

CLEVELAND LAND BRIDGE / WEST SHOREWAY CONCEPT ALTERNATIVES



Re-imagining the Lakefront Across Cleveland
and Across Ohio's Lake Erie Shore
VISION · COMMUNICATION · ADVOCACY · ENGAGEMENT

**CLEVELAND LAND BRIDGE / WEST SHOREWAY
CONCEPT ALTERNATIVES**

Document prepared by: Big Creek Connects
4352 Pearl Road, Suite C
Cleveland, Ohio 44109
www.bigcreekconnects.org

In partnership with: Green Ribbon Coalition
12505 Edgewater Drive, Suite 105
Cleveland, Ohio 44107
www.greenribbonlakefront.org

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Project Director; Narrative
& Concept Development: Bob Gardin - Executive Director, Big Creek Connects
Principal, RHG Restoration & Design

Technical Assistance: Dick Clough - Executive Board Chair, Green Ribbon Coalition
CEO, CloughCleveland Enterprises
Mary Ellen Stasek - Board Chair, Big Creek Connects
Peter Salamon – Urban Design Consultant, Urbzz
Patrick Nortz, CPG, PE; Board Member, Green Ribbon Coalition
Principal, Otisco Engineering Ltd.
Jeff Homans – Board Member, Green Ribbon Coalition
Senior Urban Planner

For further information, contact: Bob Gardin
Executive Director, Big Creek Connects
bgardin@bigcreekconnects.org
216.269.6472

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OVERVIEW

The purpose of this proposal is to help broaden the scope of the City of Cleveland's Downtown Lakefront Connector planning process, by updating the initial Green Ribbon Coalition land bridge proposal and suggesting additional alternatives to the City's Land Bridge Improvements Concepts that include several Shoreway realignment concepts that extend westward, across the east and west banks of the Flats into the Ohio City and Detroit Shoreway neighborhoods. Currently, the City's planning efforts are focused on the downtown lakefront area only.

This document examines several near-west Shoreway realignment alternatives beyond the downtown area, due to the need for eventual replacement of the 83-year old Main Avenue Bridge. The life expectancy of the bridge is estimated to be between 10 to 30 years. Therefore, it is crucial that any downtown lakefront planning examines alternatives for replacement of the bridge.

The Shoreway/boulevard realignment alternatives proposed here include recommendations to convert the abandoned Main Avenue Bridge and its approaches into an elevated greenway, similar to New York City's High Line. In addition to the connectivity the park would create - between downtown, the Cuyahoga River valley or "Flats", and the Ohio City neighborhood - the greenway could be a regional, national and international draw to the City. The conversion could also spur economic development adjacent to the structure, as has been seen with the High Line and similar elevated parks. The concept plans also present an option to improve the quality of life of Lakeview Terrace and other Ohio City residents impacted by Whiskey Island truck traffic, by diverting the bulk of the traffic away from the residences and onto a realigned Shoreway across Whiskey Island.

The City's initial Land Bridge Improvements Concepts were based on the Haslam Sports Group (HSG) renderings presented for a land bridge extending northwards from the Cleveland Mall to the east side of First Energy Stadium. The renderings follow an earlier, detailed proposal by the Green Ribbon Coalition for a land bridge extending at an angle, to avoid the Shoreway's incline to the west. The City has since added a concept similar to the GRC land bridge proposal, and another with a land bridge further east, parallel to the East 9th Street bridge.

This proposal critiques and recommends aspects of this newest set of of the City's Land Bridge Improvements Concepts as well as the HSG renderings. It also updates the initial GRC land bridge concept and recommends it, or something similar as a first phase of development. The GRC land bridge concept is modified by incorporating the most recent Rock Hall expansion plans along its northern end, and an integrated Transit Center under the center of the structure. The surrounding road network is modified in a feasible manner while it removes the Shoreway's deficient weave areas between East 9th and West 3rd Streets. The concepts envision positive economic impacts via improved access to downtown and the Flats while spurring economic development opportunities.

This proposal also incorporates a second phase for the land bridge based on, or similar to the HSG renderings that can be built adjacent to a first phase after a realignment of the Shoreway is completed. Illustrations in this proposal present how a first and second phase of a land bridge can be connected via both surface and enclosed walkways to the Transit Center, the Convention Center, the Museums, and the Stadium.

Big Creek Connects and the Green Ribbon Coalition have developed this proposal to assist the City, the Greater Cleveland Partnership, and the Lakefront Task Force with its downtown lakefront planning process. The ideas in this proposal seek to expand and enhance the City's scope of

study for an integrated land bridge and transit center, an improved road and trail network, an elevated greenway, and a new, realigned Shoreway. They strive to improve the health and quality of life of residents, provide better access to and between lakefront destinations, and spur economic development within the downtown lakefront, the East and West Banks of the Flats, and the near-west lakefront neighborhoods.

REVIEW OF DOWNTOWN LAKEFRONT PLANNING TO THE PRESENT

Extending the Cleveland Mall northward from the 1903 Cleveland Group Plan to connect with the lakefront has been discussed for decades between planners and the Cleveland community. The strategy of the Plan was to create an iconic gateway leading from a new railroad depot at the lakefront to Public Square. The rail station was never realized however, as the Union Terminal was built at the southwest quadrant of Public Square instead, resulting in the 50-foot bluff overlooking the somewhat unsightly rail and highway infrastructure to the north of The Mall. The rail and highway also separate the City's civic center from the lakefront attractions that were developed over the next one hundred years. (See Figure 1)

As the Group Plan's vision along The Mall was being realized, the Downtown lakefront provided little as a public destination besides docking for passenger ships, with a restaurant and a short-lived marina along the 9th Street Pier. In 1931 the Cleveland Municipal Stadium was built on reclaimed land between East 9th and West 3rd Streets. In 1936 and 1937 the successful Great Lakes Exposition extended from The Mall to the Stadium and from there eastward on 135 acres, but little that was built remained of the exposition.



Figure 1: Existing view of the Downtown Lakefront



Figure 2: Green Ribbon Coalition 2017 Land Bridge Rendering

Over the next 50 years, little development occurred. In 1988 a large parking area between the stadium and East 9th was excavated to create North Coast Harbor and Voinovich Park. In 1995 the Rock and Roll Hall of Fame and Museum opened, followed by the Great Lakes Science Center in 1996. In 1997 First Energy Stadium replaced the aging Municipal Stadium. In 2016, Nuevo Modern Mexican & Tequila Bar opened on the 9th Street Pier. Soon afterwards, Harbor Verandas Apartments opened with retail on its first floor. Today however, the view to the north from The Mall leaves one with little incentive to explore these destinations by foot, while The Mall itself lacks the activity it deserves for such an important public space. To reach lakefront destinations from downtown, pedestrians need to walk to East 9th or West 3rd Streets and work their way north while navigating dangerous street crossings at the Shoreway's entrance and exit ramps.

Over the years, a range of designs have been proposed combining different bridge and building structures to provide an alternative to these routes, to close the gap between downtown and the lakefront, and to strengthen the connection between these important destinations. In 2012 the Cleveland Lakefront Plan proposed a multi-modal transportation center adjacent to the rail lines. In 2013 the Convention Center and Mall were rebuilt. In 2014, an iconic, cable-stayed bridge designed by Boston architect Miguel Rosales was selected as the preferred method to connect The Mall with the harbor area.

In 2017, the Green Ribbon Coalition released its first draft proposal for a *land* bridge, promoting it as a seamless extension of The Mall to the North Coast Harbor while hiding the rail and highway infrastructure separating these important destinations. (See Figure 2) To learn more about the history of the downtown lakefront, and the development of the GRC Land Bridge Proposal with its concept plans and renderings, the full document can be downloaded at: greenribbonlakefront.org. As the GRC land bridge proposal gained support, the City of Cleveland determined that such a bridge may indeed be more feasible than Rosales' narrow, iconic bridge and abandoned the Rosales proposal. For several years afterwards however, the City kept their lakefront planning out of view while devising a lakefront connector plan of their own in collaboration with the Haslam Sports Group and Osborn Engineering. In 2021 HSG released graphic and video renderings of their vision for a land bridge and surrounding building infrastructure. The impressive presentations and influence of the Haslam group in turn enabled \$5 Million in state and city funding towards a feasibility study to explore traffic patterns and economic impacts based on several Land Bridge Improvements Concepts.

In January 2022 the City released the Land Bridge Improvements Concepts, which began under the former administration, to determine how the downtown lakefront area could be altered to adapt to the HSG concept. Soon after, the Northeast Ohio Areawide Coordinating Agency (NOACA) requested that the city explore additional concept plans beyond those based solely on the HSG renderings, including the GRC land bridge concept, and to allow community input. The new administration in turn acknowledged and accepted these requests, and in February added two new land bridge concepts. One of these is vaguely based on the GRC concept, as it angles from The Mall towards the museums to avoid the Shoreway incline to the west. The other extends as a large, square platform from City Hall to Erieside Avenue, and from East 9th Street to near the Great Lakes Science Center. The City and the Greater Cleveland Partnership (GCP) has also organized a Lakefront Task Force with five working groups to study and guide the development of a comprehensive downtown lakefront plan based on the concepts.

Considering the potential of working with this new administration and recognizing the need to consider the future replacement of the Main Avenue Bridge, in January the Green Ribbon Coalition and Big Creek Connects began examining the expansion of study westward, beyond the immediate downtown lakefront area, while updating its initial land bridge proposal. Figure 3 illustrates the difference between the two study areas.

In March 2022, BCC and GRC asked to meet with the City, GRC and NOACA to present a draft of this document. Per the City's request, BCC sent an April 20 draft to the GCP and a representative from each organization followed up with a presentation with the GCP's senior director of major projects. In July, drafts were sent to various entities for review before an August 2nd final draft for review was sent back to the GCP, and to the City and the Lakefront Task Force. This *final* document was published on August 16th and made available to the public on August 19th.

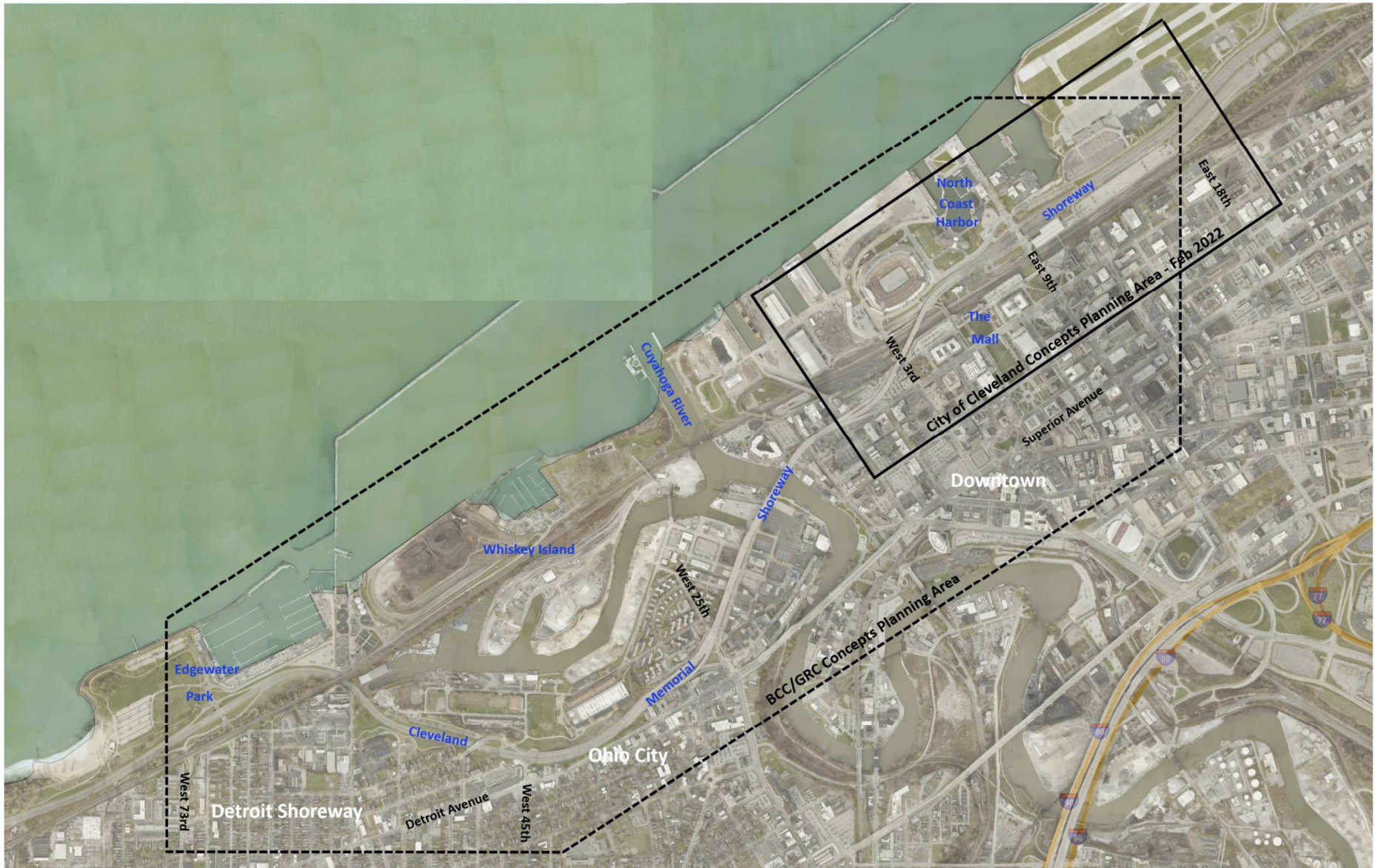


Figure 3: Concepts Study Areas

HSG LAND BRIDGE AND CLEVELAND IMPROVEMENTS CONCEPTS

THE HASLAM SPORTS GROUP LAND BRIDGE RENDERINGS, released early in 2021, are dependent on the removal or realignment of the Shoreway to allow for the structure to extend straight out from The Mall. (See Figure 4) Following is a critical assessment of their proposal:

- The commitment being offered by the HSG for lakefront development at the scale envisioned is welcome news for the City, as they seek to bridge the gap between downtown and the lakefront and develop buildings for multiple uses along the lakefront. The development envisioned north of the Brown's stadium and the Science Center looks particularly promising.
- Lowering Erieside Avenue slightly and bridging the space between the Brown's stadium and the Science Center parking garage seems feasible, as the north end of Erieside is already somewhat entrenched. However, the land bridge seems to be designed for access to the First Energy Stadium and surrounding buildings over destinations to the east, including the Rock and Roll Hall of Fame and the East 9th Street Pier. In addition, several of the buildings depicted in its renderings obscure important site lines from The Mall towards North Coast Harbor, the Great Lakes Science Center and the Rock Hall. If a new stadium is to be built at another location within the City, the existing stadium site would be preferable for taller buildings where they would not obstruct sight lines to the harbor area.
- Perhaps one of the biggest questions related to the HSG concept, in addition to any Shoreway realignments, is how the road network under the land bridge would function. The Land Bridge Improvements Concepts are being developed to help answer these questions. The same can be asked, however, about how a transit center would be incorporated into its design, and how the Convention Center might connect with the stadium and the museums with an enclosed walkway. If Erieside Drive running north-south is covered with a land bridge as depicted in the renderings, the height limitations make any east-west enclosed connections unlikely.



Figure 4: Haslam Sports Group Land Bridge Renderings

Nelson Byrd Woltz, Osborn Engineering, CallisonRTKL, AoDK Architecture

- Design features such as the large oculus in the center of the structure seem unnecessary. Considering the value of open, usable space, such large openings seem wasteful. In addition, why would one want to look down onto railroad tracks or other gray infrastructure when they can do so by looking over the edge of the structure? Unless very small in size, would a view of the convention center windows below be something worth sacrificing valuable space for? Providing light to the convention center windows also seems unnecessary, as the windows face northwards, and lighting could be better accomplished by artificial means, if needed. These types of design features are minimal concerns at this stage of planning however, as the overall redesign and function of the Shoreway and local road network, as depicted in the City of Cleveland's Land Bridge Improvement Concepts, is of more concern.

THE CITY OF CLEVELAND LAND BRIDGE IMPROVEMENTS CONCEPTS, initiated by the prior administration to accommodate the HSG land bridge and buildings renderings, were released in January 2022. In February, the City added another two concept plans. Following is a review and critique of each (See Figures 5 & 6)

Concept A. Concept A1 is a No-Build/Minor Improvements Plan that seeks to improve ADA compliance and accommodate bicyclists. Concept A2 states that it consolidates on and off-ramps between West 3rd and East 9th to remove deficient weave areas. However, as with many planning level studies, the details of accomplishing these goals are not provided. Noted is that Concepts A1 and A2 are not mutually exclusive.

Concept B1 appears to be based on the initial GRC land bridge concept, as a narrow version of the structure angles from The Mall towards the museums to avoid the Shoreway incline to the west. As in Concept A, it *seeks* to improve ADA compliance, accommodate bicyclists, and remove deficient weave areas.

Concept B2 extends a large, square land bridge from City Hall to Erieside Avenue, and from East 9th Street to near the Great Lakes Science Center. It removes the East 9th interchange ramps and extends East 12th from Lakeside Avenue north and creates a new interchange with ramps to/from the Shoreway. This concept seeks to accommodate bicyclists and evaluate impacts to Amtrak and RTA stations. One positive aspect of the concept is that pedestrian and vehicular traffic can interact with each other along the land bridge. Missing is how the structure might connect with and act as an extension of The Mall. More concerning, however, is the loss of access and connectivity along East 9th Street, a critical transportation corridor connecting downtown with North Coast Harbor in a cohesive, linear fashion.

Concept B3 proposes to lower the profile of the Shoreway as it crosses eastbound over West 3rd Street. The lowering of the profile would enable a land bridge to extend nearly straight out from The Mall. This concept is worth exploring further if the resulting increase in slope meets transportation design criteria and determines how it could accommodate a reduced speed limit along the alignment. Concept B proposed by BCC/GRC also envisions lowering the Shoreway at this location, for a second phase of the land bridge that would extend straight out from The Mall.

Concept C removes the Shoreway east of the Lakeside access ramps, diverting traffic along Lakeside and onto West 3rd or East 9th Street, where a new boulevard replaces the Shoreway, part of Erieside Avenue, and North Marginal Road. Excessive traffic would be diverted onto the downtown street networks, and access and safety issues could be significant if needed parking is provided along the boulevard. In addition, the time and costs involved with removing the roadways and at-grade Shoreway, and relocating sewers and other infrastructure while building the new boulevard, may

not be feasible. A new port access road is depicted that separates undesirable truck traffic from the new boulevard. The alignment of the road in relation to existing infrastructure and its link with the Shoreway further east is not yet explained. Of particular concern is how the road's alignment would affect access to a transit center and the Amtrak and RTA rail lines.

Concept D is similar to Concept C except it adds an at-grade intersection with East 18th Street. Although there may be merit in such a connection, whether at-grade or via a bridge above the Shoreway, the feasibility of an extension of East 18th Street is not within the scope of study within this document.

Concept E removes the Shoreway east of the Lakeside Avenue eastbound exit. It forces traffic onto the city street network using Lakeside and East 9th Street to return to the Shoreway to continue eastbound. Westbound traffic would exit East 9th Street before returning to the Lakeside westbound entrance. In addition to the traffic congestion this concept would force on the downtown street network, the drastic decrease in the level of service (LOS) for east and westbound travelers along the lakefront would not likely be acceptable for many greater Clevelanders. The newly opened Opportunity Corridor may have provided some relief of traffic volume along the Shoreway, but the real benefit of the corridor is yet to be determined. Regardless, the potential of a scenic, lakefront drive at a reduced speed, something that has been recognized as an asset in other cities for decades, would be lost entirely. In addition, the decrease of LOS on the Shoreway would incur significant costs of federal funds to the City. The concept plan also lowers Erieside Avenue to allow the land bridge to extend northward over the streets. Although this may be desirable, it also proposes constructing a transit center west of the land bridge without providing details about where and how that might be accomplished.

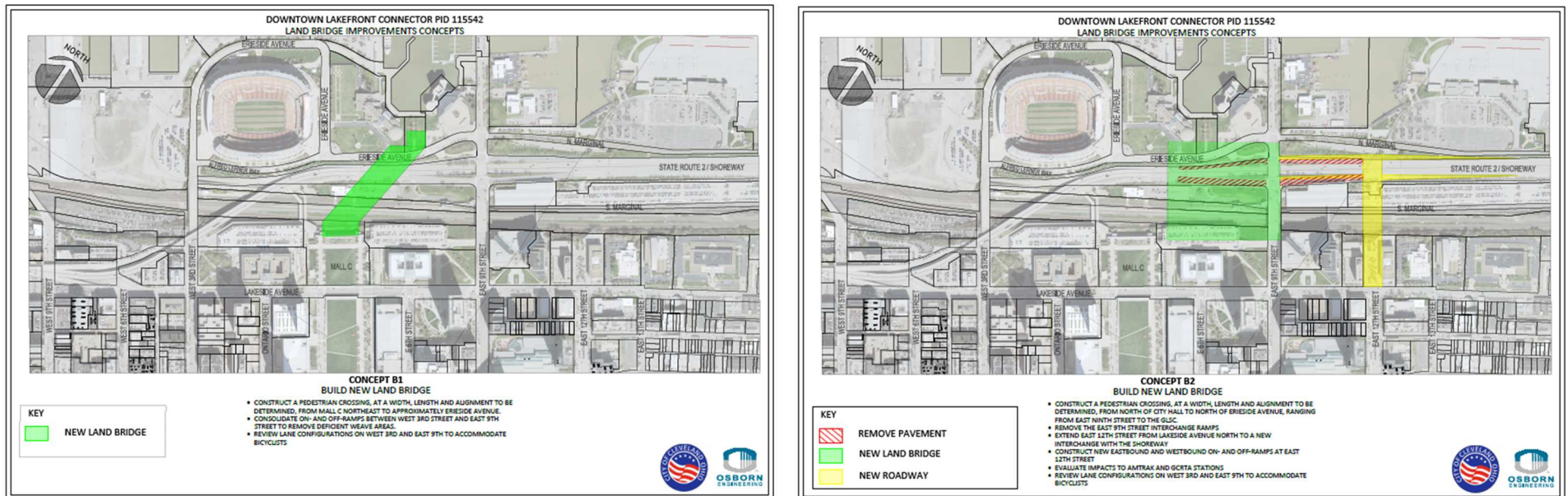


Figure 5: City of Cleveland Land Bridge Improvements Concepts B1, B2

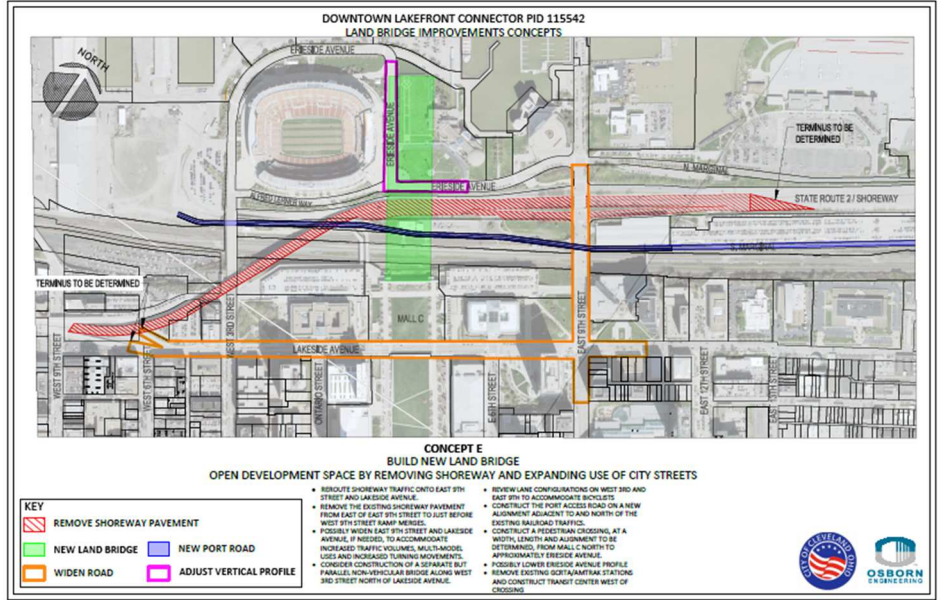
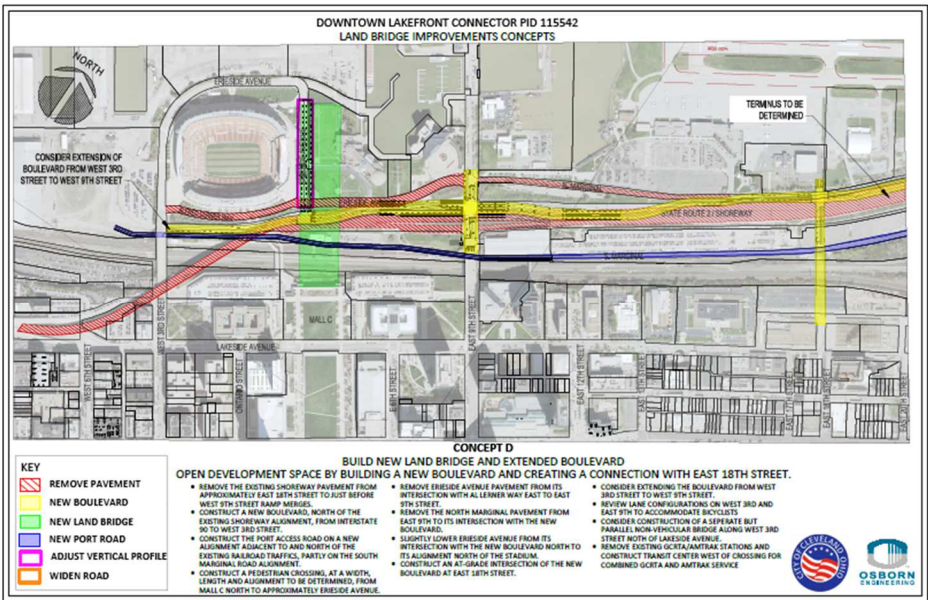
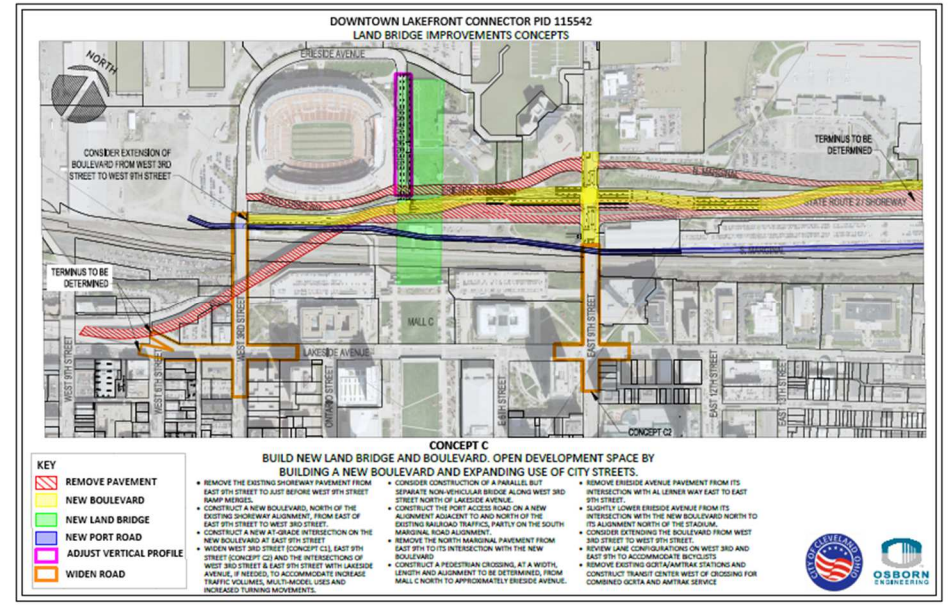
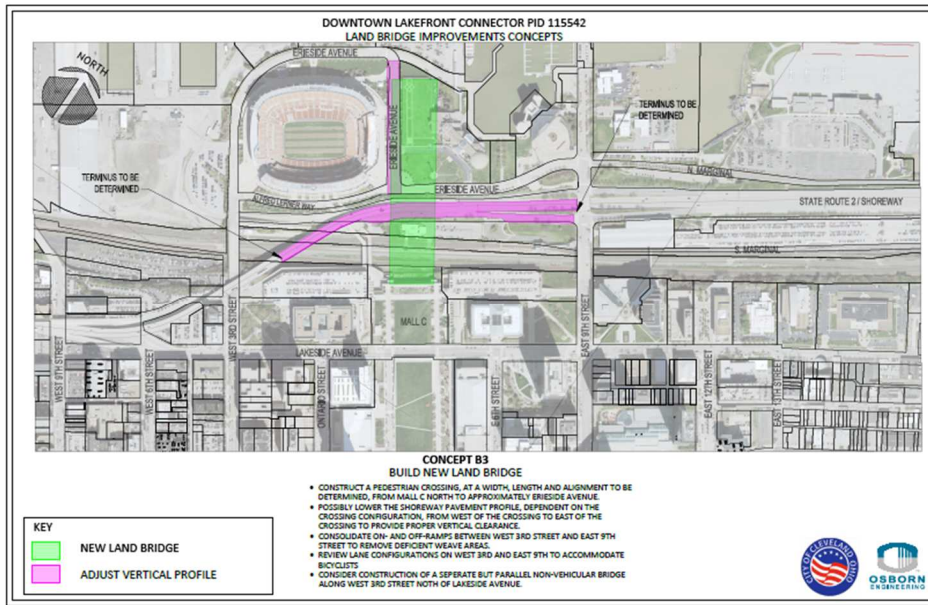


Figure 6: City of Cleveland Land Bridge Improvements Concepts B3, C, D, and E

LAND BRIDGE BASED ON GRC CONCEPT AS A FIRST PHASE OF DEVELOPMENT

If it is determined that the Shoreway should not be removed or altered in its geometrics in a manner that would reduce its LOS, a land bridge based on or similar to the GRC land bridge concept has the advantage of avoiding the existing Shoreway by angling the structure eastward.

The GRC or a similar concept could also be the first of two phases of a land bridge, if rebuilding the Shoreway is to occur based on the lifespan of the existing Main Avenue Bridge. Both phases of the land bridge could be designed, and the new Shoreway alignment determined, before a first phase of the land bridge is built. And, sections of a new Shoreway alignment could be built well before decommissioning the Main Avenue Bridge.

MODIFICATIONS TO GREEN RIBBON COALITION 2017 LAND BRIDGE CONCEPT

- The most recent Rock and Roll Hall of Fame (RRHOF) expansion plan envisions a large amphitheater with adjacent open space between the museums and with the building expansion below-grade. (see Figure 7) The 2017 GRC land bridge concept envisioned a street level Connector Building between the museums based on the City's 2012 Lakefront Plan. An update to the GRC land bridge concept finds the open space leading to the harbor a welcome addition. The RRHOF states that the expansion will connect underground with the GLSC, although it is difficult to see how the connection is made based on the renderings provided. Due to the sloping land towards the harbor, the connecting portion of the expansion is most likely within the southern half of the site.
- The GRC land bridge continues to envision an enclosed walkway to the convention center connecting with the museums, something the RRHOF plan currently lacks. The connection can still be accomplished by removing the earlier proposed at-grade Connector Building and pulling the elevator and stairs southward into a tower at the northern edge of the land bridge. (see Figure 8) The tower would be just large enough to house the stairs and an elevator between the street level, the land bridge above, and the RRHOF museum expansion below.
- The GRC land bridge modification incorporates softer landscape features like flowing water, curving trails, and additional trees
 - Ponds that existed on the hillside below the existing Mall C in the historic Lake View Park are replicated at about 2/3 scale of their original size in a location on the land bridge above almost exactly where they had existed in the late 19th century. A recirculating stream, replicating an historic spring, cascades from a rock garden into the upper, then lower pond. Surrounding the ponds is a naturalized area with native plants. Not shown is how the stream could continue to flow over the north end of the land bridge, then cascade between the museums, on towards a small catch basin at the edge of the inner harbor, where it could be recirculated back up to the ponds.
 - Trails are depicted to extend between the ponds and across the land bridge. Envisioned 10-foot-wide all-purpose trails allow for an ADA-compliant grade of under 5% along their entire lengths. The trails provide additional connections along the land bridge and create a more passive experience without compromising on valuable open space for concerts, gatherings, or recreational activities.
 - One or more fountain(s) could be placed within one of the two large open spaces. However, fountains could obstruct important sight lines and take up valuable open space on the land bridge. It may also be odd placing a formal, upright fountain on a sloping surface. Small, cascading fountains and falls however, could be more appropriate. Also to consider is that a large, stately fountain already exists – the Fountain of Eternal Life on Mall A – that the land bridge could help draw people to from the Harbor area.

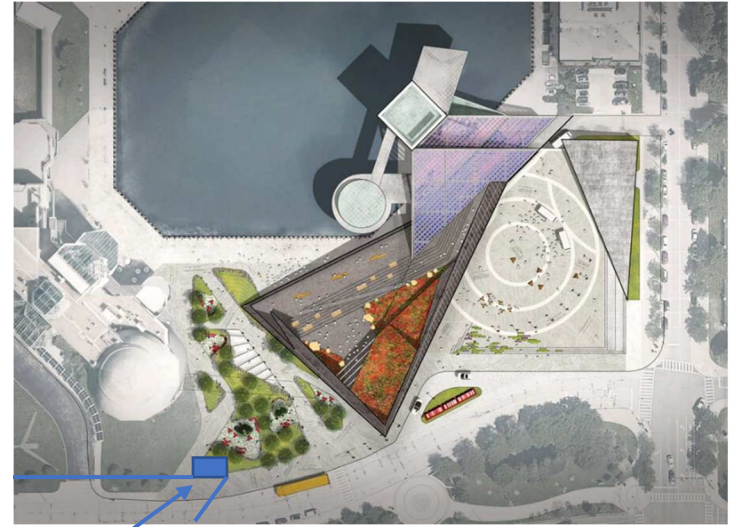


Figure 7: Rendering and concept plan of RRHOF expansion

Practice for Architecture and Urbanism, RRHOF

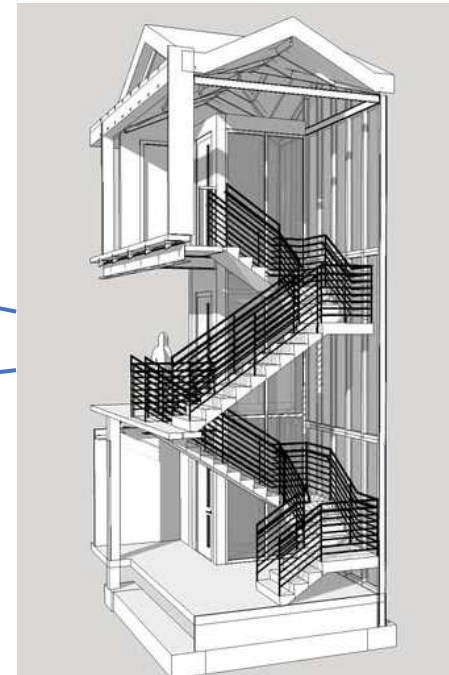


Figure 8: Modified GRC land bridge rendering and example of an elevator/stair tower showing its proposed locations

TRANSIT CENTER: The revised GRC land bridge concept incorporates a Transit Center under the structure. (See Figure 9) Its location and footprint is based on the assumption that the existing rail lines are not significantly changed. Like the GRC land bridge concept, this concept is intended to increase alternatives for further study. Along with other design elements, the Transit Center contains the following:

- A new road network separated from the Shoreway/boulevard with a dedicated access road off of East 9th and/or West 3rd Street. Adjacent to the road is an all-purpose trail for pedestrian, bicycle and other personal mobility options.
- A building of approximately 27,000 square feet vs the existing Amtrak Station at about 8,000 sq. ft. The new building acts as a station for:
 - **Amtrak:** The building extends an enclosed walkway westward to the existing platforms for the trains.
 - **RTA Waterfront Line:** The Greater Cleveland Regional Transit Authority station is moved 300' west from its existing location at East 9th Street, while the W. 3rd station is eliminated.
 - **Bus Terminal:** A small bus terminal is envisioned on the western end of the building.
 - **Car Rentals:** A car rental counter can be stationed within the east end of the building with parking for rental cars and visitors east of the building. The existing South Marginal Road network can be utilized for extra visitor parking or car rental storage by creating a loop using the Shoreway eastbound from East 9th to access the Municipal Parking Lot.
 - **Visitor Parking:** Surface parking is increased from the existing 0.75 acres in the Amtrak Station lot with a capacity of about 65 vehicles, to about 1.75 acres with a capacity of over 150 vehicles. In addition to parking for Amtrak, the lot can be utilized for the RTA station, a bus terminal, and for visitors to the surrounding venues. The potential also exists for a parking garage under the land bridge, that could increase parking capacity. However, such a structure could obscure views from the Convention Center windows.
 - **Storage Areas** for luggage and personal belongings for travelers boarding from the stations or for visitors to the nearby venues.
 - **Retail** for personal needs, and eating and drinking establishments can be housed in the facility.
 - **Access to Surrounding Venues:** Access via an enclosed walkway network and the land bridge above is centralized within the Transit Center. (See Figure 10) An elevator and stairs can transport visitors from the floor level of the transit center to the enclosed, level walkway network 23' above. The enclosed walkways connect to the Convention Center, the Science Center and Rock Hall, and to First Energy Stadium. If it is decided that a new stadium is to be built in another location within the city, an enclosed walkway could be connected to a hotel, retail or other development in the place of the existing stadium.

At the south end of the land bridge, the enclosed walkways connect with the existing stairwell at the Convention Center's Ballroom Level, where it is modified to include an elevator with the stairs, as they extend to The Mall and the land bridge above and to an emergency exit at the transit level below. At the north end of the land bridge, a stair and elevator tower connects the enclosed walkways with the land bridge above, to the street level at Erieside, and to the museums below-grade. (See Figure 11) To learn more about the initial GRC land bridge design, the full document can be downloaded at: greenribbonlakefront.org

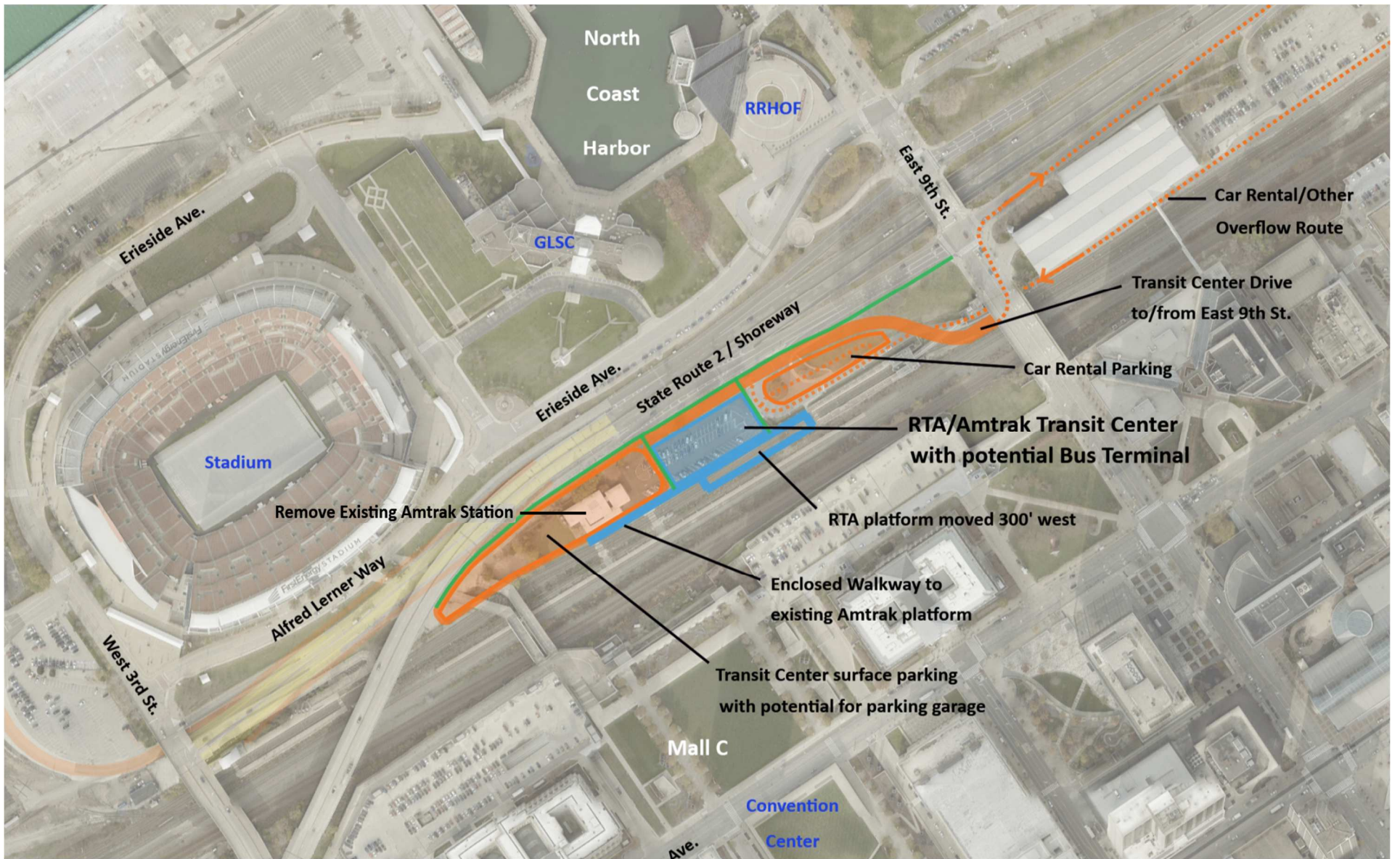


Figure 9: Transit Center Building and Parking

Alternate Deck Configuration

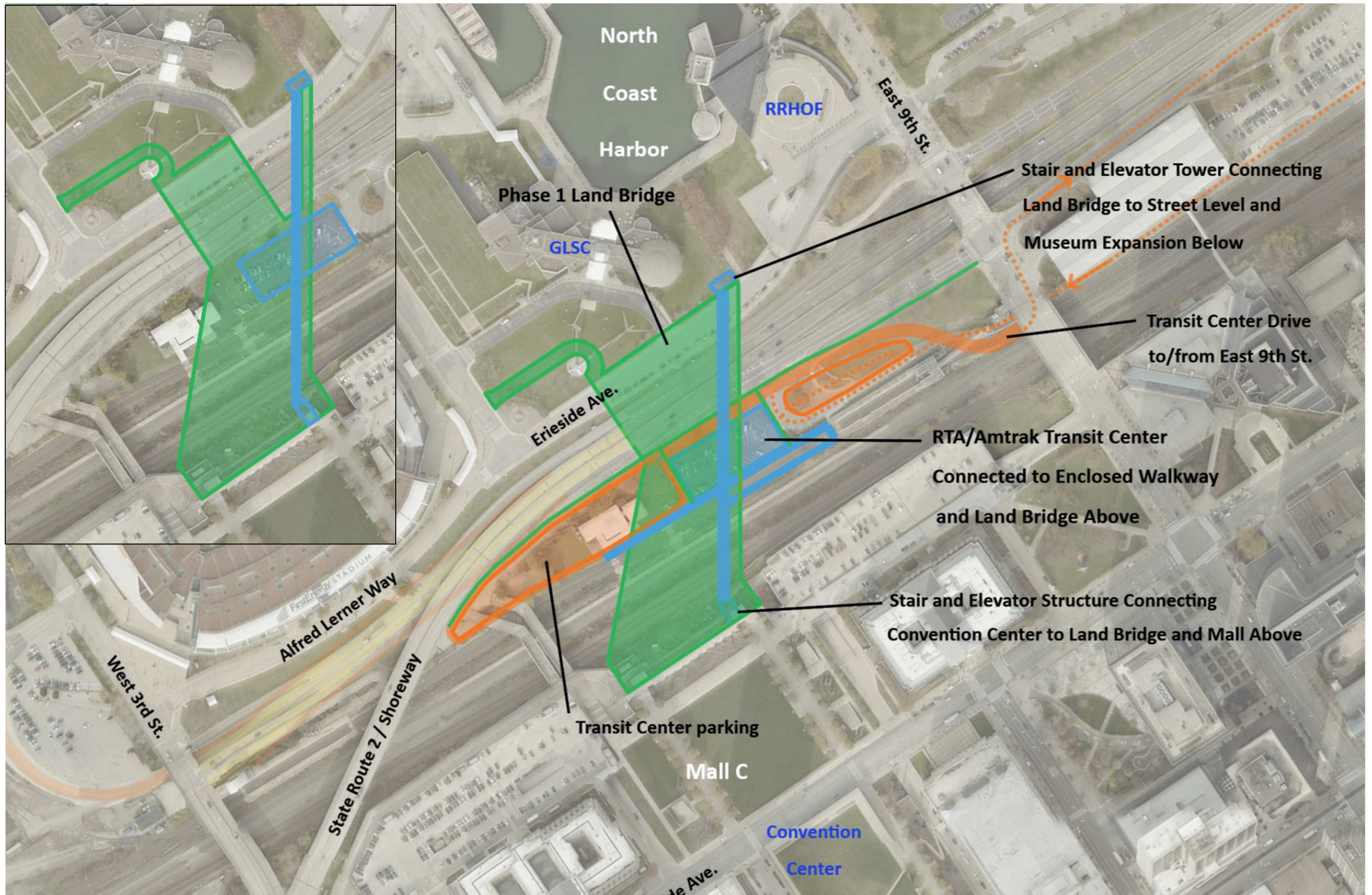


Figure 10: Phase 1 Land Bridge with Enclosed Walkway above Transit Center (Shoreway No-Build / Concept A)

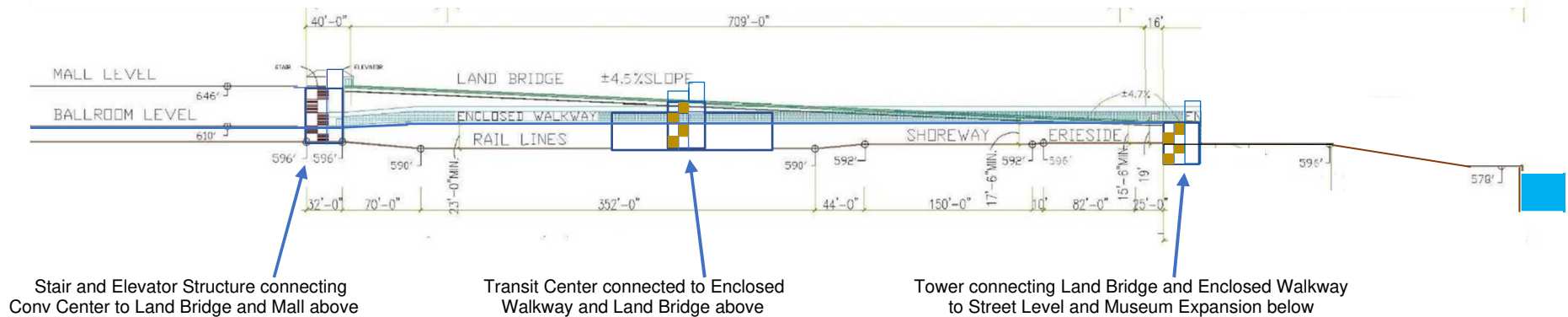


Figure 11: Phase 1 Land Bridge Elevation showing Enclosed Walkway and Access Towers

LAND BRIDGE BASED ON HSG RENDERINGS AS A SECOND PHASE OF DEVELOPMENT

As noted previously, there are positive aspects about the HSG land bridge and adjacent development proposal. However - due to a timeframe that may depend on the lifespan of the existing Shoreway bridge structure, and the benefits of developing a first phase of the land bridge described above - building the land bridge expansion based on the HSG renderings *after* the life-use time for the Shoreway has been expended may be a more feasible approach. The design of the land bridge expansion, however should be determined and incorporated into an overall design before a first phase is built. Planning should also be underway to determine the preferred route and design alternatives for the Shoreway/boulevard while planning and design of both phases of the land bridge are undertaken.

DOWNTOWN / WEST SHOREWAY MODIFICATIONS AND NEW ALIGNMENTS

NEW SHOREWAY / BOULEVARD DESIGN CONSIDERATIONS

- **Traffic studies** need to be performed to better determine the feasibility of any concepts based on traffic patterns and level of service differences. The process that is currently underway should be expanded to consider realignments of the Shoreway beyond the immediate downtown area. The concepts in this document do not recommend an at-grade intersection with East 9th Street. Creating an intersection there, in addition to at West 3rd Street, could significantly reduce the LOS of the Shoreway. The LOS will also determine the speed and design of the roadway, in a range of use designations - from a limited access freeway - to a boulevard with one or more at-grade intersections. Considering the undetermined design of the roadway at this concept planning level, the use of both terms *Shoreway* and *Boulevard* are used within this document.

- Main Avenue Bridge design flaws:** The 1939 structure is a cantilevered truss bridge of the type that has proven to have serious design flaws. Although repairs to extend the life of the structure have been made in recent years, according to the Ohio Department of Transportation, the remaining life expectancy of the bridge is estimated to range between 10-30 years. At that point, costs to repair the structure could exceed replacement costs. Therefore, planning should begin soon to determine if the main truss span (See Figure 13) should be rebuilt or if a new alignment of the bridge should be studied. Building a new bridge to replace the existing structure can allow for improved design standards in addition to providing a safe and extended lifespan compared to continuing with repairs and upgrades of the existing structure. Despite its design flaws, the bridge is an attractive and historic structure worth preserving and repurposing. In 2021 the bridge was designated as a National Historic Civil Engineering Landmark.
- New Shoreway/boulevard and bridge construction:** To be determined is the type of construction that might be considered for a new bridge or series of bridges, depending on the concept or combination of concepts chosen. The simplest and most inexpensive type of bridge is a beam or “girder” bridge. In addition to cost savings, a girder bridge would not distract from existing bridges of character crossing the Cuyahoga River, such as the vertical lift railroad bridge known as Bridge #1, also known as “The Iron Curtain”. Or the bright blue Main Avenue Bridge itself, with its 10 continuous-cantilever deck trusses. The biggest challenge to a new Shoreway realignment, however, will remain its costs, as most of a new structure would need to be elevated in some manner along its entire length. In Concepts G & H, for example, the height would vary from a minimum 20 feet or so to allow vehicular or rail traffic to pass under it near either end, to a nearly 100-foot clearance required over the Cuyahoga River and the Old River Channel. Since the realigned Shoreway will be elevated for nearly all its length, the concept plans in this document envision the roadway with 2 lanes and a right-hand shoulder for emergency use in each direction, divided by a concrete barrier.

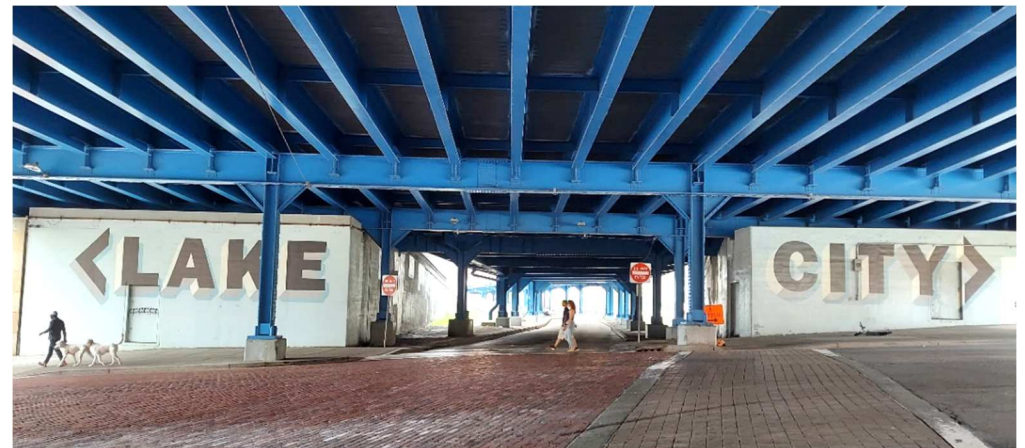


Figure 12: Views from under the Main Avenue Bridge at West 9th Street, uphill from the Flats East Bank

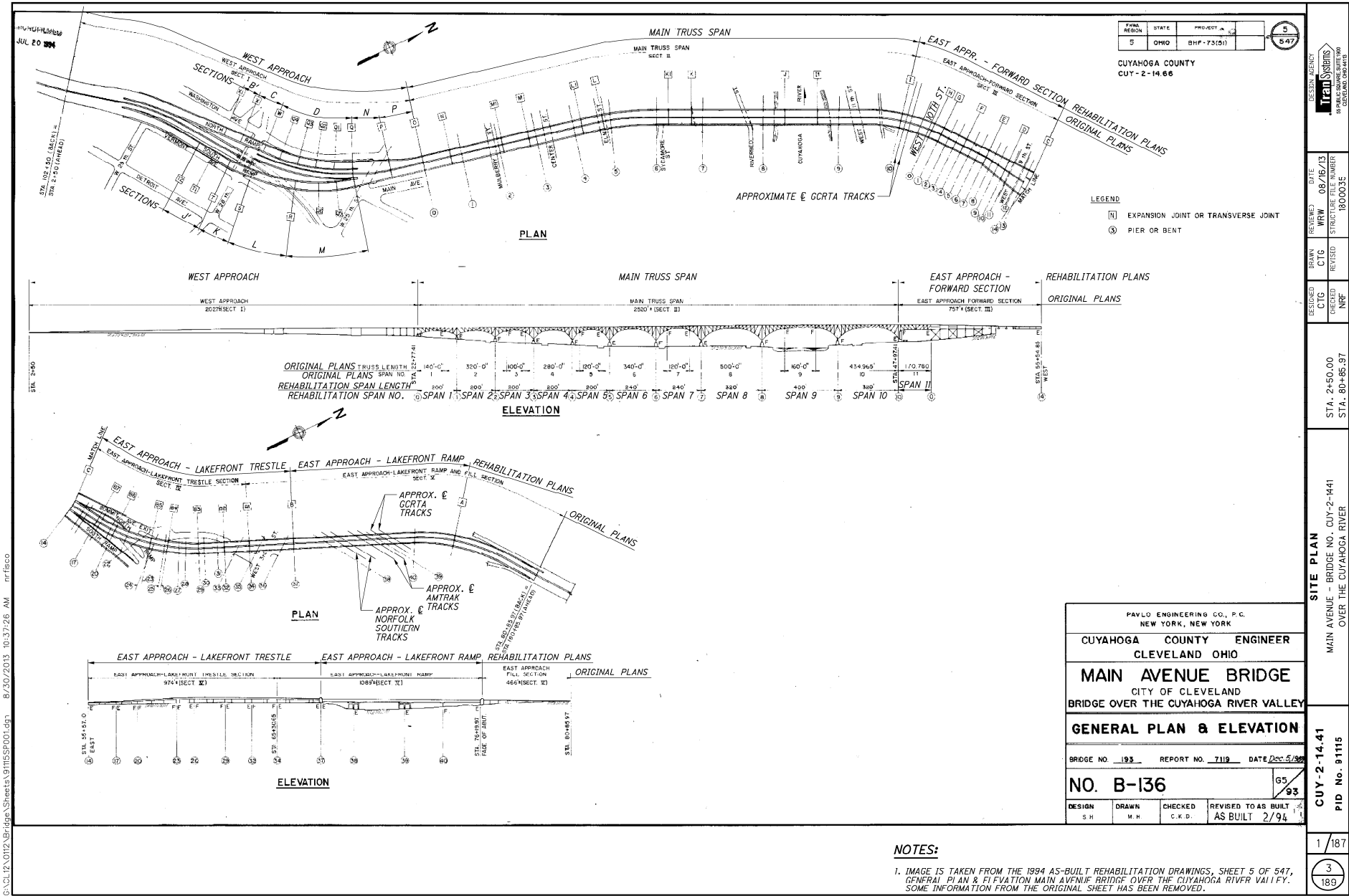


Figure 13: General Plan & Elevation of Main Avenue Bridge

CONVERTING MAIN AVENUE BRIDGE INTO AN ELEVATED PARK

- Examining alternate alignments for a new bridge provides an opportunity to save on costs for demolition while repurposing the historic bridge structure into an attractive, elevated greenway with all-purpose trails. Elevated parks created elsewhere out of abandoned railroads or highways include the Promenade Plantee in Paris, the High Line in New York City, and the Skypark or Skygarden in Seoul, Korea. (See Figures 20 & 21) The Skygarden, like Cleveland's Shoreway, was an elevated highway before its conversion into a park.
 - As the Shoreway/boulevard realignment Concepts D thru K progress westward, the potential length of an elevated park expands, providing increasing environmental, social, and economic opportunities. Abandoned ramps on each end are envisioned for emergency and maintenance vehicle access, and for pedestrian, bicycle, and other personal-mobility options. An elevated greenway could connect and improve the quality of life for residents in the adjacent neighborhoods, from the Warehouse District downtown to the Lake View Terrace housing complex in Ohio City and other residential areas along, and to the south of Detroit Avenue.
 - A converted Shoreway or "Shore Line" could also become a regional, national and international tourist destination as it connects Cleveland's Downtown, The Mall, the Convention Center, the new Land Bridge, the Transit Center, and the North Coast Harbor area with the East and West Banks of the Flats, the Cuyahoga River Valley and the Towpath Trail, the Ohio City and Detroit Shoreway neighborhoods, the Lakefront Bikeway, and Edgewater and Wendy Parks. The underside of the bridge *itself* could be considered an attraction, particularly along Main Avenue, up the hill from the Flats East Bank. (See Figure 12)
 - At a width of between 43 - 87', the park could provide development opportunities *adjacent to* as well as *on top* of the structure. With the structure carrying relatively static vs dynamic loads, the lifespan of the bridge could be significantly increased. Planters, trellises, art installations, water features, kiosks, exercise equipment, chairs, benches, tables, and other fixtures could be installed along the elevated structure. Existing and new buildings could be connected directly adjacent to or even over the structure. Developable public and private parcels west of the Downtown Lakefront area where vacant or parking lots exist are identified in the concept plans.
 - The greenway could become a model for sustainable, adaptive reuse. Due to the curvature of the deck for drainage, the structure could also capture, infiltrate and transpire stormwater runoff along its length through the use of green infrastructure along the center and outer edges.

DOWNTOWN LAKEFRONT SHOREWAY ACCESS AND ROADWAY OPTIONS

- **Shoreway access roads:** Shown in Figure 14 is how the dangerous weave area is eliminated where westbound Shoreway traffic exits for West 3rd or the Port Authority by diverting westbound traffic from East 9th to West 3rd before entering the Shoreway. Not shown is how a similar weave situation can be eliminated for eastbound traffic from West 3rd. Also not shown is how the eastbound Port traffic lane could merge with the Shoreway from the left, vs the right lane merge that is illustrated.
- **Transit Center Drives:** Two options are illustrated for Transit Center Drives. In option 1, a separate access road to the proposed Transit Center from East 9th could be signalized without significantly affecting traffic flow. Option 2 shows a drive at West 3rd. A Transit Center Drive would make more sense located at East 9th than near an at-grade intersection at West 3rd, where a traffic signal could restrict cross traffic during rush-hour. However, both options 1 and 2 could be built, increasing access to and from the Transit Center. (See Figure 14)

- Front Avenue extension:** Option 3 is illustrated as an 1100' extension of Front Avenue from West 9th to West 3rd Street. An extension of Front Avenue could significantly increase access from the Shoreway West 3rd ramps or intersection to the Flats East Bank. It could also open up development opportunities along the new roadway. Adjacent to the Front Avenue extension and the Transit Center Drive options is an all-purpose trail connecting the East Bank of the Flats with West 3rd Street, the elevated park, the Transit Center, and East 9th Street.

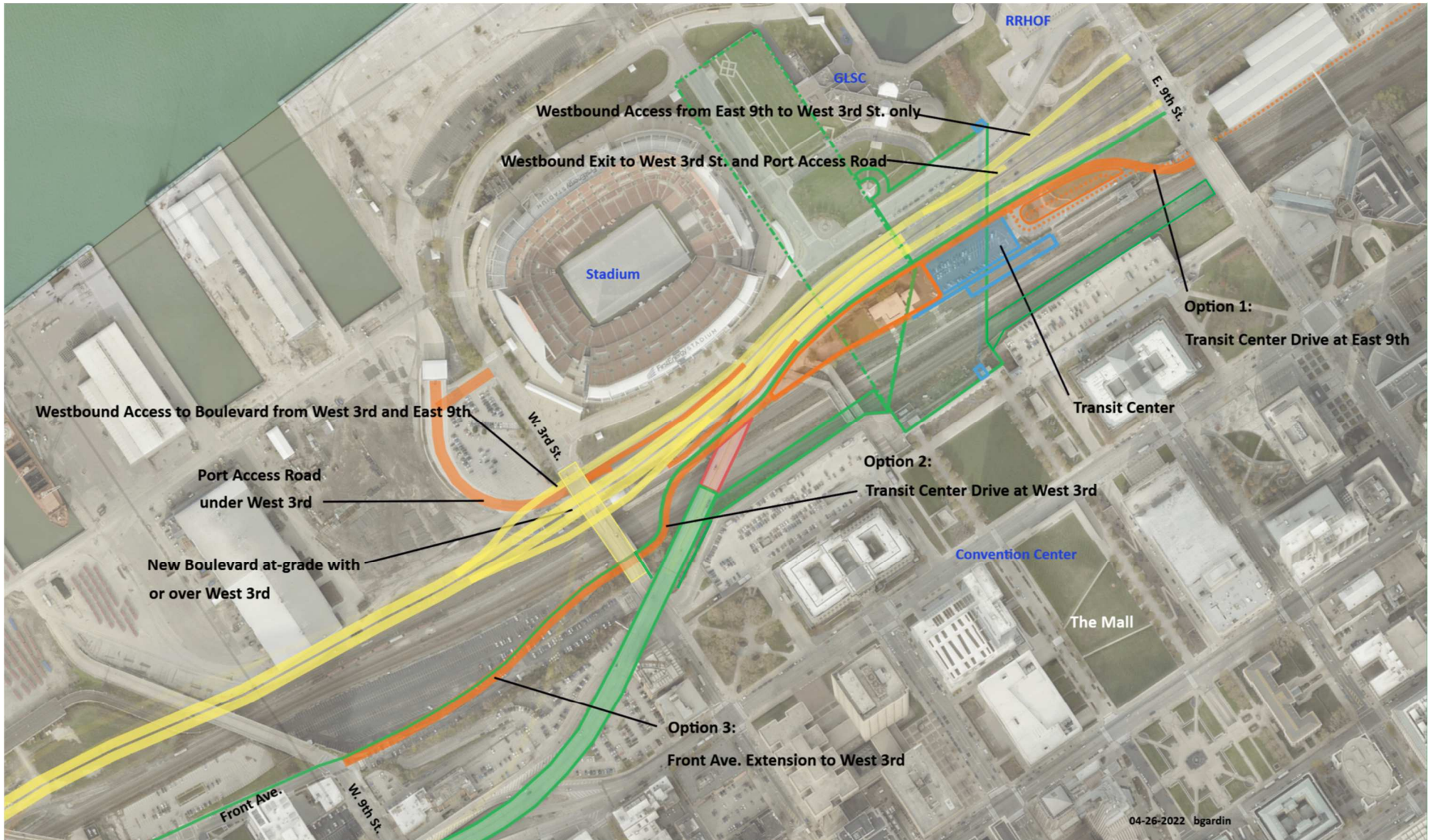


Figure 14: Downtown Lakefront Shoreway Access and Roadway Options

SHOREWAY / BOULEVARD CONCEPT ALTERNATIVES

The following Shoreway/Boulevard Concept Alternatives (See Figure 15) work in combination with the proposed Land Bridge Phases 1 & 2, Transit Center, and Downtown Lakefront Shoreway Access and Roadway Options



Figure 15: Overview of Shoreway Concept Plan Alternatives

CONCEPT A: SHOREWAY NO-BUILD

- Build new Transit Center based on or similar to the above concept
- Build land bridge based on or similar to the GRC concept extending the Mall to the Harbor area, angled to the east to avoid Shoreway incline to the west, with enclosed walkway connecting the Transit Center with the Convention Center and the Museums. (See Figure 10)
- In Concept A there are minor changes to the surrounding street network but no changes to the Shoreway's profile or alignment. The land bridge in Concept A could be built alone, or act as a first of two phases of a land bridge, depending on any changes to the Shoreway.

CONCEPT B: LOWER SHOREWAY PROFILE EAST OF WEST 3RD

- **Concept B-1** is the same as Concept A but with the Shoreway profile lowered east of West 3rd Street to allow a second phase expansion of the land bridge and buildings based on or similar to the HSG renderings. (See Figure 16) The Shoreway grade would increase from about 4% to about 5%. To be determined is if this increase would exceed transportation design standards relative to LOS and speed limitations.
- **Concept B-2** lowers the Shoreway profile east of W. 3rd as in B-1 but also rebuilds the remaining east approaches and the entire cantilevered truss span in their current alignment, beginning on the west bank of the Flats. (See Figure 18) For Concepts B, C, and D, re-examining the feasibility of at-grade intersections at W. 45th and W. 54th Streets could also be considered.

CONCEPT C: REALIGN SHOREWAY EAST OF WEST 10TH

- Build land bridge as a first phase based on or similar to the modified GRC Land Bridge concept and the Transit Center concept.
- **Concept C-1** rebuilds the Shoreway east of W. 10th St. in an alignment to allow for an at-grade intersection at W. 3rd St., similar to what was proposed in the City's 2004 Waterfront District Plan. Doing so lowers the profile of the Shoreway to under 2% as it proceeds eastward under the land bridge, allowing for the land bridge to be built straight out from The Mall in a later phase. However, avoiding existing Warehouse District buildings would require a grade of about 5.5% west of W. 3rd, steeper than the existing 4% grade east of W. 3rd. An intersection at W. 3rd would provide greater access to the Warehouse District and the Flats than E. 9th Street. (See Fig. 17) A signalized at-grade intersection at W. 3rd can be timed to allow unimpeded traffic flow along the new Shoreway alignment during rush-hour traffic, while full access to downtown and the lakefront could remain via E. 9th Street. As an alternative to an at-grade intersection at W. 3rd, access ramps could be built there while the Shoreway is *bridged over W. 3rd*, lessening the grade *west* of W. 3rd but increasing it to about 5.5% *east* of W. 3rd St.
- A full interchange at Lakeside between W. 9th and W. 3rd could also be explored. However, building one in the heart of the Warehouse District could be intrusive and unwelcoming. Removing the Lakeside eastbound exit in C and later concepts decreases traffic conflicts along Lakeside near W. 6th. (See Figure 17) It also allows the possibility of restoring two-way traffic along Lakeside from W. 4th to W. 9th St.
- **Concept C-2** rebuilds the Shoreway as in C-1, as well as the remaining east approaches and the entire cantilevered truss span in their current alignment, beginning on the west bank of the flats (See Figure 18)
- Build Land Bridge expansion and buildings based on or similar to the HSG renderings.

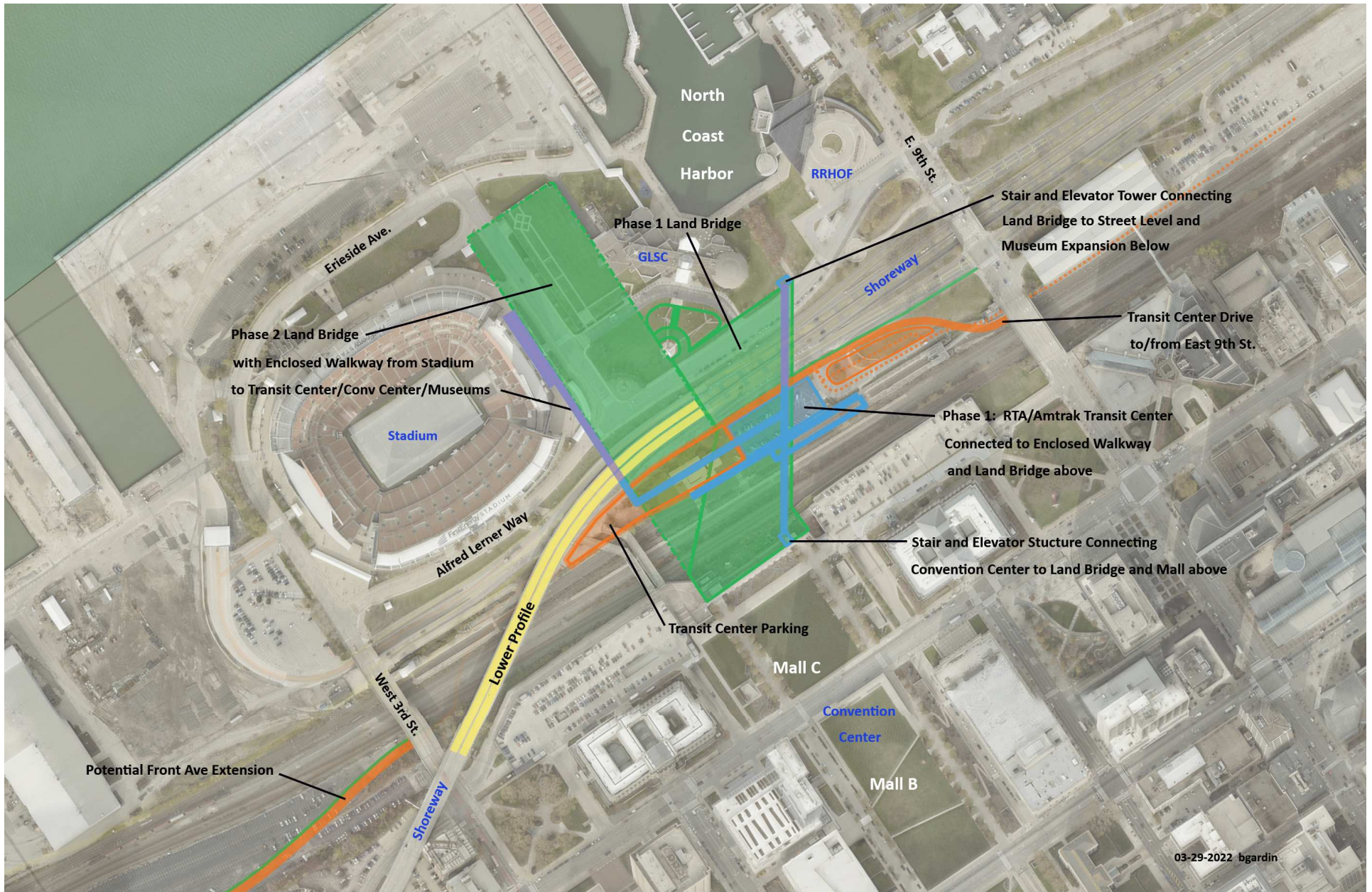


Figure 16: Concept B

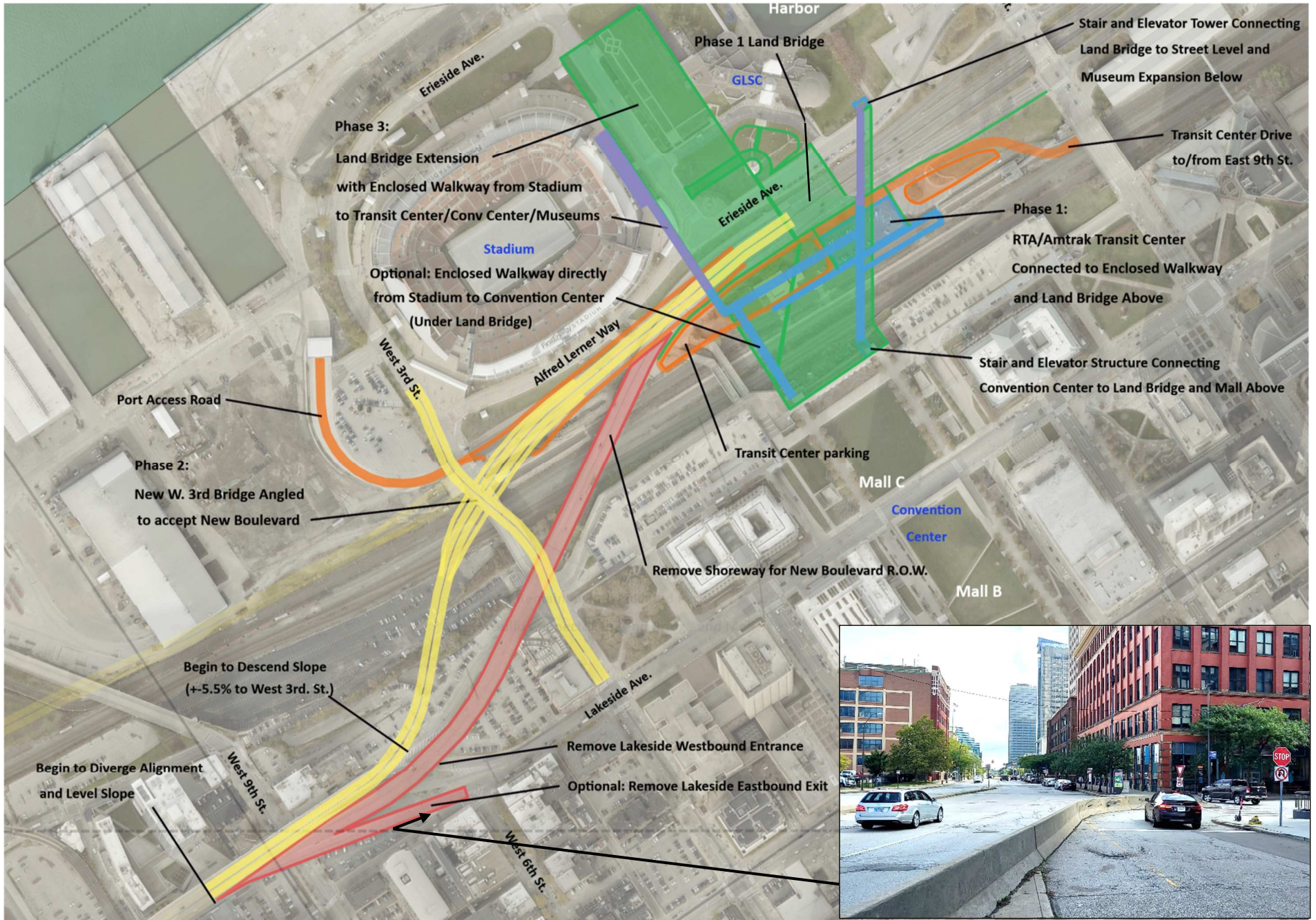


Figure 17: Concept Plan C.

Existing view looking east from Lakeside towards W. 6th

CONCPET D: RE-BUILD SHOREWAY EAST OF WEST BANK

- Build land bridge as a first phase based on or similar to the modified GRC Land Bridge concept and the Transit Center concept.
- Construct new bridge diverging NE from Elm Street on the Flats West Bank, over the river to intersect with or cross over West 3rd Street. This alternative replaces the entire cantilevered truss structure. (See Figure 18) The alignment tries to avoid existing buildings and follow public ROWs as much as possible. The height of a new bridge would need to allow 96' of clearance over the river.
- Convert abandoned Shoreway/bridge into an elevated greenway. The length of the park from the land bridge to near Elm Street is 4200' or about 0.8 mile. To access the park from the Warehouse District, the westbound entrance from Lakeside Avenue is modified for pedestrian and bicycle access, and for emergency and maintenance vehicle access. (See Figure 19) In the Flats, elevator/stair towers at a height of about 100' each are built on the East and West banks to take pedestrians between the street and the elevated park levels. (See Seattle waterfront 45' elevator/stair tower example in Figure 19)
- Build Land Bridge expansion and buildings based on or similar to HSG renderings.



Figure 18: Beginning of main truss span is shown at left, where its replacement with a new bridge could begin per Concepts B-2, C-2, or D



Figure 20: The High Line – New York City

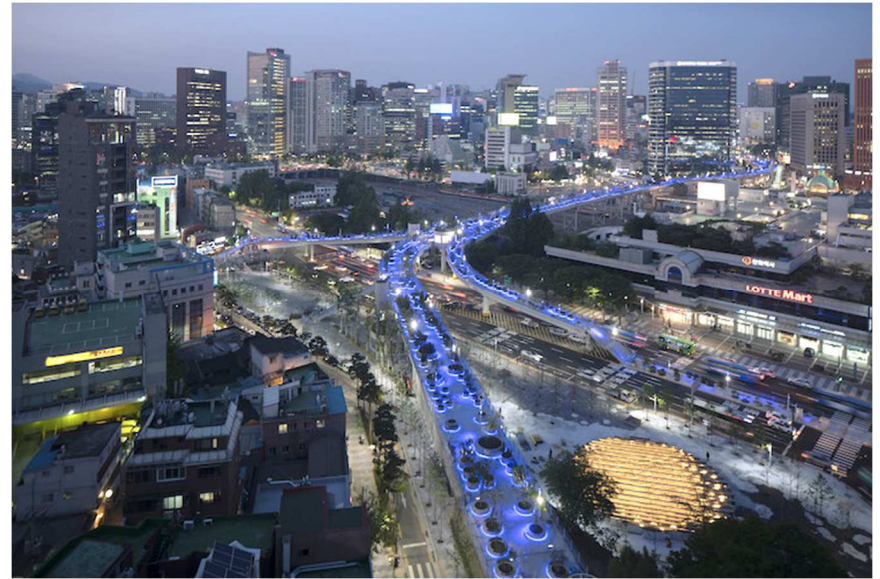


Figure 21: The Skygarden – Seoul, Korea

CONCEPT E

- New Shoreway alignment diverging northeast between water treatment plant and CMHA housing, following or adjacent to River Road before crossing the Cuyahoga River and intersecting with or crossing over West 3rd Street. (See Figure 15) Benefits include avoiding critical infrastructure (water treatment plant) and the potential to provide truck access along River Road.
- Dropped from further study due to proximity to CMHA housing and need to build over or adjacent to public roads.

CONCEPT F

- New Shoreway alignment diverging east of the Norfolk Southern Railroad bridge near West 58th Street, following or adjacent to Division Avenue and River Road before crossing the Cuyahoga River and intersecting with or crossing over West 3rd Street. (See Figure 15) Benefits include avoiding CMHA housing and the potential to provide truck access along River Road.
- Dropped from further study due to proximity to critical infrastructure (water treatment plant) and need to build over or adjacent to public roads

CONCEPTS G & H: RE-BUILD SHOREWAY ACROSS WHISKEY ISLAND

- Build Land Bridge as a first phase based on or similar to the modified GRC Land Bridge concept and the Transit Center concept.
- Construct new Shoreway diverging NE of the NS Railroad bridge near W. 58th Street, across Whiskey Island. (See Figure 15) Concept G is routed **south** of the RR bridge over the river to intersect with or cross over West 3rd Street. Concept H is routed **north** of the RR Bridge.
- Concepts G & H allow the building of an interchange on Whiskey Island to divert eastbound Shoreway truck traffic away from neighborhoods
- Convert the abandoned Shoreway into an elevated greenway. (See graphic renderings in Figures 32-35) Per Concepts G & H, the elevated park increases in length to 1.38 miles, from The Mall and land bridge westward, to where the structure meets at ground level and connects with the Lakefront Bike Trail near West 32nd Street. In comparison, New York City's High Line is 1.45 miles long. If the elevated park includes the land bridge and is extended to East 9th Street (See Figure 14) its length increases to 1.62 miles.
- Build Land Bridge expansion and buildings based on or similar to the HSG renderings.

CONCEPTS G & H: EAST SECTION

- **Concept G** is routed **south** of the Norfolk Southern Railroad Vertical Lift Bridge. This alignment does not impede on Wendy Park. It does however, encroach above the Flats East Bank where development has occurred in recent years. It would also obscure the views from the south of the iconic railroad lift bridge, also known as the *Iron Curtain*. (See Figure 22) Over 12 acres of private parcels adjacent to the elevated park (shown in red) could become development opportunities.
- **Concept H** is routed **north** of the Norfolk Southern Railroad Vertical Lift Bridge. It would not encroach above the Flats East Bank, or obscure views of the railroad lift bridge. It would encroach only on a small part of Wendy Park, over 60 feet above the connector trail bridge.

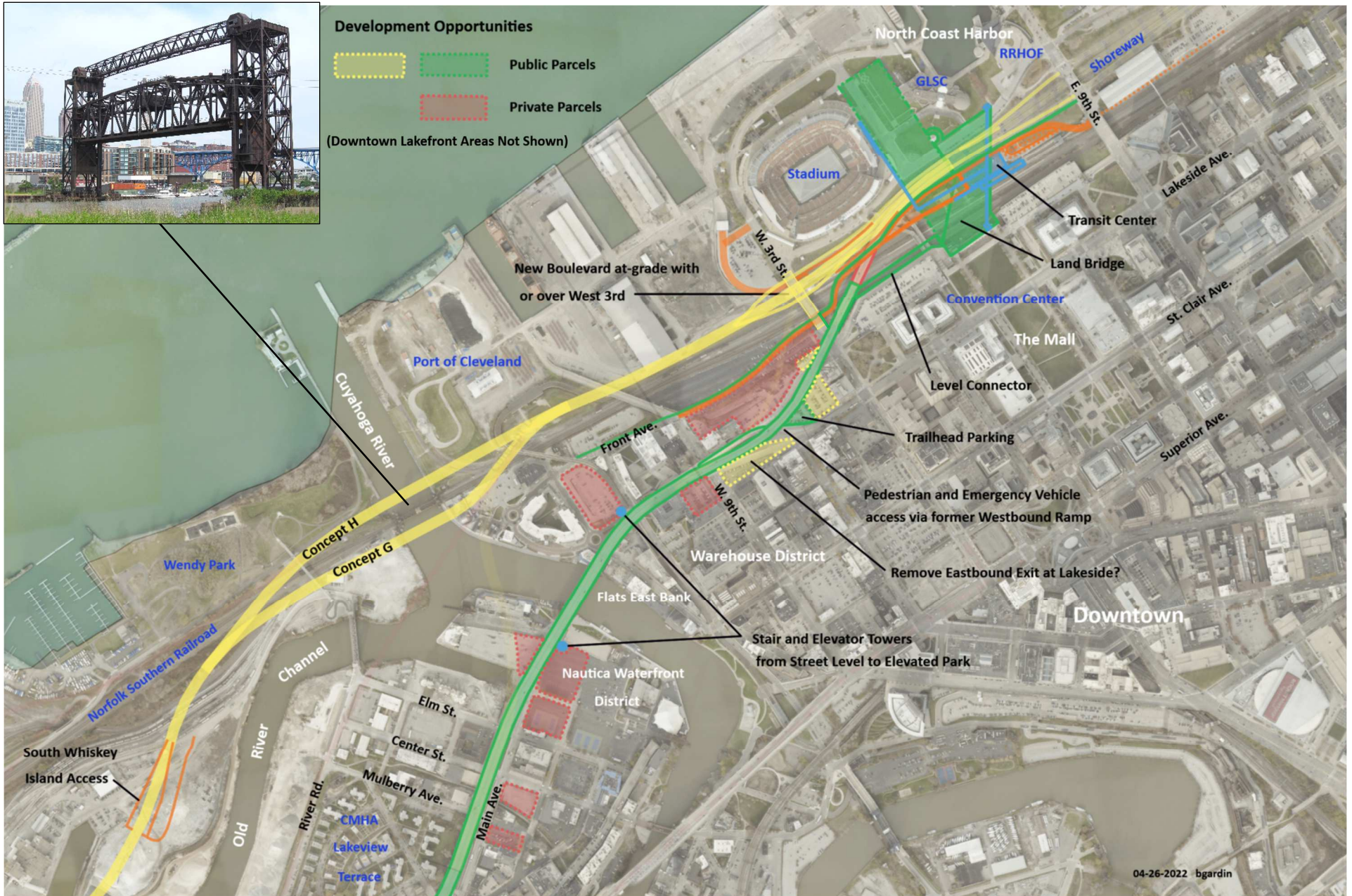


Figure 22: Concepts G & H – East Section, with inset photo of Cuyahoga River Bridge #1

SOUTH WHISKEY ISLAND TRUCK ACCESS: The City of Cleveland has in recent years sought to determine the best way to divert South Whiskey Island truck traffic away from adjacent residential areas, particularly the CMHA Lakeview Terrace apartments. Truck traffic from the salt mines and stone storage facilities has had considerable safety and environmental impacts through audible, visual, exhaust and dust pollution. In 2019 the city hired engineering firm AECOM to study alternative routes for Whiskey Island truck traffic. Of the nearly 40 options studied, Alternative 33 gained the most favor, as it routed truck traffic to the Shoreway via West 45th Street with a new, high-level bridge across the Old River Channel. (See Figure 23) The alternative was later dropped due to the significant loss of Level of Service along the Shoreway that would result.

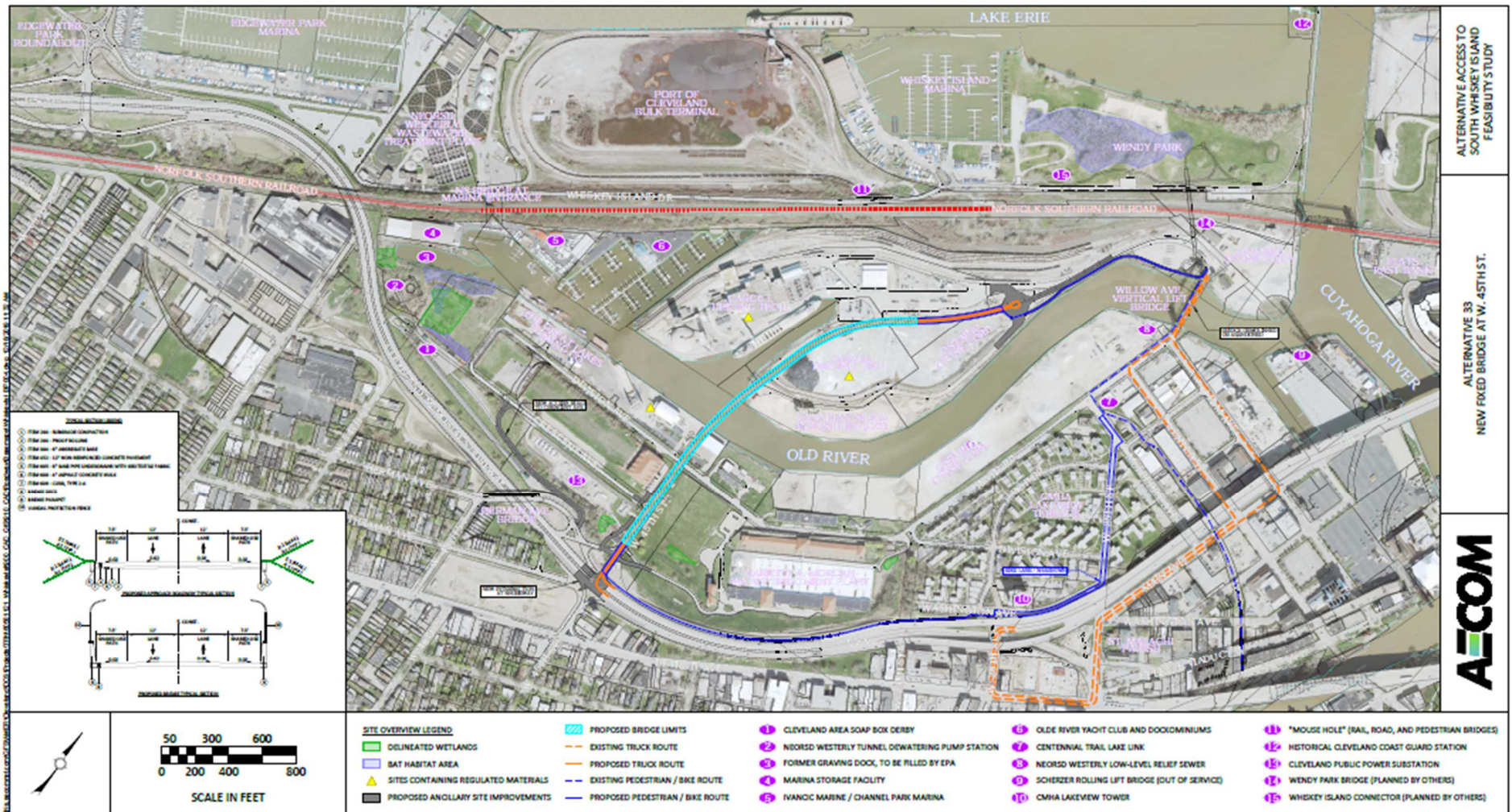


Figure 23: South Whiskey Island Feasibility Study - Alternative 33

This study proposes a partial interchange on South Whiskey Island per Concepts G & H while considering that the Willow Street Vertical Lift Bridge is upgraded or re-built, either at its existing location or somewhere further west. Since the bulk of truck traffic from Whiskey Island currently travels eastbound on the Shoreway via the West 28th Street ramp, a partial interchange on Whiskey Island would divert that traffic away from the local street network and residential areas. Local truck, vehicular, bicycle, and pedestrian access to/from South Whiskey Island could continue to be provided via an upgraded or replacement of the Willow Avenue lift bridge. (See Figure 24)



Figure 24: South Whiskey Island Interchange and Local Access

CONCEPTS G & H: WEST SECTION – OPTIONS 1-4

Option 1: Construct Shoreway diversion just east of the NS railroad bridge with vehicular access to remain eastward to/from West 45th and 25th Streets. An alignment diverging to the east of the Northeast Ohio Regional Sewer District (NEORSD) Westerly Tunnel Pump Station could also be explored. (See Figure 25)

- Traffic to/from the East Shoreway would need to gain access from either West 3rd or West 73rd Streets. This option would be preferable to diverting all Shoreway traffic onto downtown streets as envisioned per several Cleveland Improvements Concepts.
- Convert abandoned Shoreway into elevated park from The Mall/land bridge to West 28th Street.

Option 2: Construct Shoreway diversion east of the NS railroad bridge with vehicular access to remain eastward to/from West 45th Street only. (See Figure 26) This option would expand greenspace and development opportunities further westward than Option 1 but eliminate access to/from West 25th Street.

- As in Option 1, traffic to/from the East Shoreway would need to gain access from either West 3rd or West 73rd Streets. This option would *also* be preferable to diverting all Shoreway traffic onto downtown streets as envisioned per several Cleveland Improvements Concepts.
- Convert abandoned Shoreway into elevated park from The Mall/land bridge to West 32nd Street.

Option 3: Construct Shoreway diversion east of the NS railroad bridge with vehicular access to remain eastward to/from West 45th and 25th Streets, as in Option 1. Build interchange for access from/to the East Shoreway to/from West 45th and 25th Streets. (See Figure 27)

- The interchange allows access to/from the East Shoreway that would be lost in Options 1 & 2. For details about the interchange see Figures 28-30.
- Convert abandoned Shoreway into elevated park from The Mall/land bridge to West 28th Street.

Option 4: Construct Shoreway diversion east of the NS railroad bridge with vehicular access to remain eastward to/from West 45th Street only, as in Option 2. Build interchange for access from/to the East Shoreway to/from West 45th Street only. (See Figure 31)

- The interchange allows access to/from the East Shoreway that would be lost in Options 1 & 2. For details about the interchange see Figures 28-30.
- Convert abandoned Shoreway into elevated park from The Mall/land bridge to West 32nd Street.

Alternate Alignment



Figure 25: Concepts G & H – Option 1



Figure 26: Concepts G & H – Option 2



Figure 27: Concepts G & H – Option 3

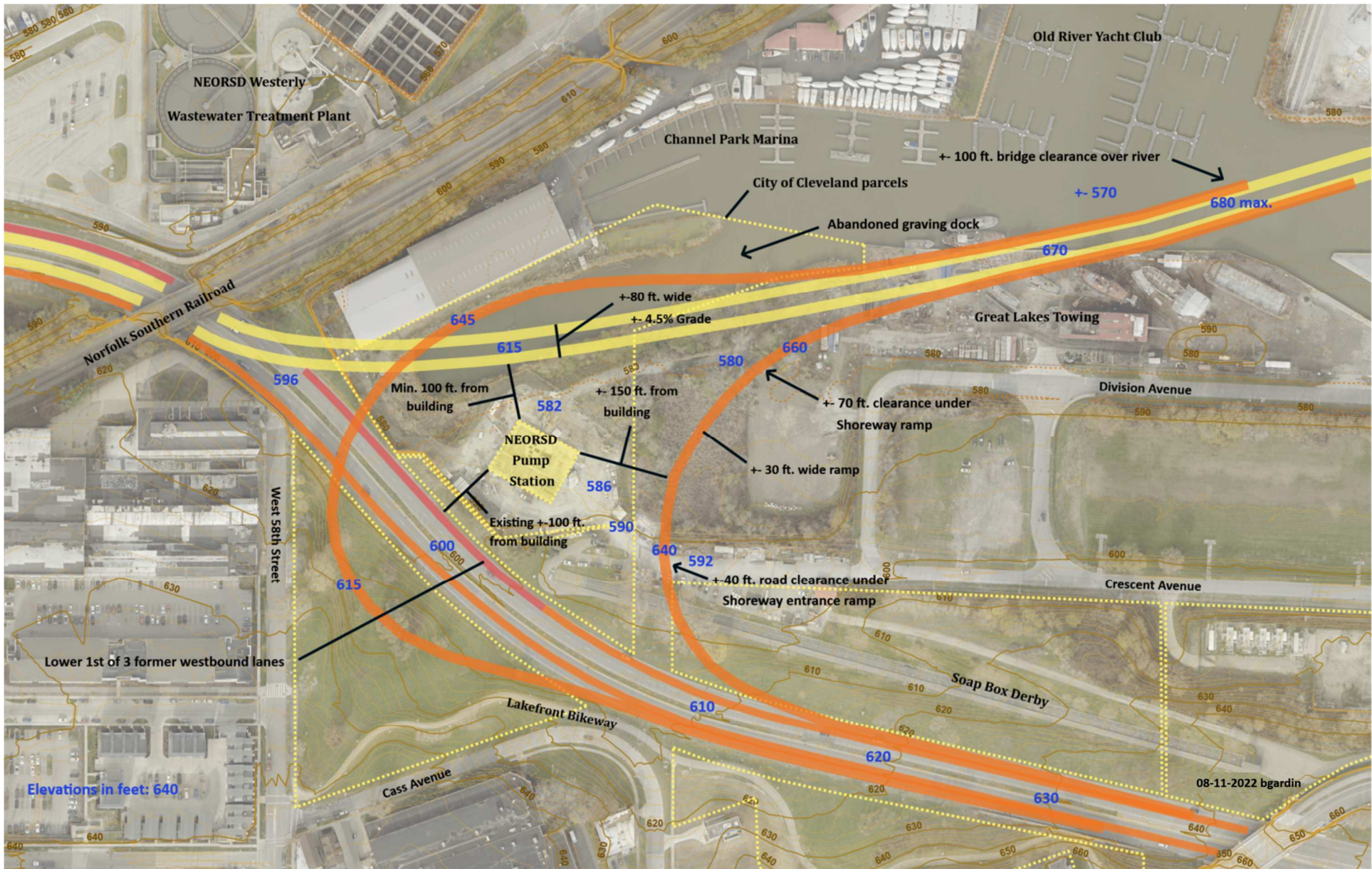


Figure 28: Concepts G & H - Options 3 & 4: East Shoreway Diversion & Access Ramp Details



Figure 29: Concepts G & H - Options 3 & 4: Approx. location of westbound exit ramp to West 45th and 25th Streets



Figure 30: City owned, abandoned graving dry dock where Concepts G & H diverge from existing Shoreway alignment



Figure 31: Concepts G & H – Option 4

CONCEPT I

- New Shoreway alignment diverging just east of the Norfolk Southern railroad bridge near West 58th Street, over the marinas, north of the railroad bridge over the Cuyahoga River, and intersecting with or crossing over West 3rd Street. (See Figure 15) Benefits include extension of elevated parkway to W. 32nd Street; avoids public housing and critical infrastructure.
- Dropped from further study due to tight geometrics from near West 58th eastward over the Old River Channel, proximity to the marinas and Wendy Park, and lack of opportunity for South Whiskey Island truck access.

CONCEPT J

- New Shoreway and bridge diverging east from near West 65th Street, across Whiskey Island north of railroad bridge over the Cuyahoga River, and intersecting with or crossing over West 3rd Street. (See Figure 15) Benefits include an alignment straight across Whiskey Island, lessening impact to neighborhoods; easier to navigate, and provides shoreline views.
- Dropped from further study due to proximity to critical infrastructure (sewage treatment plant) proximity to the marinas and Wendy Park, and lack of opportunity for South Whiskey Island truck access.

CONCEPT K

- **Concept K-1** abandons the Shoreway from West 25th to West 3rd Street. Does not build Shoreway replacement. Uses street network between West 25th and West 3rd Streets to gain access to East and West Shoreway. Same as Concepts G & H Option 1 but without Shoreway diversion. (See Figure 25) Benefits include significant savings over other Shoreway alternatives in cost of rebuilding of new bridge structures over the valley. The land bridge, an elevated park to West 28th Street, and related greenspace and development opportunities can be built in a relatively short timeframe.
- **Concept K-2** abandons the Shoreway from West 45th to West 3rd Street. Does not build Shoreway replacement. Uses street network between West 45th and West 3rd Streets to gain access to East and West Shoreway. Same as Concepts G & H Option 2 but without Shoreway diversion. (See Figure 26) Benefits include significant savings over other Shoreway alternatives in cost of rebuilding of new bridge structures over the valley. The land bridge, an elevated park to West 32nd Street, and related greenspace and development opportunities can be built in a relatively short timeframe.
- Dropped from further study due to increase in vehicular traffic, including trucks from Whiskey Island, on city streets. Also dropped due to the loss of east-west vehicular access between downtown and the east and west sides, as it could have significant transportation, economic, and quality of life impacts at local and regional levels.



Figure 32: Photo of existing Shoreway in Warehouse District looking east



Figure 33: Rendering of elevated park in Warehouse District looking east

Urbzz



Figure 34: Photo of existing Shoreway in Ohio City looking west



Figure 35: Rendering of elevated park in Ohio City looking west

Urbzz

CONCLUSION

Big Creek Connects and the Green Ribbon Coalition have developed this study to assist the City of Cleveland, the Greater Cleveland Partnership, and the Lakefront Task Force with its downtown lakefront planning process. After years of studying land uses and design issues related to the downtown lakefront area, and successfully steering the direction of a downtown lakefront connection towards a land bridge, the organizations are advocating for an expanded scope of the current phase of study that includes the following considerations:

- Increase the number of alternatives in the City's land bridge feasibility study, including realignments of the Shoreway west of the existing downtown lakefront planning area, due to the need to replace the Main Avenue Bridge within an estimated 10 to 30 years
- Examine Shoreway alternatives that continue to allow access along the lakefront and its adjacent venues and neighborhoods, without drastically reducing its level of service by diverting excessive traffic onto local street networks
- Consider building the land bridge and adjacent development in phases, if funding for the Shoreway realignment is dependent on the lifespan of the Main Avenue Bridge
- When designing the land bridge, the walkways along its length and any new buildings, respect the sight lines towards and access to the entire North Coast Harbor area, including the Great Lakes Science Center and the Rock and Roll Hall of Fame and Museum
- Build a glass-enclosed, all-weather walkway connecting the convention center with the museums and the stadium. If a new stadium is to be built in another location within the city, an enclosed walkway could connect to buildings in its place
- Build a multi-modal transit center under the land bridge that acts as a hub for the enclosed walkway network
- Consider feasible and cost effective downtown lakefront roadway designs, including an extension of Front Avenue to better connect with the Warehouse District and the Flats East Bank, while creating development opportunities
- Depending on the Shoreway realignment chosen, convert sections of the Main Avenue Bridge into an elevated park. The pedestrian friendly greenway could connect the land bridge, the transit center, and surrounding venues with the Warehouse District, the East and West Banks of the Flats, and the Ohio City and Detroit Shoreway neighborhoods, while creating additional development opportunities
- Consider a Shoreway realignment that traverses South Whiskey Island so a partial interchange for truck access can be built there. An interchange there could divert truck traffic away from the Lakeview Terrace apartments and other Ohio City and Flats residential areas

The concepts and recommendations in this study were developed by Big Creek Connects and the Green Ribbon Coalition to improve the health and quality of life of residents; provide better access to and between lakefront destinations; and spur economic development within the downtown lakefront, the east and west banks of the Flats, and the near-west lakefront neighborhoods. Both organizations are looking forward to participating in the City's lakefront planning process and encouraging its participants to develop a comprehensive plan with these recommendations in mind, as we continue to grow as a destination city where people want to live, work, visit and invest.

