RICKENBACKER INLAND PORT

WORKFORCE ACCESS IMPROVEMENTS

TIGER Application: NARRATIVE

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COLUMBUS REGIONAL AIRPORT AUTHORITY

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morpc Mid-Ohio Regional Planning Commission

Metro Parks

RICKENBACKER INLAND PORT
WORKFORCE ACCESS IMPROVEMENTS
TIGER APPLICATION NARRATIVE

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I. Project Description:

Located in Central Ohio, the Rickenbacker Inland Port (Rickenbacker) is a global multi-modal logistics hub and key gateway location for the distribution of goods throughout North America. Anchored by one of the world's only cargo-dedicated airports (Rickenbacker International/LCK) and a major rail intermodal facility, Rickenbacker is strategically located for freight distribution by truck. Positioned between major destinations including New York, Chicago, Toronto, and Atlanta, Rickenbacker is strategically located within a 10-hour drive of 47% of the U.S. and one-third of the Canadian populations.

Strong growth in demand for moving goods to and from the Central Ohio market is expected to continue. The success at Rickenbacker has placed increased demand on all travel modes and precipitated the need for workforce solutions, necessitating transportation improvements to ensure continued growth and economic prosperity.

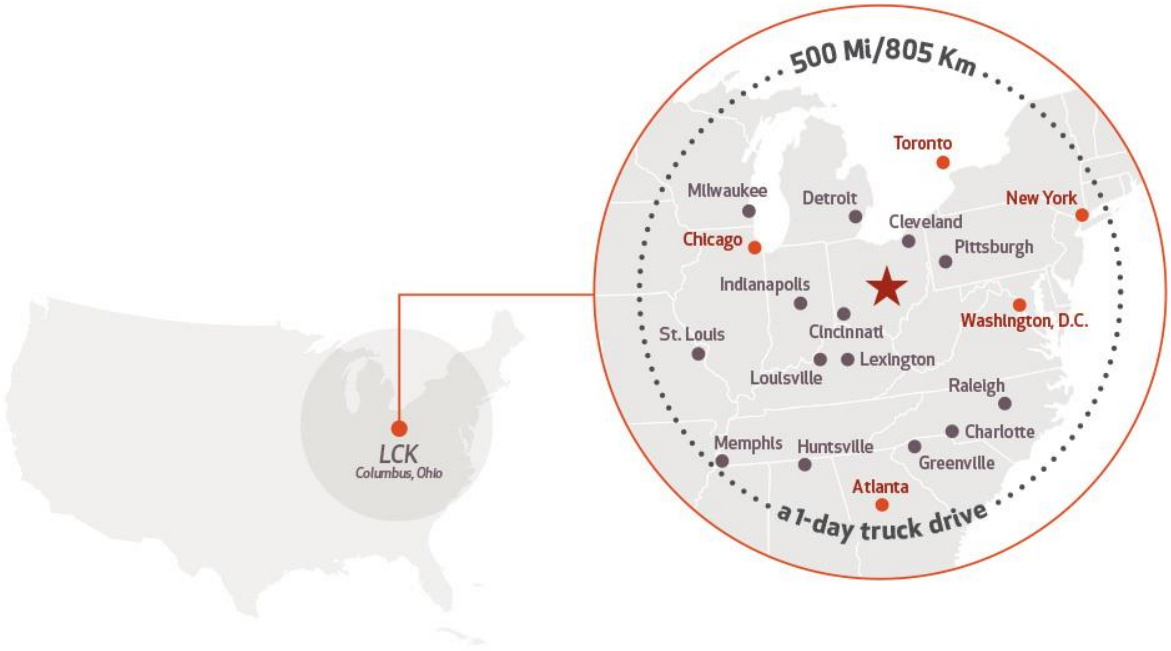


Figure 1: **Proximity of LCK/Rickenbacker Inland Port to North American Freight destinations**
(source: https://rickenbackerinlandport.com/)

The proposed project seeks to improve workforce access to employment sites and relieve roadway congestion at Rickenbacker. With more than 25,000 employees currently working in the area expected to more than double by 2040, ensuring safe, reliable, and affordable transportation for the workforce and reducing current and future congestion is a priority for businesses, residents, and workers in the region.

This application includes multiple improvements to address workforce access and roadway congestion issues; the improvements are mapped in Figure 3 and listed below:

Workforce Access Improvements

- Alum Creek Drive Shared-Use Trail & Sidewalk: Alum Creek Drive is a major thoroughfare for both freight and passenger traffic to access the Rickenbacker Inland Port. Already congested and expected to see continued traffic growth, Alum Creek Drive is currently without sidewalks. With the proposed widening of the roadway, a shared-use trail will be constructed on the east side of the roadway. Additionally, a sidewalk will be constructed on the west side. Both facilities will be completed along the entire length of the roadway improvement, between State Route 317 (SR 317) and Groveport Road.

  The south end shared-use trail will connect to an existing and currently isolated segment of shared-use trail that follows Rickenbacker Parkway from SR 317 around the west side of LCK airport. This segment of trail provides connectivity to major existing employers including American Showa, BASF Corporation, Hyperlogistics Group, and Inno Pak. This trail also connects to many of the future growth areas of the Rickenbacker area, where multiple speculative industrial buildings are currently under construction, including a 1 million-square-foot warehouse facility that is the largest speculative industrial development ever constructed in Central Ohio.

- Regional Trail System Connector/Big Walnut Trail: To ensure the shared-use trails on Alum Creek Drive and Rickenbacker Parkway create meaningful connections for workforce access, an approximately 1.95-mile trail connection will be made through Three Creeks Park. This trail will connect the new Alum Creek Drive shared-use path to the Alum Creek Greenways Trail. The Alum Creek Greenways Trail is the longest trail in the 180+-mile Central Ohio Greenways trail system. To the north, the Alum Creek Greenways Trail connects with many neighborhoods within Southeast Columbus. This provides the opportunity for an employee to commute to work via bicycle using a route of largely low-stress trails.

- Transit Improvements: Rickenbacker is served by two Central Ohio Transit Authority (COTA) bus routes that connect to three first-/last-mile shuttle routes provided for workforce by Groveport Rickenbacker Employee Access Transit (GREAT). Although additional transit service is planned as additional communities consider partnerships to expand GREAT to other developing portions of the Rickenbacker area, the focus of the improvements in this project is improving the existing service. Two additional bus pull-offs will be constructed for the combined COTA and GREAT stop on Rohr Road, just east of Alum Creek Drive. Additionally, COTA stops will receive additional improvements, including ADA pads and shelters, benches, and small sidewalk connections where needed.

Finally, bike racks will be purchased for installation on GREAT shuttle buses to ensure that all transit vehicles serving the area support bike modes as first- and last-mile solutions. All COTA buses are currently equipped with bike racks. This will assist in supporting commuters who choose to make their commutes via bike, providing a complete transit connection with bike capacity if needed for any leg of a trip or round-trip commute.

- Bike Share System: Although the addition of the GREAT service in 2015 was a significant step in providing first- and last-mile connections, there are still gaps and employment locations not covered by GREAT service. Infrastructure to create a bike-share service in the Rickenbacker area will be purchased and installed, including 26 bike terminals with 390 docks and 232 3-speed bicycles. Bike-share terminals will be placed at major transit stops and major employers. Project partners will work with large employers to site the docking terminals near employee entrances; this is especially important in the Rickenbacker area where warehouses may span a half-mile themselves.

Roadway Improvements

- Alum Creek Drive Capacity Expansion: To address current and future congestion, this project would expand the capacity of Alum Creek Drive, a component of USDOT's National Primary Freight Highway System (PHFS) and a state-designated and federally accepted National Highway System (NHS) route. The scope of this component includes adding a third through lane in each direction to the existing stretch of Alum Creek Drive between SR 317 to the south and Groveport Road to the north. The existing 2.6-mile length of Alum Creek Drive consists of two through lanes in each direction.

  Alum Creek Drive is congested, carrying 34,000 vehicles, including 8,300 trucks daily. By 2040, traffic is projected to increase by 40% to more than 54,400 vehicles, including 13,400 trucks. As further explained in the Benefit Cost Analysis, congestion in the Alum Creek Drive corridor costs more than 350,000 vehicle-hours of travel delay per year for cars and trucks combined.

  This widening will follow a number of previous investments to improve the flow of freight out of Rickenbacker to the interstate system. Previous improvements in the Alum Creek Drive corridor include a $7.1-million improvement to the I-270 & Alum Creek Drive interchange and a $13.2-million improvement to the intersection of Alum Creek Drive and Groveport Road that included an overpass to carry Groveport Road traffic over Alum Creek Drive. The latter project also brought Alum Creek Drive to three lanes in each direction to just south of Groveport Road, preparing for the widening proposed in this application. The completion of the widening completes the final phase of upgrades planned for Alum Creek Drive, ensuring the thoroughfare can provide acceptable capacity and level of service for both freight and workforce needs.

II. Project Location:

The project is located in the area of the Rickenbacker Inland Port within Franklin County in Central Ohio, as demonstrated in Figure 2. The location is approximately 9.5 miles southeast of Downtown Columbus on the fringes of the Columbus Urbanized Area. As demonstrated in Figure 3, the majority of the proposed project is located within the Columbus Urbanized Area. The improvements lie in multiple Franklin County jurisdictions, including the City of Columbus, City of Groveport, Village of Obetz, Hamilton Township, and Madison Township.

Alum Creek Drive is County Road #122. The southern limit of the widening and roadside shared-use trail project is SR 317/London-Groveport Road. The northern limit is approximately one-half mile south of Interstate I-270 (the southern limit of a previous improvement at the Groveport Road intersection). The limits of the Big Walnut Trail are Groveport Road at Old Rathmell Court to the Alum Creek Greenway Trail near its crossing with Big Walnut Creek, within Three Creeks Park. The transit stop improvements will be located on Rohr, Spiegel, Port, and Toy Roads and SR 317.

Figure 2: **Rickenbacker in context of the Columbus Urbanized Area (shown in gray)**

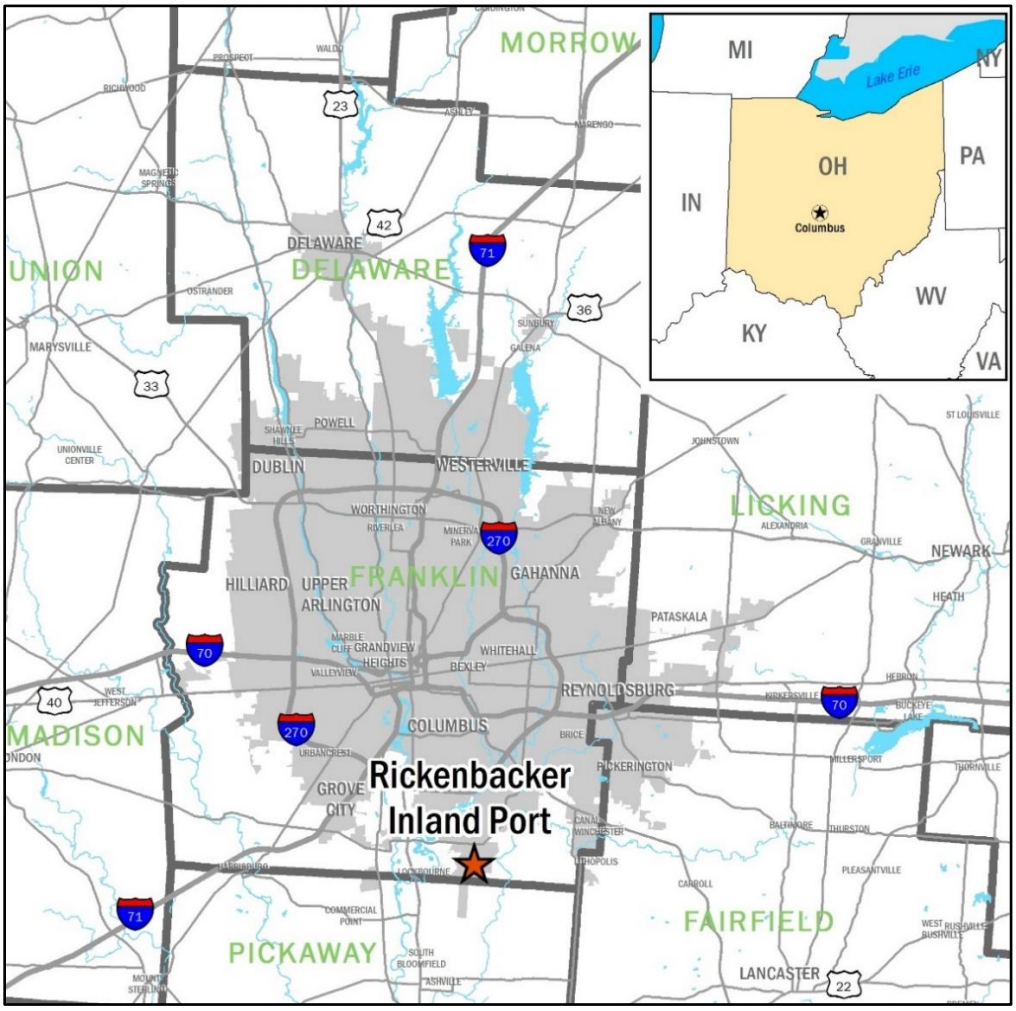
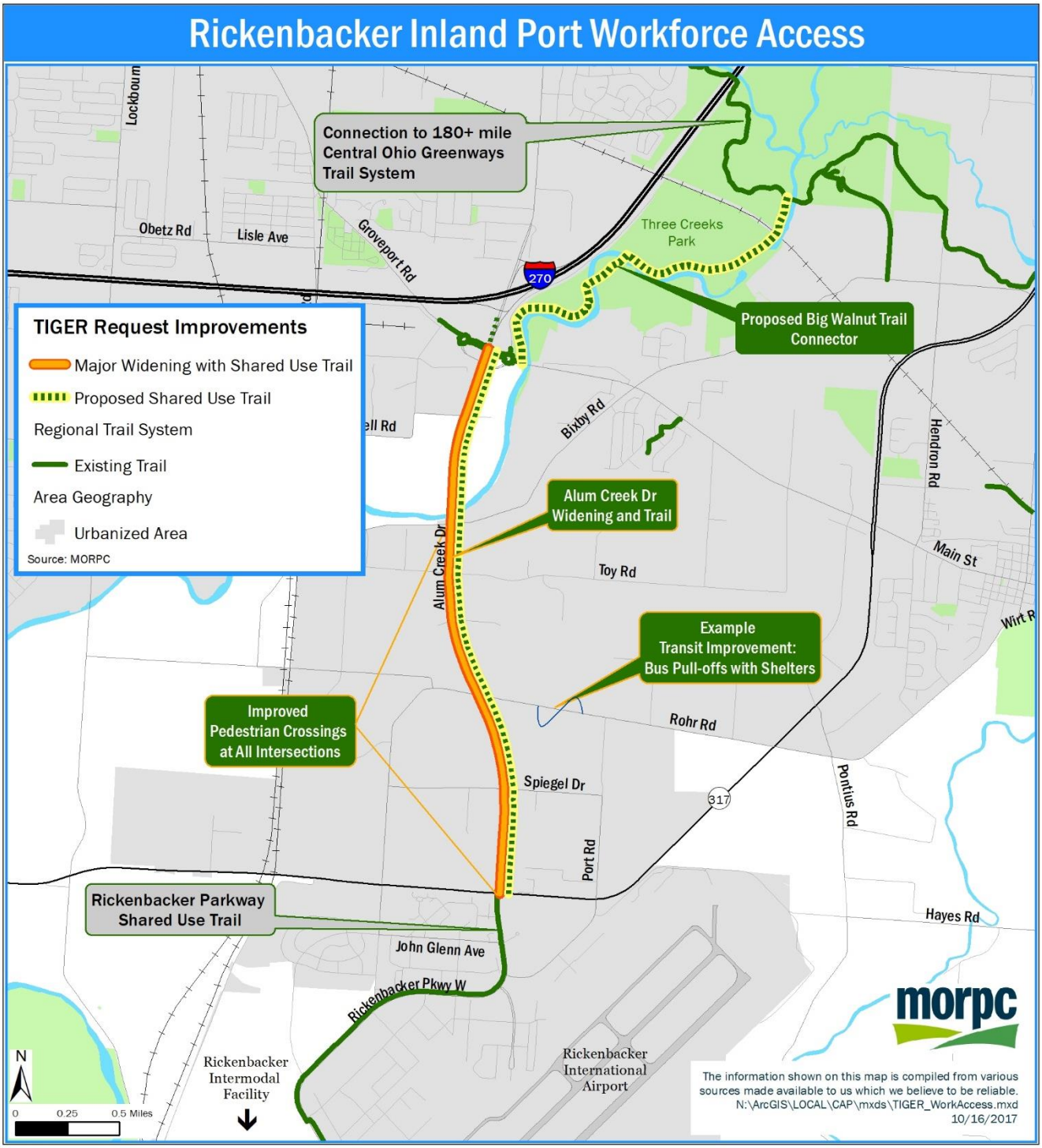


Figure 3: **Project Map showing transportation connections and the Columbus Urbanized Area**



Connections to Existing Infrastructure:

Bike & Pedestrian: As mentioned, currently bike and pedestrian infrastructure in the Rickenbacker area is extremely limited. However, the proposed shared-use paths will connect three existing trails, two of which are currently isolated from larger community- or region-wide networks. The roadside shared-use trail on Alum Creek Drive will link to the sidewalks and shared-use paths installed during the improvements at Groveport Road and Alum Creek Drive. To the south, the new roadside trail will link to an existing shared-use path on Rickenbacker Parkway, which continues around the west side of LCK airport down to the area of the intermodal facility in Pickaway County. The trail connection provided by the Big Walnut Creek Trail will tie all of these components to the regional Central Ohio Greenways Trail network.

The Central Ohio Greenways Trail network includes more than 180 miles of trails in Central Ohio. While originally developed for recreational uses, additional connections to neighborhoods and employment centers have allowed the system to see increased use by commuters. The Big Walnut Creek Trail will link to the Alum Creek Greenways Trail, the longest system trail at more than 24 miles. As this trail continues northward through and adjacent to neighborhoods of Southeast Columbus, it creates the opportunity for a worker in the Rickenbacker area to commute using a low-stress trail network.

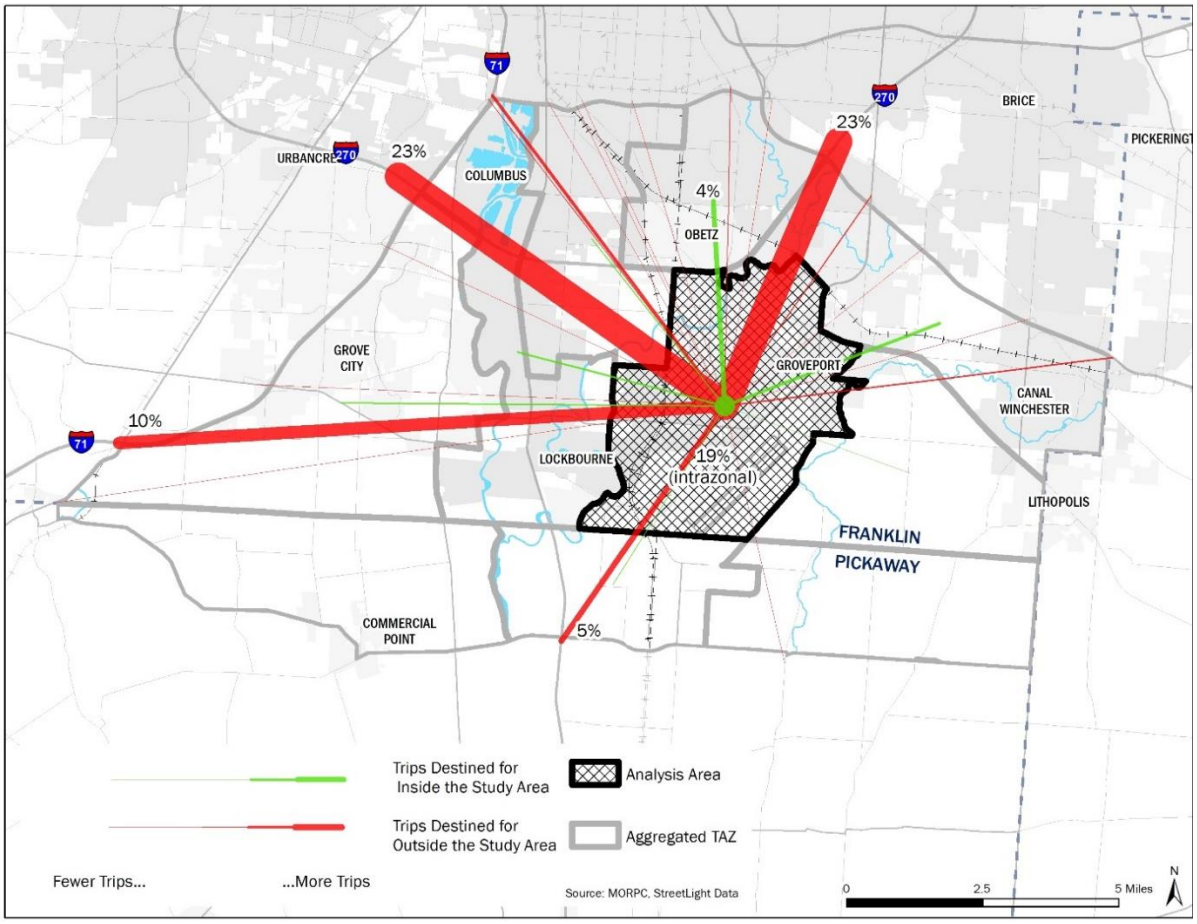
The Big Walnut Creek Trail will also connect to the proposed State Bike Route 33 at its northern terminus. This means that the new trail and Rickenbacker area will be connected to a planned network of statewide bike routes planned by the Ohio Department of Transportation (ODOT).

Railroad: Rickenbacker is served by Norfolk Southern (NS) and CSX. NS owns and operates a major intermodal facility at Rickenbacker. NS operates one of the most extensive intermodal networks in the east, covering 21,000 route miles in 22 U.S. states. CSX provides traditional rail service adjacent to Rickenbacker and operates 21,000 route miles in 23 states and the Canadian provinces of Ontario and Quebec.

Highway: The primary connection between the Rickenbacker area and the highway system is Alum Creek Drive. This route is a component of **USDOT's National Primary Freight Highway System (PHFS)** and a state-designated and federally accepted **National Highway System (NHS)** Route. Alum Creek Drive links Rickenbacker with I-270, which provides linkage to the interstate system through connections to I-70 and I-71.

Using StreetLight Data, an analysis of commercial traffic leaving Rickenbacker was conducted, as demonstrated in Figure 4. The analysis shows that commercial traffic is predominantly utilizing I-270, with equal shares of 23% heading both east and west on I-270, presumably to reach east and west I-70, or north I-71. A portion of the traffic destined for I-71 south may also be utilizing I-270 west to reach I-71, as alternative roadway connections are poor. These results help to explain the significance of Alum Creek Drive to truck distribution out of Rickenbacker as Alum Creek provides the main connection to I-270.

Figure 4: **Commercial Trips Leaving the Rickenbacker Area (April 2016 - March 2017)**



III. Grant Funds, Sources and Uses of Project Funds:

The total project cost is $37.7 million and will be leveraged with a $25-million TIGER award, which represents 66% of the project cost. The remainder of funding will come from multiple sources. The Ohio Department of Transportation (ODOT) has committed $2 million in funds. Local Jurisdictions have committed a matching $2 million in local funds. Funds will also be targeted from the Ohio Public Works Commission (non-federal) and MORPC (federal STBG) to fill the final funding gap. Although formal awards will need to be secured for the latter, these commitments have been previously discussed with funding entities and are anticipated to occur on an expedited timeframe in the event of significant federal funds through a TIGER award.

The project budget is detailed in Table 1. As part of the Alum Creek Drive component, two bridge structures will need to be wider to accommodate the extra lanes, trail, and sidewalk. Given their condition, local partners have elected to reconstruct the structures instead of widening the existing bridges. As it was estimated that to widen the structures would cost approximately 40% of the cost to totally replace, the lesser figure was used for the TIGER request. This allows matching local funding to cover the additional cost of replacement.

Table 1: **Project Budget**

Component/Category	Total Cost	TIGER	%	Other Fed.	%	Non-Federal	%
Alum Creek Drive Widening & Shared Use Trail							
Engineering Fees	$1,400,000	$1,022,000	73%	$98,000	7%	$280,000	20%
Construction	$27,750,000	$17,715,975	64%	$3,714,304	13%	$6,319,721	23%
Roadway	$1,402,917	$1,024,129	73%	$98,204	7%	$280,583	20%
Erosion Control	$1,202,500	$877,825	73%	$84,175	7%	$240,500	20%
Drainage	$2,004,167	$1,463,042	73%	$140,292	7%	$400,833	20%
Pavement	$9,018,750	$6,583,688	73%	$631,313	7%	$1,803,750	20%
Structures (40% TIGER)	$7,708,333	$3,085,558	40%	$2,311,388	30%	$2,311,388	30%
Traffic Control	$801,667	$585,217	73%	$56,117	7%	$160,333	20%
Maintenance of Traffic	$1,202,500	$877,825	73%	$84,175	7%	$240,500	20%
Traffic Signals	$1,603,333	$1,170,433	73%	$112,233	7%	$320,667	20%
Miscellaneous	$2,805,833	$2,048,258	73%	$196,408	7%	$561,167	20%
Inspection Fees	$1,942,500	$1,418,025	73%	$135,975	7%	$388,500	20%
Contingencies (10%)	$3,500,000	$2,555,000	73%	$245,000	7%	$700,000	20%
Right-of-Way	$600,000	$438,000	73%	$42,000	7%	$120,000	20%
TOTAL	$35,192,500	$23,149,000	66%	$4,235,279	12%	$7,808,221	22%
Big Walnut Creek Trail							
Engineering Fees	$45,000	$32,850	73%	$3,150	7%	$9,000	20%
Construction	$1,050,000	$766,500	73%	$73,500	7%	$210,000	20%
Contingencies (10%)	$105,000	$76,650	73%	$7,350	7%	$21,000	20%
Right-of-Way	$0	$0	0%	$0	0%	$0	0%
TOTAL	$1,200,000	$876,000	73%	$84,000	7%	$240,000	20%
Transit Improvements							
Equipment & Installation	$300,000	$225,000	75%	$15,000	5%	$60,000	20%
Bike Share							
Equipment & Installation	$1,000,000	$750,000	75%	$50,000	5%	$200,000	20%
TOTAL ALL COMPONENTS	**$37,692,500**	**$25,000,000**	**66%**	**$4,384,279**	**12%**	**$8,308,221**	**22%**

IV. Merit Criteria:

A. Criterion #1: Safety

Although all components of the project yield safety benefits, the safety advantages related to the largest component of the project—Alum Creek Drive widening and shared-use trail—can be more easily quantified because the roadway infrastructure is already in place.

Between 2014 and 2016 (most recent available data), 267 crashes were reported having occurred along the Alum Creek Drive corridor between Groveport Road and SR 317 (Table 1). The majority of these reported crashes resulted in property damage only (PDO); however, in almost 30% of crashes, at least one person was injured. This includes six individuals being seriously injured and another losing his life. The proposed improvements included in this project are expected to directly improve safety along the Alum Creek Drive corridor for all roadway users and will ultimately help reduce the occurrence of serious injuries and fatalities occurring within the Central Ohio region. Specifically, this project will address safety in three distinct ways: Reducing congestion-related crashes, separating vulnerable roadway users, and providing appropriate accommodations for heavy commercial vehicles.

Table 1: **Crash Type by Severity**

Type of Crash	Total	Fatal	Injury	PDO	% Total
Rear End	97	0	25	72	36%
Sideswipe	54	0	11	43	20%
Left Turn	35	0	15	20	13%
Angle	27	1	12	14	10%
Fixed Object	19	0	3	16	7%
Right Turn	18	0	3	15	7%
Overturning	4	0	3	1	1%
Head On	3	0	1	2	1%
Backing	3	0	0	3	1%
Pedestrian	2	0	1	1	1%
Other	5	0	0	5	2%
Total	267	1	74	192	100%

PDO: Property Damage Only Crash

Table 2: **Crash Type and Resulting Severe Injuries**

Type of Crash	Total FSI	Fatalities	Serious Injuries	% Total
Angle	3	1	2	11%
Head On	1	0	1	33%
Pedestrian	1	0	1	50%
Sideswipe	2	0	2	4%
Total	7	1	6	100%

Total FSI: Sum of fatalities and serious injuries

As shown in Table 1, rear-end and sideswipe crashes (crash types typically associated with excess congestion) were two of most prevalent crash types along the corridor. Together they accounted for over 55% of the total crashes. As noted previously, one of the major outcomes associated with this project is mitigating current and future corridor congestion and reducing these prominent issues. Specifically, the addition of new travel lanes and widening of existing travel lanes will help vehicles travel more consistently and address the queuing issues associated with a number of the corridor intersections.

While concentrations of crashes exist at several of the major intersections, most notably Alum Creek Drive at Groveport Road, corridor segments also represent a major safety concern, especially with respect to heavy commercial vehicles. Over the last three years, over 40% (110) of crashes were classified as non-intersection-related crashes. This equates to an average crash density along the corridor of

13.58 (crashes/mile/year). This is significantly higher than similar 4-lane divided principle arterials across the State of Ohio (6.01)[1]. A significant proportion of these incidents was related to heavy commercial vehicles. By addressing steep drop-offs through the addition of new guardrail and providing pull-off facilities through the addition of an outside shoulder, this project will help resolve these issues.

This project will not just address vehicle-specific safety concerns, however; this project will ultimately increase the ability of all roadway users to safety navigate Alum Creek Drive. Currently dedicated pedestrian and bicycle facilities are absent throughout almost all of the project extent. This represents a significant safety concern for current non-motorized users utilizing the corridor. For example, many transit stops located along the corridor aren't connected to any type of non-motorized facility, leaving vulnerable roadway users to share the road with significant amounts of heavy commercial vehicles. And while only two pedestrian crashes were reported between 2014 and 2016, one of these crashes resulted in the pedestrian suffering life-changing injuries. Moreover, the addition of a shared-use path and a sidewalk will help separate vulnerable current roadway users from heavy high-speed traffic and help further the development of a region-wide network of safe non-motorized facilities.

Overall, this project will provide an opportunity to move past a piece-meal approach to improving user safety along Alum Creek Drive. By comprehensively considering the entire corridor, observed safety issues will be systematically addressed through the implementation of proven countermeasures and necessary right-of-way improvements. Ultimately, this project will lead toward fewer crashes occurring within Central Ohio and help achieve the larger regional and state goal of a reduction in fatalities and serious injuries. This project is expected to mitigate almost 270 crashes over the next 20 years, helping reduce the societal impact of these tragic events by an estimated $14.9 million, as further explained in the Benefit-Cost Analysis.

Pedestrian conditions along Alum Creek Drive

[1] https://www.dot.state.oh.us/Divisions/Planning/ProgramManagement/HighwaySafety/HSIP/Crash_Rate_Information/THREE%20YEAR%20RATES%20-%202015.pdf

B. Criterion #2: State of Good Repair

This project is not driven by a need to maintain infrastructure in a state of good repair. The existing condition of pavement in the impacted portion of Alum Creek Drive is acceptable, and local jurisdictions have been proactive and provided resources to ensure existing facilities have remained in a state of good repair. As mentioned, the primary necessity for this project is addressing congestion and improving workforce access through increasing the current capacity of the roadway, bike/pedestrian, and transit systems.

However, as part of the widening of Alum Creek Drive, two existing bridge structures will need to be widened to accommodate extra lanes and pedestrian facilities. It was estimated that to simply widen the two structures would cost approximately 40% of the entire project to totally replace them. Local partners have elected to replace the bridges completely as part of the project, providing a completely new structure that will ensure a much longer lifecycle for the infrastructure. The bridges were constructed in 1959 and rehabbed in 2002. As noted in the project budget, only 40% of the structure cost was included in the TIGER request to allow matching local funding to cover the additional cost to replace.

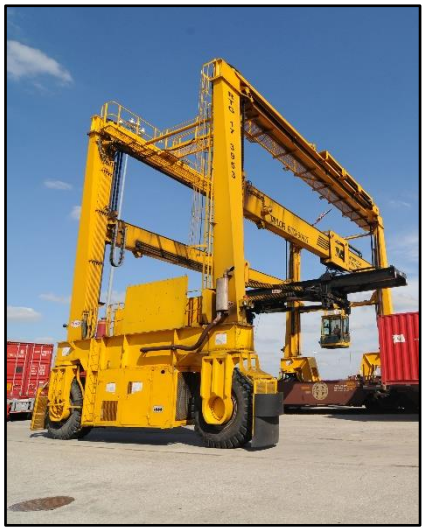
The economy in the Rickenbacker area will help to ensure the improved and newly installed infrastructure are maintained in a state of good repair in the future. Local jurisdictions are provided with sustainable revenue sources through the strong business presence, providing funding for roadway infrastructure and the shuttle transit service.

C. Criterion #3: Economic Competitiveness

As a multi-modal international logistics hub, Rickenbacker connects the Columbus marketplace to the global world. This significance has made the inland port and its transportation facilities one of Ohio's most important economic development assets. The opportunity to move additional freight through Rickenbacker will bring economic and employment growth to the Central Ohio region. This growth, however, depends on the continued investment in upgrading local infrastructure to accommodate additional freight volumes and ensure workforce can access jobs needed to support related businesses.

Rickenbacker Inland Port Assets & Growth

Over many years, officials, planning agencies, and businesses in the region have developed dynamic partnerships to position Central Ohio as a major hub for cargo distribution and warehousing. The region offers a central location to U.S. and Canadian population centers, a strong workforce, and provides businesses a greater value for the industrial space than other markets in its peer group. As such, Central Ohio has become home to 4,300 logistics-related businesses, employing more than 81,000 people. This yields a location quotient for employment of 1.16 compared to the U.S. (EMSI, 2015).



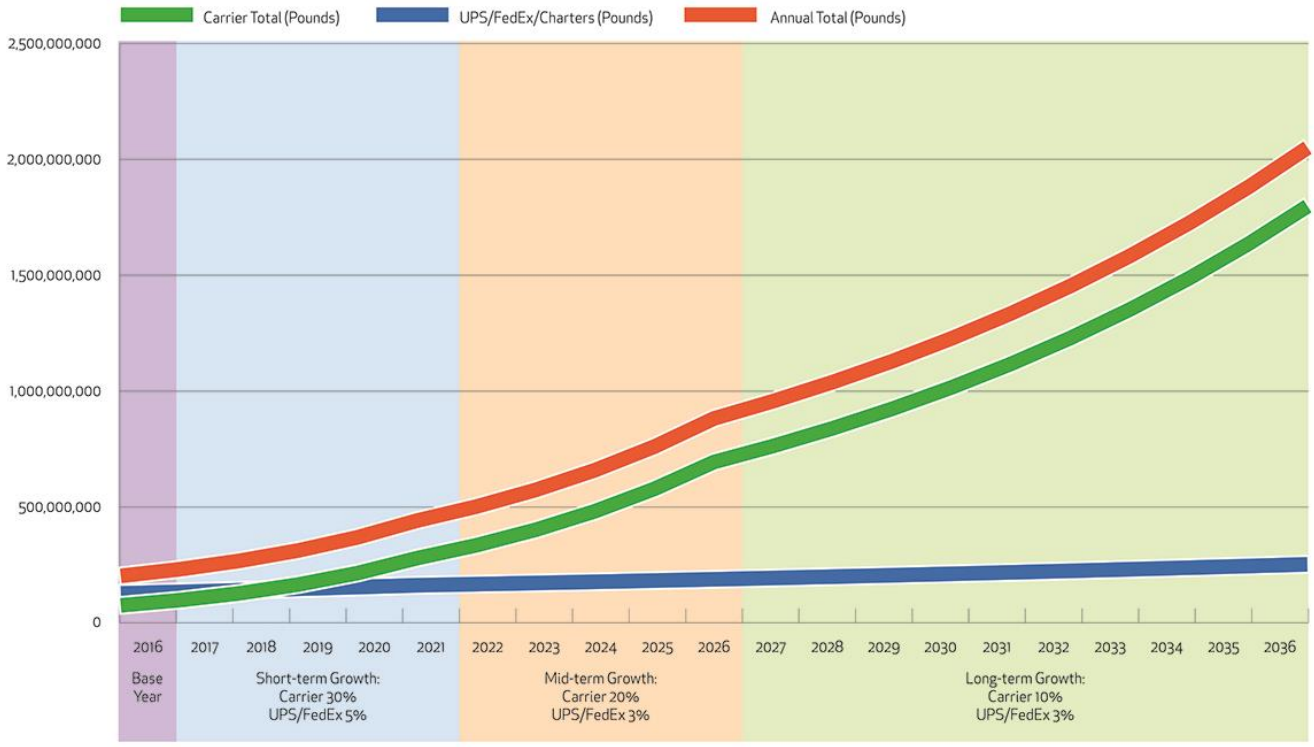
Rickenbacker Inland Port is the backbone of this logistics network as a global multi-modal logistics hub with an unparalleled location for distribution to consumers. Serving as the gateway for the Ohio Valley, Rickenbacker is home to a large base of air, road, and rail transport companies supported by a mix of freight forwarders, consolidators, customs brokers and third-party logistics providers.

The Rickenbacker area offers many assets that position it as a major freight logistics hub; these assets include:

- **Rickenbacker International Airport (LCK):** Originally a U.S. Air Force base, LCK has been successfully repurposed into one of the world's only cargo-dedicated airports. Owned and operated by the Columbus Regional Airport Authority (CRAA), LCK provides uncongested air cargo services for shippers, with providers such as Cathay Pacific Cargo, Cargolux, Etihad Cargo, Emirates SkyCargo, FedEx, and UPS. The bulk of air cargo activity at the airport is generated by carriers that utilize LCK as a gateway for both domestic and international shipments. The facility boasts two parallel 12,000-foot runways and over 500,000 square feet of air cargo facility space, including a new cargo terminal building that opened in 2016 through a unique partnership with Columbus-based business, LBrands. Strong growth continues at LCK, with Emirates reporting a 96.2% increase and Cargolux reporting an 89.1%

increase in cargo weight between October 2015 and October 2016. As demonstrated in Figure 5, CRAA anticipates that cargo growth is expected to remain strong at LCK and potentially reach 1 million tons by 2036.

Figure 5: **Rickenbacker International Airport (LCK) Cargo Forecast**



- **Foreign Trade Zone 138 (FTZ #138):** Rickenbacker serves as the pre-designated Magnet Site for FTZ #138. This zone is considered outside of customs territory for the purpose of duties, allowing goods to be brought into the site duty-free and without formal customs entry. This allows global firms to maintain the cost competitiveness of their U.S. operations and provides a direct connection between Central Ohio and Asian, European, and Middle Eastern markets. In 2015, the FTZ handled $7.8 billion in goods, ranking it #9 out of 186 such FTZs in the country, as reported by the U.S. FTZ Board's 2015 Annual Report. The CRAA acts as the grantee for the FTZ.

- **Rickenbacker Intermodal Facility and Heartland Corridor:** Planned and constructed through a unique public-private partnership (PPP) between Norfolk Southern (NS) and CRAA, the Rickenbacker Intermodal Facility opened in 2008. The facility allows NS to provide access for importers and exporters from/to major container ports on the East and West Coasts, including New York, Norfolk, Los Angeles/Long Beach, and Seattle/Tacoma. This service network, in turn, allows importers to locate distribution and warehousing facilities in the Columbus region. Seventy-three percent of the loaded trailer and container volume handled through the facility in 2015 was

international freight containers. The facility also provides domestic container services that allow Central Ohio to reach markets throughout the U.S., and serves as a point for exporters to move product, including bulk agricultural products, to key ocean port facilities in order to reach their customers in Europe, Asia, and South America. Since the Rickenbacker facility opened in 2008, lift counts have increased by 39%. To meet the increased demand, NS undertook a major expansion of the facility with private funds in 2017 to add lift capacity. The facility has the potential to be expanded again to accommodate up to 400,000 lifts annually.

The intermodal facility grew out of another NS initiative known as the Heartland Corridor. Completed in 2008, the corridor project included raising the vertical clearances in 28 tunnels along the NS mainline route through the Appalachian Mountains to accommodate double-stack trains. This created a more direct, cost-effective and time-sensitive transportation option for shippers.

Rickenbacker Industrial Development

More than 72 million square feet of industrial space has been constructed within the zip codes surrounding Rickenbacker (43206, 43125, 43217, and 43137), according to Columbus 2020. Vacancy rates are low, leading to significant speculative development. This includes the 1 million-sq. ft. TradePort Building by NorthPointe Development and a 674,000-sq. ft. bulk warehouse by Duke Realty. Pizzuti Development recently announced another 1.5-million sq. ft. expansion to its Rickenbacker holdings. With ample land available, additional development is expected to continue.

A major tool for continued growth in the area is the Rickenbacker Global Logistics Park. Developed through a partnership among CRAA, Capitol Square Ltd., and Duke Realty Corporation, the park is a master-planned logistics park capable of handling 30 million square feet of development across 1,450 undeveloped acres. A portion of the park also serves as a Loaded-to-Capacity Zone. This allows containers that are loaded at full capacity and overweight for public highways (container payloads over 58,000 lbs.) to be transported from the intermodal facility to the zone for reloading.

The Alum Creek Drive corridor serves more than 4,000 acres of business parks. These parks are mapped in the area business parks attachment. Half of these parks are still undeveloped and will provide additional economic growth as they are built out, assuming that the infrastructure can support this growth without furthering congestion and reducing travel time reliability.

Rickenbacker Employment

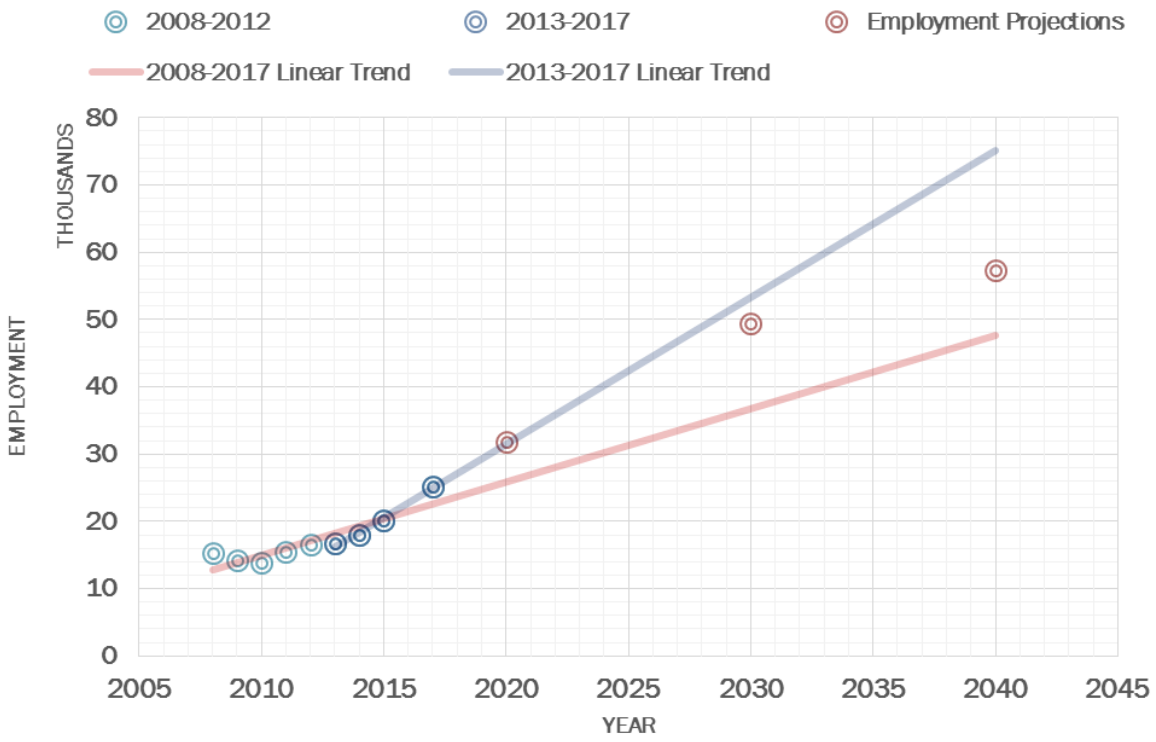
Employment in the Rickenbacker area is strong and growing, with more than 25,200 employees working in the area. At least 44 companies in the Alum Creek Drive corridor each employ more than 100 people. These companies are mapped in the large employers attachment, and include major companies such as Eddie Bauer, Mars Petcare, Amazon, Gap, and Cardinal Health.

Although many of the improvements are located in the Columbus Urbanized Area, a good portion of the employment in the area resides outside of the urbanized area. The ongoing Rickenbacker Area Study, which looks at a larger geography around Rickenbacker, found that approximately 30% of workers came from rural areas such as Pickaway County to the south. Therefore, the improvement provides both urban and rural benefits.

To understand the future growth potential at Rickenbacker, MORPC evaluated current and future land use scenarios. Using a similar geography to the ongoing Rickenbacker Area Study currently being conducted, a future land use scenario was created. The future scenario makes assumptions about potential growth areas for development based on local economic development and planning officials' knowledge of the plans and capacity of the area.

As demonstrated in Figure 6, employment is projected to reach 57,000 by 2040. This estimate is conservative when compared to the 2013-2017 higher growth trend.

Figure 6: **Rickenbacker Employment Growth Historical Trend and Projections**



The Rickenbacker Opportunity

Economic development officials have long identified Rickenbacker as a prime location for logistics and distribution facilities. More recently, however, the area has caught the attention of economic developers and site selectors for large-scale manufacturing. In recent months, Rickenbacker was one of just a handful of sites under consideration by a major foreign manufacturing company that is reshoring jobs from overseas. The proposed plant was estimated to employ between 10 and 50 thousand people, all of which would be new jobs to the United States. Although the company has not yet selected Rickenbacker, the experience strengthened local and state understanding of the competitive advantages of the area.

Rickenbacker is, of course, well-served by its major transportation connections by air, rail, and highway. Significant local coordination also means that economic development incentive districts and utility capacity are either in place or planned. For instance, electric capacity of 300 megawatts and water capacity of 12 million gallons/day are already available, and a major trunk sewer line under construction will meet all industrial sanitary sewer needs. Perhaps underappreciated previously, however, is the competitive advantage of ample flat and contiguous available land. With major growth areas to the east and south of LCK airport largely undeveloped and large portions of contiguous land already assembled by public and private development partnerships, there is the ability to quickly identify and assemble the mega-sites needed for major economic development opportunities. This makes Rickenbacker one of the best large-scale industrial sites in the nation. As the federal government continues to take steps to encourage and facilitate companies moving jobs back into the United States from foreign markets, large sites well-served by diverse transportation options will be needed to accommodate new job centers. Rickenbacker is well positioned to help the nation realize these opportunities for major job growth.

Transportation Improvements & Economic Competitiveness

As demonstrated, Rickenbacker is an economic powerhouse with capacity and potential to continue growing, bringing new jobs to the region and nation. Alum Creek Drive is a critical corridor for Rickenbacker, providing the critical link with I-270, the destination for the majority of commercial trips destined for outside the area as documented in Figure 4. Reducing congestion on this corridor will reduce travel time for commercial and passenger traffic, reducing an estimated 350,000 vehicle hours of travel delay and saving individuals and businesses $32 million over a 20-year period. This savings reduces the cost of doing business, and allows workers to keep more of their paychecks. Reducing roadway congestion and improving single-occupancy vehicle alternatives eases the burden of commuting on workers by providing timelier, reliable, affordable, and less stressful access to their workplace.

The proposed improvements will increase the productivity of local land, allowing continued growth in the area that could result in xx acres of additional land seeing development. Without infrastructure investment, congestion and workforce shortages could mean that jobs are located outside the region, or even the country. To remain economically competitive, the United States needs to continually invest with local partners in creating well-positioned areas for commerce served by well-planned, multi-modal, and uncongested transportation infrastructure.

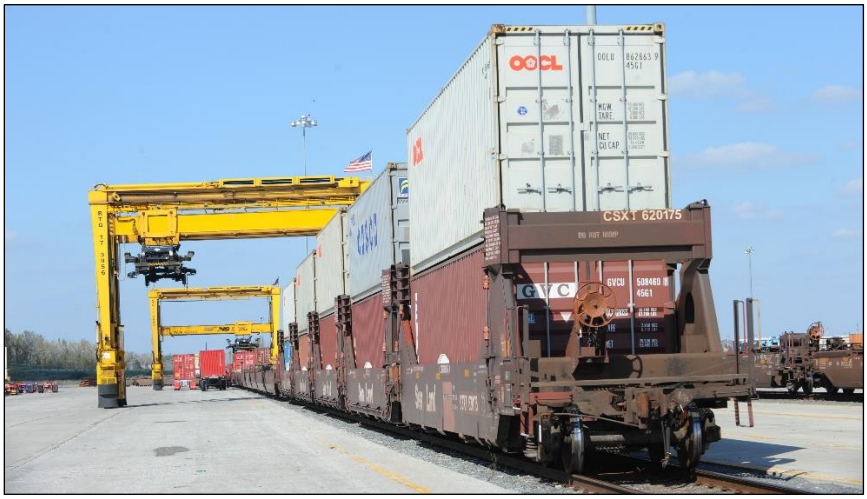
D. Criterion #4: Environmental Sustainability

A major goal of this project is reducing congestion, thereby reducing energy use and improving air quality in the region. As previously explained, Alum Creek Drive is currently congested, and additional growth in the area is expected to increase congestion significantly by 2040. Increasing capacity of the corridor is expected to reduce congestion and emissions. Additionally, transit improvements and construction of the shared-use trails will improve options for workers in the area to complete their commutes without use of single-occupancy vehicles, further reducing both congestion and emissions.

Over a 20-year period, the proposed widening is estimated to reduce VOC emissions by 10.41 short tons, NOx emissions by 2.38 short tons, PM emissions by 17.70 short tons, and SO2 emissions by 0.30 short tons.

The widening of Alum Creek Drive supports the expansion and continued growth in annual lifts at the Rickenbacker Intermodal Facility. This in turn creates the potential for measurable environmental public benefits in the form of fuel savings and emissions reductions. As more freight is diverted from all-highway to the efficient 'steel wheel on steel rail' intermodal alternative, more fuel savings are achieved. Recent and future expansions will result in an increased modal shift of freight transportation from long-distance trucking to rail. According to a Parsons Brinckerhoff analysis, once the Rickenbacker Intermodal Facility is fully expanded as planned in the coming years, the facility will provide substantial cumulative benefits over 30 years. This includes saving 94.9 million gallons of fuel, reducing 964 thousand tons of carbon emissions, and eliminating 681 million truck-miles-traveled. Although the improvements proposed in this application support the expansion and impact of the intermodal facility, these impacts were not included in the Benefit-Cost Analysis.

The reduction in emissions from reducing congestion on Alum Creek Drive and growth at the intermodal facility that replaces long-distance trucking trips would be extremely beneficial for Central Ohio, as the region will be in nonattainment for ozone pollution according to the National Ambient Air Quality Standards (NAAQS) that were strengthened in October 2015.



E. Criterion #5: Quality of Life

As workforce is the greatest asset of our region, improving quality of life for the workforce at Rickenbacker is central to the goals of this project. Local officials understand that easy access to employment is important to the health and financial outlook of individuals, families, and communities. Although employment in the area includes advanced logistics activities and well-paid positions, the workforce also includes many individuals working in basic warehousing that require affordable transportation options. Accordingly, the package of improvements in this application seeks to increase connections, reduce congestion, and improve the affordability and comfort of commute travel for the area's workforce.

The central component to meeting these goals is providing workers with increased choices for their daily commutes, providing employees with more freedom for their transportation patterns. Providing choices means creating viable opportunities for individuals to select among multiple transportation modes. Effective transit, bike and pedestrian amenities, and first-/last-mile connections are all parts of the solution.

Across the country, public transit systems struggle to serve logistics parks because the size of the warehousing and distribution facilities adversely affect density. Rickenbacker is no different, requiring creative solutions to make transit a viable alternative to reach employment locations in the area. In 2015, the City of Groveport, Village of Obetz, Central Ohio Transit Authority (COTA), and MORPC partnered to launch the GREAT (Groveport Rickenbacker Employee Access Transit) shuttle service, an annual operational commitment of approximately $600,000. This shuttle service allows employees traveling to the Rickenbacker area on primary COTA routes to connect to various business locations throughout the area. To improve the efficiency, safety, and comfort of existing transit options, a package of small improvements will be made to existing stops.

Although the GREAT service has been very successful and carries an average of 459 riders weekly, there are still employment destinations left unserved by either GREAT or COTA. There are also transportation gaps created due to the fact that many of the area businesses operate multiple shifts that may not follow traditional regional transit service times. In addition to plans for expansion of the GREAT service, this project would begin to address the diverse transportation gaps with first- and last-mile solutions through bike and pedestrian choices. The shared-use path on Alum Creek Drive will be part of a planned network of trails and sidewalks throughout the area, providing pedestrian and bike connectivity between transit stops and work locations. As part of the widening of Alum Creek Drive, pedestrian crosswalks at intersections will be designed to reduce impacts between pedestrians and both freight and non-commercial traffic. The planned bike-share system will provide further first-/last-mile opportunities.

As previously explained, the shared-use paths along Alum Creek Drive and Big Walnut Creek Trail will provide workers with the ability to consider using a bike for an entire commute by making a low-stress trail connection to dense neighborhoods in Southeast Columbus.

Finally, reducing congestion on Alum Creek Drive will benefit passenger and transit vehicles similarly to commercial traffic. Travel time reliability on the corridor is important for workers reaching their jobs by car and bus, ensuring they will arrive on time to work and be able to

commute home in a timely manner. If congestion were not addressed, quality of life would degrade with additional growth in the area that could lead to longer, more stressful and unreliable commutes.

Finally, quality of life for residents and workforce in the area is greatly enhanced with 2,200 acres of parkland (Three Creeks and Walnut Woods Metro Parks) providing accessible programs and recreational opportunities for over 1 million visitors annually.

F. Secondary Criterion #1: Partnerships

The Rickenbacker Inland Port has been the result of incredible partnerships among a multitude of players. Although CRAA acts as the major coordinator in the port, major investments by both public and private entities have positioned Rickenbacker as a major freight hub. Examples of private investments include construction of Norfolk Southern's intermodal facility, LBrands' involvement in the construction of a shared air cargo terminal at LCK airport, and private developer partnerships to construct the distribution and warehousing facilities necessary for an inland port to maximize its transportation assets.

This application is proposed as a public-private partnership (PPP) among ***US DOT***, ***Columbus Regional Airport Authority (CRAA)***, ***Franklin County Engineer's Office (FCEO)***, ***Columbus and Franklin County Metro Parks (Metro Parks),*** and the ***Mid-Ohio Regional Planning Commission (MORPC).*** CRAA is the lead agency and project applicant.

FCEO will be responsible for the widening of Alum Creek Drive and shares long-term maintenance responsibilities with the ***Village of Obetz*** that owns the northern section. FCEO owns the southern section and has a vested interest in the entire length of the proposed improvement in its oversight of the entire county thoroughfare system.

Metro Parks will be responsible for construction and maintenance of the Big Walnut Creek Trail through Three Creeks Park. The park is a partnership between Metro Parks and the ***City of Columbus***. The city owns the land and Metro Parks operates the 1,000-acre park as part of the regional Metro Parks system. Metro Parks operates over 27,000 acres in Central Ohio, serving over 10 million visitors annually.

The ***Central Ohio Transit Agency (COTA)*** and ***City of Groveport*** will be responsible for installation and maintenance of the transit infrastructure as providers of COTA and GREAT service in the area.

MORPC serves as the local Metropolitan Planning Organization (MPO) and has been involved in prior planning for transportation improvements at Rickenbacker. MORPC assisted with coordination of project partners for the purposes of this application.

The ***Ohio Department of Transportation (ODOT)***, ***City of Columbus***, ***City of Groveport***, and ***Village of Obetz*** have also been involved in prior planning for transportation improvements at Rickenbacker and have indicated their strong support for the proposed improvements.

Collaboration: Numerous private entities and businesses have been engaged to help understand the needs and potential impacts of these improvements. MORPC and CRAA have collaborated with the Columbus Region Logistics Council and Rickenbacker Employer Assistance Network (REAN). These groups represent experts in the local logistics industry, business owners, and human resources professionals who understand business challenges and opportunities within the area. As demonstrated by the numerous letters of support enclosed with this application, support among the members of these organizations is strong.

Area Planning: In addition to the projects proposed in this application, planning efforts are underway to revisit and update the planning documents that are guiding development of the Rickenbacker area. Inside the fence of the airport, CRAA recently initiated an update of a Federal Aviation Administration-compliant airport master plan for future development of LCK. Outside the airport boundaries, a partnership coordinated by MORPC has begun a two-year, comprehensive study and planning effort to identify transportation, energy, utilities, broadband, economic development, and housing needs for the larger Rickenbacker area. The latter study spans a wider geographic region across southern Columbus, encompassing 137 square miles, and has significant funding from businesses, non-profits, and local governments with a vested interest in the Rickenbacker area. These planning efforts are being coordinated to ensure recommendations are made in concert and provide a consistent roadmap for the future of the Rickenbacker area. Together, these study efforts represent an investment of nearly $2 million by all community partners.

G. Secondary Criterion #2: Innovation

Alum Creek Drive is included in the USDOT-funded Smart Columbus effort. The Smart Columbus Driver-Assisted Truck Platooning (DATP) and Freight Signal Priority (FSP) Project seek to deploy new technologies in truck operations that can promote the efficient flow of commerce in and around Columbus while contributing to the goals of the Smart Columbus program, which include emissions reduction, truck time savings, safety improvements, and promoting economic opportunity. The scope of this project is to develop and deploy a DATP capability on select limited-access highways around Columbus, combined with signal priority on key freight arterials—including Alum Creek Drive—to smooth freight traffic flow and better enable platooning once on the highway.

Freight Signal Priority (FSP) technology uses vehicle-to-infrastructure (V2I) wireless communications to make the traffic signal system aware of trucks approaching properly equipped intersections. The system can then adjust signal phase timing as needed to assign priority to freight trucks, thereby smoothing traffic flows for freight and reducing stop/start cycles, which reduces emissions. Trucks are given priority where feasible and only if there is no other overriding priority, for example an emergency vehicle. Platoon Intent Freight Signal Priority (PIFSP) is an extension of FSP that enables the traffic signal system to detect multiple approaching trucks that intend to platoon, so that signal timing can be adjusted to keep them together until they reach a limited access highway where platooning may begin.

To support the FSP technology, the City of Columbus plans to install fiber along the Alum Creek Drive corridor. Installation is currently planned to occur on poles, but award of this grant and the widening of Alum Creek Drive would allow the city to install fiber in concrete-encased conduit. This represents an additional investment of approximately $820,000. Please note that neither this application nor the City of Columbus is requesting additional dollars to support the underground fiber installation.

V. Project Readiness:

A. Technical Feasibility:

The Alum Creek Drive widening is a relatively basic roadway widening project with few of the more significant challenges typically faced on smaller projects, such as extensive right-of-way impacts, railroad involvement, multi-agency jurisdictional boundaries, etc. In most cases, the existing right-of-way will accommodate the widening, and little property will need to be acquired. FCEO has engaged Stantec to begin preliminary engineering for the widening component. Additionally, FCEO plans to follow ODOT's Local Public Agency (LPA) process per standard protocol with federal-aid projects. That process, along with using only local funding for the engineering design contracts, has allowed FCEO to progress from project conception to awarding the construction contract in a very expeditious manner. FCEO has used this LPA process on numerous federal-aid projects over the past 20 years, ranging in size from $50,000 to $15 million. All projects were delivered on time and within budget while satisfying all federal and state requirements for engineering, environmental clearance and right-of-way acquisition.

The other project components are much smaller in proportion and complexity compared with the work in the Alum Creek Drive corridor. Therefore, project partners are confident the improvements can be advanced quickly. As the Big Walnut Creek Trail connection can be accomplished entirely through Three Creeks Park, no right-of-way is required, and Metro Parks will be able to build the trail without coordination with other entities. Metro Parks has extensive experience building trails in the region and estimated the cost of the trail connection. The transit and bike-share infrastructure will require only minor design work to confirm placement and locate pads for installation. MORPC utilized costs from previous transit and bike-share projects to estimate these improvements for the application.

Alum Creek Drive where it narrows from 6 to 4 lanes south of Groveport Road

B. Project Schedule:

The project schedule is provided in Table 4. As outlined, TIGER dollars can be obligated well in advance of statutory deadlines and construction can commence in 2019, if not earlier for some components.

Table 4: **Project Schedule**

Alum Creek Drive Milestones	Other Components' Milestones	Date
Authorize Design Consultant		February 2018
Preliminary Right-of-Way Plans – Complete		June 2018
Stage 1 Plans – Complete	Authorize Design Consultants	July 2018
Stage 2 Plans – Complete	Finalize Design/Requirements	December 2018
Final Right-of-Way Plans		December 2018
Environmental Documents Approved		December 2018
Right-of-Way Authorized		January 2019
Stage 3 Plans – Complete	Transit & Bike Share – RFP for Vendors	June 2019
ODOT Right-of-Way Certification		June 2019
Plan Package to ODOT	Big Walnut Trail – Sale Date	July 2019
Sale Date		August 2019
Award Date & Begin Construction	Award Date & Begin Construction	September 2019
	End Construction/Installation	December 2020
End Construction		July 2021

C. Required Approvals:

Environmental Approvals: At this time, environmental approvals have not been secured. However, given the straightforward nature of these project components, no environmental issues that will negatively impact the project schedule are anticipated. For the largest component of the project, the widening of Alum Creek Drive, FCEO plans to follow ODOT's (LPA) process. ODOT is one of six states to have entered into FHWA's National Environmental Policy Act Assignment (NEPA) Program. Under this program, ODOT operates on behalf of FHWA and is responsible for environmental review, reevaluation, consultation, and other actions pertaining to the review or approval of highway projects required by Federal environmental laws. The NEPA Assignment Program has significantly streamlined Ohio's environmental review process and project delivery time because ODOT acts as FHWA for all actions in Ohio, which substantially reduces the total time needed to deliver projects.

Public Engagement: The roadway and trail infrastructure in this package has been included in multiple planning documents. The widening of Alum Creek Drive has been included in the Franklin County Thoroughfare Plan, MORPC's Metropolitan Transportation Plan, and the 2008 Rickenbacker Area Study. The Big Walnut Creek Trail is included in MORPC's Metropolitan Transportation Plan as well as the Central Ohio Greenways Trail plan. During development of these plans, public engagement was provided through public meetings, stakeholder committee meetings, and public comment periods. Additional public engagement is planned during the final design to ensure the public, including businesses and workforce, has an opportunity to influence outcomes.

State & Local Approvals: This project is broadly supported by key state leaders in the Ohio General Assembly and ODOT. Federal congressional leaders, local governments, and private industries are also strongly in favor of the proposed improvements, as demonstrated by the enclosed letters of support.[2] Formal approvals will be necessary for certain matching funding, but these commitments have been previously discussed with funding entities and are anticipated to occur on an expedited timeframe in the event of significant federal funds through a TIGER award.

State & Local Planning: The widening of Alum Creek Drive and Big Walnut Creek Trail are both included in MORPC's 2016-2040 Columbus Area MTP (Project IDs #1182 and #299, respectively). Remaining planning documents will be amended if TIGER funds are awarded for the project. These documents include the State of Ohio STIP and the MORPC TIP. As demonstrated by their letters of support, ODOT and MORPC already recognize and support the project as it aligns with state and regional transportation objectives.

The Ohio State Freight Plan, accepted by USDOT/FHWA in October 2016, identifies the Norfolk Southern intermodal facility as a strategic freight asset of statewide significance. The proposed improvements strengthen this asset by increasing capacity and reducing congestion. As mentioned, Alum Creek Drive is designated by the State of Ohio as an official NHS Intermodal Connector Route. This designation, accepted by FHWA, recognizes Alum Creek Drive's connection and importance to the intermodal facility and LCK.

[2] Letters of support are attached and available at www.morpc.org/RickenbackerTIGER

D. Assessment of Project Risks and Mitigation Strategies

The Alum Creek Drive widening project, as mentioned, is a very straightforward highway widening that requires only minimal right-of-way acquisition and construction of two structures. The project will be overseen by FCEO, which has extensive experience in completing complex roadway projects, including the $13.2-million “crossbow” intersection of Alum Creek Drive and Groveport Road. FCEO has identified two potential project risks at this time, related to project cost estimates. The majority of property along Alum Creek Drive is commercial or industrial and the project team anticipates owners will view the widening favorably. However, disagreements with appraisals or access issues could occur for the minimal right-of-way needed. FCEO believes any increased costs to resolve these types of issues will not be of a magnitude relative to the overall project cost that cannot ultimately be resolved within the local budget. An additional identified risk is underestimation of project costs. The estimate was first determined internally at FCEO and verified by additional work from consultant Stantec. The majority consensus of reviewers of the construction cost estimate for the project was that it is conservative. Detailed engineering could result in unanticipated issues that were not foreseen in the estimate, but it is not believed that they would result in an increase that ultimately could not be absorbed by current local funding sources, or if need be, by state freight/logistics funding.

For other project components, cost estimation is the only risk currently identified. As with Alum Creek Drive, local partners are committed to advancing this project suite and are confident additional non-federal sources could be quickly identified to ensure the TIGER-funded project could advance on schedule.

VI. Benefit Cost Analysis:

The Benefit-Cost Analysis (BCA) for this project determined that the proposed investment is cost effective. As demonstrated in the BCA summary in Table 5, the project will yield $1.35 for every $1 invested. At a discount rate of seven percent, the **benefits of the project exceed the costs by more than $11.4 million**, representing a Benefit-Cost Ratio of 1.35.

This BCA result is considered conservative as only the vehicular benefits of widening Alum Creek Drive were monetized. Significant benefits are expected from the installation of shared-use trails and transit improvements, but these were not included in the analysis because of the difficulty to quantify and value these benefits in economic terms. The costs of these non-vehicular improvements are included in the analysis, however, and the vehicular benefits still exceed the costs of all improvements.

Table 5: **Benefit-Cost Analysis Summary**

Problem to be Addressed		Congestion causing excessive freight and passenger travel delays
Change to Baseline		Widening of Alum Creek Drive (trails and transit improvements included in costs only)
Benefits at 7% Discount Rate ($2016)	Value of Travel Time Savings	$32,520,860
	Vehicle Operating Cost Savings	$2,725,375
	Safety Benefits	$5,891,650
	Emission Reduction Benefits	$2,423,585
	Total Benefits	**$43,561,471**
Costs at 7% Discount Rate ($2016)	Total Costs (Construction, Operation, and Maintenance)	**$32,177,295**
NPV at 7% Discount Rate		**$11,384,175**
Benefit-Cost Ratio		**1.35**

In order to conduct the BCA, MORPC closely followed USDOT's BCA Guidance for TIGER and INFRA Applications document (July 2017 version). MORPC's Regional Travel Demand Forecasting Model was utilized to forecast travel demand and travel time savings by car and truck for the analysis.

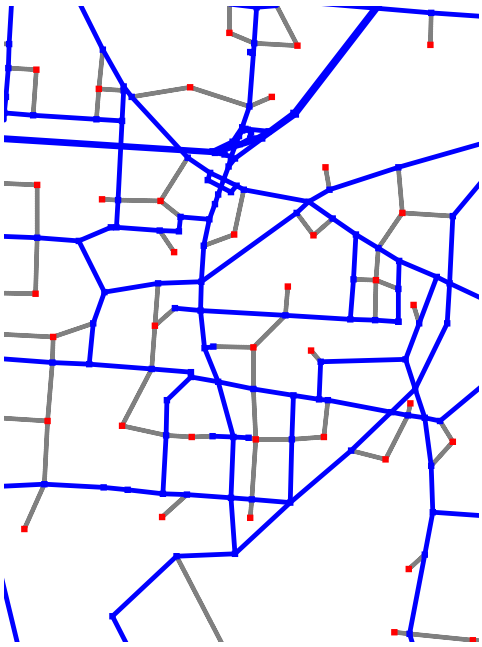
The analysis period extends from 2018 through 2040, including three construction years and 20 years of operation following construction. Benefits considered in this analysis include four major categories: Value of Travel Time Savings, Vehicle Operating Cost Savings, Safety Benefits, and Emission Reduction Benefits.

Modeling Procedure

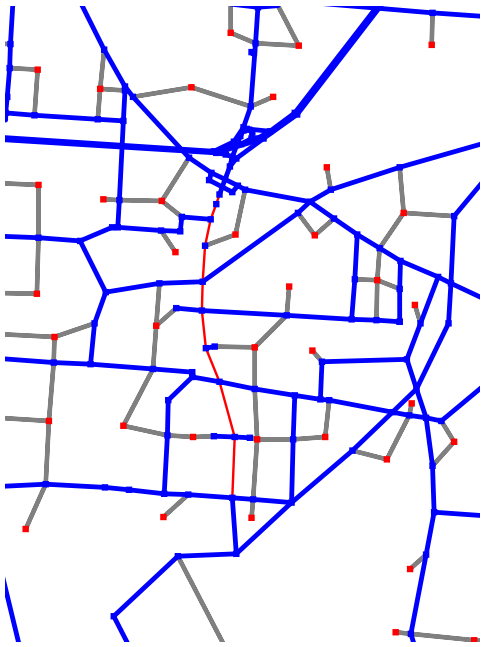
MORPC's Regional Demand Forecasting Model is a state-of-the-art activity-based model, one of the earliest operational advanced travel models in the United States. Since its development, MORPC's model has been reviewed in multiple studies[3] and identified as employing some of the most advanced modeling techniques in the world.

The key inputs to the benefits estimation in this BCA analysis are from MORPC's Regional Travel Demand Forecasting Model. Land use forecasts for three horizon years (2020, 2030, and 2040) were used by the model runs to generate vehicular trip tables for each of the three horizon years. In order to forecast traffic level of each individual year of the analysis period, these three trip tables were used to interpolate trip tables for all the years between 2020 and 2040. Then, the individual year trip tables were assigned on the model highway networks for both No-Build and Build scenarios, as shown in Figure 8. The networks shown in Figure 8 represent a Rickenbacker sub-area in the Central Ohio region; the model runs conducted reflected the full regional model geography. Tight convergence criteria (100 iterations) were used in the highway assignments to achieve meaningful comparison between No-Build and Build Scenarios.

Figure 8: **No Build and Build Model Sub-Area Networks**



No Build Network



Build Network
(capacity added to links highlighted in red)

[3] Studies include: Transportation Research Board (TRB) Special Report 288 – Metropolitan Travel Forecasting: Current Practice and Future Direction, 2007. Travel Model Improvement Program (TMIP) Report – A Snapshot of Travel Modeling Activities, August 2008. Association of Metropolitan Planning Organizations (AMPO) – Advanced Travel Modeling Study: Final Report, July 2011. FHWA Report – Activity-Based Travel Demand Forecasting: Reviews of MORPC and SACOG Modeling Practices, 2012.

Select-link analysis was conducted to determine the project vehicular users of both the No-Build and Build Scenarios. The benefits included in this BCA analysis were estimated for the project users only. The model results provided the key traffic forecasts and level of service (congestion level) to the benefits estimation.

Value of Travel Time Savings

Travel time of the project users was calculated based on the highly converged traffic assignments, for both No-Build and Build scenarios. The project users were grouped into cars and trucks and the travel time savings was calculated as the difference of vehicle-hour traveled between No-Build and Build scenarios. As MORPC's model forecasts traffic for a typical weekday, an annualization factor of 300 was used to convert daily model travel time savings to annual savings. Vehicle occupancy rates and hourly value of travel time recommended in USDOT's guidance were used to estimate the value of travel time savings brought by the proposed project. The total value of travel time savings at the discount rate of seven percent would be $32.5 million. Detailed calculations can be found in the 'TravelTimeSavings' tab of the BCA spreadsheet submitted with the application.

Vehicle Operating Cost Savings

Travel distance of the project car and truck users was calculated and the reduction in vehicle miles traveled (VMT) between No-Build and Build scenarios was the basis for the vehicle operating cost savings. The same annualization factor of 300 was used to convert daily VMT reduction to annual reduction for cars and trucks, separately. Monetized values recommended in USDOT's guidance were used to estimate the vehicle operating cost savings based on the VMT reductions brought by the project. The total vehicle operating cost savings at the discount rate of seven percent would be $2.7 million. Detailed calculations can be found in the 'VehicleOperatingCostSavings' tab in the BCA spreadsheet.

Safety Benefits

The projects' Safety benefits were modeled using the Economic Crash Analysis Tool (ECAT)[4] provided by ODOT's Office of Statewide Planning & Research. This tool utilizes Highway Safety Manual- (HSM-) based methods to calculate expected crash frequencies by severity level (KABCO scale).

In order to use this tool, the project was broken into 15 discrete elements (7 segments, 8 intersections). Existing conditions for the project segments were modeled using the Rural Multilane Segment Safety Performance Function (SPF). Lane widths and shoulder width Part C Crash Modification Factors (CMF) were applied to the HSM Base Condition to adjust for existing site conditions present along the corridor. Project intersections utilized both Signalized and Unsignalized Rural Multilane Intersection SPFs, and again the appropriate Part CMFs were applied to modify the HSM Base Conditions to the project.

[4] http://www.dot.state.oh.us/Divisions/Planning/ProgramManagement/HighwaySafety/HSIP/Pages/ECAT.aspx

Once the existing conditions were modeled, Part C &D CMFs were applied both to the entire project and individual project elements to model the expected crash frequencies for three years (2020, 2030, and 2040). Linear interpolation was used to estimate the expected crashes for the gap years. The CMFs applied to the entire project where taken from FHWA's CMF Clearing House and included the addition of new guardrail along embankments, resurfacing pavement, addition of a Bicycle Path/Shared-Use Path, and the installation of lighting along the corridor.

The total safety benefit at the discount rate of seven percent would be $5.9 million. Detailed calculations can be found in the 'SafetyBenefits' tab in the BCA spreadsheet

Emission Reduction Benefits

Based on the modeled traffic level and congestion level, emission rates from the latest version of U.S. EPA's Motor Vehicle Emission Simulator (MOVES14a)[5] with localized inputs were applied to generate the pollutant emissions for No-Build and Build scenarios, as consistent with the standard MORPC air quality conformity analysis procedure. The pollutants considered in the BCA analysis include VOCs, NOx, PM and SO_2. Again, the daily emissions were converted to the annual ones by applying the annualization factor of 300. Monetized values recommended in USDOT's guidance were used to estimate the emission benefits based on the emission reductions brought by the project. The total emission benefits at the discount rate of seven percent would be $2.4 million. Detailed calculations can be found in the 'EmissionsReduction' tab in the BCA spreadsheet.

Project Cost

In addition to the benefits of the project, the costs can be found in the 'ProjectCosts' tab of the BCA spreadsheet. The total construction cost of the project is $37,692,500 in 2016 U.S. dollars and has been broken down into three years of the construction period. Operations and maintenance costs are also estimated for both No-Build and Build scenarios. The total project costs at the discount rate of seven percent would be $32.2 million.

Benefit Summary

The BCA analysis shows that the proposed project would produce a positive net benefit. At a seven percent discount rate, the benefits exceed the costs by more than $11.4 million. This cost-effective result, especially considering that non-vehicular benefits are not included, demonstrates that the project is a worthwhile investment for the region and nation.

[5] https://www.epa.gov/moves/moves2014a-latest-version-motor-vehicle-emission-simulator-moves

VII. Cost Share:

As previously expressed, the success of Rickenbacker as an inland port has been the result of significant public-private partnerships over a number of years. Private developers, major employers, logistics and shipping companies, class I railroads, and other private entities have contributed toward construction of public and private infrastructure. Partnership examples include the construction of the intermodal facility which was funded predominantly by Norfolk Southern, a partnership with LBrands to construct a new air cargo terminal at LCK airport, and the development partnership between CRAA and Duke Realty for the Global Logistics Park, which has resulted in a higher quality-built product for areas with amenities like trail and sidewalk connections not found in most other private developments.

In the case of these projects, however, significant local private and public dollars will not be able to advance construction. The widening of Alum Creek Drive, a road corridor largely under the jurisdiction of the Franklin County Engineer's Office, is much larger in scope and cost than the office's typical project portfolio and financial capabilities. The same is true for the jurisdictions along the corridor and entities like MORPC and the Ohio Public Works Commission district, as the total project cost exceeds what each agency has available to distribute in one year. Without the TIGER grant, the project cannot move forward.

Industrial development, including warehousing and distribution, is a very thin margin business. In recent years, local partners have worked to solicit contributions from the companies in the Rickenbacker area to support the GREAT shuttle service. Although businesses have been incredibly supportive and appreciative of the service, they have not been able to participate financially due to these thin margins. For this reason, local partners do not believe funds to support the Alum Creek Drive transit, bike, or trail improvements will attract significant private contributions.

Local partners sought to identify contributions from multiple local and state partners to demonstrate both local support and raise significant funds to leverage the TIGER funding opportunity. The State of Ohio, through the Ohio Department of Transportation (ODOT), has committed $2 million in federal funding for the Alum Creek Drive widening.[6] This commitment is documented in its letter of support, included in the funding commitments attachment. Local jurisdictions have also committed a matching $2 million in local funds. Commitments from the City of Columbus and Franklin County Engineer's Office are documents in the funding commitments attachment. Other local jurisdictions were not able to document their commitment in writing at this time due to necessary council and budget approvals; however, the application partners are confident the total $2 million local contribution will be achieved without delay based on partner discussions and the strong impact of the proposed project.

Additional funds are targeted from the Ohio Public Works Commission (non-federal) and MORPC (federal STP/CMAQ) to fill the final funding gap. Although formal awards will need to be secured for the latter, these commitments have been previously discussed with funding

[6] ODOT's commitment is also made within the INFRA application for the identical improvement included in the Rickenbacker INFRA application. See Section IX for more information.

entities and are anticipated to occur on an expedited timeframe in the event of significant federal funds through a TIGER award. The amounts of these awards anticipated are within normal grant ranges, and both agencies have funding rounds scheduled in the near term that will allow the project to move forward without delay.

Although CRAA is the applicant and a committed partner, the improvements planned are outside of CRAA property, and the organization is not permitted under federal statute to contribute funds toward the projects.

Long-term maintenance will be supported by the various project partners. The Franklin County Engineer's Office and Village of Obetz, owners of Alum Creek Drive, will continue to maintain Alum Creek Drive and the added pedestrian amenities. Metro Parks will maintain the Big Walnut Creek Trail. COTA and GREAT will maintain the transit improvements and equipment. All of these partners have sustainable annual revenues and are expected to have the financial capacity to prioritize maintaining the improvements in a good state of repair moving forward, ensuring that the federal contribution is fully leveraged to provide positive transportation benefits through the practical lifecycle of the infrastructure.

VIII. Federal Wage Rate Certification:

As required, a signed Federal Wage Rate Certification is attached to this application.

IX. INFRA Application

As Rickenbacker is a major priority for economic growth and job creation, state and local partners also plan to concurrently submit an INFRA application to USDOT for transportation improvements at Rickenbacker. This application was focused on providing safe, affordable, and reliable transportation in the scope and requirements of the TIGER program. The INFRA application will include a larger set of highway and freight improvements in the scope and requirements of the INFRA program.

The Alum Creek Drive improvements, including adding lanes and pedestrian facilities, are included in both the TIGER and INFRA applications. For ease of application reviewers at USDOT, all details and commitments of and toward the Alum Creek Drive improvement are the same within both applications, except in how the benefits may increase under a larger INFRA scope. We understand that any federal commitment toward Alum Creek Drive from either program would impact the award size or potential from another application.

All partners are thankful to USDOT for the opportunity to request funds through the TIGER and INFRA programs in order to make the transportation investments necessary to advance our regional and national economy.