Brush College Road/Faries Parkway Project:

Grade Separation & Improvements

April 2016

Location: **Decatur, Illinois**

Project Type: **Urban Road and Road/Rail Grade Separation**

Applicant: **City of Decatur**

Type of Applicant: **City Government**

TIGER Funding Requested: **$20 Million**

DUNS Number: **0751630000000**

Website: **www.decaturil.gov/citygovernment/publicworks/brushcollegestudy.html**

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1.0 Executive Summary

The City of Decatur, Illinois, in cooperation with Macon County, is proposing the construction of a grade-separated intersection and associated transportation infrastructure improvements along Brush College Road at Faries Parkway, to include a crossing of the existing Norfolk Southern (NS) rail line. This project includes roadway capacity, safety, and multimodal connectivity improvements. The estimated total cost of the project is $39.9 million. This application requests $20 million.

PROJECT BENEFITS

+ Improves the **STATE OF GOOD REPAIR** by implementing **SAFETY** improvements at a dangerous intersection.
+ Creates **LADDERS OF OPPORTUNITY** by supporting **ECONOMIC COMPETITIVENESS** and movement of goods in areas of critical economic concern.
+ Enhances **QUALITY OF LIFE** by addressing needs for pedestrians and bicycles.
+ Promotes **ENVIRONMENTAL SUSTAINABILITY** by reducing carbon and noxious emissions.

Distance	Persons Employed
Along Brush College Road	434
Within 1/2-Mile	1,883
Within 1-Mile	4,352

Source: Economic Development Corporation of Decatur and Macon County; City of Decatur, April 2016.

Several major employers are located on, or near, Brush College Road and rely heavily on the corridor for the transportation of goods and services, as well as employees; therefore, Brush College Road is a critical commercial and industrial corridor for the local, regional, and national communities; serving as a conduit for freight and light vehicles. The at-grade NS crossing on Brush College Road at Faries Parkway creates daily problems for travel, blocking traffic an average of 17 hours per week. Vehicles stopped at the crossings creates user delays, crashes, lost business opportunities due to interrupted schedules, wastes fuel, increases pollution, and has negative impacts on the quality of life for users of the intersection. A grade separation is needed to allow uninterrupted access for commuters, local agribusiness deliveries, and emergency responders.

BENEFIT-COST ANALYSIS RESULTS

	Ratio
No Discount:	3.34:1
Discount 3%:	2.23:1
Discount 7%:	1.38:1

PROJECT READINESS

✓ *NEPA-Abbreviated Environmental Assessment:*	Approved March, 2015
✓ *IDOT-Combined Design Report (Phase I):*	Approved March, 2015
✓ *Bicycle Facilities Assessment:*	Completed January, 2011
✓ *Decatur Area Transportation Efficiency Study:*	Completed December 2013

2.0 Project Description

This TIGER VIII Discretionary Grant application for the Brush College Road/Faries Parkway Project is part of an overall reconstruction effort to upgrade 1.21-miles of Brush College Road in the City of Decatur, Macon County, Illinois. The focus for this grant is a 0.29-mile long segment to construct a grade-separated intersection and associated transportation infrastructure improvements along Brush College Road at Faries Parkway, to include a crossing of the existing Norfolk Southern (NS) rail line. The northern termini of this project is East Harrison Avenue and the southern termini is 200 feet south of East Logan Street. This project includes roadway capacity, safety, and multimodal connectivity improvements. The estimated total cost of the project is $39.9 million. This application requests $20 million.

EXPECTED USERS OF THE PROJECT

- Emergency Responders
- Local Residents
- Commuters
- Students
- Pedestrians/Bicyclists
- Agribusiness Industry Users
- Norfolk Southern Railroad

The Brush College Road/Faries Parkway Project will promote national, regional, and local connections to the existing surface transportation system. The following details why this intersection is the optimal location to provide relief to the region from rail-related delays and improve connectivity important to the movement of freight and on-time performance for the City of Decatur Mass Transit System bus routes.

National and Regional Connections: Several major employers are located on, or near, Brush College Road and rely heavily on the corridor for the transportation of goods and services, as well as employees; therefore, Brush College Road is a critical commercial and industrial corridor, serving as a conduit for freight and light vehicles. Agribusiness leader, Archer Daniels Midland Company (ADM), operates facilities adjacent to the west and east of the Brush College Road/Faries Parkway intersection, and recently opened its new headquarters for National Foodworks Services LLC (a local food innovation center) on Brush College Road within the overall project area. In an effort to capitalize on the location of ADM, as well as other agribusinesses (i.e. Tate & Lyle, Caterpillar, Inc.) in the area, the City of Decatur has established the Midwest Inland Port, in cooperation with the Economic Development Corporation of Decatur and Macon County. This multimodal hub delivers domestic and international flexibility for companies by connecting the Midwest to the East, West, and Gulf Coasts of North America. Phase I of the Midwest Inland Port, which has been in operation for three

ADM transports nearly 75 million tons of products by rail each year, including 2 million tons of export grain per month from the City of Decatur ADM facilities.

years, included a container freight intermodal facility and ramp (connected to three Class I railroads) designed and built by ADM. Brush College Road connects with I-72 to the north serving as the connection between the Midwest Inland Port and the Interstate, making this investment crucial to the continued development of the Port and viability and growth of existing businesses in the area.

Local Connections: This major north-south roadway also supports the movement of goods through the City of Decatur by connecting neighborhoods to areas of employment, as well as an educational area – Richland Community College – located north of the project area. Brush College Road is also an essential link for public transportation in the City of Decatur and the Central Illinois region. Everyday, thousands of people travel to work and school on Brush College Road and encounter significant and frequent bottlenecks at the Faries Parkway intersection. Furthermore, per the Decatur Public Transportation System, fixed route buses have experienced delays totaling over 33 hours in a two month period, with the Brush College Road/Faries Parkway crossing being the most blocked crossing. This is significant since the crossing lies between much of the population center of Decatur and Richland Community College and thousands of existing and potential jobs.

Dwayne O. Andreas Agribusiness Education Center, Richland Community College. Richland Community College offers over 7,600 students transfers/baccalaureate and career and technical education programs.

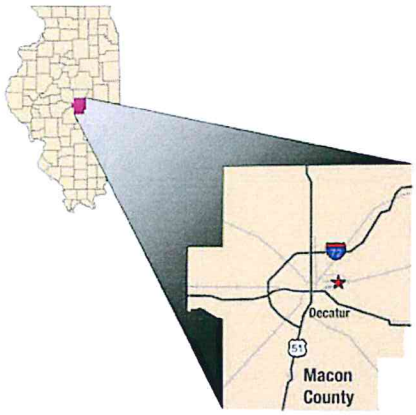
CHALLENGES RESULTING FROM INTERSECTION NOT OPERATING EFFICIENTLY

- ☐ Loss of continuous connectivity to I-72.
- ☐ Delays for residents and commuters.
- ☐ Delayed travel times for deliveries to the adjacent industrial locations.
- ☐ Increased risk of crashes due to backups and at-grade crossing with trains.
- ☐ Students miss valuable learning time at Richland Community College.
- ☐ Delay of fire and police response times.

The safety (refer to Section 5.1.1 for relevant crash data) and accessibility of this roadway is essential to the prosperity of the City of Decatur and Macon County, and will have a significant impact on residents, with regard to safety, economics, and quality of life. Currently, there is a lack of bicycle and pedestrian accommodations. The Brush College Road/Faries Parkway Project includes a shared-use path along Brush College Road. These improvements will provide a better multimodal connectivity for the low-income neighborhood in the vicinity of the project area, to the jobs in the industrial areas to the north of the project area, as well as educational opportunities through Richland Community College.

NS is the largest rail carrier in the area and the southwest quadrant of the project area includes the largest flat switching yard on the NS system. The majority of freight carried by NS in Illinois consists of coal, container intermodal, and agricultural products. Switching operations, servicing the ADM West and East plants are numerous and often result in significant delays. Specific to the NS crossing at Brush College Road, an average of approximately 17 hours of blockages per week occur, according to the *Decatur Area Transportation Efficiency Study* (December 2013).

2.1 Project Location



Regional Project Location depicting the major regional roadways – I-72 and US 51.

CITY OF DECATUR FAST FACTS

Population:
74,010
(2014, QuickFacts US Census)

Median Income
$39,588
(2014, QuickFacts US Census)

Home to Agribusiness Leaders:
Archer Daniels Midland Co. (ADM)
Tate & Lyle
Caterpillar, Inc.

Area Interstates/Highways:
I-72, I-55, I-74, I-57, and US 51

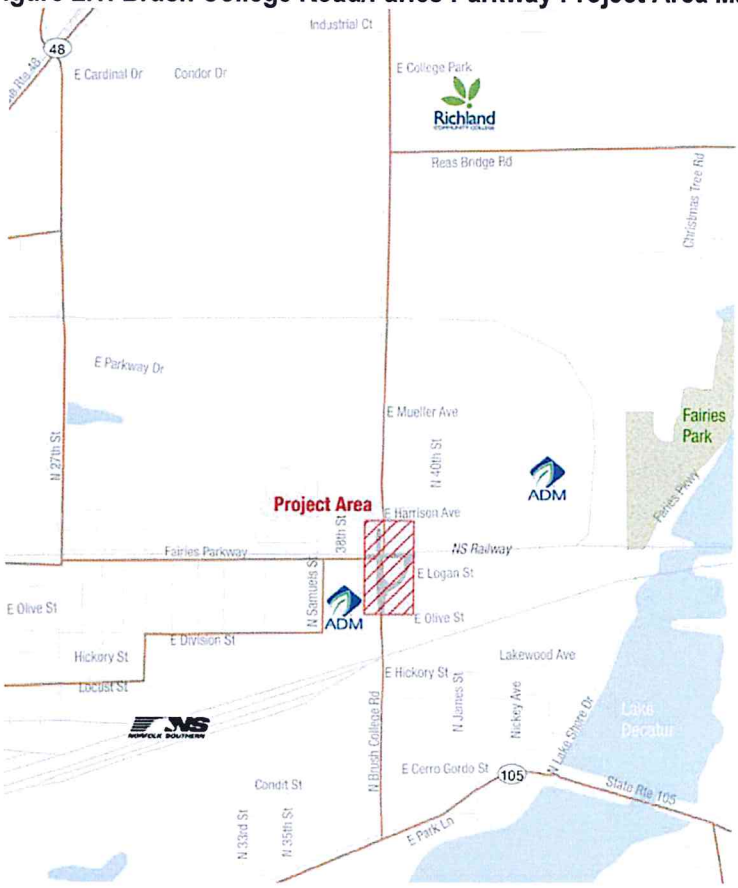
Area Class I Railroads:
CN, CSX, and NS

Population Below Poverty Level:
24.3%
(2014, QuickFacts US Census)

Decatur, Illinois is the county seat of Macon County, located approximately 200 miles southwest of Chicago, Illinois; 40 miles east of Springfield, Illinois; and 120 miles northeast of St. Louis, Missouri. Macon County is connected to the region and the country by a system of Federal, State, and County highways. Specific to the City of Decatur, I-72 wraps around the City from the northeast to the southwest in a 16-mile partial loop, providing an east-west means of access to the US National Interstate System and the National Highway Freight Network (NHFN). US Route 51 (US 51) is a four-lane limited access facility, providing a north-south corridor through the City.

Decatur has vast industrial and agricultural processing productions, including the North American headquarters of agricultural leader Archer Daniels Midland, international agribusiness, Tate & Lyle's largest corn-processing plant, and the designing and manufacturing facilities for Caterpillar Inc.'s large mining trucks. To this end, Decatur is positioning itself to become a center for the next generation of agribusiness – which not only encompasses production, but research and development, life science, and biotechnology. The growth of the Farm Progress Show, a square mile outdoor trade show, reflects the continuing agricultural focus. This trade show is slated to become the core of an agribusiness 'Research Triangle', due to its proximity to educational institutions like Richland Community College and the University of Illinois (less than an hour drive), and the City's major industrial facilities.

Figure 2.1: Brush College Road/Faries Parkway Project Area Map



Farm Progress Show: The nation's largest outdoor farm event, held every other year in Decatur, hosts nearly 600 exhibitors on almost 90 acres, displaying new farm equipment, tractors, combines and farm implements; seed and crop protection products; and many additional farm supplies and services. On average, 160,000 visitors attend the show from about 50 countries around the world.

The Brush College Road/Faries Parkway Project (Latitude 39.863346, Longitude -88.898083) is located on the east side of Decatur (see Figure 2.1). A NS track runs parallel to the north side of Faries Parkway along the entirety of the project area.

Existing land use in the vicinity of the project area includes commercial, residential, and industrial facilities, as well as a cemetery. The northwest quadrant of the intersection consists of mowed undeveloped open space with a residence. ADM has plans to develop this area as part of a new rail yard and conveyor system; specifically, this area is proposed for a new access road to run parallel to Brush College Road and then turn east and connect to Brush College Road just north of the ADM building. The northeast quadrant is occupied by St. John's Lutheran Cemetery. The southeast quadrant includes a restaurant/bar (The Pour House) and the SJ Smith Co., which supplies welding, vending, and janitorial industries with supplies. The southwest quadrant is fully occupied by the ADM West plant and associated facilities. Adjacent to the ADM West plant is the NS rail yard. Richland Community College is located just over a mile north of the intersection on Brush College Road. Millikin University is located approximately four miles southwest of the intersection, via Brush College Road to Eldorado Street.

2.2 Status of Existing Facility

North of Faries Parkway, Brush College Road consists of two northbound lanes and two southbound lanes with a single left-turn lane. South of Faries Parkway, Brush College Road is a two-lane roadway. Faries Parkway consists of two eastbound lanes and two westbound lanes with a dual left-turn lane.

The existing intersection of Brush College Road and Faries Parkway is a fully actuated signalized intersection. The intersection also includes at-grade rail crossings which consists of an east-west NS crossing in the north leg and a north-south Canadian National Railroad (CN) crossing in the west leg. Both crossings are not protected by gates and the traffic signals are synchronized to flash red when a train is approaching. The intersection has pre-empted signal timings to accommodate the at-grade train movements. The side streets intersecting Brush College Road are controlled by stop signs.

ROADWAY CLASSIFICATIONS

Brush College Road	Minor Arterial (Urban)
Faries Parkway – west of Brush College Road	Minor Arterial
Faries Parkway – east of Brush College Road	Collector
Adjacent Residential Streets/Access Roads	Local Road

The Pavement Condition Index rating for the intersection is 89.5 (good condition). The existing drainage and storm sewer systems in the vicinity of the project appear to perform

without any issues. ADM has steam lines and other utilities in the area of the project; however, none of these are anticipated to be impacted by the proposed improvements.

2.3 Proposed Improvements

Rendering of overpass at Faries Parkway, looking west.

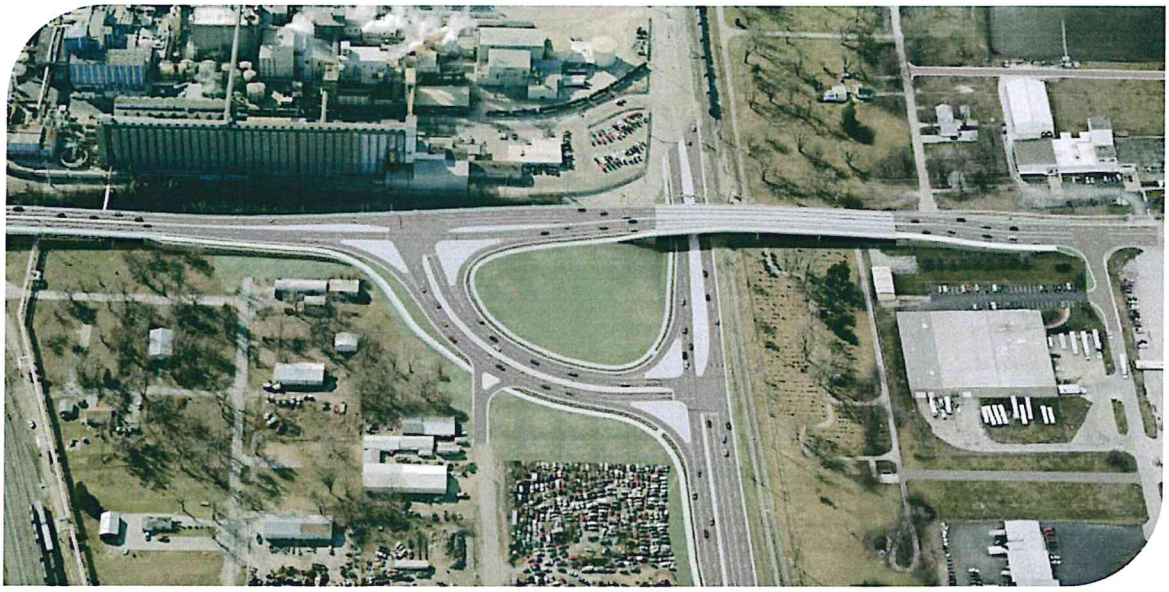
The proposed improvements include constructing a connector road from Brush College Road to Faries Parkway located in the southeast quadrant of the Brush College Road/Faries Parkway intersection. A free-flow right turn lane would be provided at the top and the bottom of the road. Other movements at the top and bottom of the road would be controlled by traffic signals.

Lane configurations at the top of the connector road would be as follows:

- One free-flow right turn lane - northbound Brush College Road to connector road
- Two lanes - southbound traffic on Brush College Road
- Two lanes – connector road to southbound Brush College Road
- One free-flow right turn lane - northbound Brush College Road

Lane configurations at the bottom of the connector road would be as follows:

- One free-flow right turn lane - eastbound Faries Parkway
- Two lanes - eastbound Faries Parkway
- Two lanes - westbound Faries Parkway
- One free-flow right turn lane - eastbound Faries Parkway to connector road



Rendering of overpass with connector road and traffic signals at Faries Parkway and Brush College Road.

3.0 Project Parties

This project has brought together federal, state, and local government leaders, as well as the general public. Organizations partnering with the City of Decatur include:

Project Parties:

City of Decatur, Illinois

- TIGER VIII Discretionary Grant Applicant
- The City is committed to moving this project forward by providing data and support, as needed, throughout the project to expedite construction.
- The City's Public Works Department maintains 825 lane-miles of pavement.
- Responsible for maintaining Faries Parkway and Brush College Road south of intersection with Faries Parkway.
- Contributing $2.9 Million

Illinois Department of Transportation (IDOT)

- Project Partner
- Contributing $2 Million (Illinois Jobs Now carryover).
- Reviewing agency for final design plans.

Illinois Commerce Commission (ICC)[1]

- Project Partner
- The mission of the ICC is to balance the interests of consumers and utilities to ensure adequate, efficient, reliable, safe, and least-cost public utility services.
- Contributing $10 Million (Grade Crossing Protection)

National Highway Freight Program (NHFP)[2]

U.S. Department of Transportation
Federal Highway Administration

- Project Partner
- NHFP funds must contribute to the efficient movement of freight on the National Highway Freight Network and be identified in a freight investment plan included in the State's freight plan.
- Contributing $5 Million

Other Partners Involved in the Project:

NS Railroad

- Will be an active participant in the engineering of the project. NS will work with the City of Decatur to address maintenance of operations concerns during construction to keep running efficiently and minimize impacts on the area businesses.

Macon County, Illinois

- Agency responsible for maintaining Brush College Road north of the intersection with Faries Parkway.

Elected Officials and Entities Supporting the Project:

Illinois Congress

- US Congressman Davis
- US Senator Durbin

Illinois General Assembly

- State Representative Mitchell
- State Representative Sherer
- State Senator Manar

Organizations

- Decatur Chamber of Commerce
- Decatur Park District
- Laborers' International Union of North America, LOCAL No. 159
- Midwest Inland Port
- Decatur Public Schools
- Economic Development Corporation

Businesses

- Fuyao Glass Illinois, Inc.
- ADM

[1] The City of Decatur is applying to the ICC to include the project in the Grade Crossing Protection Fund program.
[2] The City of Decatur has approached IDOT requesting funds from the new NHFP, identifying the critical link to the Midwest Inland Port and industrialized areas.

4.0 Grant Funds & Sources

The City of Decatur and its partners have developed an innovative financial plan for the Brush College Road/Faries Parkway Project. The plan incorporates local, state, and federal funding that has already been secured and calls for additional TIGER VIII Discretionary Grant funding to complete the financing package.

Table 4.1 summarizes the funding sources for the project costs, including the potential TIGER VIII Discretionary Grant.

Table 4.1: Anticipated Project Funding Strategy

Source	Percent Contribution (%)	Funding Amount ($ Millions)
TIGER VIII Discretionary Grant	50	20.0
City of Decatur, Illinois	7	2.9
IDOT-Illinois Jobs Now	5	2.0
ICC-Grade Crossing Protection	25	10.0
NHFP	13	5.0
TOTAL	**100**	**39.9**

In summary, the requested TIGER VIII Discretionary Grant fund of $20 million will significantly support necessary design and construction activities for the project comprising approximately 50% of the overall development costs.

5.0 Selection Criteria

5.1 Primary Selection Criteria

5.1.1 Safety

A review of crash analyses of the Brush College Road/Faries Parkway intersection, identified a total of 52 crashes were reported over a 5-year period (see Table 5.1). Four crashes involved trains, including one crash of a train hitting a car. Crash data suggests that some crashes were related to the at-grade train crossings and others to improper lane usage. The primary collision type was rear end, and none of the collisions resulted in a fatality. Unfortunately, this analysis did not have the capability to determine train-related collisions, i.e. crashes related to a train at the crossing, such as rear-end crashes at the end of a queue. Therefore, it is assumed, the actual number of train-related collisions may encompass a large majority of the total crashes in Table 5.1.

Table 5.1: Brush College Road/Faries Parkway Crashes Over 5-Year Period (2011-2015)

Year	Number of Crashes
2011	17
2012	10
2013	4
2014	11
2015	10
TOTAL	**52**

Source: Macon County Sheriff's Office and City of Decatur Police Department.

A 10-year summary of crashes on Brush College Road at the NS crossing, per the Federal Railroad Association, are detailed in Table 5.2. A total of three crashes were reported, with two occurring at night and one in the day. One crash resulted in a non-life-threatening injury.

Table 5.2: Detail of Train Crossing Crashes Over 10-Year Period (2006-2015)

Date	Detail	Night/Day	Injury
4/4 2015	Driver was stopped on tracks.[1]	Night	Yes
2/7/2011	Semi did not stop at crossing; struck a train.[1]	Night	No
4/27/2007	Train struck by car.	Day	No

[1]Included in roadway crash data as well.
Source: Federal Railroad Administration

Site reconnaissance of vehicle operations before, during, and after train crossings revealed that vehicles turning from southbound Brush College Road onto eastbound Faries Parkway frequently back up north of the NS crossing, especially during the PM peak hours; transversely, northbound Brush College Road backs up south of the NS crossing in the AM peak hour. This operation has the potential for turning vehicles to be stopped or trapped by other vehicles, which would be eliminated with the grade separation of Brush College Road and Faries Parkway.

In addition to reviewing crash reports, local stakeholder input was provided via various local government officials, including City of Decatur, Macon County Highway Department, Decatur Township, and the Macon County Regional Planning Commission. Each of these agencies supported the need for the project in terms of safety for vehicles and trains. Additionally, community service groups including EMS, Fire, Police, hospitals, school transportation districts, and the Decatur Public Transit System (DPTS) have expressed concerns about how the NS crossing Brush College Road impacts safety. The major concern for emergency personnel is that the blocked train crossing can inhibit their response time to incidents in the community, adding anywhere from 5 to 7 minutes to response times. School districts have concern regarding the potential for bus-train collisions. Delays encountered by bus drivers, was the main concern for the DPTS.

5.1.2 State of Good Repair

The Decatur region includes three Class I railroads –NS, CN, and CSX Transportation (CSX) – with a total of 85 at-grade rail crossings within the City of Decatur. The primary users of these railroads within the City of Decatur are industries such as ADM, Tate & Lyle, Caterpillar, Inc., and various other minor industrial facilities.

The east-west NS track that services ADM and crosses the north leg of the Faries Parkway/Brush College Road intersection results in significant traffic delays, due to switching operations servicing the ADM West and East plants. The switching operations occur at low speeds, resulting in vehicle delays due to train blockages. The *Decatur Area Transportation Efficiency Study* (DATES) (December 2013) determined the NS crossing at the Brush College Road/Faries Parkway intersection is blocked over 17 hours per week - over 10 percent of the time - greater than any other crossing in the City of Decatur. Projections for this intersection suggest a continued decrease of functionality in future years, with an estimated 234 blockages per week by the year 2035, resulting in over 24 hours of delay – the equivalent of one day per week.

	Existing	Future
Train Crossings (per week)	198	234
Hours of Delay (per week)	17.2	24.3

Per the DATES, the most significant increase in delay of train blockages in the City of Decatur is the Brush College Road/Faries Parkway crossing near the ADM West Plant.

The fundamental concern regarding the rail crossing delays is that an increased travel time can result in passengers missing transfers, and ultimately causing students at nearby Richmond Community College to be late for classes. Furthermore, Brush College Road is a vital link and access point for emergency responders responding to events at the facilities (i.e. ADM, rail yard, residences, Richmond Community College) in the vicinity of the intersection. Per the *Illinois Department of Transportation Combined Design Report* (March 2015), when this link is blocked, access from the south is inhibited for nearly two miles, disrupting emergency response times.

The City of Decatur's Fire Department is frequently faced with making difficult travel route decisions in emergency response situations. Per the Department's 2013 Annual Report, average response times increased due to Fire Station closures; therefore, route disruptions (i.e. train crossings) only further increase response times.

If this project is not built, maintenance and upgrade costs will be higher and the exposure for crashes at the rail crossing with vehicles and pedestrians will increase. Conversely, if the modes of traffic are separated via this project, vehicular, pedestrian, and train traffic will each have specific travel assignments. The project would also reduce dangerous driver behavior, such as trying to beat a train to the crossing and U-turns to seek alternate routes.

5.1.3 Economic Competitiveness

The economic competitiveness and viability of the City of Decatur is dependent upon its ability to connect with the surrounding region. The NS rail line is crucial to the regional economy and international trade and Brush College Road is critical to the region's

transportation system; therefore, the rail and road systems need to be a cohesive operation. A grade separation is the only viable solution to allow these two systems to efficiently coexist within the City of Decatur without negatively impacting the economic competitiveness of the region.

Various large industrial businesses within the City of Decatur – ADM, Tate & Lyle, and Caterpillar – depend on Brush College Road as a route to I-72 to receive and deliver products regionally, and ultimately, internationally. Each of these industries are major economic drivers in the area and critical to: the local, regional, and national economies; providing employment; and future job growth. Jobs equate to tax dollars and an increase in a population which will add to the commerce and prosperity of the region.

- *ADM* is one of the largest processors of corn and soy beans in the world. Recent investments in the City of Decatur by ADM include funding to support various components of the Midwest Inland Port, which will take advantage of the growing international container business.
- With a goal for *Tate & Lyle* to become the world's leading provider of specialty food ingredients, the location of the North American bulk ingredients division headquarters in Decatur is greatly dependent on the City's extensive rail service.
- *Caterpillar's* center of operations for the construction of its large mining trucks is in Decatur and is equally as dependent upon an efficient rail service system.

Additionally, these businesses are the major rail users and depend on efficient traffic flow through the area for their incoming and outgoing deliveries and employees. These businesses are also key to the designation of Illinois as the largest exporting state in the Midwest, and establish the City of Decatur's connectivity to the international market; however, that connectivity essentially fails when these facilities receive and deliver products via the Brush College Road/Faries Parkway intersection. Significant delays experienced at the intersection by truck and rail reduce the City's, as well as the region's ability to maintain economic competitiveness.

Ladders of Opportunity: The Brush College Road/Faries Parkway Project creates Ladders of Opportunities through economic competitiveness of these aspects:

Connectivity - Improving a critical economic corridor in the City of Decatur; connecting essential demographics to the east side of the City via a safer roadway, and eliminating the need for emergency responders to have backup systems, created as a result of frequent crossing delays. As well as improving access to education and employment.

Tate & Lyle is a global provider of distinctive, high quality food ingredients and solutions to the food, beverage, and other industries.

Workforce Development – The Brush College Road/Faries Parkway Project will create engineering and construction jobs. This opportunity is further detailed in Section 5.2.1.

Revitalize – The Brush College Road/Faries Parkway Project will help the local community realize its potential as a walkable community, via the inclusion of the shared-use path, connecting under-represented communities with education and employment opportunities not previously realized.

Short-term economic benefits will be gained from construction of the project. The economic impact of these jobs would be a positive for the City of Decatur, which has one of the state's highest unemployment rates for a metropolitan area. Construction of the intersection overpass and improvements leads to an increase in employment primarily for local workers.

	Unemployment Rate (%)
United States	5.2
State of Illinois	7.0
Decatur MSA	8.2

Source: Illinois Department of Employment Security, Economic Information & Analysis Division. February 2016 – Not Seasonally Adiusted.

5.1.4 Quality of Life

Convenience is an element motorists appreciate in determining a route. Frequency of train crossings and a lack of alternative routes, complicates route choice due to on-time arrivals when train delays can last 15+ minutes and alternative routes require extensive backtracking. Construction of the Brush College Road/Faries Parkway Project will increase the livability for the City of Decatur residents and neighboring economic drivers (i.e. ADM), creating an efficient, affordable, and convenient transportation choice.

Brush College Road looking north. Vehicle queues created by trains crossing Brush College Road at Faries Parkway typically extend over 1.5 miles during peak traffic periods.

In terms of alternative routes for motorists using the Brush College Road/Faries Parkway intersection, there are none that provide a time-efficient solution to the delays experienced at the existing intersection. Brush College Road is the only north-south roadway between William Street (south of intersection) and Faries Parkway from IL 121 (22nd Street) east to Lake Decatur. Adding further to the lack of alternative routes is the issue of another at-grade rail crossing on alternative routes, such as 22nd Street and 27th Street to the west of the Brush College Road/Faries Parkway Project area.

The City of Decatur Public Transit System (DPTS) also experiences lengthy rail delays, and in a system where route choice is pre-established, the convenience of the service is further complicated. DPTS does deviate from routes to alternative routes to avoid potentially long delays; however, this adds unexpected miles and expenses to the impacted routes and causes stranded passengers on the pre-established route. Further complicating the situation, DPTS operates on a pulse system (i.e. buses depart transit center simultaneously); therefore, if all buses do not arrive at the transit center at the same time, passengers needing to transfer buses will be negatively affected.

The green transportation hierarchy is the basic concept utilized by transportation groups all over the world. The hierarchy puts city-friendly cyclists and pedestrians first, since these are transportation options that add to the livability of a city and enhance the quality of life for residents.

Fostering the livability of residents in the City of Decatur, via transportation, was a fundamental finding in the DATES report completed in 2013. As such, the report noted at-grade rail crossings in the City impact all transportation users. These users include bicyclists and pedestrians, which is evident in the project area from the non-defined pathways created by pedestrians along Brush College Road. Furthermore, there are currently no provisions for bicycles in the project area. Since bicycle and pedestrian facilities are valuable community assets, which greatly enhance the quality of life, the proposed improvements also include an 8-foot wide shared-use path. These facilities will provide another connection between places and people.

The need for the Brush College Road/Faries Parkway Project is consistent with the *Long Range Transportation Plan 2035* (LRTP) (December 2009) for the Decatur Urbanized Area Transportation Study (DUATS – the local Metropolitan Planning Organization), as well as the *Macon County and Decatur Comprehensive Plan* (May 2009). Table 5.3 summarizes the DUATS LRTP's goals and objectives and Table 5.4 outlines the Comprehensive Plan's principles and strategies applicable to the regional and local truck, rail, and freight movements.

Table 5.3: DUATS 2035 LRTP Applicable Goals and Objectives

Goal	Objective
Develop coordinated multi-modal transportation system that facilitates the safe, secure, and efficient movement of people and goods to, from, within, and through the Metropolitan Planning Area (MPA), which fosters the growth of the local and regional economy.	• Plan for intermodal terminals to foster efficient transfer of people and goods between and among various modes of transportation. • Launch a freight consolidation study to encourage the joint use of rail facilities which could result in major increases in efficiencies, reductions in rail/vehicle conflicts and possible closure of certain rail crossings.
Improve and maintain the existing transportation system to make the most efficient, safest and most cost-effective use of existing infrastructure investments.	• Improve efficiency of roadway facilities by changing traffic operations or improving route design to upgrade road capacity in congested and potentially congested areas.
Promote and expand utilization of regional facilities.	• Promote the MPA as a regional freight distribution center by enhancing existing and constructing new facilities using public-private development strategies. • Develop a regional hierarchy of roads to concentrate major vehicular movements on uniformly spaced thoroughfares.
Coordinate land use and transportation improvements to insure compatibility and sensitivity with the social, economic, and ecological environments.	• Avoid encouraging the penetration of neighborhoods by vehicular traffic not destined to the area in order to preserve the quality-of-life.

Source: DUATS 2035 LRTP, December 2009.

Table 5.4: Macon County/Decatur Comprehensive Plan Applicable Principles and Strategies

Principle	Strategy
An accessible and connected county.	• Securing infrastructure investment, including U.S. Highway 51 expansion and the South East Beltway to ensure that Macon County is competitively positioned within the region. • Transforming the roadways that bisect the City and County into corridors that create safe and attractive access to and identify the regions neighborhoods, villages, and special places. • Designing our infrastructure to maximize the choices – auto, transit, cycling, walking – that residents and visitors have to move from place to place within the County and urbanized area.
A quality of life community.	• Leverage private funding with public investment in a wide range of projects and initiatives which foster enhancements and improvements to the seen and unseen infrastructure which supports a high and sustainable quality of life.
A diversified economy.	• A global economic development strategy that cultivates new industries and entrepreneurship in emerging technologies and support industries.

- The creation of a modern agribusiness business park environment around Richland Community College and the Farm Progress facilities that provides existing and potential businesses with a competitive environment in which to grow.

Source: Macon County/Decatur Comprehensive Plan, May 2009.

5.1.5 Environmental Sustainability

A decrease in the number of vehicle stops, elimination of train crossings, and a slight increase in average vehicle speeds is anticipated. Therefore less stopped vehicles will lead to less pollution.

The three criteria of sustainability.

Currently, the project area is in compliance with air quality standards. Carbon dioxide (CO_2) emissions are anticipated to decrease, which is a positive benefit to the environment. It should also be noted, emissions will be lower in adjacent congested locations when traffic shifts away from them in an effort for a more efficient option (i.e. the improved Bush College Road/Faries Parkway intersection).

The project has no adverse effects on environmental resources, per the approved Environmental Assessment from 2014, further detailed in Section 5.4.


Rendering of an intersection with green infrastructure; whereby, emissions and fuel consumption are reduced.

Decisions that support environmental sustainability will be incorporated into design, construction, and operation of the Brush College Road/Faries Parkway Project. To that end, the use of green infrastructure will be explored as part of the final design phase. Examples of green infrastructure include bioswales, planter boxes, and trees. Green infrastructure enhances connectivity between neighborhoods and people and benefits the environment, human health, and the economic and social health of communities.

The American Society of Civil Engineers (ASCE) Envision™ Rating System is also anticipated to be used in the final design of the project. Envision™ measures the sustainability of an infrastructure project from design through construction and maintenance. The ratings system is administered by the Institute for Sustainable Infrastructure.

ASCE ENVISION™ RATING SYSTEM

- Sets and achieves sustainability goals.
- Adopts and implements effectively sustainable choices.
- Helps set standards for others to follow.

Source: ASCE.

5.2 Secondary Selection Criteria

5.2.1 Innovation

Innovation can come in many forms on a project – through contracting practices, technology, or design components. The City of Decatur and its project parties have integrated innovations in all of these areas.

***Contracting Practices*:** This project will be bid through IDOT. This process provides ladders of opportunity to workforce development and an increase connectivity to employment. The City of Decatur will request the project follow its established Minority Business Enterprise (MBE) goal. The City amended its ordinance (Chapter 28, Section 10-3) for overall minority participation goals in March 2015. The minimum goals include: 1) 10% of the total dollar amount of the contract should be performed by an MBE if subcontracting opportunities are available; and 2) 18% of the total hours worked should be performed by minority workers. A request will also be made that the project be a local letting for contractors within the region. Furthermore, several line items of the project will be available for small to mid-sized local contractors (i.e. landscaping).

Technology: This project intends to utilize the latest technology in signal design and construction. A PREFAB bridge deck is suggested; whereby, it will be assembled near the project area and rolled into place to minimize road closures during construction.

***Design Components*:** As a design innovation, maintenance of traffic operations during construction of the project is suggested to be different when compared to similar completed projects. Past practice led to the innovation of keeping the intersection functioning during construction, rather than a complete closure. A closure of the intersection would disrupt freight operations and have major impacts on the adjacent businesses (i.e. ADM) dependent upon the intersection for receiving and distributing goods and services.

5.2.2 Partnership

The level of cooperation and collaboration to make this project a reality is evident in the letters of support and partnership listed in Section 3.0. A copy of the letters of support, are found in Appendix A and can be viewed at the Brush College Road website: www.decaturil.gov/citygovernment/publicworks/brushcollegestudy.html.

Jurisdictional and Stakeholder Collaboration: The City of Decatur encourages public involvement from its committees and members of the public and strives to maintain transparency in the transportation planning process and consider public involvement to be one of their most important responsibilities.

This is a combined effort of the City of Decatur, Macon County, IDOT, and ICC, which each have unique jurisdiction over certain aspects of the project. The adjacent businesses (i.e. SJ Smith Co., ADM), as well as the institutions and businesses (i.e. Richland Community College, Tate & Lyle, Caterpillar) located regionally within the project area are stakeholders and potential partners in moving the project forward. Throughout the project and grant planning processes, meetings with the key stakeholders, citizens, and organizations have been held. Since the beginning of 2016, separate presentations have been given to major employers and stakeholders, the Milikin Decatur Executives Association, and area state legislators. Individual meetings to discuss the improvements have occurred with ADM, Tate & Lyle, Caterpillar, and NS, as well as the area's congressional delegation.

Disciplinary Integration: This project will bring together various transportation agencies (i.e. City of Decatur Public Works Department, Macon County Department of Highways, IDOT, and FHWA-Illinois Division), creating an interdisciplinary approach to the development of the project and subsequent final design. Furthermore, Decatur's high unemployment rate and low household income attracts the attention of state and federal agencies tasked with improving economically disadvantaged communities. Partnerships with these agencies may present additional funding opportunities, as well as gain an understanding of necessary improvements from an indirect stakeholder perspective. Examples of these improvements could be more funding for bicycle and pedestrian projects – MPO enhancement funds – which, currently, are lacking in the vicinity of the project area.

5.3 Demonstrated Project Readiness

The City of Decatur and its project partners are ready to move forward from a technical and financial feasibility, schedule, approval, and risk management perspective, as described in the following paragraphs. Preliminary engineering has been completed.

5.3.1 Technical Feasibility

A Combined Design Report (Phase I) was completed in March 2015. This report includes the design criterion for the improvements to the intersection. Preliminary engineering designs were completed based on the design criteria and an alternatives evaluation was completed.

Per the Phase I, the recommended alternative included an overpass at Faries Parkway with a connector road from Brush College Road to Faries Parkway in the southeast quadrant of the intersection with traffic signals at the top and bottom of the ramp. The other alternative outlined in the Phase I replaced the traffic signals with multi-lane roundabouts; however, due to safety concerns and truck volumes utilizing the intersection, this alternative was not selected.

The preferred alternative consist of a 4-span plate girder bridge with an 8" cast-in-place concrete deck. The length of the end spans would be 107'-0" and the length of the interior spans would be 134'-0" resulting in a back-to-back of abutment distance of 458'-7". At the north end, the bridge will carry two 12'-lanes in each direction separated by a 4' wide median. A 2' shoulder will be provided on each side giving a width of 56'-0" face-to-face of barriers. The structure will also carry the shared-use path along the east side for a total out-to-out of deck distance of 69'-8". The bike path portion of the bridge is only 10'-6" at this location in order to avoid encroaching on St. John's Cemetery. The bridge will flare to an out-to-out deck width of 94'-7" at the south end to accommodate lanes from the ramp to Faries Parkway. A sidewalk-mounted bridge fence railing is proposed along the outside edge of the shared-use path and a parapet-mounted bridge fence railing is proposed along the west side of the structure. See Appendix B for the Brush College Road preferred alternative preliminary plans and Appendix C for the intersection design study.

Multiple utilities will be impacted by the project. Utility coordination meetings have been held, and are ongoing, to determine impacts and potential mitigation. Any utility relocations are anticipated to be completed prior to construction of the overpass and associated improvements. Utility design will be concurrent with the final roadway design to mitigate any delays.

Property owners with the potential for acquisition were notified by the City of Decatur in August 2012. Acquisition for the project is anticipated to impact one property owner, SJ Smith Co. located at the southeast corner of the Brush College Road/Faries Parkway intersection. Property acquisition is anticipated to be completed in sufficient time to not delay obligation of funds.

5.3.2 Financial Feasibility

The TIGER VIII Discretionary Grant will fulfill the funding package to allow this project to be completed. The $39.9 million investment provided through the different funding partners will benefit the area immensely. The City of Decatur and Macon County have participated in street and bridge construction and repair projects, administered by IDOT, and are experienced moving projects through the state and federal funding processes. A detailed budget for the project is presented in Table 5.5. Construction of the crossover for the grade separation represents the largest expense on this project.

Table 5.5: Brush College Road/Faries Parkway Project Budget

Item	Cost (Estimated in $)
Clear and Grub (Tree Removal)	20,849
Earthwork	1,679,372
Pavement	6,331,787
Grade Separation	7,195,970
Retaining Wall Structures	1,444,823
Miscellaneous Items (i.e. lighting, signing, etc.)	3,154,426
Other Items	1,098,733
Utilities (Removal)	984,064
Subtotal	***21,910,025***
Incidentals (10% of all Items Except Grade Separation)	1,317,000
Contingencies (15% of all Items)	3,011,000
Total Construction Cost	***26,238,025***
Phase I Engineering (8% of Total Construction Cost)	2,099,042
Phase II Engineering (8% of Total Construction Cost)	2,099,042
Utility Relocations	3,546,000
ROW	5,945,000
TOTAL PROJECT COST	**$39,927,109**

Source: Illinois Department of Transportation Combined Design Report (March 2015).

5.3.3 Project Schedule

The Brush College Road/Faries Parkway Project in this application is slated to begin in January 2017, with completion on or before December 2020. Key milestones are referenced in Table 5.6, which demonstrates our ability to complete the project preconstruction activities by April 2018, in anticipation of meeting the proposed completion date.

Table 5.6: Brush College Road/Faries Parkway Project Proposed Schedule

Activity	Date(s)
Phase I Engineering	Complete
Phase II Engineering	January 2017 - April 2018
Bid and Award Construction	May 2018
Construction Commences	June 2018 – November 2019
Construction Completion	December 2019

5.3.4 Assessment of Project Risks and Mitigation Strategies

Measures exist to compensate for acknowledged impacts of the proposed improvements – proactively managing these risks provides assurances that budget and schedule can be maintained and alternative approaches implemented, if necessary. Risks for the Brush College Road/Faries Parkway Project are summarized in Table 5.7, along with the approach to manage those risks. Risks will be tracked throughout the project and mitigation implemented when required.

Table 5.7: Risk Mitigation Strategies

Risk	Mitigation Strategy
Right-of-Way (ROW) Acquisition	As a sponsor of the project, the City of Decatur will aid the project team in efficiently acquiring ROW.
Utility Relocation	Existing relationships with the utility owners will be leveraged to expedite reviews and mitigate project-specific concerns. Additionally, construction will be sequenced to accommodate utility limitations, such as moving utilities during non-peak periods.
Construction Impacts	Contractors will be required to adhere to construction guidelines, in accordance with applicable regulations.
Environmental Clearance	A preliminary site investigation (PSI) is required if any of the sites identified with recognized environmental conditions (RECs) in the Abbreviated EA involve excavation or subsurface utility relocation, or any of the adjoining sites. Coordination during final design will ensure these sites are avoided, or the PSI is completed, if required.
Property Acquisition	Owners of properties affected by the proposed project will receive just compensation for property acquisition and relocation assistance.
Environmental Permitting	The project will comply with all applicable federal, state, and local permitting requirements during project construction and operation.
Coordination During Construction	The project team will develop communication protocols for all project participants (i.e. contractors) to follow, including regularly scheduled meetings.

5.4 NEPA and Other Environmental Reviews/Approvals

In compliance with the National Environmental Protection Act (NEPA), an abbreviated Environmental Assessment (EA) was approved by the Federal Highway Administration on January 17, 2014 for the Phase I Study of the Brush College Road Corridor Project between Williams Street and Faries Parkway (as previously discussed in Section 5.1.5). The Finding of No Significant Impact (FONSI) for the project was signed by Federal Highway Administration (FHWA) on October 2, 2014. Table 5.8 lists the applicable environmental resources and resulting determination for the Brush College Road/Faries Parkway Project, as outlined in the approved 2014 EA. See Appendix D for a copy of the approved Abbreviated EA.

Table 5.8: 2014 Environmental Assessment Findings

Resource Category	Determination
SOCIO-ECONOMIC	
Community Cohesion	There will be no segmentation, separation, or isolation of areas from the existing community due to physical barriers or access change.
Environmental Justice	The project is not expected to have a disproportionate impact on minority populations or populations living below the poverty level.
Public Facilities and Services	An electrical substation and associated lines will require relocation. Coordination with the utility company has been on-going since early 2011. Fire, police, and ambulance service will not be impacted, except that response times may improve as a result of the increased capacity and accessibility the project will provide.
Changes in Travel Patterns and Access	The proposed overpass will eliminate direct access to Brush College Road from several access streets. Roads will be extended, or travel patterns will be altered, to rectify any access interruptions. A new access road, being developed by ADM, will be provided to the area at the northwest corner of Brush College Road and Faries Parkway. St. John's Lutheran Cemetery will also be provided a new access road. Construction impacts will be limited to the proposed detour route, which has already been approved by the City of Decatur.
Relocations	Six business relocations will be required. Two of the businesses appear vacant. Relocation assistance will be offered to all occupants of buildings that will be purchased and removed, in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. A relocation plan will be developed and submitted prior to the initiation of negotiations to acquire right-of-way.
Pedestrian and Bicycle Facilities	Pedestrian and bicycle facilities will be improved by the addition of a shared-use path along Brush College Road.
AGRICULTURAL	
Agricultural	The project is located entirely within an urban area. No farmland or agricultural operation will be affected by the project.
CULTURAL RESOURCES	
Historic Properties	IDOT made the determination that no historic properties, subject to Section 106 of the National Historic Preservation Act of 1966, will be affected. The Deputy State Historic Preservation Officer gave concurrence on August 1, 2012.
Archeological Properties	A survey of the project area resulted in the determination of no archeological sites.
AIR QUALITY	
Air Quality Conformity	The project is not within a designated nonattainment or maintenance area for any of the air pollutants for which the USEPA has established standards. A conformity determination under 40 CFR Part 93 is not required.
Mobile Source Air Toxics (MSATs)	The project improvements, over time, will cause substantial reductions of MSAT levels.
NOISE	
Noise	Based on the traffic noise analysis and the subsequent noise abatement evaluation, abatements measures are unlikely.
NATURAL RESOURCES	
Wildlife Resources	The biological and wetland clearance for the project, indicating no further coordination is required regarding biological and wetland resources, was transmitted to the City of Decatur in January 2013.

Resource Category	Determination
Threatened and Endangered Species	Based on US Fish and Wildlife Service (USFWS) data, habitat for the only federally listed species in Macon County - prairie fringed orchid (*Platanthera leucophaea*) - is not present in the project area. According to the Illinois Department of Natural Resources, only one state listed species (Bewick's wren) is potentially present; however, there is no evidence of breeding of this species in Macon County.
WATER QUALITY RESOURCES/AQUATIC HABITATS	
Water Resources	
Surface Water	The increase in impervious area will increase stormwater runoff volumes, which will be controlled by appropriate design.
Groundwater	No new potential 'routes' or 'sources' will be created. If water wells within the intersection still exist, they will be abandoned in place.
Wetlands	No wetlands will be impacted.
Floodplains	No floodplains are located within the project boundaries.
HAZARDOUS MATERIAL	
Hazardous Material	A preliminary environmental site assessment was completed in 2012 determined recognized environmental conditions (RECs) exist within the project area and a preliminary site investigation (PSI) is required.
SPECIAL LANDS	
Section 4(f)/6(f)	No Section 4(f)/6(f) lands will be impacted.
Open Space Land and Acquisition Development (OSLAD)	No impacted land would be potentially eligible for OSLAD funds.

Source: Brush College Road from Williams Street to Faries Parkway, City of Decatur and Macon County, Illinois Environmental Assessment, January 2014.

6.0 Benefit-Cost Analysis

The Benefit-Cost Analysis (BCA) consists of estimating the benefits of eliminating the at-grade railroad crossing on Brush College Road by constructing an overpass and connector road to carry traffic over the NS railroad track; versus, the cost of maintaining the grade separation. Table 6.1 summarizes the BCA. See Appendix E for a detailed narrative and supporting spreadsheets of how a realistic estimate of the benefits for the grade separation was determined.

Table 6.1: Summary of Benefit-Cost Analysis - Brush College Road/Faries Parkway Project

Analysis Item	Outcome
Current Status/Baseline & Problem to be Addressed	▪ At-grade railroad/roadway crossing located approximately 40 feet north of existing signalized intersection. ▪ Vehicular traffic has a high percentage of tractor-trailer trucks. ▪ At-grade crossing is located near railroad yard and railroad spurs for loading/unloading. ▪ Safety hazard and excessive delays.
Change to Baseline/Alternatives	▪ Eliminate at-grade railroad crossing with construction of overpass and connector roadway to maintain accessibility to minor roadway. ▪ No-Build
Type of Impacts	▪ Reduce delays for vehicles. ▪ Reduce accidents. ▪ Improve reliability. ▪ Provide multi-use path to connect residential areas to Brush College and employment centers.
Population Affected by Impacts	▪ Drivers along Brush College Road and Faries Parkway ▪ Students at Richland Community College ▪ Employees at businesses along Brush College Road ▪ Transit patrons ▪ Emergency responders ▪ Residents ▪ Tourists ▪ Prospective businesses utilizing Inland Port
Economic Benefit	*Monetized value of:* ▪ Reduced travel time/delays ▪ Reduced emissions ▪ Reduced fuel costs/consumption ▪ Reduced accident costs
Summary of Results	*Estimated dollar value of:* ▪ Time savings ▪ Reduced pollution ▪ Reduced fuel consumption ▪ Safety benefits
B/C Ratio	*The results of the BCA are:* ▪ No Discount: 3.34:1 ▪ Discount 3%: 2.23:1 ▪ Discount 7%: 1.38:1

The costs for the Brush College Road/Faries Parkway Project include engineering design, ROW acquisition, and construction. The engineering costs include both Phase I – Project Development and Preliminary Engineering and Phase II – Construction Plans, Specifications, and Estimates. The Phase I engineering has been completed and approved by IDOT. Per the TIGER BCA guidelines, previous engineering design costs already expended by the City for the project should be included as a "cost" for the BCA;

however, these are not included in the total project cost as requested in this TIGER VIII Discretionary Grant. Table 6.2 includes a summary of the project costs.

Table 6.2: Project Costs

Project	Cost ($ Millions)
Phase I Engineering (included as part of BCA, not Total Project Cost)	*0.65*[1]
Phase II Engineering	2.6
ROW	4.8
Construction	32.5
Total Engineering, ROW, and Construction Costs	**$39.9**

[1]Per BCA guidelines, previous engineering design costs already expended by the City of Decatur for the project should be included as a "cost"; however, these are not included in the total project cost as requested in this TIGER VIII Discretionary Grant.

7.0 Federal Wage Rate Requirement

Written certification is attached (see Appendix F) to this application that the City of Decatur will comply with the requirements of subchapter IV of chapter 31 of title 40, United States Code (federal wage requirements), as required by the FY 2016 Continuing Appropriations Act.