

APPENDIX E:

Meeting Summaries



Meeting Minutes

TO: Dave Heil
Co-Project Manager
KYTC Central Office
200 Mero Street
Frankfort, KY 40622

Jeff Dick
Co-Project Manager
KYTC District Office #8
1660 US 27
Somerset, KY 42501

Casey Smith
Co-Project Manager
KYTC District Office #7
800 Newtown Court
Lexington, KY 40511

FROM: Len Harper
Project Manager
Stantec Consulting Services Inc.

DATE: February 9, 2023

SUBJECT: US 150 Corridor Study
US 127B (MP 0.000 – MP 1.000) Boyle County
US 150B (MP 0.000 – MP 2.270) Boyle County
US 150 (MP 16.441 – MP 18.505) Boyle County
US 150 (MP 0.000 – MP 5.467) Lincoln County
Boyle & Lincoln Counties
KYTC Item No. N/A
Project Team Meeting No. 1

The first Project Team Meeting for the subject project was held at the UK Lincoln County Extension Office and virtually via Microsoft Teams on February 7, 2023 at 10:30 a.m. EST. The following individuals were in attendance:

Jay Balaji*	KYTC – Central Office Planning
Jeff Dick	KYTC – District 8
Stephen De Witte	KYTC – Central Office Planning
Mallory Frye*	KYTC – District 8
Joseph Gossage	KYTC – District 8
Dave Heil	KYTC – Central Office Planning
James Jones	KYTC – District 8
Conley Moren*	KYTC – District 8
Amanda Parmley	KYTC – District 8
Joshua Samples*	KYTC – District 7
Alex Sergent*	Bluegrass Area Development District (BGADD)
Casey Smith	KYTC – District 7
David Souleyrette*	KYTC – Central Office Planning
Robin Sprague*	KYTC – District 7
Randy Turner*	KYTC – Central Office Highway Design
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.
Graham Winchester	Stantec Consulting Services Inc.

*Joined via Microsoft Teams

Len Harper welcomed everyone and said the purpose of the meeting was to discuss the progress to-date for the US 150 Corridor Study. Len then delivered a presentation.

The following enumerated items were discussed.

1. The purpose of the meeting is to present the results from the existing conditions analysis and to get feedback from the project team on transportation issues and preliminary improvement concepts.
2. There are two projects in the vicinity listed in *Kentucky's Enacted FY 2022 – 2028 Highway Plan*:
 - KYTC Item No. 8-80001 includes installing a turn lane on US 150 near Hubble Road and Crawford Lane (D = \$100,000; U = \$50,000; C = 350,000).
 - KYTC Item No. 8-80111 involves installing a turn lane on US 150 at Dollar General (D = \$100,000; C = \$900,000).

There is one Highway Safety Improvement Program (HSIP) project in the vicinity:

- Median U-turn at the US 150B intersection with US 150. This project is currently in the design phase.
3. The objective of the US 150 Corridor Study is to improve safety, congestion, and mobility on the South Danville Bypass and US 150 from Fireside Drive in Danville to US 27 in Stanford.
 4. The study area, which includes US 150 and the South Danville Bypass from Fireside Drive in Danville to US 27 in Stanford, is shown in **Figure 1**.
 5. Highlights from the existing conditions analysis were discussed. The study corridor is 10.8 miles in length with posted speed limits between 45 and 55 miles per hour (MPH). This four-lane principal arterial has 12-foot lanes and a 32-foot depressed median throughout with 10-foot outside and two-foot inside shoulders in the urban sections and two-foot paved inside and outside shoulders in the rural areas (10-foot graded outside).
 6. There was then a discussion on access management and median openings. The urban portions of US 150 and the South Danville Bypass have average median spacing of just over 1,000 feet while the rural portions average between 550 and 700 feet, as shown in **Figure 2**. Access management guidance from KYTC recommends a minimum of 2,400 feet between full median openings and 1,200 feet between openings with partial access.

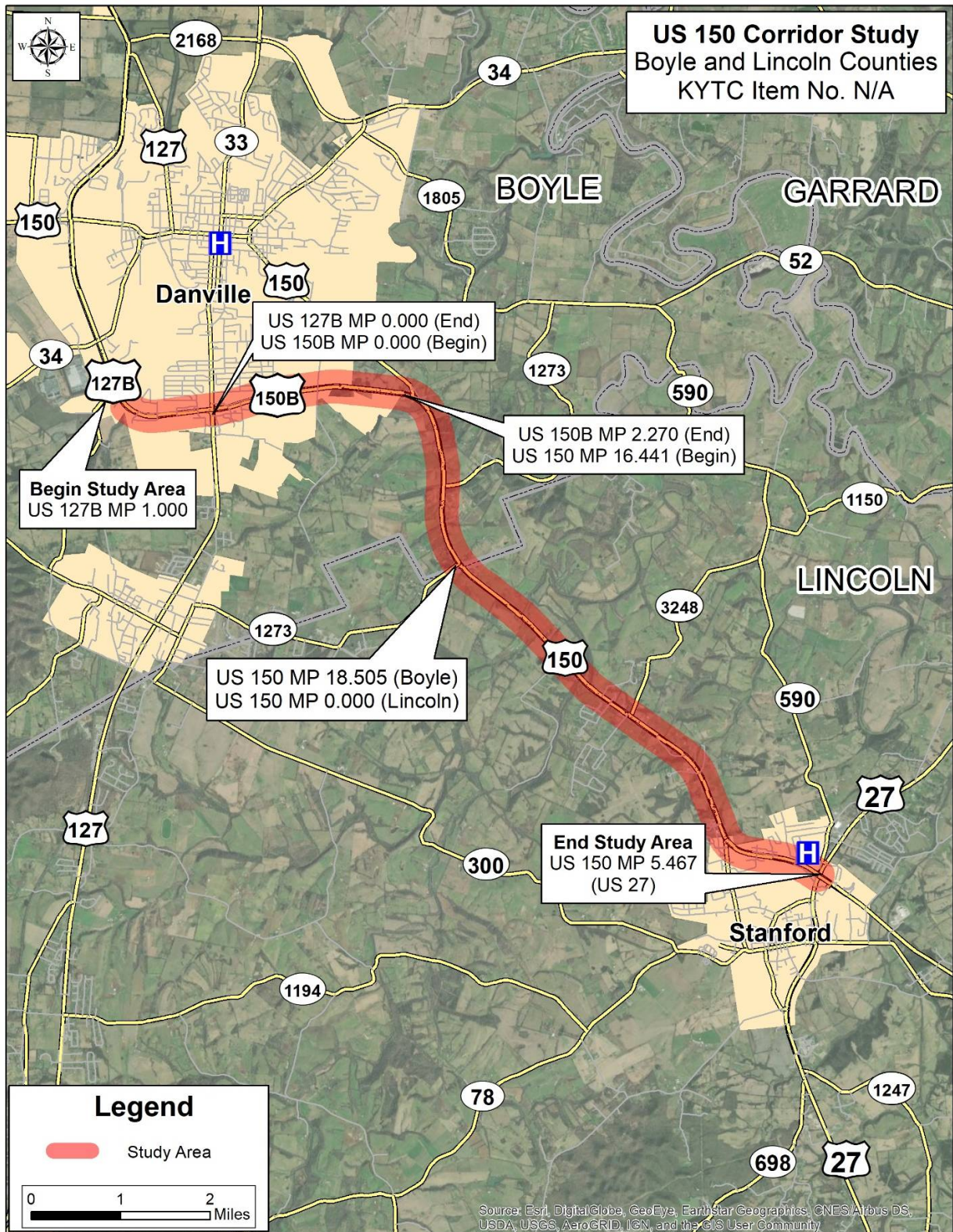


Figure 1: Study Area

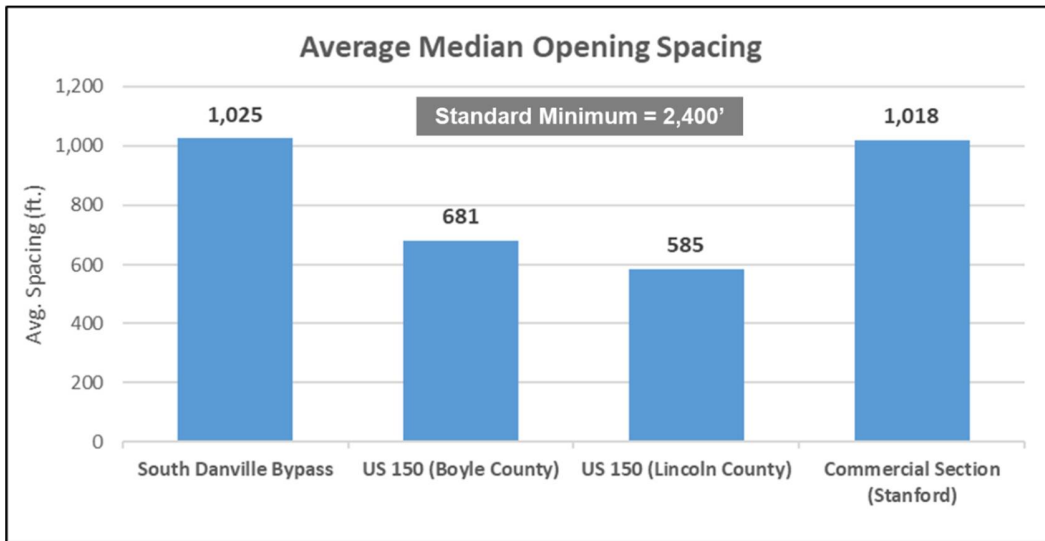


Figure 2: US 150 Average Median Opening Spacing

There are currently 72 median openings on the study corridor, 53 of which are for private driveways and 19 of which are for public streets. Of the 53 private entrances, five (nine percent) have left-turn lanes while 16 of the 19 (84 percent) of the public entrances have left-turn lanes. A Streetlight analysis was performed to determine the number of daily left turns at the median openings on the rural portion of the corridor between the US 150B intersection and Stanford. As shown in **Figure 3**, most of the entrances have fewer than five left turns per day.

- Question: How many houses along the rural section do not currently have a median opening?
Answer: Approximately 16 houses do not have a full median opening.

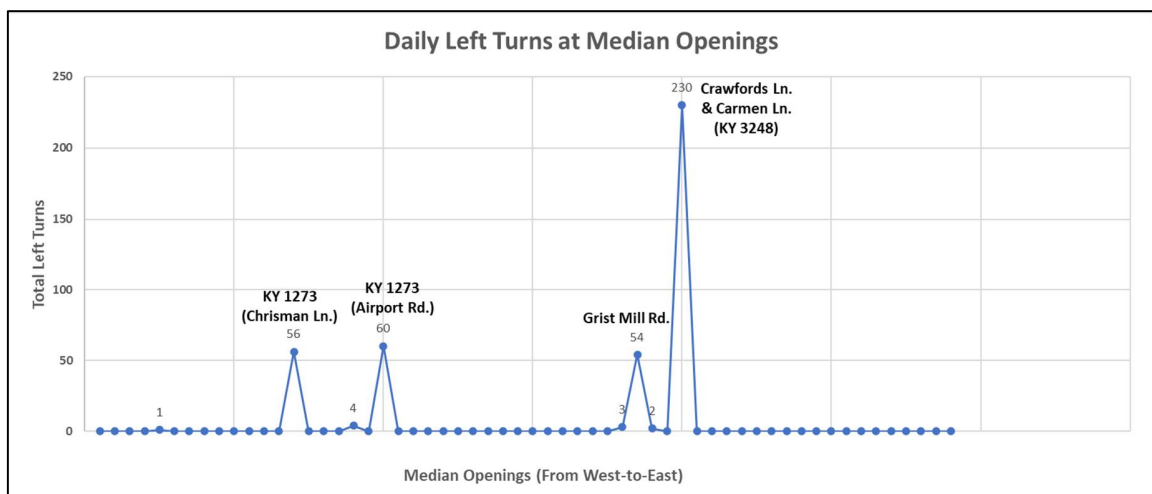


Figure 3: Daily Left Turns on Rural US 150 (Streetlight)

7. Historical KYTC traffic volumes show Annual Average Daily Traffic (AADT) volumes range from 11,100 – 23,100 vehicles per day (VPD) on the study corridor. Turning movement counts were collected at 24 intersections.

Existing peak hour traffic was analyzed at the intersections using Highway Capacity Software (HCS). Level of service (LOS), a qualitative measure describing operational conditions, was used to evaluate the adequacy of the existing roadway. In rural areas, LOS C or better is desirable and in urban areas, LOS D or better is desirable. Results from the existing simulation model analysis, shown in **Figure 4** and **Figure 5**, demonstrate that all study area intersections operate at LOS C or better during the AM and PM peak hour, except for the US 127 intersection in Danville and the US 27 intersection in Stanford, which operate at LOS D during both peaks.

- Question: Was Durham's open when the turning movement counts were collected?
Answer: No, Durham's was closed by late September.
- Question: Is the entrance to the Quarry currently used?
Answer: No, the Quarry entrance on US 150B is not used. They use an entrance on Gose Pike.

Left-turn warrant analyses were performed for all counted intersections without existing left-turn lanes. Eastbound Fireside Drive and westbound Withers Court currently satisfy warrants for a left-turn lane.

8. Crash data from the Kentucky State Police database indicates that in the five years between January 1, 2017, and December 31, 2021, a total of 501 crashes were reported on the study corridor. Of the 501 crashes, there were five fatal collisions (one percent), 128 injury collisions (30 percent), and 368 property damage only collisions (69 percent). Three of the fatal collisions were angle collisions at intersections, one was an opposing left-turn collision at an intersection, and one was a single vehicle collision along the rural portion of the study corridor. Rear end and angle crashes (35 percent each) were the most prominent types of collisions.
 - Question: What percent of the rear end collisions resulted in an injury?
Answer: Approximately 14 percent of the rear ends resulted in an injury.
9. The Crash Data Analysis Tool (CDAT) was used to perform an Excess Expected Crashes (EEC) analysis. EEC is a measure of the crash frequency at a given site compared to what is expected based on current conditions (geometrics, traffic, etc.). A positive EEC indicates more crashes are occurring than should be expected. Results from this analysis showed several segments with a positive EEC, the highest of which included the section west of US 127 in Danville and the rural section in Lincoln County. 13 additional intersections showed positive EECs. Shown in Figure 6.

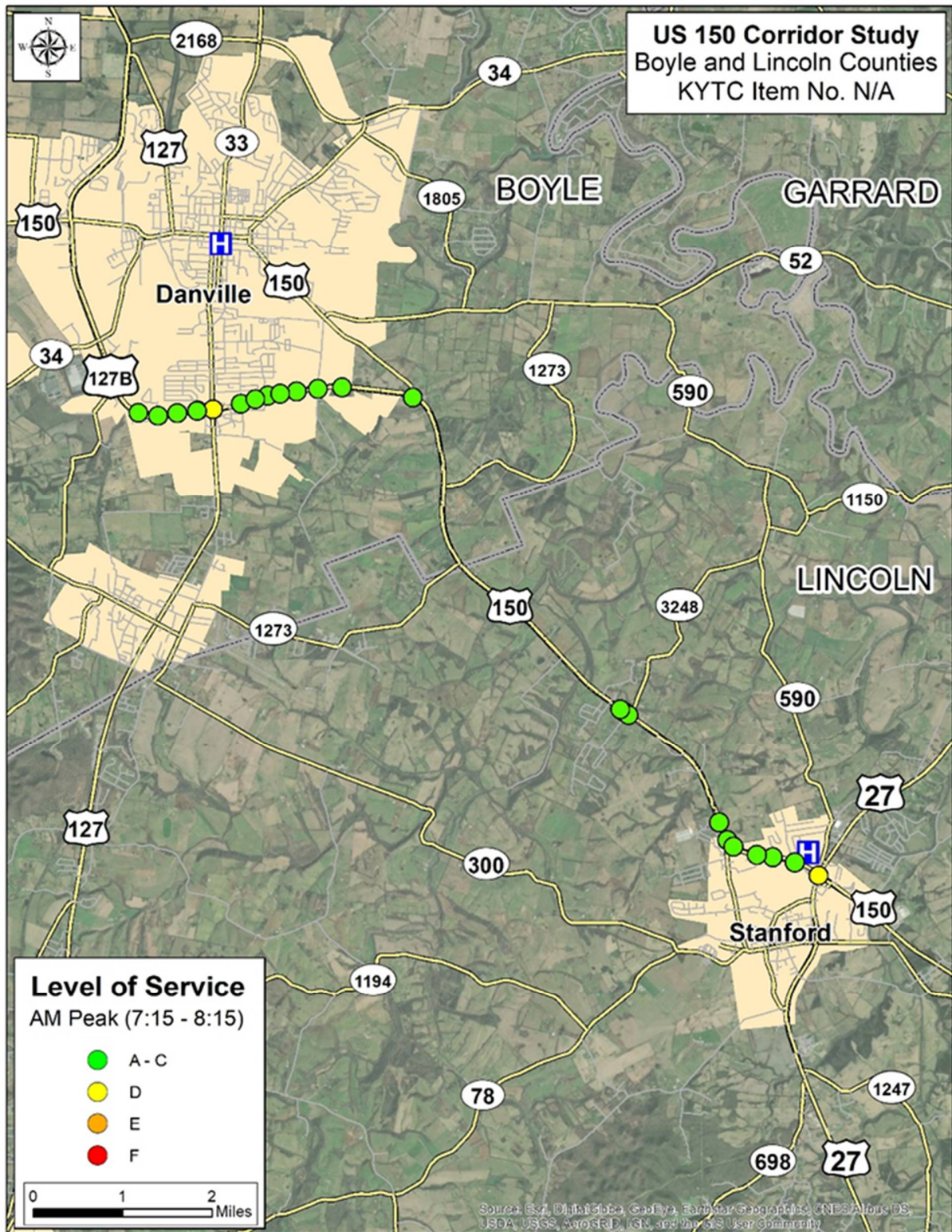


Figure 4: Existing AM Peak Hour Intersection Level of Service (LOS)

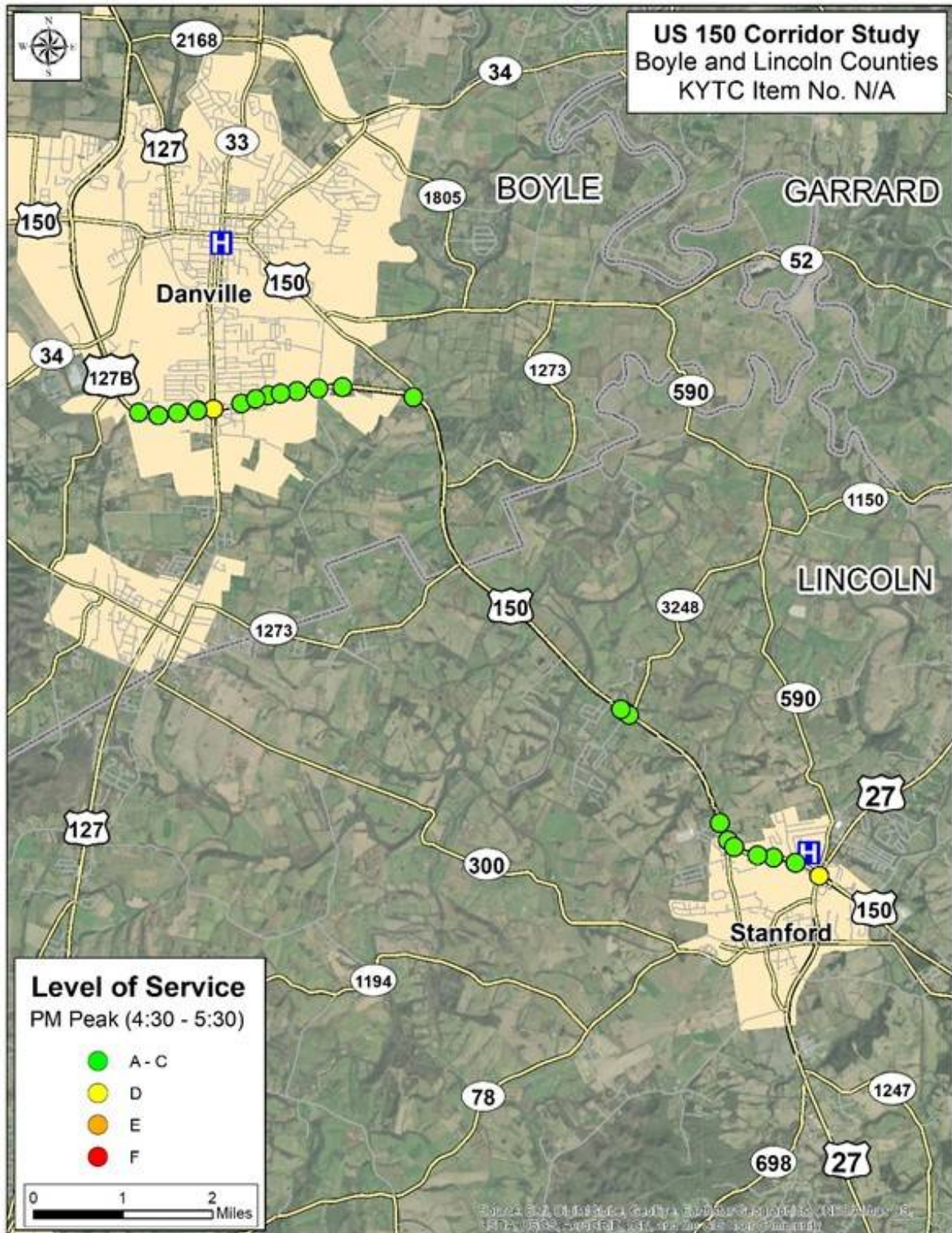


Figure 5: Existing PM Peak Hour Intersection Level of Service (LOS)

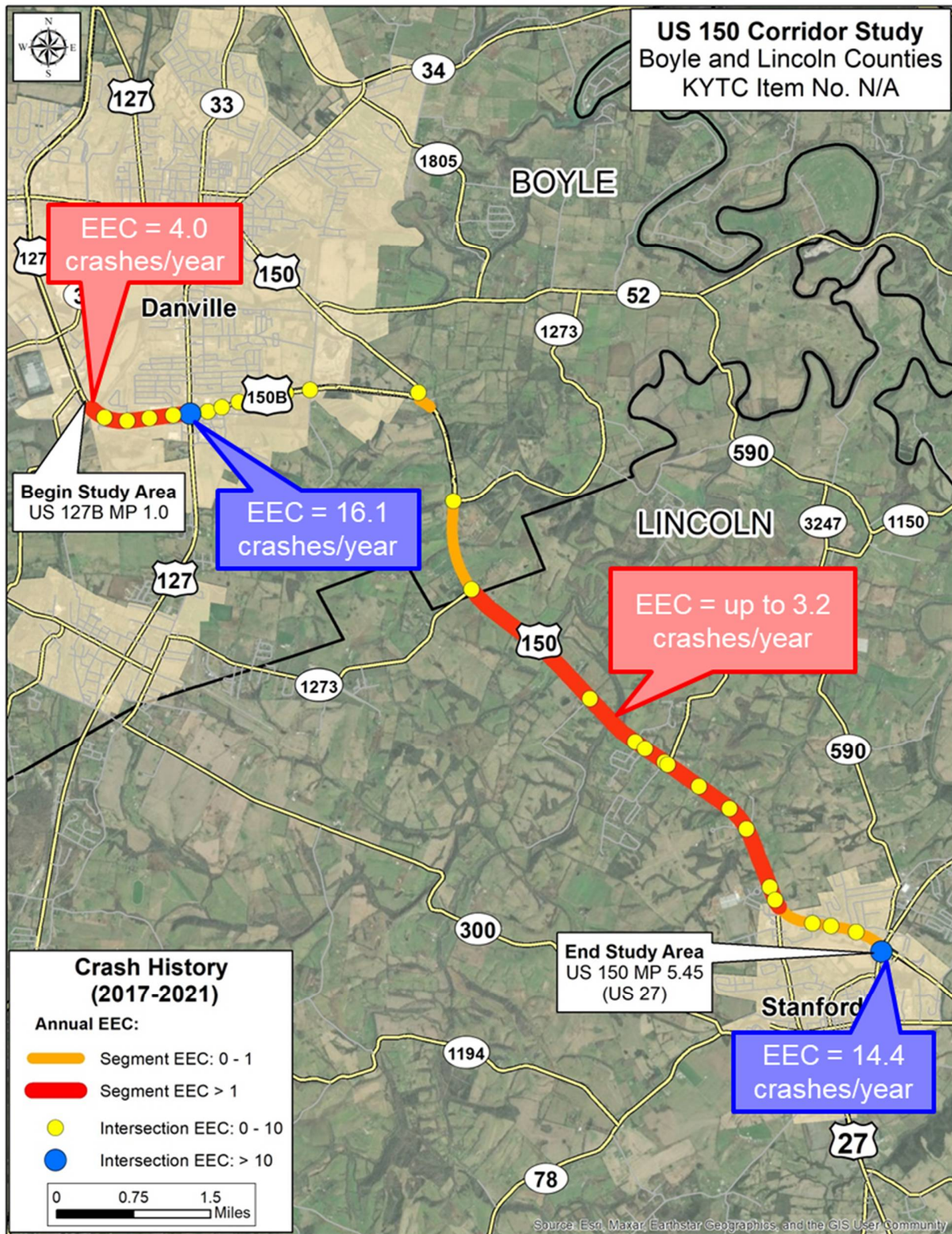


Figure 6: Excess Expected Crashes (EEC)

10. Preliminary traffic forecasts were developed using the Kentucky Statewide Travel Model (KYSTM), historical KYTC traffic counts, and population projections. Based on these data sources, and the fact that US 150 is a regional connection, a growth rate of one percent per year was used to forecast traffic for this study. **Figure 7** presents the 2045 daily traffic forecasts, with traffic ranging from 14,100 to 29,300 VPD.
11. Preliminary improvement concepts were discussed for three sections on the study corridor.

1) Danville

- Offset lefts at traffic signals: 34 percent crash reduction factor (CRF)

Improvement options were discussed for the US 150B intersection with Skywatch Drive. Over the five-year period between 2017 and 2021, there were 22 reported crashes at this location, four (18 percent) of which resulted in an injury. Of the 22 crashes, 11 were angle collisions and ten were rear ends. Improvement options include closing the southbound Skywatch Drive approach at the frontage road, restriping the southbound approach at the US 150B intersection to dual left-turns, and relocating the traffic signal.

- Question: Can we update the signal timing and lengthen the southbound extension?
Answer: No, the extension is currently 5 seconds.
- Question: How have offset left-turns been received in other locations in the district?
Answer: There have been no complaints and no reported crashes.

2) US 150 Rural Corridor

- Median U-Turns (37 percent CRF)

A KMZ file was presented showing possible locations for U-turns along the rural section of US 150. These median openings were spaced approximately 2,400 feet apart.

- The project team will also consider 1,200' spacing between median openings.
- Question: Can school buses make U-turns
Answer: School buses can only make U-turns if the movement is signed and legal.

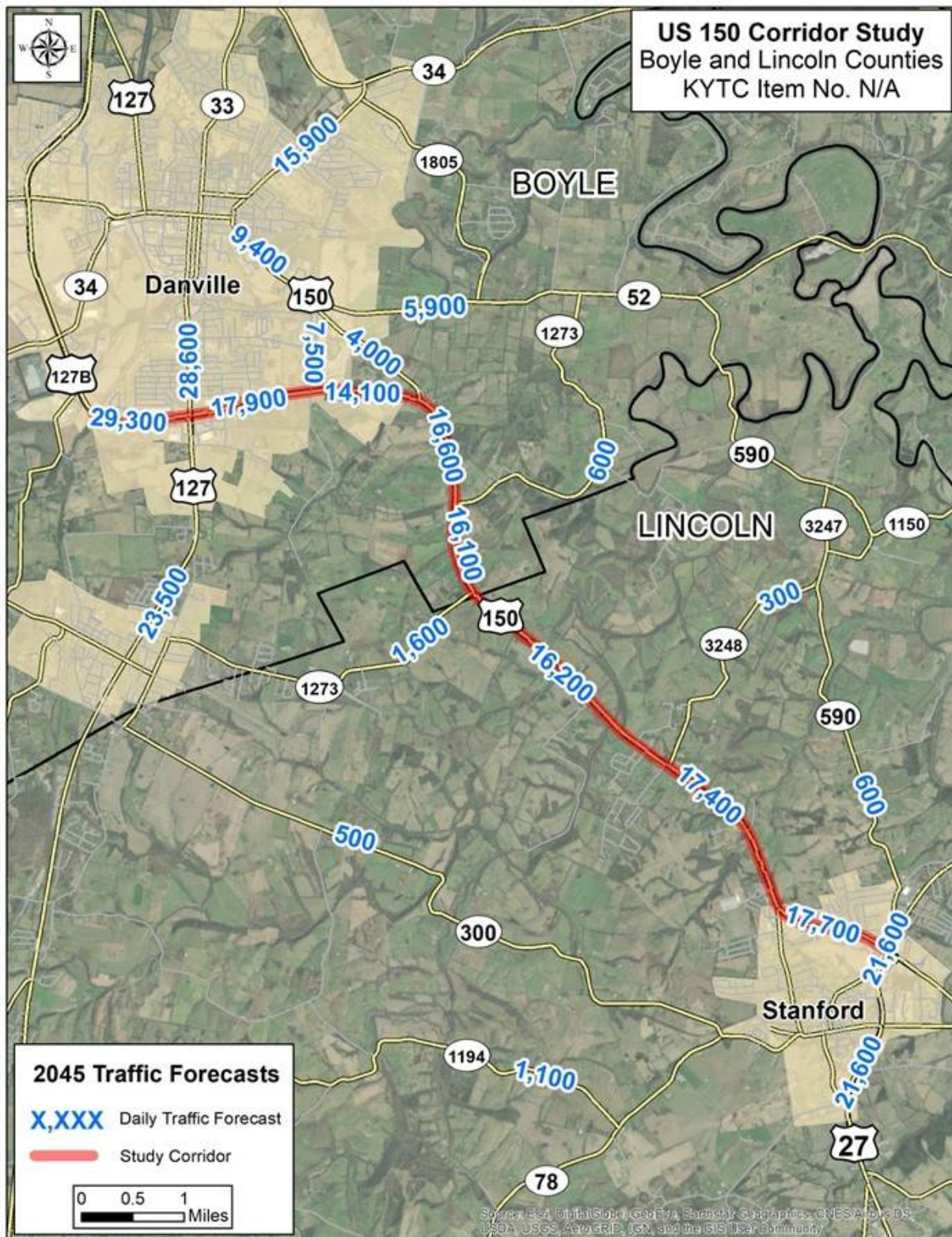


Figure 7: 2045 Daily Traffic Forecasts

3) Stanford

- RCUTs (35 percent CRF)
- Right-in / Right-out at unsignalized intersections
 - KYTC recently performed a speed study on this section of US 150. Results from the study did not indicate a need to lower the speed limit.
 - The US 150 intersection with US 27 currently has channelized right-turn lanes. The project team will consider adding acceleration lanes or removing the channelization.

12. The next steps are to present the existing conditions at the first Local Officials / Stakeholder Meeting and to use an online MetroQuest survey to solicit feedback regarding transportation issues.

The meeting ended at approximately 12:00 p.m. EST.

Meeting Minutes

TO: Dave Heil Jeff Dick Casey Smith
Co-Project Manager Co-Project Manager Co-Project Manager
KYTC Central Office KYTC District Office #8 KYTC District Office #7
200 Mero Street 1660 US 27 800 Newtown Court
Frankfort, KY 40622 Somerset, KY 42501 Lexington, KY 40511

FROM: Len Harper
Project Manager
Stantec Consulting Services Inc.

DATE: March 22, 2023

SUBJECT: US 150 Corridor Study
US 127B (MP 0.000 – MP 1.000) Boyle County
US 150B (MP 0.000 – MP 2.270) Boyle County
US 150 (MP 16.441 – MP 18.505) Boyle County
US 150 (MP 0.000 – MP 5.467) Lincoln County
Boyle & Lincoln Counties
KYTC Item No. N/A
Local Officials / Stakeholder Meeting No. 1

The first Local Officials / Stakeholder Meeting for the subject project was held at the UK Lincoln County Extension Office and virtually via Microsoft Teams on February 7, 2023 at 1:30 p.m. EST. The following individuals were in attendance:

Woods Adams	Lincoln County Judge Executive
Jonas Adbin	Stanford Water Works
JH Adkins*	Mayor City of Danville
Trille Bottom	Boyle County Judge Executive
Brian Caldwell	Danville/Boyle County EMA
Earl Coffey*	City of Danville
Brandon Curlis	Lincoln County Sheriff's Office
Ronnie Deathrage	Stanford City Council
Tony Gray*	City of Danville
Dan Gutenson	Lincoln County Magistrate
Shawn Hines	Lincoln County Sheriff
Jamie Kendrick*	Boyle County Schools
Scott Maples	Stanford Fire Chief
Zach Middleton	Stanford Police Department
Dalton Miller	Mayor of Stanford
Josh Morgan	City of Danville
Ryan Owens	Stanford Water Works
Ashley Powell	Lincoln County EMA
Michael Rowe	Lincoln County Schools

Brandon Storm*	State Legislature
Julie Wagner	Boyle County
Jeff Dick	KYTC – District 8
Stephen De Witte	KYTC – Central Office Planning
Mallory Frye*	KYTC – District 8
Joseph Gossage	KYTC – District 8
Dave Heil	KYTC – Central Office Planning
James Jones	KYTC – District 8
Daniel Kucela*	KYTC – District 7
Natasha Lacy*	KYTC – District 7
William Lucas	KYTC – District 8
Natalia McMillan*	KYTC – District 7
Conley Moren*	KYTC – District 8
Amanda Parmley	KYTC – District 8
Lindsey Phelps	KYTC – District 8
Joshua Samples*	KYTC – District 7
Alex Sergent*	Bluegrass Area Development District (BGADD)
Casey Smith	KYTC – District 7
Randy Turner*	KYTC – Central Office Highway Design
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.
Graham Winchester	Stantec Consulting Services Inc.

*Joined via Microsoft Teams

Len Harper welcomed everyone and led a presentation on the existing conditions. The purpose of the meeting was to discuss progress to-date for the US 150 Corridor Study. He then delivered a presentation.

The following enumerated items were discussed.

1. The purpose of the meeting is to present the results from the existing conditions analysis and to get feedback from the local officials/stakeholders on transportation issues in the study area.
2. There are two projects in the vicinity listed in *Kentucky's FY 2022 – 2028 Highway Plan*.
 - KYTC Item No. 8-80001 includes installing a turn lane on US 150 near Hubble Road and Crawford Lane (D = \$100,000; U = \$50,000; C = 350,000).
 - KYTC Item No. 8-80111 involves installing a turn lane on US 150 at Dollar General (D = \$100,000; C = \$900,000).

There is one Highway Safety Improvement Program (HSIP) project in the vicinity:

- Median U-turn at the US 150B intersection with US 150. This project is currently in the design phase.
3. The study area, which includes US 150 and the South Danville Bypass from Fireside Drive in Danville to US 27 in Stanford, is shown in **Figure 1**.
 4. Highlights from the existing conditions analysis were discussed. The study corridor, which includes portions of US 150 and the South Danville Bypass, is 10.8 miles in length with posted speed limits between 45 and 55 miles per hour (MPH). This four-lane principal arterial has 12-foot lanes and a 32-foot depressed median throughout with 10-foot outside and two-foot inside shoulders in the urban sections and two-foot paved inside and outside shoulders in the rural areas (10-feet graded outside).
 - It was noted that while the speed study on US 150 in Stanford did not show a high percentage of drivers traveling over the speed limit, several Stakeholders believe the speed limit in Stanford is too high and should be reduced to 45 mph. They believe driving 55 mph into the Spring Valley Drive signalized intersection is one of the causes of the crashes at this intersection.
 5. There was then a discussion on access management and median openings. The urban portions of US 150 and the South Danville Bypass have average median spacing of just over 1,000 feet while the rural portions average between 550 and 700 feet. Access management guidance from KYTC recommends a minimum of 2,400 feet between full median openings and 1,200 feet between openings with partial access.
 6. Crash data from the Kentucky State Police database indicates that in the five years between January 1, 2017 and December 31, 2021, a total of 501 crashes were reported on the study corridor. Of the 501 crashes, there were five fatal collisions (one percent), 128 injury collisions (30 percent), and 368 property damage only collisions (69 percent). Three of the fatal collisions were angle collisions at intersections, one was an opposing left-turn collision at an intersection, and one was a single vehicle collision along the rural portion of the study corridor. Rear end and angle crashes (35 percent each) were the most prominent types of collisions.
 - It was noted that there have been four fatalities on US 150 east of the US 27 intersection over the past five years.
 7. The Crash Data Analysis Tool (CDAT) was used to perform an Excess Expected Crashes (EEC) analysis. EEC is a measure of the crash frequency at a given site compared to what is expected based on current conditions (geometrics, traffic, etc.). A positive EEC indicates more crashes are occurring than should be expected. Results from this analysis showed several segments with a positive EEC, the highest of which included the section west of US 127 in Danville and the rural section in Lincoln County. Additionally, 13 intersections were shown to have positive EECs.

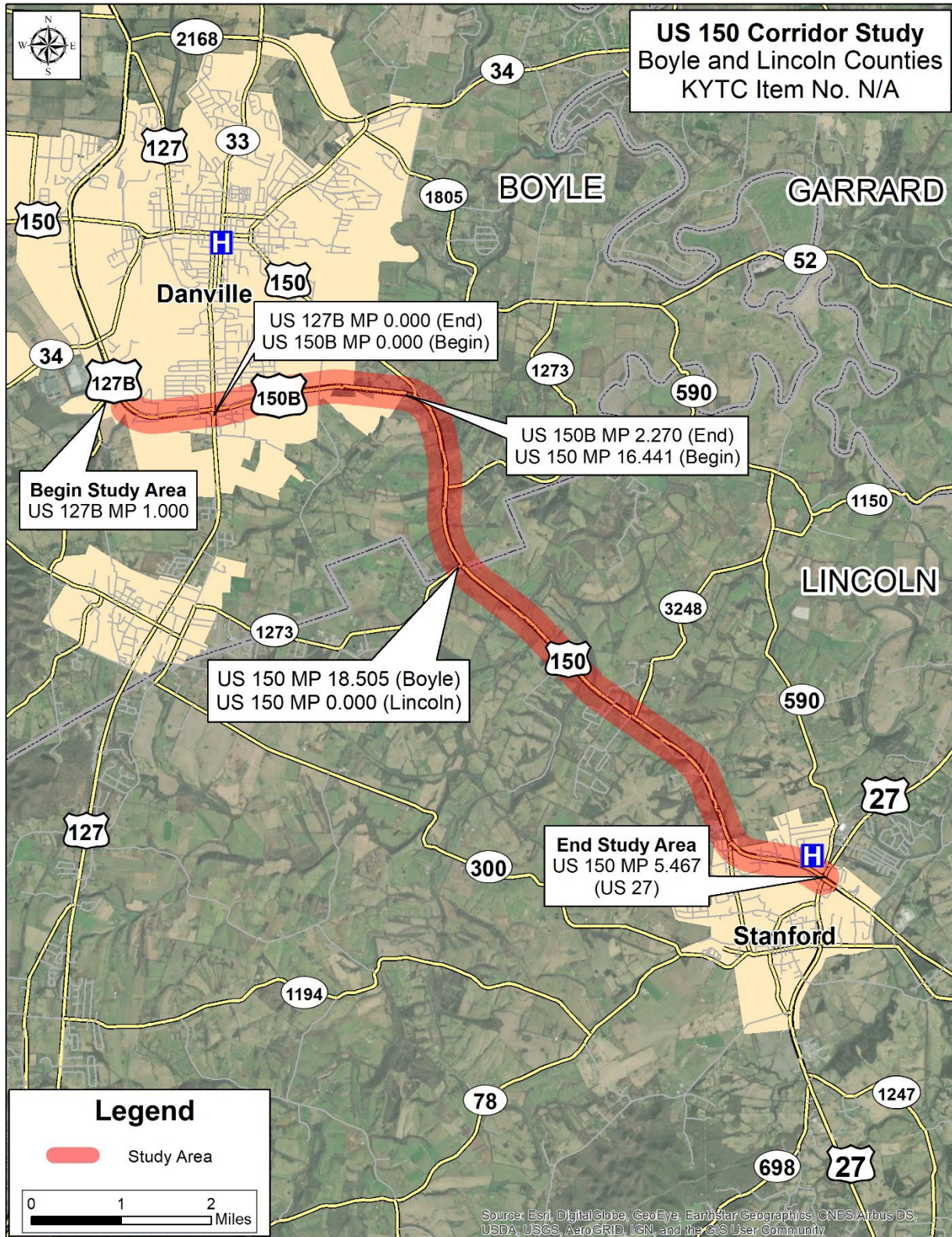


Figure 1: Study Area

8. Historical KYTC traffic volumes show Annual Average Daily Traffic (AADT) volumes range from 11,100 – 23,100 vehicles per day (VPD) on the study corridor. Turning movement counts were collected at 24 intersections.

- It was noted that Countryside Daycare near Crawford Lane is not open.

Existing peak hour traffic was analyzed at the intersections using Highway Capacity Software (HCS). Level of service (LOS), a qualitative measure describing operational conditions, was used to evaluate the adequacy of the existing roadway. In rural areas, LOS C or better is desirable and in urban areas, LOS D or better is desirable. Results from the traffic analysis demonstrate that all study area intersections operate at LOS C or better during the AM and PM peak hour, except for the US 127 intersection in Danville and the US 27 intersection in Stanford, which operate at LOS D during both peaks.

9. Preliminary traffic forecasts were developed using the Kentucky Statewide Travel Model (KYSTM), historical KYTC traffic counts, and population projections. Based on projections from the Kentucky State Data Center, Boyle County is expected to grow 0.46 percent per year to 2050 while Lincoln County's population is expected to decline 0.21 percent per year. Historical traffic count station data for US 150 and the South Danville Bypass show average annual growth rates ranging from -0.87 to 3.17 percent per year, with seven of the eight stations showing positive growth. Based on an analysis between 2019 and 2045, the KYSTM shows annual growth between 0.9 and 1.3 percent per year on the study corridor.

10. Preliminary improvement concept types were briefly discussed. This study will consider short- and long-term improvements, including:

- Short-Term Improvements
 - i. Intersection improvements
 - ii. Turn lanes
 - iii. Access modifications
- Long-Term Improvements
 - i. Intersection reconfiguration
 - ii. Alternative access (frontage / backage roads)
 - iii. Multimodal improvements

11. Len then led a discussion regarding the online MetroQuest survey. The agenda had a QR code to access the survey and a link was emailed out after the meeting. The purpose of the survey is to prioritize transportation issues, locate trouble spots related to safety and congestion, and identify improvement ideas.

There were 10 participants who completed the survey, 90 percent of whom travel US 150 at least two to three times per week. Six of the respondents live in Lincoln County and four live in Boyle County.

Respondents were asked to rank their top five transportation concerns in the study area. A scoring system was used to rank the concerns with first priority given five points, second given four points, third given three points, fourth given two points, and fifth given one point. Of the concerns listed, speeding was ranked as the highest priority receiving 56 points, followed by vehicles slowing to turn and difficulty turning onto US 150, as shown in **Figure 2**. Bicycle and pedestrian accommodations received zero points.

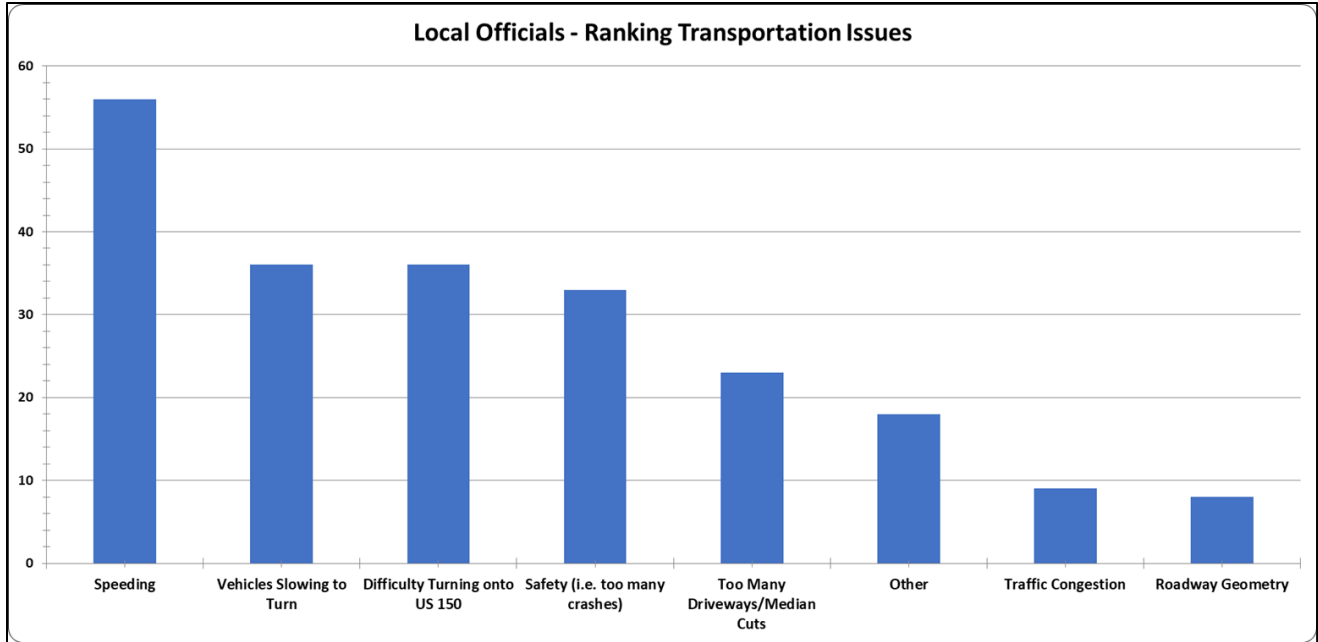


Figure 2: Local Officials Survey – Transportation Concerns

Respondents were then asked to identify trouble spots in the study area. In Boyle County, there were 17 locations identified with safety concerns, one with congestion concerns, and two categorized as “other,” as shown in **Figure 3**. The South Danville Bypass intersections with Belinda Boulevard, Skywatch Drive, Daniel Drive, and US 150 were all noted as needing intersection reconfiguration. Other concerns included the need for additional turn lanes at Skywatch Drive, speeding, sight distance, and too many median openings near the Lincoln County/Boyle County line.

In Lincoln County, there were 14 locations identified with safety concerns, five with congestion concerns, and eight other concerns, as shown in **Figure 4**. The Danville Avenue (KY 300) intersection was the most identified location with concerns including the need for a traffic signal, intersection reconfiguration, poor sight distance, difficulty turning onto US 150, and the need for turn lanes. Several responses also indicated the need for reduced speed on US 150 between Danville Avenue and US 27.

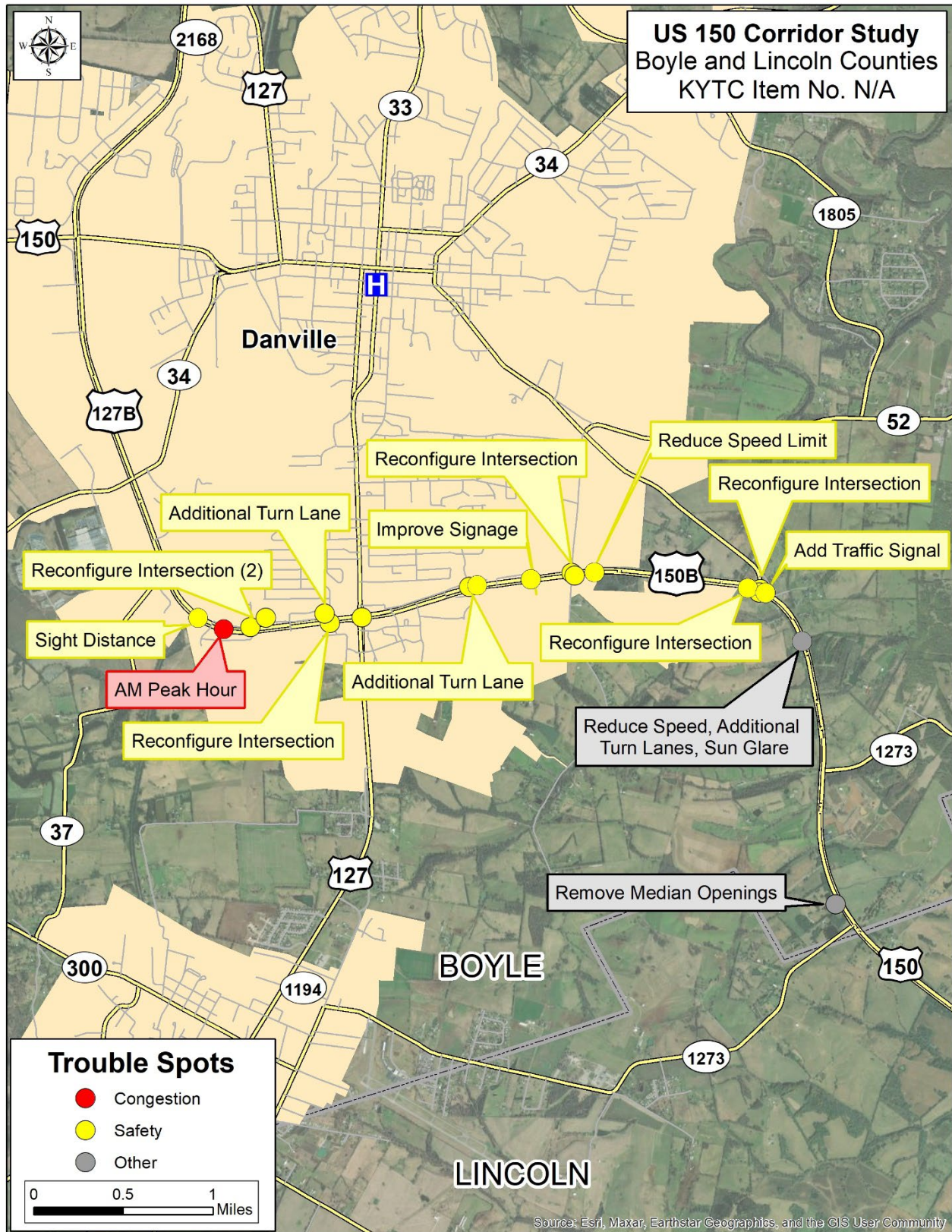


Figure 3: Local Officials Survey – Boyle County Trouble Spots

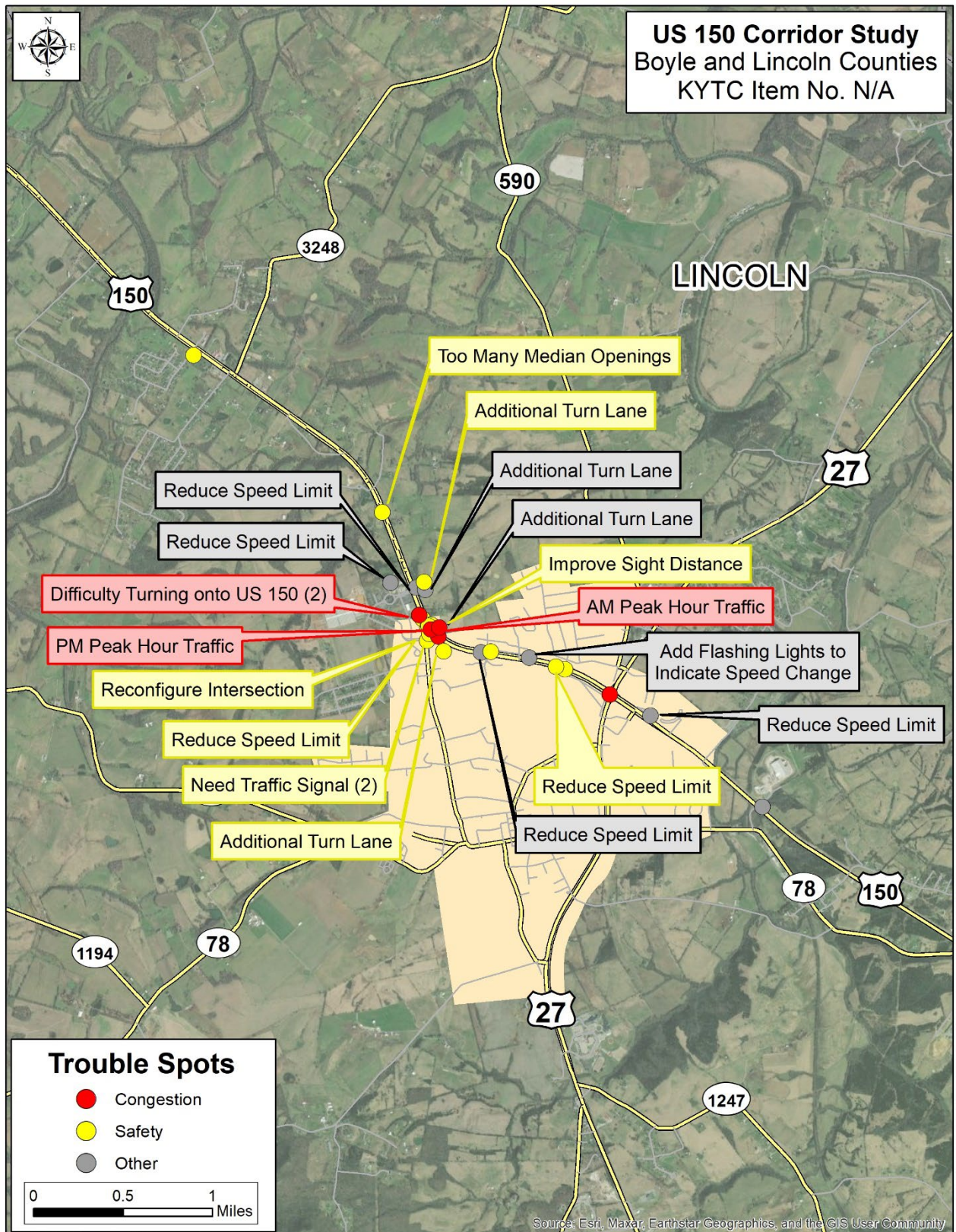


Figure 3: Local Officials Survey – Lincoln County Trouble Spots

The next question asked participants for improvement ideas in the study area. In Boyle County, there were suggestions to add turn lanes, improve signal timing, construct a roundabout, install a traffic signal, and restrict turning, as shown in **Figure 4**. In Lincoln County, the most common improvement ideas were reducing the speed limit and adding a turn lane, as shown in **Figure 5**.

Overall, results from the survey indicated that safety is more of a concern to the local officials than congestion. Speeding is the biggest concern, especially in Stanford. Most of the identified concerns and improvement ideas were in the urban areas near Danville and Stanford. Reducing the number of median openings was the only suggestion along the rural portion of the study area. Bicycle and pedestrian accommodations were not priorities for the ten participants in the survey.

12. The next steps are for the project team to analyze results from the Local Officials / Stakeholder survey and to develop improvement concepts.

The meeting ended at approximately 2:30 p.m. EST.

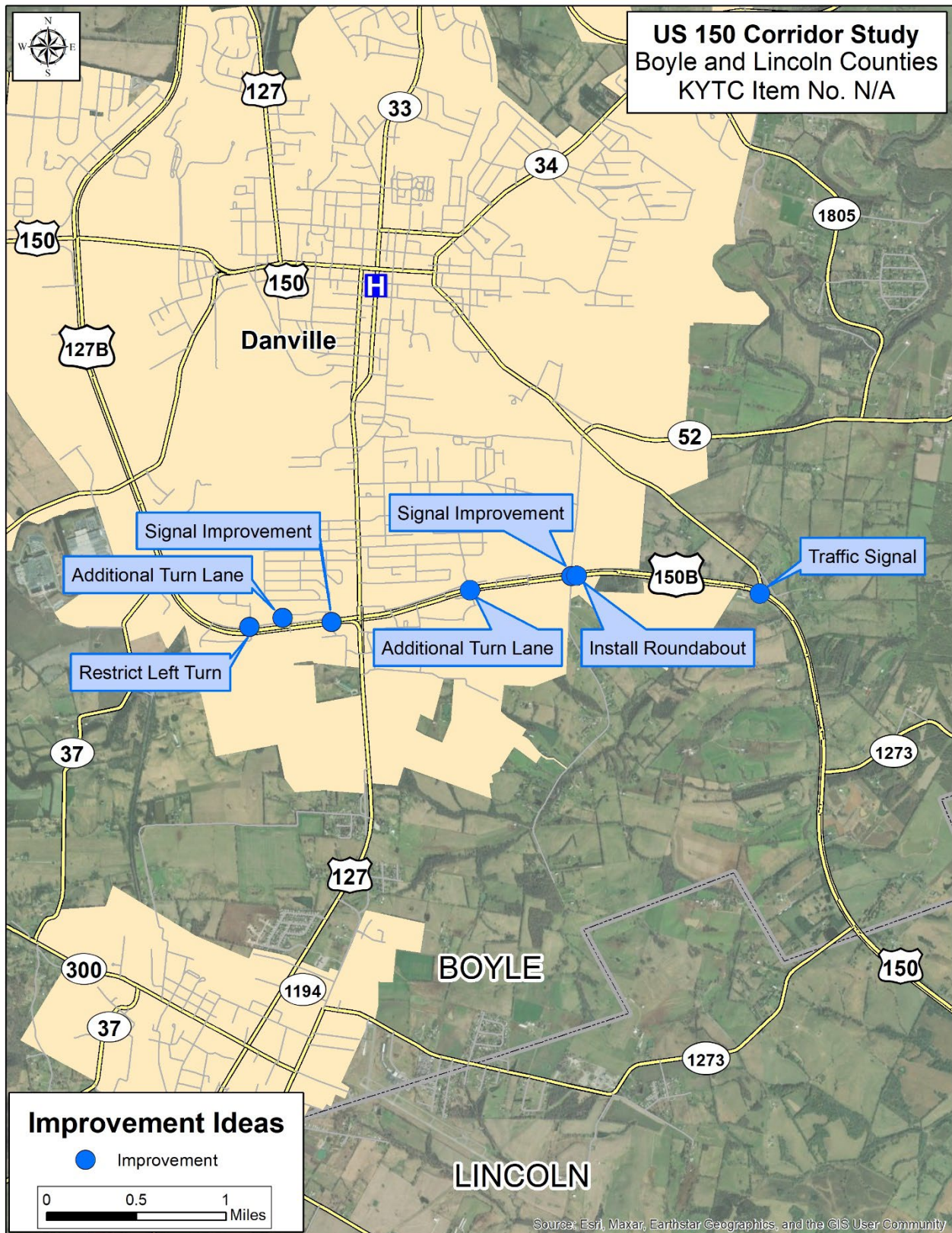


Figure 4: Local Officials Survey – Boyle County Improvement Ideas

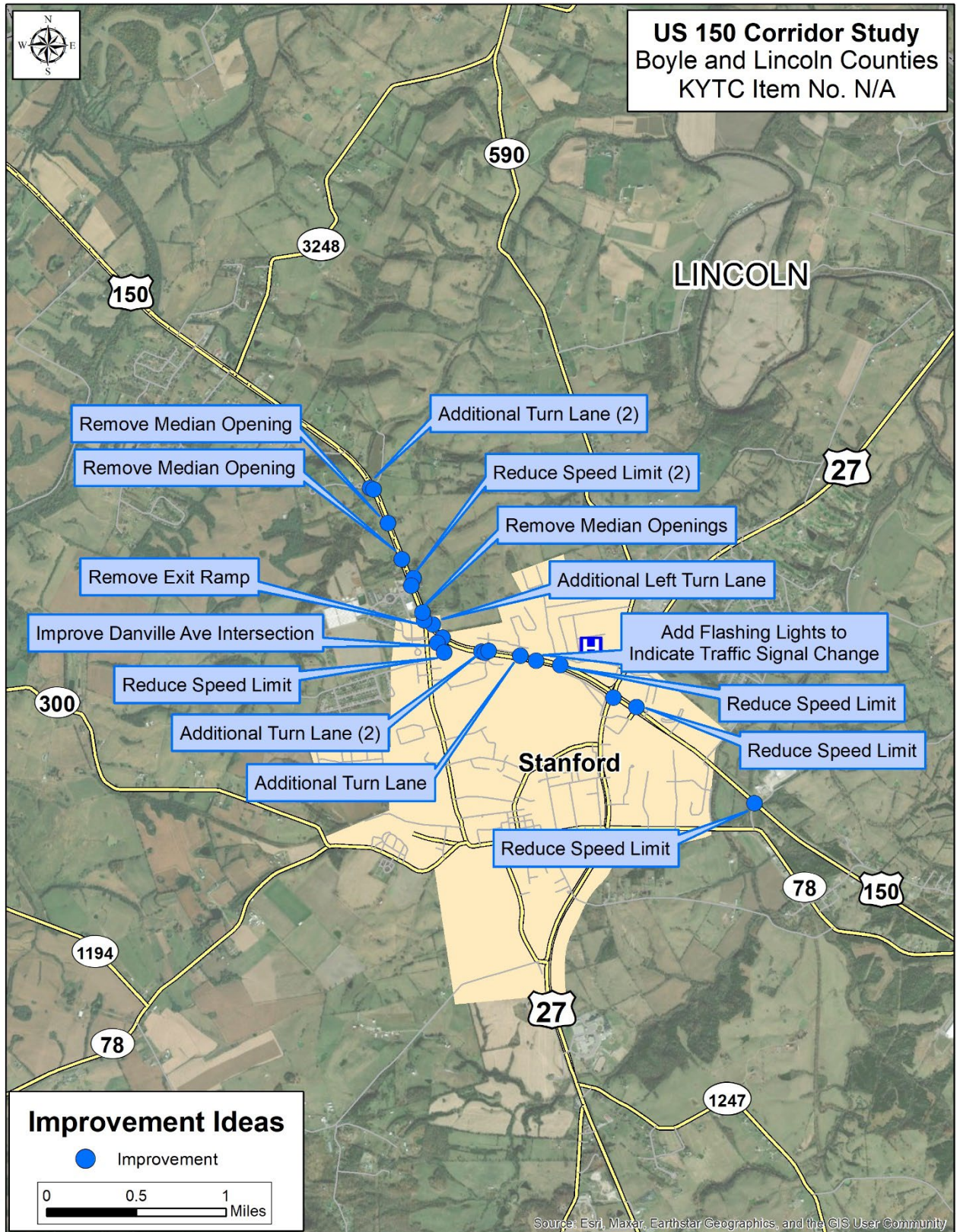


Figure 5: Local Officials Survey – Lincoln County Improvement Ideas

Meeting Minutes

TO:	Dave Heil Co-Project Manager KYTC Central Office 200 Mero Street Frankfort, KY 40622	Mallory Frye Co-Project Manager KYTC District Office #8 1660 US 27 Somerset, KY 42501	Casey Smith Co-Project Manager KYTC District Office #7 800 Newtown Court Lexington, KY 40511
-----	--	---	--

FROM: Len Harper
 Project Manager
 Stantec Consulting Services Inc.

DATE: May 23, 2023

SUBJECT: US 150 Corridor Study
 US 127B (MP 0.000 – MP 1.000) Boyle County
 US 150B (MP 0.000 – MP 2.270) Boyle County
 US 150 (MP 16.441 – MP 18.505) Boyle County
 US 150 (MP 0.000 – MP 5.467) Lincoln County
 Boyle & Lincoln Counties
 KYTC Item No. N/A
 Project Team Meeting No. 2

The second Project Team Meeting for the subject project was held at the KYTC District 8 office and virtually via Microsoft Teams on May 17th, 2023, at 9:00 a.m. EDT. The following individuals were in attendance:

Jay Balaji*	KYTC – Central Office Planning
Rachel Cash*	KYTC – HSIP
Catherine Davis	KYTC – Central Office Planning
Stephen De Witte	KYTC – Central Office Planning
Mallory Frye	KYTC – District 8
Joseph Gossage	KYTC – District 8
Dave Heil	KYTC – Central Office Planning
James Jones	KYTC – District 8
William Lucas	KYTC – District 8 TEBM
Natalie Mcmillan*	KYTC – District 7
Amanda Parmley*	KYTC – District 8
Lindsey Phelps	KYTC – District 8 Stanford Construction
Jessica Richardson*	KYTC – District 8
Joshua Samples*	KYTC – District 7
Casey Smith*	KYTC – District 7
David Souleyrette*	KYTC – Central Office Planning
Randy Turner*	KYTC – Central Office Highway Design
Brian Aldridge	Stantec Consulting Services Inc.

Len Harper Stantec Consulting Services Inc.
Tad Taylor Stantec Consulting Services Inc
Graham Winchester Stantec Consulting Services Inc.

*Joined via Microsoft Teams

Len Harper welcomed everyone and said the purpose of the meeting was to discuss the progress to-date for the US 150 Corridor Study. Len Harper then delivered a presentation.

The following enumerated items were discussed.

1. The purpose of the meeting is to get feedback from the project team on preliminary transportation improvement concepts.
2. The objective of the US 150 Corridor Study is to improve safety, congestion, and mobility on the South Danville Bypass and US 150 from Fireside Drive in Danville to US 27 in Stanford.
3. The study area, which includes US 150 and the South Danville Bypass from Fireside Drive in Danville to US 27 in Stanford, is shown in **Figure 1**.
4. Highlights from the existing conditions analysis were discussed. The study corridor, which includes portions of US 150 and the South Danville Bypass, is 10.8 miles in length with posted speed limits between 45 and 55 miles per hour (MPH). This four-lane principal arterial has 12-foot lanes and a 32-foot depressed median throughout with 10-foot outside and two-foot inside shoulders in the urban sections and two-foot paved inside and outside shoulders in the rural areas (10-foot graded outside).
5. There are currently 72 median openings on the study corridor, 53 of which are private and 19 of which are public. Of the 53 private entrances, five (nine percent) have left-turn lanes while 16 of the 19 (84 percent) of the public entrances have left-turn lanes. The South Danville Bypass area was found to have an average spacing of 1,020 feet between openings. US 150 in Boyle County had an average of 640 feet between spacing. US 150 in Lincoln County had an average spacing of 580 feet between openings. The commercial section of Stanford has an average median spacing of 1,020 feet. The recommended spacing is 2,400 feet (0.5 mile).
6. Crash data from the Kentucky State Police database indicates that in the five years between January 1, 2017, and December 31, 2021, a total of 501 crashes were reported on the study corridor. Of the 501 crashes, there were five fatal collisions (one percent), 128 injury collisions (30 percent), and 368 property damage only collisions (69 percent).

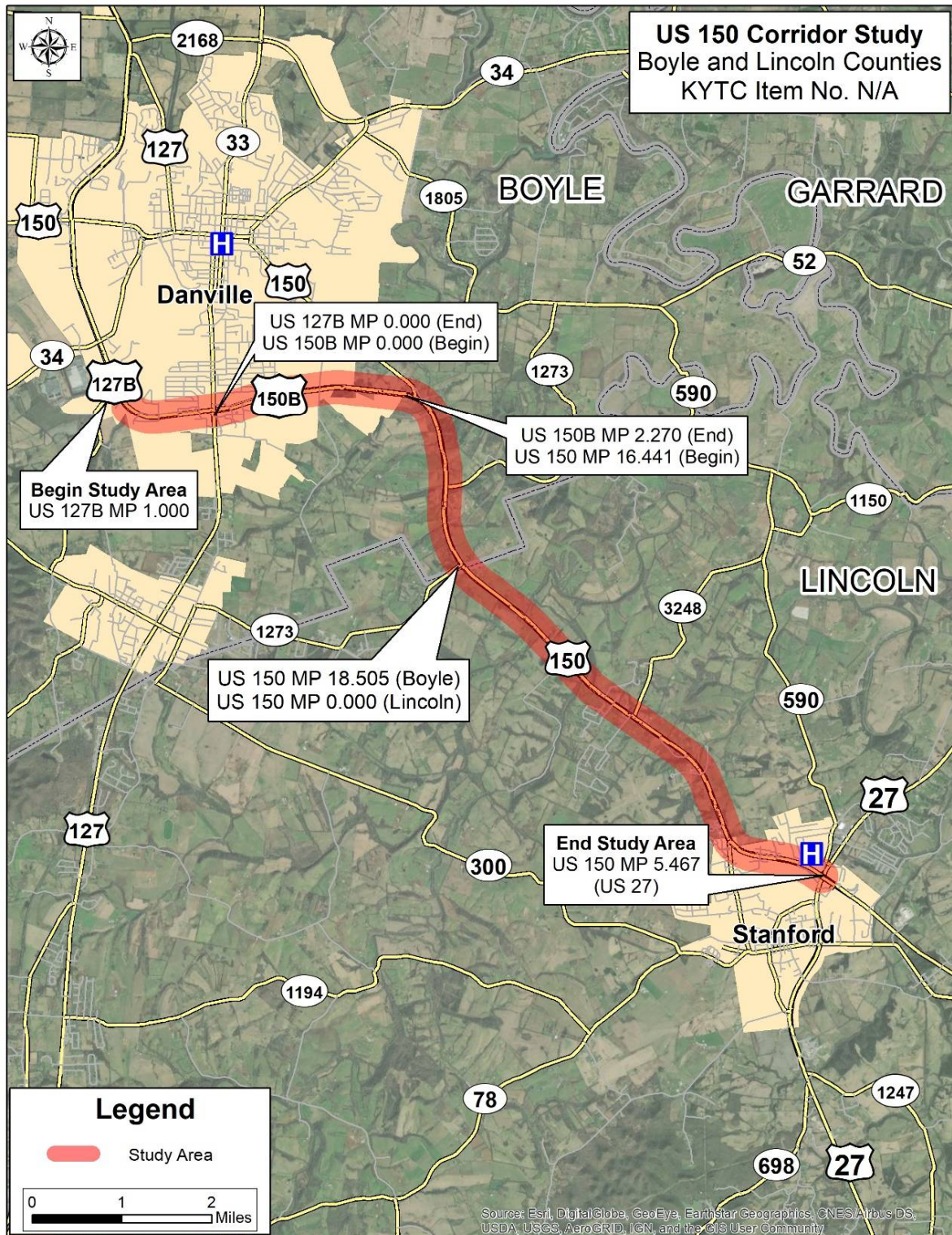


Figure 1: Study Area

7. Three of the fatal collisions were angle collisions at intersections, one was an opposing left-turn collision at an intersection, and one was a single vehicle collision along the rural portion of the study corridor. Rear end and angle crashes (35 percent each) were the most prominent types of collisions.
 - There was one fatality recorded on the rural section of US 150 in the study area. A single vehicle collision that was not related to transportation issues.
8. The Crash Data Analysis Tool (CDAT) was used to perform an Excess Expected Crashes (EEC) analysis. EEC is a measure of the crash frequency at a given site compared to what is expected based on current conditions (geometrics, traffic, etc.). A positive EEC indicates more crashes are occurring than should be expected. Results from this analysis showed several segments with a positive EEC, the highest of which included the section west of US 127 in Danville and the rural section in Lincoln County. Additionally, 13 intersections were shown to have positive EECs. Shown in **Figure 2**.
9. Historical KYTC traffic volumes show Annual Average Daily Traffic (AADT) volumes range from 11,100 – 23,100 vehicles per day (VPD) on the study corridor. Turning movement counts were collected at 24 intersections.

Existing peak hour traffic was analyzed at the intersections using Highway Capacity Software (HCS). Level of service (LOS), a qualitative measure describing operational conditions, was used to evaluate the adequacy of the existing roadway. In rural areas, LOS C or better is desirable and in urban areas, LOS D or better is desirable. Results from the existing simulation model analysis demonstrate that all study area intersections operate at LOS C or better during the AM and PM peak hour, except for the US 127 intersection in Danville and the US 27 intersection in Stanford, which operate at LOS D during both peaks.

10. Based on a one percent growth rate, 2045 daily traffic on the study corridor is expected to range from 29,300 VPD west of US 127 in Danville to 14,100 VPD near the US 150B intersection. The rural portion of US 150 is expected to carry just over 16,000 VPD in 2045. A 2045 HCS analysis show the US 127 intersection operating at a LOS F in 2045.

During the February 7th, 2023 Local Officials Meeting, a survey was conducted to solicit feedback on trouble spots and potential improvements along the study portion of US 150. Of the 10 respondents, nine travel US 150 at least 2-3 times per week. All respondents lived in the Lincoln and Boyle County areas, with 60 percent in Lincoln County and 40 percent in Boyle County. Only two of 10 respondents use US 150 to get to work.

11. Respondents were asked to rank their top five transportation concerns in the study area. A scoring system was used to rank the concerns with first priority given five points, second given four points, third given three points, fourth given two points, and fifth given one point. Of the concerns listed, speeding was the ranked as the highest priority receiving 56 points, followed by vehicles slowing to turn and difficulty turning onto US 150, as shown in **Figure 3**. Bicycle and pedestrian accommodations received zero points.

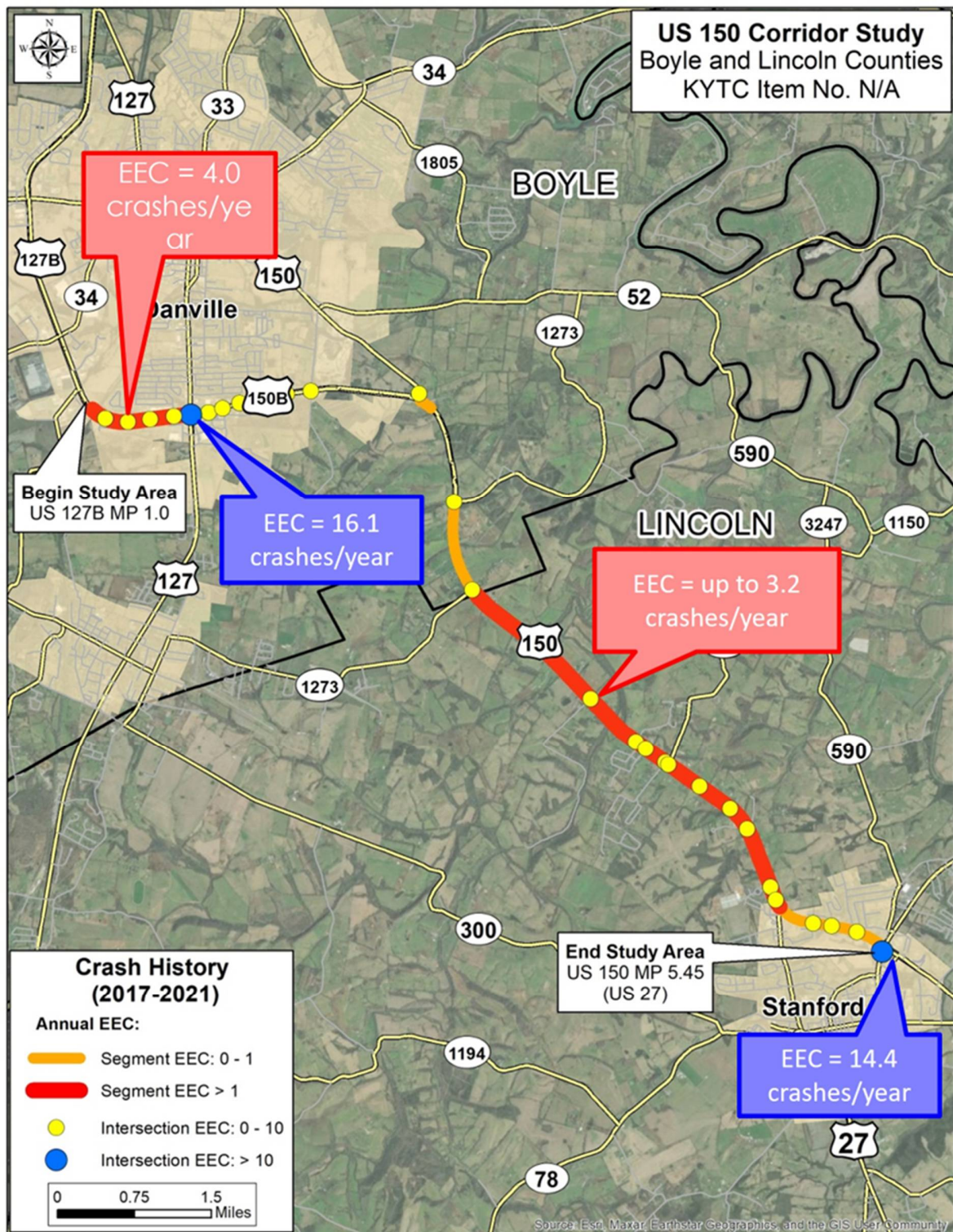


Figure 2: Excess Expected Crashes (EEC)

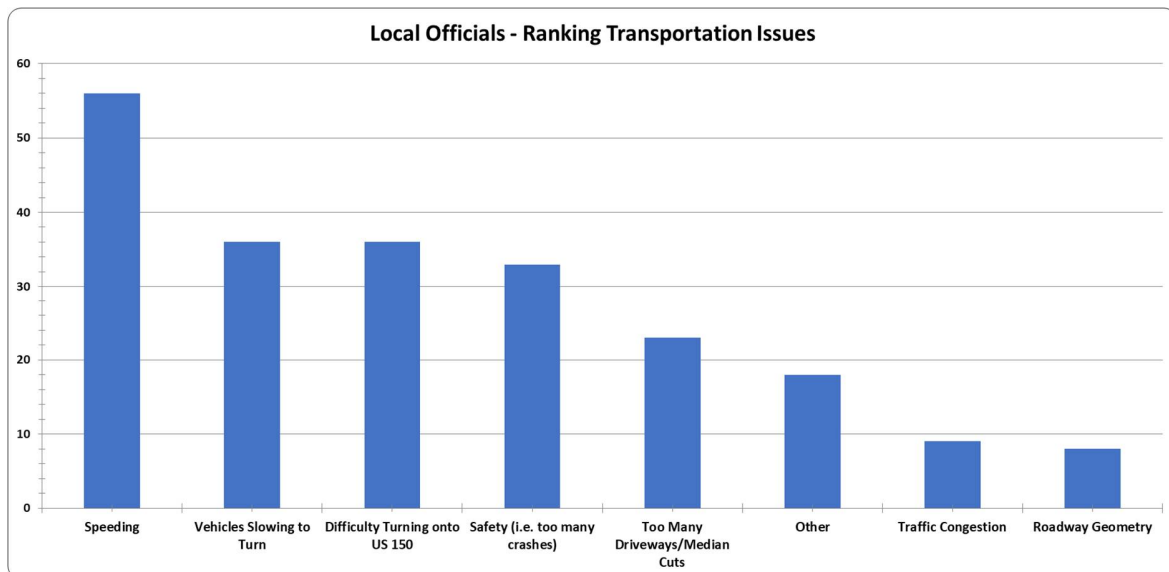


Figure 3: Local Officials Survey – Transportation Concerns

Respondents were then asked to identify trouble spots in the study area. In Boyle County, there were 17 locations identified with safety concerns, one with congestion concerns, and two categorized as “other,” as shown in **Figure 4**. The South Danville Bypass intersections with Belinda Boulevard, Skywatch Drive, Daniel Drive, and US 150 were all noted as needing intersection reconfiguration. Other concerns included the need for additional turn lanes at Skywatch Drive, speeding, sight distance, and too many median openings near the Lincoln County/Boyle County line.

In Lincoln County, there were 14 locations identified with safety concerns, five with congestion concerns, and eight other concerns, as shown in **Figure 5**. The Danville Avenue (KY 300) intersection was the most identified location with concerns including the need for a traffic signal, intersection reconfiguration, poor sight distance, difficulty turning onto US 150, and the need for turn lanes. Several responses also indicated the need for reduced speed on US 150 between Danville Avenue and US 27.

Respondents then went on to propose possible improvement options. In Boyle County, there were suggestions to add turn lanes, improve signal timing, construct a roundabout, install a traffic signal, and restrict turning, as shown in **Figure 6**. In Lincoln County, the most common improvement ideas were reducing the speed limit and adding a turn lane, as shown in **Figure 7**.

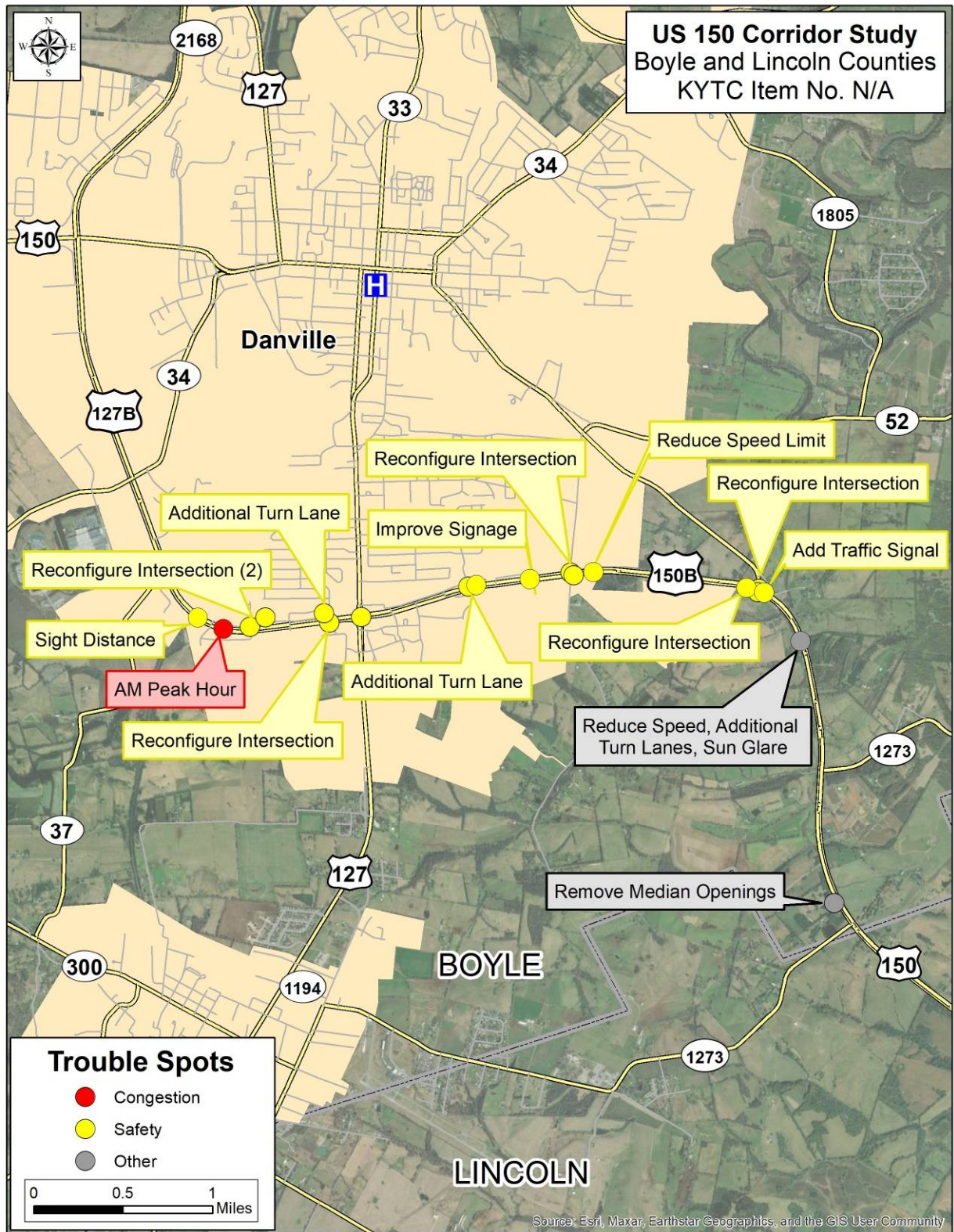


Figure 4: Local Officials Survey – Boyle County Trouble Spots

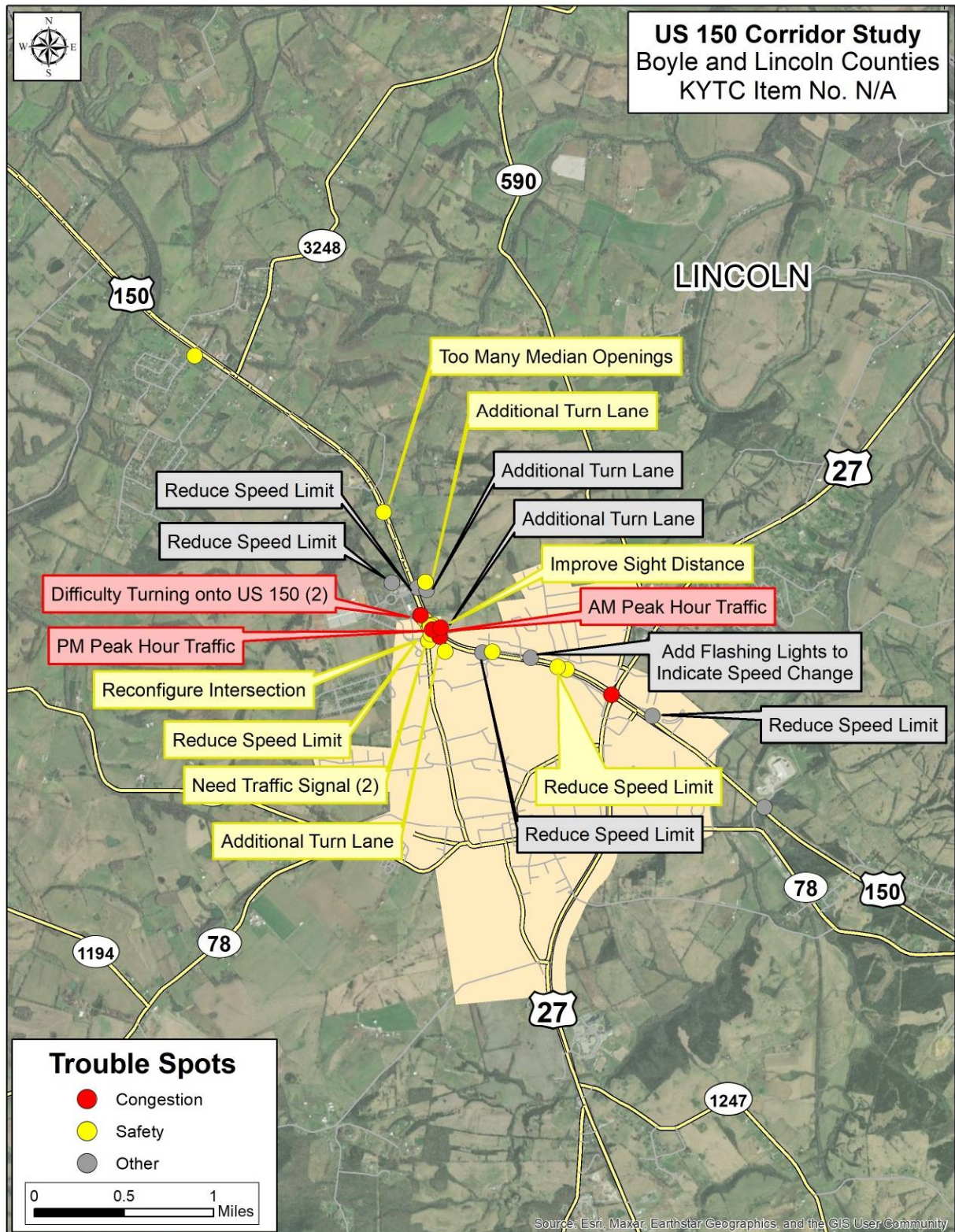


Figure 5: Local Officials Survey – Lincoln County Trouble Spots

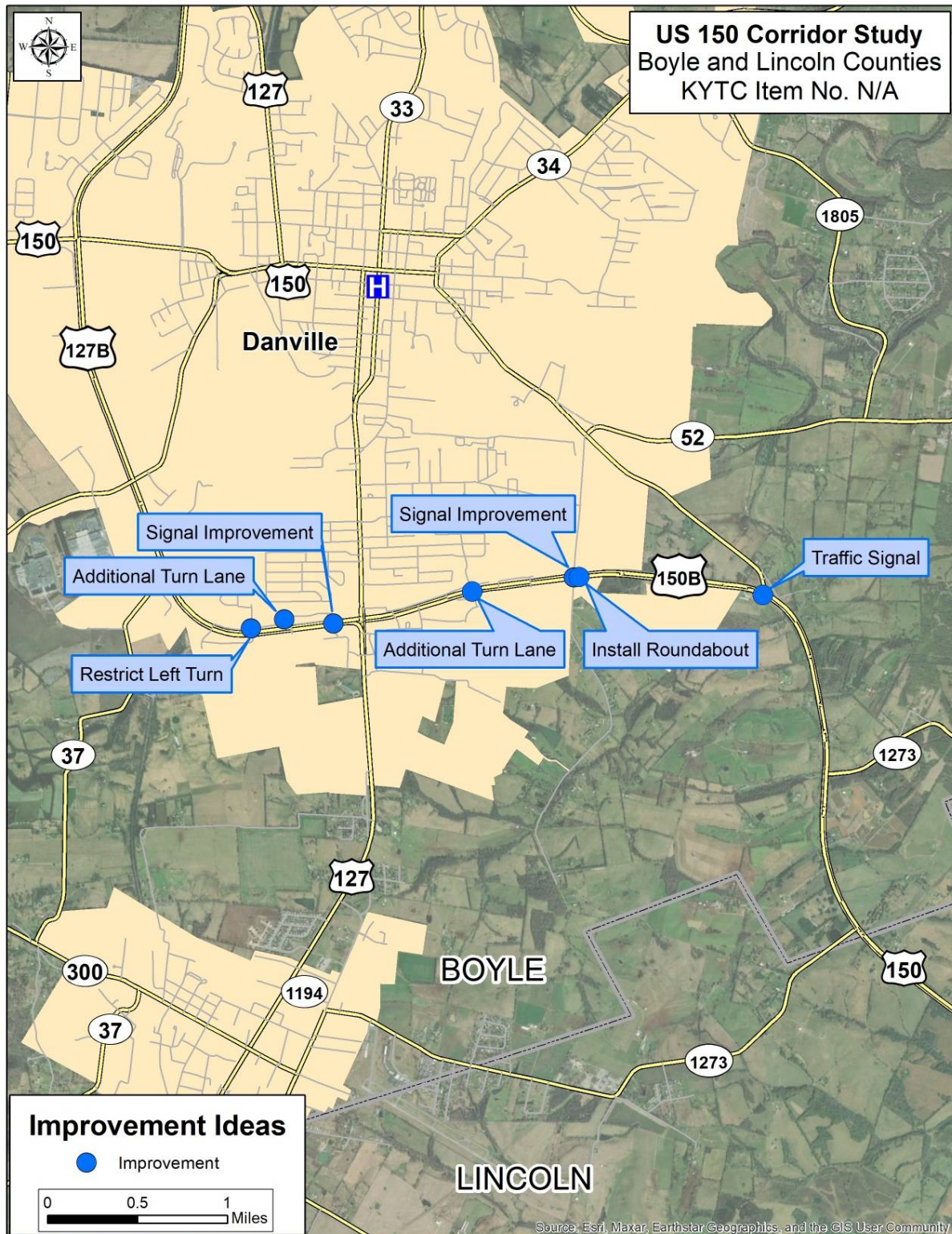


Figure 6: Local Officials Survey – Boyle County Improvement Ideas

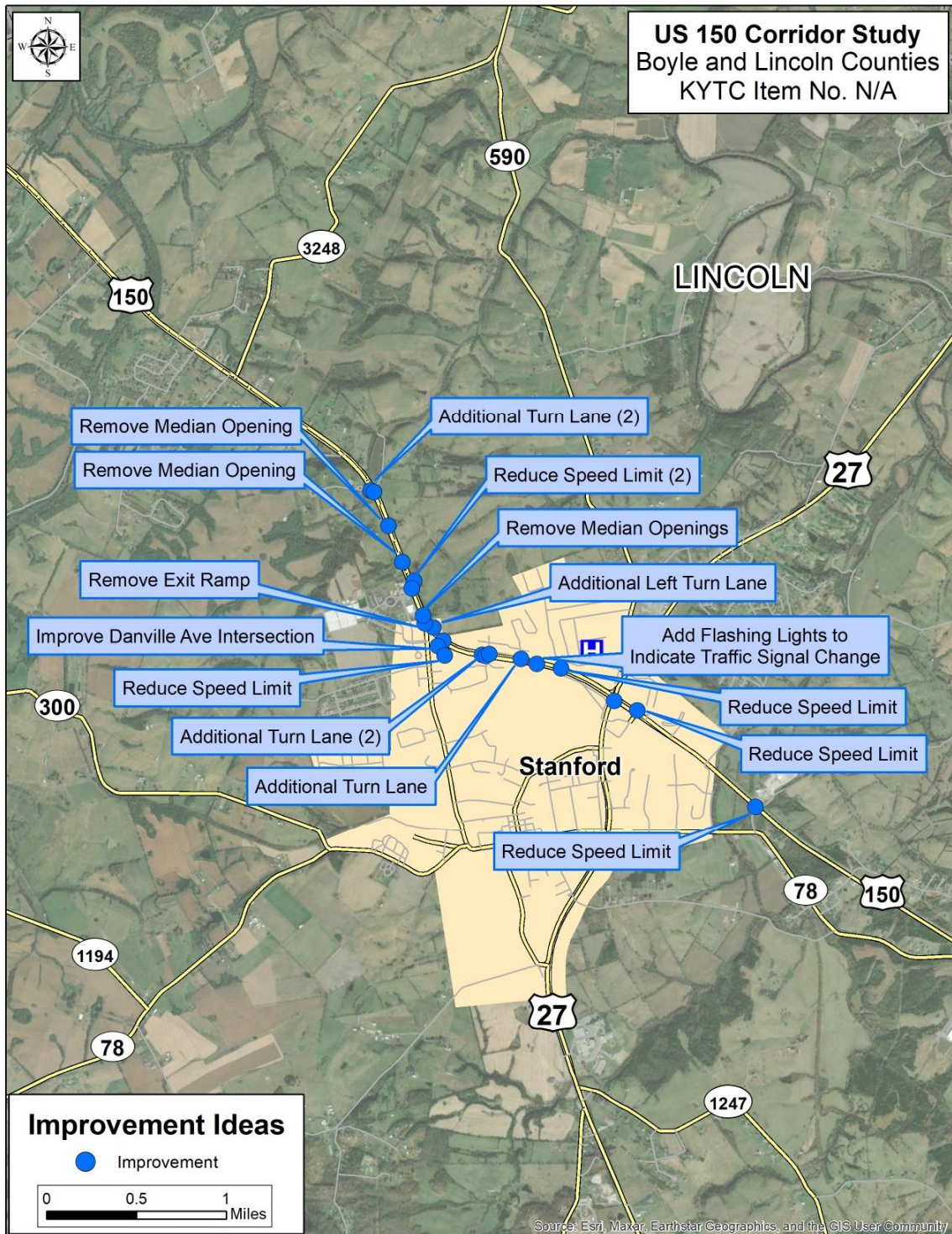


Figure 7: Local Officials Survey – Lincoln County Improvement Ideas

Overall, respondents indicated safety was a higher concern than congestion on US 150. In Lincoln County, multiple respondents mentioned speeding as the largest transportation concern, especially between KY 300 and US 27. Several respondents mentioned the reduction of median opening along the rural portion of US 150. Bicycle and pedestrian accommodations were not priorities for the participants in the survey.

12. Len then led a discussion of preliminary improvement concepts, with the study corridor broken into three segments: Danville, the Corridor, and Stanford.

Danville

The Danville portion of the study corridor includes US 127B and US 150B between Fireside Drive and US 150 and includes the following improvements:

- Reconfigure the intersection at Skywatch Drive to force northbound traffic to turn left or right, as shown in **Figure 8**. The southbound through movement will be shifted to eastbound Skywatch Drive and westbound Skywatch Drive will be restricted to right-in / right-out.
 - The southbound dual left-turn lanes on the Skywatch Drive approach would necessitate split-phase signal timing.
 - Additional signage should be placed on the mountable divide.
 - Question: Does this configuration restrict truck access to access Kroger?
Answer: No, trucks are likely not using the north Skywatch Drive approach due to the headwall.
 - It was noted that the City of Danville would be responsible for the addition of the second southbound Skywatch lane.
- Offset left turns at existing traffic signals. This improvement provides a crash reduction of 34 percent.
- Restricting unsignalized intersections to right-in / right-out and left in.
- Creation of frontage roads
- Addition of an acceleration lane for the eastbound right turn onto US 127.

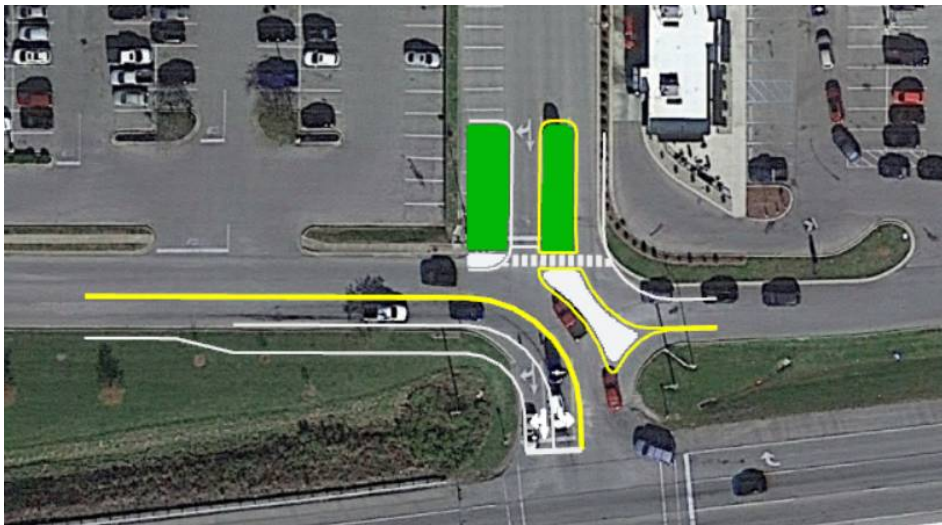


Figure 8: Reconfigured Skywatch Drive

The Corridor

Between the US 150B intersection in Boyle County and the Frontier Boulevard intersection in Lincoln County, US 150 is a rural corridor serving mostly residential and light commercial areas. Improvements to the corridor section include:

- Median U-Turns with approximately 1,200' spacing.
- Restricted Crossing U-Turn intersections (RCUTs) at side streets with higher traffic volumes and at locations where school buses turn.
 - Question: Can the median opening in front of Lincoln Motors be updated to allow left turns into the business?
Answer: Yes, the concept will be updated to reflect that change.
 - Concern was also shown whether 1,200 foot spacing or 2,400 foot spacing would be more beneficial.
 - Question: What is the total number of median openings removed?
Answer: the total net change results in the removal of 41 median openings.

Stanford

The Stanford section, from Frontier Boulevard to east of the US 27 intersection, transitions to a more urban setting with commercial areas and increased congestion. Improvements to this section include:

- RCUTs at the US 150 intersections with Frontier Boulevard, KY 300, and Choctaw Drive.
- Removal of channelized right turn lane at KY 300
- Addition of acceleration lanes for right turns at the US 27 intersection.
- Extension of the transition from four lanes to two lanes on US 150 east of the US 27 intersection.
 - Question: Was a Green-T considered at the KY 300 intersection?
Answer: Yes, a Green-T was analyzed and will be shown at the second Local Officials / Stakeholder meeting. This concept reduces crashes by 5 to 15 percent.

- Removing the channelized right turns would require relocation of the traffic signal poles.
- Question: Did we consider dual left turn lanes North bound?
Answer: No, Stantec will further research protected dual left turn lanes,
- Question: Can we put a signal ahead sign prior to the intersection?
Answer: It was determined this would not be plausible.

13. A return on investment (ROI) analysis was performed to compare the construction costs to the expected crash benefits of the preliminary improvement concepts, with an ROI above one indicating the project is cost-effective. **Table 1** presents a summary of the findings.

Improvements in the Danville section were found to have an ROI value of 3.2. Improvements along the corridor section received an ROI of 1.0. The Stanford section was broken down into converting the KY 300 intersection into a Green-T, this was found to have an ROI of 0.5. Converting intersections to RCUTS received an ROI of 4.3. The addition of receiving lanes and extending lane drops east of US 27 received an ROI of 0.3.

Table 1: Return on Investment (ROI) Summary

Section ID	Section Name	Description	Length (miles)	Construction Cost	10-Year Crash Savings	Return on Investment (ROI)
1	Danville	Improvements along the South Danville Bypass between Smoky Way and US 150 in Danville	2.5	\$5,370,000	\$17,400,000	3.2
2	Corridor	Improvements along US 150 in Boyle and Lincoln Counties between US 150B and Frontier Blvd.	6	\$14,630,000	\$14,600,000	1.0
3	Stanford	Convert KY 300 intersection to a Green-T	0.4	\$400,000	\$200,000	0.5
		Convert intersections to RCUTS on US 150 from Frontier Blvd. to Choctaw Dr.	0.9	\$5,225,000	\$22,300,000	4.3
		Add receiving lanes for channelized right turns at US 150 / US 27 intersection and extend lane drop east of US 27	0.7	\$914,000	\$300,000	0.3

14. The next steps are for Stantec to refine the preliminary improvement concepts based on project team feedback and to prepare for the second Local Officials / Stakeholder Meeting.

The meeting ended at 10:30 a.m. EDT.

Meeting Minutes

TO: Dave Heil Jeff Dick Casey Smith
Co-Project Manager Co-Project Manager Co-Project Manager
KYTC Central Office KYTC District Office #8 KYTC District Office #7
200 Mero Street 1660 US 27 800 Newtown Court
Frankfort, KY 40622 Somerset, KY 42501 Lexington, KY 40511

FROM: Len Harper
Project Manager
Stantec Consulting Services Inc.

DATE: September 19, 2023

SUBJECT: US 150 Corridor Study
US 127B (MP 0.000 – MP 1.000) Boyle County
US 150B (MP 0.000 – MP 2.270) Boyle County
US 150 (MP 16.441 – MP 18.505) Boyle County
US 150 (MP 0.000 – MP 5.467) Lincoln County
Boyle & Lincoln Counties
KYTC Item No. N/A
Local Officials / Stakeholder Meeting No. 2

The second Local Officials / Stakeholder Meeting for the subject project was held at the UK Lincoln County Extension Office on August 30, 2023 at 10:30 a.m. EDT. The following individuals were in attendance:

Woods Adams	Lincoln County Judge Executive
Trille Bottom	Boyle County Judge Executive
Larry Carrier	Transportation Manager Lincoln County Schools
Brian Caldwell	Danville/Boyle County EMA
Scott Maples	Stanford Fire Chief
Zach Middleton	Stanford Police Department
Dalton Miller	Mayor of Stanford
Josh Morgan	City of Danville
Ashley Powell	Lincoln County EMA
Brandon Saylor	The Allen Company

Joe Black	Bluegrass Area Development District (BGADD)
Catherine Davis	KYTC – Central Office Planning
Jeff Dick	KYTC – District 8
Mallory Frye	KYTC – District 8
Joseph Gossage	KYTC – District 8
Dave Heil	KYTC – Central Office Planning
James Jones	KYTC – District 8
Natasha Lacy	KYTC – District 7

Nick Lester KYTC – District 7
 William Lucas KYTC – District 8
 Francis McDonnell KYTC – District 7
 Jessica Richardson KYTC – District 8
 Alex Sergent BGADD
 Shane Tucker KYTC – District 8

Len Harper Stantec Consulting Services Inc.
 Graham Winchester Stantec Consulting Services Inc.

Len Harper welcomed everyone and gave a presentation. The purpose of the meeting was to get feedback on the improvement concepts that were developed to address the concerns identified at the first Local Officials / Stakeholder Meeting in March.

The following enumerated items were discussed.

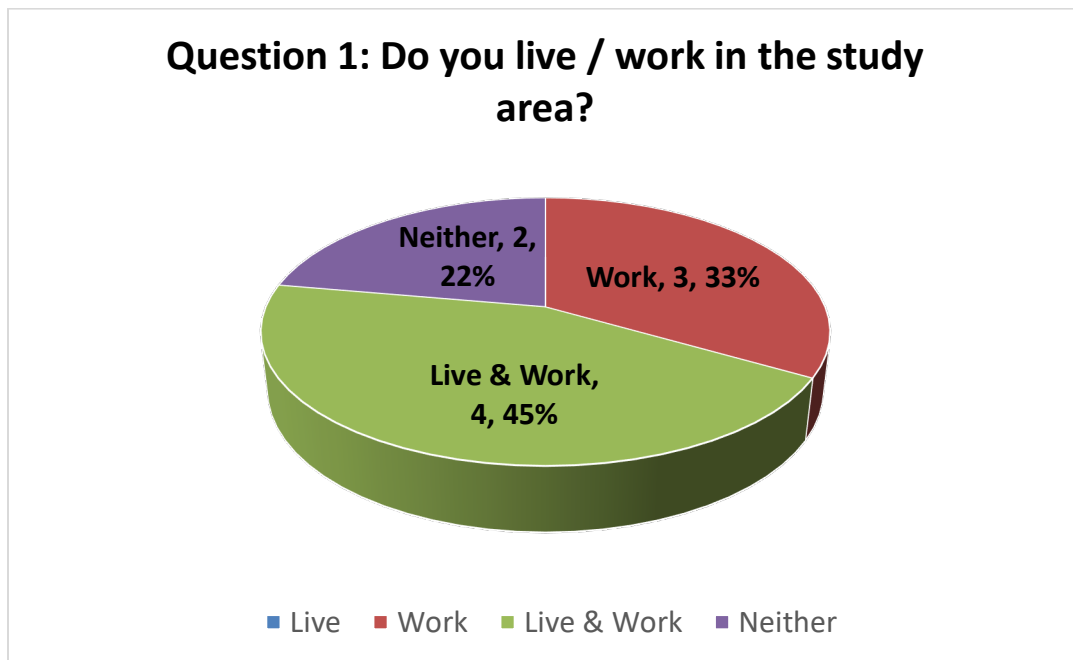
1. The objective of the US 150 Corridor Study is to improve safety, congestion, and mobility on the South Danville Bypass & US 150 from Fireside Drive in Danville to US 27 in Stanford. Large exhibit boards displaying the improvement concepts were made available for the local officials. An evaluation matrix, shown in **Table 1**, was developed to show how the improvement concepts met the study goals.

Table 1: Evaluation Matrix

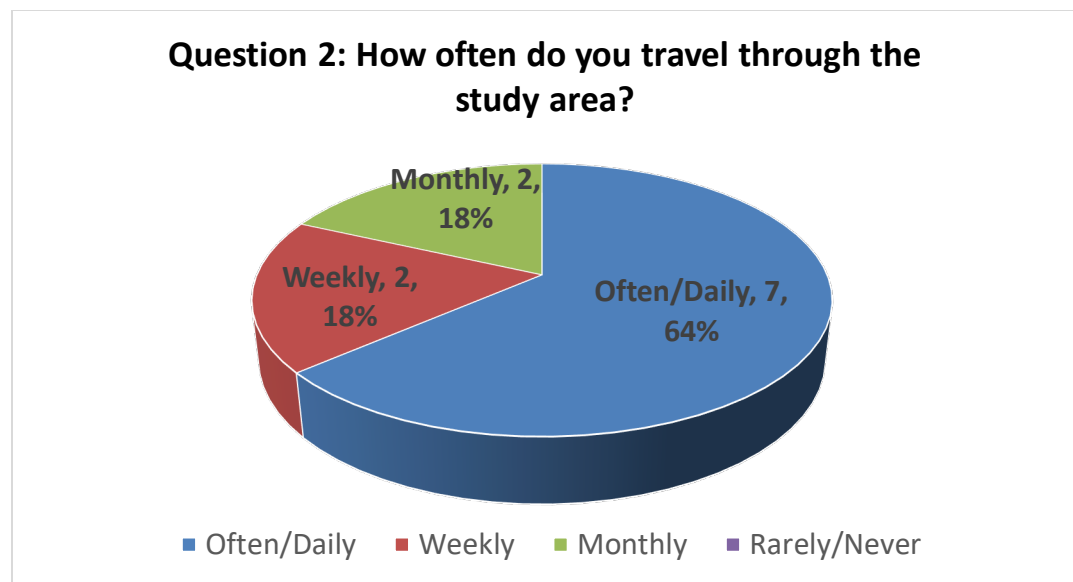
Project Goals	Danville District	Rural District	Stanford District
Project Length	3.3 miles	6.2 miles	1.3 miles
Estimated Construction Cost	\$4,700,000	\$7,500,000	\$4,600,000
Benefit-to-Cost Ratio (Crash Reduction)	3.7	1.9	4.9
Improves Safety	✓	✓	✓
Reduces Existing Congestion	✓	✓	✓
Accommodates Future Traffic	✓	✓	✓
Reduces Right-of-Way Impacts	✓	✓	✓
Reduces Utility Impacts	✓	✓	✓

2. Surveys were distributed to attendees to solicit feedback on the improvement concepts. A total of nine survey responses were collected during the comment period. Overall, results from the survey indicated that the Local Officials / Stakeholders agreed with the improvement concepts that were presented. The survey results are summarized below.

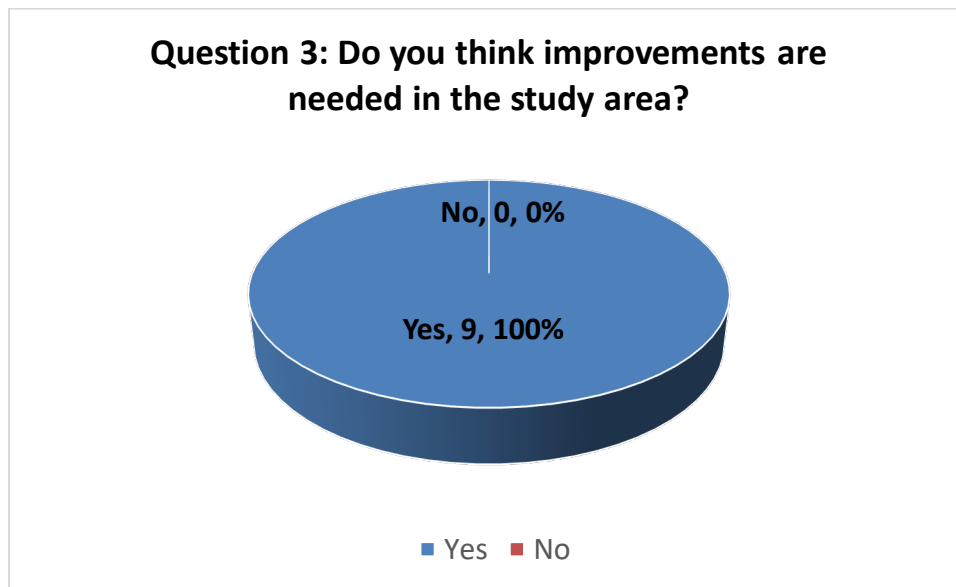
Question 1: Do you live / work in the study area?



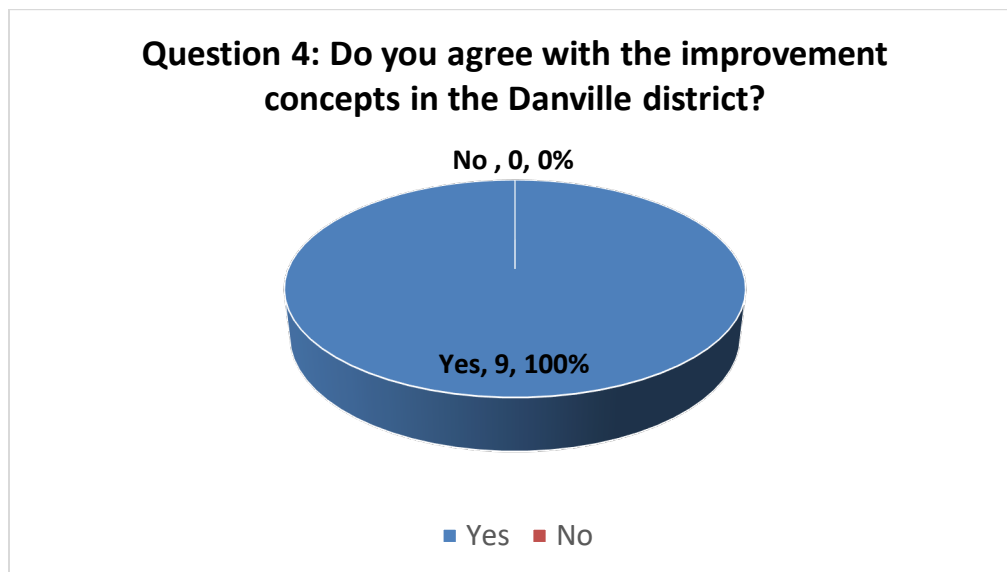
Question 2: How often do you travel through the study area?



Question 3: Do you think improvements are needed in the study area?



Question 4: Do you agree with the improvement concepts in the Danville District?

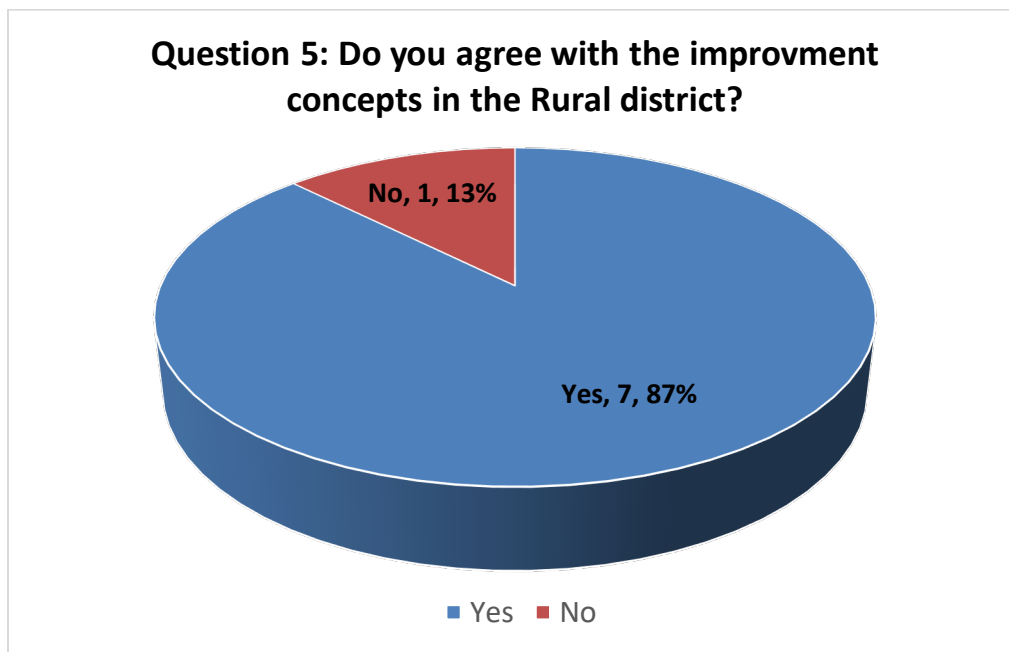


Are there other improvements that you think should be considered in the Danville District?

- Convert the South Danville Bypass intersection at Belinda Boulevard / Smokie Way to a restricted crossing U-turn (RCUT). Add a right turn lane on the South Danville Bypass at this intersection.
- Remove some of the intersections in-and-out of the shopping center by Starbucks (Skywatch Drive).

- Two people recommend a right turn lane on the South Danville Bypass at the Five Star Gas Station (Denmark Drive).
- Turn movements from Denmark and Cassady are very awkward at this intersection. Drivers are always confused about who is turning and who is going straight. There may be some visual improvements that could be made to the signals to assist.
- Three people recommend a right turn lane on the South Danville Bypass at Cattleman’s Roadhouse (Commerce Street).
- Add a right-turn lane on the South Danville Bypass at Daniel Drive.
- Shannon Way will be extended to Gose Pike as part of the development plan of this property. This will add more traffic at the Gose Pike intersection.

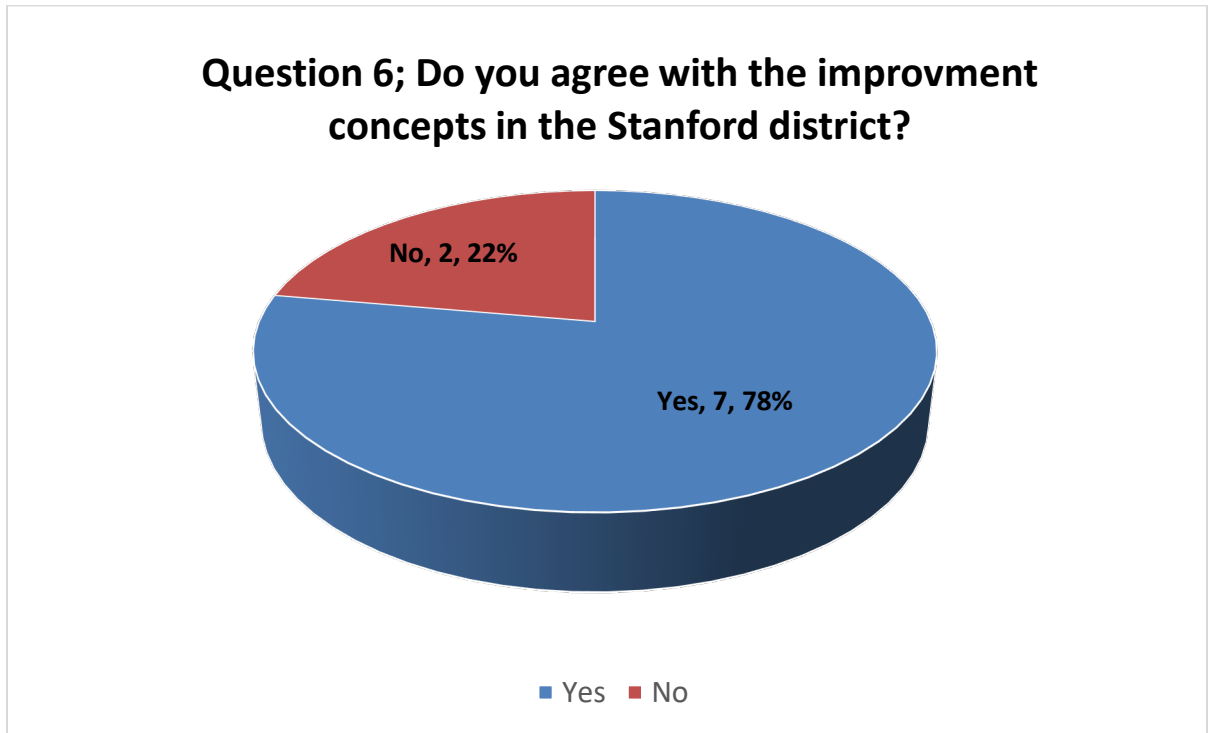
Question 5: Do you agree with the improvement concepts in the Rural District?



Are there other improvements that you think should be considered in the Rural District?

- Make sure school buses can maneuver the U-turns.
- Not sure how U-turns can improve traffic flow and decrease crashes.

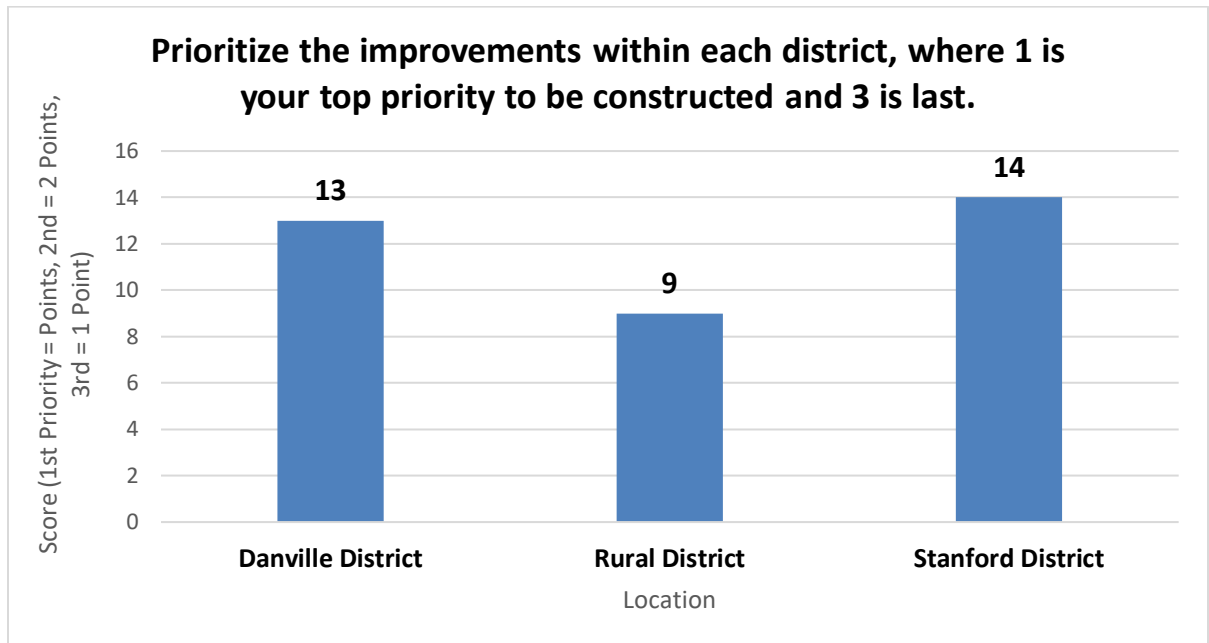
Question 6: Do you agree with the improvement concepts in the Stanford District?



Are there other improvements that you think should be considered in the Stanford District?

- Reduce the speed limit on US 150 coming into Stanford, especially if U-turns are required.
- Two people recommended extending the Danville Avenue U-turn storage on US 150 to accommodate more school busses.
- Three people recommended extending the four-lane typical section on US 150 to Cordier Road to accommodate future development.
- Fix the loop detector issues for the northbound approach at the Lincoln Trail intersection.

Question 7: Prioritize the improvements within each district, where 1 is your top priority to be constructed and 3 is last.



- The next step is the final Project Team Meeting. The purpose of the meeting is to discuss the survey results from the second Local Officials / Stakeholder Meeting, determine if changes are needed for the improvement concepts/cost estimates, and discuss study recommendations for the draft report.

The meeting ended at approximately 12:00 PM EDT.

Meeting Minutes

TO: Dave Heil Mallory Frye Casey Smith
Co-Project Manager Co-Project Manager Co-Project Manager
KYTC Central Office KYTC District Office #8 KYTC District Office #7
200 Mero Street 1660 US 27 800 Newtown Court
Frankfort, KY 40622 Somerset, KY 42501 Lexington, KY 40511

FROM: Len Harper
Project Manager
Stantec Consulting Services Inc.

DATE: November 14, 2023

SUBJECT: US 150 Corridor Study
US 127B (MP 0.000 – MP 1.000) Boyle County
US 150B (MP 0.000 – MP 2.270) Boyle County
US 150 (MP 16.441 – MP 18.505) Boyle County
US 150 (MP 0.000 – MP 5.467) Lincoln County
Boyle & Lincoln Counties
KYTC Item No. N/A
Project Team Meeting No. 1

The third Project Team Meeting for the subject project was held at the KYTC District 8 office in Somerset, KY and virtually via Microsoft Teams on October 16, 2023, at 10:30 a.m. EST. The following individuals were in attendance:

Rachel Cash*	KYTC – Central Office Planning
Mallory Frye*	KYTC – District 8
Natasha Lacy*	KYTC – Central Office Planning
Francis McDonnell*	KYTC – District 7
Natalia McMillian*	KYTC – District 7
Lindsey Phelps*	KYTC – District 8
Joshua Samples*	KYTC – District 7
Casey Smith*	KYTC – District 7
Shane Tucker*	KYTC – District 7
Randy Turner*	KYTC – Central Office Planning

Antonio Pousa*	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.

*Joined via Microsoft Teams

The purpose of the meeting was to share information regarding the US 150 Corridor Study and to share feedback from the local officials and stakeholders on preliminary improvement concepts. The objective of the US 150 Corridor Study is to improve safety, congestion, and mobility on the South Danville Bypass and US 150 from Fireside Drive in Danville to US 27 in Stanford. The study will evaluate intersections, roadways, and other infrastructure and develop potential options to improve safety and congestion.

The following enumerated items were discussed.

1. The purpose of the meeting is to present the results from the survey conducted at the Local Officials / Stakeholder meeting and to present and gather feedback from the project team on improvement concepts and cost estimates.
2. The study area, which includes US 150 and the South Danville Bypass from Fireside Drive in Danville to US 27 in Stanford, is shown in **Figure 1**.
3. Surveys were distributed at the second Local Officials / Stakeholder Meeting to solicit feedback on the need for improvements, transportation issues in the study area, and proposed improvement concepts.

Ten attendees provided feedback while nine participants completed the survey, four of which indicated they live in Boyle County, with six participants living in Stanford County. All respondents agreed that improvements are needed in the study area.

4. Crash data from the Kentucky State Police database indicates that in the five years between January 1, 2017, and December 31, 2021, a total of 501 crashes were reported on the study corridor. Of the 501 crashes, there were five fatal collisions (one percent), 128 injury collisions (30 percent), and 368 property damage only collisions (69 percent).

Three of the fatal collisions were angle collisions at intersections, one was an opposing left-turn collision at an intersection, and one was a single vehicle collision along the rural portion of the study corridor. Rear end and angle crashes (35 percent each) were the most prominent types of collisions.

- There was one fatality recorded on the rural section of US 150 in the study area. A single vehicle collision that was not related to transportation issues.

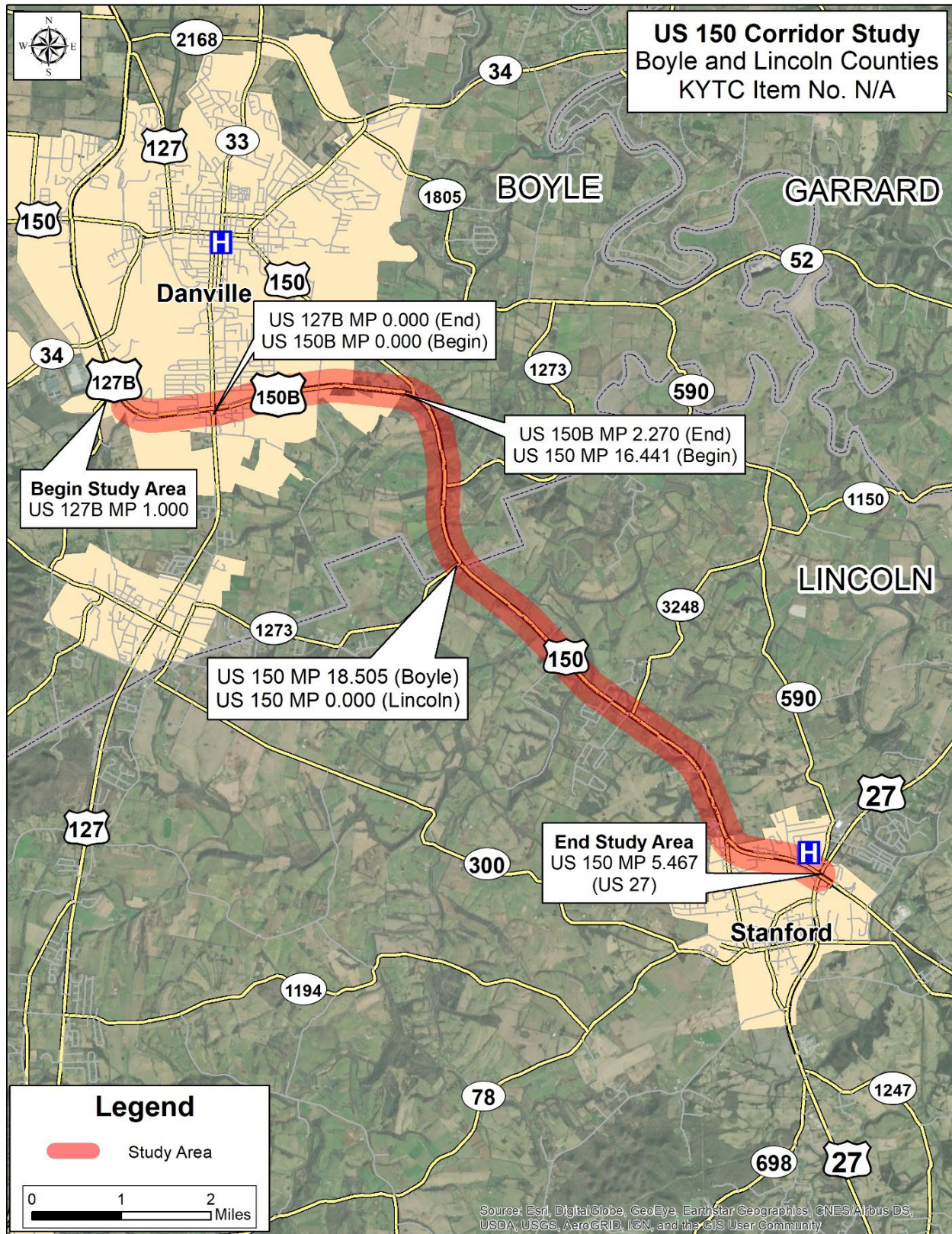


Figure 1: Study Area

5. The Crash Data Analysis Tool (CDAT) was used to perform an Excess Expected Crashes (EEC) analysis. EEC is a measure of the crash frequency at a given site compared to what is expected based on current conditions (geometrics, traffic, etc.). A positive EEC indicates more crashes are occurring than should be expected. Results from this analysis showed several segments with a positive EEC, the highest of which included the section west of US 127 in Danville and the rural section in Lincoln County. Additionally, 13 intersections were shown to have positive EECs. Shown in **Figure 2**.

Danville District Improvements

Respondents were asked if they agreed with the improvement concepts presented in the Danville district and for any additional comments or recommendations. All nine participants indicated they agreed with the presented improvement concepts. Local Officials recommendations have been summarized in **Table 1**.

South Danville Bypass at Skywatch Drive has an EEC value of 2.4 annually. With 26 total crashes from 2017 and 2019 containing one fatal (angle), seven injury (angle), and 18 property damage only.

South Danville Bypass at Commerce Street had 19 crashes between 2017 and 2021. This includes two fatal, eight injury, and nine property damage only. The crashes include eight angles, eight rear end, two opposing left turns, and one sideswipe. TMC’s were collected for this intersection, including heavy right turns on both northbound and southbound directions of South Danville Bypass.

Table 1: Local Officials Danville Recommendations

Danville District Recommendations
Convert South Danville Bypass into a restricted crossing U-turn (RCUT).
Reduce intersections near shopping center
Install a right turn lane on the South Danville Bypass at Denmark Drive
Add a right-turn lane on the South Danville Bypass at Daniel Drive
Install a right turn lane on the South Danville Bypass at Commerce Street

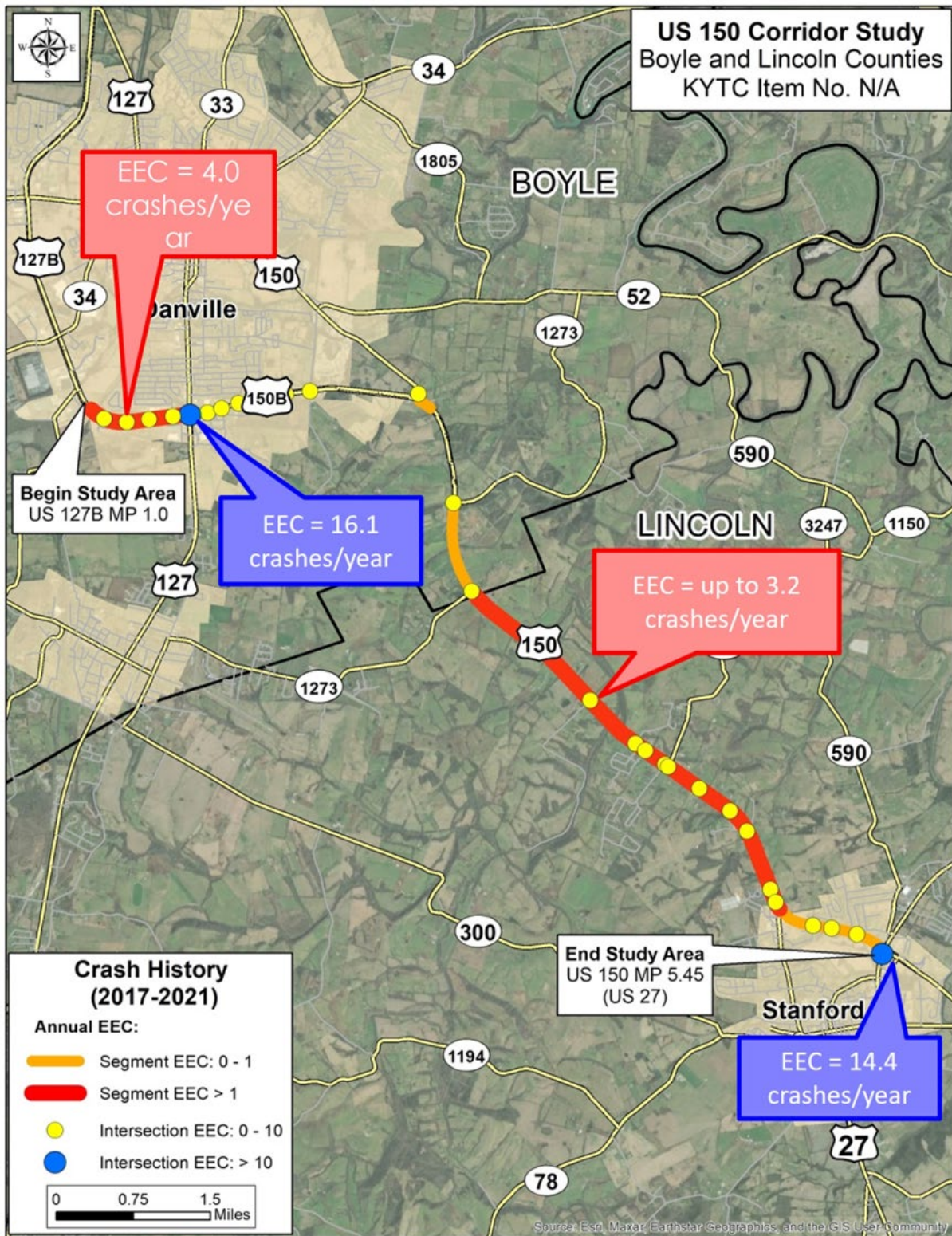


Figure 2: Excess Expected Crashes (EEC)

Rural District Improvements

Respondents were asked if they agreed with the improvement concepts presented in the rural district and for any additional comments or recommendations. Seven of the respondents agreed with the presented improvement concepts, while one respondent disagreed with the presented improvements.

Comments

- Stanford Chief of Police, wants speed limit reductions coming into Stanford.
- Lincoln County School District was ok with the improvement concepts if school buses can make the U-turns.

Stanford District Improvements

Respondents were asked if they agreed with the improvement concepts presented in the Stanford district and for any additional comments or recommendations. All nine participants indicated they did agree with the presented improvement concepts. Respondents’ recommendations are summarized in **Table 2**.

US 150 at Danville Avenue had 18 crashes between 2017 and 2021. This includes one fatal, nine injury, and eight property damage only, with eleven angle, three single vehicle, two rear end, one opposing left turn, and one sideswipe.

US 150 and US 27 had 21 total crashes in the southeast corner, all 21 crashes were rear end collisions. This includes one injury and twenty property damage only. In the northeast corner there were eight total crashes. All crashes were rear end property damage only.

Table 2: Local Officials Stanford Recommendations

Stanford District Recommendations
Extend Danville Avenue U-turn storage to accommodate more school buses
Resolve loop detector issues for the northbound approach at Lincoln Trail
Extend four-lane section typical section on US 150 to Cordier Road
Update acceleration lane on US 27 end as right turn at Plaza Road/ Lincoln Trail

- Participants were asked to rank their priority of districts that need improvements (#1 – #3) with #1 being the highest rating. A point system was used to summarize the results, with three points given to a first-place ranking, two points to a second place, and one point to a third place. The Stanford district was the highest ranked issue followed by the Danville district, as shown in **Figure 3**.

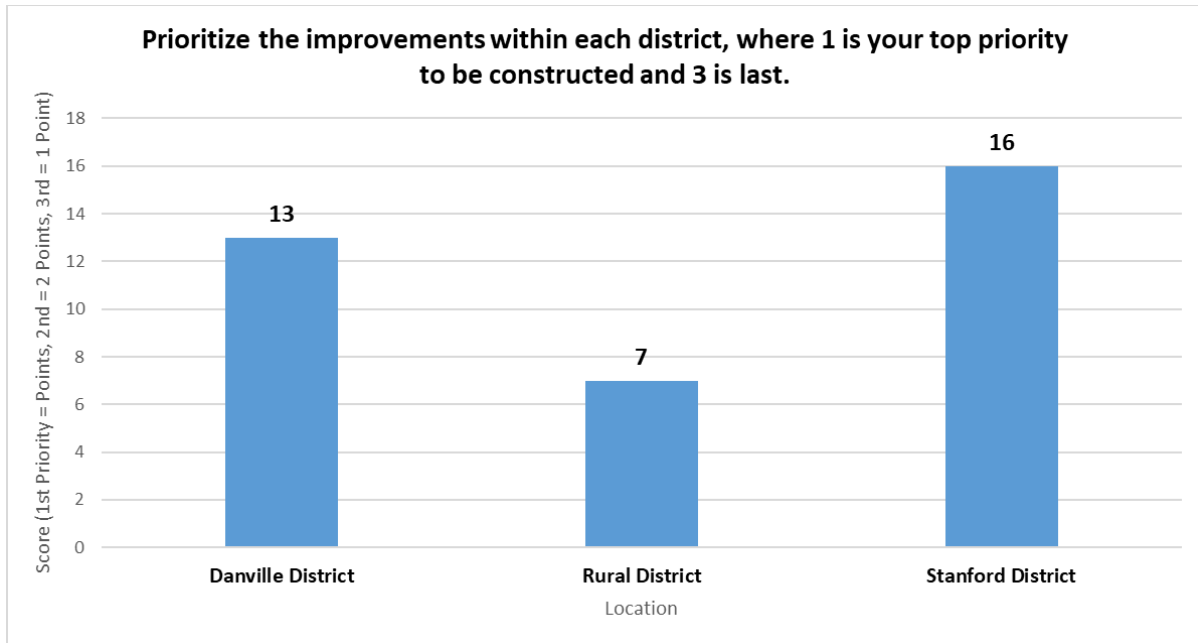


Figure 3: Local Officials Survey – Ranking District Improvements

7. The objective of the US 150 Corridor Study is to improve safety, congestion, and mobility on the South Danville Bypass & US 150 from Fireside Drive in Danville to US 27 in Stanford. An evaluation matrix, shown in **Table 3**, was developed to show how the improvement concepts met the study goals.

Table 3: Evaluation Matrix

Project Goals	Danville District	Rural District	Stanford District
Project Length	3.3 miles	6.2 miles	1.3 miles
Estimated Construction Cost	\$4,700,000	\$7,500,000	\$4,600,000
Benefit-to-Cost Ratio (Crash Reduction)	3.7	1.9	4.9
Improves Safety	✓	✓	✓
Reduces Existing Congestion	✓	✓	✓
Accommodates Future Traffic	✓	✓	✓
Reduces Right-of-Way Impacts	✓	✓	✓
Reduces Utility Impacts	✓	✓	✓

8. The next steps are to refine the improvement concepts and cost estimates and begin drafting the final report for the project.

The meeting ended at approximately 11:30 a.m. EDT.