

2.0 ALTERNATIVES

This chapter discusses the alternatives considered and analyzed to address the purpose and need for the proposed action. A range of alternatives for the project were developed and screened, as detailed in **Appendix B**. The following sections summarize the alternatives considered and the screening process used to identify and select the preferred alternative for the project.

2.1 Alternative Development and Screening

2.1.1 Alternatives Considered

As part of the environmental clearance process, a No-Build Alternative is used as a benchmark for comparison against the other improvement alternatives being evaluated. In addition to the No-Build Alternative, a total of five alternatives were considered. These alternatives were developed by KDOT in coordination with the City of Overland Park, the Kansas Turnpike Authority (KTA) and other project stakeholders. The team also drew upon alternatives developed during previous studies within the corridor. The range of potential alternatives included the following:

- No-Build
- Improvement of Alternative Routes
- Existing Capacity Management
- Multimodal
- Add Capacity Traditional Widening (Traditional Widening Alternative)
- Add Capacity Express Toll Lanes (Express Toll Lanes Alternative)

Appendix B provides more detailed descriptions of the proposed alternatives.

2.1.2 Alternatives Screening Process

The alternatives analysis process entailed screening of the alternatives to determine which warranted further consideration as Reasonable Alternatives. The Initial Alternatives Screening, or Tier 1, was conducted utilizing screening criteria established for the project, encompassing elements of the purpose and need, the natural and human environment, engineering and costs and public and stakeholder input (a full breakdown of the screening criteria can be found in **Appendix B**). The initial screening was qualitative in nature. Under the Tier 1 screening, all Initial Alternatives were evaluated first against the purpose and need criteria established for the project. In addition to the No-Build Alternative, only those alternatives that satisfied the purpose and need criteria as standalone alternatives were carried forward for additional Tier 1 screening against natural and human environment criteria, engineering and cost criteria, and public stakeholder criteria.



Based on the screening of the Initial Alternatives, the alternatives screening process transitioned into a second round, or Tier 2, screening as Reasonable Alternative(s), as more than one alternative proved feasible and prudent to consider as a potential Preferred Alternative (Proposed Action) for the project. These Reasonable Alternatives were further evaluated through quantitative measures to determine their potential impacts in comparison to the No-Build Alternative and each other.

As an outcome of the screening of the Reasonable Alternatives, a Preferred Alternative, or Proposed Action, was selected. The Preferred Alternative is the alternative that best meets the purpose and need for the project while avoiding, minimizing or mitigating impacts to both the natural and human environment, considers engineering factors and costs, and public and stakeholder input. **Appendix B** provides more detailed information on the screening of the Initial and Reasonable Alternatives for the project.

2.1.3 Alternatives Considered but Dismissed

Through Tier 1 of the alternatives development and screening process, three of the six proposed alternatives were dismissed from further consideration as standalone alternatives for improving the U.S. 69 Corridor. During the Tier 1 screening process, the Improvement of Alternative Routes, Existing Capacity Management, and Multimodal alternatives were dismissed based on their inability to satisfy elements of the Purpose and Need. Both the Traditional Widening and Express Toll Lanes alternatives were carried forward to the Tier 2 Screening in comparison with the No-Build Alternative. During the Tier 2 screening process, the Traditional Widening Alternative was dismissed from further consideration due to its larger footprint and greater impacts to the natural and human environment, as well as poorer performance against the traffic congestion, engineering and cost criteria as compared to the Express Toll Lanes Alternative. The larger footprint of the Traditional Widening Alternative is due to the construction of collector/distributor roads and auxiliary lanes necessary to meet the purpose and need of the project. The larger footprint of the Traditional Widening Alternative would result in 2.17 acres of additional ROW and 3.21 acres of additional temporary easements over the Express Toll Lanes Alternative. The Traditional Widening Alternative would also result in two additional displacements, a business displacement and a tennis court at a private apartment complex. Both displacements will be avoided by the Express Toll Lanes Alternative.

The Alternatives Screening Memo (**Appendix B**) contains the full comparison between the Traditional Widening Alternative and the Express Toll Lanes Alternative. In general, the Express Toll Lanes Alternative was selected over the Traditional Widening Alternative based on the following:



- Experiences a lower percentage of the corridor with substantial congestion Fewer impacts to parks (4.41 acres)
- Fewer impacts to bike routes and trails (3,200 feet)
- Fewer noise impacts to mitigate
- Fewer impacts to floodplains and streams
- Lower Greenhouse Gas emissions
- Fewer Right-of-Way impacts including Temporary Easements
- Fewer Residential and Business Displacements
- Ability to be constructed on a faster timeframe
- Lower overall cost (\$90 million)
- Lower Life-Cycle costs (\$8 million)
- Non-Tax dedicated source of funding

At the conclusion of the screening process, the Express Toll Lanes Alternative was chosen as the Proposed Action, or Preferred Alternative, based on its ability to satisfy the purpose and need and minimize impacts to the natural and human environment and better address traffic congestion, engineering and cost screening criteria. The Express Toll Lanes Alternative was therefore carried forward in comparison to the No-Build Alternative for analysis within the remaining sections of the EA.

2.2 No-Build Alternative

The No-Build Alternative means that no roadway and/or bridge reconstruction or capacity improvements would be constructed on the U.S. 69 Corridor. This alternative includes minor pavement and bridge rehabilitation and ongoing maintenance such as mowing and snow removal. It also includes future projects that are currently planned or committed in state, regional and local transportation improvement plans through the 2050 design year of this project.

For U.S. 69, the following improvements are committed within the corridor:

- U.S. 69 NB Bridge at 179th Street Rehabilitation; Programmed for 2022.
- U.S. 69 Johnson County Guardrail End Terminal Updates; Programmed for 2022.
- 119th Street from Pflumm Road to U.S. 69 Corridor widening and improvements; Programmed during the 2030 decade.
- 151st Street from Antioch Road to Metcalf Avenue Corridor widening and improvements; Programmed during the 2030 decade.
- 179th Street from Lackman Road to Metcalf Avenue Corridor widening and improvements; Programmed during the 2030 decade.
- Antioch Road from 119th Street to 135th Street Corridor widening and improvements; Programmed during the 2030 decade.



- Antioch Road from 135th Street to 179th Street Corridor widening and improvements; Programmed during the 2040 decade.
- Metcalf Avenue from 119th Street to 159th Street (two separate projects) Corridor widening and improvements; Programmed during the 2030 decade.
- Metcalf Avenue from 167th Street to 179th Street Corridor widening and improvements; Programmed by 2026.

While this alternative does not meet the purpose and need it is carried forward for further study because it provides a baseline for comparing the potential impacts of the other alternatives being considered, as required by the Council on Environmental Quality (CEQ) regulations for implementing NEPA.

2.3 Express Toll Lanes Alternative

The Express Toll Lanes Alternative includes adding an additional lane in each direction that would provide express toll service along the corridor by managing congestion in the lanes through pricing, vehicle eligibility and vehicle access strategies. This alternative also includes reconstruction of bridges and pavement in the corridor.

Geometric and condition improvements include:

- Add an additional travel lane in each direction with express toll lane (ETL) service;
- Reconfigure the interchange at I-435;
- Reconfigure the interchange at Blue Valley Parkway;
- Improvements to local interchanges and supporting cross streets; and
- Reconstruction of existing pavement and bridges.

With the Express Toll Lanes Alternative, the two lanes in each direction that exist today would remain free of any tolls as required by law. An additional ETL would then be added in each direction and constructed to the inside, in the current median of the corridor. Locations where travelers can enter or exit the ETLs would be indicated with a break in the double stripe lines and on overhead messaging signs.



A toll would be charged only to motorists who choose to enter and use the ETLs. The toll price charged would vary depending on the length of the trip and the amount of traffic congestion on the corridor. The more traffic congestion there is along the corridor, the higher the toll to help manage the reliability of the trip in the ETLs. Typically, that would mean that the highest tolls would be charged during morning and evening rush hours, with lower tolls during less busy times of day.

The ETLs would operate at typical highway speeds and be all-electronic with no stopping to pay cash at toll plazas along the corridor, as shown in **Figure 2-1**. Tolls would be assessed electronically either by reading a toll tag – such as K-TAG – or by reading the vehicle's license plate and charging through video tolling.

2.4 Preferred Alternative

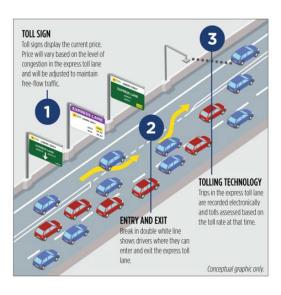
The Express Toll Lanes Alternative was selected as the Preferred Alternative, designated as the Proposed Action, for the U.S. 69 Modernization and Expansion Project. The Express Toll Lanes Alternative was recommended by the project team due to its ability to meet the purpose and need of the project, address traffic congestion and safety concerns within the corridor, fewer impacts to the natural and human environment over the other Build Alternative (Add Capacity – Traditional Widening), and its ability to provide a lower cost solution. A detailed figure showing the Express Toll Lanes Alternative can be found in **Figure 2-2**.

2.4.1 Purpose and Need Criteria

The Express Toll Lanes Alternative meets the Purpose and Need of the project by:

- Improving Safety The implementation of ETLs is expected to reduce congestion along the U.S. 69 Corridor. This reduction in congestion is forecast to reduce congestion-related crashes such as rear-end, sideswipe and sudden changes in speed. Improvements to crossings over or under U.S. 69 are anticipated to improve bicycle and pedestrian safety along crossroads.
- Reducing Congestion Through the use of lane management strategies, the Express Toll Lanes Alternative is expected to provide improvements to travel level of service by reducing congestion, increase the overall corridor's travel speed and increase the corridor's throughput.

Figure 2-1: Express Toll Configuration





- Promoting Sustainability The overall smaller construction project footprint and ability to manage congestion through dynamic pricing promotes environmental sustainability while addressing existing roadway and bridge infrastructure replacement needs and deficiencies. Through the use of managed lanes the corridor's travel time will be more consistent with less stop-and-go traffic, which will result in less greenhouse gas emissions than the No-Build. Transit use through the corridor will be incentivized by allowing transit vehicles to utilize the ETLs at a discounted rate.
- **Providing Flexible Choices** ETLs, due to their lane management strategies, provide long-term flexibility and adaptability to ever changing traffic conditions over the life of the facility. Their dynamic nature provides flexibility as well as reliability that a traditional widening project does not. Additionally, the alternative provides improvements to bicycle and pedestrian crossings throughout the corridor and will permit transit vehicle usage within the ETLs at discounted toll rates.
- Accommodating Local and Regional Growth The Express Toll Lanes Alternative improves connections and addresses congestion throughout the U.S. 69 Corridor, both characteristics of local and regional plans for the corridor. The reduction in congestion for the entire corridor, not just those utilizing the ETLs, provides equitable access to jobs and opportunities to all users.

2.4.2 Natural and Human Environment Criteria

The Express Toll Lanes Alternative is shown to have fewer Natural and Human Environment impacts than the Traditional Widening Alternative. This includes fewer displacements of residences and businesses, and lesser floodplain, stream, habitat, and Section 4(f) impacts to parks, trails, and bicycle/pedestrian routes. This is due to the overall smaller footprint of the Express Toll Lanes Alternative over the Traditional Widening Alternative. Since the No-Build Alternative does not add capacity or roadway and bridge infrastructure improvements to the corridor, it would result in fewer impacts to the natural and human environment than the Express Toll Lanes Alternative. Chapter 3 provides more detailed information on the quantifiable impacts from the Express Toll Lane Alternative to the natural and manmade environment in comparison to the No-Build Alternative.

2.4.3 Engineering and Cost Criteria

From an engineering and cost standpoint the Express Toll Lanes Alternative has an overall lower construction cost of \$90 million than the Traditional Widening Alternative, when considering the combined construction and life-cycle costs. The Express Toll Lanes Alternative has fewer ROW impacts and residential and business displacements and is expected to be completed on a quicker construction schedule with less project phasing. The No-Build is not a no cost alternative. Since the roadway pavement and bridge infrastructure would not be replaced with the No-Build Alternative, the corridor's condition and performance would continue to deteriorate over time leading to increased maintenance costs.

2.4.4 Project Phasing

The Preferred Alternative will be constructed utilizing a phased approach. This phased approach allows for critical areas with the greatest need to be addressed with the initial phase and the full scope of improvements to be constructed in phases as traffic demand throughout the corridor grows.

2.4.4.1 Project Phases

The project is split into four separate project phases that are planned to be constructed by 2050. **Figure 2-3** shows the four project phases within the U.S. 69 Express project.

Phase 1 - U.S. 69 from 103rd Street to 151st Street

- Add an additional travel lane in each direction as ETLs;
- Reconfigure interchange at Blue Valley Parkway;
- Improve local interchanges and supporting cross streets; and
- Reconstruct existing pavement and bridges.

Phase 2 - 167th Street Improvements

- Reconstruct the interchange, including completion of south facing ramps; and
- Reconstruct and widen 167th Street between Antioch Road and Metcalf Avenue.

Phase 3 - Flyover Ramp from U.S. 69 Northbound to I-435 Westbound

- Construct U.S. 69 Northbound to I-435 Westbound ramp as a flyover bridge; and
- Construct extended ramp system from I-435 to College Boulevard.

Phase 4 - U.S. 69 from 151st Street to 179th Street

- Add an additional travel lane in each direction as express toll lanes;
- Improve local interchanges and supporting cross streets; and
- Reconstruct existing pavement and bridges.

Figure 2-3: U.S. 69 Express Project Phases

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2.4.4.2 Phased Construction, Project Costs, and Funding

All project phases described above are anticipated to be constructed by the design year of 2050. At this time Phase 1 (U.S. 69 from 103rd Street to 151st Street) and Phase 2 (167th Street Improvements) are planned to be combined and advanced as a single construction project with design and construction beginning in 2022. Phases 3, and 4 would follow as funding allows and as traffic and safety needs warrant additional improvements.

Phases 1 and 2, constructed concurrently, will be delivered utilizing a Design-build process. Design-build is an alternative project delivery tool that allows KDOT the flexibility to deliver the project more efficiently and cost-effectively by selecting a design-builder to complete the design and construction of the project. Design-build allows the contractor and designer to collaborate early and develop innovative and efficient solutions to meet the project goals. Project delivery methods for Phases 3 and 4 are unknown at this time.

The MARC Transportation Improvement Program (TIP), KDOT's Statewide Transportation Improvement Plan (STIP), and the MARC Long Range Transportation Plan (LRTP) have been updated to reflect the following with respect to cost and assumed schedule for each project phase:

- Phase 1 & Phase 2 U.S. 69 from 103rd St to 151st St and 167th St Improvements
 - \circ Cost = \$375 million
 - Projected Letting Year = 2022
 - MARC TIP = Yes
 - KDOT STIP = Yes
- Phase 3 Flyover Ramp from U.S. 69 Northbound to I-435 Westbound
 - Cost = \$70 million
 - Projected Letting Year = 2032
 - \circ MARC TIP = No
 - \circ KDOT STIP = No
 - MARC LRTP = Yes, Constrained 2030-2040
- Phase 4 U.S. 69 from 151st St to 179th St
 - Cost = \$255 million
 - Projected Letting Year = 2043
 - MARC TIP = No
 - KDOT STIP = No
 - MARC LRTP = Yes
 - Preliminary Engineering/Right of way = Constrained 2040-2050
 - Construction = Unconstrained 2040-2050



The approach to phasing outlined above may change as the corridor develops and is dependent on available funding and traffic congestion and safety needs. The phasing approach will not change the improvements comprising the Preferred Alternative, once fully implemented. If phased construction of the Preferred Alternative occurs over an extended timeframe, regular NEPA re-evaluations may be performed to determine potential environmental effects of phased construction.

Amendments to the TIP and LRTP were approved by MARC on December 21, 2021 and reflect the phasing approach described above.



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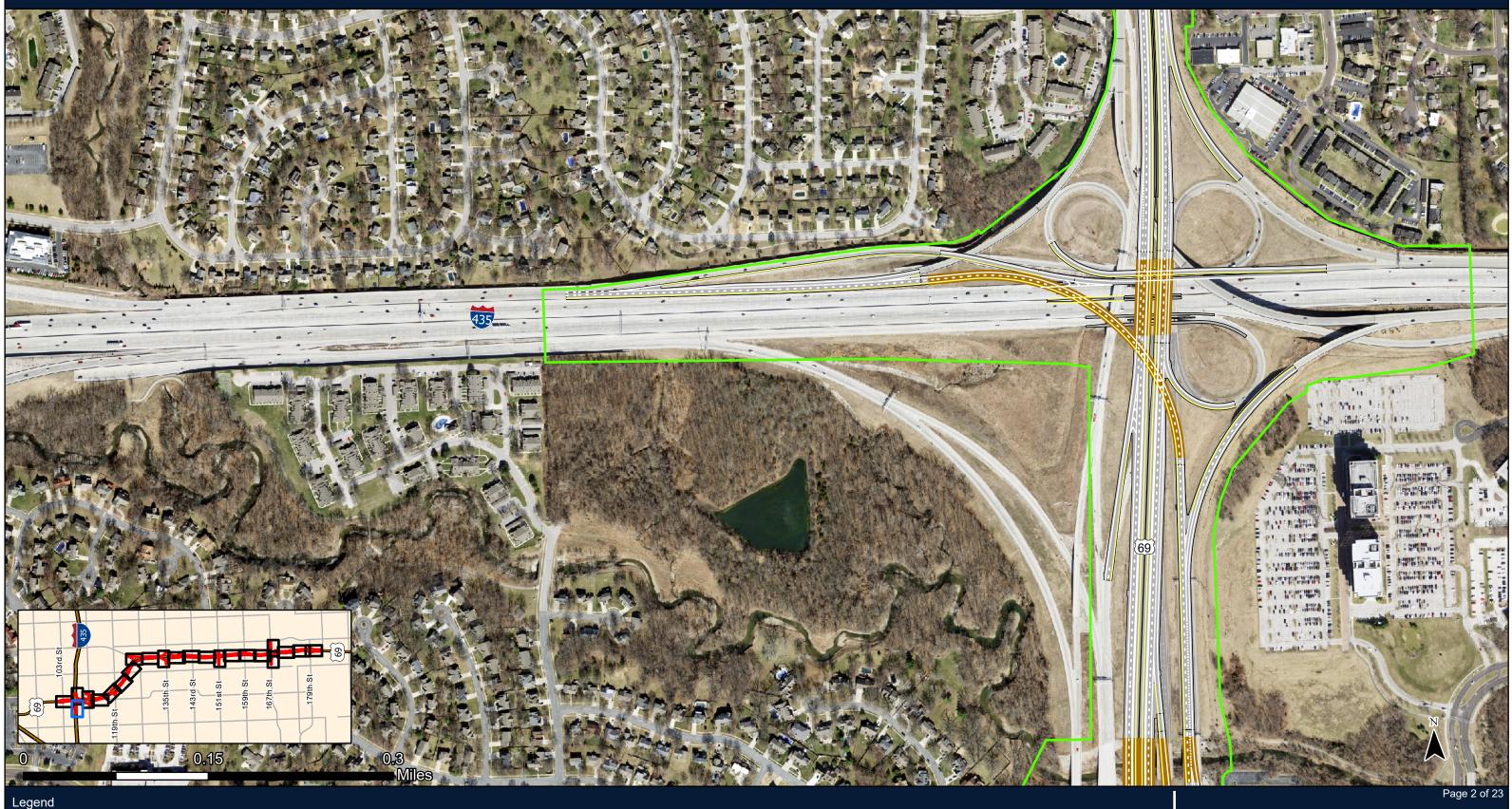
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Figure 2-2

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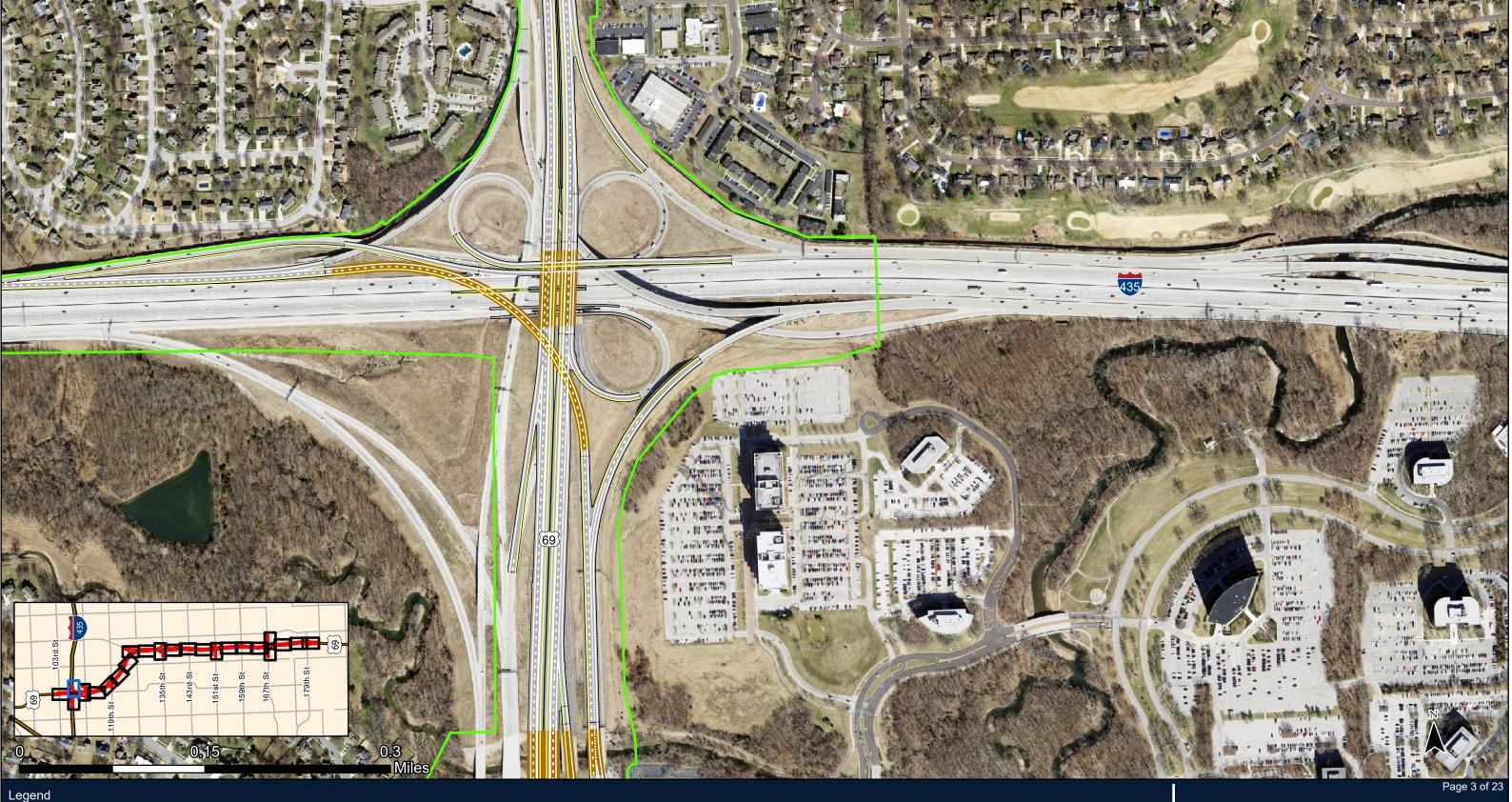














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Preferred Bridges Alternative Constrution Limits Sidewalk Pavement U.S. 69 Modernization and Expansion Project Environmental Assessment KDOT# 69-46 KA-5700-02











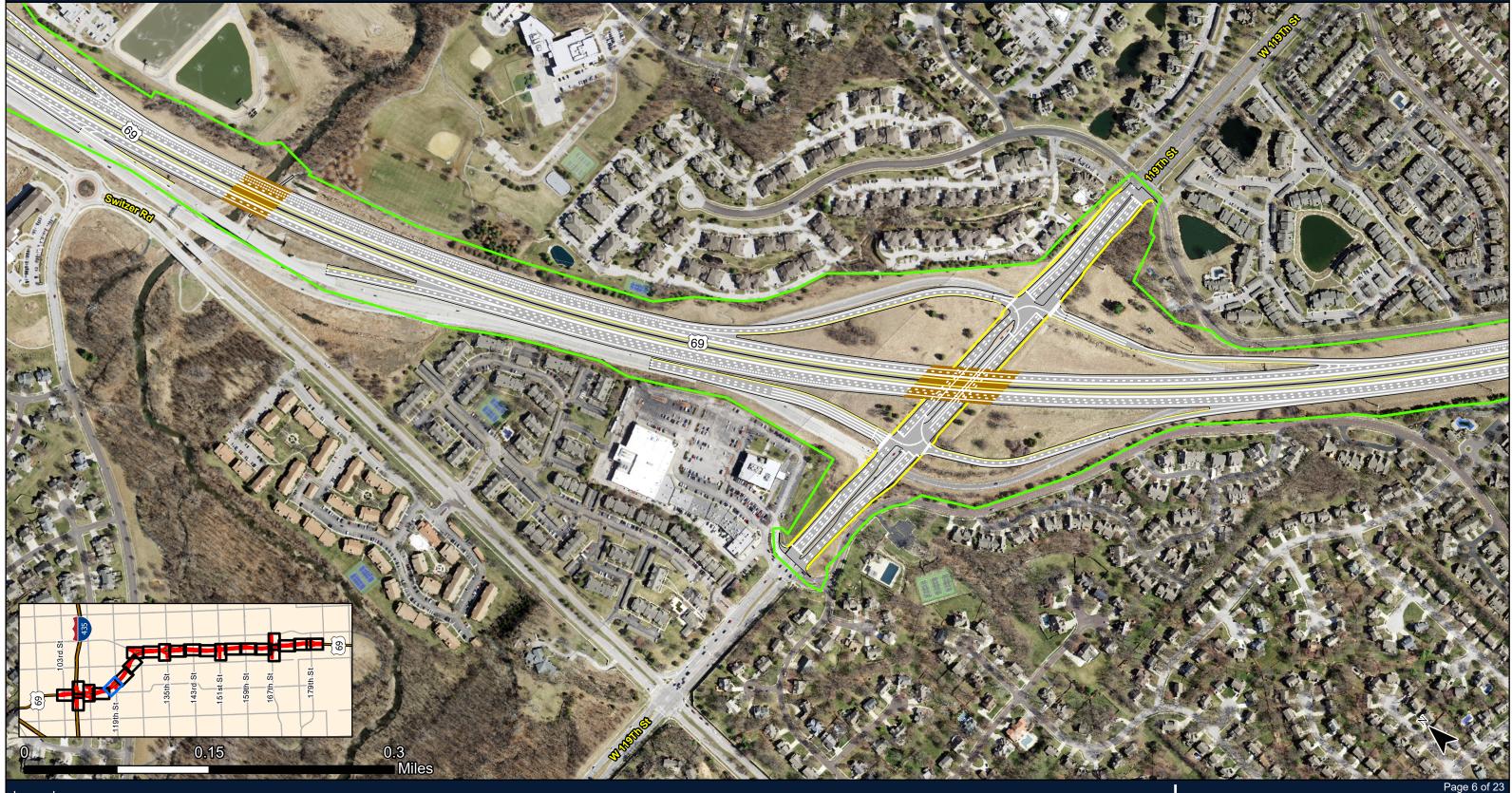
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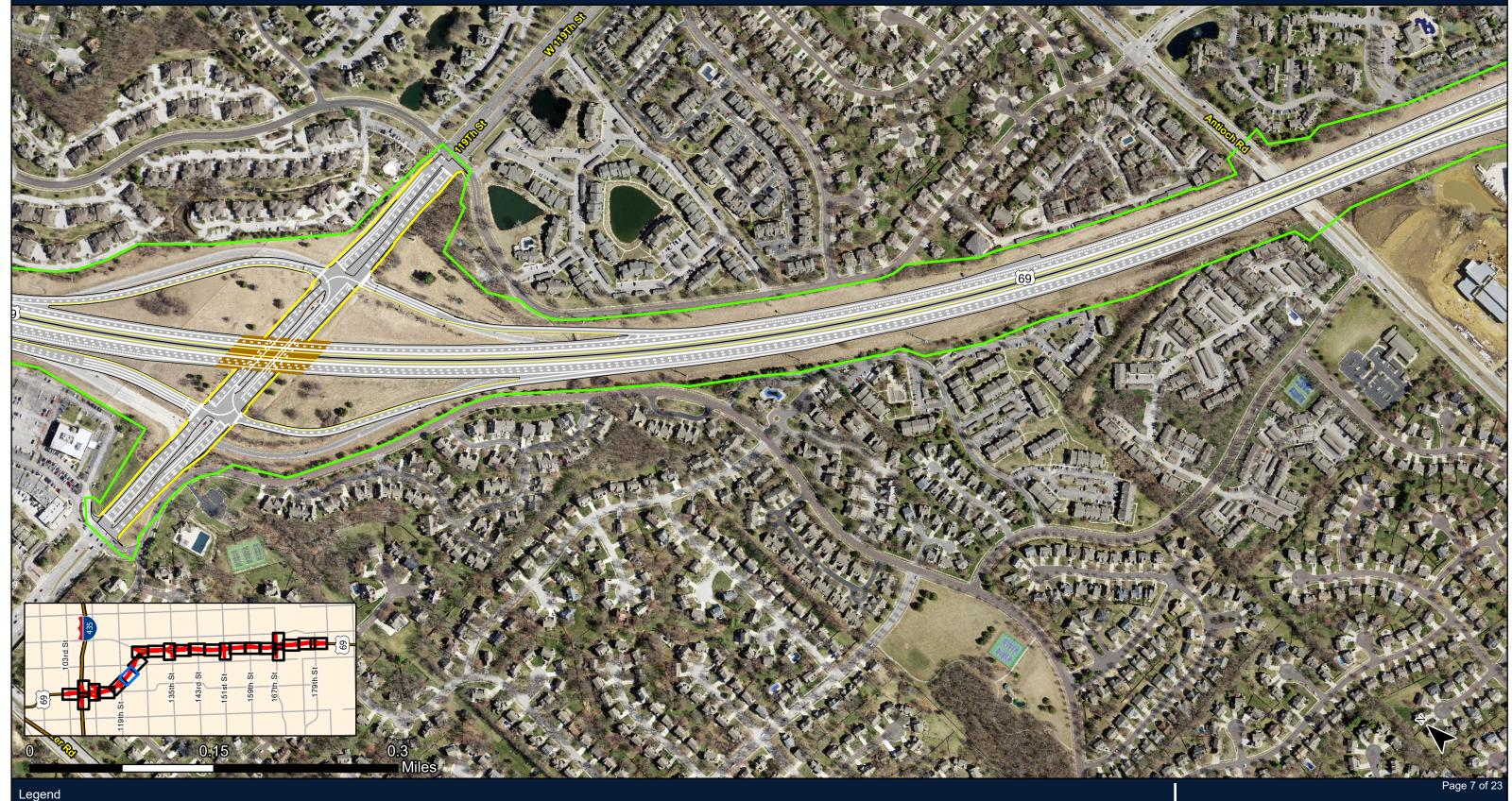












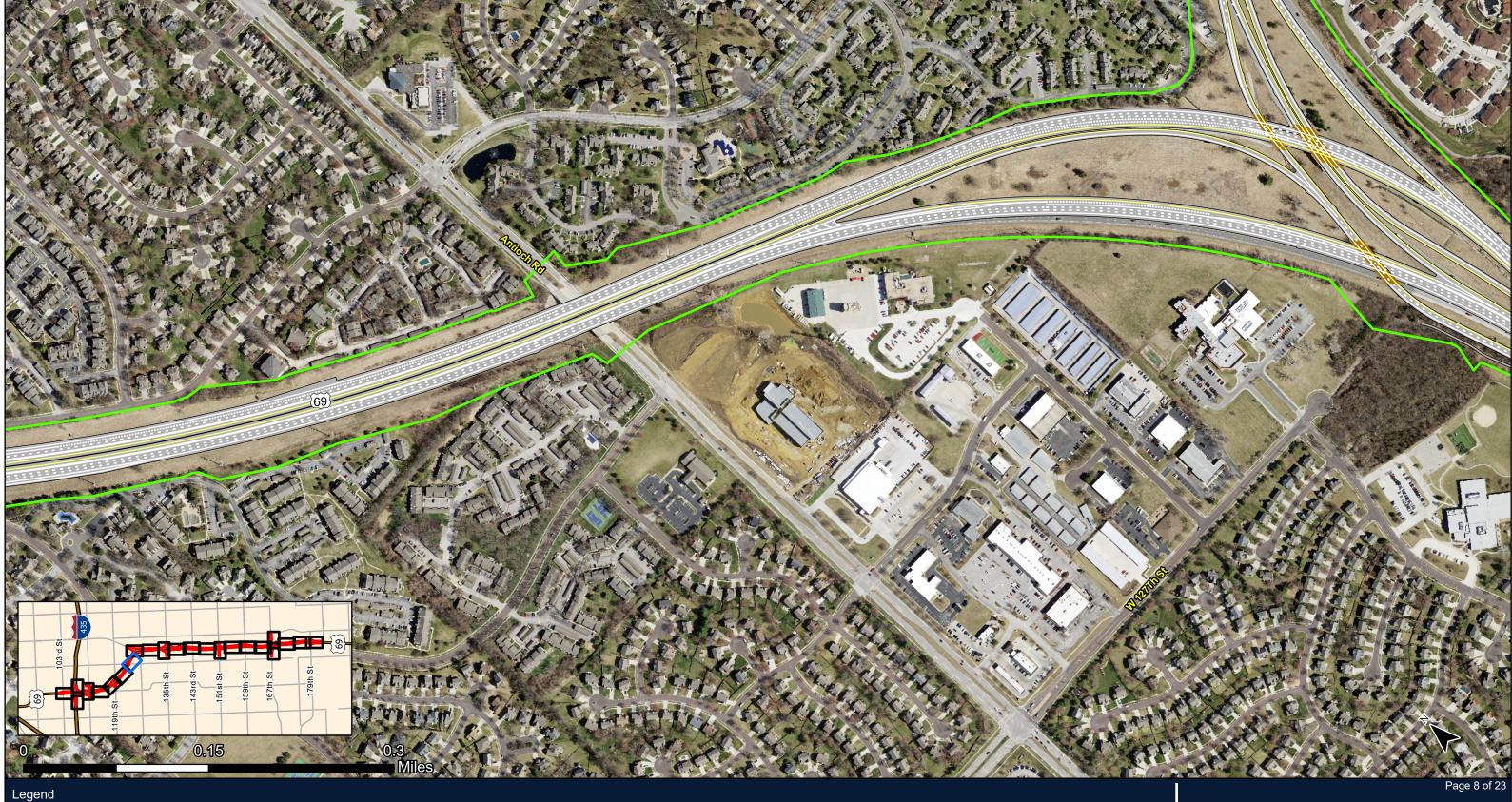










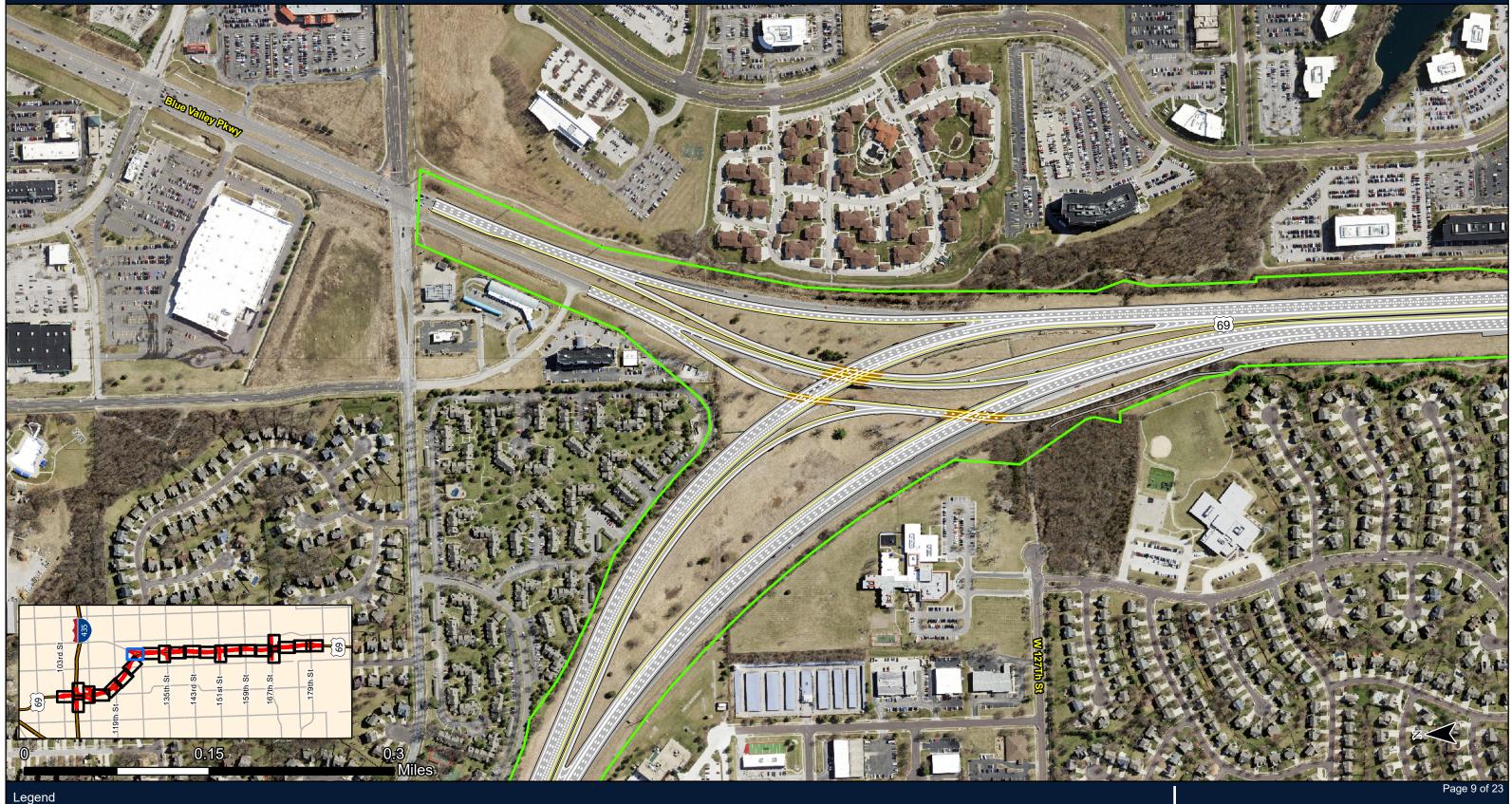












Preferred Bridges Alternative Sidewalk **Constrution Limits** Pavement











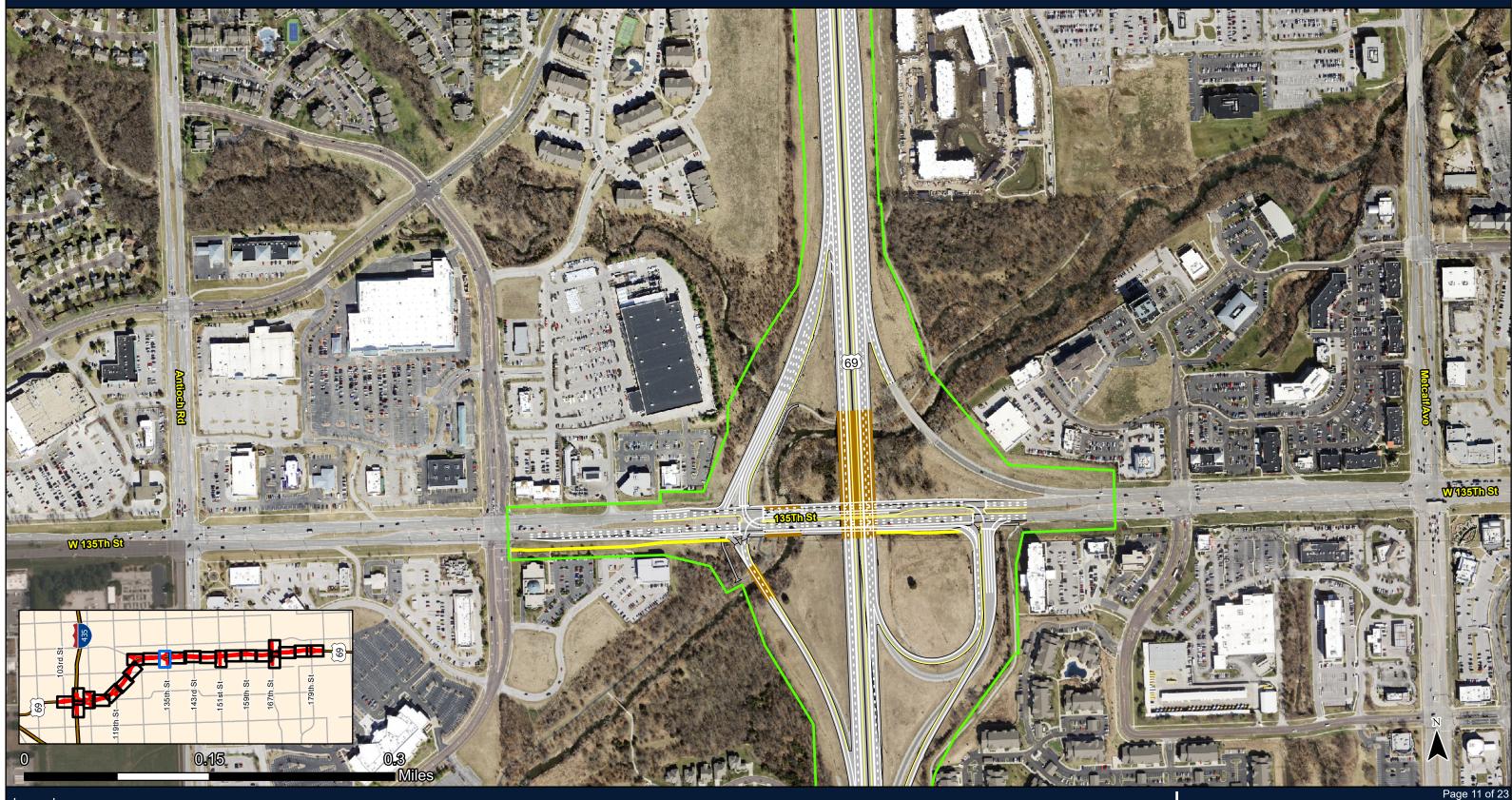
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Figure 2-2



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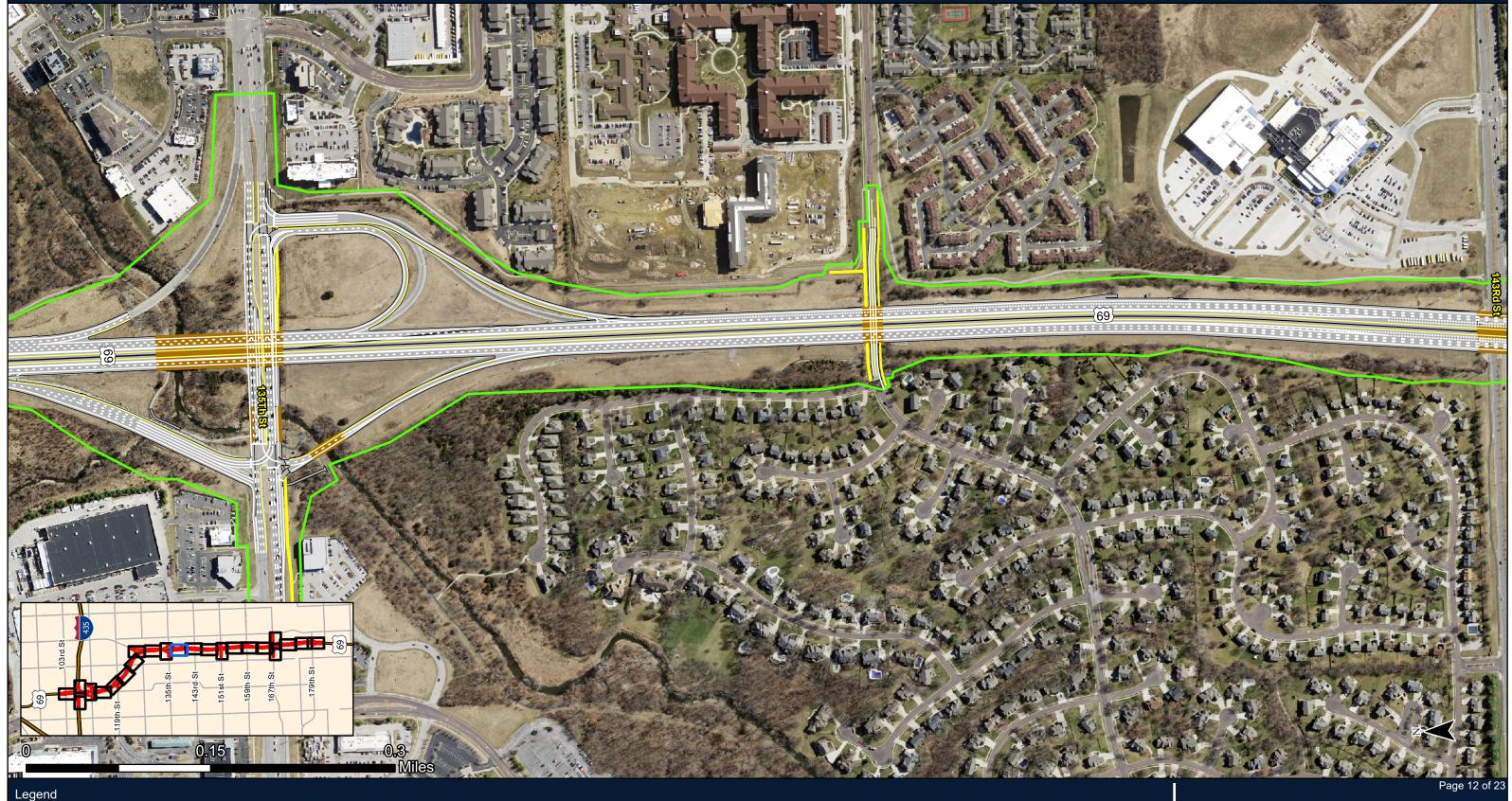
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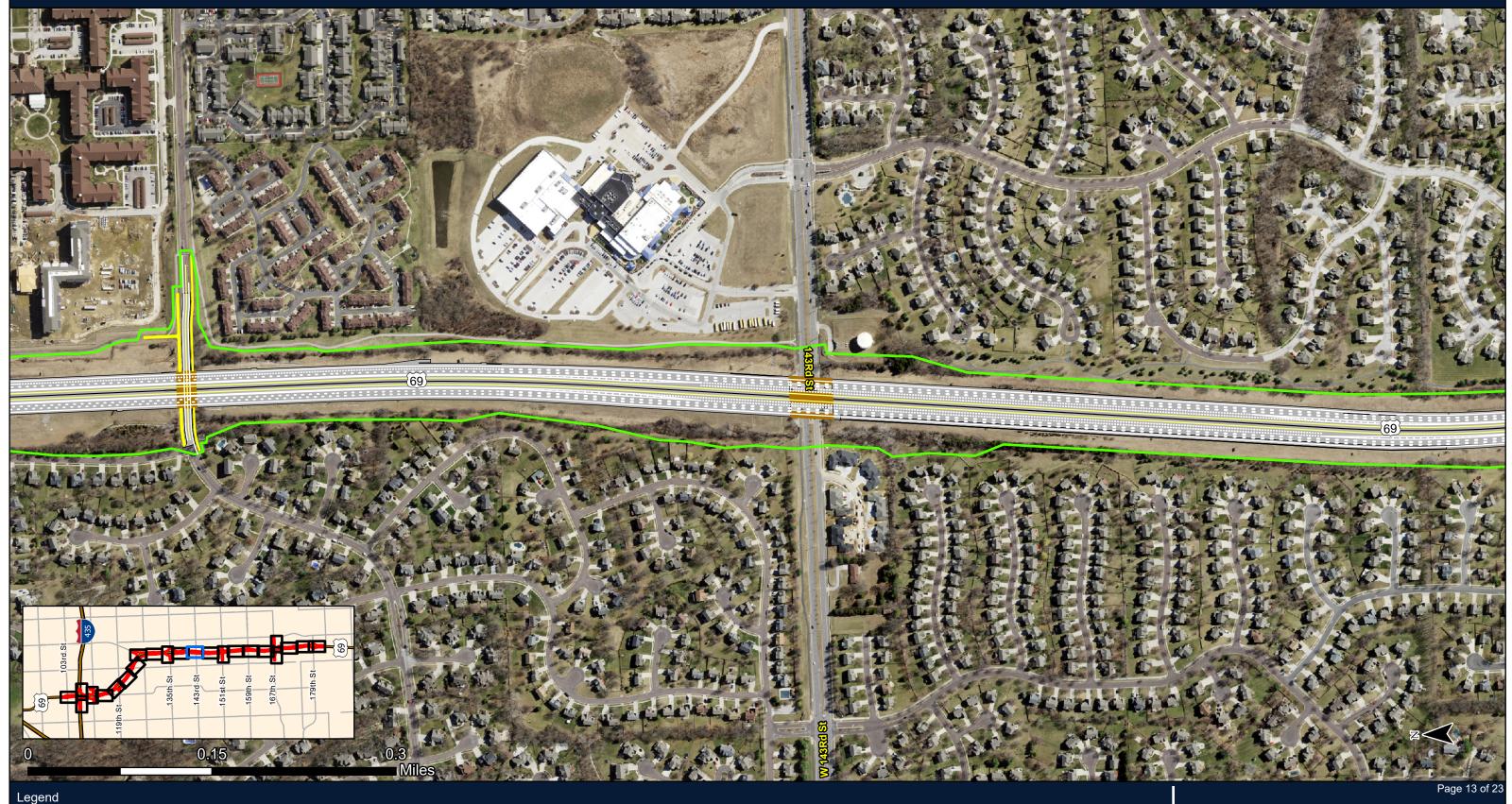


Preferred Bridges Alternative Sidewalk Constrution Limits Pavement

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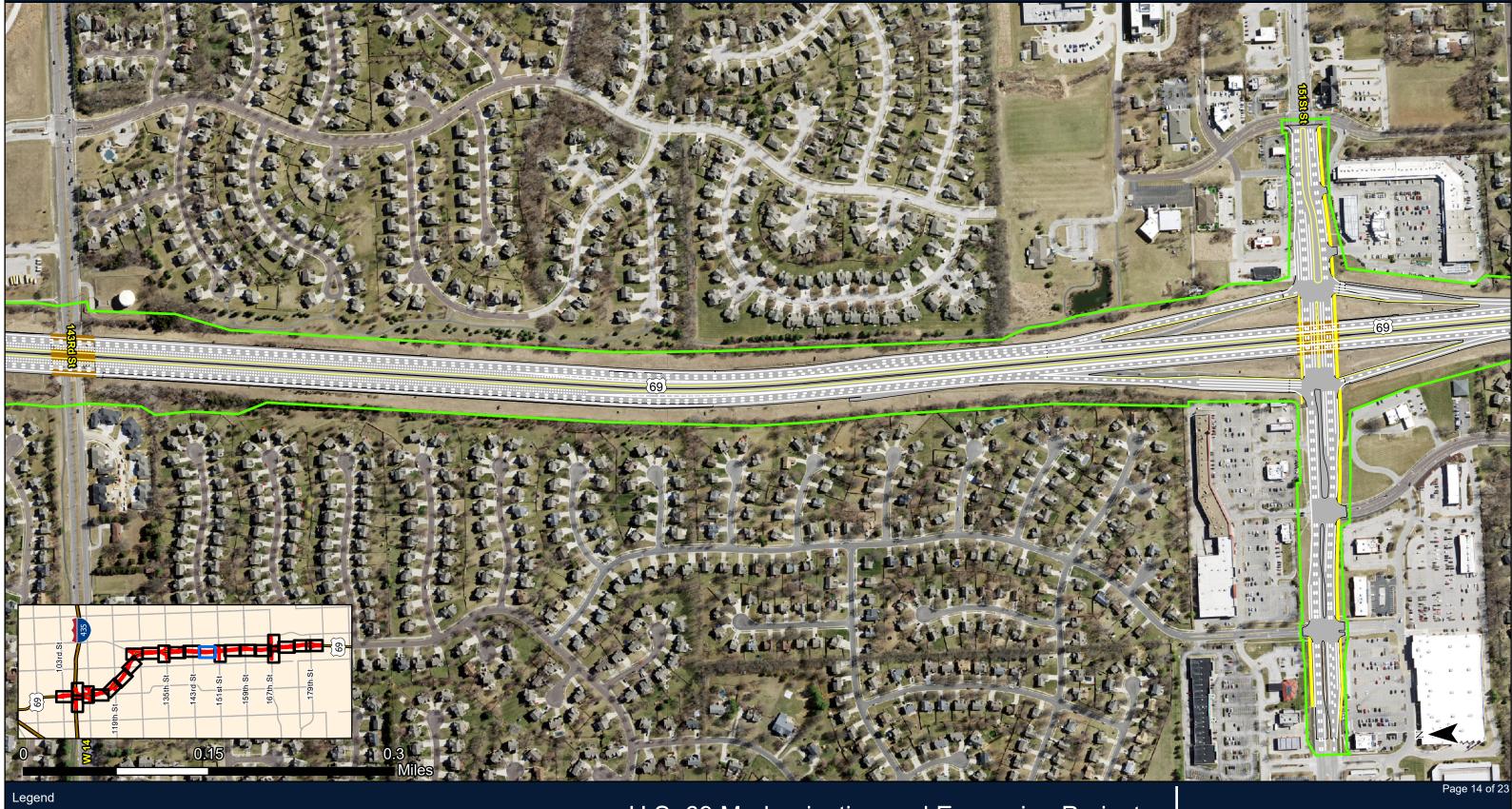




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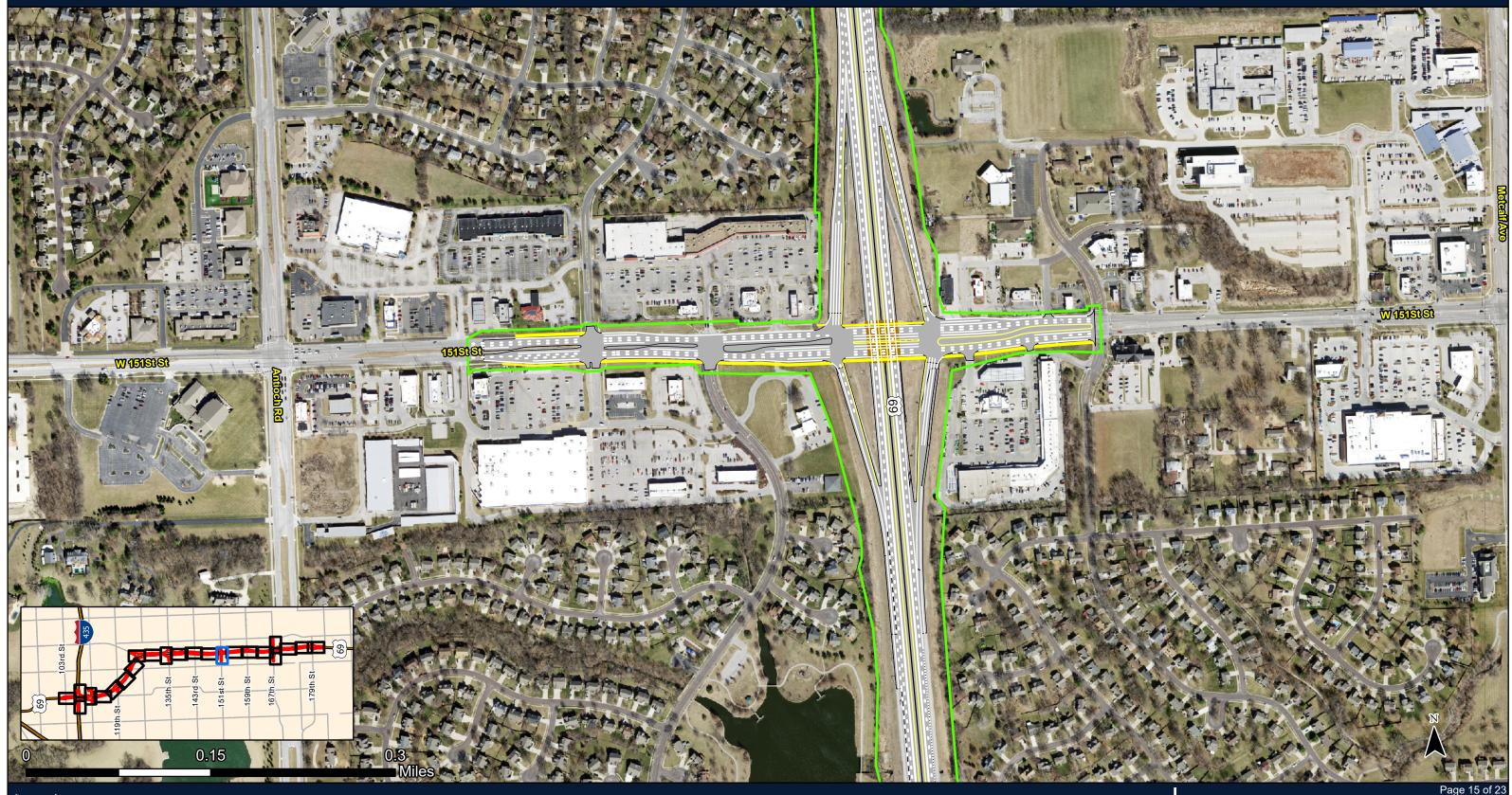


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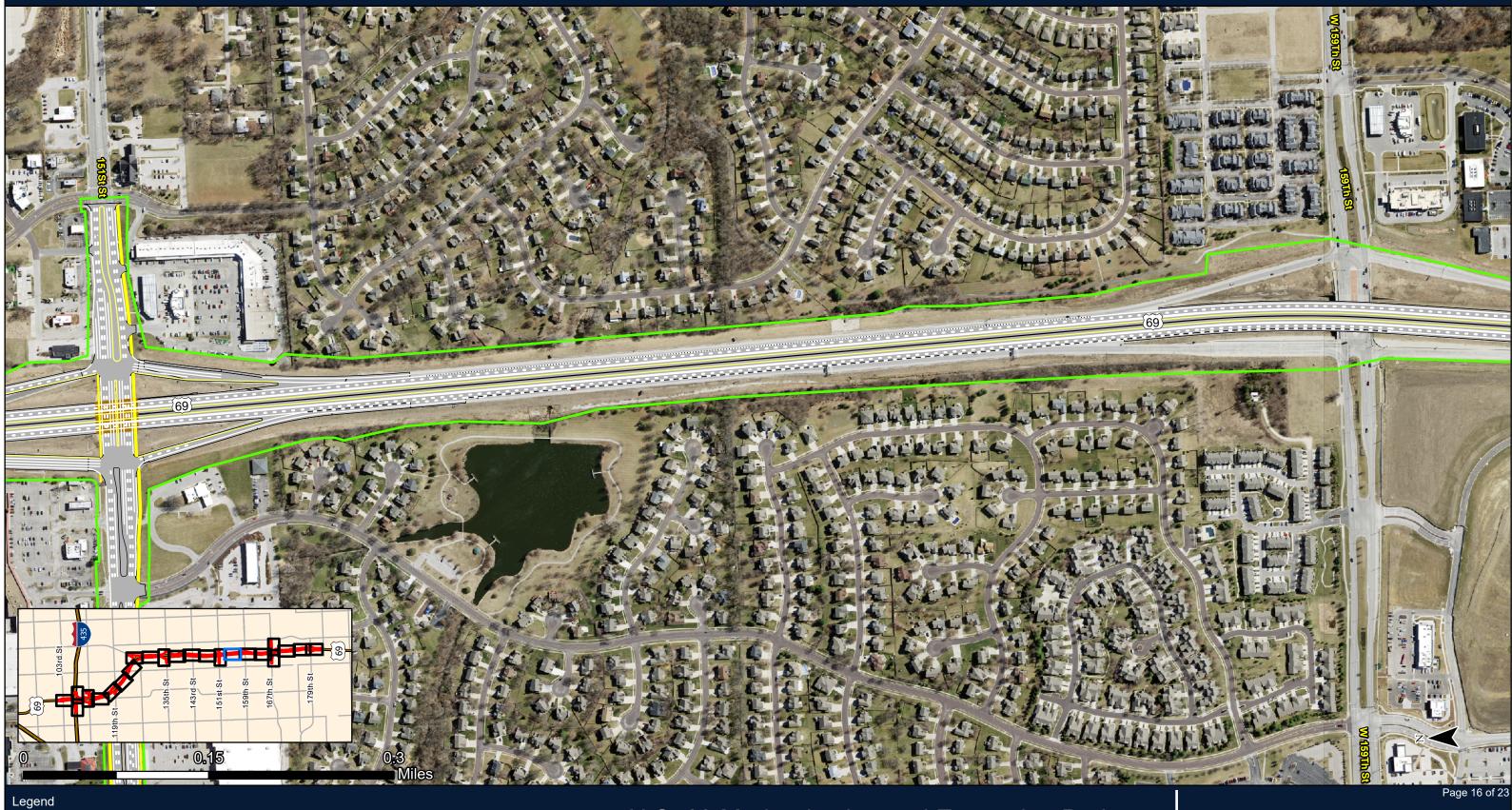
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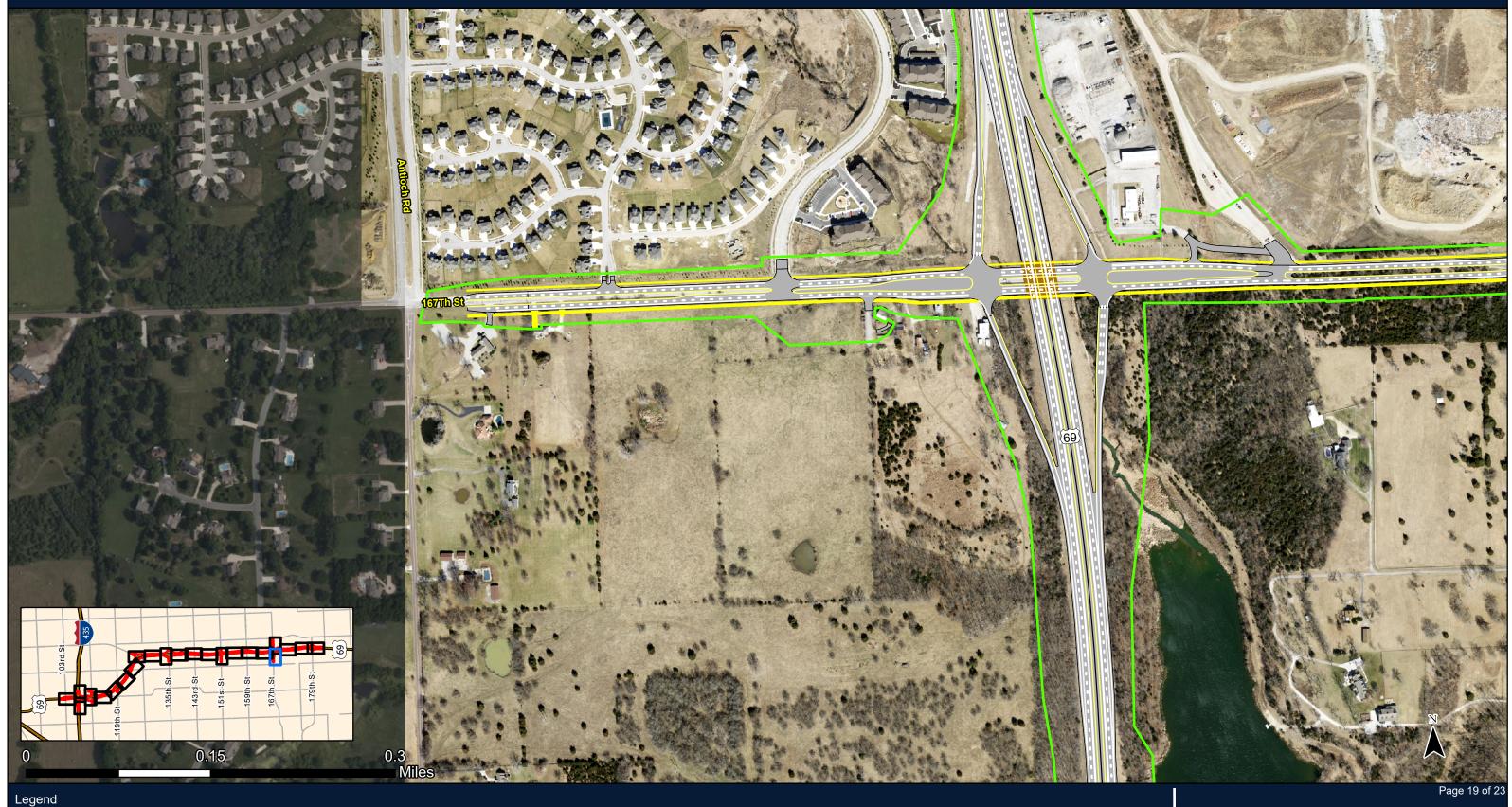
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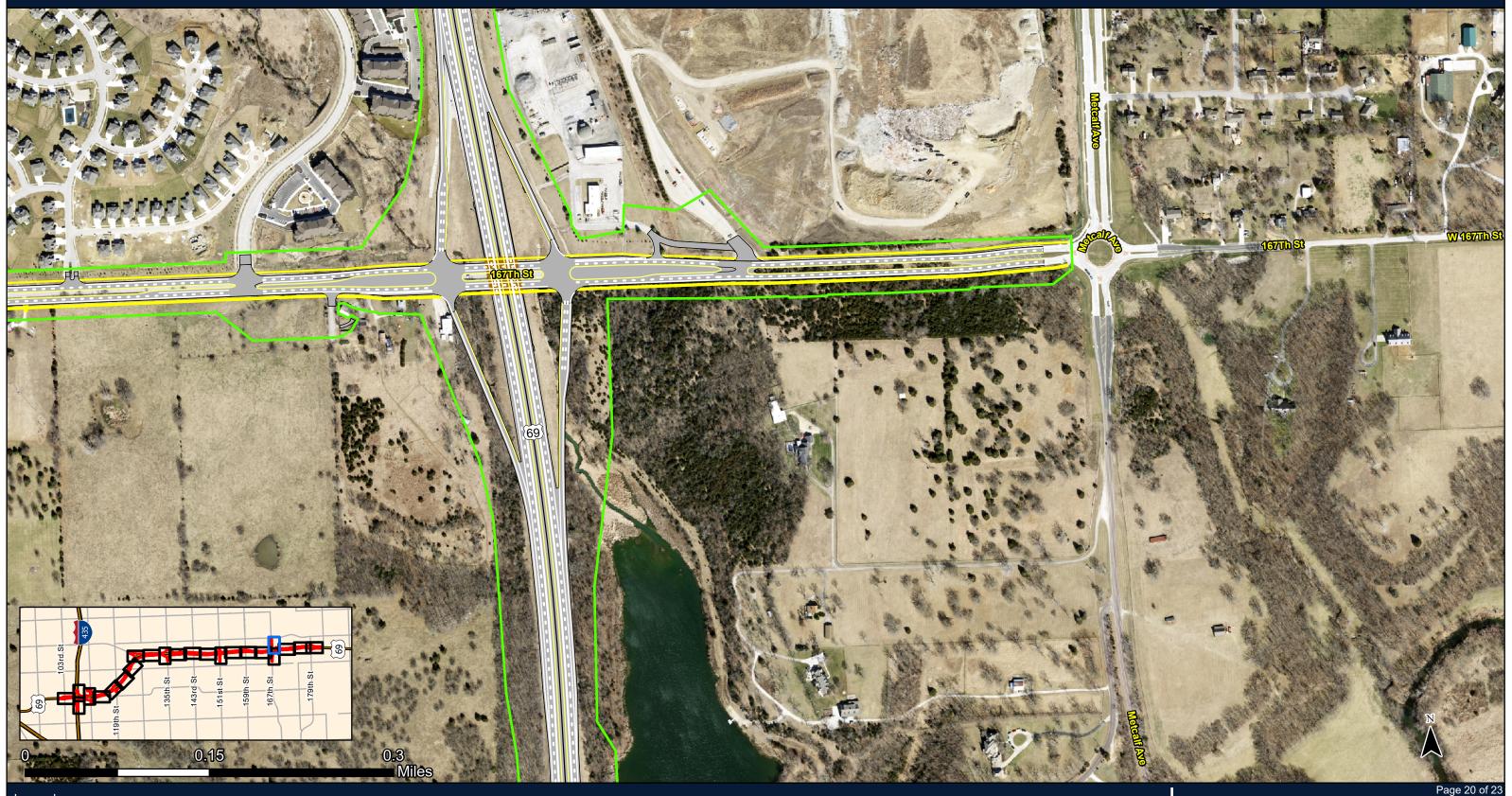














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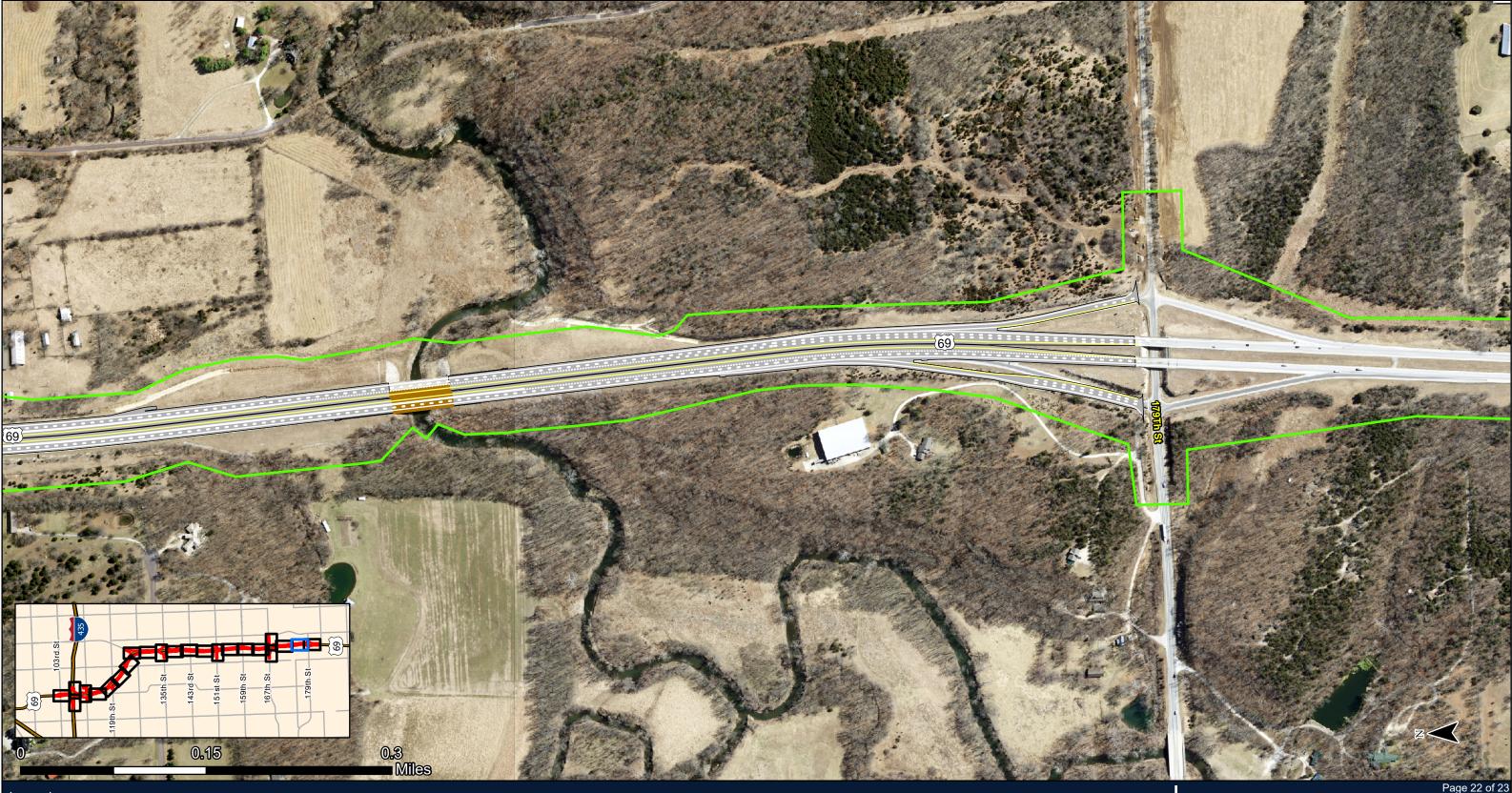
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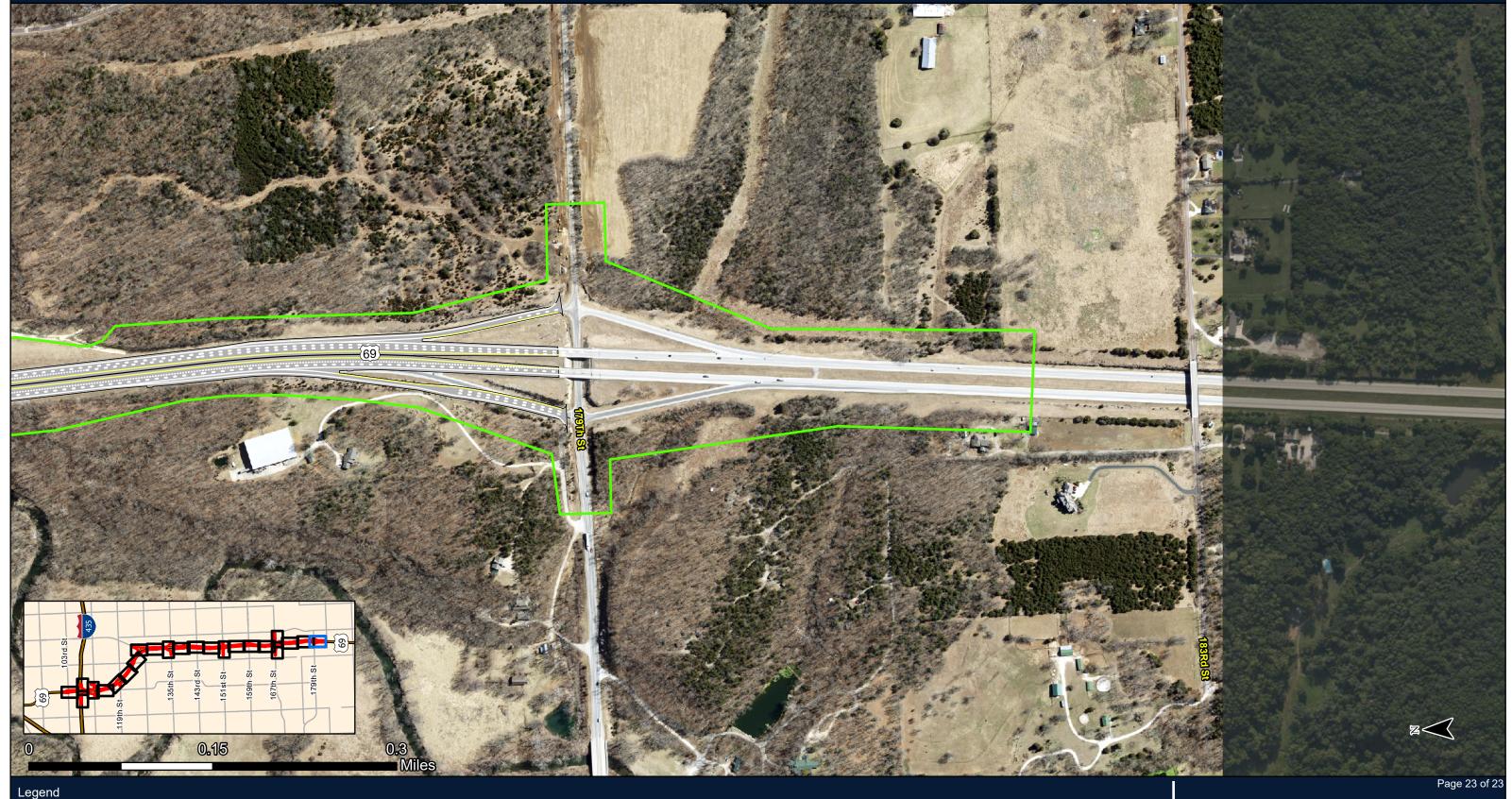
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Preferred Bridges Alternative Sidewalk **Constrution Limits** Pavement





