Roll Call Number 21-0949

Agenda Item Number 6

Date June 28, 2021

APPROVING AND AUTHORIZING THE APPLICATION FOR A DEPARTMENT OF TRANSPORTATION (DOT) REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY (RAISE) DISCRETIONARY GRANT FOR THE SOUTHEAST CONNECTOR PROJECT BETWEEN SE 30TH STREET AND U.S. 65

WHEREAS, the Consolidated Appropriations Act, 2021, appropriated $1 billion to be awarded by the Department of Transportation (DOT) for the National Infrastructure Investments, now known as Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants; and

WHEREAS, the funds for the RAISE Grants are to be awarded on a competitive basis for surface transportation projects that will have a significant local and regional impact; and

WHEREAS, the Southeast Connector is a surface transportation project that satisfies many of the selection criteria and aligns well with the Administration's priorities on several points; and

WHEREAS, following completion of the Environmental Impact Statement, the Record of Decision for the Southeast Connector was approved by the Federal Highway Administration on May 27, 2010; and

WHEREAS, the City of Des Moines Engineering Department is preparing a grant application to construct the Southeast Connector from SE 30th Street to U.S. Highway 65; and

WHEREAS, the total project cost is estimated to be $60 million, with the RAISE Grant amount of $23 million; and

WHEREAS, the City Engineer recommends that the City Council authorize the Southeast Connector – SE 30th Street to U.S. Highway 65 application for the DOT National Infrastructure Investments, also known as RAISE Grants.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DES MOINES, IOWA:

1. That the City Engineer or his designee is authorized to finalize and submit the above described grant application on behalf of the City of Des Moines to the Department of Transportation.

2. That the Mayor is authorized and directed to execute said application and lobbying disclosure for and on behalf of the City of Des Moines, Iowa.

(Council Letter Number 21-294 attached)

★ **Roll Call Number** 21-0949

Agenda Item Number 6

Date June 28, 2021

Activity ID 14-2021-001

Moved by Gatto to adopt.

FORM APPROVED: s/Kathleen Vanderpool
Kathleen Vanderpool
Deputy City Attorney

Funding Source: Various Funding Sources, as follows: $23 million – RAISE Discretionary Grant, $11,284,000 – Federal STBG funding allocated by the Des Moines Metropolitan Planning Organization, $25,716,000 – 2021-2022 CIP, Page 113, Southeast Connector-SE 30th to U.S. 65, ST256, GO Bonds and Proceeds from Federal Title 23 Excess Land Sales

SLN PW

COUNCIL ACTION	YEAS	NAYS	PASS	ABSENT
COWNIE	✓			
BOESEN	✓			
GATTO	✓			
GRAY	✓			
MANDELBAUM	✓			
VOSS	✓			
WESTERGAARD	✓			
TOTAL	7			

MOTION CARRIED APPROVED

J. M. Franklin Cownie
Mayor

CERTIFICATE

I, P. Kay Cmelik, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

P. Kay Cmelik
City Clerk

OMB Number: 4040-0004
Expiration Date: 12/31/2022

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: 07/09/2021

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: City of Des Moines

* b. Employer/Taxpayer Identification Number (EIN/TIN): 42-6004514

* c. Organizational DUNS: 0734989090000

d. Address:

* Street1: 400 Robert D Ray Drive
Street2:
* City: Des Moines
County/Parish:
* State: IA: Iowa
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 50309-1891

e. Organizational Unit:

Department Name: Engineering

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: Mr.
* First Name: Steve
Middle Name:
* Last Name: Naber
Suffix:

Title: City Engineer

Organizational Affiliation: City of Des Moines - Engineering Department

* Telephone Number: 515-283-4920
Fax Number:

* Email: slnaber@dmgov.org

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

DOT OSDBU

11. Catalog of Federal Domestic Assistance Number:

20.933

CFDA Title:

National Infrastructure Investments

*** 12. Funding Opportunity Number:**

DTOS59-21-RA-RAISE

* Title:

FY 2021 National Infrastructure Investments

13. Competition Identification Number:

RAISE-FY21

Title:

FY21 RAISE GRANTS

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Southeast Connector - Southeast 30th Street to US Highway 65

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: IA-003 * b. Program/Project: IA-003

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 10/01/2023 * b. End Date: 12/01/2026

18. Estimated Funding ($):

* a. Federal	34,284,000.00
* b. Applicant	9,716,000.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	44,000,000.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Mr. * First Name: T.M.Franklin

Middle Name:

* Last Name: Cownie

Suffix:

* Title: Mayor

* Telephone Number: 515-283-4944 Fax Number:

* Email: fcownie@dmgov.org

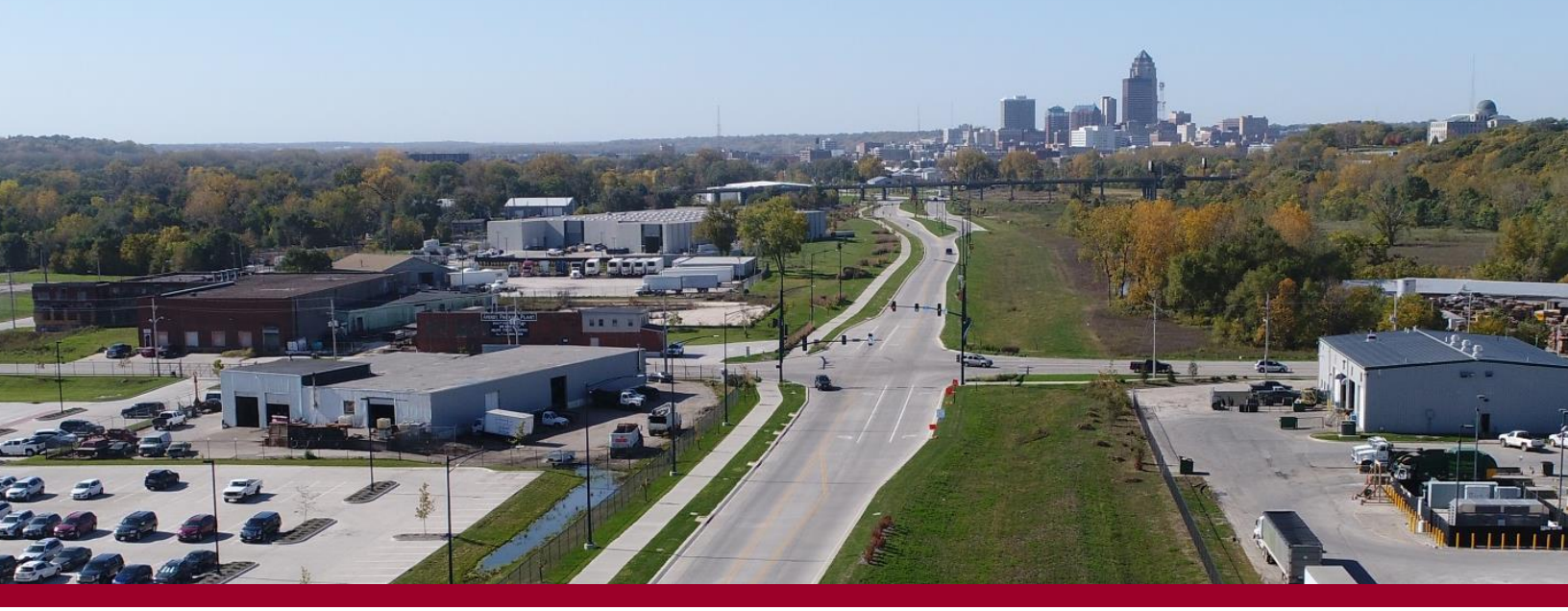
* Signature of Authorized Representative: Pamela S Cooksey * Date Signed: 07/09/2021

ATTACHMENTS FORM

Instructions: On this form, you will attach the various files that make up your grant application. Please consult with the appropriate Agency Guidelines for more information about each needed file. Please remember that any files you attach must be in the document format and named as specified in the Guidelines.

Important: Please attach your files in the proper sequence. See the appropriate Agency Guidelines for details.

1) Please attach Attachment 1	1234-Project Narrative.pdf	Add Attachment	Delete Attachment	View Attachment
2) Please attach Attachment 2	1235-Support Letters - App A	Add Attachment	Delete Attachment	View Attachment
3) Please attach Attachment 3	1236-Benefit-Cost Analysis -	Add Attachment	Delete Attachment	View Attachment
4) Please attach Attachment 4	1237-RAISE 2021 Project Infor	Add Attachment	Delete Attachment	View Attachment
5) Please attach Attachment 5	1238-Resolution 21-0949.pdf	Add Attachment	Delete Attachment	View Attachment
6) Please attach Attachment 6		Add Attachment	Delete Attachment	View Attachment
7) Please attach Attachment 7		Add Attachment	Delete Attachment	View Attachment
8) Please attach Attachment 8		Add Attachment	Delete Attachment	View Attachment
9) Please attach Attachment 9		Add Attachment	Delete Attachment	View Attachment
10) Please attach Attachment 10		Add Attachment	Delete Attachment	View Attachment
11) Please attach Attachment 11		Add Attachment	Delete Attachment	View Attachment
12) Please attach Attachment 12		Add Attachment	Delete Attachment	View Attachment
13) Please attach Attachment 13		Add Attachment	Delete Attachment	View Attachment
14) Please attach Attachment 14		Add Attachment	Delete Attachment	View Attachment
15) Please attach Attachment 15		Add Attachment	Delete Attachment	View Attachment



2021 RAISE Grant

Southeast Connector

Southeast 30th Street to US Highway 65

CITY OF DES MOINES

pleasant hill

July 2021

TABLE OF CONTENTS

Project Website: **http://www.seconnector.com**

June 28, 2021

The Honorable Pete Buttigieg
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington D.C. 20590

RE: Des Moines & Pleasant Hill Southeast Connector RAISE Grant Application

Dear Secretary Buttigieg:

The Cities of Des Moines and Pleasant Hill, Iowa are pleased to partner and jointly submit the Southeast Connector – Southeast 30th Street to U.S. Highway 65 project for National Infrastructure Investments included in the Consolidated Appropriations Act, 2021, now known as RAISE Grants. This final project completes the regional connection between downtown Des Moines and US Highway 65 in Pleasant Hill.

The Southeast Connector arterial road project is exactly the type of project for which the RAISE Grants are targeted with respect to equity and sustainability. The Southeast Connector represents the opportunity to use infrastructure funding in a lower income, industrial Brownfield area to create jobs, increase economic competitiveness, support economic redevelopment, enhance access and safety for residents, and encourage environmental enhancements.

This segment of the Southeast Connector will complete the final two miles of the regional corridor that the central Iowa region and USDOT have partnered on over the past two decades. This last segment will provide a critical connection that is necessary to ultimately realize the benefits noted above, as well as close vital gaps in the regional transportation and trail network. The regional importance of the Southeast Connector is evident by the broad support and financial backing to date.

The City of Des Moines is committed to obligating funds and ensuring the Southeast Connector is under construction within the timeframes required by the RAISE Grant program. Project development, including property acquisition, is locally funded and timed to successfully be completed such that construction will begin in 2024 and completed in 2026.

The Cities of Des Moines and Pleasant Hill look forward to receiving critical support for the Southeast Connector. Please contact Steve Naber at 515.283.4920 or slnaber@dmgov.org for any questions or additional information.

Sincerely,

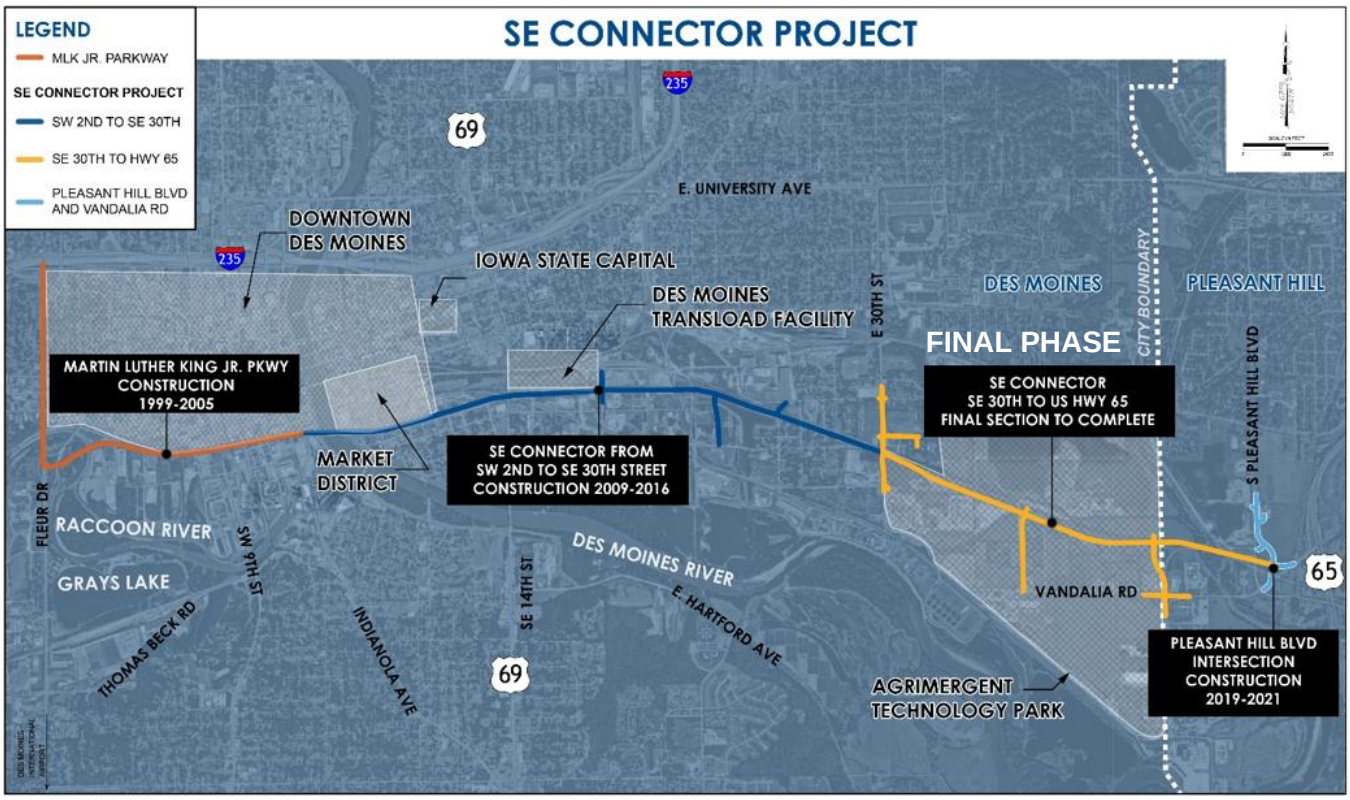
T. M. Franklin Cownie, Mayor
City of Des Moines

Sara Kurovski, Mayor
City of Pleasant Hill

Project Description

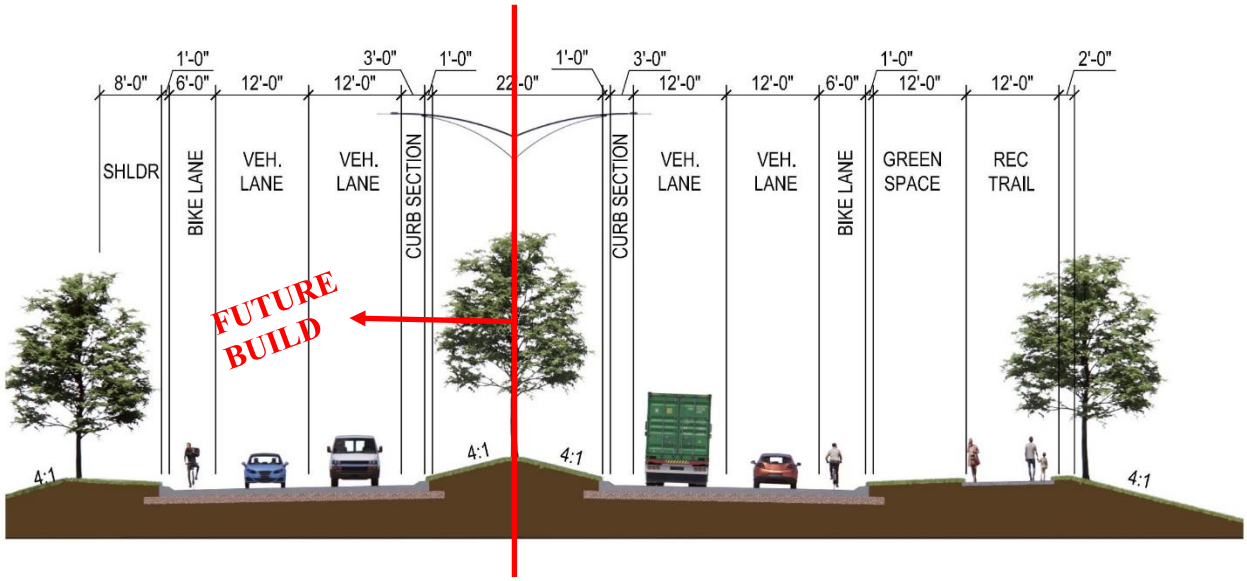
The Cities of Des Moines and Pleasant Hill, Iowa are prepared to fill a critical gap in the regional transportation network by leveraging investment from the RAISE Grant Program in partnership with the U.S. Department of Transportation. The Southeast (SE) Connector is the result of the successful partnerships between the two cities, local businesses, regional, state and federal entities. The SE Connector is a long-planned, multi-modal urban arterial from downtown Des Moines to U.S. Highway 65 through the southeast portion of Des Moines extending into the city limits of Pleasant Hill (**Figure 1**).

Figure 1. Southeast Connector Project



Construction of the proposed roadway will fill the 2.2-mile gap between SE 30th Street in Des Moines and U.S. Highway 65 in Pleasant Hill, completing the SE Connector. The project provides two vehicular travel lanes, curbs and gutters, street lighting, and a multi-purpose shared-use trail with a green space on the south side. The construction also includes a 1,515 foot-long, seven-span bridge over Fourmile Creek (a source of historic flooding), the floodway, and a grade separated railroad crossing. As with the previous section of the SE Connector from SE 15th Street to SE 30th Street that was completed in 2016, this project includes right-of-way acquisition and grading for a future full four-lane street with a center median.

Figure 2. Typical Section of Project and Full-Build Improvement



As illustrated in **Figure 2**, the project includes construction of a two-lane roadway with the future build consisting of a four-lane corridor. The cross section provides adequate pavement width for future on-street bicycle facilities. The complete cross section will be constructed once traffic demand warrants the full build section and there is community and financial support.

The SE Connector project is consistent with Des Moines' Transportation Master Plan, MoveDSM.[1] MoveDSM aims to provide a transportation network for everyone, providing transportation options for every user at every stage of life.

The SE Connector project is also consistent with the Des Moines metro-wide Tomorrow Plan,[2] a forward-thinking plan for the sustainable development of the Greater Des Moines region over the next 40 years, by supporting the goals of the Tomorrow Plan:

Goal 1 – "Create a Resilient Regional Economy" by completing a critical multi-modal connection."

Goal 3 – "Further the Health and Well-Being of All Residents in the Region" by providing a vitally important trail connection."

[1] https://cms2.revize.com/revize/desmoines/document_center/Engineering%20and%20Traffic%20Forms%20and%20Documents/Traffic/MoveDSM_Transportation%20Master%20Plan.pdf

[2] https://dmampo.org/the-tomorrow-plan/

The completion of the SE Connector will accomplish the following:

- **Improve Safety.** The SE Connector will significantly improve safety of the region's transportation system by:
  - Providing a controlled-access, urbanized roadway with a shared-use trail.
  - Diverting traffic from existing streets that have a significant history of crashes.
  - Eliminating the need for motorists and trucks to traverse three active railroad crossings.
  - Reducing response times for emergency services.

  The SE Connector project will also reduce flood risk to the area by improving and raising adjacent levees. This project includes the relocation and improvement of approximately 4,000 linear feet of the Southeast Des Moines levee system to reduce flood risk to valuable assets, critical facilities and the community located generally north of the Des Moines River and west of Fourmile Creek. This work is being done in partnership with the United States Army Corps of Engineers (USACE) and in conjunction with improvements that are underway to the overall City of Des Moines' levee systems for the Des Moines River, Raccoon River and Fourmile Creek.

- **Improve the Movement of People and Goods.** The SE Connector will increase the region's future capacity for the movement of people and goods by completing a critical roadway network connection from downtown Des Moines to U.S. Highway 65.

- **Enhance Regional Economic Competitiveness.** The SE Connector will enhance regional economic competitiveness by providing direct highway and interstate access to a new railroad transload facility, a new mixed-use residential/commercial district and several existing industrial and commercial businesses. Industrial companies and current development projects on the southeast side of downtown will also greatly benefit from a regional transportation connection to the highway and Interstate system providing reliable and efficient movement of people and goods.

- **Enhance Quality of Life for the Region and Local Businesses and Residents.** The SE Connector will enhance the quality of life of area residents by constructing an adjacent shared-use trail, filling a critical gap within the region's trail network while also providing an alternative transportation option to access employment, medical care, and government services. This portion of the Des Moines metropolitan area is home to comparatively low-income, underserved, and disadvantaged residents who currently lack adequate transportation options to jobs and other critical destinations downtown and in the southeast region of Des Moines and will benefit from the SE Connector. This final project phase will complete a crucial component of the Central Iowa Trails network by connecting the Martin Luther King, Jr. Parkway Trail with the Gay Lea Wilson Trail in eastern Polk County. Filling this gap and making this connection will provide residents safe access to hundreds of uninterrupted miles of trails throughout central Iowa.

- **Provide an excellent return on investment with a benefit-cost of 1.94.**

Project History

The City of Des Moines has long recognized the need for a new transportation facility to serve the southeastern portion of the metropolitan area. Groundwork for the SE Connector began in 1979 with a study for a project originally known as the Commercial Business District (CBD) Loop Arterial, which later was established as the Martin Luther King, Jr. Parkway project. The Martin Luther King, Jr. Parkway project included the construction of approximately 2.3 miles of new multi-lane roadway bordering downtown Des Moines that connected to Interstate 235. This section of Martin Luther King, Jr. Parkway was designed and constructed in multiple phases over several years, with the final intersection at Fleur Drive completed in 2005. This portion of Martin Luther King, Jr. Parkway utilized various funding sources, including Federal and State funds, coordinated through the Iowa DOT.

In 1999, the Southeast Diagonal Corridor/Project Location Major Investment Study identified the need for a transportation corridor from Martin Luther King, Jr. Parkway near downtown through southeastern Des Moines to connect with U.S. Highway 65. Following the opening of Martin Luther King, Jr. Parkway west of the Des Moines River, the City initiated the SE Connector project in 2004 to extend the corridor to U.S. Highway 65. The Final Environmental Impact Statement (EIS)[3] was made available in January 2010 and the Record of Decision (ROD)[3] was published in May 2010.

The construction phasing for the SE Connector includes:

- SW 2nd Street to SE 9th Street (including Des Moines River Bridges) – 2010 completion
- SE 9th Street to SE 15th Street – 2015 completion
- SE 15th Street to SE 30th Street (2012 TIGER Grant) – 2016 completion
- Pleasant Hill Boulevard and Vandalia Road intersection – May 2021 completion
- SE 30th Street to U.S. Highway 65 (2021 RAISE Grant Application) – 2026 anticipated completion

SE Connector project background, newsletters, maps, and other relevant documents are located at www.seconnector.com.[3]

The U.S. Department of Transportation has previously recognized the critical importance of Des Moines' SE Connector Project. The City of Des Moines received a $10 Million TIGER Grant for the SE Connector from SE 15th Street to SE 30th Street.[4] As shown in **Table 1**, the City of Des Moines has met or exceeded the expectations set forth in the 2012 TIGER Grant application and agreement. The City has successfully completed several Federal aid projects, including TIGER projects, and is able to comply with the requirements of a RAISE Grant to complete the SE Connector project.

[3] See http://www.seconnector.com/index.stm for the FEIS, ROD, and other documents.

[4] https://www.transportation.gov/sites/dot.gov/files/docs/fy2012tiger_0.pdf

Table 1. 2012 TIGER Grant – SE Connector, SE 15th Street to SE 30th Street

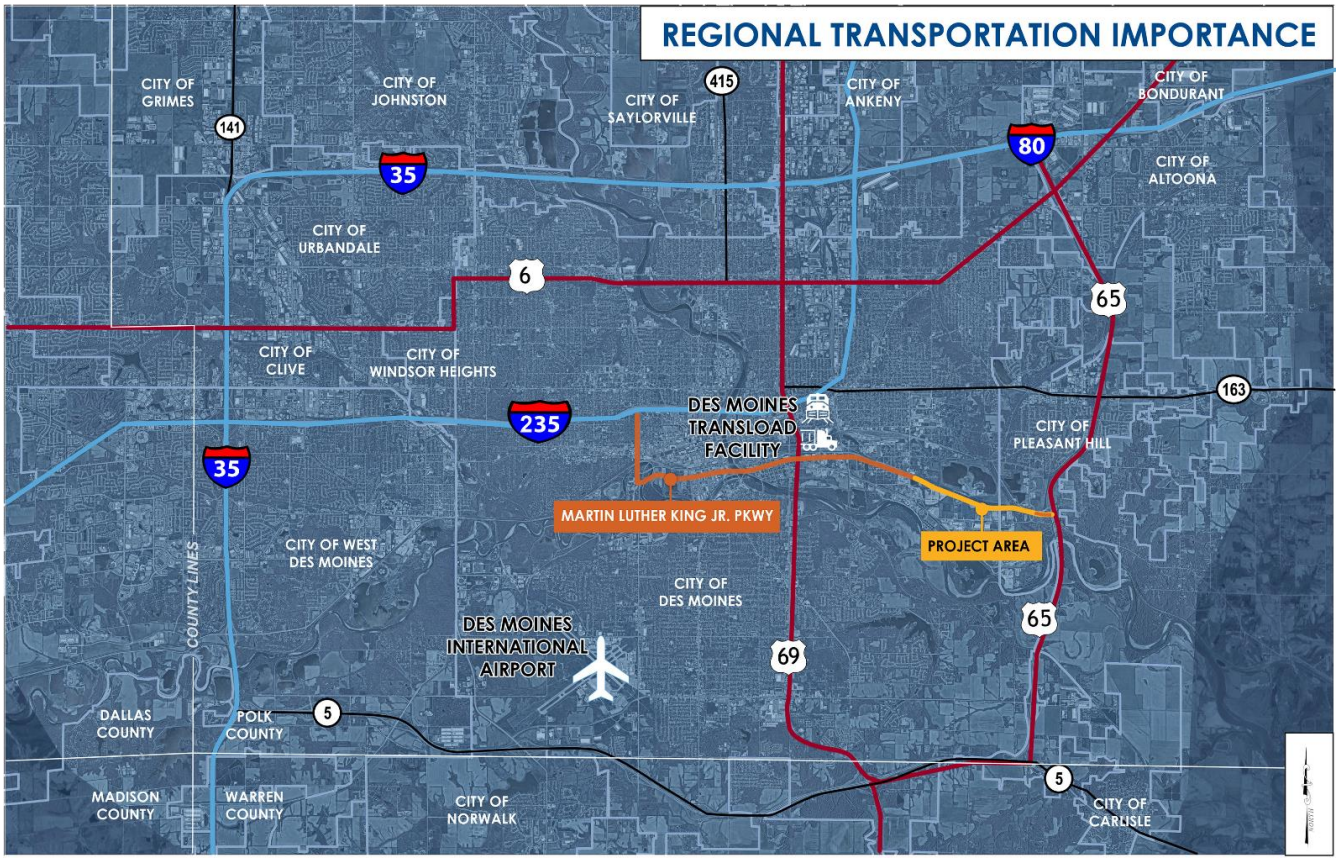
Expectation	2012 TIGER Grant	Expectation Met
Schedule	Begin Construction 2013	✓ Construction began 2013
	Open to Traffic September 2016	✓ Open to Traffic May 2016
Budget	Construction Estimated at $30 Million. Budget included $3 Million contingency.	✓ Final construction cost was $31.5 Million
Benefits Realized	Enhance System Connectivity	✓ Direct route provided to the local community and resulted in decreased traffic on alternative routes.
	Improve Capacity	✓ More capacity to handle commuter, freight, and active transportation modes.
	Economic Development	✓ Project attracted re-development in the immediate area, including expansion of Kemin Industries headquarters and the Des Moines Transload Facility.
		✓ The number of jobs in the vicinity of the project increased. Property values increased by more than $50 Million.
	Safety	✓ The crash rate since opening (41 crashes per 100 million vehicle miles traveled) has been lower than historical average crash rates for municipal city streets in Iowa (396 crashes per 100 million vehicle miles traveled). [5]
		✓ The project eliminated the need for vehicles to cross two at-grade railroad crossings.

[5] https://iowadot.gov/traffic/pdfs/crash_rate-density_comparables_segments_2007-2016_20170718_statewide.pdf (using rate shown on page 2, divided by 100 for conversion)

Project Location

This phase of the SE Connector will construct 2.2 miles of Martin Luther King, Jr. Parkway from SE 30th Street to the Pleasant Hill Boulevard intersection at U.S. Highway 65. This final phase will complete the SE Connector that connects downtown Des Moines and Interstate 235 with U.S. Highway 65/Iowa Highway 5 and provides regional connections to Interstates 80 and 35 as illustrated in **Figure 3**.

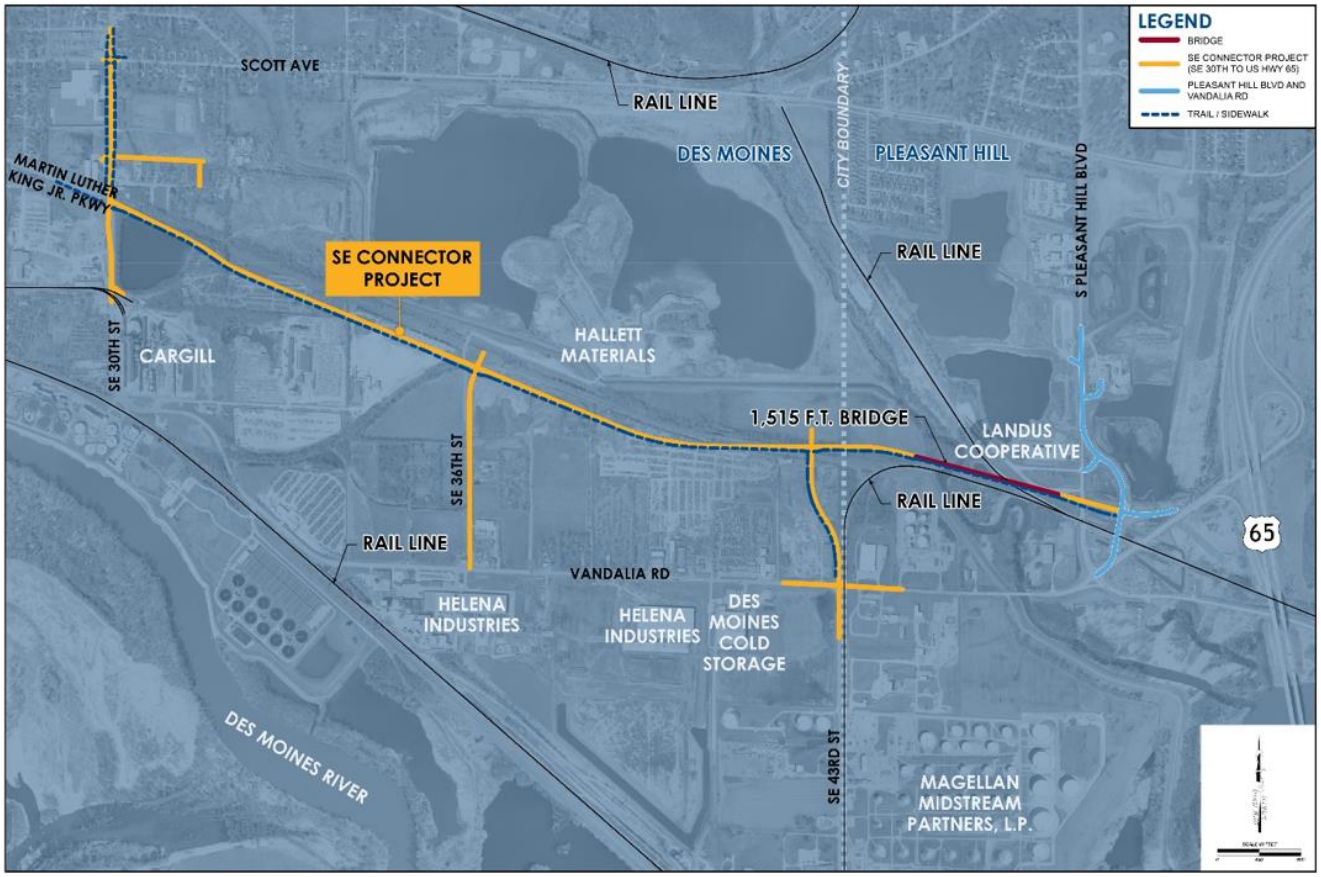
Figure 3. Regional Transportation Network and the Southeast Connector Project



The project includes improved sidewalk and roadway connections to the existing street network at SE 30th Street, including connecting to the SE 30th Street Viaduct over Union Pacific Railroad Yard, currently being rehabilitated by the City.

Additional improvements along this corridor include the construction of intersections with SE 36th Street and an extension of SE 43rd Street to Vandalia Road. Extending further east along the corridor, the project includes the construction of a new 1,515 lineal-foot steel-girder bridge, spanning over the Fourmile Creek floodplain, and connections with the Pleasant Hill Boulevard intersection and U.S. Highway 65 interchange. As shown on **Figure 4**, these elements are located within the City of Pleasant Hill corporate limits.

Figure 4. Local Roadway Network Improvements with the Southeast Connector Project



Grant Funds, Sources and Uses of Project Funds

The City of Des Moines has incurred $4 Million on preliminary engineering and design. The remaining total cost to complete the final segment of the SE Connector is estimated to be **$54 Million**. The budget for the anticipated future construction project and funding breakdown by activity is shown in **Table 2** below.

Table 2. Future Project Costs and Funding Sources by Activity

Activity	Funding Source			
	Local	Other Federal	RAISE	TOTAL
Design	$ 1,000,000			$ 1,000,000
ROW	$ 4,000,000			$ 4,000,000
Engineering & Inspection	$ 5,000,000			$ 5,000,000
Construction	$ 9,716,000 (22%)	$ 11,284,000 (26%)	$23,000,000 (52%)	$ 44,000,000
TOTAL	**$ 19,716,000 (37%)**	**$ 11,284,000 (21%)**	**$23,000,000 (42%)**	**$ 54,000,000**

The sources of the local funds are general obligation bonds and proceeds from property sales. The other Federal funds are allocated from the Des Moines Area Metropolitan Planning Organization (MPO) Surface Transportation Block Grant (STBG).[6] The City of Des Moines was awarded $11.284 Million in STBG funding from the MPO for Federal Fiscal Year (FFY) 2024, as shown in the Draft FFY 2022-2025 Transportation Improvement Program (TIP).[7] The Draft FFY 2022-2025 TIP is expected to be finalized July 15, 2021, after the submission of this application.[8] U.S. Representative Cindy Axne submitted a $7 Million funding request for this project as part of the Surface Transportation Reauthorization. Should this request be successful, the RAISE fund amount would be reduced accordingly. RAISE funding would complete the required funding to construct the final section of the SE Connector project.

[6] https://dmampo.org/wp-content/uploads/2019/05/April-Policy-Meeting-Minutes.pdf, https://dmampo.org/wp-content/uploads/2019/03/2023-STBG-Funding-Awards.pdf, https://dmampo.org/wp-content/uploads/2020/05/April-Policy-Meeting-Minutes.pdf, https://dmampo.org/wp-content/uploads/2020/04/2024-STBG-Funding-Awards-Final.pdf

[7] https://dmampo.org/wp-content/uploads/2021/06/2022-TIP-Project-List.pdf

[8] https://dmampo.org/transportation-projects/

Selection Criteria

Safety

The proposed project will create and enhance transportation safety and mobility in the regional and local street network. This final section of the SE Connector will provide a direct route for traffic; bypassing railroad crossings and eliminating the need for traffic to utilize local streets and congested routes. This will be accomplished through access control, new pavement with curbs and gutters, storm sewer, street lighting, a grade separated railroad crossing, and accommodations for multi-modal options to more equitably serve a portion of the community that lacks such facilities. Adjacent existing routes lack many of these safety elements and are comprised of open ditches, unpaved shoulders, limited, if any, sidewalks, no bicycle facilities or other accommodations for non-motorized users.

Assessing the safety benefits of completing the SE Connector requires examination of the safety deficiencies of existing nearby routes adjacent to the project area. The three major, alternate routes in the project vicinity connecting Des Moines, Pleasant Hill and U.S. Highway 65 include Vandalia Road, Scott Avenue, and E. University Avenue (State Highway 163).

Figure 5. Vandalia Road (Image from Google Earth)

An existing alternate parallel route, Vandalia Road, has safety concerns with significant truck traffic and little to no access control.

Vandalia Road is a two-lane rural minor arterial that lacks access control, paved shoulders, sidewalks or non-motorized accommodations. Vandalia Road has many industrial properties along the corridor resulting in a very high percentage of truck traffic. The truck traffic is approximately 30% of vehicles along the roadway.

Scott Avenue is located to the north of the proposed SE Connector alignment. Scott Avenue is a two-lane rural collector with limited drainage facilities along the corridor. A portion of Scott Avenue is residential and has increased traffic from vehicles and trucks currently using this route, despite Scott Avenue not being a designated truck route.

E. University Avenue (State Highway 163) via E. 30th Street is also north of the proposed project. E. University is a four-lane undivided principal arterial with poor curbs and drainage systems.

The safety performance measures for these three roadway segments and Martin Luther King, Jr. Parkway are shown in **Table 3**. The crash rate along E. University is 474 per 100 million VMT per year, which is ***over ten times the crash rate*** for the previous section of the SE Connector (SE 15th Street to SE 30th Street) over the same period and over 1.75 times the statewide average crash rate. The crash rate for Scott Avenue is ***over seven times the crash rate*** for the previous section of the SE Connector over the same period and over two times the statewide average crash rate. **Figure 6** is a heat map displaying crash locations in the area transportation network.

Figure 6. Traffic Accident Heat Map Queried from Iowa DOT Crash Analysis Tool

Table 3. Safety Performance of Nearby Roadway Segments

Route	Segment Description	Length (mi)	AADT[1]	No. of Crashes[2]	Crash Rate[2,3]	Statewide Crash Rate[3,5]
MLK Jr. Pkwy.	SE 15th to SE 30th (2-lane)	1.82	11,100	14	41	271
Vandalia Rd.[4]	Martin Luther King Jr. Pkwy. to Pleasant Hill Blvd.	2.56	6,898	30	101	207
Scott Ave.	SE 30th to Oakwood Dr.	1.42	3,841	29	315	151
University Ave.	SE 30th to Pleasant Hill Blvd.	2.00	18,969	303	474	271

[1] Value based on weighted average of 2016 No-Build Output from the MPO travel demand model.
[2] Based on crash history from 5/20/2016 thru 12/31/2020 (1,685 days).
[3] Crashes per 100 million VMT per year.
[4] Portion that connects with MLK Jr. Pkwy. is technically SE 30th St.
[5] Statewide 10-year average crash rate - https://iowadot.gov/traffic/pdfs/crash_rate-density_comparables_segments_2007-2016_20170828_secondary_functionalclass.pdf

One of the major safety improvements for this final phase is providing a continuous route that avoids three at-grade railroad crossings:

- Two mainline railroad crossings on Vandalia Road.
- One spur line, with three sets of tracks, serving an agricultural-industrial processing facility on SE 30th Street.

This is accomplished by making alternate street connections to local streets and constructing a new bridge providing a grade separated crossing for a private spur line.

Avoiding at-grade railroad crossings eliminates the risk of collisions with trains and drastically improves medical and emergency response times in the community. This is also important for trucks hauling goods, chemicals, and hazardous materials. Several global and national industries are located along this corridor that generate significant truck traffic, including:

- Helena Industries LLC, one of the largest chemical toll manufacturers in the United States.
- Kemin Industries, Inc., a global ingredient supplier that improves the health and lives of humans, pets and animals.
- Cargill, Incorporated, a global provider of food, agricultural, financial and industrial products.
- Magellan Midstream Partners, L.P., which transports, stores, and distributes refined petroleum products and crude oil throughout the United States.

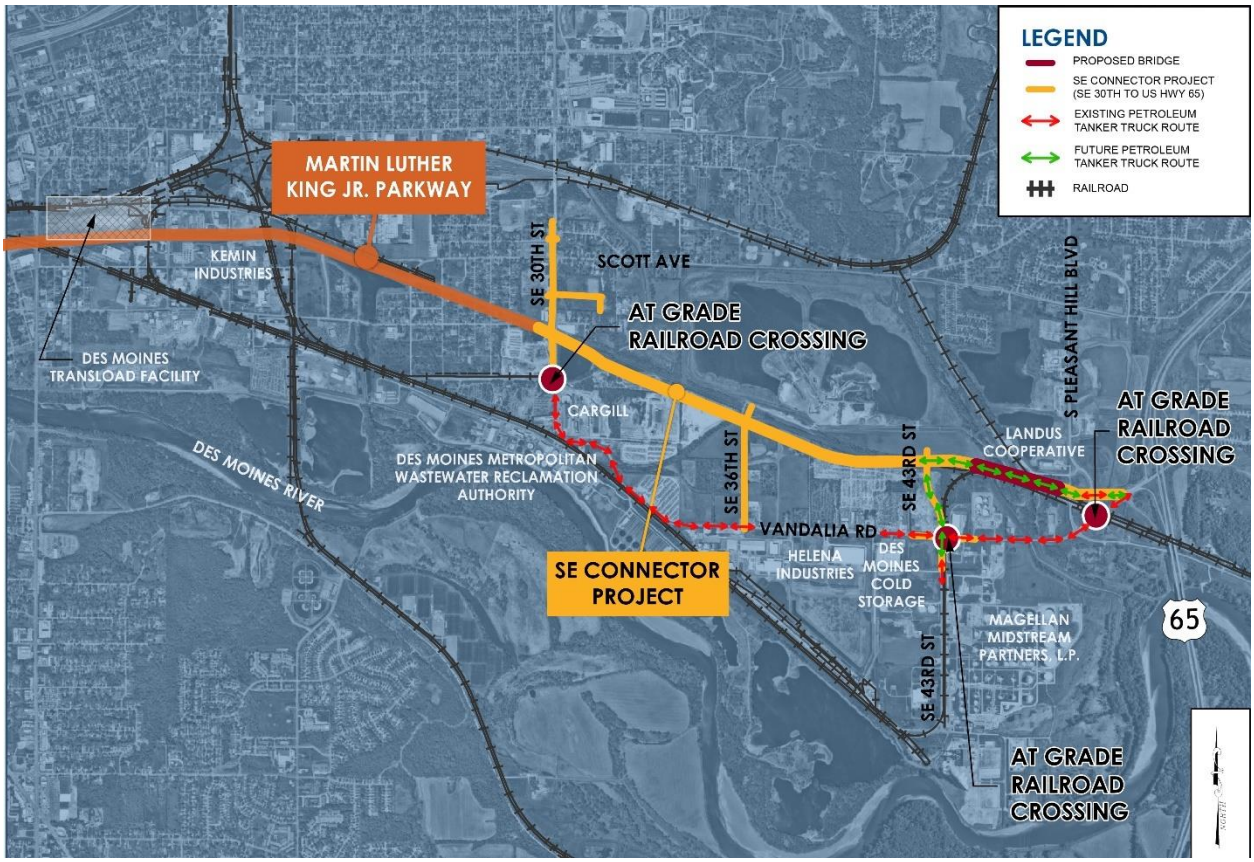
The Des Moines Metropolitan Wastewater Reclamation Authority, made up of 17 metro area municipalities, counties and sewer districts, and its regional wastewater treatment plant which serves nearly 500,000 people, is also located near the SE Connector Corridor and generates significant truck traffic for operation of the regional treatment plant and collection system.

Multiple national and global industries along the SE Connector Corridor, which transport various goods, chemicals, and hazardous materials, will benefit substantially, in terms of safety and efficiency, from the SE Connector.

An issue with trucks routing along Vandalia Road is trucks can become trapped between at-grade railroad crossings during certain train switching operations. A large food products facility is located on Vandalia Road at SE 30th Street that requires frequent train switching that blocks Vandalia Road. If other train crossings are operating at a similar time, Vandalia Road users are not able to enter or exit the Vandalia Road corridor. This situation presents significant travel delays, and possibly significant safety impacts, for emergency vehicles and others traversing through the area.

Figure 7 shows the locations of the at-grade railroad crossings that can be avoided once the SE Connector is complete and also shows how a national distributor of petroleum products can use the SE Connector to avoid the at-grade railroad crossings.

Figure 7. Existing At-Grade Railroad Crossings and Comparison of Existing and Future Petroleum Truck Routes



In addition to the safety benefits this project provides by limiting potential conflicts with vehicles and trains, this project will provide a more efficient movement of goods for the railroad system and the industries transporting materials and goods on the roadway system. This will lead to lower transportation costs and minimizing delays.

The SE Connector will provide a safer alternate route and is anticipated to improve safety along parallel alternative routes by decreasing current traffic demand on those existing facilities.

Environmental Sustainability

Climate Change

The City of Des Moines is committed to addressing climate change through sustainable policies, actions, and other efforts, as evidenced by the recent earning of a top-three ranking on the U.S Environmental Protection Agency's 2021 list of mid-size cities with the most Energy Star-certified buildings. Understanding that inaction perpetuates inequality and ensures that the burdens of climate hazards will be borne by the most marginalized and vulnerable residents, the City recently updated its greenhouse gas emissions goals to align with the United Nations Intergovernmental Panel on Climate Change recommendations.[9] Furthermore, the City recently committed to a goal of achieving 100% electricity from carbon-free sources by 2035 and has installed electric vehicle charging stations in several of its public parking garages to incentivize motorists to use electric vehicles. The City is in the process of developing a climate action and adaption plan to help achieve these goals identified in the Des Moines Resolution Greenhouse Gas Emissions Reduction Goals and Community 24X7 Carbon-free Electricity Goal.[10]

Environmental Justice

As noted in the Final EIS and ROD, the overall project area contains "higher levels of minority and low-income populations." The MPO's biennial Environmental Justice Report (updated November 2020) shows that the majority of the project area (Census Tract 53) is considered an area of moderate concern by meeting five categories: non-white populations, households in poverty, single head of household with children, households with person(s) over 65, and persons with disabilities.[11] These categories were flagged because the values exceeded the MPO regional average. According to the EJSCREEN tool, the following environmental justice demographic indicators exceed the National median values in the project area:

- Percent people of color
- Percent linguistic isolation
- Percent less than high school education
- Percent under age 5
- Percent over age 64

Other census tracts immediately to the west of the project area also exceed the median values for each of the above demographic indicators, along with percent low-income population.[12] As shown in **Figure 8** and **Figure 9**, there is a concentration of and low-income and people of color population near downtown Des Moines.

[9] https://www.dsm.city/news_detail_T2_R320.php

[10] https://www.dsm.city/news_detail_T2_R385.php

[11] https://dmampo.org/wp-content/uploads/2020/10/EJ-2020.pdf

[12] https://ejscreen.epa.gov/mapper/

Improving connectivity and providing additional transportation choices will provide more efficient access to employment opportunities, critical services, and recreational resources throughout the Des Moines region.

Figure 8. EJSCREEN Index – Low Income Population

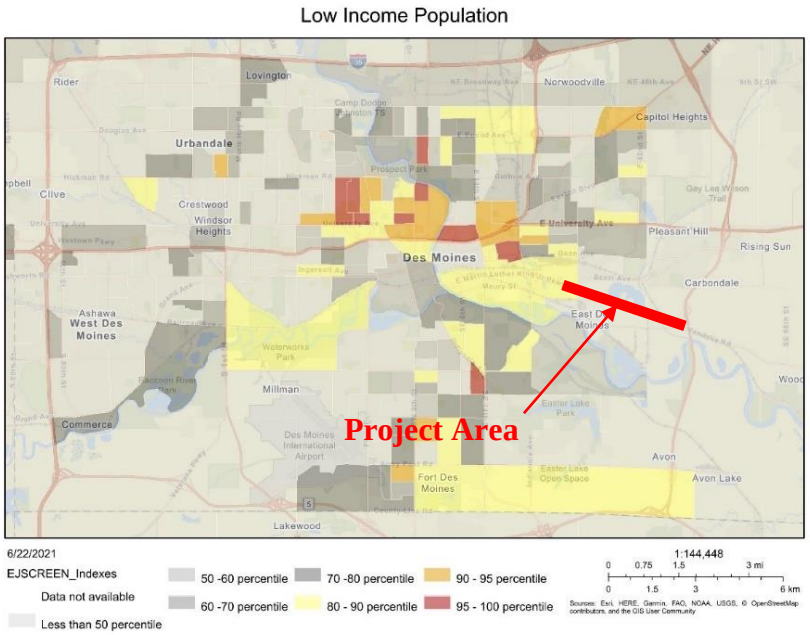
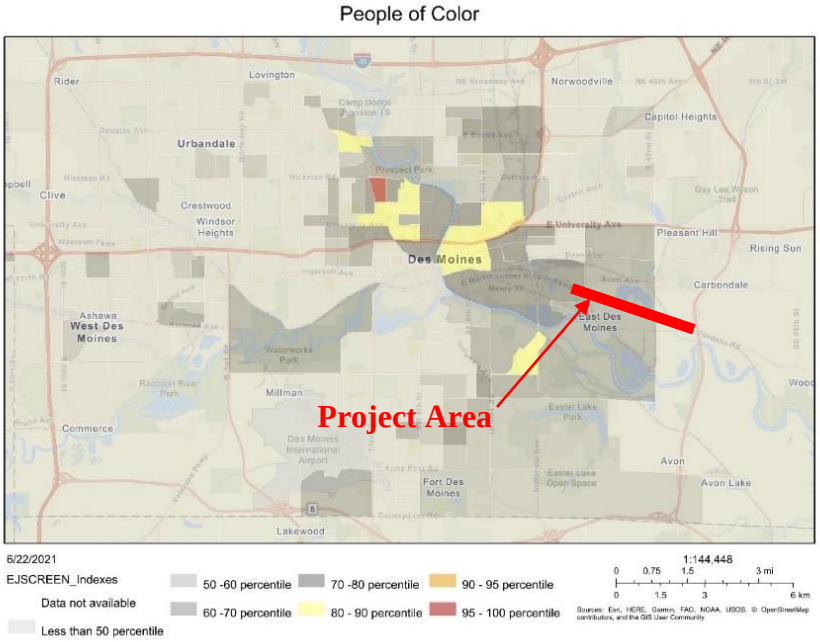


Figure 9. EJSCREEN Index – People of Color



Emission Reduction

The SE Connector will provide a direct route for traffic connecting downtown Des Moines with U.S. Highway 65, bypassing railroad crossings, and eliminating the need for traffic to utilize local streets and other congested routes. The proposed project will result in a decrease in overall vehicle-miles traveled (VMT), according to the MPO travel demand model. Although the model results indicate slightly more VMT in the future, the emissions impact may be offset with less vehicle delay, as compared to traveling on current routes. Additional net reductions in emissions, which are not directly captured in the benefit-cost analysis, will be realized with the avoidance of the three at-grade railroad crossings. Eliminating the need to stop at railroad crossings reduces delay and overall emissions due to idling. The continued transition to electric infrastructure and electric vehicles in the future will also contribute to reduced emissions over time.

Improving the transportation system operations will decrease traffic congestion and delay, reduce fuel consumption, and decrease greenhouse gas emissions from the transportation sector.

Flood Mitigation and Storm Water Management

Following the 2008 Midwest Flood, USACE conducted the Des Moines River Regulated Flow Frequency Study (DMRRFFS) to estimate the frequency and magnitude of future reservoir outflows and downstream river flows. Completed in November 2010 and released in January 2011, the results of the DMRRFFS showed flood flow frequencies have increased over previous USACE estimates and floods similar to the 1993 and 2008 events are more likely to occur than previously estimated. In addition to identifying the higher risk of flooding, the DMRRFFS showed that the existing levees in downtown Des Moines do not meet the standards for Federal Emergency Management Agency (FEMA) accreditation of levees provided in Title 44 of the Code of Federal Regulations (44 CFR) Section 65.10 of the National Flood Insurance Program regulations impacting FEMA flood hazard mapping.

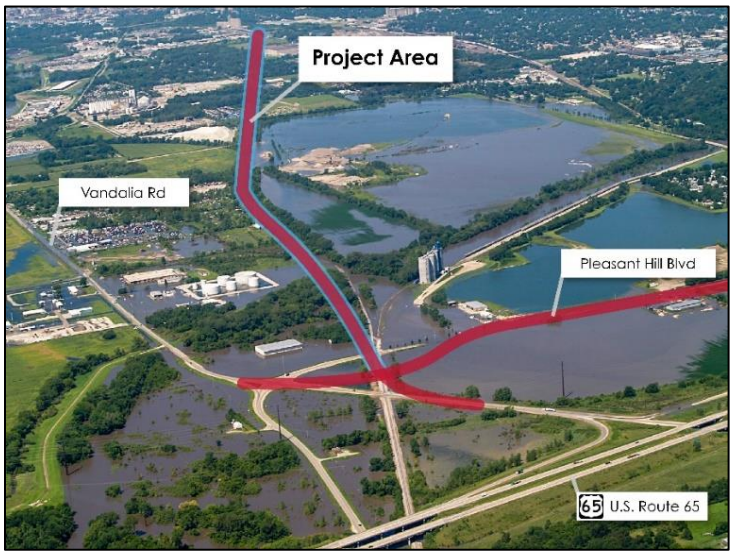
In response to the DMRRFFS and increased river flows, the City worked with USACE to develop a Flood Mitigation Plan to improve the levee system. As part of that plan, the SE Connector project includes the relocation and improvement of approximately 4,000 linear feet of the Southeast Des Moines levee system to reduce flood risk to valuable assets, critical facilities and the community located generally north of the Des Moines River and west of Fourmile Creek. This work is being done in partnership with the USACE and in conjunction with improvements that are underway to the overall City of Des Moines' levee systems for the Des Moines River, Raccoon River and Fourmile Creek.

The value of this area protected by the levee system could exceed $1 billion as noted by the USACE.[13] This levee improvements planned as part of the City's overall Flood Mitigation Program are scheduled for construction in 2024-2027 as part of the Des Moines Levee Alterations Program.[14] The 1,515 ft bridge will span the Fourmile Creek floodway to improve the conveyance of stormwater flow and mitigate flooding impacts upstream. The areas surrounding the project lack adequate storm sewer systems, which intensify flash flooding. The project will manage stormwater runoff through detention basins and enclosed storm sewers to better convey stormwater runoff. In addition to providing storm water management, the detention basins will provide opportunities for the storm water to recharge the ground water table.

The U.S. Army Corps of Engineers estimated the value of property protected by the levee system could exceed $1 Billion, making improving the levee system in coordination with the SE Connector Project imperative.

The SE Connector is part of a strategic effort to address extreme weather events that have occurred with greater frequency in recent years. The portion of the SE Connector from Pleasant Hill Boulevard to U.S. Highway 65 that opened to traffic in May of 2021 was elevated above the 500-year floodplain. The SE Connector will be elevated above the 100-year floodplain outside the levee system to prevent closure of this critical access for the community.

Figure 10. 2010 Flood Event with SE Connector Location

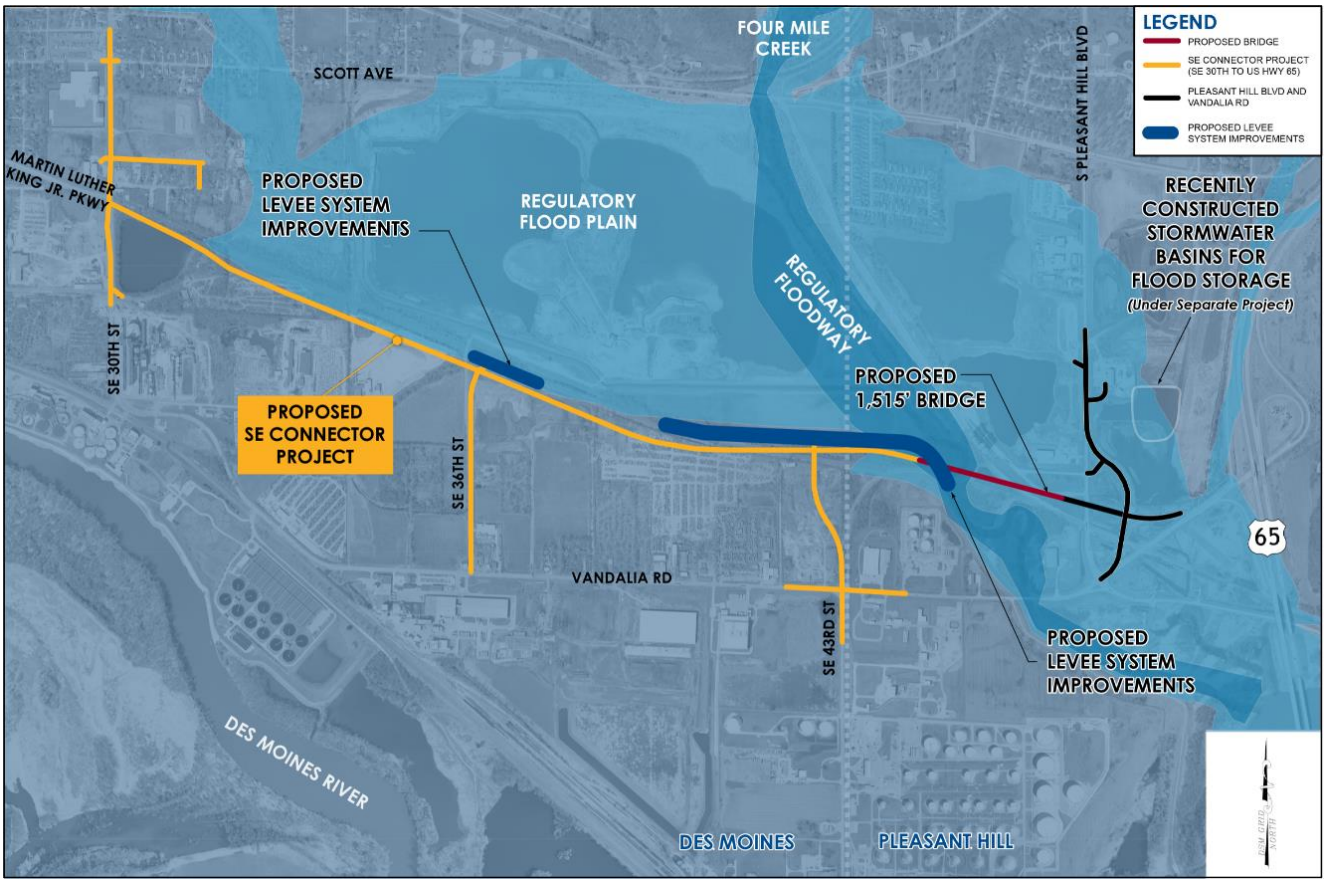


The SE Connector will provide safe access to the Cities of Des Moines and Pleasant Hill and eastern Polk County during a 100-year flood event. Currently, existing roadways connecting to eastern Des Moines and southern Pleasant Hill are inundated with floodwaters during a 100-year flood event.

[13] https://www.mvr.usace.army.mil/About/Offices/Programs-and-Project-Management/District-Projects/Projects/Article/1169954/red-rock-remedial-works-southeast-des-moines-southwest-pleasant-hill-levee-des/

[14] https://desmoines-levee-stantec.hub.arcgis.com/

Figure 11. Proposed Levee System Improvements



Quality of Life

Removing Barriers

There is a lack of multi-modal transportation options in the southeastern portion of Des Moines, which contains comparatively high levels of people with low-income, people of color, and other demographic indicators of vulnerable populations, relative to other areas in the Des Moines Metropolitan area. The project area is geographically close to the urban core of downtown Des Moines, but is sparsely developed except for largely low-income neighborhoods and industrial uses. The SE Connector will provide a new urban corridor with improved connections to the existing street network that will safely accommodate all users equitably.

The SE Connector contributes to the City's Comprehensive Plan, PlanDSM, and the Social Equity goal of ensuring "that all residents have convenient access to healthy food, health care, safe environments, and choices for an active lifestyle".[15] The City of Des Moines is pursuing the development of a social equity plan to ensure the services are provided equitable throughout the

[15] https://plandsm.dsm.city/

community. In 2019, an Equitable Services Team was formed, comprised of City staff from all departments, to develop an "Equity Framework." On October 19, 2020, the Des Moines City Council unanimously passed a resolution[16] adopting the City of Des Moines Equity Framework[17] for the Evaluation and Implementation of Equitable Delivery of City Services and Amenities. The current budget includes funds to procure consulting services to evaluate and identify areas of potential improvement to City's services from an equitable standpoint.

Transportation Choices

The southeastern portion of the Des Moines community that is comparatively low-income, underserved, and disadvantaged lacks safe and efficient transportation options, particularly for east-west connectivity. This lack of adequate accessibility to transportation results in challenges to the local community to access jobs, healthcare, schools, and other critical destinations. The SE Connector will provide a safe and efficient multi-modal connection for the community to the larger region. The project includes improved multi-modal connections to the SE Connector from adjacent local streets, including SE 30th Street, SE 36th Street, SE 43rd Street, and Pleasant Hill Boulevard.

Completing the SE Connector will allow for a net reduction in travel times for the southeast Des Moines region. The SE Connector provides regional and local benefits to the transportation network. Traffic that currently travels on Vandalia Road, E. University Avenue (State Highway 163), and other nearby city streets will have a safer and more efficient corridor to travel between downtown Des Moines and U.S. Highway 65. The SE Connector will benefit the neighborhoods on these other routes that will experience reduced automobile and truck through-traffic. Completion of the SE Connector also allows for a more reliable transportation network by providing a safe and efficient alternative to downtown Des Moines and the Des Moines International Airport. With the connection to U.S. Highway 65, the completed roadway corridor will allow traffic in the southern and eastern portion of the region a safe and efficient alternative to U.S. Highway 69, Iowa Highway 5 and Interstates 35, 80 and 235 that may result due to traffic incidents or other unexpected events. The SE Connector will allow safer and more efficient access from rural portions of eastern Polk County and beyond to downtown Des Moines, hospitals, government services, the State Capital, the Iowa State Fairgrounds, and other important destinations.

The proposed project provides a safe and efficient multi-modal transportation facility in an area of the community with limited transportation choices.

Nearby adjacent east-west routes have a general lack of active transportation accommodations. The general lack of sidewalks or paved shoulders, bicycle lanes or trails, as well as transit, has a detrimental impact on a community. The SE Connector will complete the missing trail segment

[16] https://councildocs.dsm.city/rollcalls/2020/20-1693.pdf

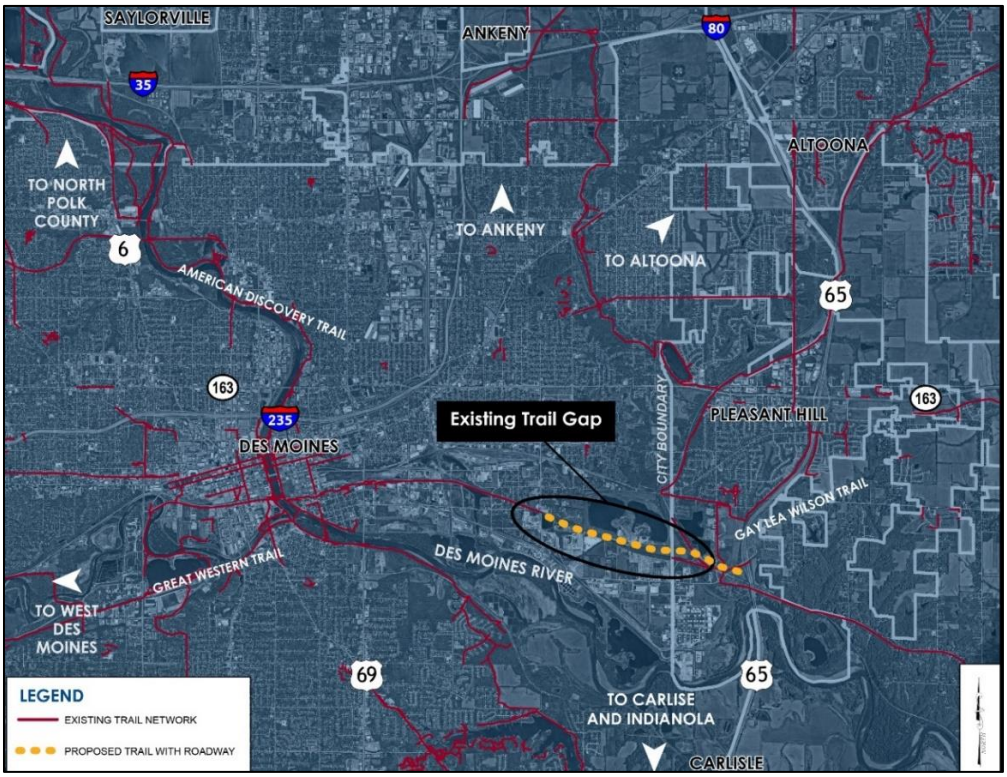
[17] https://councildocs.dsm.city/Resolutions/20201019/46i.pdf

in this area as shown in **Figure 12**. This will provide opportunities for alternative methods of commuting, as well as recreational opportunities. The new 12-foot-wide shared-use trail will provide for alternative transportation opportunities for area residents and fill a critical gap in the Central Iowa Trails network by connecting the Martin Luther King, Jr. Parkway Trail with the Gay Lea Wilson Trail. In so doing, the opportunities for residents to be active, improve physical and mental health and maintain a healthy lifestyle will be greatly increased as this connection will provide direct access to the hundreds of miles of uninterrupted Central Iowa Trails. The SE Connector fills a critical gap in the regional roadway network and a critical gap in the regional trail system providing enhanced multi-modal connectivity to the cities of Des Moines and Pleasant Hill and the entire region**.**

The Des Moines Area Regional Transit Authority (DART) currently does not have a scheduled route that serves this immediate area on a schedule; the nearest route is approximately one mile to the north of the project area.[18]

The SE Connector project fills an existing trail gap in the Central Iowa Trail System, including connecting to part of the 110-mile Central Iowa Trail Loop which connects parks, trails, neighborhoods, and businesses in five counties.

Figure 12. SE Connector Fills Existing Trail Gap in Central Iowa Trail System



[18] https://ridedart.com/sites/default/files/routes/route-maps/System%20Map%208.23.2020.pdf

Economic Competitiveness

Improving Movement of People and Goods

Completion of the SE Connector will provide a direct connection between downtown Des Moines, U.S. Highway 69, U.S. Highway 65, the new railroad transload facility, as well as the local street network. U.S. Highway 65 directly connects to Interstate 80 on the northeast side of the Des Moines Metropolitan area. U.S. Highway 65 connects to Interstate 35 on the southwest side of the Des Moines Metropolitan area.

This connection will enhance regional connectivity by providing travel time savings for freight and commuter traffic. The SE Connector will result in an estimated two percent net decrease in vehicle-hours traveled (VHT), which is significant when considering the amount of VHT in the southeast Des Moines region.

The SE Connector provides improved access to several global, national, and local industries:

- The Des Moines area is home to numerous global insurance and financial companies, many of which are located in downtown Des Moines.[19] The connection between downtown Des Moines and U.S. Highway 65 and eastern Polk County will be extremely beneficial to downtown businesses and commuters traveling to and from downtown.

- As noted previously, there are several global and national industries located along this corridor that will utilize the SE Connector for their main access, including: Helena Industries LLC, Kemin Industries, Inc., Cargill, Incorporated, Magellan Midstream Partners, L.P.

- The Des Moines Metropolitan Wastewater Reclamation Authority, made-up of 17 metro area municipalities, counties and sewer districts, and the regional wastewater treatment plant which serves nearly 500,000 people is located along the SE Connector Corridor. The SE Connector will provide a safer and more efficient access for operations of the wastewater treatment plant and collection system.

The SE Connector will significantly increase the region's future capacity for the movement of people and goods by completing a critical roadway network connection from downtown Des Moines to U.S. Highway 65, as well as improving access to the new transload facility and several global and national industries along the corridor.

[19] https://www.uschamber.com/co/good-company/growth-studio/des-moines-iowa-insurance

Figure 13. Magellan Midstream Partners, L.P. large terminal along the SE Connector

Approximately 80 tanker trucks per day travel to and from this large terminal on S.E. 43rd Street that will utilize the SE Connector to distribute petroleum products.

Development Along the SE Connector Corridor

The completion of the SE Connector, as an extension of the Martin Luther King, Jr. Parkway, will benefit an adjacent census track (Census Tract 52) that meets the definition of an "area of persistent poverty" as defined by the 2021 RAISE Grant Program. Martin Luther King, Jr. Parkway traverses through the middle of Census Tract 52, which comprises the neighborhood immediately south and east of downtown and the Iowa State Capital. Furthermore, the proposed project will provide a direct transportation connection to undeveloped and brownfield sites near downtown Des Moines, thereby promoting infill development and supporting planned growth and development.

The previously completed portion of the SE Connector (2016) was a significant catalyst to the expansion of Kemin Industries World Headquarters in 2017.[20] Kemin Industries is a major employer with over 650 employees in Des Moines, and over 2,300 employees worldwide. The development of the SE Connector/Martin Luther King, Jr. Parkway has demonstrated that continued development of this transportation corridor will attract desirable re-development of brownfield and under-utilized sites.

The new Des Moines Transload Facility is currently under construction near the crossing of U.S. Highway 69 at Martin Luther King, Jr. Parkway. This $25 Million facility, located on 31 acres accessed directly from Martin Luther King, Jr. Parkway, is a partnership with the Des Moines Area MPO and funded partly through a Better Utilizing Infrastructure to Leverage Development (BUILD) grant.[21] This facility will provide direct service access to three Class I and one Class II

[20] https://news.kemin.com/2017-02-07-Kemin-Industries-Worldwide-Headquarters-Opens-in-Des-Moines#:~:text=Des%20Moines%2C%20Iowa%20(February%207,located%20at%201900%20Scott%20Avenue

[21] https://railroads.dot.gov/environment/environmental-reviews/des-moines-transload-facility, https://dmampo.org/transload-facility/

rail lines and is projected to be completed in late 2021.[22] Once completed, the facility is projected to process 2,800 rail cars per year, or the equivalent of 11,200 semi truckloads per year.[23] It is estimated that 30 to 50 trucks per day will access the facility, which is anticipated to primarily handle bulk commodities such as aggregate and rock salt, lumber and steel products, pallets of shingles, softener salt, specialty grains and minerals. These trucks will access the facility directly from the SE Connector/Martin Luther King, Jr. Parkway, thus emphasizing the importance of making the final connection to U.S. Highway 65.

Figure 14. Des Moines Transload Facility Under Construction (photo taken 7/1/2021)

The new transload facility, providing direct service access to three Class I rail lines and one Class II rail line, is currently under construction on a site with direct access to the SE Connector.

The City of Des Moines has been engaged in a public-private partnership with a local development team to redevelop and repurpose an area known as the Market District, which is bounded by the Des Moines River on the west, SE 8th Street on the east, Vine Street on the north and Martin Luther King, Jr. Parkway on the south. This multi-phased redevelopment project, which had its groundbreaking in June 2021, will transform an aged industrial area into a proposed $500,000,000 multi-use, walkable residential/commercial district consisting of retail space, office space, restaurants, multi-family housing, entertainment venues and a large park space. Completion of the SE Connector will provide direct access to and from the Market District area.

The SE Connector project, with its connection to an improved SE 36th Street, will improve access to Hallett Materials, a supplier of sand and aggregate that operates a large pit north of the project area. This pit operation sees between 60 to 100 truckloads of material hauled per day which will utilize the SE Connector for access. Once the quarry ceases operations, it will allow for the possibility of recreational use with the remaining lake, serving as a potential catalyst for

[22] https://www.dsmpartnership.com/news-media/news/construction-begins-on-des-moines-industrial-transloading-facility

[23] https://dmampo.org/wp-content/uploads/2020/06/Des-Moines-Transload-Facility-Draft-EA-for-public-comment.pdf

further growth and development in the area.[24] As demonstrated by the Gray's Lake Park in Des Moines, converting old quarries into recreational areas can be transformational for a region.[25]

Most of the surrounding land immediately south of the proposed project is zoned for light industrial, while most of the land immediately north is zoned for open space and recreation. Most of the future land use surrounding the proposed project is planned for commercial, office, and light industrial uses.[26] Completing the SE Connector and the levee improvements will increase nearby property values by reducing flood risk, improving access and allow for more development opportunities in the area. The project impacts two existing salvage yards and will help facilitate re-development of these areas. Any future uses are required to meet current requirements in place for zoning, containment, stormwater and overall aesthetics.

State of Good Repair

This project will add two miles of two-lane roadway to the City's transportation network. But this new roadway is designed to carry the heavy traffic volumes, including truck traffic, which will significantly reduce the burden on existing routes, many of which are not designed to handle heavy traffic volumes. The SE Connector will reduce traffic on parallel routes, including Vandalia Road, Scott Avenue, and E. University Avenue, some of which go through residential areas.

The SE Connector will also provide an alternative route that allows vehicles to avoid at-grade railroad crossings. While this is a significant safety aspect, maintenance costs association with repairing the crossings will also be reduced. The significant truck traffic on Vandalia Road results in annual repairs to the existing crossings. This project should reduce damage and the frequency in which the crossings will need to be repaired. This also applies to railroad crossings in the west portion of the project area near E. 18th Street and E. 15th Street.

The SE Connector project will reconstruct a portion of the Southeast Des Moines Levee System and raise the levee to protect against the updated flow requirements for a 100-year flood event, as noted by the USACE.[27] This levee improvement is part of the overall Des Moines Levee Alterations Program and will provide long term flood risk reduction for this section of the City.[28]

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[24] http://www.seconnector.com/PDFs/AgrimergentTechnologyPark.pdf

[25] https://www.waymarking.com/waymarks/WMBKBT_Grays_Lake_History_Plaques_Des_Moines_IA

[26] https://maps.dsm.city/showmemycity/, https://www.pleasanthilliowa.org/151/City-Maps

[27] https://www.mvr.usace.army.mil/About/Offices/Programs-and-Project-Management/District-Projects/Projects/Article/1169954/red-rock-remedial-works-southeast-des-moines-southwest-pleasant-hill-levee-des/

[28] https://desmoines-levee-stantec.hub.arcgis.com/

Partnership

The Cities of Des Moines and Pleasant Hill, Iowa are prepared to fill this critical gap in the regional transportation network by leveraging investment from the RAISE Grant Program in partnership with the U.S. Department of Transportation. The Cities have had agreements in place since 2015 which coordinate funding, design and corridor preservation for the remaining SE Connector located in both Pleasant Hill and Des Moines. The City of Des Moines is responsible for administering the project construction and grant agreements for this final project. Following construction, each city will be responsible for operation and maintenance within their respective corporate limits.

The Cities worked together with the MPO to secure funding and complete the Pleasant Hill Boulevard and Vandalia Intersection project in 2021 at the eastern terminus of the SE Connector at U.S. Highway 65. As part of the intersection project, some of the stormwater management facilities were constructed in preparation for the SE Connector and excess material from the intersection project has been stockpiled for construction of the SE Connector project. The Cities have also worked with adjacent landowners and developments, including the new transload facility that is under construction, to plan for access to the SE Connector.

This project continues the partnership with the USACE to improve the USACE owned and maintained Southeast Des Moines Levee that was built to reduce flooding from the backwater of the Des Moines River and Lake Red Rock downstream. In response to the Des Moines River Regulated Flow Frequency Study released in January 2011 by USACE and increased river flows, the City worked with USACE to develop a Flood Mitigation Plan to improve the levee system. As part of that plan, the SE Connector project includes the relocation and improvement of approximately 4,000 linear feet of the Southeast Des Moines levee system to reduce flood risk to valuable assets, critical facilities and the community located generally north of the Des Moines River and west of Fourmile Creek. This work is being done in partnership with the USACE and in conjunction with improvements that are underway to the overall City of Des Moines' levee systems for the Des Moines River, Raccoon River and Fourmile Creek. USACE has completed reviews of the hydraulic modeling completed for the SE Connector and levee improvements.

Project support letters have been provided in **Appendix A**. Letters have been received from the following entities:

- Senator Charles Grassley, U.S. Senate
- Senator Joni Ernst, U.S. Senate
- Congresswoman Cindy Axne, U.S. House of Representatives
- Iowa Department of Transportation
- Polk County
- Des Moines Area Metropolitan Planning Organization
- Eastern Polk Innovation Collaborative Economic Development Organization
- Iowa State Fair
- Des Moines Airport Authority
- Greater Des Moines Partnership
- Des Moines Industrial
- Kemin Industries
- Helena Industries
- Hallett Materials
- Des Moines Cold Storage

Innovation

The project is incorporating several innovated technologies into the design and it is anticipated that the construction contractor may utilize other innovative technologies during construction.

This project may incorporate stringless paving technology where the paving machines will be controlled off the digital terrain model created by the design team. This technology speeds construction and limits the source of errors during the construction process.

Consistent with the City of Des Moines Intelligent Transportation Systems (ITS) Master Plan,[29] this project will interconnect the traffic signals along this corridor. The fiber-optic cables utilized in the project will interconnect all the traffic signals along this corridor and connect to the City's entire traffic signal system for optimum performance and efficiencies. Along with the interconnection of the signals, the project will install CCTV cameras, improved signal controllers, and other improvements from downtown to SE 30th Street and on to the connection to U.S. Highway 65. The project will also incorporate dynamic messaging to alert drivers on the SE Connector and the adjacent highways of incidents or traffic information. This will improve efficiencies and safety to the traveling public. The proposed project will include high efficiency LED streetlights that provides high quality illumination while minimizing operations and maintenance costs, as well as minimizing the impact on the environment.

[29] https://cms2.revize.com/revize/desmoines/Final%20ITS%20Master%20Plan_COMBINED.pdf?pdf=ITS%20Master%20Plan&t=1624207344559&pdf=ITS%20Master%20Plan&t=1624207344559

Environmental Risk Review

Project Schedule

Table 4. Project Schedule

Task	Completion Date
Surveys	Complete
Environmental	Complete
STIP/TIP	Complete
Amend City Agreement	Q4 2021
Design (75% Complete)	Q4 2022
Right-of-Way Acquisition	Q1 2022
USACE Section 408	Q3 2023
USACE 404/DNR Permit	Q3 2023
Railroad Agreement	Q3 2023
Plans, Specifications and Estimates	Q3 2023
Bid Project	Q4 2023[1]
Award Contract / Notice to Proceed	Q1 2024[1]
Substantial Completion/Open to Traffic	Q4 2026[1]

[1] *Assumes award of RAISE Grant*

Required Approvals

All necessary environmental approvals have been provided for the proposed project. The Final EIS was made available in January 2010 and a ROD was published in May 2010.[30] The project team has provided updates to the Iowa DOT Office of Location and Environment (OLE) for National Environmental Policy Act (NEPA) compliance review as details of the project have progressed. The most recent update was in August of 2018 where the typical section, alignment,

[30] http://www.seconnector.com/index.stm

and drainage layouts were updated. The Iowa DOT OLE office concurred on these changes with no comments. OLE also reviewed and approved the adjoining Pleasant Hill Boulevard & Vandalia Road project, which was opened to traffic in spring 2021.

The project will require a 404 permit for impacts associated with the bridge over and construction near Fourmile Creek. The 404 permit process with the USACE and Iowa Department of Natural Resources will be initiated as part of final design.

The USACE Section 408 process is being followed as part of the described modifications to the federal Southeast Des Moines Levee. This process has been initiated and will continue through final design. The City of Des Moines and USACE staff have tentatively agreed to the process for local modification of the federal levee. The 60% plan review comments from the USACE have been received and are being addressed as design progresses.

Project coordination with the impacted railroads has been underway over the last several years. Design comments and direction has been incorporated into the project plans. As plans are further developed, railroad agreements will be drafted to approve project construction. Agreements will be required with Norfolk Southern Railroad, Burlington Northern Santa Fe Railroad (BNSF), and private railroad spur owned by Landis in conjunction with BNSF.

There are no legislative approvals required to move this project forward. Local and regional support of the SE Connector is evident from the agencies providing support letters and actions to date. The project agreement between the Cities of Des Moines and Pleasant Hill is being updated regarding specific roles and responsibilities on this final project.

As noted earlier, the City of Des Moines was allocated $11.284 Million STBG funding from the MPO for FFY 2024, as shown in the Draft FFY 2022-2025 TIP.[31] The Draft FFY 2022-2025 TIP is expected to be finalized July 15, 2021, after the submission of this application. The TIP will be updated to reflect RAISE Grant information following an award announcement.

As part of the NEPA process, significant public engagement occurred during the development of alternative alignments. The engagement, documented in the FEIS, included five Project Advisory Committee meetings, a Resource Agency Management Group, two public open houses, two neighborhood drop-in centers, and numerous individual meetings with local residents and business owners.

[31] https://dmampo.org/wp-content/uploads/2021/06/2022-TIP-Project-List.pdf

Assessment of Project Risks and Mitigation Strategies

The greatest risks that may delay project delivery have been identified along with mitigation strategies:

- Railroad coordination – The railroad is currently reviewing layout of new overpass crossing, crossing upgrades at SE 30th Street, and new pre-empted crossing & signal at SE 43rd Street and Vandalia Road.

- USACE 404 permit is a standard process that is incorporated into the design development. As plans are developed to the required level of completion, the appropriate permits will be submitted for review and consideration.

- The USACE Section 408 process for the levee modification has been initiated and is progressing. No significant issues are anticipated based on the ongoing coordination occurring with the USACE Rock Island District staff.

- Bridge and levee construction will occur in areas of potential high water. The construction duration spans over several construction seasons to allow additional flexibility. Contract requirements will address working duration and construction phasing to accommodate possible high-water conditions.

The SE Connector project will be ready for construction to begin in 2024.

The City of Des Moines has successfully managed projects of this magnitude previously. Professional services are used to supplement City staff. The design of the SE Connector is well underway and will be completed on schedule to allow construction to proceed in 2024. Overall project management is performed by experienced City of Des Moines staff.

The City of Des Moines has the experience, fiscal capacity, and fiscal management skills to successfully ensure the SE Connector project is delivered in accordance with the applicable local, state, and federal requirements. Local funding for the project is included in the City of Des Moines Capital Improvement Program.[32] As proven with the completion of Martin Luther King, Jr. Parkway from E.15th Street to E. 30th Street (shown in **Figure 15**), the City of Des Moines has a proven track record in managing grant funding and financial reporting.

The City of Des Moines has demonstrated the ability to complete projects that meet and exceed requirements and expectations that come with discretionary grant funding.

[32] https://www.dsm.city/departments/finance/capital_improvement_program_budget.php

Figure 15. Looking west along completed section of SE Connector corridor

Benefit Cost Analysis

The 30-year benefit-cost analysis (BCA) for the project identifies significant anticipated travel time savings to be realized. Along with expected safety benefits of the project, the total net benefits are projected to substantially exceed estimated costs, resulting in a benefit-cost ratio of 1.94 (see **Table 5**). The BCA is conservative since it does not include the significant benefits expected from, for instance, avoidance of three at-grade railroad crossings, improved quality of life and health outcomes due to the shared-use trail, or increased property values. Detailed BCA calculations and documentation are provided in **Appendix B**.

Table 5. Benefit-Cost Analysis Summary

Benefit-Cost Category	Present Value at 7%/3%* Discount Rate
Travel Time Savings	$69,970,931
Operating Cost Savings	($571,549)
Emissions Savings	($181,087)
Safety Benefits	$13,741,085
Operations and Maintenance	($719,324)
Residual Value	$1,485,039
Benefits Sub-Total	**$83,725,095**
Capital Costs	**$43,049,629**
Benefit-Cost Ratio	**1.94**

**All benefits and costs are discounted at 7% except for CO2 emissions, which are discounted at 3% per USDOT BCA Guidance (Feb 2021).*

Southeast Connector

Southeast 30th Street to US Highway 65

Appendix A: Support Letters

Senator Charles Grassley, U.S. Senate

Senator Joni Ernst, U.S. Senate

Congresswoman Cindy Axne, U.S. House of Representatives

Iowa Department of Transportation

Polk County

Des Moines Area Metropolitan Planning Organization

Eastern Polk Innovation Collaborative Economic Development Organization

Iowa State Fair

Des Moines Airport Authority

Greater Des Moines Partnership

Des Moines Industrial

Kemin Industries

Helena Industries

Hallett Materials

Des Moines Cold Storage

REPLY TO:

☐ 135 HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510–1501
(202) 224–3744
www.grassley.senate.gov

☐ 721 FEDERAL BUILDING
210 WALNUT STREET
DES MOINES, IA 50309–2106
(515) 288–1145

☐ 111 7TH AVENUE, SE, BOX 13
SUITE 6800
CEDAR RAPIDS, IA 52401–2101
(319) 363–6832

United States Senate

CHARLES E. GRASSLEY
PRESIDENT PRO TEMPORE EMERITUS
WASHINGTON, DC 20510–1501

REPLY TO:

☐ 120 FEDERAL BUILDING
320 6TH STREET
SIOUX CITY, IA 51101–1244
(712) 233–1860

☐ 210 WATERLOO BUILDING
531 COMMERCIAL STREET
WATERLOO, IA 50701–5497
(319) 232–6657

☐ 201 WEST 2ND STREET
SUITE 720
DAVENPORT, IA 52801–1817
(563) 322–4331

☐ 307 FEDERAL BUILDING
8 SOUTH 6TH STREET
COUNCIL BLUFFS, IA 51501–4204
(712) 322–7103

June 15, 2021

The Honorable T. M. Franklin Cownie
Mayor
City of Des Moines
400 Robert D Ray Drive
Des Moines, Iowa 50309

Dear Mayor Cownie:

I have contacted Pete Buttigieg, Secretary of the U.S. Department of Transportation, regarding the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program grant application being submitted by the City of Des Moines to complete the final segment of the Southeast Connector Project from SE 30th Street to US 65 Beltway. I asked that this application be given all due consideration. Should I receive a response from the U.S. Department of Transportation, I will relay any helpful information to you.

Thank you for allowing me to be of assistance to you. If you have any further questions regarding this, or any other federal matter, please do not hesitate to contact me again.

Sincerely,

Chuck Grassley

Charles E. Grassley
United States Senator

CEG/sk

JONI K. ERNST
IOWA

VICE CHAIRMAN,
SENATE REPUBLICAN CONFERENCE

WASHINGTON, DC OFFICE
730 HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510
PHONE: 202-224-3254
FAX: 202-224-9369

WWW.ERNST.SENATE.GOV

United States Senate

COMMITTEES
ARMED SERVICES
AGRICULTURE, NUTRITION AND FORESTRY
ENVIRONMENT AND PUBLIC WORKS
JUDICIARY
SMALL BUSINESS AND ENTREPRENEURSHIP

June 29, 2021

The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590-0001

Dear Secretary Buttigieg,

I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill, Iowa, will finalize this important link in our region's transportation system. It connects to the he previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Provide improved access to the area, which will assist business growth to create jobs and support planned growth and development.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

I would appreciate your thorough and expeditious consideration for this project, in accordance with all rules and regulations. Please forward your response to Emily Gaard in my Des Moines office at 733 Federal Building, 210 Walnut Street, Des Moines, IA 50309 or by phone at (515) 284-4574. Emily may also be reached by email at Emily_Gaard@ernst.senate.gov.

DES MOINES OFFICE
733 FEDERAL BUILDING
210 WALNUT STREET
DES MOINES, IA 50309
PHONE: 515-284-4574
FAX: 515-284-4937

CEDAR RAPIDS OFFICE
111 SEVENTH AVENUE SE
SUITE 480
CEDAR RAPIDS, IA 52401
PHONE: 319-365-4504
FAX: 319-365-4683

DAVENPORT OFFICE
201 WEST SECOND STREET
SUITE 806
DAVENPORT, IA 52801
PHONE: 563-322-0677
FAX: 563-322-0854

SIOUX CITY OFFICE
194 FEDERAL BUILDING
320 SIXTH STREET
SIOUX CITY, IA 51101
PHONE: 712-252-1550
FAX: 712-252-1638

COUNCIL BLUFFS OFFICE
221 FEDERAL BUILDING
8 SOUTH SIXTH STREET
COUNCIL BLUFFS, IA 51501
PHONE: 712-352-1167
FAX: 712-352-0087

Sincerely,

Joni K. Ernst
United States Senator

JE/EG

CYNTHIA AXNE
3RD DISTRICT, IOWA

COMMITTEE ON FINANCIAL SERVICES
INVESTOR PROTECTION, ENTREPRENEURSHIP, AND CAPITAL MARKETS
HOUSING, COMMUNITY DEVELOPMENT AND INSURANCE

COMMITTEE ON AGRICULTURE
COMMODITY EXCHANGES, ENERGY, AND CREDIT
CONSERVATION AND FORESTRY

Congress of the United States
House of Representatives
Washington, DC 20515

WASHINGTON, DC OFFICE
330 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-5476

DES MOINES OFFICE
400 EAST COURT AVE., SUITE 346
DES MOINES, IA 50309
(515) 400-8180

COUNCIL BLUFFS OFFICE
501 5TH AVE.
COUNCIL BLUFFS, IA 51503
(712) 890-3117

CRESTON OFFICE
208 WEST TAYLOR
CRESTON, IA 50801
(515) 400-8180

June 25, 2021

U.S. Department of Transportation
Secretary Pete Buttigieg
1200 New Jersey Avenue, SE
Washington, DC 20590

Secretary Buttigieg,

I have been contacted by my constituents, City of Des Moines Mayor Frank Cownie and City of Pleasant Hill Mayor Sara Kurovski, regarding a RAISE Grant application to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway.

The Mayors and their staff members asserted that completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize an important link in the region's transportation system. It connects to the previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

Mayor Cownie and Mayor Kurovski believe this is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. They said the Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Provide improved access to the area, which will assist business growth to create jobs and support planned growth and development.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

Des Moines and Pleasant Hill leadership stated the project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

We thank you for your full and fair consideration consistent with applicable laws, rules, and regulations in the processing on this request.

Please do not hesitate to contact my team member, Kaity Patchett, at Kaitryn.Patchett@mail.house.gov, regarding this matter. We appreciate any updates you may be able to provide.

Sincerely,

Cynthia Axne

Congresswoman Cindy Axne (IA-03)
U.S. House of Representatives

IOWADOT

June 10, 2021

The Honorable Pete Buttigieg
Secretary, United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Support of the City of Des Moines, IA – Southeast Connector Project - 2021 RAISE Grant

Dear Secretary Buttigieg:

I am pleased to offer my support for the City of Des Moines, IA application for Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system. It connects to the previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

I am pleased to support the City of Des Moines' RAISE grant application for the Southeast Connector project. The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

Sincerely,

Scott C. Marler, Director

515-239-1111 | scott.marler@iowadot.us | www.iowadot.gov
Address: 800 Lincoln Way, Ames, IA 50010

COUNTY OF POLK
Board of Supervisors
111 Court Ave, Suite 300
Des Moines, Iowa 50309-2214
Ph. 515.286.3120
Fax. 515.323.5225
www.polkcountyiowa.gov

Angela Connolly, Chair, 2nd District
Ph 515.286.3117
angela.connolly@polkcountyiowa.gov

Robert Brownell, 1st District
Ph 515.286.3115
robert.brownell@polkcountyiowa.gov

Steve Van Oort, 3rd District
Ph 515.286.3119
steve.vanoort@polkcountyiowa.gov

Matt McCoy, 5th District
Ph 515.286.3118
matt.mccoy@polkcountyiowa.gov

Tom Hockensmith, 4th District
Ph 515.286.3116
tom.hockensmith@polkcountyiowa.gov

June 9, 2021

The Honorable Pete Buttigieg
The Secretary of Transportation
Office of the Secretary of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

Re: Support letter for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Mr. Secretary,

I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system. It connects to the previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had significant positive impacts on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

Sincerely,

Angela Connolly, Chair
2nd District Supervisor

DES MOINES AREA MPO
METROPOLITAN PLANNING ORGANIZATION

420 Watson Powell Jr. Parkway, Suite 200
Des Moines, Iowa 50309
Phone: 515.334.0075
Email: info@dmampo.org
www.dmampo.org

June 4, 2021

The Honorable Pete Buttigieg
Secretary of the Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Re: Support letter for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Secretary Buttigieg:

On behalf of the Des Moines Area Metropolitan Planning Organization (MPO), I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program for the Southeast Connector from SE 30th Street to the US 65 Beltway. The Martin Luther King, Jr. Parkway and Southeast Connector projects have had a significant impact on the Greater Des Moines region over the years. Completing the segment between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our transportation system.

This important project will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route.
- Incorporate bicycle and pedestrian facilities to the project area.
- Eliminate the need to traverse at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to what has been an economically distressed part of the region.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation. The project has been a priority for the MPO for many years and is included in the 2050 Long-Range Transportation Plan, *Mobilizing Tomorrow*.

The MPO is pleased to support this project. Please know the MPO appreciates the Department's continued assistance with improving our region and that we are available should you need any additional information.

Sincerely,

Todd Ashby
Executive Director

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

June 3, 2021

The Honorable Pete Buttigieg
The Secretary of Transportation
Office of the Secretary of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

Re: Support letter for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Mr. Secretary,

As the President of the Eastern Polk Innovation Collaborative economic development organization, I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system. It connects to the he previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

Sincerely,

Craig Erickson, President

IowaStateFair | NOTHING COMPARES

P.O. BOX 57130 | DES MOINES, IOWA 50317 P 515.262.3111 F 515.262.6906 IOWASTATEFAIR.ORG

June 14, 2021

The Honorable
Pete Buttigieg
The Secretary of Transportation
Office of the Secretary of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

Re: Support letter for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Mr. Secretary,

I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system. It connects to the he previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

Sincerely,

Gary Slater – Manager/CEO

DES MOINES
International Airport

June 7, 2021

The Honorable
Pete Buttigieg
The Secretary of Transportation
Office of the Secretary of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

Re: Support letter for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Mr. Secretary,

I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system. It connects to the he previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

Sincerely,

Kevin Foley
Executive Director

Des Moines Airport Authority, 5800 Fleur Drive, Room # 207, Des Moines, IA 50321; T 515-256-5100; F 515-256-5025; www.dsmairport.com

GREATER DES MOINES PARTNERSHIP

700 Locust St., Ste. 100
Des Moines, Iowa 50309
p: (515) 286-4950
DSMpartnership.com

June 17, 2021

The Honorable Pete Buttigieg
Secretary, U.S. Department of Transportation
1200 New Jersey Ave., S.E.
Washington, D.C. 20590

Re: Letter of support – RAISE Grant – Southeast Connector Project for City of Des Moines, IA

Dear Secretary Buttigieg:

The Greater Des Moines Partnership is the economic and community development organization serving Greater Des Moines (DSM). We are pleased to offer our strong support for the City of Des Moines's application to the U.S. Department of Transportation's Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program.

A successful grant application will allow the City of Des Moines to complete the final segment of the Southeast Connector Project from SE 30th Street to the U.S. 65 Beltway. This connection will finalize the corridor between the cities of Des Moines and Pleasant Hill, an important link for the region's transportation system, connecting the previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects.

This important project connecting Des Moines and Pleasant Hill will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and the region, including:

- Provide a direct and continuous travel route within DSM.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed area.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation. For these reasons and many others, The Partnership fully supports this project and reiterates our strong support for the City of Des Moines' RAISE grant application.

Sincerely,

Jay Byers
President & CEO

DSMUSA

Des Moines
Industrial

June 14, 2021

The Honorable
Pete Buttigieg
The Secretary of Transportation
Office of the Secretary of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

Re: Support letter for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Mr. Secretary,

I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system. It connects to the he previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

Sincerely,

Paul Cownie, CEO
Des Moines Industrial

Christopher E. Nelson, PhD
President & CEO
Kemin Industries
1900 Scott Avenue
Des Moines, Iowa 50317, USA
+1 800-777-8307
www.kemin.com

June 4, 2021

The Honorable Pete Buttigieg
Secretary of Transportation
Office of the Secretary of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

RE: Letter of Support for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Secretary Buttigieg:

I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project. Completing the final segment of the corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system.

Linking the Martin Luther King, Jr. Parkway and Southeast Connector projects, will have a significant positive impact on not only the greater Des Moines area, but also on central Iowa businesses. The cities of Des Moines and Pleasant Hill have worked together on these projects resulting in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city.

Completing the Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Enhance emergency response vehicles through the area because at-grade railroad crossings have been reduced.
- Support continued development to a historically economically distressed part of the area.

I strongly urge your support of the RAISE 2021 grant for completing the final segment of the City of Des Moines' Southeast Connector Project.

Sincerely,

Christopher E. Nelson PhD
President & CEO
Kemin Industries

Tracking Number:GRANT13419729 Funding Opportunity Number:DTOS59-21-RA-RAISE Received Date:Jul 09, 2021 02:11:09 PM EDT

HELENA INDUSTRIES, INC.
P.O. Box 5004
Des Moines, IA 50306
Phone: (515) 262-8299

6/8/2021

The Honorable
Pete Buttigieg
The Secretary of Transportation
Office of the Secretary of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

Re: Support letter for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Mr. Secretary,

I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system. It connects to the he previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.
- Separate the significant commuter traffic pattern from the commercial trucks servicing us here at Helena Industries. On an annual basis we receive in and our shop out 9,000 – 10,000 tractor trailer loads of materials. That means that there are 18,000 – 20,000 truck trips into and out of our facility on Vandalia Road each year. In my nearly two decades with Helena we have had a number of accidents and countless near misses with the blend of commuter and commercial truck traffic.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

Sincerely,

Troy L. Hugen

Plant Manager Helena Industries

3525 Vandalia Road, Des Moines, Iowa

A CRH COMPANY

Hallett Materials
PO Box 3365
Des Moines, IA 50316

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The Honorable
Pete Buttigieg
The Secretary of Transportation
Office of the Secretary of Transportation
1200 New Jersey Ave., SE
Washington, D.C. 20590

Re: Support letter for City of Des Moines, IA - Southeast Connector Project – 2021 RAISE

Dear Mr. Secretary,

I am pleased to offer my support for utilizing the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 2021 Discretionary Grant program to complete the final segment of the City of Des Moines' Southeast Connector Project from SE 30th Street to the US 65 Beltway. Completing the final segment of this corridor between SE 30th Street in Des Moines and US 65 in Pleasant Hill will finalize this important link in our region's transportation system. It connects to the previously completed Martin Luther King, Jr. Parkway and Southeast Connector projects, which have had a significant positive impact on the Greater Des Moines area and broader region.

This is an important joint project between the cities of Des Moines and Pleasant Hill that will result in several environmental and equitable benefits while enhancing the sustained growth of Iowa's capital city and its surrounding region. The Southeast Connector will:

- Provide a direct and continuous travel route within the Des Moines metropolitan area.
- Incorporate bicycle and pedestrian facilities into the project area.
- Eliminate the need to traverse several at-grade railroad crossings on SE 30th Street and Vandalia Road.
- Support continued development to a historically economically distressed part of the area.

The project is a critical transportation improvement for the region that will enhance the livability of the area and provide positive opportunities for economic development and job creation.

Sincerely,

Kyle Timmer
Vice President/General Manager

Des Moines Cold Storage Company, Inc.

3805 Vandalia Road, Des Moines Iowa 50317

06/03/21

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1200 New Jersey Ave., SE
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Sincerely,

CJ Morton, CFO

Des Moines Cold Storage

3805 Vandalia Road

Des Moines, IA 50317

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Southeast Connector

Southeast 30th Street to US Highway 65

Appendix B: Benefit-Cost Analysis

Introduction

The Cities of Des Moines and Pleasant Hill have proposed a joint project to complete the final phase of the Southeast Connector (SE) between Southeast 30th Street to US Highway 65. The information in this appendix describes the assumptions, calculations, and results of the benefit-cost analysis (BCA) for the Southeast Connector project from Southeast 30th Street to US Highway 65. This analysis was conducted in accordance with the *Benefit-Cost Analysis Guidance for Discretionary Grant Programs (February 2021)*, hereafter known as the Guidance.

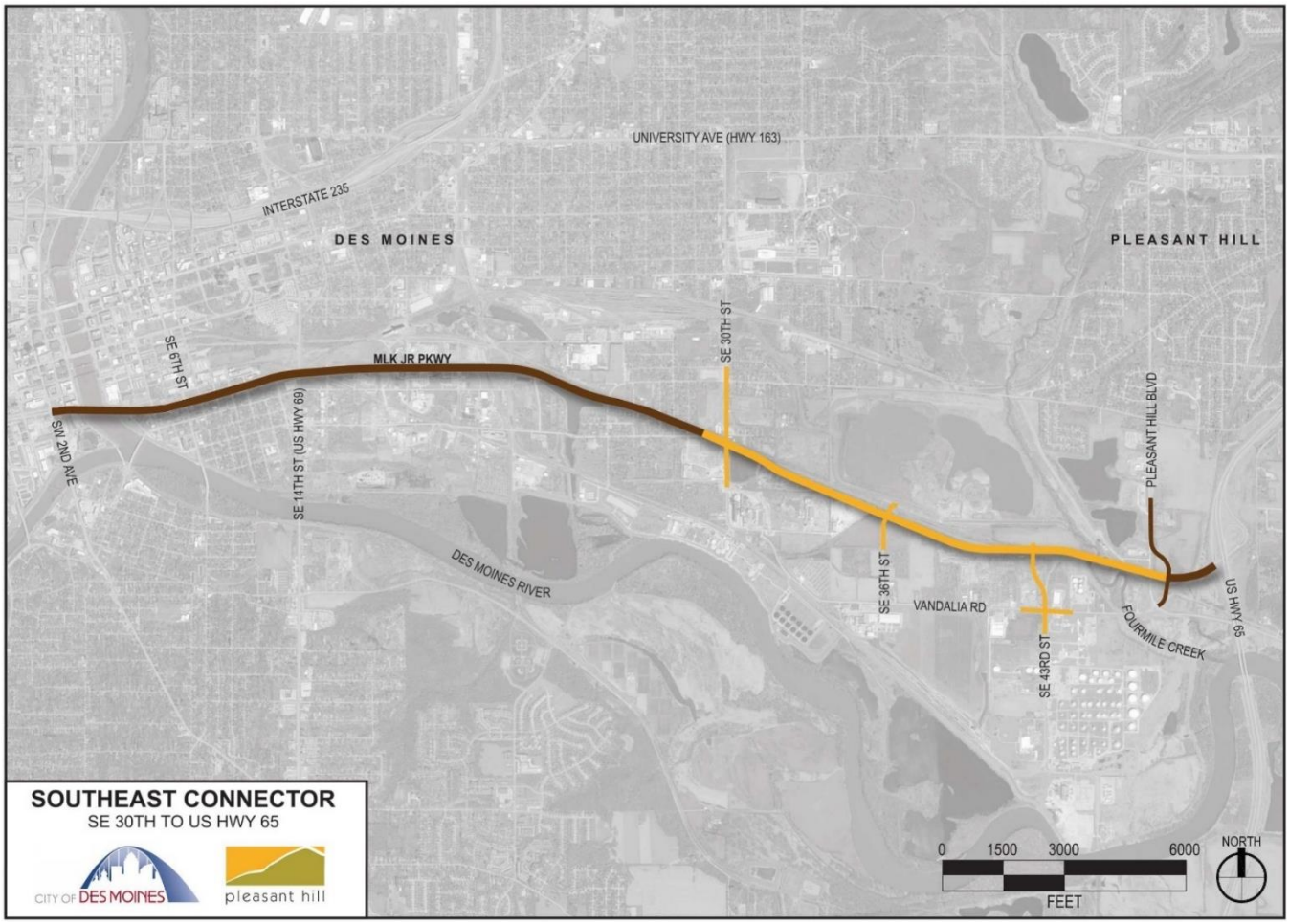
The City of Des Moines, as the lead entity, plans to construct the final segment of the SE Connector from SE 30th Street to US Highway 65, completing the decades-long-planned urban arterial from downtown Des Moines (including US Highway 69) to US Highway 65. The SE Connector will complete a critical gap in the existing local and regional transportation network by providing a safe and efficient multi-modal transportation connector.

The 2.2-mile roadway corridor facility will consist of two 12-foot travel lanes, curb and gutter, street lighting, a 1,515-foot bridge, and a 12-foot shared-use path with a 12-foot green space on the south side. The proposed facility includes a 6-foot pavement width is included for a future bike lane in the eastbound direction once the ultimate improvements (four lanes) are completed in the corridor. The proposed project will only pave and complete two lanes to serve current traffic demand; however, it will also include the acquisition of necessary rights-of-way and complete the grading work that will be required for the future construction of two additional travel lanes in preparation of full build-out to a four-lane divided roadway, when warranted.

To achieve the project's intended purpose, additional improvements beyond the primary SE Connector route will be necessary. The additional improvements include enhanced connections at SE 30th Street, SE 36th Street, and SE 43rd Street. See **Figure 1** for project area.

Tracking Number:GRANT13419729 Funding Opportunity Number:DTOS59-21-RA-RAISE Received Date:Jul 09, 2021 02:11:09 PM EDT

Figure 1. Project Area



As shown in **Figure 1**, the Pleasant Hill Boulevard intersection portion of the SE Connector project, which was led by the City of Pleasant Hill, included construction of the eastern-most segment of the SE Connector, and which will connect the SE Connector to US Highway 65. The connection was part of the Pleasant Hill Boulevard/Vandalia Road Intersection project that was completed in May 2021 and was assumed as being complete in the baseline condition of this BCA. Accordingly, the travel demand models (TDM) utilized for this project assumed this completion even in the "base year" 2016 models.

Assumptions and Inputs

The following benefits and costs were quantified and included in the BCA:

- Travel Time Savings
- Vehicle Operating Cost Savings
- Emissions Savings
- Safety Benefits
- Operations and Maintenance Costs
- Residual Value
- Capital Costs

General BCA assumptions and inputs include the following:

- **Base Year Dollars –** All dollars assume 2019 as the base year per Guidance recommendation.
- **Discount Rate –** All future benefits and costs beyond the base year (2019) are discounted at 7%, except for carbon dioxide emissions that are discounted at 3%. These assumptions are consistent with the Guidance.
- **Analysis Time Period –** The time period begins in 2011, the first year of project expenditures. For future years, the analysis period is capped at 30 years from anticipated completion per Guidance recommendations. Since the project is anticipated to be complete by 2026, the study time period ends in 2055.

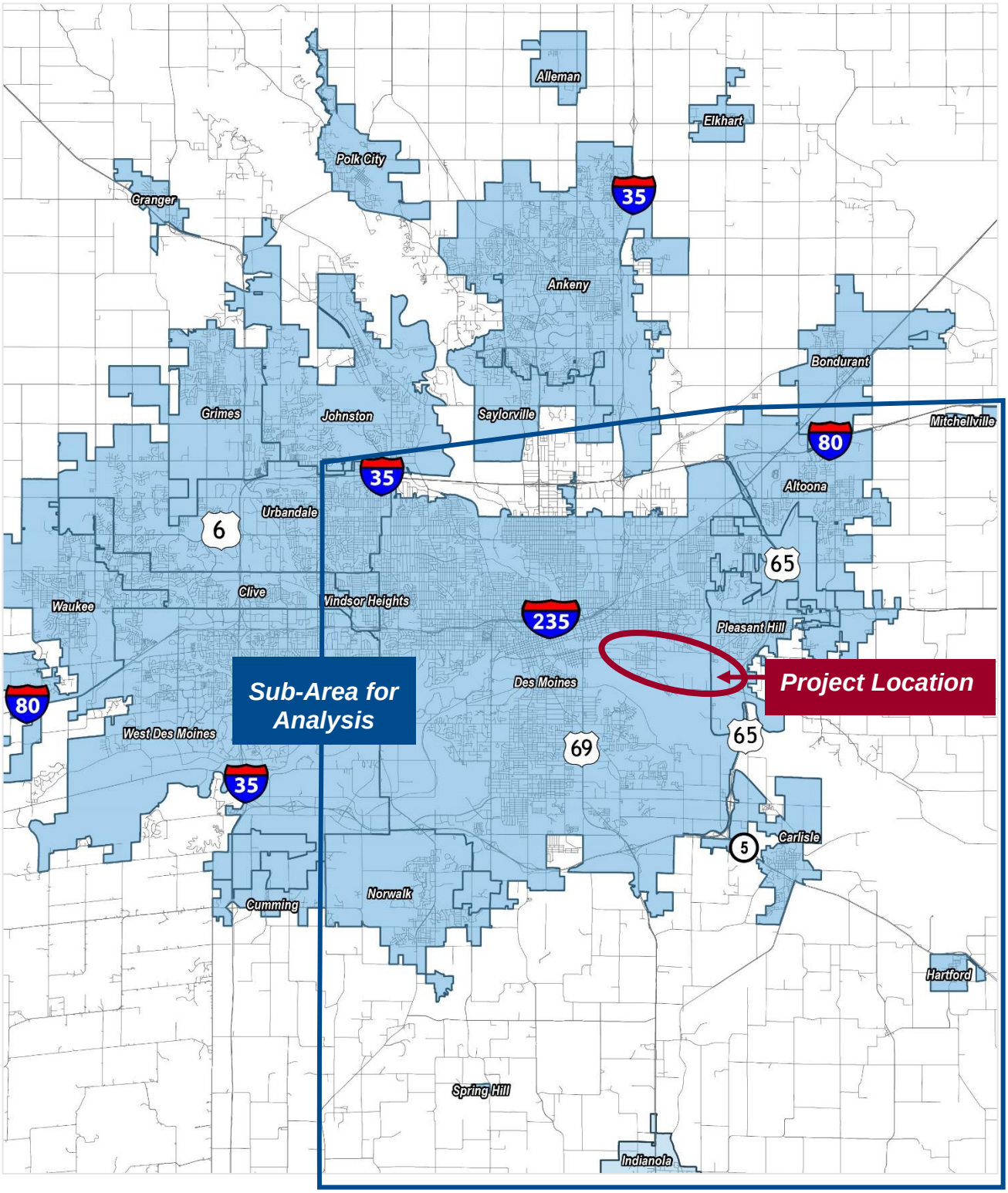
Additional BCA assumptions and inputs that were used in the development of this analysis are provided below.

Travel Demand Forecasting

TDMs were utilized for this project BCA in order to estimate vehicle hours traveled (VHT) and vehicle miles traveled (VMT). The TDMs were provided by the Des Moines Area Metropolitan Planning Organization (MPO). Four model runs were provided as follows: 2016 No-Build, 2016 Build, 2040 No-Build, and 2040 Build. Each TDM contained 10,308 roadway links, representing distinct segments of roadways in the model. The following assumptions were included in these TDMs:

- Because the SE Connector is a critical regional connection, a sub-area of the MPO regional model was defined using Interstates 35 and 80 as the western and northern boundaries, respectively. These boundaries will allow capturing the regional travel demand impacts of the proposed project while limiting it to the southeastern portion of the Des Moines metropolitan region. See **Figure 2** for a depiction of the TDM area used in this BCA.

Figure 2. TDM Area



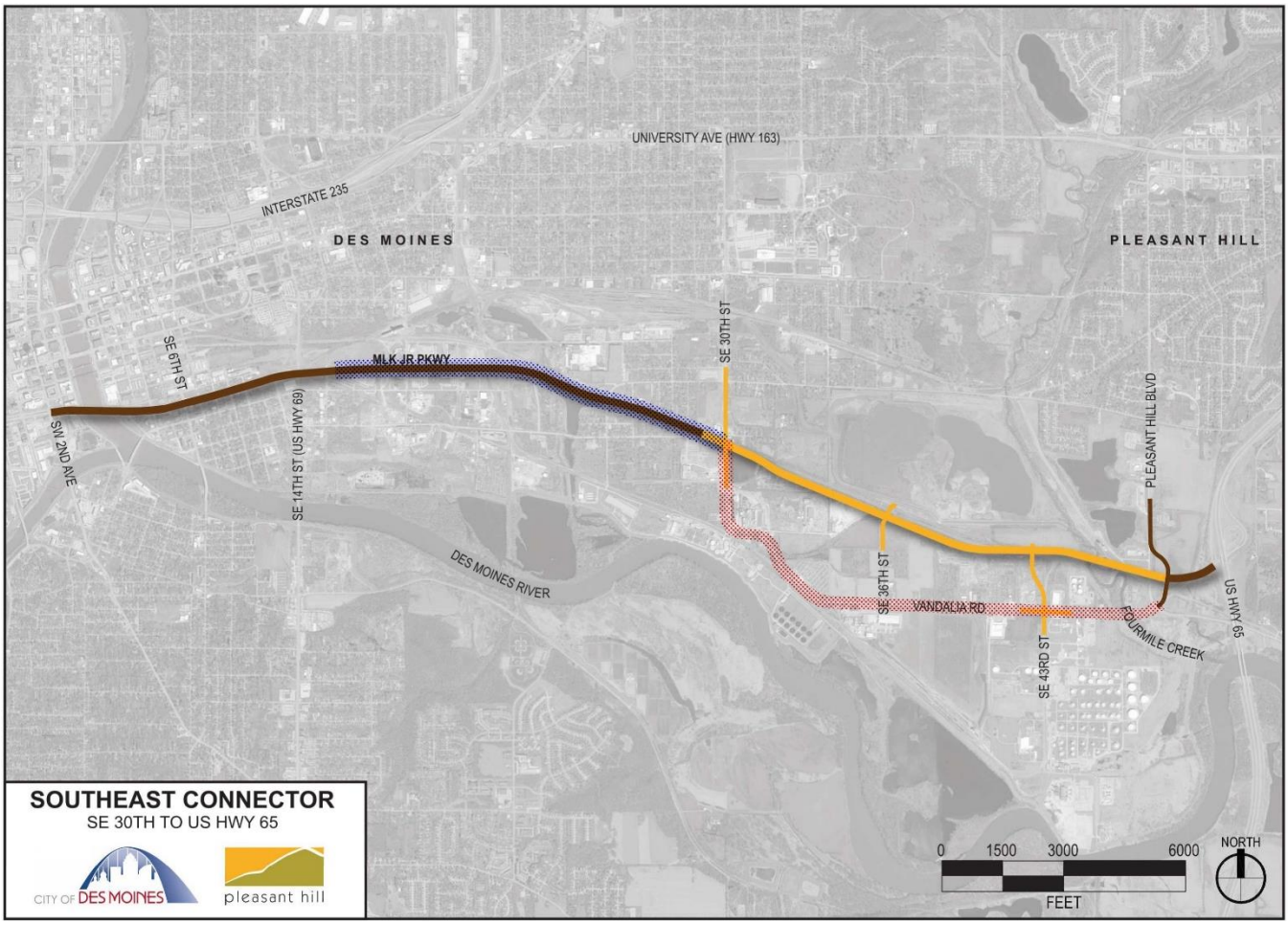
- The 2040 TDMs include projects from the MPO's metropolitan transportation plan (MTP) fiscally constrained project list. The latest MTP, *Mobilizing Tomorrow*, was adopted in 2019 by the MPO.
- The improvements proposed as part of the project are the only difference between the Build and No-Build models for the respective years (2016 and 2040).
- The assumed percentage of truck traffic on the SE Connector is 5.6%, based on the truck percent information taken from the Build 2016 TDM.
- No traffic growth was assumed to occur after the future year modeled (2040), consistent with the Guidance recommendation.
- Travel forecast demands were provided as average annual daily traffic (AADT) from the TDMs.
- Estimated travel times accounted for capacity constraints in addition to posted speed limits and were provided as an average of all time periods (including weekday peak and off-peak, as well as weekends). The travel times for each direction were averaged together unless the roadway link was coded as one-way.
- The TDMs modeled the project improvements, including the SE 30th Street, SE 36th Street, and SE 43rd Street connections. Along with the SE Connector, all links in the Build conditions were modeled as two traveled lanes. The posted speed limit of the SE Connector was assumed to be 40 miles per hour (mph).

Demand Modeling Assumptions for the Safety Analysis

Several routes and links in the TDM area show some level of reduction in traffic due to the project, resulting in less exposure and therefore less crash risk on those routes. A few links, such as portions of SE 30th Street, show a slight increase in traffic in the TDM due to the project. Due to the impracticality of assessing the safety performance of every link in the TDM area, route(s) that experience the greatest traffic impact due to the project that have well-defined origins-destinations were evaluated. Only one route met that criteria—Vandalia Road from its intersection with SE 30th Street and MLK Jr. Parkway to Pleasant Hill Boulevard, a length of approximately 2.56 miles. While only the one route was used to calculate the safety benefit, additional safety benefit is expected based on the crash rates of other routes, the design and the condition of existing east-west alternate routes.

In order to estimate the safety performance of the new SE Connector due to the project, the safety performance of the previously completed portion of the SE Connector (MLK Jr. Parkway from near SE 15th Street to SE 30th Street), a distance of approximately 1.82 miles, was used as a proxy measure. Specifically, the crash history of this route from the opening date (May 20, 2016) through December 31, 2020 was reviewed. This same time period was also reviewed for the Vandalia Road segment. Crash data was obtained from the Iowa Department of Transportation's Iowa Crash Analysis Tool (ICAT), which includes crash data on local routes from local law enforcement agencies. See **Figure 3** for the study area specific for the safety analysis portion of the BCA.

Figure 3. Safety Analysis Study Area



Travel Time Savings

To determine travel time savings, the VHT for every year from 2026 through 2055 for the No-Build and Build conditions was calculated. The calculation is a summation of the VHT for each roadway link, which is calculated by multiplying the travel demand by the travel time provided in the TDM. The VHT for each year between 2026 and 2040 was based on a linear interpolation between the 2016 and 2040 values from the TDMs. The VHT values beyond 2040 were capped at the 2040 values. The difference in the No-Build and Build VHTs for each year was calculated.

The VHT difference was then sub-divided into passenger vehicles and trucks. To calculate the monetary travel time savings, default values for vehicle occupancy and value of time from the Guidance were used with the exception of passenger vehicle occupancy. With Des Moines having participated in the 2017 National Household Travel Survey (NHTS), the local value of

1.72 for passenger vehicle occupancy was used in lieu of the default value of 1.67 provided in the Guidance since the actual local value would provide a higher level of accuracy. The savings for both passenger vehicles and trucks were then discounted at 7%, and then added together. See **Table 1** for VHT calculations, **Table 2** for passenger vehicle calculations, **Table 3** for truck calculations, and **Table 4** for total travel time savings.

Table 1. Change in Annual VHT

Year	Daily VHT No-Build	Daily VHT Build	Annual VHT No-Build[1]	Annual VHT Build[1]	Annual VHT Difference[2]
2005	Project Development and Construction Phases[3]				
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014					
2015					
2016	324,251	324,033	118,675,855	118,596,233	(79,622)
2017	331,032	330,783	120,826,677	120,735,784	(90,893)
2018	337,813	337,533	123,301,751	123,199,369	(102,382)
2019	344,594	344,282	125,776,824	125,662,953	(113,870)
2020	351,375	351,032	128,603,272	128,477,569	(125,702)
2021	358,156	357,781	130,726,970	130,590,122	(136,848)
2022	364,937	364,531	133,202,043	133,053,707	(148,336)
2023	371,718	371,280	135,677,116	135,517,291	(159,825)
2024	378,499	378,030	138,530,689	138,358,906	(171,783)
2025	385,280	384,779	140,627,263	140,444,460	(182,802)
2026	392,061	391,529	143,102,336	142,908,045	(48,573)
2027	398,842	398,278	145,577,409	145,371,630	(205,779)
2028	405,623	405,028	148,458,105	148,240,242	(217,863)
2029	412,404	411,778	150,527,555	150,298,799	(228,757)
2030	419,185	418,527	153,002,628	152,762,383	(240,245)
2031	425,966	425,277	155,477,702	155,225,968	(251,734)
2032	432,747	432,026	158,385,522	158,121,578	(263,944)
2033	439,528	438,776	160,427,848	160,153,137	(274,711)
2034	446,309	445,525	162,902,921	162,616,721	(286,200)
2035	453,090	452,275	165,377,994	165,080,306	(297,689)
2036	459,871	459,024	168,312,939	168,002,915	(310,024)
2037	466,652	465,774	170,328,141	170,007,475	(320,666)
2038	473,433	472,523	172,803,214	172,471,059	(332,154)
2039	480,214	479,273	175,278,287	174,934,644	(343,643)
2040	486,996	486,023	178,240,356	177,884,251	(356,105)
2041	486,996	486,023	177,753,360	177,398,228	(355,132)
2042	486,996	486,023	177,753,360	177,398,228	(355,132)
2043	486,996	486,023	177,753,360	177,398,228	(355,132)
2044	486,996	486,023	178,240,356	177,884,251	(356,105)
2045	486,996	486,023	177,753,360	177,398,228	(355,132)
2046	486,996	486,023	177,753,360	177,398,228	(355,132)
2047	486,996	486,023	177,753,360	177,398,228	(355,132)
2048	486,996	486,023	178,240,356	177,884,251	(356,105)
2049	486,996	486,023	177,753,360	177,398,228	(355,132)
2050	486,996	486,023	177,753,360	177,398,228	(355,132)
2051	486,996	486,023	177,753,360	177,398,228	(355,132)
2052	486,996	486,023	178,240,356	177,884,251	(356,105)
2053	486,996	486,023	177,753,360	177,398,228	(355,132)
2054	486,996	486,023	177,753,360	177,398,228	(355,132)
2055	486,996	486,023	177,753,360	177,398,228	(355,132)

Notes:

[1] Accounts for leap years (2016, 2020, 2024, 2028, etc.).

[2] Project substantial completion anticipated late 2026; therefore, 2026 value adjusted to reflect benefits for last 3 months of year.

[3] Although Project Development and Construction Phases are assumed through 2025, calculations are shown starting in the year 2016 for this table's purpose.

Table 2. Travel Time Savings (Passenger Vehicles)

Year	Annual VHT Difference	Occupancy Annual VHT Difference	Annual Travel Time Savings (Undiscount)[1]	Annual Travel Time Savings (7% Discount)[1,2]
2005	Project Development and Construction Phases			
2006				
2007				
2008				
2009				
2010				
2011				
2012				
2013				
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				
2026	(45,853)	(78,867)	$ 1,411,711	$ 879,143
2027	(194,256)	(334,120)	$ 5,980,748	$ 3,480,850
2028	(205,663)	(353,740)	$ 6,331,953	$ 3,444,163
2029	(215,946)	(371,428)	$ 6,648,557	$ 3,379,789
2030	(226,792)	(390,082)	$ 6,982,461	$ 3,317,317
2031	(237,637)	(408,735)	$ 7,316,365	$ 3,248,554
2032	(249,163)	(428,560)	$ 7,671,229	$ 3,183,287
2033	(259,327)	(446,043)	$ 7,984,174	$ 3,096,400
2034	(270,173)	(464,697)	$ 8,318,078	$ 3,014,854
2035	(281,018)	(483,351)	$ 8,651,983	$ 2,930,726
2036	(292,663)	(503,380)	$ 9,010,506	$ 2,852,495
2037	(302,709)	(520,659)	$ 9,319,791	$ 2,757,390
2038	(313,554)	(539,313)	$ 9,653,695	$ 2,669,327
2039	(324,399)	(557,966)	$ 9,987,600	$ 2,580,986
2040	(336,163)	(578,200)	$ 10,349,782	$ 2,499,608
2041	(335,244)	(576,620)	$ 10,321,504	$ 2,329,699
2042	(335,244)	(576,620)	$ 10,321,504	$ 2,177,289
2043	(335,244)	(576,620)	$ 10,321,504	$ 2,034,850
2044	(336,163)	(578,200)	$ 10,349,782	$ 1,906,939
2045	(335,244)	(576,620)	$ 10,321,504	$ 1,777,316
2046	(335,244)	(576,620)	$ 10,321,504	$ 1,661,043
2047	(335,244)	(576,620)	$ 10,321,504	$ 1,552,377
2048	(336,163)	(578,200)	$ 10,349,782	$ 1,454,795
2049	(335,244)	(576,620)	$ 10,321,504	$ 1,355,906
2050	(335,244)	(576,620)	$ 10,321,504	$ 1,267,202
2051	(335,244)	(576,620)	$ 10,321,504	$ 1,184,301
2052	(336,163)	(578,200)	$ 10,349,782	$ 1,109,856
2053	(335,244)	(576,620)	$ 10,321,504	$ 1,034,414
2054	(335,244)	(576,620)	$ 10,321,504	$ 966,742
2055	(335,244)	(576,620)	$ 10,321,504	$ 903,498

Notes:

[1] Savings shown as positive values.

[2] Base year dollars is 2019 per USDOT BCA Guidance (Feb 2021).

Table 3. Travel Time Savings (Trucks)

Year	Annual VHT Difference	Occupancy Annual VHT Difference	Annual Travel Time Savings (Undiscount)[1]	Annual Travel Time Savings (7% Discount)[1,2]
2005	Project Development and Construction Phases			
2006				
2007				
2008				
2009				
2010				
2011				
2012				
2013				
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				
2026	(2,720)	(2,720)	$ 83,778	$ 52,173
2027	(11,524)	(11,524)	$ 354,928	$ 206,572
2028	(12,200)	(12,200)	$ 375,771	$ 204,394
2029	(12,810)	(12,810)	$ 394,560	$ 200,574
2030	(13,454)	(13,454)	$ 414,375	$ 196,867
2031	(14,097)	(14,097)	$ 434,191	$ 192,786
2032	(14,781)	(14,781)	$ 455,250	$ 188,913
2033	(15,384)	(15,384)	$ 473,822	$ 183,756
2034	(16,027)	(16,027)	$ 493,638	$ 178,917
2035	(16,671)	(16,671)	$ 513,453	$ 173,924
2036	(17,361)	(17,361)	$ 534,730	$ 169,282
2037	(17,957)	(17,957)	$ 553,084	$ 163,638
2038	(18,601)	(18,601)	$ 572,900	$ 158,412
2039	(19,244)	(19,244)	$ 592,716	$ 153,169
2040	(19,942)	(19,942)	$ 614,209	$ 148,340
2041	(19,887)	(19,887)	$ 612,531	$ 138,256
2042	(19,887)	(19,887)	$ 612,531	$ 129,212
2043	(19,887)	(19,887)	$ 612,531	$ 120,758
2044	(19,942)	(19,942)	$ 614,209	$ 113,168
2045	(19,887)	(19,887)	$ 612,531	$ 105,475
2046	(19,887)	(19,887)	$ 612,531	$ 98,575
2047	(19,887)	(19,887)	$ 612,531	$ 92,126
2048	(19,942)	(19,942)	$ 614,209	$ 86,335
2049	(19,887)	(19,887)	$ 612,531	$ 80,466
2050	(19,887)	(19,887)	$ 612,531	$ 75,202
2051	(19,887)	(19,887)	$ 612,531	$ 70,283
2052	(19,942)	(19,942)	$ 614,209	$ 65,865
2053	(19,887)	(19,887)	$ 612,531	$ 61,387
2054	(19,887)	(19,887)	$ 612,531	$ 57,371
2055	(19,887)	(19,887)	$ 612,531	$ 53,618

Notes:

[1] Savings shown as positive values.

[2] Base year dollars is 2019 per USDOT BCA Guidance (Feb 2021).

Table 4. Total Travel Time Savings

Year	Travel Time Savings (7% Discount)
2005	$ -
2006	$ -
2007	$ -
2008	$ -
2009	$ -
2010	$ -
2011	$ -
2012	$ -
2013	$ -
2014	$ -
2015	$ -
2016	$ -
2017	$ -
2018	$ -
2019	$ -
2020	$ -
2021	$ -
2022	$ -
2023	$ -
2024	$ -
2025	$ -
2026	$ 931,315
2027	$ 3,687,421
2028	$ 3,648,557
2029	$ 3,580,363
2030	$ 3,514,184
2031	$ 3,441,340
2032	$ 3,372,200
2033	$ 3,280,157
2034	$ 3,193,771
2035	$ 3,104,650
2036	$ 3,021,777
2037	$ 2,921,028
2038	$ 2,827,739
2039	$ 2,734,155
2040	$ 2,647,947
2041	$ 2,467,956
2042	$ 2,306,501
2043	$ 2,155,608
2044	$ 2,020,106
2045	$ 1,882,792
2046	$ 1,759,618
2047	$ 1,644,503
2048	$ 1,541,130
2049	$ 1,436,373
2050	$ 1,342,404
2051	$ 1,254,584
2052	$ 1,175,720
2053	$ 1,095,802
2054	$ 1,024,114
2055	$ 957,116
TOTAL	**$ 69,970,931**

Vehicle Operating Cost Savings

To calculate vehicle operating cost savings, the annual VMTs for the period of 2026 - 2055 for both the No-Build and Build conditions were calculated. The calculation is a summation of the VMT for each roadway link, which is calculated by multiplying the travel demand by the length of the roadway link provided in the TDM. Similar to the VHTs, the VMTs for the period of 2026 - 2040 were based on a linear interpolation between the 2016 and 2040 values from the TDMs. The VMT values beyond 2040 were capped at the 2040 values. The differences in the No-Build VMT and Build VMT for each year were calculated.

The VMT difference was then sub-divided into passenger vehicles and trucks. To calculate the monetary operating cost savings, default values for passenger vehicle and truck operating costs from the Guidance was used. The savings for both passenger vehicles and trucks were discounted at 7% and then added together. See

Table 5 for VMT calculations, **Table 6** for passenger vehicle calculations, **Table 7** for truck calculations, and **Table 8** for total operating cost savings. Because the net VMT increases, the net total operating cost savings is shown as a negative value.

Table 5. Change in Annual VMT

Year	Daily VMT No-Build	Daily VMT Build	Annual VMT No-Build[1]	Annual VMT Build[1]	Annual VMT Difference[2]
2005	Project Development and Construction Phases[3]				
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014					
2015					
2016	11,206,892	11,204,446	4,101,722,630	4,100,827,324	(895,306)
2017	11,385,973	11,383,683	4,155,880,114	4,155,044,384	(835,730)
2018	11,565,053	11,562,920	4,221,244,491	4,220,465,890	(778,601)
2019	11,744,134	11,742,157	4,286,608,868	4,285,887,397	(721,471)
2020	11,923,214	11,921,394	4,363,896,459	4,363,230,297	(666,162)
2021	12,102,295	12,100,631	4,417,337,622	4,416,730,409	(607,212)
2022	12,281,375	12,279,868	4,482,701,998	4,482,151,915	(550,083)
2023	12,460,456	12,459,105	4,548,066,375	4,547,573,422	(492,954)
2024	12,639,536	12,638,342	4,626,070,288	4,625,633,270	(437,018)
2025	12,818,617	12,817,579	4,678,795,129	4,678,416,434	(378,695)
2026	12,997,697	12,996,816	4,744,159,506	4,743,837,940	(80,391)
2027	13,176,778	13,176,053	4,809,523,882	4,809,259,446	(264,436)
2028	13,355,858	13,355,290	4,888,244,117	4,888,036,243	(207,874)
2029	13,534,939	13,534,527	4,940,252,636	4,940,102,459	(150,177)
2030	13,714,019	13,713,764	5,005,617,013	5,005,523,965	(93,048)
2031	13,893,100	13,893,001	5,070,981,390	5,070,945,471	(35,918)
2032	14,072,180	14,072,238	5,150,417,947	5,150,439,216	21,269
2033	14,251,261	14,251,475	5,201,710,143	5,201,788,484	78,341
2034	14,430,341	14,430,712	5,267,074,520	5,267,209,990	135,470
2035	14,609,422	14,609,949	5,332,438,897	5,332,631,496	192,600
2036	14,788,502	14,789,186	5,412,591,776	5,412,842,189	250,413
2037	14,967,583	14,968,423	5,463,167,650	5,463,474,509	306,858
2038	15,146,663	15,147,660	5,528,532,027	5,528,896,015	363,988
2039	15,325,744	15,326,897	5,593,896,404	5,594,317,521	421,117
2040	15,504,824	15,506,134	5,674,765,605	5,675,245,162	479,557
2041	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2042	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2043	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2044	15,504,824	15,506,134	5,674,765,605	5,675,245,162	479,557
2045	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2046	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2047	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2048	15,504,824	15,506,134	5,674,765,605	5,675,245,162	479,557
2049	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2050	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2051	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2052	15,504,824	15,506,134	5,674,765,605	5,675,245,162	479,557
2053	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2054	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247
2055	15,504,824	15,506,134	5,659,260,781	5,659,739,027	478,247

Notes:

[1] Accounts for leap years (2016, 2020, 2024, 2028, etc.).

[2] Project substantial completion anticipated late 2026; therefore, 2026 value adjusted to reflect benefits for last 3 months of year.

[2] Although Project Development and Construction Phases are assumed through 2025, calculations are shown starting in the year 2016 for this table's purpose.

Table 6. Operating Cost Savings (Passenger Veh.)

Year	Annual VMT Difference	Annual Vehicle Operating Savings (Undiscount)[1]	Annual Vehicle Operating Savings (7% Discount)[1,2]
2005			
2006			
2007			
2008			
2009			
2010			
2011			
2012			
2013			
2014			
2015	Project Development and Construction Phases		
2016			
2017			
2018			
2019			
2020			
2021			
2022			
2023			
2024			
2025			
2026	(75,889)	$ 32,632	$ 20,322
2027	(249,627)	$ 107,340	$ 62,473
2028	(196,233)	$ 84,380	$ 45,897
2029	(141,767)	$ 60,960	$ 30,989
2030	(87,837)	$ 37,770	$ 17,944
2031	(33,907)	$ 14,580	$ 6,474
2032	20,078	$ (8,634)	$ (3,583)
2033	73,954	$ (31,800)	$ (12,333)
2034	127,884	$ (54,990)	$ (19,931)
2035	181,814	$ (78,180)	$ (26,482)
2036	236,390	$ (101,648)	$ (32,179)
2037	289,674	$ (124,560)	$ (36,853)
2038	343,605	$ (147,750)	$ (40,854)
2039	397,535	$ (170,940)	$ (44,174)
2040	452,702	$ (194,662)	$ (47,013)
2041	451,465	$ (194,130)	$ (43,818)
2042	451,465	$ (194,130)	$ (40,951)
2043	451,465	$ (194,130)	$ (38,272)
2044	452,702	$ (194,662)	$ (35,866)
2045	451,465	$ (194,130)	$ (33,428)
2046	451,465	$ (194,130)	$ (31,241)
2047	451,465	$ (194,130)	$ (29,198)
2048	452,702	$ (194,662)	$ (27,362)
2049	451,465	$ (194,130)	$ (25,502)
2050	451,465	$ (194,130)	$ (23,834)
2051	451,465	$ (194,130)	$ (22,275)
2052	452,702	$ (194,662)	$ (20,874)
2053	451,465	$ (194,130)	$ (19,456)
2054	451,465	$ (194,130)	$ (18,183)
2055	451,465	$ (194,130)	$ (16,993)

Notes:

[1] Savings shown as positive values.

[2] Base yr dollars is 2019 per USDOT BCA Guidance (Feb 2021

Table 7. Operating Cost Savings (Trucks)

Year	Annual VMT Difference	Annual Vehicle Operating Savings (Undiscount)[1]	Annual Vehicle Operating Savings (7% Discount)[1,2]
2005			
2006			
2007			
2008			
2009			
2010			
2011			
2012			
2013			
2014			
2015	Project Development and Construction Phases		
2016			
2017			
2018			
2019			
2020			
2021			
2022			
2023			
2024			
2025			
2026	(4,502)	$ 4,187	$ 2,607
2027	(14,808)	$ 13,772	$ 8,015
2028	(11,641)	$ 10,826	$ 5,889
2029	(8,410)	$ 7,821	$ 3,976
2030	(5,211)	$ 4,846	$ 2,302
2031	(2,011)	$ 1,871	$ 831
2032	1,191	$ (1,108)	$ (460)
2033	4,387	$ (4,080)	$ (1,582)
2034	7,586	$ (7,055)	$ (2,557)
2035	10,786	$ (10,031)	$ (3,398)
2036	14,023	$ (13,042)	$ (4,129)
2037	17,184	$ (15,981)	$ (4,728)
2038	20,383	$ (18,956)	$ (5,242)
2039	23,583	$ (21,932)	$ (5,668)
2040	26,855	$ (24,975)	$ (6,032)
2041	26,782	$ (24,907)	$ (5,622)
2042	26,782	$ (24,907)	$ (5,254)
2043	26,782	$ (24,907)	$ (4,910)
2044	26,855	$ (24,975)	$ (4,602)
2045	26,782	$ (24,907)	$ (4,289)
2046	26,782	$ (24,907)	$ (4,008)
2047	26,782	$ (24,907)	$ (3,746)
2048	26,855	$ (24,975)	$ (3,511)
2049	26,782	$ (24,907)	$ (3,272)
2050	26,782	$ (24,907)	$ (3,058)
2051	26,782	$ (24,907)	$ (2,858)
2052	26,855	$ (24,975)	$ (2,678)
2053	26,782	$ (24,907)	$ (2,496)
2054	26,782	$ (24,907)	$ (2,333)
2055	26,782	$ (24,907)	$ (2,180)

Notes:

[1] Savings shown as positive values.

[2] Base yr dollars is 2019 per USDOT BCA Guidance (Feb 2021

Table 8. Total Operating Cost Savings

Year	Vehicle Operating Savings (7% Discount)
2005	$ -
2006	$ -
2007	$ -
2008	$ -
2009	$ -
2010	$ -
2011	$ -
2012	$ -
2013	$ -
2014	$ -
2015	$ -
2016	$ -
2017	$ -
2018	$ -
2019	$ -
2020	$ -
2021	$ -
2022	$ -
2023	$ -
2024	$ -
2025	$ -
2026	$ 22,929
2027	$ 70,488
2028	$ 51,786
2029	$ 34,965
2030	$ 20,246
2031	$ 7,304
2032	$ (4,042)
2033	$ (13,915)
2034	$ (22,488)
2035	$ (29,880)
2036	$ (36,308)
2037	$ (41,581)
2038	$ (46,096)
2039	$ (49,842)
2040	$ (53,045)
2041	$ (49,440)
2042	$ (46,205)
2043	$ (43,182)
2044	$ (40,468)
2045	$ (37,717)
2046	$ (35,250)
2047	$ (32,944)
2048	$ (30,873)
2049	$ (28,774)
2050	$ (26,892)
2051	$ (25,133)
2052	$ (23,553)
2053	$ (21,952)
2054	$ (20,516)
2055	$ (19,174)
TOTAL	**$ (571,549)**

Emissions Savings

The emissions savings were calculated using the VMT difference for each year, based on the methodology from Vehicle Operating Cost Savings. Various conversion factors were then applied to obtain the proper emission units for each of the four emissions (nitrogen oxide, sulfur dioxide, fine particulate matter, and carbon dioxide) for both gasoline and diesel vehicles. It was assumed that all passenger vehicles were gasoline powered, while all trucks were diesel powered. Finally, the savings were calculated for each year using a 7% discount rate for all emission except carbon dioxide, which was discounted at 3% per Guidance.

The parameters and assumptions specific to the emissions analysis is shown in **Table 9**. See **Table 10** for nitrogen oxide savings, **Table 11** for sulfur dioxide savings, **Table 12** for fine particulate matter savings, **Table 13** for carbon dioxide savings, and **Table 14** for total emissions savings. Because the net VMT increases, the net total emissions savings is shown as a negative value.

Table 9. Emissions Analysis Parameters and Assumptions

Parameter	Value	Notes
Assumed gasoline miles per gallon (mpg)	22.3	Based on EPA website referenced in BCA Guidance https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
Assumed diesel miles per gallon (mpg)	6.1	Based on Iowa specific data from Geotab https://www.geotab.com/truck-mpg-benchmark/
NOx emission rate, gasoline (grams per mile)	0.289	Based on light-duty vehicles (2018) from BTS https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and
NOx emission rate, diesel (grams per mile)	5.971	Based on heavy-duty vehicles (2018) from BTS https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and
SO2 ppm per gallon, gasoline (tier 3)	10	Based on EPA requirement https://www.transportpolicy.net/standard/us-fuels-diesel-and-gasoline/
SO2 ppm per gallon, diesel	15	Based on EPA requirement https://www.transportpolicy.net/standard/us-fuels-diesel-and-gasoline/
PM 2.5 emission rate, gasoline (grams per mile)	0.013	Based on avg. light-duty vehicles/trucks (exhaust+breakwear+tirewear) (2018) from BTS https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and
PM 2.5 emission rate, diesel (grams per mile)	0.230	Based on heavy-duty vehicles/trucks (exhaust+breakwear+tirewear) (2018) from BTS https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and
CO2 emission rate, gasoline (grams per gal)	8,887	Based on EPA website referenced in BCA Guidance https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
CO2 emission rate, diesel (grams per gal)	10,180	Based on EPA website referenced in BCA Guidance https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
Conversion rate SO2 parts per million (ppm) to metric tons per gal	9.91777 E-12	Based on SO2 molecular weight https://www.teesing.com/en/page/library/tools/ppm-mg3-converter
Conversion rate grams to metric tons	1.00000 E-06	

Table 10. Nitrogen Oxide Savings

Year	Value per Metric Ton[1]	NOx Diff. - Gasoline (Metric Tons)	NOx Difference - Diesel (Metric Tons)	Savings (Undiscounted)[2]	Savings (7% Discount)[2,3]
2005					
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014					
2015	Project Development and Construction Phases				
2016					
2017					
2018					
2019					
2020					
2021					
2022					
2023					
2024					
2025					
2026	$17,000	-0.022	-0.027	$829.82	$ 517
2027	$17,300	-0.072	-0.088	$2,777.75	$ 1,617
2028	$17,500	-0.057	-0.070	$2,208.84	$ 1,201
2029	$17,700	-0.041	-0.050	$1,614.00	$ 820
2030	$18,000	-0.025	-0.031	$1,016.96	$ 483
2031	$18,000	-0.010	-0.012	$392.57	$ 174
2032	$18,000	0.006	0.007	($232.46)	$ (96)
2033	$18,000	0.021	0.026	($856.22)	$ (332)
2034	$18,000	0.037	0.045	($1,480.62)	$ (537)
2035	$18,000	0.053	0.064	($2,105.01)	$ (713)
2036	$18,000	0.068	0.084	($2,736.88)	$ (866)
2037	$18,000	0.084	0.103	($3,353.80)	$ (992)
2038	$18,000	0.099	0.122	($3,978.19)	$ (1,100)
2039	$18,000	0.115	0.141	($4,602.58)	$ (1,189)
2040	$18,000	0.131	0.160	($5,241.30)	$ (1,266)
2041	$18,000	0.130	0.160	($5,226.98)	$ (1,180)
2042	$18,000	0.130	0.160	($5,226.98)	$ (1,103)
2043	$18,000	0.130	0.160	($5,226.98)	$ (1,030)
2044	$18,000	0.131	0.160	($5,241.30)	$ (966)
2045	$18,000	0.130	0.160	($5,226.98)	$ (900)
2046	$18,000	0.130	0.160	($5,226.98)	$ (841)
2047	$18,000	0.130	0.160	($5,226.98)	$ (786)
2048	$18,000	0.131	0.160	($5,241.30)	$ (737)
2049	$18,000	0.130	0.160	($5,226.98)	$ (687)
2050	$18,000	0.130	0.160	($5,226.98)	$ (642)
2051	$18,000	0.130	0.160	($5,226.98)	$ (600)
2052	$18,000	0.131	0.160	($5,241.30)	$ (562)
2053	$18,000	0.130	0.160	($5,226.98)	$ (524)
2054	$18,000	0.130	0.160	($5,226.98)	$ (490)
2055	$18,000	0.130	0.160	($5,226.98)	$ (458)

Notes:

[1] Based on USDOT BCA Guidance for Discretionary Grant Programs (Feb 2021) Table A-6. Note Table A-6 does not go beyond 2050; therefore, 2050 values are assumed constant through 2055.

[2] Values are negative since VMT increases.

[3] Base year dollars is 2019 per USDOT BCA Guidance (Feb 2021).

Table 11. Sulfur Dioxide Savings

Year	Value per Metric Ton[1]	SO2 Diff. - Gasoline (Metric Tons)	SO2 Difference - Diesel (Metric Tons)	Savings (Undiscounted)[2]	Savings (7% Discount)[2,3]
2005					
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014					
2015	Project Development and Construction Phases				
2016					
2017					
2018					
2019					
2020					
2021					
2022					
2023					
2024					
2025					
2026	$45,500	0.000	0.000	$10.77	$ 7
2027	$46,200	-0.001	0.000	$35.97	$ 21
2028	$46,900	0.000	0.000	$28.71	$ 16
2029	$47,600	0.000	0.000	$21.05	$ 11
2030	$48,200	0.000	0.000	$13.21	$ 6
2031	$48,200	0.000	0.000	$5.10	$ 2
2032	$48,200	0.000	0.000	($3.02)	$ (1)
2033	$48,200	0.000	0.000	($11.12)	$ (4)
2034	$48,200	0.000	0.000	($19.23)	$ (7)
2035	$48,200	0.000	0.000	($27.33)	$ (9)
2036	$48,200	0.001	0.000	($35.54)	$ (11)
2037	$48,200	0.001	0.000	($43.55)	$ (13)
2038	$48,200	0.001	0.000	($51.66)	$ (14)
2039	$48,200	0.001	0.000	($59.77)	$ (15)
2040	$48,200	0.001	0.000	($68.06)	$ (16)
2041	$48,200	0.001	0.000	($67.87)	$ (15)
2042	$48,200	0.001	0.000	($67.87)	$ (14)
2043	$48,200	0.001	0.000	($67.87)	$ (13)
2044	$48,200	0.001	0.000	($68.06)	$ (13)
2045	$48,200	0.001	0.000	($67.87)	$ (12)
2046	$48,200	0.001	0.000	($67.87)	$ (11)
2047	$48,200	0.001	0.000	($67.87)	$ (10)
2048	$48,200	0.001	0.000	($68.06)	$ (10)
2049	$48,200	0.001	0.000	($67.87)	$ (9)
2050	$48,200	0.001	0.000	($67.87)	$ (8)
2051	$48,200	0.001	0.000	($67.87)	$ (8)
2052	$48,200	0.001	0.000	($68.06)	$ (7)
2053	$48,200	0.001	0.000	($67.87)	$ (7)
2054	$48,200	0.001	0.000	($67.87)	$ (6)
2055	$48,200	0.001	0.000	($67.87)	$ (6)

Notes:

[1] Based on USDOT BCA Guidance for Discretionary Grant Programs (Feb 2021) Table A-6. Note Table A-6 does not go beyond 2050; therefore, 2050 values are assumed constant through 2055.

[2] Values are negative since VMT increases.

[3] Base year dollars is 2019 per USDOT BCA Guidance (Feb 2021).

Table 12. Fine Particulate Matter Savings

Year	Value per Metric Ton[1]	PM 2.5 Diff. - Gasoline (Metric Tons)	PM 2.5 Difference - Diesel (Metric Tons)	Savings (Undiscounted)[2]	Savings (7% Discount)[2,3]
2005					
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014					
2015	Project Development and Construction Phases				
2016					
2017					
2018					
2019					
2020					
2021					
2022					
2023					
2024					
2025					
2026	$807,500	-0.001	-0.001	$1,632.77	$ 1,017
2027	$818,600	-0.003	-0.003	$5,444.58	$ 3,169
2028	$829,800	-0.003	-0.003	$4,338.57	$ 2,360
2029	$841,200	-0.002	-0.002	$3,177.42	$ 1,615
2030	$852,700	-0.001	-0.001	$1,995.60	$ 948
2031	$852,700	0.000	0.000	$770.34	$ 342
2032	$852,700	0.000	0.000	($456.17)	$ (189)
2033	$852,700	0.001	0.001	($1,680.18)	$ (652)
2034	$852,700	0.002	0.002	($2,905.44)	$ (1,053)
2035	$852,700	0.002	0.002	($4,130.70)	$ (1,399)
2036	$852,700	0.003	0.003	($5,370.64)	$ (1,700)
2037	$852,700	0.004	0.004	($6,581.23)	$ (1,947)
2038	$852,700	0.004	0.005	($7,806.49)	$ (2,159)
2039	$852,700	0.005	0.005	($9,031.75)	$ (2,334)
2040	$852,700	0.006	0.006	($10,285.11)	$ (2,484)
2041	$852,700	0.006	0.006	($10,257.01)	$ (2,315)
2042	$852,700	0.006	0.006	($10,257.01)	$ (2,164)
2043	$852,700	0.006	0.006	($10,257.01)	$ (2,022)
2044	$852,700	0.006	0.006	($10,285.11)	$ (1,895)
2045	$852,700	0.006	0.006	($10,257.01)	$ (1,766)
2046	$852,700	0.006	0.006	($10,257.01)	$ (1,651)
2047	$852,700	0.006	0.006	($10,257.01)	$ (1,543)
2048	$852,700	0.006	0.006	($10,285.11)	$ (1,446)
2049	$852,700	0.006	0.006	($10,257.01)	$ (1,347)
2050	$852,700	0.006	0.006	($10,257.01)	$ (1,259)
2051	$852,700	0.006	0.006	($10,257.01)	$ (1,177)
2052	$852,700	0.006	0.006	($10,285.11)	$ (1,103)
2053	$852,700	0.006	0.006	($10,257.01)	$ (1,028)
2054	$852,700	0.006	0.006	($10,257.01)	$ (961)
2055	$852,700	0.006	0.006	($10,257.01)	$ (898)

Notes:

[1] Based on USDOT BCA Guidance for Discretionary Grant Programs (Feb 2021) Table A-6. Note Table A-6 does not go beyond 2050; therefore, 2050 values are assumed constant through 2055.

[2] Values are negative since VMT increases.

[3] Base year dollars is 2019 per USDOT BCA Guidance (Feb 2021).

Table 13. Carbon Dioxide Savings

Year	Value per Metric Ton[1]	CO2 Diff. - Gasoline (Metric Tons)	CO2 Difference - Diesel (Metric Tons)	Savings (Undiscounted)[2]	Savings (3% Discount)[2,3]
2005					
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014					
2015	Project Development and Construction Phases				
2016					
2017					
2018					
2019					
2020					
2021					
2022					
2023					
2024					
2025					
2026	$57	-30.243	-7.513	$2,152.12	$ 1,750
2027	$58	-99.482	-24.713	$7,203.29	$ 5,686
2028	$59	-78.203	-19.427	$5,760.17	$ 4,415
2029	$60	-56.497	-14.035	$4,231.92	$ 3,149
2030	$61	-35.005	-8.696	$2,665.74	$ 1,926
2031	$62	-13.513	-3.357	$1,045.89	$ 734
2032	$63	8.002	1.988	($629.33)	$ (429)
2033	$64	29.472	7.321	($2,354.78)	$ (1,557)
2034	$66	50.964	12.660	($4,199.23)	$ (2,695)
2035	$67	72.457	18.000	($6,060.56)	$ (3,777)
2036	$68	94.206	23.403	($7,997.40)	$ (4,839)
2037	$69	115.441	28.678	($9,944.20)	$ (5,841)
2038	$70	136.933	34.017	($11,966.51)	$ (6,824)
2039	$71	158.426	39.356	($14,042.48)	$ (7,775)
2040	$72	180.411	44.817	($16,216.43)	$ (8,717)
2041	$73	179.918	44.695	($16,396.73)	$ (8,557)
2042	$75	179.918	44.695	($16,845.96)	$ (8,536)
2043	$76	179.918	44.695	($17,070.57)	$ (8,398)
2044	$77	180.411	44.817	($17,342.57)	$ (8,283)
2045	$78	179.918	44.695	($17,519.80)	$ (8,124)
2046	$79	179.918	44.695	($17,744.41)	$ (7,988)
2047	$80	179.918	44.695	($17,969.02)	$ (7,854)
2048	$81	180.411	44.817	($18,243.48)	$ (7,742)
2049	$83	179.918	44.695	($18,642.86)	$ (7,681)
2050	$84	179.918	44.695	($18,867.48)	$ (7,547)
2051	$84	179.918	44.695	($18,867.48)	$ (7,327)
2052	$84	180.411	44.817	($18,919.17)	$ (7,133)
2053	$84	179.918	44.695	($18,867.48)	$ (6,906)
2054	$84	179.918	44.695	($18,867.48)	$ (6,705)
2055	$84	179.918	44.695	($18,867.48)	$ (6,510)

Notes:

[1] Based on USDOT BCA Guidance for Discretionary Grant Programs (Feb 2021) Table A-6. Note Table A-6 does not go beyond 2050; therefore, 2050 values are assumed constant through 2055.

[2] Values are negative since VMT increases.

[3] Base yr dollars is 2019 per USDOT BCA Guidance (Feb 2021). Note 3% discount rate per Guida

Table 14. Total Emissions Savings

Year	Emissions Savings (7% Discount for NOx, SO2, PM 2.5; 3% Discount for CO2)
2005	$ -
2006	$ -
2007	$ -
2008	$ -
2009	$ -
2010	$ -
2011	$ -
2012	$ -
2013	$ -
2014	$ -
2015	$ -
2016	$ -
2017	$ -
2018	$ -
2019	$ -
2020	$ -
2021	$ -
2022	$ -
2023	$ -
2024	$ -
2025	$ -
2026	$ 3,290
2027	$ 10,493
2028	$ 7,992
2029	$ 5,595
2030	$ 3,363
2031	$ 1,252
2032	$ (716)
2033	$ (2,545)
2034	$ (4,292)
2035	$ (5,898)
2036	$ (7,416)
2037	$ (8,793)
2038	$ (10,097)
2039	$ (11,314)
2040	$ (12,483)
2041	$ (12,068)
2042	$ (11,816)
2043	$ (11,464)
2044	$ (11,156)
2045	$ (10,802)
2046	$ (10,491)
2047	$ (10,193)
2048	$ (9,934)
2049	$ (9,724)
2050	$ (9,456)
2051	$ (9,111)
2052	$ (8,805)
2053	$ (8,465)
2054	$ (8,162)
2055	$ (7,871)
TOTAL	**$ (181,087)**

Safety Benefits

As stated earlier, a refined area was considered for the safety benefits analysis. The safety performance of Vandalia Road from its intersection with SE 30th Street and MLK Jr. Parkway to US Highway 65, a length of approximately 2.56 miles, was evaluated. In order to estimate the safety performance of the new SE Connector due to the project, the safety performance of the previously completed portion of the SE Connector (MLK Jr. Parkway from near SE 15th Street to SE 30th Street), a distance of approximately 1.82 miles, was used as a proxy measure. Specifically, the crash history of this route from the opening date (May 20, 2016) through December 31, 2020 was reviewed. This same time period was also reviewed for the Vandalia Road segment. Crash data was obtained from the Iowa Department of Transportation's Iowa Crash Analysis Tool (ICAT), which includes crash data on local routes from local law enforcement agencies. See **Figure 3** for the study segments for the safety analysis. As shown in **Table 15**, the calculated crash rates for all severity levels within the study time period are lower on the SE Connector than on Vandalia Road.

Table 15. Crash Rates by Severity

Segment	Fatal (K)	Incapacitating Injury (A)	Non-Incapacitating Injury (B)	Possibly Injury (C)	No Injury (O)
Vandalia Rd	0.034	0.067	0.067	0.067	0.773
SE Connector (Existing 2-lane portion), aka MLK Jr Pkwy	0.000	0.029	0.059	0.117	0.206

Crashes per million VMT per year, based on crash history from 5/20/2016 thru 12/31/2020.

To calculate the safety benefits of the anticipated VMT reduction on Vandalia Road, an approach similar to the Vehicle Operating Cost Savings was utilized. The VMTs for the period of 2026 - 2055 for the No-Build and Build conditions were calculated for Vandalia Road. The VMTs for the period of 2026 - 2040 was based on a linear interpolation between the 2016 and 2040 values from the TDMs. The VMT values beyond 2040 were capped at the 2040 values. The differences in the No-Build and Build VMTs for each year were then calculated. This VMT difference was then multiplied by the Vandalia Road crash rate for each severity from **Table 15** and the monetary value for a crash in each severity category, then divided by 1,000,000. These calculated values were then summed for each year using a 7% discount rate. Default monetary values of fatalities and injuries provided in the Guidance were used for the calculations and are shown in **Table 16**.

Table 16. Safety Analysis Parameters and Assumptions

Parameter	Value	Notes
Fatal (K)	$10,900,000	Based on USDOT BCA Guidance for Discretionary Grant Programs (Feb 2021) Table A-1, in base year (2019) dollars.
Incapacitating Injury (A)	$ 521,300	
Non-Incapacitating Injury (B)	$ 142,000	
Possible Injury (C)	$ 72,500	
No Injury (O)	$ 3,700	
Average annual daily traffic diverted from Vandalia to SE Connector	5,065	Based on TDM Model Output (see Safety Assumptions tab in the BCA spreadsheet).
Length of Vandalia Study Area (mi)	2.56	
Length of SE Connector Project Study Area (mi)	2.17	

Next, the anticipated safety performance of the new SE Connector project was calculated. As previously discussed, because the project will essentially be identical to the portion immediately to the west that was opened in 2016, the safety performance of that existing portion was used to estimate the safety performance of the project area. First, the AADT diverted from Vandalia Road to the SE Connector in the project area was estimated for each year. Then, for each severity category the AADT was multiplied by the length of the project area, the crash rate and monetary value for the severity category, the number of days in the year, and then divided by 1,000,000. These calculated values were then summed for each year using a 7% discount rate.

Finally, the sum of the Vandalia safety benefits and the SE Connector project area safety benefits (or more accurately, disbenefits) for each year was made, then summed. See **Table 17** for VMT and AADT changes for Vandalia Road, **Table 18** for Vandalia Road safety benefits, **Table 19** for SE Connector project area safety benefits (or disbenefits), and **Table 20** for total safety benefits.

Table 17. Changes in VMT & AADT for Vandalia

Year	Daily VMT No-Build	Daily VMT Build	Daily VMT Difference	AADT Diverted from Vandalia	Annual VMT No-Build[1]	Annual VMT Build[1]	Annual VMT Difference[2]
2005	Project Development and Construction Phases[3]						
2006							
2007							
2008							
2009							
2010							
2011							
2012							
2013							
2014							
2015							
2016	17,660	4,693	(12,967)	5,065	6,463,566	1,717,782	(4,745,784)
2017	18,253	5,318	(12,936)	5,053	6,662,473	1,940,912	(4,721,561)
2018	18,847	5,942	(12,905)	5,041	6,879,039	2,168,735	(4,710,304)
2019	19,440	6,566	(12,874)	5,029	7,095,606	2,396,558	(4,699,048)
2020	20,033	7,190	(12,843)	5,017	7,332,206	2,631,572	(4,700,634)
2021	20,627	7,814	(12,812)	5,005	7,528,739	2,852,205	(4,676,534)
2022	21,220	8,438	(12,782)	4,993	7,745,306	3,080,028	(4,665,278)
2023	21,813	9,063	(12,751)	4,981	7,961,872	3,307,851	(4,654,021)
2024	22,407	9,687	(12,720)	4,969	8,200,846	3,545,361	(4,655,485)
2025	23,000	10,311	(12,689)	4,957	8,395,005	3,763,497	(4,631,508)
2026	23,593	10,935	(12,658)	4,945	8,611,572	3,991,320	(1,155,063)
2027	24,187	11,559	(12,627)	4,933	8,828,139	4,219,143	(4,608,995)
2028	24,780	12,183	(12,597)	4,921	9,069,485	4,459,150	(4,610,335)
2029	25,373	12,808	(12,566)	4,908	9,261,272	4,674,790	(4,586,482)
2030	25,967	13,432	(12,535)	4,896	9,477,839	4,902,613	(4,575,226)
2031	26,560	14,056	(12,504)	4,884	9,694,405	5,130,436	(4,563,969)
2032	27,153	14,680	(12,473)	4,872	9,938,125	5,372,939	(4,565,186)
2033	27,747	15,304	(12,442)	4,860	10,127,538	5,586,082	(4,541,456)
2034	28,340	15,929	(12,412)	4,848	10,344,105	5,813,905	(4,530,200)
2035	28,933	16,553	(12,381)	4,836	10,560,672	6,041,728	(4,518,943)
2036	29,527	17,177	(12,350)	4,824	10,806,765	6,286,728	(4,520,036)
2037	30,120	17,801	(12,319)	4,812	10,993,805	6,497,375	(4,496,430)
2038	30,713	18,425	(12,288)	4,800	11,210,371	6,725,198	(4,485,174)
2039	31,307	19,049	(12,257)	4,788	11,426,938	6,953,021	(4,473,917)
2040	31,900	19,674	(12,226)	4,776	11,675,405	7,200,518	(4,474,887)
2041	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2042	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2043	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2044	31,900	19,674	(12,226)	4,776	11,675,405	7,200,518	(4,474,887)
2045	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2046	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2047	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2048	31,900	19,674	(12,226)	4,776	11,675,405	7,200,518	(4,474,887)
2049	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2050	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2051	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2052	31,900	19,674	(12,226)	4,776	11,675,405	7,200,518	(4,474,887)
2053	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2054	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)
2055	31,900	19,674	(12,226)	4,776	11,643,505	7,180,844	(4,462,661)

Notes:

[1] Accounts for leap years (2016, 2020, 2024, 2028, etc.).

[2] Project substantial completion anticipated late 2026; therefore, 2026 value adjusted to reflect benefits for last 3

[3] Although Project Development and Construction Phases are assumed through 2025, calculations are shown starting in the year 2016 for this table's purpose.

Table 18. Safety Benefits – Vandalia

Year	K	A	B	C	O	Safety Savings (7% Discount)[1,2]
2005	Project Development and Construction Phases					
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014						
2015						
2016						
2017						
2018						
2019						
2020						
2021						
2022						
2023						
2024						
2025						
2026	$ (423,047)	$ (40,465)	$ (11,023)	$ (5,628)	$ (3,303)	$ 301,078
2027	$ (1,688,064)	$(161,466)	$ (43,983)	$ (22,456)	$ (13,179)	$ 1,122,781
2028	$ (1,688,555)	$(161,513)	$ (43,995)	$ (22,462)	$ (13,183)	$ 1,049,634
2029	$ (1,679,819)	$(160,677)	$ (43,768)	$ (22,346)	$ (13,115)	$ 975,891
2030	$ (1,675,696)	$(160,283)	$ (43,660)	$ (22,291)	$ (13,083)	$ 909,809
2031	$ (1,671,573)	$(159,888)	$ (43,553)	$ (22,237)	$ (13,051)	$ 848,197
2032	$ (1,672,019)	$(159,931)	$ (43,565)	$ (22,242)	$ (13,054)	$ 792,918
2033	$ (1,663,328)	$(159,100)	$ (43,338)	$ (22,127)	$ (12,986)	$ 737,193
2034	$ (1,659,205)	$(158,705)	$ (43,231)	$ (22,072)	$ (12,954)	$ 687,258
2035	$ (1,655,082)	$(158,311)	$ (43,123)	$ (22,017)	$ (12,922)	$ 640,701
2036	$ (1,655,483)	$(158,349)	$ (43,134)	$ (22,022)	$ (12,925)	$ 598,931
2037	$ (1,646,837)	$(157,522)	$ (42,908)	$ (21,907)	$ (12,857)	$ 556,825
2038	$ (1,642,714)	$(157,128)	$ (42,801)	$ (21,853)	$ (12,825)	$ 519,095
2039	$ (1,638,591)	$(156,733)	$ (42,694)	$ (21,798)	$ (12,793)	$ 483,918
2040	$ (1,638,946)	$(156,767)	$ (42,703)	$ (21,802)	$ (12,796)	$ 452,358
2041	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 421,609
2042	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 394,027
2043	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 368,250
2044	$ (1,638,946)	$(156,767)	$ (42,703)	$ (21,802)	$ (12,796)	$ 345,101
2045	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 321,644
2046	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 300,601
2047	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 280,936
2048	$ (1,638,946)	$(156,767)	$ (42,703)	$ (21,802)	$ (12,796)	$ 263,276
2049	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 245,380
2050	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 229,327
2051	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 214,325
2052	$ (1,638,946)	$(156,767)	$ (42,703)	$ (21,802)	$ (12,796)	$ 200,852
2053	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 187,199
2054	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 174,953
2055	$ (1,634,468)	$(156,339)	$ (42,586)	$ (21,743)	$ (12,761)	$ 163,507

Notes:

[1] Savings shown as positive values.

[2] Base year dollars is 2019 per USDOT BCA Guidance (Feb 2021).

Table 19. Safety Benefits – SE Connector

Year	K[1]	A[1]	B[1]	C[1]	O[1]	Safety Savings (7% Discount)[2,3]
2005	Project Development and Construction Phases					
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014						
2015						
2016						
2017						
2018						
2019						
2020						
2021						
2022						
2023						
2024						
2025						
2026	$ -	$ 59,968	$ 32,670	$ 33,360	$ 2,979	$ (80,321)
2027	$ -	$ 59,822	$ 32,590	$ 33,279	$ 2,972	$ (74,883)
2028	$ -	$ 59,839	$ 32,600	$ 33,289	$ 2,973	$ (70,005)
2029	$ -	$ 59,530	$ 32,431	$ 33,116	$ 2,958	$ (65,086)
2030	$ -	$ 59,384	$ 32,352	$ 33,035	$ 2,950	$ (60,679)
2031	$ -	$ 59,237	$ 32,272	$ 32,954	$ 2,943	$ (56,570)
2032	$ -	$ 59,253	$ 32,281	$ 32,963	$ 2,944	$ (52,883)
2033	$ -	$ 58,945	$ 32,113	$ 32,791	$ 2,929	$ (49,167)
2034	$ -	$ 58,799	$ 32,033	$ 32,710	$ 2,921	$ (45,836)
2035	$ -	$ 58,653	$ 31,954	$ 32,629	$ 2,914	$ (42,731)
2036	$ -	$ 58,667	$ 31,961	$ 32,637	$ 2,915	$ (39,945)
2037	$ -	$ 58,361	$ 31,795	$ 32,466	$ 2,900	$ (37,137)
2038	$ -	$ 58,215	$ 31,715	$ 32,385	$ 2,892	$ (34,621)
2039	$ -	$ 58,069	$ 31,635	$ 32,304	$ 2,885	$ (32,275)
2040	$ -	$ 58,081	$ 31,642	$ 32,311	$ 2,886	$ (30,170)
2041	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (28,119)
2042	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (26,279)
2043	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (24,560)
2044	$ -	$ 58,081	$ 31,642	$ 32,311	$ 2,886	$ (23,016)
2045	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (21,452)
2046	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (20,048)
2047	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (18,737)
2048	$ -	$ 58,081	$ 31,642	$ 32,311	$ 2,886	$ (17,559)
2049	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (16,366)
2050	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (15,295)
2051	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (14,294)
2052	$ -	$ 58,081	$ 31,642	$ 32,311	$ 2,886	$ (13,396)
2053	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (12,485)
2054	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (11,668)
2055	$ -	$ 57,923	$ 31,556	$ 32,222	$ 2,878	$ (10,905)

Notes:

[1] Safety performance based on existing 2-lane portion of SE Connector (MLK Jr Pkwy).

[2] Savings shown as negative values due to additional traffic from Vandalia.

[3] Base year dollars is 2019 per USDOT BCA Guidance (Feb 2021).

Table 20. Total Safety Benefits

Year	Safety Savings (7% Discount)
2005	$ -
2006	$ -
2007	$ -
2008	$ -
2009	$ -
2010	$ -
2011	$ -
2012	$ -
2013	$ -
2014	$ -
2015	$ -
2016	$ -
2017	$ -
2018	$ -
2019	$ -
2020	$ -
2021	$ -
2022	$ -
2023	$ -
2024	$ -
2025	$ -
2026	$ 220,757
2027	$ 1,047,898
2028	$ 979,629
2029	$ 910,804
2030	$ 849,130
2031	$ 791,627
2032	$ 740,035
2033	$ 688,027
2034	$ 641,422
2035	$ 597,970
2036	$ 558,986
2037	$ 519,688
2038	$ 484,474
2039	$ 451,643
2040	$ 422,188
2041	$ 393,490
2042	$ 367,748
2043	$ 343,689
2044	$ 322,085
2045	$ 300,192
2046	$ 280,553
2047	$ 262,199
2048	$ 245,717
2049	$ 229,015
2050	$ 214,033
2051	$ 200,030
2052	$ 187,456
2053	$ 174,714
2054	$ 163,284
2055	$ 152,602
TOTAL	**$ 13,741,085**

Operations & Maintenance

The additional operations and maintenance (O&M) costs due to the project were included in the BCA. Consistent with the Guidance, this cost was included in the numerator along with other benefits. The O&M estimated costs were based on the City of Des Moines' historical costs for similar facilities. Routine O&M costs were estimated on an average annual basis for both the roadway/pavement, which includes activities such as mowing, plowing, and sweeping, and for bridge structures, which includes activities such as joint repair and sealing. More intensive regular rehabilitation activities for both the roadway/pavement and bridge structures were also included with assumed intervals. O&M costs for each year were then calculated using a 7% discount rate, then summed. See **Table 21** for O&M assumptions and **Table 22** for total O&M costs.

Table 21. O&M Assumptions

Parameter	Value	Notes
Pavement - Avg. Annual Cost for Routine O&M (per lane-mile)	$ 5,380	Cost includes mowing, plowing, sweeping, re-striping, etc., based on city historical spending
Pavement - Cost for Routine Maintenance (per lane-mile)	$ 21,138	Cost includes grinding, joint repair, pavement repair, etc., based on city historical spending
Pavement - Routine Maintenance Activity Interval (years)	6	
Bridge - Avg. Annual Cost for Routine Maintenance (per sf)	$ 0.11	Cost based on city historical spending
Bridge - Cost for Deck Rehabilitation (per sf)	$ 10	Cost includes maintenance activities such as joint repair and deck overlay, based on city historical spending
Bridge - Deck Rehabilitation Activity Interval (years)	25	
Length of New SE Connector (mi)	2.17	
Number of Equivalent Lanes - SE Connector (pavement width=33 ft)	3	
Length of Improvement to SE 30th St - N (mi)	0.34	North of SE Connector
Number of Additional Lanes - SE 30th St - N	1	Widening from 2 lanes to 3 lanes north of SE Connector
Length of Improvement to SE 30th St - S (mi)	0.18	South of SE Connector
Number of Additional Lanes - SE 30th St - S	1	Widening from 2 lanes to 3 lanes south of SE Connector
Length of New Extension of SE 36th St (mi)	0.19	
Number of Lanes - SE 36th St	2	
Length of New Extension of SE 43rd St (mi)	0.29	
Number of Lanes - SE 43rd St	3	
Length of Additional Lanes - SE 43rd St - Vandalia Intersection Improvement (mi)	0.2	Includes Improvements to the intersection with Vandalia Rd (turn lanes + half of taper length)
Number of Additional Lanes - SE 43rd St - Vandalia Intersection Improvement	1	Includes Improvements to the intersection with Vandalia Rd (turn lanes + half of taper length)
Bridge Deck Area (sf)	79,295	New bridge west of Pleasant Hill Blvd
Annual Pavement Cost	**$ 45,622**	**in base year 2019 dollars**
Annual Bridge Cost	**$ 8,722**	**in base year 2019 dollars**
Pavement Routine Maintenance Cost	**$ 179,250**	**in base year 2019 dollars**
Bridge Routine Maintenance Cost	**$ 792,950**	**in base year 2019 dollars**

Table 22. O&M Costs

Year	O&M Costs (7% Discount)
2005	$ -
2006	$ -
2007	$ -
2008	$ -
2009	$ -
2010	$ -
2011	$ -
2012	$ -
2013	$ -
2014	$ -
2015	$ -
2016	$ -
2017	$ -
2018	$ -
2019	$ -
2020	$ -
2021	$ -
2022	$ -
2023	$ -
2024	$ -
2025	$ -
2026	$ (33,843)
2027	$ (31,629)
2028	$ (29,560)
2029	$ (27,626)
2030	$ (25,819)
2031	$ (24,130)
2032	$ (96,934)
2033	$ (21,076)
2034	$ (19,697)
2035	$ (18,408)
2036	$ (17,204)
2037	$ (16,079)
2038	$ (64,591)
2039	$ (14,044)
2040	$ (13,125)
2041	$ (12,266)
2042	$ (11,464)
2043	$ (10,714)
2044	$ (43,040)
2045	$ (9,358)
2046	$ (8,746)
2047	$ (8,174)
2048	$ (7,639)
2049	$ (7,139)
2050	$ (28,679)
2051	$ (97,220)
2052	$ (5,828)
2053	$ (5,446)
2054	$ (5,090)
2055	$ (4,757)
TOTAL	**$ (719,324)**

Residual Value

Because many transportation assets are designed for long-term use and, therefore, have an expected life that exceeds the analysis period, the residual value (a.k.a. salvage value or remaining service life) may be quantified and included in the BCA. The residual value of the project was estimated based on the cost estimates of the project components and useful life assumptions, using a 7% discount rate. See **Table 23** for assumed remaining residual value factors from the neighboring state of Minnesota, which is considered more relevant for this project. See also **Table 24** for parameters and assumptions, and **Table 25** for total residual value.

Table 23. Remaining Residual Value Factors

Analysis Period (years)	Expected Remaining Life* at:				
	25	40	50	60	100
30	0.00	0.29	0.46	0.58	0.80

**Based on MnDOT Benefit-Cost Analysis for Transportation Projects, Appendix A https://www.dot.state.mn.us/planning/program/benefitcost.html*

Table 24. Parameters and Assumptions

Parameter	Value	Notes
Useful Life (yrs) - Major Structures	60	Based on MnDOT Benefit-Cost Analysis for Transportation Projects https://www.dot.state.mn.us/planning/program/benefitcost.html
Useful Life (yrs) - Grading & Drainage	50	
Useful Life (yrs) - Sub-Base and Base	40	
Useful Life (yrs) - Surface	25	
Useful Life (yrs) - Pavements	40	Weighted average assuming 50% grading and drainage; 25% sub-base and base; 25% surface. Rounded to nearest 10.
Residual Value - Pavements	**$ 8,555,000**	**Applying factor from Table 23 with est. pavement cost from Table 27.**
Useful Life (yrs) - Structures	60	
Residual Value - Structures	**$ 8,410,000**	**Applying factor from Table 23 with est. structures cost from Table 27.**

Table 25. Residual Value

Parameter	Residual Value
Residual Value - Pavements	$ 8,555,000
Residual Value - Structures	$ 8,410,000
Total Residual Value	$ 16,965,000
Total Residual Value (2055) (7% Discount)	**$ 1,485,039**

Capital Costs

Project costs previously expended and anticipated in the future for various project development activities were obtained by year of activity. Previously expended costs were adjusted to real dollars using inflation adjustment factors provided in the Guidance. Future anticipated costs were adjusted using 7% discount rate. All capital costs were then summed. See **Table 26** for capital cost breakdown by activity, **Table 27** for construction cost breakdown by activity (used for residual value calculation), and **Table 28** for costs by activity for each year along with total capital cost.

Table 26. Capital Cost by Activity

Activity	Previous	Future
PE - Surveys	$ 155,000	$ -
PE - Environmental	$ 282,905	$ -
PE - Design	$ 3,570,000	$ 1,000,000
Right-of-Way (ROW)	$ 339,172	$ 4,000,000
Engineering and Inspection	$ -	$ 5,000,000
Construction	$ -	$ 44,000,000

Table 27. Construction Cost Breakout

Activity	Future
Pavement	$ 29,500,000
Structures	$ 14,500,000

Table 28. Capital Costs

Year	Preliminary Engineering (PE) - Surveys	Preliminary Engineering (PE) - Environmental[1]	Preliminary Engineering (PE) - Design	Right-of-Way (ROW)	Construction Engineering & Inspection	Construction	Total Capital Costs (Nominal $, Undiscounted)[2]	Total Capital Costs (Real $, Undiscounted)[3]	Capital Costs (7% Discount)
2005	$ -	$ 130,216.84	$ -	$ -	$ -	$ -	$ 130,216.84	$ 167,224.47	$ 167,224.47
2006	$ -	$ 236,226.59	$ -	$ -	$ -	$ -	$ 236,226.59	$ 294,456.44	$ 294,456.44
2007	$ -	$ 384,345.12	$ -	$ -	$ -	$ -	$ 384,345.12	$ 466,556.54	$ 466,556.54
2008	$ -	$ 116,435.47	$ -	$ -	$ -	$ -	$ 116,435.47	$ 138,639.71	$ 138,639.71
2009	$ -	$ 112,066.03	$ -	$ -	$ -	$ -	$ 112,066.03	$ 132,428.42	$ 132,428.42
2010	$ -	$ 26,338.75	$ -	$ -	$ -	$ -	$ 26,338.75	$ 30,766.29	$ 30,766.29
2011	$ -	$ 3,862.72	$ -	$ -	$ -	$ -	$ 3,862.72	$ 4,419.73	$ 4,419.73
2012	$ -	$ 8,593.81	$ -	$ -	$ -	$ -	$ 8,593.81	$ 9,648.27	$ 9,648.27
2013	$ -	$ 448.35	$ -	$ -	$ -	$ -	$ 448.35	$ 494.66	$ 494.66
2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2015	$ 100,000.00	$ -	$ -	$ 70,450.00	$ -	$ -	$ 170,450.00	$ 182,892.85	$ 182,892.85
2016	$ -	$ 95,000.00	$ 480,000.00	$ 17,669.00	$ -	$ -	$ 592,669.00	$ 629,355.21	$ 629,355.21
2017	$ 15,000.00	$ 145,000.00	$ 615,000.00	$ 35,446.00	$ -	$ -	$ 810,446.00	$ 844,727.87	$ 844,727.87
2018	$ -	$ -	$ 522,000.00	$ 24,682.00	$ -	$ -	$ 546,682.00	$ 556,467.61	$ 556,467.61
2019	$ 25,000.00	$ -	$ 1,200,000.00	$ 132,550.00	$ -	$ -	$ 1,357,550.00	$ 1,357,550.00	$ 1,357,550.00
2020	$ 15,000.00	$ 30,000.00	$ 580,000.00	$ 58,375.00	$ -	$ -	$ 683,375.00	$ 683,375.00	$ 638,668.22
2021	$ -	$ -	$ 673,000.00	$ 2,500,000.00	$ -	$ -	$ 3,173,000.00	$ 3,173,000.00	$ 2,771,421.08
2022	$ -	$ -	$ 500,000.00	$ 1,500,000.00	$ -	$ -	$ 2,000,000.00	$ 2,000,000.00	$ 1,632,595.75
2023	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2024	$ -	$ -	$ -	$ -	$ 2,000,000.00	$ 18,000,000.00	$ 20,000,000.00	$ 20,000,000.00	$ 14,259,723.59
2025	$ -	$ -	$ -	$ -	$ 2,000,000.00	$ 18,000,000.00	$ 20,000,000.00	$ 20,000,000.00	$ 13,326,844.48
2026	$ -	$ -	$ -	$ -	$ 1,000,000.00	$ 8,000,000.00	$ 9,000,000.00	$ 9,000,000.00	$ 5,604,747.68
2027	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2028	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2029	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2030	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2031	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2032	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2033	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2034	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2035	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2036	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2037	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2038	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2039	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2040	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2041	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2042	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2043	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2044	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2045	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2046	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2047	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2048	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2049	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2050	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2051	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2052	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2053	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2054	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2055	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
								TOTAL	**$ 43,049,628.87**

Notes:

[1] 2005-2013 expenses related to NEPA documentation, pro-rated to account for project area (2.17 miles of 4.84 mile NEPA study corridor).

[2] Nominal, or year-of-expenditure, dollars.

[3] Previously expended costs are shown in 2019 dollars using inflation adjustment values provided in USDOT BCA Guidance Table A-7.

Benefits by Selection Criteria

The Southeast Connector has considerable benefits to the region – some that can be monetized and included in the BCA and many that are qualitative and contribute directly to the overall selection criteria: safety, environmental sustainability, quality of life, economic competitiveness and state of good repair. The more qualitative benefits are noted below.

Selection Criteria	Benefit
Safety	
Crash reduction (fatality, injury)	$13,741,085
Improved emergency response	Qualitative++
Avoids three railroad crossings/reduce exposure. See **Table 29**.	Qualitative
Provides alternate route with lower crash rate due to access control, paved shoulders, and shared use trail. See **Table 30**.	Qualitative
Reduces traffic volumes on parallel routes/local streets	Qualitative
Improved access for transport of hazardous materials, reducing risk	Qualitative
Improves flood protection system	Qualitative
Provides safe roadway network during 100-year flood event	Qualitative
Improves drainage system for adjacent areas	Qualitative
Environmental Sustainability	
Emissions reduction	($181,087)
Trail usage	Qualitative
Infill development (vs. suburban)	Qualitative
Levee improvements/flood risk reduction	Qualitative
Access to environmental justice populations	Qualitative
Provides multi-modal options for travel/commuting	Qualitative

Detention Basin Areas provide Groundwater Recharging Opportunities	Qualitative
Improving Storm Water Management for surrounding area	Qualitative
Project Aligns with Des Moines Climate Action Plan	Qualitative
Quality of Life	
Increased pedestrian, bicycle use (multi-modal)	Qualitative
Improved access for disadvantaged groups	Qualitative
Property values	Qualitative, but measurable post-project
Reduced flood risk	Qualitative
Completes the trail gap connection, providing direct access to Central Iowa trails System for improved physical and mental health	Qualitative
Recreational opportunity	Qualitative
Direct access for rural communities to Downtown Des Moines amenities	Qualitative
Recreation access to the lake at Pleasant Hill Boulevard	Qualitative
Economic Competitiveness	
Travel Time Savings	$69,970,931
Vehicle Operating Savings	($571,549)
Employment	Qualitative
Re-Development and infill opportunity	Qualitative
Increased property values/ tax revenue	Qualitative
Freight enhancement with access to highways/transload	Qualitative
Avoid at-grade railroad crossings	Qualitative
Businesses along the corridor will have greater flood protection with the improved levee system	Qualitative

Provides rural areas and surrounding communities better access to jobs at major corporations in Des Moines metro	Qualitative
State of Good Repair	
Transportation network – roads & trails	Qualitative
Flood risk reduction	Qualitative
Maintenance, repair and inspection	($719,324)
Better condition long-term and reduced costs to maintain alternate routes and railroad crossings due to diverted truck traffic	Qualitative
Improving the height and the condition of the levee system to United State Army Corp of Engineers Standards	Qualitative

++ Qualitative benefits not calculated but anticipated to be positive.

Table 29. Existing At-Grade Railroad Crossing Crashes

USDOT Crossing Number	Location Description	Protection Type	Number of Crashes[1]
864243N	SE 30th Street South of MLK Jr. Parkway	Flashing Lights	7
484126T	Vandalia Road near 43rd Street	Flashing Lights	2
072963T[2]	Pleasant Hill Boulevard	Flashing Lights	0
484125L[2]	Vandalia Road	Flashing Lights	0

[1] Based on available crash data through Federal Railroad Administration (FRA) https://safetydata.fra.dot.gov/OfficeofSafety/publicsite/crossing/crossing.aspx

[2] Crossings have been closed due to recently completed portion of the SE Connector and replaced with at-grade railroad crossing USDOT Number 974174L that was opened to traffic May 2021.

Table 30. Safety Performance of Other Nearby Roadway Segments

Route	Segment Description	Length (mi)	AADT[1]	No. of Crashes[2]	Crash Rate[2,3]	Statewide Crash Rate[3,5]
MLK Jr. Pkwy.	SE 15th to SE 30th (2-lane)	1.82	11,100	14	41	271
Vandalia Rd.[4]	MLK Jr. Pkwy. to Pleasant Hill Blvd.	2.56	6,898	30	101	207
Scott Ave.[6]	SE 30th to Oakwood Dr.	1.42	3,841	29	315	151
University Ave.[6]	SE 30th to Pleasant Hill Blvd.	2.00	18,969	303	474	271

[1] Value based on weighted average of 2016 No-Build Output from the MPO travel demand model because no consistent AADT data source within the safety analysis time period is available (https://iowadot.maps.arcgis.com/apps/MapSeries/index.html?appid=0cce99afb78e4d3b9b24f8263717f910).

[2] Based on crash history from 5/20/2016 thru 12/31/2020 (1,685 days).

[3] Crashes per 100 million VMT per year.

[4] Portion that connects with MLK Jr. Pkwy. is technically SE 30th St.

[5] Statewide 10-year average crash rate - https://iowadot.gov/traffic/pdfs/crash_rate-density_comparables_segments_2007-2016_20170828_secondary_functionalclass.pdf

[6] These segments are alternate east-west routes, but do not have common endpoints and origin-destination information

Summary

The BCA summary includes all benefits compared with the capital costs and is expressed as a ratio. As shown in **Table 31**, the benefit-cost ratio using the discount rates required by the Guidance is **1.94**.

BCA Worksheet Excel Spreadsheets and BCA Benefit Calculations Excel Spreadsheets are available on the SE Connector Website:

http://www.seconnector.com/RAISE.stm

Table 31. Benefit-Cost Analysis Summary

Year	Travel Time Savings (7% Discount)	Vehicle Operating Savings (7% Discount)	Emissions Savings (7%/3% Discount)*	Safety Benefits (7% Discount)	O&M (7% Discount)	Residual Value (7% Discount)	Capital Costs (7% Discount)
2005	$ -	$ -	$ -	$ -	$ -	$ -	$ 167,224
2006	$ -	$ -	$ -	$ -	$ -	$ -	$ 294,456
2007	$ -	$ -	$ -	$ -	$ -	$ -	$ 466,557
2008	$ -	$ -	$ -	$ -	$ -	$ -	$ 138,640
2009	$ -	$ -	$ -	$ -	$ -	$ -	$ 132,428
2010	$ -	$ -	$ -	$ -	$ -	$ -	$ 30,766
2011	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,420
2012	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,648
2013	$ -	$ -	$ -	$ -	$ -	$ -	$ 495
2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2015	$ -	$ -	$ -	$ -	$ -	$ -	$ 182,893
2016	$ -	$ -	$ -	$ -	$ -	$ -	$ 629,355
2017	$ -	$ -	$ -	$ -	$ -	$ -	$ 844,728
2018	$ -	$ -	$ -	$ -	$ -	$ -	$ 556,468
2019	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,357,550
2020	$ -	$ -	$ -	$ -	$ -	$ -	$ 638,668
2021	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,771,421
2022	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,632,596
2023	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2024	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,259,724
2025	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,326,844
2026	$ 931,315	$ 22,929	$ 3,290	$ 220,757	$ (33,843)	$ -	$ 5,604,748
2027	$ 3,687,421	$ 70,488	$ 10,493	$ 1,047,898	$ (31,629)	$ -	$ -
2028	$ 3,648,557	$ 51,786	$ 7,992	$ 979,629	$ (29,560)	$ -	$ -
2029	$ 3,580,363	$ 34,965	$ 5,595	$ 910,804	$ (27,626)	$ -	$ -
2030	$ 3,514,184	$ 20,246	$ 3,363	$ 849,130	$ (25,819)	$ -	$ -
2031	$ 3,441,340	$ 7,304	$ 1,252	$ 791,627	$ (24,130)	$ -	$ -
2032	$ 3,372,200	$ (4,042)	$ (716)	$ 740,035	$ (96,934)	$ -	$ -
2033	$ 3,280,157	$ (13,915)	$ (2,545)	$ 688,027	$ (21,076)	$ -	$ -
2034	$ 3,193,771	$ (22,488)	$ (4,292)	$ 641,422	$ (19,697)	$ -	$ -
2035	$ 3,104,650	$ (29,880)	$ (5,898)	$ 597,970	$ (18,408)	$ -	$ -
2036	$ 3,021,777	$ (36,308)	$ (7,416)	$ 558,986	$ (17,204)	$ -	$ -
2037	$ 2,921,028	$ (41,581)	$ (8,793)	$ 519,688	$ (16,079)	$ -	$ -
2038	$ 2,827,739	$ (46,096)	$ (10,097)	$ 484,474	$ (64,591)	$ -	$ -
2039	$ 2,734,155	$ (49,842)	$ (11,314)	$ 451,643	$ (14,044)	$ -	$ -
2040	$ 2,647,947	$ (53,045)	$ (12,483)	$ 422,188	$ (13,125)	$ -	$ -
2041	$ 2,467,956	$ (49,440)	$ (12,068)	$ 393,490	$ (12,266)	$ -	$ -
2042	$ 2,306,501	$ (46,205)	$ (11,816)	$ 367,748	$ (11,464)	$ -	$ -
2043	$ 2,155,608	$ (43,182)	$ (11,464)	$ 343,689	$ (10,714)	$ -	$ -
2044	$ 2,020,106	$ (40,468)	$ (11,156)	$ 322,085	$ (43,040)	$ -	$ -
2045	$ 1,882,792	$ (37,717)	$ (10,802)	$ 300,192	$ (9,358)	$ -	$ -
2046	$ 1,759,618	$ (35,250)	$ (10,491)	$ 280,553	$ (8,746)	$ -	$ -
2047	$ 1,644,503	$ (32,944)	$ (10,193)	$ 262,199	$ (8,174)	$ -	$ -
2048	$ 1,541,130	$ (30,873)	$ (9,934)	$ 245,717	$ (7,639)	$ -	$ -
2049	$ 1,436,373	$ (28,774)	$ (9,724)	$ 229,015	$ (7,139)	$ -	$ -
2050	$ 1,342,404	$ (26,892)	$ (9,456)	$ 214,033	$ (28,679)	$ -	$ -
2051	$ 1,254,584	$ (25,133)	$ (9,111)	$ 200,030	$ (97,220)	$ -	$ -
2052	$ 1,175,720	$ (23,553)	$ (8,805)	$ 187,456	$ (5,828)	$ -	$ -
2053	$ 1,095,802	$ (21,952)	$ (8,465)	$ 174,714	$ (5,446)	$ -	$ -
2054	$ 1,024,114	$ (20,516)	$ (8,162)	$ 163,284	$ (5,090)	$ -	$ -
2055	$ 957,116	$ (19,174)	$ (7,871)	$ 152,602	$ (4,757)	$ 1,485,039	$ -
TOTAL	**$ 69,970,931**	**$ (571,549)**	**$ (181,087)**	**$ 13,741,085**	**$ (719,324)**	**$ 1,485,039**	**$ 43,049,629**

Notes:

*All emission types are discounted at 7% except for CO2, which is discounted at 3%, per USDOT BCA Guidance (Feb 2021).

Sum of Benefits	**$ 83,725,095**
Sum of Costs	**$ 43,049,629**
Benefit-Cost Ratio	**1.94**

The following attachment is not included in this view since it is not a read-only PDF file.

The agency will receive all application forms and attachments without any data loss.

AttachmentForm_1_2-ATT4-1237-RAISE 2021 Project Information.xlsx

Roll Call Number 21-0949

Agenda Item Number 6

Date June 28, 2021

APPROVING AND AUTHORIZING THE APPLICATION FOR A DEPARTMENT OF TRANSPORTATION (DOT) REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY (RAISE) DISCRETIONARY GRANT FOR THE SOUTHEAST CONNECTOR PROJECT BETWEEN SE 30TH STREET AND U.S. 65

WHEREAS, the Consolidated Appropriations Act, 2021, appropriated $1 billion to be awarded by the Department of Transportation (DOT) for the National Infrastructure Investments, now known as Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants; and

WHEREAS, the funds for the RAISE Grants are to be awarded on a competitive basis for surface transportation projects that will have a significant local and regional impact; and

WHEREAS, the Southeast Connector is a surface transportation project that satisfies many of the selection criteria and aligns well with the Administration's priorities on several points; and

WHEREAS, following completion of the Environmental Impact Statement, the Record of Decision for the Southeast Connector was approved by the Federal Highway Administration on May 27, 2010; and

WHEREAS, the City of Des Moines Engineering Department is preparing a grant application to construct the Southeast Connector from SE 30th Street to U.S. Highway 65; and

WHEREAS, the total project cost is estimated to be $60 million, with the RAISE Grant amount of $23 million; and

WHEREAS, the City Engineer recommends that the City Council authorize the Southeast Connector – SE 30th Street to U.S. Highway 65 application for the DOT National Infrastructure Investments, also known as RAISE Grants.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DES MOINES, IOWA:

1. That the City Engineer or his designee is authorized to finalize and submit the above described grant application on behalf of the City of Des Moines to the Department of Transportation.

2. That the Mayor is authorized and directed to execute said application and lobbying disclosure for and on behalf of the City of Des Moines, Iowa.

(Council Letter Number 21-294 attached)

★ **Roll Call Number** 21-0949

Agenda Item Number 6

Date June 28, 2021

Activity ID 14-2021-001

Moved by Gatto to adopt.

FORM APPROVED: s/Kathleen Vanderpool
Kathleen Vanderpool
Deputy City Attorney

Funding Source: Various Funding Sources, as follows: $23 million – RAISE Discretionary Grant, $11,284,000 – Federal STBG funding allocated by the Des Moines Metropolitan Planning Organization, $25,716,000 – 2021-2022 CIP, Page 113, Southeast Connector-SE 30th to U.S. 65, ST256, GO Bonds and Proceeds from Federal Title 23 Excess Land Sales

SLN PW

COUNCIL ACTION	YEAS	NAYS	PASS	ABSENT
COWNIE	✓			
BOESEN	✓			
GATTO	✓			
GRAY	✓			
MANDELBAUM	✓			
VOSS	✓			
WESTERGAARD	✓			
TOTAL	7			

MOTION CARRIED APPROVED

T. M. Franklin Cownie
Mayor

CERTIFICATE

I, P. Kay Cmelik, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

P. Kay Cmelik
City Clerk

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2022

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

[x] Prime [ ] SubAwardee

** Name:* City of Des Moines

** Street 1:* 400 Robert D Ray Drive *Street 2:*

** City:* Des Moines *State:* IA: Iowa *Zip:* 50309

Congressional District, if known: IA-003

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency:
US Department of Transportation

7. * Federal Program Name/Description:
National Infrastructure Investments

CFDA Number, *if applicable:* 20.933

8. Federal Action Number, *if known:*
DTOS59-21-RA-RAISE

9. Award Amount, *if known:*
$

10. a. Name and Address of Lobbying Registrant:

Prefix: ** First Name:* Cornerstone Government Affairs *Middle Name:*

** Last Name:* *Suffix:*

** Street 1:* 800 Maine Ave SW *Street 2:* Floor 7

** City:* Washington DC *State:* DC: District of Columbia *Zip:* 20024

b. Individual Performing Services (including address if different from No. 10a)

Prefix: Mr. ** First Name:* David *Middle Name:*

** Last Name:* Adelman *Suffix:*

** Street 1:* 800 Maine Ave SW *Street 2:* Floor 7

** City:* Washington DC *State:* DC: District of Columbia *Zip:* 20024

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** Pamela S Cooksey

***Name:** *Prefix:* ** First Name:* T.M. Franklin *Middle Name:*

** Last Name:* Cownie *Suffix:*

Title: Mayor, City of Des Moines **Telephone No.:** 515-283-4944 **Date:** 07/09/2021

Federal Use Only:

Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-97)

OMB Number: 4040-0008
Expiration Date: 02/28/2022

BUDGET INFORMATION - Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	$	$	$
2. Land, structures, rights-of-way, appraisals, etc.	$ 4,000,000.00	$ 4,000,000.00	$ 0.00
3. Relocation expenses and payments	$	$	$
4. Architectural and engineering fees	$ 1,000,000.00	$ 1,000,000.00	$ 0.00
5. Other architectural and engineering fees	$	$	$
6. Project inspection fees	$ 5,000,000.00	$ 5,000,000.00	$ 0.00
7. Site work	$	$	$
8. Demolition and removal	$	$	$
9. Construction	$ 44,000,000.00	$	$ 44,000,000.00
10. Equipment	$	$	$
11. Miscellaneous	$	$	$
12. SUBTOTAL *(sum of lines 1-11)*	$ 54,000,000.00	$ 10,000,000.00	$ 44,000,000.00
13. Contingencies	$	$	$
14. SUBTOTAL	$ 54,000,000.00	$ 10,000,000.00	$ 44,000,000.00
15. Project (program) income	$	$	$
16. TOTAL PROJECT COSTS *(subtract #15 from #14)*	$ 54,000,000.00	$ 10,000,000.00	$ 44,000,000.00

FEDERAL FUNDING

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.	Enter eligible costs from line 16c Multiply X 80 %	$ 35,200,000.00