

Second Street Corridor (US 60)

Complete Street and Road Diet Project Frankfort, Kentucky

Introduction

The City of Frankfort, Kentucky's Second Street Corridor project is an example of how local governments and State departments of transportation (DOTs) can address safety needs during the National Environmental Policy Act (NEPA) process (figure 1). The City of Frankfort received Transportation Investment Generating Economic Recovery (TIGER) funds in 2018 to implement Complete Streets elements and a Road Diet along the Second Street Corridor (U.S. 60). The project's objective was to create a safer travel experience for all users, boost economic development in a distressed neighborhood, and allow for placemaking opportunities.

This case study explains how safety was considered prior to, and incorporated into, the NEPA process. The scope of the project in this case study demonstrates that improving safety performance can also advance environmental stewardship and elevate communities where environmental justice (EJ) considerations are a motivating factor for transportation investments (City of Frankfort, 2017).

Safety in the NEPA Process



Project Background

Second Street runs east to west along the south side of Frankfort. The corridor is *physically* separated from downtown by the Kentucky River; it is connected to downtown by only two bridges crossing the river. In 2012, Frankfort applied for technical assistance to develop a plan to revitalize, reimagine, and enhance the Second Street Corridor through the US Environmental Protection Agency's (EPA's) Greening America's Capitals (GAC) Program. The grant allowed the City to develop a *Greening America's Capitals: Second Street Corridor* (Plan), to improve the corridor by producing a "high quality public realm that promotes healthy civic interactions" (Graham, 2012). This Plan resulted in six distinct areas suggested for improvement (figure 2).



The City received funding in 2018 through the United States Department of Transportation (USDOT) TIGER Discretionary Grant Program to implement the Second Street Corridor Complete Street and Road Diet project. According to the grant application, nearly 25 percent of residents in this neighborhood live in poverty, 20 percent live with a disability, and nearly 15 percent do not have access to a motor vehicle (City of Frankfort, 2017). The corridor's existing conditions—high vehicle speeds, long crossing lengths, and limited multimodal facilities along the corridor—caused safety concerns for pedestrians, bicyclists, and transit users.

The Complete Street and Road Diet project would improve safety by:

- » Implementing new pedestrian, bicyclist, and transit facilities.
- » Increasing access for seniors and persons with disabilities.
- » Reducing the roadway width, creating shorter crossing lengths, and adding space to install multimodal facilities.

The final project limits included four of the six areas recommended in the 2012 Plan:

- » Second Street School area.
- » Second Street between Steele and Shelby Streets.
- » Capital Avenue at Second Street.
- » Capital Avenue at Main Street.

Each area had specific needs, but the project aimed to create a coherent, connected network that is safe for all road users. The other two identified areas in the original 2012 plan, Dolly Graham Park and the Riverfront area, are both key elements to potential economic redevelopment and encouraging active lifestyles. However, they are not directly related to the street network improvements. The four selected areas noted above translate into a project study area focused on three segments: Second Street, Capital Avenue, and Main Street (figure 3). Improvements to these segments would result in a safer travel network for the residents of the corridor area, providing accessibility benefits to all users in the community.



Source: KYTC, 2019.

Project Timeline

The project schedule included a series of key milestones in accordance with the NEPA process and overall project delivery (figure 4).

N	MARCH 2018	FEBRUARY 2019→ SEPTEMBER 2019 ->					
Т	IGER grant awarded.	Public and stakeholder engagement. Preliminary design. Resource agency coordination.		Technical resource reviews and impact calculations. Alternatives analysis. Preferred alternative selection. NEPA CE checklist approval.			
$\left(\right)$	SEPTEMBER 2022		⇐ DECEMBER 2020	↓ JULY 2020 ←	- OCTOBER 2019		
	Substantial construction of and open to traffic.	completed	Construction started.	Right of way (ROW) acquisition.	Final design initiation.		
Figure 4. Graphic. Second Street Corridor project development process. Source: FHWA							

Project Summary

Safety has been a core component of the Second Street Corridor Complete Street and Road Diet project since its inception in 2012. The City documented the need to create a safer environment for users consistently in the GAC grant and subsequent corridor study. The following sections document how the City incorporated safety throughout project development and in multiple stages of the NEPA process, including pre-NEPA activities:

- » Project Planning and Scoping.
- » Purpose and Need.
- Alternatives Analysis. »

Safety in Project Planning and Scoping

Through technical assistance provided as part of the 2012 GAC grant program, Frankfort's corridor study process included a public workshop that engaged the community and gathered feedback for creating safer

facilities and a more comfortable pedestrian and bicyclist experience. Public engagement was a key element early in the project development process, including the visioning exercises associated with the 2012 corridor study. During a multi-day public workshop, citizens voiced their concerns about the study area and helped establish project goals (figure 5). The workshop established improved user safety as a top priority goal. While there was an evaluation of historical crash data, the anecdotal input from daily users of the corridor helped to solidify the justification of implementing a safer corridor solution.



Source: OSC. 2013.

The City continued engaging with the public during the

NEPA process to maintain support for the project from a diverse stakeholder group. The City held a public

meeting in May 2019 and received 18 written comments from 54 attendees. Many of these comments mentioned the importance of safety as part of future improvements. The City's project team also held a series of 23 stakeholder meetings, including meetings with:

- » Residents.
- » Property owners.
- » Business owners.
- » Frankfort City Commissioners.
- » Representatives of the Frankfort/Franklin County Tourist Commission.
- » Downtown Frankfort, Inc.

- » Franklin County Arts Council.
- » Kentucky Heritage Council.
- » Kentucky Transportation Cabinet.
- » Kentucky Division of Water.
- » Kentucky River Authority.
- » Frankfort Independent Schools.
- » Walk Bike Frankfort.

» City of Frankfort.

The public engagement process included the following groups, which represent underserved communities:

- » South Frankfort Neighborhood Association (the community is 30 percent minority, 24 percent of residents live in poverty, 17 percent of residents are age 65 and older, 14 percent do not have access to a motor vehicle, and nearly 20 percent of the population is disabled; table 1).
- » Kentucky State University (a historically black university located in Frankfort).
- » Frankfort Independent School Board (school district includes South Frankfort and downtown neighborhoods and Second Street Elementary School is located adjacent to the project).
- » Frankfort Housing Authority (representing lower income, ethnically diverse residents living in the Southern Apartments which is located adjacent to the project).
- » Elected City Commissioners and County Magistrates who represent a socioeconomically and ethnically diverse constituency in and around the project area.

Characteristic	South Frankfort	City of Frankfort	Kentucky	United States
Median Household Income	\$38,582	\$41,101	\$43,740	\$53,889
Poverty	23.9%	19.1%	18.9%	15.5%
Renters	71.6%	50.2%	32.8%	36.1%
No Vehicle Access	13.7%	7.5%	7.8%	9.1%
School Age (5-17)	13.8%	14.6%	16.8%	17.0%
Age 65 and Older	16.8%	15.0%	14.4%	14.1%

Table 1. Comparison of the South Frankfort community to regional and national characteristics (City of Frankfort, 2017).

Keeping safety as a priority project goal was a consistent theme throughout all public engagement activities. The City has maintained a robust email listserv throughout the project's duration, sending out over 40 project updates to date in order to actively communicate with all stakeholders. City staff also provided project updates on social media platforms through their "Track the TIGER" campaign.

Safety in Project Purpose and Need

The project's environmental documentation consisted of a Level I Categorical Exclusion (CE) as allowed by a 2018 Programmatic Agreement between the Kentucky Transportation Cabinet (KYTC) and the Federal Highway Administration (FHWA). Pursuant to the TIGER application, the project "qualifies as a Categorically Excluded activity as it consists of reconstruction of existing public facilities without any significant increase in size or capacity" (City of Frankfort, 2017). The City documented the need for an improved streetscape that safely accommodated bicyclists and pedestrians and reduced the impact of vehicle traffic on the community. Although the word "safety" is not included in the purpose and need statement, the statement still noted how pre-NEPA planning and observational data can be used to achieve a safer transportation system. As stated in the CE,

"The purpose of the project is to improve pedestrian and bicycle accommodations in historical downtown Frankfort. Along with improving sidewalks and bike lanes, streetscape enhancements will be added, and the combined sanitary and stormwater sewer system will be separated to reduce overflows.

The need for the project was identified through a study of existing conditions of the sidewalks, roadway, and combined sewer system. Existing conditions revealed that the Second Street transportation corridor exhibits many challenges for pedestrians and bicyclists. Sewer improvements are needed to prevent overflows from releasing raw sewage into the Kentucky River during heavy rainfall." (KYTC, 2019)

The corridor had several known safety concerns:

- » High speeds.
- » Narrow sidewalks.
- » Wide roadway.
- » Long crosswalks.
- » Illegal left turns.
- » Lack of accessibility for all users and limited compliance with accessibility standards such as Americans with Disabilities Act (ADA).
- » Limited bike accommodations.
- » Existing crash history.

The corridor averaged 17 crashes per year during the 7-year study period (2010 to 2016; City of Frankfort, 2017). The City decided to implement a Road Diet to accommodate all road users' needs along Second Street. Road Diets are an FHWA Proven Safety Countermeasure. These treatments help slow down drivers, shorten pedestrian crossings, and ultimately improve safety and mobility for all users. Road Diets can include wider sidewalks, reduced crosswalk lengths, improved lighting, additional transit stops, and enhanced bicycle accommodations (FHWA, 2022). The project also included general street repairs to crosswalks and sidewalks to reduce impediments to pedestrians and persons with disabilities and damage to vehicles reported along the corridor, including deployed airbags, popped tires, and damage to vehicle struts.

The purpose and need statement also underscored how safety and environmental stewardship can both be addressed during the NEPA process. The City documented the need to improve the sewer system along Second Street to prevent overflows and releasing raw sewage into the Kentucky River during heavy rainfall. The TIGER grant application documents how stormwater improvements and safer bicycle and pedestrian accommodations can complement each other:

- » Repaving on-street parking using more porous materials.
- » Planting street trees and rain gardens as part of streetscape enhancements.
- » Constructing linear landscaping buffers along the entire project.
- » Separating the combined stormwater and sanitary sewer system to reduce the frequency of overflows into the Kentucky River.

In addition to stormwater treatments, this project is located along a corridor that was once known as "Gasoline Alley" due to the number of gas stations situated on it. Many of those businesses had closed prior to project implementation, but they left behind numerous underground storage tanks (USTs). As redevelopment occurs as a result of this project, there is an opportunity to remove these USTs and remediate potential contamination. As continued development occurs along the corridor, the City plans to apply for funding for this work through the Brownfield Assessment Grant program through the US EPA.

Safety in Alternatives Analysis

The project team based their design process on the concepts of Complete Streets and Road Diets during the alternatives development phase of the NEPA process (FHWA, n.d.). These design approaches prioritize safety, comfort, and connectivity for all users of the roadway, but they also have environmental benefits associated with reduced greenhouse gas emissions. By including bicycle, pedestrian, and transit facilities and Proven Safety Countermeasures associated with a Complete Streets design model, contextual designs can incorporate safety elements without compromising environmental considerations.

The City of Frankfort worked through multiple iterations of design options for three distinct project segments (figure 6):

- 1. Second Street combination of Second Street School Area and Second Street between Steele and Shelby Streets Area from the GAP study.
- 2. Capital Avenue Capital Avenue at Second Street from the GAP study.
- 3. Main Street Capital Avenue at Main Street from the GAP study.



The City ultimately selected the following designs for each segment.

Second Street from Taylor Avenue to Capital Avenue (1)

The proposed safety-related improvements for this segment include:

- » Realignment of cross-streets to address geometric issues.
- » Placement of a median at the school entrance to restrict left turns and provide traffic calming effects.
- » Reestablishment of concrete sidewalk/entrance in front of several buildings to provide a demarcation between the pedestrian space and the private parking area.
- » Conversion of the Steele and Shelby Street intersections from signalized control to all-way stops.
- » Improved lighting (energy efficient LEDs), crosswalks, and transit accommodations.

The two alternatives developed for Second Street proposed different ways to implement bicycle facilities. Alternative I included traditional bike lanes, while Alternative 2 included a two-way bicycle facility separated from vehicular traffic on Second Street. The City selected Alternative 2 due to the safety benefits associated with the separated facility on the section from Bridge Street to Shelby Street.

- » Second Street (from Taylor Avenue to Bridge Street):
 - \circ One 12-13-ft travel lane in each direction, with turn lanes as needed.
 - I0-16-ft of mixed-use path on the north side of the street (combining pedestrians and bicyclists).
 - \circ 6-8-ft of sidewalk on the south side of the street.
- » Second Street (from Bridge Street to Shelby Street; figure 7):
 - One 13-ft travel lane in each direction, with no exclusive turn lanes.
 - 6-ft of sidewalk on the south side of the street.
 - o 8-12-ft of sidewalk on the north side of the street with adjacent 8-ft, two-way bike lane.
 - Curb extensions at intersections.



• On-street parking in westbound direction.

Capital Avenue from Second Street to the Capital Avenue Bridge (2)

The two alternatives developed for Capital Avenue proposed different lane configurations to accommodate southbound Capital Avenue traffic (figure 8). Alternative I provided a dedicated right-turn lane, a through lane, and a short, dedicated left-turn lane; Alternative 2 provided a shared right-through lane and a shared left-through lane. However, both alternatives included a multi-use path to provide connectivity to the future river trail.

The City recommended Alternative I due to the need for the dedicated left-turn lane for traffic operations. This demonstrates an example of balancing project needs across various parameters while still improving safety over the existing condition. Design specifics for this alternative include:

- » Capital Avenue (from Second Street to the Bridge):
 - One 11-ft travel lane in each direction.
 - One 12-ft dedicated southbound right-turn lane and one 11-ft dedicated southbound left-turn lane at Second Street.
 - 8-10-ft sidewalks on both sides of the street.
 - Curb extensions at Second Street intersection.



Figure 8. Graphic. Capital Avenue improvement alternative. Source: KYTC, 2019.

Main Street – High Street to Broadway Street (3)

The two alternatives developed for Main Street proposed different options for the existing eastbound dedicated right-turn lane and sidewalk (figure 9). Alternative I removed the dedicated eastbound right-turn lane and widened the southern sidewalk in front of the stone buildings between High Street and Capital Avenue. This additional space allowed for improved walking conditions and the ability to build a two-tiered sidewalk on the south side to remove the existing stair barriers to accessibility for pedestrians with disabilities. Alternative 2 maintained the dedicated right-turn lane but requires pedestrians not able to use stairs on the south side to cross over to the north side. The existing 12-ft sidewalk area on the south side in front of the stone buildings would be two-tiered to provide both an accessible pedestrian route and an accessible entrance to a stone building. The City recommended Alternative 2 due to the need for the dedicated right-turn lane for traffic operations. Design specifics for this alternative include:



- » Main Street at Capital Avenue and High Street Intersections:
 - Curb extensions at both intersections.
 - 10-13-ft sidewalks along the north side of Main
 - Street and 6-ft sidewalks on the south side of Main Street.

Project Themes

The Second Street Corridor Complete Street and Road Diet project touches on several themes noted in FHWA's Integrating Road Safety into NEPA Analysis: A Practitioner's Primer guidance (FHWA, 2011).

Considering Safety Prior to NEPA

The NEPA process is structured to produce a thorough review of potential environmental impacts of a project, including those to the human environment. However, the grant writing process, along with feasibility studies, existing conditions reviews, and stakeholder engagement leading up to the NEPA process can identify project needs, safety being just one example. The City's project planning and pre-NEPA work established safety as a priority goal of the community that was used to inform the purpose and need. During the NEPA process, there was an opportunity to document project decisions and create a path for safety elements to be included in the project.

Safety and Environmental Justice

The project will provide benefits to many of the affected neighborhood residents by providing safe, accessible routes along Second Street and across the river into downtown Frankfort. The Second Street Corridor has a considerably high low-income population who lack of access to a motor vehicle (table 1). By engaging multiple public groups and agencies that advocate for underserved communities (as previously detailed), the project team was able to engage these communities and build consensus through the environmental review, design, and implementation of the project.

Safety and Environmental Stewardship

The combination of an improved multimodal environment (i.e., safe, comfortable, and connected network for all road users) and environmental remediation (i.e., stormwater improvements, reduced emissions, etc.) demonstrate a key point in the USDOT's National Roadway Safety Strategy (NRSS):

"The climate, health, and other co-benefits of safety improvements on our roadways and in the surrounding environment are substantial, and further support the benefits of a focused roadway safety effort." (USDOT, 2022; p. 9)

Future Opportunities for Complete Streets and the NEPA Process

A project like the Second Street Corridor Complete Street and Road Diet project opens the door for future opportunities to plan, develop, and operate equitable streets and networks that prioritize safety and connectivity to destinations for all people who use the street network. The City hopes to implement various forms of public art (murals, sculptures, granite sidewalk inserts) in the future to encourage community ownership of the corridor. The positive momentum around this project has also helped the City secure a Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant for a nearby two-mile corridor that will also implement Complete Streets concepts, furthering the mission of a safe and connected City network.

References & Additional Information

- » City of Frankfort, Kentucky. (2017). TIGER Application: Complete Street and Road Diet on Second Street Corridor. Available online: <u>http://www.frankfort.ky.gov/DocumentCenter/View/1593/Frankfort-TIGER-Application---Complete-Street-and-Road-Diet-on-Second-Street-Corridor</u>.
- » Federal Highway Administration. (n.d.). Complete Streets. Available online: <u>https://highways.dot.gov/complete-streets</u>
- » Federal Highway Administration. (2011). Integrating Road Safety into NEPA Analysis: A Primer for Safety and Environmental Professionals, Report No. FHWA-SA-11-036, Washington D.C. Available online: <u>https://rosap.ntl.bts.gov/view/dot/42549</u>.
- » Federal Highway Administration. (2022). Proven Safety Countermeasures. Available online: https://highways.dot.gov/safety/proven-safety-countermeasures.
- » Graham, H. (2012). Proposal to the U.S. Environmental Protection Agency for the Greening America's Capitals Program [Letter]. Frankfort, Kentucky.
- » Kentucky Transportation Cabinet. (2019). *Categorical Exclusion Environmental Determination Checklist*. Item #: 5-565.00. Franklin County, Kentucky.
- » Office of Sustainable Communities. (2013). Greening America's Capitals: Second Street Corridor. Frankfort, Kentucky. Available online: <u>https://archive.epa.gov/epa/sites/production/files/2014-</u>02/documents/greening-americas-frankfort_0.pdf.
- » Phone Interview on January 28, 2022, with Rebecca Hall (City of Frankfort, KY), Chuck Knowles (City of Frankfort, KY), and Andrew Seth (Sustainable Strategies DC).
- » United States Department of Transportation. (2022, January). National Roadway Safety Strategy. Available online: <u>https://www.transportation.gov/sites/dot.gov/files/2022-02/USDOT-National-Roadway-Safety-Strategy.pdf.</u>

Project Contact

Rebecca Hall City of Frankfort (502) 352-2076 rhall@frankfort.ky.gov