

Ohio Department of Transportation Response to Public Comment: Working Position Paper: Redesign of the Brent Spence Bridge Project

EXECUTIVE SUMMARY

A group of citizens prepared a detailed public comment (*Working Position Paper: Redesign of the Brent Spence Bridge Project by Ryan Laber, P.E.*) in response to the Brent Spence Bridge Corridor (BSBC) project being undertaken by the Ohio Department of Transportation (ODOT) and the Kentucky Transportation Cabinet (KYTC).

The project team carefully reviewed the suggestions from this position paper and provided a detailed response, which includes technical and engineering analyses. This summary outlines the many project priorities where there is agreement and offers the technical rationale for why the primary focus of the position paper – lowering I-75 and creating a street grid system in Downtown Cincinnati – is unsafe for the driving public and impractical to construct.

Discussion

I. Public engagement is the cornerstone of everything we do

The Ohio Department of Transportation (ODOT), Kentucky Transportation Cabinet (KYTC), and full leadership team of the Brent Spence Bridge Corridor (BSBC) project, is fully committed to robust public involvement to gain insights and receive feedback as part of the project development process.

ODOT and KYTC have engaged in thorough public involvement since the inception of the project and have worked closely with local partners to incorporate changes to the project. These adjustments have already significantly reduced the impact to local municipalities while investing in underserved populations on both sides of the river.

II. The Brent Spence Bridge Corridor project provides an opportunity to address shared community priorities, including:

- Reconnecting communities through multi-modal and pedestrian-friendly improvements
- Returning public land for local use
- Separating local and through traffic to improve safety and support better access to the Covington and Cincinnati business districts
- Honoring local requests to separate highway runoff from the combined sewer system
- Investing in much-needed quality of life amenities in urban communities within the corridor
- Providing aesthetic features that establish a more dynamic sense of place in urban neighborhoods
- Completing and investing in necessary bike, pedestrian, and roadway connections in both Cincinnati and Covington that will enhance connections between the east and west sides of the freeway and will accommodate the recent RAISE and INFRA investments in the City of Cincinnati
- Continuing public engagement as project plans are refined

The project team continues to work hand-in-hand with local stakeholders to identify every opportunity to reduce the footprint of the project and invest in changes that support and connect communities throughout the corridor.

III. Discussion regarding the ideas in the position paper

Two of the concepts presented were previously evaluated and dismissed during the study phase of the BSBC project. The first was a modification to an alternative (Alternative B) studied in 2009, which resulted in negative impacts to communities, residences, businesses, regulated materials sites, and utilities – impacts that were substantially higher than others under consideration. In addition, this option had a more complex design, higher cost, and posed a more significant constructability risk when compared to other alternatives.

The position paper also presented a modification to another alternative (Concept 85), which was originally developed during a Value Engineering Workshop in 2012. This alternative was removed from consideration because of negative impacts to parks and/or historic resources, the City of Cincinnati's opposition to reducing east-west connectivity and alternatives that shift I-75 to the west, impacts to the United Parcel Service (UPS) in Ohio, and engineering concerns about the angle of the new companion bridge across the Ohio River.

The third concept involved "depressing" I-75 with parallel frontage roads, similar to the layout for I-71 east of the project area (known locally as Fort Washington Way). This concept also relocates I-71 and U.S. 50 by carrying them across the BSB corridor and creating a new connection with I-75 to the north.

This concept would be unsafe for the driving public and impractical to construct for the following reasons:

- Lowering I-75 to the extent proposed in public comments would require the grade from the Central Business
 District to the bridges crossing the Ohio River to be as much as 8%, which is unsafe and impractical. For
 context, the current uphill grade for traffic moving southbound on I-71/75 from the Ohio River to Dixie
 Highway is 5%.
- Lowering I-75 and creating a street grid system that would eliminate the option for traffic to move continuously from the interstate to the local network system and replace it with a series of signalized intersections is not feasible. This solution, as proposed, does not meet the objectives for the project; specifically, it does not address congestion and does not address the crashes we see as a result of congestion.
- Providing a street grid design over I-75 would create a larger footprint, reducing the amount of land that could be reclaimed for local use.
- Eliminating the proposed local connections in favor of a street grid concept would bring longer travel times and increased congestion on local streets.
- Changing connections to I-71/U.S. 50 as proposed in other concepts does not take into account historic resources and impacts to local communities. This preliminary idea by proposers would need further vetting as a standalone transportation project outside of the BSBC effort.

Each of these points is discussed in more detail in the full report that follows.

IV. Well-reasoned analysis that reflects local input will move our region forward

The Brent Spence Bridge Corridor project presents the opportunity to upgrade aging infrastructure and invest in underserved populations that have suffered from disinvestment for decades.

The passage of the Bipartisan Infrastructure Law has created a once-in-a-generation opportunity to improve the quality of life for the millions of Americans who use the federal highway system to travel between Ohio and Kentucky and beyond.

The BSBC project will:

Establish more multi-modal connections

In Cincinnati, the project currently includes sidewalk and shared use path expansions and improvements across the following east-west connectors: 6th St., 7th St., 8th/9th St., Linn St., Freeman Ave. (including pedestrian bridge to W. Court St.), Ezzard Charles Dr., W. Liberty St., Findlay St., Bank St., Harrison Ave., and Winchell Ave. from 6th St. to Ezzard Charles. In Covington, improvements are planned on 5th St., 9th St., Pike St., and 12th St.

In addition, the project team continues to work with the Cincinnati and Covington to collaborate on reducing the project's footprint and improving multi-modal connections.

> Reduce flooding impacts and address infrastructure inequities in low-income communities

ODOT is coordinating with the Metropolitan Sewer District to build storm sewers that will separate combined sewers and/or provide retention to mitigate adverse effects on low-income communities that are disproportionately impacted by flooding that occurs during extreme rain events, including basement flooding in a vulnerable Health Improvement Zone in the Mill Creek Valley where existing combined sewer systems can flood the creek with sewage.

KYTC has signed a Memorandum of Understanding with the City of Covington to also separate interstate runoff from combined sewers that create flooding issues for disadvantaged communities in the Willow Run watershed.

> Engage the public

- Upcoming one-on-one meetings with directly-affected communities are being scheduled now
- Additional neighborhood meetings will be held later this year
- Two public hearings will be held in 2023
- BrentSpenceBridgeCorridor.com provides project information and an opportunity to submit feedback; members of the public who wish to submit a comment and/or sign up for periodic project updates can visit the project website <u>here</u>.
- In addition, the team has met with a <u>Project Advisory Committee</u>, which represents constituents throughout the project area to keep them apprised of the project's progress and receive feedback. An <u>Aesthetics</u> <u>Committee</u> a subcommittee of this group is in place to provide input on the design and appearance of the new bridge and corridor.

The Brent Spence Bridge Corridor Project is ready to go. The project team is prepared to break ground in late 2023 and looks forward to working with all members of the public who have an interest in this transformative project. For more information about the Brent Spence Bridge Corridor project, please visit the project website at <u>BrentSpenceBridgeCorridor.com</u>.



Response to Public Comment Working Position Paper: Redesign of the Brent Spence Bridge Project

TO: KYTC and ODOT

FROM: HNTB Corporation

DATE: August 31, 2022

RE: Brent Spence Bridge Corridor Project | ODOT PID 89068 | KYTC Project Item No. 6-17

Introduction

The purpose of this memorandum is to provide a response to three alternative design concepts for the Brent Spence Bridge (BSB) Corridor Project as presented in the *Working Position Paper: Redesign of the Brent Spence Bridge Project (Position Paper)* prepared by Ryan Laber, P.E. that includes concepts presented by the Bridge-Forward Cincinnati Coalition (December 21, 2022). The concepts in the *Position Paper* were first presented to the Ohio Department of Transportation (ODOT) on January 7, 2022. The full *Position Paper* was provided to the Kentucky Transportation Cabinet (KYTC) and ODOT via email on January 17, 2022. The stated goal of the *Position Paper* was to develop concepts for redesigning the project to promote economic development in the region.

Concepts Previously Studied and Dismissed

Two concepts presented in the *Position Paper* were variations of concepts previously evaluated and dismissed during the study phase of the BSB Corridor Project, as discussed in the following sections.

Modified Alternative B

The *Position Paper* presents a modification to Alternative B from the 2009 *Conceptual Alternatives Study* (CAS) prepared for the BSB Corridor Project (see Figure 1). The CAS concluded that Alternative B resulted in adverse impacts to communities, residences, businesses, regulated materials sites, and utilities, which were substantially higher than other alternatives under consideration. In addition, Alternative B had substantially greater overall complexity, constructability risk, and cost when compared to other alternatives. Finally, the concept was strongly opposed by both the City of Cincinnati, Ohio and the City of Covington, Kentucky. Therefore, it was removed from further consideration.

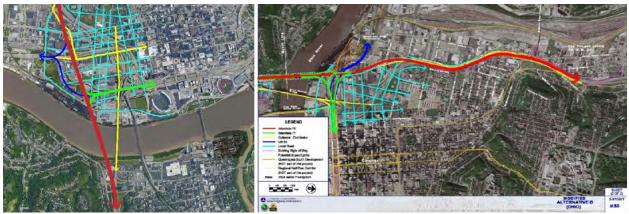
Alternative B was developed based on extensive traffic operational analyses that established the traffic movements required to maintain local connectivity and acceptable traffic flow through the project area. In addition, ramp layouts – including high speed interstate to interstate connections between I-71 and I-75 – were established based on extensive geometric analysis. This alternative was developed to minimize impacts, therefore there are limited (if any) opportunities to "scale back and right-size¹" Alternative B further such that the overriding negative impacts that led to its dismissal would be reversed.

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¹ Working Position Paper: Redesign of the Brent Spence Bridge Project, page 25.

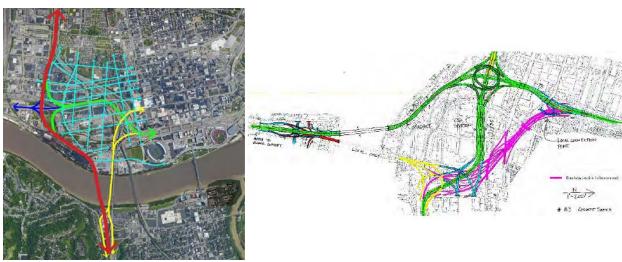


Figure 1: Modified Alternative B



Source: Working Position Paper: Redesign of the Brent Spence Bridge Project, page 3.

Figure 2: Modified Concept 85



Source: Working Position Paper: Redesign of the Brent Spence Bridge Project, page 3.

Modified Concept 85

The *Position Paper* also presents a modification to Concept 85, which was developed during a Value Engineering Workshop for the BSB Corridor Project in October 2012 (see Figure 2). The *Position Paper* states that "Concept 85 was not advanced further, likely because the [project] team did not feel they had the license to pursue a project requiring relatively more right-of-way acquisition²." However, the project team evaluated Concept 85 and removed it from further study due to a number of factors, including:

• Additional impacts to parks and/or historic resources;

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² Working Position Paper: Redesign of the Brent Spence Bridge Project, page 13.



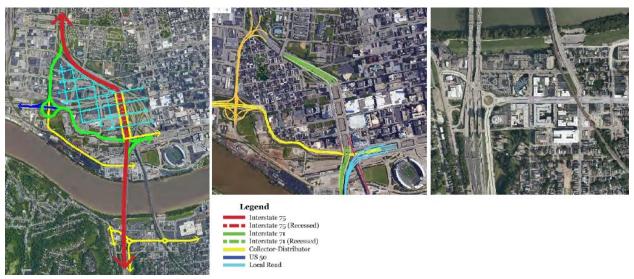
- City of Cincinnati opposition to reducing east-west connectivity and alternatives that shift I-75 to the west³;
- Impacts to United Parcel Service (UPS) in Ohio; and
- Engineering concerns related to a new bridge that crosses the Ohio river on a skew.

Given the above, the modifications to Concept 85 presented in the *Position Paper* – recessing the eastwest connection between US 50 and Fort Washington Way – would not address the factors for which it was removed from further study.

Bridge-Forward Cincinnati Concept by Brian Boland

The final concept presented in the *Position Paper* was originally developed by Brian Boland (the Boland Concept). The Boland Concept (see Figure 3) depresses I-75 with parallel frontage roads similar to the layout of I-71 just east of the project area, which is locally known as Fort Washington Way. The Boland Concept also relocates I-71 and US 50 by carrying them across the BSB corridor and creating a new connection with I-75 to the north via Freeman Avenue. Finally, it reconfigures local roadways in Covington, Kentucky. The following sections discuss the geometric and traffic operational feasibility of the Boland Concept.

Figure 3: The Boland Concept



Source: Working Position Paper: Redesign of the Brent Spence Bridge Project, page 3.

³ The Position Paper acknowledges this opposition and suggests the proposed modified design addresses these concerns, and the value engineering workshop also noted the positive nature of some of these refinements. ODOT and the City of Cincinnati are working collaboratively to implement the BSB Corridor Project. While the City has requested refinements to the current design to better meet their needs – and in many cases, the design has been refined to accommodate these requests – they have not expressed a desire to incorporate whole-scale changes comparable to those presented with Modified Concept 85.



Depressed I-75

Although ODOT supports the idea of depressing I-75 through downtown Cincinnati, the concept simply is not feasible for this specific location due to the following limitations:

- Any bridge over the Ohio River must meet U.S. Coast Guard clearance requirements, which means the bottom of the bridge will need to be 55 feet above the flowline of the Ohio River.
- Once the interstate passes over the Ohio River, it cannot descend directly into downtown Cincinnati. First, it must stay elevated to cross active CSX rail lines between Pete Rose Avenue and 3rd Street.
- Any design must accommodate a complicated system of mainline and ramp movements to provide local access and continuity along I-71, I-75, and US 50. Weaving these ramps through the project area requires a complex tiered bridge system with the highest tier rising over 50 feet above the ground (see Attachment 1).

To meet these geometric constraints, the preferred alternative for the BSB Corridor Project currently descends toward downtown Cincinnati at a 4- to 5.5-percent grade. Depressing the roadway any further as presented in the Boland Concept would require substantially steeper roadway grades (up to 7.7 percent). For reference, ODOT's *Location and Design Manual, Volume 1* lists the maximum grade for urban interstates in similar terrain as 6 percent. Furthermore, given the complicated geometry, any changes to the mainline profile would cascade throughout the BSB interchange area, resulting in prohibitively steep grades along other ramps and C-D roads. Introducing grades of this magnitude would require design exceptions and present traffic operational and safety concerns, particularly considering the high volumes of heavy truck traffic traveling through the corridor. This would be contrary to the project's approved purpose and need, which includes improving traffic flow and safety and correcting geometric deficiencies through a key regional and national transportation corridor.

The geometric constraints in the corridor also affect local cross streets in the Boland Concept. Because the I-75 mainline and access ramps cannot be depressed further, local Cincinnati cross streets must be raised substantially to pass over I-75. In addition, 6th Street must be raised substantially to connect to eastbound US 50. These changes would require grades ranging from 5 to 9 percent on 4th Street, 5th Street, and 6th Street⁴ (see Figure 4 and Attachment 2). ODOT's *Location and Design Manual, Volume 1* lists the maximum grade for urban arterial roadways as 7 percent. However, the manual states that maximum design grades should be used infrequently, rather than a value to be used in most cases. Grades of this magnitude are not only undesirable for vehicular traffic, but they also present substantial mobility and accessibility concerns for cyclists and pedestrians. The Americans with Disabilities Act (ADA) requires facilities that accommodate pedestrians to be constructed with grades of 5 percent or less.

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⁴ Potential exists to reduce the grades on 6th Street with more extensive engineering study and refinement. However, the constraints on 4th and 5th Street would remain.



When compared to the preferred alternative for the BSB Corridor Project, elevating the downtown Cincinnati cross streets over I-75 would substantially increase the project footprint on the west side of I-75 to tie into the existing elevations near 4th Street. This additional footprint would result in new impacts to existing businesses and potential developable land. For example, the Boland Concept would create steep slopes that would negatively affect potential development opportunities on 2.5 to 3.0 acres of land east of I-75 that is currently slated to be transferred to the City of Cincinnati once the project is completed.

Parallel Frontage Roads

The Boland Concept includes parallel frontage roads that intersect the local street network in a grid configuration (see Figure 3). However, the *Position Paper* did not include a traffic analysis to determine the number of lanes required for the frontage road system to operate. A high-level screening of traffic operations was conducted using available traffic data to determine the minimum number of lanes required to provide acceptable levels of service⁵ for the frontage road intersections. Based on the screening, the frontage roads would require three to four lanes for through traffic with additional left and right turn lanes at each intersection to eliminate any adverse operations on the freeway system. The local cross streets would also require additional lanes for turning traffic. The minimum lanes required for the parallel frontage roads are depicted schematically in Figure 4.

The BSB Corridor Project must serve both long-distance interstate traffic and local trips. When compared to the preferred alternative for the project, the Boland Concept eliminates a C-D system that serves local movements. As a result, traffic traveling between Covington and downtown Cincinnati would be required to utilize other congested cross-river routes and the signalized frontage road intersections, resulting in longer travel times and increased congestion on local streets.

The *Position Paper* states that the preferred alternative for the BSB Corridor Project would form a barrier and provide "inadequate vehicle, bicycle, and pedestrian connections between the Cincinnati [Central Business District] CBD and Queensgate⁶." However, the preferred alternative maintains or improves local connectivity for both vehicular and pedestrian/bicycle traffic. A system of C-D roads and ramps provide connections between the interstate highways and 4th Street, 5th Street, 6th Street, 7th Street and other streets in Queensgate, the Riverfront, and the CBD. The C-D roads also provide north-south interconnectivity between local streets. Furthermore, the east-west connectivity of US 50, 6th Street, 7th Street, and other local roads is maintained. Attachment 3 includes a color-coded map illustrating the interstate and local roadway connections in the Queensgate, the Riverfront, and downtown Cincinnati areas. In addition, the preferred alternative maintains existing sidewalk connections in downtown Cincinnati and adds new pedestrian and bicycle shared use paths parallel to and across I-75.

⁵ Level of Service (LOS) is a way of describing the amount of traffic congestion on a roadway by "grading" it on a letter scale from A (best) to F (worst). LOS A represents near ideal traffic flow, while LOS F represents a breakdown of traffic flow. LOS D is considered acceptable urban intersections such as those in downtown Cincinnati.

⁶ Working Position Paper: Redesign of the Brent Spence Bridge Project, page 14.

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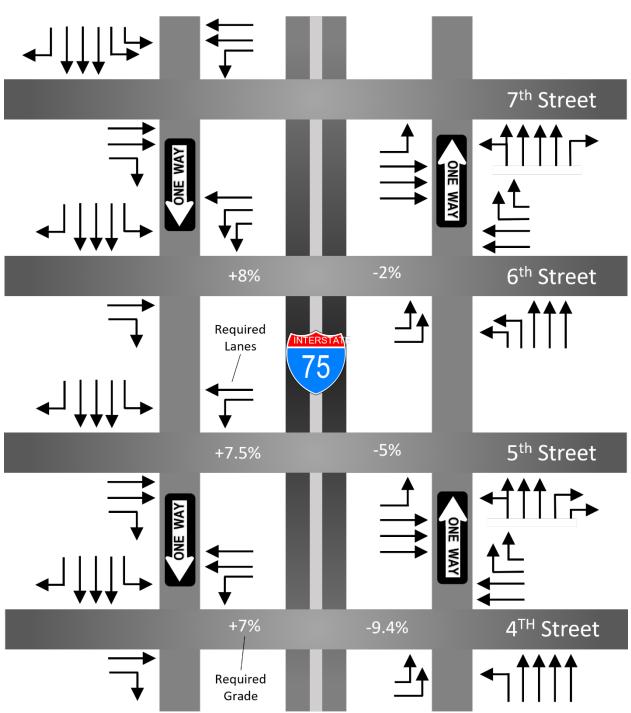


Figure 4: Schematic Depiction of Boland Concept at Frontage Road Intersections



I-71 and US 50

The purpose and need for the BSB Corridor Project did not identify any specific needs related to the I-71 or US 50 corridors beyond maintaining connections to these existing corridors. As such, the project scope addresses transportation needs along the I-75 corridor while maintaining existing connections to I-71 and US 50 in Cincinnati. Furthermore, the continuity of US 50 east and west of I-75 must be maintained (see Attachment 3). Relocating and realigning I-71 and US 50 west of I-75 would need to be investigated as part of a separate regional project with an approved purpose and need specific to that undertaking. That project would need to address a number of issues, including but not limited to: historic opposition to moving US 50 due to potential impacts to Longworth Hall; impacts to businesses and access in Queensgate; impacts to regional travel connections; and impacts to traffic operations along I-71, I-75, US 50, Freeman Avenue, and other local routes.

Covington

The Boland Concept proposes accommodating local cross-river trips via the local street grid in Covington, Kentucky. To better accommodate these trips, it proposes reworking the street grid in Covington, including converting 4th Street to a two-way roadway, removing 5th Street, and installing roundabouts. The *Position Paper* maintains that the Boland Concept addresses concerns Covington officials have expressed about the project in the past. However, Covington officials have consistently expressed concerns about traffic traveling through their local street network to other Ohio River bridges during construction of the BSB Corridor Project. The Boland Concept would exacerbate these concerns by requiring all traffic with local origins and destinations to travel through the street network in Covington and cross the Ohio River on other local bridges. KYTC recognizes Covington's concerns about increased traffic on the local street network and is working cooperatively with the City of Covington to address them as they implement the preferred alternative for the BSB Corridor Project. To that end, KYTC and the City signed a Memorandum of Understanding on June 15, 2022 to further evaluate traffic impacts and to implement context sensitive design principles in conjunction with the BSB Corridor Project.

Furthermore, under the existing conditions, incidents on the BSB force traffic onto the local street network, often overburdening the system⁷. The construction of a new companion bridge and C-D system introduces additional resiliency into the local and regional transportation network by providing additional options for maintaining cross-river traffic if an incident or future construction or maintenance activities occur, options that would not be available with the Boland Concept.

Finally, the extensive changes to the Covington street grid that are proposed in the Boland Concept are beyond the purpose and need for the BSB Corridor Project, which focuses on the I-71/I-75 interstate corridor. Any network-wide changes to the street grid in Covington would need to be investigated as part of one or more separate projects with an approved purpose and need specific to that undertaking that is developed in consideration of the City's long-term goals.

⁷ https://local12.com/news/local/trucks-causing-traffic-problems-despite-order-to-stay-on-interstates-after-bridgeclosure-cincinnati

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Conclusion

The concepts presented in the *Working Position Paper: Redesign of the Brent Spence Bridge Project* (*Position Paper*) prepared by Ryan Laber, P.E. that includes concepts presented by the Bridge-Forward Cincinnati Coalition are not recommended for further consideration. Variations of two concepts presented in the *Position Paper* – Modified Alternative B and Modified Concept 85 – were previously evaluated and eliminated from consideration during the BSB Corridor Project preliminary development activities. The modifications proposed in the *Position Paper* would not address the factors for which these concepts were removed from further study. The final concept – the Boland Concept – was not found to be geometrically feasible and would result in a greater project footprint than the current preferred alternative.

KYTC and ODOT share many of the goals articulated by the Bridge-Forward Coalition and summarized in the *Position Paper*, including:

- Minimizing the footprint of the highway;
- Using the interstate primarily as an efficient processor of regional, through traffic;
- Providing a network of safe, multi-modal streets for local traffic; and
- Using only modern, progressive engineering practices.⁸

To accomplish those goals, KYTC and ODOT have developed a set of refinements to the preferred alternative since the approval of the project's Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) in 2012. These refinements reconfigured the river crossing to use the existing BSB for local traffic and a new double decker companion bridge to the west for through (interstate) traffic. In addition, performance-based design principles have been incorporated into the project's design, substantially reducing the project's footprint and associated impacts. Multi-modal facilities have been incorporated into the project with the cities of Cincinnati and Covington to address local concerns while further reducing the highway's footprint and impacts to the communities in the project area.

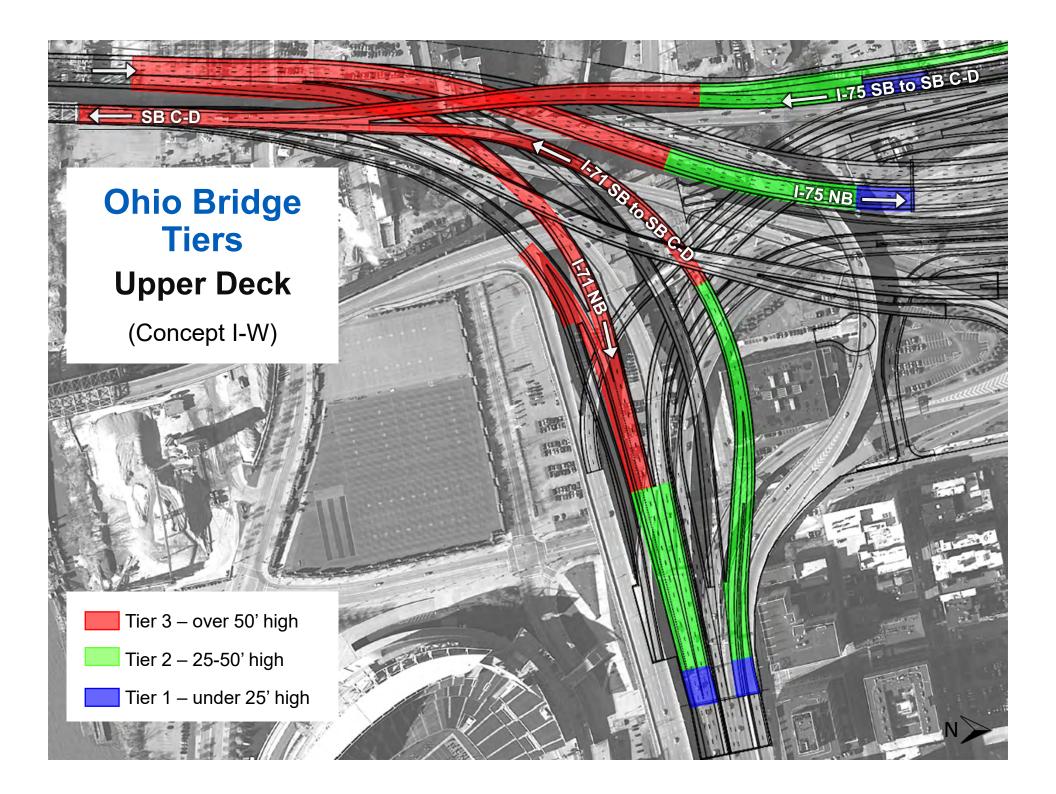
While the specific concepts presented in the *Position Paper* are not feasible and, as such, will not be considered in the project's Supplemental Environmental Assessment, KYTC and ODOT will continue to incorporate the overriding principles championed by the Bridge-Forward Coalition as the BSB Corridor Project moves toward implementation.

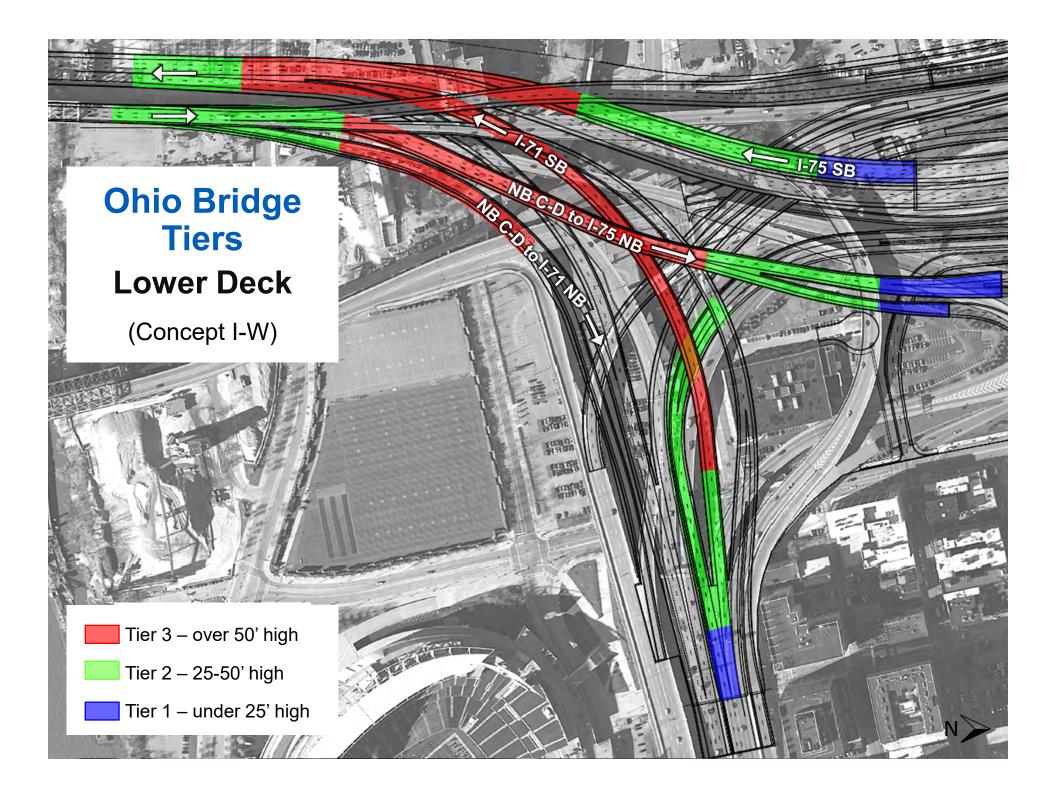
⁸ Working Position Paper: Redesign of the Brent Spence Bridge Project, page 22.

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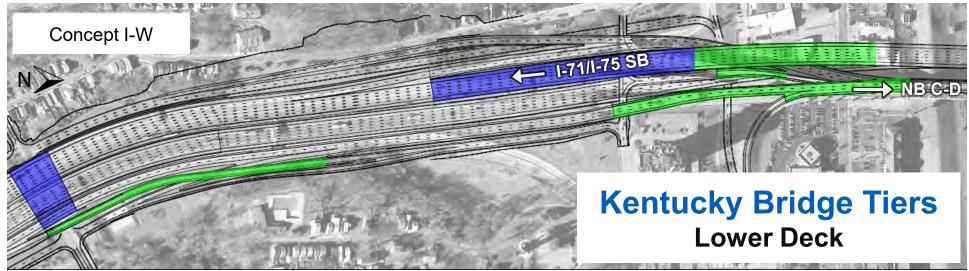
Attachment 1: BSB Corridor Project Tiered Bridge System





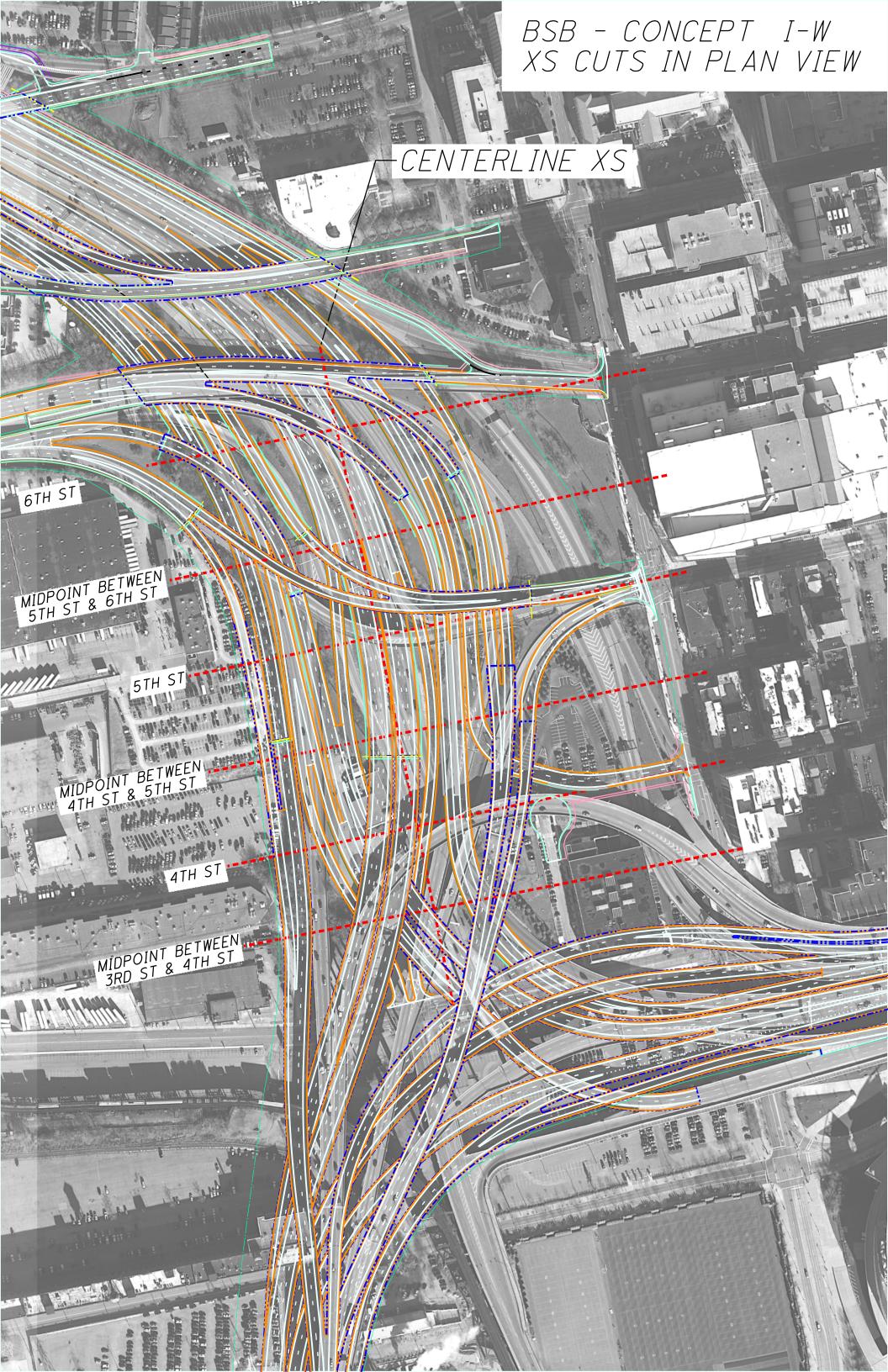


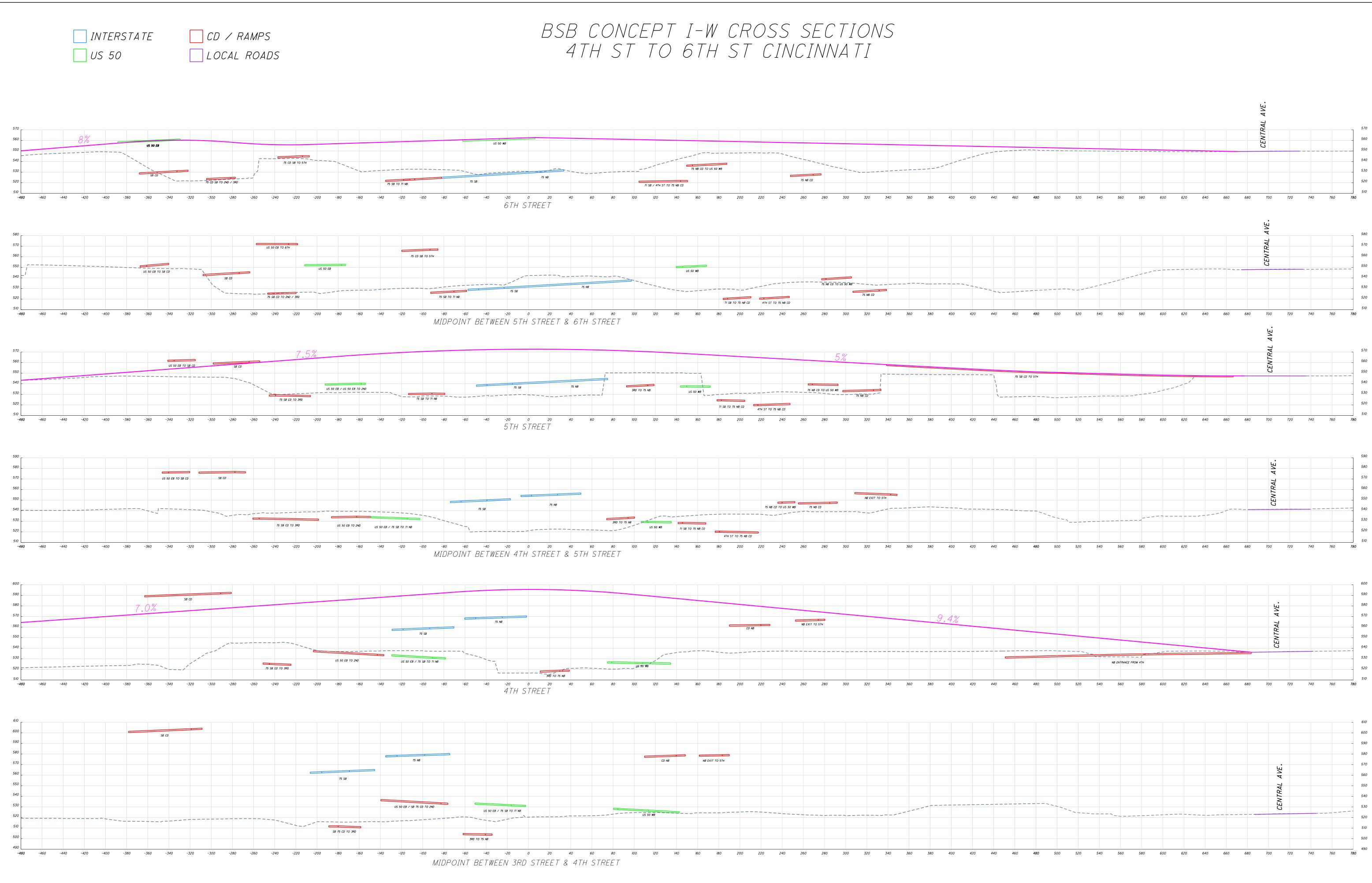






Attachment 2: BSB Corridor Project Cross Sectional Views





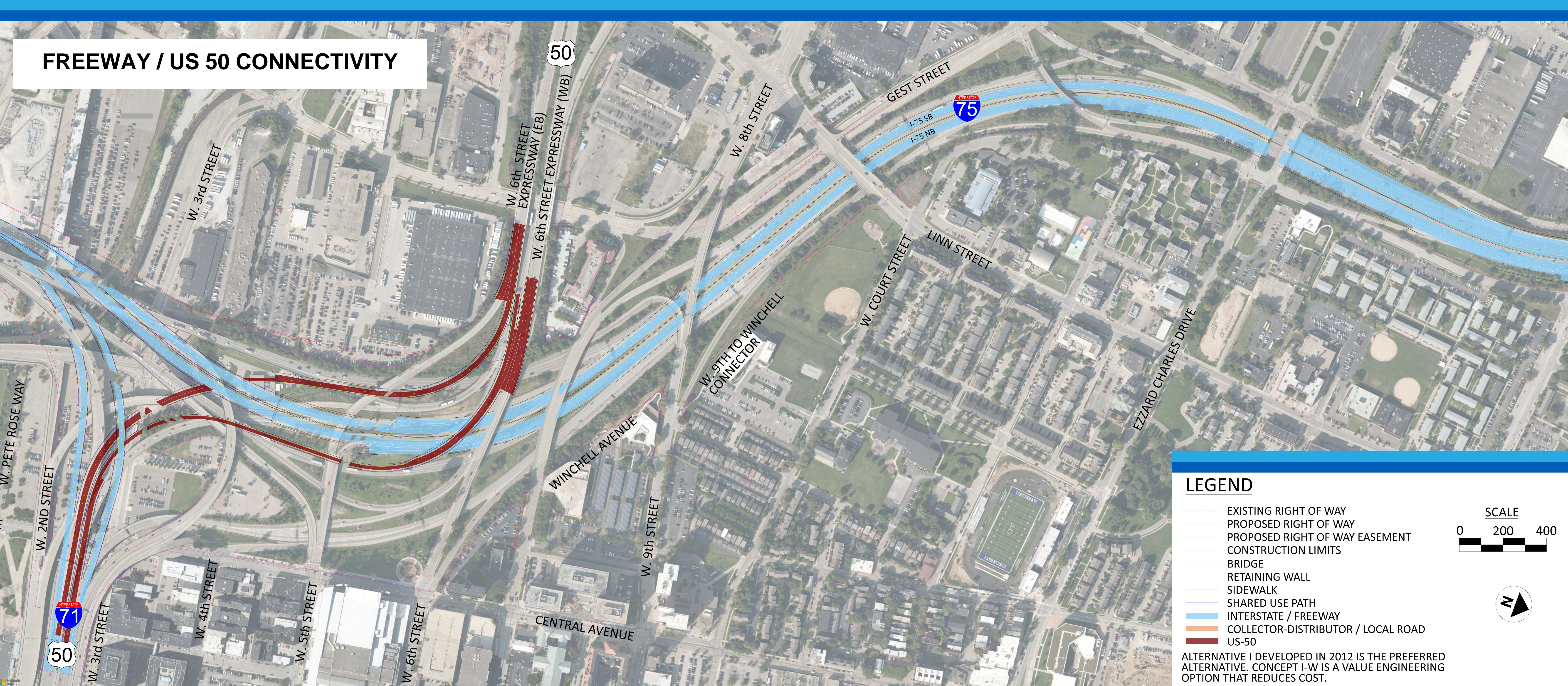


Attachment 3: BSB Corridor Project Interstate and Local Continuity

BRENT SPENCE BRIDGE CORRIDOR



BRENT SPENCE BRIDGE CORRIDOR PROJECT - CONCEPT I-W ODOT PID 116649 & KYTC KENTON COUNTY 6-17









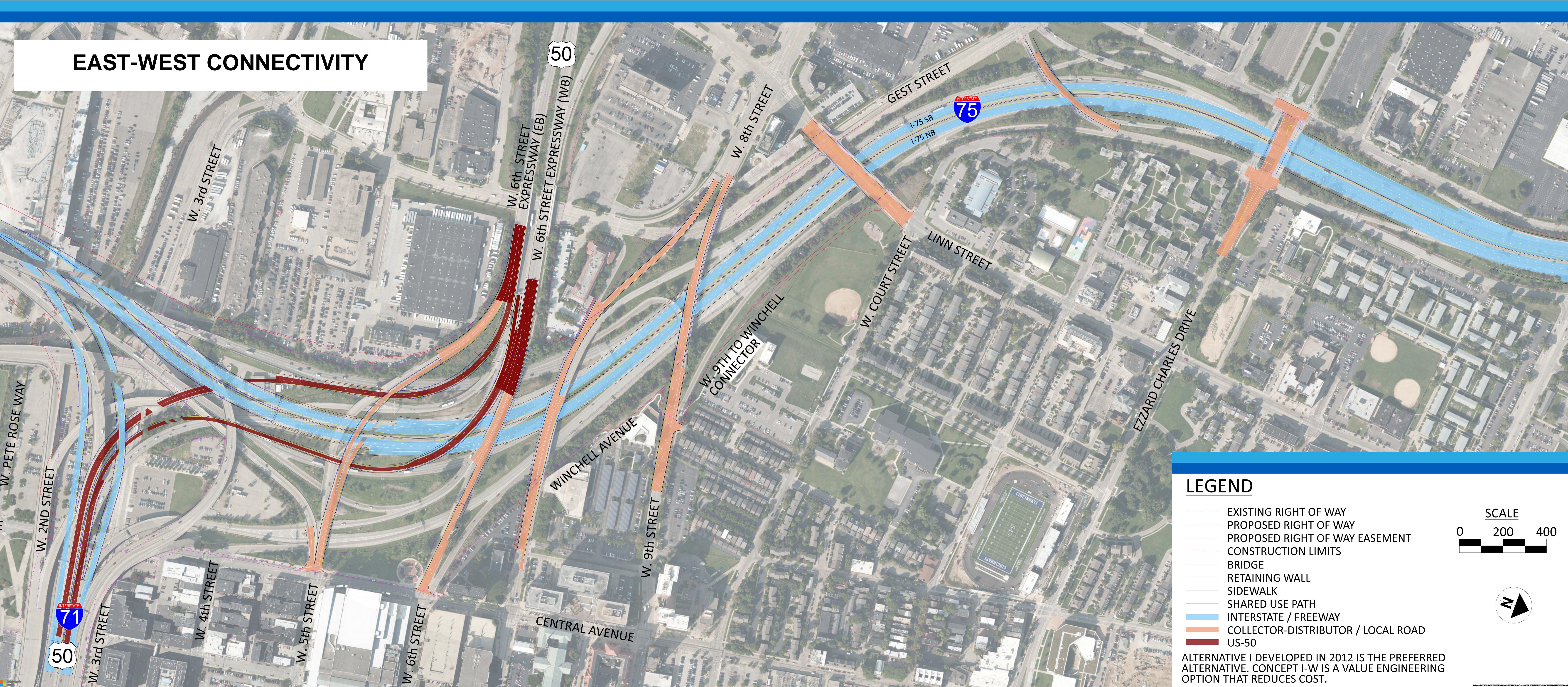
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BRENT SPENCE BRIDGE CORRIDOR PROJECT - CONCEPT I-W ODOT PID 116649 & KYTC KENTON COUNTY 6-17









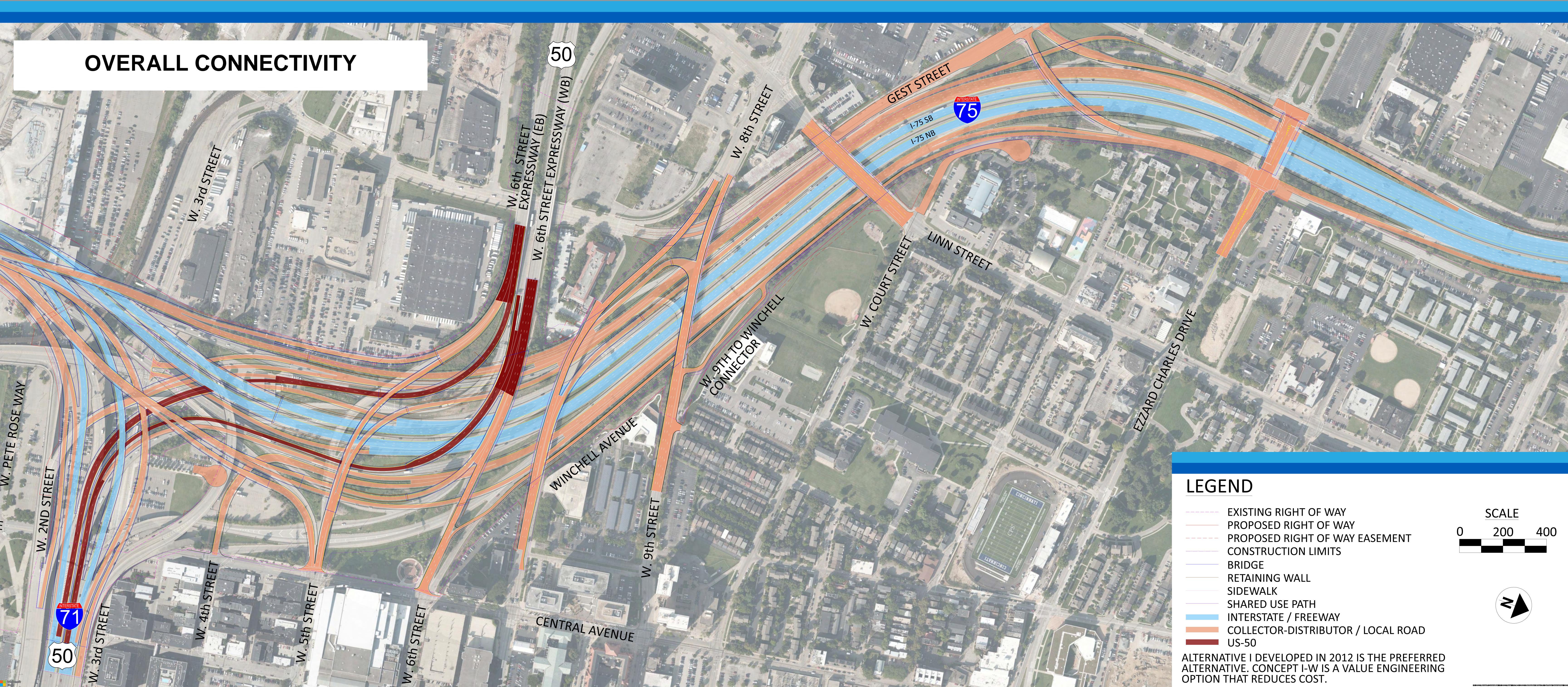


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