www.cityofchicago.org/Environment

Bioswales
United States Environmental Protection Agency. *Grassed Swales.*
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.

Rain Gardens
Raingardens.org
www.raingardens.org

Naturalized Detention
United States Environmental Protection Agency. *Post-Construction Storm Water Management in New Development & Redevelopment: Wetponds*
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm

Native Landscaping
Wild Ones. *Native Plants, Natural Landscapes*
www.for-wild.org

Rain Barrels
Rain Barrel Guide. *Harvesting Rainwater with Rain Barrels, an Old Idea with a New Following*
www.rainbarrelguide.com

Composting
Compost Guide. Why Make Compost?
www.compostguide.com

How To Compost
www.howtocompost.org

Additional City of Chicago Resources

Chicago Department of Transportation
30 N. LaSalle Street, 11th Floor
Chicago, IL 60602
(312) 744-3600
www.cityofchicago.org/transportation

Chicago Department of Environment
30 N. LaSalle Street, 25th Floor
Chicago, IL 60602
(312) 744-7606
www.cityofchicago.org/environment

Chicago Center for Green Technology
445 N. Sacramento Boulevard
Chicago, IL 60612
(312)746-9642
www.cityofchicago.org/Environment/GreenTech

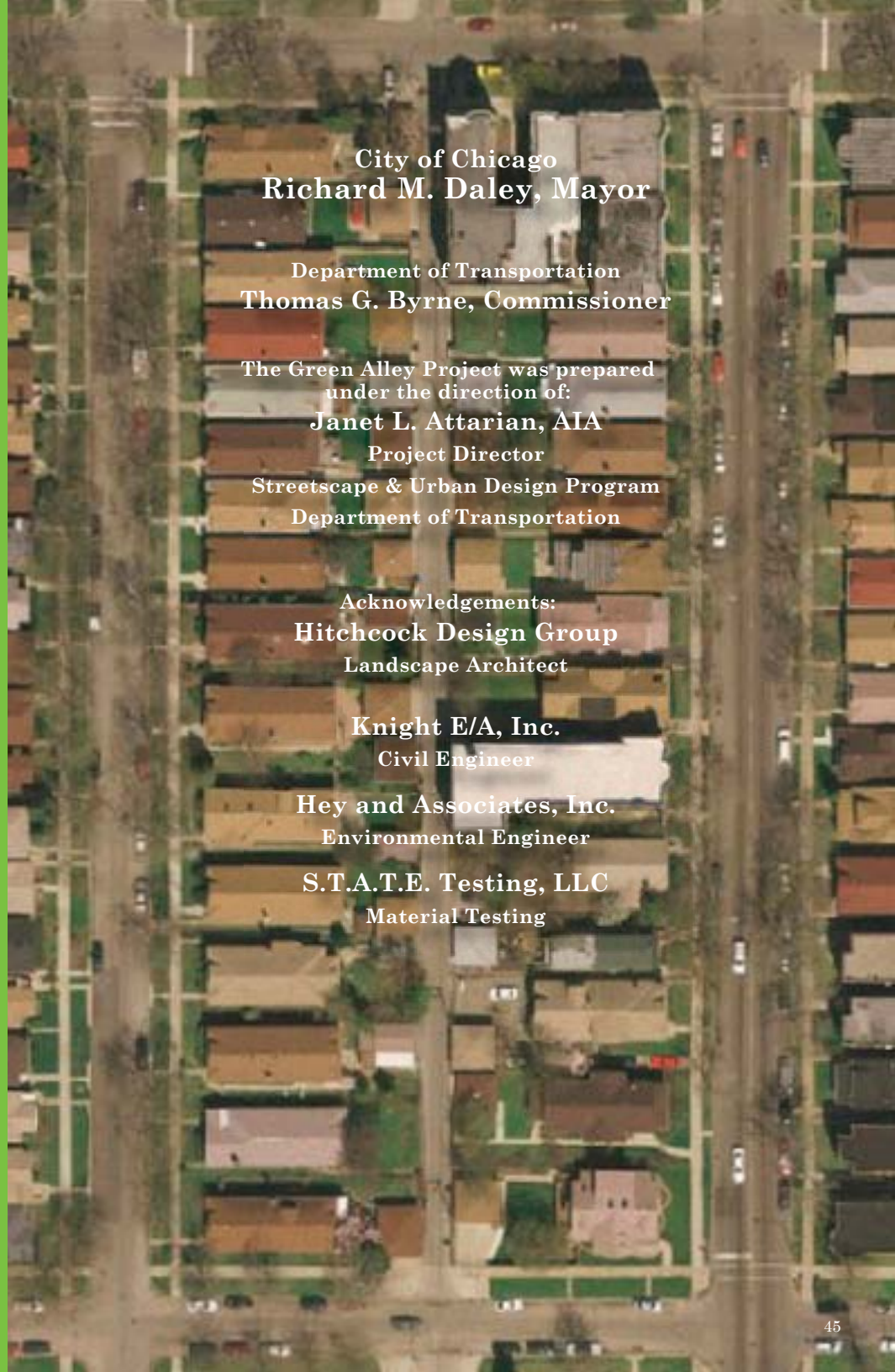
Chicago Department of Water Management
1000 E. Ohio, Suite 104
Chicago, IL 60611
(312)744-7001
www.cityofchicago.org/WaterManagement

Questions?

Please address all questions and concerns to:
Chicago Department of Transportation
30 N. LaSalle Street, 11th Floor
Chicago, IL 60602
(312) 744-3600

City of Chicago Service Request Line
311

Or Your Local Alderman's Office



City of Chicago
Richard M. Daley, Mayor

Department of Transportation
Thomas G. Byrne, Commissioner

The Green Alley Project was prepared under the direction of:
Janet L. Attarian, AIA
Project Director
Streetscape & Urban Design Program
Department of Transportation

Acknowledgements:
Hitchcock Design Group
Landscape Architect

Knight E/A, Inc.
Civil Engineer

Hey and Associates, Inc.
Environmental Engineer

S.T.A.T.E. Testing, LLC
Material Testing