COLUMBUS CROSSROADS

PHASE 4 BUILD APPLICATION | JULY 19, 2018

THE CITY OF COLUMBUS
ANDREW J. GINTHER, MAYOR

OHIO DEPARTMENT OF TRANSPORTATION

morpc
Mid-Ohio Regional Planning Commission

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Columbus Crossroads Project Phase 4 BUILD Application Website

The Project Narrative, Letters of Support, and Supporting Documents are available online at **http://www.morpc.org/build/**. More than 20 letters of support were received prior to submitting this application. Letters received after the application was submitted on July 19, 2018 will be added to the application website.

I. Project Description

The City of Columbus is requesting $20 million from the Better Utilizing Investments to Leverage Development ("BUILD") Transportation Discretionary Grants program to support Phase 4 of the Columbus Crossroads Project ("Phase 4"). The Columbus Crossroads Project, illustrated below in **Figure 1** and in the bottom rendering on this application's cover, is a $1.3 billion, multi-phase project developed by the Ohio Department of Transportation ("ODOT") in partnership with the City of Columbus, the Mid-Ohio Regional Planning Commission ("MORPC") and other stakeholders. These partners have cast an ambitious vision with the Columbus Crossroads Project, which would leverage an infrastructure project redesigning functionally obsolete interstates that far exceed their original design capacity as a catalyst for reconnecting and restoring neighborhoods that were isolated and torn apart by the interstates' initial construction.

A. Concise Project Description

The City of Columbus sits at the intersection of two major national interstate routes: I-70 and I-71. Interstate 70 stretches from Denver to Baltimore, and I-71 reaches from Cleveland to Louisville. The Columbus Crossroads is named for this intersection of I-70 and I-71. As shown in **Figure 1**, the primary focus of Phase 4's freeway improvements is the 1.25 mile 'overlap' of these nationally significant routes. This area of overlap is known locally as the "Downtown Split." The Downtown Split runs through the South Innerbelt Trench, which physically separates Downtown Columbus from neighborhoods immediately south: the Brewery District, historic German Village, Schumacher Place, and Livingston Park.

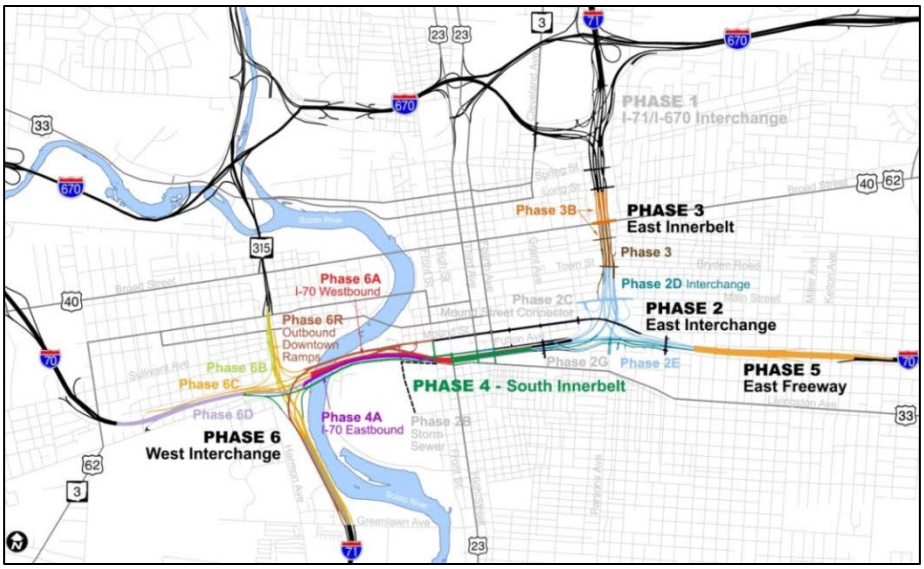

Figure 1 - Phasing for the Columbus Crossroads Project.

Phase 4 is necessary nationally and regionally to improve safety and reduce delays caused by congestion and crashes along an important segment of the National Highway Freight Network's Primary Highway Freight System.[1] Phase 4 is necessary regionally and locally to improve access to essential and critical services in Downtown Columbus, and to restore neighborhood connections that had been severed when the interstates and the South Innerbelt Trench were first constructed in the 1960's.

[1] "National Highway Freight Network Map," Federal Highway Administration, U.S. Department of Transportation, last modified February 1, 2017, https://ops.fhwa.dot.gov/freight/infrastructure/nfn/maps/nhfn_map.htm.

Phase 4's improvements include multiple elements impacting freeways and urban avenues within the project area. These improvements include:

- Reconstructing eastbound I-70 and northbound I-71 through the I-70/I-71/SR 315 West Interchange;
- Rebuilding the I-70/I-71 overlap section of freeway between High Street and Grant Avenue;
- Replacing four bridges over I-70/I-71 at: Front Street, High Street, Third Street and Fourth Street;
- Reconnecting Downtown Columbus and the neighborhoods immediately south through urban avenue improvements, bridge enhancements, and the installation of caps on the Front Street Bridge, High Street Bridge, and Third Street Bridge; and
- Facilitating innovative technology, including traffic signal preemption.

Figure 2 – Phase 4 improvements within the immediate South Innerbelt Trench area. The full exhibit is available at a larger scale in Appendix A and online at morpc.org/build. This appendix also includes an exhibit showing all of the Columbus Crossroad Project's phases within the general South Innerbelt Trench area.

B. Transportation challenges for Phase 4

The stretch of pavement traversed by Phase 4 of the Columbus Crossroads Project is of national, regional, and local significance. The Downtown Split serves as the southern leg of the Columbus Innerbelt (I-70/I-71/I-670/SR 315) that encompasses Downtown Columbus, and is one of the busiest and most vital sections of highway in the region. Today, the corridor serves approximately 130,000 vehicles per day. Truck volumes on the freeway are 17,100 per day, which means the highway serves about 12 trucks per minute. But like many highways built during the 1960s, traffic has long surpassed the original design. Today**, the highway exceeds its design capacity by about 50,000 vehicles per day**, making it one of the top congestion locations in Ohio.

The Downtown Split freeway area is also one of the most hazardous. **Although it makes up only 6% of the Columbus area freeway system, it is the site of 25% of all freeway crashes in the region, resulting in an average of two crashes per day.** These crashes are caused by congestion and are also due to characteristics of an outdated highway design, which include:

- Intense weaving caused by the overlapping freeways. Motorists on I-71 are forced to cross several lanes of traffic to continue north or south through the downtown.

- Closely spaced interchanges add to the weaving and merging problems. This includes 21 ramps to and from city streets and three system interchanges within the 3.5-mile freeway.
- Insufficient lengths at ramps for acceleration, deceleration and merging
- Substandard horizontal curves

The safety issues, combined with the congestion, create significant transportation challenges with national, regional, and local impacts.

The Downtown Split is at the epicenter of national freight movement between the East Coast and Midwest. The Downtown Split lies directly between national industrial manufacturing hubs, such as Cleveland and Pittsburgh, and national distribution centers, such as Louisville and Chicago. Columbus itself serves as a logistics nexus because of its strategic location within 500 miles or a one-day truck trip of: **58% of the U.S. population, 50% of the Canadian population, 61% of U.S. manufacturing capacity, and 80% of U.S. corporate headquarters.** However, the current congestion and safety issues limit the ability of freight to efficiently move through this section of the National Highway Freight Network.

Moreover, the Downtown Split is at the center of significant regional and local growth. Central Ohio has grown significantly, and population estimates for the Columbus, Ohio Metropolitan Statistical Area now exceed 2 million. People throughout the region use the Downtown Split to commute to or through the city center for work, healthcare, or entertainment. The Columbus Innerbelt, which includes Downtown Columbus, is the largest job center in the region,[2] with more than 100,000 jobs located inside and directly adjacent to the Innerbelt network that encompasses Downtown Columbus.[3] It provides essential medical services to the entire region from OhioHealth's Grant Medical Center, which is a Level 1 Trauma Center, and Nationwide Children's Hospital, which is Level 1 Pediatric Trauma Center. The Columbus Innerbelt also contains the seats of government for the State of Ohio, Franklin County, and the City of Columbus. However, regional access to and through this area can be limited due to current significant congestion and safety issues in the Downtown Split.

Once on a city street within the Columbus Innerbelt, people are still faced by local transportation challenges stemming from the disruption created by the original construction of the interstate. For the people who work or live in or near the Phase 4 area, the Downtown Split significantly limits the transportation options for travelling across the South Innerbelt Trench. Vehicles that are travelling locally across the bridges must contend with vehicles using lanes on the bridges to enter or exit I-70/I-71. Pedestrians and bicyclists trying to cross the South Innerbelt Trench bridges must contend not only with vehicles using lanes on the bridges to enter or exit I-70/I-71, but also with poor pedestrian and bicyclist facilities on the bridges and other city streets within the project area.

C. Phase 4's approach to transportation challenges within the project area

This project will improve safety and reduce congestion challenges by adding lanes and consolidating the number of ramps to Downtown Columbus. Reducing congestion will save time and money for commuters, emergency services, and support the emerging on-demand economy of

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[2] Major employers such as Nationwide Insurance, Huntington Bank, Nationwide Children's Hospital ("NCH"), PNC Bank, American Electric Power, OhioHealth, and Columbia Gas are all situated in and around the city core. Other major employers induding the Ohio State University, JP Morgan Chase, Limited Brands, Defense Logistics Center, and Alliance Data are on the fringe of the city center core.

[3] MORPC calculated the downtown workforce using LEHD (Longitudinal Employer-Household Dynamics); for the selected geography inside and directly adjacent to the Columbus Innerbelt (I-70/I-71/I-670/SR 315), the estimated population was 107,125.

the national logistics industry. Safety will be improved as consolidating the number of eastbound ramps into the downtown will reduce the number of necessary lane changes. Improved safety will also have a positive impact on congestion, as the high number of rear-end collisions that occur along this corridor decrease. In addition, by including accommodations for pedestrian and bicycle traffic on the reconstructed bridges to connect with similar facilities on adjacent urban avenues, safety for bicycle and pedestrian traffic will improve. Including these accommodations on the reconstructed bridges and adjacent urban avenues will also reconnect neighborhoods.

D. Project history and previously completed components

A good faith effort has been made to construct the Columbus Crossroads Project. The need to fix this congested, high-crash corridor has never been more critical. As one of the fastest growing regions in the Midwest, **MORPC estimates that by 2040 Central Ohio could have: 25% population growth, 20% job growth, and 13% increase in regional vehicle trips.** The proposed improvements documented in the approved Interchange Modification Study (IMS), Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) are needed to improve safety and reduce congestion of this critical regional corridor.[4] The following project phases have either been completed or are currently underway using funds committed by ODOT, Columbus and MORPC:

- Phase 1 – The I-71/I-670 Interchange reconstruction was completed in 2014.
- Phase 2 –The following phases of the I-70/I-71 East Interchange have also been completed:
  - Phase 2C, The Mound Street Connector – completed in 2015
  - Phase 2B, I-70/I-71 Storm Sewer Outlet and BMP – completed 2017
  - Phase 2G, Grant Avenue Bridge Replacement & Fulton Street Reconstruction – under construction, to be completed in 2019
  - Phase 2E, Eastbound I-70 Reconstruction – construction to start in 2019

Funding availability has limited how quickly project phases have been implemented, including Phase 4. Prior to this funding opportunity, limited funding forced ODOT to further sub-phase the project into Phases 4R, 4H, and 4B. However, this is not the preferred approach. Phase 4 was initially developed as a single phase. All of its improvements work together as a system to optimize the national, regional, and local benefits. This optimization is only possible once all the Phase 4 improvements have been constructed. The City of Columbus has consulted with ODOT District 6, which has already begun the initial design and acquisition for Phase 4R, and it is still feasible for Phase 4 to be executed as a single phase instead of Phases 4R, 4H, and 4B. A successful BUILD application would allow the partners to leverage the BUILD funds into the full funding necessary to construct Phase 4 as it was originally envisioned. Commitment letters have already been received that verify the funds necessary to complete Phase 4 would be available if the project is awarded BUILD funding, and they are included in **Appendix C**.

E. Additional context and benefit to outlying industrial and rural areas

Although the Columbus Crossroads Project is situated in an urbanized area, it has a significant impact on the surrounding region that reaches out from the urban core and into the surrounding rural areas around it. Phase 4 will benefit (1) industry located in the surrounding areas, (2) commuters living in rural areas, and (3) patients who live in rural areas but require advanced medical care.

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[4] Please see **Appendix B** for copies of the approved IMS and FONSI documents. The Columbus Crossroads Project's Environmental Assessment can be found here: http://www.dot.state.oh.us/projects/7071/environmental/Documents/EN-02%20Environmental%20Assessment.pdf.

Many of the distribution centers that depend on an efficient interstate system are located on the fringes surrounding the urban core. Large distribution centers have been constructed to the west, north, and east of the city in order to make use of their proximity to the I-70 and I-71 interstates that connect them to consumer markets. In addition, the Rickenbacker Inland Port is located south of the Downtown Split, on the urban core's rural fringe. This intermodal asset is a keystone to the eastern seaboard logistic networks. Rail lines from Rickenbacker, Norfolk Southern' s Heartland Corridor, connect directly to the Port of Norfolk, which accommodates ships enroute to U.S. markets through the expanded Panama Canal. Likewise, Rickenbacker International Airport (LCK) is a gateway for domestic and international freight shipments with regular service to destinations such as Hong Kong, Luxembourg, Dubai, and Moscow. International cargo increased 65% in 2017 and is expected to increase by 900% in the next 20 years.

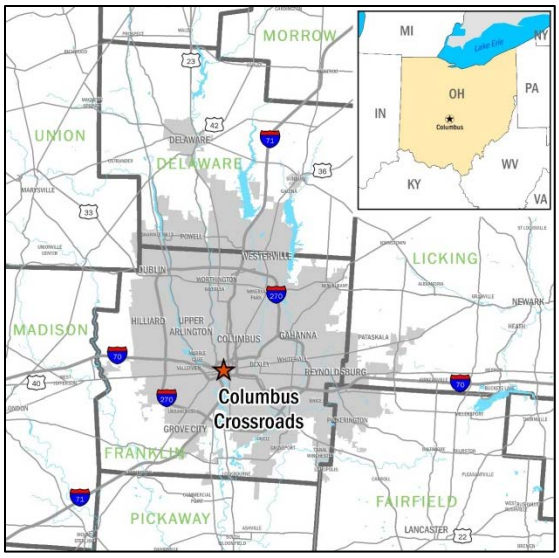

Figure 3 - Project location within urbanized area.

Phase 4's improvements will make the City of Columbus more accessible to commuters from rural areas within the Columbus, OH Metropolitan Statistical Area. This is important because a significant percentage of the Columbus, OH MSA lives in rural areas. During the most recent census, 313,122 people in the MSA of the MSA's total population lived in rural communities, or 16.46% of the MSA's total population. The percentage of people living in rural areas increases dramatically upon leaving Franklin County. In the nine other counties in the Columbus, OH MSA, **40.26% of the population, or 297,369 people, live in rural areas.** Documentation is provided in **Appendix D.** Even though Phase 4 is geographically within the City of Columbus, its will be felt throughout the ten county metropolitan statistical area by (1) easing congestion for commuters and (2) improving access for people seeking essential services in Downtown Columbus.[5]

The workforce in the City of Columbus and Franklin County is dependent upon commuters from outside MSA' urban core: of the 739,541 jobs in Franklin County in 2015, 279,058 are filled by workers from other counties, including 144,309 filled by workers who commute from the other nine counties in the Columbus, OH MSA.[6] The number of in-commuting workers to Franklin County is documented in **Appendix D**, along with information regarding the rural percentage of each county. Clearly, not all of the commuters are from rural areas, and clearly not all of the commuters are dependent upon the Downtown Split to access their jobs and workers are dependent upon the Downtown Split. However, Phase 4's impact on central pieces of the region's interstate system will have an unquestionable, positive impact on rural commuters travelling to work in the City of Columbus and Franklin County.

Phase 4's impact on central pieces of the region's interstate system will also have an unquestionable, positive impact on improving rural communities' access to essential medical services in and around Downtown Columbus. OhioHealth Grant Medical Center and Nationwide Children's Hospital are major regional healthcare facilities in and around Downtown Columbus. Both facilities

[5] The Columbus, OH Metropolitan Statistical Area consists of the following counties: Delaware, Fairfield, Franklin, Hocking, Licking, Madison, Morrow, Perry, Pickaway, and Union.

[6] "Franklin County 2015 Inflow and Outflow Report," Ohio Labor Market Information, Ohio Department of Job and Family Services, last modified September 27, 2017, http://ohiolmi.com/census/Franklin_InflowOutflow.pdf.

offer significant medical care to rural Southeastern Ohio, including many counties in the Appalachian Region of Southern and Eastern Ohio. Grant Medical Center is one of twelve Level 1 Trauma Centers in Ohio, and one of the closest Level 1 Trauma Centers to Southeastern Ohio.[7] NCH is one of only three Level 1 Pediatric Trauma Centers in Ohio,[8] and it is one of only nine Ohio hospitals in the Children's Hospital Association.[9] It is the closest children's hospital for much of southeastern Ohio, and NCH offers a range of important health services to the rural communities. Improving congestion and safety issues in the Downtown Split will improve access to both medical facilities for patients from rural areas.

II. Project Location

Phase 4 of the Columbus Crossroads Project is located in the City of Columbus, in the federally designated Columbus, Ohio Urbanized Area. The geographical coordinates for the proposed project are: 39°57'10.70"N, 82°59'55.89"W.

Figure 4 - Project location in relation to existing infrastructure.

Phase 4 will extend along northbound I-71 from north of the Greenlawn Avenue interchange to the I-70/I-71 overlap, and then east along eastbound I-70/I-71 to west of the Front Street bridge. Both eastbound and westbound of the I-70/I-71 overlap will be reconstructed from west of Front Street to Third Street. As shown in Figure 3, the Front Street, High Street, Third Street and Fourth Street bridges will be replaced along with the adjacent intersections along Fulton Street and Livingston Avenue. Front Street will be reconstructed from north of the Fulton Street intersection to Mound Street and Mound Street will be resurfaced from Front Street to High Street. Eastbound exit ramps 100A and 100B will be consolidated and relocated and will empty onto Fulton Street at Front Street.

III. Grant Funds, Sources, and Uses of all Project Funding

The Ohio Department of Transportation, the City of Columbus, and the Mid-Ohio Regional Planning Commission have already invested nearly $380 million in the Columbus Crossroads Project, including planning, engineering, right of way acquisition and construction of the phases completed to date. This includes $285 million in Federal Transportation and MPO-Attributable

[7] The Ohio State University Medical Center is also a Level 1 Trauma Center in Columbus, Ohio. But the remaining nine Level 1 Trauma Centers are located in Akron, Cincinnati, Cleveland, Dayton, Toledo, and Youngstown. "Trauma Centers," Ohio Department of Public Safety, last modified May 9, 2018, http://www.publicsafety.ohio.gov/links/ems_tc_alphaorder.pdf.

[8] The other two are located in Cincinnati and Cleveland.

[9] The other eight are located in Akron, Cincinnati, Cleveland, Dayton, and Toledo. "Children's Hospital Directory," Children's Hospital Association, https://www.childrenshospitals.org/Directories/Hospital-Directory?state=OH.

funds, $66 million in State Transportation funds, $22 million in GARVEE monies, and more than $5 million from Columbus.

The project cost for Phase 4 of the Columbus Crossroads Project is estimated to be approximately $206.7 million. The following budget does not include the money already expended on 4R's design ($2.4 million) and right of way acquisition ($14.6 million):

Category	Total cost	BUILD	%	Other Fed.	%	Non-federal	%
Land, structures, rights-of-way, appraisals, etc.	$3,700,000	$0	0%	$3,330,000	90.00%	$370,000	10.00%
Architectural and engineering fees	$4,000,000	$0	0%	$3,600,000	90.00%	$400,000	10.00%
Project Inspection fees	$13,000,000	$0	0%	$10,100,000	77.69%	$2,900,000	22.31%
Construction	$159,300,000	$20,000,000	12.55%	$104,000,000	65.29%	$35,300,000	22.16%
Contingencies	$26,700,000	$0	0%	$20,700,000	77.53%	$6,000,000	22.47%
Total:	**$206,700,000**	**$20,000,000**	**9.68%**	**$141,730,000**	**68.57%**	**$44,970,000**	**21.76%**

This BUILD application is seeking to obtain an award of **$20 million** for construction costs for Phase 4. This award would be leveraged to ensure Phase 4 is fully funded. ODOT would commit an additional **$142.3 million** in State and Federal Transportation funds for the design engineering, right of way acquisition, construction and construction engineering for Phase 4, bringing its total commitment to these improvements to $159.3 million. Columbus would commit **$35.1 million** in funding along with **$9.3 million** of federal Surface Transportation Block Grant (STBG) funding through MORPC towards the construction of Phase 4. These letters are provided in **Appendix C**

IV. Merit Criteria

A. Safety

1. Freeway Safety

The freeway improvements planned for Phase 4 of the Columbus Crossroads Project will have a dramatic impact on an area that consistently experiences a high number of crashes and has ranked within the annual top 10 high crash locations in Ohio for most of the last decade.

Between 2015 and 2017 (most recent available data), 681 crashes were reported having occurred along portions of I-70, I-71, and associated ramps identified for improvement in Phase 4 of the Columbus Crossroads Project. At least one person was injured in more than 25% of crashes, including four individuals being seriously injured and one individual suffering fatal injuries. See **Appendix E** for complete safety data.

As shown in **Table A**, rear-end and sideswipe crashes (crash types typically associated with excess congestion) were the two most prevalent crash types

Table A- Freeway Crash Type

Crash Type	Total Crashes	% Total	Injury Rate
Rear End	**394**	57.9%	31.0%
Sideswipe - Passing	**203**	29.8%	18.7%
Fixed Object	**48**	7.0%	25.0%
Left Turn	**9**	1.3%	55.6%
Other Non-Collision	**9**	1.3%	44.4%
Other Object	**7**	1.0%	14.3%
Head On	**3**	0.4%	33.3%
Right Turn	**3**	0.4%	66.7%
Angle	**1**	0.1%	0.0%
Overturning	**1**	0.1%	100.0%
Parked Vehide	**1**	0.1%	100.0%
Pedestrian	**1**	0.1%	100.0%
Unknown	**1**	0.1%	0.0%
Total	**681**	**100.0%**	**27.6%**

along the Phase 4 freeway focus area. Together they accounted for almost 90% of the total crashes. Phase 4 will provide additional traffic lanes on northbound I-71 and I-70/I-71, reducing congestion and traffic backups that likely contribute to the high number of rear end crashes (54.3% of crashes were attributed to either following too closely or failing to leave assured clear distance ahead). Also, by consolidating the eastbound ramps to downtown streets, the project will allow vehicles to exit the freeway with fewer lane changes – a likely action contributing to the high number of sideswipe crashes (19.4% of crashes were attributed to improper lane changes).

The I-70/I-71 corridor provides both north-south and east-west linkages critical to the national logistic network connecting the Midwest and East Coast markets. In addition, Central Ohio is a key freight distribution center, dependent on efficient truck movement into and through the region. Between 2015 and 2017, over 15% of crashes involved a heavy commercial vehicle. These, as well as overall crashes along the corridor, delay freight delivery and undermine the reliability of the national freight system.

2. City Street Safety

Phase 4 of the Columbus Crossroads Project will also work to improve safety conditions along several city streets adjacent to and across the affected freeway segments. Between 2015 and 2017, 296 crashes were reported at intersections and along segments of city streets identified for Phase 4 improvements. There was at least one injury resulting from 17% of these crashes, including three serious injuries. See **Appendix E**.

The project will address vehicle-specific safety concerns, and also increase the ability of all roadway users to navigate to and from Downtown Columbus and neighborhoods to the south. There were 12 crashes in the focus area involved non-motorized users: 11 involving pedestrians, and 1 involving a bicyclist. While only accounting for 4% of non-freeway crashes, non-motorized crashes made up 24% of injury crashes overall and 33% of serious injury crashes. See **Appendix E**.

Table B - City Street Crash Type

Crash Type	Total Crashes	% Total	Injury Rate
Sideswipe - Passing	**76**	25.7%	5.3%
Angle	**57**	19.3%	22.8%
Rear End	**48**	16.2%	18.8%
Left Turn	**34**	11.5%	11.8%
Right Turn	**23**	7.8%	8.7%
Backing	**14**	4.7%	7.1%
Parked Vehide	**14**	4.7%	14.3%
Fixed Object	**13**	4.4%	7.7%
Pedestrian	**11**	3.7%	100.0%
Other Non-Collision	**2**	0.7%	50.0%
Animal	**1**	0.3%	0.0%
Head On	**1**	0.3%	100.0%
Other Object	**1**	0.3%	0.0%
Pedalcydes	**1**	0.3%	100.0%
Total	**296**	**100.0%**	**16.9%**

Wider bridges will allow ODOT and the City of Columbus to implement Complete Streets principles to make bridge crossings safer and more comfortable for bicyclists and pedestrians. ODOT is incorporating bike lanes along city streets, parallel to the Crossroads in conjunction with other components of the I-70/I-71 project phases that have already been built.

Overall, 33% of non-motorized crashes observed along city streets affected by Phase 4 were attributed to motorists failing to yield to crossing pedestrians, while pedestrians were observed to be at-fault through making improper crossings in 25% of non-motorized crashes. Risk associated with these crashes will be reduced through the construction of wider sidewalks on both sides of the four bridges associated with the project, and the addition of sidewalk bulb-outs and brick crosswalks at intersections, working to shorten crosswalks and make pedestrians more visible to motorists. Currently-free flowing traffic that is not signalized at intersections along Fulton Street and Livingston Avenue at the Third Street and Fourth Street intersections will include signalization as part of this project to allow for safer pedestrian crossings.

B. State of Good Repair

The Downtown Split was constructed in 1963. Since that time, the pavement has received asphalt overlays every 10-12 years. The pavement within the project area has exceeded its service life and is in need of replacement and reconstruction. Construction will reset the maintenance cycle, saving $5.5 million within the next five to eight years. These costs are included in the "no-build" construction costs of the Benefit-Cost Analysis.

There are five existing bridges that will be replaced as part of Phase 4 of the Columbus Crossroads Project: one at-grade structure and four overhead bridges that carry city streets. The current condition of the at-grade bridge carrying eastbound I-70/I-71 is in "good" condition and the overhead bridges range from "fair" to "poor". The four city street structures date back to the original construction in 1963, while the bridge over Short Street predates the Interstate construction. As a result, four bridges are in need of substantial maintenance including deck replacement and structural steel painting within the next 5 to 7 years. The Ohio Department of Transportation is currently making interim repairs to the four overhead bridges including placing debris containment on the superstructure to protect vehicles traveling below on the interstate until the bridges can be replaced. Incorporating the replacement of these structures as part of Phase 4 will save millions of dollars in system preservation costs.

Figure 5 - Current Fourth Street Bridge Condition

Phase 4 will replace existing infrastructure that is in need of reconstruction, and utilize new pavement techniques and structure construction procedures to improve safety and reduce congestion.

This project will also include new, wider sidewalks and bike lanes on the city street overhead bridges that are currently in need of replacement. By relocating freeway ramps to downtown, this project will eliminate free-flowing traffic at the Third and Fourth Street intersections that compromise safe pedestrian crossings through the corridor today.

Additionally, the Central Ohio Transit Authority ("COTA") has transit routes on Fulton Street, Livingston Avenue, High Street, and Fourth Street. The pavement and bridge replacements will support the long term efficiency of transit operations.

C. Economic Competitiveness

Phase 4 of the Columbus Crossroads sits at the epicenter of significant growth in the City of Columbus and Central Ohio. Between 2016 and 2017, the Columbus, OH Metropolitan Statistical Area's gross domestic product grew by 2.5% to approximately $130.8 billion,[10] and its population grew by 1.6% to approximately 2,078,725.[11] The City of Columbus has experienced the eighth

[10] "Gross Domestic Product by Metropolitan Area, 2016," Bureau of Economic Analysis, U.S. Department of Commerce, last modified September 19, 2017, https://bea.gov/newsreleases/regional/gdp_metro/2017/pdf/gdp_metro0917.pdf.

[11] "Estimates of Resident Population Change and Rankings: July 1, 2016 to July 1, 2017 - United States -- Metropolitan Statistical Area; and for Puerto Rico," American FactFinder, U.S. Census Bureau, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk.

largest numeric population increase (15,429) between July 1, 2016, and July 1, 2017 for cities with a population of 50,000 or more. Its total population is estimated to be 879,170, and it has passed Indianapolis to become the fourteenth largest city in the country.[12] This growth is significant nationally, regionally, and locally. Phase 4 is essential to (1) improving national, regional, and local traffic that flows through the City of Columbus, and (2) supporting local economic development opportunities in Downtown Columbus and its surrounding neighborhoods.

1. Highway and Freight Movements

Phase 4 of the Columbus Crossroads Project position at the literal crossroads of I-70 and I-71 means that it will have a tremendous impact on the national, regional, and local flow of goods and people through the City of Columbus and Central Ohio.

Truck transportation is a $7 billion industry in the State of Ohio. At 4.8% of the national gross domestic product for truck transportation, the state is the fourth largest for truck transportation.[13] Reducing freight congestion on its vital corridors is an economic priority for the Ohio Department of Transportation. ODOT is investing millions of dollars in improvements throughout the state's I-70 corridor. Projects include adding lanes near Dayton and Springfield, multiple interchange upgrade and modification projects, and enabling truck platooning between the Columbus region and eastern Ohio. The only major area of congestion left between Pittsburgh, Pennsylvania and Indianapolis, Indiana that does not have construction scheduled is Phase 4.

Phase 4's freeway area is heavily used. Approximately 130,000 vehicles drive through the Columbus Crossroads every day; and approximately 17,100 are trucks and 112,900 are personal vehicles. This use exceeds the capacity currently available by approximately 50,000, causing significant daily congestion. This area of freeway congestion is the one of the most congested in the entire state (number 15 overall). According to the attached Phase 4's freeway improvements should reduce the current congestion by 97%, almost completely eliminating it.[14] This reduction in congestion will provide significant benefits to commuters and freight travelling through the corridor.

In addition to reducing congestion for commuters travelling through Downtown Columbus, Phase 4 will make it easier for commuters travelling to jobs inside Downtown Columbus and the surrounding neighborhoods. Commuters represent a significant portion of the 112,900 personal vehicles that use the Downtown Split. Phase 4 will reconfigure the exit ramps for eastbound traffic entering Downtown Columbus. These improvements, combined with improvements during Phases 2E and 6R for traffic exiting Downtown Columbus, will significantly improve commute times for workers and residents who must enter and leave Downtown Columbus on a regular basis.

The total reduction in congestion for commuters and freight is projected to have a significant economic impact. Phase 4's improvements should save approximately 6,600 person-hours of delay daily in the Opening Year and up to 8,500 daily person-hours of delays by the Design Year, which will prevent annual losses of approximately $30 million due to lost time and productivity.[15]

2. Capitalizing on Downtown Revitalization & Economic Growth

Phase 4's improvements will also provide significant support for local economic development opportunities in Downtown Columbus and its surrounding neighborhoods. MORPC predicts jobs in Downtown Columbus to increase by 13% and the residential population to grow by

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[12] "Census Bureau Reveals Fastest-Growing Large Cities," U.S. Census Bureau, May 24, 2018, https://www.census.gov/newsroom/press-releases/2018/estimates-cities.html.

[13] "Gross Domestic Product from Ohio, September 2017," Ohio Development Services Agency, last modified October 13, 2017, https://development.ohio.gov/files/research/E1001.pdf.

[14] Please see Benefit Cost Analysis induded in **Appendix K**.

[15] Please see Benefit Cost Analysis induded in **Appendix K.**

120% between 2015 and 2040. This growth has resulted in a significant investment of private and public funds in Downtown Columbus. In 2017 alone, 22 projects ($360 million) were completed; 29 projects ($548 million) were under construction; and 35 projects ($1.9 billion) were proposed.[16] Phase 4 will support economic development in Downtown Columbus and the neighborhoods immediately south of Downtown Columbus – including the Brewery District, historic German Village, Schumacher Place, and Livingston Park – in three primary ways: (1) it will improve existing economic development opportunities, (2) it will create new economic development opportunities, and (3) it will improve the overall movement and well-being of workers and residents in Downtown Columbus and the areas immediately around it. With Phase 4's bridge and city street improvements, the communities immediately south of Downtown Columbus are reconnected to downtown and a vibrant catalyst for growth and economic development within their own neighborhoods. Without these improvements, the communities south of Downtown Columbus will remain cutoff from downtown and they will continue to remain in limbo on how redevelopment should proceed.

a. Improvement of existing economic development opportunities

In general, Phase 4 will improve existing economic development opportunities for areas inside and immediately surrounding the Phase 4 project area. The Phase 4 improvements combined with the City of Columbus's Livingston Avenue improvements will significantly improve general access for sites on both Livingston Avenue and Front Street. The planned improvements will also support the following existing economic development opportunities, maps of which are also provided in **Appendix F**:

- **Former Wasserstrom Site** – A former brewery on 1.24 acres, this property has been underutilized since Wasserstrom Co. relocated its corporate headquarters in October 2017. The property recently sold for $6.4 million and is targeted for a major redevelopment. The quality and success of this development will be heavily impacted by Phase 4, which directly abuts the north side of the property at the Front Street Bridge. Dwight McCabe, a developer for the property has told the Brewery District Commission that the planned Phase 4 improvements would "make the property's location a 'front door' to Downtown that could boost his plans for ground-floor retail along with a hotel and offices.[17]
- **Nationwide Children's Hospital (NCH) Campus Expansion** - One of the top-ranked children's hospitals in the nation, NCH is in the midst of a $1.25 billion reconstruction and expansion of its campus, including the area directly south of the trench. Multiple phases of the Columbus Crossroads Project are providing essential support for NCH's expansion. Phase 4 will improve freeway access and ease congestion for staff and patients at NCH's main campus. It will also tie-in with the freeway improvements planned for Phase 2E of Columbus Crossroads Project. Phase 2E will construct a new ramp directly serving the complex, and it will realign Mooberry Street. **Appendix F** includes the Master Facilities II map.
- **Former Columbus Africentric High School Site** – Phase 4 will also support NCH's redevelopment of the old location of the Columbus Africentric High School., a 3.7 acre site just to the east of Phase 4's eastern limit. Phase 4's urban avenue improvements on the

[16] "State of Downtown Columbus, Year End 2017," Capital Crossroads & Discovery Special Improvement Districts, last modified February 21, 2018, https://downtowncolumbus.com/wp-content/uploads/2018/02/2017-SOD-Report-EOY-web.pdf.

[17] Marla Matzer Rose, "Brewery District attracting more interest from developers," *The Columbus Dispatch*, December 23, 2017, http://www.dispatch.com/news/20171223/brewery-district-attracting-more-interest-from-developers.

Fourth Street Bridge, and the City of Columbus' related Livingston Avenue projects, will significantly improve development options for the site.

- **33 E. Livingston Avenue** – Proposals have been submitted to the German Village Commission to redevelop this 0.27 acre property. The current proposal would construct a 6-story, 156 room hotel. The property is situated directly in the Phase 4 project area, and currently fronts a one-way section of Livingston Avenue. The site will benefit significantly from the planned improvements in Phase 4 and the City of Columbus' related Livingston Avenue Phases A & B, which (1) convert Livingston Avenue from one-way to two-way, between Front Street and Fourth Street, and (2) install urban avenue enhancements.
- **Short Street** – Situated in the Brewery District, access and opportunities in and around this area have been limited because Short Street ends before Sycamore Street. Phase 4's Maintenance of Traffic plans requires Short Street to be completed all the way from Liberty Street to Sycamore Street in the Brewery District. This will create new development opportunities once the connection is completed.

b. Creation of new economic development opportunities

Phase 4 will also create new economic development opportunities immediately south of Downtown Columbus. The following opportunities are also included on the map in **Appendix F**, and they are only possible with Phase 4's planned improvements:

- **Commercial Cap over I-70/I-71** – The City of Columbus' High Street Cap over I-670 was one of the very first commercial caps constructed in the country. This cap, which seamlessly reconnected Downtown Columbus to the Short North neighborhood, has become a case study for other cities looking for creative ways to restore and reconnect neighborhoods.[18] The High Street Cap over I-670 also provides the City of Columbus with its own case study on how to develop additional commercial caps across the South Innerbelt Trench, including how to navigate some of the related legal challenges such as obtaining title to the land beneath the commercial cap and leasing the air space to be developed as a commercial cap. While Phase 4 improvements currently include dual sixty foot wide green caps for both the High Street Bridge and Third Street Bridge, both of these bridges will also have the ability to support commercial caps on both sides. The City of Columbus has already completed a feasibility study for a commercial cap on the High Street Bridge over I-70/I-71. It believes the value of this new economic development opportunity is significant enough that a developer will be quickly identified.

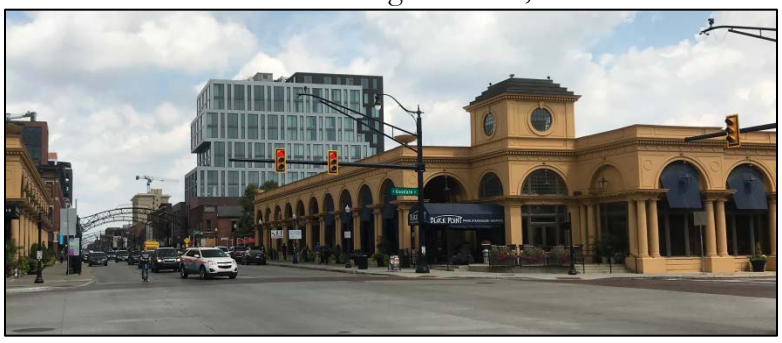

Figure 6 - High Street Cap over I-670

- **Livingston Avenue, between Third Street and Fourth Street** – The construction of a retaining wall on the southern edge of I-70/I-71 during Phase 4 will create an acre and a half of newly developable land on Livingston Avenue, shown in **Figure 7**. This property would be made accessible by Phase 4's urban avenue improvements to the Third Street Bridge, the

[18] "The Cap at Union Station," ULI Development Case Studies, last modified February 26, 2007, https://casestudies.uli.org/wp-content/uploads/sites/98/2015/12/C035010.pdf.

Fourth Street Bridge; and the City of Columbus' related Livingston Avenue projects. The new acreage is on the border between German Village and Downtown Columbus, and it would also be near Nationwide Children's Hospital and a potential commercial cap on the Third Street Bridge. This new acreage's location makes it highly desirable area for development. In fact, the adjacent Africentric School site recently sold for nearly $15 million, roughly $4 million an acre.

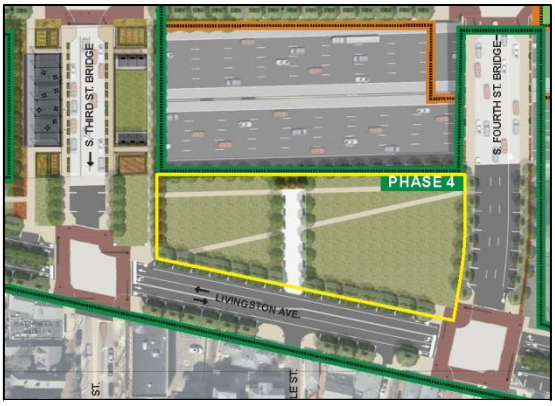

Figure 7 - New acreage available for development.

Phase 4's benefits are more than just supporting existing economic development opportunities or creating new opportunities. Phase 4 allows for redevelopment opportunities that have been dreamed of for 15 years to become reality. Additionally, because the blocks around the project limits have been continuously developed and re-developed over the last 150 years, there are potential brownfield issues that could exist due to the former commercial and industrial uses. Revitalization of several major properties could therefore include brownfield redevelopment.

c. Improvement of the overall movement and well-being of workers and residents

Phase 4 will also improve the overall movement and well-being of workers and residents in Downtown Columbus and the areas immediately around it. Not only is Downtown Columbus the region's largest job center, it has a rapidly growing residential population – particularly the area that is immediately north of the Front Street Bridge and the High Street Bridge: one new residential project was completed in 2017, three are underway, and an additional two residential projects are proposed. Phase 4 will replace the Front Street Bridge, High Street Bridge, Third Street Bridge, and Fourth Bridge with pedestrian and bicyclist friendly bridges that will encourage additional pedestrian and bicyclist traffic between Downtown Columbus and the neighborhoods immediately around it. This will benefit the overall well-being and movement of workers and residents in Downtown Columbus and areas immediately around it by providing mobility options that do not currently exist.

D. Environmental Protection

In July 2009 the Federal Highway Administration (FHWA) issued a Finding of No Significant Impact (FONSI) for the entire Columbus Crossroads Project. The FONSI stated that "the proposed project will have no significant impact on the human or natural environment." The environmental assessment prepared for this project described the measures being undertaken as part of the project to protect the environment. Moreover, this project will make several important improvements to the environment:

- **Energy Saving** – New LED street lighting and traffic signals are proposed throughout the project. These fixtures reduce energy consumption by 50% and have a longer life than regular fixtures.
- **Reduces on Oil Dependency** – The Mobile Source Air Toxics (MSAT) analysis conducted for the Columbus Crossroads Project indicated that total emissions from gasoline and diesel powered vehicles would decline with the construction of the proposed improvements even though the number of vehicles would increase by nearly 40%. Because the emissions of MSAT's such as Acetaldehyde, Benzene, and Formaldehyde are directly related to the

amount of petroleum consumed, it is reasonably foreseeable that Phase 4's proposed improvements will reduce oil consumption and oil dependency.

- **Air Quality** – The Columbus Crossroads Project will reduce congestion and the resulting emissions MSATs, Particulate Matter (PM), and carbon (3,500 tons of carbon over 10 years). Carbon Monoxide (CO) and PM studies have shown that emissions from idling vehicles are substantially higher than those from free flowing traffic. As a result, Phase 4 will not cause or contribute to any regional MSAT or localized CO or PM 2.5 violations. The studies show that the project area will be in compliance with the NAAQS for the design year of 2030.
- **Noise Reduction** – Noise reduction will feature prominently in the selection of pavement and bridge deck surface treatments.
- **Improves Water Quality** – Phase 4 will be designed with a commitment to improve water quality. Previous phases have removed freeway storm sewer connections to the existing combined sewer system. A new manufactured system for Best Management Practices was constructed to treat storm water from the freeway before entering the Scioto River. The proposed drainage system for Phase 4 will connect to this system. Additionally, the greenspace on freeway caps will also reduce run off by acting as a green roof.
- **Sustainability** – ODOT will mandate the use of recycled materials (asphalt and concrete) in the construction of new pavement. The construction phasing will be done in a way that soil excavated from the project will be reused in areas where the elevation is being increased.
- **Preserves Historic Resources** – ODOT will avoid or minimize the impacts to historic resources through the extensive use of full-height retaining walls, minimizing the freeway footprint. The project will maximize the use of existing city streets to reduce construction on new alignments. As a result, this Columbus Crossroads Project has received a preliminary finding of no use or minimal use of many historic resources. Where impacts to historic resources have been identified, ODOT has made commitments to further minimize harm through the use of mutually negotiated mitigation strategies.
- **Aesthetic and Context Sensitive Treatments** – These treatments will be used throughout the project to sustain the viability of neighboring residential and commercial districts, many of which are listed on the National Register of Historic Places. Community sensitive aesthetics are proposed for the City street bridges over I-70/I-71 as part of Phase 4. ODOT and Columbus have engaged neighborhood groups and historic preservation commissions, including the Brewery District and German Village Commissions, in the design of the Columbus Crossroads aesthetics to further ensure the design is context sensitive.

Figure 8 - High Street Bridge looking east (existing).

Figure 9 – High Street Bridge looking east (proposed)

E. Quality of Life

The City of Columbus, the Ohio Department of Transportation, and the Mid-Ohio Regional Planning are working together to ensure Phase 4 will have a significant, positive impact on Downtown Columbus and the surrounding neighborhoods. Reconstructing four bridges

across the South Innerbelt Trench, converting Front Street to two-way streets, and completing the urban avenue improvements throughout the project area will (1) improve transportation choices for individuals, (2) expand access to essential services and critical destinations, and (3) otherwise improve the quality of life for people who live or work in Downtown Columbus, German Village, the Brewery District, and Franklinton.

Phase 4 will expand transportation choices that are currently very limited for individuals travelling across the South Innerbelt Trench. Pedestrian facilities across the existing Front Street Bridge, High Street Bridge, Third Street Bridge, and Fourth Street Bridge are in poor condition, and the facilities are limited by the flow of traffic entering or exiting the interstate. Phase 4 will reconstruct each bridge with broad sidewalks (at least ten feet wide) on both sides of the street, and each bridge also will be able to accommodate bicyclists either on a bike lane in the roadway or on a path on a bridge cap. These enhanced pedestrian and bicyclist accommodations will provide safe, meaningful pedestrian and bicyclist transportation choices for residents and workers. Current pictures and renderings showing Phase 4's quality of life impact are included in **Appendix G.**

Phase 4 will significantly improve and expand access to essential services and critical destinations for residents and non-residents of Downtown Columbus:

- **Nationwide Children's Hospital**. NCH is one of the largest and busiest children's hospitals in the country. It is also one of just three Level 1 Pediatric Trauma Centers in Ohio. In 2017, there were approximately 1,486,471 patient visits, and patients came from all 50 states and 48 different countries.[19] NCH serves its patients from its primary campus inside the Columbus Crossroads Project area, as well as several satellite locations within Central Ohio. At the primary campus alone, NCH anticipates approximately 90,000 emergency department visits and 300,000 outpatient visits. NCH currently employs approximately 11,909, with an additional 1,500 jobs anticipated as NCH continues to expand its main campus. Phase 4 will significantly improve access by greatly reducing freeway congestion for patients and staff travelling on eastbound I-70/I-71. The freeway improvements during Phase 4 will tie-in to Phase 2E's new eastbound exit ramp at Mooberry Street. The urban avenue improvements during Phase 4 and the City of Columbus' Livingston Avenue Phase A and Phase B projects will tie-in to Livingston Avenue Phase C, thereby improving City street access to the NCH's primary campus.
- **OhioHealth Grant Medical Center.** Traffic signal preemption equipment will be installed on Mound Street, from Third Street to Washington Avenue, and Fulton Street, from Front Street to Fourth Street. This technology will be installed during Phase 4 and Phases 2C, 2D, 2E, and 2G. It will provide swift access to Columbus Fire personnel transporting patients to this hospital critical Level 1 Trauma Center
- **Access for Columbus Division of Fire.** The traffic signal preemption technology along Fulton Street and Mound Street will also provide the Columbus Division of Fire's EMS and Fire units with the ability to move swiftly through these corridors. The preemption technology will also ensure fire and EMS units responding from Columbus Fire Station 2 can quickly depart the station, which is located at the northwest corner of the intersection of Fulton Street and Fourth Street. Other Phase 4 improvements will also increase Fire and EMS response times by improving congestion and roadway conditions on several priority routes for Fire and EMS units within the project area. **Appendix H** shows priority EMS routes in and around the project area.

[19] "Fast Facts," Nationwide Children's Hospital, https://www.nationwidechildrens.org/about-us/our-story/fast-facts,

- **DC Fast Chargers for Electric Vehicles –** SMART Columbus is planning to install the infrastructure necessary for electric vehicle DC Fast Chargers for on Fulton Street, just east of Fourth Street. The consolidation and relocation of Exits 100A and 100B during Phase 4 will provide drivers travelling east in the Downtown Split with quick, direct access to these charging stations, increase the range for electric vehicles. Phase 4 ramp improvements are an essential element that allows drivers to easily leave the interstate, swiftly charge their vehicle, and easily return to the interstate with minimal disruption or delay.
- **Brewers Yard Kroger Grocery Store.** Downtown Columbus' population has grown from approximately 3,488 in 2000 to approximately 8,400 in 2017.[20] However, affordable grocery options in the area have not increased. The USDA considers the southwest corner of Downtown Columbus to be in a low-income (LI) census tract with low access (LA) to supermarkets within a half mile.[21] The Brewers Yard Kroger is just beyond the half mile radius from many of the new residential projects in Downtown Columbus. But it is separated from the residential units by the South Innerbelt Trench. Poor pedestrian and bicyclist accommodations, along with one-way restrictions on the existing Front Street Bridge, currently limit the choices residents have for travelling to this grocery store. Phase 4 will improve access to this critical destination by converting the Front Street Bridge to two-way, and adding safe pedestrian and bicyclist accommodations to it.

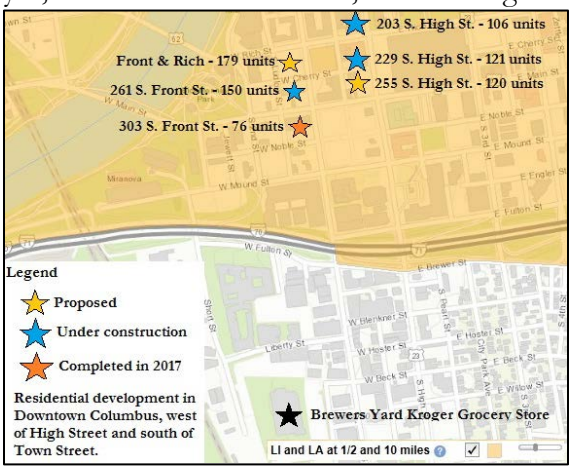

Figure 10 – Relationship of new residential units built in a LI and LA at ½ mile area to Kroger.

- **Columbus Downtown High School** – This is one of two career technical educational centers for Columbus City Schools. It offers eleventh and twelfth graders full-day career-technical courses in a number of business, information technology, culinary, cosmetology, education, engineering & manufacturing, and public safety programs, all to prepare students for in-demand careers in high-growth technical fields and for college. It is located at southeast corner of Fourth Street and Mound Street, in the block directly north of the Fourth Street Bridge. Pedestrian and bicyclist access to the school will be improved by the Fourth Street Bridge reconstruction during Phase 4.

Phase 4 will also have a significant impact on the city's overall quality of life by transforming the bridges across the South Innerbelt Trench into new public spaces that are that psychologically inviting and environmentally beneficial. The current bridges across the South Innerbelt Trench are not inviting to pedestrians. Sidewalks are narrow, pushed up next to driving lanes, and in poor condition. Visual separation between the pedestrians and the interstate below is non-existent. Crosswalks are limited because of vehicles entering and exiting I-70/I-71. Phase 4 would significantly improve these conditions. Broad sidewalks (at least ten feet wide) would be constructed on both sides of all four bridges. A line of planters or other visual barriers will be installed on both sides of all four bridges. Additional crosswalks will be installed at the intersections as Phase 4

[20] "State of Downtown Columbus, Year End 2017"

[21] "Food Access Research Atlas," U.S. Department of Agriculture, last updated May 18, 2017, https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas/. Figure 10 illustrates new residential units in a LI and LA at ½ mile area, and their location to the Brewers Yard Kroger.

permanently reroutes traffic entering and exiting the interstate. Additionally, the following improvements are planned for each bridge:

- **Front Street Bridge:** The new bridge will be a gateway for Downtown and the Brewery District. It will feature sidewalks at least eleven feet wide and a forty foot wide green cap on the east side.
- **High Street Bridge:** The new bridge will be a civic gateway between Downtown, German Village, and the Brewery District. It will feature sidewalks at least ten feet wide and sixty foot wide green caps on both sides with significant public green space and enhanced pedestrian accommodations. If a private developer can be identified, it is the city's goal to develop a commercial cap.
- **Third Street Bridge:** The new bridge will be a gateway between Downtown and German Village. It will feature sidewalks at least ten feet wide and, if this application is successful, the City of Columbus would work to identify a developer to develop the sixty foot wide caps on both sides of the bridge as commercial cap space.

Figure 11 - Front Street Bridge looking north (existing).

Figure 12 – Front Street Bridge looking north (proposed)

- **Fourth Street Bridge:** The new bridge will feature enhanced accommodations for pedestrians and bicyclists. It will feature sidewalks at least ten feet wide, and planters on both sides. It will connect to improved development opportunities on Livingston Avenue.

The new bridge designs will create urban spaces that invite people to enter and enjoy the green space. The idea is to create spaces on the bridges that reconnect the neighborhoods and make people forget they are actually on top of I-70/I-71. The bridges' emphasis on public green space in the caps and planters will provide green space that not only serve as a visual shield for the interstate below, but also as an environmental filter. Recent research demonstrates that green barriers on the edges of roadways can help reduce air pollution in the immediate areas surrounding the roadways. According to the United States Environmental Protection Agency, "Studies have shown that noise and vegetative barriers can reduce downwind pollutant concentrations near roads."[22] Phase 4's emphasis on creating significant green spaces on the new bridges will not only make the bridges more inviting, but it will also improve the overall quality of life in the immediate area by limiting the impact of exhaust pollution from the vehicles travelling through the South Innerbelt Trench.

F. Innovation

1. Innovative Technologies

[22] "Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality," Environmental Protection Agency, last modified August 9, 2016, https://www.epa.gov/sites/production/files/2016-08/documents/recommendations_for_constructing_roadside_vegetation_barriers_to_improve_near-road_air_quality.pdf.

Phase 4 of the Columbus Crossroads Project will support the delivery of two innovative technologies in Downtown Columbus: (1) signal preemption technology; and (2) DC Fast Chargers for Electric Vehicles.

a. Signal preemption technology

The installation of signal preemption technology on Fulton Street and Mound Street is part of the improvements planned for the Columbus Crossroads Project as a whole. This technology is being installed for the benefit of Columbus Fire Division units responding from Columbus Fire Station 2, which is situated at the northwest corner of the intersection of Fourth Street and Fulton Street, and transporting patients to OhioHealth Grant Medical, which is a Level 1 Trauma Center in Downtown Columbus. Opticom GPS priority emergency signal preemption for traffic signals will be installed at signals on both Mound Street, from Front Street to Fourth Street, and Fulton Street from Third Street to Washington Avenue. The overall phasing of the Columbus Crossroads Project means this aspect of the project will be completed over multiple phases, including Phases 4, 2C, 2D, Phase 2E, and Phase 2G. Installing the preemption technology should not have any adverse effect of Phase 4's delivery timeline. The City of Columbus has already installed fiber optic infrastructure for the signals on Fulton Street and Mound Street, and it is in the process of integrating signal preemption technology into its central traffic control system in other areas of the city. By the time Phase 4 is ready for construction, the City of Columbus will have the experience necessary to ensure the integration of Phase 4's signal preemption technology does not have any adverse effect on the project delivery timeline.

b. DC Fast Chargers for Electric Vehicles

SMART Columbus is planning to install the infrastructure necessary for electric vehicle DC fast chargers on Fulton Street. The infrastructure will be situated just outside of Phase 4's project area on Fulton Street as part of Phase 2G. The DC fast chargers will be privately installed and maintained after the infrastructure is in place. However, installing and maintaining the DC fast chargers will not be economically viable unless there is a critical mass of users who can easily reach these stations. Phase 4's improvements to the exit for eastbound traffic entering Downtown Columbus on Fulton Street help ensure a critical mass of users are able to easily access the DC fast chargers while travelling eastbound through the Downtown. Neither the installation of the DC fast chargers nor Phase 2G's installation of the DC fast chargers' infrastructure would have any adverse effect on Phase 4's project delivery timeline.

2. Innovative Project Delivery

The Ohio Department of Transportation has incorporated two innovative aspects regarding Phase 4's project delivery: (1) ODOT's Performance Based Project Development (PBPD) process, and (2) ODOT's NEPA Assignment.

a. Performance Based Project Development (PBPD)

ODOT has adopted PBPD as a planning and design philosophy that proposes targeted, right sized improvements based on a project's specific needs. This philosophy places less emphasis on strict adherence to design standards and more significance on safety and operational performance. PBPD techniques were used in the development of phases for the Columbus Crossroads Project. Phase 3 proposes a deviation from standard shoulder widths in order to allow space for an additional northbound lane for I-71 through the west interchange, which will advance improvements to safety and reduce congestion as part of this project phase. A future phase of the project will

reconstruct the I-70/I-71 bridge over the Scioto River, which will include the standard shoulder width.

b. NEPA Assignment

The Environmental Assessment for the Columbus Crossroads Project was approved and a Finding of No Significant Impact (FONSI) was issued on July 8, 2009. A reevaluation is currently being prepared for Phase 3 of the Columbus Crossroads Project to address construction access and the multi-year construction schedule along the Lower Scioto Bikeway that crosses the project area. ODOT is one of a handful of states nationwide that has, under NEPA Assignment, the authority to assume the Federal Highway Administration's NEPA responsibilities. ODOT's NEPA Assignment ensures a single point of contact that understands both project details and the regulatory process. As ODOT is best suited to ensure compliance with all local agreements and partner commitments, as well as Federal NEPA requirements, coordination inefficiencies have been dramatically lessened using this approach, eliminating extra steps in the review/approval process which can adversely affect the overall project schedule. This innovative delivery method allows ODOT to streamline the environmental approval process for this reevaluation. When ODOT entered into the NEPA Assignment Program, it estimated the reduction would equate to approximately 20% time savings for our overall program. Since implementation of NEPA Assignment in Ohio, ODOT has saved approximately 2,970 days of review time and approximately $17.7 million dollars.

3. Innovative Funding

The project is funded primarily through traditional means for the Ohio Department of Transportation, the City of Columbus, and the Mid-Ohio Regional Planning Commission. However, the City of Columbus has approached Nationwide Children's Hospital (NCH) regarding private support projects related to Phase 4 of the Columbus Crossroads Project. For Livingston Avenue Phase C, NCH has agreed to contribute $1,000,000 towards this projects design costs, and it has also donated land for right of way valued at $320,000. NCH has also contributed approximately $1.5 million towards bridge enhancements for the 18th Street Bridge over I-70, which will be constructed during Phase 2E of the Columbus Crossroads Project.

G. Partnership

The Columbus Crossroads Project represents a multi-year partnership among the City of Columbus, the Ohio Department of Transportation, and the Mid-Ohio Regional Planning Commission. The urban avenues and bridge enhancements featured in Phase 4 of the Columbus Crossroads Project is the result of more than a decade of partnership, planning, and public involvement. The City of Columbus is proud to be the lead applicant for this BUILD application; and ODOT has agreed to be the proposed grant recipient if this application is selected for funding. A copy of this letter has been provided in **Appendix D**.

a. Details about the Ohio Department of Transportation, the proposed BUILD grant recipient

ODOT is the administrative department of the state government responsible for developing and maintaining all state and federal roadways in Ohio with the exception of the Ohio Turnpike. It is the lead agency responsible for the Columbus Crossroads Project.

ODOT has broken up the state of Ohio into 12 districts in order to facilitate regional development. Each district is responsible for the planning, design, construction, and maintenance of the state and federal highways in their region. Ohio's Columbus Crossroads Project is located in

ODOT District 6. ODOT District 6 is responsible for 4,921 US Route, State Route and Interstate lane miles and 1,557 bridges throughout eight counties in Central Ohio.

ODOT's primary source of transportation funding in Ohio is gas tax revenue, which by statute can be used for highway construction, traffic enforcement and certain other activities. Each year there are more capital needs for passenger and freight improvements than there is funding available. Given the competition for scarce funding resources, the Ohio Revised Code in 1997 established the nine-member Transportation Review Advisory Council (TRAC) to assist in developing a project selection process for ODOT's largest investments and is chaired by ODOT's Director. Due to its significant economic and transportation impact, this project is a priority for Central Ohio. ODOT District 6 has received TRAC funding for construction of the improvements.

ODOT estimates the total cost for all Columbus Crossroads Project Phases is approximately $1.3 billion, which includes $206.7 million for just Phase 4. ODOT has partnered with MORPC and the City of Columbus to ensure the project continues to move forward with the funding necessary to execute the shared design vision for the Columbus Crossroads Project.

b. Details about the Mid-Ohio Regional Planning Commission, the regional metropolitan planning organization

MORPC serves as the local Metropolitan Planning Organization and has been involved in prior planning for all phases of the Columbus Crossroads Project, including Phase 4. Across all phases, MORPC has committed $20 million in funding to provide design enhancements including Complete Streets facilities to the city streets reconstructed as part of the Columbus Crossroads Project. MORPC also assisted with coordination of project partners and provided data and information for this BUILD application. This project was identified as a regional priority through the Competitive Advantage Projects (CAP) initiative. CAP is an initiative of Columbus 2020 and MORPC that prioritizes and advances strategic infrastructure investments across Central Ohio.

c. Details about the City of Columbus, the lead BUILD applicant

The City of Columbus is the municipality in which the Columbus Crossroads Project is located. It is responsible for maintaining the Minor Collectors, Major Collectors, and Arterials within its corporate limits. It is the lead applicant for this BUILD application, and it has worked closely with the ODOT on the Columbus Crossroads Project since the project's inception. The City of Columbus has committed significant funds to the project, including **$35.1 million** towards Phase 4.

City personnel from multiple departments have coordinated with the Ohio Department of Transportation during the Columbus Crossroads Project, including personnel from the Department of Development, the Department of Public Utilities, the Department of Public Safety, the Department of Building and Zoning Services, and the Department of Public Service.

The Department of Development coordinated a development study to identify the optimal commercial utilization of Phase 4's freeway caps. It has also worked closely with Nationwide Children's Hospital to support NCH's ambitious expansion of its campus and services,[23] during the overall Columbus Crossroads Project and related Department of Public Service urban avenue projects on Livingston Avenue and Parsons Avenue.

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[23] "Nationwide Children's Hospital to Transform Main Campus with Phase II Facilities Plan and Behavioral Health Pavilion," Nationwide Children's Hospital, last modified June 10, 2016, https://www.nationwidechildrens.org/newsroom/news-releases/2016/06/nationwide-childrens-hospital-to-transform-main-campus-with-phase-ii-facilities-plan-and-behavioral.

The Department of Public Utilities (DPU) has provided input and comments on the Columbus Crossroads Project's impact on the City's storm water management system and the City's floodwall along the Scioto River. DPU has also worked closely with ODOT in regard to its Furnace Street Substation. In an effort to accommodate DPU's substation, ODOT will construct a retaining wall during Phase 4. This wall will allow the substation to remain in situ, with just the transmission lines being moved from existing locations.

The Department of Public Safety and the Department of Building and Zoning Services coordinated the reconstruction of Columbus Fire Station 2 with ODOT. The station sits at the corner of Fulton Street and Fourth Street. Portions of Fulton Avenue are being improved and reconfigured during Phases 2E, 2G, and 4. The Fourth Street Bridge, which is the south leg of the intersection of Fulton Street and Fourth Street, is being rebuilt during Phase 4. In reviewing the station's needs and the proposed building site plan for the station, it was decided to install signal preemption equipment at key signals around the station during Phase 2G.

The City of Columbus' Department of Public Service (DPS) is also coordinating multiple projects with ODOT in support of Phase 4. DPS is in the process of awarding a contract to complete Short Street between Liberty Street and Sycamore Street. This extension is necessary for the maintenance of traffic during Phase 4's construction. Public Service has also coordinated this project with Public Utilities to upgrade storm water facilities in this area.

DPS is also closely coordinating with ODOT the City of Columbus's urban avenue a three-phase, $28.3 million project on Livingston Avenue that complements the work being completed during the Columbus Crossroads Project, particularly Phase 4. Livingston Avenue Phase A runs along a portion of the South Innerbelt Trench's southern wall, and it is dependent on a retaining wall being constructed during Phase 4 from the western edge of the South Innerbelt Trench to the Third Street Bridge. The urban avenue improvements planned for the City of Columbus' Livingston Avenue projects are being coordinated with Phase 4's improvements to ensure a seamless streetscape, regardless of the agency responsible for a particular section.

DPS is also coordinating its Livingston Phase C project with Nationwide Children's Hospital, who is contributing approximately $1 million to the design of this DPS project. The City of Columbus' Livingston Avenue projects would tie-in directly with the Columbus Crossroad's Phase 4 work on the Front Street Bridge, High Street Bridge, Third Street Bridge, and Fourth Street Bridge; and the projects' urban avenue enhancements would be consistent with the Design Enhancements established for the Columbus Crossroads Project.

d. Details about public involvement and support for the Columbus Crossroads Project

The City of Columbus and other community stakeholders have been involved in the planning process for the Columbus Crossroads Project, including Phase 4, since the ODOT began planning for the project. Nationwide Children's Hospital has been a particularly active supporter for the overall Columbus Crossroads Project. NCH's main campus is situated where I-70 and I-71 divide, and it has been an actively involved with the project since ODOT convened the I-70/I-71 South Innerbelt Advisory Committee ("Advisory Committee").

ODOT convened the Advisory Committee to be the representative oversight group to guide its Innerbelt Study planning process. This study began in 2001. The advisory committee was composed of a broad range of public and private community stakeholders representing national, state, county, city, and neighborhood interests, including Federal Highway Administration, ODOT, Franklin County Board of Commissioners, City of Columbus, Columbus Downtown Development Commission, Livingston United Methodist Church, the German Village Society, and Nationwide Children's Hospital. A complete list of Advisory Committee members is available in **Appendix I**.

The Advisory Committee also served as the I-70/I-71 South Innerbelt Stakeholders Group ("Stakeholder Group"), and it provided public oversight of the project's formal Design Enhancement Process that began in 2006. The Stakeholder Group received recommendations from a working group and two constituent committees that had been created to provide technical guidance and community input during the Design Enhancement Process. Representatives of the City of Columbus, ODOT, and the project consultant team composed the working group. A wide range of national, state, county, city, and neighborhood stakeholders composed the East Corridor Constituent Committee and the South Corridor Constituent Committee. Phase 4 falls within the South Corridor, and the members of the South Corridor Constituent Committee included the Federal Highway Administration, Ohio Department of Transportation, Franklin County Board of Commissioners, City of Columbus, Columbus Downtown Development Commission, Livingston United Methodist Church, the German Village Society, and Nationwide Children's Hospital. A complete list of South Corridor Constituent Committee members is available in **Appendix I**.

The Columbus Crossroads Project has also been guided by feedback solicited from interested businesses and individuals. The public involvement process included more than **500 community meetings**, and thousands of public comments. The public comments, combined with the feedback from the working group, stakeholders, and constituent committees, ultimately led to the creation of the I-70/I-71 South Innerbelt Project Design Enhancement Manual in 2010.[24] This manual's purpose is to ensure the Columbus Crossroads Project's design enhancements reflect the input and needs of the surrounding neighborhoods and businesses, and also that that its design enhancements are consistently implemented throughout the entire project corridor.

The Columbus Crossroads Project is a large and complex project that spans multiple years and phases. It is only possible by the strong partnerships between the City of Columbus, the Ohio Department of Transportation, the Mid-Ohio Regional Planning Commission, and other stakeholders. The Long Street Bridge and Cultural Wall, which was completed during an earlier Columbus Crossroads Project phase, is an example of what this partnership has already been able to achieve, and it is an example of what the partnership believes it will achieve during Phase 4.[25]

H. Non-Federal Revenue for Transportation Infrastructure Investment

The City of Columbus is actively seeking new sources of non-federal revenue for transportation infrastructure investment. It is seeking new sources on its own and also collaboratively with its regional partners and stakeholders in Central Ohio.

1. Local efforts to create non-federal revenue for transportation infrastructure investment

The City of Columbus' actively seeks to identify and create new non-federal revenue for Transportation Infrastructure Investment. Local efforts include (1) tax increment financing, (2) private contributions, (3) public-private partnerships, and (3) lease revenue.

The City of Columbus uses Tax Increment Financing (TIF) as one of its primary mechanisms for creating new, non-federal revenue to support infrastructure improvements. Since

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[24] The Design Enhancement Manuals is available online at https://www.dot.state.oh.us/projects/7071/enhancements/Documents/7071DesignEnhancemetManual.pdf (last visited June 20, 2018).

[25] The Federal Highway Administration has featured this bridge as an example of the type of community connection that it seeks to encourage as part of its Every Day Counts round four (EDC-4) community connections initiative. "Community Connections: Turning aging infrastructure into opportunities to revitalize cities," *Innovator*, Issue 62, last modified August 31, 2017, https://www.fhwa.dot.gov/innovation/innovator/issue62/issue62.pdf.

January 1, 2015, the City of Columbus has created seven TIFs: TIFs allow the city to redirect new property tax revenues to invest in infrastructure that supports ongoing development. These seven TIFs are expected to generate significant non-federal revenue for transportation infrastructure investment by December 31, 2027.[26]

The City of Columbus also works regularly with developers and other private entities who benefit from transportation infrastructure projects to identify ways for these entities to contribute to these projects. For example, Nationwide Children's Hospital will benefit significantly from the City of Columbus' Livingston Avenue Phase C project, which directly connects to the Phase 4 improvements. NCH has agreed to contribute $1,000,000 towards design costs, and it has also agreed to donate land for right of way valued at $320,000.The City of Columbus has also used public-private partnerships to create non-federal revenue for local infrastructure projects.

Finally, the City of Columbus believes it will be possible to use lease revenue generated by any future commercial cap on the Third Street Bridge and place the revenue in a fund for transportation improvements. The precise timeframe for this funding is dependent upon how quickly a developer is found for the commercial cap and a lease agreement approved by the Columbus City Council. The fund would be created at the same time the commercial lease agreement is approved by the Columbus City Council. If this BUILD application is successful, the City of Columbus would ramp up the process of identifying a potential developer for the Third Street Bridge's commercial cap.

2. Regional efforts to create non-federal revenue for transportation infrastructure investment

Efforts to create new non-federal revenue for transportation infrastructure investment are not limited to the City of Columbus' corporate limits. Regional efforts have involved (1) expanding the local permissive tax, and (2) discussing the creation of a Transportation Improvement District.

As a region, Central Ohio – including the City of Columbus – is working collaboratively to identify new sources of new non-federal revenue. A current example is the expansion of the local permissive tax. Local government stakeholders worked with the Ohio General Assembly in 2017 to craft and pass legislation that allows county governments to add an additional $5 fee to the cost of vehicle registrations to generate funding for road and highway improvements. Franklin County, where the Columbus Crossroads Project is located, opted to enact the fee in 2018 and is expected to generate more than $5.6 million annually, in addition to existing permissive taxes collected from vehicle registrations. These funds will be leveraged with existing transportation funding to advance major roadway projects throughout the county.

Regional discussions are also are underway about the potential to create a Transportation Improvement District (TID). A TID is authorized by Ohio Revised Code 5540, and it is an innovative and collaborative government body that could potentially provide funds to be leveraged with city, state, and federal resources in order to complete larger, more impactful projects on a shorter timeframe. TIDs have authority to collect revenues over multi-year agreements with project funders and can issue their own bonds, outside of the bonding authority of local government partners, to accelerate project construction. This funding source and structure could potentially benefit the Columbus Crossroads Project as a result.

V. Project Readiness

[26] The following seven TIFs have been created since January 1, 2015: Polaris II TIF, Dublin Granville West TIF, Milo-Grogan TIF, Jaeger Site TIF, Buggyworks TIF, Brice Road TIF, and West Goodale TIF.

A. Technical Feasibility

The Columbus Crossroads Project is proposed to improve safety and reduce congestion at the crossroads of I-70 and I-71. The proposed improvements were recommended based on operational efficiency, local accessibility, mobility, safety, environmental and community issues, constructability, cost effectiveness and cost. The Columbus Crossroads Project will reconfigure the freeway system interchanges and add lanes for improved route continuity, reducing the amount of lane changes in the I-70/I-71 overlap. Additionally, the project will consolidate ramps serving the downtown area through the use of one-way urban avenues. This will reduce the number of freeway access points and minimize the amount of weaving traffic on the freeway. Even though the number of access points will decrease, the urban avenues will allow easy access to all city streets that cross the freeways.

Phase 4 will consolidate two eastbound ramps to one location in order to reduce the weaving traffic along I-70/I-71. It will connect this new ramp to the downtown street network by reconstructing Fulton Street for one-way eastbound traffic between Front Street and High Street, connecting with the portion of Fulton Street that was reconstructed as part of previous phases of the Columbus Crossroads Project. Additionally, Phase 4 will add a continuous lane for northbound I-71 from SR 315 to the I-70/I-71 East Interchange, reducing the amount of lanes changes and increasing the freeway capacity. These improvements will improve safety and reduce congestion along eastbound I-70/I-71. The South Innerbelt Trench renderings in **Appendix A** and the project schematics in **Appendix J** help illustrate Phase 4's planned improvements.

Based on the August 10, 2010 Revised Interchange Modification Study, the project is expected to obtain a Level of Service (LOS) of D or better for all freeways and ramps within the Columbus Crossroads Project area in the 2035 design year. Additionally, an LOS of D or better will be obtained at all the urban avenue intersections with city streets.

While some design exceptions will be necessary on an interim basis, no design exceptions are anticipated when all phases of the Columbus Crossroads Project are completed. Horizontal and vertical geometry along I-70/I-71 will comply with the ODOT Location & Design (L&D) Manual criteria. Phase 4 will require design exceptions at isolated locations for a reduced shoulder width, vertical clearance and a vertical curve until a future phase of the Columbus Crossroads is constructed. These design exceptions are similar to ones that were approved by ODOT and FHWA for previous phases of the Columbus Crossroads.

Improvements proposed in Phase 4 for Fulton Street and the Front Street, High Street, Third Street, and Fourth Street bridges over I-70/I-71 are necessary to improve mobility along the corridor. As shown in **Figure 2** and **Appendix A**, Fulton Street will be reconstructed with sidewalks that have bulb-outs at intersections for shorter pedestrian crossings, enhanced crosswalks that will be more visible to drivers, and new traffic signals that will control vehicle traffic to allow for pedestrian crossings at intersections. A new bike lane is proposed along Fulton Street and bus pads will be constructed for new Central Ohio Transit Authority bus stops. The city street bridges over the freeway will be rebuilt with wider, 10 foot sidewalks, along with adjacent greenspace, to encourage pedestrians crossing the freeway corridor between downtown and the adjacent neighborhoods. These proposed features of the project will improve safety for pedestrians and bicyclists, along with encouraging the use of alternative modes of transportation through the corridor. These features will also tie-in with the urban avenue improvements that the City of Columbus is completing during related projects.

Phase 4 includes the construction of new retaining walls along both sides of the freeway in order to minimize the environmental impact and right of way acquisition needed. These walls will

reduce the effect on the Brewery District and German Village, which are both listed on the National Register of Historic Places.

B. Cost Estimate

Preliminary cost estimates for Phase 4 were developed for the project and have been updated as the project planning and design is further developed. Costs for roadway and pavement quantities were determined using Ohio Department of Transportation Estimator software with unit prices generated by ODOT's interactive Bid History Catalog. Costs for erosion control, traffic control, maintenance of traffic, and utility work were established using ODOT's Procedure for Construction Budget Estimating spreadsheet and/or input from specific manufacturers. The preliminary cost estimates include costs for the relocation of public utilities that will be included with the project, but do not include costs for private utility relocations that will be necessary. A 15% contingency was applied to the construction costs for non-itemized pay items and for the uncertainty associated with the preliminary plans available at this time. Design engineering was estimated as 10% of the proposed construction cost and construction engineering was estimated as 7%, based on ODOT's historical average for this type of work. Right of way acquisition costs are estimated to be $6.1 million. The costs were converted from current year dollars to forecast construction year (2020) dollars using the ODOT Office of Estimating Construction Cost Inflation Spreadsheet tool. The total project cost for Phase 4 is estimated $206.7 million.

C. Risk Mitigation

As part of the planning and preliminary engineering process, alignments, profiles and preliminary cross sections have been prepared for Phase 4, along with preliminary type studies for bridges and retaining walls. These were used to develop project construction limits for the NEPA documentation, which determined environmental commitments for the project. The portion of Phase 4 west of and including the Front Street bridge has been further developed with Stage 2 plans being submitted in July 2018. Right of way acquisition has started for this portion of the project and is anticipated to be completed by July 2019. This accounts for more than 95% of the right of way required for Phase 4. A significant amount of the work has already been completed for the project, making delays going forward less likely. This project is ideally suited for quick progression to construction. The known risks to scope, schedule and budget are minimal:

1. Environmental Risk Mitigation

The NEPA Environmental Assessment (EA) has been completed and a FONSI has been obtained for the project. Petroleum contaminated soils and other buried regulated materials are present at some locations along the project corridor and will need to be disposed of according to ODOT standard procedures. The necessary provisions are being included in the project construction plans for this work. Freshwater mussels were found in the Scioto River and, in order to avoid harming these species, ODOT will relocate the all mussels prior to project construction. The minimal impacts to the Scioto River are known as they were identified in the EA. Stream mitigation will be developed as part of the Army Corps of Engineers' (COE) Section 404 permitting process. A 408 permit required for construction impacts to flood control infrastructure is currently being prepared and coordinated with the COE. This is scheduled to be obtained by September 2019. An environmental reevaluation is currently being prepared to address potential Section 4(f) and 6(f) park impacts during construction. This is scheduled to be completed by July 2019.

2. Utility Relocation Risk Mitigation

The location of existing utilities and ownership has already been identified using Level B subsurface utility location techniques throughout the project corridor. Public water, sewer, electric and telecommunication utilities are proposed to be relocated as part of the construction contract and have been planned to the level of detail matching the rest of the project improvements. In addition, there have been regular coordination meetings held with private utility owners with facilities along the corridor regarding their facilities, including AEP overhead and underground electric lines, AT&T overhead and underground telecommunication lines, Columbia Gas lines. Columbia Gas has already relocated their facilities and are clear of the proposed project. AEP has also relocated their overhead transmission line near Short Street. AEP will be relocating another portion of the overhead facilities later this year. Coordination has occurred with AEP regarding the relocation of an underground 138kV line that lies under the freeway between Third and Fourth Streets. If BUILD grant funds are obtained, then final planning and relocation will occur prior to completion of the final plans in mid-2020. AT&T is currently preparing relocation plans for their facilities.

3. Construction Cost Mitigation

Inflation is an important element of risk to account for within the estimate of cost. Annual construction cost inflation in the past 15 years has been as high as 12% in FY 2006 and as low as -3% in FY 2010. For ODOT, inflation over the past 15 years has averaged over 3.6%. ODOT has developed a process of updating an inflation forecast in January and July to stay on top of any inflationary developments.

Inflation is not a discount rate. Inflation is applied to an estimate of cost because we expect the price of inputs into a construction project to change over time. Federal Highway Administration guidance suggests calculating year of expenditure costs for all the major elements of a project, accounting for differing inflation rates for each. ODOT's construction cost mitigation process, which incorporates applicable FHWA guidance, is being followed for Phase 4 to minimize the risk of escalating construction costs.

4. Right of Way Risk Management

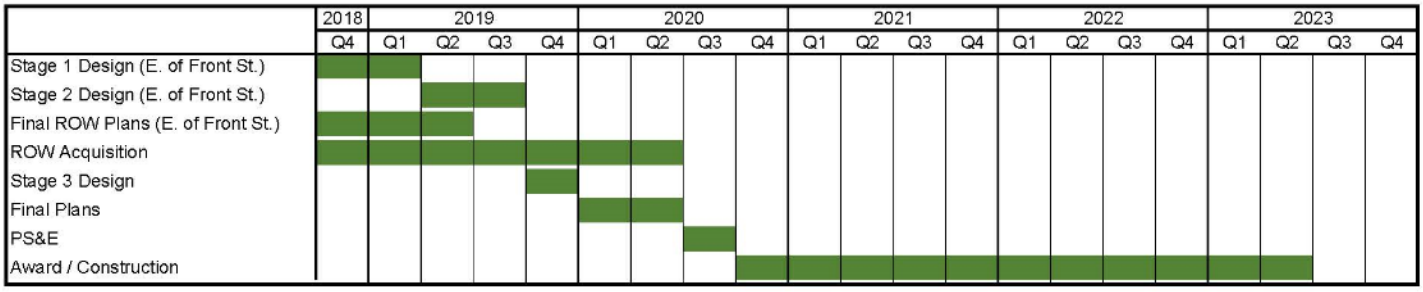
Phase 4 will require the acquisition of permanent right of way and temporary construction easements. Most of the right of way acquisition is necessary for the portion of the project west of Front Street. Acquisition for this part of the project was authorized in November 2015, is underway and is planned to be acquired by July 2019. If BUILD grant funds are obtained, the right of way plan development and acquisition for the remaining portion of the project can be accelerated so that the acquisition for this area can be completed before July 2020.

D. Project Schedule

The project has completed the NEPA process and has received the Finding for No Significant Impact (FONSI) on July 8, 2009. It also received IMS approval by the Federal Highway Administration on July 10, 2009. The project can begin construction quickly upon obligation of the BUILD funds and the grant funds will be spent expeditiously one construction starts. The right of way plans are complete and acquisition has begun for the western portion of the project (west of and including the Front Street bridge), which includes over 95% percent of the right of way required for Phase 4. The design plans for the western portion of the project have been completed up to Stage 2, in accordance with ODOT's project development process.

As shown in the schedule below, the Stage 1 Design, Stage 2 Design and Final Right of Way Plans would only need to be completed for the relatively short portion of the project east of Front Street in order for the final plans to be completed with the rest of the project to meet the September 2020 obligation date. The project is included in local and state transportation plans as noted in the

following **Required Approvals** section. The project is moving forward with the design, right of way acquisition and construction per the detailed project schedule below:



All necessary activities to complete Phase 4 will allow the BUILD funds to be expended in advance of the statutory deadline of September 30, 2025.

E. Required Approvals

The Columbus Crossroads Project has completed the NEPA process and gained approval of the following documents on the dates noted:

- On July 8, 2009, the Federal Highway Administration issued a Finding of No Significant Impact (FONSI) for the I-70/I-71 South Innerbelt Project, FRA-70-8.93 PID 77369. The FONSI was based upon an Environmental Assessment (EA) from December 2008 and a Final Section 4(f) Evaluation from June 2009.
- On September 22, 2010, the FHWA approved the Environmental Reevaluation prepared to confirm the 2009 FONSI was applicable to the first of the six smaller projects: Phase 1 – I-71/I-670 Interchange (FRA-71-17.76 PID 77369).
- On May 20, 2015, the FHWA approved the Environmental Reevaluation prepared to confirm the 2009 FONSI was applicable to Phase 2 – I-70/I-71 East Interchange, Phase 3 – I-71 East Trench, and Phase 6 – I-70/I-71/SR 315 West Interchange. At that time, Phase 6 included construction of new eastbound and westbound bridges over the Scioto River, CSX Railroad, and Short Street. It also involves reconstruction of the Mound Street and High Street bridges over I-70/I-71, a new off-ramp bridge to Fulton Street, and work on portions of Fulton and Front Streets.
- IMS was approved by FHWA on July 10, 2009.

All of the NEPA documents associated with the project can be found at the following link: http://www.dot.state.oh.us/projects/7071/environmental/Pages/default.aspx.

The EA, which can be found at the link above, includes discussions with the appropriate agencies and the link contains the approval showing compliance with NEPA and the applicable Federal environmental reviews and approvals. Chapter 4 of the EA includes a summary of the agency coordination and a description of public engagement about the project that has occurred and the commitments made.

The project is included:

- As part of #270 on the MORPC 2016-2040 Metropolitan Long Range Plan, which can be found at the following link: http://www.morpc.org/mtp2040/.
- On the MORPC 2018-2021 Transportation Improvement Plan (TIP) as #2874 and #3295.
- I-70 and I-71 are part of the Interstate System and are included in the Ohio 2040 Long Range Transportation Plan, which can be found at the following link:

http://www.dot.state.oh.us/Divisions/Planning/SPR/StatewidePlanning/access.ohio/AO40_library/ODOTAccessOhio2014.pdf

- I-70 and I-71 are part of the Primary Highway Freight System (PHFS) per the February 2018 Transport Ohio Statewide Freight Plan, which can be found at the below link: http://www.dot.state.oh.us/Divisions/Planning/SPR/StatewidePlanning/Documents/ODOT_FreightPlan_Updated%203.21.18.pdf

F. Assessment of Project Risks and Mitigation Strategies

With the completion of the NEPA document, FONSI approval and IMS approval, risks moving forward with the Phase 4 of the Columbus Crossroads Project have been minimized. As previously detailed in ***Section V*** under ***Technical Feasibility, Risk Mitigation***, the potential for encountering petroleum contaminated soils and other regulated materials during construction are known as they were identified in the NEPA document and will be addressed as part of construction contract provisions. The relocation of freshwater mussels will be completed prior to the project construction and stream mitigation will be developed as part of the COE Section 404 permitting process. Preparation of a COE 408 permit is currently underway and is expected to be obtained well in advance of the project construction start. The relocation of utilities has already started for Phase 4 and the planning and coordination necessary for relocating the remaining utilities is also underway. Project costs have included a contingency percentage and have been escalated for inflation using ODOT's process, which has been developed to stay on top of fluctuations in construction pricing. Right of way acquisition for most of Phase 4, west of Front Street, has been authorized and is to be acquired by July 2019, minimizing the impact of future land value increases. If the requested BUILD funds are committed to Phase 4, the acquisition of the remaining 5% of the parcels will start in July 2020, more than 5 years before the statutory deadline of September 30, 2025.

Commitments from ODOT, MORPC Attributable Funds and the City of Columbus are included in **Appendix D**. These demonstrate the commitments to funding the balance of the Phase 4's costs as well as to the legislative approval if the BUILD funds are made available.

VI. Benefit Cost Analysis

A. Introduction

A Benefit-Cost Analysis (BCA) has been performed to determine the value of quantifiable benefits that would be generated by Phase 4 of the Columbus Crossroads Project. It is contained in **Appendix K**. The benefits looked at as part of this BCA include travel time benefits from reduction in delay. Other benefits will be generated from completion of Phase 4, however those are not quantifiable at this time. Other benefits, including safety benefits, emissions reduction benefits, and quality-of-life are just a few benefits that may result from this project, but are not quantified in this document. Therefore, the documented benefits are conservative and are likely higher than quantified in this report. A copy of the spreadsheet used to calculate the benefits is attached and titled "ColumbusCrossroadsBenefit-CostAnalysis".

Including initial construction and maintenance, Phase 4 will cost $226 million in real (2018) dollars over the life of the project (2043). The project will cost $162 million using a 7% discount over the life of the project (2043). The benefits are estimated to be $303 million at 7% discount over the life of the project. A summary of the annual costs and benefits can be found below.

B. Benefits

Delay reduction benefits for Phase 4 of the Columbus Crossroads Project were estimated using traffic volumes and microsimulation models. The traffic modeling software Vissim was utilized to model the No-Build and Build conditions to determine the reduction of delay within the network. The Build condition is predicted to save over 6,600 person-hours of delay daily in the Opening Year and up to 8,500 daily person-hours of delays by the Design Year. This results in over $30 million in lost time and productivity annually.

In addition to the quantifiable benefits, Phase 4 will also have numerous non-quantifiable benefits:

- **Travel Time Reliability** – Phase 4's project area currently experiences stopped traffic on I-70 eastbound and I-71 northbound approaching and through this project area. This breakdown in traffic flow occurs during morning and afternoon weekday peak periods. This impedes local residents trying to access downtown, but also impedes the large volume of through freight, commercial and regional traffic passing through the corridor. Phase 4's improvements are expected to eliminate 97% of these delays, making I-70 and I-71 a much more reliable route for through freight traffic and other regional trips. The project eliminates the existing I-70 eastbound loop ramp to SR 315 northbound. This will reduce traffic volumes feeding the adjacent section of SR 315, which is ODOT's #1 ranked location on their 2106 Congestion Priority list for freeways.
- **Improved Regional Connectivity** – Regionally, the Build condition will add a second lane of I-71 northbound through the project area. The current interchange configuration only provides a single-lane ramp connection for I-71 northbound through traffic – the only single-lane portion of I-71 northbound between Louisville, Kentucky and Cleveland. The existing I-71 northbound also contains a 40 mile-per-hour curve. The proposed Phase 4 improvements will provide a new two-lane I-71 northbound connection designed for freeway speeds. This meets driver expectations that through freeway movements will have multiple lanes, and provide enhanced regional connectivity along the I-71 corridor.
- **Improved Neighborhood Connectivity** – On a neighborhood level, the Phase 4 improvements will provide improved connectivity across the I-70/I-71 freeway. The project will allow for the conversion of Front Street to two-way operations between Livingston Avenue and Mound Street, the final segment in the City of Columbus's long-term plan to convert Front Street from one-way to two-way. The Phase 4 improvements will also provide better pedestrian connectivity over the freeway. A new sidewalk connection will be constructed on the west side of Front Street. Existing sidewalks on High Street and Front Street will be upgraded, providing a better connection between downtown and the adjacent Brewery District and German Village neighborhoods to the south.
- **Safety** – Phase 4 improvements will have a positive impact on safety. The project will eliminate a major weaving section of traffic on I-70/I-71 between SR 315 and Front Street. Several segments of the project freeway have ranked among the highest on ODOT's Safety Priority list for excess crashes along urban freeway locations over the last decade, , including the #26 and #33 locations on the 2016 list. As recently as the 2015 Safety Priority list, 3 of the top 10 urban freeway segments were within the project limits. Eliminating the congestion and weaving movements in the I-70/I-71 eastbound freeway will help to reduce crashes. Also, the existing I-70/I-71 eastbound ramp to Front Street is observed to back up onto the freeway during peak hours. The Phase 4 improvements will replace this relatively short ramp with a new, much longer connection that will keep stopped traffic from spilling out onto the mainline freeway system.

C. Costs

The project costs consist of two components:

- Cost of initial construction
- Maintenance costs

The methodology of estimating these project costs are explained in the sections below:

1. Initial Construction Costs

Preliminary construction costs have been developed for Phase 4. Costs for roadway and pavement quantities were determined using Ohio Department of Transportation's Estimator software with unit prices generated by ODOT's interactive Bid History Catalog. Costs for erosion control, traffic control, maintenance of traffic, and utility work were established using ODOT's Procedure for Construction Budget Estimating spreadsheet and/or input from specific manufacturers. The preliminary cost estimates do not include costs for utility relocation. A 15% contingency was applied to the construction costs. The costs were converted to from current year dollars to forecast construction year (2020) dollars using the ODOT Office of Estimating Construction Cost Inflation Spreadsheet tool.

The remaining engineering design for Phase 4 is estimated to be 10% of the construction cost. Construction management and inspection is estimated to be 7% of the construction cost. Right-of-way costs were estimated based on property values of the affected parcels.

2. Maintenance Costs

Additional costs will be required to maintain the Phase 4 improvements over its 20-year design life. These costs are discussed in the sections below:

a. Pavements

It is assumed that pavement resurfacing of the new roadway will be required after 10 years. Based on historic costs for similar "mill-and-fill" projects, a unit cost of $9 per square yard ($1 per square foot) was assumed for the resurfacing. This unit cost was applied to the nearly 700,000 square feet of new pavement associated with Phase 4. Approximately 140,000 square feet of removed roadway was debited out from the cost, as it will no longer need to be maintained. Costs for maintenance-of-traffic, inspection, and contingency were also included. The cost, in 2018 dollars, of the mill-and-fill pavement resurfacing is expected to be just under $800,000.

Annual maintenance costs for new pavements, such as pavement markings and snow/ice removal, were also calculated. Based on ODOT data, the annual maintenance cost for a lane-mile of pavement is $100,000. This was applied to the net new 4.5 lane-miles projected, for an annual maintenance cost of approximately $450,000.

b. Bridges

The existing bridges in the corridor are reaching the end of their lifespan. If they are not replaced, it is assumed that bridge redecking will be required to keep the bridges functional over the next 20 years. Phase 4 will replace 6 aging bridges – two that carry I-70/I-71, and four that carry downtown streets over I-70/I-71. Using a unit cost of $75 per square foot for bridge redecking, the project will result in a savings of nearly $7 million in bridge maintenance work that will no longer be required in the next 20 years. Additionally, the project will remove the Whittier Street Bridge over I-70/I-71, which has been closed to traffic for over 15 years. Without the project, it is assumed this bridge will need to be demolished during the next 20 years at a cost of approximately $0.5 million. The project will add 5 new bridges and remove 1 existing bridge, resulting in additional annual inspection costs. This has been estimated at a total of $8,000 annually.