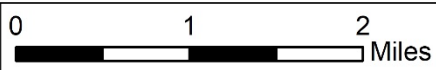


Study Area Sections

- Danville Section
- Rural Section
- Stanford Section

Median Openings

- ★ Private Driveway
- ★ Public Street



US 150 CORRIDOR STUDY

BOYLE AND LINCOLN COUNTIES
EXECUTIVE SUMMARY | JUNE 2024

PREPARED FOR



IN PARTNERSHIP WITH



Executive Summary

The Kentucky Transportation Cabinet (KYTC) initiated the *US 150 Corridor Study* in Boyle and Lincoln Counties to identify concepts to improve safety, congestion, and mobility on US 150 and the South Danville Bypass (US 127B and US 150B) from Fireside Drive in Danville to US 27 in Stanford. The study area is shown in **Figure ES-1**.

Existing Conditions

US 150 is an east-west Principal arterial through central Kentucky, and a regionally important route. Within the Bluegrass Region, US 150 connects communities between the Bluegrass Parkway in Nelson County and I-75 in Rockcastle County. Because of this connectivity, US 150 serves dual roles: it provides access to local businesses / homes and serves as an artery for regional through traffic. The study portion of US 150 and the South Danville Bypass is 10.8 miles and stretches between Danville and Stanford. The study area was divided into three sections based on their distinct land use and roadway characteristics:



US 150 Near Milepoint 1.0 in Lincoln County

- **Danville Section (Purple on Study Area Map):** 3.3 miles along the South Danville Bypass from Fireside Drive to US 150 in Danville
- **Rural Section (Blue and Orange on Study Area Map):** 6.2 miles along US 150 from the South Danville Bypass in Boyle County to Frontier Boulevard in Lincoln County
- **Stanford Section (Green on Study Area Map):** 1.3 miles along US 150 from Frontier Boulevard to US 27 in Stanford

Current daily traffic volumes range from 11,100 vehicles per day to just over 23,000 vehicles per day on the South Danville Bypass near the west end of the Danville Section. The study corridor has four travel lanes (two in each direction) and a depressed median, which can sufficiently accommodate existing and future traffic volumes. However, some of the side streets at intersections (such as Skywatch Drive, US 127, KY 300, and US 27) experience control delay due to peak hour congestion.

Crash data were collected for the five-year period from 2017 through 2021. A total of 501 crashes were reported over the nearly 11-mile section during this time. Many of these crashes can be attributed to the abundance of driveways, intersections, and median openings. Of the 501 reported crashes on the study corridor, 306 (61 percent) were at an intersection, four of which resulted in a fatality (1 percent) and 94 resulted in one or more injuries (31 percent). Based on a comprehensive safety analysis, US 150 and the South Danville Bypass have a Level of Service of Safety (LOSS) of 3, which indicates a moderate-to-high potential for crash reduction.

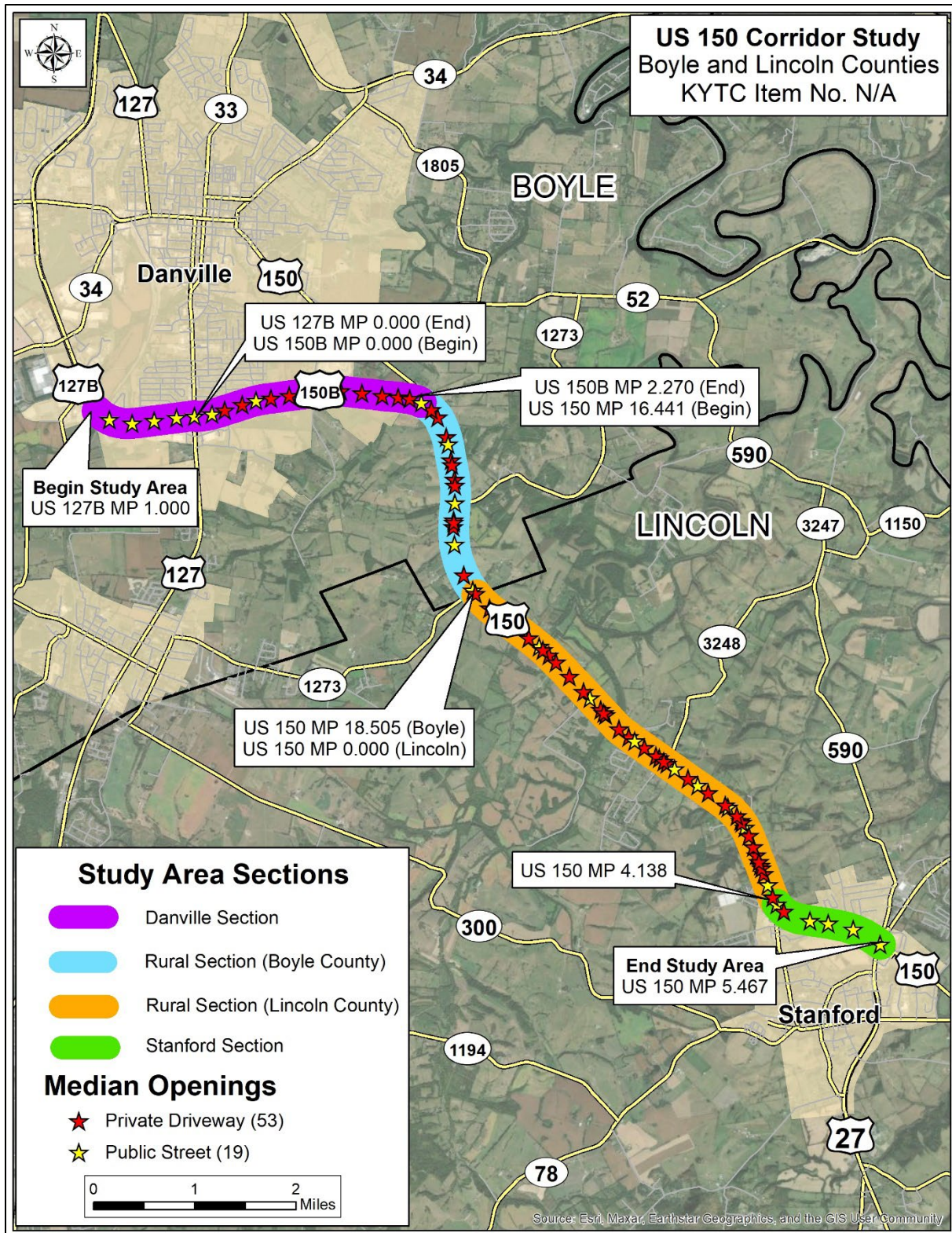


Figure ES-1: Study Area

As shown in **Figure ES-1**, there are currently 72 full access intersections along the study corridor, many of which serve private driveways. Each median opening creates a potential conflict point (i.e., location where vehicle paths cross) between through traffic and turning traffic. The Danville and Stanford Sections were found to have an average spacing of 1,000 feet between full access intersections. The Rural Section has an average of 600 feet between full access intersections, with the closest intersections only 32 feet apart. In both cases, the current spacing is far less than the 2,400 feet recommended by KYTC for a major arterial.¹ Proactively managing access points, especially on arterials meant for higher mobility, promotes safe and efficient travel through the transportation network.

Local Official / Stakeholder Outreach

Over the course of the study, the project team met twice with local officials and stakeholders to provide information and to solicit input on transportation concerns in the study area and the proposed improvement concepts. Overall, feedback from the local officials and stakeholders indicated that safety is more of a concern than congestion. Intersection improvements were the highest priority in the Danville Section, consolidating median openings were the highest priority in the Rural Section, and reducing speeding was the highest priority in the Stanford Section.

Improvement Concepts

Improvement concepts were developed to improve safety and congestion by reconfiguring intersections along the study corridor. Improvement concepts include the addition of positive offset left turn lanes at intersections, eliminating left-turns from side streets at unsignalized intersections, extending merge lanes at US 127 and US 27, and extending frontage roads to provide secondary access to adjoining properties. This will reduce the number of potential conflict points, a proven countermeasure to reduce crash frequency. More importantly, these concepts have been proven to significantly reduce serious opposing left-turn and angle crashes, especially from the side streets. Recently constructed Restricted Crossing U-Turn (RCUT) intersections across Kentucky have reduced severe crashes by 50 percent or more. These improvements also help traffic flow more freely and reduce congestion.

The following figures provides a summary of the improvement concepts within each Section:

- **Danville Section (Figure ES-2)**
- **Rural Section (Figure ES-3)**
- **Stanford Section (Figure ES-4)**

Top 5 Concerns Identified by Local Officials / Stakeholders

1. **Speeding**
2. **Vehicles Slowing to Turn**
3. **Difficulty Turning onto US 150**
4. **Safety**
5. **Too Many Driveways / Median Cuts**

¹ <https://transportation.ky.gov/Congestion-Toolbox/Documents/Access%20Management%20Implementation%20Report%202008.pdf>

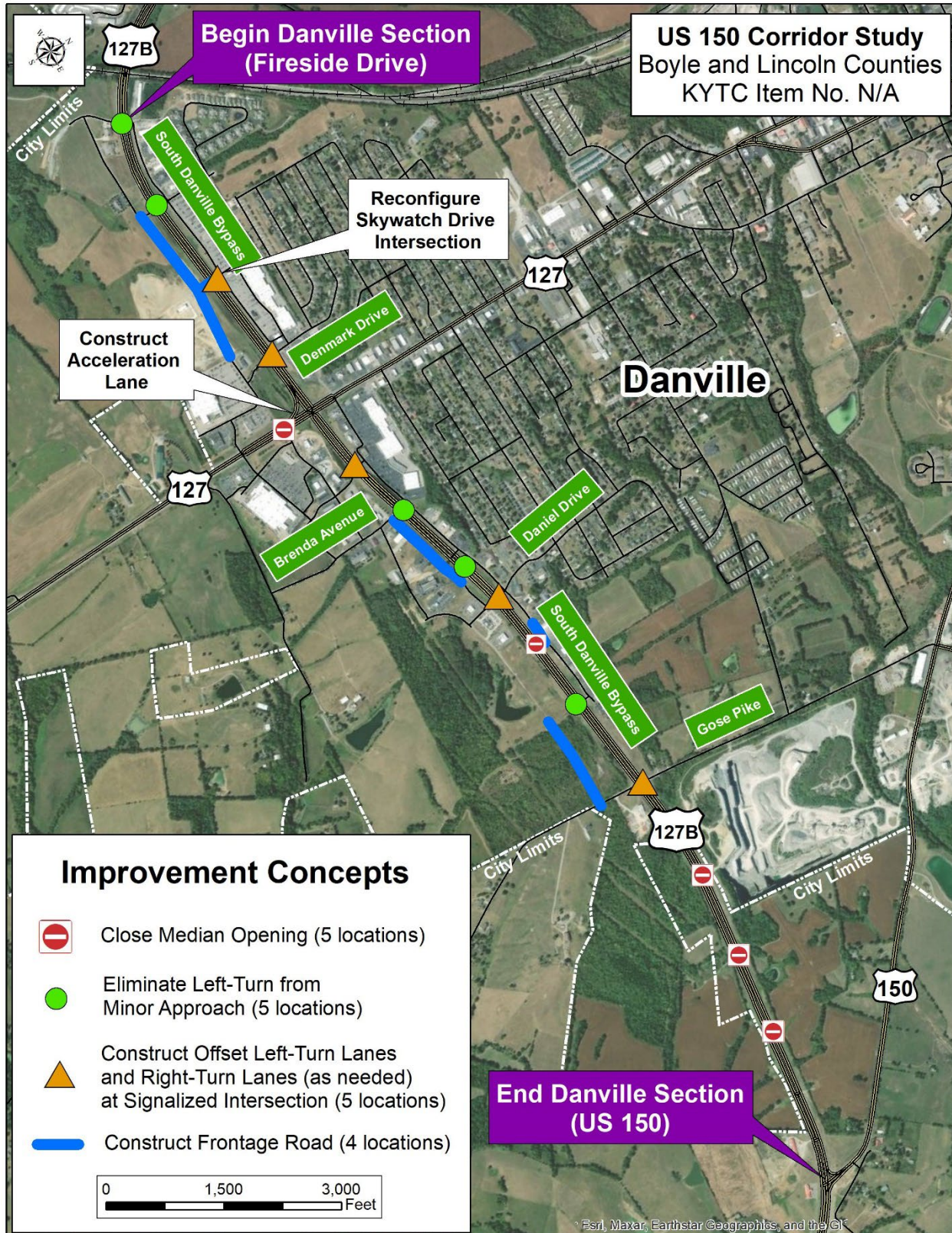


Figure ES-2: Improvement Concepts – Danville Section

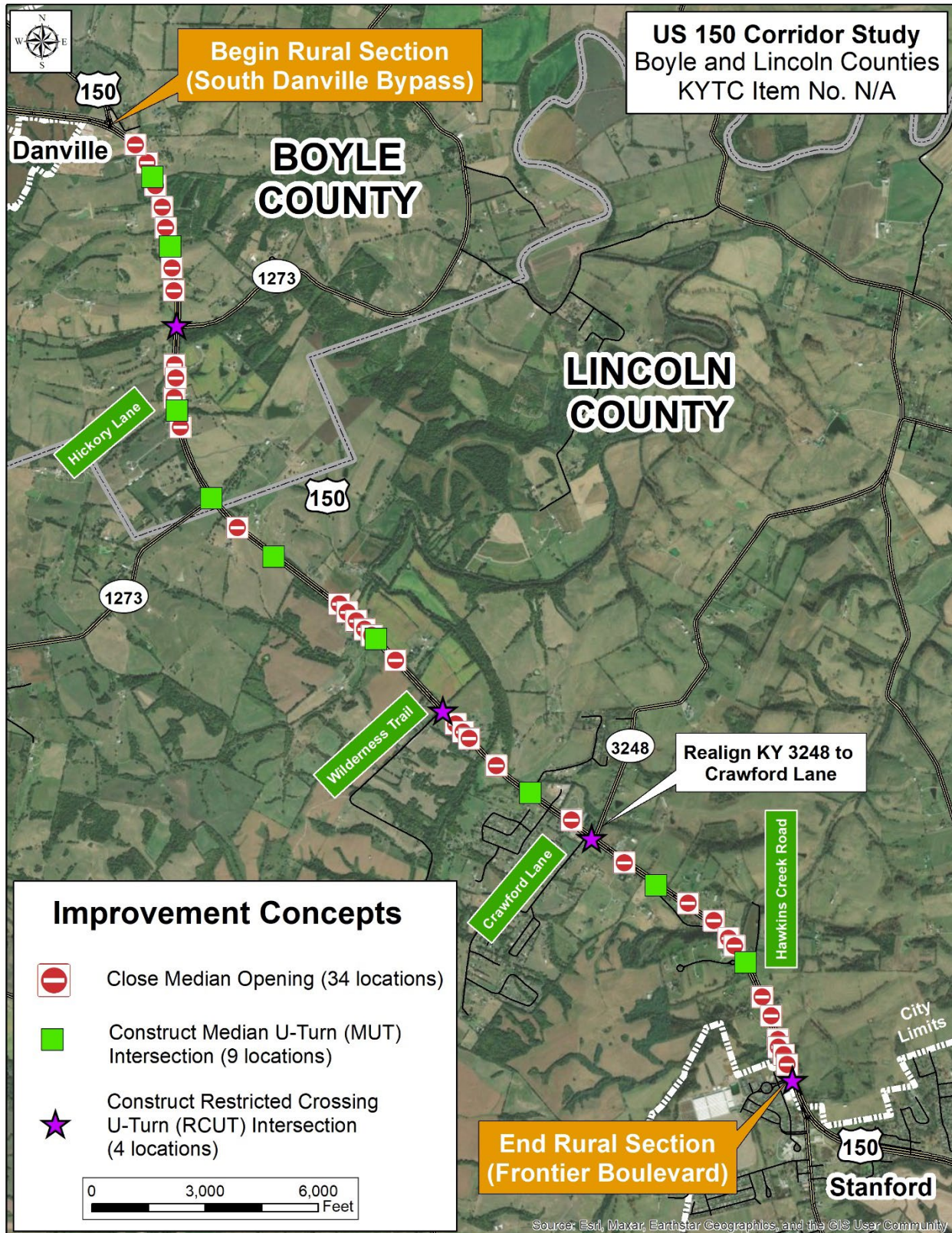


Figure ES-3: Improvement Concepts – Rural Section

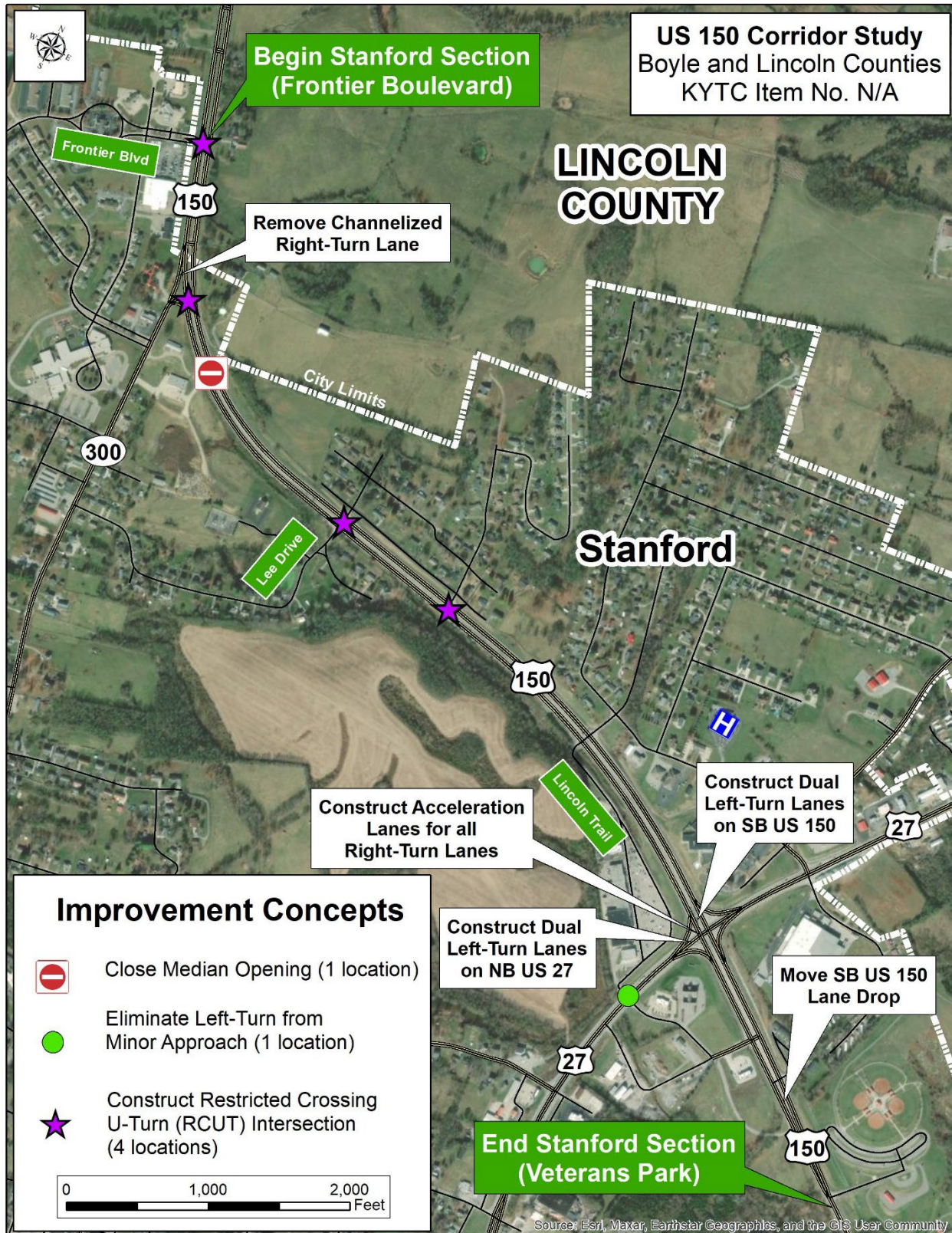


Figure ES-4: Improvement Concepts – Stanford Section

Table ES-1 presents an evaluation matrix showing the total 2023 cost for the improvement concepts within each Section (design, right-of-way, utility, and construction), the return-on-investment (ROI), the priority rankings based on input from the Local Officials / Stakeholders, and whether or not the improvements address the project goals. The ROI compared the estimated costs to the expected safety benefits for the improvements. An ROI above one indicates the project is cost-effective.

Table ES-1: Evaluation Matrix

Project Goals	Danville Section	Rural Section		Stanford Section
		Boyle County	Lincoln County	
Project Length	3.3 miles	2.1 miles	4.1 miles	1.3 miles
Design Cost	\$1.9 million	\$500,000	\$600,000	\$900,000
Right-of-Way Cost	\$1.6 million	\$200,000	\$700,000	\$300,000
Utility Cost	\$600,000	\$100,000	\$1 million	\$300,000
Construction Cost	\$12.8 million	\$3.1 million	\$4.3 million	\$5.7 million
Total Cost Estimate (2023 Dollars)	\$16.9 million	\$10.5 million		\$7.2 million
Return-On-Investment (ROI)	1.7	1.4		3.5
Local Officials Priority Ranking	2	3		1
Improves Safety	✓	✓		✓
Reduces Existing Congestion	✓	✓		✓
Accommodates Future Traffic	✓	✓		✓
Reduces Right-of-Way Impacts	✓	✓		✓
Reduces Utility Impacts	✓	✓		✓

Next Steps

The recommended improvement concepts in all three Sections satisfy the project goals of improving safety, congestion, and mobility on US 150 and the South Danville Bypass and were deemed cost-effective based on results from the ROI analysis.

The next step following this study for any potential improvements would be Phase 1 Design (Preliminary Engineering and Environmental Analysis). Depending on funding availability, the improvement concepts within each Section could be implemented separately, over time.

Executive Summary
US 150 Corridor Study

In the Rural and Stanford Sections, there are three design projects listed in the recently passed *2024-2026 Biennial Highway Plan*:

- KYTC Item No. 8-80300.00 has \$1.368 million in design funds listed in FY 2026 for improving safety and access control along US 150 from Danville to Stanford.
- KYTC Item No. 8-80001.00 has \$150,000 in design funds listed in FY 2024 for installing a turn lane on US 150 near Crawford Lane in Lincoln County.
- KYTC Item No. 8-80111.00 has \$100,000 in design funds listed in FY 2024 for installing a turn lane on US 150 at the Dollar General on Withers Court in Stanford.

The recommended improvements in the Rural and Stanford Sections address safety and congestion issues at all three project locations listed above. As such, it is recommended they be combined into one design project and completed as KYTC Item No. 8-80300.00 to provide consistency throughout the corridor.

In the Danville Section, the City of Danville is currently pursuing a Safe Streets and Roads for All (SS4A) Federal grant to help implement the improvement concepts identified as part of this study. If successful, they would work with KYTC during design.