FY24 RAISE Grant Proposal: City of Beatrice, NE
Court Street Access and Safety Transformation (CAST) Initiative

BENEFIT COST ANALYSIS MEMORANDUM

I. Purpose

This memorandum documents the assumptions, methodology, and results of the Benefit Cost Analysis (BCA) conducted for the City of Beatrice, Nebraska Court Street Access and Safety Transformation (CAST) Initiative for the FY24 RAISE.

The City of Beatrice is applying to receive RAISE funds to design and construct a project that would relocate the U.S. Highway 136 designation from its current alignment on Court Street south one block to Market Street. Additionally, the project will fund streetscape improvements in the downtown business district along Court Street, thus encouraging a pedestrian-scale corridor suitable commercial reinvestment in the area.

A Benefit-Cost Analysis (BCA) was conducted to support this project which explored both an option to construct the full project and one to construct only what is needed to relocate Highway 136. The latter is offered as a demonstration of project viability even if the city is provided a partial award.

Existing Roadway Network

US Highway 136 (Court Street) is regional highway, originating in central Nebraska, passing through Beatrice, and ultimately terminating in Indiana. It also serves regional and interregional passenger trips and interregional freight routes. Near the project area, the roadway carries between 8,000 vehicles per day (vpd) and 13,000 vpd with approximately 4% of that traffic as heavy trucks. The highway is on the National Highway System and is owned and maintained by the Nebraska Department of Transportation (NDOT).

There is currently an independent truck route for Highway 136 as it passes through the downtown central business district along Ella Street which is one block north of Court Street; however, the route sees poor compliance as trucks favor the direct route along Court Street. A primary goal of this project is to create a viable alternate truck route off Court Street.

Market Street is a local road one block south of Court Street which carries approximately 2,000 vpd. There are primarily heavy commercial and industrial land uses surrounding it as compared to the pedestrian-scale retail along Court Street. The street is currently one-way eastbound but would be converted to two-way traffic as part of the project.

II. Methodology

Assumptions

All benefits and costs associated with the project are estimated in 2022 US dollars, consistent with the *Benefit-Cost Analysis Guidance for Discretionary Grant Programs* (BCA Guidance) published by the U.S. Department of Transportation (USDOT).

All estimated future dollars are discounted at a 3.1 percent annual rate, except for CO_2 and CO_2-equivalents which are discounted at a 2 percent annual rate, consistent with the BCA Guidance and the spreadsheet tool provided by USDOT which was used for this analysis.

The analysis period is from 2025 through 2049, including the Project Development and Construction phases (2025-2029), with the inaugural year of operations in 2030. This assumes a 20-year lifespan of the facility. This was chosen for the whole of the project due to Court Street being limited to operational or aesthetic improvements, as compared to full reconstruction that would permit up to a 30-year lifespan. That said, Market Street is anticipated to be reconstructed and thus was assumed to have useful of 30 years. This portion of the project was assigned a residual value.

The annual traffic growth rate was estimated at 0.25 percent. It was assumed that the regional travel characteristics and transportation preferences do not shift over the next 20 years, allowing this growth rate to be applied to traffic as well as bicycle and pedestrian trips directly. There are localized mode shift assumptions discuss later in this memorandum that are related to induced pedestrian and bike traffic from the Court Street improvements.

Other key assumptions and inputs into the BCA are listed below.

- Assumed rates from the BCA Guidance for:
    - Future dollars were discounted to 2022 using 3.1 percent.
        - CO2 and CO2-equivalents are discounted at a 2 percent.
    - Monetized value of crashes by severity
    - Hourly user costs for travel time savings
    - Hourly vehicle operating costs
    - Emissions costs per mile, by vehicle type
    - Health value of induced trips
- Daily and peak hour traffic volumes from counts conducted by NDOT and as part of the Feasibility Study previously conducted for this project.
- For Travel Time Benefit 260 days per year was used in the analysis of weekday traffic and benefits were applied to 105 weekend days per year. This assumes traffic volumes on weekends are 50 percent of the typical weekday traffic.
- Crash history was collected from 2016 to 2020 through the study area.
- Mode shift along Court Street is assumed to be 3% pedestrians and 1% bikes, just over the statewide average for mode share. This equates to 95 new pedestrian trips and 4 new bike trips per day. No mode shift was assumed for Market Street.

Traffic Volume Inputs

Traffic data were collected as part of a 2013 Feasibility Study performed to understand the operational impacts of the highway relocation. The data collection effort included conducting peak hour turning movement counts and collecting average daily traffic (ADT) volume counts. Turning movement counts were conducted during the AM, NOON, and PM peak periods of traffic flow (7:00am – 9:00am, 11:00am – 1:00pm, and 4:00pm – 6:00pm). The peak hour counts included heavy vehicle and pedestrian documentation at all count locations.

These volumes were collected for use in capacity analyses and projection of future traffic patterns. Study intersections include the following:

- 2nd Street & Court Street
- 2nd Street & Market Street
- 3rd Street & Ella Street
- 3rd Street & Court Street
- 6th Street & Ella Street
- 6th Street & Court Street
- 6th Street & Market Street
- 7th Street & Ella Street
- 7th Street & Court Street
- 7th Street & Market Street
- 8th Street & Court Street

Daily directional counts were also conducted at six locations throughout the study area. These traffic volumes were essential in determining the daily utilization of the study corridors and served as a basis for projecting and modeling future conditions. Given these counts were conducted in 2013, they were compared against daily counts conducted by NDOT to verify their current applicability. Counts were found to be similar.

Traffic Volume Projections

NDOT provided future 2035 traffic volumes used in the 2013 Feasibility Study showed a half percent annual growth rate along 6th Street and no growth along Court Street. By comparing this to trends in traffic volumes between 2013 and 2020, actual changes in traffic have been flat or slightly decreased. Despite this, some growth was assumed for project. Both Court Street and Market Street were grown at 0.25 percent annually through the analysis period.

For the build condition, rerouted traffic was used directly from the 2013 Feasibility Study with some additions for intersections not included in that analysis. Traffic reassignment was performed primarily considering the most direct routes through the network, the relative distribution of existing traffic along corridors, and engineering judgment.

Approximately half of the total east-west traffic volume was assigned to Market Street to account for trucks and trips passing through Beatrice using the more attractive Market Street route. The remaining traffic was split approximately evenly between Ella Street and Court Street. Additionally, it was assumed that the relocation of highway traffic and the amentitization of Court Street would induce pedestrian and bicycle traffic. Current pedestrian counts show 0.3 percent of traffic as compared to the statewide average of 2.25 percent for pedestrian mode share and 0.29 percent for bicycles. Given the nature of a business district, it was assumed that a 3 percent mode share for pedestrians and 1 percent mode share for bicycles could be achieved.

Calculation of Benefits

The following section discusses in detail each benefit used for the CAST Initiative BCA. Note that benefits are presented individually as undiscounted values before summarizing them at the end of this section as discounted values. All summary tables can be found in **Appendix A**.

Safety

Several safety improvements are associated with CAST Initiative at four intersections as well as the entire alignments of Court Street and Market Street. The primary intersection improvements are removal of unwarranted traffic signals and conversion of the 8th Street & Court Street signal to a modern roundabout.

Crash data from 2016-2020 along Market Street and Court Street between 2nd Street and 8th Street were obtained from the NDOT Nebraska Transportation Information Portal (NTIP). These publicly available data show basic information including crash severity, location, and involvements. Crashes for this 5-year period are summarized in **Table 1** below.

Table 1. Summary of Existing Crashes

Crash Severity	Total	Crashes/Year
K	0	0.00
A	0	0.00
B	11	2.20
C	12	2.40
O	48	9.60
U	48	9.60
Sum	119	23.80

Note that an intersection will be added to the network at the new Court Street & Market Street intersection on the west end of the project. This intersection will be a modern single lane roundabout. Crashes at this intersection were estimated using the Highway Safety Manual predictive methodology. This resulted in 0.2 Fatal or Injury Crashes and 0.4 Property Damage crashes being added to the Build conditions. Injury crashes were partitioned based on the current distribution of KABC crashes exhibited in the crash data.

The Crash Modification Factor (CMF) Clearinghouse was used to collect CMFs related to the proposed modifications described above. These are summarized in **Table 2** below, including where in the analysis they were used. Detail sheets for each CMF are included in **Appendix B**.

Table 2. Relevant CMF Summary

	Description	All Crashes		KABC Crashes		Location
		CMF ID	CMF	CMF ID	CMF	
Segment	Reduce Accesses (12/mi to 6/mi)	2512	0.945	2513	0.985	Court Street
Segment	Reduce Accesses (22/mi to 10/mi)	2512	0.893	2513	0.985	Market Street
Intersections	Remove Unwarranted Signals	332	0.760	-	-	4th, 5th, and 7th intersections along Court
Intersections	Convert to RAB	4252	0.792	-	-	8th & Court

CMFs were applied to existing crash data by multiplying the appropriate CMF by the associated crashes at appropriate locations. For example, CMF 4252 was applied to all crash types and severities at the 8th Street & Court Street intersection only. The number of crashes was then increased using the 0.25 percent annual growth rate used in the volume projections. Crashes for 2020, the end of the existing crash data window, and 2030, the first year the project is open, are shown in **Table 3** below.

Table 3. Safety Benefit Summary

Crash Severity	Total Crashes per Year			
	2020		2030	
	No Build	Build	No-Build	Build
K	0.000	0.000	0.000	0.000
A	0.000	0.000	0.000	0.000
B	1.100	0.800	1.156	0.841
C	1.200	1.151	1.261	1.210
O	4.800	4.025	5.045	4.231
U	4.800	4.669	5.045	4.907
Sum	7.100	5.976	7.463	6.282

Monetized crash values summarized in **Table A-1** of the BCA Guidance were used to determine the relative annual cost of the No Build and Build conditions in the 2030 opening day of the project. Crash values were then increased annually at 0.25 percent per year. This resulted in a total undiscounted benefit of $4,831,567.

Travel Time

The project is expected to have a positive effect on travel time given the modifications to intersection control along both Market Street and Court Street. To measure this affect, capacity analyses were performed for all the study intersections Synchro, Version 11.0 which is based on the Highway Capacity Manual (HCM) delay methodologies. This was performed for the No Build and Build conditions to determine the control delay and running time for each intersection and segment, respectively. The sum of these values represents the total average travel time for Market Street and Court Street. This is summarized in **Table 4** below.

Table 4. Travel Time Benefit Summary

		No Build	Build	Difference
Average Travel Time (s)		**209.0**	**190.3**	**18.7**
General Purpose	Vehicle Travel Time (s)	200.7	182.7	18.0
	Person Travel Time (hr)[1]	0.093	0.085	0.008
	Annual Weekday Person Travel Time (hr)[2]	*21.45*	*19.53*	*1.92*
	Annual Weekend Person Travel Time (hr)[3]	*2.96*	*2.69*	*0.27*
Commercial	Vehicle Travel Time (s)	8.40	7.60	0.70
	Person Travel Time (hr)	0.002	0.002	0.000
	Annual Weekday Person Travel Time (hr)	*0.61*	*0.55*	*0.05*
	Annual Weekend Person Travel Time (hr)	*0.06*	*0.06*	*0.01*

1. Travel Time *1/3600*1.67 (Assumes a 1.67 vehicle occupancy rate).
2. Person Travel Time * 260 Weekdays * 1.48 Occupancy
3. Person Travel Time * 105 Weekend Days * 0.25 Volume Reduction * 1.48 Occupancy

These values were then applied to daily traffic rates and undiscounted trip rates for passenger car and commercial trips using the following two formulas, respectively:

*All Purpose Trip Rate * (Weekday Travel Time + Weekend Travel Time) * Passenger Car ADT*

*Commercial Trip Rate * (Weekday Travel Time + Weekend Travel Time) * Truck Traffic ADT*

Trip rates were found in **Table A-3** of the BCA Guidance. Total Travel Time Cost is the sum of these two values. This was calculated for the No Build and Build conditions to determine the annual Travel Time Benefit. Total undiscounted Travel Time Benefit for the project is expected to be $10,958,037.

The travel time benefit is primarily attributable to the removal of unneeded traffic signals along Court Street and the reduction of control delay relative to conversion of intersections to roundabouts.

Vehicle Operating Cost

The mode shift to walking and biking discussed in the Traffic Volume Projections is expected to have a positive benefit, that is a reduction, in vehicle operating costs. By reducing vehicle trips, vehicle operating costs for light-duty vehicles (passengers cars and light-duty trucks) are also reduced. Consistent with the mode shift values discussed above, vehicle reductions were only applied to Court Street and only to light-duty vehicle trips.

Vehicle operating costs are the expenses associated with owning and operating a vehicle including car payments, fuel, oil changes, tires, and other standard maintenance procedures. The BCA Guidance provides monetary values for vehicle operating costs according to vehicle type. The BCA Guidance states that operating cost is $0.52 per mile for light-duty vehicles.

The 0.25% percent annual growth rate was applied to the Operating Cost benefit according to the BCA Guidance and using the BCA spreadsheet tool. The total undiscounted operating cost benefit is expected to be $550,420.

Emissions Reduction

Mode shift is anticipated to also have a positive benefit for Emissions Reduction. This reduction in vehicle trips decreases emissions affecting the air and the climate and helping reach USDOT goals of addressing environmental justice for Historically Disadvantaged Communities and addressing climate change.

Transportation-related activities commonly produce four local emission types including Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), Carbon Dioxide (CO_2), and Fine Particulate Matter ($PM_{2.5}$). The BCA Guidance provides monetary values per mile traveled for these four emission types which was used to forecast the benefit out to 2049.

Monetary values for emissions per mile were applied to the light-duty vehicle volumes (96 percent of total traffic) and heavy truck volumes (4 percent of total traffic) for each analysis year. Note that the 0.25 percent annual growth rate was applied to each subsequent year starting in 2029. The resulting undiscounted emissions reduction benefit is expected to be $10,826 for non-$CO_2$ emissions and $96,528 for CO_2 emissions. Note these are differentiated because different rates will be used when discounting to present day value.

Health Benefits

The BCA Guidance provides assumptions and methodology to quantify health benefits related to induced walking and cycling trips. The guidance states maximum average monetary value of induced walking and cycling trips are $7.63 and $6.80, respectively. This is for users in the 20-74 and 20-64 age groups for walking and bike, respectively. Additionally, the following input data were generated to develop the annual induced walking and cycling trips.

Table 5. Health Benefits Input Data

Description	Value	Notes
Percent Induced Trips - Walking	90%	Based on 8:1 ratio of Census American Community Survey for the State of Nebraska (2.25% walk, 0.29% bike)
Percent Induced Trips - Biking	10%	
Value per Induced Trip - Walking	$7.63	Based on USDOT BCA Guidance for Discretionary Grant Programs (Dec 2023) Table A-13, in base year (2020) dollars. Applies to ages 20-74.
Value per Induced Trip - Cycling	$6.80	
% of users in age ranges for Walking	68%	Based on USDOT BCA Guidance for Discretionary Grant Programs (Dec 2023) Table A-13
% of users in age ranges for Cycling	59%	
Length of Project (mi)	0.50	Average walk trip distance - Length of project >1mile
Assumed Volume (vpd)	3,500	Based on volume along Court Street after highway relocation.

Applying these values to a 3% ultimate mode share for pedestrians and 1% mode share for bicycles, as discussed in the volume projections, the resulting induced trips are 95 pedestrians and 4 bicycles per day. Applying these values to the monetary rates per trips, the expected annual health benefit is $271,865 at the end of the benefit period. This was applied to all years starting in 2029 by reducing the amount by 0.25 percent per year. The total expected undiscounted health benefit is $3,716,375.

Residual Value

The nature of the work on Market Street versus Court Street creates a disparity between the useful life of each street. As described in the BCA Guidance, projects that are a full reconstruction such as Market Street can be assigned a useful life up to 30 years. Whereas projects that are modifying existing infrastructure such as Court Street have a maximum useful life of 20 years. The former controlled the decision to use 20 years for the analysis period, but this leaves 10 years of useful life for the Market Street alignment.

To account for this difference a residual value of the *construction costs* of the Market Street reconstruction was applied for the remaining 10 years of useful life. The resulting undiscounted benefit is $3,716,375.

Operations & Maintenance

Independent of the CAST Initiative project, the project area would require investment in the form of operations and maintenance of the existing facility. This cost, deferred if this project is built, is a monetary benefit as it is a cost that is avoided. That said, there are also maintenance costs associated with the project that will be required. Both are captured in the summary table below. Maintenance for the No Build conditions include resurfacing of both alignments at the start and end of the analysis period as well as reconstruction of all signals along both alignments. For the Build condition, routine pavement repair and surfacing are assumed at approximately 10 years after the opening of the project. Note that this is a dis-benefit as it is a cost to the project.

Year	No Build	Build	Net Change	No Build O&M
2030	$2,972,402	$0	($2,972,402)	Market Street Resurfacing (50%)
2031	$2,972,402	$0	($2,972,402)	Court Street Resurfacing (50%)
2032	$1,000,000	$0	($1,000,000)	Signal Reconstruction (6th St)
2033-2034	$0	$0	$0	
2035	$700,000	$0	($700,000)	Signal Reconstruction (4th, 5th)
2036	$0	$0	$0	
2037	$700,000	$0	($700,000)	Signal Reconstruction (7th St., 8th St.)
2038-2040	$0	$0	$0	
2041	$0	$7,511,112	$7,511,112	Assumed pavement repair 5% annual increase from 2029 costs
2042-2047	$0	$0	$0	
2048	$7,153,440	$0	($7,153,440)	Market Street Resurfacing (50%)
2049	$7,153,440	$0	($7,153,440)	Court Street Resurfacing (50%)

Discounting

The BCA Guidance states that future benefits be discounted to bring to present day value for direct comparison with the costs. Therefore, all estimated future dollars are discounted at a 3.1 percent annual rate, except for CO_2 and CO_2-equivalents which are discounted at a 2 percent annual rate. The discounted costs are summarized in **Table 6** below.

Table 6. Discounted Benefits

Benefit	Undiscounted Value	Discounted Value
Operations and Maintenance	$15,140,571.83	$8,403,254.50
Safety	$4,831,567.17	$2,861,421.37
Travel Time Savings	$10,958,037.10	$6,503,263.33
Vehicle Operating Cost Savings	$550,420.00	$324,912.61
Non-CO2 Emission Reduction	$10,825.57	$6,390.33
CO2 Emission Reduction	$96,527.98	$68,323.73
Health Benefits	$3,792,497.07	$2,166,195.50
Residual Value	$3,716,374.52	$1,629,804.49
Pedestrian Facility Improvement	$42,890.50	$25,401.24
Total Benefits	$39,139,711.74	$21,988,967.11

Other Unquantified Benefits

There are a multitude of other expected benefits that were not quantified during the BCA but are still expected to be realized with the project. These provide further evidence of the project's benefit to the public and positive expenditure of federal funds. Examples of these include:

- Safety benefits from shortened crossing distances along Court Street.
- Property value increases and sales tax revenue impacted by downtown redevelopment induced by this project.
- Mode shift for traffic on streets other than Court Street or Market Street
- Induced Transit Ridership
- Stormwater Quality Mitigation

III. Project Costs

Capital Costs

The capital expenditures include the up-front costs for the project. This includes, but is not limited to, engineering design, environmental analysis, easements and acquisitions, survey and construction staking, construction costs, and associated contingencies. A specific cost estimation exercise was conducted for the project and is described in detail in the Budget section of the project narrative. These costs are summarized in **Table7** below.

Table 7. Budget Summary

	US-136 Relocation	Court Street	Project Total
Total Construction with 20% Contingency	$11,149,123.55	$4,640,068.35	$15,789,191.90
PE Costs	$1,023,841.50	$405,815.00	$1,429,656.50
CE Costs	$1,560,877.30	$649,609.57	$2,210,486.87
Private Utility Impact Costs	$334,473.71	$139,202.05	$473,675.76
Right of Way Costs	$1,486,406.26	$0.00	$1,486,406.26
Project Total	**$15,554,722.32**	**$5,834,694.97**	**$21,389,417.29**

These budgets are assumed to be spent over the course of the five-year project development time as shown in **Table 8**.

Table 8. Assumed Timeline of Expenditures

Year	Year of Expenditure Amount	Scope
2025	$714,828	50% Design Engineering
2026	$1,458,031	50% Design Engineering 50% ROW Acquisitions
2027	$1,077,677	50% ROW Acquisitions Highway 136 Utility Relocations
2028	$12,849,203	Highway 136 Construction Highway 136 Construction Engineering Court Street Utility
2029	$5,289,678	Court Construction Court Street Construction Engineering
Total	**$21,389,417**	

IV. Results

The primary benefits quantified in the BCA are Safety, Travel Time, and Health Benefits. Safety and Travel Time benefits are related to the removal of unneeded signals and conversions to roundabouts, both of which offer reduced crash potential and delay. Health Benefits are reflective of an expectation for increased pedestrian trips. This is the result of a conservative estimate of 3% pedestrian traffic and 1% bike traffic for mode share long term.

The resulting BCA for both the full project and only Highway 136 relocation are shown below. Note that the BCA for the latter is lower because much of the cost of the project is in the highway relocation while much of the benefit, particularly safety and health, are realized on the Court Street segment. So, while it is possible to see an overall beneficial impact for a partial award, completing the entire project will maximize the relative benefit for the investment.

Table 1: BCA Results

BCA Scenario	Benefits (Discounted)	Capital Costs (Discounted)	Net Present Value (Discounted)	**BCR**
Full Project	$21,963,566	$13,619,290	$8,344,276	**1.61**
Highway 136 Relocation Only	$13,645,049	$10,189,178	$3,455,871	**1.34**

APPENDIX A
BCA SUMMARY TABLES

APPENDIX B
CMF DETAIL SHEETS


CAST Initiative
City of Beatrice, NE
FY24 RAISE Grant Proposal

FY24 RAISE Grant Proposal: City of Beatrice, NE
Court Street Access and Safety Transformation (CAST) Initiative

STATEMENT OF WORK

The proposed RAISE project described in this application will improve freight circulation, enhance pedestrian opportunities, decrease VMT, reduce crashes, curb greenhouse gas emissions, and promote economic development. A detailed statement of work follows:

1. **Overall Management**
   - Execute Funding Agreement: A RAISE funding agreement will be established between the City and DOT.
   - Designate Project Manager: Beatrice will identify a project manager to supervise and implement the work. Duties will include public outreach, project management, planning oversight, reporting, and compliance with all funding requirements.
2. **Project Preparation**
   - Partnership Agreements: Confirm local and regional stakeholder support.
3. **Procurement**
   - Bid: Prepare solicitation and competitively bid the design and engineering project.
   - Contract: Select the contractor and confirm the overall design team.
4. **Planning**
   - Conceptual Design: The City has already completed a conceptual design for the relocation of US-136 and the reconstruction of Court Street. To support conceptual design, the consultant will need to incorporate the Homestead Trail to run through the west end of the project, develop a conceptual layout for the improved storm drainage system, develop an access management plan for the Farmer's Cooperative grain elevator located to the south of the project between 2nd and 3rd Streets, update corridor and intersection analyses to consider current and future traffic demands. The concepts should show roadway cross section, aesthetics, and any other necessary information. This task includes all work items necessary to prepare a preferred concept along with a Benefit-Cost Analysis (BCA).
   - 30% Schematic Design: Once the preferred infrastructure concepts are determined, the consultant will conduct the following tasks:
     - Define the project scope;
     - Create a high-quality rendering showing different perspectives of the updated concept for use in public engagement;
     - Develop a preliminary cost estimate and schedule for the work;
     - Finalize the infrastructure design criteria; and
     - Create construction phasing plan; and
     - Determine land acquisition needs.
   - 60% Design Plan: Following preliminary design, the consultant will:
     - Finalize the expectations and objectives of the project;
     - Confirm the constructability of the project;
     - Determine construction permit requirements;

    - Implement acceptable value engineering requirements, if applicable;
    - Identify preferred materials; and
    - Complete National Environmental Policy Act (NEPA) documents and other state and local permits.
- 90% Design Plan: After review by the Nebraska Department of Transportation (NDOT), the consultant will:
    - Complete set of plans and specifications for construction;
    - Develop final construction cost estimate and schedule for the work;
    - Finalize permit package.

5. Community Engagement

- Past Engagement Opportunities: The City has been working on this plan for over a decade and in 2023 a stakeholder meeting and a public open house were held to gain community input on the proposed improvements in the corridor. Members of the public and stakeholders from downtown Beatrice were invited to share their feedback on the future vision for Court Street.
- Stakeholder Outreach: Outreach to the community will be integrated into the entire process. Since the downtown businesses will endure the greatest impacts both during construction and after the completion of the project, the community engagement process will be tailored to the needs of these areas and will amplify voices that may not have been traditionally included in planning processes. Project leaders will communicate planning intentions, impacts, and design concepts through social media, the City web site, newsletters, and other outreach tools.
- Public Meetings: Share design concepts, plans and potential impacts with residents and local businesses through community forums and public meetings to seek feedback. To gather ideas, the City will have design charrette and walking tours of the corridors to get a deeper understanding of mobility challenges. Beatrice will work closely with community groups and other institutions to garner feedback and input on design.

6. Construction

- Pre-Construction and Construction Activities: The City of Beatrice will implement pre-construction and construction activities in accordance with all applicable DOT/FHWA regulations, requirements, and policies. These activities include, but are not limited to:
    - award of contract.
    - Survey, design, and plan development.
    - Secure NEPA clearance and obtain all regulatory permits.
    - Approval of final plans, specs, and cost estimates; obligation of federal funds.
    - Rights-of-Way appraisal and acquisition.
    - Project construction.
    - Ongoing public engagement and coordination.

7. Closeout

- End: Submit final report.

FY24 RAISE Grant Proposal: City of Beatrice, NE
Court Street Access and Safety Transformation (CAST) Initiative

MERIT CRITERIA NARRATIVE

Project Description:

The City of Beatrice, NE is seeking FY24 RAISE funding to implement the *Court Street Access and Safety Transformation (CAST) Initiative*. Currently, Downtown Beatrice is characterized by high-speed and heavy truck traffic on Court Street/US Highway 136. This vehicle-centered design of Court Street has discouraged business development and has created an unsafe and uninviting environment for pedestrians and bicyclists. The *CAST Initiative* proposes rerouting Highway 136 one block South to Market Street and reestablishing Downtown Beatrice as a pedestrian corridor.

The objectives of this project include creating a safe and comfortable environment for non-motorized road users through enhanced sidewalks, crosswalks, and wayfinding; attracting and retaining businesses in the Downtown corridor; and increasing multimodal access for residents without vehicles. This initiative aligns with state and federal infrastructure priorities including improving safety, environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness and opportunity, state of good repair, partnership and collaboration, and innovation.

I. Safety

Safety Issues in the Corridor

Addressing and improving safety for all roadway users, including pedestrians and bicyclists, is the primary goal of Beatrice's *CAST Initiative.* Due to the current routing of US Highway 136, there are several points of conflict between vehicles, pedestrians, and bicyclists in Downtown Beatrice. The corridor has no marked bicycle lanes. Although sidewalks exist on both sides of Court Street, existing sidewalks are in varied condition, and the high-speed nature of US Highway 136 creates an unsafe and uninviting environment for multimodal road users. Several intersections, including intersections with traffic lights, create difficult conditions for pedestrians and cyclists to cross the street, in addition to creating confusion amongst drivers. Due to state highway regulations, pedestrian enhancements options in the corridor are limited without the relocation of US Highway 136.

Figure 1: A recent three-vehicle collision on Court Street/US Highway 136 *Source: News Channel Nebraska Southeast*

These conditions have created an unsafe and unpredictable environment for motorists, pedestrians, and cyclists along the corridor, including individuals from the socially vulnerable communities within or adjacent to the corridor. This is especially concerning for the 17% and 23% of individuals with a disability in Census Tracts 9651 and 9650, respectively (Source: US Census Data). The current routing of US Highway 136 has resulted in frequent collisions and conflicts between motorists, pedestrians, and cyclist roadway users.

Figure 2: US Highway 136/Court Street Crashes, 2016-2020

Crash Type	2016	2017	2018	2019	2020	Totals
Minor Injury	4	5	2	1	0	12
Visible Injury	3	5	2	0	3	13
Property Damage Only	5	10	12	11	12	50
Not Reported	11	9	12	7	11	50
Totals	23	29	28	19	26	**125**

Source: Beatrice Police Department

CAST Initiative Safety Benefits

Through over 13 years of strategic planning, initial design, and community engagement, the *CAST Initiative* is designed to address specific safety concerns and provide safety benefits to all road users in Downtown Beatrice.

Figure 3: Safety Benefit Summary

Crash Severity	Total Crashes per Year			
	2020		2030	
	No Build	Build	No-Build	Build
K	0.000	0.000	0.000	0.000
A	0.000	0.000	0.000	0.000
B	1.100	0.800	1.156	0.841
C	1.200	1.151	1.261	1.210
O	4.800	4.025	5.045	4.231
U	4.800	4.669	5.045	4.907
Sum	7.100	5.976	7.463	6.282

The City of Beatrice has committed to DOT's Vision Zero goal of eliminating traffic fatalities and severe injuries within its jurisdiction. The proposed safety improvements support the City's Vision Zero efforts. In addition, the project aligns with the City's DOT-funded Safe Streets and Roads for All Comprehensive Safety Action Plan that is currently in development.

Specific safety improvements include:

- *Construction of two roundabouts,* east and west of Downtown Beatrice, replacing existing traffic light intersections, diverting US Highway 136 traffic away from Downtown

Beatrice, and slowing local traffic through Downtown. Roundabouts have reduced fatal and injury classes by 82% (Source: The Highway Safety Manual, 2010 American Association of State Highway Transportation Professionals).

- *Redesigned intersections,* including proven countermeasures that align with the FHWA Safe Transportation for Every Pedestrian (STEP) Initiative, including:
  - High-visibility crosswalk markings to reduce intersection conflicts, reduce excessive vehicle speeds, and separate multimodal road users from traffic,
  - Improved nighttime lighting to increase pedestrian visibility,
  - Pedestrian refuge nodes at central intersections.
- *Improved signage and wayfinding* for vehicular and multimodal roadway users.
- *Widened sidewalks* to improve pedestrian and cyclist safety and access, which reduce pedestrian crashes along roadways by 65-89% (Source: 2005 Update of Florida Crash Reduction Factors and Countermeasures to Improve the Development of District Safety Improvement Projects, 2005).
- *Reduced speed limit* on Court Street.

While the *CAST Initiative* will benefit all motorists and multimodal road users within and passing through Downtown Beatrice, project components will particularly benefit low-income residents in DOT-designated disadvantaged community Census Tracts 9651 and 9650. Residents living in disadvantaged tracts are more likely to walk and bike to work than other commuters in Beatrice (Source: www.census.gov/hhes/commuting/).

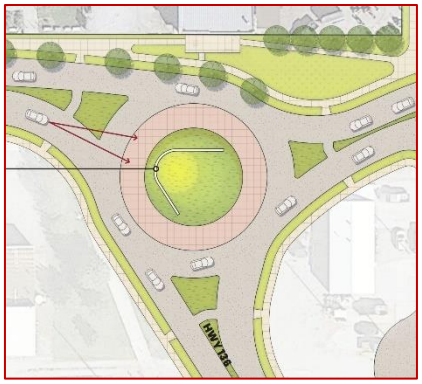


Figure 4: Rendering of the proposed eastern roundabout, diverting eastbound high-speed traffic away from Downtown Beatrice

II. Environmental Sustainability

The *CAST Initiative* aligns with local, statewide, and federal sustainable transportation initiatives and policies, including the Nebraska Department of Transportation (NDOT)'s Environmental Procedures Manual, the US National Blueprint for Transportation Decarbonation, and DOT's Justice40 efforts. Specifically, Beatrice's RAISE project will decrease emissions by improving air quality, decreasing carbon use, and reducing auto-dependency.

Addressing Environmental Justice

As indicated in Figure 6, Census Block Group 2 of Tract 651.00, which includes the project location and surrounding neighborhoods, is identified as environmental justice areas of concern. According to EPA EJSCREEN tool, this area ranges between the 59th and 78th percentiles for environmental indicators in Nebraska and between the 25th and 53rd percentiles nationally. Among the goals, the *CAST Initiative* aims to improve air quality and access for this underserved population.

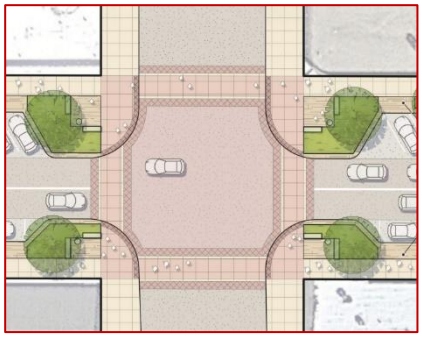


Figure 5: Rendering of a central intersection in the redesigned Court Street corridor, including high-visibility crosswalk markings, pedestrian refuge areas

Figure 6: Environmental Indicators for Project Area (Census Tract 651.00, Block Group 2, Census Tract 651.00)

Environmental Indicator	Percentile in Nebraska	Percentile in United States
Ozone	78	23
Air Toxics Cancer Risk	59	25
Air Toxics Respiratory Hazard	75	45
Traffic Proximity	67	53

Source: EPA EJ Screen Tool

Reducing Pollutant Emissions and Fuel Consumption

Through the addition of roundabouts and diversion of US Highway 136 away from Downtown Beatrice, the *CAST Initiative* will significantly decrease vehicle idling time, ultimately reducing pollutant emissions and fuel consumption by up to 29% (Source: University of Cincinnati Niehoff Urban Studio). This will improve air quality and address environmental justice concerns of underserved census tracts. The addition of roundabouts will also reduce energy costs associated with electric traffic signals, which amount to approximately $3,500 to $5,000 per year per intersection. (Source: Roundabouts - NDOT (nebraska.gov)).

Promoting Sustainable Transportation Options

Through the construction of widened sidewalks and redeveloped crosswalks in alignment with the FHWA Safe Transportation for Every Pedestrian (STEP) Initiative, the *CAST Initiative* will promote the use of alternative modes of transportation, including walking and biking. In addition, the project will provide multimodal connection between Downtown Beatrice, the existing trail on the west side of downtown Beatrice, and Riverfront Park and Trail, further improving walkability, providing multimodal access, and incentivizing sustainable transportation options for members of the Beatrice community.

Sustainable and Resilient Construction Materials and Practices

In addition, the *CAST Initiative* includes green, sustainable, and resilient construction materials and practices. As outlined in the 2023 Court Street Master Plan, the redesign of Court Street includes permeable paving to provide walking space and larger root zone for trees, and trees and planters to increase shade cover and reduce the project's carbon footprint. In addition, mid-block buildouts, widened sidewalks, use of concrete in intersections, and open green spaces results in reduced asphalt, ultimately reducing the carbon footprint of the project.

Comprehensive Environmental Planning and Review

In 2014, the City of Beatrice contracted with Olsson Engineering to conduct a study on the human and natural environmental impact of the *CAST Initiative*, in alignment with Section 106. The study concluded that "no potential 'red flags' [had] been identified in the study area," indicating that there are unlikely to be "potential issues that may lead to a more complex NEPA evaluation… if

federal funding is obtained in the future" (Source: 2014 Highway 136 Relocation Feasibility Study Planning and Environmental Linkage Review).

III. Quality of Life

Redeveloping Court Street for the Beatrice Community

As outlined in the 2023 *Court Street Master Plan*, supporting and promoting quality of life is among the primary outcomes of the *CAST Initiative*. The quality of life improvements outlined in Beatrice's FY24 RAISE proposal are the result of robust community engagement efforts led by city leadership over the course of the last decade.

Currently, Beatrice ranks in the 67th percentile for traffic proximity and volume in the state of Nebraska (Source: EPA EJSCREEN). The current routing of US 136 creates an uncomfortable and negative environment for multimodal road users, ultimately increasing stress and anxiety around Downtown Beatrice and discouraging residents from spending time in the corridor.

By rerouting US Highway 136 one block south of Court Street, the proposed RAISE project would allow Court Street to be developed as a pedestrian and cyclist-focused corridor. Proposed multimodal improvements, including redesigned intersections, widened sidewalks, updated signage and wayfinding, lighting, green spaces, trees and planters, benches, and bike racks will reestablish Court Street as a space for commercial and civic life, further developing a "sense of place" in the Beatrice community. Once Court Street is redeveloped, City leadership plans to use the corridor as a center for community life, festivals, and community events. In addition, the Court Street pedestrian improvements will connect to the existing trail on the west side of downtown Beatrice, and Riverfront Park and Trail, further improving quality of life for residents. These improvements are not possible to accomplish with the current configuration of US Highway 136 due to restrictions on development on a designated highway.

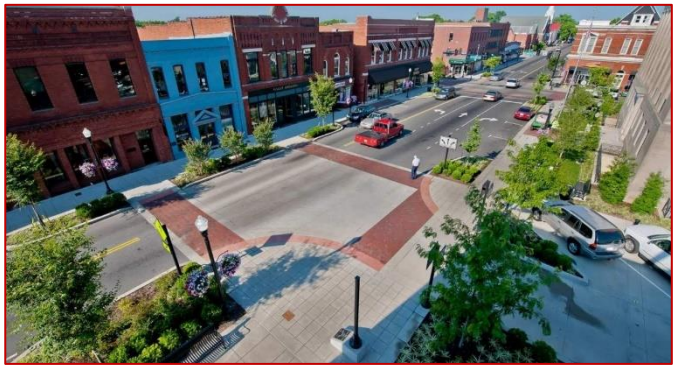


Figure 7: **Rendering of Beatrice's pedestrian-focused Court Street Corridor**

Improving Community Accessibility

The re-establishment of Court Street as a multimodal corridor will remove barriers to daily needs for community members, including jobs, education, healthcare, food, and recreation. Court Street improvements will also reduce travel times for both pedestrians and vehicles entering Downtown Beatrice, ultimately contributing to quality of life. These improvements will advance equity for disabled and disadvantaged community members located in Census Tracts 9651 and 9650 (Source: US Census).

Improving Community Health and Safety

Finally, the *CAST Initiative* will improve community health and safety, ultimately addressing quality of life considerations in Beatrice. Currently, as identified in figure 6, Block Group 2 of Tract 651.00, which includes the project location and surrounding neighborhoods, is identified as an environmental justice area of concern. By reducing vehicle idling time, reducing pollutant emissions, and improving transportation proximity and volume in Downtown Beatrice, the *CAST Initiative* will improve air quality for these environmental justice areas of concern.

IV. Mobility and Community Connectivity

Through the rerouting of US Highway 136 and the redevelopment of Court Street, the *CAST Initiative* will advance mobility and community connectivity within Beatrice and the greater region of southeast Nebraska. US Highway 136 is a major regional highway serving passenger and freight traffic, carrying between 8,000 and 13,000 vehicles per day (VPD)p. Approximately 4% of road users are heavy trucks. Due to the current routing of US Highway 136, regional vehicle and freight traffic along the highway is slowed due to traffic signals and pedestrian crossings in Downtown Beatrice. In addition, due to frequent vehicle collisions and accidents, the route is often backed-up, resulting in significant travel delays. The relocation of US Highway 136 one block south of Court Street will make traffic flow on the highway more efficient, increasing thoroughfare and providing better regional connectivity.

Locally, the relocation of US Highway 136 south to Market Street will allow for Court Street to be redeveloped as a pedestrian-focused corridor. Improved multimodal improvements, including redesigned intersections, widened sidewalks, updated signage and wayfinding, lighting, benches, and bike racks will improve pedestrian and cyclist comfort in Downtown Beatrice, ultimately increasing access to Downtown Beatrice. These efforts will expand access and advance equity for disadvantaged and disabled community members located in Census Tracts 9651 and 9650.

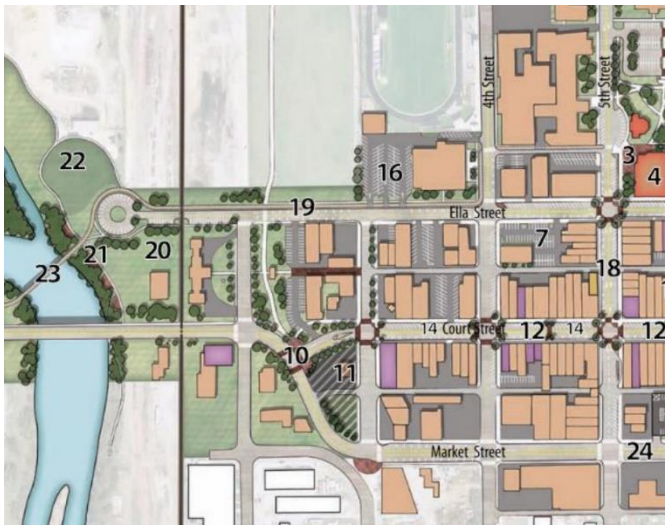


Figure 8: **Proposed pedestrian connectivity between Downtown Beatrice and parks/trails to the west of downtown**

The proposed pedestrian connectivity between Downtown, the existing trail on the west side of downtown Beatrice, and Riverfront Park and Trail will create new opportunities for recreation in the City, furthering mobility and community connectivity for residents.

V. Economic Competitiveness and Opportunity

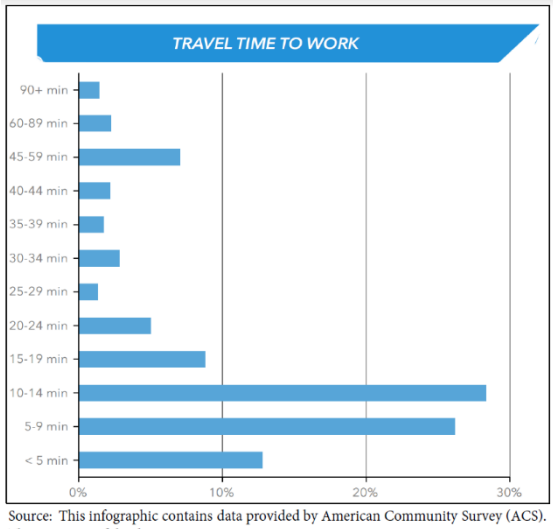
As outlined in the 2023 Court Street Master Plan, the *Cast Initiative* will stimulate the local and regional economy in the following ways:

Promote Local Economic and Workforce Development

Due to the current routing of US Highway 136, Downtown Beatrice is stigmatized as an uncomfortable and unsafe environment for pedestrians, which decreases walk-up traffic to local businesses. As identified in the 2011 Beatrice Downtown Revitalization Plan, "while businesses [along Court Street/US Highway 136] have some visibility to motorist, the traffic volumes make it difficult for individuals to be aware of business available along the street. Often motorists are focusing on moving through the district safely, avoiding parked cars, truck traffic and pedestrians."

According to a 2021 blight study, 11.7% of structures in Beatrice were vacant. In addition, according to Main Street Beatrice, second story housing currently has an occupancy rate of 20%. While the City has utilized over $1,795,184 to stimulate Downtown Beatrice through grants, low-interest loans to business owners, and tax increment financing tax abatement to Downtown property owners, several studies have identified that the relocation of US Route 136, and the redesign of Court Street, is the most cost-effective way to incentivize business retention, attract new private investment, and bolster the local workforce in Beatrice.

Figure 9: **Travel time to work for Beatrice residents**



Source: This infographic contains data provided by American Community Survey (ACS). The year span of the data is 2015-2019.

Improve Access to Jobs

By increasing multimodal access to catalyze economic growth in Downtown Beatrice, the *CAST Initiative* will improve access to jobs within the community. Currently, 80 percent of Beatrice residents drive alone to work, five percent walk, and less than one percent bicycle. With an average commute of 16.7 minutes, the *CAST Initiative* multimodal improvements will enable residents to walk or bike to work and reduce reliance on personal vehicles (Source: US Census). This will also improve access to work for underserved communities as transportation is a significant barrier to job retention.

In addition, the City will include local hiring provisions in construction contracts awarded under the *CAST Initiative* RAISE grant, allowing local residents to directly benefit from federal infrastructure support.

VI. State of Good Repair

Throughout the comprehensive planning process to redevelop and revitalize Downtown Beatrice, the *CAST Initiative* project components have been identified as priorities for addressing state of good repair on Beatrice and Gage County roadways.

According to a 2016 Downtown infrastructure study: the "condition of sidewalks in Downtown Beatrice are variable" (Source: Beatrice Downtown Revitalization Project – Phase 1). The study further identifies several segments of Court Street sidewalks as "poor condition" and recommends sidewalk replacement. Due to state highway regulations however, sidewalk upgrades are limited without the relocation of US Highway 136, thus making the pedestrian improvements outlined in the *CAST Initiative* impossible without the relocation of US Highway 36.

In addition, pavement analysis conducted by Nebraska Department of Transportation (NDOT) indicates that Market Street (the potential relocated location for US Highway 136) is currently in poor condition. Specifically, Falling Weight Deflectometer (FWD) testing on pavement strength indicated weak (150,000-250,000 psi) to very weak (<150,000 psi) pavement moduli (strength). Thus, Market Street requires reconstruction to support high-speed and heavy truck traffic with the relocation of US 136, supporting the need for federal funds for the *CAST Initiative.*

Finally, the City of Beatrice has undergone significant analysis and review of the environmental and cultural resources in the Court Street corridor, in alignment with Section 106.

VII. Innovation

The *CAST Initiative* will implement components of the FHWA's "Every Day Counts" model that "identifies and rapidly deploys proven, yet underutilized innovations to shorten the project delivery process, enhance roadway safety, reduce traffic congestion, or integrate automation." These innovations "... facilitate greater efficiency at the State and local levels, saving time, money, and resources that can be used to deliver more projects," thus ensuring that our roads "...are built better, faster, and smarter." Throughout the project development process, the City has worked to identify this innovative model to ensure project delivery addresses key priorities of the RAISE grant program that will result in even greater impact for its residents.

Since its inception in 2011, EDC has promoted 85 innovative practices relative to the design, delivery, construction, and operational phases of highway projects, of which the following EDC initiatives have been identified as having the potential for incorporation into the *CAST Initiative.*

The project will incorporate the following specific practices (note that the actual implementation of the proposed project delivery innovations will depend on local and state regulations):

- Construction Manager/General Contractor: This is an alternative contracting method that could potentially be incorporated to accelerate project delivery and reduce costs and risks for the City of Beatrice, particularly since there are multiple components to the project scope that require varied areas of expertise, in terms of both the design and construction of the planned

improvements [street rehabilitation, drainage improvements, construction of pedestrian and bicycle facilities, installation of street lighting, etc.]. Thus, this alternative contracting method may be preferable to the traditional delivery method, as the design of one portion of the project could be immediately followed by construction of that portion, concurrent with the design of the next portion of the project, etc., under the leadership of a CM/GC team.

- Flexibilities in Right-of-Way: Since additional rights-of-way must be acquired for the construction of several different project components, most of which involve small tracts, this innovation could expedite the acquisition process by allowing for appraisal waiver valuations within a defined threshold, partial or conditional ROW certifications, and appraisal and negotiations by the same individual.
- Planning and Environmental Linkages: The extensive efforts by the City of Beatrice in the planning phase of this project to solicit and obtain feedback from the community relative to the project goals of stimulating economic development and improving safety and quality of life should help to streamline the public involvement aspect of the environmental review and permitting phase of this project.
- Warm Mix Asphalt: Consideration will be given to the incorporation of WMA specifications for construction of the new asphalt pavements on this project, not only for improving pavement performance, but also for improving working conditions by reducing exposure to fuel emissions, fumes, and odors, both at the asphalt plant and on the various construction sites, many of which are located in residential areas.
- High Friction Surface Treatments: Several highly traveled streets identified for planned improvement under this project contain intersections where HFST can be applied in order to improve the frictional characteristics of the pavement, making braking more effective and thus improving safety to road users and pedestrians.
- Intelligent Compaction: Consideration will be given to incorporating a requirement that Intelligent Compaction equipment be used for construction of the new asphalt pavements on this project, which could result in enhanced pavement quality, uniformity of pavement density, and longer-lasting performance.
- Data-Driven Safety Analysis: The proposed safety improvements support the City's Vision Zero efforts. In addition, the project aligns with the City's DOT-funded Safe Streets and Roads for All Comprehensive Safety Action Plan that is currently in development. In addition, crash data was also utilized to calculate anticipated project benefits, as part of the Benefit-Cost Analysis
- Community Connections: These strategies will be considered during the planning, design, and construction phases of the project to ensure that all users have access to a safe, reliable, affordable, and multimodal transportation network that supports community development and revitalization.
- Pavement Preservation: Upon completion of the project, the newly constructed pavements will be monitored in order to determine the right time to apply pavement preservation treatments that will extend their service life and delay the need for more extensive rehabilitation.

- Safe Transportation for Every Pedestrian: The scope of the planned work includes the reconstruction of intersections that include proven countermeasures that align with the FHWA Safe Transportation for Every Pedestrian (STEP) Initiative
- Value Capture – Capitalizing on the Value Created by Transportation: In addition to improving mobility and safety to all road users within the project target area, one of the main goals of this project is to stimulate economic development opportunities
- Strategic Workforce Development: The project specifications will include language encouraging the construction contractor to utilize the resources and innovative strategies developed by the Highway Construction Workforce Partnership for identifying, training, and placing qualified individuals in the workforce.

VIII. Partnership and Collaboration

Since 2011, partnership and collaboration have been essential to the planning process for *the CAST Initiative,* including the development of Beatrice's FY24 RAISE proposal.

Partnerships

Local partnerships and collaboration with community stakeholders are essential to the RAISE proposal planning and project development process due to the diverse expertise, perspectives, needs, and priorities of the community. Key stakeholders supporting the *CAST Initiative* include:

Figure 10: Stakeholder Matrix

Stakeholder	Connection to the Project
Nebraska Department of Transportation (NDOT)	Will prioritize the project in the State Transformation Improvement Plan (STIP) upon award of RAISE grant funds. Will work with Beatrice to expeditiously complete NEPA and other state and federal regulatory requirements within an appropriate timeframe.
Main Street Beatrice	Will work to increase economic and workforce development opportunities in Downtown Beatrice before, during, and after project construction.
Beatrice Chamber of Commerce	Will work to increase economic and workforce development opportunities in Downtown Beatrice before, during, and after project construction.
Gage Area Growth Enterprise (NGage)	Will work to increase economic and workforce development opportunities in Downtown Beatrice before, during, and after project construction.
Local Businesses in Downtown Beatrice	Will directly benefit from the relocation of US Highway 136 and redesign of Court Stret. In addition, local businesses have the potential to expand after the redesign of Court Street stimulates the local economy.
Local Elected Officials	Will continue to support the project throughout the planning, and construction process.

Community Engagement

Since 2011, Beatrice has utilized local, state, and federal funding to plan all aspects of the *CAST Initiative*, including robust and meaningful community engagement. The Downtown Revitalization Plan was presented to the Beatrice City Council on February 7, 2011. Focus group discussions were held on March 8, 2011, to discuss the challenges facing Downtown. Public engagement continued through April with design workshops to engage the public in conceptual planning. A public Open House was held for the public to review and comment on the Downtown Revitalization Plan prior to the City Council meeting on June 6, 2011. A "Beatrice Community Downtown 'Vision' Wants & Needs Survey" was advertised Beatrice citizens via public websites. A total of 273 surveys were received. Additionally, a survey for business/property owners was distributed to all property owners in Downtown Beatrice. Highlights and complete results from both survey responses can be found in the attached Beatrice Downtown Revitalization Project – Phase 1 document. Two stakeholder open houses were held for the Court Street Master Plan in 2023. The City of Beatrice hosted the Downtown stakeholder open houses on March 27, 2023, and May 22, 2023, at the Beatrice City Auditorium. Comments were gathered with provided sticky notes, green dots, and through verbal conversations with the public.

Overall, the residents of Beatrice are eager to see the city make capital investment in the Court Street Master Plan and relocating truck traffic. Public outreach for the *CAST Initiative* will be ongoing during all phases of the project. Future engagement will seek input from any disadvantaged communities identified during the NEPA review through targeted outreach, events, and coordination with services and organizations that are familiar with these communities.

Furthermore, this application includes letters of support from various local stakeholders. These letters highlight the existing challenges on Highway 136, emphasizing how the current traffic conditions hinder business development and pose safety concerns for pedestrians and cyclists. The letters affirm that the *CAST Initiative* aligns with the City's objectives, addressing safety, community, mobility, and quality of life along the Highway-136/Court Street Corridor. Additionally, it is seen as a catalyst for economic development in the broader region.

Figure 11: One of two recent two-hour open houses held on the CAST Initiative

In addition, the City has made information on the project publicly available through online resources, including a dedicated project page on the Beatrice website and publication of several strategic planning documents.

FY24 RAISE Grant Proposal: City of Beatrice, NE
Court Street Access and Safety Transformation (CAST) Initiative

PROJECT DESCRIPTION

I. Beatrice's Unique Transportation Challenges

Due to the current routing of US Highway 136, Downtown Beatrice, and specifically the Court Street corridor, is characterized by high-speed and heavy truck traffic. US Highway 136 is a regional highway originating in Central Nebraska, passing through Beatrice's Downtown Central Business District as Court Street, and terminating in Indiana. The highway serves local and regional passenger and freight traffic and carries between 8,000 and 13,000 vehicles per day (VPD). Approximately 4% of road users are heavy trucks.

This unintentional vehicle-centered design of Court Street has had negative impacts on the citizens, community, and economy of both Beatrice and the surrounding area. Currently, Downtown Beatrice is an unsafe environment for motorist, pedestrian, and bicyclist road users. The speed and frequency of vehicles create a higher chance for pedestrian and vehicle conflicts, including the 125 crashes that occurred between 2016 and 2020 (Source: Beatrice Police Department).

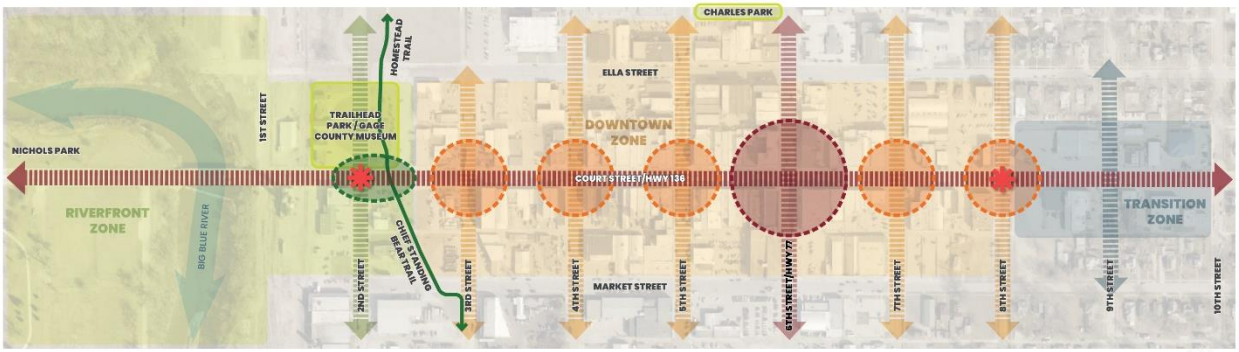


Figure 1: Existing site analysis

Originally built as a nineteenth-century "Main Street" pedestrian marketplace, Court Street and Downtown Beatrice were not originally designed for high-speed vehicle use. This has constrained economic growth and impacted accessibility for residents, in addition to creating an uncomfortable and uninviting environment for multimodal road users, ultimately decreasing foot traffic to Beatrice's businesses. The lack of pedestrian accessibility particularly impacts the 3,400 citizens located in the DOT-designated Disadvantaged Census Tracks located in and adjacent to the project area (Source: DOT ETC Explorer). In addition, the Census Block Group surrounding the US Highway 136/Court Street corridor is an environmental justice area of concern due to air quality and traffic proximity (Source: EPA EJScreen Tool).

II. Beatrice's RAISE Solution

Beginning in 2011 City elected officials, leadership, and the greater community began comprehensive efforts to identify feasible solutions to Beatrice's historic transportation challenges. Specifically, the City has utilized local, state, and federal funding to engage in comprehensive stakeholder engagement, feasibility and revitalization studies, and initial design/planning. These strategic efforts have culminated in the development of the 2023 *Court Street Corridor Master Plan* and Beatrice's FY24 RAISE application for the *Court Street Access and Safety Transformation (CAST) Initiative*.

The *CAST Initiative* includes the rerouting of Highway 136 one block South to Market Street and the redevelopment of Downtown Beatrice as a pedestrian-focused corridor. The rerouting of US Highway 136 would allow the City to reestablish Court Street as a pedestrian-focused corridor, which would increase safety, access, and walkability of the Downtown corridor and thus stimulate economic growth and development in Downtown Beatrice.

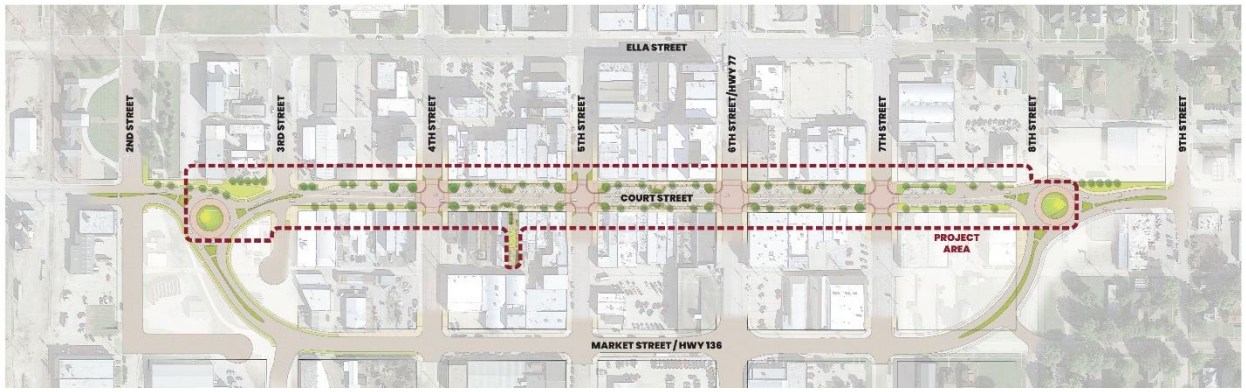


Figure 2: Proposed US Highway 136 reroute and Court Street redevelopment

Specific improvements include:

Relocation of US Highway 136 one block South of Court Street, between 2nd and 8th Streets, removing high-speed and heavy truck traffic from Downtown Beatrice.

Reestablishment of Court Street as a Pedestrian Corridor

- Pedestrian amenities including improved seating, benches, bike racks, trash receptacles, and sidewalk lighting;
- Pedestrian amenity zone nodes at central intersections;
- Pedestrian-scale wayfinding monuments;
- Addition of a public outdoor space at the site of a recently demolished building;
- Concrete crosswalks and intersections, slowing traffic and enhancing pedestrian visibility.

Environmental Improvements

- Promotion of multimodal transportation options;
- Addition of permeable paving to provide walking space and a larger root zone for trees;
- Mid-block buildouts, decreasing asphalt cover and increasing green space;

- Rain-garden planters to capture surface stormwater;
- In-ground and above-ground planters, including trees to increase shade cover.

Other Accessibility Improvements, including increased parking capacity from 82 stalls to 108 stalls;

III. Project History

Beatrice's FY24 RAISE Grant proposal for the *CAST Initiative* is the culmination of over 13 years of strategic planning efforts led by City elected officials, leadership, and the greater community. Since 2011, the City has utilized local, state, and federal funding to engage in comprehensive stakeholder engagement, feasibility and revitalization studies, and initial design/planning. Specific planning efforts include:

- The 2011 *Beatrice Downtown Revitalization Plan*, which includes an analysis of conditions in Downtown Beatrice, comprehensive community engagement, and identifies the relocation of US Highway 136 as a viable redevelopment concept
- The 2014 *Highway 136 Relocation Feasibility Study*, which includes analysis of the project's environmental impacts (in alignment with NEPA provisions), traffic operations, parking, and design feasibility;
- 2016 *Downtown Revitalization* Study, which further details planned efforts to redevelop and revitalize the Downtown;
- The May 2022 *Downtown Revitalization* Plan, developed by the University of Nebraska-Lincoln College of Architecture Community & Regional Planning Program.

In addition, Beatrice has utilized grant funding to develop sections of the Court Street corridor, including:

- 2015, 2021, and 2023 HUD Community Development Block Grants for building/façade improvements from Court Street to Ella Street;
- 2010 DOT-FHWA Surface Transportation Program (STP) Grant to restore a historic brick roadway section of 2nd Street between Court Street and Ella Street;
- 2023 QTC Recovery Grant for beautification efforts on Ella Street.

These strategic efforts have culminated in the development of the 2023 *Court Street Corridor Master Plan* and Beatrice's FY24 RAISE application. **Building upon previous strategic efforts, the *Master Plan* provides a vision for implementation of the *CAST Initiative*.**

IV. Statement of Work

The proposed project will improve freight circulation, enhance pedestrian opportunities, decrease vehicle miles traveled (VMT), reduce crashes, curb greenhouse gas emissions, and promote economic development. A summary Statement of Work is as follows, and is accompanied by a detailed Statement of Work in attachment #12:

1. Overall Management
    a. Execute Funding Agreement
    b. Designate Project Manager
2. Project Preparation
    a. Partnership Agreements: This project has local and regional stakeholder support
3. Procurement
    a. Design Bid: Prepare solicitation and competitively bid the design and engineering of the project, including environmental compliance, in accordance with Federal, State, and Local regulations and grant award procurement requirements.
    b. Construction Bid: The City will prepare a solicitation and competitively bid and select a contractor for the project's construction.
    c. Project Design**:** The City has already completed a conceptual design for the relocation of US-136 and the reconstruction of Court Street. The project is currently valued at 15% design. Once the consultant is selected, they will work through preliminary design/engineering, environmental permitting, right of way acquisition, and final design.
4. Community Engagement
    a. Public Involvement: Including robust stakeholder outreach and public meetings
5. Construction
    a. The City will implement pre-construction and construction activities in accordance with all applicable DOT/FHWA, NDOT, and local regulations, requirements, and policies. These activities are further detailed in the Statement of Work attachment (attachment #12).
6. Closeout
    - End: Submit final report.

V. Project Location

The City of Beatrice

Beatrice sits on a bend of the Big Blue River in southeastern Nebraska, about forty miles south of Lincoln. Founded in 1854, Beatrice grew from a small band of westward travelers to a thriving community of homesteaders, becoming an agricultural hub and key stop on the Oregon Trail.

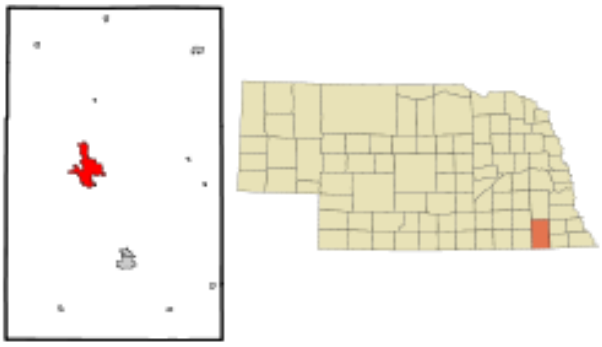


Figure 3: Location of Beatrice and Gage County

Today, the city is home to a population of 12,209 in 5,482 households. 28.7% of the city's residents work in education, healthcare, and social assistance. Just 17.1% of the population holds a bachelor's degree or higher, compared to the national average of 37%. The median household income is $49,537, relative to the Nebraska average of $63,015 and the national average of $74,580. 20.1% of Beatrice residents are living in poverty, nearly double the national poverty rate. (Source: 2022 US Census Data).

Further compounding these economic challenges is the high rate of disability in Beatrice. 18.3% of the city's population lives with a disability, compared to just 12.6% statewide. 10.3% live with an ambulatory disability. This is exacerbated by multimodal accessibility issues in Downtown Beatrice, making it more difficult for those struggling with disabilities to get jobs, attend work regularly, and participate in the local economy. (Source: 2022 US Census Data)

Census tract 9651, where project components are focused, has a disability rate just below that of the cities at 17%. Tract 9650, an adjacent tract and one that would be greatly helped by the funding and completion of the *Cast Initiative*, has a disability rate of 23%. Though Beatrice is dispersed, with a population density of just 1293.8 per sq. mile, tract 9650 has a density of 3681 per sq. mile (Source: 2022 US Census Data). Easing traffic flow in an area adjacent to the most densely populated area of Beatrice will increase mobility for not just those who live there, but the city as a whole.

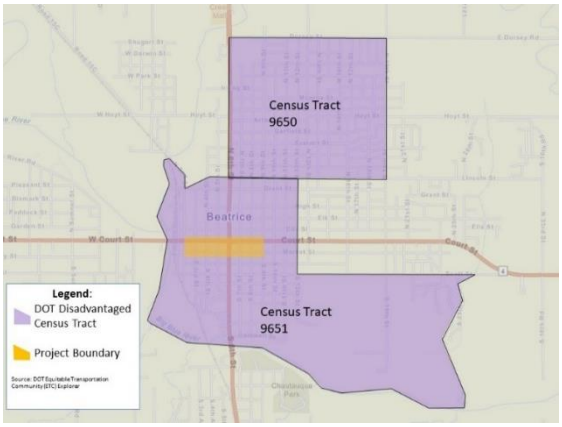


Figure 3: USDOT Disadvantaged Census Tracts and project corridor

CAST Initiative Corridor Location

The *CAST Initiative* project location/project boundary was selected based on critical community needs to address existing limitations and challenges while increasing opportunities aligned with city, state, and federal priorities. Figure 3 indicates that the Court Street Corridor is located both within and adjacent to two Department of Transportation Historically Disadvantaged census tracts (Census tracts 9651 and 9650, respectively).

The specific *CAST Initiative* project area runs along Court Street and Market Street, with traffic flowing east-west, and between 2nd and 9th Street moving north and south, as indicated in Figure 4.

Figure 4: CAST Initiative Project Area