

BI-STATE SUSTAINABLE REINVESTMENT CORRIDOR



PLANNING AND ENVIRONMENT LINKAGES (PEL) STUDY REPORT

May 2026

Bi-State Sustainable Reinvestment Corridor (BSRC)

Planning and Environment Linkages

Study Report

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Prepared for:
Mid-America Regional Council



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Executive Summary

Overview of the BSRC Project

The Bi-State Sustainable Reinvestment Corridor (BSRC) is an initiative proposed to provide high-frequency, reliable, and convenient transit service as the backbone of a zero-emissions transportation network along a 24-mile corridor between western Kansas City, KS and Independence, MO. Within the Project Corridor, limited transit service and community development challenges have led to difficulties in accessing employment, healthcare, education, and other essential services. Recognizing these needs, regional leaders and stakeholders came together to form a plan for improved transit service in the BSRC corridor alongside other sustainable investments as a catalyst for community revitalization. This transportation investment would be constructed in addition to strategic investments in housing, technology, and infrastructure to prepare for a sustainable future. Planning for the Project is ongoing, with the Project receiving a competitive \$5.6 million planning grant in 2022 from the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program.

The Project builds on prior planning work and multimodal improvement studies in the corridor, with efforts boosted significantly in 2022 with the U.S. Department of Transportation awarding of a RAISE grant to the Project. Planning for the BSRC corridor in full has been composed of two phases thus far, the Assessment and Strategy Action Plan, and a Planning and Environmental Linkages (PEL) Study. During Phase 1, the Project identified how the study initiative emerged, established overarching goals, timeline, and specific transportation, land use, and community challenges, which formed the preliminary Project Purpose and Need. This high-level study set the stage for Phase 2 and this document, the Project's PEL Study. This document provides a roadmap for Project implementation, focusing on conceptual design refinement, additional technical studies, and additional public engagement to capture the planning-level decisions, assumptions, methodologies, and screening results which inform the Project design and implementation.

Purpose and Need Summary

The BSRC is an initiative proposed to provide high-frequency, reliable, and convenient transit service as the backbone of a zero-emissions transportation network along a 24-mile corridor between western Kansas City, KS and Independence, MO. Within the Project Corridor, limited transit service and community development challenges have led to difficulties in accessing employment, healthcare, education, and other essential services. Recognizing these needs, regional leaders and stakeholders came together to form a plan for improved transit service in the BSRC corridor alongside other sustainable investments as a catalyst for community revitalization. This transportation investment would be constructed in addition to strategic investments in housing, technology, and infrastructure to prepare for a sustainable future. Planning for the Project is ongoing, with the Project receiving a competitive \$5.6 million planning grant in 2022 from the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program.

The purpose of the BSRC project is to develop an integrated and forward-thinking transportation and infrastructure framework that enhances mobility, reduces carbon output, and promotes fair access to housing, employment, education, and healthcare along a key east-west corridor within the Kansas City metropolitan region. The project aims to align transportation improvements with community needs, foster economic growth, and address environmental quality goals in collaboration with regional, state, and local partners.



Description of Recommended Vision and Alternatives Analysis

To develop the Recommended Vision, the corridor was evaluated in five segments (segments 1-5), with each segment divided into three lettered options (corridors A-C). Each segment was evaluated individually in two tiers, first screening for feasible modes, and the second selecting for a recommended mode and alignment. Tier 1 selection criteria included capital and operating costs, service format, capacity, station spacing, and construction impacts. Tier 2 criteria included a scoring methodology broadly based on transit service, community development, and multimodal connectivity. The following modes were considered:

BRT-Lite: BRT-Lite is akin to the KCATA MAX bus service in Greater Kansas City, which includes transit signal priority, frequent service, and branded service (vehicles, stops, and wayfinding). The level of service is greater than that of standard bus service, but does not receive the same dedicated Right-of-Way (ROW) and travel time benefits as BRT.

BRT: BRT assumes a higher level of bus priority, providing more consistent bus service and a more predictable experience for bus riders. BRT transit service provides bus service at 10-minute or better frequency, with buses operating almost exclusively in a dedicated ROW, often physically separated by curb, pavement texture, or movable physical barriers.

Streetcar: The existing Kansas City Streetcar system offers fixed-route transit service on tracks embedded into the street, providing a predictable, high-quality mode for riders. In practice, the KC Streetcar operates at 10-minute peak frequencies for more than 60 hours per week, with service from 6:00 a.m. to midnight on weekdays and until 1:00 a.m. on weekends, exceeding the operating span of the current MAX BRT service in Downtown.

Following the Tier 2 evaluation, the Project proposed the construction of a new mixed-service Bus Rapid Transit (BRT) and BRT-lite service, dramatically improving service in the corridor currently served by routes 101 State Ave and 24 Independence Ave. The Segments in downtown and eastern Kansas City, Missouri are recommended for implementation of full BRT service, while the segments to the east and west of these central segments are proposed for BRT-lite service. Including the five existing transit centers along the corridor, 101 BRT stations are recommended for construction at roughly half-mile spacings. The service corridor would follow State Ave from 110th St in Kansas City, Kansas, follow James St, 12th St, 11th St, and Charlotte St through West Bottoms and Downtown Kansas City, Missouri before moving to Independence Ave/Highway 24 to the east of downtown Kansas City, Missouri, terminating at Independence Transit Center in Independence, Missouri. Service would improve to 10-minute headways in the central BRT segments, with 10–30-minute frequencies in the non-core BRT-lite segments. Infrastructure improvements would be made to improve travel times and user experience, including implementation of transit signal priority (TSP), dedicated bus lanes, and improved station structures, with the most drastic improvements taking place in central BRT segments.

Summary of Environmental Consequences

A desktop existing conditions and preliminary impact analysis of 16 environmental categories near the corridor were conducted. Given that the project will operate primarily within existing public ROW, direct, permanent environmental impacts to each category were found to be limited. Project temporary impacts are anticipated to be consistent with those associated with road construction disruptions. Indirect impacts of the project, such as increased development and increased density, may create further knock-on impacts, requiring further analysis.

Although the Study Area lies almost entirely within public ROW, three properties were identified to be impacted, including:

- Proposed layover area at Independence Ave and Winner Rd



- Proposed layover area at Independence Ave and White Ave
- Proposed BRT bus stop at Wyoming St and 12th St.

Potential impacts due to the Project are outlined below. This includes both temporary and permanent impacts:

Land Use: The Recommended Vision encourages and supports increased land use intensities throughout the corridor, particularly in the eastern portion. Communities in the eastern portion of the corridor are in the process of modifying policies to support increased intensities. No temporary impacts are anticipated.

Socioeconomic: The proposed improvements would increase access throughout the corridor, smoothing geographic disparities in access, which would have a positive effect on socioeconomic outcomes. Construction of the project would temporarily impede accessibility in the corridor and create conditions which adversely impact communities immediately adjacent to the corridor.

Transportation: The Recommended Vision would improve regional transit services, as well as infrastructure quality for pedestrians and bikes in the corridor. BRT and BRT-lite improvements may adversely impact auto and freight truck traffic but is not expected to have a notable effect on traffic outcomes. Construction of the project would temporarily disturb existing roadways and pedestrian infrastructure, temporarily adversely impacting mobility in the corridor.

Air Quality: Project elements are not anticipated to be a significant source of emissions. Moreover, improved transit services would help reduce the number of cars on the road, a major source of air pollution. Construction will temporarily degrade air quality in the immediate vicinity of the project, due to heightened dust and vehicle emissions.

Traffic Noise: Traffic noise impacts as a result of the BSRC will need to be assessed during the NEPA study. Substantial noise impacts are unlikely. Areas immediately adjacent construction activities will see temporary heightened noise levels,

Water Quality: Although a small increase in impervious surface may occur, the proposed improvements will largely occur in areas currently covered in impermeable surfaces and are not expected to have permanent impacts to water quality. BSRC operations are not anticipated to produce pollutants that would result in a violation of water quality standards. Construction of the project may result in soil erosion and sedimentation of surface water, temporarily adversely impacting water quality. An NPDES construction permit will likely be required for this project.

Wetland/Waterbodies: As proposed, no dredge or fill of potentially jurisdictional waterbodies is anticipated, and no permanent impacts to wetlands or waterbodies are expected. Construction of the project may result in soil erosion and sedimentation of wetlands or waterbodies, temporarily adversely impacting wetlands or waterbodies. An NPDES construction permit will likely be required for this project.

Floodplain: As currently proposed, shelter improvements will not be constructed within the 100-year floodplain. Transportation improvements and increased development intensities indirectly associated with the project may be constructed in the 100-year floodplain, although significant floodplain impacts are not anticipated. No significant temporary floodplain impacts are expected.

Biological Resources: The proposed improvements may require permanent tree clearing and conversion to developed land. These may impact federally listed bats, federally protected birds, the monarch butterfly, and other common wildlife. Construction activities will temporarily increase noise,



light, and human activities within the project area, potentially disturbing wildlife. No permanent or temporary impacts to aquatic wildlife are anticipated.

Archaeological Resources: The BSRC has a low potential to impact three previously recorded archaeological sites in Missouri as well as unrecorded archaeological sites throughout the corridor. Further analysis under the Section 106 process is needed.

Architectural/Historic Resources: The BSRC has a low potential to impact the historic integrity of previously recorded as well as unrecorded historic properties including NRHP-listed historic districts. Further analysis under the Section 106 process is needed.

Section 4(f) Resources: While future coordination under Section 106 will influence Section 4(f) determinations, it is anticipated that there will not be any impacts that would permanently substantially impair the activities, features, or attributes that qualify the resource for protection. Section 4(f) resources may be affected by construction impacts, similar to other destinations along the BSRC corridor; construction would not impede access to any Section 4(f) resource along the corridor.

Section 6(f) Resources: Permanent conversion of Section 6(f) property is not anticipated. Proposed improvements within or adjacent to Section 6(f) resources may include sidewalks or shared-use paths that would improve pedestrian and bicycle access to recreational facilities and would not adversely affect any park features. Where such facilities support or enhance public outdoor recreation and do not diminish recreational utility, they may be considered compatible uses and not a Section 6(f) conversion. Section 6(f) resources may be affected by construction impacts, similar to other destinations along the BSRC corridor; construction would not impede access to any Section 6(f) resource along the corridor.

Utilities: Improvements to broadband and high speed internet access are proposed. Temporary impacts to underground utilities are likely, although the location of these utilities is not currently known. Further analysis and consultation with utility owners is needed.

Viewshed and Aesthetics: The proposed improvements may increase density and intensity of uses in the corridor, particularly surrounding BRT stops. TOD initiatives currently highlight areas of redevelopment and development promise and may lead to more changing visual and scenic character. Project construction may temporarily impact visual character throughout the corridor.

Hazardous Materials: There are approximately 22 hazardous materials sites within 25 feet of the project study area. Depending on the depths of construction activities, construction of the Project may disrupt these hazardous materials sites and adjacent contamination sites. There is potential for site remediation alongside this project. Further field analysis is required.

Future NEPA Processes

This PEL study is a preliminary planning document which factors existing corridor planning decisions including alignment, mode, and logical termini into a preliminary environmental review. Future planning studies and NEPA documentation will build on this document's desktop environmental analyses to inform scope and areas of concern in future NEPA documentation. As individual corridor segments advance, project sponsors may reference this PEL study to inform scoping, alternatives development, and early coordination efforts. Due to the flexible and segmented nature of this regional planning project, future NEPA reviews are likely to be conducted on a project-by-project and segment-by-segment basis. This flexibility will enable projects to be completed as funding becomes available, while maintaining consistency with the



broader corridor vision established in the PEL process. These elements were developed through a close partnership with local government and in coordination with federal, state, regional, local agencies, and Tribes, as well as through public and stakeholder engagement, and are intended to inform future project-level NEPA decision-making.

The planning-level impact study identified environmental resource considerations that may warrant further evaluation during project-level NEPA reviews. As individual projects advance, additional technical studies and screenings are anticipated. These may include, but are not limited to:

- Cultural resources, including architectural history surveys and archaeological surveys, as needed to support Section 106 consultation;
- Noise screenings and, if warranted, general noise assessments
- Phase I Environmental Site Assessments (and Phase II investigations if necessary), and;
- Evaluation of potential impacts to Section 4(f) and Section 6(f) resources.

The need for and scope of these technical studies will be confirmed during future NEPA scoping and agency coordination and will reflect site-specific conditions and design details not available at the planning stage.

The majority of proposed improvements from the PEL Study are anticipated to qualify for Categorical Exclusions (CEs) under 23 CFR 771.117, reflecting the planning-level finding that improvements would largely occur within existing right-of-way and involve very limited environmental impacts. BRT-lite improvements may classify for (c)-list CEs, while full BRT segments may classify as (d)-list CEs, and require further analysis under and Environmental Assessment, depending on their environmental impacts. CE documentation and approval timelines are anticipated to range from approximately 4 to 9 months per project, depending on scope, coordination needs, and resource considerations.

Additional analysis under future NEPA studies may be required under the following criteria:

- The proposed project deviates from the assumptions made in this PEL document, such as if an additional segment were converted from BRT-lite to BRT.
- Resource-specific considerations identified through impact screening in Section 6 are likely to necessitate further analysis, including for compliance with Section 106 of the National Historic Preservation Act, Section 4(f) of the USDOT Act, Section 6(f) of the Land and Water Conservation Fund Act, or findings of previously unidentified hazardous materials.
- Changes in regulatory context, agency requirements, or environmental conditions.

The need for additional analysis will be evaluated in coordination with the appropriate lead federal agency based on the totality of circumstances for each project. While the PEL Study is intended to scope and preempt the need for further environmental studies, duplication of work may be required, dependent on environmental and agency conditions.



As the Kansas City metropolitan region evolves over the course of this project's development, coordination between states and other projects may be required. As a regional project which crosses state boundaries between Kansas and Missouri, the project has been developed with flexibility, independent utility, and segmentation in mind. As segments advance, future NEPA review will need to consider bi-state coordination, particularly within the core 3B segment, which serves both downtown KCK and KCMO as full BRT service. Further coordination with other regional projects, such as the Grand Boulevard Re-Imagined initiative, the proposed relocation of the Kansas City Chiefs' stadium, and the development of a new Kansas City Royals stadium in downtown KCMO. Although these major regional projects are advancing under separate planning and decision-making processes, additional reconsideration for the Recommended Vision may be required, dependent on these major regional developments.

Conclusions

This BSRC PEL Study provides a planning framework that supports future project development while maintaining a unified corridor vision. By capturing planning-level decisions, documenting the basis for the Recommended Vision, and identifying key environmental considerations early, the study positions the BSRC to advance into subsequent NEPA processes in a coordinated, transparent, and efficient manner while allowing future studies the flexibility to accommodate evolving community needs, regulatory requirements, and implementation conditions. The following key findings were identified:

- The PEL Study confirms the community-identified needs for improved east-west mobility, safety, and access to opportunity, informing the development of a preliminary Purpose and Need Statement.
- Through the development of a two-tier alternatives analysis screening process, a Recommended Vision was identified that consists of a combination of BRT and BRT-lite service, supported by multimodal streetscape improvements across the entire 24-mile corridor.
- Desktop environmental screening indicates that the Recommended Vision can be implemented largely within existing public right-of-way, with limited potential for significant environmental impacts. Although additional analysis is likely to be required, much of the screened impact categories will likely qualify for CEs
- The PEL process reinforces the importance of sustained coordination across jurisdictions, agencies, and communities. The corridor's phased implementation strategy allows for a flexible and segmented project rollout, while providing a unified planning framework under the PEL Study.



Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
ADA	Americans with Disabilities Act
BNSF	Burlington Northern Santa Fe (railroad)
BRT	Bus Rapid Transit
BSRC	Bi-State Sustainable Reinvestment Corridor
CE	Categorical Exclusion
CIG	Capital Investment Grant
CPKC	Canadian Pacific Kansas City (railroad)
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HPC	Historic Preservation Commission
KCATA	Kansas City Area Transportation Authority
KCK	Kansas City, Kansas
KCMO	Kansas City, Missouri
KDHE	Kansas Department of Health and Environment
KDOT	Kansas Department of Transportation
KDWP	Kansas Department of Wildlife and Parks
KHRI	Kansas Historic Resource Inventory
KS	Kansas
KSHS	Kansas Historical Society
LWCF	Land and Water Conservation Fund (act)
MO	Missouri
MAX	Metro Area Express
MARC	Mid-American Regional Council
MDC	Missouri Department of Conservation
MDNR	Missouri Department of Natural Resources
MKC	Charles B. Wheeler Downtown Airport
MO	Missouri
MOE	Measure of Effectiveness
MoDOT	Missouri Department of Transportation
MSAT	Mobile Source Air Toxic
MS4	Municipal Separate Storm Sewer System
NEPA	National Environmental Policy Act



Acronym / Abbreviation	Full Name
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
PEL	Planning and Environmental Linkages (study)
RAISE	Rebuilding American Infrastructure with Sustainability and Equity (grant)
ROW	Right of Way
RTP	Regional Transportation Plan
SHPO	State Historic Preservation Office
SWPPP	Stormwater Pollution Prevention Plan
TIP	Transportation Improvement Plan
TOD	Transit Oriented Development
TSM	Transportation System Management
TSP	Transit Signal Priority
T/E	Threatened and Endangered Species
UGT	Unified Government Transit
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service



1 Introduction

1.1 Project Background and History

The Bi-State Sustainable Reinvestment Corridor (BSRC) represents a transformative investment in regional connectivity and sustainable redevelopment across the Kansas City metropolitan area. As shown in Figure 1 in Appendix A the corridor spans approximately 24 miles from Village West in western Kansas City, Kansas (KCK) to Independence Square in eastern Independence, Missouri. The Study Area crosses two states and two counties, linking the communities of Kansas City, Kansas (Wyandotte County); Kansas City, Missouri (KCMO); Sugar Creek, Missouri; and Independence, Missouri (Jackson County).

The BSRC initiative was launched in response to longstanding transportation and community development challenges in the region. Limited public transit service is currently available within the Study Area, with many neighborhoods facing barriers to accessing employment, education, healthcare, and other essential opportunities. Recognizing these needs, regional leaders and stakeholders came together to pursue a holistic solution that would leverage transit improvements as a catalyst for broader economic growth and community revitalization.

The BSRC aims to provide high-frequency, reliable, and convenient public transit as the backbone of a zero-emission transportation network, coupled with strategic investments in housing, technology, and infrastructure. By prioritizing sustainable transportation and community investment, the BSRC sets the stage for long-term growth and improved quality of life throughout the region.

In 2022, the BSRC received a significant boost through a competitive \$5.6 million Rebuilding American Infrastructure with Sustainability and Equity (RAISE) planning grant, awarded by the U.S. Department of Transportation. This federal support, secured via the Infrastructure Investment and Jobs Act (IIJA) and championed by local congressional leadership, enabled the launch of a multi-jurisdictional planning process to foster long-term growth and improved quality of life throughout the region.

Previous Studies | The BSRC builds on years of prior planning work and community engagement, intentionally aligning with local and regional plans to amplify existing community goals. Previous studies such as the *Independence Avenue Pedestrian Safety Improvement Plan*, *Independence Avenue Bus Rapid Transit (BRT) Planning and Feasibility Study*, *U.S. 24 Highway Corridor Study*, *goDotte Strategic Mobility Plan*, and *PlanKCK* have engaged thousands of residents and laid out visions for safer streets, better transit, and reinvestment in corridor communities. The BSRC unifies these initiatives into a single actionable program, leveraging prior work to avoid “reinventing the wheel” and focus on implementing shared priorities across the entire corridor.

BSRC Phase 1: Assessment and Strategy Action Plan | Phase 1 of this study presents a comprehensive, multi-phase assessment and planning effort aimed at shaping a sustainable reinvestment strategy for the bi-state corridor. The study outlines how the study initiative emerged, and establishes overarching goals, timeline, and specific transportation, land-use, and community challenges that helped form the project’s preliminary purpose and need. Detailing how the project evolved and by highlighting the complex interplay between regional growth, infrastructure conditions, and long-term economic and mobility



objectives, robust community engagement was key to ensure that residents and stakeholders played an active role in refining the corridor's vision.

During this phase, the project team initiated early coordination with partner agencies and stakeholders and launched the public engagement program. Early public and agency input collected during Phase 1 directly informed how alternatives were evaluated. Through community-driven workshops, statistically valid surveys, and targeted outreach, the study gathered detailed input on alignment options, community priorities, and concerns. These activities provided the basis for defining an initial range of transit service concepts and alignment options for further evaluation.

Additionally, Phase 1 explored the Project Corridor's physical and market context, identified key character areas, and examined existing and anticipated future land-use patterns. Technical work completed during Phase 1 included corridor-wide data collection, site visits, and analysis of existing transportation conditions, land use patterns, environmental resources, and community context. Phase 1 findings helped define common themes and informed a "path forward" that reflects local desires and is grounded in inclusive engagement practices.

Phase 1 also included development of the project Purpose and Need statement and the identification and initial screening of a broad range of transit service concepts and alignment options. Early alternatives screening helped define logical corridor segments, clarify key constraints and opportunities, and narrow the range of options to those most consistent with corridor goals, community priorities, and implementation considerations. Environmental screening was also performed to understand potential impacts and considerations early in the decision-making process. Input from public engagement and agency coordination conducted during Phase 1 directly informed the Preliminary Purpose and Need Statement and the identification of the BSRC Recommended Vision carried forward into Phase 2 for more detailed evaluation.

Altogether, the study culminates in a data-driven, community-informed set of strategies intended to support sustainable reinvestment, improve mobility, and guide long-term development across the bi-state corridor. The alternatives analysis in Phase 1 also established logical corridor segments with independent utility and documented the rationale for the Recommended Vision, supporting a phased implementation strategy under which segments may advance on different schedules and under different funding sources. The Phase 1 Study is incorporated by reference and can be found here: [Assessment and Strategy Action Plan](#).

BSRC Phase 2: Implementation Strategy Report and Planning & Environment Linkages (PEL) Study

| Phase 2 builds on Phase 1 to provide a roadmap for project implementation. During this phase, the study emphasis shifted to conceptual design refinement, additional technical studies, and additional public engagement. Public, stakeholder, and agency engagement continued throughout Phase 2 and was integrated iteratively into the Recommended Vision.

A key milestone of Phase 2 is the completion of this Planning and Environmental Linkages (PEL) documentation, which captures the planning-level decisions, assumptions, methodologies, and screening results developed throughout both phases of the study. The PEL documentation is intended to serve as a planning record that can be referenced during future project-level National Environmental Policy Act (NEPA) reviews as individual corridor segments advance. The PEL Study evaluated several alternatives which are described in Section 4 of this document. It is anticipated that alternatives dismissed as part of the



PEL Study would not require further evaluation as part of future NEPA studies. This study aligns with the PEL approach described in Title 23 of the US Code of Federal Regulations (CFR) Sections 450.212 and 450.318. To further support the integration of BSRC planning documents into the NEPA environmental review stage, the Federal Highway Administration (FHWA) PEL questionnaire was completed for this project and is included as Appendix H.

1.2 Community Partners

The BSRC is being developed through a strong bi-state partnership led by Mid-America Regional Council (MARC) in partnership with multiple local governments, regional stakeholders, and state partners including the Missouri Department of Transportation (MoDOT) and Kansas Department of Transportation (KDOT). Community funding partners (community partners) include the Unified Government of Wyandotte County/Kansas City, KS; the City of Kansas City, MO; Jackson County, MO; the City of Independence, MO; the City of Sugar Creek, MO; Kansas City Area Transportation Authority (KCATA); and MARC.

Community partners helped shape the project priorities and advise on technical analyses throughout the development of the Project. Additionally, community partners also met regularly with a Community Advisory Committee made up of leaders from the public, private, and nonprofit sectors. This group served as a sounding board for project decisions.

1.3 Purpose of the PEL Study

The purpose of this PEL Study is to document the coordinated, corridor-wide planning efforts and the environmental review framework that will be carried forward as the project advances. By capturing planning-level assumptions, methods, and decisions now, this PEL Study provides a clear record that can be referenced in subsequent environmental reviews to support efficient project delivery. MARC and its partners are using the PEL approach because the BSRC is a complex, bi-state corridor with multiple jurisdictions and agencies, and because it is expected to advance in multiple phases as funding becomes available. The PEL framework supports early coordination and helps establish a shared understanding of corridor priorities, constraints, and implementation considerations across partners. It also documents logical corridor segments with independent utility so that individual segments can move forward on different schedules while remaining consistent with the broader corridor vision.

The PEL Study documents planning-level decisions, assumptions, and supports analyses related to corridor needs, goals, alternatives development, and impact considerations that will be subjected to future NEPA requirements.

A PEL Study takes a structured approach to early coordination and planning decisions that would meet NEPA requirements that would allow projects to be shovel ready once funding is secured. This approach is intended to reduce duplication of effort and improve project delivery efficiency.

This PEL Study is intended to align transportation planning with broader community, land use, housing, economic development, and environmental objectives along the corridor. It documents the evaluation of a range of transit service concepts and supporting multimodal improvements, identifies logical corridor segments with independent utility, documenting the alternative evaluation process. The study also



establishes a shared understanding of existing conditions, corridor challenges, and community priorities, informed by extensive public and agency engagement conducted throughout Phases 1 and 2 of the study.

At a planning level, the PEL Study identifies potential environmental impacts associated with the recommended corridor vision (Recommended Vision), including cultural resources, parks and recreational resources, natural resources, noise, and contaminated sites. These considerations are documented to inform future NEPA scoping, agency coordination, and technical studies of the anticipated impacts, outcomes, and mitigations of the project.

Ultimately, the purpose of this PEL Study is to support develop a defensible, planning foundation that will meet NEPA regulations and compliances, improving coordination processes among federal, Tribal, state, regional, and local partners to receive concurrences from the respective regulatory agencies.

1.4 Statutory PEL Authorities & Regulatory Requirements

Under 23 CFR Part 450, PEL is implemented through statewide and metropolitan transportation planning regulations which require early and ongoing coordination with resource agencies, Tribal governments, and the public; use of reliable and reasonably current data; and documentation of planning analyses and decisions that may inform subsequent project development. Sections 450.212 and 450.318, specifically encourage transportation planning studies to be conducted in a manner that supports linkage to the NEPA process, while clarifying that transportation planning does not itself constitute NEPA compliance.

The statutory provisions for PEL (e.g., 23 USC 168 and 23 USC 139) establish the legal authority to adopt or incorporate certain planning products and decisions into the NEPA process, whereas the regulatory provisions in 23 CFR 450 define how planning must be conducted in order for planning products to be eligible for use in future environmental reviews. In summary, the statutes provide the authority and the regulations provide the procedural framework for implementing PEL.

1.5 Existing and Future Conditions

As part of the Phase 1 Assessment and Strategy Action Plan, a detailed assessment of existing conditions was completed that evaluated land use, demographics, the existing transportation network, and redevelopment potential. The following sections summarize information presented in the Phase I Assessment and Strategy Action Plan. Detailed information may be viewed at [Assessment and Strategy Action Plan](#).

The Study Area developed for the Phase 1 report (the Phase 1 Study Area) includes a mix of residential, commercial, institutional, and industrial land uses and serves as a critical link for regional transit and goods movement. Approximately 196,428 residents and 150,058 jobs are present in the Phase 1 Study Area. Representing a substantial share of the region's population and economic activity, enhanced east-west connectivity through high-capacity transit will help reduce travel barriers for residents, link workers to jobs across the state line, and catalyze reinvestment in long-disadvantaged areas.

An Existing Conditions Report was prepared as part of the Phase 1 Study, which focused on identifying the challenges and root causes affecting transit accessibility and connectivity in the planning area. It examines current conditions to identify east-west and first- and last-mile connectivity gaps, barriers to reliable and



frequent transit service, and a lack of integration among transportation, housing, economic development, and provision of public services and infrastructure. The report highlights insights that serve as a foundation for planning a dedicated, sustainable, zero emission transit system to address these critical issues. The following paragraphs summarize key findings of the Existing Conditions Report. Additional details may be found in the complete report available here: [Assessment and Strategy Action Plan](#) (Appendices Part 1a and 1b).

1.5.1 Existing Transit System and Services

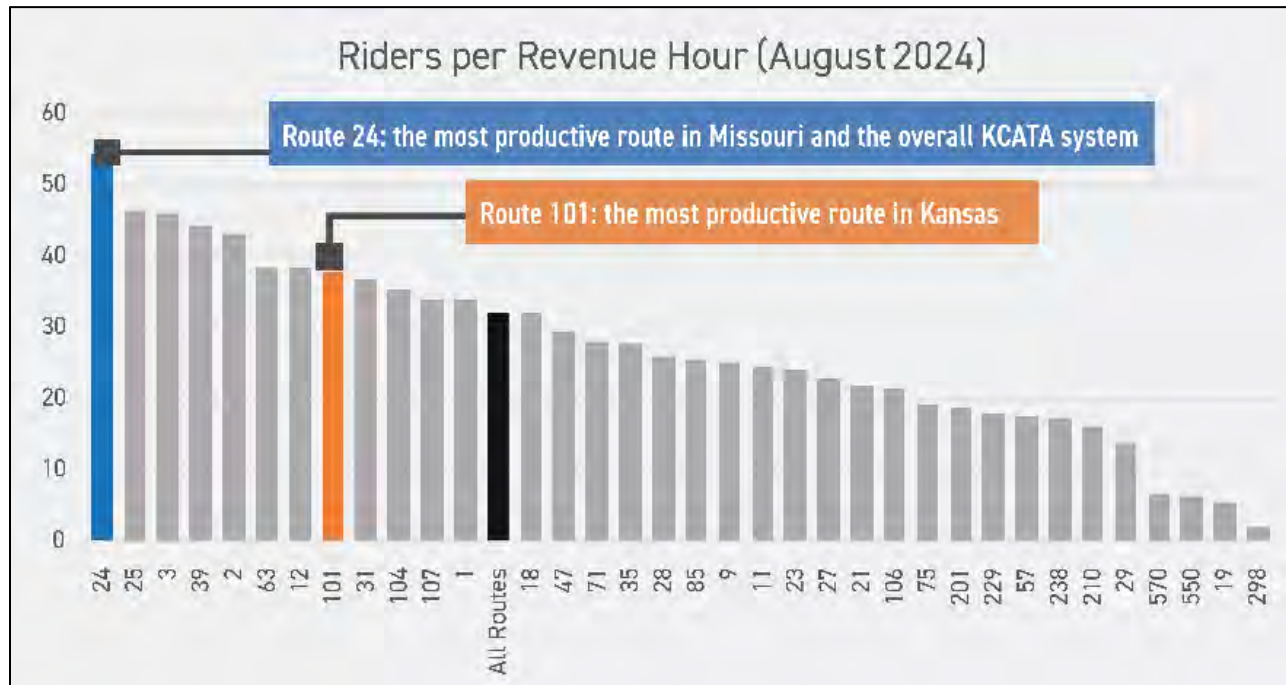
Existing transit service in the Kansas City Metropolitan Area is operated by multiple agencies unified under the RideKC brand, with numerous locations featuring overlapping and intersecting routes. The majority of existing transit services are concentrated in the urban core with higher-frequency service connecting downtown KCMO to the City's neighborhoods to the south. The full east-west length of the Phase 1 Study Area is currently served by the KCATA routes: Route 101 State Avenue in Kansas and Route 24 Independence in Missouri, with two additional Unified Government-operated routes providing service west to Interstate 435 (I-435) and the Village West District in Wyandotte County. Other existing transit services include:

- **Fixed Bus Route:** In addition to Route 101 and Route 24, there are 43 other fixed routes that operate in or intersect the Phase 1 Study Area primarily at three transit centers. These routes include two existing Bus Rapid Transit-lite (BRT-lite) routes, known as KCATA Metro Area Express (MAX); the Troost MAX and Prospect MAX.
- **Streetcar:** The Kansas City Streetcar is a two-mile north-south route that crosses the Phase 1 Study Area at 11th Street.
- **RideKC Freedom (ADA Complimentary Paratransit):** Americans with Disabilities Act (ADA) paratransit is operated along the length of the Phase 1 Study Area (within a ¾ mile distance of fixed routes). This service provides demand-response curb-to-curb transportation by reservation to residents with a documented disability.
- **On-Demand Micro Transit:** An app-based, on-demand service provided by, and within, KCMO and several other municipalities, which bridges gaps in areas that are difficult to serve with fixed-route transit.

Exhibit 1 shows existing transit service routes and frequencies operated by KCATA and Unified Government Transit.(UGT). As shown, existing transit service is concentrated in the KCMO downtown urban core. Exhibit 3 shows existing transit ridership. Overall, transit ridership is high in the urban core and lower in the eastern and western edges of the corridor. Route 24 (Independence Avenue) in Missouri generates the most riders per revenue hour within the existing transit network. Route 101 (State Avenue) is the most productive route in Kansas.



Exhibit 1. Riders per Revenue Hour (August 2024)



A total of 213 existing bus stops are present in the Phase 1 Study Area, which are spaced approximately ¼ mile apart, on average. Additionally, there are four transit centers. Stops along 11th and 12th Streets in downtown are known as “Transit Emphasis Corridors” and have been upgraded to MAX standards, serving high levels of ridership and transfer activity.

MAX routes features include:

- Frequent service
- Traffic signal priority
- Fewer stops for faster service
- Stations are substantially larger than standard bus stops
- Unique branding

Bus stop infrastructure varies greatly, but is generally described as follows:

- Village West, State Avenue, Minnesota Avenue (KCK): Stops west of I-435 within the Village West area are generally upgraded and well-equipped, typically including shelters, seating, lighting, and ADA-accessible boarding areas. Moving east, most stops between I-435 and N. 18th Street lack these core amenities and are in need of improvement. In the downtown area, east of N. 18th Street, stops are more established but still require the addition of shelters to better support riders.

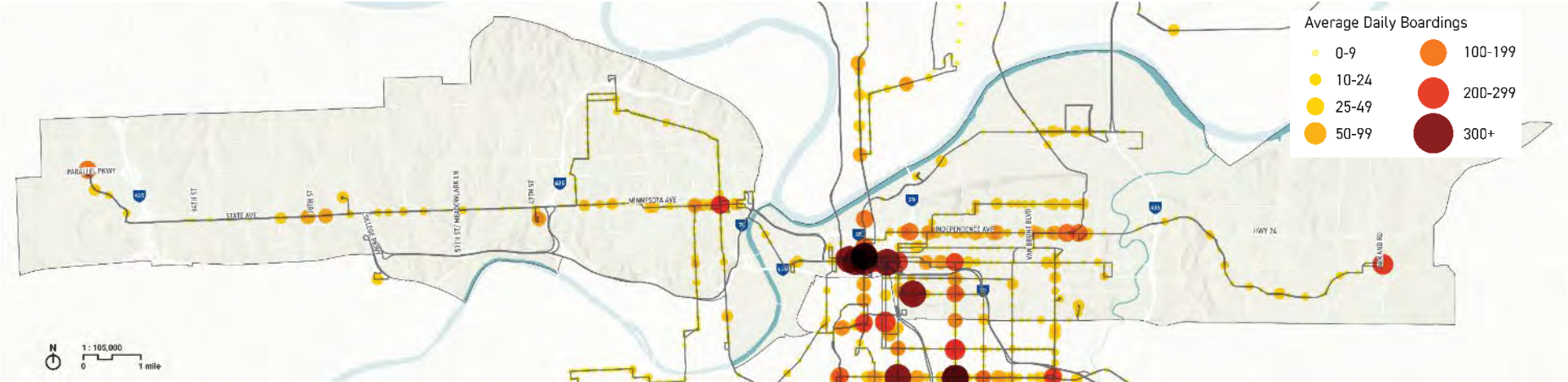
- W. 12th Street (West Bottoms KCMO): Stops along this segment are more limited in amenities and reflect a transitional condition, with several locations lacking consistent shelters, seating, and lighting.
- E. 11th & E. 12th Streets (Downtown KCMO): Most stops are upgraded to BRT-Lite (MAX) standards, meaning they include enhanced passenger amenities such as shelters, seating, lighting, real-time arrival information, branded infrastructure, and improved boarding conditions. These stops support high service levels across numerous routes and function as key transit spines within the downtown network. Independence Avenue (KCMO): High-ridership stops feature “local stop” which is limited to a bench and signage. Some select stops include a shelter that provides some degree of protection from poor weather conditions.
- 24 Highway & Winner Road (Independence): Stops are remaining as is with no improvements, with only a few exceptions.



Exhibit 2. Existing Transit Service Routes and Frequencies



Exhibit 3. Existing Transit Ridership by Stop



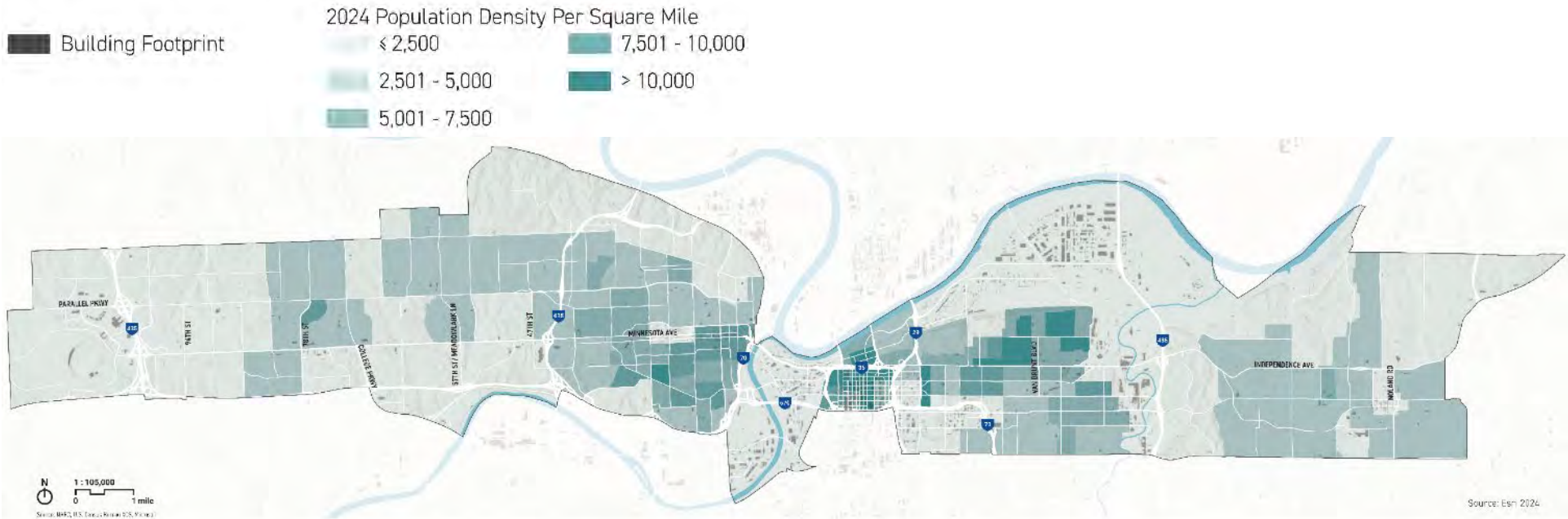
1.5.2 Existing Land Use

The Phase 1 Study Area intersects a diverse set of urban, industrial, and suburban environments, with existing land uses ranging from dense mixed-use districts in downtown Kansas City, Missouri and Kansas City, Kansas to low-density single-family neighborhoods on the Phase 1 Study Area's eastern and western edges. Downtown Kansas City, Missouri contains the highest concentrations of mixed-use development—including high-rise housing, offices, retail, and institutional uses—while neighborhoods between the downtowns and the Blue River consist largely of older single-family homes on small lots that still maintain moderate residential density. Kansas City, Kansas' urban core similarly features compact residential areas composed of small-lot single-family homes, duplexes, triplexes, and small apartment buildings, with density decreasing toward the suburban areas west of I-635. Independence's neighborhoods include older single-family housing on somewhat larger lots, with Downtown Independence offering a more traditional mix of duplexes, triplexes, and small multifamily structures. Major commercial and industrial land uses are concentrated in the West Bottoms, along the Kansas and Missouri Rivers, and in areas of Independence and western Wyandotte County, reflecting long-standing economic patterns that influence land development across the Phase 1 Study Area.

1.5.3 Population Density

Population density varies considerably across the Phase 1 Study Area, shaped by the differing land use patterns of each area. The densest neighborhoods are located in and around Downtown Kansas City, Missouri, reaching more than 22,500 people per square mile. Downtown Kansas City, Kansas also exhibits relatively high population density, with pockets reaching 8,500 people per square mile. In contrast, the westernmost and easternmost sections of the Phase 1 Study Area remain far less dense, with fewer than 1,000 residents per square mile, reflecting their suburban and exurban characteristics. These variations in density correspond closely with the differing forms of residential development, from high-rise buildings and historic mixed-use structures in central districts to lower-density single-family subdivisions farther from urban cores. Exhibit 4 illustrates population density in the Phase 1 Study Area.

BSRC PEL Study
Exhibit 4. Population Density



1.5.4 Demographics

Demographically, the Phase 1 Study Area contains many historically low-income neighborhoods, particularly in eastern Kansas City, Missouri and central Kansas City, Kansas, where there is a higher percentage of residents with lower incomes, higher unemployment rates, and lower levels of educational attainment. These areas also contain higher proportions of people of color and households experiencing cost burdens related to housing, contributing to regional disparities in access to opportunity. Neighborhoods shaped by redlining and industrial adjacency tend to have larger family sizes, more single parent households, and higher concentrations of public or affordable housing. Meanwhile, downtown adjacent neighborhoods such as parts of the West Bottoms and the northeast area of Kansas City, Missouri, have seen growth over the years due to redevelopments. Suburban areas in northern Independence and western Wyandotte County exhibit higher household incomes, greater homeownership, and lower socio-economic diversity, reflecting more traditional middle- and upper-middle-income suburban demographics.

1.5.5 Employment Activity

Several large employment centers are present in the Phase 1 Study Area including the office hub of Downtown Kansas City, Missouri and a high concentration of industrial land use in the West Bottoms neighborhood. The northeast area of the Phase 1 Study Area has the highest density of jobs. Proximity to office work is driving residential reinvestment downtown, northwest of Downtown, and in the West Bottoms neighborhood with growing numbers of young professionals who generally prefer to use transit, bike, or walk to work.

The eastern and western termini of the Phase 1 Study Area are characterized by large auto-oriented commercial areas in Village West, Kansas and a mix of office, retail, and industrial areas in Independence, Missouri. Downtown Independence and Kansas City, Kansas, each have high densities of public sector jobs – education and medical services, and public administration jobs make up 41 percent and 64 percent of total jobs respectively. Public sector jobs help stabilize the occupancy of downtown commercial activities. Exhibit 5 identifies major employers (250 employees or more) adjacent to the Phase 1 Study Area.

1.5.6 Future Redevelopment

Future redevelopment in the Phase 1 Study Area is expected to focus on reinvestment in underutilized land, strategic corridor revitalization, and targeted growth in areas already showing signs of market momentum; “underutilized” land refer to surface areas, open parking lots, etc. that can be redeveloped to improve land use efficiency and increase density. The Existing Conditions Report identifies that roughly one-third of the Phase 1 Study Area (with much of it consisting of vacant parcels or small lot single family properties) has strong potential for new development or major rehabilitation, making these locations prime candidates for infill housing, mixed use redevelopment, and neighborhood revitalization efforts. Downtown districts in Kansas City, Missouri and Kansas City, Kansas are anticipated to continue densifying through additional mixed use and residential projects, while areas such as the West Bottoms and Northeast Kansas City are already undergoing significant transformation, with historic industrial buildings being converted to housing and commercial uses. Comprehensive plans further support future redevelopment by guiding intensified mixed-use development along major east–west corridors like East Truman Road and Highway 24,

encouraging higher density residential developments like multi-family homes in Kansas City, Kansas, and promoting continued commercial expansion in Village West. Suburban nodes, including parts of northern Independence and western Wyandotte County, also present redevelopment opportunities as they evolve toward more diverse land uses and updated commercial and residential offerings. In historically disinvested neighborhoods, particularly in eastern Kansas City, Missouri and central Kansas City, Kansas, the document highlights the need for stabilization, rehabilitation of aging housing stock, and strategic redevelopment to address longstanding social and economic disparities. Together, these conditions illustrate a broad but coordinated set of redevelopment opportunities aimed at revitalizing older neighborhoods and leveraging market strengths.

BSRC PEL Study

Exhibit 5. Major Employers in the Phase 1 Study Area



Exhibit 6. Redevelopment Potential based on Improvement Value to Land Value Ratio (2024, appraised)



1.6 Relationship to Other Regional Initiatives and Projects

Several adopted county and city plans for the Phase 1 Study Area share common themes focused on improving transportation infrastructure and overall connectivity. These plans emphasize providing high-quality transit service that will enhance safety and expanding accessibility for all users; well-planned and functioning transit system can improve people's mobility and accessibility, especially those without access to a vehicle. Multimodal transportation is a major priority across these plans, which call for strengthened transit service, better pedestrian and bicycle facilities, and revitalization of sites that serve as key economic assets. A more detailed summary of previous regional plan priorities is provided in the Phase 1 [Assessment and Strategy Action Plan](#).

These plans also identify redevelopment opportunities that can invigorate downtowns and major activity centers. Many highlight the importance of creating walkable, mixed-use environments and encouraging development patterns that support transit. Cultural and community preservation emphasizes efforts to protect local history, arts, and neighborhood character. Several roadway, multimodal, and sewer infrastructure projects have been implemented in the KCK and KCMO regions in support of redevelopment of the corridor.

MARC is advancing several major resilience initiatives for stormwater and design initiatives to influence future planning. A key effort is its two-phase transportation resiliency plan titled Natural Hazards Transportation Risk Assessment (2025), partly funded through KDOT's Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) program, which shapes how transportation infrastructure responds to natural hazards and extreme weather. MARC's Natural Hazards Transportation Risk Assessment is available at <https://www.marc.org/transportation/plans-and-studies/natural-hazard-transportation-risk-assessment>.

Additionally, MARC has completed a major update to the region's 5600 stormwater standards in partnership with the American Public Works Association (the first since 2005) shifting from a volume-control approach to retention-based stormwater management that prioritizes use of green infrastructure practices, such as infiltration systems, bioretention, permeable pavements, rain gardens, and other system. This updated stormwater approach establishes comprehensive design criteria that address both stormwater runoff quantity and quality that aims to reduce flooding risk and improve water quality. MARC's broader Bi-State Corridor resilience priorities include addressing heat and flood hazards, evaluating station areas along with first- and last-mile environments, and developing operational guidance to resolve issues like snowplow pile-ups at bus stops. MARC's 2025 Stormwater Standards Manual is available at <https://www.marc.org/environment/environment-plans/stormwater-management>.

Across all initiatives, MARC emphasizes improving comfort and safety for the first and last mile of a trip. These initiatives include small-scale resilient design solutions providing system-wide benefit by integrating updated stormwater guidelines, and expanded tree canopy strategies and resilience hubs into station and streetscape design. These resilience hubs are envisioned as multi-functional community assets providing shade, climate-controlled shelter, cooling and warming options, green stormwater features, battery storage, solar charging for e-bikes and devices, and access to water. MARC also promotes integrating art into transit shelters, and ensuring that design decisions support long-term resilience and community well-being.

2 Purpose and Need

2.1 Context and Regional Significance

The BSRC intersects three urban downtown areas across two states (Kansas and Missouri) connecting major employment centers, educational campuses, healthcare hubs, and cultural destinations, serving approximately 200,000 residents and providing connectivity to approximately 150,000 jobs. The corridor is regionally significant as it addresses longstanding gaps in the transit network and serves as a critical east-west spine for mobility across the Kansas City metropolitan area.

2.2 Transportation Challenges and Opportunities

The Phase 1 Study Area faces significant transportation challenges, including limited public transit service, long travel times, and barriers to accessing employment, education, and healthcare. Over 22 percent of Phase 1 Study Area households live in poverty, and nearly 13 percent lack access to a personal vehicle, resulting in high transit dependency. Existing transit options are limited outside of the downtown KCMO core. Travel time for transit riders is inefficient, with end-to-end trips between the western termini of the corridor (Village West) and eastern termini (Independence Transit Center) often exceeding two hours. Section 1.5.1 provides additional details on the existing transit system.

Opportunities in the corridor include future transit-oriented development, advanced mobility hubs, and first/last-mile solutions, using improved transit options to encourage and support economic and community revitalization.

2.3 Safety and Community Considerations

The BSRC traverses diverse urban environments, including areas with high crash rates, insufficient infrastructure, and challenging physical barriers for pedestrians and bicyclists. Between 2017 and 2021, 116 traffic fatalities, 24 pedestrian deaths, and two bicycle fatalities occurred in the Phase 1 Study Area, underscoring the urgent need for improved safety measures. Notably, the areas with the highest concentration of fatality and serious injury crashes coincide with the two Kansas City downtowns and neighborhoods in Kansas City, Missouri, west of the Blue River. These sections of the corridor do not have the highest traffic volumes in the Phase 1 Study Area, which suggests other factors may be contributing to safety issues. These factors could include roadway design, volume of bicycle and pedestrian traffic, and environmental conditions, such as limited visibility from terrain, lighting or parallel transportation infrastructure.

As discussed in Chapter 6, community engagement has been central to the BSRC's development, with extensive outreach to residents, stakeholders, and local organizations. Input from statistically valid surveys, public workshops, and advisory committees has shaped project priorities, emphasizing the need for safe, accessible transit, affordable housing, and inclusive economic development. The Project seeks to address displacement risks, promote economic revitalization, and ensure that benefits are distributed across all Phase 1 Study Area communities.

2.4 Project Goals and Objectives

The BSRC is guided by a comprehensive set of goals and objectives that reflect both regional priorities and community-driven outcomes. The overarching aim is to deliver a high-capacity transit corridor that serves as a catalyst for sustainable redevelopment and long-term resilience across the Kansas City metropolitan area.

Key goals include:

- **Enhancing Mobility and Connectivity:** Establish a frequent, reliable east-west transit spine that links major activity centers, neighborhoods facing barriers to accessing employment, education, healthcare, and other essential opportunities, employment hubs, educational campuses, and healthcare facilities. The corridor is designed to reduce travel times, improve access, and connect residents to opportunities across two states.
- **Aligning with Regional and Local Plans:** Unify previous planning efforts and leverage existing studies, such as the Independence Avenue BRT Planning and Feasibility Study, goDotte Strategic Mobility Plan, and PlanKCK, to implement shared priorities and streamline project delivery.

Secondary goals associated with the broader BSRC initiative:

- **Promoting Sustainable and Equitable Development:** Integrate transit-oriented development (TOD), affordable housing, and mixed-use land use strategies around station areas to foster inclusive growth and revitalize historically disinvested communities. The Project seeks to leverage public transit investments to attract private capital, support small businesses, and create vibrant, walkable neighborhoods.
- **Advancing Environmental Stewardship:** Expand green infrastructure, and implement resilience measures such as stormwater management and tree canopy expansion. The corridor aims to reduce transportation emissions with a transition to low emission vehicles, to improve air quality and enhance public health outcomes.
- **Supporting Workforce Development and Digital Inclusion:** Invest in workforce training programs and broadband infrastructure to ensure that corridor residents have access to jobs, education, and digital resources. The Project prioritizes strategies that address barriers to employment and promote economic mobility.

These goals and objectives are reinforced by extensive community engagement, technical analysis, and policy alignment, as documented in the Assessment and Strategy Action Plan. The BSRC's goals are designed to make sure that transit investments deliver measurable benefits in mobility, equity, sustainability, and economic vitality for all Phase 1 Study Area communities.

2.5 Consistency with Regional and Local Plans

As previously noted, the BSRC builds upon a foundation of prior studies and planning initiatives, including the [*Independence Avenue Pedestrian Safety Improvement Plan \(2018\)*](#), [*Independence Avenue BRT*](#)

[Planning and Feasibility Study \(2019\)](#), [U.S. 24 Highway Corridor Study \(2006\)](#), [goDotte Strategic Mobility Plan \(2022\)](#), and [PlanKCK \(2023\)](#). The BSRC project development process has incorporated prior planning work to help streamline implementation and maintain alignment with local and regional plans.

2.6 Preliminary Purpose and Need Statement

A preliminary Purpose and Need Statement is a foundational element of the NEPA environmental review process. It defines the underlying transportation problems or community issues that a project is intended to address and establishes the goals the project is expected to achieve. The statement provides the rationale for considering federal/state action and serves as the basis for developing, screening, and comparing project alternatives. In the context of NEPA, a clear and well-supported preliminary Purpose and Need Statement is essential for determining the scope of analysis, focusing environmental review efforts, and demonstrating that the selected alternative is responsive to the identified need.

The following preliminary Purpose and Need Statement was developed by MARC and its community partners:

The purpose of the BSRC project is to develop an integrated and forward-thinking transportation and infrastructure framework that enhances mobility, reduces carbon output, and promotes fair access to housing, employment, education, and healthcare along a key east-west corridor within the Kansas City metropolitan region. The project aims to align transportation improvements with community needs, foster economic growth, and address environmental quality goals in collaboration with regional, state, and local partners.

The preliminary Purpose and Need Statement was developed by MARC and its community partners in 2024. It is anticipated that as part of future NEPA processes, project-specific purpose and need statements will be prepared.

2.7 Needs/Deficiencies

2.7.1 Safety

A crash analysis was conducted to identify intersections with crash rates that are higher than expected for comparable facilities. The most recent available crash data was obtained from MoDOT and KDOT for the Phase 1 Study Area. The crash data from the complete years of 2014-2024 was used to determine the average crash rate at the study intersections. The calculated crash rates were then compared to the critical crash rate following MoDOT and KDOT methodology.

Table 1 summarizes the number of crashes, calculated crash rate, and critical crash rate for study intersections. Intersections with a critical index greater than one indicate that crash rate is greater than expected compared to random chance. Intersections with a critical index greater than one should be investigated further to determine possible hazards present at the intersection. Several intersections demonstrate critical index values that exceed one demonstrating potential intersection safety issues. Intersections shaded in gray in Table 1 were found to have a critical index value exceeding one.

Table 1. Summary of Crash Rates

Existing Conditions	No. Crashes	Exposure (MEV*)	Crash Rate (Crashes/MEV)	Critical Crash Rates (Crashes/MEV)	Critical Index
Village West at Parallel	16	126.11	0.13	0.50	0.26
State Ave at Village West Pkwy	44	110.35	0.40	0.50	0.79
State Ave at 98 th	19	25.00	0.76	0.63	1.21
State Ave at 94 th	19	25.00	0.76	0.63	1.21
State Ave at 90 th	13	24.27	0.54	0.63	0.85
State Ave at 82 nd	25	40.68	0.61	0.58	1.07
State Ave at 78 th	75	66.07	1.14	0.54	2.12
State Ave at 75 th Place	24	6.75	3.55	0.87	4.06
State Ave at 74 th	10	19.71	0.51	0.66	0.77
KCKCC	16	7.12	2.25	0.86	2.61
State Ave at College Pkwy	80	100.01	0.80	0.51	1.57
State Ave at 63 rd Ter	16	24.33	0.66	0.63	1.04
State Ave at 62 nd	21	5.48	3.84	0.94	4.10
State Ave at 57 th / Meadowlark Ln	6	57.67	0.10	0.55	0.19
State Ave at 47 th	19	58.44	0.33	0.54	0.60
State Ave at 38 th	80	52.38	1.53	0.55	2.76
State Ave at 29 th	27	23.32	1.16	0.64	1.82
State Ave at Howl Pkwy	4	6.03	0.66	0.91	0.73
Minnesota at 18 th	13	59.86	0.22	0.54	0.40
Minnesota at 7 th	12	93.08	0.13	0.51	0.25
Minnesota at 5 th	10	112.24	0.09	0.50	0.18
12 th at I35 SB	39	34.67	1.12	0.59	1.90
12 th at I35 NB	35	25.13	1.39	0.63	2.22
East Village Transit Center	46	26.86	1.71	0.62	2.77
Independence Ave at Charlotte	35	18.88	1.85	0.67	2.78
Independence Ave at the Paseo	173	35.65	4.85	0.59	8.25
Independence Ave at Woodland	84	19.15	4.39	0.66	6.61
Independence Ave at Prospect	130	24.48	5.31	0.63	8.42
Independence Ave at Benton	166	31.67	5.24	0.60	8.73

Existing Conditions	No. Crashes	Exposure (MEV*)	Crash Rate (Crashes/MEV)	Critical Crash Rates (Crashes/MEV)	Critical Index
Hwy 24 at Manchester	4	40.51	0.10	0.58	0.17
Hwy 24 at Wallace	7	39.30	0.18	0.58	0.31
Hwy 24 at Brookside	16	43.19	0.37	0.57	0.65

*MEV denotes million entering vehicles

2.7.2 Travel Time

Existing transit Route 24 and Route 101 are inefficient for riders, with end-to-end trips often exceeding two hours. Table 2 summarizes travel time for the existing condition. As shown, under existing conditions, traveling through the Phase 1 Study Area from the western terminus (Route 101 State Avenue, west of 47th Street) to the eastern terminus (Route 24 Independence), is an approximately two-hour trip.

Table 2. Existing Conditions - Service Travel Time

Route	Headways (min)			Span (hr)			Travel Time
	Wkd	Sat	Sun	Wkd	Sat	Sun	
24 Independence (within KCMO)	20	20	30	19	18	17	28-30 min.
24 Independence (to Independence)	60	60	--	16	15	--	18-20 min.
101 State Avenue (east of 47 th St)	30	60	60	18	12	10	31-37 min.
101 State Avenue (west of 47 th St)	30	60	60	18	12	10	29-33 min.
Total							120-126 min.^

* Note: substantial alignment change from existing service

^ Total route times include 10-minute layover at EVTC (Existing: layover+transfer. Planned: layover only)

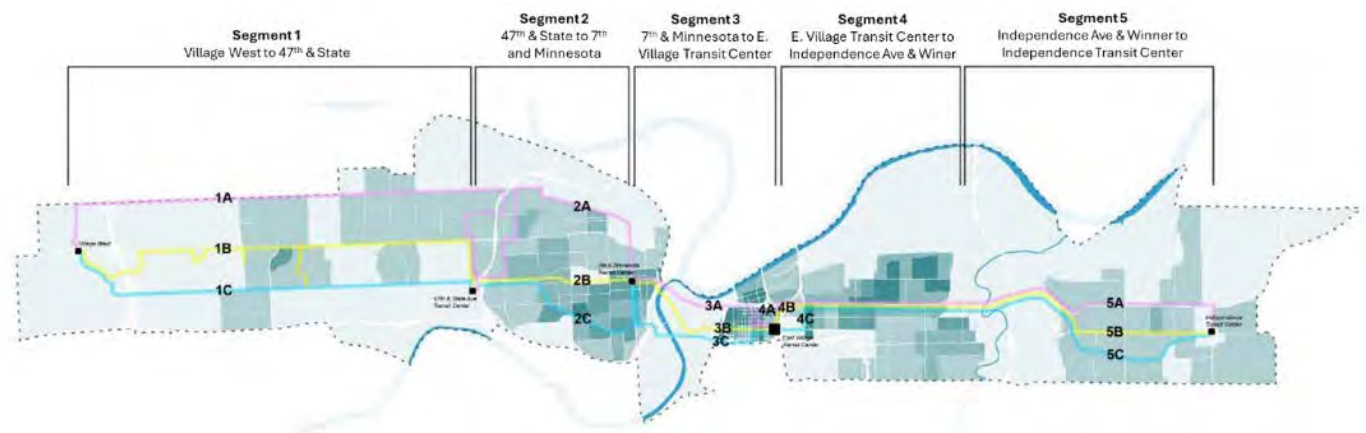
3 Corridor Segments

To perform the alternatives analysis, the corridor was organized into five segments based on logical breaks at major nodes. The five segments were based on different community needs, recognizing varying levels of density and neighborhood character. These segments also considered major transit transfer points, hubs, and transition areas. The five corridor segments are as follows:

- Segment 1 – Village West to 47th Street and State Avenue (KCK)
- Segment 2 – 47th Street & State Avenue to 7th Street & Minnesota Avenue (KCK)
- Segment 3 – 7th Street & Minnesota Avenue (KCK) to East Village Transit Center (KCMO)
- Segment 4 – East Village Transit Center to Independence Avenue & Winner Road (KCMO)
- Segment 5 – Independence Avenue & Winner Road (KCMO) to Independence Transit Center (Independence, MO)

Within each segment, three east–west route options were evaluated, labeled A, B, and C, to compare alignment choices within each segment. This approach supports “logical termini and independent utility,” meaning each segment is framed to function as a stand-alone improvement if it advances ahead of other segments. This methodology also allowed the project team to identify the strongest alignment for each segment while keeping options open as the Project evolves. Exhibit 7 illustrates the five segments and alignments that were evaluated in the alternatives analysis.

Exhibit 7. Tier 1 Alternatives



4 Alternatives Analysis

Multiple transit modes were considered in the analysis, including BRT, BRT-Lite, and streetcar. A structured multi-factor analysis evaluated each alignment and mode based on accessibility, ridership potential, transit

readiness, socioeconomic factors, multimodal connectivity, and development capacity. A two-tiered evaluation process was used to screen multiple transit mode alternatives, which consisted of the following:

- **Alternatives Evaluation Tier 1 – Qualitative Assessment of Build Alternatives:** Tier 1 consisted of a high-level qualitative assessment of Build Alternatives. Community partners evaluated all alternatives and identified those that were feasible based on current ridership, the anticipated development growth needed to support the transit, and community support. Build Alternatives were advanced for Tier 2 evaluation.
- **Alternatives Evaluation Tier 2 – Multi-Factor Analysis of Build Alternatives:** Tier 2 included a detailed multi-factor analysis of each Build Alternative that included transit service, community development, and multimodal criteria. A Recommended Vision was identified based on the results of the Tier 2 evaluation.

4.1 No Build Alternative

The No Build Alternative establishes a baseline for evaluating the benefits and environmental impacts of the proposed BSRC transit improvements. Under the No Build scenario, only currently programmed projects from regional and local transportation plans would be implemented, and no new dedicated bus rapid transit (BRT) lanes, BRT-Lite service, or associated enhancements would be constructed. Existing bus routes would continue to operate at current frequencies and capacities, with no upgrades to station amenities, multimodal connections, or active transportation infrastructure. As a result, travel times, transit accessibility, and connectivity between major activity centers and neighborhoods facing barriers to accessing employment, education, healthcare, and other essential opportunities would remain unchanged. The No Build Alternative does not address the corridor's identified mobility and safety challenges, nor does it provide the environmental or community benefits associated with the Recommended Vision.

4.2 TSM Alternative

The Federal Transit Administration (FTA) describes Transportation System Management (TSM) alternatives as the lower-cost approaches to addressing transportation needs in a study area. The TSM Alternative represents the “best that can be done” for mobility without constructing a new transit priority corridor, as is recommended with the Recommended Vision. Generally, the TSM Alternative emphasizes upgrades in transit service through operational and relatively minor physical improvements, plus selected multimodal safety upgrades through intersection improvements and implementing multimodal networks recommended through local planning efforts in the region. While the scale of these improvements is generally modest, TSM alternatives may cost tens of millions of dollars while the BRT alternatives range up to several hundreds of millions of dollars. TSM alternatives are important components of transit studies because they provide a baseline against which all major investment alternatives can be evaluated. The most cost-effective TSM alternative generally serves as the baseline against which the selected Build Alternative is compared.

For the BSRC, the TSM Alternative is based on corridor-wide recommendations, identified through the existing condition phase – including transit-system efficiencies, the complete implementation of previous mobility planning (i.e. GoDotte, Kansas City Bicycle Plan (Missouri)), and safety modifications at locations

with fatal or severe crashes reported in the last 11-year period (2014-2024). These improvements would result in some safety improvements for vulnerable users and enhanced mobility/connectivity but on its own, the TSM Alternative does not meet the overall goals of the Project, as defined in the preliminary Purpose and Need statement. As a transportation project, it does not connect the region across the Kansas/Missouri state line, rather makes local improvements in the form of bike lanes, aligning existing transit services, and making intersection improvements. There is no unified transit service or coordination across the state line, and there is little to advance environmental sustainability through land development or state of good repair through full-roadway reconstruction under the TSM Alternative. Further, and importantly, the TSM Alternative does not deliberately advance the reinvestment aspects of the Project. The Bi-State Reinvestment Corridor is an economic development project, using the BRT service as the catalyst for station areas with higher density, with more housing, employment, and education opportunities.

4.3 Build Alternatives

Three transit modes were considered in the Build Alternatives analysis, including:

- **BRT-Lite:** BRT-Lite, which is a scaled version of BRT, is akin to the KCATA MAX bus service in Greater Kansas City, which includes transit signal priority (TSP), frequent service, and branded service (vehicles, stops, and wayfinding). TSP technology can improve schedule reliability by extending green lights or providing an early green light to allow buses to clear the intersection with less delay. The level of service is greater than that of standard bus service but does not receive the same dedicated Right-of-Way (ROW) and travel time benefits as BRT.
- **BRT:** BRT assumes a higher level of bus priority, providing more consistent bus service and a more predictable experience for bus riders. BRT transit service provides bus service at 10-minute or better frequency, with buses operating almost exclusively in a dedicated ROW, often physically separated by curb, pavement texture, or movable physical barriers.
- **Streetcar:** The existing Kansas City Streetcar system offers fixed-route transit service on tracks embedded into the street, providing a predictable, high-quality mode for riders. In practice, the Streetcar operates at 10-minute peak frequencies for more than 60 hours per week, with service from 6:00 a.m. to midnight on weekdays and until 1:00 a.m. on weekends, exceeding the operating span of the current MAX BRT service in Downtown.

Table 3 summarize key characteristics of transit modes considered in the Alternatives Analysis.

Table 3. Transit Modes Considered in the Alternatives Analysis

Evaluation Criteria	BRT-Lite	BRT	Streetcar
Station spacing/ mi.	< ¼ mi	¼ - ½ mi	¼ - ½ mi
Service frequency (min.)	10-30 min	<10 min	<10 min

Evaluation Criteria	BRT-Lite	BRT	Streetcar
Passenger capacity/ hr.	240 – 280	360 – 1,440	600 – 1,800
Capital cost (million)/ mi.	\$9.1	\$22.5	\$122.2
Operating cost/ vehicle revenue hr.	\$189	\$172	\$365
Roadway construction impacts	Limited to key intersections	Full roadway reconstruction	Full roadway reconstruction

4.4 Tier 1 – Screening of Build Alternatives

4.4.1 Methodology

As described in Section 4.0, three routes for each of the five segments were evaluated in the alternatives analysis. For each segment, BRT and BRT-Lite were considered. Streetcar was only evaluated for the portion of the corridor with the highest population density, Segment 3.

The Tier 1 screening consisted of a high-level qualitative assessment completed in coordination with Community Partners, as informed by past studies and public engagement, to identify the segments that did not meet the preliminary Purpose and Need Statement, or were not practical/ implementable. Community Partners evaluated the Build Alternatives by evaluating preliminary ridership forecasts, redevelopment potential, and community support, and assigning each alternative a low score (1) indicating the alternative should be dismissed from further consideration as it was deemed not feasible or failed to meet the purpose and need of the Project, or high score (2), indicating the alternative met the purpose and need, was feasible, and supported by the community. Build Alternatives that did not meet the purpose and need, or lacked feasibility were dismissed. Table 4 summarizes the findings of the Tier 1 evaluation.

Table 4. Tier 1 Evaluation Results

Segment	Transit Mode	Meets the Purpose and Need and Feasible? (Y/N)	Rationale for Dismissed Alternatives
Segment 1	1A BRT	N	• Segments 1A and 1B are not expected to see the necessary growth to support BRT.
	1A BRT-Lite	Y	
	1B BRT	N	
	1B BRT-Lite	Y	
	1C BRT	Y	
	1C BRT-Lite	Y	

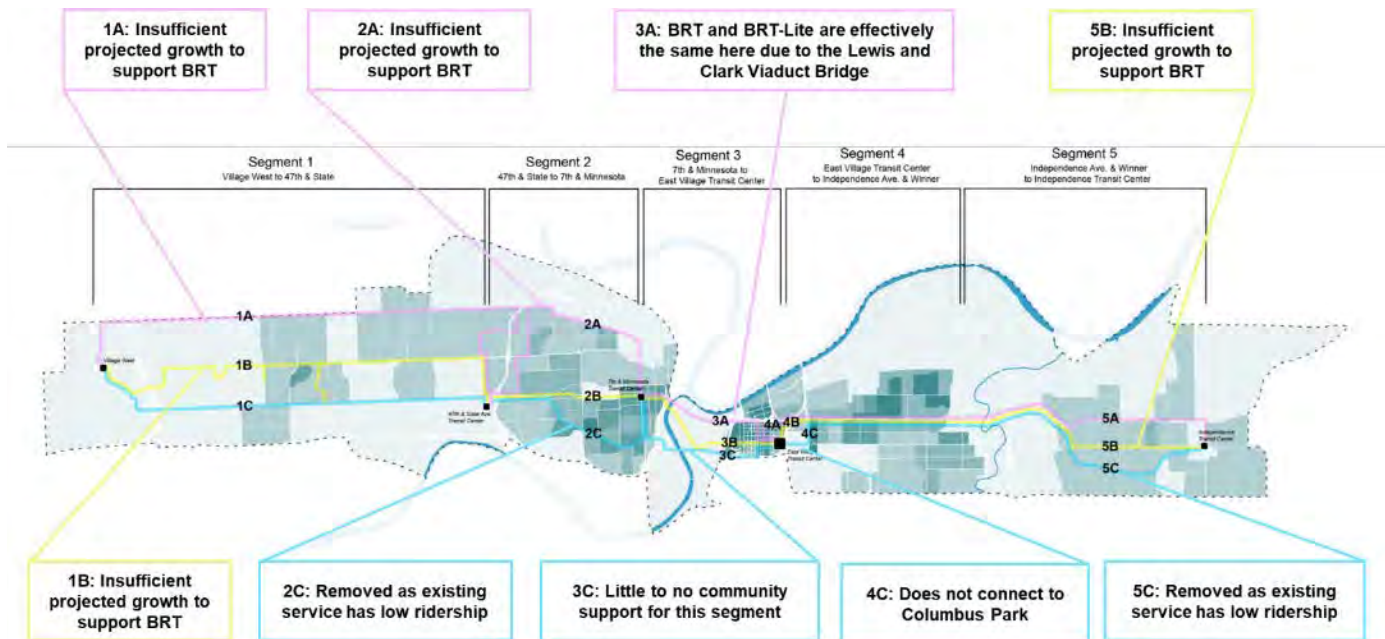
Segment	Transit Mode	Meets the Purpose and Need and Feasible? (Y/N)	Rationale for Dismissed Alternatives
Segment 2	2A BRT	N	- Segment 2A is not expected to generate sufficient growth to support BRT. - Segment 2C was removed as the existing UGT 102 service on Central Ave has low frequency and low ridership.
	2A BRT-Lite	Y	
	2B BRT	Y	
	2B BRT-Lite	Y	
	2C BRT	N	
	2C BRT-Lite	N	
Segment 3	3A BRT	Y	- Segment 3A was not advanced for BRT-Lite evaluation as the Lewis and Clark Viaduct Bridge does not allow for the differentiation between two transit alternatives. - Segment 3C was not supported by community partners.
	3A BRT-Lite	N	
	3B BRT	Y	
	3B BRT-Lite	Y	
	3B Streetcar	Y	
	3C BRT	N	
	3C BRT-Lite	N	
Segment 4	4A BRT	Y	- Segments 4A and 4B were re-routed to Independence Ave. and Truman Rd., respectively, per input from local partners. Segment 4A was evaluated for BRT and BRT-Lite. - Segment 4B was not evaluated for BRT due to insufficient projected growth. - Segment 4C was dismissed as it would not connect to the existing East Village Transit Center and the Columbus Park neighborhood.
	4A BRT-Lite	N	
	4B BRT	Y	
	4B BRT-Lite	Y	
	4C BRT	N	
	4C BRT-Lite	N	
Segment 5	5A BRT	Y	- Segment 5B was not evaluated for BRT based on the likelihood for development growth. - Segment 5C was dismissed as existing transit service (KCATA Rte. 24) has low ridership.
	5A BRT-Lite	Y	
	5B BRT	N	
	5B BRT-Lite	Y	
	5C BRT	N	
	5C BRT-Lite	N	

4.4.2 Tier 1 Evaluation Results

The Tier 1 screening evaluation narrowed the range of alternatives by removing alternatives that did not meet the preliminary Purpose and Need or lacked feasibility. Across the Phase 1 Study Area, alternatives were dismissed for several reasons including insufficient projected growth or transit readiness to support a higher investment mode, existing overlapping transit service indicated low ridership potential, a lack of

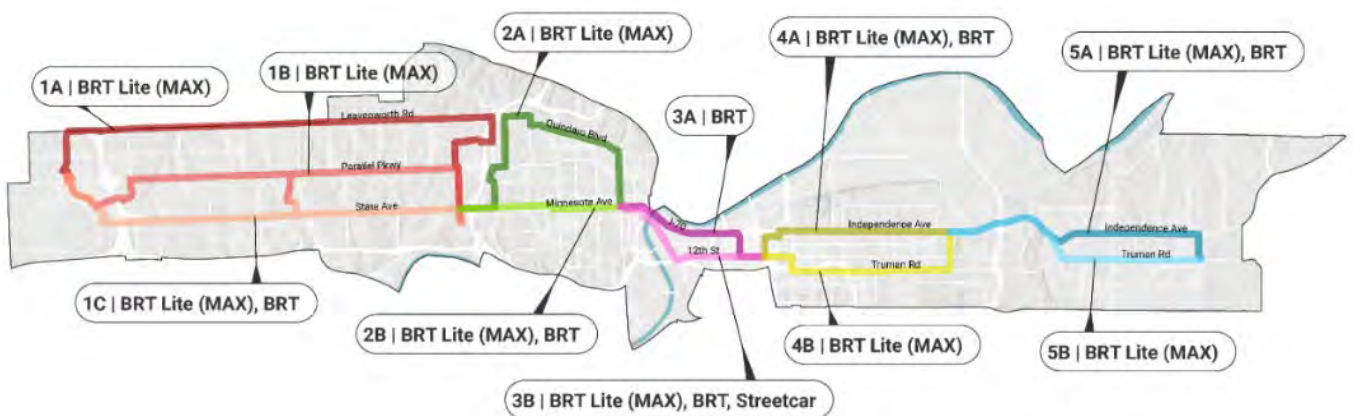
connectivity to key destinations or transit anchors, and – as in the case of 3C – community feedback indicated little to no support. Exhibit 8 summarizes the results of the Tier 1 evaluation.

Exhibit 8. Tier 1 Alternatives Analysis



Based on the results of the Tier 1 evaluation, 12 alternatives were dismissed from further consideration and 17 alternatives were advanced for Tier 2 evaluation. Exhibit 9 illustrates the alternatives selected for Tier 2 evaluation.

Exhibit 9. Build Alternatives Advanced to Tier 2 Evaluation



4.5 Tier 2 – Screening of Build Alignment Alternatives

4.5.1 Multi-Factor Analysis

4.5.1.1 Measures of Effectiveness

To guide the evaluation of alternatives in the Assessment and Strategy Phase, a multi-factor scoring methodology was developed using a comprehensive set of Measures of Effectiveness (MOEs). These MOEs provide a transparent, data-driven method for evaluating how well each alternative addresses the project needs articulated in the preliminary Purpose and Need Statement. This approach also establishes a strong analytical foundation for the subsequent NEPA review, where the Purpose and Need Statement shapes the comparison of reasonable alternatives.

The MOEs encompass a broad range of criteria that align with the stated needs and goals of the BSRC project. Transit service metrics such as ridership potential, frequency, and connectivity assess how well alternatives improve mobility for users. Socioeconomic indicators, including share of zero-vehicle households and poverty rates, evaluate the potential for alternatives to improve access to essential services. Safety metrics such as the number of crashes, pedestrian and bicycle collisions, and fatality locations are used to determine the effectiveness of improvements in reducing transportation-related harm.

Environmental quality and infrastructure modernization are addressed through MOEs that evaluate low-emission transit options, state of good repair needs, and ROW impacts. Measures related to land use and development readiness, such as residential and job density, redevelopment potential, and station area typologies, are used to assess how well alternatives can support long-term economic vitality and sustainable growth. Finally, multimodal connectivity metrics, including bicycle network expansion and pedestrian infrastructure, evaluate the integration of transit within the broader transportation system and the potential to provide a seamless and safe travel experience across multiple modes of travel.

These MOEs will continue to inform project decision-making into the NEPA environmental review to be conducted in the Implementation Phase.

4.5.1.2 Methodology

The transit segments and investment levels were evaluated through a multi-factor analysis to understand how the alignment and transit-type supports the Project goals. The Tier 2 evaluation criteria were based on performance factors as the Project is within a developed, urban core and it is anticipated to have minimal disturbance outside of the existing right-of-way and limited to no environmental resource impacts.

Table 5 presents Tier 2 evaluation scoring parameters.

Table 5. Tier 2 Evaluation Scoring Parameters

Criteria	Low	Medium	High
Transit Service Evaluation			
Cost/ State of Good Repair			
Capital Cost	>\$84mil	\$53mil - \$84mil	<\$53mil
Operating Cost	>\$1,500	\$750 - \$1,500	<\$750
Access			
Spacing between stops		>¼ mi	<¼ mi
Expected frequency of service	10-30min		<10min
Travel time to downtowns/ activity centers	Avg. >30min	Avg. 20-30min	Ave <20min
Community Development			
Transit Readiness			
Residential density	>75% increase. in density needed	25-75% increase. in density needed	<25% increase in density needed
Job density	>75% increase in density needed	25-75 increase in density needed	<25% increase in density needed
Redevelopment Potential			
Redevelopment-ready areas	>50% redevelopment-ready areas needed to meet density minimums	25-50% land needed	<25% land needed
Socio-Economic			
Zero vehicle households	<5%	5-15%	>15%
Poverty	<4%	4-7%	>7%
Multimodal Connectivity			
Transit Connectivity			
# of transit routes that connect to the corridor segment	<10	10-20	>20
Ridership	<1,000	1,000-2,000	>2,000
% of segment serving transit opportunity	<30%	30-60%	>60%
Access to jobs/ community resources via segment	<5,000	5,000-10,000	>10,000
Roadway Impacts			
Impact on delay for vehicles	Significant alterations in roadway design (loss of lanes/turns or widening required)	Changes in roadway needing mitigation	No or very limited reduction in travel lane

Criteria	Low	Medium	High
% of intersections with transit signal priority	<50%	50-75%	>75%
% of corridor with dedicated ROW	<50%	50-75%	>75%
Local Opportunity			
Network strength	Impacted		Not impacted
Bicycle network strength	Not impacted		Impacted
Opportunity to expand bicycle network	No		Low
Pedestrian crossings impacted by design	<5	5-10	>10
Safety			
# crashes, w/locations modified by design	<400	400-800	>800
# crashes w/ pedestrian/bicycle collision, w/ locations modified by design	<15	15-30	>30
# crashes w/ fatalities, w/ locations modified by design	<20	20-40	>40
# crash locations modified by design	<15	15-20	>20
# pedestrian/bicycle collision locations modified by design	<5	5-10	>10

For each of the evaluation parameters (Transit Service, Land Use and Community Development, and Multimodal Connectivity), a “high”, “medium”, or “low” score was assigned, based on how each segment alignment and transit-type was assigned a score of high, medium, and low to indicate how well it would support each MOE. A “high” score is assigned when the alignment and transit-type score positively. This can mean more frequent service, more than 75 percent of dedicated ROW, less than 25 percent growth in development needed to meet the required density, or a low capital or operating cost. Subsequently, “medium” is assigned for moderate impacts in the MOE and “low” is assigned for negative impacts, features, or high costs. This process resulted in three scores for each alignment and transit-type. There is no “total” score, as the overall suitability and performance depends on each corridor’s context. Some options demonstrate stronger transit service performance based on segment length, higher ridership potential, or better connectivity, while others face limitations related to cost, travel time, or lower transit readiness. Table 6 shows the results of the Tier 2 evaluation.

Table 6. Tier 2 Evaluation Results

Segment	Transit Mode	Transit Service		Community Development		Multimodal Connectivity	
		Score	Notes	Score	Notes	Score	Notes
1A	BRT-Lite	Low	Segment length increases cost; Low frequency	Low	Low redevelopment potential	Low	Few crash locations improved
1B	BRT-Lite	Low	Segment length increases cost; Low frequency	Low	Low redevelopment potential	Low	Few crash locations improved
1C	BRT-Lite	Medium	Relatively shorter than A or B, reducing overall cost; Low frequency	Low	Low redevelopment potential	Low	Few crash locations improved
1C	BRT	Low	BRT comes with increased cost	Low	Low redevelopment potential	Medium	More safety improvements than other segment 1 interventions
2A	BRT-Lite	Medium	High capital cost due to length of route	Medium	Moderate socioeconomic impact	Medium	Few crash locations improved
2B	BRT-Lite	High	Lower cost reflective of shorter segment	Medium	High impact on zero vehicle households	Low	Few crash locations improved
2B	BRT	High	Lower cost reflective of shorter segment; BRT service is high quality	Medium	High impact on zero vehicle households	Medium	BRT has high safety opportunities, but trade off of impact on roadway network
3A	BRT	High	Lower cost reflective of shorter segment; BRT service is high quality	Medium	Downtown segment=more potential for growth	Medium	BRT has high safety opportunities, but trade off of impact on roadway network
3B	BRT-Lite	High	Lower cost reflective of shorter segment	High	High transit readiness and socioeconomic impact	Medium	Few crash locations improved
3B	BRT	High	Lower cost reflective of shorter segment; BRT service is high quality	Medium	Low redevelopment potential	Medium	BRT has high safety opportunities, but trade off of impact on roadway network



Segment	Transit Mode	Transit Service		Community Development		Multimodal Connectivity	
		Score	Notes	Score	Notes	Score	Notes
4A	BRT-Lite	Medium	Low headways	High	High transit readiness and socioeconomic impact	High	High transit opportunity served and 13 crash locations with fatalities impacted
4A	BRT	High	BRT has better headways	High	High transit readiness and socioeconomic impact	High	BRT scores well on roadway impacts
4B	BRT-Lite	Medium		Medium	Low redevelopment potential	Medium	Low transit connectivity and moderate opportunity
5A	BRT-Lite	Low	Long travel time to activity centers, low frequency service	Medium	Low impact on poverty and low redevelopment potential	Medium	Low transit connectivity and moderate opportunity
5A	BRT	Medium	Higher frequency counters travel times	Low	Highest growth in suburban area required	Medium	Low transit connectivity and opportunity Dedicated Transit ROW increases score
5B	BRT-Lite	Low	Long travel time to activity centers, low frequency service	Medium	Low impact on poverty and low redevelopment potential	Low	Low transit connectivity and moderate opportunity



4.5.1.3 Tier 2 Evaluation Results

The Recommended Vision would connect the Village West Transit Center in Kansas City, Kansas with the Independence Transit Center in Independence, Missouri through improved BRT and BRT-Lite service. The recommended route follows an alignment similar to the existing KCATA routes 24 Independence and 101 State Avenue.

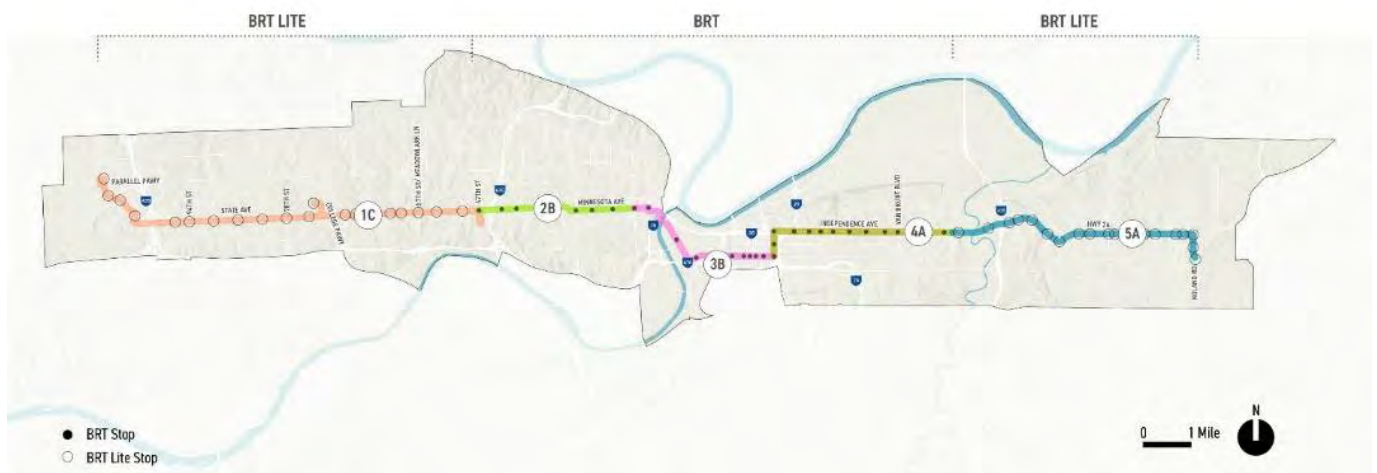
The Recommended Vision includes the following alignments and service types:

- Segment 1C BRT-Lite
- Segment 2B BRT
- Segment 3B BRT
- Segment 4A BRT
- Segment 5A BRT-Lite

BRT-Lite is recommended for Segments 1 and 5, where conditions support improved transit service but do not warrant the higher level of investment associated with full BRT. In these segments, BRT-Lite would provide more frequent, reliable service, TSP, and enhanced bus stops while maintaining flexibility within the existing roadway context.

Full BRT is recommended for Segments 2, 3, and 4, where stronger ridership potential, higher transit readiness, and greater opportunities to improve safety and connectivity support a higher level of investment. These segments would benefit from more frequent service, dedicated transit lanes, and improved travel time reliability. Exhibit 10 depicts the Recommended Vision.

Exhibit 10. Recommended Vision



5 Recommended Vision

5.1 Recommended Vision Overview

The Recommended Vision involves development of an integrated, multimodal transportation and infrastructure program that enhances transit service, pedestrian and bicycle connectivity, and related corridor improvements linking major employment, education, and healthcare centers, neighborhoods, and institutions in KCK, KCMO, and Independence, MO. Notably, the Recommended Vision would link areas like the Village West entertainment and retail district in western Wyandotte County, the urban core of Kansas City, and historic Independence Square. In doing so, transit and land use investments can connect under-invested areas with centers of opportunity. The BSRC would also address critical safety, mobility, economic, and infrastructure challenges within the Kansas City metropolitan region. Individuals traveling on foot or by bicycle face heightened risks due to insufficient infrastructure, underscoring the need for safer multimodal transportation options and enhanced traffic safety measures.

As part of the Phase 2 Study, the project team developed conceptual designs for the Recommended Vision. The Recommended Vision replaces the existing Routes 24 Independence and 101 State Avenue, effectively merging these services into a single route and a major expansion of service. Both routes serve as a “spine” corridor within their respective areas and demonstrate existing and potential ridership demand that warrant major upgrades to service and infrastructure. This is particularly true on Route 24 Independence, which is currently the most productive route in KCATA’s network on a riders per service hour basis.

The following exhibits illustrate the Recommended Vision along each of the five segments. The endpoint of each segment coincides with an existing or proposed transit center or terminus location which would allow for the phased implementation of service improvements. The corridor includes a total of 213 existing bus stops. The Project would include a total of 97 on-street BRT stations and four off-street stops at existing or future transit centers in the corridor.

Exhibit 11. Segment 1 - Recommended Alignment and Proposed Bus Stop Locations



Exhibit 12. Segment 2 - Recommended Alignment and Proposed Bus Stop Locations

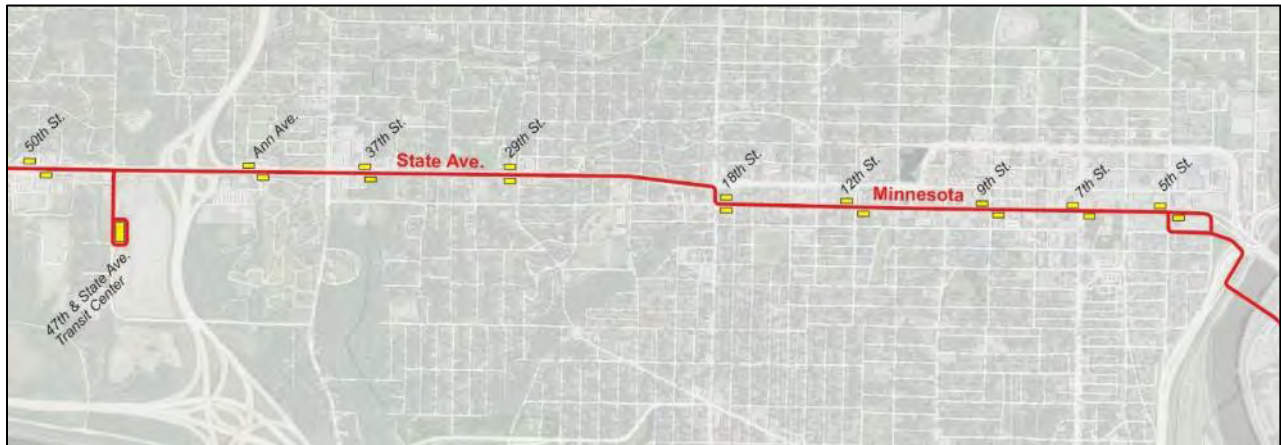


Exhibit 13. Segment 3 - Recommended Alignment and Proposed Bus Stop Locations

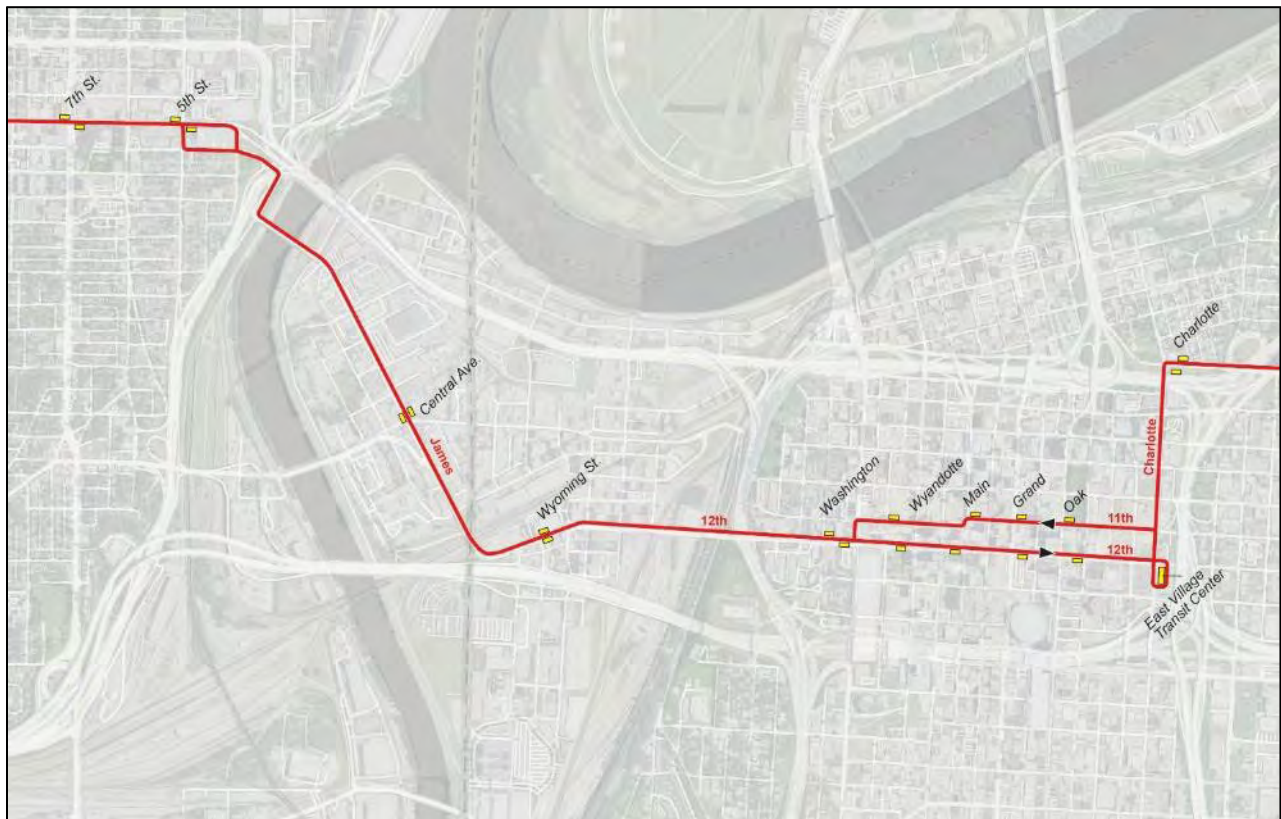


Exhibit 14. Segment 4 - Recommended Alignment and Proposed Bus Stop Locations

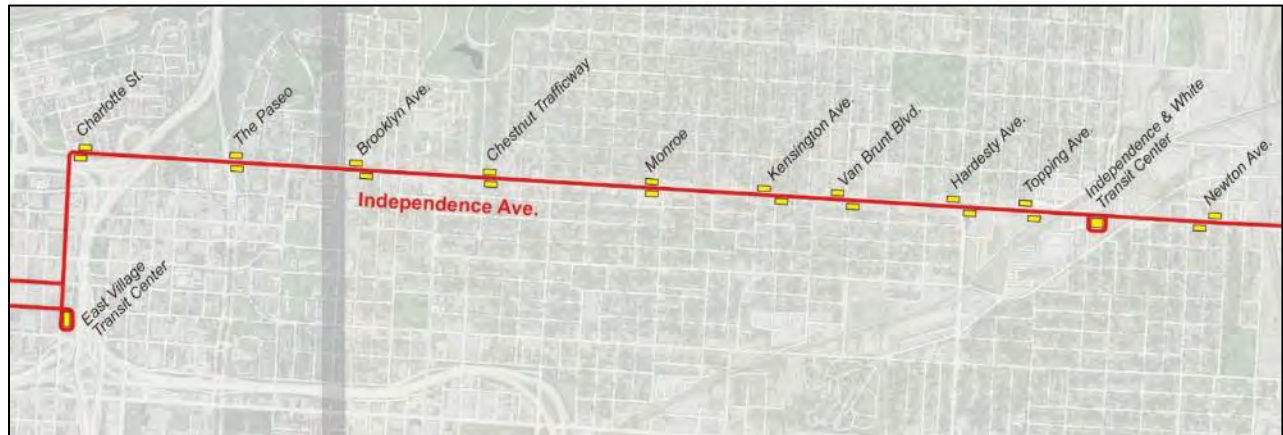
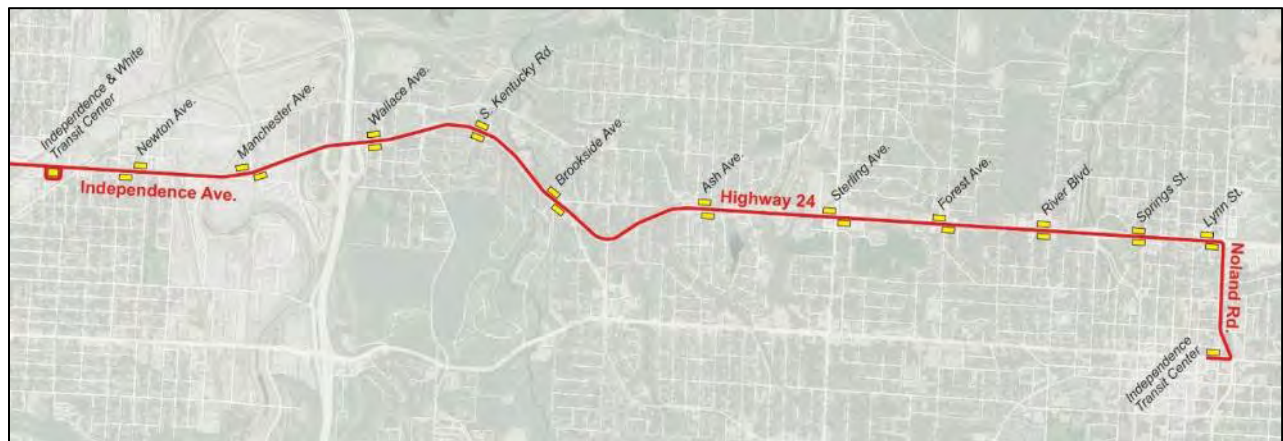


Exhibit 15. Segment 5 - Recommended Alignment and Proposed Bus Stop Locations



5.2 Vision Elements

5.2.1 BRT and BRT-Lite Service

The Recommended Vision is to implement a combination BRT and BRT-Lite route approximately 24 miles long. This modern transit line would stretch from the Village West area in western KCK to the Independence Transit Center in eastern Independence, Missouri, largely following State Avenue on the Kansas side and Independence Avenue (US-24) on the Missouri side.

Buses would run as often as every 10 minutes in core segments, with priority lanes or dedicated right-of-way where feasible to bypass traffic delays. This is a dramatic improvement over current bus options – today a trip from one end of the corridor to the other can take well over 2½ hours, an untenable commute that the BRT line will shorten considerably.



High-demand, dense segments (e.g., central Kansas City, KS, Downtown Kansas City, MO, and Independence Avenue) are slated for full BRT service with sizable bus stops, all-door boarding, and other enhancements. Less dense stretches at the far west and east ends would use BRT-Lite, similar to Kansas City's existing MAX lines, that still features branded buses, upgraded stops, and 10–30 minute frequencies. This configuration balances speed and coverage by providing express service where ridership is highest, and slightly slower service with more stops in outlying areas so that smaller communities like western KCK and Sugar Creek/Independence remain included.

BRT service may require full roadway reconstruction to accommodate dedicated BRT bus lanes except in specific areas where geometric or other feasibility constraints are identified. Typically, dedicated BRT lanes are visually distinguished with red paint. Other components include the addition of dedicated bicycle lanes where sufficient right-of-way is available (Minnesota Avenue), and preservation and improvement of existing bicycle lanes (Charlotte Street). Pedestrian crossing improvements would be implemented at intersections.

BRT-Lite segments would not require full roadway reconstruction. Work is anticipated to primarily be limited to roadway re-striping and existing cross-sections would generally be maintained. Where feasible, shared use paths would be constructed on both sides of the roadway and connect to all bus stops. Select intersection improvements, such as bump outs to improve pedestrian safety would be constructed (e.g., intersection of State Avenue and 78th Street).

5.2.2 BRT Stops

Due to the nature of BRT and BRT-Lite service, notably the emphasis on travel speed and reliability, stops are spaced further apart than typical “local” bus routes, including existing routes on the corridor. Design assumptions included a preference for stops spaced every ½-mile on average for BRT segments. Spacing of ½-mile is also desired for BRT-Lite segments but some areas may be closer to ¼-mile depending on land use context and street connectivity.

The following factors were applied to proposed stop locations:

- Existing ridership and future potential ridership;
- Development density and presence of major activity centers¹;
- Street connectivity to surrounding developments and within neighborhoods, such as at arterial and collector streets;
- Spacing between stops;

¹ For the purposes of the BSRC, a major activity center is a geographic node that generates significant travel demand due to a concentration of employment, essential services (healthcare, education, government), commercial or retail activity, transit connectivity, or civic and cultural destinations. Major activity centers identified in the corridor include Downtown Kansas City, MO; Downtown Kansas City, KS; Independence Square; the Village West district; and Kansas City Kansas Community College, among others (see Section 1.5).



- Proximity to intersection, driveways, or other traffic considerations; and,
- Locations that would best minimize the need for additional right-of-way.

Bus stop footprints were based on KCATA's Prospect MAX stops, with the notable exception of not including level boarding (per KCATA direction). These stops include a large custom-designed shelter with integrated electronic kiosks, benches, trash receptacles, and bicycle racks where appropriate.

The conceptual design for the Recommended Vision includes a total of 97 on-street BRT stops, including 48 bus stop pairs, plus one Kansas City Kansas Community College (KCKCC) stop serving both directions, and four off-street stops at existing or future transit centers. This includes stops in both the BRT and BRT-Lite segments.

5.2.3 Multi-modal Facilities

Major upgrades in infrastructure and design components are proposed to improve safety for pedestrians and bicyclists in the corridor, including those traveling to or waiting at a bus stop. These improvements are intended to go beyond basic ADA requirements, in order to maximize safety, comfort, and usability.

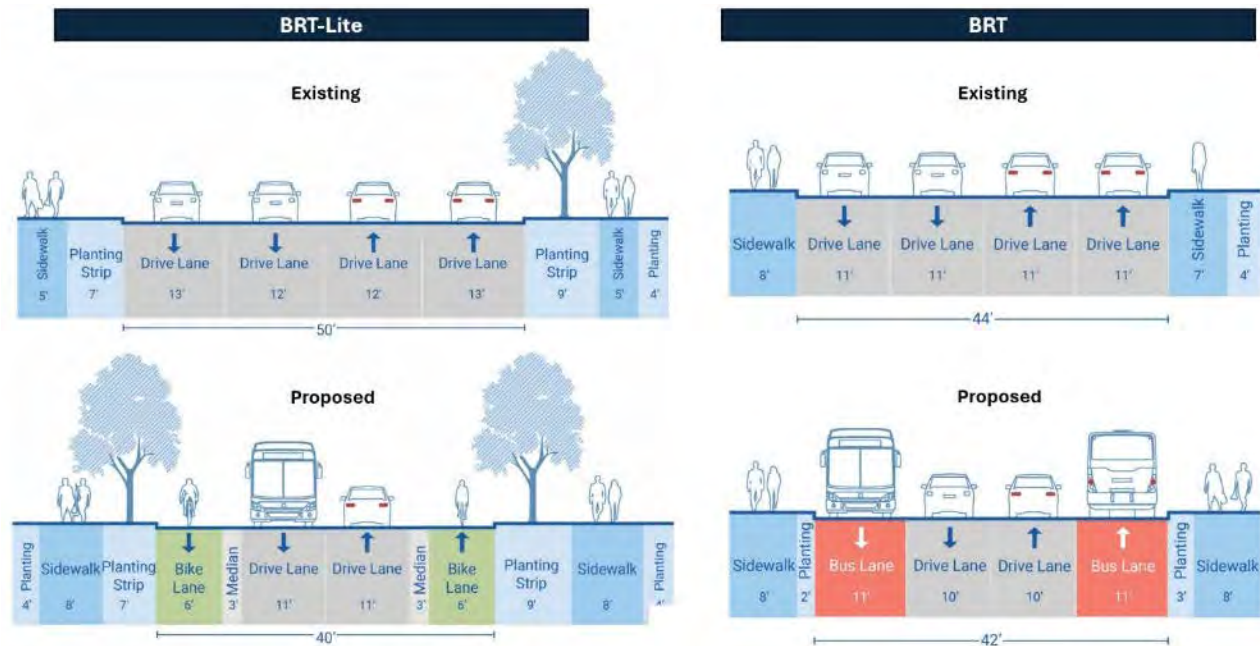
Proposed elements include:

- A shared-use path at least 10 feet wide along the corridor on both sides of the street (except in rare cases where both sides cannot be accommodated).
- Narrower travel lanes to reduce the overall width of the street, reduce the distance required to cross the street, and provide more space for an adequate shared-use path. Lanes are recommended at 10 feet for general traffic and 11 feet for bus lanes.
- Ample crossing opportunities such as enhanced crosswalks with improved signage, striping, and pedestrian signals.
- Addition of signalized intersections at 12th Street and Liberty Street and at Independence Avenue and White Avenue for pedestrian and vehicular safety.
- Bike lanes where accessibility is feasible. Bike lanes are recommended for sections of Minnesota Avenue in Kansas City, KS and Charlotte Street in Kansas City, MO. These bike lanes are five feet or six feet in width depending on context. Additionally, plans for 11th and 12th Streets in downtown Kansas City, MO carry forward recommendations of the 11th and 12th Complete Streets Connections Plan completed by the City in 2022. This includes a two-way cycle track on the north side of 12th Street.

Exhibit 16 shows the proposed typical sections (i.e., roadway cross-sections), including multimodal improvements for both BRT and BRT-Lite service.



Exhibit 16. Proposed Typical Sections



Note: Proposed BRT includes dedicated bicycle lanes where sufficient right-of-way is available and preservation and improvement of existing bicycle lanes.

5.2.4 Parking

It is anticipated that implementation of the Recommend Vision would require converting the existing angled parking on Minnesota Avenue, 17th Street and 6th Street to parallel parking, resulting in a reduction in the total number of parking spaces on the corridor. A preliminary review of parking conditions on the corridor indicates that this change is not anticipated to cause parking shortages along Minnesota Avenue. Existing parallel parking along 11th Street and 12th Street is not anticipated to be impacted. A parking study would be completed as the design develops to further assess parking impacts resulting from the Recommended Vision.

5.3 Transit Service Improvements

5.3.1 Travel Time Savings

BRT and BRT-Lite services are anticipated to improve travel time and schedule reliability. In addition to improving passenger satisfaction and increasing ridership potential, these features can help lower operating costs as fewer buses and drivers can provide the same number of trips. These features include:

- Dedicated bus lanes (BRT segments only) that reduce bus conflicts with general traffic;

- TSP at signalized intersections along the corridor that can improve schedule reliability by extending green lights or providing an early green light to allow for buses to clear the intersection with less delay. Existing RideKC Streetcar and MAX routes have deployed TSP to improve reliability; and,
- Larger stop spacing allows the bus to make fewer stops, thus improving overall travel speed from end to end. This has also been a feature of existing KCATA MAX routes.

Table 7 and Table 8 summarize travel time for the existing condition and Recommended Vision. As shown, the Recommended Vision is anticipated to result in a corridor-wide travel time savings of 42 to 46 minutes.

Table 7. Existing Conditions - Service Travel Time

	Wkd	Sat	Sun	Wkd	Sat	Sun	
24 Independence (within KCMO)	20	20	30	19	18	17	28-30 min.
24 Independence (to Independence)	60	60	--	16	15	--	18-20 min.
101 State Avenue (east of 47 th St)	30	60	60	18	12	10	31-37 min.
101 State Avenue (west of 47 th St)	30	60	60	18	12	10	29-33 min.
Total							

* Note: substantial alignment change from existing service

^ Total route times include 10-minute layover at EVTC (Existing: layover+transfer. Planned: layover only)

Table 8. Recommended Vision - Service Travel Time

Route	Headways (min)			Span (hr)			Travel Time
	Wkd	Sat	Sun	Wkd	Sat	Sun	
New MAX BRT (within KCMO)	10	10	15	20	19	18	10-11 min.*
New MAX BRT-Lite (to Independence)	20	20	30	20	19	18	12-15 min.*
New MAX BRT (east of 47 th St)	10	10	15	20	19	18	18-21 min.
New MAX BRT-Lite (west of 47 th St)	20	20	30	20	19	18	24-27 min.
Total							78-80 min.^

* Note: substantial alignment change from existing service

^ Total route times include 10-minute layover at EVTC (Existing: layover+transfer. Planned: layover only)



5.3.2 Service Capacity Improvements

The Recommended Vision will substantially increase the overall capacity along the proposed BSRC, as shown in Table 9. The overall increase in service capacity, as measured by the number of seats on buses per day, ranges from 167 percent to 375 percent depending on segment. The largest increase in capacity will occur in Independence, which will increase from 640 seats per day to 2,400 seats per day.

Table 9. Service Capacity

Route	Existing Conditions		Recommended Vision		Capacity Increase (%)
	Buses per day	Seats per day	Buses per day	Seats per day	
KCMO: East Village to Winner Rd.	57	2,280	120	4,800	211%
Independence: Winner Rd. to Independence Transit Center	16	640	60	2,400	375%
KCK: 47 th St. to East Village Transit Center	36	1,440	120	4,800	333%
KCK: Village West to 47 th St.	36	1,440	60	2,400	167%

6 Affected Environment, Potential Impacts, and Mitigation Strategies

6.1 Methodology

Available geospatial data, aerial photography, and other desktop resources, such as local and regional planning documents, were utilized to evaluate the “affected environment” (existing environmental conditions within the Study Area) and potential impacts. Table 10 summarizes the affected environment, anticipated permanent and temporary impacts, and anticipated next steps as part of future NEPA environmental review processes. It is anticipated that work would largely occur between the existing road edges. Project disturbance limits and associated impacts will be refined as part of future NEPA studies.

6.2 Recommended Vision Study Area

Proposed improvements are expected to occur within the existing ROW with minimal to no impacts to abutting and adjacent properties and resources. At three locations, properties outside of the existing ROW would be impacted, which include:

- Proposed layover area at Independence Avenue and Winner Road;
- Proposed layover area at Independence Avenue and White Avenue; and,
- Proposed BRT bus stop at Wyoming Street and 12th Street.



Potential impacts identified in Table 11 are based on a 25-foot buffer from the proposed edge of pavement, including the existing road edge and proposed shared-use path to evaluate a conservative footprint that would account for potential future improvements. This area is termed “Study Area” or “BSRC corridor” for the purposes of the impact assessment discussion. Corresponding figures for each environmental resource are contained in Appendix A.



Table 10. Summary of Affected Environment Evaluation, Potential Impacts, and Next Steps for NEPA Study

Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
Land Use	Land use within the Recommended Vision Study Area is analogous to adjacent land use in the broader Kansas City metropolitan region, extending from near the edge of urban development in Wyandotte County to downtown Independence, MO. Land uses vary throughout the route length as described in the following paragraphs. Figures 2a-d, Appendix A illustrate existing land uses.	<u>Permanent Impacts</u>	A review of existing and future land use, zoning, and major development projects will be conducted to make sure the Recommended Vision still meets community needs.. Documenting these changes will be crucial for implementation as it helps determine if the BSRC's preliminary Purpose and Need Statement is still accurate and applicable.
	Commercial activity surrounds the BSRC; major nodes are present at each end of the corridor and in intermediate locations in downtown KCMO and KCK. Industrial development is concentrated on the Kansas River west of Downtown Kansas City, MO, and along the Blue River. Office development is most concentrated in downtown KCMO, with intermediate nodes near the I-635 corridor and near the western Project terminus. Residential land uses surround the Study Area throughout its length, with the greatest population densities in downtown KCMO, in neighborhoods in eastern KCMO, and in central KCK.	The Recommended Vision encourages and supports increased land use intensities throughout the corridor, particularly in the eastern portion. While existing policy in KCMO and Wyandotte County are largely consistent with the BSRC reinvestment goals, the communities of Independence, Sugar Creek, and Jackson County, MO are in the process of modifying land use policies to be more transit supportive and adding tools to improve access to affordable housing near stops. In the event of successful policy implementation, communities may change planned land use to adapt to future changes and growth.	
	Regional employment centers are present throughout the corridor, as it connects the emerging employment center at Village West with established centers in the downtowns of Kansas City, KS and MO. Another regional job center is present to the north of the corridor, along the southern bank of the Missouri River in Kansas City, MO. Future land uses are generally consistent with existing uses, with an emphasis on increasing intensity, diversity, and transit accessibility of existing land uses throughout the corridor, especially in central KCK. KCMO is planning the expansion of industrial areas near the Blue River and Missouri River, possibly creating future job centers.	<u>Temporary Impacts</u> No temporary impacts are anticipated to this resource in the event of the implementation of the BSRC plan, due to the use of existing operational ROW.	
Socioeconomic	The corridor has a younger median age (36.2 years), lower median household income (\$54,000), and a lower homeownership percentage (48%) than the metropolitan Kansas City population at large. It is further subdivided into areas characterized by suburban/exurban development, industrial uses, urban core, and other classifications. Among these areas, each see a variety of socioeconomic outcomes.	<u>Permanent Impacts</u>	A review of updated socioeconomic information is recommended but is not a NEPA requirement for a Categorical Exclusion (CE). It will be important to identify and understand potential impacts to the communities within and adjacent to the Project location.
	Suburban/exurban Suburban and exurban areas are generally higher income, have lower crime rates, higher internet access, and better access to healthcare. These communities have access to food, but it is often inaccessible by modes other than driving.	The proposed improvements would increase access throughout the corridor, smoothing geographic disparities in access to jobs, food, healthcare, and opportunity, which would have a positive effect on socioeconomic outcomes.	
	Urban core The urban core presents the highest economic opportunity, high internet access, access to groceries, civic services, and healthcare. This category	<u>Temporary Impacts</u> Construction impacts would temporarily impede access and mobility throughout the corridor, adversely impacting communities adjacent to the corridor.	



Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
Transportation	includes areas of historic disinvestment that experience high crime, pollution, and low homeownership, accompanied by higher health disparities, and lower economic opportunity.		
	The Recommended Vision is located primarily on State Avenue, W/E 12th Street, and Independence Avenue/US 24. The Study Area contains varying levels of connectivity, infrastructure quality, and safety; connectivity generally decreases further from the urban core; pavement and bridge quality is generally higher on the Kansas side of the Study Area; high volume arterials are located across the BSRC. Transit Transit service in the corridor is operated by a mix of KCATA and Unified Government Transit (UGT) service under the unified RideKC brand. The corridor is primarily served by two separate routes: Route 101 operates on State Street and 12th Street between Village West Transit Center and East Village Transit Center; Route 24 operates partially along Independence Avenue between Independence Transit Center and East Village Transit Center. Other services operating within the 12th Street corridor in downtown KCMO include Routes 9, 106, and 103. The Project area connects to six transit centers: Village West, KCKCC, 47th & State Avenue, 7th and Minnesota, East Village, and Independence. Connecting routes include Routes 113, 116, 118, 102, 103, 107, 106, 9, 210, 25, 28, 11, 21, 12, Wyandotte County Microtransit (199), Prospect MAX, Troost MAX, and the Kansas City Streetcar. Current transit ridership is most concentrated in downtown KCMO, with neighborhoods to the east, downtown KCK, and Independence also having relatively higher ridership numbers. Despite significant ridership decreases during the COVID-19 pandemic, ridership on both existing routes is higher than pre-pandemic levels. Bicycle Most bike infrastructure is found in the cores of KCMO, KCK and Independence, with a network of greenways and dedicated pathways in the vicinity of all three cores. A limited bike lane network is also present on major thoroughfares in eastern KCMO. Regional plans include a bike route network that covers much of Wyandotte County along and parallel to the BSRC with improved connectivity between KCMO and Independence. Micromobility Bikeshare and scootershare are operated by RideKC, with docking and mobility hubs located throughout downtown Kansas City, MO, and to the north and south of the Project area. RideKC services are less accessible in the eastern portion of the Project area, with no docks to the east of Gladstone Blvd. Only one RideKC dock is present in Kansas, near downtown Kansas City, KS. While Lime scootershare has a presence in the Study Area, it is restricted by regulations, a lack of formal contract, and geofencing.	<u>Permanent Impacts</u> The Recommended Vision would improve regional transit services, with opportunities for improved bike and pedestrian movement across the corridor. Improved and modified transit would increase crosstown connectivity and lower travel times. BRT and BRT-lite improvements, such as bus lanes or queue jumps, may impact auto and truck freight traffic but are not expected to have a notable effect on traffic conditions. <u>Temporary Impacts</u> Construction would involve the disturbance of existing roadways and pedestrian infrastructure. This may negatively impact travel times by all modes of road transportation during construction, warranting detours and shifting congestion patterns. Rail movement would not be impacted by construction.	Further study of transportation impacts should include further refinement of project elements in consideration of evolving conditions within the Study Area to maintain consistency with BSRC goals and the project Purpose and Need Statement. Because this Project crosses other transportation resources including railroads and federal and state highways, studies and coordination with owners of these resources may be required. Owners include KDOT, MoDOT, Union Pacific Railroad, Canadian Pacific Kansas City (CPKC) Railroad, Kansas City Terminal Railroad, Burlington Northern Santa Fe (BNSF) Railroad, and other operators. Additionally, traffic and operations analyses will be completed and considered in future studies. This includes studies for both the proposed build year and Project horizon year. Traffic and operations analysis should include all impacted modes: such as auto, bike, transit, pedestrian, and road freight.



Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
Air Quality	Pedestrian Pedestrian infrastructure varies in accessibility and quality throughout the Study Area. On major roads, pedestrian infrastructure quality is generally the highest in downtown Kansas City, MO, to the east of downtown Kansas City, MO, near downtown Independence, and across several segments in Wyandotte County. Intersection density, which approximates to pedestrian network connectivity, shows the most connectivity in downtown Kansas City, MO and KS, and neighborhoods to the east of Downtown Kansas City, MO. Areas with the most limited connectivity are located in the far western and eastern portions of the Project area, and near industrial sites on the Missouri, Kansas, and Blue Rivers.		
	Auto The Study Area is highly accessible by car, with a network composed of Interstate highways, divided highways, and other arterials. The Study Area features several corridors operating under capacity, including State Avenue, which is under capacity for nearly its entire length, and, to a lesser extent, Independence Avenue. This provides opportunities for lane reductions to enable bus lane implementation or queue jumps along much of the Recommended Vision. Travel time and congestion risks are present in downtown KCMO, as well as along Independence Avenue in KCMO, Sugar Creek, and Independence, State Avenue in downtown KCK, the exit of I-635 at State Avenue, and at other busy intersections in the Study Area. Both fatal and serious injury crashes have occurred in the Study Area; most concentrated in eastern KCMO, and in parts of KCK and Independence. Notably, 23rd Street S has a relatively high number of fatalities, and the West Bottoms/Central Industrial District areas have a higher rate of fatal crashes compared to injury crashes.		
	Freight The region is a major freight and logistics hub, with railroad and highway freight using and crossing much of the Study Area. Rail crossings are largely grade-separated, with no conflicts with the Recommended Vision. Because much of State Avenue and Independence Avenue operate as wide, arterial roadways, much of the corridor is located on truck routes. The BSRC is also adjacent to major freight and logistics hubs, such as industrial sites and train yards.		
Air Quality	Improvements in the BSRC corridor fall within a sulfur dioxide (SO2) nonattainment area for Jackson County, Missouri (SO2.2010.Kansas_City). The nonattainment area within the BSRC is bounded by the Missouri-Kansas border to the west, the Missouri River to the north, I-435 to the east, and I-70 to the south, falling entirely within KCMO.	<u>Permanent Impacts</u>	Federal funding can only be used for Projects that comply with the conformity provision of the Clean Air Act and the US Environmental Protection Agency (EPA) transportation air quality conformity regulations (40 CFR Subpart T, and 40 CFR 93, Subpart A). The Project must be included in a conforming Transportation Improvement Plan (TIP) and Regional Transportation Plan (RTP). The Project design concept must be
		<u>Temporary Impacts</u>	



Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
		Areas neighboring construction activities could be exposed to heightened levels of dust and vehicle emissions, due to construction.	sufficiently defined to determine emissions at the time of the conformity determination. Because the BSRC is partially located in a nonattainment zone for SO2, an analysis of Project SO2 emissions should be conducted. Intersections operating at service level D or below require “Hot Spot Modeling” for pollutants, particularly coarse particulate matter (PM10) and Carbon Monoxide (CO). Construction of bus lanes may meet one of the four criteria established by the conformity rule, requiring analysis for MSATs, PM10, PM2.5 or CO. While unlikely, a PM10 or fine particulate matter (PM2.5) analysis could also be required if the BSRC is considered a significant increase in diesel-fueled vehicle volumes. If elements of the Recommended Vision are to be evaluated as an Environmental Assessment (EA), air quality analyses may need to include Mobile Source Air Toxics (MSAT). Under these conditions, a greenhouse gas analysis would also be recommended.
Traffic Noise	Noise sensitive areas near the proposed improvements include residential areas, places of worship, schools, nursing homes, libraries, theaters, hotels, parks, and cemeteries. A review of the USDOT National Transportation Noise Map shows elevated noise levels in the study corridor, south of Kansas City Downtown Airport (MKC), varying between 69.9 and 45.0 dBA. Impacts are in Downtown and West Bottoms in KCMO, and Central Industrial District and Strawberry Hill in KCK. Affected areas are near the FTA criteria threshold for noise impacts due to existing noise conditions and should be considered noise sensitive.	<u>Permanent Impacts</u> Traffic noise impacts as a result of the BSRC will need to be assessed during the NEPA study. Substantial noise impacts are unlikely. <u>Temporary Impacts</u> Areas adjacent to the proposed BSRC are likely to be impacted by construction-borne noise impacts.	As a transit project without a significant highway component, only FTA noise criteria apply to this project. A determination of the level of analysis required for NEPA study must be made. This is performed via an initial Noise Screening and General Noise Assessment. In the event of sufficient numbers of noise impacts or presence of sensitive receivers, a Detailed Noise Analysis may be required.
Water Quality	The Study Area includes portions of impaired waterbodies, including the Kansas River, which is on the Kansas 303(d) List of Impaired Waters, and the Blue River and Rock Creek, which are on the Missouri 303(d) List of Impaired Waters. All three waterbodies are listed as impaired due to their levels of <i>Escherichia coli</i> bacteria. The Kansas River is also listed as impaired due to biology, biology-sediment, and total phosphorous levels.	<u>Permanent Impacts</u> Although a small increase in impervious surface may occur, the proposed improvements will largely occur in areas currently covered with impermeable surfaces and are not expected to have permanent impacts to water quality. BSRC operations are not expected to produce pollutants that would result in a violation of water quality standards. <u>Temporary Impacts</u> Construction of the proposed improvements may cause soil erosion and sedimentation of surface water; if more than one acre is disturbed, the construction activities will require a National Pollutant Discharge Elimination (NPDES) permit and an associated Stormwater Pollution	If Section 404 permits are required from the U.S. Army Corps of Engineers (USACE), associated 401 Water Quality Certifications will be required from the Kansas Department of Health and Environment (KDHE) and the Missouri Department of Natural Resources. Certifications involving 303(d) waters may have additional conditions. Stormwater runoff from construction areas > 1 acre will require NPDES Permits and associated SWPPP from KDHE and the Missouri Department of Natural Resources. 303(d) waters might have additional discharge restrictions outlined in the SWPPP. In addition, BSRC operations should comply with the terms



Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
		Prevention Plan (SWPPP) which will provide best management practices (BMPs), including sediment and erosion control practices, to prevent potential construction pollutants from impacting stormwater. With these best management practices in place, the proposed improvements are not expected to have temporary impacts on water quality.	of the Municipal Separate Storm Sewer System (MS4) permits for KCK, and Kansas City, Sugar Creek, and Independence, Missouri.
Wetland/ Waterbodies	The Study Area is divided by the Missouri River watershed and the Kansas River watershed. The 16 stream segments located throughout the Study Area total approximately 2,804.41 linear feet in length; these waterways include Mill Creek, Muncie Creek, Brenner Heights Creek, the Kansas River, the Blue River, Rock Creek, and Sugar Creek. The Kansas River and the Blue River are Section 10 Navigable Waters of the United States. Many of these streams have associated riverine wetlands, totaling 2.49 acres within the Study Area, which also contains 0.05-acre of freshwater emergent wetland and 0.32-acre of freshwater forested/shrub wetland, both adjacent to Sugar Creek. The Study Area overlaps with 0.09-acre of freshwater ponds. The Study Area’s water features are shown in Figures 4a-d in Appendix A.	<u>Permanent Impacts</u> As currently proposed, no dredge or fill of potentially jurisdictional wetlands or waterbodies is anticipated, and the proposed improvements are not expected to result in permanent impacts on wetlands or waterbodies.	Conduct a wetlands and waterbodies delineation to inform Project design; if impacts to jurisdictional wetlands and waterbodies are unavoidable, Section 404 permits may be required from USACE.
		<u>Temporary Impacts</u> Earth disturbing activities as part of construction may cause soil erosion and sedimentation of surface waters. Construction activities associated with the proposed improvements will likely require an NPDES permit and an associated SWPPP which will provide best management practices, including sediment and erosion control practices, to prevent pollutants from impacting stormwater during construction. With these best management practices in place, the proposed improvements are not expected to have temporary impacts on wetlands and waterbodies.	
Floodplain	As shown in Figures 5a-d in Appendix A, the Study Area contains 6.6 acres of 100-year floodplain, 7.2 acres of 500-year floodplain, and 4.4 acres of floodway, all associated with major drainages.	<u>Permanent Impacts</u> As currently proposed, new bus stop shelters and stops will not be constructed within the 100-year floodplain. Transit improvements, road reconstruction, sidewalk improvements, and shared use path development may occur within the 100-year floodplain and cause permanent impacts, although significant impacts to the floodplain are not anticipated.	Placement of fill material or excavation within a 100-year floodplain may require a Floodplain Development Permit from the Kansas Department of Agriculture - Division of Water Resources and the Missouri Department of Public Safety.
		<u>Temporary Impacts</u> The Project is not expected to temporarily impact the 100-year floodplain beyond the potential permanent impacts described.	



Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
Biological Resources	Disturbance-tolerant urban wildlife species, such as raccoons (<i>Procyon lotor</i>), eastern gray squirrels (<i>Sciurus carolinensis</i>), and coyotes (<i>Canis latrans</i>), as well as raptors, pigeons, and other common urban bird species, are expected to be present within the Study Area.		
	The U.S. Fish and Wildlife Service (USFWS) IPaC Resources List (provided in Appendix B) indicated that the Study Area is within the ranges of three federally endangered bat species, one federally endangered fish, a proposed endangered bat species, and two proposed threatened butterfly species. Additionally, the Study Area is within the range of the federally protected bald eagle and sixteen additional migratory birds. No USFWS-designated critical habitat is present within the Study Area.	<u>Permanent Impacts</u> The proposed improvements may require permanent tree clearing, potentially removing habitat for the federally listed bat species, federally protected migratory birds, and more common urban wildlife species. Converting existing areas of herbaceous vegetation to developed land cover may permanently remove monarch butterfly habitat, although these areas are likely cool-season lawn grasses and are therefore not high-quality habitat.	
	The Kansas Department of Wildlife and Parks (KDWP) County List of threatened and endangered (T/E) species (Appendix B) identified twelve state-listed threatened and endangered (T/E) species with the potential to occur in Wyandotte County. The Study Area crosses the Kansas River, which is KDWP-designated critical habitat for four fish species and two bird species.	Because of the water resources best management practices discussed above, no permanent Project impacts to water resources, including aquatic species, are anticipated.	Further desktop and field analysis of potential habitat for T/E species may be needed. Once Project design is more advanced, coordination with USFWS could begin with an official species list request.
	The Missouri Natural Heritage Program County List of T/E species (Appendix B) identified two state-listed fish species with the potential to occur in Jackson County. Missouri does not designate critical habitat for state-listed species.	<u>Temporary Impacts</u> Construction activities for the proposed improvements may temporarily increase noise, light, and human activity within the Study Area, potentially disturbing wildlife. Because the Study Area is largely developed land with high baseline levels of noise, light, and human activity, these temporary impacts are expected to be less than significant.	The Project may also be submitted to the KDWP and the Missouri Department of Conservation (MDC) for T/E review and potential clearance.
Archaeological Resources	Although land cover in the Study Area is largely developed, portions of the Study Area along State Avenue are bordered by patches of deciduous forest that may provide suitable foraging or roosting habitat for the federally listed and proposed bat species, federally protected migratory birds, and more common urban wildlife species. Developed Open Space and Pasture/Hay land cover may provide suitable habitat for the monarch butterfly if native flowering plants are present. Suitable habitat for the western regal fritillary (native grasslands and prairies) is not present in or near the Study Area. The locations of proposed bus stops are currently paved and developed areas that do not provide suitable wildlife habitat.	Because of the water resource best management practices discussed above, no temporary impacts from construction activities to water resources, including aquatic species, are anticipated.	
	A cultural resources review of the Kansas Historical Society (KSHS) Archaeological Inventory and the Missouri Department of Natural Resource (MoDNR) online archaeological sites database Archaeology Viewer was performed for previous archaeological surveys as well as known archaeological sites, cemeteries and burial sites, and other cultural resources within the Study Area. The National Register of Historic Places (NRHP) database for NRHP-listed properties within the Cultural Resources Study Area was also reviewed. This review identified 13 previous archaeological surveys were identified in Kansas and 67 previous archaeological surveys were identified in Missouri. No previously recorded archaeological sites were identified in Kansas. Three previously recorded archaeological sites were	<u>Permanent Impacts</u> The BSRC has a low potential to impact three previously recorded archaeological sites in Missouri as well as unrecorded archaeological sites. The nature and extent of these impacts is currently unknown. <u>Temporary Impacts</u> See above.	When future federal undertakings are identified, the lead federal agency will comply with Section 106 of the National Historic Preservation Act (NHPA). As part of the initiation of Section 106 consultation, an Area of Potential Effects (APE) will be defined and a list of potential consulting parties and Tribes needs to be developed or refined in coordination with the State Historic Preservation Office (SHPO). Once the APE has been defined, additional archaeological fieldwork may be needed depending on the potential to impact archaeological sites. This additional fieldwork is likely to



Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
	identified in Missouri. Appendix C provides a memorandum summarizing the desktop cultural resources review.		involve the re-survey of previously recorded sites and the identification of newly recorded sites that may be eligible for listing in the NRHP. Once field work has been completed, surveyed sites would be evaluated for NRHP eligibility and assessed for possible effects. Results would be presented in a report prepared by Secretary of the Interior (SOI) qualified archaeologist and submitted to the SHPO for review and comment. If the Section 106 process results in an adverse effect to historic properties (including archaeological sites), the negotiation of appropriate mitigation and the execution of an agreement document would be necessary.
Architectural/ Historic Resources	Stantec performed a cultural resources review of the Kansas Historic Resources Inventory (KHRI) and the MoDNR Historic Districts and Sites Map Viewer for previous above-ground surveys as well as previously recorded above-ground properties and within the Cultural Resources Study Area. Stantec also reviewed the NRHP databased for NRHP-listed properties within or partially within the Cultural Resources Study Area. This review identified the following: six previous above-ground surveys were identified in Kansas, and 15 previous above-ground surveys were identified in Missouri. Additionally, 284 previously recorded above-ground properties were identified in Kansas and no previously recorded above-ground properties were identified in Missouri. Eight NRHP-listed historic properties were identified in Kansas, and 48 NRHP-listed historic properties were identified in Missouri. Two NRHP-listed historic districts were identified in Kansas, and 14 NRHP-listed historic districts were identified in Missouri. Figure 7, Appendix A identifies historic sites and districts. Appendix C provides a memorandum summarizing the desktop cultural resources review.	<u>Permanent Impacts</u> The BSRC has a low potential to impact the historic integrity of previously recorded as well as unrecorded historic properties including NRHP-listed historic districts. The nature and extent of these impacts is currently unknown but is expected to be limited to indirect or visual effects. <u>Temporary Impacts</u> See above.	When future federal undertakings are identified, the lead federal agency will comply with Section 106 of the NHPA. As part of the initiation of Section 106 consultation, an APE)needs to be defined, and a list of potential consulting parties and Tribes needs to be developed or refined in coordination with the SHPO. Once the APE has been defined, additional historic architectural field work is likely to be requested to complete the identification of historic properties. This additional field work is likely to involve the re-survey of previously recorded properties and the identification of newly recorded properties that may be eligible for listing in the NRHP. As part of field work, additional archival research needs to be conducted. Once field work has been completed, surveyed properties would be evaluated for NRHP eligibility and assessed for possible effects. Results would be presented in a report prepared by SOI qualified architectural historians and historians and submitted to the SHPO for review and comment. If the Section 106 process results in an adverse effect to historic properties, the negotiation of appropriate mitigation and the execution of an agreement document would be necessary.
Section 4(f) Resources	Online geospatial data sources (WYCOKCK.org and jcgis.jacksongov.org) were reviewed to identify properties potentially subject to Section 4(f) of the U.S. Department of Transportation Act (49 U.S.C. §303 and 23 U.S.C. §138) and to evaluate potential constraints associated with the proposed construction activities. Based on this review, eleven properties potentially subject to Section 4(f) were identified and are listed below. Once construction activities are determined at each site, a more comprehensive analysis will occur. A more detailed description of each Section 4(f) property, including location and	<u>Permanent Impacts</u> Potential impacts to properties protected under Section 4(f) of the USDOT Act may occur if the Project requires the permanent incorporation of land from a protected resource into transportation ROW, which would constitute a direct use. However, additional ROW would be associated with the addition or sidewalks and bike lanes which would improve multimodal connectivity.	The Project will be designed to avoid and minimize impacts to Section 4(f) properties to the maximum extent practicable. Where avoidance is not feasible, minimization measures such as limiting ROW acquisition, maintaining access to recreational facilities, implementing temporary construction staging areas outside of sensitive areas, and providing mitigation for noise or visual impacts will be considered. Any unavoidable impacts would require coordination with the



Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
	relevant characteristics, is provided in Appendix D. Figure 8a-d, Appendix A identifies Section 4(f) and Section 6(f) resources. • Kensington Park • St. Johns Dog Park • Columbus Square Park • Belvidere Park • Kessler Park • Mulkey Square Park • Ilus W Davis Park • Independence Plaza Park • St. Clair Park • Stover Park • McCoy Park	While future coordination under Section 106 of the NHPA will influence Section 4(f) determinations, it is anticipated that there will not be any impacts that would substantially impair the activities, features, or attributes that qualify the resource for protection. <u>Temporary Impacts</u> Section 4(f) resources may be affected by construction impacts, similar to other destinations along the BSRC. Construction impacts would not obstruct access to any Section 4(f) resources.	appropriate resource agencies and coordination would follow to determine whether the Project constitutes a <i>de minimis</i> use or requires a more detailed, individual Section 4(f) approval. Coordination is always required when a project has the potential to use or affect Section 4(f) properties. Even if impacts are minor or temporary, federal regulations (49 U.S.C. §303 and 23 U.S.C. §138) and FHWA guidance require early and ongoing coordination with the agencies or entities that own or manage the resource. The next steps include developing documentation and coordination with FHWA to determine the potential use – direct, temporary, or constructive use under Section 4(f). Following determination of potential use, early coordination would occur with agencies or entities that own or manage the resource – notifying them of potential impacts, sharing project plans, and discussing avoidance, minimization, and mitigation measures. Agencies will typically provide concurrence on <i>de minimis</i> impacts or identify additional requirements if a more formal evaluation is needed. Coordination is required regardless of whether the impact is permanent or temporary, because Section 4(f) protections apply.
Section 6(f) Resources	Online geospatial data sources (WYCOKCK.org, jcgis.jacksongov.org and LWCF.plgris.org) were reviewed to identify properties potentially subject to Section 6(f) of the Land and Water Conservation Fund (LWCF) Act and to evaluate potential constraints associated with the proposed construction activities. Based on this review, nine Section 6(f) properties were identified within the Phase II Study Area and are listed below. Once construction activities are determined at each site, a more comprehensive analysis will occur. A more detailed description of each Section 6(f) property, including location and relevant characteristics, is provided in Appendix D. • Oppenstein Memorial Park • Big Eleven State Park • Coronado Community Park • Kansas City Developments at 415 East 12th Street, KC, MO • Kansas City Developments at East 12th Street between Oak Street and McGee Street, KC, MO • Community Parks Development at Downtown KCK Metro Center • Independence Park • McCoy Park • Jackson County Truman Farm	<u>Permanent Impacts</u> Permanent conversion of Section 6(f) property is not anticipated. Proposed improvements within or adjacent to Section 6(f) resources may include sidewalks or shared-use paths that would improve pedestrian and bicycle access to recreational facilities and would not adversely affect any park features. Where such facilities support or enhance public outdoor recreation and do not diminish recreational utility, they may be considered compatible uses and not a Section 6(f) conversion. <u>Temporary Impacts</u> Section 6(f) resources may be affected by construction impacts, similar to other destinations along the BSRC. Construction impacts would not obstruct access to any Section 6(f) resources.	Future project-level NEPA review will confirm the location, design, and purpose of improvements relative to Section 6(f) boundaries. Coordination with the State LWCF Liaison Officer will be conducted to determine whether proposed actions constitute a conversion under Section 6(f) or qualify as a compatible recreational use. If a conversion is required, coordination with the National Park Service will occur in accordance with LWCF requirements, including evaluation of replacement land.



Resource	Affected Environment/ Existing Conditions	Potential Impacts	Next Steps for NEPA Study
Utilities	There are a number of above-ground utilities along the corridor including street lighting, traffic signals, and power lines. There are also numerous underground utilities including water lines, wastewater, stormwater, electric, fiber optic, and gas lines in the Study Area. Consultation with utility owners and further analysis of utility locations is required.	<u>Permanent Impacts</u> Improvements to broadband and high-speed internet access are proposed for the study corridor. Areas with weak broadband access will see the most changes. Data for these resources is not publicly available; further coordination with utility owners and analysis of potential impacts will be required. <u>Temporary Impacts</u> Relocation of aboveground and underground utilities may be required during construction, disrupting regular service. In addition, there may be a temporary impact on traffic signals during construction.	Utility coordination is not a NEPA requirement but, coordination with existing aboveground and underground utility owners will be beneficial to determine impacts and coordinate accordingly. Advanced coordination with upcoming utility improvements, especially underground infrastructure improvements that require breaking ground, may provide opportunities to advance the implementation of the Project. Additionally, proactive utility coordination will help identify impacts and calculate potential costs associated with those impacts.
Viewshed and Aesthetics	The BSRC corridor traverses a broad range of visual and aesthetic contexts, including rural, suburban, industrial, and urban environments. Visual character varies by corridor segment and is shaped by surrounding land uses, development intensity, transportation infrastructure, and roadway cross-sections. In some areas, the corridor is characterized by wide arterial roadways, commercial development, and auto-oriented features, while other segments pass through historic neighborhoods, parks, downtown activity centers, and areas of emerging reinvestment. Natural features such as the Kansas and Missouri Rivers, as well as publicly accessible open spaces and civic landmarks, also contribute to corridor viewsheds. Overall, aesthetic sensitivity and visual quality vary along the corridor, with higher sensitivity generally associated with parks, historic districts, and pedestrian-oriented areas.	<u>Permanent Impacts</u> The proposed improvements may increase density and the intensity of uses in the corridor and especially surrounding proposed BRT stops. TOD initiatives currently highlight areas of redevelopment and development promise and may lead to more changing visual and scenic character. <u>Temporary Impacts</u> Project construction may impact visual character throughout the corridor. The presence of construction equipment, ground disturbances, and reconstruction of existing facilities may alter visual character in the short term.	While viewshed and aesthetics are not NEPA requirements, the Project will have to coordinate with SHPO and Kansas City's Historic Preservation Commission (HPC) to ensure that the proposed Project aligns and conforms with the Project area's historic, cultural, aesthetic and architectural characteristic. Elements such as streetscaping/land scaping, light fixtures, benches, and other public realm elements proposed by the Project would need to meet the criteria of SHPO and HPC as seen fit by the agencies. A detailed description of improvements should be shared with SHPO during the initial review request to help ensure that the proposed Project meets SHPO requirements for concurrence.
Hazardous Materials/ Contamination	There are approximately 22 hazardous materials or contamination sites within the 25-foot buffer of the Study Area. Additional sites are located outside of the buffer Study Area, with several adjacent sites located within downtown KCMO and Independence. The hazardous materials or contamination sites are located greater than 25 feet from the majority of proposed bus stop locations. The 78 th East, 67 th East, and Spring West proposed bus stops have storage tank sites located within 25 feet of the stop. Figure 9a-d, Appendix A identifies potentially contaminated sites in the Study Area.	<u>Permanent Impacts</u> Depending on depths of construction necessary, there is potential for impacts during construction in the areas with nearby and adjacent hazardous materials or contamination sites. The likelihood of permanent impacts from hazardous materials are dependent on the type of facility or site. Soil or surface contamination could be present based on past land uses. <u>Temporary Impacts</u> There is potential for construction to encounter hazardous materials or contaminated soil or groundwater adjacent to these elements. However, since ground disturbance is anticipated to be shallow or not needed in some areas during construction, temporary impacts from hazardous materials are anticipated to be minimal.	During final design, a Phase I Environmental Site Assessment (ESA) is required for all disturbance areas in accordance with the EPA's All Appropriate Inquires Rule. The results of the investigation would be used to determine if impacts from contaminated sites could be minimized or avoided or if additional investigation is needed (Phase II ESA). If contamination is identified within areas with planned soil or groundwater disturbance, a Voluntary Cleanup Plan and/or a Risk Management Plan may need to be prepared and submitted to the KDHE or MoDNR.



7 Agency Coordination and Public Involvement

7.1 Public Engagement

7.1.1 Engagement Objectives

Public engagement has been a foundational element of the BSRC planning process and was intentionally designed to support informed decision-making across both phases of the study. Engagement activities were structured to ensure that community values, corridor needs, and stakeholder priorities were meaningfully integrated into the development, refinement, and evaluation of corridor alternatives carried forward in this PEL Study.

During Phase 1 (*Assessment and Strategy Action Plan*), MARC and its partners implemented a broad, inclusive engagement program to:

- Establish a shared corridor vision;
- Identify key transportation and community challenges; and,
- Inform the preliminary Purpose and Need.

Engagement during Phase 1 emphasized early listening, with a focus on understanding existing barriers to mobility, access to opportunity, safety concerns, and desired outcomes related to reinvestment and community stability. Input gathered during Phase 1 directly informed the definition of corridor goals, identification of logical corridor segments, and the initial screening of transit service concepts and alignments.

Phase 2 engagement built upon the Phase 1 foundation and shifted toward more targeted engagement to support planning-level decision-making. Engagement during Phase 2 focused on:

- Communicating how earlier public input shaped the Recommended Vision;
- Refining corridor alternatives and design assumptions at a conceptual level;
- Validating the planning-level rationale for alternatives advanced through the Tier 1 and Tier 2 evaluation process; and,
- Supporting transparency around environmental considerations and future NEPA pathways.

Across both phases, engagement objectives were guided by the following principles:

- **Inclusivity and equity**, with outreach methods intended to reach corridor residents, transit-dependent populations, and historically underserved communities;
- **Transparency**, by clearly communicating study purpose, constraints, and how public input influenced outcomes; and,
- **Continuity**, by ensuring Phase 2 engagement reflected and built upon the priorities identified in Phase 1 rather than restarting the process.

Public engagement activities were coordinated closely with the community partners and the Community Advisory Committee (CAC), further defined in Section 7.1.3, and designed to build upon and complement engagement conducted through prior corridor studies and local planning efforts.



7.1.2 Summary of Public Meetings, Workshops, and Outreach Efforts

Public engagement conducted throughout the BSRC planning process provided critical input that shaped the evolution of the corridor vision and informed the Recommended Vision documented in this PEL Study. Engagement activities across Phases 1 and 2 included a combination of public meetings and workshops, surveys, targeted outreach, and ongoing coordination with community representatives and partner agencies.

Phase 1 Engagement Summary | Phase 1 engagement, documented in the *Assessment and Strategy Action Plan* and its Appendix E, emphasized corridor-wide outreach to establish priorities and define the range of issues to be addressed. Engagement methods included community workshops, statistically valid surveys, stakeholder interviews, and coordination with local governments and community organizations. These activities generated input on:

- Travel reliability, long transit travel times, and limited east-west connectivity;
- Safety concerns for pedestrians, bicyclists, and transit riders, particularly along high crash segments;
- Access to employment, healthcare, education, and essential services;
- Concerns related to displacement, affordability, and the need for reinvestment without community harm; and
- Preferences for frequent, reliable transit paired with improvements to first and last-mile connectivity.

Key themes from Phase 1 engagement informed the preliminary Purpose and Need, corridor segmentation, and the identification of transit service concepts evaluated in Phase 2.

Phase 2 Engagement Summary | Phase 2 engagement focused on communicating technical findings, refining alternatives at a planning level, and confirming that the Recommended Vision reflected previously identified community priorities. Engagement during Phase 2 was coordinated with key project milestones, including alternatives screening and evaluation, and emphasized clarity regarding what decisions were being made during Phase 2 versus those reserved for future project-level NEPA review.

Consistent themes that emerged and were reinforced during Phase 2 included:

- Strong support for improved transit frequency and reliability along the corridor;
- Recognition of the need for a scalable approach that balances higher-investment BRT in core segments with BRT-Lite in outlying areas;
- Continued emphasis on safety improvements, particularly at intersections and along pedestrian and bicycle corridors;
- Interest in bus stop area improvements that enhance comfort, accessibility, and neighborhood connectivity; and,
- The importance of maintaining flexibility to advance corridor segments independently as funding and implementation opportunities arise.



Public input received during Phase 2 supported the advancement of a mixed BRT and BRT-Lite Recommended Vision and reinforced the importance of integrating transportation improvements with the broader community reinvestment goals identified during Phase 1.

Relationship to Future Engagement | Future public engagement will be conducted as individual projects advance, designs are refined, and funding is obtained. That engagement will build upon the themes, priorities, and planning decisions made in Phases 1 and 2 and will be tailored to the specific scope, impacts, and communities associated with each project-level action.

7.1.3 Community Advisory Committee

A CAC was established to provide ongoing input throughout the BSRC planning process and to serve as a sounding board for project decisions at key milestones. The CAC is composed of leaders from the public, private, and nonprofit sectors and was convened to reflect a range of community perspectives along the corridor. The committee met six times between October 2024 and April 2026, with meetings coordinated alongside broader partner and agency engagement activities. Input from the CAC informed refinement of corridor priorities, alternatives evaluation, and planning-level considerations documented in the PEL Study. A list of participating organizations is included in Appendix F.

7.2 Agency Coordination

To formally support agency coordination, the project team prepared and implemented an Agency Coordination Plan (Appendix F), which documented roles, responsibilities, and communication protocols among agencies and project partners. By engaging agencies early and consistently, the project established a shared understanding of corridor needs, constraints, and opportunities.

Local Agencies | Local agency coordination was a central element of the BSRC study. The sustained level of local agency coordination throughout the BSRC study reflects the scale and complexity of the corridor and the need for long-term alignment across jurisdictions. Given the corridor's bi-state context, multi-jurisdictional governance structure, and phased implementation strategy, sustained coordination among local governments, transit agencies, regional partners, Tribal Nations, and state and federal agencies was necessary to align planning assumptions, technical analyses, and long-term implementation considerations.



Between June 2024 and March 2026, MARC and local government partners held 28 coordination meetings. These meetings served as the primary forum for interagency collaboration and included regular coordination between MARC, local government, and transit providers. Topics addressed through these meetings included preliminary purpose and need, existing conditions, ridership and reinvestment potential, transit type and alignment evaluation, and review of planning-level impact screening results.

In addition to standing partner meetings, MARC coordinated directly with elected officials and local jurisdictional leadership, including city councilmembers and county commissioners, to foster informed decision-making and to obtain policy-level input on corridor priorities and implementation considerations. These meetings helped further align the planning process with local policy objectives and community development initiatives underway within individual municipalities.



State Transportation Agencies | State transportation agencies, including KDOT and MoDOT, participated in meetings at key points to help shape project priorities, advise on technical analyses, and provide direction at major milestones. The project corridor spans Kansas and Missouri and includes facilities under the jurisdiction of both KDOT and MoDOT. Their involvement focused on planning-level decisions related to transit modes, roadway configurations, and corridor improvements as informed by state transportation policies, design standards, and long-term system considerations. State DOT participation supported consistency between the BSRC study and existing or planned state transportation investments, while also helping to identify potential implementation constraints and opportunities.



Federal Agencies and Other State Agencies | Since November 2025, MARC has held 12 coordination meetings with the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) to support development of the PEL study, including review of study approach, alternatives development, and documentation strategy. FHWA has been involved with the Project in a supporting role with FTA as the lead agency.

In March 2026, agencies were notified that a PEL Study was being prepared for the BSRC and invited to participate in a project informational webinar. The webinar described the project background, current status, information on the PEL process, and how PEL planning products can be referenced in future NEPA reviews. Participants were invited to participate in a Q&A session at the end of the webinar and provide comments at any time during the two-week comment period following the second of two identical webinar sessions. This collaborative approach provided an opportunity for state and federal agencies to comment on existing conditions and community factors that should most influence how alternatives move forward in NEPA; identify elements or decisions that will require the strongest agency coordination; and share any specific recommendations for NEPA, design, or construction phases.

No comments were received from federal agencies or other state agencies during the webinar or the associated comment period. One comment letter was received from the Missouri Department of Natural Resources Coordination with federal and state agencies will continue, as appropriate, as individual corridor elements advance into future project-level NEPA review.



7.3 Tribal Coordination

Tribes were invited by FTA to participate in a PEL Informational Webinar held on April 29, 2026, which provided an overview of the project, the PEL process, alternatives analysis, and planning-level impact screening. Tribes were offered the opportunity to provide comments during the webinar and through following two-week written comment period. No comments were received from Tribes during or following the webinar comment period. Tribal coordination will continue as appropriate as individual corridor elements advance into future project-level NEPA review, consistent with FTA requirements and government-to-government consultation responsibilities.

8 Funding and Costs Estimates

8.1 Priority Funding Pathways

There are several funding opportunities that would align with the BSRC's needs. While programs have similar cycles from year to year, timelines and requirements can change based on federal appropriations, administrative priorities, or updates to program guidance, making it important to regularly monitor funding programs to stay informed.

Funding opportunities are typically competitive. Therefore, along with aligning applications with federal funding cycles and project development milestones, identifying the best fitting funding program will be important in accelerating the implementation plan.

8.2 Recommended Grant Applications

A matrix of priority grant opportunities that align with the BSRC's phased implementation strategy, funding needs, and project readiness is provided in **Table 11**. Typically, it takes a minimum of two to three months to author a competitive application.

This list of grants does not include the National Electric Vehicle Infrastructure (NEVI) Program, Carbon Reduction Program (CRP), or the Charging and Fueling Infrastructure (CFI) Grant Program as these programs have either expired, been fully obligated, or were discontinued at the federal level. Future funding opportunities for similar infrastructure may re-emerge under new authorizations or restructured programs and should be tracked.



Table 11. Funding Programs

Agency	Program	Purpose	Eligible Project	Timeline
Federal				
FTA	Capital Investment Grants	Provides funding for new or expanded fixed guideway transit systems, including heavy rail, commuter rail, light rail, streetcars, and BRT.	Construction of new transit corridors or substantial expansion of existing systems.	Mid-term/ Long-term
FTA	Bus and Bus Facilities	Supports capital projects to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities.	Bus replacements, fleet expansions, and maintenance/storage facility upgrades.	Mid-term
FTA	Low-No Emissions Program	Supports the purchase or lease of zero-emission and low-emission transit buses and related infrastructure.	Acquisition of electric or hydrogen buses and charging/refueling equipment.	Mid-term
FTA	Pilot Program for Transit Oriented Development	To help local communities integrate land use and transportation planning around new fixed guideway or core capacity transit projects.	Comprehensive planning that promotes economic development, increased transit ridership, multimodal connectivity, and mixed-use, mixed-income development near transit stations.	Short-term
US Department of Transportation (USDOT)	Better Utilizing Investments to Leverage Development	Provides capital funding for surface transportation projects that will have a significant local or regional impact.	Multimodal projects including roads, transit, rail, bicycle/pedestrian infrastructure, and planning efforts.	Short-term/ Mid-term
USDOT	Safe Streets and Roads for All	Supports local initiatives to prevent roadway deaths and serious injuries through comprehensive safety action plans and implementation.	Planning and implementation of strategies to reduce transportation-related fatalities and injuries, especially for vulnerable road users.	Short-term



Agency	Program	Purpose	Eligible Project	Timeline
US Economic Development Administration	Public Works	To help distressed communities revitalize, expand, and upgrade their physical infrastructure.	Acquisition or development of land and infrastructure improvements needed for the successful establishment or expansion of industrial or commercial enterprises.	As opportunities arise
National Endowment for the Arts	Grants for Arts Programs	To integrate arts, culture, and design into local efforts to strengthen communities over the long-term.	Creative placemaking that demonstrates a specific role for arts.	Short-term
State (Missouri)				
MoDOT	Statewide Transportation Assistance Revolving (STAR) Fund	Provides low-interest loans to public entities for transportation projects that improve the state's transportation system.	Road, bridge, transit, and multimodal projects eligible for federal funds.	Mid-term
MoDOT	Governor's Transportation Cost Share Program	To build partnerships with local communities to pool efforts and resources to deliver road and bridge projects.	Road and bridge improvements that promote safety, economic development, or address local transportation needs.	Short-term/ Mid-term
MoDOT	Local Public Agency (LPA) Program	Allows local governments to receive and administer federal-aid transportation funds for eligible local projects.	Sidewalks, bike/ped projects, road improvements, transit-supportive infrastructure.	Short-term/ Mid-term
State (Kansas)				
KDOT	Innovative Technology Program	Encourages pilot projects and new technologies to improve transportation safety, efficiency, and sustainability.	Smart infrastructure, connected vehicle technology, traffic management systems, and emerging mobility solutions.	Short-term/ Mid-term



Agency	Program	Purpose	Eligible Project	Timeline
KDOT	Eisenhower Legacy Transportation Program (IKE)	KDOT's 10-year transportation plan that funds highway modernization, preservation, and expansion projects across Kansas.	Roadway improvements, multimodal enhancements, transit, and freight infrastructure.	Short-term/ Mid-term
KDOT	Economic Development Program	Supports highway and bridge projects that directly support job creation or economic growth.	Infrastructure that enables business expansion, industrial park access, or freight movement.	As opportunities arise
KDOT	Cost Share Program	Matches local funding for projects that improve safety, support economic development, or address transportation needs.	Local roadway improvements, safety enhancements, and multimodal access projects.	As opportunities arise



8.3 CIG Competitiveness Priority Segments

A preliminary evaluation of the five corridor segments was completed to determine their competitiveness for the U.S. Department of Transportation's Capital Investment Grant (CIG) program, which funds Small Starts and New Starts projects. The evaluation examined each of the five segments comprising the corridor.

- Segment 1C
- Segment 2B
- Segment 3B
- Segment 4A
- Segment 5A

Initial screening found that Segments 1C and 5B are not currently eligible for CIG funding due to insufficient dedicated right-of-way. The remaining segments (2B, 3B, and 4A) meet minimum eligibility thresholds and may advance for further consideration.

Segments 2B, 3B, and 4A were evaluated against CIG criteria, including Project Justification and Local Financial Commitment. Under current conditions, all eligible segments are anticipated to score in the medium to medium low range, indicating that improvements in competitiveness will require early local funding commitments and policy alignment, not additional refinement of technical concepts alone. Segment 3B was identified as the highest scoring segment; however, its cross state alignment introduces implementation complexity, requiring coordinated policy, funding, and governance actions between Kansas City, Missouri and the Unified Government of Wyandotte County, Kansas.

Given these constraints, Segment 4A is recommended for near term advancement, offering simpler governance, clearer sponsorship, and a faster and more direct implementation pathway while maintaining competitive performance. Policy and institutional coordination for Segment 3B should proceed in parallel to support future funding readiness.

8.4 Cost Estimates

Individual 15% Design draft cost estimates were developed for each of the five segments of the BSRC to determine the level of anticipated capital investment required. Two partial draft cost estimates-- one for Kansas and another for Missouri--were drafted, which divided work between two firms, Olsson Engineering and Stantec. This division of work accounts for each state's differentiating design standards and engineering procedures. Operations costs were estimated by Olsson under a unified model, with the assumption that KCATA would operate the entire proposed BSRC corridor.

15% Design of the Kansas portion of the corridor was completed by Olsson, locating transit improvements including stops, bus lanes, TSP intersections, and pedestrian and bike improvements. This included development of a service plan and associated operations and vehicle procurement costs for the entire corridor. 15% Design in the Missouri portion of the corridor was completed by Stantec, including a supplementary technical overview of Missouri corridor costs and operations. Transit services and



infrastructure quality are broadly divided by BRT and BRT-lite services, with the assumption that the BSRC would be operated as one of KCATA's MAX services.

Based on draft 15% Design cost estimates, capital construction costs for the Project are expected to be \$222.7 million in 2031 dollars. This estimate factors transit, pedestrian, bike, and road improvements in the corridor, including partial road reconstructions in several segments of the Project. The Project is anticipated to leverage investment for sustainable improvements throughout the corridor, by creating the spine of a zero-emissions transportation network. A capital cost estimate for the Union Station alignment is not currently proposed.

8.4.1 Capital Costs by Jurisdiction

Project capital costs are to be divided by four jurisdictions across two states: Unified Government of Kansas City and Wyandotte County; Kansas, Kansas City, MO; Independence, MO; and MoDOT. Costs are divided by the jurisdiction of each improvement and the ownership of road segments where each improvement is made. The table below outlines the contributions of each jurisdiction based on total cost, and the subtypes for transit, road, sidewalk, ROW, and staking and mobilization costs.

BY JURISDICTION				
Category	Unified Governments	Kansas City, MO	MODOT	Independence, MO
Construction Cost Total	\$114,000,000	\$61,050,000	\$24,000,000	\$2,000,000
Transit Improvements	\$33,900,000	\$13,990,000	\$9,700,000	\$ -
Road Construction	\$48,622,000	\$44,663,000	\$5,975,000	\$680,000
Sidewalk Improvements	\$14,890,000	\$2,060,000	\$6,050,000	\$640,000
Mobilization & Staking	\$6,410,000	\$4,570,000	\$1,750,000	\$330,000
ROW Cost	\$ -	\$10,210,000	\$4,890,000	\$910,000
TOTAL	\$114,000,000	\$91,440,000	\$28,890,000	\$2,910,000

8.4.2 Operations Costs

Operations and vehicle cost estimates were completed for the entire corridor by Olsson under the assumption of a KCATA-run service. Service under the current plan is recommended to be composed of two routes: a short route and a long route. Short routes, roughly 50-67 percent of routes in the corridor, operate exclusively in BRT segments, while long routes operate the entire length of the corridor. This would allow for higher service frequencies in the core BRT segments while still providing a flexible, one-seat ride between Village West and Independence Square. An additional analysis was made of cost estimates of a potential Union Station alignment alternative.



Official yearly transit operations costs in the corridor are based on the currently accepted 11th/12th St alignment. The adopted corridor is anticipated to cost \$19.6 million to operate per year in 2031 dollars, while the Union Station alignment would cost \$22.3 million in 2031 dollars. Given service requirements and a requirement for a 20% spare ratio, the Project anticipates approximately \$13.4 million in vehicle costs under the adopted alignment and \$15.3 million under the Union Station alignment option. Lower travel times and improved service would attract increased ridership, increasing ridership per service hour and the efficiency of transit investment in the corridor.

Table 12. Operations, Revenue Hours, Vehicle Costs by alternative

Route	Annual Vehicle Revenue Hours	Vehicles Operated in Max Service	Annual Operating Cost*	Vehicle Cost*
Existing 24+101 Routes	52,689	10	\$10,818,000	\$9,557,000
Planned - 11th/12th St. Option	95,586	14	\$19,626,000	\$13,380,000
Planned - Union Station Option	108,432	16	\$22,263,000	\$15,292,000

**Cost estimates are based on 2031 dollars*

8.4.3 Kansas

Within Kansas, draft 15% Design cost estimates were prepared by Olsson. Each segment of cost estimation corresponds to previously outlined project segments, entirely located within Kansas City, KS: Segment 1 covers from the western terminus in Village West to 47th St. Segment 2 covers from 47th St to 7th St, and Segment 3 covers from 7th St to the Kansas-Missouri border. Of these segments, Segment 1 is proposed for BRT-lite service, while Segments 2 and 3 are proposed for full BRT service. Olsson's cost estimates factor in both transit improvements, and pedestrian, bike and road improvements in the corridor. Notably, sidewalk gaps are programmed to be filled along the entire Kansas portion of the corridor, alongside several road reconstructions. A table of draft cost estimates by category and segment is located below. For an itemized list of cost estimates in Kansas, see the Phase 2 Project Technical Memo and individual segment cost estimates located in Appendix G.

Table 13. Capital Costs in Kansas by Category and Segment

Category	Segment 1	Segment 2	Segment 3	Total Cost
Mobilization and Staging	\$690,000	\$2,380,000	\$730,000	\$3,800,000
Transit Improvements	\$60,000	\$7,150,000	\$2,150,000	\$9,360,000
Roadway Construction	\$5,170,000	\$33,800,000	\$10,400,000	\$49,370,000
Sidewalk Construction	\$8,150,000	\$5,620,000	\$1,640,000	\$15,400,000
Construction Subtotal	\$14,070,000	\$48,940,000	\$14,920,000	\$77,940,000



Category	Segment 1	Segment 2	Segment 3	Total Cost
ROW Costs	\$ -	\$ -	\$ -	\$ -
Contingency (20%)	\$2,810,000	\$9,790,000	\$2,980,000	\$15,590,000
Inflation to 2031 (16%)	\$2,700,000	\$9,400,000	\$2,860,000	\$14,960,000
Probable Cost	\$19,590,000	\$68,130,000	\$20,770,000	\$108,490,000

Tables for cost estimates for each segment, as well as a cost per mile estimate, are also located below. This roughly corresponds to initial estimates of higher capital costs involved with the investment in BRT Segments 2 and 3.

Table 14. Summarized Construction Costs for Segment 1 Village West to 47th St (BRT-lite)

Segment 1	
Construction	\$ 14,070,000
Contingency (20%) and 2031 Inflation (16%)	\$ 5,510,000
Total	\$ 19,590,000
Miles	8.9
Cost per Mile	\$ 2,200,000

Table 15. Summarized Construction Costs for Segment 2 47th St to 7th St (BRT)

Segment 2	
Construction	\$ 48,940,000
Contingency (20%) and 2031 Inflation (16%)	\$ 19,190,000
Total	\$ 9,400,000
Miles	3.2
Cost per Mile	\$ 2,940,000

Table 16. Summarized Construction Costs for Segment 3 7th St to KS-MO State Line (BRT)

Segment 3	
Construction	\$ 14,920,000
Contingency (20%) and 2031 Inflation (16%)	\$ 5,840,000
Total	\$ 20,770,000
Miles	1.8
Cost per Mile	\$ 11,540,000

8.4.3.1 Operations Costs

Operations costs in Kansas under the adopted alignment are anticipated to be \$10.3 million annually in 2031 dollars, with a Union Station alignment reducing yearly operations costs and vehicle costs in Kansas



relative to the adopted alignment. Vehicle costs are anticipated to be \$7 million in 2031 dollars, the cost of approximately 10 new buses.

Table 17. Operating and Vehicle Costs in Kansas (2031 dollars)

Route	Operating Costs	Vehicle Costs
Existing 24+101 Routes	\$4,963,000	\$4,249,000
Planned – 11 th /12 th St. Option	\$10,265,000	\$7,004,000
Planned – Union Station Option	\$10,109,000	\$6,944,000

8.4.4 Missouri

Within Missouri, 15% Design draft cost estimates were drafted by Stantec. Each segment of cost estimation and design corresponds to previously outlined project sections in Kansas City, MO, Sugar Creek, and Independence: Segment 3 covers from the Missouri-Kansas State Line to the intersection of Charlotte St and Independence Ave, Segment 4 covers from Charlotte St and Independence Ave to Winner Rd and Independence Ave, Segment 5 covers from Independence Ave and Winner Rd to Independence Square. Of these segments, Segments 3 and 4 are proposed for full BRT service, while Segment 5 is proposed for BRT-lite service. Stantec cost estimates factor in transit improvements, alongside pedestrian, bike, and road improvements in the corridor. Notably, several road reconstructions are planned to take place, alongside the construction of new bike facilities. A table of generalized draft cost estimates by category and segment are located below. For itemized cost estimates in Missouri, see the Phase 2 Project Technical Memo and individual segment cost estimates located in Appendix G.

Table 18. Capital Costs in Missouri by Category and Segment

Category	Segment 3	Segment 4	Segment 5	Total Cost
Mobilization and Staging	\$1,670,000	\$2,320,000	\$1,460,000	\$5,440,000
Transit Improvements	\$4,660,000	\$6,330,000	\$8,140,000	\$19,130,000
Roadway Construction	\$18,830,000	\$25,170,000	\$6,770,000	\$50,770,000
Sidewalk Construction	\$ -	\$1,110,000	\$5,620,000	\$6,730,000
Construction Subtotal	\$25,160,000	\$34,920,000	\$21,980,000	\$82,060,000
ROW Costs	\$4,950,000	\$4,950,000	\$4,950,000	\$4,950,000
Contingency (20%)	\$5,030,000	\$6,980,000	\$4,400,000	\$16,410,000
Inflation to 2031 (16%)	\$4,830,000	\$6,700,000	\$4,220,000	\$15,760,000
Probable Cost	\$35,030,000	\$48,610,000	\$30,600,000	\$114,230,000



Tables for cost estimates for each segment, as well as a cost per mile estimate, are also located below. This roughly corresponds to initial estimates of higher capital costs involved with the investment in BRT Segments 3 and 4.

Table 19. Summarized Construction Costs for Segment 3 MO/KS State Line to Charlotte St and Independence Ave (BRT)

Segment 3	
Construction	\$ 25,160,000
Contingency (20%) and 2031 Inflation (16%)	\$ 9,860,000
Total	\$ 35,030,000
Miles	2.49
Cost per Mile	\$ 14,070,000

Table 20. Summarized Construction Costs for Segment 4 Charlotte St to Winner Rd (BRT)

Segment 4	
Construction	\$ 34,920,000
Contingency (20%) and 2031 Inflation (16%)	\$ 13,680,000
Total	\$ 48,610,000
Miles	4.07
Cost per Mile	\$ 11,940,000

Table 21. Summarized Construction Costs for Segment 5 Winner Rd to Independence Square (BRT-lite)

Segment 5	
Construction	\$ 21,980,000
Contingency (20%) and 2031 Inflation (16%)	\$ 8,620,000
Total	\$ 30,600,000
Miles	6.56
Cost per Mile	\$ 4,660,000

8.4.4.1 Operations Costs

Operations costs in Missouri under the adopted alignment are anticipated to be \$9.4 million annually in 2031 dollars, with a Union Station alignment increasing yearly operations costs by \$2.7 million in Missouri. Vehicle costs are anticipated to be \$6.4 million in 2031 dollars, the cost of approximately 9 new buses. Table 22 summarizes operating and vehicle cost estimates for the Missouri portion of the project.



Table 22. Operating and Vehicle Costs in Missouri (2031 Dollars)

Route	Operating Costs	Vehicle Costs
Existing 24+101 Routes	\$5,855,000	\$5,308,000
Planned - 11th/12th St. Option	\$9,361,000	\$6,376,000
Planned - Union Station Option	\$12,154,000	\$8,348,000

9 Future NEPA Processes

9.1 Framework for Subsequent Project-Level Environmental Reviews

This PEL Study was developed to establish a clear, well-documented planning framework that can be carried forward into future project-level environmental reviews as individual BSRC elements advance toward implementation. This framework is intended to support efficient and coordinated environmental review by documenting planning-level decisions, assumptions, and analyses in a manner consistent with FHWA PEL guidance and 23 CFR 450 Appendix A.

The PEL process documented in this study provides a foundation for subsequent NEPA reviews by identifying corridor-wide goals and priorities, defining a preliminary Purpose and Need, evaluating a reasonable range of alternatives, and conducting planning-level impact screening. These elements were developed through a close partnership with local government and in coordination with federal, state, regional, local agencies, and Tribes, as well as through public and stakeholder engagement, and are intended to inform future project-level NEPA decision-making.

As individual corridor segments or improvements advance, future project sponsors may reference this PEL Study to inform NEPA scoping, alternatives development, and early coordination efforts. Planning-level decisions documented in this study, including the Recommended Vision, logical termini and independent utility, and the rationale for alternatives screening, may be considered in subsequent NEPA documents, as appropriate, provided they remain valid and consistent with current conditions, regulatory requirements, and agency policies at the time of project development.

Future NEPA reviews are anticipated to be conducted on a project-by-project or segment-by-segment basis, reflecting the incremental and phased nature of implementation along the corridor. This approach allows individual projects to advance independently as funding becomes available, while maintaining consistency with the broader corridor vision established through the PEL process.

The planning-level impact screening conducted as part of this PEL Study identified environmental resource considerations that may warrant further evaluation during project-level NEPA reviews. As individual projects advance, additional technical studies and screenings are anticipated, as appropriate, based on project scope, design refinement, and regulatory requirements. These may include, but are not limited to:

- Cultural resource investigations, including architectural history surveys and archaeological surveys, as needed to support Section 106 consultation;



- Noise screenings and, if warranted, general noise assessments;
- Phase I Environmental Site Assessments (and Phase II investigations, if necessary); and,
- Evaluation of potential impacts to Section 4(f) and Section 6(f) resources.

The need for and scope of these technical studies will be confirmed during future NEPA scoping and agency coordination and will reflect site-specific conditions and design details not available at the planning stage.

The majority of proposed improvements from the BSRC PEL Study are anticipated to qualify for Categorical Exclusions (CEs) under 23 CFR 771.117, reflecting the planning-level finding that improvements would largely occur within existing right-of-way and involve very limited environmental impacts. Transit amenities such as bus stops, shelters, and mobility hubs; sidewalk and bikeway improvements; and traffic signal and operational upgrades are anticipated to qualify as likely CEs under the (c)-list categories for transit amenities, roadway resurfacing, and traffic operations improvements. Stormwater and drainage enhancements may qualify as case-by-case CEs under the (d)-list, depending on final design and resource impacts. BRT-Lite segments that do not add travel lanes or require notable right-of-way expansion are also anticipated to be eligible for documented CEs, while full BRT segments involving more substantial roadway reconstruction could still qualify as a (d)-list CE but could require preparation of an Environmental Assessment, depending on how the project footprint develops in subsequent design efforts. CE documentation and approval timelines are expected to range from approximately four to nine months per project, depending on scope, coordination needs, and resource considerations.

9.2 Criteria for Determining the Need for Additional Analysis

This section identifies factors that could trigger the need for additional analysis during future project-level NEPA review. Evaluation of these factors can help determine which planning-level decisions documented in this PEL Study remain sufficient and where supplemental technical studies, coordination, or documentation are warranted based on project scope, design refinement, or changed conditions.

Additional analysis may be required if a proposed project deviates from the assumptions or characteristics evaluated at the planning level. Examples include a change from BRT-Lite to BRT service, change in recommended segment alignment(s), introduction of new features that increase the proposed typical section and project footprint, or notable impacts to environmental resources.

Resource-specific considerations identified through impact screening in Section 6 are likely to necessitate further analysis. Additional studies are anticipated where future projects have the potential to affect cultural resources subject to Section 106 of the National Historic Preservation Act; publicly owned parks, recreation areas, or historic sites subject to Section 4(f) of the USDOT Act; or properties protected under Section 6(f) of the Land and Water Conservation Fund Act. Similarly, projects that encounter previously unidentified hazardous materials may warrant additional environmental investigation.

Changes in regulatory context, agency requirements, or environmental conditions may also trigger additional analysis. Updated resource inventories, new listings of threatened or endangered species,



revised floodplain mapping, or changes in air quality designation could affect the applicability of planning-level conclusions and require reevaluation during NEPA scoping. Agency input received during future coordination will further inform the scope and level of analysis needed.

Finally, the need for additional analysis will be evaluated in coordination with the appropriate lead federal agency based on the totality of circumstances for each project. While this PEL Study is intended to reduce duplication of effort and streamline future environmental review, it does not preclude the need for supplemental analysis where warranted. The criteria outlined above provide a transparent framework for determining when additional studies or documentation are necessary to support NEPA compliance while maintaining consistency with BSRC planning-level decisions.

9.3 Integration with State and Local Environmental Review Requirements

As previously noted, consistent with FHWA PEL guidance, the segmentation of the corridor and independent utility were key considerations in defining corridor segments and evaluating alternatives. Segment 3B is unique in that it spans both Kansas and Missouri, crossing state jurisdictional boundaries and involving facilities under the oversight of multiple agencies. As this segment advances, future NEPA review will need to carefully consider bi-state coordination, lead and cooperating agency roles, and jurisdiction-specific regulatory requirements, while maintaining a unified Purpose and Need and avoiding segmentation concerns. The PEL framework documented in this study establishes the planning-level rationale for Segment 3B's limits and function, providing a defensible basis for future NEPA scoping and interagency coordination across both states.

9.4 Relationship to Major Regional Projects Under Development

There are several major regional projects currently under development that could influence future travel demand, land use patterns, and access needs along the BSRC corridor. These projects include multiple mixed-use, residential, and commercial developments, the [Grand Boulevard Re-Imagined](#) initiative, the proposed relocation of the Kansas City Chiefs' stadium, and development of a new Kansas City Royals stadium within downtown Kansas City, Missouri. These initiatives are advancing under separate planning and decision-making processes and are not yet finalized. Accordingly, elements of the Recommended Vision may need to be revisited in the future as these regional investments are refined, to maintain alignment with evolving mobility needs, land use conditions, and broader reinvestment goals.

10 Conclusions

The BSRC PEL Study documents a comprehensive, corridor-wide planning effort intended to support future project-level implementation and NEPA environmental reviews. Through coordinated technical analysis, extensive public and agency engagement, and a structured alternatives evaluation process, the study establishes a defensible planning foundation for advancing regional transit and multimodal improvements.



The PEL Study confirms a clear need for improved east-west mobility, safety, and access to opportunity within the corridor. Existing conditions analyses and public input consistently identified long travel times, safety challenges for pedestrians and bicyclists, limited multimodal connectivity, and disparities in access to employment, healthcare, and essential services. These needs informed development of a preliminary Purpose and Need Statement and guided the evaluation of transit modes, alignments, and supporting multimodal improvements.

Through a two-tier alternatives screening process, a Recommended Vision was identified that consists of a combination of BRT and BRT-Lite service, supported by pedestrian, bicycle, and streetscape improvements. The Recommended Vision reflects corridor-specific conditions, balances investment levels with transit readiness and community context, and supports phased implementation with logical termini and independent utility. Importantly, the PEL Study documents the rationale for alternatives advanced and dismissed, providing transparency and traceability for future decision-making.

Planning-level (i.e., desktop) environmental screening conducted as part of this study indicates that the Recommended Vision can largely be implemented within existing right-of-way, with limited potential for significant environmental impacts. Key environmental considerations (cultural resources, parks and recreational resources subject to Sections 4(f) and 6(f), noise, hazardous materials, and community effects) have been identified early to inform future NEPA scoping and coordination. The study emphasizes avoidance and minimization as guiding principles and highlights where additional project-level analysis and agency coordination will be required as designs are refined.

The PEL process also reinforces the importance of sustained coordination across jurisdictions, agencies, and communities. Given the corridor's bi-state context and phased implementation strategy, the study establishes a shared understanding among partners regarding corridor goals, assumptions, and constraints. This coordinated planning approach is intended to reduce duplication of effort, support efficient environmental review, and provide flexibility for individual corridor segments to advance as funding and implementation opportunities arise.

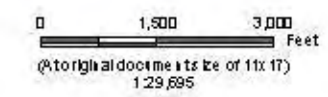
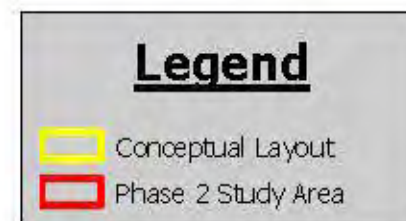
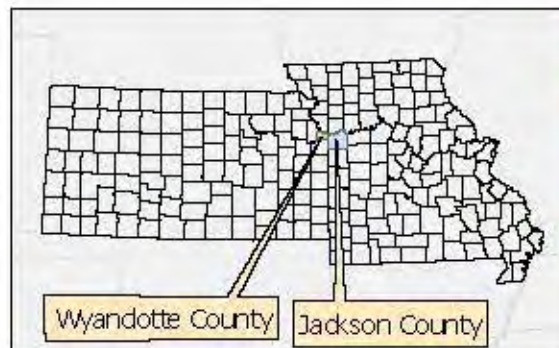
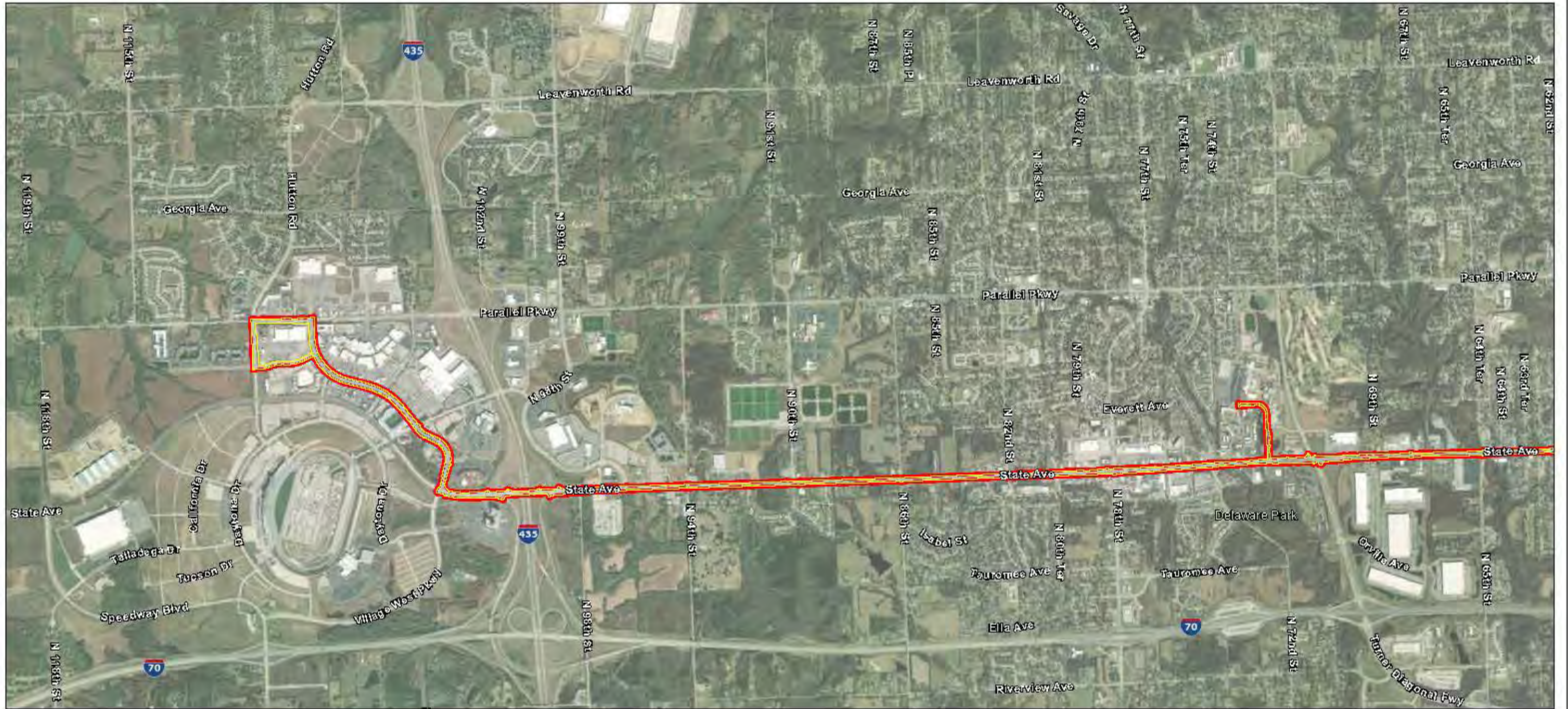
In conclusion, this BSRC PEL Study provides a planning framework that supports future project development while maintaining a unified corridor vision. By capturing planning-level decisions, documenting the basis for the Recommended Vision, and identifying key environmental considerations early, the study positions the BSRC to advance into subsequent NEPA processes in a coordinated, transparent, and efficient manner while allowing future studies the flexibility to accommodate evolving community needs, regulatory requirements, and implementation conditions.



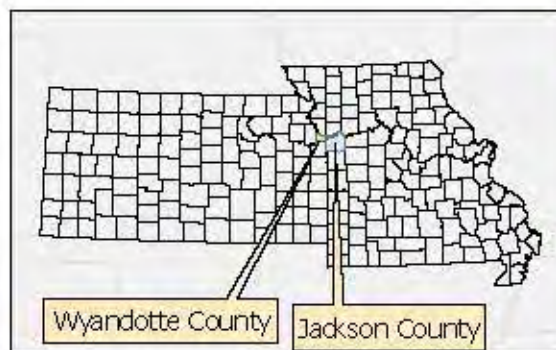
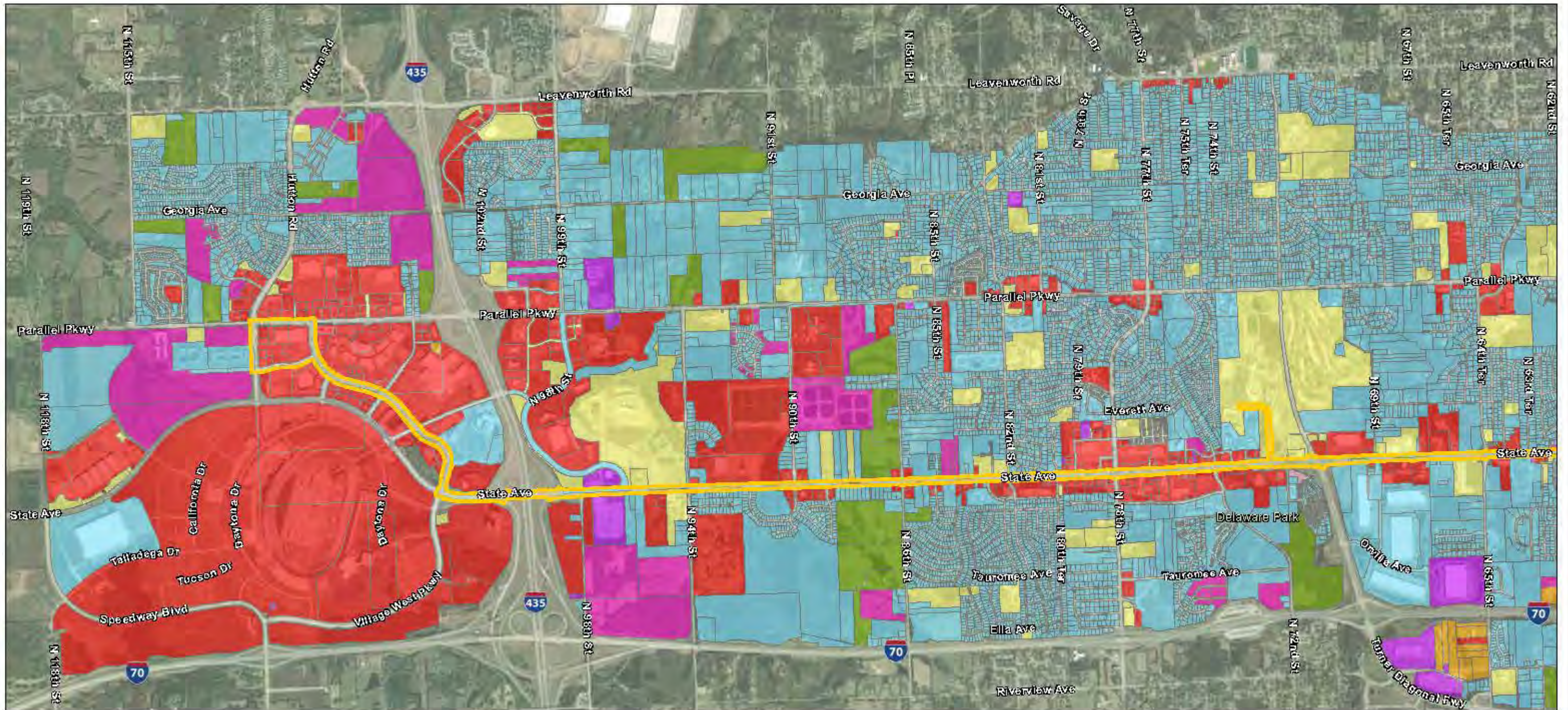
Appendices



Appendix A - Figures



Project Location	Prepared by RO on 2025-02-24
Kansas City	
Wyandotte County, KS; Jackson County, MO	
Client/Project	190300478
Mid-America Regional Council	
Bi-State Regional Council	
Environmental Assessment	
Figure No.	
1a	
Title	
BSRC-P Project Location Map	



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Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO

Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

Prepared by: RO on 2025-02-17

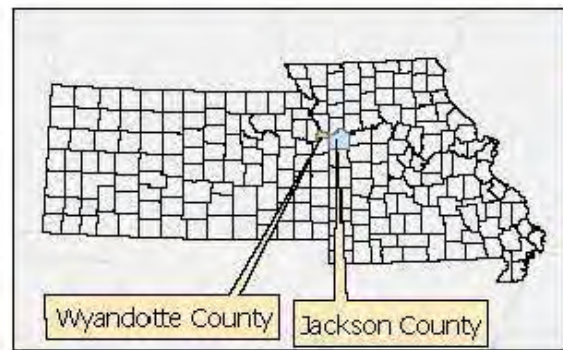
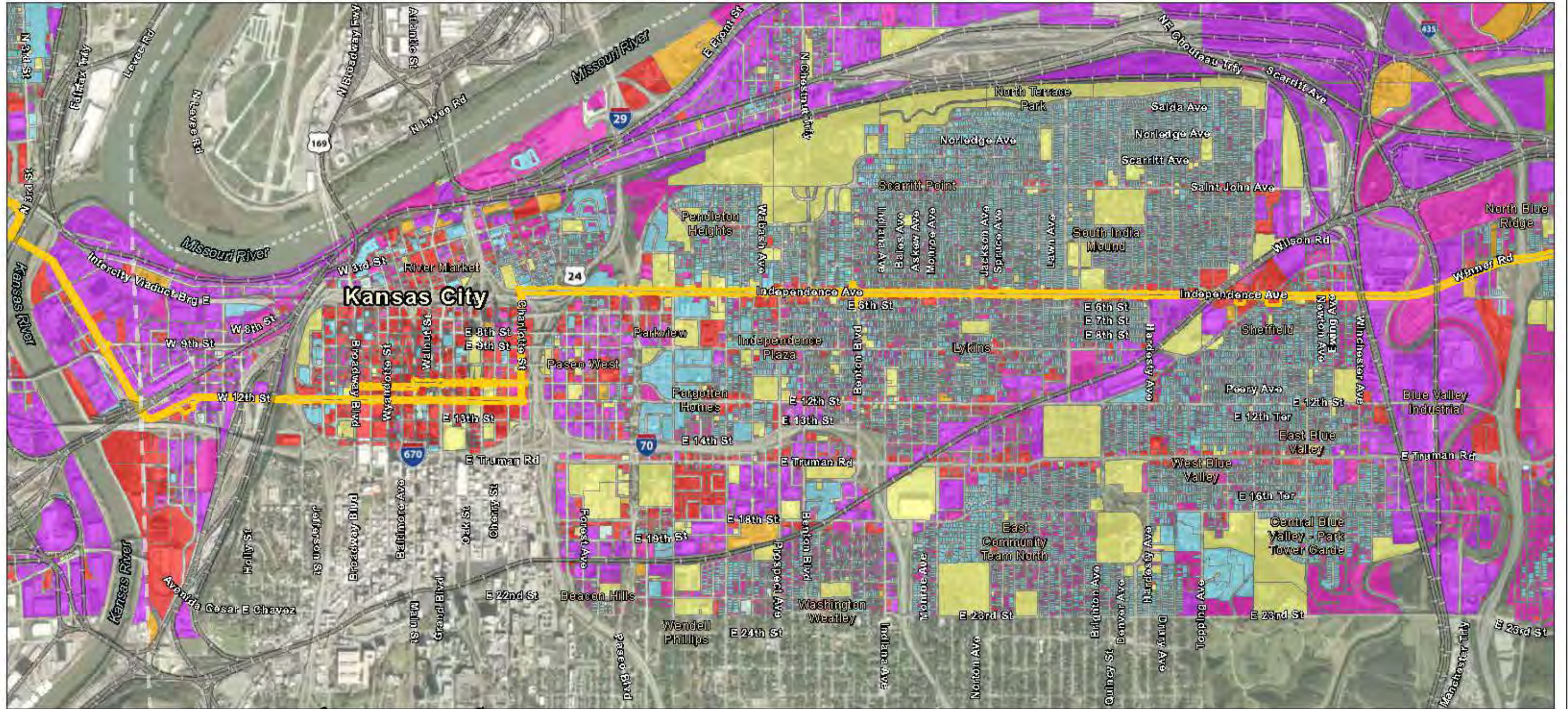
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Figure No.

2a

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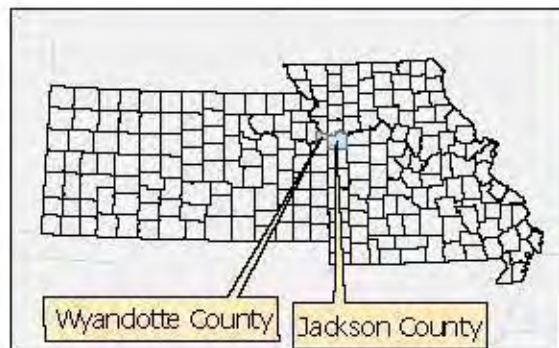
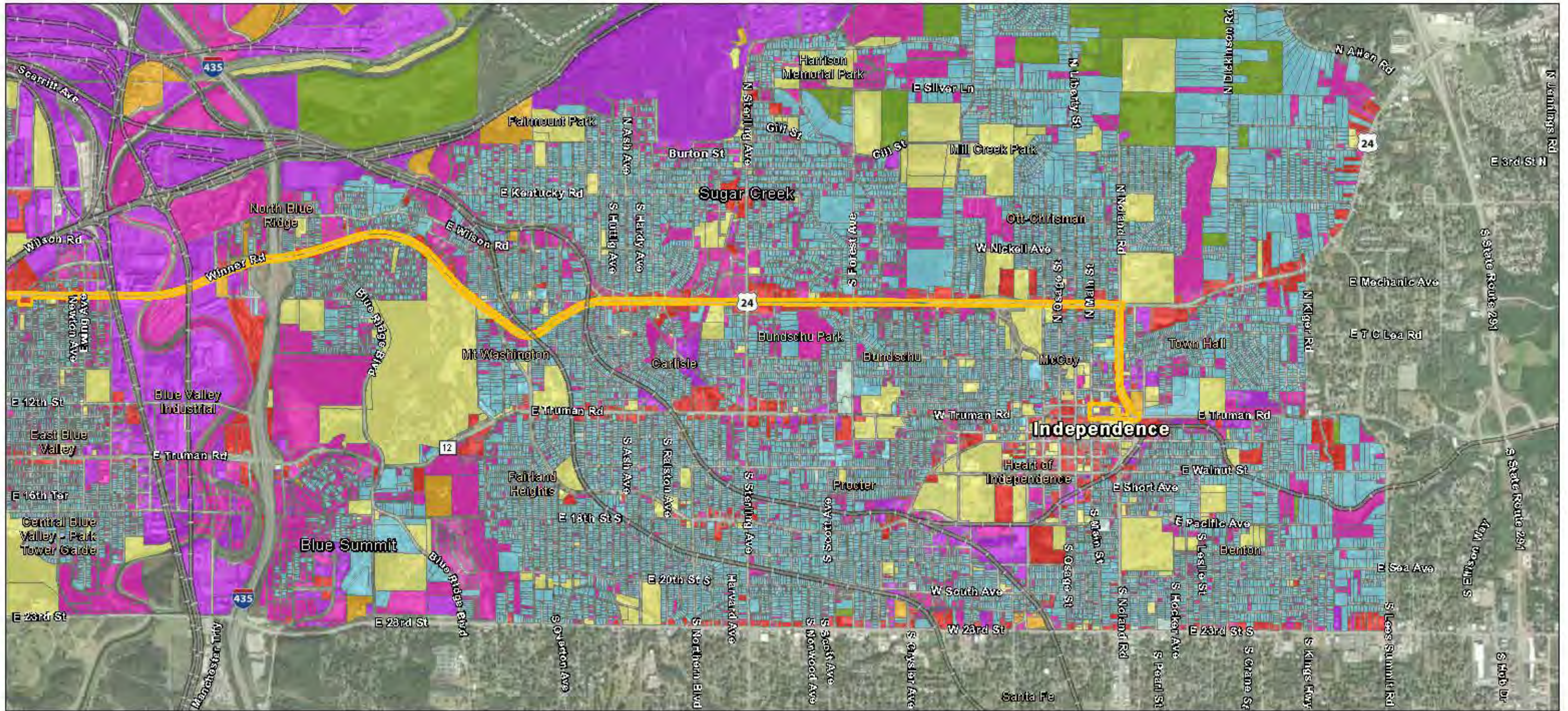
BSRC-Existing Land Use Map



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Project Location: Kansas City, Wyandotte County, KS; Jackson County, MO
Client/Project: Mid-America Regional Council, Bi-State Regional Council, Environmental Assessment
Figure No.: 2c
Title: BSRC-Existing Land Use Map



Legend

- Agriculture
- Commercial
- Industrial
- Mixed Use
- Residential
- Tax-Exempt
- Utility
- Vacant
- Phase 2 Study Area

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(At original document size of 11x17)
1:29,695



Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO
Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

Prepared by RG on 2025-02-18

190.300.478

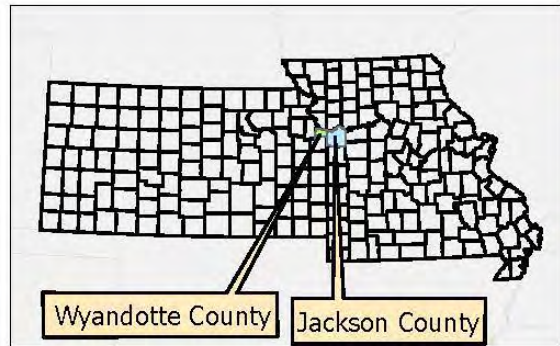
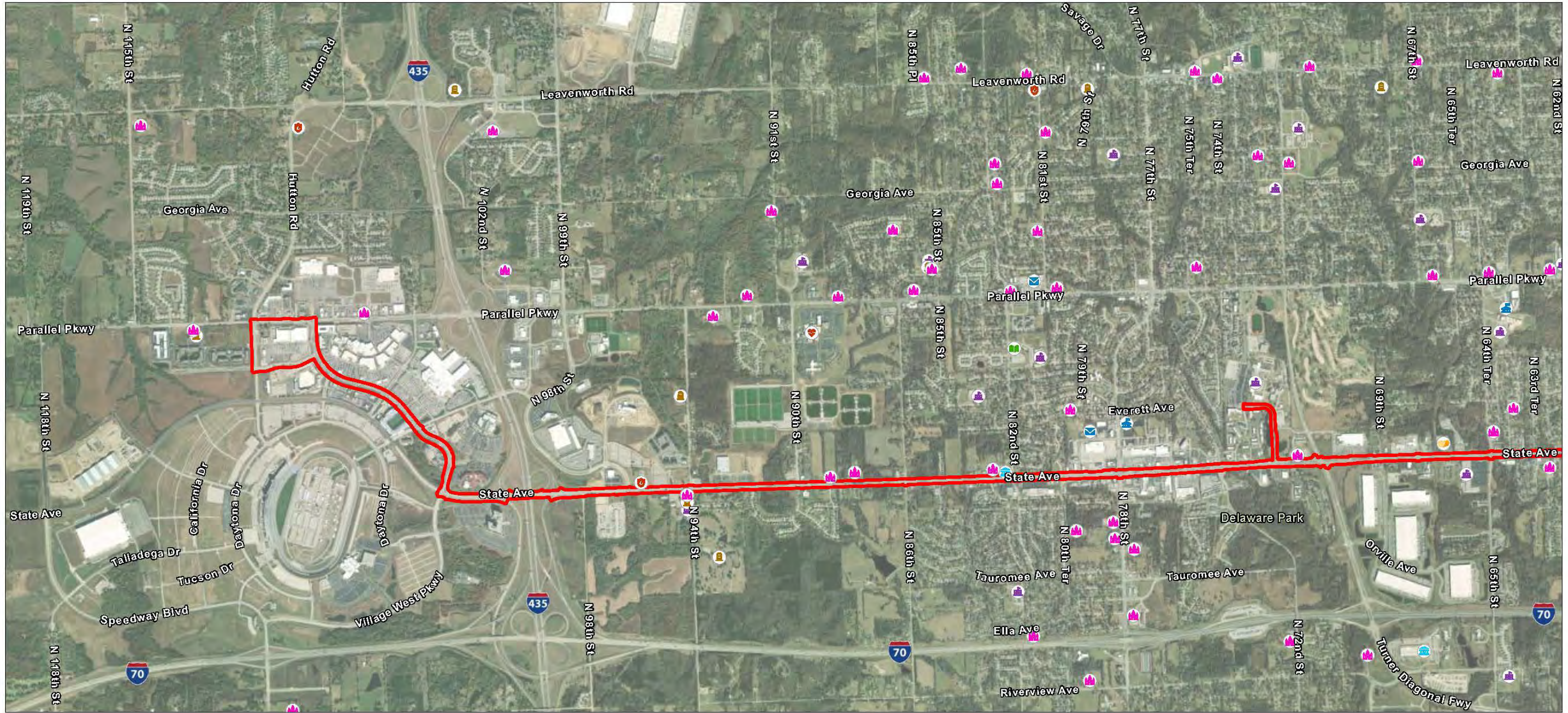
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2d

BSRC-Existing Land Use Map

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2. Data Sources: Base Feature is derived from Design Elements, Jackson County (2020), Wyandotte County (2020).
3. Background: Light Gray Base, Esri, TomTom, Garmin, FAD, NOAA, USGS, EPA, USFWS
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World Imagery: Maxar
World Topographic Map: United States of Wyandotte Co, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, FAD, METRUSA, USGS, EPA, NPS, USFWS
World Hydrology: Esri, NOAA, USGS

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NOTES
1. Coordinate System: NAD 1983 StatePlane Kansas North FIPS 5001 Feet
2. Data Sources: Base Feature produced from Design Release
3. Background: Light Gray Base, SHI, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
4. Road Labels: Mapbox Vector Streets, OpenStreetMap
5. Water Features: United States Hydrographic Survey, NOAA
6. Topographic Map: United States Geological Survey, NOAA
7. Map Labels: SHI, CO, USA, USGS

Legend

- | | |
|----------------------------|----------------------|
| Cemeteries | Government Buildings |
| Fire Station | Police Stations |
| Hospitals | Post Offices |
| Food Pantries | VA Centers |
| Museums | Schools |
| Community Centers | Universities |
| Libraries | Houses of Worship |
| Local Government Buildings | Phase 2 Study Area |

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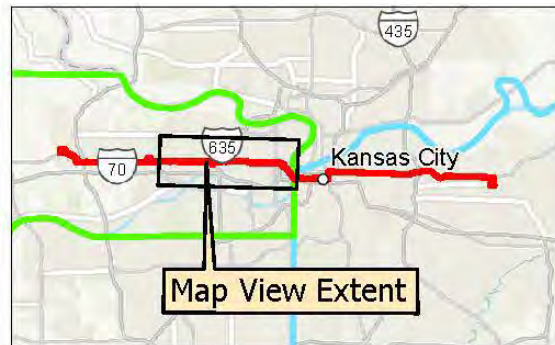
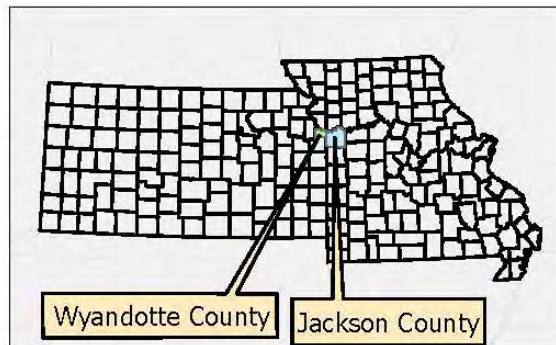
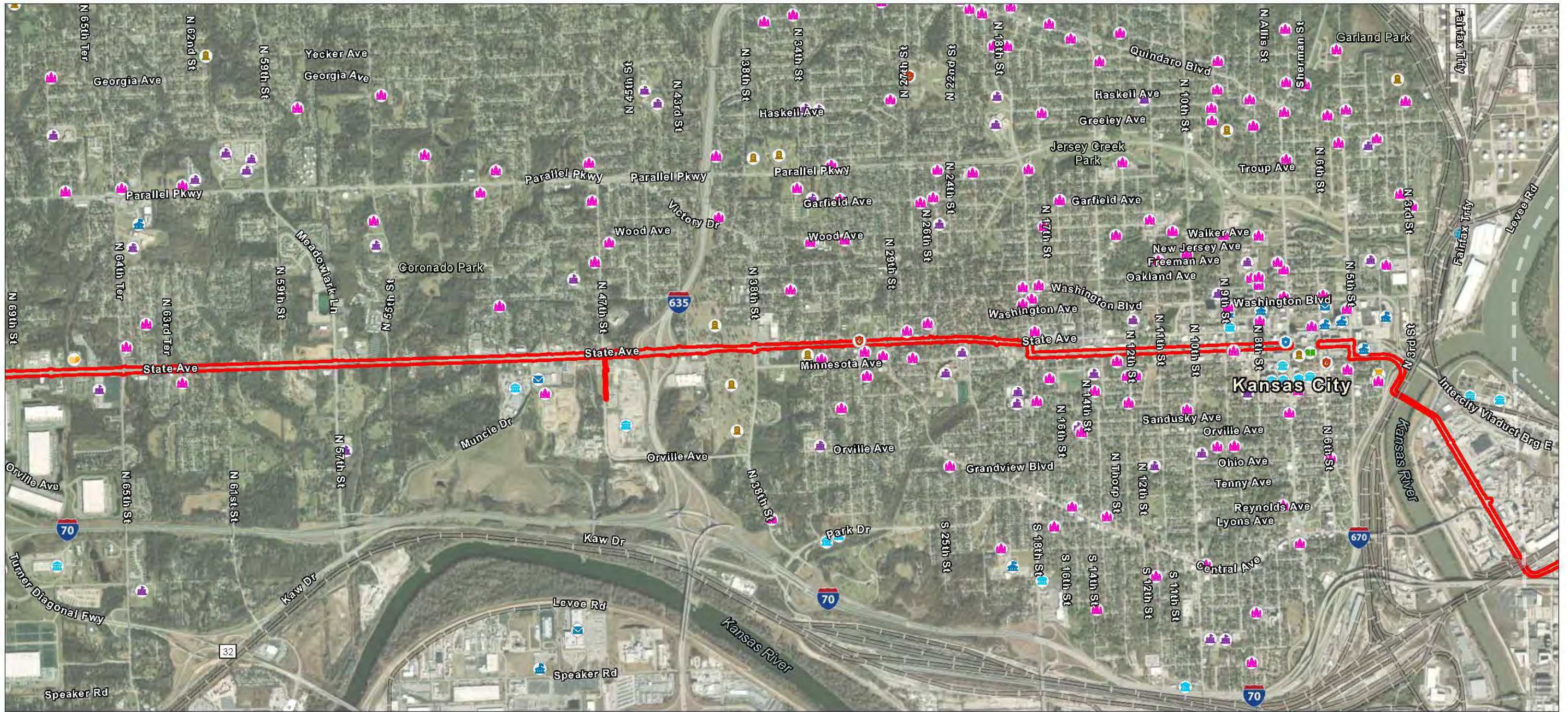
Project Location Kansas City
Wyandotte County, KS; Jackson County, MO

Client/Project Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

Figure No. 3a

Title BSRC-Community Resources Map

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Legend

- | | |
|----------------------------|----------------------|
| Cemeteries | Government Buildings |
| Fire Station | Police Stations |
| Hospitals | Post Offices |
| Food Pantries | VA Centers |
| Museums | Schools |
| Community Centers | Universities |
| Libraries | Houses of Worship |
| Local Government Buildings | Phase 2 Study Area |

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Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO
Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

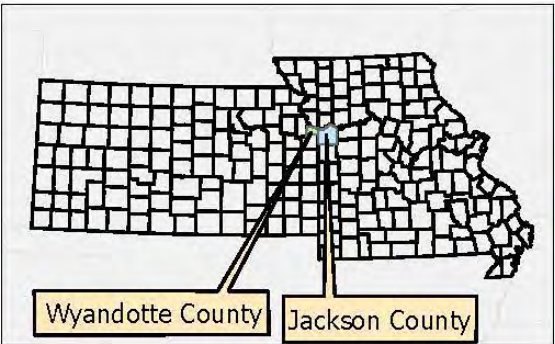
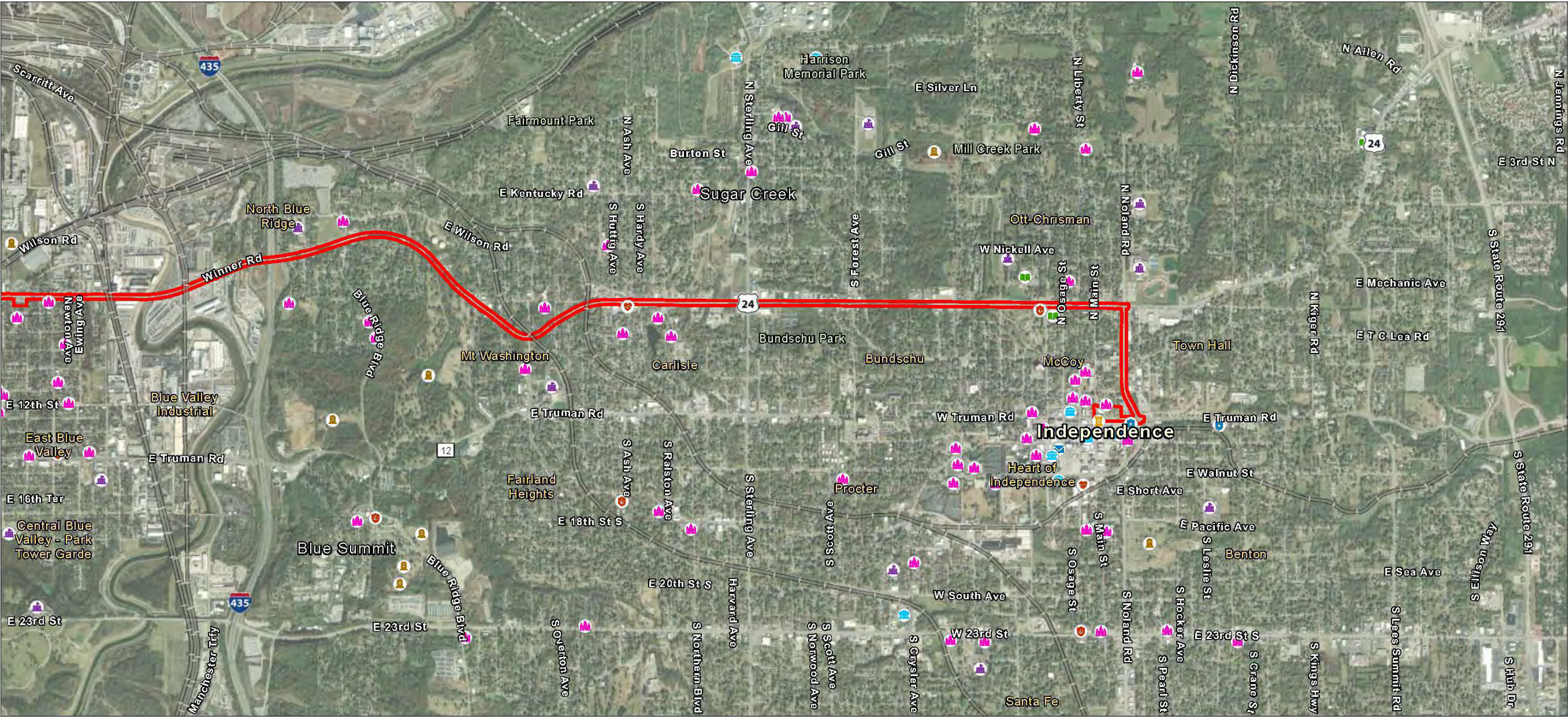
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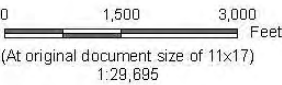
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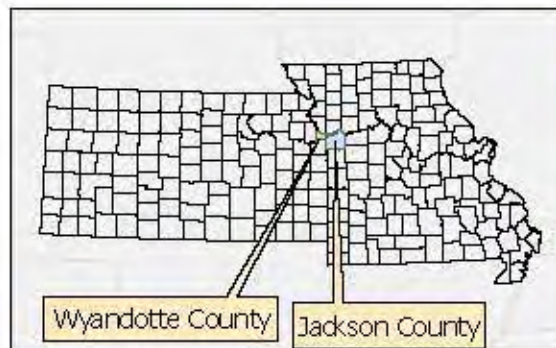
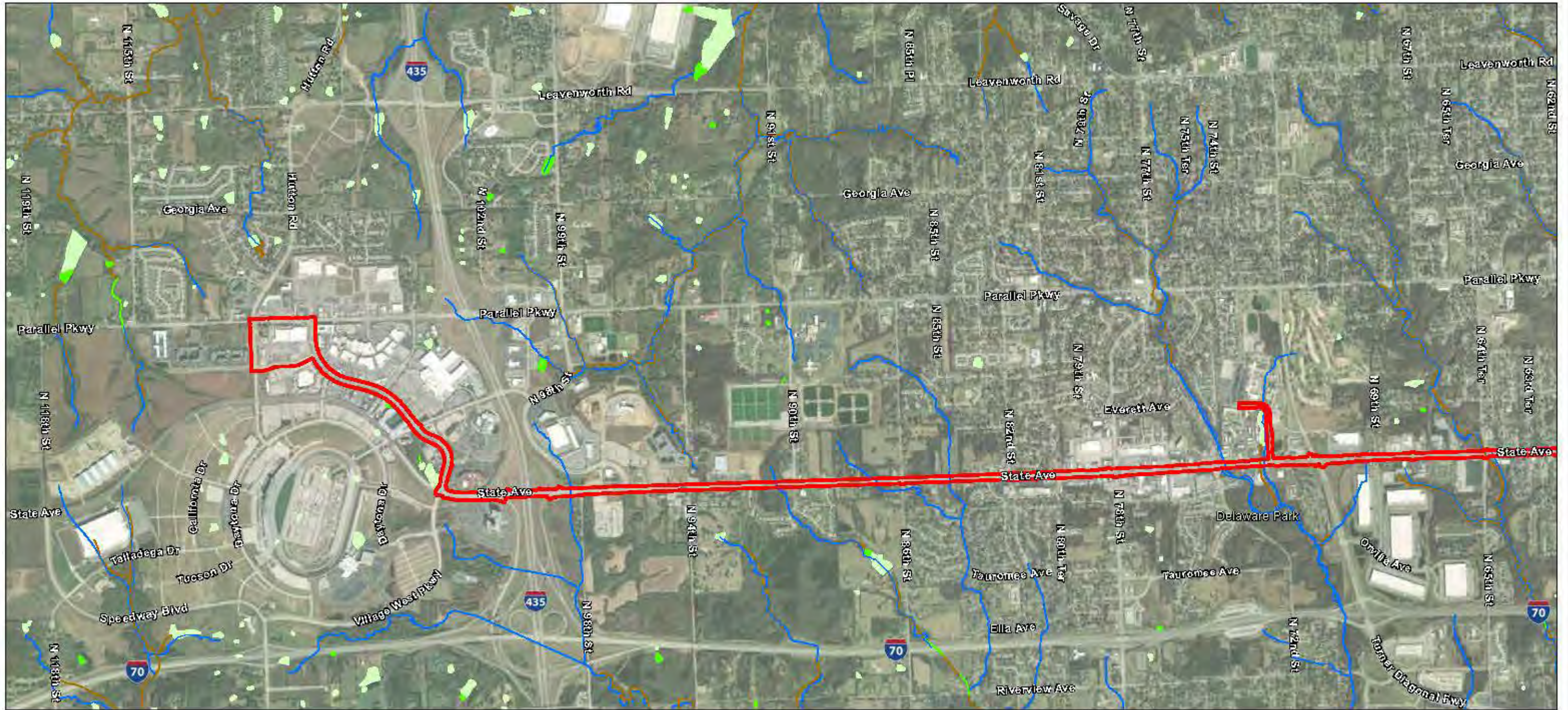
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Legend	
Cemeteries	Government Buildings
Fire Station	Police Stations
Hospitals	Post Offices
Food Pantries	VA Centers
Museums	Schools
Community Centers	Universities
Libraries	Houses of Worship
Local Government Buildings	Phase 2 Study Area



Project Location	Prepared by RG on 2026-02-18
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Wyandotte County, KS; Jackson County, MO	
Client/Project	190300478
Mid-America Regional Council	
Bi-State Regional Council	
Environmental Assessment	
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Title	
BSRC-Community Resources Map	



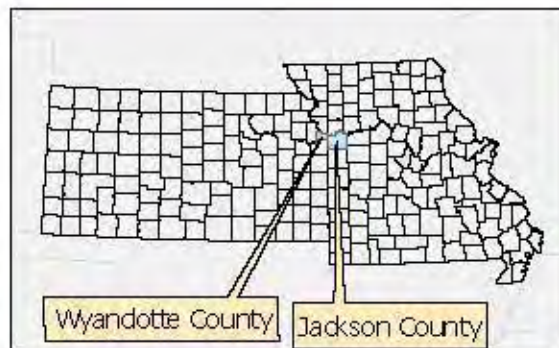
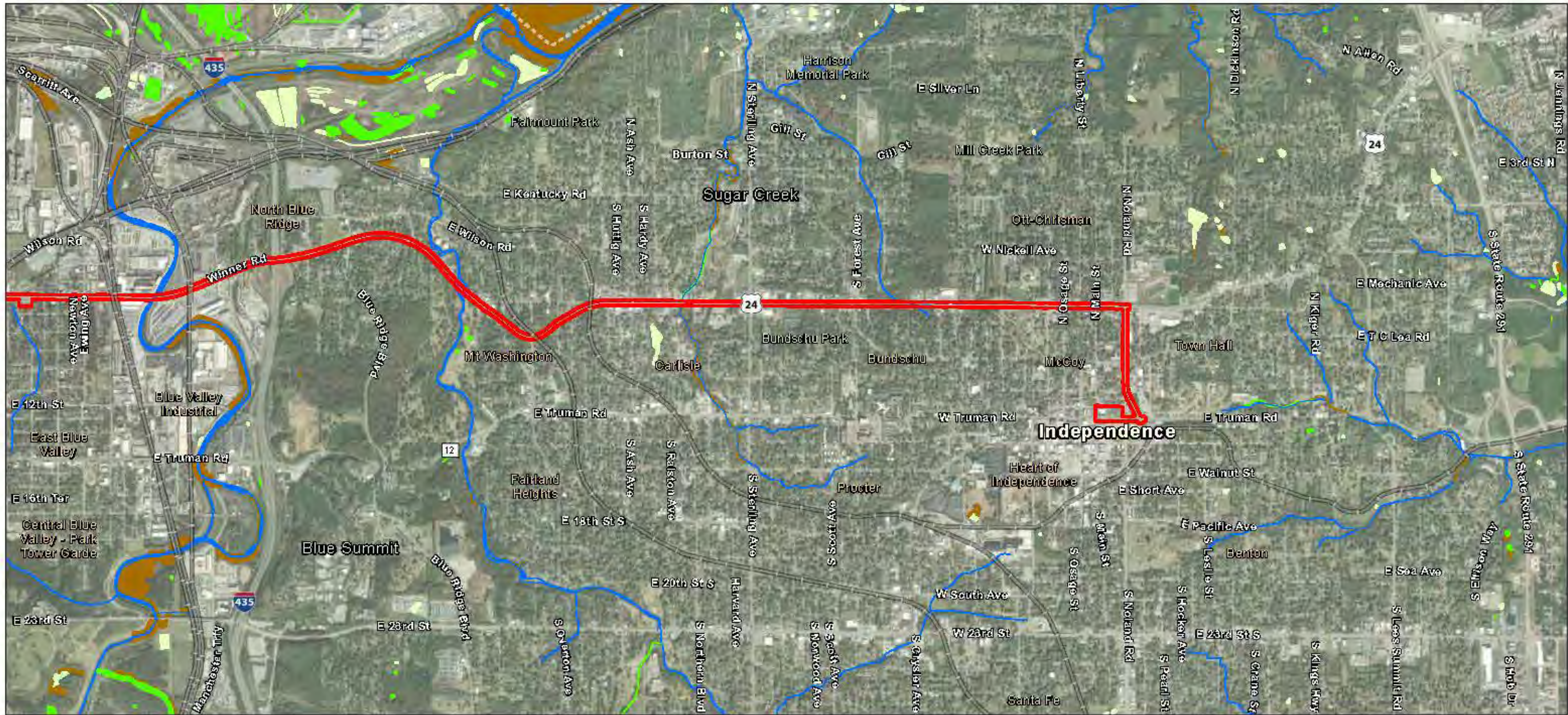
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- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- NHD Lines
- Phase 2 Study Area

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Project Location: Kansas City, Wyandotte County, KS; Jackson County, MO
Client/Project: Mid-America Regional Council, Bi-State Regional Council, Environmental Assessment
Figure No.: 4a
Title: BSRC-Wetlands and Waterbodies Map



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Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO

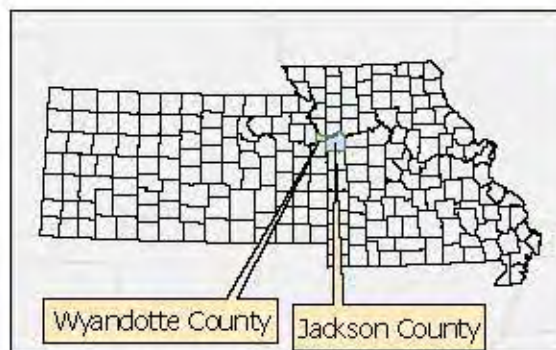
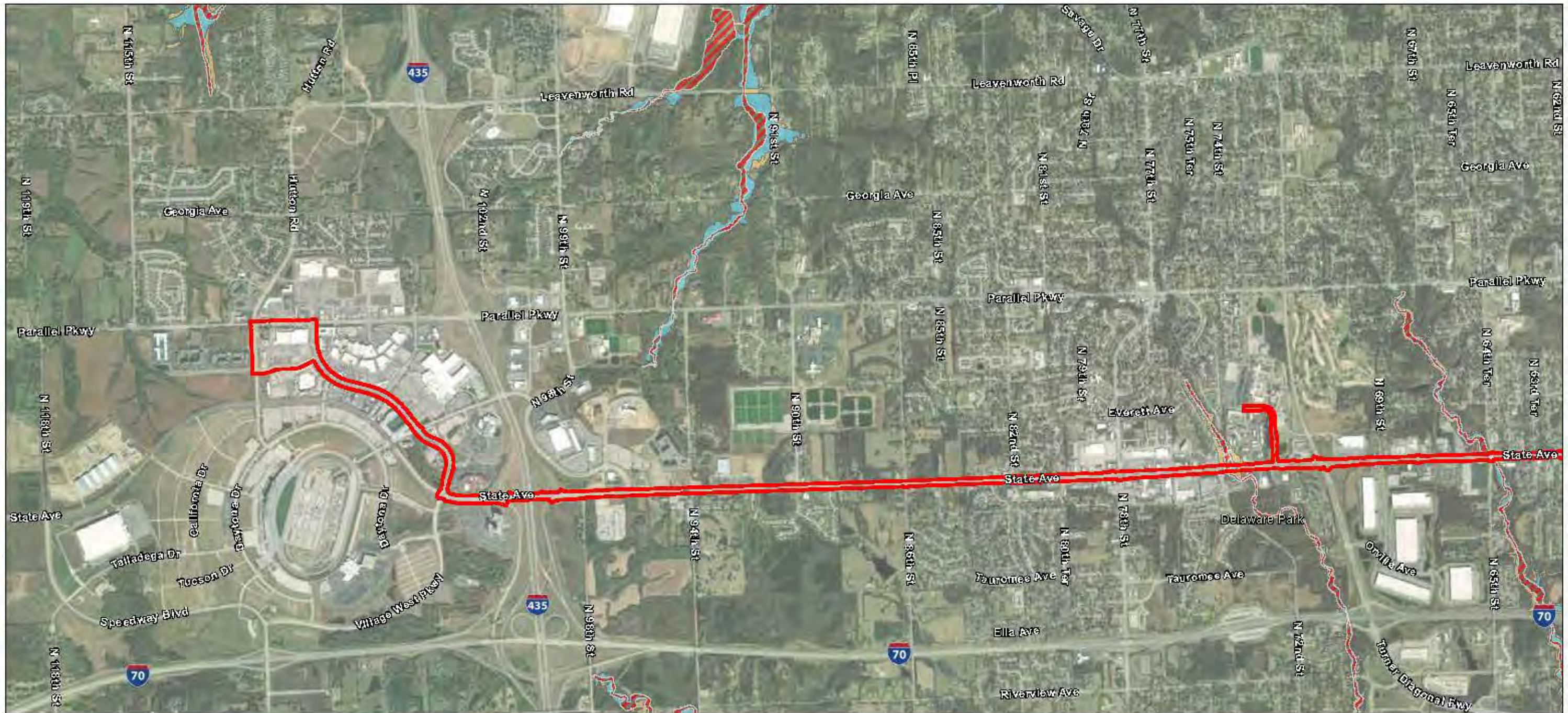
Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

Figure No.
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Title
BSRC-Wetlands and Waterbodies Map

Prepared by RG on 2025-02-18
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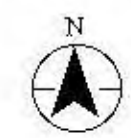
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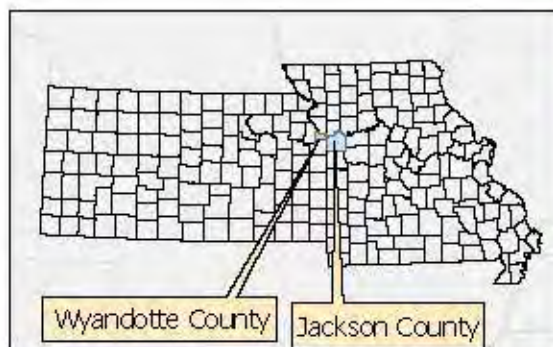
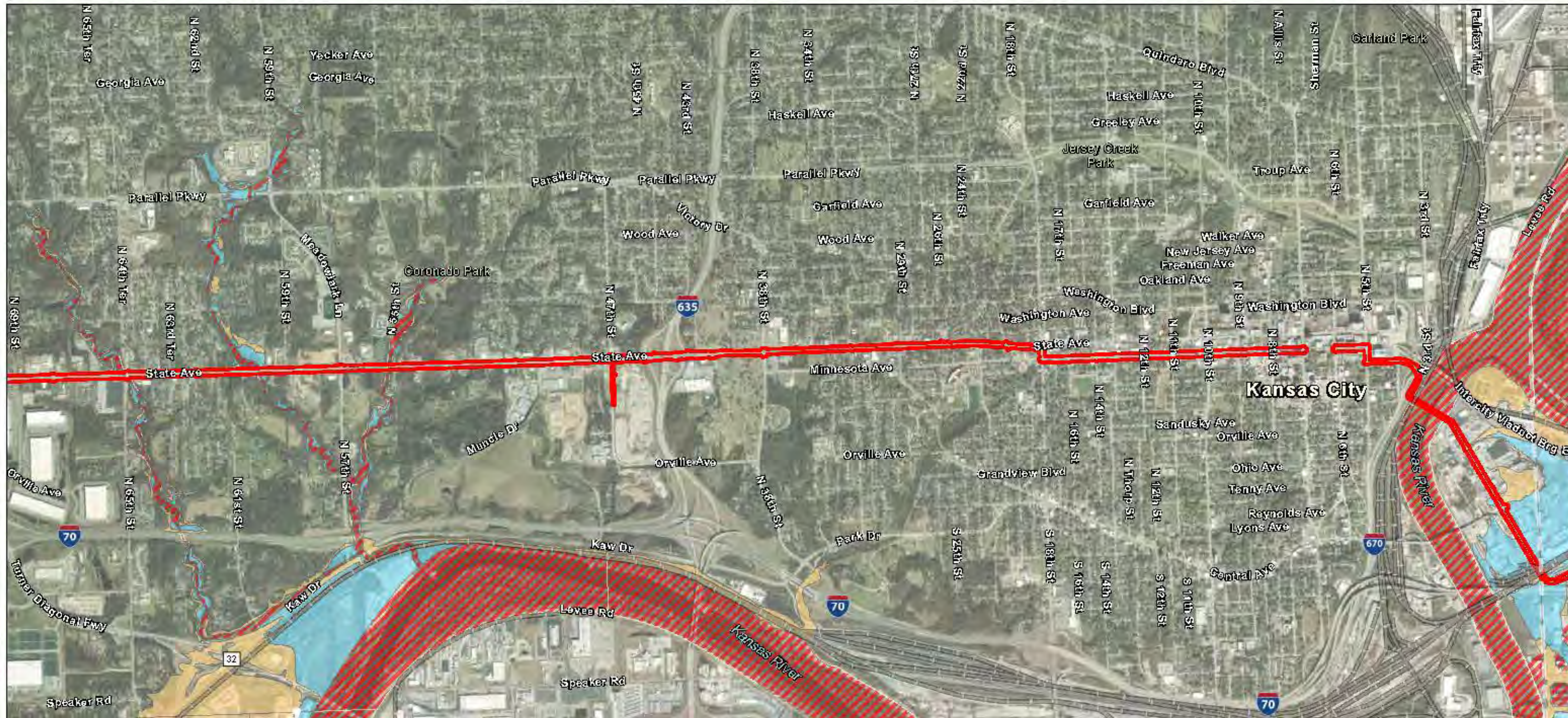
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- Floodway
- Phase 2 Study Area

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Project Location: Kansas City, Wyandotte County, KS; Jackson County, MO
 Client/Project: Mid-America Regional Council, Bi-State Regional Council, Environmental Assessment
 Figure No.: 5a
 Title: BSRC-FEMA Floodplains Map

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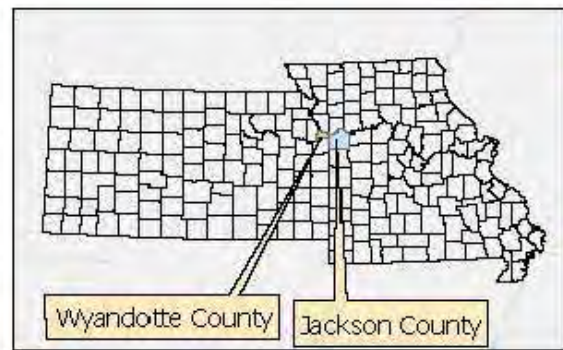
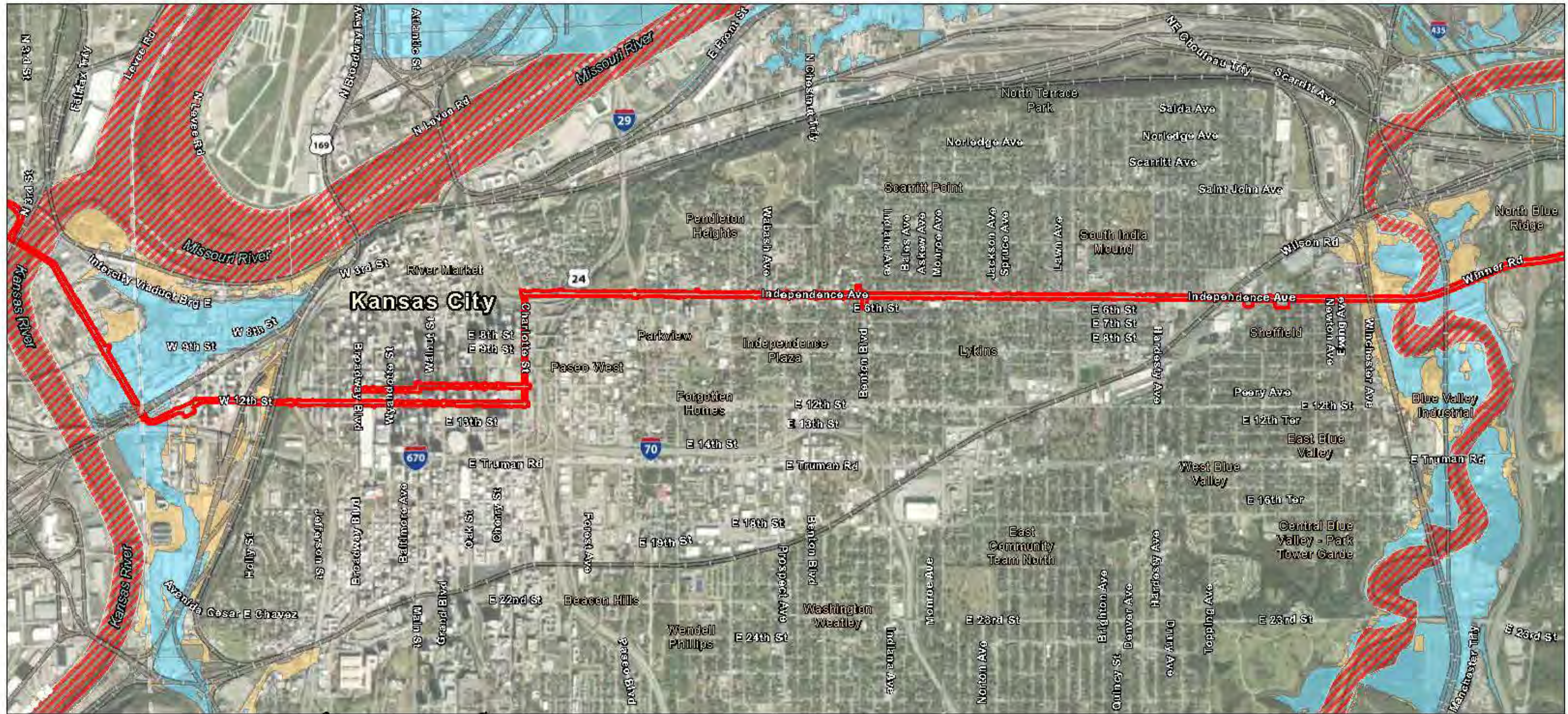
Project Location
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Wyandotte County, KS; Jackson County, MO

Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

Figure No.
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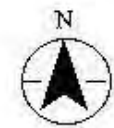
Prepared by RG on 2006-02-17
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Legend

- 100 Year Floodplain
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- Floodway
- Phase 2 Study Area

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Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO

Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

Figure No.
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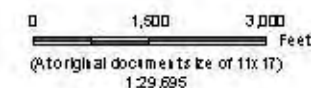
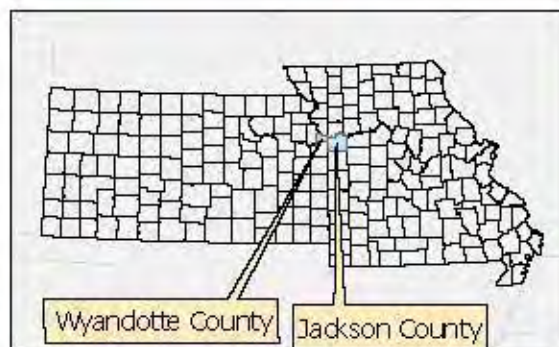
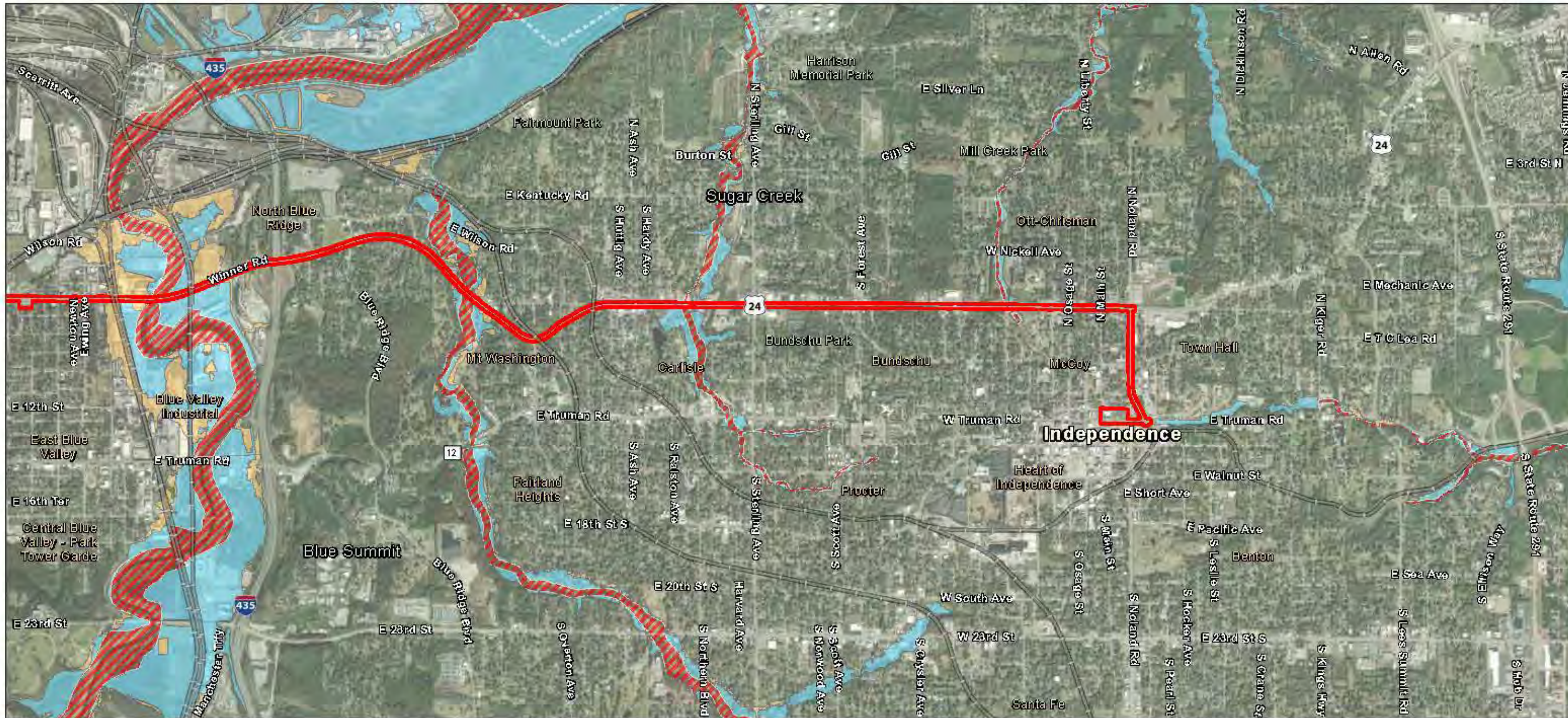
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7. World Hillshade: Esri, COMPTON, USGS

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Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO

Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

Figure No.
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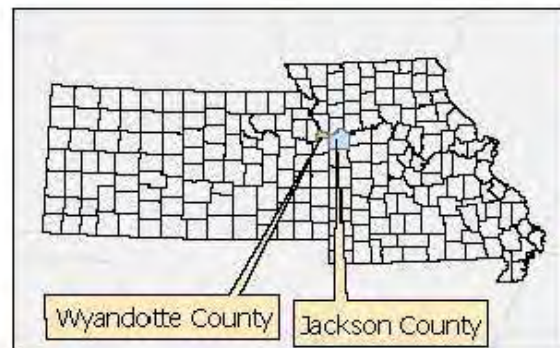
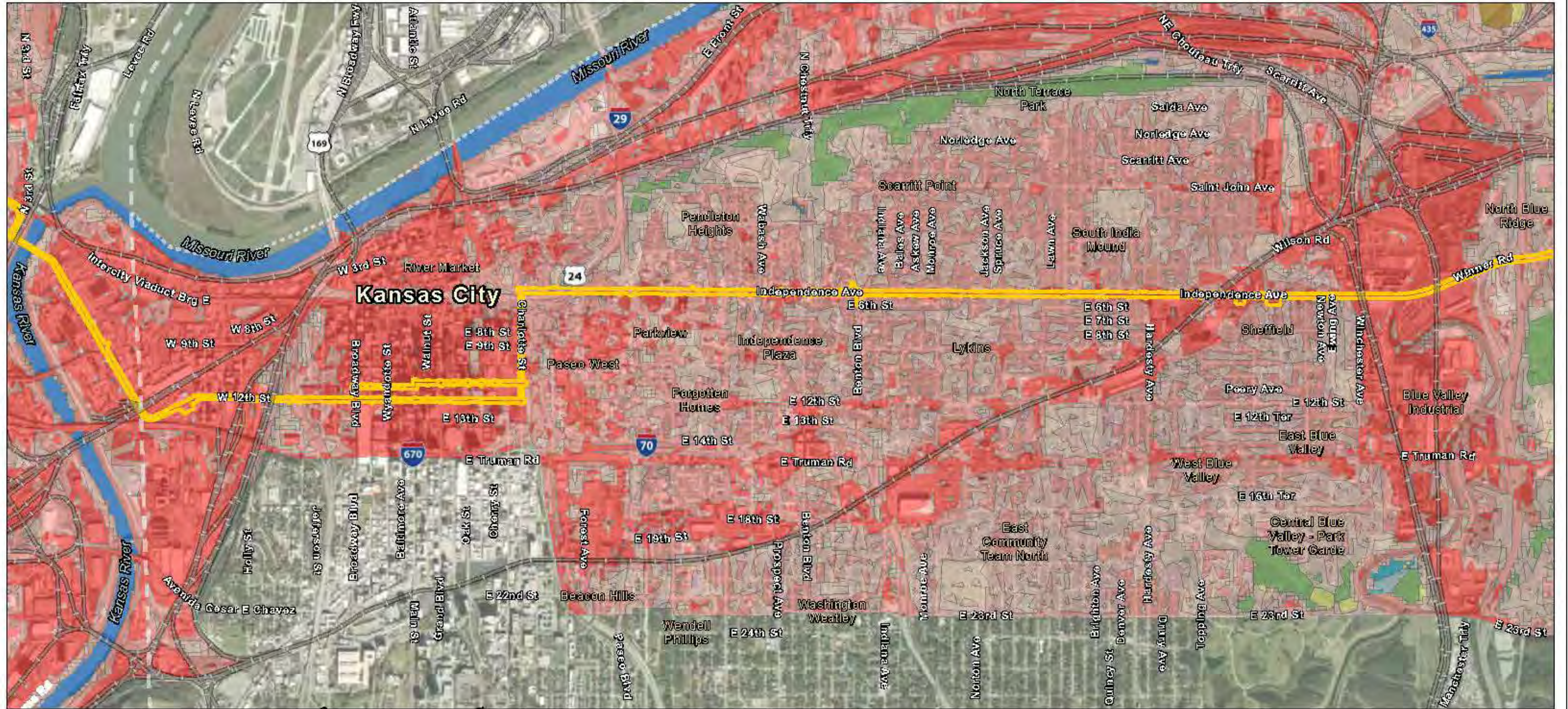
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Prepared by RG on 2025-02-13
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World Imagery, Esri
World Topographic Map, United States of America, Esri; Terrain Data, Esri; USGS, USGS
World Imagery, Esri; USGS, USGS

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Project Location Kansas City, Wyandotte County, KS; Jackson County, MO Prepared by R.O. on 2025-02-17

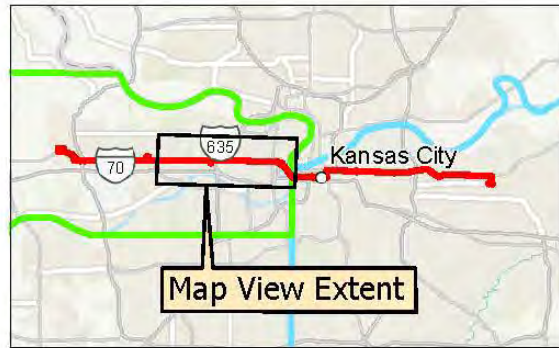
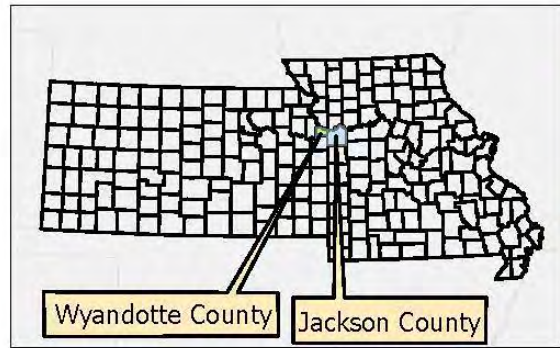
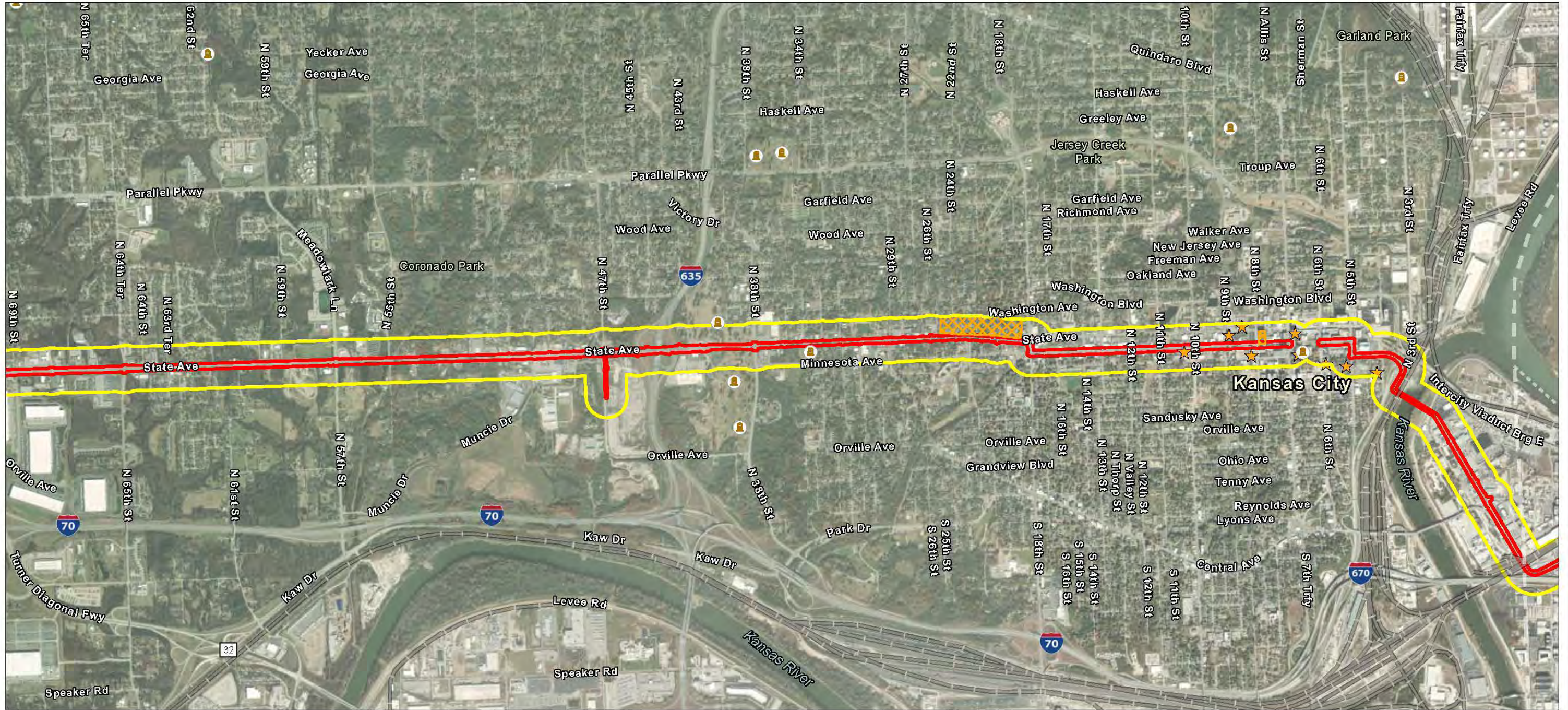
Client/Project Mid-America Regional Council Bi-State Regional Council Environmental Assessment 190300478

Figure No. 6c

Title BSRC-NLCD Land Cover Map

Notes:
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2. Data Sources: Data is derived from USGS National Wetlands Inventory (NWI) 1:250,000 Scale
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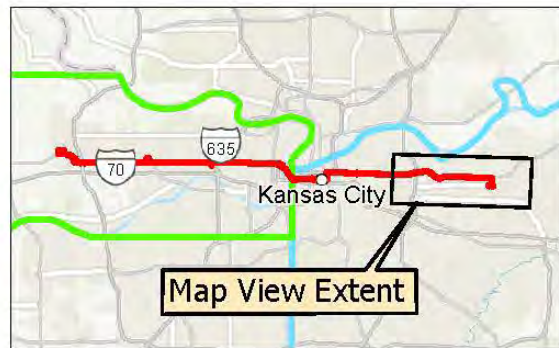
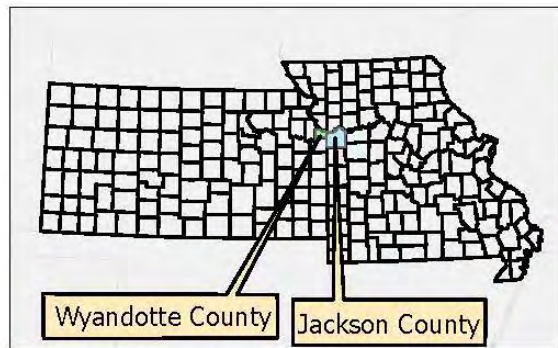
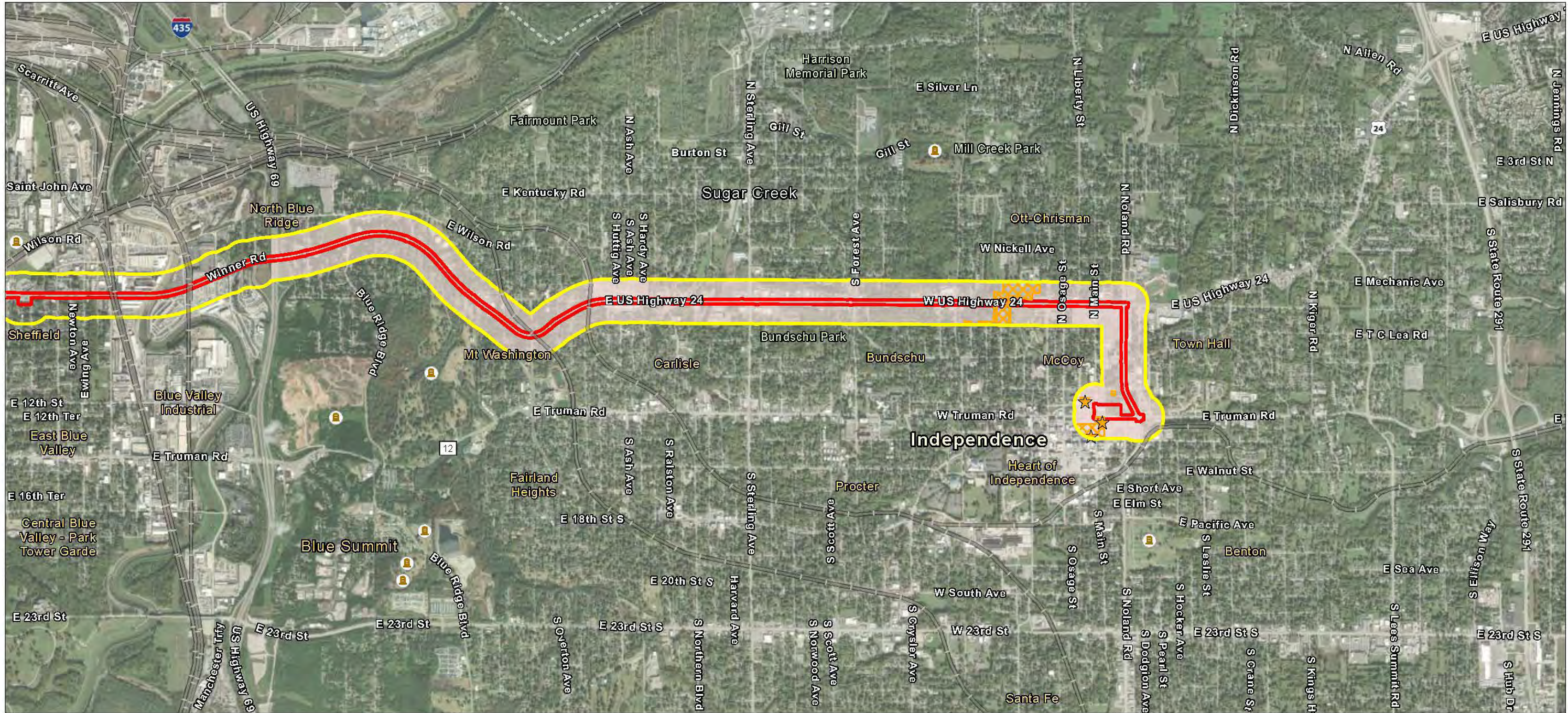
- 500 ft buffer
- Phase 2 Study Area
- National Register Historic Places
- National Register Historic Districts
- Cemeteries
- Architectural Survey*

*Not Visible within Map Extent

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Feet
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Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO
Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment
Figure No.
7b
Title
BSRC-Cultural Resources Map



Legend

- 500 ft buffer
- Phase 2 Study Area
- National Register Historic Places
- National Register Historic Districts
- Cemeteries
- Architectural Survey

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Project Location
Kansas City
Wyandotte County, KS, Jackson County, MO

Prepared by RG on 2025-12-04

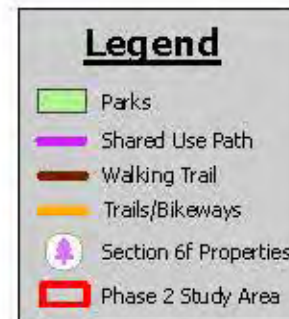
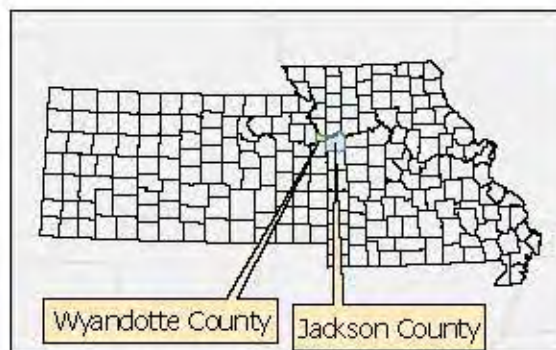
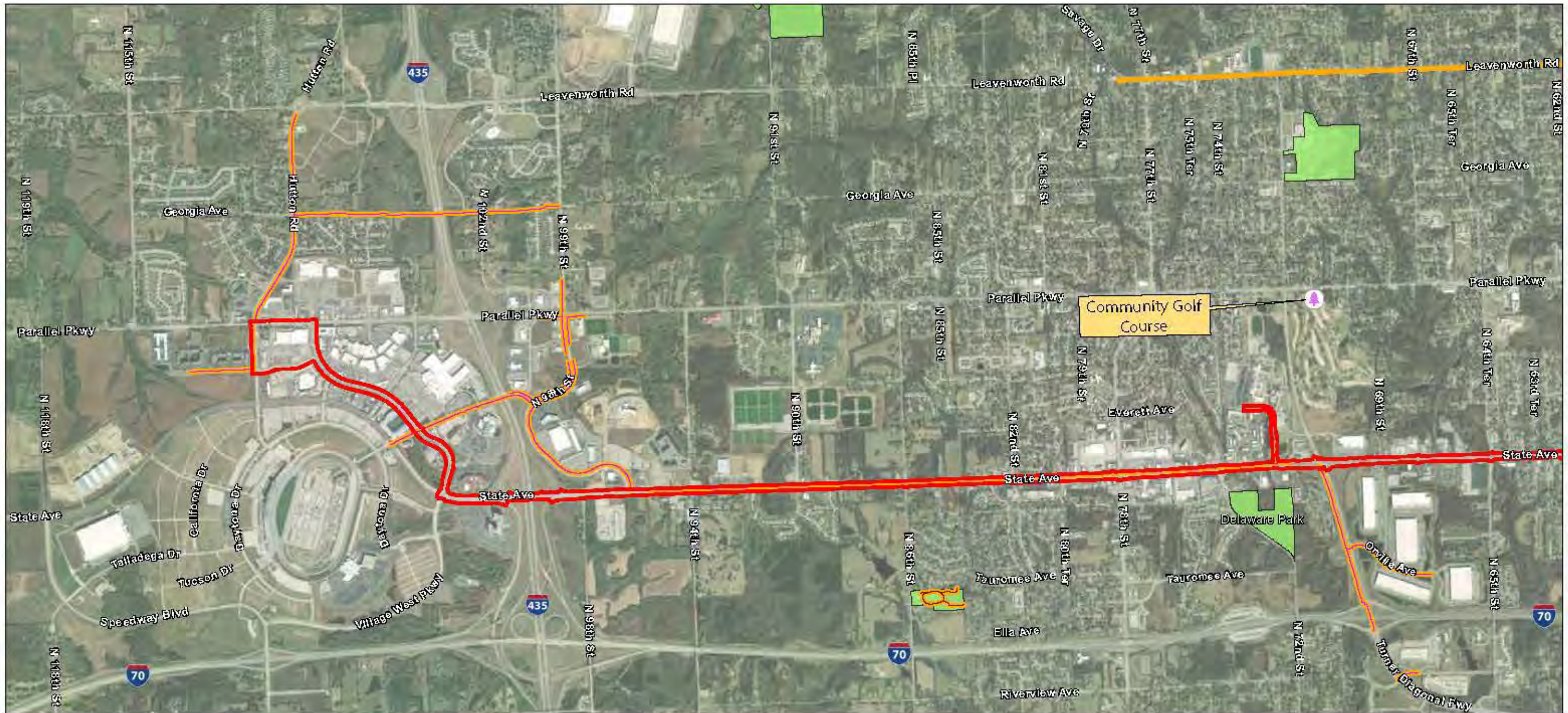
Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

190300478

Figure No.
7d

Title
BSRC-Cultural Resources Map

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1. Coordinate System: NAD 1983 StatePlane Kansas: North FIPS 1501 Feet
2. Data Sources: Base Features produced from Design Elements
3. Background: Light Gray Base: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Hybrid Reference Layer: Missouri Dept. of Conservation, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS
World Imagery: Vantor
World Topographic Map: Unified Gov of Wyandotte Co, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, FAO, METINASA, USGS, EPA, NPS, USFWS
World Hills: Esri, COIAR, USGS



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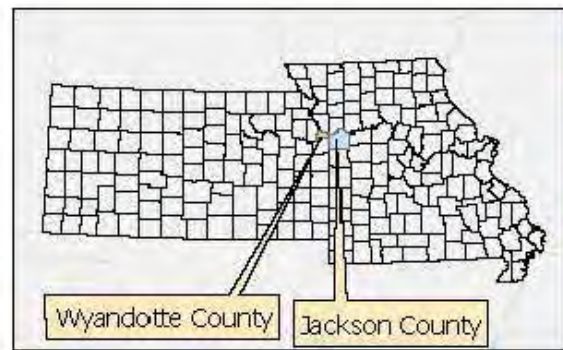
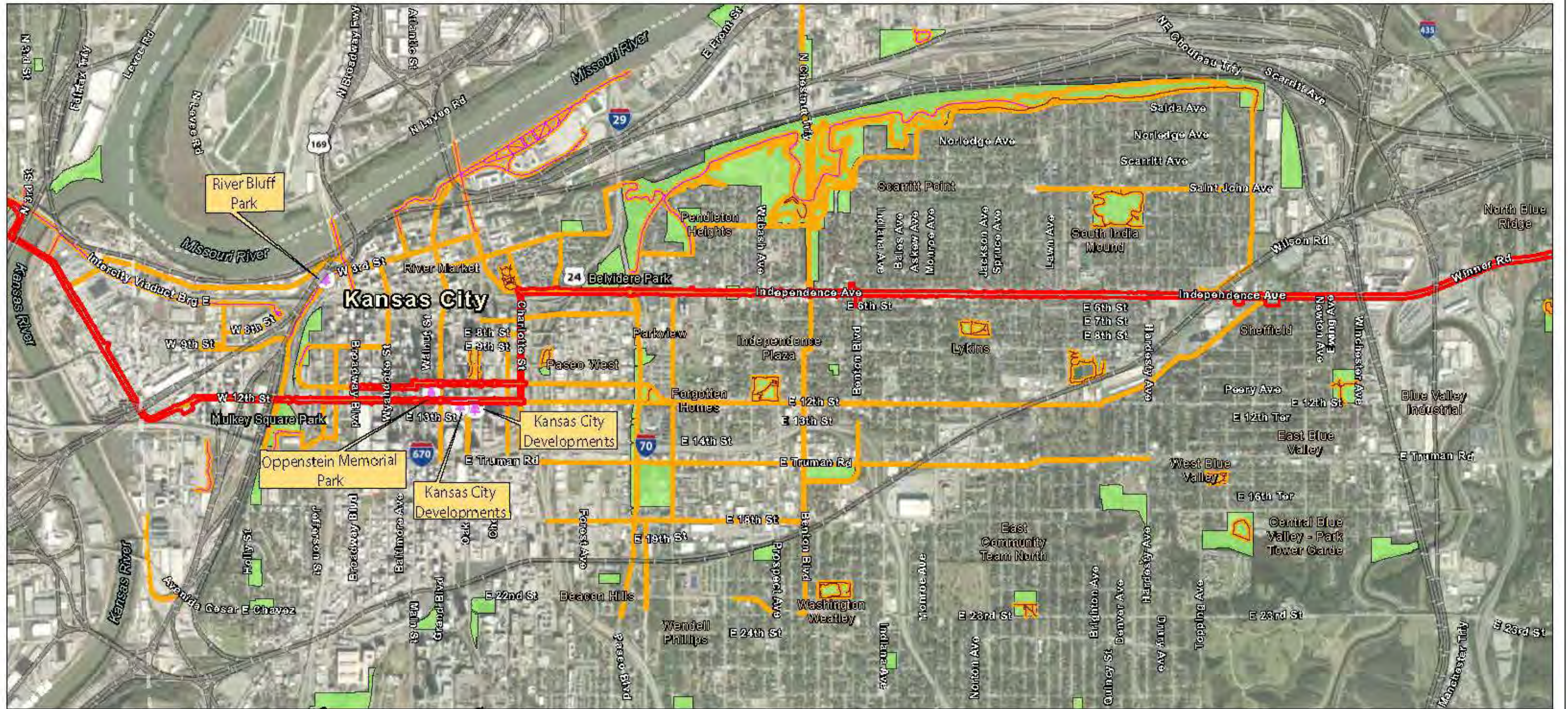


Project Location: Kansas City, Wyandotte County, KS; Jackson County, MO Prepared by: RO on 2025-02-17

Client/Project: Mid-America Regional Council, Bi-State Regional Council, Environmental Assessment 190300478

Figure No.: 8a

Title: BSRC-Section 4(f) Section 6(f) Properties Map

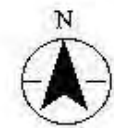


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 2. Data Sources: Base File is reproduced from Design Elements, LINCOS (2020), KS GIS (2020), MO GIS (2020).
 3. Background: Light Gray Base, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
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 World Imagery: Vector
 World Topographic Map: United States of America, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, FAO, METI/INASA, USGS, EPA, NPS, USFWS
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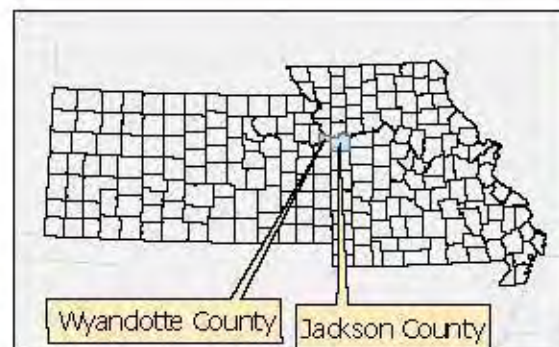
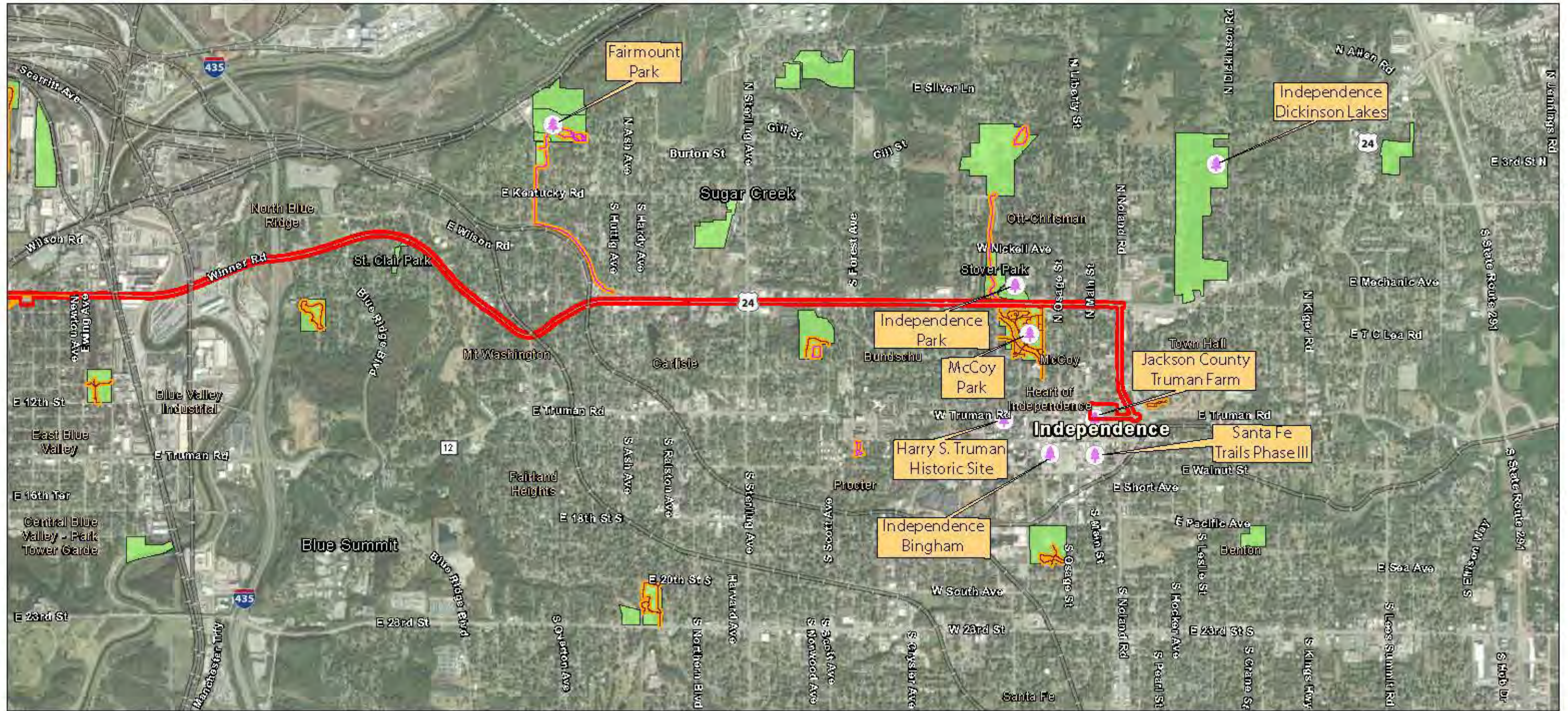
- Parks
- Shared Use Path
- Walking Trail
- Trails/Bikeways
- Section 6f Properties
- Phase 2 Study Area

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 (At original document size of 11x17)
 1:29,895



Project Location
 Kansas City
 Wyandotte County, KS; Jackson County, MO
 Client/Project
 Mid-America Regional Council
 Bi-State Regional Council
 Environmental Assessment
 Figure No.
 8c
 Title
 BSRC-Section 4(f)/
 Section 6(f) Properties Map

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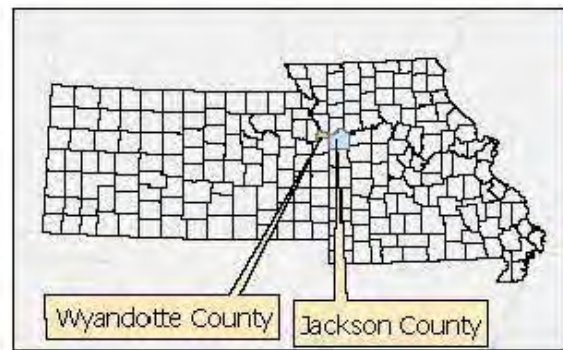
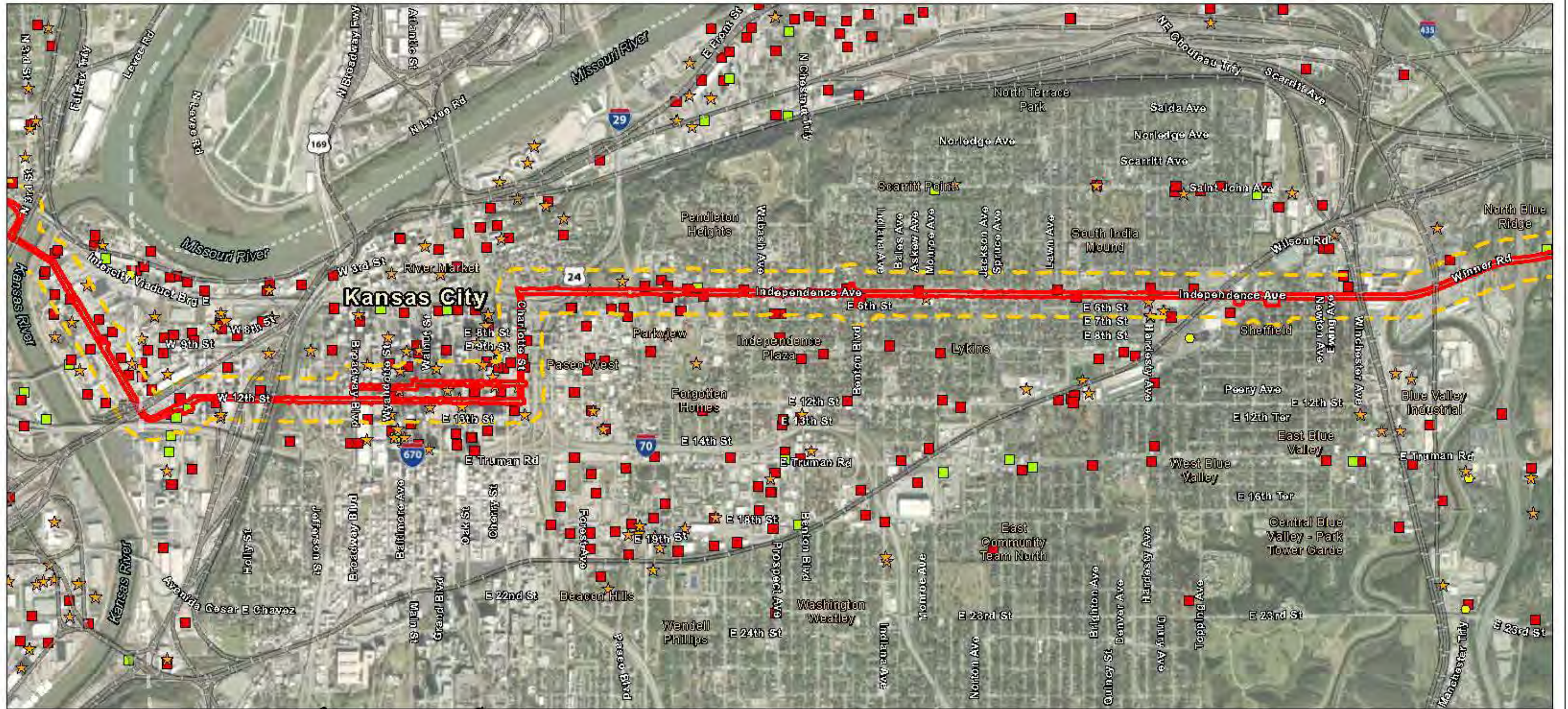
Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO
Prepared by RG on 2025-02-18

Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment
190.300.47.8

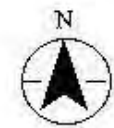
Figure No.
8d

**BSRC-Section 4(f)/
Section 6(f) Properties Map**

Notes
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4. Hybrid Reference Layer: Missouri Dept. of Conservation, Missouri DNR, Car, Terrain, Green, FAD, NOAA, USGS, EPA, USFWS
5. World Imagery: Google
6. World Topographic Map: United States of America, Missouri DNR, Car, Terrain, Green, FAD, NOAA, USGS, EPA, USFWS
7. World Hydrology: Car, NOAA, USGS



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Project Location
Kansas City
Wyandotte County, KS; Jackson County, MO

Client/Project
Mid-America Regional Council
Bi-State Regional Council
Environmental Assessment

Figure No.
9c

Title
BSRC-Hazardous Materials Map

Appendix B - State and Federal Protected Species Lists

Appendix B: Threatened and Endangered Species

1 Regulatory Background

Pursuant to the federal Endangered Species Act (ESA), the United States Fish and Wildlife Service (USFWS) has authority over projects that may result in take of a species listed as threatened or endangered (collectively known as T/E) under the ESA. Under the ESA, the definition of “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct.” Under federal regulations, take is further defined to include habitat modification or degradation that results, or is reasonably expected to result, in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. In general, persons subject to the ESA (including private parties) are prohibited from “taking” endangered or threatened fish and wildlife species on private property, and from “taking” endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Any take of federally-listed T/E species or their designated critical habitat requires an incidental take permit authorized under Section 10 of the ESA or additional measures through Section 7 consultation triggered by other federal agencies (e.g. Clean Water Act permits and authorizations).

The Project is also subject to regulations under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). The MBTA promulgates regulations protecting migratory birds and their nests or eggs from intentional or incidental “take” which includes activities such as to pursue, shoot, poison, wound, kill, capture, trap, molest, or disturb. Under the MBTA, construction activities in grassland, roadsides, wetland, riparian, shrubland, or woodland habitats that would otherwise result in the taking of migratory birds, eggs, young and/or active nests should be avoided. The USFWS implements the MBTA as prohibiting incidental take and applying enforcement discretion (50 Code of Federal Regulations Parts 21 and 22). The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are federally protected by the MBTA and the BGEPA, which protects eagle parts (including nests, eggs, and features) from incidental take.

As provided by the Kansas Nongame and Endangered Species Conservation Act of 1975, the Kansas Department of Wildlife and Parks (KDWP) designates nongame species as Species in Need of Conservation (SINC), threatened, or endangered. In addition to granting protection for state-listed T/E species, KDWP also protects state-designated critical habitat, defined as “specific areas documented as currently providing essential physical and biological features and supporting a self-sustaining population of a listed species; or specific areas not documented as currently supporting a listed species, but determined essential for the listed species by the secretary.” Action Permits are required from KDWP if a project is publicly funded or another state or federal permit is required and incidental take is likely, or if the development involves the intentional taking of a species listed as threatened or endangered by the state or the species’ state-designated critical habitat. Species listed as SINC are not included in this report unless they are provided additional legal protection under state or federal law.

The Wildlife Code of Missouri prohibits the importation, transportation, sale, purchase, taking, or possession with intent to sell of any article made in whole or in part from the skin, hide, or other parts of any state-listed endangered species. There is no permitting mechanism for the “take” of state-listed species during otherwise lawful commercial activities. Through the state environmental review process, Missouri Department of Conservation (MDC) staff review construction projects and provide recommendations, including actions to avoid and minimize impacts on Missouri-listed species. While it is unlawful to “take” a state-endangered species or its



parts from a population, disturbing the habitat of a state-listed species is not unlawful. Missouri also designates Species of Conservation Concern (SCC), which are not afforded legal protections but are classified based upon their rarity or vulnerability to extirpation. Species with this designation are not included in this report unless they are provided additional legal protection under state or federal law.

2 Preliminary Desktop Analysis

The USFWS Information for Planning and Consultation (IPaC) tool provides a list of federally listed species and/or species proposed for listing that have the potential to occur within the Study Area. The KDWP Wyandotte County List of T/E species lists T/E species with documented occurrences in Wyandotte County. The MDC Natural Heritage Review (NHR) includes T/E species with documented occurrences within Jackson County, Missouri.

The IPaC Resources List (provided in Attachment A) indicated that the Study Area is within the ranges of the federally endangered gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), and pallid sturgeon (*Scaphirhynchus albus*), the proposed endangered tricolored bat (*Perimyotis subflavus*), and the proposed threatened monarch butterfly (*Danaus plexippus*) and western regal fritillary (*Argynnis idalia occidentalis*).

Additionally, the IPaC Resources List indicated that the Study Area is within the range of the bald eagle, which is protected under BGEPA and MBTA, and 16 additional species of migratory birds which are protected under MBTA. Species that do not nest in the vicinity of the Study Area include the American golden-plover (*Pluvialis dominica*), lesser yellowlegs (*Tringa flavipes*), pectoral sandpiper (*Calidris melanotos*), rusty blackbird (*Euphagus carolinus*), and semipalmated sandpiper (*Calidris pusilla*). Species that may nest in the vicinity of the Study Area include the bald eagle, black-billed cuckoo (*Coccyzus erythrophthalmus*), bobolink (*Dolichonyx oryzivorus*), cerulean warbler (*Setophaga cerulea*), chimney swift (*Chaetura pelagica*), grasshopper sparrow (*Ammodramus savannarum perpallidus*), Henslow's sparrow (*Centronyx henslowii*), Kentucky warbler (*Geothlypis formosa*), prairie loggerhead shrike (*Lanius ludovicianus excubitorides*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), and wood thrush (*Hylocichla mustelina*).

The KDWP Wyandotte County List of T/E Species (Attachment B) identified five state-listed endangered species (least tern [*Sternula antillarum*], pallid sturgeon, silver chub [*Macrhybopsis storeriana*], sicklefin chub [*Macrhybopsis meeki*], and American burying beetle [*Nicrophorus americanus*]) and seven state-listed threatened species (snowy plover [*Anarhynchus nivosus*], piping plover [*Charadrius melodus*], plains spotted skunk [*Spilogale interrupta*], plains minnow [*Hybognathus placitus*], flathead chub [*Platygobio gracilis*], western silvery minnow [*Hybognathus argyritis*], and sturgeon chub [*Macrhybopsis gelida*]) with the potential to occur in Wyandotte County.

The MDC Missouri Natural Heritage Program Jackson County List of T/E Species (Attachment C) identified two state-listed endangered species with the potential to occur in Jackson County: the pallid sturgeon and the lake sturgeon (*Acipenser fulvescens*).

No USFWS-designated critical habitat is present within the Study Area, with the nearest Service-designated critical habitat approximately 83 miles to the southwest (USFWS 2026b). Missouri does not designate critical habitat for state-listed species. The Study Area crosses the Kansas River, which is KDWP-designated critical habitat for the plains minnow, flathead chub, sturgeon chub, silver chub, least tern, and piping plover.



The T/E species, along with their listing status and preferred habitat in Kansas and Missouri, are listed in Table 1.

Table 1 T/E Species Potentially Occurring in the Study Area and Vicinity

Common Name (Scientific Name)	Federal Status	Kansas Status	Missouri Status	Potential to Occur	Habitat
Mammals					
Plains Spotted Skunk (<i>Spilogale interrupta</i>) ²	--	T	E	Low	Inhabits forest edges and grasslands, often preferring areas with adequate cover such as rocky outcrops or shrubs, odd areas, and abandoned structures.
Gray Bat (<i>Myotis grisescens</i>) ¹	E	E	E	Low	Hibernates and roosts in caves and mines throughout the year. Forested areas along the banks of streams and lakes near cave roosts provide feeding grounds and shelter.
Indiana Bat (<i>Myotis sodalis</i>)	E	--	E	Moderate	Hibernates in caves and mines; roosts in trees; forages in small stream corridors with well-developed riparian woods or upland forests with an open understory.
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	E	SINC	E	Moderate	Hibernates in caves; roosts in trees; forages over wetlands, in forest interiors, and at forest edges near grasslands and agricultural fields.
Tricolored Bat (<i>Perimyotis subflavus</i>)	PE	--	SCC	Moderate	Hibernates in caves, mines, culverts, bridges, buildings and often returns to the same hibernaculum every year. Forages along forest and wetland edges and over ponds and waterways.
Birds					
Bald eagle (<i>Haliaeetus leucocephalus</i>)	DL; BGEPA	--	SCC	Low	Nests in tall trees or on cliffs near water. Wintering areas are commonly associated with open water, which is a source of preferred food. Typically roosts in trees, up to 20 miles from food sources.
Least Tern (<i>Sternula antillarum</i>) ²	DL	E	E	Low	Originally lived on islands and sandbars in big rivers, but often uses dredge islands, dike fields, sandpits, and gravel roads on levees.
Piping Plover (<i>Charadrius melodus</i>)	T	T	--	Low	Requires sparsely vegetated shallow wetlands and open beaches and sandbars adjacent to or within streams and impoundments.
Snowy Plover (<i>Anarhynchus nivosus</i>) ²	--	T	--	Low	Inhabits open salt flats, beaches and bars of rivers, and wetlands. Nests in open salt flats or sandy areas near water.
Fish					
Flathead Chub (<i>Platygobio gracillis</i>)	--	T	E	Low	Found in large rivers and tributaries in areas of swift currents and continuously turbid waters; prefers sand and fine gravel substrates.



Common Name (Scientific Name)	Federal Status	Kansas Status	Missouri Status	Potential to Occur	Habitat
Lake Sturgeon (<i>Acipenser fulvescens</i>)	--	--	E	Low	Inhabits the bottoms of large, clean, freshwater river channels with a continuous strong flow. Preferred river channel substrate is typically firm sand, gravel, or rock.
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	E	E	E	Low	Dwells at the bottom of large rivers in areas of strong current that have firm sand substrates in the main river channels, such as along sand bars and behind wing dikes with deeply scoured trenches.
Plains Minnow (<i>Hybognathus placitus</i>)	--	T	SCC	Low	Occurs in small to medium rivers and large streams with sandy or silty bottoms; requires sufficient water flow that varies between high land low flow rates to complete its life cycle.
Shoal Chub (<i>Macrhybopsis hyostoma</i>)	--	T	--	Low	Inhabits broad shallow riffles over sand, mud, or firm gravel in large low-gradient streams and small to large rivers; often in fast water over shifting sand.
Sicklefin Chub (<i>Macrhybopsis meeki</i>)	--	T	--	Low	Primarily inhabits sandy or fine gravel channels of the Missouri and Mississippi Rivers and prefers fast moving, turbid waters.
Silver Chub (<i>Macrhybopsis storeriana</i>)	--	E	--	Low	Lives on or near the bottom of large sandy rivers.
Sturgeon Chub (<i>Macrhybopsis gelida</i>)	--	T	SCC	Low	Prefers strong currents within open channels of large rivers with sand or fine gravel substrates.
Western Silvery Minnow (<i>Hybognathus argyritis</i>)	--	T	SCC	Low	Inhabits large, slow moving, silty rivers with fine sediment substrates.
Insects					
American Burying Beetle (<i>Nicrophorus americanus</i>)	T	E	E	Low	Inhabits a wide variety of vegetative habitats including grasslands and hardwood forests. Prefers sandy clay loam soils.
Monarch Butterfly (<i>Danaus plexippus</i>)	PT	--	--	Moderate	Lays eggs on obligate milkweed (<i>Asclepias</i> spp.) host plants and forages on flowering plant species in herbaceous, grassland, and riparian habitats.
Western Regal Fritillary (<i>Argynnis idalia occidentalis</i>)	PT	--	SCC	Low	Inhabits remnant native prairies and native pastures. Violets (<i>Viola</i> spp.) are the sole larval food source. Adults use warm-season bunchgrasses and nectar plants for shelter and food.

Sources: KDWP 2025; MDC 2025, 2026a, 2026b; NatureServe 2026; USFWS 2025a, 2026a

¹The gray bat was recommended for federal delisting on July 1, 2025, based on the results of the most recent Species Status Assessment (USFWS 2025b).

²Common and/or scientific name has been updated and does not match KDWP list.

Key:

DL = Delisted

E = Endangered

PE = Proposed Endangered



Common Name (Scientific Name)	Federal Status	Kansas Status	Missouri Status	Potential to Occur	Habitat
T = Threatened PT = Proposed Threatened SINC = Species in Need of Conservation SCC = Species of Conservation Concern BGEPA = Protected under the Bald and Golden Eagle Protection Act					

Project development activities may include road and sidewalk reconstruction and installation of bus stop shelters, bus stations, and shared use paths. Reconstruction activities and bus stop shelter installations are expected to occur within the existing infrastructure footprint, and the proposed locations of new bus stations are currently paved and developed areas that do not provide suitable wildlife habitat.

Although land cover in the Study Area is largely developed, portions of the Study Area along State Avenue are bordered by patches of deciduous forest that may provide suitable foraging or roosting habitat for the federally listed and proposed bat species and nesting or perching habitat for migratory birds. Developed Open Space and Pasture/Hay land cover may provide suitable habitat for the monarch butterfly if native flowering plants are present. Based on a desktop review, suitable habitat for the western regal fritillary (native grasslands and prairies) is not present in or near the Study Area.

Based on a desktop analysis, the Study Area does not contain suitable habitat for the least tern, piping plover, snowy plover, plains spotted skunk, or American burying beetle. Although the Study Area includes bridge crossings over potentially suitable habitat for the federal and state listed fish species, no temporary or permanent impacts to aquatic resources are expected.

Using knowledge of the preferred habitats of federally and state protected species with potential to occur within the Study Area and a desktop review of habitats within the Study Area, potentially suitable habitat was identified within the Study Area for the federally listed or proposed monarch butterfly, gray bat, Indiana bat, northern long-eared bat, and tricolored bat, and federally protected migratory birds. The federally protected bald eagle may nest in the vicinity of the Study Area but is not expected to nest within the Study Area.

3 **References**

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BSRC PEL Study

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Attachment A: USFWS IPaC Resources List

IPaC resource list

This report is a preliminary general list of species and their resources which biologically (collectively referred to as *trust resources*) under the U.S. Fish & Wildlife Service's (SFWS) jurisdiction. It is not intended to be a comprehensive list of all species and resources. The list may include resources that occur outside of the project area, but which could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood of direct effects on project area resources typically requires greater detail. Site-specific (e.g., vegetation/species surveys) and project-specific (e.g., mapping of impacts for proposed activities) information is required.

Below is a summary of the project information provided to the SFWS office(s) with jurisdiction in the defined project area. Please read the information carefully. It includes (Endangered Species, Migratory Birds, SFWS Facilities, U.S. Wildlife) for detailed information applicable to the resources addressed in this section.

Location

Kansas and Missouri



Local offices

Missouri Ecological Services Field Office

☎ (573) 234-2132

📠 (573) 234-2181

MAILING ADDRESS

101 Park Deville Drive

Suite A

Columbia, MO 65203-0057

PHYSICAL ADDRESS

101 Park Deville Drive

Suite A}

Columbia, MO 65203-0057

Kansas Ecological Services Field Office

☎ (785) 539-3474

📠 (785) 539-8567

2609 Anderson Avenue U

Manhattan, KS 66502-2801 U

Endangered species

This resource is in our online portal and does not contain an analysis of project environmental impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be directly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, additional site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species in which is listed or proposed to be listed may be present in the area of such proposed action for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> Wherever found There is no critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Fishes

NAME G	STATUS
Pallid Sturgeon <i>Scaphiognathus reticulatus</i> Where found No critical habitat has been designated for this species. G http://www.gov/e/p/pe/ie/7162	Endangered

Insects

NAME G	STATUS
Monahey Butte Lydanau plexippu Where found G The proposed critical habitat of this species. Your location does not overlap the critical G habitat. http://www.gov/e/p/pe/ie/9743	Proposed Threatened
Western Regal Fritillary <i>Argynnis idalia occidentalis</i> G Wherever found No critical habitat has been designated for this species.	Proposed Threatened G

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information on Migratory Bird and Eagle in IPaC <http://www.w.gov/media/supplemental-information-migratory-bird-and-bald-and-golden-eagle-may-also-appear>

The eagle Bald Eagle and/or Golden Eagle in your [project area](#). G

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagle, please review the [National Bald Eagle Management Guideline](#). You may employ the timing and activity-specific recommendations in this document when designing your project/activity to avoid and minimize eagle impact. For bald eagle information, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines on avoiding and minimizing disturbance to nesting Golden Eagle. For information, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagle cannot be avoided, an [incidental take permit](#) may be available to authorize any take that is ultimately, but not the purpose of, an otherwise lawful activity. For assistance making this determination on Bald Eagle, visit the [Do I Need A Permit Tool](#). For assistance making this determination on golden eagle, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete G

Information on project area is in a pool survey data in IPaC, our list may not be complete and our main goal is to provide information on other sources to determine what species may be present (e.g. our local Wildlife, state surveys, our own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the potential species distribution, including determining if there is sufficient data to ensure our list is accurate.

For guidance on when to schedule activities so implement avoidance and minimization measures to reduce impacts to bald or golden eagles on our list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in our project area.

Review the FAQs

These FAQs below provide important additional information and sources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucophthalmus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act's potential susceptibility in our show areas as a common contaminant in development activities. https://cos.ws.gov/cp/species/1626	Breeds Oct 15 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (■)

Visual representation of survey effort is provided by the number of survey events in each 4-week month. The number of survey events is shown by the number of vertical bars in the survey effort graph. The number of survey events is shown by the number of vertical bars in the survey effort graph. The number of survey events is shown by the number of vertical bars in the survey effort graph.

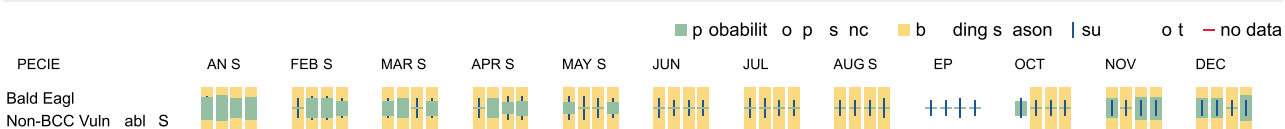
To see a bar's survey effort score, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no surveys conducted that week.

Survey Timeframe

Our summary only shows the last 10 years as used in our database to ensure data is current and relevant. The exception to this is areas on the Atlantic coast, where birds are based on all available data, since data in these areas is currently much more sparse.



What does a score indicate to generate the potential presence of bald and golden eagle in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warrenting special attention because they are eagles ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort leaves no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, where they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing where to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagle are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or residing), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC n PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA)¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected n migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-impacts-to-birds-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for proactively Minimizing Migratory Bird impact

Your IPa ra ory Brd ls showcases [brds of concern](#), nclud n [B rds of onserva on oncern \(B \)](#), n your rojec loca on Th s s no a co rehens vels of all brds found n your rojec area However, you can hel roac vely n zes nfc an ac s o all brds a your projec loca on by mplemen he measures n he [Na onw de avo dance and m n mza on measures for brds](#) documen , and any o her projec -spec f c avo dance and m n mza on measures su es ed a ~~he~~ nk [asures for avo d n and m n miz n mpac s o brds](#) for he brds of concern on your ls below

Ensure Your Migratory Bird List is Accurate and Complete

If your projec area s n a poorly surveyed area, your ls may no be comple e and you may need o rely on o her resources o de erm he wha spec es may be presen (e your local FWS f eld off ce, s a e surveys, your own surveys) Please rev ew he [Supplemen al Informa on on ra ory Brds and Ea les documen](#), o help you properly n erpre he repor for your spec fed loca on, nclud n de erm n n f here s suff c en da a o ensure your ls s accura e

For u dance on when o schedule ac v es or mplemen avo dance and m n mza on measures o reduce mpac s o m i ra ory brds on your ls , see he "Probab l y of Presence Summary" below o see when hese brds are mos lkely o be presen and breed n n your projec area

Review the FAQs

The FAQs below prov de mpor an add onal nforma on and resources.

ME NAME

BREEDING SEASON.

American Golden-plover *Pluvialis dominica*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bald Eagle *Haliaeetus leucocephalus*

Breeds Oct 15 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Black-billed Cuckoo *Coccyzus erythrophthalmus*

Breeds May 15 to Oct 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9399>

Bobolink *Dolichonyx oryzivorus*

Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cerulean Warbler *Setophaga cerulea*

Breeds Apr 21 to Jul 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2974>

Chimney Swift *Chaetura pelagica*

Breeds Mar 15 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Grasshopper Sparrow *Ammodramus savannarum* *er all dus*

Breeds Jun 1 o Au 20 .

This is a Bird of onserva on oncern (B) only n ar cular Brd onserva on Re ons . (B Rs) n he con nen al USA

<https://ecos.fws.gov/ecp/species/8329>

Henslow's Sparrow *Ammodramus henslowi*

Breeds y 1 o Au 31

This is a Bird of onserva on oncern (B) hrou hou s ran e n he con nen al USA and Alaska

<https://ecos.fws.gov/ecp/species/3941>

Kenucky Warbler *Geothlypis formosa*

Breeds Apr 20 o Au 20 .

This is a Bird of onserva on oncern (B) hrou hou s ran e n he con nen al USA and Alaska

Lesser Yellowlegs *Tringa flavipes*

Breeds elsewhere .

This is a Bird of onserva on oncern (B) hrou hou s ran e n he con nen al USA and Alaska

<https://ecos.fws.gov/ecp/species/9679>

Pectoral Sandpiper *Calidris melanotos*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Prairie Longhead Shrike *Lanius ludovicianus excubitorides*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<http://ec.f.g.v/ecp/pecie/8833> M

Breeds Feb to Jun 31

Pronghorn Warbler *Pratincola citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds April to Jun 31 M

Red-headed Woodpecker *anerpe erythrocephala*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10 M

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Semipalmated Sandpiper *Calidris pusilla*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Wood Thrush *Hylocichla ustulata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across a week. For example, imagine the probability of presence in week 20 for the spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence in week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence is calculated in the previous step under the assumption that a probability value falls between 0 and 10, inclusive. This is the probability of presence score.

These are the probability of presence scores, implying very uncertain over the year.

Breeding Season (■)

Yearly are denoted a very imprecise estimate of the time-frame in which the bird breeds across its entire range. If there are no May or June for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical axis line superimposed on probability of presence bars indicate the number of survey performed for that species in the 10km grid cell(s) your project area overlaps. The number of survey is expressed as a range, for example, 33 to 64 survey.

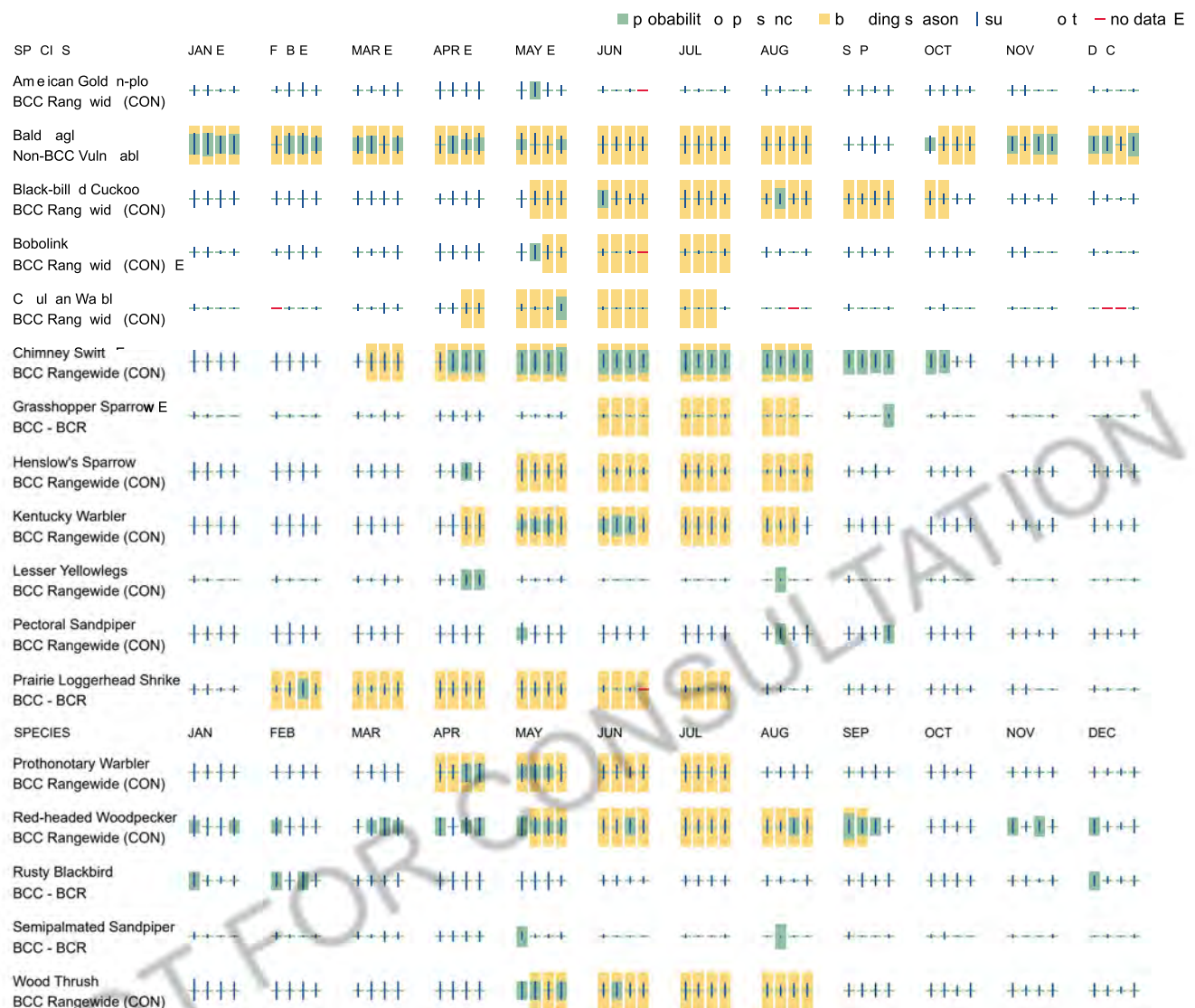
These are the survey effort range, implying very uncertain over the year.

No Data (—)

A week is marked as having no data if there were no survey event for that week.

Survey Timeframe M

Species only in the last 10 years as used in order to successfully identify important information. The exception to this is a species on the Atlantic coast, which birds are based on all available data, since data in this area is currently much more sparse. E



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds are banded in the area, identifying the locations of active nests and avoiding the destruction is one of the most effective ways to minimize impacts. To see how birds are most likely to occur and band in our project area, see the [Probability of Presence Summary](#). [Additional measures on permits](#) may be available depending on the project location and the project impact to bird species present on our project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is composed of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in our project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the ILS or conservation migratory birds?" for more information on the ILS or conservation codes in the IPaC migratory bird species list.

The migratory bird list generated for our project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is updated and added to the list of those birds potentially occurring in the 10km grid cells with which our project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to show activity so development.

Again, the Migratory Bird Resource List includes only a subset of birds that may occur in our project area. It is not possible for all birds that may occur in our project area. To get a list of all birds potentially present in our project area, and to discuss other potential impacts, please visit the [Rapid Avian Information Location \(RAIL\) Tool](#).

Why are subspecies showing up on my list? E

Subspecies present in the list are included in the list of species present in your project area because subspecies in the AKN are the species being detected. The species are present, that means that the subspecies may also be present. A subspecies shows up in your list, you may need to verify in the species database that subspecies may be present (e.g. you can use FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a combination of [survey banding](#) and [citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, visit the [Probability of Presence Summary](#) and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area? g

To see what particular a bird's annual cycle is within (i.e. breeding, wintering, migrating, resident), you may query your list using the [RAIL T](#) and view the annual maps provided by birds in your area at the bottom. The probabilities provided for each bird in your results. A bird in your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars in the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), the yellow bars represent periods of time within the time frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangeland" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's active probability of presence in the 10km grid cell(s) in your project area during a particular week of the year. A tall bar indicates a high probability of presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events that week. For example, if in week 12 there were 20 survey events and the species was detected in 5 of them, the probability of presence for the species in week 12 is 0.25.

To compare the pattern of presence across the year, the active probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 is 0.05, and that the probability of presence at week 12 (0.25) is the maximum any week of the year. The active probability of presence in week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The active probability of presence calculated in the previous step underlies a statistical analysis that allows us to see a relationship between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very brief estimate of the time-frame inside which the bird breeds across its entire range. The yellow bars show a bird, regardless of whether it breeds in your project area.

Survey Effort ()

Vertical lac li e superimpo ed o pro a ility of pre e ce ar i dicat the umber of urvey performed for that pecie i the 10 m grid cell() your project area overlap .

No ata ()

A wee i mar ed a havi g o data if there were o urvey eve t for that wee .

Survey Timeframe

Survey from o ly the la t 10 year are u ed i order to e ure delivery of curre tly releva t i formatio . The exceptio to thi i area off the Atla tic coa t, D where ird retur are a ed o all year of availa le data, i ce data i the e area i curre tly much more par e.

Facilities

National Wildlife Refuge lands

A y acDvity propo ed o la d ma aged y the [Natio al Wildlife Refuge](#) y tem mu t u dergo a 'Compati ility Determi atio ' D co ducted y the Refuge. Plea e co tact the i dividual Refuge to di cu a y que tio or co cer .

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image i terpretatio depe d o the quality of the imagery, the experie ce of the image a aly t , the amou t a d quality of the collateral data a d the amou t of grou d truth verificatio wor co ducted. Metadata hould e co ulted to determi e the date of the ource imagery u ed a d a y mappi g pro lems

Wetla d or other mapped feature may have cha ged i ce the date of the imagery or field wor . There may e occa io al differe ce i polygo ou darie or cla ificatio etwee the i formatio depicted o the map a d the actual co ditio o ite.

ata exclusions

Certa wetla d ha itat are excluded from the Natio al mappi g program ecau e of the limitatio of aerial imagery a the primary data ource u ed to detect wetla d . The e ha itat i clude eagra e or u merged aquatic vegetatio that are fou d i the i tertidal a d u tidal zo e of e tuarie a d ear hore coa tal water . Some deepwater reef commu itie (coral or tu erficid worm reef) have al o ee excluded from the i ve tory. The e ha itat , ecau e of their depth, go u detected y aerial imagery.

ata precautions

Federal, tate, a d local regulatory age cie with juri dictio over wetla d may defi e a d de cri e wetla d i a differe t ma er tha that u ed i thi i ve tory. There i o attempt, i either the de ig or product of thi i ve tory, to defi e the limit of proprietary juri dictio of a y Federal, tate, or local gover me t or to e ta li h the geographical cope of the regulatory programs of gover me t age cie . Per o i te di g to e gage i activitie i volvi g modificatio withi or adjae t to wetla d area hould ee the advice of appropriate Federal, tate, or local age cie co cer i g pecified age cy regulatory program sa d proprietary juri dictio that may affect uch activitie . D

Attachment B: KDWP Wyandotte County List of T/E Species



[Print This Page](#)

[Back to Site h](#)

Department of
Wildlife and Parks

Wyandotte County



Threatened and Endangered (T&E) Species

Critical a itat ignat d

STURGEON CHUB *Macr ybopsis gelida*

State: Threatened Federal: Candidate Critical h
Habitat: Yes

SHOAL CHUB *Macr ybopsis yostoma*

State: Threatened Federal: N/A Critical Habitat: h
Yes

PALLID STURGEON *Scap ir ync us albus*

State: Endangered Federal: Endangered Critical h
Habitat: Yes

SICKLEFIN CHUB *Macr ybopsis meeki*

State: Endangered Federal: Candidate Critical
Habitat: Yes

WESTERN SILVERY MINNOW *Hybognat us argyritis*

State: Threatened Federal: N/A Critical Habitat:
Yes

FLATHEAD CHUB *Platygobio gracilis*

State: Threatened Federal: N/A Critical Habitat:
Yes

SILVER CHUB *Macr ybopsis storeriana*

State: Endangered Federal: N/A Critical Habitat:
Yes

LEAST TERN *Sterna antillarum*

State: Endangered Federal: Endangered Critical
Habitat: Yes

PLAINS MINNOW *Hybognat us placitus*

State: Threatened Federal: N/A Critical Habitat:
Yes

PIPING PLOVER *C aradrius melodus*

State: Threatened Federal: Threatened Critical
Habitat: Yes

o Critical a itat ignat d

SNOWY PLOVER *C aradrius alexandrinus*

State: Threatened Federal: N/A Critical Habitat: No

EASTERN SPOTTED SKUNK *Spilogale putorius*

State: Threatened Federal: N/A Critical Habitat: No h

AMERICAN BURYING BEETLE *Nicrop orus americanus*

State: Endangered Federal: Endangered Critical
Habitat: No

Species In Need of Conservation (SINC)

There are no species with critical habitat in
Wyandotte county

River herring *Neتر pi blennius*
State: SINC Federal: N/A Critical Habitat: No

Black Tern *Chlidonias niger*
State: SINC Federal: N/A Critical Habitat: No

Short-eared Owl *Asio flammeus*
State: SINC Federal: N/A Critical Habitat: No

Ferruginous Hawk *Buteo regalis*
State: SINC Federal: N/A Critical Habitat: No

Golden Eagle *Aquila chrysaetos*
State: SINC Federal: N/A Critical Habitat: No

Timber Rattlesnake *Crotalus horridus*
State: SINC Federal: N/A Critical Habitat: No

Southern Flying Squirrel *Glaucomys volans*
State: SINC Federal: N/A Critical Habitat: No

Blue Sucker *Cyprinus elongatus*
State: SINC Federal: N/A Critical Habitat: No

Easter Hog nose Snake *Heterodon platirhinos*
State: SINC Federal: N/A Critical Habitat: No

Bobolink *Dolichonyx oryzivorus*
State: SINC Federal: N/A Critical Habitat: No

Henslow's Sparrow *Ammodramus henslowii*
State: SINC Federal: N/A Critical Habitat: No

Yellow-throated Warbler *Setophaga dominica*
State: SINC Federal: N/A Critical Habitat: No

Cerulean Warbler *Setophaga cerulea*
State: SINC Federal: N/A Critical Habitat: No

Franklin's Ground Squirrel *Poliocitellus franklinii*
State: SINC Federal: N/A Critical Habitat: No

Brassy Minnow *Hybognathus hankinsoni*
State: SINC Federal: N/A Critical Habitat: No

Easter Whip-poor-will *Antrostomas vociferus*
State: SINC Federal: N/A Critical Habitat: No

**Attachment C: MDC Missouri Natural Heritage Program
Jackson County List of T/E Species**

Missouri Natural Heritage Program



Missouri Natural Heritage Review

The Missouri Natural Heritage Review Program supports the conservation of Species and Communities of Conservation Concern (SOCC) by making external developers aware of SOCC that may occur in the project vicinity and potential impacts of their project on these SOCC.

[Go to Missouri Natural Heritage Review website](#)

HISTORY

In 1972, the Missouri General Assembly passed an Act (Section 252.240 RSMo.) charging MDC with establishing a list of endangered species and providing protection for them. Section 4.111 of the Wildlife Code of Missouri regulates these species.

In 1981, the Nature Conservancy, Missouri Department of Natural Resources and Missouri Department of Conservation (MDC) created the Missouri Natural Heritage Program (MONHP) to identify species and natural communities of conservation concern in Missouri.

Since 1983, the MONHP has been part of MDC, where it continues its strong commitment to conserving rare and endangered plants and animals and high-quality natural communities.

SCOPE OF DATA

The MONHP receives biological data from the Missouri Natural Features Inventory, field biologists, universities, scientific literature, herbaria and other individuals and organizations. This information provides an understanding of the abundance, distribution, condition and conservation needs of these species and communities of conservation concern (SOCCs). There are currently more than 40,000 occurrence records of more than 1,250 sensitive species and natural community types in Missouri.

Species and natural communities are evaluated and ranked on the basis of their global and statewide status. These ranks are revised as new information becomes available; changes in ranking can be the result of changes in species populations or in changes in our knowledge of the species. Each year, MONHP issues the [Missouri Species and Communities of Conservation Concern Checklist](#) which reflect the latest rankings.

SEARCH

The data is managed with Biotics, a geographic information system-based software from NatureServe. Through NatureServe, MONHP is part of an international network of biological and ecological databases.

The Missouri Natural Heritage Program (MONHP) identifies species and natural communities of conservation concern in each Missouri county. You can use this database to get accurate and current information for conservation planning, environmental review, scientific research, land acquisition and planning for economic development.

MONHP DATA AVAILABLE

Download the Natural Heritage species of conservation concern (SOCC) animal, plant, and natural community records by county.

[MO SOCC Feb2026 0.csv](#) (329.48 KB)

Natural Heritage Search

County

Jackson

Apply

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Name	State Rank	Global Rank	State Status	Federal Status
Lake Sturgeon <i>Acipenser fulvescens</i> Field Guide entry for Lake Sturgeon	Critically imperiled Code: S1	Vulnerable Apparently secure Code: G3G4	Endangered Code: E	
Auriculate False Foxglove <i>Agalinis auriculata</i>	Vulnerable Code: S3	Vulnerable Code: G3		

Name	State Rank	Global Rank	State Status	Federal Status
Great Plains Toad <i>Axyrus cogtus</i> Field Guide entry for Great Plains Toad	Vulnerable Code: S3	Secure Code: G5		
Northern Metalmark <i>Calephelis borealis</i>	Critically imperiled Code: S1	Vulnerable Code: G3		
Central Plains - Warmwater - Small river	Unranked Code: S?	Not ranked Code: GNR		
Eastern Collared Lizard <i>Crotaphytus collaris</i> Field Guide entry for Eastern Collared Lizard	Apparently secure Code: S4	Secure Code: G5		
Tansy Mustard <i>Descurainia pinta ssp. pinta</i>	Imperiled Vulnerable Code: S2S3	Secure Taxonomic subdivision: Secure Code: G5T5		
Dry-mesic limestone/dolomite forest Field Guide entry for Dry-mesic limestone/dolomite forest	Apparently secure Code: S4	Not ranked Code: GNR		
Dry-mesic limestone/dolomite woodland Field Guide entry for Dry-mesic limestone/dolomite woodland	Vulnerable Code: S3	Not ranked Code: GNR		
Dry-mesic loess/glacial till prairie Field Guide entry for Dry-mesic loess/glacial till prairie	Critically imperiled Code: S1	Not ranked Code: GNR		
Little Blue Heron <i>Egretta caerulea</i>	Imperiled Code: S2	Secure Code: G5		
Peregrine Falcon <i>Falco peregrinus</i> Field Guide entry for Peregrine Falcon	Vulnerable Code: S3	Apparently secure Code: G4		

Name	State Rank	Global Rank	State Status	Federal Status
Glacial fen Field Guide entry for Glacial fen	Critically imperiled Code: S1	Not ranked Code: GNR		
Bald Eagle <i>Haliaeetus leucocephalus</i> Field Guide entry for Bald Eagle	Vulnerable Code: S3	Secure Code: G5		
Western Silvery Minnow <i>Hybogthus argyritis</i> Field Guide entry for Western Silvery Minnow	Imperiled Code: S2	Apparently secure Code: G4		
Brassy Minnow <i>Hybogthus hankinsoni</i> Field Guide entry for Brassy Minnow	Vulnerable Code: S3	Secure Code: G5		
Plains Minnow <i>Hybogthus placitus</i> Field Guide entry for Plains Minnow	Imperiled Code: S2	Apparently secure Code: G4		
Thirteen-lined Ground Squirrel <i>Ictidomys tridecemlineatus</i> Field Guide entry for Thirteen-lined Ground Squirrel	Imperiled Code: S2	Secure Code: G5		
Toad Rush <i>Juncus bufonius</i> var. <i>bufonius</i> Field Guide entry for Toad Rush	Critically imperiled Code: S1	Secure Taxonomic subdivision: Secure Code: G5T5		
Limestone glade Field Guide entry for Limestone glade	Vulnerable Code: S3	Not ranked Code: GNR		
Limestone/dolomite talus Field Guide entry for Limestone/dolomite talus	Vulnerable Code: S3	Not ranked Code: GNR		

Name	State Rank	Global Rank	State Status	Federal Status
Northern Crawfish Frog <i>Lithobates areolatus circulosus</i> Field Guide entry for Northern Crawfish Frog	Vulnerable Code: S3	Apparently secure Taxonomic subdivision: Apparently secure Code: G4T4		
Hairy Parsley <i>Lomatium foeniculaceum ssp. foeniculaceum</i>	Critically imperiled Vulnerable Code: S1S3	Secure Taxonomic subdivision: Secure Code: G5T5		
Tufted Loosestrife <i>Lysimachia thyrsiflora</i>	Critically imperiled Code: S1	Secure Code: G5		
Sturgeon Chub <i>Macrhybopsis gelida</i> Field Guide entry for Sturgeon Chub	Vulnerable Code: S3	Vulnerable Code: G3		
Page 1 »				

NATURAL HERITAGE TERMS AND DEFINITIONS

> Federal Status

> State Status

> Global Rank

> State Rank

Species and natural communities are evaluated and ranked on the basis of their global and statewide status. These ranks are revised as new information becomes available; changes in ranking can be the result of changes in species populations or in changes in our knowledge of the species. Each year, MONHP issues the [Missouri Species and Communities of Conservation Concern Checklist](#) which reflect the latest rankings.

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[MO SOCC Feb2026 0.csv](#) (329.48 KB)

Natural Heritage Search

County

Jackson

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[Reset](#)

Name	State Rank	Global Rank	State Status	Federal Status
Mesic limestone/dolomite forest Field Guide entry for Mesic limestone/dolomite forest	Vulnerable Code: S3	Not ranked Code: GNR		
Little Brown Myotis <i>Myotis lucifugus</i> Field Guide entry for Little Brown Myotis	Imperiled Code: S2	Vulnerable Apparently secure Code: G3G4		

Name	State Rank	Global Rank	State Status	Federal Status
Long-tailed Weasel <i>Neogale freta</i> Field Guide entry for Long-tailed Weasel	Vulnerable Code: S3	Secure Code: G5		
Black-crowned Night-heron <i>Nycticorax nycticorax</i> Field Guide entry for Black-crowned Night-heron	Vulnerable Code: S3	Secure Code: G5		
Tri-colored Bat <i>Perimyotis subflavus</i> Field Guide entry for Tri-colored Bat	Imperiled Code: S2	Vulnerable Apparently secure Code: G3G4		P Endangered Code: PE
Texas Horned Lizard <i>Phrynosoma cornutum</i> Field Guide entry for Texas Horned Lizard	Imperiled Code: S2	Apparently secure Code: G4		
Bushy Cinquefoil <i>Potentilla supi ssp. paradoxa</i>	Imperiled Code: S2	Secure Taxonomic subdivision: Secure Code: G5T5		
Pallid Sturgeon <i>Scaphirhynchus albus</i> Field Guide entry for Pallid Sturgeon	Critically imperiled Code: S1	Imperiled Code: G2	Endangered Code: E	Endangered Code: E
Regal Fritillary <i>Speyeria idalia</i> Field Guide entry for Regal Fritillary.	Vulnerable Code: S3	Vulnerable Inexact numeric rank Code: G3?		P Threatened Code: PT
American Badger <i>Taxidea taxus</i> Field Guide entry for American Badger	Vulnerable Code: S3	Secure Code: G5		

Name	State Rank	Global Rank	State Status	Federal Status
Rock Elm <i>Ulmus thomasii</i>	Imperiled Code: S2	Apparently secure Code: G4		

⏪

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NATURAL HERITAGE TERMS AND DEFINITIONS

> Federal Status

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> Global Rank

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Appendix C - Cultural Resources Desktop Review Memorandum

To: Mid-America Regional Council

From: Benjamin Banks and Jennifer Ryall
Wichita

Project/File: 190300478

Date: April 13, 2026

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

In March 2026, a cultural resources desktop review for the Bi-State Reinvestment Corridor (BSRC) Planning and Environmental Linkages (PEL) Study was conducted by Stantec Consulting Services Inc. (Stantec). This desktop review examined the PEL study area (existing roadway corridor with a 25-foot buffer from the existing roadway corridor) as well as an additional 500-foot buffer (Cultural Resources Study Area) to identify any previously recorded properties partially within the buffer. The Cultural Resources Study Area extends from Kansas City, Kansas, into Kansas City, Missouri. As such, the desktop review tables in each section are divided to present the results by state.

Methods

On March 3, 2026, Stantec performed a cultural resources review of the Kansas Historical Society (KSHS) Archaeological Inventory and the Missouri Department of Natural Resource (MoDNR) online archaeological sites database Archaeology Viewer for previous archaeological surveys as well as known archaeological sites, cemeteries and burial sites, and other cultural resources within the Cultural Resources Study Area. On March 16, 2026, Stantec also performed a cultural resources review of the Kansas Historic Resources Inventory (KHRI) and the MoDNR Historic Districts and Sites Map Viewer for previous above-ground surveys as well as previously recorded above-ground properties and within the Cultural Resources Study Area. Finally, Stantec performed a cultural resources review of the National Register of Historic Places (NRHP) database for NRHP-listed historic properties.

Results

The results of this review include previous cultural resources surveys as well as those previously recorded archaeological sites, above-ground properties, NRHP-listed historic properties, and NRHP-listed historic districts located within or partially within the Cultural Resources Study Area. This review identified:

- 13 previous archaeological surveys in Kansas and 67 previous archaeological surveys in Missouri;
- Six previous above-ground surveys in Kansas and 15 previous above-ground surveys in Missouri;
- No previously recorded archaeological sites in Kansas and three previously recorded archaeological sites in Missouri;
- 284 previously recorded above-ground properties in Kansas and no previously recorded above-ground properties in Missouri;
- Eight NRHP-listed historic properties in Kansas and 48 NRHP-listed historic properties in Missouri; and

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

- Two NRHP-listed historic districts in Kansas and 14 NRHP-listed historic districts in Missouri within or partially within the Cultural Resources Study Area.

Previous Archaeological Surveys

The KSHS Archaeological Inventory includes 13 archaeological surveys recorded within the Cultural Resources Study Area in Kansas (Table 1). The MoDNR records include 67 archeological surveys recorded within the Cultural Resources Study Area in Missouri (Table 2). These surveys were conducted between 1978 and 2025 for the construction of buried utilities, road and bridge improvements, replacements, and repairs, communication towers and collocations, and other various infrastructure projects. Nine of the surveys identified and recorded 69 archaeological sites; however, no archaeological sites were identified within the Cultural Resources Study Area.

Table 1. Kansas Previous Archaeological Surveys Within the Cultural Resources Study Area.

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
2451	Cultural Resource Survey of Proposed Roadway Improvements (State Avenue, New Jersey Avenue and Interstate-70) Near the Proposed Kansas International Speedway, Kansas City, Wyandotte County, Kansas	Feagins, Jim D.	1998	Within Project	14WY420; No sites within Cultural Resources Study Area
3135	Cultural Resources Survey of Kansas International Speedway Corp.'s Proposed Wyandotte County Racetrack	Schmits, Larry J., Gary Rex Walters, and Jeremy Dillion	1998	Within Project	14WY411; No sites within Cultural Resources Study Area
4152	Phase II Cultural Resource Investigation of the Proposed Schlitterbahn Vacation Village Development, Kansas City, Wyandotte County, Kansas	Schoen, Christopher M. and Camilla Deiber	2007	Within Project	14WY411; No sites within Cultural Resources Study Area
4211	First Baptist RL Wireless Communication Tower Project Wyandotte Co.	Kelly, Mark W.	2008	15 ft	No sites identified
4459	Intensive Archaeology Survey (Kansas Phase II) Proposed T-Mobile USA, Inc. A5DO155 First Baptist RL Wireless Communications Tower Project Wyandotte County, Kansas	Kelly, Mark William	2008	Within Project	No sites identified
6086	Phase I Archaeology Survey Letter IMPACT7G, Inc. Project "KS-0004 Armstrong" Wyandotte County, Kansas	Silliman, Garrett W.	2016	180 ft	No sites identified

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
6110	Cultural Resource Investigations Phase II Survey: Turner Diagonal Project Wyandotte County, Kansas	Sturdevant, Craig	2016	41 ft	No sites identified
6374	Cultural Resources Assessment of the Nebraska Avenue Cellular Tower Wyandotte County, Kansas	Dyle, Lindsay P.	2018	64 ft	No sites identified
6855	Cultural Resources Assessment of the KCYCKCKLEDGENDS09SC – A Cellular Pole Wyandotte County, Kansas	Dyle, Lindsay P.	2020	36 ft	No sites identified
6856	Cultural Resources Assessment of the KCYCKCKLEGENDS08SC – A Cellular Pole Wyandotte County, Kansas	Dyle, Lindsay P.	2020	63 ft	No sites identified
6859	Cultural Resources Assessment of the KS_KCYC_KCK_LGDS_010 – Cellular Pole Wyandotte County, Kansas	Dyle, Lindsay P.	2020	Within Project	No sites identified
6895	Cultural Resources Assessment of the KS_KCYC_KK_LGDS_006 – A Cellular Pole Wyandotte, County, Kansas	Dyle, Lindsay P.	2020	443 ft	No sites identified
8540	Archaeological Survey of KDOT Project 435-105 KA-3228-02 (KA-3228-RCNS-01), Wyandotte County, Kansas	Crable, Barbara M.	2024	12 ft	14WY32; No sites within Cultural Resources Study Area

Table 2. Missouri Previous Archaeological Surveys Within the Cultural Resources Study Area.

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
AU-29	Management Summary: Phase I Cultural Resources Investigation for Williams Communication, Inc., Fiber Optic Communications System	Roberts, Jason and Marianne Marek	1999	Within Project	58 sites; No sites within Cultural Resources Study Area

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
AU-33	Phase I Inventory of Cultural Resources Associated with the Proposed William Communications, Inc. Fiber Optic Communications System in Audrain, Boone, Callaway, Cass, Cooper, Jackson, Johnson, Lincoln, Moniteau, Montgomery, Pettis, and St. Charles	Williams, Michele, Christopher Baltz, Patrick Bennett, Cinder Miller, and Alisa Strauss	2001	Within Project	45 sites; No sites within Cultural Resources Study Area
BO-92	Cultural Resource Survey, Reconnaissance Level Investigation Proposed A.T.&T. Buried Cable Project, St. Louis to Kansas City, Missouri	Sturdevant, Craig	1985	Within Project	No sites identified
JA-127	Independence-Westport Road Crossing and Other Oregon / Santa Fe Trail Alternatives; National Register Assessment	McCoy, Sondra Van Meter	1994	Within Project	No sites identified
JA-13	Cultural Resource Survey, Blue River Channel Project, Kansas City, Missouri. Multiple archaeological sites identified but are not located within the current Cultural Resources Study Area	Fitting, James E., Stephan C. Demeter, Ronald K. Edgerton, Jeffrey C. Kimball, and Donald J. Weir	1978	Within Project	11 sites; No sites within Cultural Resources Study Area
JA-196	Kansas City, MO to St. Louis, MO Segment: Level (3) communication, Corps of Engineers Section 404 Permits	HDR Engineering, Inc.	1999	Within Project	No sites identified
JA-223	MO2258 Memorial	Clark, Colleen M.	2000	Within Project	No sites identified
JA-241	Emergency Excavations and Preliminary Analyses of the Artifacts and Skeletal Remains from the St. Francis Regis Cemetery, Kansas City, Missouri	Powell, Gina	2000	Within Project	JA578; No sites within Cultural Resources Study Area
JA-267	Cell Tower, KC54XR557-F	Dycus, Don L.	2001	Within Project	No sites identified
JA-297	Proposed repairs to 12th Street viaduct	Mobley, Jane	2003	Within Project	No sites identified
JA-331	Results of an Architectural Viewshed Assessment in Kansas City, Jackson County, Missouri	Kapler, Todd	2005	Within Project	No sites identified
JA-354	Replacement of MoDOT bridge No. K-462, Route 24 (MoDOT Job No. J4P1364)	Harcourt, James P.	2005	Within Project	No sites identified

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
JA-369	Phase I Cultural Resource Survey Selective Site Consultants, Inc. Tower Project "T-Mobile USA, Inc. 24 Highway & Winner Road Site No A5C0270" Jackson County, Missouri	Kelly, Mark W.	2006	Within Project	No sites identified
JA-388	Cricket Communication MCI 042-Y Apple Mart Tower Site	Kelly, Mark W.	2007	243 ft	No sites identified
JA-44	A Cultural Resource Survey of the Garrison School Building, The Blue Valley Recreation Center, an Portions of Blue Valley Park, Kansas City, Jackson County, Missouri	Feagins, Jim D.	1980	384 ft	No sites identified
JA-48	Results of the Town of Kansas Site Pedestrian Bridge Archaeological Monitoring	Marushia, Michelle and Wayne Bischoff	2003	Within Project	No sites identified
JA-485	Cultural Resources Assessment Proposed Downtown Federal Building Kansas City, Missouri	Arthur, Charles and Marcia Meier	2010	Within Project	No sites identified
JA-489	Proposed AT&T Mobility Wireless Communications Project, Stowes KS5143, Jackson County, Missouri	Kelly, Mark W., Carol Kuhn, and Kerri Oliver	2011	169 ft	No sites identified
JA-492	Proposed AT&T Mobility Wireless Communications Project, 13th & Oak KS5106, Jackson County, Missouri	Kelly, Mark, Carol Kuhn, and Kerri Oliver	2011	470 ft	No sites identified
JA-521	Cultural Resource Inventory Survey: Proposed Cell Tower Collocation, Argyle Building (KC54XC522), 306 E. 12th Street, Kansas City, Jackson County, Missouri	Branstner, Mark C.	2012	14 ft	No sites identified
JA-524	Proposed Motorola City Hall Antenna Co-location Project	Kelly, Mark, Carol Kuhn, and Kerri Oliver	2010	109 ft	No sites identified
JA-534	Section 106 review of proposed tower, City Hall, 414 E. 12th Street, Kansas City, Jackson County, Missouri (FCC)	N/A	N/A	36 ft	No sites identified

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
JA-546	Section 106 Review for Improvements to Route 24 Bridges over the Big Blue River, Cambridge Avenue, the Burlington Northern Santa Fe Railroad, and the Union Pacific Railroad, Jackson County, MoDOT Job Nos. J4P2191C (Bridge No. K0394) and J4P3096G (Bridge No. K0392)	Prawl, Toni	2013	Within Project	No sites identified
JA-576	Cultural Resources Report	Cubie, Tara	2014	468 ft	No sites identified
JA-577	Cultural Resources Report	Ihle, Melanie	2014	233 ft	No sites identified
JA-596	Section 106 Review: MC-Argyle/KC54XC552, 306 E. 12th Kansas City, Jackson County, Missouri	Smith, Andrew	2015	7 ft	No sites identified
JA-604	Antennas – Lexington/10010699 / KS5012 – 9623 East Independence Avenue, Independence, Jackson County, Missouri	Forrest, Stephen	2014	381 ft	No sites identified
JA-608	Archaeological Reconnaissance Survey Technical Report Kansas City Downtown Streetcar Project HPP 106 Number 213-JA-12, City of Kansas City	Houghton, Susan M.	2012	Within Project	No sites identified
JA-610	Cultural Resources Investigation Report	Leggio, Christine	2015	427 ft	No sites identified
JA-627	Cultural Resources Assessment of the KCYC Downton and KCYC Sprint Center Cellular Nodes, Kansas City, Jackson County, Missouri	Plunk, Lindsay L.	2016	353 ft	No sites identified
JA-628	Archaeological & Architectural History Resource Assessment KCYC Continental, Kansas City, Jackson County, Missouri	McNamara, Britt and Adam Holven	2016	445 ft	No sites identified
JA-630	Proposed Colocation at 9623 Independence Ave, Independence, Jackson County, MO	Leggio, Christine	2015	370 ft	No sites identified
JA-633	Prospect MAC Bus Rapid Transit, Kanas City (FTA) Jackson County, Missouri	Architectural & Historical Research, LLC	2016	Within Project	No sites identified

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
JA-650	National Historic Preservation Act (NHPA) Section 106 Cultural Resource Investigations, Proposed AT&T Wireless Communications Project, Oliver KS5214 Non tower roof-mount Antenna co-location, Kansas City, Jackson County, Missouri	Kelly, Mark, Carol Kuhn, and Kerri Oliver	2016	466 ft	No sites identified
JA-655	Phase I Cultural Resources Survey of the 6.17-acre Hink Park Tract, Jackson County, Missouri.	Futch, Jane	2016	270 ft	No sites identified
JA-670	Proposed T-Mobile Wireless Communications Project Space Bank Mini Storage A5C0497A Non-Tower Roof-Mount Antenna Co-Location Kansas City, Jackson County, Missouri	Kelly, Mark W.	2016	Within Project	No sites identified
JA-696	National Historic Preservation Act (NHPA) Section 106, Cultural Resource Investigations; Proposed T-Mobile Wireless Communications Project Century Towers A5C0509A; Non-tower Roof-Mount antenna Co-locations, Kansas City, Jackson County, Missouri	Kelly, Mark, Carol Kuhn, and Kerri Oliver	2016	266 ft	No sites identified
JA-697	Section 106 Review, TCNS ID 142194; Proposed 120-Foot tall Overall Height Pole Structure, 9MOX000042/KC90XC132A; E. Moore Street, Independence, Jackson County, Missouri	Whitney, Devin	2017	264 ft	No sites identified
JA-707	Proposed PC colocations Union Pacific Railroad KC Metro Subdivision, Kansas City, Jackson County, Missouri (FCC)	Leonard, Megan E., Sydney Boos-Smith, and Jana Morehouse	2017	373 ft	No sites identified
JA-715	Phase I Cultural Resources Survey: Route 24 (Winner Road), Jackson County, MoDOT Job No. J4S3242, Missouri	Greenwood, Brianne	2017	Within Project	No sites identified

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
JA-739	A Phase I Intensive Archaeological Survey of the Kansas City Parks & Recreation Department Proposed The Paseo & Independence Avenue Gateway Improvement Project No. 70142204, Jackson County, Missouri	Dycus, Don L.	2018	Within Project	No sites identified
JA-743	Cultural Resources Assessment of the 9MOB000113 Cellular Light Pole Kansas City, Jackson County, Missouri	Dyle, Lindsay P.	2018	Within Project	No sites identified
JA-750	Cultural Resources Assessment of the 9MOB001401 Cellular Collocation, Jackson County, Missouri	Dyle, Lindsay P.	2018	257 ft	No sites identified
JA-767	Cultural Resources Assessment of the KC54XC552 Cellular Collocation, Kansas City, Jackson County, Missouri	Dyle, Lindsay P.	2018	Within Project	No sites identified
JA-769	Cultural Resources Survey Proposed Cell Tower Site Trileaf #643538 / "KC52XC003" Kansas City, Missouri	Rich, Cori and Erin N. Whitson	2018	446 ft	No sites identified
JA-772	Cultural Resource Survey KC52XC003, 920 Main Street, Kansas City	Rich, Cori and Erin N. Whitson	2018	434 ft	No sites identified
JA-773	Colocation 920 Main Street, Kansas City	Zovar, Joel	2018	434 ft	No sites identified
JA-776	Central Industrial District Green Infrastructure Project Cultural Resources Investigation Report. No archaeological sites identified	Francis, Ike E.	2019	137 ft	No sites identified
JA-782	Bridge L0840 Replacement on Route 24 over Delaware Ave/Truman Pkwy	Greenwood, Brianne	2019	Within Project	No sites identified
JA-798	Cultural Resource Summary within the US-169/-Buck O'Neil Bridge Environment Study Area	Harris, Brandy	2019	Within Project	No sites identified
JA-802	Cultural Resources Assessment of the CONVENTION CENTER Cellular Collocation, Kansas City, Jackson County, Missouri	Dyle, Lindsay P.	2019	33 ft	No sites identified

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
JA-81	Intensive Cultural Resources Survey of the Truman Road Street Improvements, Jackson County, Missouri	Schmits, Larry J. and Michael R. Fosha	1987	Within Project	No sites identified
JA-822	KCYC KCM DOWNTOWN 06SC – A (Site 616232338) 1102 Locust Street Kansas City, Jackson County, Missouri	Allen, Danna, Dominique Segura, and Emily Jones	2020	Within Project	No sites identified
JA-840	Phase I Archaeological Survey for the US-16/Broadway (Buck O'Neil) Bridge Replacement Project	Gottsfeld, Andrew	2021	Within Project	No sites identified
JA-857	Cultural Resources Assessment of the MO_KCYC_KCM_COLU_004 – A Cellular Pole Jackson County, Missouri	Dyle, Stephen	2020	423 ft	No sites identified
JA-870	Cultural Resources Assessment of the PERKY BROTHERS Cellular Collocation Kansas City, Jackson County, Missouri	Riley-Starr, Chelsea	2021	Within Project	No sites identified
JA-883	Cultural Resources Assessment of the KCYCKCMSPREINTCTRSC – A Cellular Collocation	Riley-Starr, Chelsea	2021	419 ft	No sites identified
JA-890	Cultural Resources Assessment of Communications Tower (CONVENTION CENTER), 301 W. 13th Street, Kansas City, Jackson County, Missouri	Waters, Jacob	2021	39 ft	No sites identified
JA-892	T-Mobile #A5CO21B/Anchor – 1300 West 13th Street, Kansas City, Jackson County, Missouri 64102 (FCC)	McDevitt, Jill	2021	148 ft	No sites identified
JA-895	Cultural Resources Assessment of the CONTINENTAL Cellular Collocation Kansas City, Jackson County, Missouri	Riley-Starr, Chelsea	2021	354 ft	No sites identified
JA-903	KCMCI00094C – TCNS 23786	McLaughlin, Sara	2021	Within Project	No sites identified
JA-918	Cultural Resources Assessment of the CONTINENTAL Cellular Collocation	Dyle, Stephen	2020	358 ft	No sites identified

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Number	Survey Report	Author	Year	Distance from Project	Survey Results
JA-923	Section 106 Review TCNS ID #239175 Proposed Modification/Collocation of Antennas on an Existing 146-foot tall building	Bartlett, Laurel L.	2021	454 ft	No sites identified
JA-924	Architectural Resource Survey of the Convention Center Proposed Rooftop Antenna Colocation	Waters, Jacob	2021	466 ft	No sites identified
JA-929	Cultural Resources Assessment of Proposed Collocation/Modification of Antennas on an Existing 158-Foot Tall Building	Scales, Darcie	2022	Within Project	No sites identified
JA-954	Phase I Cultural Resource Survey for Truman Connected Project for the City of Independence Municipal Services, Independence, Jackson County, Missouri, Job Nos. STBG-3301524	Wilkins, Kathryn	2023	Within Project	JA1867 and JA1868; No sites within Cultural Resources Study Area
JA-974	3379440 Winner Road Historic Resources Survey	Green, Jenya and Candace Parker	2025	Within Project	No sites identified

Previous Above-ground Surveys

The KHRI identified six above-ground surveys recorded within or partially within the Cultural Resources Study Area in Kansas. These surveys were conducted between 1988 and 2022 (Table 3). The MoDNR Historic Districts and Sites Map Viewer identified 15 above-ground surveys recorded within or partially within the Cultural Resources Study Area in Missouri. These surveys were conducted between 1988 and 2019 (Table 4).

Table 3. *Kansas Previous Above-ground Surveys Within the Cultural Resources Study Area.*

Survey Name	Author	Year	Survey Number
Kansas City - Downtown Kansas City, Kansas Survey (HPF 2016)	Dunleavy, Alison	2016	Various
Kansas City - Strawberry Hill Survey (HPF 2012)	PSLLC/Davis	2012	Various
Kansas City - Downtown Kansas City, Kansas Survey (HPF 2022)	Ammerman, Cynthia	2022	Various
Kansas City - Downtown Kansas City, Kansas Survey (1993)	Millstein/Becker; Architectural and Art Historical Research	1993	Various

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Survey Name	Author	Year	Survey Number
Kansas City - CLG Survey III (1989)	Millstein, Cydney	1989	Various
Kansas City - CLG Survey II (1988)	Millstein, Cydney	1988	Various

Table 4. Missouri Previous Above-ground Surveys Within the Cultural Resources Study Area.

Survey Name	Author	Year	Survey Number
East Village Project	Bradley Wolf	2007	JAAS044
Independence	Dr. Bonnie Stepenoff	1992	JAAS031
Kansas City Industrial District	Kansas City Landmarks Commission	1977	JAAS001
Kansas City Central Business District	Kansas City Landmarks Commission	1980	JAAS005
Kansas City Downtown Streetcar Survey	Cydney Millstein and MaryAnn Warfield	2012	JAAS065
Warner/ Miller Plaza	Landmarks	1983	JA-AS-073
Colonnaded Kansas City Apartment Buildings (PI)	Becker and Millstein	1990	JA-AS-028
Garfield Neighborhood	Cydney Millstein	1989	JA-AS-024
Kansas City Historic Churches	Historic Kansas City Foundation	1993	JA-AS-032
North Main St. Neighborhood, Independence	Wendy Shay	2014	JA-AS-071
Columbus Park	K.C. Landmarks Commission	1988	JA-AS-022
Central Business District 1994 Update	N/A	1994	JA-AS-011
I-29/I-35 Study in Kansas City (partially in Clay)	Archaeological Research Center of St. Louis Inc.	2004	JA-AS-086
Independence Square	Schwenk	2001	JA-AS-089
Fairmount Neighborhood & Commercial District	Architectural & Historical Research, LLC	2019	JAAS091

Known Archaeological Sites

The KSHS Archaeological Inventory identified no known archaeological sites recorded within the Cultural Resources Study Area in Kansas. The MoDNR identified three known archaeological sites recorded within the Cultural Resources Study Area in Missouri (Table 5), two of which are located within the Cultural Resources Study Area. Of these, one is recorded as Precontact Native American site (JA1737) and two are reported as historic period sites (JA578 and JA1872). Site JA1872 is recorded as “not eligible,” with sites JA578 and JA1737 remaining unevaluated for inclusion in the NRHP.

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Table 5. Missouri Recorded Archaeological Sites within the Cultural Resources Study Area.

Site Number	Time Period	Description	NRHP Status	Distance from Study Area
JA578	Historic	St. Francis Regis Cemetery active between 1845-1876	Unevaluated	225 ft
JA1737	Precontact	Lithic scatter	Unevaluated	Within Project
JA1872	Historic – Urban/Industrial (1900-1960)	Habitation and scatter consisting of historic ceramics, faunal remains, glass, metal, and building materials	Not eligible	Within Project

Previously Recorded Above-ground Properties

The KHRI identified 284 previously recorded above-ground properties within or partially within the Cultural Resources Study Area in Kansas. Of these, two properties are listed in the Register of Historic Kansas Places (State Register) with an asterisk beside their names below; 33 of the previously recorded above-ground properties were recorded as demolished and are indicated by strikethroughs in the table below (Table 6). The remaining previously recorded above-ground properties are listed in the NRHP and included in Table 7. In addition to the NRHP-listed historic properties included in Table 8, the MoDNR identified no above-ground properties previously recorded within or partially within the Cultural Resources Study Area in Missouri.

Table 6. Kansas Previously Recorded Aboveground Properties within the Cultural Resources Study Area.

Site Number	Name
209-2820-00007	St. Mary's Catholic Church (SR)*
209-2820-01707	St. John's Orphanage (SR)*
209-2572	Purity Food Co.
209-2428	443 Armstrong Ave.
209-2820-02026	7216 State Ave.
209-2573	Perry Motor Company
209-2820-00044	Kansas City Public Service Company Substation V
209-2820-01037	Pryor House
209-2820-01902	Eureka Cleaners Store
209-2258	819 N. 5 th St.
209-2580	1302 Minesota Ave.
209-2820-00759	John Keefer Building
209-2820-01120	White Eagle Oil & Refining Co. Filling Station

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2820-01115	Prairie Brew Bottling Company
209-2587	1410 Minnesota Ave.
209-2820-01107	City Paint & Glass Co.
209-2581	Community Real Estate Co.
209-2595	H&R Block Income Taxes
209-2820-01117	1607 Minnesota Ave.
209-2820-01118	George E. Hoch & Son Creamery
209-2820-01111	Wolf Auto Service
209-2820-01105	1413 Minnesota Ave.
209-2820-01491	Clark, Horace J., House (Demolished)
209-2547	1017 N. 18 th St.
209-2820-01898	OK Cab Company
209-2820-01113	1513-1515 Minnesota Ave.
209-2820-01104	1403 Minnesota Ave.
209-2820-01106	1417 Minnesota Ave.
209-2820-01110	1505 Minnesota Ave.
209-2820-00883	1801 State Ave.
209-2820-01900	M.H. Peterson Plumbing Co.
209-2568	1142 Minnesota Ave.
209-2820-01897	Cornell Wickliffe Tire Shop
209-2820-00893	Leland Cunningham House (Demolished)
209-2820-01802	Wyandotte Sheet Metal Works
209-2557	520 Minnesota Ave.
209-2820-01894	1000 Minnesota Ave.
209-2820-00886	Mapes, Bernard J., House (Demolished)
209-2820-01879	Reitz & Sons Grocers (Demolished)
209-2257	520 Minnesota Ave.
209-2820-01899	Kansas Auto Radiator & Top Shop
209-2648	KCKS Fire Station No. 11
209-2820-00892	Ribic House (Recorded as Demolished)
209-2820-01901	Clyde O. Reeves Radio Repair
209-2820-00884	Juhl House
209-2046	Ranch West Bowling Center Sign

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2603	540 Minnesota Ave.
209-2820-01036	Webb House
209-2820-00902	Freeland House
209-2820-01103	Specification Motor Oil System Building
209-2820-01856	722-724 Minnesota Ave.
209-2563	1117 Minnesota Ave.
209-2562	Mayes, Clarence M., House
209-2565	Kenton Glass Company
209-2560	Tucker's Service
209-2561	Adam, James M., House
209-2566	Miller, James B., House
209-2596	1610 Minnesota Ave.
209-2579	Budget Finance, Inc.
209-2570	1151 Minnesota Ave.
209-2583	Home Family Laundry
209-2820-01868	Avenue Theater (Demolished)
209-2820-01847	Security National Bank (Demolished)
209-2820-01689	National Refining Company
209-2820-00109	The Duer Building (Demolished)
209-2820-01964	Nick's Standard Service Station
209-2820-00888	Garrett, Fewell, House
209-2820-01690	Monarch Oil Company
209-2820-01903	Wyandotte Laundry
209-2582	1310 Minnesota Ave.
209-2820-01482	1810 State Ave.
209-2820-00900	Black, William L., House
209-2576	1230 Minnesota Ave.
209-2820-01895	The Great A-Z P Tea Company (Demolished)
209-2571	1200 Minnesota Ave.
209-2820-01116	Samuel Shaw Used Cars
209-2569	Kritzler Motor Co, Inc.
209-2820-00890	Ellis House
209-2575	1227 Minnesota Ave.

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2577	The Bruce Motor Company
209-2289	Podrebarac, Joseph, House
209-2291	Krall House
209-2290	Ladesic House
209-2292	Murphy House
209-2293	Richardson House
209-2585	1404 Minnesota Ave.
209-2586	Forsen Dairy Co.
209-2294	Nelson, George, House
209-2588	Fletcher, Benjamin, House
209-2295	439 Armstrong Ave.
209-2564	1124 Minnesota Ave.
209-2296	445 Armstrong Ave.
209-2559	1027 Minnesota Ave.
209-2567	Dr. K.D. Johnson, Chiropractor
209-2256	815 N. 5 th St.
209-2820-01893	Katz Drug Store (Demolished)
209-2578	1244 Minnesota Ave.
209-2598	Safeway Stores Grocer
209-2590	Harper, Anna, House
209-2592	1500 Minnesota Ave.
209-2045	Service Station
209-2820-01845	Enterprise Building (Demolished)
209-2820-01119	Harry Brown Motors
209-2635	1725 State Ave.
209-2584	1328 Minnesota Ave.
209-2255	813 N. 5 th St.
209-2820-01121	Grandview Club Transfer & Storage Co.
209-2594	1604 Minnesota Ave.
209-2820-01035	Lind House
209-2593	Roney Monument Co.
209-2574	1213 Minnesota Ave.
209-2254	811 N. 5 th St.

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2589	1500 Minnesota Ave.
209-2820-01761	St. Mary's Rectory
209-2597	1710 Minnesota Ave.
209-2820-00760	Hatfield House
209-2048	Crest Motel Court
209-2049	Crest Motel Sign
209-2047	Crest Motel Office/Manager's House
209-2820-01013	Glanville, Joseph C., House
209-2820-01965	Commercial National Drive-In Bank
209-2820-01834	500 Minnesota Ave.
209-2591	1500 Minnesota Ave.
209-2820-00090	Huron Building (Demolished)
209-2820-01837	Portsmouth Building Annex (Demolished)
209-2820-01713	Kansas City, Kansas High School (Demolished)
209-2242	808 N. 4 th St.
209-2820-01691	First Seventh Day Adventist Church
209-2253	McGuire House
209-2820-01305	Launder Rite Store
209-2820-02024	Crothers Laundry
209-2820-00762	Lewis House
209-2820-01962	PPAT Collins Beer (Demolished)
209-2820-01034	Woody House
209-2042	West Haven Motel Office
209-2044	West Haven Motel Sign
209-2043	West Haven Motel Court
209-2241	806 N. 4 th St.
209-2820-01340	909 N. 18 th St.
209-2252	Lee House
209-2427	Zugelich, Slavko, House
209-2543	Washeteria Automatic
209-2820-00766	Kansas Motor Company Building
209-2820-01838	620 Minnesota Ave.
209-2634	1705 State Ave.

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2820-01937	Markl Buick
209-2820-02019	Harris Motors, Inc.
209-2240	804 N. 4 th St.
209-2820-01829	Ben Gorman Furniture Company Annex
209-2820-01966	Young Womens Christian Association
209-2820-01938	1025 State Ave.
209-2617	1245 State Ave.
209-2614	1201 State Ave.
209-2820-01080	Holton, Patrick L., House
209-2820-01084	1612 Armstrong Ave.
209-2556	Mount Olive Missionary Baptist Church
209-2264	Thomas, John, House
209-2266	420 Ann Ave.
209-2820-01692	Abraham, Charles F., House
209-2261	Zugecich, Leo, House
209-2263	Bolrich House
209-2275	Holcomb House
209-2612	1151 State Ave.
209-2273	Mikesic House
209-2271	Fabac House
209-2268	Grisnar House
209-2283	Harvat House
209-2281	Hotujec House
209-2278	Polowich House
209-2611	Theodore F. Wetherell Filling Station
209-2285	Miller House
209-2820-01033	Young House
209-2265	418 Ann Ave.
209-2625	Nick's Bar-B-Q
209-2251	805 N. 5 th St.
209-2820-01339	907 N. 18 th St.
209-2627	1549 State Ave.
209-2820-01072	1508 Armstrong Ave.

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2820-00957	Solow House
209-2820-02023	Rental Auto Repair
209-2239	802 N. 4 th St.
209-2820-01927	Youngman, House, Louis L. & Louis F. (Demolished)
209-2820-01824	Leuenberger, Albert, House (Demolished)
209-2820-01930	Schoonover, F.L., House (Demolished)
209-2820-01929	Voorhees, Clyde C. & Emma M., House (Demolished)
209-2820-01928	McPherson, Emma, House (Demolished)
209-2820-01830	Quick, Eva, House
209-2820-01832	Walsh, Richard J., House
209-2620	Kansas Rambler, Inc.
209-2820-01831	Thomas, August E., House
209-2820-01833	Reed, William C., House (Demolished)
209-2820-00042	Car Barn For Kansas City Metropolitan Railway
209-2260	406 Ann Ave.
209-2820-01823	Farris, Green, House (Demolished)
209-2621	1315 State Ave.
209-2820-01032	Ireland House
209-2259	404 Ann Ave.
209-2623	1327 State Ave.
209-2250	Cameron House
209-2820-01693	1114 N. 18 th St.
209-2548	Safeway Store
209-2820-01338	Edwin McShane Drugstore
209-2820-00041	George W. Kaiser Packing Company
209-2542	521 Armstrong Ave.
209-2297	Maurin House
209-2226	Draskowich Grocery & Meat Market
209-2820-01688	1807-1815 Nebraska Ave.
209-2633	1703 State Ave.
209-2225	Zelesznak Grocery & Meat Market
209-2262	Podrebarac House
209-2632	Corner Cupboard

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2631	Natural Cylinder and Gas Co.
209-2626	Allen's Drive-In
209-2820-00801	Brindle House
209-2820-00805	Lucas House
209-2227	Carr, Joseph, House
209-2249	Sullivan House
209-2820-02011	Liggett, John, House
209-2555	Weber, Rudolph H., House
209-2349	Srakocic House
209-2820-00671	McArthur House (Demolished)
209-2820-00765	Lums Restaurant
209-2820-01975	811 N. 7th St.
209-2554	831 Armstrong Ave.
209-2298	Mikasich House
209-2820-02010	Lowman, Dr. Richard L., House
209-2228	St. John the Baptist Catholic Church
209-2624	1330 State Ave.
209-2350	Frankovich House
209-2229	Rectory, St. John the Baptist Catholic Church
209-2629	1608 State Ave.
209-2248	White House
209-2189	Waller House (Demolished)
209-2820-00049	Mauer-Neurer Packing Co.
209-2820-02009	Poinsett, W.B.L., House (Demolished)
209-2820-01921	Gibson, Porter & Brenner Funeral Home
209-2618	Gordon W. Lane Filling Station
209-2267	Long House
209-2272	Scott House
209-2270	Gibson House
209-2269	Gorojich House
209-2276	Martin House
209-2274	Mafich House
209-2280	Lonearitz House

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2279	Cigich House
209-2277	McConnell, Mary, House
209-2284	Povich House
209-2282	Rogencic House
209-2287	Jarnevich House
209-2286	Jesson House
209-2288	Granger House
209-2820-01916	Kansas Department of Human Resources
209-2630	L. G. Barcus and Sons
209-2615	1228 State Ave.
209-2820-01598	Sprague, Leon, House
209-2299	Krascovich House
209-2820-01935	Fasenmyer Motors Inc.
209-2820-01696	1212 N. 25 th St.
209-2820-01936	Fasenmyer Motors, Inc.
209-2616	L. D. Lockwood Motors Inc.
209-2820-01939	1026 State Ave.
209-2820-01721	Kansas City Carnegie Library (Demolished)
209-2223	Chap-Ruzich House
209-2622	Nu-Way Drive In
209-2619	Nu-Way Auto Service
209-2628	L. G. Barcus and Sons
209-2247	Hansell House
209-2820-01946	1100 State Ave.
209-2351	Matujec House
209-2820-00767	National Life Insurance Company
209-2820-02008	Phelan, Michael J., House
209-2820-01697	1216 N. 25 th St.
209-2544	Myron & Dick's Dental Laboratory
209-2820-01942	Kansas State School for the Blind – Administration Building (Demolished)
209-2820-01934	954 State Ave.
209-2820-02020	Kansas City Public Service Sub Station (Demolished)
209-2820-01599	Phelps, Vernon A., House

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Site Number	Name
209-2300	Carr, Matthew, House
209-2353	Smith, Prudence, House
209-2820-01920	Jennings Tire & Battery Supply
209-2601	1609 Nebraska Ave.
209-2820-00769	Porter & Sons Funeral Home
209-2820-01915	500 State Ave.
209-2820-02007	William A. Allen & Nina B. Spencer House (Demolished)

National Register of Historic Places (NRHP)-Listed Historic Properties

The NRHP database, KSHS Archaeological Inventory, and the KHRI identified eight NRHP-listed historic properties within or partially within the Cultural Resources Study Area in Kansas (Table 7). The NRHP database, MoDNR online archaeological sites database Archaeology Viewer, and the MoDNR Historic Districts and Sites Map Viewer identified 48 NRHP-listed historic properties within or partially within the Cultural Resources Study Area in Missouri, five of which are recorded as demolished/delisted and are indicated by strikethroughs in the table below (Table 8). These historic properties include cemeteries as well as commercial, industrial, religious, educational, institutional, and municipal buildings.

Table 7. Kansas NRHP-Listed Historic Properties within the Cultural Resources Study Area.

NR Reference Number, Site Number	Name
11001037, 209-2820-01741	Horace Mann Elementary School (Public Schools of Kansas MPS)
86000857, 209-2820-00105	Kansas City, KS City Hall and Fire Headquarters
14000352, 209-2820-01981	Town House Hotel
71000335, 209-2820-00001	Huron Cemetery
11001038, 209-2820-01782	Kansas City, KS High School Gym and Lab (Public Schools of Kansas MPS)
05000004, 209-2820-01896	Granada Theater (Theaters and Opera Houses of Kansas MPS)
100004199, 209-2820-01749	Kansas City, Kansas YMCA
100004198, 209-2820-01745	Brotherhood Block – Old Brotherhood Building

Table 8. Missouri NRHP-Listed Historic Properties within the Cultural Resources Study Area.

NR Reference Number, Site Number	Name
74001074, N/A	Standard Theatre
77000808, N/A	Loew's Midland Theater-Midland Building

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

NR Reference Number, Site Number	Name
78001663, N/A	St. Mary's Episcopal Church
79001370, N/A	Jenkins Music Company Building
79001369, N/A	Hotel Phillips
79001373, N/A	Professional Building
80002368, N/A	Peck, George B., Dry Goods Company Building
71000467, JA009	Boley Building
72000715, JA013	Coates House Hotel
82003144, N/A	Fire Department Headquarters
82003145, N/A	Gate City National Bank
N/A, JA011	Bullene, Moore & Emery Store [Demolished]
72000716, JA015	Curtiss, Louis, Studio Building
85000101, N/A	Land Bank Building
85000102, N/A	The Palace Clothing Company Building
N/A, NRJA166	The National Garage [demolished, delisted]
83000997, JA095	Continental Hotel (Hotels in Downtown Kansas City TR MPS)
02001401, N/A	Kansas City Club Building
02001683, N/A	R.A. Long Building
84002568, NRJA106	Bonfils Building
89000312, NRJA132	Bryant Building
01001379, JA177	Chambers Building
08000534, JA280	Inter-State Building
70000333, N/A	Jackson County Jail & Marshal's House
72000713, N/A	Jackson County Courthouse
79001366, N/A	Trinity Episcopal Church
N/A, NRJA385	Kansas City Public Library and Board of Education Bldg (demo; delisted)
N/A, NRJA200	Exchange Building (demolished, delisted)
03001052, N/A	Majestic Apartments
04000392, N/A	Kansas City Southern Railway Building (Railroad Related Historic Commercial and Industrial Resources in Kansas City, Missouri MPS; Railroad Related Historic Commercial and Industrial Resources in Kansas City, Missouri MPS)
05000624, N/A	Kansas City Title and Trust Building
05001327, N/A	Insurance Building-Consumer Cooperative Association Building

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

NR Reference Number, Site Number	Name
05000891, JA234	Argyle Building
08001387, JA290	Dierks Building
09000830, NRJA305	Mercantile Bank & Trust Building
12001257, NRJA335	Marty, Albert Building (Railroad Related Historic Commercial and Industrial Resources in Kansas City, Missouri MPS; Railroad Related Historic Commercial and Industrial Resources in Kansas City, Missouri MPS)
N/A, NRJA353	The Wiltshire Apartment Hotel (demo, delisted)
14001158, NRJA356	Independence Boulevard Christian Church
15000471, NRJA359	The Fairfax Building
16000233, NRJA369	Traders National Bank Building
16000764, NRJA376	Creamery Package Manufacturing Company Building (Historic Commercial and Industrial Resources in Kansas City, Missouri MPS; Railroad Related Historic Commercial and Industrial Resources in Kansas City, Missouri MPS)
100002034, NRJA393	National Cloak & Suit Company
100002424, NRJA395	The Crane Company Building (Railroad Related Historic Commercial and Industrial Resources in Kansas City, MO MPS)
100004065, NRJA399	The Moline Plow Company Building (Railroad Related Historic Commercial and Industrial Resources in Kansas City, MO MPS)
100004985, NRJA404	Adams, Charles Francis Jr., Building (Railroad Related Historic Commercial and Industrial Resources in Kansas City, MO MPS)
100006075, NRJA409	Hazelle, Inc. Building
100006773, NRJA413	Federal Office Building
100006891, NRJA414	Mason Building

National Register of Historic (NRHP)-Listed Historic Districts

The NRHP database, KSHS Archaeological Inventory, and the KHRI identified two NRHP-listed historic districts within or partially within the Cultural Resources Study Area in Kansas (Table 9). The NRHP database, MoDNR online archaeological sites database Archaeology Viewer, and the MoDNR Historic Districts and Sites Map Viewer identified 14 NRHP-listed historic districts within or partially within the Cultural Resources Study Area in Missouri (Table 10). These historic districts include but are not limited to commercial areas, residential areas, and parks.

Table 9. Kansas NRHP-Listed Historic Districts within the Cultural Resources Study Area.

Addresses	Name
N/A	Westheight Manor Historic District
745-755 State Ave	Brotherhood Block

Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

Table 10. *Missouri NRHP-Listed Historic Districts within the Cultural Resources Study Area.*

Addresses	Name
Main, 8th, 10th, & Central Streets	West 9th Street/Baltimore Avenue Historic District
Broadway, 10th, 14th, Jefferson Streets	Quality Hill
Baltimore Ave., 12th, 13th, Wyandotte Streets	District I (Hotels in Downtown Kansas City TR)
6th, 8th, 11th, Broadway, & Washington Streets	Wholesale District
Thompson Avenue, Gladstone & Benton Boulevards	Scarritt Point South Historic District
100 Blk of West 10th & 1000 Blk of Baltimore Avenue	West 9th Street/Baltimore Avenue Historic District (Boundary Increase)
North Delaware Street area	Harry S. Truman Historic District
Range 32W Township 49N Sects 2 & 3	Truman, Harry S., Historic District (Boundary Increase)
N/A	Holy Rosary Historic District
Boundaries as shown on site plan map.	West Eleventh Street Historic District
Various locations	The Kansas City Parks and Boulevards Historic District (The Kansas City System of Parks and Boulevards MPS)
Bounded by Main, McGee, E. 8th, and E. 10th	East Ninth Street-Grand Boulevard Historic District
E. 9th St., Walnut St., E. 10th St., Main St.	Commerce Trust Company Historic District
St. Louis Ave, Santa Fe, W. 14th, Liberty, Rails	West Bottoms Historic District Boundary Increase (Railroad Related Historic Commercial & Industrial Resources KC)

Conclusion and Recommendations

Stantec conducted a cultural resources review of the KSHS Archaeological Inventory, the KHRI, the MoDNR online archaeological sites database Archaeology Viewer, the MoDNR Historic Districts and Sites Map Viewer, and the NRHP database. The results of this review include previous cultural resources surveys as well as those previously recorded archaeological sites, above-ground properties, NRHP-listed historic properties, and NRHP-listed historic districts located within or partially within the Cultural Resources Study Area. This review identified:

- 13 previous archaeological surveys in Kansas and 67 previous archaeological surveys in Missouri;
- Six previous above-ground surveys in Kansas and 15 previous above-ground surveys in Missouri;
- No previously recorded archaeological sites in Kansas and three previously recorded archaeological sites in Missouri;

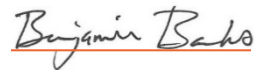
Reference: Bi-State Reinvestment Corridor (BSRC), PEL Study Desktop Review

- 284 previously recorded above-ground properties in Kansas and no previously recorded above-ground properties in Missouri;
- Eight NRHP-listed historic properties in Kansas and 48 NRHP-listed historic properties in Missouri; and
- Two NRHP-listed historic districts in Kansas and 14 NRHP-listed historic districts in Missouri within or partially within the Cultural Resources Study Area.

Additional unrecorded archaeological sites and above-ground properties may be present within or partially within the Cultural Resources Study Area but have not yet been identified or registered with the KSHS or the MoDNR. As a result, further cultural resources surveys are likely to be needed in the future if required by a lead federal agency.

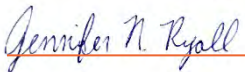
Respectfully,

Stantec Consulting Services Inc.



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Attachment: Figures



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Attachment: Figures

Appendix D - 4(f) and 6(f) resource Information

Resource Type	Property Address	Owner	Acreage of Resource	Potential Construction Activity	Impact (Acres)	Amenities
4(f) Resource Name						
Kensington Park	2900 State Avenue, Kansas City, KS 66102	Wyandotte County	12.77	BRT - full reconstruction, dedicated BRT facility.	0.68	playground, volleyball courts, picnic tables, grills, park benches, lighted softball field, parking lot, recreation center, gym, and meeting rooms
St. Johns Dog Park	4th and Armstrong, Kansas City, KS 66102	Wyandotte County	2	BRT - full reconstruction, dedicated BRT facility.	0.16	scenic overlook, and dog park
Columbus Square Park	701 East Missouri Avenue, KC MO 64106	City of Kansas City	4.22	BRT - full reconstruction, dedicated BRT facility.	0.03	4.2 acre park with walking trail, splash pad, wading pool, river, paved paths, playground, drinking fountains, picnic areas, and a picnic shelter, soccer field, bocce court.
Belvidere Park	1408 Independence Avenue, Kansas City MO 64106	City of Kansas City	0.44	BRT - full reconstruction, dedicated BRT facility.	0.55	15 acre park currently officially closed by KC Parks and Rec
Kessler Park	5200 Gladstone Blvd, Kansas City, MO 64120	Kansas City Parks and Rec	372.92	BRT - full reconstruction, dedicated BRT facility.	0.68	303 acre park with mountain biking trails, hiking trails, a scenic drive, a memorial to John F. Kennedy Jr., a museum, a historic boulevard (the Paseo), a lake and several memorials to notable indivi
Mulkey Square Park	1100 Summit Street, Kansas City, MO 64105	City of KC Property and Ins. Division	14.74	BRT - full reconstruction, dedicated BRT facility.	0.08	8.87 acre park with a playground, Contains the Hereford Bull Monument
Ius W Davis Park	1019 Oak Street, Kansas City, MO 64106 and 1016 Locust Street, KC MO, 64106	City of Kansas City	2.2	BRT - full reconstruction, dedicated BRT facility.	0.14	5.2 acre park with grass, benches, a fountain, and memorials, to the Bill of Rights, city employees, The Native Sons and Daughters of Greater Kansas City, and Ius W. Davis. There are 2 parcels tha
Independence Plaza Park	2200 Independence Blvd, Kansas City, MO 64124 and 603 Brooklyn Avenue, KC MO 64124	City of Kansas City	1.76	BRT - full reconstruction, dedicated BRT facility.	0.24	1.73 acre park bisected by Independence Blvd. Features trees, shrubbery, walks, tennis court, pickleball courts, playground equipment.
St. Clair Park	400 South Kentucky Avenue, Independence MO, 64053	City of Independence	0.26	BRT-Lite - roadway re-striping, wayfinding improvements	0.05	Small neighborhood park with benches, grassy area and woods. One basketball court, area affected by ROW is just barren area.
Stover Park	600 West Mechanic Avenue, Independence, MO 64050	Independence School District #30	12.61	BRT-Lite - roadway re-striping, wayfinding improvements	0.02	Municipal park adjacent to the Truman Presidential Library. Has a walking trail and grassy areas, but no other amenities.
McCoy Park	800 North Bess Truman Parkway, Independence Parkway, Independence, MO 64050	City of Independence	14.51	BRT-Lite - roadway re-striping, wayfinding improvements	0	Open space, playground, baseball field, Fire Department
6(f) Resource Name						
Oppenstein Brothers Memorial Park	1123 Walnut Street, Kansas City, MO 64106	Jackson County Missouri	0.48	BRT - full reconstruction, dedicated BRT facility.		
Jackson County Truman Farm	12301 Blue Ridge Blvd, Grandview, MO 64030	Jackson County Missouri		BRT-Lite - roadway re-striping, wayfinding improvements	0.1	
Big Eleven State Park	1060 State Avenue, Kansas City, KS 66102	United Government of WYCO/KCK	5.93	BRT-Lite - roadway re-striping, wayfinding improvements		
Independence Plaza Park	500 West US 24 Highway, Independence, MO 64050	Harry S Truman Library Inc.	0.24	BRT-Lite - roadway re-striping, wayfinding improvements	0.24	
Coronado Community Park	5216 Nebraska Avenue, Kansas City, KS 66102	Unified Government of WY CO/KCK	46.55	BRT-Lite - roadway re-striping, wayfinding improvements		
Kansas City Developments	415 East 12th Street, Kansas City, MO 64106	Jackson County Missouri	2.46	BRT - full reconstruction, dedicated BRT facility.		
Kansas City Developments	East 12th Street between Oak Street and McGee Street	Jackson County Missouri		BRT - full reconstruction, dedicated BRT facility.	0.21	
McCoy Park	800 North Bess Truman Parkway, Independence, MO 64050	City of Independence		BRT-Lite - roadway re-striping, wayfinding improvements	0.05	
Community Parks Development at KCK Metro Center	645 Minnesota Avenue, Kansas City, KC 66101	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.	0.01	
Trial- Bikeways						
Stony Point Park Walking Trails	527 N 86th Street Kansas City, KS	Wydonette County		BRT-Lite - roadway re-striping, wayfinding improvements		
Thompson Park Walking Trail	2534 N 59th St. Kansas City, KS 66104	Wydonette County		BRT-Lite - roadway re-striping, wayfinding improvements		
Welborn Park	2520 N 59th St. Kansas City, KS, 66104	Wydonette County		BRT-Lite - roadway re-striping, wayfinding improvements		
Bethany Park	1120 Central, Kansas City, KS	Wydonette County		BRT - full reconstruction, dedicated BRT facility.		
Kessler Park Trail	59 Chestnut Trafficway Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Ius Davis Park	400 E 11th Street Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Columbus Square Park	Pacific Street and Charlotte Street, Kansas City, KS	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Margaret Kemp Playground	E 9th Street and Harrison Street	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Goin' To Kansas City Plaza At Twelfth Street And Vine	12th and Vine	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Prospect Plaza Park	E 12th Street and Prospect Ave, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Montgall Park	2100 Walrond Ave, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Lykins Square Park	4115 E 7th Street, Kansas City, MO 64124	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
9th and Van Brunt Park	9th and Van Brunt, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Ashland Square Park	2200 Elmwood Ave, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Budd Park	5001 St John Trail, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Blue Valley Recreation Center	6001 E 17th Street, 64126	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
McCoy Park	1524 White Ave, 64126	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Sheffield Park	E 12th St and Winchester Ave, 64126	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Winner Park	8400 E. Independence Ave	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Bundschu Park	11400 E 9th St S, Independence, MO 64054	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
William M Hill Park	2201 S Maywood Ave, Independence, MO	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
McCoy Park	111 E Maple St, Independence, MO	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Bingham-Waggoner Estate	616 S Osage St, Independence, MO	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Young Park	111 E Maple St	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Walkways						
Stony Point Park Walking Trails	527 N 86th Street Kansas City, KS	Wydonette County		BRT-Lite - roadway re-striping, wayfinding improvements		
Thompson Park Walking Trail	2534 N 59th St. Kansas City, KS 66104	Wydonette County		BRT-Lite - roadway re-striping, wayfinding improvements		
Bethany Park	1120 Central, Kansas City, KS	Wydonette County		BRT-Lite - roadway re-striping, wayfinding improvements		
Columbus Square Park	Pacific Street and Charlotte Street, Kansas City, KS	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Ius Davis Park	400 E 11th Street Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
The Paseo	Independence Ave and Paseo Blvd	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Margaret Kemp Playground	E 9th Street and Harrison Street	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Goin' To Kansas City Plaza At Twelfth Street And Vine	12th and Vine	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Prospect Plaza Park	E 12th Street and Prospect Ave	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Lykins Square Park	4115 E 7th Street, Kansas City, MO 64124	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Montgall Park	2100 Walrond Ave, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
9th and Van Brunt Park	9th and Van Brunt, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Ashland Square Park	2200 Elmwood Ave, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Budd Park	5001 St John Trail, Kansas City, MO	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Blue Valley Recreation Center	6001 E 17th Street, 64126	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Sheffield Park	E 12th St and Winchester Ave, 64126	City of Kansas City		BRT - full reconstruction, dedicated BRT facility.		
Bundschu Park	11400 E 9th St S, Independence, MO 64054	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
William M Hill Park	2201 S Maywood Ave, Independence, MO	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
McCoy Park	800 N Bess Truman Pkwy, Independence, MO	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Bingham-Waggoner Estate	616 S Osage St, Independence, MO	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Young Park	111 E Maple St	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Shared Use Paths						
Turner Diagonal Freeway Shared Use Path	Turner Diagonal Freeway and State Avenue	Kansas City, KS		BRT-Lite - roadway re-striping, wayfinding improvements		
Hutton Road Shared Use Path	Hutton Road and Parallel Pkwy	Kansas City, KS		BRT-Lite - roadway re-striping, wayfinding improvements		
N. 98th Street Shared Use Path	N 98th Street and State Ave	Kansas City, KS		BRT-Lite - roadway re-striping, wayfinding improvements		
W Village Pkwy and Franco Family Drive Shared Use Path	W Village Pkwy and Franco Family Dr	Kansas City, KS		BRT-Lite - roadway re-striping, wayfinding improvements		
Jersey Creek Greenway East and West	1251 Parallel Pkwy Kansas City, KS 66104	Wydonette County		BRT - full reconstruction, dedicated BRT facility.		
Waterway Park	700 Waterway Drive, Kansas City, KS	Wydonette County		BRT - full reconstruction, dedicated BRT facility.		
N 5th Street Shared Use Path	N 5th Street and State Ave, Kansas City, KS	Wydonette County		BRT - full reconstruction, dedicated BRT facility.		
Intercity Viaduct	N3rd Street and State Ave			BRT - full reconstruction, dedicated BRT facility.		
Berkley Riverfront	950 Riverfront Drive, Kansas City, MO	Kansas City, MO		BRT - full reconstruction, dedicated BRT facility.		
Cliff Drive Scenic Byway	Chestnut Trafficway and Cliff Drive	Kansas City, MO		BRT - full reconstruction, dedicated BRT facility.		
Fairmount Park	9022 E Norledge Ave, Independence, MO	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Bundschu Park	11400 E 9th St S, Independence, MO 64054	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Mill Creek Park	1717 N River Blvd, Independence, MO	Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		
Stover Park	600 W Mechanic Ave	The School District of the City of Independence, MO		BRT-Lite - roadway re-striping, wayfinding improvements		

Appendix E - Public Involvement Plan Public Involvement Plan

Bi-State Sustainable Reinvestment Corridor

DRAFT Public Involvement Plan

June 2024

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1 Introduction

The Public Involvement Plan (Plan) is a guide to increase education about, and public participation in, the Bi-State Sustainable Reinvestment Corridor (BSRC) Phase I.

This Plan outlines methods to identify and engage with elected officials, residents, business and civic organizations, adjacent communities and key stakeholders who could potentially be affected by change in the project area. The Plan is a living document and communications strategies, tools and tactics may change throughout the project duration.

1.1 Overview

The BSRC will implement a transformational strategy to enhance multimodal mobility, regenerate historically disadvantaged communities, and reduce carbon emissions by focusing a wide range of federal and local investments on a key regional corridor that connects Kansas and Missouri.

Mid-America Regional Council (MARC) and its partners have secured funds through the Federal Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary grant program for a three-phase planning project. The BSRC project will update, integrate, and refine existing transit and transportation plans for this corridor, and develop new tools and land use strategies that advance the broader community and economic development goals within the study area. The project will analyze and develop recommendations along each corridor segment, with special attention to the unique connectivity constraints along the segment of the corridor between downtown Kansas City, Kansas (KCK) and downtown Kansas City, Missouri (KCMO).

The project will consider zero-emission transportation elements and complete conceptual design for high-capacity transit routes with supporting mobility services and hubs, sidewalk and bikeway connections, and other improvements for future capital, programmatic, social and cultural investments to be funded with other sources.

This planning program is a key element in the Kansas City region's strategy to:

- Accelerate implementation and demonstrate the potential of integrated investments in zero-emission transit, green infrastructure, broadband access, attainable housing, workforce development, childcare and other critical services to enhance neighborhood vibrancy, affordability, equity and connectivity as a model for other corridor-based programs.
- Create a strong community-defined and market-focused framework for private investment in under-achieving neighborhoods, business districts and activity centers.
- Protect and enhance the long-term integrity of key educational institutions and civic and cultural assets along the corridor.
- Achieve regional and local carbon reduction goals through better integration of land use and transportation that reduces vehicle miles traveled.
- Strengthen the physical, cultural and economic resilience of the neighborhoods along the corridor through strategic interventions and investments in the built, natural and social environments.

Program History

This program builds on and supports numerous and extensive community planning initiatives already completed or underway for various elements and segments along the corridor. Studies include but not limited to:

- [Independence Avenue Pedestrian Safety Improvement Plan](#)
- [Independence Avenue BRT Planning and Feasibility Study](#)
- [US 24 Highway Corridor Study](#)

Program Goals

- Accelerate implementation of community investments.
- Position the corridor for early action on large-scale, strategic investments via a variety of new federal funding opportunities.
- Demonstrate the potential of integrated investments in zero-emission transit, green infrastructure, attainable housing, broadband access, workforce development, child-care and other basic services to enhance neighborhood vibrancy, affordability, equity and connectivity as a model for other corridor-based programs.

Overall Project Objectives

- Expand BSRC community outreach and engagement as part of project-level planning on all BSRC elements. The project team is committed to developing and implementing public involvement actions that will provide early, continuous and meaningful engagement of the community affected by the project with particular emphasis on environmental justice and disadvantaged communities within the corridor.

Overall Project Outcomes

- Community engagement initiated and sustained
- Conceptual feasibility study, including:
 - Preliminary scope
 - Conceptual cost estimates (infrastructure)
 - Conceptual operational requirements and costs
- Preliminary National Environmental Policy Act (NEPA) work initiated
- Funding alternatives report
- Partnership opportunities report
- Small Starts Rating development for transit elements initiated, as appropriate
- Project Development Plan/Corridor Action Plan, as detailed below
 - The Corridor Action Plan (i.e., Project Development Plan), shall document the Phase 1 process, summarize the findings of reports developed during Phase 1, and outline implementation recommendations. The recommendations shall incorporate zero-emission and sustainability planning elements and be inclusive of the following:
 - Built and natural environment:
 - Climate change resiliency
 - Community assets (e.g., community centers, parks, religious institutions, libraries, museums, hospitals and health care centers,

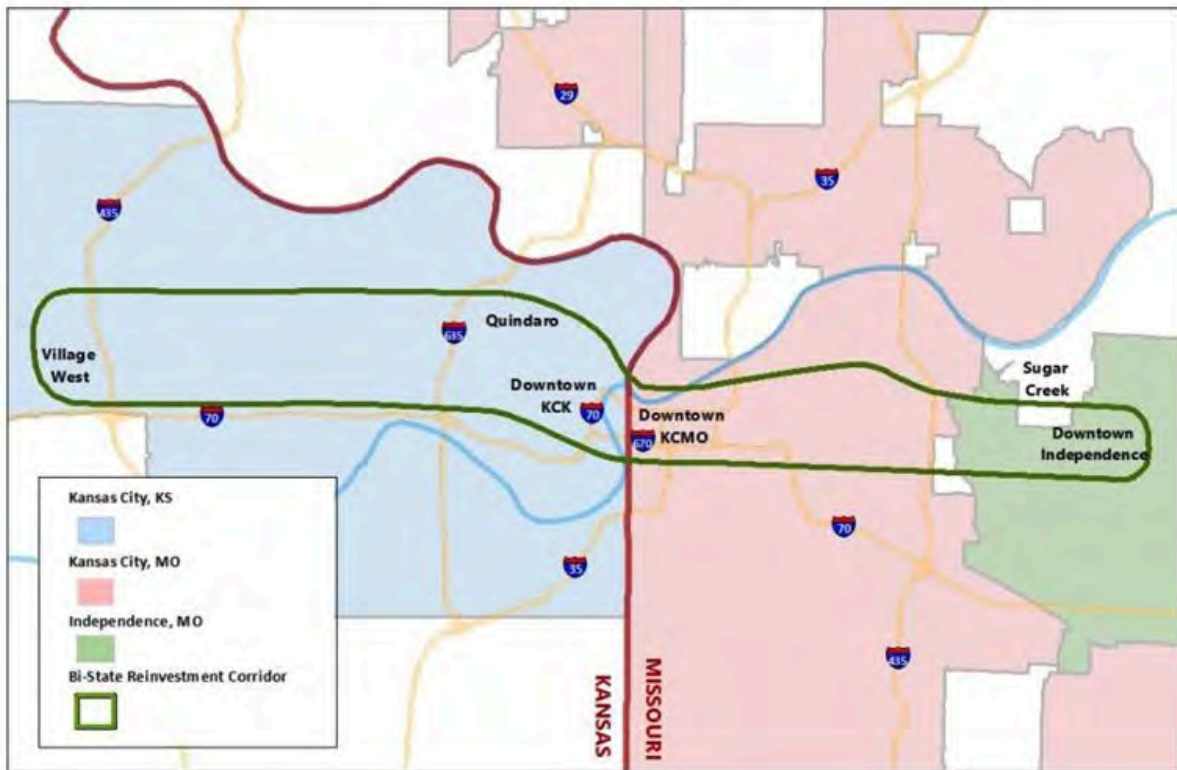
- and schools, daycare centers, broadband internet facilities and services)
 - Diversity of attainable housing options
 - Land use plans, zoning changes, design guidelines and standards, and other tools to set the foundation for TOD
 - Mobility hubs
 - Public safety elements
 - Workforce training opportunities and programs
- Socio-economic environment:
 - Childcare
 - Environmental justice areas
 - Historically-underserved communities
 - Workforce development (i.e., implementation of the Workforce for the Future Training Program)
- Zero-emission transportation improvements along each corridor segment, with special attention to the segment between Downtown KCK and Downtown KCMO given existing barriers (i.e, rail lines, major rivers, and interstate highways):
 - Autonomous vehicles
 - Bicycle infrastructure
 - Pedestrian infrastructure (e.g., sidewalks, crosswalks)
 - Private-use and shared-use EVs
 - Related roadway improvements
 - Transit alternatives
 - Vision Zero and Complete Streets strategies

The Corridor Action Plan shall identify roles and responsibilities for various agencies overseeing the implementation of this planning initiative. A critical part of the Corridor Action Plan will be to identify potential funding alternatives for all of the identified community development initiatives in addition to the zero-emissions component of the project in coordination with related work by the KCATA, City and County partners, as well as partnership opportunities with public sector agencies at the local, state and federal levels (e.g., HUD and USDOT) and the private sector around environmental improvements and potential transit-oriented development.

1.2 Project Area

The project is located along an east-west corridor in the Kansas City, Missouri-Kansas urbanized area that connects three downtowns and multiple activity centers with employment, education, health care and tourism. The corridor is approximately 24 miles in length and serves approximately 84,980 jobs and 90,810 residents. The corridor is centered along Independence Avenue in Missouri and State Avenue in Kansas and includes portions of Jackson County, Missouri, and Wyandotte County, Kansas, and the cities of Independence, Kansas City and Sugar Creek in Missouri, and Kansas City in Kansas.

Bi-State Reinvestment Corridor



1.3 Public Participation Goals

The following are public participation goals:

- Engage stakeholders to inform them of plans for the corridor.
- Engage elected officials and civic organizations in order to develop broad support.
- Elicit feedback about specific needs for each community along the corridor.

2 Stakeholders - Master Contact List

There are a variety of stakeholders in the project study area, including, but not limited to:

Government Agencies

- Departments of Transportation (MoDOT and KDOT)
- Federal Highway Administration (FHWA)
- Corridor municipalities and counties including: the Unified Government of Wyandotte County/Kansas City, Kansas; City of Kansas City, Missouri; Sugar Creek, Missouri; Independence, Missouri; and Jackson County in Missouri
- City Departments

- Mid-America Regional Council (MARC)
- Kansas City Area Transportation Authority (KCATA)
- Federal, state, and local elected officials

Businesses

- Area businesses and large employers
- Trade organizations
- Healthcare organizations
- Chambers of commerce
- Financial institutions
- Economic development entities
- Transportation Development Districts

Community

- Environmental organizations
- Civic/public interest groups
- Art organizations
- Public libraries
- Community centers
- Institutions of higher learning
- School districts
- Transportation organizations
- Faith-based organizations
- Workforce development organizations
- Housing authority agencies (Independence, Kansas City, Missouri, Kansas City, Kansas)

Residents

- Residents along the project area
- Neighborhood associations and organizations

General

- Commuters, travelers, transit riders
- General public
- News media

3 Key Messages

As a part of the process, key messages will be developed to clearly communicate basic information with a range of stakeholders across multiple communication channels. These messages will build on issues previously identified through community engagement activities and highlight:

- Project overview
- Purpose and need: identify the problem and how it might be solved
- Project area
- Project impacts: people, places and activities

- Public engagement opportunities
- Funding options to pursue

Overall Message:

The goal of the Bi-State Sustainable Reinvestment Corridor is to invest a wide range of federal and local funding on a key east-west regional transit corridor to:

- Connect people with transportation and employment options
- Transform communities
- Reduce carbon emissions

This initiative will:

- Identify opportunities, approaches and funding sources.
- Demonstrate how such funding can develop sustainable communities in and around highly trafficked corridors.
- Support improved access to housing, health care, employment and education.
- Create opportunities for replication in other corridors both in the Kansas City region and nationally.

Funding for this study was secured as part of a bi-state effort by Congressman Emanuel Cleaver II and Congresswoman Sharice Davids.

4 Outreach Methods

The Plan incorporates multi-layered outreach methods to ensure key messages and information reach the range of stakeholder groups in the project area. To increase awareness and knowledge about the project, the Plan utilizes a diverse mix of communications strategies, tools and tactics that will engage stakeholders and broaden the audience reach. This integrated approach leverages the distribution of information through multiple communications channels, in-person and virtual meetings, digital tools and printed materials.

Based on the project scope, this section is divided into General Engagement Activities, Grass Tops Neighborhood, Grassroots Engagement, and Public Surveys and Data Storytelling

General Engagement

Tasks 4.1-4.3 apply to tasks in all sections of the engagement work

4.1 Stakeholder Outreach/Master Contact List

Strategy: Build and maintain a master stakeholder list to connect with people located in or near the project area.

Tools and Tactics:

- Identify stakeholders and create a stakeholder list
 - Ensure representation from diverse and disadvantaged groups
 - Ensure representation from a wide range of public and private organizations.
- Maintain stakeholder list and update, as needed

Deliverables: Stakeholder list

4.2 Creative Asset Development

Creative assets will help promote the project, featuring approved images and key messages, directing people to the project website or through a QR code, and include project contact information. Creative assets materials may include:

Project Logo

Strategy: With client approval, identify and utilize logo elements on all project materials.

Tools and Tactics:

- Use approved logo/brand on project collateral materials throughout to give the project a recognizable visual identity.

Deliverables: Brand identity connected to project.

Website Content

Strategy: Develop website content to share on the centralized digital space for people to stay up-to-date about the project. The content will include:

- Basic information, timeline, project news and announcements
- Interactive project map (embedded and/or linked)
- Resources such as public meeting materials, collateral materials, and documents
- Photos and/or videos
- Opportunities for engagement

Deliverable: Web content and updates throughout the project.

Digital Content

Strategy: Use project name and branding to develop social media campaigns.

Tools and Tactics:

- Develop social media toolkit with posts and images for use by project partners to educate constituencies about the project.

Deliverables: Social media toolkit.

4.3 Translation Coordination

Relevant collateral materials, surveys and presentations will be developed in appropriate languages for specific audiences.

Grass Tops Neighborhood Engagement

Tasks 4.4-4.9 apply to Grass Tops engagement, primarily focusing on public affairs, and influencing key community influencers through innovative and impactful methods.

4.4 Neighborhood Groups, Stakeholders, or Government Events/Public Affairs Support

Strategy: Identify up to 30 neighborhood groups, stakeholders, or government events where project information may be shared.

Tools and Tactics:

- Identify existing meetings in the project area and offer to provide a project update
- Create a roadshow by utilizing existing materials (i.e. convert boards from public meetings into PowerPoint slides)
- Coordinate meeting logistics: confirm essential project team staff, confirm time/date/location, coordinate meeting supplies
- Create a master calendar of events in and around the project boundaries that the project team can attend
- Develop components for an awareness campaign to support public affairs, including project toolkit, creative materials, etc.
- Create sign-up sheets to collect contact information that key project milestones/public meeting dates/new survey releases can be distributed
- Ask for priority contacts and organizations to cross reference with the stakeholder list
- Offer to provide a project update for one-on-one or committee meetings (such as Transportation & Infrastructure, Finance, etc.)
- Position P+A as the first place to go with questions about the project.
- Encourage elected officials to share constituent questions, concerns, and comments directly to the P+A team
- Summarize meetings

Deliverables: Roster of contacts, fact sheet/one pager, presentation, summary of one-on-one/small group meeting notes

Deliverables: Calendar of events, presentation slides, meeting tracker, summary of comments received at presentations

4.5 One-on-One Meetings with Community Partners

Strategy: Support the project team during one-on-one meetings with community partners to discuss and plan the data collection process.

Tools and Tactics:

- Identify appropriate points of contact
- Schedule meetings, coordinate calendar invitations and logistics
- Draft an agenda/Run of Show
- Draft presentations
- Summarize meetings

Deliverables: Content for meeting invitations and emails, agenda/Run of Show documents, presentations, meeting summary

4.6 One-on-One Meetings with Stakeholders, Residents, and Community Members

Strategy: Identify a list of key stakeholders, residents and community members to provide updates and gain buy-in about this transformative project. Facilitate up to 50 virtual and/or in-person meetings.

Tools and Tactics:

- Develop list of individuals/organizations to approach for individual meeting
- Draft communications to introduce project
- Schedule meetings within the project timeline
- Coordinate calendar invitations and logistics
- Use awareness campaign content, including project toolkit, creative materials, website, etc., to communicate about the project
- Prepare team for meetings
- Summarize meetings
- Identify individuals within these meetings to serve on Advisory Committee

Deliverables: One-on-One stakeholder roster, content for meeting invitations and emails, agenda/Run of Show documents, presentations, meeting summary

4.7 Advisory Council

Strategy: Establish an Advisory Council and facilitate up to four meetings/bus tours with approximately 20-30 identified stakeholders representing a range of interests. The purpose of the Advisory Council is to present information, elicit feedback, and act as a sounding board throughout the process to tailor engagement to their organizations and surrounding communities. By keeping in constant communication, Advisory Council members can reiterate key messages and important dates to their constituents.

Tools and Tactics:

- Draft and confirm list of potential Advisory Council members
- Update Steering Committee information and/or identify replacement members, if necessary
- Draft and send an invitation and email reminders (email and/or hard copy) inviting potential Advisory Council members to serve
- Coordinate dates, calendar invitations and logistics
- Edit and review agenda/run of show
- Edit and review presentations
- Schedule run throughs with project team
- Summarize meetings

Deliverables: Advisory Council roster, introductory letter, content for meeting invitations and emails, agenda/Run of Show documents, presentations, meeting summary

4.8 Public Meetings

Strategy: Host up to four public meetings (three in person, one virtual) to provide information and elicit feedback.

Public meeting notices will include the meeting time, date and location, where project information can be accessed, and a statement to accommodate The Americans with Disabilities Act (ADA) and/or Limited English Proficiency requests.

Kick off Event/Public Meeting #1 - The purpose of the first public meeting is to:

- Serve as official kick off event for the project with elected officials, community partners and key stakeholders
- Present a project overview and refine the Purpose and Need, confirm vision
- Share upcoming public involvement opportunities
- Elicit feedback about park programming
- Launch a survey

Additional Public Meetings - The team will host up to three in-person meetings and one virtual meeting after the kickoff event in line with project milestones.

Tools and Tactics:

The consultant will:

- Handle logistics for the public meetings, including, but not limited to:
 - Confirm meeting purpose(s)
 - Confirm essential project team staff
 - Confirm time/date/location
 - Provide meeting supplies - fact sheet, sign-in sheet, comment card/survey, project boards, refreshments, technology, translator and other items, as needed
 - Coordinate translation needs
- Develop public meeting format and presentation needs
 - Work with the project team to develop/utilize existing renderings, images and graphics to create boards
 - Develop other project-related boards as needed
- Develop a messaging toolkit

- Create and coordinate distribution of media alerts and news releases
- Update project website with boards/presentation, materials and resources, following meetings
 - Distribute through communications channels
 - Distribute to the Advisory Committee

The client and consultant will promote the public meetings through multiple communications channels including, but not limited to:

- Paid advertising (social media, print, digital, radio)
- Email invitation to stakeholders
- Website content
- Media alerts and news releases
- Other miscellaneous tools as needed

Deliverables: Content for meeting invitations and emails, digital graphic social media posts, project boards, public meeting messaging toolkit, meeting summaries, attendee list, meeting materials, and ads, if applicable

Grassroots Neighborhood Engagement

Tasks 4.9-4.10 apply to Grassroots engagement, focused on reaching out to neighborhood groups, specialty groups, and individuals who might otherwise be overlooked in the planning process. Note that there is crossover in the scope between the Advisory Council and public meeting tasks, which in many cases apply to both Grass Tops and Grassroots Engagement.

4.9 Neighborhood Meetings and Pop-Up Events

Strategy: Identify up to 54 (24 in the Englewood, Historic Northeast and Sugar Creek areas, and 30 in the broader areas of Kansas City, KS, Independence, and Eastern Jackson County) community/neighborhood meetings or pop-up events where project information may be provided by appropriate members of the Speakers Bureau in a more casual setting (targeting residents and community members who normally wouldn't attend a structured meeting).

Specifically, Hoxie Collective will be responsible for organizing up to 24 of these events with a focused engagement within the Englewood area, the Historic Northeast, and Sugar Creek.

P+A will organize the remaining up to 30 events that will take place within the broader areas of Kansas City KS, the City of Independence, and Eastern Jackson County.

Tools and Tactics:

- Identify existing meetings in the project area and offer to provide a project update
- Create a roadshow by utilizing existing materials (i.e. convert boards from public meetings into PowerPoint slides)
- Confirm essential project team staff
- Confirm time/date/location

- Coordinate meeting supplies
- Create a master calendar of events in and around the project boundaries that the project team can attend
- Create and/or order collateral materials (such as fact sheets, QR codes to project website/surveys, pop-up banner, swag, etc.) to distribute at events
- Handle logistics, including, but not limited to:
 - Confirm project team staff
 - Confirm time/date/location
 - Prepare supplies - collateral materials, sign-in sheet, refreshments, and other items, as needed
- Create sign-up sheets to collect contact information that key project milestones/public meeting dates/new survey releases can be distributed

Deliverables: Calendar of events, presentation slides, roadshow meeting tracker, summary of comments received at presentation.

4.10 Community Development Meetings

Strategy: Coordinate up to six Community Development meetings to aid in project concept, alignment, and implementation.

Tools and Tactics:

- Support the project team in planning and executing meetings.
- Confirm time/date/location, logistics and supplies.
- Collect feedback and prepare meeting summaries.'
- Maintain tracker of meetings

Deliverables: Calendar of events, meeting tracker, meeting summaries.

Public Surveys and Data Storytelling

4.11 Survey and Data Management

Strategy: Under direction from Parson + Associates (P+A), Porchlight Insights administer two statistically valid surveys, which will gather feedback from the three main geographical areas along the corridor. The administration, creation, and collection of two statistically valid surveys, which will be used to gather feedback from three main geographical areas along the corridor: Kansas City, KS, Kansas City, MO, and the combined communities of Independence, Jackson County, and Sugar Creek. Each survey is designed to collect input during different phases of the project, ensuring a diverse and comprehensive understanding of resident and stakeholder needs and perspectives. Insights gathered from these surveys will be instrumental in aligning the study's objectives and methodologies with the community's expectations and requirements.

Tools and Tactics:

- Draft electronic surveys

- Coordination of translation services
- Create a toolkit for stakeholders to help share the surveys, which will include: content for email blasts/newsletters/websites, graphics, social media posts

Deliverables: Electronic surveys, survey results

5 Project Team Roles and Responsibilities

P+A will coordinate with the project owners throughout the project duration and act as an extension of their team. P+A will also manage tasks assigned to Hoxie Collective, Porchlight Insights, and Promenade Consulting. Project Partners will have final approval of any communication-related templates and materials that are released to the public, elected officials or other stakeholders.

MARC

Project Manager: Ron Achepohl

Community Partners: City of Kansas City, Missouri, City of Independence, Unified Government of Kansas City, Kansas, Jackson County, Missouri, Sugar Creek and Kansas City Area Transit Authority (KCATA)

Project Partners:

Stantec – Stantec is the primary consultant furnishing the professional services for the Bi-State Sustainable Redevelopment Corridor, Phase 1.

- Project Lead: Adam Jones

Parson + Associates – P+A will lead the public engagement and outreach goals outlined in this document, with the support of the entire team.

- Project Lead: Lara Schopp

Hoxie Collective – Hoxie Collective will assist P+A with public engagement and outreach, specifically in the Historic Northeast KCMO, Sugar Creek, Englewood and Independence areas of the project area.

- Project Lead: Christina Hoxie

Porchlight Insights – Porchlight Insights will develop up to six surveys and provide data management and analysis for the project.

- Project Lead: Kate Bender

Promenade Consulting – Promenade Consulting will provide general assistance with community engagement and communications strategy, community context, engagement content, coordination, and will serve as the infrastructure and concept design liaison.

- Project Lead: Thomas Morefield

5.1 Process and Procedures

Collateral Materials

1. Public facing materials such as fact sheets, boards, webpage content, postcards, etc. will be drafted by P+A.
2. P+A will send material drafts to the Stantec team for review and approval.

Documentation

Public involvement activities will be conducted in accordance with the approved plan as well as MARC's Public Participation Plan guidelines, and documented in a Public Involvement summary document. P+A will create and maintain a log of calls, emails, and other communications with the public throughout the project. Other documentation may include:

1. Public meeting summaries
2. Advisory Committee summaries
3. One-on-One meeting summaries
4. Survey Results

6 Phase and Timeline

This plan addresses Phase I of the BSRC and is expected to be completed by May 2025. A more detailed timeline will be developed and provided as an addendum to this document, but high-level milestones include:

Months 1-3

1. Establish general awareness of the project
2. Develop project website
3. Meet with elected officials through the project corridor
4. Identify and meeting with project champions across the corridor to establish early familiarity and project buy-in
5. Establish Advisory Committee
6. Identify communities with specific needs for translation, transportation, and other specialized services related to learning about the project
7. Identify community meetings and events at which to share information

Months 3-9

1. Support the project team's work at this phase of the project
2. Customize messages based on project findings and needs
3. Continue meeting with federal, state and local elected officials
4. Promote public meetings
5. Conduct surveys to gather data needed by the project team
6. Share messaging at one-on-one meetings and pop up events

Months 9-12

1. Ensure outreach has been comprehensive and diverse
2. Compile summary data
3. Continue meeting with federal, state and local elected officials
4. Complete the cycle of feedback to sharing findings with the communities

Appendix F - Agency Coordination Plan

Bi-State Regional Corridor Bus Rapid Transit Agency Coordination Plan

Date:
May 2026

Prepared for:
Mid-America Regional Council



Prepared by:
Stantec



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1 Purpose of the Coordination Plan

This Coordination Plan formalizes the approach for engaging federal, state, tribal, and local agencies throughout the Programmatic Environmental Assessment (PEA) process. Its goals are to proactively identify timing, streamline communications, clarify agency roles, and ensure efficient progress toward regulatory compliance and future Tier 2 reviews.

2 Project Background

2.1 Project Location

The Bi-State Sustainable Reinvestment Corridor (BSRC) spans key transit corridors across metropolitan Kansas City. The Project Corridor spans approximately 24 miles from Village West in western Kansas City, Kansas to Independence Square in eastern Independence, Missouri. The Corridor crosses two states and two counties, linking the communities of Kansas City, Kansas (Wyandotte County); Kansas City, Missouri; Sugar Creek, Missouri; and Independence Missouri (Jackson County).



2.2 Community Partners

The BSRC Project is being developed through a strong bi-state partnership led by MARC in partnership with multiple local governments, regional stakeholders, and state partners including the Missouri Department of Transportation (MoDOT) and Kansas Department of Transportation (KDOT). Community partners include the Unified Government of Wyandotte County/Kansas City, KS; the City of Kansas City, MO; Jackson County, MO; the City of Independence, MO; the City of Sugar Creek, MO; Kansas City Area Transportation Authority (KCATA); and MARC.

Community Partners helped to shape the Project priorities and advise on technical analyses throughout the development of the Project. Additionally, Community Partners also met regularly with a Community Advisory Committee made up of leaders from the public, private, and nonprofit sectors. This group served as a sounding board for project decisions.

2.3 Purpose and Need

The BSRC initiative was launched in response to longstanding transportation and community development challenges in the region. Existing public transit service within the corridor has been limited, with many neighborhoods underserved and facing barriers to accessing employment, education, healthcare, and other essential opportunities. Recognizing these needs, regional leaders and stakeholders came together to pursue a holistic solution that would leverage transit improvements as a catalyst for broader economic growth and community revitalization.

The BSRC aims to provide high-frequency, reliable, and convenient public transit as the backbone of a zero-emission transportation network, coupled by strategic investments in housing, technology, and infrastructure. By prioritizing sustainable transportation, renewable energy use, and community investment, the BSRC sets the stage for long-term growth and improved quality of life throughout the region.

The purpose of the BSRC Project is to develop an integrated and forward-thinking transportation and infrastructure framework that enhances mobility, reduces carbon output, and promotes fair access to housing, employment, education, and healthcare along a key east-west corridor within the Kansas City metropolitan region. The Project aims to align transportation improvements with community needs, foster economic growth, and address environmental quality goals in collaboration with regional, state, and local partners.

2.4 Project History

In 2022, the Project received a significant boost through a competitive \$5.6 million Rebuilding American Infrastructure with Sustainability and Equity (RAISE) planning grant, awarded by the U.S. Department of Transportation. This federal support, secured via the Bipartisan Infrastructure Law and championed by local congressional leadership, enabled the launch of the Assessment and Strategy Action Plan and established a strong foundation for future implementation.

The BSRC builds on years of prior planning work and community engagement, intentionally aligning with local and regional plans to amplify existing community goals. Previous studies such as the *Independence Avenue Pedestrian Safety Improvement Plan*, *Independence Avenue BRT Planning and Feasibility Study*, *U.S. 24 Highway Corridor Study*, *goDotte Strategic Mobility Plan*, and *PlanKCK* have engaged thousands of residents and laid out visions for safer streets, better transit, and reinvestment in corridor communities. The BSRC unifies these initiatives into a single actionable program, leveraging prior work to avoid “reinventing the wheel” and focus on implementing shared priorities across the entire corridor.

The Project underwent a Phase 1 study, which presented a comprehensive, multi-phase assessment and planning effort aimed at shaping a sustainable reinvestment strategy for the bi-state corridor. The study outlined how the study initiative emerged, and established overarching goals, timeline, and specific transportation, land-use, and community challenges that helped form the Project’s purpose and need. Detailing how the Project evolved and by highlighting the complex interplay between regional growth, infrastructure conditions, and long-term economic and mobility objectives, robust community engagement was key to ensure that residents and stakeholders played an active role in refining the corridor’s vision. Through community-driven workshops, statistically valid surveys, and targeted outreach, the study gathered detailed input on preferred alignments, priorities, and concerns. These findings helped define common

themes and informed a “path forward,” ensuring that the plan reflects local desires and is grounded in equitable, inclusive engagement practices.

Additionally, Phase 1 also relied on a structured planning framework, exploring the corridor’s physical and market context, identifying key character areas, and examining existing land-use patterns. It included evaluations of river crossings, major environmental constraints, and the alignment of proposed strategies with existing local and regional plans. This framework provided the technical and contextual background necessary to develop feasible future alignments/alternatives.

Building on this foundation, the study conducted an extensive planning analysis of transit modes, land-use integration, and infrastructure needs. It evaluated individual corridor segments, compared zoning approaches, and used strategic storytelling methods to convey ideas clearly to the community. Environmental screening was also performed to understand potential impacts and considerations early in the decision-making process. Altogether, the study culminated in a data-driven, community-informed set of strategies intended to support sustainable reinvestment, improve mobility, and guide long-term development across the bi-state corridor.

2.5 Current Status and PEL

The BSRC Project is currently in Phase 2, which builds on Phase 1 to provide a roadmap for project implementation. Phase 2 study includes refinement of corridor concepts and transit service strategies, advancement of conceptual design, and continued coordination with partner agencies and stakeholders. A key milestone of Phase 2 is the completion of a Planning and Environmental Linkages (PEL) documentation, which captures the planning-level decisions, assumptions, methodologies, and screening results developed throughout both phases of the study. The PEL documentation is intended to serve as a planning record that can be referenced during future project-level National Environmental Policy Act (NEPA) reviews as individual corridor segments advance. The PEL Study is being prepared in accordance with Federal Highway Administration (FHWA) guidance. Consistent with RAISE grant reporting requirements, Phase 2 deliverables, including the PEL documentation, are required to be completed by the end of April 2026. Subsequent phases of the BSRC (NEPA environmental review, final design, and construction) are not currently funded. Advancement of future phases is contingent on local, state, and federal funding and will proceed incrementally as resources become available.

PEL is a planning process that allows planning-level decision and analyses to be documented in a manner that can be used to inform and streamline subsequent NEPA review. BSRC is well-suited for a PEL approach because it is a multi-partner, phased corridor program where implementation will occur over time and may involve a mix of project types and funding sources. The PEL Study will document planning decisions and analyses, such as Purpose and Need, alternatives screening, and environmental constraints, so that future NEPA actions can build on that work, reducing duplication, improving consistency across jurisdictions, and supporting efficient delivery as individual elements advance. Agency coordination is an important part of making sure the PEL record is complete, accurate, and usable for subsequent project development and environmental review.

3 Coordinating Agencies

3.1 Lead Federal Agency

The “Lead Federal Agency” is the primary agency responsible for supervising the preparation of environmental reviews, ensuring compliance with laws like NEPA and Section 106, and managing the Project schedule. For this project, the Lead Federal Agency will be overseeing the PEL process. Lead federal agencies on a federal project serve as the central authority, managing the overall environmental review process, ensuring regulatory compliance, and coordinating with other agencies and stakeholders.

The Federal Transit Administration (FTA) is the Lead Federal Agency for this project. The Federal Highway Administration (FHWA) has been involved with the Project in a supporting role with FTA as the lead agency. As Lead Agency, the FTA will invite other affected or interested local, regional, and state agencies and Tribal Nations to participate in the Corridor study’s PEL process. The FTA must oversee the study process and concur as implemented by MARC and their Community Partners, satisfying regulatory compliances and environmental review processes.

3.2 Federal Agencies

The federal agencies listed in Table 1 below have been invited to participate in this PEL Study.

Table 1: List of Federal Agencies Contacted

Agency Name	Contact Information	Responsibilities
FHWA Kansas Division	6111 SW 29 th Street, Suite 100 Topeka, KS 66614 Email: Kansas.FHWA@dot.gov Phone: (785) 273-2600	Lead Federal Agency. Oversee PEL process. Section 4(f) jurisdiction. Provide comments on aspects of the PEL Study under FHWA jurisdiction.
FHWA Missouri Division	Kevin Ward, P.E., Division Administrator 3220 W. Edgewood, Suite H Jefferson City, MO 65109 Email: Missouri.FHWA@dot.gov Phone: (573) 636-7104	Lead Federal Agency. Oversee PEL process. Provide comments on aspects of the PEL Study under FHWA jurisdiction.
FTA Region 7	Cynthia Moses, Acting Director 901 Locust Street, Suite 104 Kansas City, MO 64106 Email: moses.cynthia@fta.gov Phone: (816) 329-3920	Lead Federal Agency. Oversee PEL process. Provide information regarding funding criteria and funding for transit. Provide

		comments on aspects of the PEL Study under FTA jurisdiction.
Federal Emergency Management Agency (FEMA) Region 7	Catherine Sanders, Acting Regional Administrator 11224 Holmes Road Kansas City, MO 64131 Email: Catherine.Sanders@fema.dhs.gov Phone: (816) 283-7061	Provide comments on aspects of the PEL Study under FEMA jurisdiction.
U.S. Army Corps of Engineers (USACE) Kansas City Regulatory District	601 E 12 th Street, Room 641 Kansas City, MO 64106 Email: CENWK-PA@usace.army.mil Phone: (816) 389-3486	Section 404 permit jurisdiction. Provide comments on aspects of the PEL Study under USACE jurisdiction.
U.S. Environmental Protection Agency (EPA)	Michael Sedlacek, NEPA Lead 11201 Renner Boulevard Lenexa, KS 66219 Email: sedlacek.michael@epa.gov Phone: (913) 551-7029	Clean Water Act jurisdiction. Provide comments on aspects of the PEL Study under U.S. EPA jurisdiction.
U.S. Fish and Wildlife Service (USFWS) Kansas Ecological Services Field Office	2609 Anderson Avenue Manhattan, KS 66502 Email: kansases@fws.gov Phone: (785) 539-3474	Endangered Species Act, Fish and Wildlife Coordination Act jurisdiction. Provide comments on aspects of the PEL study under USFWS jurisdiction.
USFWS Missouri Ecological Services Field Office	John Weber, Field Supervisor 101 Park Deville Drive, Suite A Columbia, MO 65203 Email: john_s_weber@fws.gov Phone: (573) 234-2132	Endangered Species Act, Fish and Wildlife Coordination Act jurisdiction. Provide comments on aspects of the PEL study under USFWS jurisdiction.

3.3 State Agencies

The state agencies listed in Table 2 below have been invited to participate in this PEL Study.

Table 2: List of State Agencies Contacted

Agency Name	Contact Information	Responsibilities
Kansas		
Governor of Kansas	Laura Kelly, Governor 300 S.W. 10 th Avenue Topeka, KS 66612 Email: correspondence@ks.gov Phone: (785) 368-8500	Provide comments on the PEL Study.
Kansas Division of Environment Bureau of Air	Douglas Watson, Director of the Bureau of Air 1000 SW Jackson, Suite 310 Topeka, KS 66612 Email: douglas.watson@ks.gov Phone: (785) 296-1551	Provide comments on aspects of the PEL Study under Kansas Division of Environment jurisdiction.
Kansas Division of Environment Bureau of Water	Riley Biel, Field Operation, Permitting & Compliance Manager 1000 SW Jackson, Suite 420 Topeka, KS 66612 Email: Riley.Biel@ks.gov Phone: (785) 600-0585	Provide comments on aspects of the PEL Study under Kansas Division of Environment jurisdiction.
Kansas Department of Wildlife, Parks and Tourism Kansas City District	Sarah Navarro, Senior Administrative Specialist 512 SE 25 th Avenue Pratt, KS 67124 Email: sarah.navarro@ks.gov Phone: (620) 672-5911	Provide comments on aspects of the PEL Study under Kansas Department of Wildlife, Parks and Tourism jurisdiction.
KDOT District 1 Area 3	Ryan Barrett, Metro Engineer 650 N. K-7 Highway Bonner Springs, KS 66012 Email: Ryan.barrett@ks.gov Phone: (913) 942-3040	Provide comments on aspects of the PEL Study under Kansas Division of Environment jurisdiction.
KDOT Construction Stormwater	Mervin Lare P.E., Stormwater Compliance Engineer 700 SW Harrison Street Topeka, KS 66612 Email: Mervin.Lare@ks.gov Phone (785) 250-4793	Provide comments on aspects of the PEL Study under Kansas Division of Environment jurisdiction.
Kansas Historical Society	6425 SW 6 th Avenue Topeka, KS 66615 Patrick Zollner, Executive Director	National Historic Preservation Act Section 106 jurisdiction. Review and comment on cultural resource

Agency Name	Contact Information	Responsibilities
	Email: patrick.zollner@ks.gov Phone: (785) 272-8681 Ext. 202 SHPO Email: kshs.shpo@ks.gov Phone: (785) 272-8681 Ext. 240 Katrina Ringler, Cultural Resources Division Leader Email: katrina.ringler@ks.gov Phone: (785) 272-8681 Ext. 217	investigation reports and materials. Provide comments on aspects of the PEL Study under State Historic Preservation Office (SHPO) jurisdiction.
Kansas Preservation Alliance	Melina Stewart, President PO Box 3901 Topeka, KS 66604 Email: Information@kansaspreservationalliance.org	Provide comments on the aspects of the PEL Study under Kansas Preservation Alliance jurisdiction.
Kansas Emergency Management Agency	Dirk Christian, Bureau Director 2800 W Topeka Boulevard Topeka, KS 66611 Email: Dirk.A.Christina@ks.gov Phone: (785) 646-2301	Provide comments on the aspects of the PEL Study under Kansas Emergency Management Agency jurisdiction.
Missouri		
Governor of Missouri	Mike Kehoe Capitol Building, Room 216 PO Box 720 Jefferson City, MO 65102 Email: scheduling@governor.mo.gov Phone: (573) 751-3222	Provide comments on the PEL Study.
Missouri Department of Natural Resources (MDNR)	Kurt U. Schaefer, Director 1101 Riverside Drive, PO Box 176 Jefferson City, MO 65102-0176 Email: contact@dnr.mo.gov Phone: (573) 751-3443	Provide comments on the aspects of the PEL Study under MDNR jurisdiction.
Missouri Division of Energy	Emily Wilbur, P.E., Director 1101 Riverside Drive, PO Box 176 Jefferson City, MO 65102-0176 Email: energy@dnr.mo.gov Phone: (573) 751-2254	Provide comments on the aspects of the PEL Study under Missouri Division of Energy jurisdiction.

Agency Name	Contact Information	Responsibilities
Missouri Division of Environmental Quality (MDEQ) Kansas City Regional Office	Mike Carroll, Regional Director 200 Unity Circle North, Suite 2A Lee's Summit, MO 64086-6018 Email: kcro@dnr.mo.gov Phone: (816) 251-0700	Provide comments on the aspects of the PEL Study under MDEQ jurisdiction.
Missouri Geological Survey (MGS)	Carey Bridges, RG, Director 111 Fairgrounds Road, PO Box 250 Rolla, MO 65402-0250 Email: geology@dnr.mo.gov Phone: (573) 368-2100	Provide comments on the aspects of the PEL Study under MGS jurisdiction.
MGS Water Resources Center	Erin Fanning PO Box 176 Jefferson City, MO 65102-0176 Email: mowaters@dnr.mo.gov Phone: (573) 751-2867	Provide comments on the aspects of the PEL Study under MGS jurisdiction.
MGS Soil and Water Conservation Program	Jim Plassmeyer, Director PO Box 176 Jefferson City, MO 65102-0176 Email: soil&waterconservationprogram@swcd.mo.gov Phone: (573) 751-4932	Provide comments on the aspects of the PEL Study under MGS jurisdiction.
Missouri State Parks	Laura Hendrickson, Director 1659 E. Elm St, PO Box 176 Jefferson City, MO 65102-0176 Email: moparks@dnr.mo.gov Phone: (573) 751-2479	Provide comments on the aspects of the PEL Study under Missouri State Parks jurisdiction.
Missouri Department of Conservation (MDC) Kansas City Regional Office	Jason Sumners, Director 12405 SE Ranson Road Lee's Summit, MO 64082 Email: kcregion@mdc.mo.gov Phone: (816) 622-0900	Provide comments on the aspects of the PEL Study under MDC jurisdiction.
MoDOT Kansas City District	Greg Bolon, District Engineer 600 NE Colbern Road Lee's Summit, MO 64086 Email: greg.bolon@modot.mo.gov Phone: (816) 607-2281	Provide comments on the aspects of the PEL Study under MoDOT jurisdiction.

Agency Name	Contact Information	Responsibilities
Missouri SHPO	Dawn Scott, SHPO PO Box 176 Jefferson City, MO 65102 Email: moshpo@dnr.mo.gov Phone: (573) 751-7858	National Historic Preservation Act Section 106 jurisdiction. Review and comment on cultural resource investigation reports and materials. Provide comments on aspects of the PEL Study under (SHPO) jurisdiction.
Missouri Advisory Council on Historic Preservation (ACHP)	Chris Tellman, Secretary PO Box 176 Jefferson City, MO 65102 Email: chris.tellman@dnr.mo.gov Phone: (573) 751-7858	Provide comments on the aspects of the PEL Study under Missouri ACHP jurisdiction.
Missouri State Emergency Management Agency	James Remillard, Director 2302 Militia Drive, PO Box 116 Jefferson City, MO 65102 Email: mosema@sema.dps.mo.gov Phone: (573) 526-9100	Provide comments on the aspects of the PEL Study under Missouri State Emergency Management Agency jurisdiction.
Missouri Department of Health and Senior Services	Sarah Wilson, Director 912 Wildwood, PO Box 570 Jefferson City, MO 65102-0570 Email: info@health.mo.gov Phone: (573) 751-0570	Provide comments on the aspects of the PEL Study under Missouri Department of Health and Senior Services jurisdiction.
Missouri Department of Economic Development	Michelle Hataway, Director PO Box 1157 Jefferson City, MO 65101 Email: ecodev@ded.mo.gov Phone: (573) 751-4962	Provide comments on the aspects of the PEL Study under Missouri Department of Economic Development jurisdiction.
Missouri Department of Agriculture	Chris Chinn, Director PO Box 630, 1616 Missouri Boulevard Jefferson City, MO 65102 Email: aginfo@mda.mo.gov Phone: (573) 751-4211	Provide comments on the aspects of the PEL Study under Missouri Department of Agriculture jurisdiction.
Missouri Public Service Commission (MPSC)	Nancy Dippell, Secretary 200 Madison Street, PO Box 360 Jefferson City, MO 65102-0360 Email: pscinfo@psc.mo.gov Phone: (573) 751-3234	Provide comments on the aspects of the PEL Study under MPSC jurisdiction.

3.4 Tribes

The Native American Tribes listed in Table 3 below have been invited to participate in this PEL Study. Native American Tribes were asked to provide comments and consultation on Tribal cultural resources and National Historic Preservation Act Section 106 impacts, and provide comments on aspects of the PEL Study that are of interest to the Tribes.

Table 3: List of Native American Tribes Contacted

Tribal Name	Contact Information
Apache Tribe of Oklahoma	Durell Cooper, Chairman 511 East Colorado Anadarko, OK 73005 Email: durell.cooper@apachetribe.org Phone: (405) 247-9493
Cheyenne and Arapaho Tribes, Oklahoma	Max Bear, THPO PO Box 145 Concho, OK 73022 Email: mbear@cheyenneandarapaho-nsn.gov Phone: (405) 422-7714 Reggie Wassana, Governor PO Box 167 Concho, OK 73022 Email: rwassana@c-a-tribes.org Phone: (800) 247-4612
Delaware Nation, Oklahoma	Katelyn Lucas, THPO PO Box 825 Anadarko, OK 73005 Email: klucas@delawarenation-nsn.gov Phone: (405) 544-8115 Michael McLane, President 31064 State Highway 281, Building 100 Anadarko, OK 73005 Email: mmclane@delawarenation-nsn.gov Phone: (405) 247-2448
Delaware Tribe of Indians	Brad Killscrow, Chief 5100 Tuxedo Boulevard Bartlesville, OK 74006 Email: bkillscrew@delawaretribe.org Phone: (918) 337-6590

Tribal Name	Contact Information
	Martina Thomas, THPO 5100 Tuxedo Boulevard Bartlesville, OK 74006 Email: his.pres@delawaretribe.org Phone: (918) 337-6590 Ext. 111
Eastern Shawnee Tribe of Oklahoma	Lora Nuckolls, THPO 70500 E 128 Rd Wyandotte, OK 74370 Email: thpo@estoo.net Phone: (918) 238-5151 Ext. 1840 Glenna Wallace, Chief 12755 S 705 Road Wyandotte, OK 74370 Email: gjwallace@estoo.net Phone: (918) 666-2435
Iowa Tribe of Kansas and Nebraska	Lance Foster, THPO 3345 Thrasher Road White Cloud, KS 66094 Email: lfoster@iowas.org Phone: (785) 595-3258 Timothy Rhodd, Chairman 3345 Thrasher Road White Cloud, Ks 66439 Email: jwalters@iowas.org Phone: (785) 595-3258 Kelley A. Email: akelley@iowas.org
Iowa Tribe of Oklahoma	Jacob Keyes, Chairman 335588 East 750 Road Perkins, OK 74059 Email: jkeyes@iowanation.org Phone: (405) 547-2402 Candace Pershall, THPO 335588 East 750 Road Perkins, OK 74059-3268 Email: cpershall@iowanation.org Phone: (405) 547-2402 Ext. 3502

Tribal Name	Contact Information
Kaw Nation, Oklahoma	Kimberely Jenkins, Chairwoman 698 Grandview Drive Kaw City, OK 74641 Email: kjenkins@kawnation.com Phone: (580) 269-2552 THPO Email: Thpo@kawnation.com
Meskwaki Nation (Sac and Fox Tribe of the Mississippi in Iowa)	Email: director.historic@meskwaki-nsn.gov
Miami Tribe of Oklahoma	Douglas Lankford, Chief 3410 P Street Miami, OK 74354 Email: thpo@miamination.com Phone: (918) 541-1300 Logan York, THPO PO Box 1326 Miami, OK 74355 Email: thpo@miamination.com Phone (918) 541-7885
Omaha Tribe of Nebraska	Jerell Grant, THPO PO Box 368 Macy, NE 68039 Email: jarell.grant@theomahatribe.com Phone: (402) 837-5391 Ext. 433 Jason Sheridan, Chairman 100 Main Street Macy, NE 68039 Email: jason.sheridan@theomahatribe.com Phone: (402) 837-5391
Osage Nation	Andrea A. Hunter, Director and THPO Pawhuska, OK 74056 Email: s106@osagenation-nsn.gov Phone: (918) 287-5328
Otoe-Missouria Tribe of Indians, Oklahoma	John Shotton, Chairman 8151 Highway 177 Red Rock, OK 74651 Email: jshotton@omtribe.org

Tribal Name	Contact Information
	Phone (580) 723-4466 Elsie Whitehorn, THPO 8151 Highway 177 Red Rock, OK 74651 Email: ewhitehorn@omtribe.org Phone (580) 723-4466 Ext. 202
Ponca Tribe of Nebraska	Foley T. Email: tfoley@poncatribene.org
Ponca Tribe of Indians of Oklahoma	Liana Hesler Email: 106notifications@ponca-nsn.gov Email: liana.hesler@ponca-nsn.gov
Sac & Fox Nation of Missouri in Kansas and Nebraska	Tiauna Carnes, Chairperson 305 North Main Street Reserve, KS 66434 Email: tiauna.carnes@sacandfoxks.com Phone: (785) 742-7471 Gary Bahr Email: gary.bahr@sacandfoxks.com
Sac & Fox Tribe of the Mississippi in Iowa	Vern Jefferson, Chairman 349 Meskwaki Road Tama, IA 52339-9629 Email: executive.assistant@meskwaki-nsn.gov Phone: (641) 484-4678 Tieranny Keahna, Director, THPO 349 Meskwaki Road Tama, IA 52339 Tieranny.keahna@meskwaki-nsn.gov Phone: (641) 484-3185
Sac & Fox Nation of Oklahoma in Jackson County	Email: nagpracoordinator@sacandfox.com
Seneca-Cayuga Nation	Charles Diebold, Chief 23701 Sough 655 Road Grove, OK 74344 Email: cdiebold@sctribe.com Phone: (918) 787-5452 William Tarrant, THPO

Tribal Name	Contact Information
	PO Box 453220 Grove, OK 74345 Email: wtarrant@sctribe.com Phone: (918) 791-6061
Shawnee Tribe	Benjamin Barnes, Chief 29 South Highway 69a Miami, OK 74354 Email: chief@shawnee-tribe.com Phone: (918) 542-2441 Tony Tipton, THPO 29 South Highway 69a Miami, OK 74354 Email: tonya@shawnee-tribe.com Phone: (918) 542-2441 Ext. 103
Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma	Gary McAdams, THPO Wichita and Affiliated Tribes PO Box 729 Anadarko, OK 73005 Email: gary.mcadams@wichitatribe.com Phone: (405) 247-8695 Ext. 200 Amber Silverhorn-Wolfe, President 1 ¼ Mile North of Anadarko on Highway 281 Anadarko, OK 73005 Email: amber.silverhorn-wolfe@wichitatribe.com Phone: (405) 247-2425
Wyandotte Nation	Sherri Clemons, THPO 8 Turtle Drive Wyandotte, OK 74370 Email: sclemons@wyandotte-nation.org Phone: (918) 678-6344 Billy Friend, Chief 8 Turtle Drive Wyandotte, OK 74370 Email: bfriend@wyandotte-nation.org Phone: (918) 678-2297

4 Coordination Points

4.1 Scoping

The PEL process included coordination with federal, state, and tribal agencies. Agencies were invited to participate in a webinar that provided preliminary project information and invited to provide input on the PEL Study. Agency coordination is completed to make sure the PEL identifies relevant statutory requirements and reflects the perspectives of agencies with jurisdiction or expertise. This collaborative approach helped identify potential impacts and mitigation strategies to be considered in subsequent NEPA reviews.

Invitations to participate in the webinars were sent out via email to all agencies on Friday, March 6, 2026. Two identical webinars were held on Tuesday, March 24, 2026, and Monday, March 30, 2026. Agencies were encouraged to attend one session; the Project Team extended an option to meet individually to any agency who could not attend either of the webinar sessions. Follow-up invitations to the webinars were sent via email on March 16 and 23, 2026, along with an advanced copy of the webinar presentation for review ahead of the session. Tribal Nations were offered an additional invitation to participate in a separate webinar on Wednesday, April 29, 2026. Invitations for this third webinar were sent out to the Tribal Nations via email on Monday, April 14, 2026. Each webinar option presented an overview of the corridor, the PEL process, current study activities, and next steps. In addition, each webinar concluded with a Question-and-Answer (Q&A) session which provided an opportunity for the agencies to ask questions and provide comments. Agencies were also provided with an email address to submit questions prior to the webinar to be addressed during the Q&A session. Agencies were also encouraged to provide feedback during the two-week comment period following the conclusion of the second webinar.

Comments received through the comment period deadline of Monday, April 13, 2026 were incorporated into the PEL record. PEL documentation will be finalized by April 30, 2026 to meet RAISE grant requirements. Agency coordination will continue as project elements move toward implementation.

The primary NEPA concern identified during scoping relates to potential impacts on previously recorded and unrecorded historic properties likely to be identified through the Section 106 review process. Historic properties may include buildings, structures, objects, cultural landscapes, historic districts, and archaeological sites within or partially within the corridor. Additionally, due to the presence of publicly owned parks, recreation areas, and historic sites that could be impacted by transit improvements, another concern identified during scoping relates to potential impacts on properties eligible for Section 4(f) protection under the USDOT Act. Further, several parks and a wildlife refuge have federal protections against conversion to non-recreational use under Section 6(f) of LWCF Act. Agencies have stressed the importance of attempting to avoid or minimize impacts. The scoping process reinforced the importance of early consultation, thorough documentation, and compliance with all applicable federal statutes to ensure responsible project development.

4.2 Document Review

The document review process provides another critical coordination point. Three webinars on the PEL were held over a span of four weeks (3/16 - 4/29) during which opportunities to comment on the Project were provided. Presentation materials were shared with agencies to review and provide comments by email or ArcGIS StoryMap. This formal review period is important because it provides agencies with the opportunity to provide feedback on the findings, methodologies, and recommendations. The circulation of the final document will conclude the programmatic NEPA review process.

5 Coordination Tracking

Table 4: Coordination Tracking

Milestone	Agencies Involved	Date Completed	Notes/Follow-Up Actions
Webinar Invitations Sent to all Agencies	All listed agencies	Friday, March 6, 2026	Invitation follow-ups sent March 16 and 23, 2026.
Webinar Option 1	All listed agencies	Wednesday, March 24, 2026	Presentation materials distributed March 16, 2026
Webinar Option 2	All listed agencies	Monday, March 30, 2026	Presentation materials distributed March 16, 2026
End of Two-Week Agency Comment Period	All listed agencies	Monday, April 13, 2026	Address comments.
Tribal Coordination Webinar	All listed Tribes	Wednesday, April 29, 2026	Presentation material distributed April 10, 2026
End of Tribe Comment Period	All listed Tribes	Monday, May 11, 2026	Address comments
Final PEL Study	Lead agencies, Community Partners	Thursday, April 30, 2026	Incorporate comment summary into PEL Study.
Additional Agency Coordination	All listed agencies	Ongoing	Agency coordination will continue as project elements move toward implementation.

April 9, 2026

Ron Achelpohl, PE
Director, Transportation & Environment
Mid-America Regional Council
600 Broadway, Suite 200
Kansas City, Missouri 64105-1659
BSRC@stantec.com

Dear Ron Achelpohl;

The Missouri Department of Natural Resources appreciates the opportunity to review the materials for the Bi-State Sustainable Reinvestment Corridor to improve east-west mobility, reliability, and access to regional destinations through phased, implementable transit and multimodal investments across Kansas City, KS into Kansas City, MO and east to Independence, MO.

The department offers the following comments related to environmental considerations for use in evaluating your project's environmental impacts pursuant to National Environmental Policy Act as amended (42 U.S.C. §§ 4321, et seq.).

Project Location

The project is located in Kansas City. The location boundaries are the state line to the west, the Missouri River to the north, Highway 291 to the east, and Highway 78 to the south. The following geographic descriptions apply to the approximate location of the study area.

Geographic Coordinates:

371499.56 E, 4329597.41 N

8-Digit Hydrologic Unit Code:

Lower Missouri-Crooked (10300101)

Lower Kansas, Kansas (10270104)

Ecological Drainage Unit:

Central Plains/Blackwater/Lamine

Central Plains/Kansas

Geology and Geospatial Data

If a full Geologic Assessment is required for a project, the Missouri Geological Survey can be contacted directly at 800-361-4827. Other maps showing natural and cultural resources can be found at <https://dnr.mo.gov/land-geology/maps-data-research>.

Karst Topography

There are two known springs and zero sinkholes near the project area. The project area is in the Kansas City, North Kansas City, Independence, and Liberty quadrangles. Kansas City has a cave density of three. North Kansas City has a cave density of one. Independence and Liberty both have a cave density of zero. Springs, sinkholes, and caves are features on the landscape associated with karst topography that can act as direct conduits of surface water and pollutants to groundwater. As such, extra precaution should be taken to minimize disturbance of land in or around these features, and to avoid the introduction of pollutants to sensitive groundwater resources. Karst areas may also potentially collapse.

Wells

The Water Well Drillers' Act (Missouri Revisor of Statutes Sections 256.600 to 256.640) requires well installation and pump installation contractors to submit certification reports for all new wells drilled after July 31, 1987. As a result, the below information would not include well data prior to July 31, 1987.

According to the Well Information Management System (WIMS) database, there are 4,000 wells located in the project area. Wells can act as conduits of pollutants to groundwater resources. Any abandoned wells discovered must be plugged in accordance with section 256.615, RSMo. Best management practices should be used to protect any currently operating wells. For more information on locating and plugging wells, or on private domestic wells, please visit the link below for the department's Well Installation Section webpage or contact the department's Geological Survey Program directly. <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wells-drilling>.

Public Land

There are no known public lands near the project area.

Conservation Opportunity Areas

There are no known Conservation Opportunity Areas (COA's) near the project area. Both terrestrial and aquatic COAs are identified by the Missouri Department of Conservation (MDC) and its conservation partners as priority areas that support and conserve viable populations of wildlife and the ecological systems on which they depend. Designated COAs are located statewide and may consist of a combination of public and private resources. Please contact the MDC at 573-751-4115 for more information.

Water Protection

Best Management Practices

Best management practices should be used during project activities to limit the amount of sediment and other pollutants entering waters of the state, and to protect the water's chemical,

physical, and biological characteristics. These practices include, but are not limited to, conducting work during low flow conditions whenever possible, keeping heavy equipment out of the water, and taking all necessary precautions to avoid the release of fuel or other waste products to streams and other waters. In addition, the department encourages the preservation of existing riparian or buffer areas around each water resource to limit the amount of sediments or other pollutants entering the water. Any stream banks, riparian corridors, lake shores, or wetlands denuded of vegetation should be stabilized and re-vegetated as soon as is practicable.

Watershed Conditions

Public Drinking Water

The project area is in or around the Independence PWS, Kansas City PWS, and Sugar Creek PWS. There are five intakes, drinking water wells, or tanks near the project area. Proposed project personnel should be aware of nearby Public Drinking Water systems. Work associated with any project should take into consideration the protection of surface and groundwater public drinking water supplies, implementing appropriate best management practices as necessary. For additional information regarding source water protection, please contact Ken Tomlin of the department's Public Drinking Water Branch at 573-526-0269.

Designated Uses

Water Bodies with Specific Designated Uses

The proposed project area is in the watershed of the Missouri River. Water bodies are assigned specific designated uses according to State of Missouri Water Quality regulations at 10 CSR 20-7.031(2). These waters are protected by numeric water quality criteria outlined in 10 CSR 20-7.031(5) and Table A, as well as general water quality criteria outlined at 10 CSR 20-7.031(4). Designated uses of the Missouri River include the following:

- Protection and propagation of fish, shellfish, and wildlife – warm water habitat (WWH)
- Human health protection (HHP)
- Irrigation (IRR)
- Livestock and wildlife protection (LWP)
- Secondary contact recreation (SCR)
- Whole body contact recreation – Category B (WBC-B)
- Drinking water supply (DWS)
- Industrial water supply (IND)

Water Bodies without Specific Designated Uses

Water bodies that are not assigned specific designated uses are still protected by general water quality criteria outlined at 10 CSR 20-7.031(4) and are subject to the acute toxicity criteria of Tables A and B, as well as whole effluent toxicity conditions.

According to the National Wetlands Inventory <https://www.fws.gov/wetlands/>, there is the likelihood of freshwater wetlands and ponds within the riparian corridors of the Missouri River. This project has the potential to impact wetlands, ponds, and the aforementioned tributaries and headwater streams to be impacted, depending on their proximity to land disturbance activities. Project sponsors should avoid such impacts through alternatives analysis before compensatory mitigation is considered. If wetlands, ponds, headwaters, or tributaries are not directly impacted

but are near any land disturbance, project sponsors should take care to protect water quality. While these water bodies are not assigned specific designated uses, they are protected by Missouri's general water quality criteria.

Sensitive Waters

There are no known sensitive waters in the project area for the following categories: Cold Water Habitat, Outstanding National Resource Waters, Outstanding State Resource Waters, biocriteria reference locations, and losing streams.

Table F, Metropolitan No-Discharge Streams

The Blue River and the Little Blue River are both Metropolitan No-Discharge Streams.

Project personnel should maintain compliance with 10 CSR 20-7.031(7) for any land disturbance activities that are within a Metropolitan No-Discharge stream's watershed. Discharge to metropolitan no-discharge streams is prohibited, except as specifically permitted at 10 CSR 20-7.031(7). These exceptions include uncontaminated cooling water, permitted stormwater discharges in compliance with permit conditions, and excess wet-weather bypasses not interfering with designated uses.

303(d) Impaired and 305(b) Threatened Waters

The Missouri River, the Blue River, and Rock Creek are all impaired for *E. coli* within or near the project area.

Waters assessed by the department as threatened or impaired could potentially be impacted by projects. Project personnel should ensure that activities related to the project do not cause an increase in the pollutants impairing these waters nor re-suspend any pollutants that might be bound to sediment. Additional information can be found by contacting the department's Water Protection Program at 573-526-1446 or by visiting the link below.

<https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/impaired-waters>

Waters with Approved Total Maximum Daily Loads

The Missouri River and the Blue River both have TMDLs for chlordane. The Missouri River TMDL also includes PCBs.

Impairments should not be made worse by this project's activities. The department staff may require extra protections when developing permits or certifications to comply with total maximum daily load and wasteload allocations. Additional information can be found by contacting the department's Water Protection Program at 573-526-1446 or by visiting the link below.

<https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/tmdls>

Permitting Obligations

Clean Water Act Sections 401 and 404

Projects that have the potential to discharge fill or dredged material into a jurisdictional water of the United States must receive a Clean Water Act Section 404 Permit Authorization from the U.S. Army Corps of Engineers (USACE), and a Section 401 Water Quality Certification from the department. Some examples of activities that typically require a 404 permit and a 401 certification include stream bank stabilization, installation or replacement of culverts and low water crossings, fill impacts related to residential and commercial developments, and infrastructure maintenance. To learn more about the 404 permits visit the USACE's website: <https://rrs.usace.army.mil/rrs/home/permitting>. For more information about 401 water certification from the department, go to <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality>

If discharge into water has occurred, or will occur, project personnel should immediately contact the appropriate USACE District (link below) and the department's Operating Permits Section at 573-522-4502 for more information.

<http://www.mvr.usace.army.mil/Portals/48/docs/regulatory/MORegBound.pdf>

Land Disturbance

The project must apply for a land disturbance permit from the department if it involves construction disturbance activities of one or more acres, or construction activities that disturb less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. Land disturbance activities include clearing, grubbing, excavating, grading, filling, and other activities that result in the destruction of the root zone. Disturbance to valuable resource waters, including springs, sinkholes and losing streams, could require additional conditions or permits.

Information and application for online land disturbance permits are located at <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/stormwater/construction-land-disturbance>.

Questions regarding permit requirements may be directed to the appropriate Regional Office. <https://dnr.mo.gov/about-us/division-environmental-quality/regional-office>

Demolition and Construction Waste Management

Information on managing construction and demolition waste can be found at <https://dnr.mo.gov/print/document-search/pub2045>.

Hazardous Waste

The department's interactive map allows users to access information about hazardous substance and petroleum storage tank site investigations and cleanups. Please review site investigations and cleanups in the project area by accessing the interactive map at the following link:

<https://dnr.mo.gov/waste-recycling/long-term-stewardship-lts/environmental-site-tracking-research-tool-e-start>. Should the project area intersect with one or more hazardous substance or petroleum storage tank sites, please contact erp@dnr.mo.gov for additional guidance prior to initiating excavation.

During the project, if any underground tanks or contaminated soil is discovered, workers should withdraw to a safe distance and notify the department's spill line at 573-634-2436.

It is the generator's responsibility to determine if materials generated during construction and demolition, are hazardous wastes. Demolition-related waste categories typically include paint residue (paint chips, paint scrapings, etc.), demolition debris (metal and boards that have been painted with lead-based or other heavy metal-based paint), and scrap metal (metal objects that contain lead or other heavy metals). A hazardous waste determination is not required for materials that will be reused or recycled without additional processing.

Asbestos

Prior to demolition activities, regulated structures must be thoroughly inspected by a Missouri-certified asbestos inspector to determine if any Asbestos Containing Materials are present, and a notification made to the department at least ten working days prior to demolition. Regulated structures include any building which has been used as a commercial, institutional, or industrial building (even if it was historic use), and projects involving two or more residential structures. In addition, this includes but is not limited to the following "non-building" structures: bridges, pipelines, cooling towers, chimneys, dams, and tunnels. Any asbestos found must be properly managed to prevent release of asbestos fibers.

Solid Waste

Information about solid waste uncovered during construction activities can be found at <https://dnr.mo.gov/document-search/managing-solid-waste-encountered-during-excavation-activities-pub2192/pub2192>.

No waste may be buried on-site or at an alternate site, except for clean fill. Clean fill is defined by the Revised Statutes of Missouri as "uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the department for fill, reclamation or other beneficial use." Clean fill must not contain protruding metals or demolition debris. Although not regulated as waste, placement of clean fill materials may be subject to requirements of the department's Water Protection Program if it is placed in contact with surface or subsurface waters of the state or would otherwise violate water quality standards.

Air Pollution

Dust

Project sponsors should ensure fugitive particulate matter emissions, such as dust, resulting from the project do not remain on surfaces or in the air beyond the property line of origin. 10 CSR 10-6.170 restricts the emission of particulate matter to the ambient air beyond the premises of origin. Additional information on general dust emissions may be found at <https://dnr.mo.gov/print/document-search/pub2200>.

Open Burning

The open burning of refuse and trade waste is restricted according to 10 CSR 10-6.045. Construction, demolition, and trade waste cannot be open burned, except for untreated wood. Brush from land clearing activities may be burned if the burning is conducted outside the city

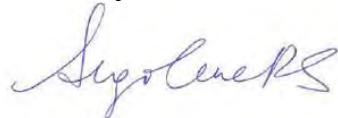
limits and greater than 200 yards from the nearest occupied structure. Additional information on open burning can be found at <https://dnr.mo.gov/print/document-search/pub2047>.

The above comments concern potential environmental impacts related to air, land, and water. Feedback on this project related to the other topics should be directed as described below:

- Historic Preservation: Project personnel should check with the department's State Historic Preservation Office to determine if a Section 106 Review is needed. Information on the Section 106 Review can be found on the department's web site at <https://www.mostateparks.com/page/84261/section-106-review> or by contacting the State Historic Preservation Office at 573-751-7858.
- Floodplain: For information concerning flood plains impacts, contact the Missouri State Emergency Management Agency, Floodplain Management and Mitigation Branch, at 573-526-9100 or 2302 Militia Drive, Jefferson City, MO 65101.
- Endangered Species: The MDC is responsible for collecting and managing information on the location and status of endangered species in the state. Contact MDC's Endangered Species Coordinator at 573-751-4115 or P.O. Box 180, Jefferson City, MO 65102 for information about endangered species impacts.

We appreciate the opportunity to provide comments for the proposed project. If you have any questions or need clarification, please contact me at 573-522-8277.

Sincerely,



Ségolène Renazé
Policy Advisor

SR/rab

Appendix G - Conceptual Design Cost Estimates

Bi-State Sustainable Reinvestment Corridor – 15% Design Technical Memo

4/23/2026

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2. Memo Overview

This memo provides an overview of the technical work completed in support of the Bi-State Sustainable Reinvestment Corridor (BSRC). It describes the purpose of the project and basis of design, including key assumptions and standards, and presents an overview of the corridor's length, right-of-way, functional classification, and geometric constraints.

The memo summarizes existing and proposed typical sections, including BRT treatments, lane configurations, pedestrian and bicycle facilities, and parking impacts, as well as planned transit services such as route alignment, service structure, headways, span of service, and operational considerations.

It also addresses traffic operations and the impacts of proposed investments on intersections, signals, turn lanes, and other operational elements; identifies right-of-way and environmental considerations; outlines the basis for cost estimates, including unit costs, methodology, assumptions, and contingency; and concludes with a summary of key risks, coordination needs, and next steps toward advancing the project to 30 percent design.

3. Purpose & Basis of Design

The BSRC design team was directed to complete 15% design for improvements along the BSRC corridor, conduct a review of existing and future traffic conditions, and to develop a transit service plan for future services.

3.1. Study Area

The Bi-State Sustainable Reinvestment Corridor (BSRC) study area incorporates an area approximately 24 miles east to west and 1-5 miles north to south, stretching from Village West in Kansas City, Kansas to Independence Square in Independence, Missouri. The highly-generalized boundaries within each jurisdiction are as follows:

- Kansas City, Kansas: N 118th Street to the west, Leavenworth Road to the north, the KS/MO state line to the east, and I-70 to the south.
- Kansas City, Missouri: KS/MO state line in the west, Missouri River on the north, I-670 and 23rd Street in the south, and the city boundary in the east.
- Independence, Missouri: city boundary in the west, Missouri River to the north, Lee's Summit Road and Highway 24 to the east, and 23rd Street to the south.
- Sugar Creek, Missouri: the study area incorporates the entirety of Sugar Creek approximately west of N River Blvd.

The study area includes multiple east-west arterial corridors in each jurisdiction which were reviewed for suitability for an enhanced east-west transit corridor with transit-oriented development. The area also includes numerous connecting transit routes which have also been included in this evaluation.

The full alternatives analysis and selection process for the Recommended Vision is detailed in the *Bi-State Sustainable Reinvestment Corridor Assessment and Strategy Action Plan* completed in September 2025. The selected corridor for implementation is detailed in the Section 2: Corridor Overview.

3.2. Design Intent

The BSRC project team was charged with developing plans for a “gold-standard” high-capacity transit service and infrastructure improvements on a selected corridor spanning the Study Area. This transit service is to support, and be supported by, land use planning that facilitates higher-density development that supports economic growth and quality-of-life benefits to the community. Enhancements such as improved facilities for people walking and biking should be integrated into the project to provide an enhanced level of multimodal access, safety, and connectivity within the Study Area.

This design intent means that recommendations will prioritize elements that enhance transit visibility and access, multimodal connectivity, and higher-density development opportunities.

Procedurally, the design intent included laying out improvements on an aerial background with right-of-way lines in GIS to determine feasibility of alternatives, NEPA impacts, and station locations. No vertical design was performed for the 15% layouts.

3.3. Standards Used (state/local)

Standards used in the design process include:

- PROWAG is assumed to be utilized in ADA design in the ROW.
- KDOT in interchange areas with highways
- APWA for city streets
- KCATA MAX bus stop facility standards
- MUTCD
- KCMO standards

- Unified Government of Wyandotte County standards
- MoDOT standards

3.4. Key Assumptions

The following assumptions formed the basis of the planning and design work:

3.4.1. Funding

As documented in Mid-America Regional Council's (MARC) 2024 Peer Regions Transit Report, transit in the Kansas City region is chronically underfunded as compared to Kansas City's peer and aspirational regions, and funding levels have been decreasing on a per-capita basis. This has resulted in a severe reduction in transit service provided, in the form of eliminated routes and reduced service levels on existing routes. While positive developments have occurred—most notably the introduction and expansion of KC Streetcar and the opening of Prospect MAX—service levels are lower than peers and exhibited local demand.

Only one jurisdiction—Kansas City, Missouri—has a dedicated sales tax used to fund transit services. All other jurisdictions providing transit funds—including Unified Government and the City of Independence—do so from a general fund or other sources that are not legally dedicated to transit. Additionally, local funding has not kept pace with growing costs related to paying competitive wages for bus operators and other staff, increased cost of procuring transit vehicles, and rising infrastructure and maintenance costs.

The BSRC planning and design process assumes that adequate funding will be provided to construct recommended infrastructure improvements and to sustainably operate recommended services on an ongoing basis. These improvements cannot occur without additional investment in transit, for both operating and capital costs.

For capital costs, it is assumed that MARC, the Kansas City Area Transportation Authority (KCATA), and municipal partners will pursue federal funding through the Federal Transit Administration's (FTA) Capital Investment Grant (CIG) Program. Local Financial Commitment to match federal funds is required, with higher levels of local funding contributing to a stronger project rating in the federal process.

For operating costs, it is assumed that local jurisdictions will raise additional revenue to support transit operations. While the BSRC design process does not include a specific recommendation, this additional revenue would likely occur through a new sales tax levied across multiple cities or counties. *Note: At the time of this memo, MARC is in the process of updating the Smart Moves Regional Transit Vision to define a transit service plan for the full region, with updated costs and implementation steps. BSRC recommendations are included in that process.*

3.4.2. Transit Priority

While BSRC incorporates a variety of improvements to enhance community transportation and development, specific assumptions for transit priority treatments are fundamental to the design work. These elements are part of a suite of improvements designated as Bus Rapid Transit (BRT) or BRT-Lite. These include:

- Dedicated transit lanes where feasible (BRT segments only), as the primary mechanism of improving transit travel times by physically separating buses from general traffic.
- Transit signal priority at traffic signals along the corridor, to help buses maintain schedules and improve overall travel times.
- Enhanced stations with a high level of amenities beyond a typical bus stop. These include shelters, benches, information kiosks, trash receptacles, bicycle racks, and ADA enhancements.
- Prioritized pedestrian and bicycle access between transit stations and neighboring land uses, with full ADA compliance and maximizing safety and comfort for these users.
- Transit services designed to operate at high-frequencies (every 10 minutes for BRT, 20 minutes for BRT-Lite) and with large (40-foot) transit buses.

3.4.3. Transit Network Connectivity

Transit planning should include attention to connecting routes and how enhanced BRT and BRT-Lite service on the corridor connects to other fixed routes and on-demand services. This includes providing adequate space for transfers and vehicle layovers at transit centers, potential alignment changes to other routes, and designating key bus stops on other routes within the broader study area to be improved alongside BSRC investments. These services and infrastructure should work together to improve transportation across the transit network, not only along the BSRC route specifically.

This design intent has been reinforced by engagement with project partners and the community. While BSRC aims to facilitate improvements on a specific east-west corridor, improvements to connecting services are also desired.

3.4.4. Multimodal Safety Enhancements

While traffic from private automobile use will continue to be accommodated, we recognize that infrastructure for this mode is more developed and in less need of enhancement than for other modes. Accordingly, plans focus on a major upgrade in infrastructure and design components to improve safety for people walking or biking along or across the corridor, including those traveling to, or waiting at, a bus stop. These improvements are intended to go beyond basic ADA requirements, in order to maximize safety, comfort, and usability. These elements include:

- A shared-use path at least 10 feet wide along the corridor on both sides of the street (except in rare cases where both sides cannot be accommodated).
- Narrower travel lanes to reduce the overall width of the street, reduce the distance required to cross the street, and provide more space for an adequate shared-use path. Lanes are recommended at 10' for general traffic and 11' for bus lanes.
- Ample crossing opportunities including enhanced crosswalks with improved signage, striping, and pedestrian signals.
- Addition of signalized intersections at 12th Street and Liberty Street and at Independence Avenue and White Avenue for pedestrian and vehicular safety.
- Bike lanes where accessibility is available. Bike lanes are recommended for sections of Minnesota Avenue in Kansas City, KS (KCK) and Charlotte Street in Kansas City, MO (KCMO). These bike lanes are 5' or 6' in width depending on context. Additionally, plans for 11th and 12th Streets in downtown KCMO carry forward recommendations of the *11th and 12th Complete Streets Connections Plan* completed by the City in 2022. This includes a two-way cycle track on the north side of 12th Street.

3.4.5. Transit-Supportive Land Use

Transportation and land use are directly correlated. A high-quality transit service will have limited utility if there are not many people living, working, or visiting places along the corridor the corridor. Enhanced transit, walking, and biking infrastructure are designed to work in tandem with redevelopment of the corridor to bring a larger population and increased economic activity to the area.

Specifically, the BSRC design team is relying on inputs from Stantec's "Station Area Plan" process that is providing conceptual plans for development and transportation connectivity within ¼-mile of the corridor at the following specific locations:

- Village West
- State Avenue at 78th Street
- State Avenue at 47th Street
- West Bottoms at 12th St and Wyoming Street
- East Village Transit Center
- Independence Avenue at The Paseo
- Independence Avenue at Chestnut
- Independence Avenue at Hardesty
- Highway 24 at Sterling Avenue
- Independence Square

3.4.6. Right-of-Way Constraints and Development Preservation

The BSRC design team should develop plans that fit within the existing right-of-way, where possible. Where not possible, improvements should not impact existing buildings. Exceptions to this include where noted on Station Area Plans to denote redevelopment opportunities on appropriate parcels.

Importantly, this means that adding dedicated bus lanes and shared-use paths along the majority of the BRT segment requires reduction of a general traffic lane, as widening the street is generally not an option for most of the corridor. Additionally, on-street parking along Minnesota Avenue is proposed to be reconfigured from angled parking to parallel parking, to allow for corridor improvements to occur within the right-of-way.

Review of traffic conditions and potential areas of concern related to lane removals are noted in Section 5.

3.5. Definition of 15% Scope

In addition to developing plans for transit service and reviewing traffic conditions on the corridor, the BSRC team was scoped to provide “Preliminary Engineering and Planning Designs (Limited to 15%)” for the corridor. This scope is summarized as follows:

- Develop foundational infrastructure designs and planning, completing conceptual designs up to 15% as allowed by current project constraints. No design work has been accomplished in previous phases.
- Corridor inventories utilizing available GIS data for transportation infrastructure and utilities, inventories of existing conditions, aerial photos, and field observations to document existing conditions accurately.
- Develop one corridor-wide conceptual design illustrating proposed roadway, intersection, pedestrian, bicycle, and transit-priority improvements. This design will include detailed lane configurations, traffic safety measures, and accessibility enhancements, consistent with applicable design standards and project objectives. In addition, develop up to two alternative concepts for select small areas—such as key intersections or specific segments of roadway—where additional evaluation is necessary to support final decision-making. These alternatives will help facilitate stakeholder discussions and refine design direction without duplicating effort across the full corridor.
- Using the station types developed earlier in the project by Stantec urban design and land use planners, create detailed preliminary designs for ten (10) station areas. These designs will incorporate amenities, shelters, ADA compliance features, and mobility hub integrations, tailored to each station’s context. Architectural sketches, spatial layouts, and illustrative renderings will be produced to support stakeholder engagement and public communication, ensuring clarity around station functionality and opportunities for integration within surrounding development.
- Undertake detailed modeling and scenario analyses to quantify the performance impacts of proposed improvements, documenting travel times, reliability enhancements, and passenger experience improvements.
- The team will develop thorough construction and operational cost estimates consistent with FTA SCC guidelines, clearly identifying discrete optional elements such as fare equipment, signage, and advanced system components.

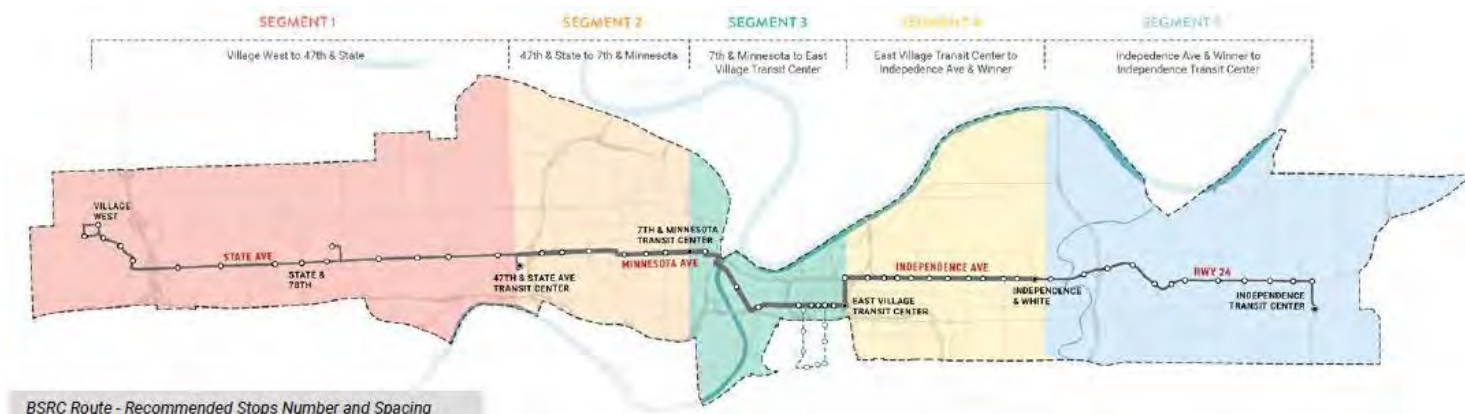
4. Corridor Overview

After an Alternatives Analysis process (see: *Bi-State Sustainable Reinvestment Corridor Assessment and Strategy Action Plan*), the corridor selected for enhanced transit service is generally described as State Avenue in Kansas City, Kansas, Independence Avenue in Kansas City, Missouri, and Highway 24 in Independence, Missouri. The alignment is similar to existing routes 24 Independence and 101 State Avenue, with some exceptions.

The more detailed route alignment is as follows, and as shown in Figure 1 below.

- In Kansas: Beginning on the west end at Village West and Parallel Parkway and continuing south along Village West to State Avenue. Then moving east along State Avenue to Hoel Parkway then South to Minnesota Avenue. Then moving east along Minnesota Ave. to 5th Street then south to Armstrong Avenue. Then moving east along Armstrong to the James Street Bridge to the West bottoms. Then east along James Street to the Missouri state line.
- Beginning at the Kansas and Missouri state line at James Street/12th Street, the route will begin at 12th Street and Wyoming St, continuing east along 12th Street to Broadway Boulevard. Continue east route along 12th Street to Charlotte Street, to the existing East Village Transit Center. The route will travel north and south along Charlotte Street to 11th Street, where the west route would continue along 11th Street to Main Street, south along Main Street to continue west along 11th Street to Broadway Boulevard to continue west along 12th Street to the state line. With the route following Charlotte Street to Independence Avenue, the east/west route will continue along Independence Ave to Noland Road. Then moving north/south along Noland Road to Independence Transit Center.
- In Missouri: An additional route option will include routing to reach the Union Station/Liberty Memorial/Crown Center entertainment district. This route will travel from 12th Street to Grand Avenue, then travel south on Grand Avenue to Pershing Road, then to a stop at Union Station. From there, the route will continue west on Pershing Road to Broadway Boulevard, where it will travel north back to 12th Street, then continue west along 12th Street to connect to the Kansas side of the route.

Figure 1: BSRC Route – Recommended Alignment



4.1. Corridor Segments

The corridor covers 24 miles from end to end. 14 miles are in Kansas and 10 miles are in Missouri. This distance covers a wide variety of community contexts, as defined in the *Assessment and Strategy Action Plan*. Because of this, the corridor is divided into five segments to better evaluate the needs and operational considerations within each segment. These segments also correlate to existing transit services and infrastructure. These segments are defined as follows:

- Segment 1: Village West to 47th Street & State Avenue (KCK)
- Segment 2: 47th Street & State Avenue to 7th Street & Minnesota Avenue (KCK)
- Segment 3: 7th Street (KCK) to East Village Transit Center (KCMO)
- Segment 4: East Village Transit Center to Independence Avenue & Winner Road (KCMO)
- Segment 5: Independence & Winner Road (KCMO) to Noland Road (Independence)

4.2. Bus Stops & Station Locations

Much of the BSRC corridor has existing transit service, primarily from routes 24 Independence and 101 State Avenue. Many other routes travel along the corridor within downtown KCMO. A full description of

existing transit conditions was provided as part of the BSRC Phase 1 process; sections below provide a brief summary.

4.2.1.Existing Bus Stops

There are a total of 213 existing bus stops on the corridor (this includes portions of existing route 24 in Independence that are not on the selected BSRC alignment). As is typical for “local” RideKC routes, stops are spaced approximately ¼-mile apart, on average (more precisely: 0.26 miles apart, or 3.76 stops per mile). Additionally, there are four transit centers on the corridor. Stops along 11th and 12th Streets in downtown are known as “Transit Emphasis Corridors” and have been upgraded to KCATA MAX bus stop facility standards and serve high levels of ridership and transfer activity.

Bus stop infrastructure varies greatly across the corridor, but is generally described as follows:

- Village West and State Avenue (KCK): Many locations have upgraded stops similar to a BRT-Lite investment (referred to as “Connex” when constructed in 2011-2012), but are in need of upgrades. Some stops have limited or no infrastructure.
- 11th & 12th Streets (KCMO) : Most stops are upgraded to BRT-Lite (MAX) standards and facilitate high service levels across numerous routes.
- Independence Avenue (KCMO): High-ridership stops feature “local stop” shelter and bench improvements, some stops have only a bench, others have no improvements.
- 24 Highway & Winner Road (Independence): stops are generally unimproved, with only a few exceptions. (Note: there are no existing stops along 24 Highway east of Brookside).

4.2.2.Proposed Transit Stations

Note: Additional information on proposed transit stations is provided in Section 6.

Due to the nature of BRT and BRT-Lite service—emphasizing travel speed and reliability—stations are spaced further apart than typical “local” bus routes, including existing routes on the corridor. Design assumptions included a preference for stops spaced every ½-mile on average for BRT segments. Spacing of ½-mile is also desired for BRT-Lite segments but some areas may be closer to ¼-mile depending on land use context and street connectivity.

As the design process focused on specific intersections and utilized existing ridership data, recommended stop spacing is near the ½-mile recommendations for most of the corridor, including both BRT and BRT-Lite segments. The total number of stations and spacing is shown in Table 1, Count of Stops and Stop Spacing (Existing & Future).

Table 1: Count of Stops and Stop Spacing (Existing & Future)

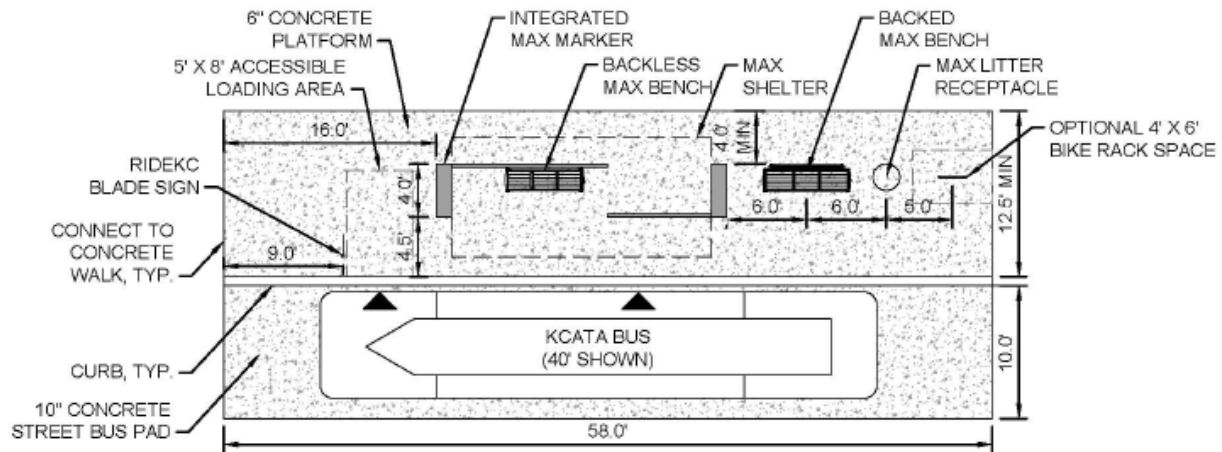
Route	# of stops	Miles (two-way)	Avg. Spacing (miles)	Stops per Mile
Existing 24+101 Routes	213	57	0.27	3.76
Planned BSRC - 11th/12th St. Option	101	55	0.54	1.84

Station locations are a balance between a variety of inputs:

- Ridership: both existing ridership and future potential
- Adjacent land uses: Development density and presence of major activity centers
- Street connectivity: Locations providing access to surrounding developments and within neighborhoods, such as at arterial and collector streets
- Spacing between stops
- Proximity to intersection, driveways, or other traffic considerations
- Station locations are based upon the least amount of right-of-way impacts.

Station footprints included in 15% design utilize layouts from KCATA's Bus Stop Guidelines, with the notable exception of not including level boarding (per KCATA direction). These stations include a large custom-designed shelter with an integrated electronic kiosk, benches, trash receptacles, and bicycle racks where appropriate.

Figure 2: MAX Station Layout, KCATA Bus Stop Guidelines



The project includes a total of 97 on-street BRT stations (48 station pairs, plus one Kansas City Kansas Community College (KCKCC) station serving both directions) and four off-street stops at existing or future transit centers. This includes stops in both the BRT and BRT-Lite segments. A breakdown of stops by segment is provided in Table 2, Stops by Corridor Segment.

Table 2: Stops by Corridor Segment

Segment	On-street stops	Off-street stops	Total stops	Miles (two-way)	Avg. Spacing (miles)
1: Village West to 47 th Street (KCK)	27	1	28	18.40	0.66
2: 47 th Street to 7 th Street (KCK)	14	0	14	7.00	0.50
3: 7 th Street (KCK) to East Village Transit Center (KCMO)	16	1	17	7.26	0.43
4: East Village Transit Center to Independence & Winner Road (KCMO)	18	1	19	8.08	0.43
5: Independence & Winner Road (KCMO) to Noland Road (Independence)	22	1	23	12.56	0.55
Total	97	4	101	53.30	0.53

Note: Off-street stops located at the intersection of two segments is counted with the western-most segment.

4.3. Existing ROW Widths

Right-of-Way widths vary throughout the corridor. Existing widths can be generally described as:

- State Avenue: 140' to 160' west of I-635, 60' to 90' east of I-635.
- Minnesota Avenue: 100' in most areas.
- James Street: 75'

- 11th & 12th Streets: 60' to 70'
- Independence Avenue: Varies 60' to 100' but typically 80' in many areas
- Highway 24: 80' to 110'

Table 3, Right-of-Way Width (in feet) at Selected Locations below provides approximate widths at selected locations along the corridor (if varies, measured at the narrowest point)

Table 3: Right-of-Way Width (in feet) at Selected Locations

Location	ROW width
Village West Pkwy at Prairie Crossing	149
State Ave at 90th St	140
State Ave at 78th St	156
State Ave at 57th St	137
State Ave at 37th St	82
Minnesota Ave at 10 th Str	104
James St at Central Ave	70
12 th St at Grand Blvd	60
Independence Ave at Woodland	96
Independence Ave at Monroe	78
Independence Ave at Winner	80
Highway 24 at Kentucky	100
Highway 24 at Sterling	91
Noland Rd at College St	80

Note: Existing street sections were provided as part of the *Bi-State Sustainable Reinvestment Corridor Assessment and Strategy Action Plan*.

4.4. Functional Classification

As the corridor spans three jurisdictions, the proposed BRT service would travel along streets of varying street classifications. In fact, each jurisdiction utilizes a different street classification system. Street classifications for the alignment are as follows:

- Kansas City, Kansas (as defined in GoDotte):
 - o Village West Parkway: Minor Arterial
 - o State Avenue: Major Arterial
 - o Minnesota Avenue: Minor Arterial
 - o James Street: Major Collector
- Kansas City, Missouri (from Major Street Plan typologies)
 - o 12th Street (in West Bottoms): Established Arterial
 - o 12th Street (in Downtown): Thoroughfare
 - o 11th Street: Commerce/Mixed Use
 - o Charlotte: Commerce/Mixed Use
 - o Independence Ave (Charlotte to Paseo): Local Link
 - o Independence Ave (Paseo to Benton): Established Boulevard
 - o Independence Ave (Benton to city boundary): Thoroughfare
- Independence, Missouri (from Imagine Independence 2040 Comprehensive Plan, Thoroughfare Plan):
 - o Highway 24: Highway
 - o Noland Road: Major Arterial

4.5. Major Geometric Constraints

The corridor consists of several geometric constraints due to the many different contexts and infrastructure conditions along the corridor. The most significant constraints include:

- Kansas City, Kansas:

- o Between Ann Street and 38th Street: Cemeteries are located on both sides of State Avenue, with retaining walls as close as one to two feet away from the existing curb line. Any expansion of the roadway in this segment is infeasible. With some narrowing of travel lanes, a shared-use path can be created on one side of the street.
- o On Minnesota Ave. between 6th and 7th Streets: A Native American cemetery (Huron Indian Cemetery) is located along the south side of Minnesota and creates a pinch point in the roadway and sidewalk. As the street is already only two lanes, bus or bike lanes cannot be accommodated on this block.
- o Armstrong Ave. east of 4th Street: This street provides access to several highway on and off-ramps, with an existing two-lane section and variety of turning movements. Bus lanes cannot be accommodated.
- o James Street Bridge over the Kansas River: This bridge has a two-lane section with no bicycle or pedestrian facilities. A new bridge (not recommended in this project) would be needed in order to accommodate bus lanes and bike/ped facilities.
- Kansas City, Missouri:
 - o 12th Street in West Bottoms: Except for an approximately 800-foot segment between Genessee and Liberty Streets, 12th Street between the KS/MO state line and I-35 is a viaduct. West of Genessee, the street section is two lanes and no bus lane or bike/ped facilities can be accommodated, other than preserving a narrow sidewalk on the north side of the street. East of Liberty, the existing four-lane section allows for implementation of bus lanes, but pedestrian facilities are limited to preserving existing sidewalk space on the south side of the street.
 - o Charlotte Street between Independence Ave. and 12th Street: In order to accommodate and enhance existing bicycle lanes, a bus lane can only be added in the southbound direction.

5. Typical Sections

5.1. Existing vs. Proposed Cross-Sections

Street Section Notes:

- Existing street sections were provided as part of the Bi-State Sustainable Reinvestment Corridor Assessment and Strategy Action Plan.
- Proposed street sections are provided as part of the 15% design plans that correspond to this memo.

Proposed Cross-Sections

BRT segments:

- Components of the “design intent” in Section 1 related to multimodal transportation treatments are most visible in BRT segments, as a full reconstruction of the right-of way is assumed.
- Major changes to street cross-sections are proposed, including:
 - o The addition of dedicated bus lanes along the majority of the BRT segment (exceptions have been noted under Major Geometric Constraints).
 - o The addition of dedicated bicycle lanes in some areas where these can be accommodated alongside other improvements (Minnesota Ave.), as preservation and improvement of existing bicycle lanes (Charlotte St.) or as implementation of other related plans (12th Street cycle track).
 - o The addition of 10’ or 11’ wide shared use paths in other areas (also included in BRT-Lite segments).
 - o Improved pedestrian crossings at intersections as determined by the BSRC project team.

BRT-Lite Segments:

- Unlike BRT segments, BRT-Lite segments are not proposed for a full repurposing of the roadway. Therefore, street cross sections generally maintain existing roadway conditions.
- Where possible along full corridor, shared use paths are added to both sides of the street and connecting to all bus stops.
- Some intersections have improvements such as bump outs for pedestrian safety. (E.g. State Avenue at 78th Street)

Proposed Dimensions:

- Lane widths: 10' car lanes, 11' bus lanes and 1.5' buffer zone
- Curb and gutter: 2'

5.2. Lane Configuration

- State Avenue: section includes one lane in each direction for cars, bus lanes and shared use path on both sides of the road.
- Minnesota Avenue: section includes one lane in each direction for cars, bus lanes, parallel parking, cycle track, and shared-use path on both sides of the road.
- James Street: section includes one lane in each direction for cars, bus lanes and shared use path on both sides of the road.
- 12th Street (State Line to I-35 Overpass): One lane each direction for cars, dedicated bus lanes, and shared-use paths on both sides.
- 12th Street (I-35 Overpass to Broadway Blvd): One lane in each direction for cars, dedicated bus lanes, and shared-use paths on both sides.
- 12th Street (Broadway Blvd to Charlotte St): One-way eastbound traffic with a bus lanes and 1-2 variable car lanes. Existing on-street parking will be maintained.
- Broadway Blvd (12th St to 11th St): One lane in each direction for cars, dedicated bus lanes, and shared-use paths on both sides.
- 11th Street (Charlotte St to Broadway Blvd): One-way westbound traffic with a bus lane and 1-2 variable car lanes. Existing on-street parking will be maintained.
- Charlotte Street (East Village Transit Center to Independence Ave): One southbound bus lane, one car lane in each direction, 2' buffers, 5' bike lanes, and sidewalks on both sides.
- Independence Avenue (Charlotte St to White Ave): One lane in each direction for cars, dedicated bus lanes, and shared-use paths on both sides.

5.3. BRT Treatment

- BRT segment minimum requirements are set by KCATA and include 11-foot, dedicated bus lanes with red paint to visually distinguish between general traffic lanes. Generally, these dedicated lanes are proposed east of 38th Street in KCK and White Street in KCMO, with the following exceptions:
 - o Armstrong Avenue east of 4th Street
 - o James Street bridge
 - o James Street viaduct within KCK
- The addition of BRT stations at selected locations, as detailed in other sections of this memo (also included in BRT-Lite segments).

5.4. Pedestrian/Bike Facilities

- Shared use path added to both sides of the street connecting all bus stops
- Some intersections have improvements such as bump outs for pedestrian safety.
- Pedestrian and bicycle facilities:
 - o Cycle track on 12th Street in downtown KCMO
 - o Dedicated bicycle lanes on sections of Minnesota Ave. (KCK) and Charlotte St. (KCMO). Generally 5' wide with 2' buffer zone.
 - o Shared use paths (generally 10' or 11' wide) along the remainder of the corridor except where otherwise noted.

5.5. Parking Impacts

- Existing angled parking on Minnesota Avenue between 17th Street and 6th Street is proposed to be converted to parallel parking. This reduces the total number of parking spaces on the corridor. A preliminary review of parking conditions on the corridor indicates that this change is not anticipated to cause parking shortages along Minnesota Avenue.
- Existing parallel parking along 11th St and 12th St will be maintained and is shown in the 15% design plans.

5.6. Median/Curb Treatments

- Shared use path added to both sides of the street connecting all bus stops
- Design includes a 1.5' buffer between travel lanes and standard CG-1.

5.7. Access Management

- Some driveways have been proposed to be closed due to proximity to the intersections as well as elimination of redundant drives.
- Many driveways will remain on the corridor, to continue providing access to adjacent properties. Driveways are most frequent on Independence Avenue in KCMO. To accommodate turning movements in these areas, bus lanes will function as Business Access and Transit (BAT) lanes that accommodate right-turn movements along with bus through traffic.
- Median Treatments: Medians have been added in some areas to facilitate a pedestrian refuge island to reduce street crossing distance. (e.g. State Avenue at 78th Street)

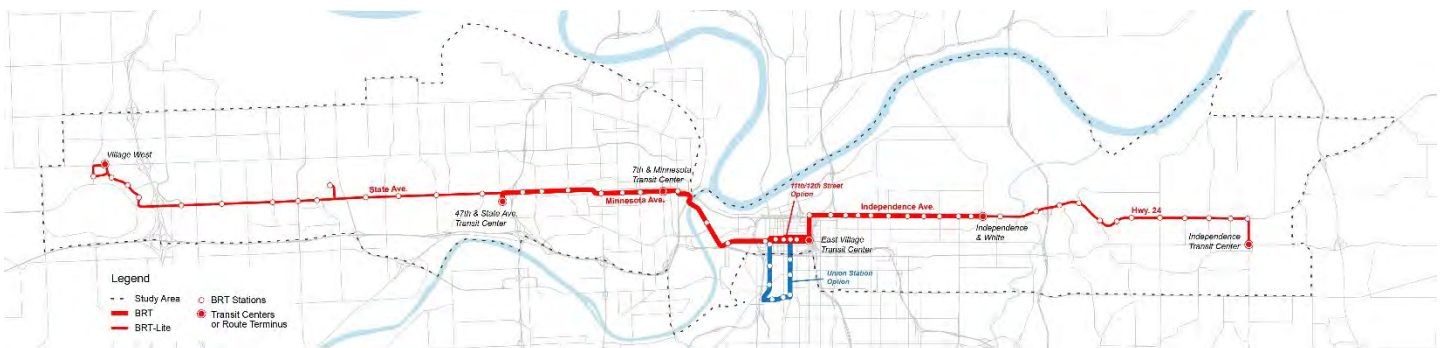
6. Transit Service Plan

This section presents an overview of the recommended transit service on the corridor, with route alignment, service profile, operational considerations, and estimated operating costs.

6.1. Route Description

The analysis conducted in Phase 1 of the BSRC project defined a recommended alignment and mode for enhanced transit service, as shown in Figure 2 below.

Figure 3: BSRC Route – Recommended Alignment



The BSRC Route will replace existing routes 24 Independence and 101 State Avenue, effectively merging these services into a single route and implementing a major expansion of service. Both existing routes 24 and 101 are designated as Fast & Frequent routes both by KCATA's Service Guidelines and by MARC's SmartMoves 3.0 (currently being updated). Both routes serve as a "spine" route within their respective areas and exhibit existing and potential ridership demand warranting of major upgrades to service and

infrastructure. This is particularly true on route 24 Independence which is currently the most productive route in KCATA's network on a riders per service hour basis.

The below figures illustrate the recommended route alignment and BRT stop locations along each of the five segments of the corridor. The endpoint of each segment coincides with an existing or proposed transit center or terminus location which would allow for service improvements to occur in phases, due to funding or other constraints. There are a total of 101 BRT stops recommended on the corridor (including existing and proposed transit centers).

Figure 4: BSRC Route – Recommended Alignment & Station Locations (Segment 1 Detail)



Figure 5: BSRC Route – Recommended Alignment & Station Locations (Segment 2 Detail)



Figure 6: BSRC Route – Recommended Alignment & Station Locations (Segment 3 Detail)

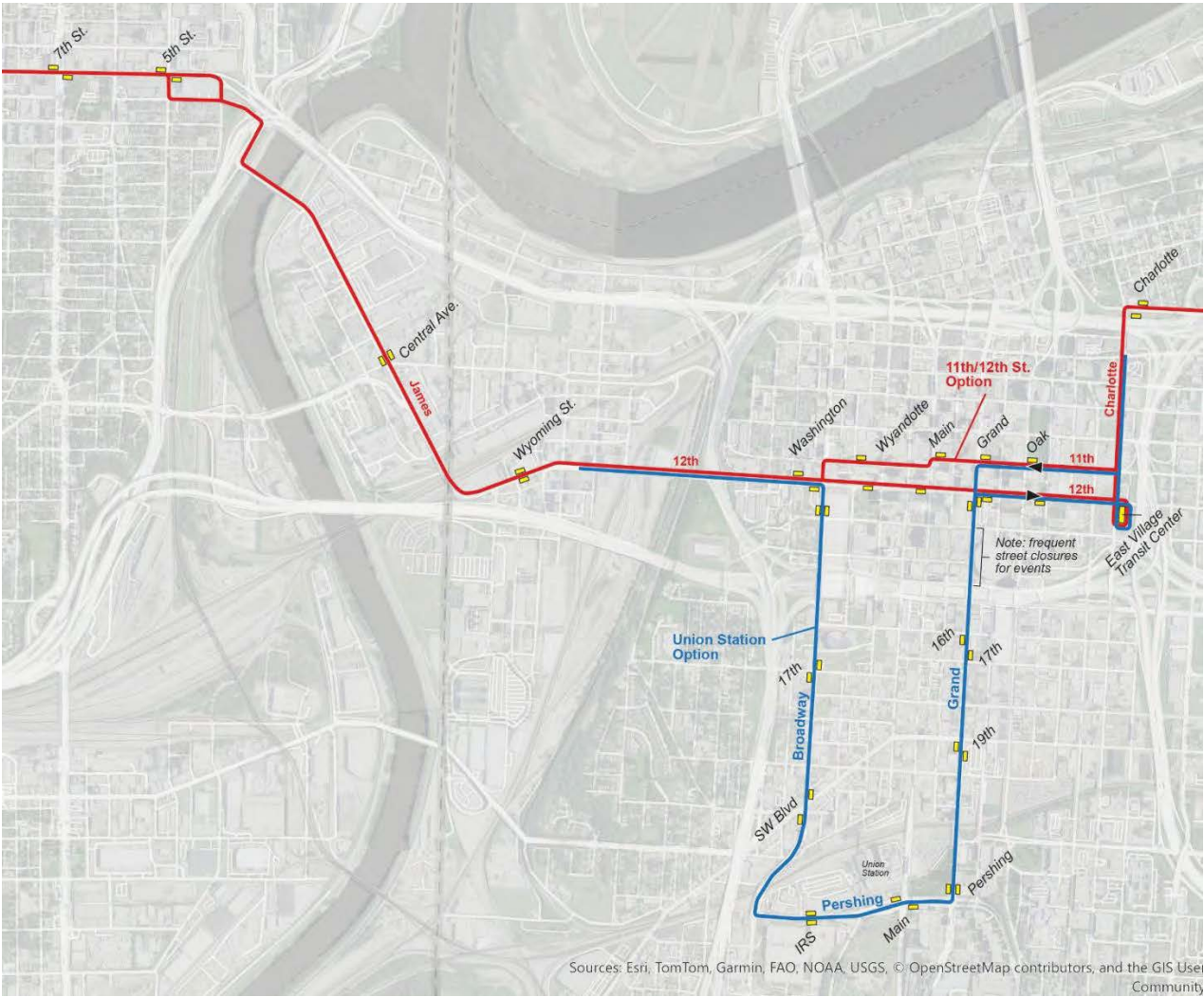


Figure 7: BSRC Route – Recommended Alignment & Station Locations (Segment 4 Detail)

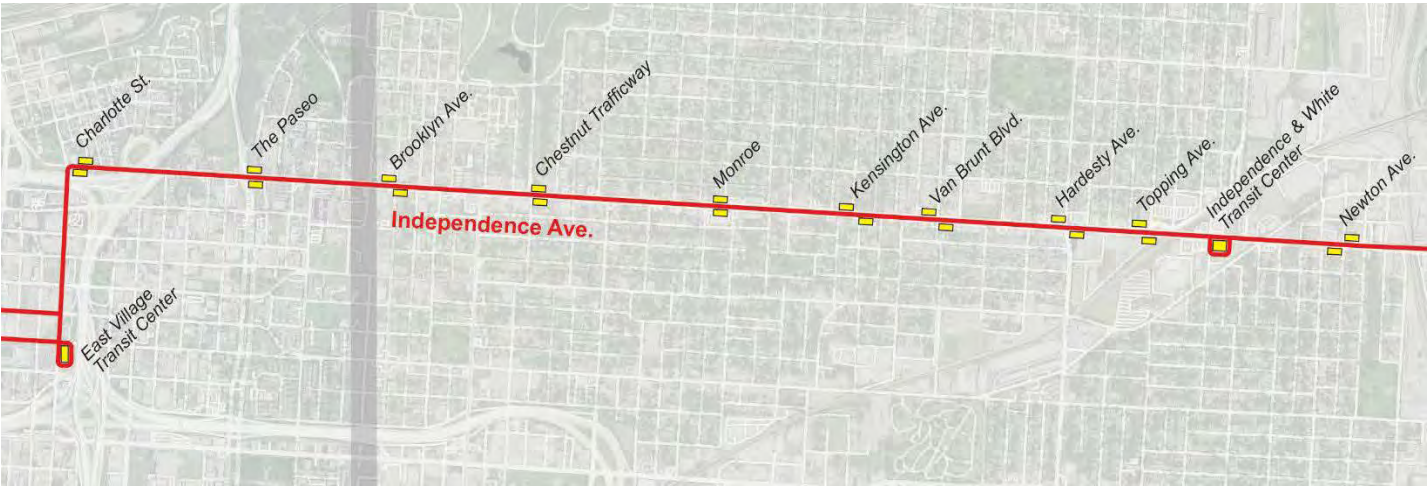


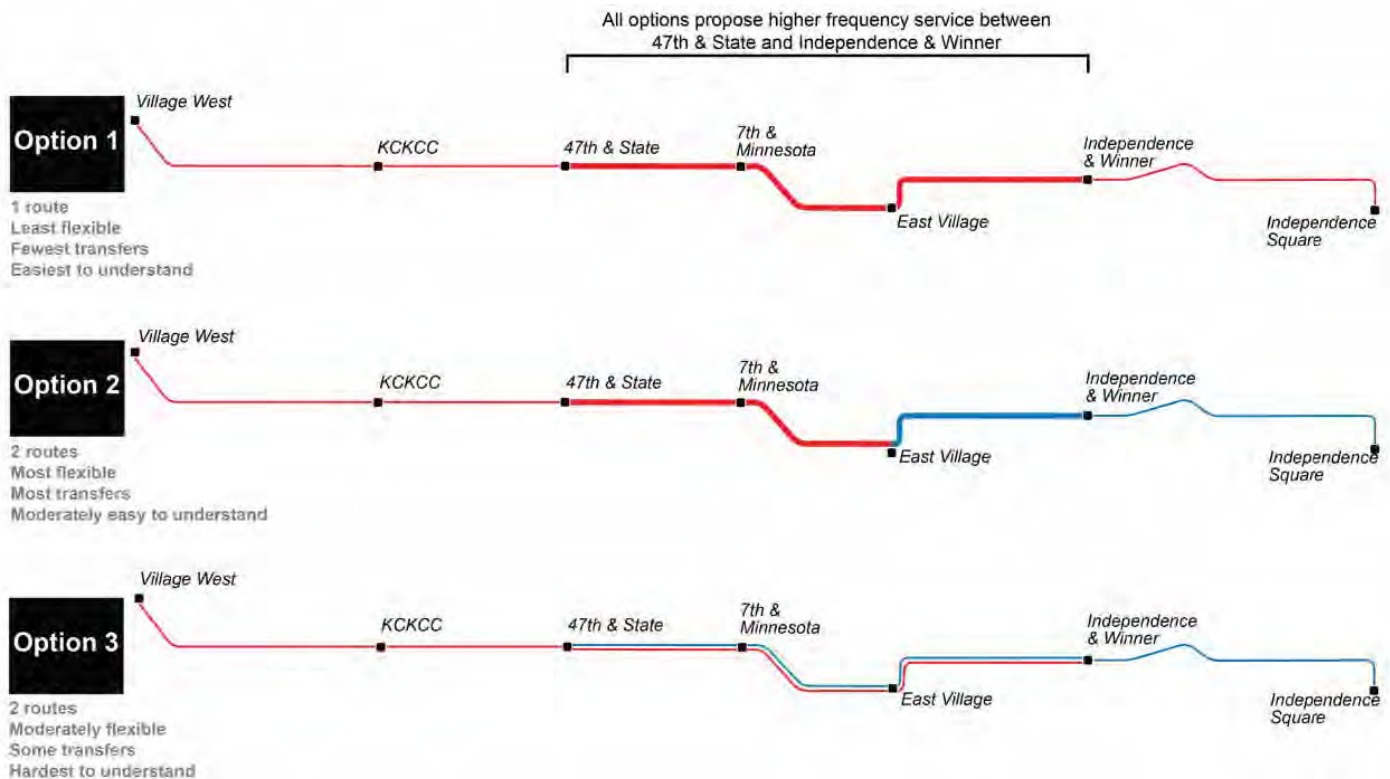
Figure 8: BSRC Route – Recommended Alignment & Station Locations (Segment 5 Detail)



6.2. Route Structure

During the Phase 2 design process, multiple route structure options were considered for the corridor. These options are intended to determine how the routes will appear to the passenger in a route list, map, and schedule, and how KCATA will structure the route operationally. Three primary options emerged, with multiple potential variations of each:

Figure 9: BSRC Route Potential Service Structures



Option 1

Description: Single route operating the entire length of the corridor, from Village West to Independence Square.

Pros:

- Provides a single-seat ride for all riders traveling along the corridor.
- Simplest route to use and understand for the rider.
- Most consistent with the intent of the BSRC project providing a transformational bi-state transportation investment, crossing two states and multiple jurisdictions.

Cons:

- Provides the least amount of flexibility for implementation. For example, service frequency could not be easily varied across the corridor to match funding or demand, without a variety of route patterns that would not keep in spirit with the idea of a single route and likely confusing for riders.
- Greater risk for service disruptions or traffic impacts that impact the full alignment.
- Will need to have a mid-route layover point; this reduces travel time benefits as compared to other options.

Option 2

Description: Two routes with a transfer at East Village Transit Center, similar to existing 24 and 101 routes.

Pros:

- Can operate at different frequencies by segment and by short and long pattern
- Rider education/branding support to understand 2 routes on corridor

Cons:

- Transfers needed for end-to-end travel
- Less consistent with project intent to provide a multi-jurisdictional service.

Option 3

Description: Two routes with lower service levels, but with overlapping segment creating high-frequency service in the BRT segment.

Pros:

- Can operate at different frequencies by route, not by segment
- Rider education/branding support to understand 2 routes on corridor

Cons:

- Transfers needed for end-to-end travel
- Moderately vulnerable to delays/disruptions
- Rider education/branding support to understand 2 routes on corridor

Service Recommendation

The BSRC design team recommends proceeding with Option 1, but communicating the potential to be implemented in phases, if conditions dictate (funding, ridership demand, adjacent development). This structure creates two “patterns” from KCATA’s perspective:

- “Short Trips” operating between 47th & State Avenue and Independence & White
- “Long Trips” operating between Village West and Independence Square

These patterns will operate at the same frequency. Because the “short trip” segment will also be served by “long trip” buses, this segment will have double the service frequency.

6.3. Service Profile

The BSRC BRT route is intended to offer service levels similar to existing RideKC Streetcar and RideKC MAX routes (as these routes were designed to operate). This includes base headways of 10-12 minutes and operating in the vicinity of 19 hours each day. This level of service applies to the segment of the

corridor between 47th & State and Independence & Winner. The segments of the corridor beyond these points are intended to operate with “BRT-Lite” service at half the frequency, due to lower development densities and ridership potential.

Within Segment 3, two options are proposed:

- 11th & 12th Streets: The BSRC route would utilize these established “transit emphasis corridors” in downtown. Stops along these streets facilitate connections to numerous other routes, including KC Streetcar at Main Street for north/south travel within KCMO.
- Union Station: The BSRC route would travel south of downtown to Union Station, utilizing Broadway, Pershing, and Grand. This alignment would provide a one-seat ride to Union Station, Crown Center, and some destinations in the Crossroads district.

Travel Time Savings

Infrastructure supporting BRT and BRT-Lite services are intended to improve travel time and schedule reliability. See Table 4, BSRC Route Existing vs. Planned Service Levels for a comparison of existing vs. planned travel time and annual revenue hours. In addition to improving passenger satisfaction and increasing ridership potential, these features can help lower operating costs as fewer buses and drivers can provide the same number of trips. These features include:

- Dedicated bus lanes (BRT segment only) that reduce bus conflicts with general traffic. For the BSRC corridor, bus lanes are planned to be curbside. Therefore, this bus lane in some areas will need to be shared with right-turning traffic. This is similar to some segments of the RideKC Streetcar Main Street extension. These lanes are known as Business Access and Transit (BAT) lanes.
- Transit Signal Priority (TSP) at signalized intersections along the corridor. This technology can improve schedule reliability by extending green lights or providing an early green light to allow for buses to clear the intersection with less delay. Existing RideKC Streetcar and MAX routes have deployed TSP to improve reliability.
- Larger stop spacing allows the bus to make fewer stops, thus improving overall travel speed from end to end. This has also been a feature of existing RideKC MAX routes; Troost MAX and Prospect MAX have significantly fewer stops than the local routes that were replaced. Stop spacing requires a careful balancing of access and speed considerations, and should be deployed alongside stop amenity improvements.

Table 4: BSRC Route Existing vs. Planned Service Levels

Existing Service

Route	Headways (in min.)			Span (in hours)			Travel Time	Annual Vehicle Revenue Hours
	Wkd	Sat	Sun	Wkd	Sat	Sun		
24 Independence (within KCMO)	20	20	30	19	18	17	28-30 min.	25,503
24 Independence (to Independence)	60	60	--	16	15	--	18-20 min.	
101 State Avenue (east of 47th)	30	60	60	18	12	10	31-37 min.	27,186
101 State Avenue (west of 47th)	30	60	60	18	12	10	29-33 min.	
Existing Total							120-126 min.^	52,689

Planned Service - 11th/12th St.

Route	Headways (in min.)			Span (in hours)			Travel Time	Annual Vehicle Revenue Hours
	Wkd	Sat	Sun	Wkd	Sat	Sun		
New MAX BRT (within KCMO)	10	10	15	20	19	18	10-11 min.*	95,586
New MAX BRT-Lite (to Independence)	20	20	30	20	19	18	12-15 min.*	
New MAX BRT (east of 47th)	10	10	15	20	19	18	18-21 min.	
New MAX BRT-Lite (west of 47th)	20	20	30	20	19	18	24-27 min.	

Planned Total	78-80 min.^	95,586
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Difference between Existing and Planned Service	42-46 min.^	42,897
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Planned Service - Union Station

Route	Headways (in min.)			Span (in hours)			Travel Time	Annual Vehicle Revenue Hours
	Wkd	Sat	Sun	Wkd	Sat	Sun		
New MAX BRT (within KCMO)	10	10	15	20	19	18	21-22 min.*	108,432
New MAX BRT-Lite (to Independence)	20	20	30	20	19	18	12-15 min.*	
New MAX BRT (east of 47th)	10	10	15	20	19	18	18-21 min.	
New MAX BRT-Lite (west of 47th)	20	20	30	20	19	18	24-27 min.	
Planned Total							89-91 min.^	108,432

Difference between Existing and Planned Service	31-35 min.^	55,743
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Difference compared to 11th/12th Street Option	+11 min.	12,846
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* Note: substantial alignment change from existing service

^ Total route times include 10-minute layover at EVTC (Existing: layover+transfer. Planned: layover only)

Service Capacity

The BSRC project will dramatically increase the overall levels of service along the corridor, as shown in Table 5, Service Capacity Statistics. The overall increase in service levels—as measured by the number of seats on buses per day—ranges from 167% to 375% depending on segment. The largest increase in capacity will occur in Independence, which will increase from only 640 seats per day to 2,400 seats per day.

Table 5: Service Capacity Statistics

Route	Existing Service				Capacity % Increase
	Buses per hour	Seats per hour	Buses per day	Seats per day	
KCMO: East Village to Winner Rd.	3	120	57	2,280	
Independence: Winner to Ind. TC	1	40	16	640	
KCK: 47th to East Village	2	80	36	1,440	
KCK: Village West to 47th	2	80	36	1,440	

Route	Planned Service				Capacity % Increase
	Buses per hour	Seats per hour	Buses per day	Seats per day	
KCMO: East Village to Winner Rd.	6	240	120	4,800	211%
Independence: Winner to Ind. TC	3	120	60	2,400	375%
KCK: 47th to East Village	6	240	120	4,800	333%
KCK: Village West to 47th	3	120	60	2,400	167%

Note: Statistics are for Weekday service, per direction

BSRC Route Timing Methodology

This methodology establishes a baseline for BSRC route timing by each corridor segment, then applies evidence-based time savings for dedicated lanes, signal priority, and stop spacing. The approach is transparent, repeatable, and allows for segment-by-segment customization based on planned improvements.

- Establishing Baseline Travel Times:
 - o Segments with Existing Service: Use current bus travel times between time points, reflecting local conditions for weekdays, Saturdays, and Sundays.
 - o Segments with No Existing Service: Use Google Maps auto travel time plus 20% (to account for slower bus operations and stops) as the baseline.
- Applying Time Savings Factors – BRT Segments¹:
 - o Dedicated Lanes: 20% time savings, assuming 100% dedicated lanes
 - o Transit Signal Priority (TSP): 5% time savings
 - o Fewer Stops/Increased Stop Spacing: 5% time savings per stop/mile reduction
 - o *All three factors are additive for BRT segments.*
- Applying Time Savings Factors – BRT-Lite Segments¹:
 - o TSP: 5% time savings
 - o Fewer Stops/Increased Stop Spacing: 5% per stop/mile reduction
 - o *Dedicated lanes are not assumed for BRT-Lite.*
- Calculating Segment Travel Times:
 - o For each segment, start with the baseline and apply the relevant time savings factors based on planned infrastructure and service changes.
 - o Example: If a segment reduces stops from 8 to 4 per mile, expect a 20% time savings from stop spacing alone.

Travel Time Outcomes

Implementing all strategies throughout the corridor is projected to achieve an overall travel time reduction of 24–27%, as shown in Figure 18, BSRC Route – Route Timing Assessment – Full Corridor. The magnitude of these savings will vary by direction (eastbound vs. westbound) and by segment, with particularly notable differences between BRT and BRT-Lite sections. Overall, these estimated time savings are intentionally conservative, as actual travel time reductions can vary widely between cities that have implemented similar BRT components. Details of each segment are provided below in Figures 10-19 and in Table 6, BSRC Route Timing Assessment By Segment.

Table 6: BSRC Route Timing Assessment By Segment

Direction	Segment	Distance (mi)	Baseline Travel Time (min)	Estimated Travel Time (min)	Dedicated Lanes Time Savings	Signal Priority Time Savings	Stop Spacing Time Savings
EB	Village West to 78th Street	4.9	12	11	0%	5%	2%
EB	78th Street to KCKCC	1.1	6	5	0%	5%	5%
EB	KCKCC to 47th Street	3.9	13	11	0%	5%	9%
EB	47th Street to 5th Street (KCK)	3.9	16	9	20%	5%	19%
EB	5th Street (KCK) to East Village Transit Center (KCMO)	3.3	18	12	20%	5%	6%

¹ Estimated time savings per BRT component sourced from TCRP Report 165: Transit Capacity and Quality of Service Manual, 3rd Edition

EB	East Village Transit Center (KCMO) to Independence & Chestnut Trafficway	1.9	10	6	20%	5%	16%
EB	Independence & Chestnut Trafficway to Independence & Winner Road (KCMO)	2	12	7	20%	5%	15%
EB	Independence & Winner Road (KCMO) to Independence & Ash Avenue	3.2	7	6	0%	5%	3%
EB	Independence & Ash Avenue to Noland Road (Independence)	2.9	7	6	0%	5%	2%
WB	Noland Road (Independence) to Independence & Ash Avenue	3.3	10	9	0%	5%	2%
WB	Independence & Ash Avenue to Independence & Winner Road (KCMO)	3.2	7	6	0%	5%	3%
WB	Independence & Winner Road (KCMO) to Independence & Chestnut Trafficway	2	8	5	20%	5%	15%
WB	Independence & Chestnut Trafficway to East Village Transit Center (KCMO)	1.9	10	6	20%	5%	16%
WB	East Village Transit Center (KCMO) to 5th Street (KCK)	3.5	15	10	20%	5%	7%
WB	5th Street (KCK) to 47th Street	3.9	13	8	20%	5%	17%
WB	47th Street to KCKCC	3.9	12	10	0%	5%	10%
WB	KCKCC to 78th Street	1.1	4	3	0%	5%	5%
WB	78th Street to Village West	4.4	12	11	0%	5%	2%

Figure 10: BSRC Route – Route Timing Assessment – Village West to 78th St.

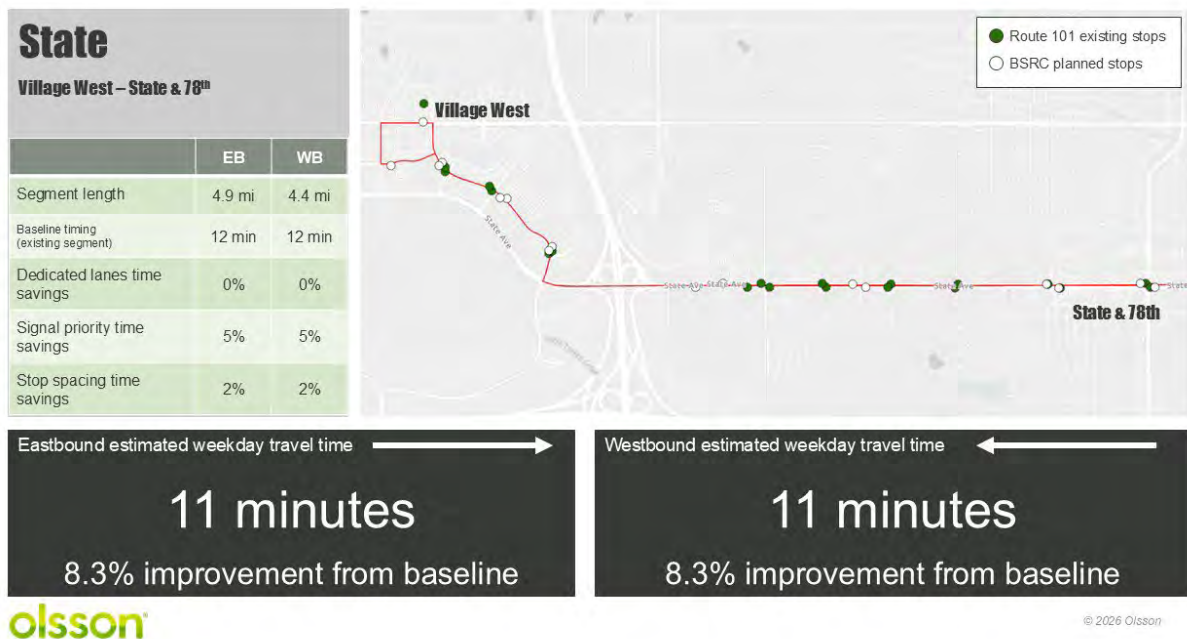


Figure 11: BSRC Route – Route Timing Assessment –78th St. to KCKC

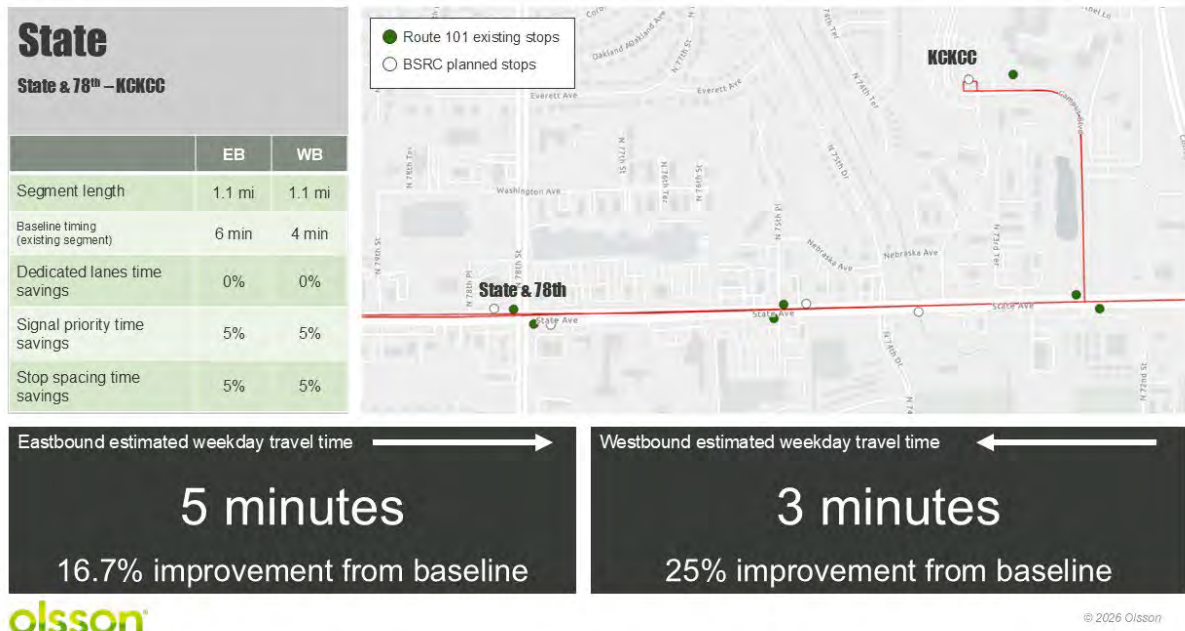


Figure 12: BSRC Route – Route Timing Assessment – KCKC to 47th & State Ave.

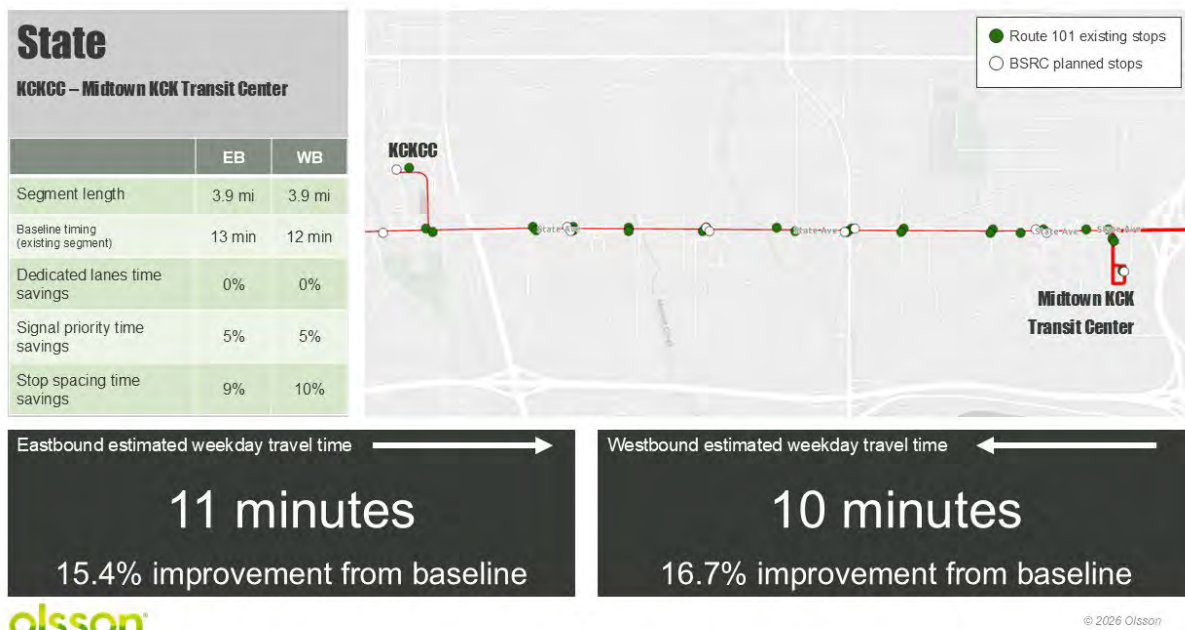


Figure 13: BSRC Route – Route Timing Assessment –47th & State to 5th St.

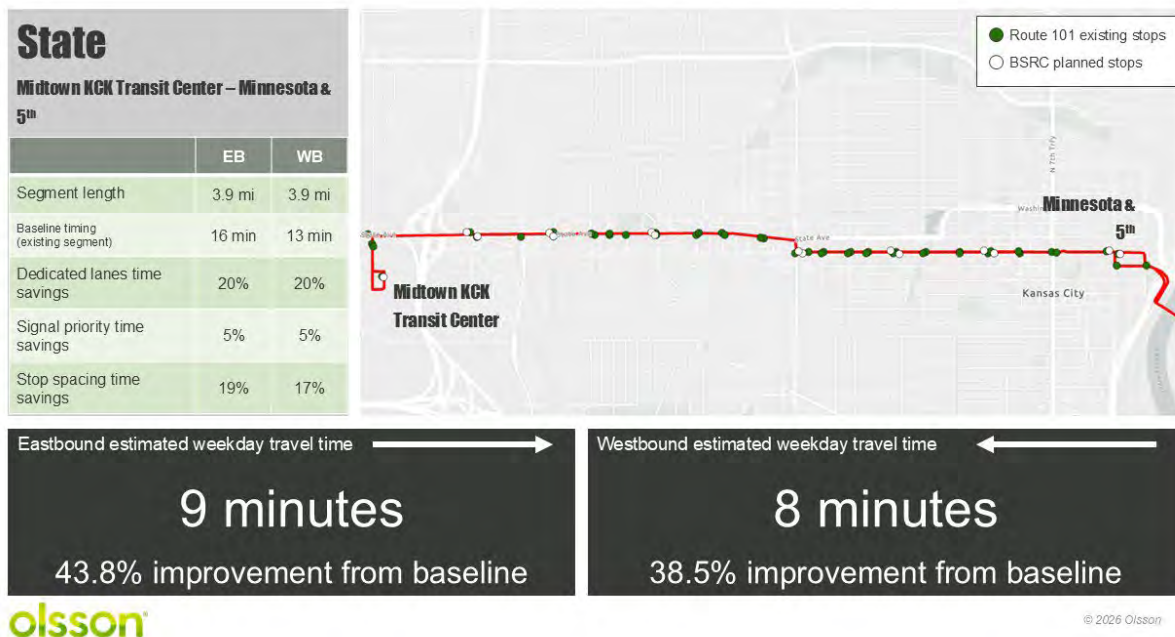


Figure 14: BSRC Route – Route Timing Assessment – 5th St. to EVTC

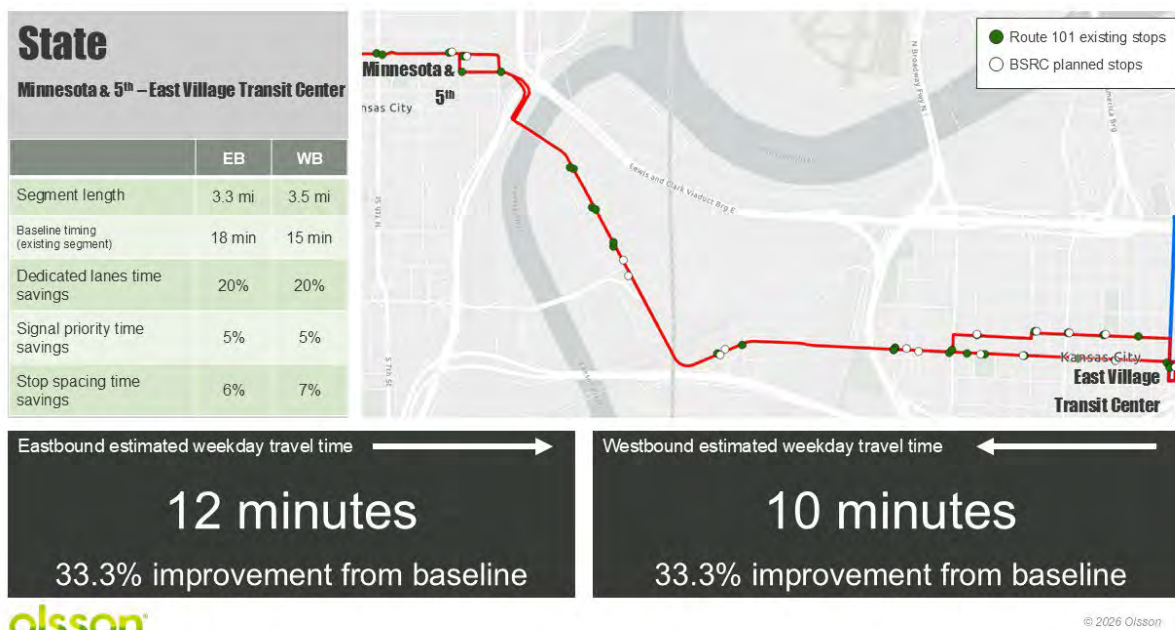


Figure 15: BSRC Route – Route Timing Assessment – EVTC to Chestnut

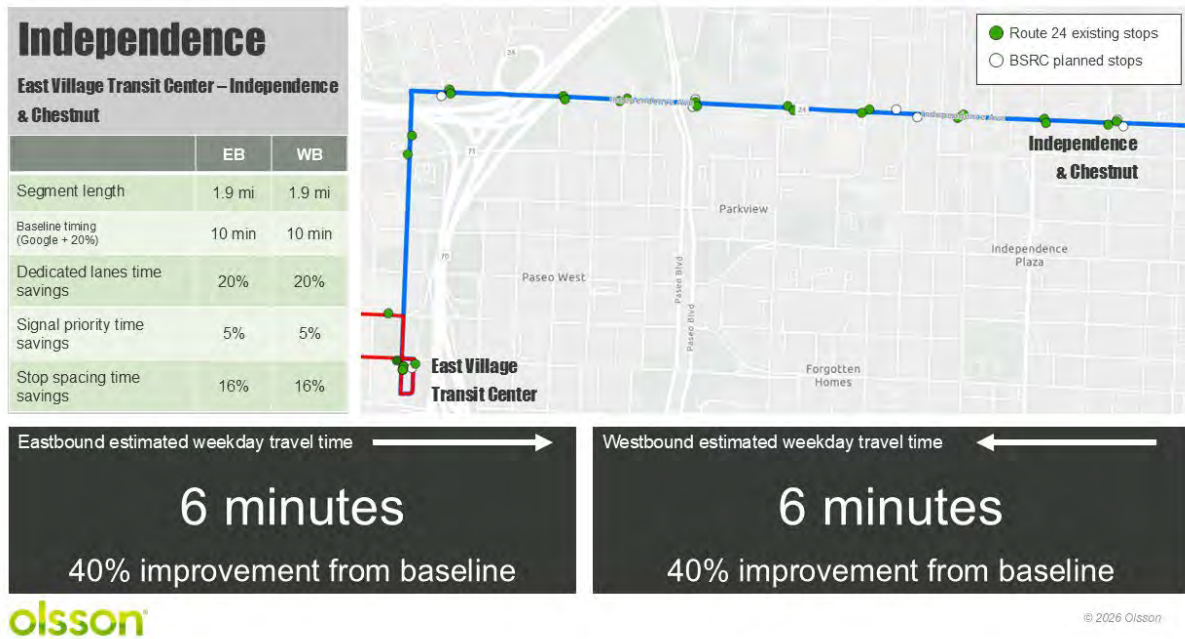


Figure 16: BSRC Route – Route Timing Assessment – Chestnut to Independence & Winner

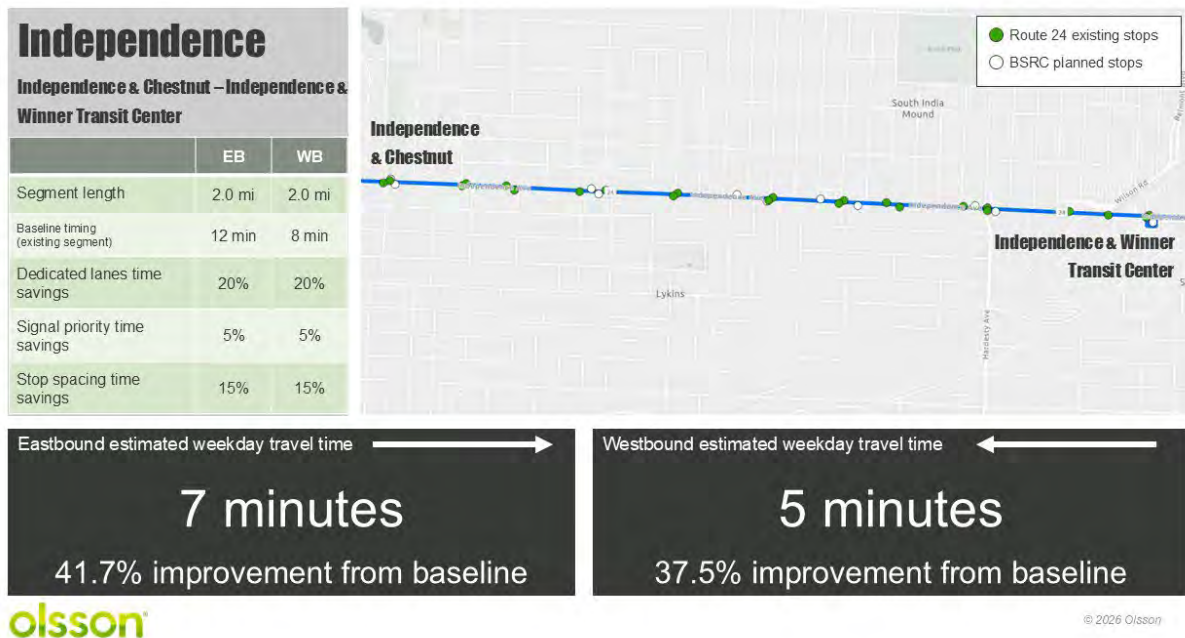


Figure 17: BSRC Route – Route Timing Assessment – Winner to Ash

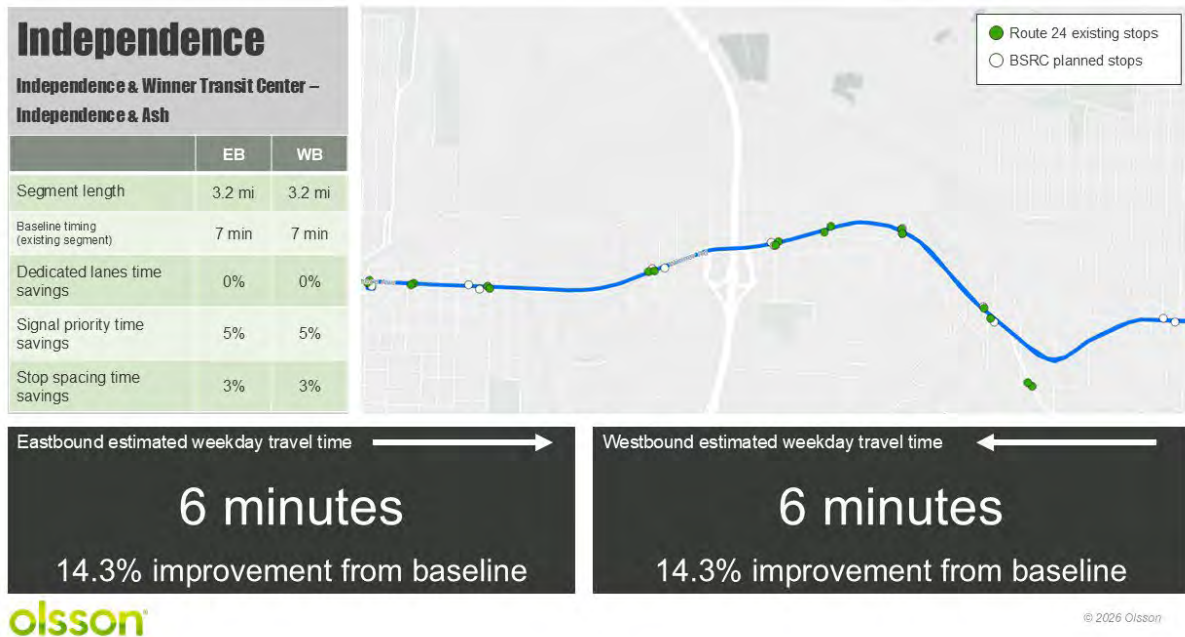


Figure 18: BSRC Route – Route Timing Assessment – Ash to Noland

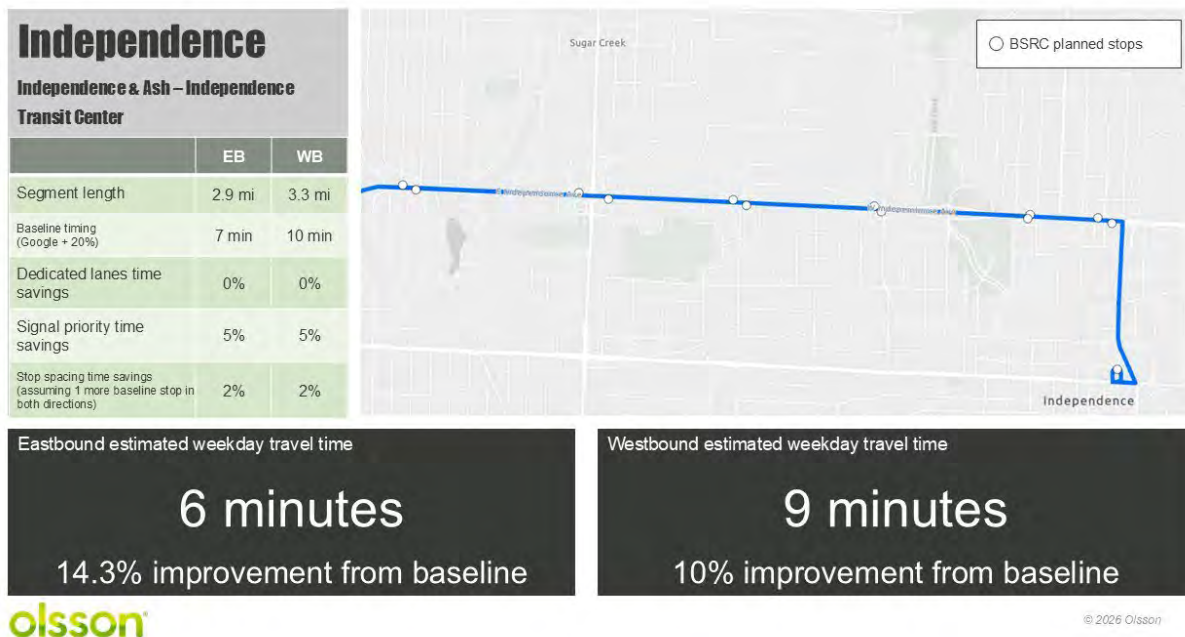
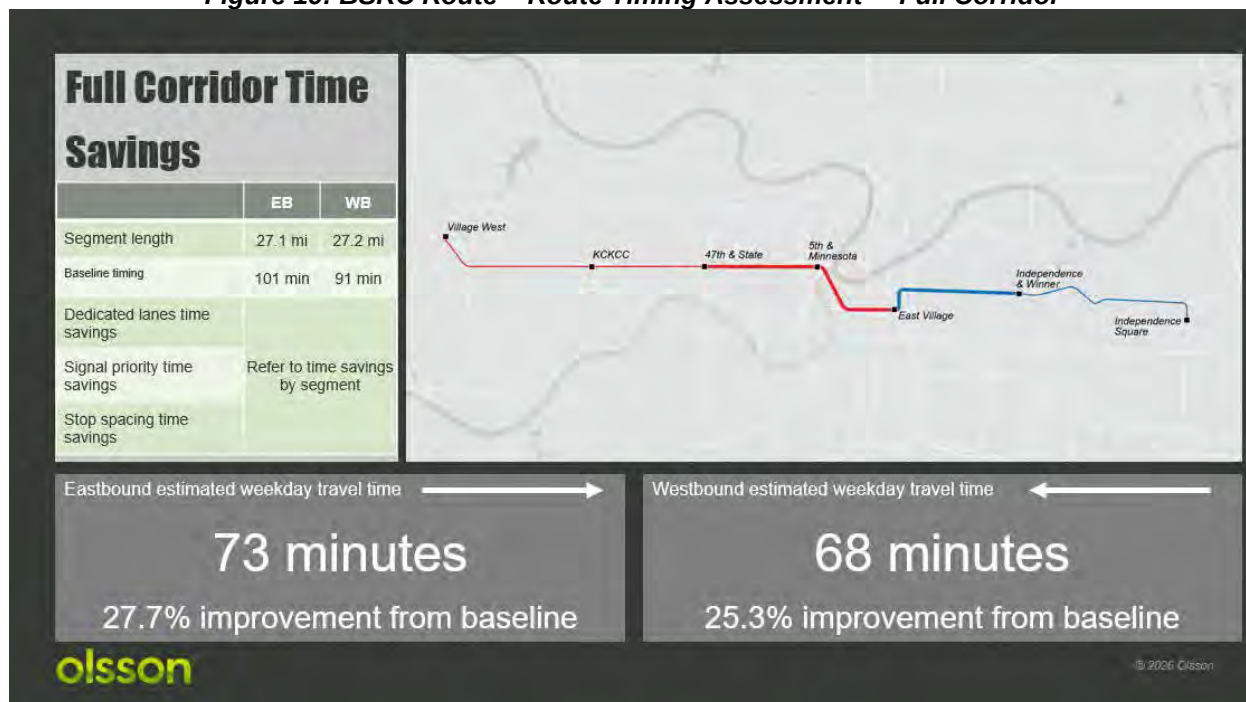


Figure 19: BSRC Route – Route Timing Assessment – Full Corridor



6.4. Operating Considerations

Operating Considerations for the BSRC route include what path the route will operate on, where there are layover points, scheduling constraints per Collective Bargaining Agreement (CBA) parameters, vehicle needs, and connections with other routes. Section 6.5 details operating costs that are separate from capital improvement costs. Operating costs are primarily driven by wages, overtime, benefits, training, and administrative staff needed to operate, dispatch and maintain service. Vehicle operating costs include fuel, routine maintenance, and as needed repairs and spare parts.

Route Patterns

Upon full implementation, the BSRC route will operate with two patterns:

- Pattern 1 (long trips): These trips would extend the full length of the corridor, 24 miles.
- Pattern 2 (short trips): These trips would serve only the segment between 47th & State Avenue and Independence & White.

Terminus & Layover Points

The BSRC Route will utilize the following facilities for layover points, which are also locations where breaks in service levels could occur, if necessitated by funding or other considerations.

- Parallel Parkway at Village West (Note: the existing 101 route terminus within the Walmart parking lot would be relocated to within the right-of-way along Parallel Parkway). The BSRC MAX “long trips” would use this facility for end-of-line layovers.
- 47th & State Avenue: This existing transit center facilitates transfers to three Unified Government routes, one micro transit service, and one Johnson County fixed route. The BSRC MAX “short trips” would use this facility for end-of-line layovers.
- East Village Transit Center: This existing transit center facilitates transfers to numerous KCATA routes and offers indoor waiting space and facilities for bus operators. Both patterns of the BSRC

MAX route would utilize East Village for layovers; this time will be particularly important for the long trips due to the travel distance of that pattern.

- Independence & White future transit center: While the existing 24 Independence route has existing layovers in this area, a new facility is planned at the southeast corner of Independence & White to better meet this need as well as providing connections to routes 9 9th Street and 21 Cleveland-Antioch. The BSRC MAX “short trips” would use this facility for end-of-line layovers.
- Independence Transit Center: This existing facility is recommended to be replaced with a new facility integrated with future development of the area. The BSRC MAX “long trips” would use this facility for end-of-line layovers.

Note: 7th & Minnesota in Downtown KCK is a transit center on the corridor not listed above. This facility provides transfers to seven other routes, but is not planned as a layover location for the BSRC MAX route, as the route will remain on Minnesota Ave. and not pull into an off-street bay at the transit center.

Scheduling Considerations

The BSRC Route will operate in accordance with KCATA standard practices and under the rules of the current Collective Bargaining Agreement with the Amalgamated Transit Union. The BSRC planning process assumes layover times of a minimum of 10 minutes per trip (20 minutes per cycle), split between the end-of-line and East Village Transit Center. Block and run structures and deadhead procedures will be determined by KCATA under consideration of system-wide needs.

Fleet Considerations

The BSRC design process, for operations and cost-estimating purposes, assumes the BSRC MAX route will be operated with 40-foot BRT CNG buses that can be used interchangeably with existing Troost MAX and Prospect MAX routes, as well as other future MAX routes that are implemented. This fleet flexibility was cited by KCATA as a critical consideration of the corridor, and was a primary factor in the decision to provide dedicated lanes curbside rather than in the median (this would have required customized buses for the corridor with capability to board and alight on the left side of the vehicle).

Connecting Route Realignments

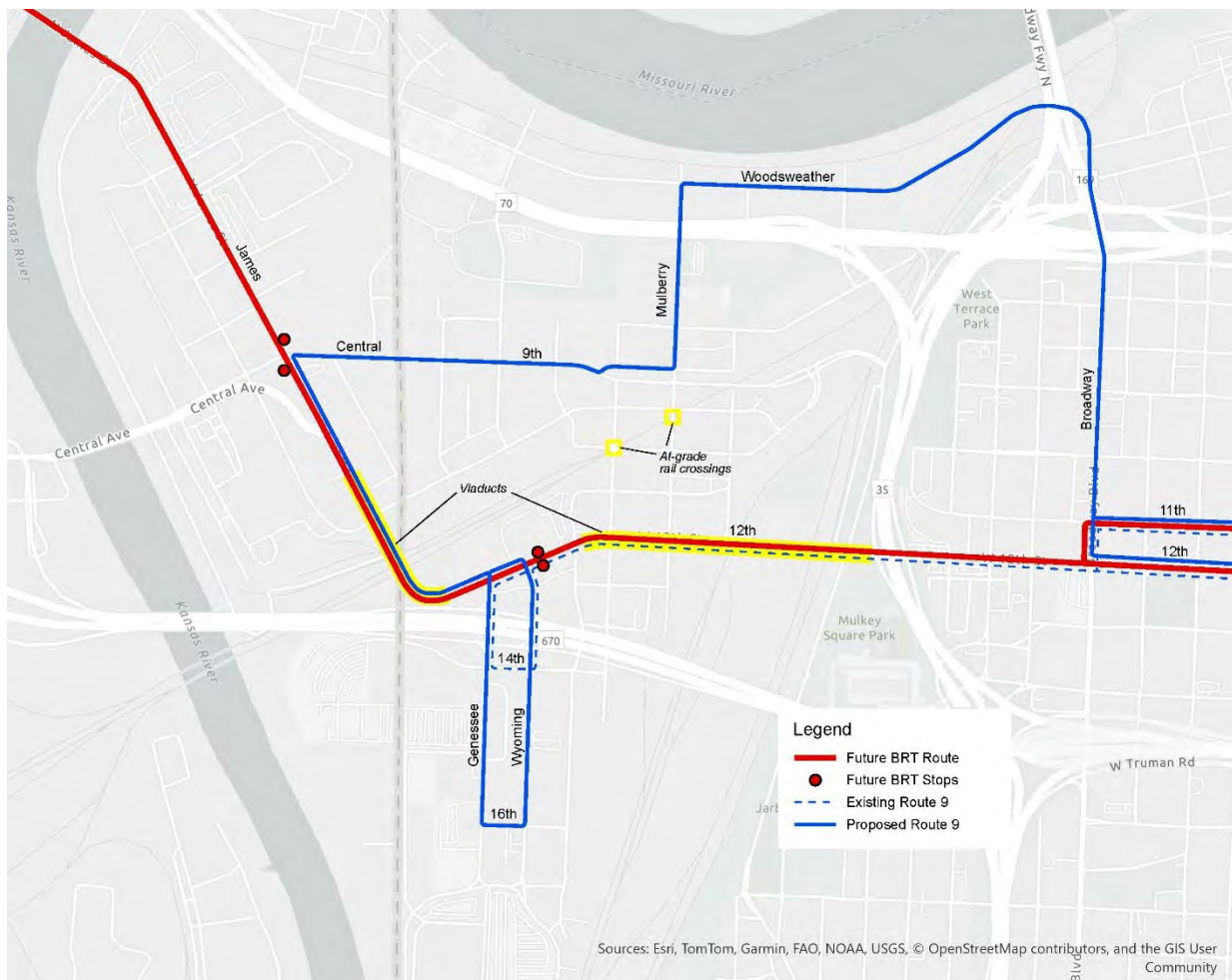
Several realignments are proposed to connecting routes to improve connectivity to the BSRC corridor, or to better facilitate first and last-mile connections. These include:

Route 9 9th Street in the West Bottoms

Community engagement efforts in the West Bottoms indicated a strong desire from residents to have the BSRC route travel along 9th Street in the West Bottoms, rather than on 12th Street. However, such a realignment is challenging due to many constraints, including a generally disconnected street network, the presence of long viaducts on several streets, and at-grade rail crossings. Such a realignment would negate the goals of the BRT route as providing rapid, efficient, and direct service across the corridor, and significantly increase operating costs.

However, to meet this need, existing RideKC Route 9 9th Street could be utilized to make this connection. The proposed realignment, shown in Figure 18, would re-orient the route to connect portions of the West Bottoms to 12th Street more effectively, using Woodsweather, Mulberry, 9th, Central, Genesee, 16th, and Wyoming Streets.

Figure 20: Route 9th Street West Bottoms Realignment



Independence & White Future Transit Center Connections

With the creating of a new off-street transfer location at Independence & White, two route realignments should be pursued to provide more direct and convenient connections between BRT and local route services:

- 9 9th Street (from 9th & Hardesty)
- 21 Cleveland-Antioch (from Independence & Topping)

6.5. Operating & Vehicle Costs

The BSRC design team has prepared estimated operating costs for the BSRC MAX route according to the following parameters:

- Hourly operating cost of \$177 per vehicle revenue hour (in 2026 dollars). This figure was determined through a combination of:
 - o Existing costs reported by KCATA
 - o Existing costs reported by Unified Government and Johnson County used for minor adjustments and calibration (primarily to achieve consistency with costs developed for the Smart Moves regional transit planning process) UG and Johnson County costs used for calibration) and

- o Reported BRT operating costs from peer agencies.
- Vehicle cost of \$686,600 for a 40-foot CNG transit bus, including 20% spare ratio.
- Travel time estimates (includes savings due to dedicated lanes, signal priority, and stop spacing)
 - o Village West to 47th & State (BRT-Lite):
 - o 47th & State to East Village (BRT):
 - o East Village to Independence & White (BRT):
 - o Independence & White to Independence Square (BRT-Lite):
- Layover time of 20 minutes per cycle, split between end-of line and mid-route at EVTC
- Conceptual schedules were built to affirm vehicle requirements and adequate layovers

Table 7: Annual Operating Costs and Vehicle Costs (2026 dollars)

Route	Annual Vehicle Revenue Hours	Vehicles Operated in Max Service	Est. cost in 2026 dollars	
			Annual Operating Cost	Vehicle Cost
Existing 24+101 Routes	52,689	10	\$9,325,940	\$8,239,200
Planned - 11th/12th St. Option	95,586	14	\$16,918,722	\$11,534,880
Planned - Union Station Option	108,432	16	\$19,192,464	\$13,182,720

Table 8: Annual Operating Costs and Vehicle Costs (2031 dollars)

Route	Annual Vehicle Revenue Hours	Vehicles Operated in Max Service	Est. cost in 2031 dollars	
			Annual Operating Cost	Vehicle Cost
Existing 24+101 Routes	52,689	10	\$10,818,091	\$9,557,472
Planned - 11th/12th St. Option	95,586	14	\$19,625,718	\$13,380,461
Planned - Union Station Option	108,432	16	\$22,263,258	\$15,291,955

Table 9: Operating Costs by Jurisdiction (2026 dollars)

Route	KCK	KCMO	Independence	Total
Existing 24+101 Routes	\$4,278,844	\$4,769,829	\$277,268	\$9,325,940
Planned - 11th/12th St. Option	\$8,849,211	\$6,306,858	\$1,762,653	\$16,918,722
Planned - Union Station Option	\$8,714,787	\$8,702,501	\$1,775,176	\$19,192,464

Table 10: Vehicle Costs by Jurisdiction (2026 dollars)

Route	KCK	KCMO	Independence	Total
Existing 24+101 Routes	\$3,663,201	\$4,227,417	\$348,582	\$8,239,200
Planned - 11th/12th St. Option	\$6,038,014	\$4,286,153	\$1,210,713	\$11,534,880
Planned - Union Station Option	\$5,985,922	\$5,977,483	\$1,219,315	\$13,182,720

Table 11: Operating Costs by Jurisdiction (2031 dollars)

Route	KCK	KCMO	Independence	Total
Existing 24+101 Routes	\$4,963,459	\$5,533,002	\$321,631	\$10,818,091
Planned - 11th/12th St. Option	\$10,265,085	\$7,315,955	\$2,044,678	\$19,625,718
Planned - Union Station Option	\$10,109,153	\$10,094,901	\$2,059,205	\$22,263,258

Table 12: Vehicle Costs by Jurisdiction (2031 dollars)

Route	KCK	KCMO	Independence	Total
Existing 24+101 Routes	\$4,249,313	\$4,903,804	\$404,355	\$9,557,472
Planned - 11th/12th St. Option	\$7,004,096	\$4,971,938	\$1,404,427	\$13,380,461
Planned - Union Station Option	\$6,943,670	\$6,933,881	\$1,414,405	\$15,291,955

6.6. Ridership Forecast

Methodology

Ridership forecasts were developed utilizing a mix of existing ridership data, industry research, and information under development for Smart Moves KC regional transit vision update. More specifically, three methods were used, and then averaged to provide a planning-level estimate for future ridership shown in Table 13. These three methods include:

- Smart Moves KC. This is a current process for which preliminary ridership forecasts have been developed to model the desired growth of transit services throughout the Kansas City region. This includes a growth of the 24 and 101 routes with BRT and BRT-Lite improvements as envisioned in the BSRC process. While these numbers are not finalized or published as of March 2026, initial data for routes 24 and 101 were used, and adjusted to account for reduced transfer activity due to a combined route.
- Peer Agency Data. Ridership data was collected for peer agencies with BRT services that are at least partially operating with exclusive lanes. This includes data from BRT routes in Cleveland, Indianapolis, Albuquerque, Eugene, Hartford, and Richmond. Results were adjusted for applicability to BSRC to account for route length and presence of exclusive lanes.
- Elasticity Forecast. Basic elasticity multipliers were utilized from transit industry research (e.g. TCRP) to forecast ridership impacts related to headway improvements and dedicated lanes. Results are adjusted to account for reduced transfer activity and variance in BRT features by segment.

Table 13: Existing and Forecasted Ridership

Scenario	Average Daily Riders (UPT)			Annual Riders (UPT)
	Weekdays	Saturdays	Sundays	
Existing 24+101 Routes	5,294	3,206	2,000	1,637,850
New BSRC MAX	10,951	7,140	4,758	3,559,281
Percent Change	107%	123%	138%	117%

This ridership forecast indicates a growth of ridership by 117 percent over the course of a full year. Forecasted increases are higher on Saturday and Sunday due to existing service levels and ridership being far lower than on weekdays for existing routes.

7. Traffic Operations

Traffic Review of the BSRC corridor is provided in more detail in the Operational & Safety Analysis document completed in March 2026.

7.1. Preliminary Intersection Impacts

While the corridor contains many intersections, 44 representative intersections were selected for operational and safety evaluation. Intersections with prior planning studies (e.g., 11th/12th Street in downtown KCMO) and low-impact areas (e.g., the West Bottoms) were excluded from detailed study. Four scenarios were analyzed to understand the impact of improvements along the corridor and the results of these are included below:

Existing Conditions: Existing traffic volumes and operations along the Kansas Side of the corridor indicate that there is excess capacity along the study corridor. On the Missouri side, main-line and side-street traffic volumes indicate that there is less excess capacity available for dedicated BRT lane configurations, and some intersections may experience a level-of-service degradation with reduced capacity.

Effect of a Dedicated BRT Lane: The reduction of a single outside lane each direction for the dedicated BRT service through specific corridor areas has limited operational impact at most locations. Some locations along the corridor have qualitative restrictions that make a dedicated BRT lane unfeasible. The intersections that have operational deficiencies as a result of the dedicated BRT lane are described in the recommendations for turn lanes and signal modifications below.

2050 No Build Conditions: The results of traffic volume growth along the corridor exacerbate existing issues as may be expected. Operations at the I-35 interchange in downtown Kansas City, Missouri are expected to see a strain in capacity but are outside the scope of this study. Otherwise, no major issues arise in addition to the ones identified under the existing conditions scenario.

2050 with BRT Lane Reconfigurations: Similar to the 2050 No Build conditions, some additional LOS issues emerge with the dedicated BRT lane in place, but these are largely correctable through targeted mitigations such as shared right-turn lanes and coordinated signal timing adjustments.

7.2. Turn Lane Modifications

As stated above, the following locations were determined to require specific turn lane recommendations as a result of the installation of the BRT lane under existing or future year conditions.

- State Avenue and 41st Street/Ann Street – A northbound right turn was included to address a degradation in capacity from existing conditions.
- Independence Avenue and The Paseo – To mitigate the operations issue at this intersection, the westbound lane drop was analyzed as a shared right turn only lane.
- Independence Avenue between Woodland Avenue and Benton Boulevard – At the five intersections along this section of the corridor, 150 foot left turn lanes are recommended for both east and west approaches in order to preserve an acceptable LOS.

- Independence Avenue and Prospect Avenue – It is recommended to include a shared eastbound right turn lane and a northbound right turn lane.
- Independence Avenue and Benton Boulevard – a shared eastbound right turn lane provides substantial benefit.
- Independence Avenue and Hardesty Avenue – Recommend the installation of shared eastbound and westbound right turn lanes in place of dedicated BRT lane.

7.3. Signal Impacts

Signal timing plans were optimized and the cycle lengths for the coordinated signal along Independence Avenue were lengthened to provide additional time for east-west traffic. This was specifically focused to provide benefits for the following intersections:

- Independence Avenue and The Paseo
- Independence Avenue and Woodland Avenue
- Independence Avenue and Van Brunt Boulevard

7.4. Safety Recommendations and Additional Considerations

In addition to the geometric and operational recommendations identified in previous sections, several supplemental strategies may enhance safety, multimodal accommodation, and overall corridor performance. These “additional considerations” do not significantly affect vehicular LOS but provide meaningful benefits for pedestrians, bicyclists, and transit users.

- Leading Pedestrian Intervals (LPIs) – LPIs provide pedestrians with a 3–7 second head start before adjacent vehicle movements receive a green indication. At intersections with high pedestrian activity, LPIs provide improved visibility and reduced turning vehicle conflicts. Implementation may require minor adjustments to signal timing but typically does not impact mainline progression.
- Dedicated Bicycle Signal Phasing – Much of the corridor will be reconfigured with a multi-use trail provided to replace the existing sidewalk for portions of the corridor. It may be feasible for the corridor to be afforded dedicated bicycle lanes for segments of the corridor if additional space allows. Where existing bicycle facilities exist or intersect with the corridor, bicycle-specific signal phases can separate conflicting movements and reduce crash risks. Bicycle signals can be coordinated with transit priority strategies without major operational impact.
- Transit Signal Priority (TSP) Enhancements – TSP is already assumed in BRT and BRT-Lite segments. Conditional priority and early green or green extension strategies tailored to specific intersections can improve reliability along the corridor.
- Pedestrian Safety Enhancements – Additional treatments that may complement LPIs include:
 - High-Visibility Crosswalk Markings
 - Refuge islands where widths permit
 - Accessible Pedestrian Signals (APS)
 - Curb extensions to reduce pedestrian crossing distances where possible
- Access Management – Dedicated BRT lanes may require targeted adjustment to private driveways and/or public street connections.
- Additional Crossing Opportunities – In several locations along the BSRC corridor, pedestrian demand generated by BRT stops may not align well with existing signalized intersections. Where crossing opportunities are spaced too far apart, or where informal midblock crossings are likely, additional pedestrian-focused treatments can significantly improve safety and access without imposing substantial delay to vehicular traffic or to BRT operations.

8. Right-Of Way Impacts

8.1. Potential ROW or Easement Needs

- State Avenue (BRT-Lite section): There are anticipated to be minor sidewalk easements needed.
- State Avenue (BRT section): There are long strips of ROW or Sidewalk easements that will be required to implement the 10' shared use path on both sides of the corridor.
- Minnesota Avenue (BRT section): There are some minor areas where a sidewalk easement or ROW would be needed to fit the section into the corridor.
- Independence Ave (BRT section): There are some minor areas where a sidewalk easement or ROW would be needed to fit the section of the corridor.

8.2. Anticipated Permanent and Temporary Acquisitions

- Permanent acquisition of property at 12th St and Wyoming St in the West Bottoms.
- Permanent acquisition of property at Independence Ave and White Ave.

9. Environmental Flags

9.1. Floodplain impacts

Floodplain impacts have not been fully evaluated at 15% design. However, the following portions of the corridor cross or are located within a floodplain:

- An area of floodplain exists at State Avenue & 73rd Place. The BSRC project includes the addition of a 10-foot shared use path at this location; no planned BRT features are in this area.
- An area of floodplain exists at State Avenue & 64th Terrace. The BSRC project includes the addition of a 10-foot shared use path at this location; no planned BRT features are in this area.
- An area of floodplain exists at James Street and Central Avenue. Two BRT stations and 10' sidewalk improvements are proposed for the area.
- An area of floodplain exists near 12th Street & Wyoming. Two BRT stations and 10' sidewalk improvements are proposed for the area.
- An area of floodplain exists near Independence Ave. & Manchester Ave. Two BRT stations and 10' sidewalk improvements are proposed for the area.

9.2. Parks

- Kensington Park (State Ave. & 29th St.): A portion of the planned 11' shared-use path improvement is shown as being partially on park property. This facility will enhance access to and from the park.

10. Cost Estimate Basis

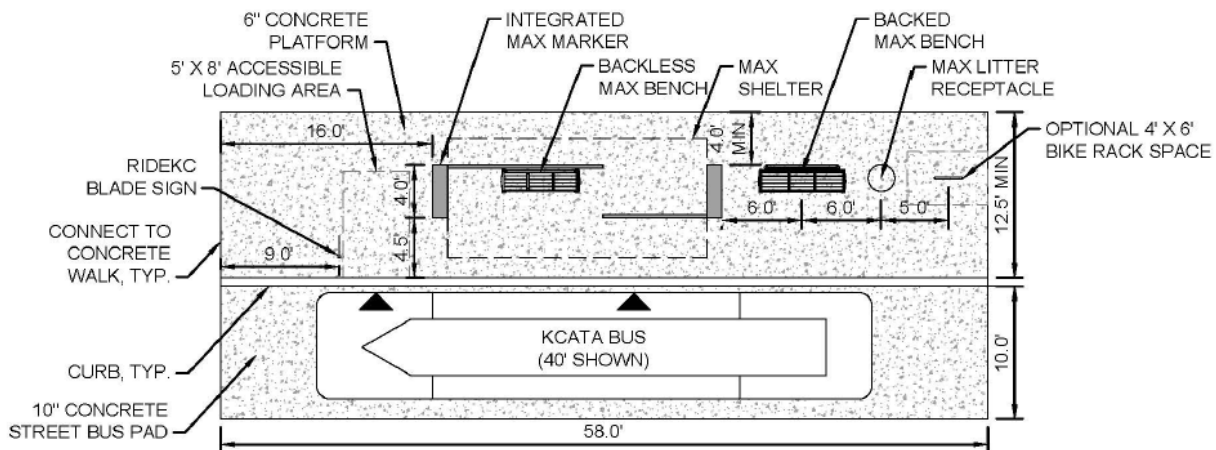
10.1 Quantity methodology

- Quantities are estimated based on scaled layout drawings developed over an aerial background.
 - Mobilization is assumed to be 5% of the construction cost.
 - The contractor construction staking was assumed to be 2% of construction, not including the mobilization.
 - The removal of existing structures was determined using engineering judgement based on past work on similar projects.
 - Clearing and grubbing was determined using engineering judgement based on past work on similar projects.

- Traffic control was determined by adjusting the cost of a similar project based on the length of this project versus the length of the similar project.
- Erosion control was determined by adjusting the cost of a similar project based on the length of this project versus the length of the similar project.
- Landscaping was determined by adjusting the cost of a similar project based on the length of this project versus the length of the similar project.
- The BRT section of the project is assumed to be full reconstruction. Therefore, the HMA (hot mix asphalt) number assumes all pavement is new.
- The storm sewer is assumed to all be replaced in the BRT section. We looked at the profile of the road via google earth elevation profile. This determined the high and low points along the corridor. Storm sewer main lengths were assumed for runs flowing to the low points. Inlet pairs were assumed every 250'. A storm pipe was assumed between every inlet pair.
- The concrete pavement (12" uniform)(AE) is for the KCATA required bus pad in front of the bus stops in the road where the bus stops to pick unload passengers. This prevents pavement degradation / rutting from buses starting and stopping all day.
- The bus stop costs assume complete reconstruction and are based on multiple inputs as summarized under Unit cost basis below.

10.2 Unit cost basis

- Unit costs are based on recent project bid tabs in the metro.
- Bus stop elements are based on KCATA's current Bus Stop Guidelines, adopted in 2025. KCATA has advised that the "MAX" stop typology should be used for the BSRC project. The MAX typology is based on existing Prospect MAX stations constructed in 2019. (Note: By KCATA request, level boarding, which was included at some Prospect MAX locations, is not to be included in the BSRC project.)
- Specifically, the "MAX Station Layout – Shelter" is assumed at all locations unless stated otherwise. These typical stations include:
 - o Minimum 58' x 12.5' station footprint, concrete platform 6" depth.
 - o Custom-built shelter
 - o Integrated MAX marker/kiosk with electronic signage
 - o Two benches, one backless bench located with shelter structure and one backed bench located upstream of shelter
 - o MAX litter receptacle located next to the backed bench.
 - o 4' x 6' space for bicycle rack
 - o RideKC blade sign
 - o Connection to concrete sidewalk
 - o Required clear zones for ADA compliance, including 8' x 5' clear zone at front door boarding location
 - o 58' x 10' concrete bus pad located in street, 10" in depth.



- Bus stop costs assume complete reconstruction and are based on multiple inputs that include the following:
 - o Peer agency BRT station cost information obtained from the Federal Transit Administration's Capital Cost Database (2024 Update). Specifically, unit costs from Indianapolis, Albuquerque, Cleveland, and Fort Collins were utilized, due to similarities with BSRC plans.
 - o Estimated costs of BRT station improvements from the Independence Avenue BRT Study were used for validation and calibration.
 - o Estimated costs of BRT station improvements from the Prospect Avenue Planning Study that proceeded Prospect MAX improvements were used for validation and calibration.
- 7th & Minnesota Transit Center Non-BRT Improvements: The 15% design plans do not include improvements to this transit center, beyond the on-street east-bound and west-bound stations that the BRT service will utilize.
 - o However, it was advised that the Cost Estimates should assume improvements to local bus stops located on the diagonal portion of the transit center between 7th Street and Minnesota.
 - o Because no design work or community/stakeholder engagement was conducted on this element, there is no design basis on which to provide cost estimates. Therefore, the cost of one additional BRT station is assumed.
 - o Because this cost is not reflected in the 15% plan set, this line item is separated out from other costs.

10.3 Contingency

- Due to the 15% design status, a 20% contingency has been applied.

10.4 Escalation

- Cost estimates are provided both in 2026 and in 2031 dollars. For 2031 dollars, a 3% increase per year has been assumed.

11. Risk Summary

- In BRT sections where a full rebuild is proposed, we do not know the magnitude of the existing sanitary sewer system and if it is in conflict with future storm sewer, or if the city would want to replace it along with the road since it is so old. This can be a major cost escalation. Evaluation of utility costs was not included in the scope of the 15% design for this project.

- Implementation of the proposed changes will require authorization from KDOT for work within KDOT-controlled right-of-way.
- Implementation of the proposed changes will require authorization from MoDOT for work within MoDOT-controlled right-of-way.
- Continued coordination will be needed from impacted municipalities to ensure agreement with BSRC plans and next steps.
- In February 2026, City of Kansas City staff indicated that 11th and 12th Streets in downtown may no longer be considered “transit emphasis corridors” where multiple routes are consolidated and related improvements (bus lanes, cycle track) would occur. BSRC design team assumptions included implementation of these improvements and are incorporated into the BSRC project. Downtown service and stop locations may need to be re-evaluated based on this new development.
- As of March 2026, there are uncertainties related to two major sports facilities that may be built along the corridor:
 - o A new Kansas City Chiefs stadium has been announced for the Village West area in KCK. Once the specific location is determined for certain and this development can formally proceed, this may impact the alignment of the west end of the BSRC corridor, planned service levels, and multimodal facilities.
 - o A location along the “Union Station Option” on Segment 3 of the BSRC corridor is one of several potential locations for a new Kansas City Royals ballpark (existing Washington Square Park). This development may impact route alignment, stop locations, and service levels, in this segment.

12. Coordination Notes & Next Steps

12.1. Steps Toward 30% Design

- Survey work will be needed to help verify feasibility and refine design.
- Buy-in from each jurisdiction will be needed throughout the design process, to be able to proceed with additional design work and efforts to obtain additional federal and local funding.
- Coordination with KDOT will be needed as some sections of the corridor (near interchanges with I-435, I-635, and I-70) are within KDOT ROW.
- Coordination with MoDOT will be needed throughout the design process. Highway 24 in Independence is a MoDOT route, and includes 18 planned BRT stations. Other corridor segments, such as near I-35 and I-70, cross MoDOT ROW as well.
- Continued coordination with the cities of KCK, KCMO, Independence, and Sugar Creek will be needed, to affirm design direction, decisions, and appropriate use of local standards.

13. Preliminary Cost Estimates



ENGINEER'S OPINION OF PROBABLE COST

Segment 1 Village West to 47th Street KCK

Client: MARC

Project: Bi-State Sustainable Reinvestment Corridor

Project Number: 022-05672

Date: 4/13/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$671,000.00	\$671,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$20,000.00	\$20,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$50,000.00	\$50,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$100,000.00	\$100,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$100,000.00	\$100,000.00
6	EROSION CONTROL	1	LUMP SUM	\$50,000.00	\$50,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$200,000.00	\$200,000.00
8	UNCLASSIFIED EXCAVATION	27168	CU. YD.	\$45.00	\$1,222,550.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	14000	CU. YD.	\$5.00	\$70,000.00
10	CURB AND GUTTER, TYPE B	3676	LIN. FT.	\$35.00	\$128,660.00
11	SIDEWALK CONSTRUCTION (4") (AE)	732853	SQ. FT.	\$9.00	\$6,595,677.00
12	CONCRETE PAVEMENT (4" UNIFORM)(AE)(PLAIN)(STAMPED COLOR)	819	SQ. YD.	\$85.00	\$69,615.00
13	CONCRETE PAVEMENT (12" UNIFORM)(AE)	1354	SQ. YD.	\$225.00	\$304,650.00
14	HMA COMMERCIAL GRADE (CLASS A)	73	TON	\$90.00	\$6,570.00
15	AGGREGATE BASE (AB-3)(OP Modified)(4")	82456	SQ.YD.	\$18.00	\$1,484,208.00
16	AGGREGATE BASE (AB-3)(OP Modified)(6")	1518	SQ.YD.	\$20.00	\$30,360.00
17	BUS STOPS	27	EACH	\$420.00	\$11,340.00
18	PAVEMENT MARKING	1	LUMP SUM	\$198,000.00	\$198,000.00
19	SOD	43928	SQ. YD.	\$10.00	\$439,280.00
20	TRAFFIC SIGNAL MODIFCATION	29	EACH	\$80,000.00	\$2,320,000.00

SUBTOTAL 2026 Dollars	\$14,071,910.00
CONTINGENCY	20% \$2,814,382.00
INFLATION TO 2031 DOLLARS	16.0% \$2,701,806.72
OPINION OF PROBABLE COST 2031 DOLLARS	\$19,588,098.72

Note:

1 Quantities derived from 15% plan layouts on an aerial background.



ENGINEER'S OPINION OF PROBABLE COST

Segment 2 - 47th Street to 7th Street KCK

Client: MARC
Project: Bi-State Sustainable Reinvestment Corridor
Project Number: 022-05672
Date: 4/13/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$2,331,000.00	\$2,331,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$50,000.00	\$50,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$1,000,000.00	\$1,000,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$100,000.00	\$100,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$1,298,000.00	\$1,298,000.00
6	EROSION CONTROL	1	LUMP SUM	\$455,000.00	\$455,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$455,000.00	\$455,000.00
8	UNCLASSIFIED EXCAVATION	94000	CU. YD.	\$45.00	\$4,230,000.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	32000	CU. YD.	\$5.00	\$160,000.00
10	CURB AND GUTTER, TYPE B	29395	LIN. FT.	\$35.00	\$1,028,825.00
11	PINNED ON MEDIAN CURB	433	SQ. YD.	\$200.00	\$86,534.00
12	CONCRETE MEDIAN NOSE	4	EACH	\$2,000.00	\$8,000.00
13	SIDEWALK CONSTRUCTION (4") (AE)	396987	SQ. FT.	\$9.00	\$3,572,883.00
14	CONCRETE DRIVEWAY (6" CONCRETE)	15613	SQ. YD.	\$80.00	\$1,249,040.00
15	CONCRETE PAVEMENT (12" UNIFORM)(AE)	837	SQ. YD.	\$225.00	\$188,406.00
16	HMA COMMERCIAL GRADE (CLASS A)	60624	TON	\$90.00	\$5,456,160.00
17	CEMENT TREATED SUBGRADE (9")	100430	SQ. YD.	\$11.00	\$1,104,730.00
18	AGGREGATE BASE (AB-3)(OP Modified)(4")	44110	SQ.YD.	\$18.00	\$793,980.00
19	AGGREGATE BASE (AB-3)(OP Modified)(6")	100430	SQ.YD.	\$20.00	\$2,008,600.00
20	STORM SEWER SYSTEM	1	LUMP SUM	\$6,074,000.00	\$6,074,000.00
23	BUS STOPS	14	EACH	\$420,000.00	\$5,880,000.00
24	7TH & MINNESOTA NON BRT IMPROVEMENTS	1	LUMP SUM	\$420,000.00	\$420,000.00
25	PAVEMENT MARKING	1	LUMP SUM	\$4,497,000.00	\$4,497,000.00
40	SOD	2809	SQ. YD.	\$10.00	\$28,090.00
41	TRAFFIC SIGNAL	9	EACH	\$500,000.00	\$4,500,000.00
42	TRANSIT SIGNAL PRIORITY EQUIPMENT	9	EACH	\$30,000.00	\$270,000.00
43	TRAFFIC SIGNAL MODIFCATION	5	EACH	\$80,000.00	\$400,000.00
44	STREET LIGHTING	1	LUMP SUM	\$1,298,000.00	\$1,298,000.00

SUBTOTAL 2026 Dollars	\$48,943,248.00
CONTINGENCY	20% \$9,788,649.60
INFLATION TO 2031 DOLLARS	16.0% \$9,397,103.62
OPINION OF PROBABLE COST 2031 DOLLARS	\$68,129,001.22

Note:

1 Quantities derived from 15% plan layouts on an aerial background.



ENGINEER'S OPINION OF PROBABLE COST

Segment 3 (Kansas) - 7th Street to State Line KCK

Client: MARC
Project: Bi-State Sustainable Reinvestment Corridor
Project Number: 022-05672
Date: 4/13/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$711,000.00	\$711,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$20,000.00	\$20,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$800,000.00	\$800,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$100,000.00	\$100,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$412,000.00	\$412,000.00
6	EROSION CONTROL	1	LUMP SUM	\$103,000.00	\$103,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$145,000.00	\$145,000.00
8	UNCLASSIFIED EXCAVATION	22000	CU. YD.	\$45.00	\$990,000.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	11000	CU. YD.	\$5.00	\$55,000.00
10	CURB AND GUTTER, TYPE B	10423	LIN. FT.	\$35.00	\$364,805.00
11	PINNED ON MEDIAN CURB	420	SQ. YD.	\$200.00	\$84,000.00
12	CONCRETE MEDIAN NOSE	2	EACH	\$2,000.00	\$4,000.00
13	SIDEWALK CONSTRUCTION (4") (AE)	114639	SQ. FT.	\$9.00	\$1,031,751.00
14	CONCRETE DRIVEWAY (6" CONCRETE)	4694	SQ. YD.	\$80.00	\$375,520.00
15	CONCRETE PAVEMENT (12" UNIFORM)(AE)	233	SQ. YD.	\$225.00	\$52,425.00
16	HMA COMMERCIAL GRADE (CLASS A)	19994	TON	\$90.00	\$1,799,460.00
17	CEMENT TREATED SUBGRADE (9")	33333	SQ. YD.	\$11.00	\$366,663.00
18	AGGREGATE BASE (AB-3)(OP Modified)(4")	12738	SQ.YD.	\$18.00	\$229,284.00
19	AGGREGATE BASE (AB-3)(OP Modified)(6")	33333	SQ.YD.	\$20.00	\$666,660.00
20	STORM SEWER SYSTEM	1	LUMP SUM	\$2,067,000.00	\$2,067,000.00
23	BUS STOPS	3	EACH	\$420,000.00	\$1,260,000.00
24	PAVEMENT MARKING	1	LUMP SUM	\$1,270,000.00	\$1,270,000.00
34	SOD	2416	SQ. YD.	\$10.00	\$24,160.00
35	TRAFFIC SIGNAL	3	EACH	\$500,000.00	\$1,500,000.00
36	TRANSIT SIGNAL PRIORITY EQUIPMENT	3	EACH	\$30,000.00	\$90,000.00
37	STREET LIGHTING	1	LUMP SUM	\$400,000.00	\$400,000.00

SUBTOTAL 2026 Dollars	\$14,921,728.00
CONTINGENCY	20% \$2,984,345.60
INFLATION TO 2031 DOLLARS	16.0% \$2,864,971.78
OPINION OF PROBABLE COST 2031 DOLLARS	\$20,771,045.38

Note:

1 Quantities derived from 15% plan layouts on an aerial background.

Reference: Cost Estimation Technical Memo

To: Mid-America Regional Council (MARC) From: Stantec, Inc.
600 Broadway St, Suite 200, Kansas Minneapolis, MN
City, MO 64105

Project/File: Bi-State Sustainable Reinvestment Corridor Date: April 30, 2026

Reference: Cost Estimation Technical Memo

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Reference: Cost Estimation Technical Memo

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Reference: Cost Estimation Technical Memo

1 Project Background

The Bi-State Sustainable Reinvestment Corridor (BSRC) represents a transformative investment in regional connectivity and sustainable redevelopment across the Kansas City metropolitan area. The corridor spans approximately 24 miles from Village West in western Kansas City, KS (KCK) to Independence Square in Independence, MO, linking the communities of Kansas City, KS (Wyandotte County); Kansas City, MO (KCMO); Sugar Creek MO; and Independence, MO (Jackson County).

Figure 1: Map of the BSRC Corridor



Developed by the Mid-America Regional Council (MARC) in coordination with multiple local governments, regional stakeholders, and state partners, the BSRC initiative was launched in response to longstanding transportation and community development challenges in the region. Limited public transit service is currently available within the Project Corridor, with many underserved neighborhoods facing barriers to accessing employment, education, healthcare, and other essential opportunities. Recognizing these needs, regional leaders and stakeholders came together to pursue a holistic solution that would leverage transit improvements as a catalyst for broader economic growth and community revitalization.

The Project Purpose and Need, developed to guide project development during the environmental process, references these needs and the role of the project not only as a transportation improvement, but also as a spur for further, transformative sustainable reinvestment:

"The purpose of the BSRC project is to develop an integrated and forward-thinking transportation and infrastructure framework that enhances mobility, reduces carbon output, and promotes fair access to housing, employment, education, and healthcare along a key east-west corridor within the Kansas City metropolitan region. The project aims to align transportation improvements with community needs, foster economic growth, and address environmental quality goals in collaborating with regional, state, and local partners."

As a catalyst for wider regional investment into sustainable technology, land use, and as the proposed backbone for a zero-emissions transportation network, the BSRC project proposes the construction of a new mixed Bus Rapid Transit (BRT) and BRT-lite system along the 24-mile corridor, as well as installation of new protected bike lanes along much of the corridor length. The two modes of transit being implemented along the corridor are described below:

- **BRT** is a form of bus-based rapid transit, which delivers a mix of improved service and infrastructure to shorten travel times, increase frequencies and reliability, and improve stop amenities. It offers a higher level of service than both traditional buses and BRT-lite services, while

Reference: Cost Estimation Technical Memo

requiring less investment and disruption than other modes of rapid transit such as light rail. BRT improvements include dedicated bus lanes for much or all of a system's length, TSP at traffic signals, and headways of every 10 minutes or better.

- **BRT-lite** is a form of improved bus service, which combines improved service with infrastructure improvements similar to the existing Troost Metropolitan Area Express (MAX) and Prospect MAX services in Kansas City, MO. Improvements include higher frequencies (10-30 minutes), Transit Signal Priority (TSP), shelter improvements, and some right of way (ROW) improvements such as bus lanes for part of their length. BRT-lite delivers many of the benefits of full BRT service, but at a lower level of investment and disruption to the existing environment.

Project development of the BSRC has been ongoing for years. In 2022, the project received a significant boost through a competitive \$5.6 million Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant, awarded by the U.S. Department of Transportation (USDOT) to fund the planning of the corridor. Although this grant boosted the adoption of a corridor wide plan, the plan builds on prior studies and plans which recommend multimodal improvements within the corridor. These include *Independence Avenue Pedestrian Safety Improvement Plan*, *Independence Avenue Bus Rapid Transit (BRT) Planning and Feasibility Study*, *U.S. 24 Highway Corridor Study*, *goDotte Strategic Mobility Plan*, and *PlanKCK*.

Planning efforts since the receipt of the project RAISE grant have focused on studying the BSRC's physical and market context to reach a preliminary level of design and decide a desired corridor and mode for detailed planning. Phase 1 involved a market analysis of the BSRC study area to determine the desired corridor and mode, while the Phase 2 Planning and Environmental Linkages (PEL) Study focuses on refining and developing preliminary design for the corridor.

Phase 1: the Assessment and Strategy Action Plan focuses on a comprehensive, multiphase assessment of corridor context, considering a variety of corridors and transit modes for implementation in the BSRC. This phase laid the groundwork for the ongoing Phase 2, by deciding on the desired corridor and mode. The desired corridor generally follows State Ave in KCK, 11/12th Sts in downtown KCMO, and Independence Ave and U.S. 24 east of downtown KCMO, as shown in [Figure 1](#). Phase 1 divided the corridor into five segments, with the central three segments in central KCK and KCMO (Segment 2, Segment 3, Segment 4) selected for full BRT service, while the two outlying segments in western KCK and Independence (Segment 1 and Segment 5) were selected for BRT-lite service. These findings were brought into the following, ongoing Phase 2 PEL study.

Phase 2: the BSRC Plan and PEL Study builds on Phase 1 to provide a roadmap for project implementation. Planned alongside the ongoing design and cost estimation process outlined here, the study identifies specific design constraints and provides a preliminary environmental impact screening of the project. The cost estimates displayed in this document were developed in conjunction with the ongoing PEL process. This Phase will guide further phases of development, which will investigate environmental impacts and further develop design to an eventual 100% level.

2 Purpose of Technical Memo

This technical memo provides an overview and analysis of the 15% Design and cost estimate of the Missouri portion of the BSRC corridor. This portion, whose design development was led by Stantec, spans from the Missouri-Kansas State Line to Independence Square in Independence, MO. To account for differing design standards and expectations in Kansas, a different firm, Olsson Engineering led the 15% Design development process in Kansas, as well as a transit service plan for service along the BSRC

Reference: Cost Estimation Technical Memo

corridor. Within the 'segments' established in the Phase 1 assessment, this report covers the Missouri portion of Segment 3, and the entirety of Segments 4 and 5.

2.1 Design Area

The area scoped for BSRC design spans an 13.1-mile corridor largely within public ROW from the Missouri-Kansas State Line to Independence Square, via 12th St and 11th St to Charlotte St in downtown Kansas City, MO, and via Independence Ave/U.S. 24 to N Noland Rd in Kansas City, MO, Sugar Creek, and Independence. Roads vary in width between approximately 2 and 5 lanes wide within the design area, with much of the length composed of 4-lane roads (2 lanes in each direction). The Missouri study area contains 55 BRT and BRT-lite stations and 3 transit centers, with 29 stops in each direction.

Of the 5-segment study area designated in the Phase 1 report, this study contains a portion of segment 3, and the entirety of segments 4 and 5. Segments 3 and 4 were designated for full BRT service, while segment 5 is designated for BRT-lite service. Within this cost estimation memo, each segment will be evaluated individually, in line with the delivery of 15% Design plans and the independent evaluation of each segment and as intended in the Phase 1 plan.

- **Segment 3** spans between Downtown KCK and Downtown KCMO. The portion evaluated in this memo spans from the Missouri-Kansas State Line to Charlotte St and East Village Transit Center, via 11th and 12th Sts in Downtown KCMO. This segment contains 13 stops, 7 in each direction.
- **Segment 4** spans from East Village Transit Center in Downtown KCMO to near the eastern border with Independence, MO. It follows Charlotte St north to Independence Ave, continuing along Independence to Winner Rd. This segment contains 19 stops, 10 in each direction.
- **Segment 5** spans from eastern KCMO to Independence Transit Center. It follows Independence Ave and U.S. 24 to Noland Rd, terminating at the transit center on Truman Rd. This segment contains 23 stops, 12 in each direction.

2.2 Design Intent

The design team sought to develop a 'gold standard' high-capacity mixed BRT and BRT-lite transit system alongside sustainable multimodal infrastructure improvements along the 13.1-mile Missouri portion of the project corridor. This transit facility is intended to support and be supported by the development of higher-density development, improved quality of life, and increased access for surrounding communities. Infrastructure improvements developed as a part of design scope are intended to decrease travel times, and improve connectivity, safety, and the viability of sustainable and equitable transport options. This design intent means that recommendations will prioritize elements that enhance transit visibility and access, multimodal connectivity, and higher-density development opportunities.

Procedurally, the design intent included laying out improvements on an aerial background with ROW lines in GIS to determine feasibility of alternatives, NEPA impacts, and station locations. No vertical design was performed for the 15% layouts.

2.3 Standards Used

The Missouri portion of the corridor used a variety of design standards spanning federal, state, transit agency, and industry regulations. The standards used are listed below:

Reference: Cost Estimation Technical Memo

- Public Right-of-Way Accessibility Guidelines (PROWAG): Federal standard used to inform and check for accessibility of improvements.
- American Public Works Association (APWA) Standards: National Public Works guidelines to inform city street design
- Kansas City Area Transportation Authority (KCATA) Standards: Standards required by the public transit operator which is anticipated to operate on the BSRC corridor.
- Manual of Uniform Traffic Code Devices (MUTCD): Standards which outline signals, striping, and usage of ROW within public ROW
- Kansas City, Missouri Standards: Standards for city and road design as adopted by Kansas City, MO.
- Missouri Department of Transportation (MoDOT) Standards: Design standards for MoDOT-operated roadways, such as U.S. 24.

2.4 Key Assumptions

The following assumptions formed the basis of the planning and design work:

2.4.1 Funding

As documented in MARC's 2024 Peer Regions Transit Report, transit in the Kansas City region is chronically underfunded compared to Kansas City's peer and aspirational regions, and funding levels have been decreasing on a per capita basis. This has resulted in a severe reduction in transit service provided, in the form of eliminated routes and reduced service levels on existing routes. While positive developments have occurred, most notably the introduction and expansion of the KC Streetcar and the opening of Prospect and Troost MAX, service levels are lower than peers and exhibited local demand.

Local funding for Kansas City area transit operations is provided by municipal and county jurisdictions, including Unified Government of Kansas City and Wyandotte County, City of Kansas City, MO, and City of Independence, MO. Of these jurisdictions, funding is provided from a general fund or other sources by all entities, however these funding levels have not kept pace with increasing operations costs associated with paying competitive wages, vehicle procurement, and rising infrastructure and maintenance costs. Only one jurisdiction in the region, Kansas City, MO, has a dedicated funding source for transit service- a local sales tax.

The BSRC planning and design process operates under the assumption that adequate funding will be provided to construct and operate improved BRT services within the corridor on a sustainable, ongoing basis. The proposed investments will require an increase in funding to do so both from a capital and operating basis.

For capital costs, it is assumed that MARC, KCATA, and municipal partners will pursue federal funding through the Federal Transit Administration's (FTA) competitive Capital Investments Grant (CIG) Program. Under CIG, a local financial commitment is required alongside relevant studies and design characteristics to receive funding. A higher and specifically more reliable local funding commitment contributes to a stronger project rating and resultant chance of receiving funding under the process.

For operations costs, it is assumed that local jurisdictions will raise additional revenue to support transit operations. While the BSRC design process does not include a specific recommendation, this additional revenue would likely occur through a new sales tax levied across multiple cities or counties.

Reference: Cost Estimation Technical Memo

2.4.2 Transit Priority

While BSRC incorporates a variety of improvements to enhance community transportation and development, specific assumptions for transit priority treatments are fundamental to the design work. These elements are part of a suite of improvements designated as BRT or BRT-lite. These include:

- Dedicated bus lanes where feasible, with increased emphasis on full ROW control in BRT-designated sections. This would improve travel times by separating transit from general traffic and eliminating congestion in transit lanes.
- TSP at traffic signals across the corridor, to reduce or eliminate wait times at traffic signals.
- Enhanced stations with a high level of amenities beyond a typical bus stop. These include custom shelters, benches, information kiosks, trash bins, bike racks, and ADA enhancements to boarding platforms.
- Prioritized bicycle and pedestrian access between stations and neighboring land uses, with closing of several sidewalk gaps and full ADA compliance to maximize safety and comfort for users going to or leaving from BRT services.
- Transit services designed to operate at high frequencies of every 10 minutes for BRT and every 20 minutes for BRT-lite services in large, specialized 40-foot buses.

2.4.3 Transit Network Connectivity

Transit and station planning includes attention to connecting routes and improved BRT and BRT-lite service on the corridor connects to other fixed routes to maintain connectivity. This includes providing adequate space for transfers and layovers at transit centers, potential alignment changes to other routes, and designating key bus stops on other routes within the broader study area to be improved alongside BSRC investments. These services and infrastructure should work together to improve transportation across the transit network, not only along the BSRC route specifically.

This design intent has been reinforced by engagement with project partners and the community. While BSRC aims to facilitate improvements on a specific east-west corridor, improvements to connecting services are also desired.

2.4.4 Multimodal Safety Enhancements

Improvements in the corridor are most focused on enhancing infrastructure for transit, bike, and pedestrian transportation modes. While private vehicles will continue to be accommodated along the corridor, infrastructure for this mode is more developed and less in need of enhancement compared to the other modes proposed for improvement. Design plans therefore focus on improving safety and accessibility for nonmotorized modes, improving accessibility, frequency, quality of life, and travel times for transit uses. These improvements are intended to both achieve ADA levels of quality and go beyond them to make a desirable environment for multimodal uses. These elements include:

- Installation of new protected 5-foot bike lanes between Highland Ave and Topping Ave to improve safety and accessibility along the corridor by bike.
- Installation of new bike lanes along 11th and 12th Sts in downtown Kansas City, MO.

Reference: Cost Estimation Technical Memo

- Installation of new 11-foot bus lanes for the entire length of the corridor between the MO-KS State Line and Winner Rd to speed travel times and improve transit reliability. Parking and travel lanes would be substituted for bus lanes.
- Shortening of turning radii to reduce turning vehicle speeds throughout the corridor and improve pedestrian and bike safety.
- Narrower travel lanes to reduce the width of the street, reduce the width required to cross the street, and provide more space for bike lanes.
- Construction of new sidewalks where gaps exist to improve safety and accessibility for riders and pedestrians.
- Construction of roadway medians to lower crossing distances and reduce vehicle speeds.
- Implementation of TSP on all intersections in BRT segments, and most intersections in BRT-lite segments to improve travel time.
- Installation of new BRT shelters along the corridor to improve transit user experience, accessibility, and safety.

2.4.5 Transit-Supportive Land Use

Ridership and transportation mode choice are highly dependent on the land uses surrounding a transitway. Without dense, mixed, and affordable land uses surrounding the corridor, a transit investment is less likely to be used by people working, running errands, living along, or visiting the corridor. This is also true for biking and walking investments, which are designed to work in tandem with the redevelopment of station areas to increase population and economic activity of an area.

These design decisions are reliant on inputs from an ongoing station area planning process, which provides conceptual plans for development near proposed future stations, specifically within ¼ mile of each of the following stations within Missouri:

- East Village Transit Center
- Independence Ave & The Paseo
- Independence Ave & Chestnut
- Independence Ave & Hardesty
- U.S. 24 & Sterling Ave
- Independence Square

2.4.6 Right of Way Constraints and Development Preservation

Project construction will be largely limited to the existing public ROW, with limited anticipated acquisition of new ROW. Where possible, project guidance suggests not taking any new ROW. Where not possible, limited ROW acquisition will take place, with no acquisition of buildings except in the event of circumstances where ROW acquisition supports redevelopment proposals as outlined in the station area planning process.

The project is currently proposing to impact three properties at Independence Ave and Winner Rd, Independence Ave and White Ave, and Wyoming St and 12th St. These areas will serve as layover areas, and a BRT stop, respectively.

Reference: Cost Estimation Technical Memo

2.5 Definition of 15% Scope

15% Design reflects the most up-to-date version of the design and planning process along the BSRC corridor. It shows the adopted vision for transit and multimodal improvements, including the proposed road configuration, service patterns, and cost estimations. While 15% Design provides a vision and overview of the corridor, it does not include considerations for elevation, detailed physical characteristics, and future project decisions. All designs submitted under this scope are subject to change due to further analysis, physical constraints, or the decision of the client.

3 Introduction of Missouri Corridor

The Missouri portion of the project corridor spans 13.1 miles from the Missouri-Kansas State Line to Independence Square in Independence, MO. From east to west, the corridor runs along 12th St, an 11th/12th St one-way pair in Downtown Kansas City, MO, Charlotte St, Independence Ave and U.S. 24, and Noland Rd. BRT improvements are programmed to be implemented in project Segments 3 and 4—from the State Line to Winner Rd—while BRT-lite improvements are programmed for Segment 5 between eastern Kansas City, MO and Independence.

Design and cost estimations for the corridor are divided into three segments, corresponding to each project segment. The following section describes the existing transportation and public realm conditions along the corridor and describes improvements and the proposed transportation and public realm improvements programmed. Descriptions of the existing and proposed corridors are divided by the three project segments.

3.1 Existing roadway characteristics

The Missouri portion of the corridor is currently served by bus routes KCATA 24, KCATA 9, and UGT 101, which generally travel along Independence Ave, 9th St, and State Ave (KCK), respectively. Service frequency varies throughout the corridor, with the highest levels of service seen in the downtown transit corridor along 11th/12th Sts and the lowest on Independence Ave/U.S. 24 east of Winner Rd. Within Downtown KCMO, transfers are available to several routes, including the KC Streetcar and both MAX bus routes.

The corridor is broadly composed of 2-5-lane roads, with most of the streets being 4 lanes in width, carrying 2 lanes of vehicle traffic per direction. Vehicle access is strong, with connections to major interstates, state highways, and arterials. Congestion within the corridor is generally low, with analysis in the project Phase 1 report finding that Independence Ave, which makes up the length of segment 4, could operate at a satisfactory level of service with only 2-3 lanes, compared to its current layout. In fact, much of the corridor is built with a higher-than-needed capacity, providing opportunities for lane reductions and other measures to better prioritize transit and non-motorized modes.

Bike infrastructure in the corridor is sparse, with painted lanes present along Charlotte St in KCMO, and no bike infrastructure present in the rest of the corridor. Bike connections exist in the downtown and inner neighborhoods of Kansas City, MO, with no connections present east of The Paseo. Bicyclists wishing to use the corridor today must either use the sidewalk or bike in mixed-traffic on medium- and high-speed roadways. Significant safety and mobility improvements for bikes are possible.

The sidewalk network in Kansas City, MO is largely complete and much of the length of the corridor is traversable as a pedestrian. However, sidewalk coverage on both sides of the street is not complete east of

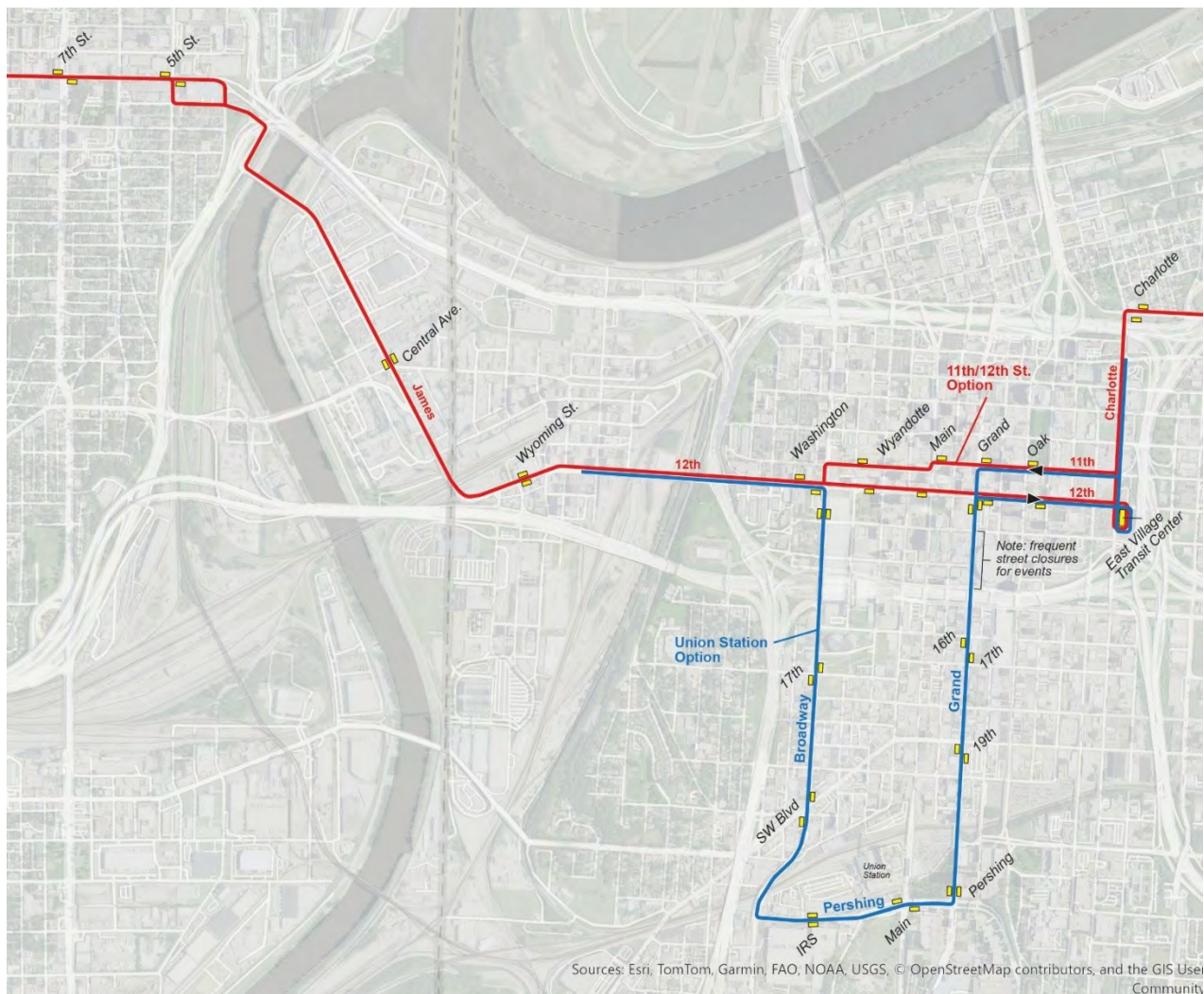
Reference: Cost Estimation Technical Memo

Winner Rd, and there are opportunities for improvement for pedestrian comfort and safety along the entire corridor length, in terms of sidewalk width, street furniture, shade, auto-oriented land uses, and crossings.

3.1.1 Segment 3: Missouri-Kansas State Line to Charlotte St

Segment 3 begins in Kansas City, KS, spanning from the Missouri-Kansas State Line to Charlotte St in Downtown Kansas City, MO via 12th St, the 11th/12th St transit corridor, and Charlotte St to the intersection with Charlotte St and Independence Ave.

Figure 2: Segment 3 Overview



Road widths in this segment vary. The James St bridge is a two-lane roadway from the Missouri-Kansas State Line to Liberty St. The road then widens to 4 lanes at Liberty St, before transitioning to a 3-lane-per-direction one way pair along 11th/12th Sts at Broadway Blvd in Downtown KCMO. Along Charlotte St, the street is 3 lanes in each direction, with parking and bike lanes in both directions.

Reference: Cost Estimation Technical Memo

UGT Route 101 serves most of this portion of the corridor, from the Missouri-Kansas State Line to East Village Transit Center. As scheduled, travel time along this segment is approximately 13 minutes over 2.5 miles, averaging 12 miles per hour. Headways are every 30 minutes throughout the day and peak hours.

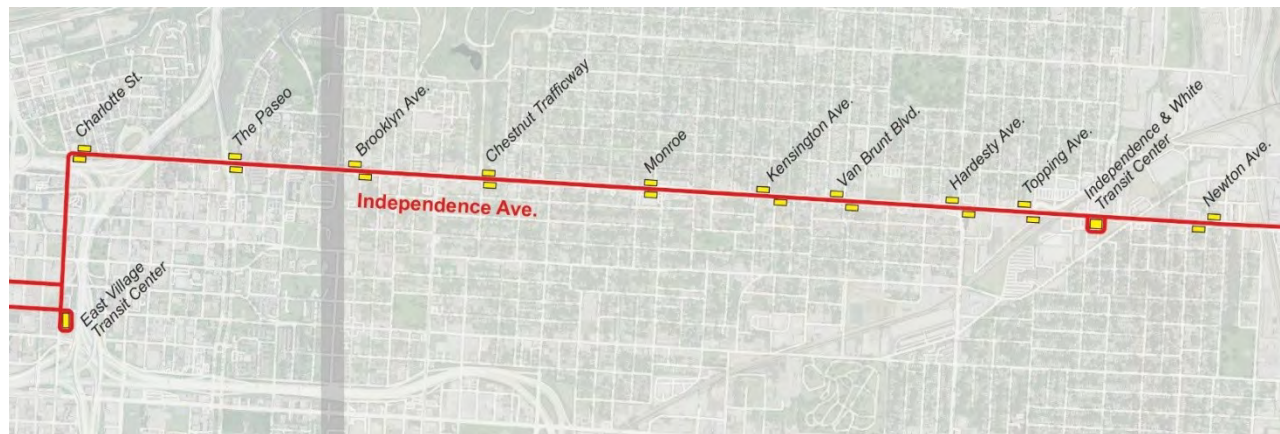
Bike infrastructure is only present along Charlotte St in this portion of the corridor, with painted lanes spanning from Independence Ave to southern KCMO. Although the corridor connects with the local bike network at multiple points downtown, few parallel bike routes currently exist.

Pedestrian conditions in this section are generally favorable, given the almost complete sidewalk coverage and downtown setting. The pedestrian environment is rich with shade opportunities, street furniture, and pedestrian-supportive land uses. Less favorable pedestrian conditions exist in the West Bottoms portion of the project area.

3.1.2 Segment 4: Charlotte St to Winner Rd

Segment 4 is programmed to run along Independence Ave from Charlotte St to Winner Rd, crossing from Downtown KCMO through eastern Kansas City, terminating near a major industrial zone by the Blue River.

Figure 3: Segment 4 Overview



This segment is composed entirely of Independence Ave, spanning approximately 4.1 miles. Road widths vary between 4 and 5 lanes, including center turn lanes over some portions of the segment. The road functions as a primary arterial, taking both local and regional traffic. Near the eastern edge of the segment, Independence Ave functions more as a suburban arterial.

The main transit service in the corridor is KCATA route 24, which generally runs along Independence Ave through eastern KCMO. As scheduled, travel time for transit in this corridor averages 14 minutes over a 4.1-mile segment, with an average speed of 18 miles per hour. Route 24 is the most productive route in KCATA's system, with the highest ridership per mile. Demand for transit service is therefore high relative to other portions of the Kansas City region. Headways along this segment are generally every 20 minutes during the day and peak hours.

There is no dedicated bike infrastructure in this portion of the corridor at present. Biking conditions on the existing segment are generally unfavorable- bikers would need to either bike in mixed traffic on a 4-lane roadway or use the sidewalk. A regional bikeway connection is present at Independence Ave and The Paseo.

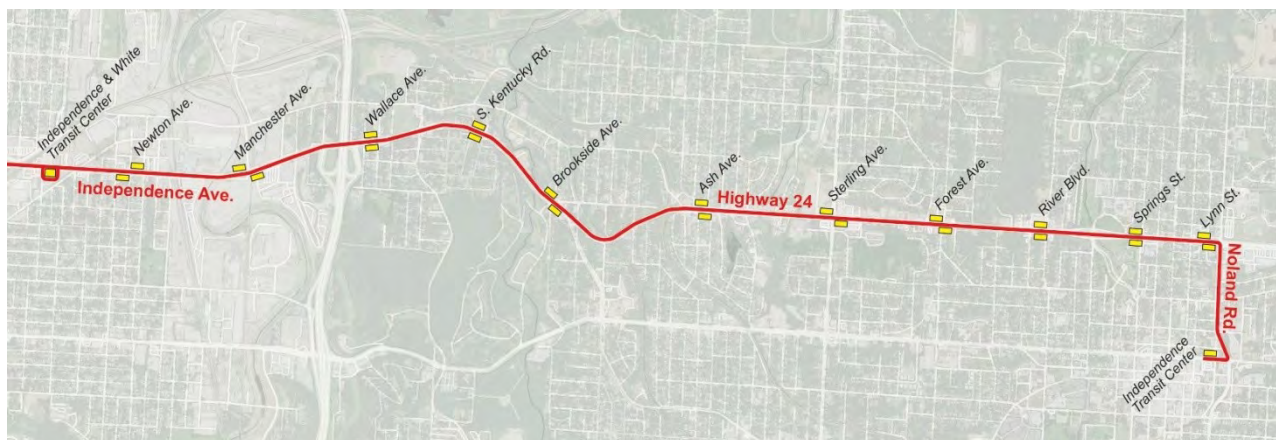
Reference: Cost Estimation Technical Memo

Pedestrian conditions vary throughout the corridor, with more favorable conditions located closer to downtown, with more pedestrian-oriented land use, shade, and safer crossings. Medians between sidewalks and traffic are present throughout the segment.

3.1.3 Segment 5: Winner Rd to Independence Square

Segment 5 spans from Winner Rd in Kansas City, MO to Independence Square in Independence via Independence Ave, U.S. 24, and Noland Rd. This segment passes through industrial areas, suburban residential development, and Independence's historic downtown district. It crosses three communities- Kansas City, Sugar Creek, and Independence along a 6.6-mile corridor.

Figure 4: Segment 5 Overview



The segment is composed of Independence Ave, U.S. Highway 24, and Noland Rd, with road widths varying between 4 and 5 lanes. Independence Ave and U.S. 24 function as suburban arterials, with the latter having two grade-separated interchanges, carrying high speed traffic. Noland Rd operates as a 4-lane roadway connecting U.S. 24 with downtown Independence. Vehicle traffic through this segment is generally higher speed than other segments.

No transit service currently serves this portion of the corridor. Paralleling service between Independence Square and Downtown Kansas City is available via KCATA Route 24, which travels along Winner Rd and Lexington Ave, south of the project corridor. This service runs over a 6.6-mile corridor in 18 minutes, at an average speed of 22 miles per hour. Service headways are hourly during daytime and peak travel times.

There is no dedicated bike infrastructure in this portion of the corridor at present. No bike routes intersect with the corridor. Biking conditions on the existing segment are generally unfavorable- bikers would need to either bike in mixed traffic on a 4-lane roadway or use the sidewalk.

Pedestrian conditions vary throughout the segment, with more favorable conditions present near Winner Rd and Independence Square. Pedestrian conditions along U.S. 24 are generally unfavorable, with sidewalk gaps present on bridges and large sections of roadway. Limited shade opportunities, street furniture, and pedestrian-oriented land uses are available in this segment.

Reference: Cost Estimation Technical Memo

3.2 Proposed improvements

The corridor is proposed to be improved to BRT and BRT-lite standard across its entire length, with pedestrian, bike, and safety improvements also programmed. Segments 3 and 4 will be converted to full BRT service, seeing buses as frequently as every 10 minutes, while Segment 5 will see BRT-lite service at frequencies of 10-30 minutes throughout the day. All segments will see an improvement in transit service, as well as biking and walking conditions, with comparatively small impacts to vehicle traffic. To see proposed improvements, see Appendices C, D, and E.

This subsection covers the proposed improvements to each segment of the corridor, noting conditions for each mode, as well as important design features and focus points present throughout each segment. Cost estimation details are presented in the next section.

Transit service in the Missouri portion of the corridor is recommended to be provided by two separate lines: a hybrid BRT-BRT-lite service which spans the entire length of the corridor between Village West, KCKCC and Independence Missouri, and a BRT service which spans segments 2, 3, and 4. Both services would operate at 20-minute frequencies, with buses from each line interlining in the central segments, spaced at 10-minute intervals. This would create 10-minute headways within the central BRT segments, and 20-minute intervals in the outer BRT-lite segments. Due to the length of the hybrid route, a 10-minute layover at East Village Transit Center is required.

Figure 5: Proposed corridor service pattern



3.2.1 Segment 3: Missouri-Kansas State Line to Charlotte St (BRT)

BRT improvements are proposed for Segment 3, between the Missouri-Kansas State Line, through Downtown Kansas City, MO, to Charlotte St and Independence Ave at the edge of downtown. Transit conditions are proposed to be improved by this plan by substituting existing ROW dedicated to cars to transit and implementing other infrastructure improvements. This segment will see an overhaul of transit infrastructure to boost travel times and reliability, while having little impact on other modes.

Transit conditions are proposed to be improved through a mix of infrastructure and service changes in this segment. The following improvements consistent with BRT standards will be implemented:

Table 1: List of Transit Improvements in Segment 3

Existing condition	Improvement	Reasoning
Limited dedicated ROW on 11 th /12 th Sts in Downtown	Painted Bus Lanes between James St and Charlotte St	Improve travel time and reliability; improve safety
No signal priority	Transit Signal Priority at several intersections	Improve travel time and reliability

Reference: Cost Estimation Technical Memo

Existing condition	Improvement	Reasoning
9 stops spaced at 1/5-mile intervals	7 stops spaced at 1/3-mile intervals	Improve travel time and reliability
Varying condition of bus stops- sheltered, unsheltered, some benches	Consistent, amenity-rich bus stations	Improve user experience and safety
Bus stops located on shoulder	Bus stops located closer to travel lane	Reduces need for buses to pull out of traffic to serve a stop; improve travel time and reliability
20-minute frequencies (Routes 24 & 101)	10-minute frequencies, most of the day	Decrease wait time; increase capacity; improve total travel time and reliability
No service on Charlotte St (Route 24 bypasses Charlotte St)	10-minute frequencies on Charlotte St	Improve total travel time and reliability; Increase route directness

Transit conditions are proposed to be improved with a mix of service and infrastructure improvements in Segment 3. In this corridor, short and long trips will be combined to realize 10-minute headways for the duration of service. This improved service will be accompanied by bus lanes, transit signal priority for the entire length of the segment, and a reduction in number of stops. These improvements are anticipated to lower travel times and increase transit ridership in the corridor.

Bus lanes will be implemented on 12th St beginning at Wyoming St, continuing into downtown KCMO, where the bidirectional lanes will split into one-way pairs between Broadway Blvd and Charlotte St. The corridor will reconvene at Charlotte St, which will have bus lanes in only the southbound direction for its length within the corridor. Once the corridor reaches Independence Ave, bus lanes will once again be in both directions. Although bus lanes are not completely transit exclusive; they also serve as turn lanes for private vehicles, they will significantly speed transit times in the corridor, as buses will be less impacted by private vehicle congestion.

Bike conditions are proposed to be improved with the addition of new separated and painted bike facilities between Oak St and Charlotte St on 12th St, Broadway Blvd and Charlotte St on 11th St, and Charlotte St between 13th St and Independence Ave. Along much of the bike corridors on 11th and 12th Sts, bike lanes will be raised to sidewalk height with significant buffer (up to 4 ft) between bikes and vehicle traffic. On Charlotte St, bike lanes will remain in their current painted buffer condition. This will significantly improve bike infrastructure in the area, as 11th/12th Sts do not currently have any dedicated bike infrastructure, and the downtown area at large lacks a comprehensive bike network. This reorientation will improve safety and comfort for cyclists, as well as improve connections to other downtown bikeways.

Pedestrian conditions are proposed to be improved in the corridor with repainting, addition of new paint, and a widened buffer between pedestrians and moving vehicles. Within the downtown portion of the corridor, new parking lanes, bike lanes, and bus lanes will increase distances between pedestrians and moving vehicles. Sidewalks throughout much of the 11th/12th St segments will be widened by a variable number of feet, and new curb-outs will be installed to both delineate parking areas and reduce crossing distances in downtown. Charlotte St and the West Bottoms portion of the segment will remain largely the same for pedestrians.

Lane reductions are proposed for much of the corridor, with the replacement of travel and parking lanes with bus, bike, and parking lanes. Table 2 summarizes proposed lane conversions.

Reference: Cost Estimation Technical Memo

Table 2: Proposed Travel Lane Conversions in Segment 3

Road name	Existing travel lanes	Proposed travel lanes	Conversion
12 th St between Wyoming St and Broadway Blvd	4	2	2 bidirectional bus lanes
12 th St between Broadway Blvd and Locust St	3	1-2	1 EB bus lane 1 parking lane (2 blocks)
12 th St between Locust St and Charlotte St	4	2	1 EB bus lane 1 parking lane
Broadway Blvd between 12 th and 11 th Sts	5	4	1 SB bus lane
11 th St between Broadway Blvd and Charlotte St	3	1	1 WB bus lane 1 parking lane
Charlotte St between 13 th St and Independence Ave	2	2	1 SB bus lane

Although this will reduce the number of travel lanes within the corridor, the segment already operates at a high level of service, allowing for a more flexible set of roadway alternatives. Traffic studies have found that congestion is sufficiently low that major traffic impacts are not anticipated from these lane conversions.

3.2.2 Segment 4: Charlotte St to Winner Rd (BRT)

BRT improvements are proposed for Segment 4, spanning from Downtown KCMO through eastern KCMO to the edge of an industrial district. Transit, bike, and pedestrian conditions are proposed to be improved by this plan, while substituting existing ROW dedicated to cars for these other modes. Extensive safety improvements are proposed for this segment.

Transit conditions are proposed to be improved through a mix of infrastructure and service changes in this segment. The following improvements will be implemented:

Table 3: List of Transit Improvements in Segment 4

Existing condition	Improvement	Reasoning
No dedicated ROW	Bus lanes between Charlotte St and Topping Ave	Improve travel time and reliability; improve safety
No signal priority	Transit Signal Priority at several intersections	Improve travel time and reliability
20 stops spaced at 1/6-mile intervals	10 stops spaced at 1/3-mile intervals	Improve travel time and reliability
Varying condition of bus stops- sheltered, unsheltered, some benches	Consistent, amenity-rich bus stations	Improve user experience and safety
Bus stops located on shoulder	Bus stops located closer to travel lane	Reduces need for buses to pull out of traffic to serve a stop; improve travel time and reliability

Reference: Cost Estimation Technical Memo

Existing condition	Improvement	Reasoning
20-minute frequencies (Route 24)	10-minute frequencies, most of the day	Decrease wait time; increase capacity; improve total travel time and reliability

Transit conditions are proposed to be improved with the installation of bus lanes for nearly the entire segment length, from Charlotte St to Topping Ave. Lanes will vary in width between 10-13 feet, with lanes doubling as right turn lanes for vehicle traffic. 10 stops in each direction are proposed for this segment, with average stop spacings of approximately 0.33 miles, nearly twice the average distance between stops along the existing alignment. TSP is proposed for all 15 signalized intersections in the segment. Improved transit service, including shorter headways, will make transit a more attractive choice in this corridor.

Bike conditions are proposed to be improved with the construction of a new sidewalk-level bikeway between Highland Ave and Topping Ave. This improvement will improve safety and connectivity for cyclists in the area, creating a new east-west bike corridor and linking it to the dedicated bikeway on The Paseo.

New sidewalks are proposed to be constructed along the corridor, largely reconstructing existing sidewalks and implementing ADA improvements. Sidewalk construction will occur with minimal impacts to surrounding private property. Safety improvements for nonmotorized modes are proposed via the shortening of lane widths, changing irregular intersection geometries, constructing pedestrian striping new crossings, and restriping existing crossings.

Private vehicles will use the center 2 lanes for most of the segment length, with bus lanes functioning as right turn lanes. This is a reduction in lanes from the existing format, which allows private vehicles to use all 4 lanes in the roadway. Vehicle travel lane widths are proposed to be reduced to between 11 and 10 feet throughout the segment, the minimum width allowed under MoDOT standards. These changes will improve safety by reducing vehicle speeds, while likely having little impact on throughput, due to the roads existing state of overcapacity.

Table 4: Proposed Travel Lane Conversions in Segment 4

Road Name	Existing travel lanes	Proposed travel lanes	Conversion
Independence Ave between Charlotte St and Topping Ave	4-5	2-3	2 bidirectional bus lanes
Independence Ave between Topping Ave and Winner Rd	4	4	Retains existing configuration

3.2.3 Segment 5: Winner Rd to Independence Square (BRT)

BRT-lite improvements are proposed for segment 5, spanning between Winner Rd and Independence Square via Independence Ave and U.S. 24. Transit, bike, and pedestrian conditions are programmed for improvement in this segment, while keeping much of the existing ROW available to private and freight vehicle use. Alongside mobility improvements programmed, this segment will see accessibility and safety investments at intersections and mid-block areas throughout the corridor.

Reference: Cost Estimation Technical Memo

Transit conditions are proposed to be improved to BRT-lite standard. While this is a smaller level of infrastructure change than segments 3 and 4, this still represents a substantial improvement on the existing provision of transit service in the area. The following improvements will be implemented:

Table 5: List of Transit Improvements in Segment 5

Existing condition	Improvement	Reasoning
No signal priority	Transit Signal Priority at 10 intersections	Improve travel time and reliability
No service on U.S. 24 east of Glenwood Ave	20-minute frequencies on U.S. 24 between Noland Rd and Winner Rd	Increase coverage; improve travel time and reliability
Parallel route (24): 23 stops spaced at ¼ stop spacings	12 stops at ½ mile stop spacings	Improve travel time and reliability
Varying condition of bus stops- sheltered, unsheltered, some benches	Consistent, amenity-rich bus stations	Improve user experience and safety
Bus stops located on shoulder	Bus stops located closer to travel lane	Reduces need for buses to pull out of traffic to serve a stop; improve travel time and reliability
60-minute frequencies (Route 24)	20-minute frequencies, most of the day	Decrease wait time; increase capacity; improve total travel time and reliability

Transit conditions are proposed to be improved through a mix of infrastructure and service improvements along the entirety of Segment 5. This includes the introduction of transit service on U.S. 24 between Winner Rd and Noland Rd and along Noland Rd between U.S. 24 and Independence Square. Service along the segment will be operated at 20-minute frequencies during the day, connecting with all other segments, allowing for a cross-state, one-seat ride between Independence Square and Village West. Infrastructure improvements include increased spacings between stops, implementation of TSP at 10 signalized intersections, and improved stops with more amenities for riders.

Pedestrian conditions are proposed to be improved through the filling of several sidewalk gaps throughout the segment. New sidewalks will vary between 3-10 ft, with most areas of the corridor seeing construction of sidewalks on both sides of the street, accompanied by buffers. Several crosswalks will be painted at intersections where crosswalks do not currently exist, alongside the alteration of intersection geometries to lower turning vehicle speeds and improve pedestrian safety. Much of the existing crossing lengths within the corridor will remain the same, although cross streets and crossings running parallel to the corridor will see reduced crossing distances where possible. Much of the construction activity along this segment will be focused on improvement of pedestrian infrastructure.

Reference: Cost Estimation Technical Memo

Although new bike-specific infrastructure is not programmed for this segment, bike accessibility is improved by the implementation of safer crossings, wide sidewalks, and the filling of sidewalk gaps.

Vehicle conditions are not proposed to be significantly altered in this segment. The existing road format will remain the same, and no road reconstruction is planned for this segment.

4 Cost Estimate

Cost estimates were developed by Stantec based on preliminary 15% Design within the Missouri portion of the corridor. Cost estimates are divided into Segments 3, 4, and 5, in line with the segment-based design process. Of these segments, Segments 3 and 4 are proposed to see the highest costs and most extensive construction activities, due to the number of proposed improvements to the system, while Segment 5 is expected to see lower cost per mile. All estimates are adjusted to include a 20% contingency, consistent with projects of this scale, and an adjustment to estimated 2031 inflation levels, the estimated project completion date. Unit costs were developed from recent project bid tabs in the Kansas City metro area and are unitized in cost estimation tables.

This section provides an overview of cost estimates for the Missouri portion of the corridor, listing the assumptions and items anticipated to be included in construction.

4.1 Cost Assumptions

Cost estimates are based on the assumptions of a full buildout of each segment as designed. This includes partial and full reconstruction of roadways and sidewalk facilities abutting roadways in the design area, and installation of new transit, bike, and pedestrian facilities. All costs outlined below are in 2031 dollars and include a 20% contingency, which is consistent with a project of this scale and scope. Costs are derived from a series of previous and ongoing projects' itemized costs to determine an average amount that the client could expect to ask of bidders.

BRT station estimates are based on a hybrid cost estimation model of existing KCATA procurement costs, peer agency costs, and other regional projects. Because this service will have elevated station quality as compared to existing MAX services, and because both existing MAX services had different station costs, this hybrid model seeks to smooth costs for each station—particularly in the event of bespoke station options, where costs may be variable.

4.2 Cost Items

Under the previously outlined cost assumptions and programmed improvements to the corridor, cost estimates were prepared by Stantec, mirroring those created by Olsson's work in Kansas. Costs were developed as both itemized and lump sum items, reflecting recent unit costs and generally accepted lump sum amounts for each item listed. These estimates were developed alongside engineering roll plots, which are described in Section 3.2. For more detailed cost estimate information, see the estimates for Segments 3-5 in Appendix A.

The tables below note the individual cost items considered in the cost estimates, as well as notes on their development.

Reference: Cost Estimation Technical Memo

Table 6: List of Project costs

Cost Item	Notes
MOBILIZATION	Startup costs for contractor.
CONTRACTOR CONSTRUCTION STAKING	Setting up and taking down construction sites.
REMOVAL OF EXISTING STRUCTURES	Removal of existing bus stops, either for removal of the stop or replacement with a new BRT shelter.
CLEARING AND GRUBBING	Clearing vegetation and surface debris from the site.
TRAFFIC CONTROL	Signage and contractor time dedicated to traffic control.
EROSION CONTROL	Erosion control for construction and environmental purposes; will be created in coordination with the project Stormwater Pollution Prevention Plan.
LANDSCAPING (STREET TREES)	Addition and replacement of trees in vegetated buffer areas.
UNCLASSIFIED EXCAVATION	Excavation of existing road and sidewalk elements and fill.
COMPACTION OF EARTHWORK (ALL TYPES)	Preparation of earth prior to addition of aggregate and road surface.
CURB AND GUTTER, TYPE B	Road reconstruction.
PINNED ON MEDIAN CURB	Median curb; traffic calming.
CONCRETE MEDIAN NOSE	Median nose; traffic calming.
SIDEWALK CONSTRUCTION (4") (AE)	Construction of new sidewalks; pedestrian improvements.
CONCRETE DRIVEWAY (6" CONCRETE)	Replacement of driveways will be required throughout the segment.
CONCRETE PAVEMENT (12" UNIFORM)(AE)	Concrete road pavement for vehicle traffic, more durable than HMA.
HMA COMMERCIAL GRADE (CLASS A)	Asphalt for road resurfacing.
CEMENT TREATED SUBGRADE (9")	Roadway base
AGGREGATE BASE (AB-3)(OP Modified)(4")	Sidewalk base
AGGREGATE BASE (AB-3)(OP Modified)(6")	Roadway base
STORM SEWER SYSTEM	Road reconstructions will require interaction with the storm sewer system. Relocations and reconstructions are possible as a result of the project.
BUS STOPS	New improved BRT bus stops with shelters, benches, trip information, trash bins, and lighting.
PAVEMENT MARKING	Bus, bike, road, and pedestrian painted markings.
SOD	Construction fill.
TRAFFIC SIGNAL	Reconstruction of new traffic signals. Most existing signals will be retained.
TRANSIT SIGNAL PRIORITY EQUIPMENT	Implementation of TSP on 47 intersections along the alignment.
STREET LIGHTING	Reconstruction of new street lighting elements. Most existing lighting will be retained.
HAWK SIGNAL	High-intensity Activated crossWalk beacon; improves pedestrian crossing safety.

Reference: Cost Estimation Technical Memo

4.3 Summarized Costs

Total construction cost for the BSRC is anticipated to be \$222.7 million, spread between Kansas and Missouri. This will include partial and full road reconstructions, transit improvements, sidewalk improvements, bikeway improvements, and other costs such as mobilization and staking. The cost tables below provide an overview of project costs in Missouri and Kansas. Costs are broken down by segment, the jurisdiction of each cost, cost per mile, and the type of infrastructure. Inflation between the writing of this report and the anticipated project completion date is anticipated to be 16%. Contingency is currently 20%, due to the project type and stage of project development. Contingency, alongside construction costs, has been inflated to the 2031 level. ROW has not been inflated due to the anticipation of property acquisition earlier in the process.

Note: All figures in this section are rounded to the nearest \$10,000. See Appendix A for exact figures.

4.3.1 Cost per Mile

Cost per mile is anticipated to be highest in the segments seeing full BRT implementation. This is due to both more intensive transit, bike, and pedestrian improvements, and because the existing roadways in Segments 4 and 5 are programmed to be at least partially reconstructed. U.S. 24, which takes up much of Segment 5, is not planned for reconstruction or many of the multimodal improvements planned for Segments 3 and 4, and will therefore see a lower cost per mile figure.

Table 7: Summarized Construction Costs for Segment 3 (BRT)

Segment 3	
Construction	\$ 25,160,000
Contingency (20%) and 2031 Inflation (16%)	\$ 9,860,000
Total	\$ 35,030,000
Miles	2.49
Cost per Mile	\$ 14,070,000

Table 8: Summarized Construction Costs for Segment 4 (BRT)

Segment 4	
Construction	\$ 34,920,000
Contingency (20%) and 2031 Inflation (16%)	\$ 13,680,000
Total	\$ 48,610,000
Miles	4.07
Cost per Mile	\$ 11,940,000

Reference: Cost Estimation Technical Memo

Table 9: Summarized Construction Costs for Segment 5 (BRT-lite)

Segment 5	
Construction	\$ 21,980,000
Contingency (20%) and 2031 Inflation (16%)	\$ 8,620,000
Total	\$ 30,600,000
Miles	6.56
Cost per Mile	\$ 4,660,000

4.3.2 Capital Cost by Category and Segment

Capital costs will be split between Kansas and Missouri, with the division of both planning and funding efforts divided at the state line. Segment 3 is split between Kansas and Missouri, with the majority of the segment and associated improvements located in Downtown Kansas City, MO, a major node in the BSRC.

Table 10: Capital Costs in Kansas by Category and Segment

Category	Segment 1	Segment 2	Segment 3	Total Cost
Mobilization and Staging	\$690,000	\$2,380,000	\$730,000	\$3,800,000
Transit Improvements	\$60,000	\$7,150,000	\$2,150,000	\$9,360,000
Roadway Construction	\$5,170,000	\$33,800,000	\$10,400,000	\$49,370,000
Sidewalk Construction	\$8,150,000	\$5,620,000	\$1,640,000	\$15,400,000
Construction Subtotal	\$14,070,000	\$48,940,000	\$14,920,000	\$77,940,000
ROW Costs	\$ -	\$ -	\$ -	\$ -
Contingency (20%)	\$2,810,000	\$9,790,000	\$2,980,000	\$15,590,000
Inflation to 2031 (16%)	\$2,700,000	\$9,400,000	\$2,860,000	\$14,960,000
Probable Cost	\$19,590,000	\$68,130,000	\$20,770,000	\$108,490,000

Table 11: Capital Costs in Missouri by Category and Segment

Category	Segment 3	Segment 4	Segment 5	Total Cost
Mobilization and Staging	\$1,670,000	\$2,320,000	\$1,460,000	\$5,440,000
Transit Improvements	\$4,660,000	\$6,330,000	\$8,140,000	\$19,130,000
Roadway Construction	\$18,830,000	\$25,170,000	\$6,770,000	\$50,770,000
Sidewalk Construction	\$ -	\$1,110,000	\$5,620,000	\$6,730,000
Construction Subtotal	\$25,160,000	\$34,920,000	\$21,980,000	\$82,060,000
ROW Costs	\$4,950,000	\$4,950,000	\$4,950,000	\$4,950,000
Contingency (20%)	\$5,030,000	\$6,980,000	\$4,400,000	\$16,410,000
Inflation to 2031 (16%)	\$4,830,000	\$6,700,000	\$4,220,000	\$15,760,000

Reference: Cost Estimation Technical Memo

Category	Segment 3	Segment 4	Segment 5	Total Cost
Probable Cost	\$35,030,000	\$48,610,000	\$30,600,000	\$114,230,000

4.3.3 Capital Cost by Jurisdiction

The following table breaks out capital costs borne by each funding jurisdiction. Four jurisdictions, Unified Government of Kansas City, KS and Wyandotte County; Kansas City, MO; MoDOT; and Independence, MO are anticipated to partially fund the BSRC. Costs are divided by the jurisdiction of each improvement and the ownership of road segments where each improvement is made. The table below outlines the contributions of each jurisdiction based on total cost, and the subtypes for transit, road, sidewalk, ROW, and staking and mobilization costs.

Table 12: Capital Costs by Jurisdiction

By Jurisdiction				
Category	Unified Governments	Kansas City, MO	MODOT	Independence, MO
Construction Cost Total	\$114,000,000	\$61,050,000	\$24,000,000	\$2,000,000
Transit Improvements	\$33,900,000	\$13,990,000	\$9,700,000	\$ -
Road Construction	\$48,622,000	\$44,663,000	\$5,975,000	\$680,000
Sidewalk Improvements	\$14,890,000	\$2,060,000	\$6,050,000	\$640,000
Mobilization & Staking	\$6,410,000	\$4,570,000	\$1,750,000	\$330,000
ROW Cost	\$ -	\$10,210,000	\$4,890,000	\$910,000
TOTAL	\$114,000,000	\$91,440,000	\$28,890,000	\$2,910,000

Reference: Cost Estimation Technical Memo

5 Attachments

A.1 Appendix A: Cost Sheets for Segments 3-5 (Missouri)



ENGINEER'S OPINION OF PROBABLE COST
Segment 3 (Missouri) - Liberty Street & 12th to East Village Transit Center (KCMO)

Client: MARC

Project: Bi-State Sustainable Reinvestment Corridor

Project Number: 022-05672

Date: 4/8/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$ 1,198,000.00	\$1,198,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$ 470,000.00	\$470,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$ 150,000.00	\$150,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$ 100,000.00	\$100,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$ 684,000.00	\$684,000.00
6	EROSION CONTROL	1	LUMP SUM	\$ 261,000.00	\$261,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$ 454,000.00	\$454,000.00
8	UNCLASSIFIED EXCAVATION	58000	CU. YD.	\$ 45.00	\$2,610,000.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	23000	CU. YD.	\$ 5.00	\$115,000.00
10	CURB AND GUTTER, TYPE B	34000	LIN. FT.	\$ 35.00	\$1,190,000.00
11	PINNED ON MEDIAN CURB	9	SQ. YD.	\$ 200.00	\$1,800.00
12	CONCRETE MEDIAN NOSE	2	EACH	\$ 2,000.00	\$4,000.00
13	SIDEWALK CONSTRUCTION (4") (AE)	0	SQ. YD.	\$ 60.00	\$0.00
14	CONCRETE DRIVEWAY (6" CONCRETE)	0	SQ. YD.	\$ 80.00	\$0.00
15	CONCRETE PAVEMENT (12" UNIFORM)(AE)	1300	SQ. YD.	\$ 225.00	\$292,500.00
16	HMA COMMERCIAL GRADE (CLASS A)	51200	TON	\$ 90.00	\$4,608,000.00
17	CEMENT TREATED SUBGRADE (9")	76800	SQ. YD.	\$ 15.00	\$1,152,000.00
18	AGGREGATE BASE (AB-3)(OP Modified)(4")	0	SQ. YD.	\$ 18.00	\$0.00
19	AGGREGATE BASE (AB-3)(OP Modified)(6")	78100	SQ. YD.	\$ 20.00	\$1,562,000.00
20	STORM SEWER SYSTEM	1	LUMP SUM	\$ 3,810,000.00	\$3,810,000.00
23	BUS STOPS	12	EACH	\$ 321,000.00	\$3,852,000.00
24	PAVEMENT MARKING	1	LUMP SUM	\$ 705,332.00	\$705,332.00
25	SOD	0	SQ. YD.	\$ 10.00	\$0.00
26	HAWK SYSTEM	0	LUMP SUM	\$ 80,000.00	\$0.00
27	TRAFFIC SIGNAL	1	EACH	\$ 500,000.00	\$500,000.00
28	TRANSIT SIGNAL PRIORITY EQUIPMENT	22	EACH	\$ 30,000.00	\$660,000.00
29	STREET LIGHTING	1	LUMP SUM	\$ 783,000.00	\$783,000.00

SUBTOTAL 2026 Dollars **\$25,162,632.00**

CONTINGENCY **20%** **\$5,032,526.40**

INFLATION TO 2031 DOLLARS **16.0%** **\$4,831,225.34**

OPINION OF PROBABLE COST 2031 DOLLARS **\$35,026,383.74**

Note:

1 Quantities derived from 15% plan layouts on an aerial background.

Sub Categories (in 2031 \$):

Construction Cost Total	\$ 35,026,383.74
Transit Cost	\$ 7,020,320.00
Road Construction Cost	\$ 24,926,939.52
Sidewalk Cost	\$ -
Mobilization & Staking Cost	\$ 3,039,280.00
ROW Cost	\$ 4,950,000.00

Rounded Totals	
\$ 35,000,000.00	
\$ 7,000,000.00	
\$ 24,927,000.00	
\$ -	
\$ 3,040,000.00	
\$ 4,950,000.00	

\$ 34,986,539.52

\$ 34,967,000.00

\$ 33,000.00 error in rounding

Rounded Segment 3 (EAST) Total \$ 39,950,000.00



ENGINEER'S OPINION OF PROBABLE COST

Segment 4 (Missouri) - East Village Transit Center to Independence & Winner Road (KCMO)

Client: MARC

Project: Bi-State Sustainable Reinvestment Corridor

Project Number: 022-05672

Date: 4/8/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$ 1,663,000.00	\$1,663,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$ 652,000.00	\$652,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$ 100,000.00	\$100,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$ 100,000.00	\$100,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$ 950,000.00	\$950,000.00
6	EROSION CONTROL	1	LUMP SUM	\$ 336,000.00	\$336,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$ 454,000.00	\$454,000.00
8	UNCLASSIFIED EXCAVATION	102000	CU. YD.	\$ 45.00	\$4,590,000.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	41000	CU. YD.	\$ 5.00	\$205,000.00
10	CURB AND GUTTER, TYPE B	50000	LIN. FT.	\$ 35.00	\$1,750,000.00
11	PINNED ON MEDIAN CURB	230	SQ. YD.	\$ 200.00	\$46,000.00
12	CONCRETE MEDIAN NOSE	26	EACH	\$ 2,000.00	\$52,000.00
13	SIDEWALK CONSTRUCTION (4") (AE)	13200	SQ. YD.	\$ 60.00	\$792,000.00
14	CONCRETE DRIVEWAY (6" CONCRETE)	0	SQ. YD.	\$ 80.00	\$0.00
15	CONCRETE PAVEMENT (12" UNIFORM)(AE)	2000	SQ. YD.	\$ 225.00	\$450,000.00
16	HMA COMMERCIAL GRADE (CLASS A)	87300	TON	\$ 90.00	\$7,857,000.00
17	CEMENT TREATED SUBGRADE (9")	130900	SQ. YD.	\$ 15.00	\$1,963,500.00
18	AGGREGATE BASE (AB-3)(OP Modified)(4")	13200	SQ.YD.	\$ 18.00	\$237,600.00
19	AGGREGATE BASE (AB-3)(OP Modified)(6")	132900	SQ.YD.	\$ 20.00	\$2,658,000.00
20	STORM SEWER SYSTEM	1	LUMP SUM	\$ 2,067,000.00	\$2,067,000.00
23	BUS STOPS	18	EACH	\$ 321,000.00	\$5,778,000.00
24	PAVEMENT MARKING	1	LUMP SUM	\$ 1,270,000.00	\$1,270,000.00
25	SOD	1900	SQ. YD.	\$ 10.00	\$19,000.00
26	HAWK SYSTEM	1	LUMP SUM	\$ 80,000.00	\$80,000.00
27	TRAFFIC SIGNAL	0	EACH	\$ 500,000.00	\$0.00
28	TRANSIT SIGNAL PRIORITY EQUIPMENT	15	EACH	\$ 30,000.00	\$450,000.00
29	STREET LIGHTING	1	LUMP SUM	\$ 400,000.00	\$400,000.00

SUBTOTAL 2026 Dollars **\$34,920,100.00**

CONTINGENCY 20% **\$6,984,020.00**

INFLATION TO 2031 DOLLARS 16.0% **\$6,704,659.20**

OPINION OF PROBABLE COST 2031 DOLLARS **\$48,608,779.20**

Note:

1 Quantities derived from 15% plan layouts on an aerial background.

PEL Numbers (in 2031 \$):

Construction Cost Total	\$ 48,608,779.20
Transit Cost	\$ 8,606,080.00
Road Construction Cost	\$ 34,157,080.00
Sidewalk Cost	\$ 1,509,056.00
Mobilization & Staking Cost	\$ 4,217,680.00
ROW Cost	\$ 3,630,000.00

Rounded Totals

\$ 49,000,000.00
\$ 8,600,000.00
\$ 34,157,000.00
\$ 1,510,000.00
\$ 4,220,000.00
\$ 3,630,000.00

\$ 48,489,896.00

\$ 48,487,000.00

\$ 513,000.00 error in rounding

Rounded Segment 4 Total \$ 52,630,000.00



ENGINEER'S OPINION OF PROBABLE COST

Segment 5 (Missouri) - Independence & Winner Road (KCMO) to Noland Road (Independence)

Client: MARC

Project: Bi-State Sustainable Reinvestment Corridor

Project Number: 022-05672

Date: 4/8/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$ 1,047,000.00	\$1,047,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$ 410,000.00	\$410,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$ 150,000.00	\$150,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$ 80,000.00	\$80,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$ 399,000.00	\$399,000.00
6	EROSION CONTROL	1	LUMP SUM	\$ 148,000.00	\$148,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$ 732,000.00	\$732,000.00
8	UNCLASSIFIED EXCAVATION	16000	CU. YD.	\$ 45.00	\$720,000.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	6000	CU. YD.	\$ 5.00	\$30,000.00
10	CURB AND GUTTER, TYPE B	12000	LIN. FT.	\$ 35.00	\$420,000.00
11	PINNED ON MEDIAN CURB	4800	SQ. YD.	\$ 200.00	\$960,000.00
12	CONCRETE MEDIAN NOSE	72	EACH	\$ 2,000.00	\$144,000.00
13	SIDEWALK CONSTRUCTION (4") (AE)	72000	SQ. YD.	\$ 60.00	\$4,320,000.00
14	CONCRETE DRIVEWAY (6" CONCRETE)	0	SQ. YD.	\$ 80.00	\$0.00
15	CONCRETE PAVEMENT (12" UNIFORM)(AE)	0	SQ. YD.	\$ 225.00	\$0.00
16	HMA COMMERCIAL GRADE (CLASS A)	0	TON	\$ 90.00	\$0.00
17	CEMENT TREATED SUBGRADE (9")	0	SQ. YD.	\$ 15.00	\$0.00
18	AGGREGATE BASE (AB-3)(OP Modified)(4")	72000	SQ.YD.	\$ 18.00	\$1,296,000.00
19	AGGREGATE BASE (AB-3)(OP Modified)(6")	0	SQ.YD.	\$ 20.00	\$0.00
20	STORM SEWER SYSTEM	0	LUMP SUM	\$ -	\$0.00
21	BUS STOPS	24	EACH	\$ 321,000.00	\$7,704,000.00
22	PAVEMENT MARKING	1	LUMP SUM	\$ 73,250.00	\$73,250.00
23	SOD	0	SQ. YD.	\$ 10.00	\$0.00
24	HAWK SYSTEM	0	LUMP SUM	\$ 80,000.00	\$0.00
25	TRAFFIC SIGNAL	2	EACH	\$ 500,000.00	\$1,000,000.00
26	TRANSIT SIGNAL PRIORITY EQUIPMENT	10	EACH	\$ 30,000.00	\$285,000.00
27	STREET LIGHTING	1	LUMP SUM	\$ 2,061,000.00	\$2,061,000.00

SUBTOTAL 2026 Dollars \$21,979,250.00

CONTINGENCY 20% \$4,395,850.00

INFLATION TO 2031 DOLLARS 16.0% \$4,220,016.00

OPINION OF PROBABLE COST 2031 DOLLARS \$30,595,116.00

Note:

1 Quantities derived from 15% plan layouts on an aerial background.

PEL Numbers (in 2031 \$):

Construction Cost Total	\$ 30,595,116.00
Transit Cost	\$ 12,429,040.00
Road Construction Cost	\$ 7,647,620.00
Sidewalk Cost	\$ 7,637,760.00
Mobilization & Staking Cost	\$ 2,653,920.00
ROW Cost	\$ 7,425,000.00

Rounded Totals

\$ 31,000,000.00
\$ 12,400,000.00
\$ 7,648,000.00
\$ 7,640,000.00
\$ 2,650,000.00
\$ 7,430,000.00

\$ 30,368,340.00

\$ 30,338,000.00

\$ 226,776.00

\$ 662,000.00

error in rounding

Rounded Segment 5 Total \$ 38,430,000.00

Reference: Cost Estimation Technical Memo

A.2 Appendix B: Cost Sheets for Segments 1-3 (Kansas)



ENGINEER'S OPINION OF PROBABLE COST

Segment 1 Village West to 47th Street KCK

Client: MARC
Project: Bi-State Sustainable Reinvestment Corridor
Project Number: 022-05672
Date: 4/13/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$671,000.00	\$671,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$20,000.00	\$20,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$50,000.00	\$50,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$100,000.00	\$100,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$100,000.00	\$100,000.00
6	EROSION CONTROL	1	LUMP SUM	\$50,000.00	\$50,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$200,000.00	\$200,000.00
8	UNCLASSIFIED EXCAVATION	27168	CU. YD.	\$45.00	\$1,222,550.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	14000	CU. YD.	\$5.00	\$70,000.00
10	CURB AND GUTTER, TYPE B	3676	LIN. FT.	\$35.00	\$128,660.00
11	SIDEWALK CONSTRUCTION (4") (AE)	732853	SQ. FT.	\$9.00	\$6,595,677.00
12	CONCRETE PAVEMENT (4" UNIFORM)(AE)(PLAIN)(STAMPED COLOR)	819	SQ. YD.	\$85.00	\$69,615.00
13	CONCRETE PAVEMENT (12" UNIFORM)(AE)	1354	SQ. YD.	\$225.00	\$304,650.00
14	HMA COMMERCIAL GRADE (CLASS A)	73	TON	\$90.00	\$6,570.00
15	AGGREGATE BASE (AB-3)(OP Modified)(4")	82456	SQ.YD.	\$18.00	\$1,484,208.00
16	AGGREGATE BASE (AB-3)(OP Modified)(6")	1518	SQ.YD.	\$20.00	\$30,360.00
17	BUS STOPS	27	EACH	\$420.00	\$11,340.00
18	PAVEMENT MARKING	1	LUMP SUM	\$198,000.00	\$198,000.00
19	SOD	43928	SQ. YD.	\$10.00	\$439,280.00
20	TRAFFIC SIGNAL MODIFCATION	29	EACH	\$80,000.00	\$2,320,000.00

SUBTOTAL 2026 Dollars	\$14,071,910.00
CONTINGENCY	20% \$2,814,382.00
INFLATION TO 2031 DOLLARS	16.0% \$2,701,806.72
OPINION OF PROBABLE COST 2031 DOLLARS	\$19,588,098.72

Note:

1 Quantities derived from 15% plan layouts on an aerial background.



ENGINEER'S OPINION OF PROBABLE COST

Segment 2 - 47th Street to 7th Street KCK

Client: MARC
Project: Bi-State Sustainable Reinvestment Corridor
Project Number: 022-05672
Date: 4/13/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$2,331,000.00	\$2,331,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$50,000.00	\$50,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$1,000,000.00	\$1,000,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$100,000.00	\$100,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$1,298,000.00	\$1,298,000.00
6	EROSION CONTROL	1	LUMP SUM	\$455,000.00	\$455,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$455,000.00	\$455,000.00
8	UNCLASSIFIED EXCAVATION	94000	CU. YD.	\$45.00	\$4,230,000.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	32000	CU. YD.	\$5.00	\$160,000.00
10	CURB AND GUTTER, TYPE B	29395	LIN. FT.	\$35.00	\$1,028,825.00
11	PINNED ON MEDIAN CURB	433	SQ. YD.	\$200.00	\$86,534.00
12	CONCRETE MEDIAN NOSE	4	EACH	\$2,000.00	\$8,000.00
13	SIDEWALK CONSTRUCTION (4") (AE)	396987	SQ. FT.	\$9.00	\$3,572,883.00
14	CONCRETE DRIVEWAY (6" CONCRETE)	15613	SQ. YD.	\$80.00	\$1,249,040.00
15	CONCRETE PAVEMENT (12" UNIFORM)(AE)	837	SQ. YD.	\$225.00	\$188,406.00
16	HMA COMMERCIAL GRADE (CLASS A)	60624	TON	\$90.00	\$5,456,160.00
17	CEMENT TREATED SUBGRADE (9")	100430	SQ. YD.	\$11.00	\$1,104,730.00
18	AGGREGATE BASE (AB-3)(OP Modified)(4")	44110	SQ.YD.	\$18.00	\$793,980.00
19	AGGREGATE BASE (AB-3)(OP Modified)(6")	100430	SQ.YD.	\$20.00	\$2,008,600.00
20	STORM SEWER SYSTEM	1	LUMP SUM	\$6,074,000.00	\$6,074,000.00
23	BUS STOPS	14	EACH	\$420,000.00	\$5,880,000.00
24	7TH & MINNESOTA NON BRT IMPROVEMENTS	1	LUMP SUM	\$420,000.00	\$420,000.00
25	PAVEMENT MARKING	1	LUMP SUM	\$4,497,000.00	\$4,497,000.00
40	SOD	2809	SQ. YD.	\$10.00	\$28,090.00
41	TRAFFIC SIGNAL	9	EACH	\$500,000.00	\$4,500,000.00
42	TRANSIT SIGNAL PRIORITY EQUIPMENT	9	EACH	\$30,000.00	\$270,000.00
43	TRAFFIC SIGNAL MODIFCATION	5	EACH	\$80,000.00	\$400,000.00
44	STREET LIGHTING	1	LUMP SUM	\$1,298,000.00	\$1,298,000.00

SUBTOTAL 2026 Dollars	\$48,943,248.00
CONTINGENCY	20% \$9,788,649.60
INFLATION TO 2031 DOLLARS	16.0% \$9,397,103.62
OPINION OF PROBABLE COST 2031 DOLLARS	\$68,129,001.22

Note:

1 Quantities derived from 15% plan layouts on an aerial background.



ENGINEER'S OPINION OF PROBABLE COST

Segment 3 (Kansas) - 7th Street to State Line KCK

Client: MARC
Project: Bi-State Sustainable Reinvestment Corridor
Project Number: 022-05672
Date: 4/13/2026

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST \$	COST \$
1	MOBILIZATION	1	LUMP SUM	\$711,000.00	\$711,000.00
2	CONTRACTOR CONSTRUCTION STAKING	1	LUMP SUM	\$20,000.00	\$20,000.00
3	REMOVAL OF EXISTING STRUCTURES	1	LUMP SUM	\$800,000.00	\$800,000.00
4	CLEARING AND GRUBBING	1	LUMP SUM	\$100,000.00	\$100,000.00
5	TRAFFIC CONTROL	1	LUMP SUM	\$412,000.00	\$412,000.00
6	EROSION CONTROL	1	LUMP SUM	\$103,000.00	\$103,000.00
7	LANDSCAPING (STREET TREES)	1	LUMP SUM	\$145,000.00	\$145,000.00
8	UNCLASSIFIED EXCAVATION	22000	CU. YD.	\$45.00	\$990,000.00
9	COMPACTION OF EARTHWORK (ALL TYPES)	11000	CU. YD.	\$5.00	\$55,000.00
10	CURB AND GUTTER, TYPE B	10423	LIN. FT.	\$35.00	\$364,805.00
11	PINNED ON MEDIAN CURB	420	SQ. YD.	\$200.00	\$84,000.00
12	CONCRETE MEDIAN NOSE	2	EACH	\$2,000.00	\$4,000.00
13	SIDEWALK CONSTRUCTION (4") (AE)	114639	SQ. FT.	\$9.00	\$1,031,751.00
14	CONCRETE DRIVEWAY (6" CONCRETE)	4694	SQ. YD.	\$80.00	\$375,520.00
15	CONCRETE PAVEMENT (12" UNIFORM)(AE)	233	SQ. YD.	\$225.00	\$52,425.00
16	HMA COMMERCIAL GRADE (CLASS A)	19994	TON	\$90.00	\$1,799,460.00
17	CEMENT TREATED SUBGRADE (9")	33333	SQ. YD.	\$11.00	\$366,663.00
18	AGGREGATE BASE (AB-3)(OP Modified)(4")	12738	SQ.YD.	\$18.00	\$229,284.00
19	AGGREGATE BASE (AB-3)(OP Modified)(6")	33333	SQ.YD.	\$20.00	\$666,660.00
20	STORM SEWER SYSTEM	1	LUMP SUM	\$2,067,000.00	\$2,067,000.00
23	BUS STOPS	3	EACH	\$420,000.00	\$1,260,000.00
24	PAVEMENT MARKING	1	LUMP SUM	\$1,270,000.00	\$1,270,000.00
34	SOD	2416	SQ. YD.	\$10.00	\$24,160.00
35	TRAFFIC SIGNAL	3	EACH	\$500,000.00	\$1,500,000.00
36	TRANSIT SIGNAL PRIORITY EQUIPMENT	3	EACH	\$30,000.00	\$90,000.00
37	STREET LIGHTING	1	LUMP SUM	\$400,000.00	\$400,000.00

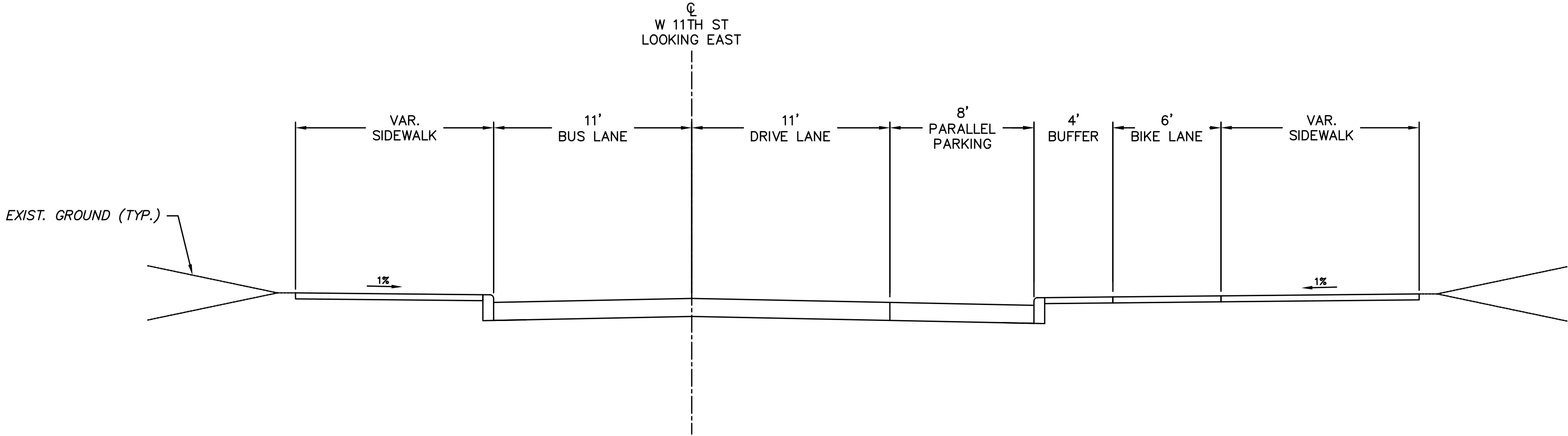
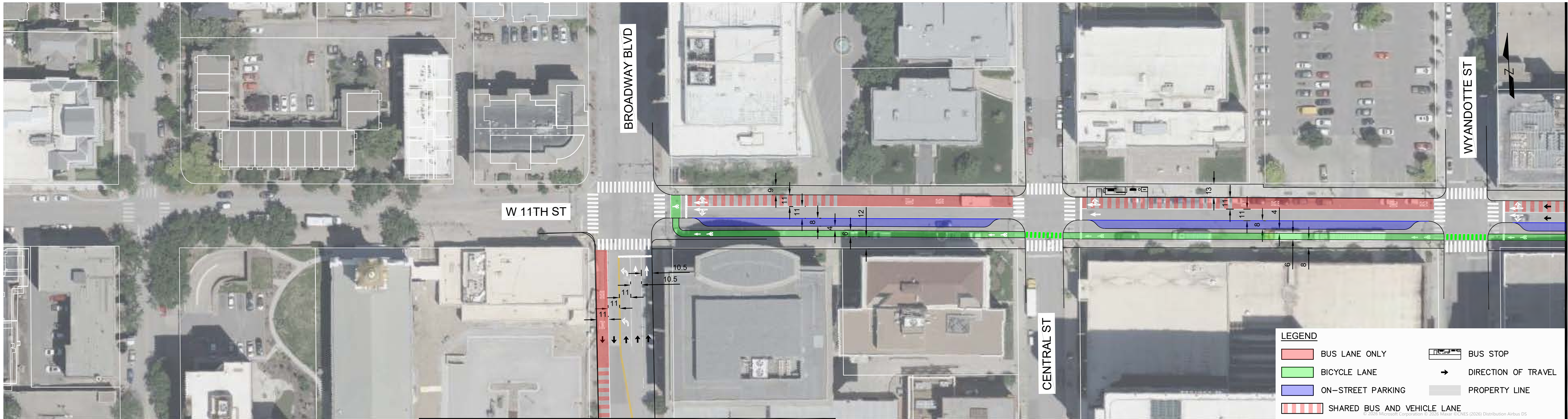
SUBTOTAL 2026 Dollars		\$14,921,728.00
CONTINGENCY	20%	\$2,984,345.60
INFLATION TO 2031 DOLLARS	16.0%	\$2,864,971.78
OPINION OF PROBABLE COST 2031 DOLLARS		\$20,771,045.38

Note:

1 Quantities derived from 15% plan layouts on an aerial background.

Reference: Cost Estimation Technical Memo

A.3 Appendix C: Concept Drawings for 11th St, Charlotte St, Independence Ave (Segments 3-4, Missouri)



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Permit-Seal

Consultants

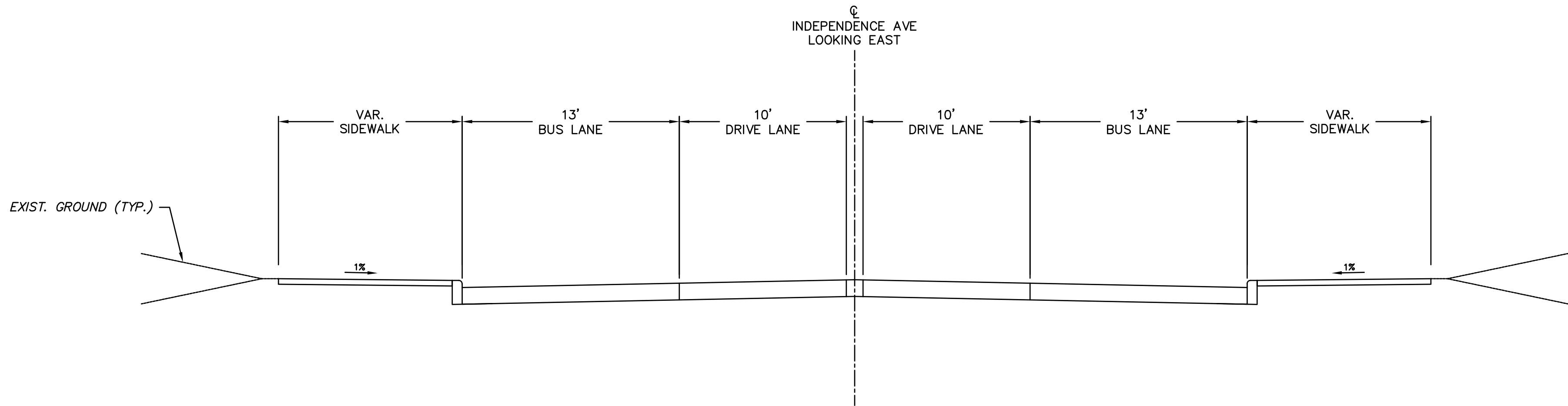
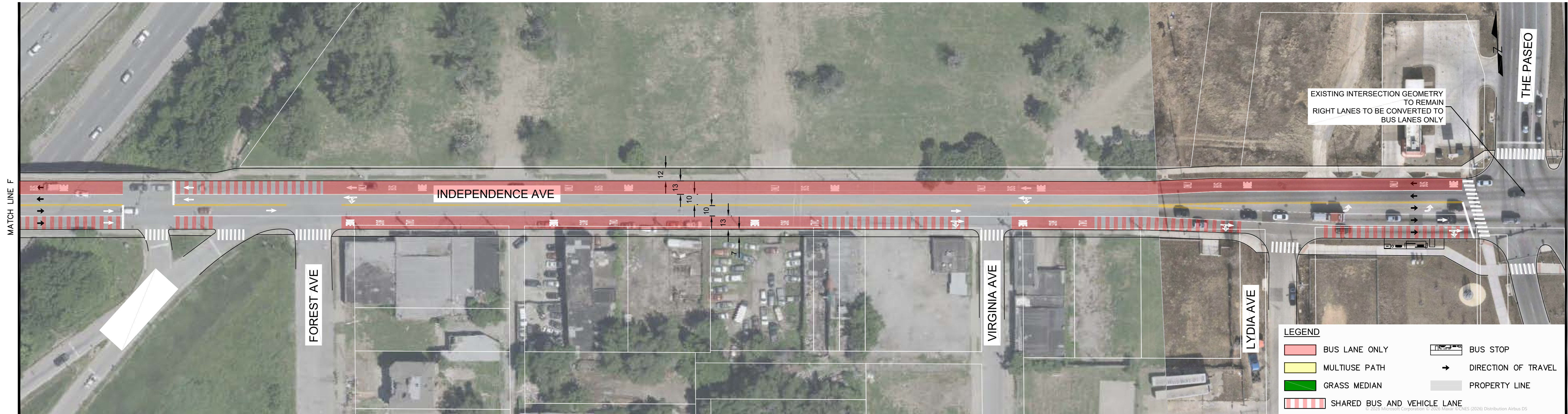


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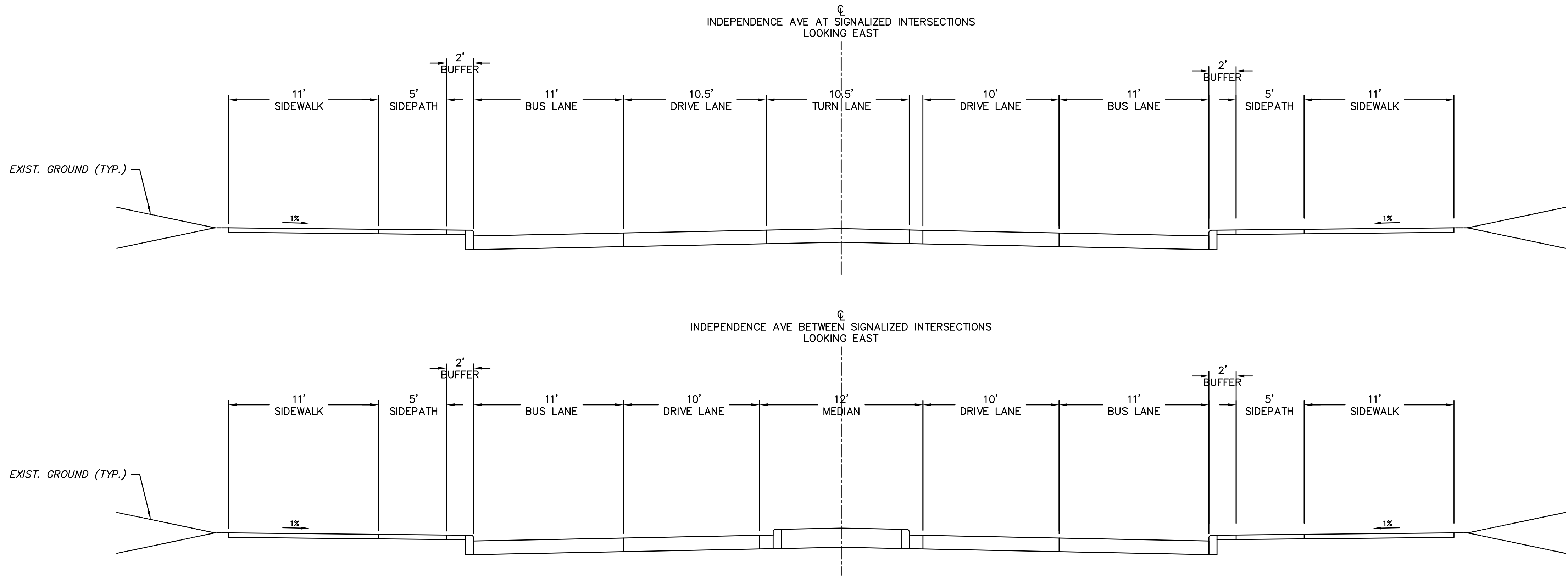
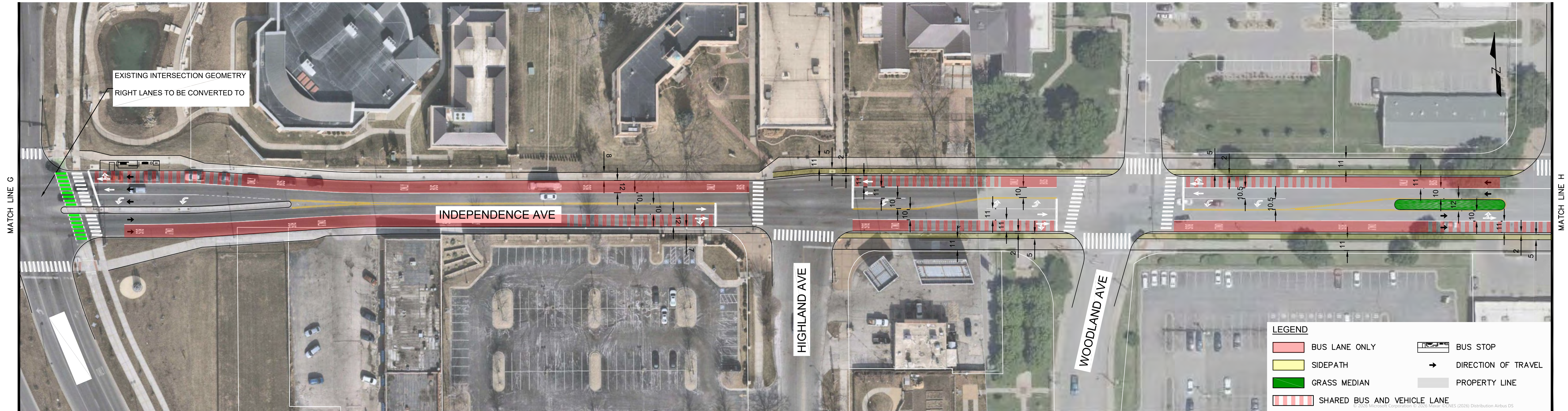
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	REGIONAL TRANSIT AND INFRASTRUCTURE IMPROVEMENT PROJECT
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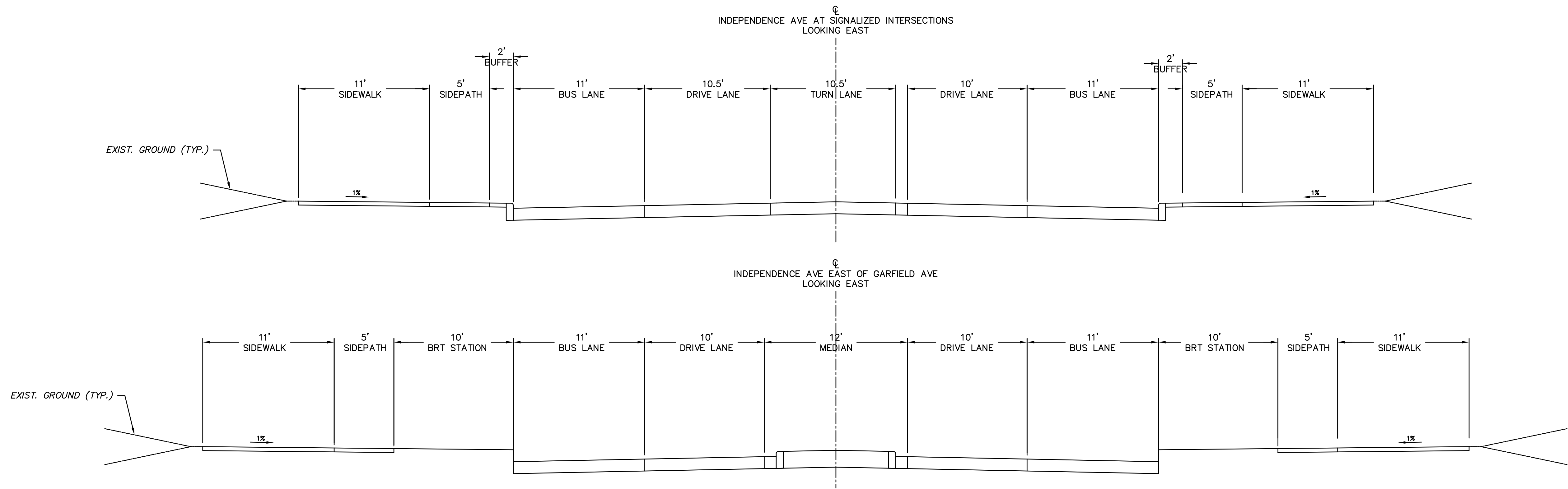
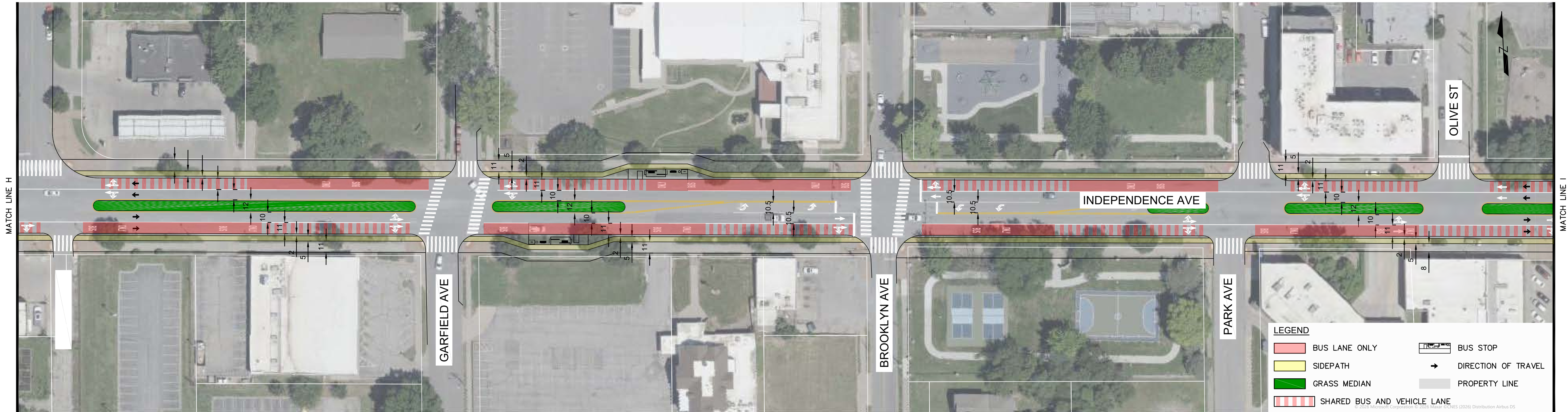
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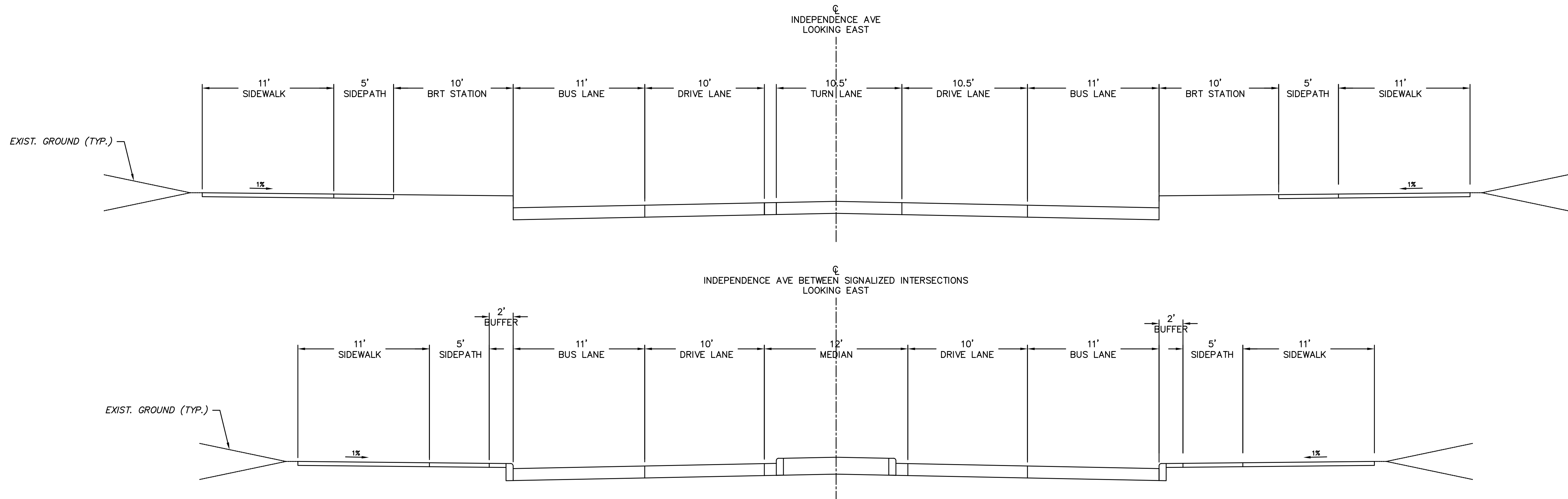
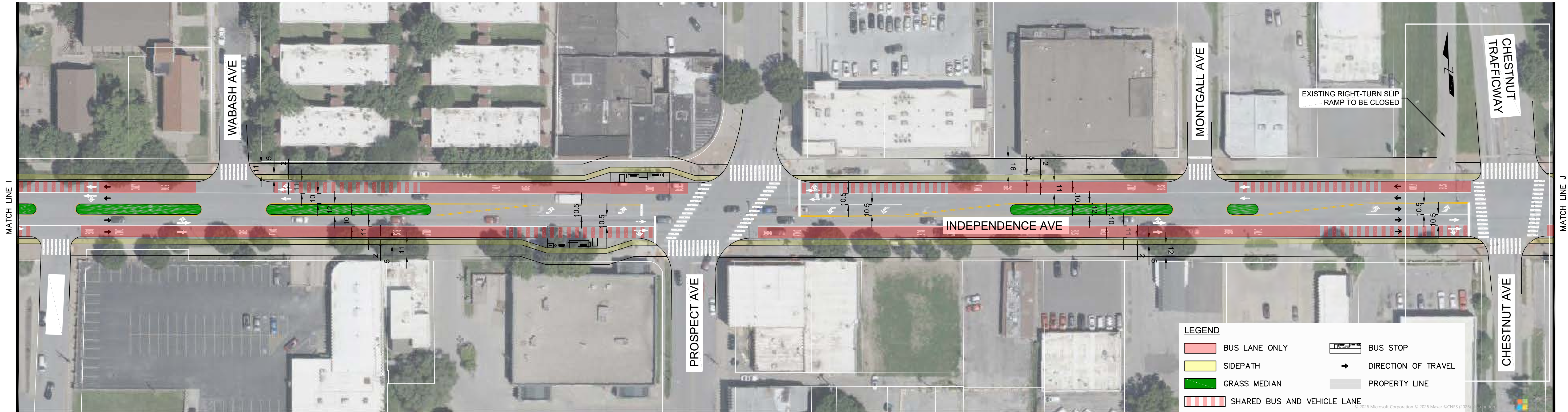


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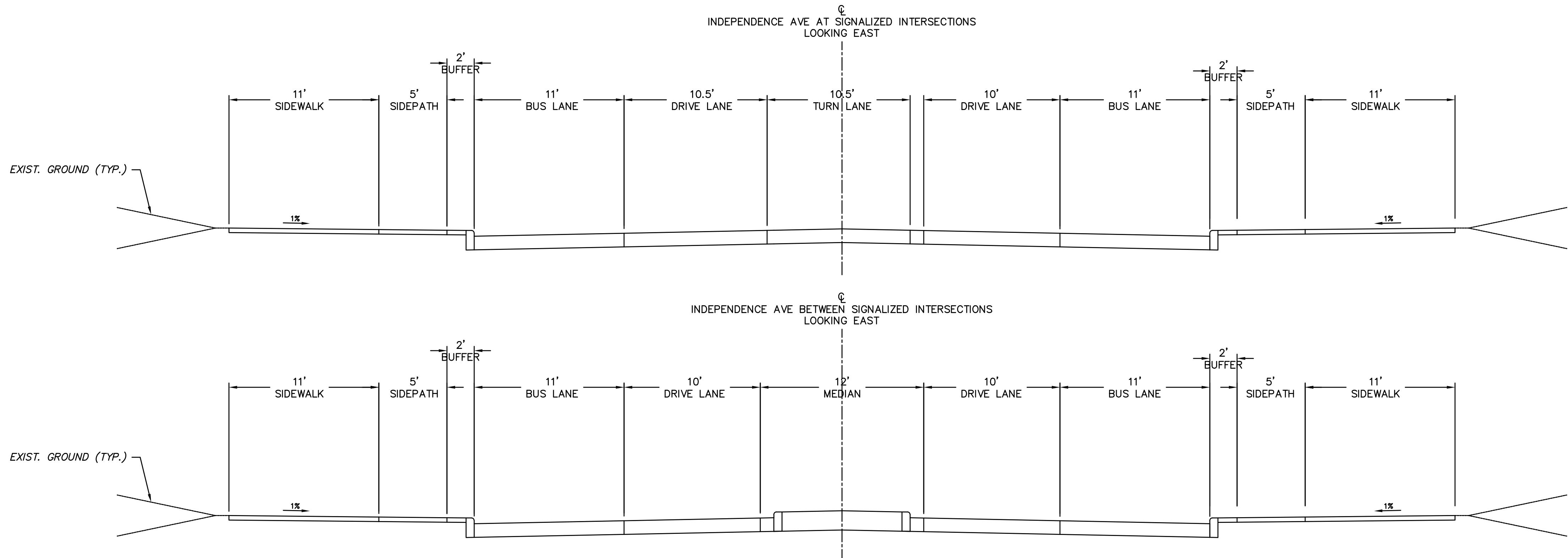
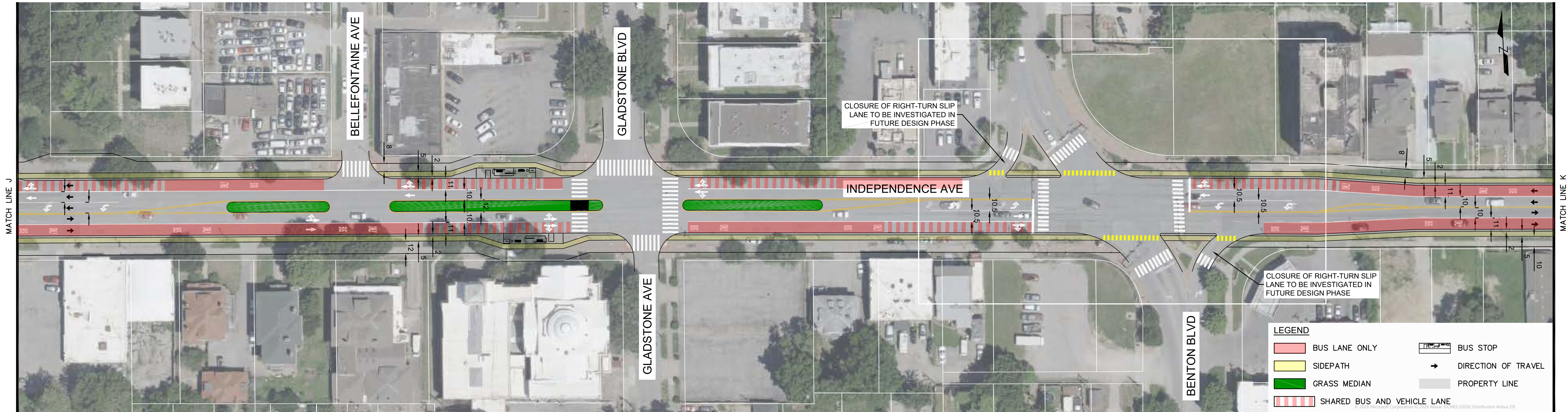
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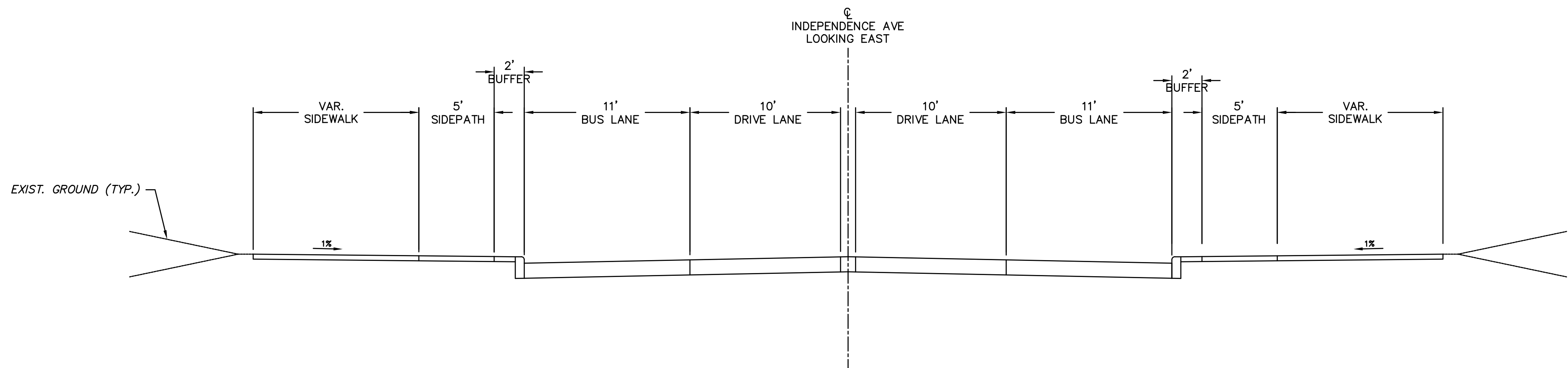
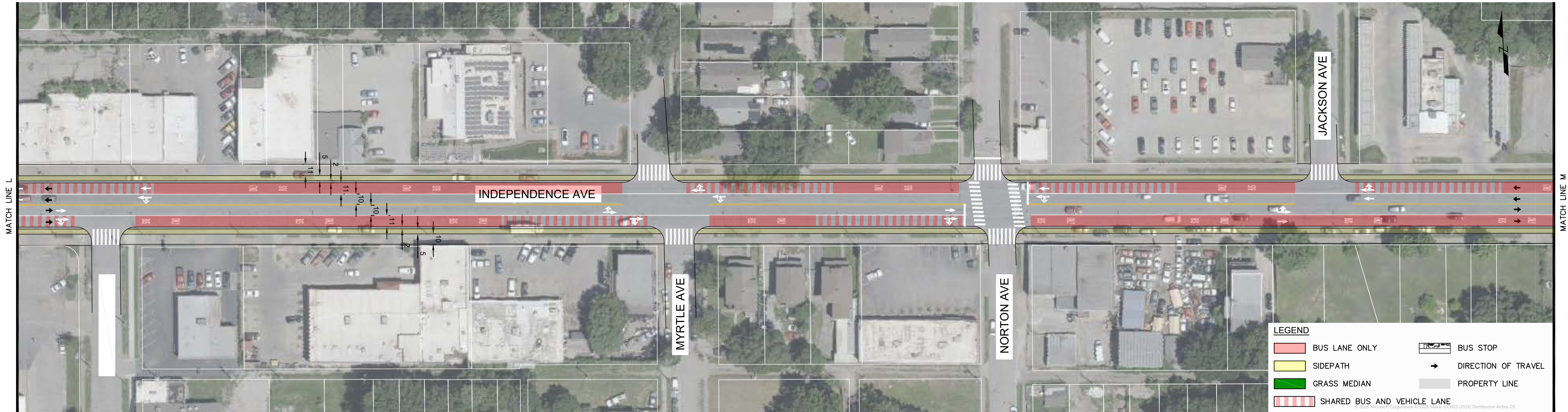
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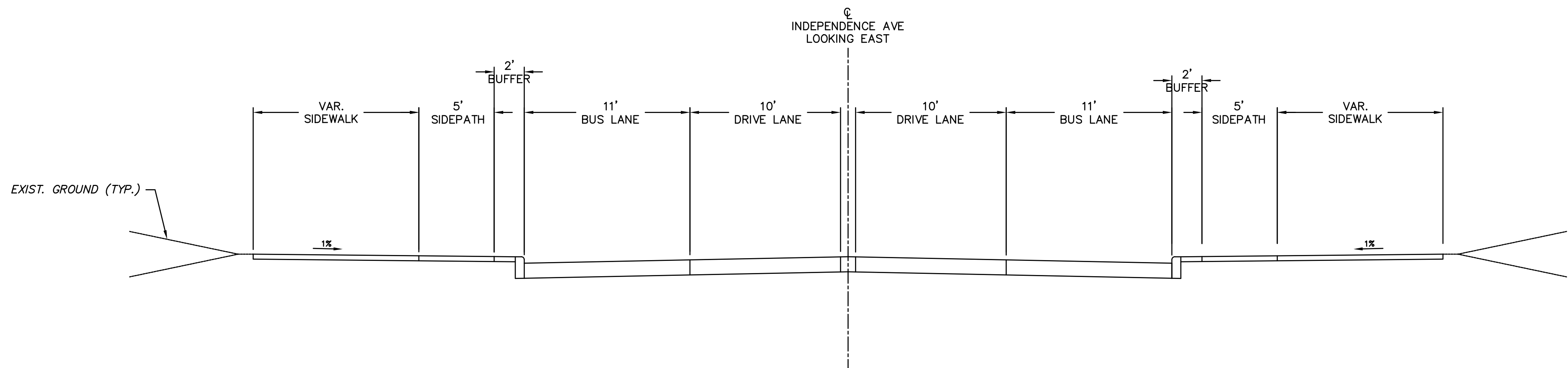
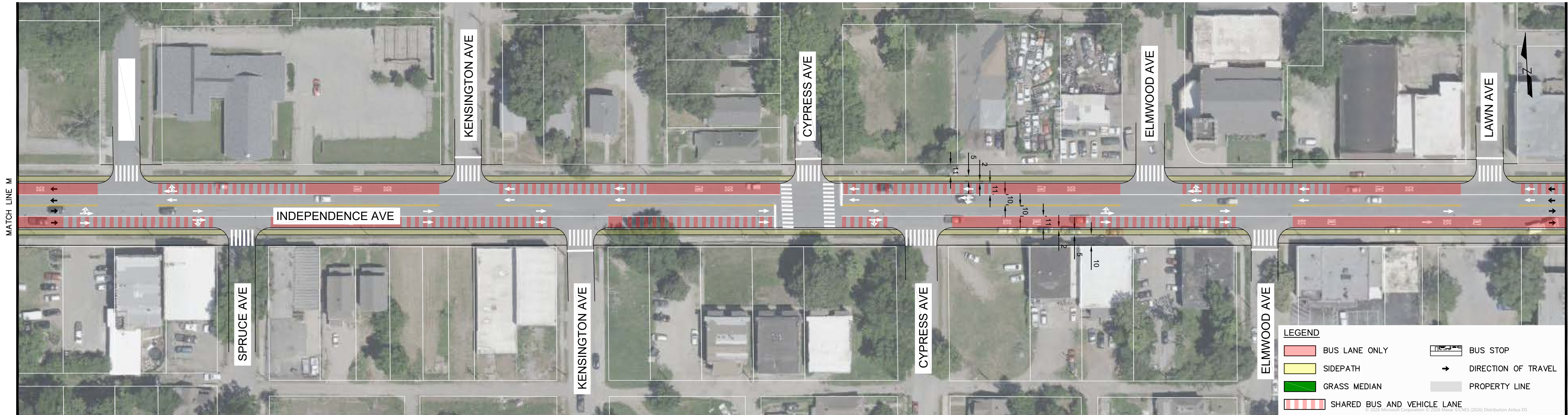
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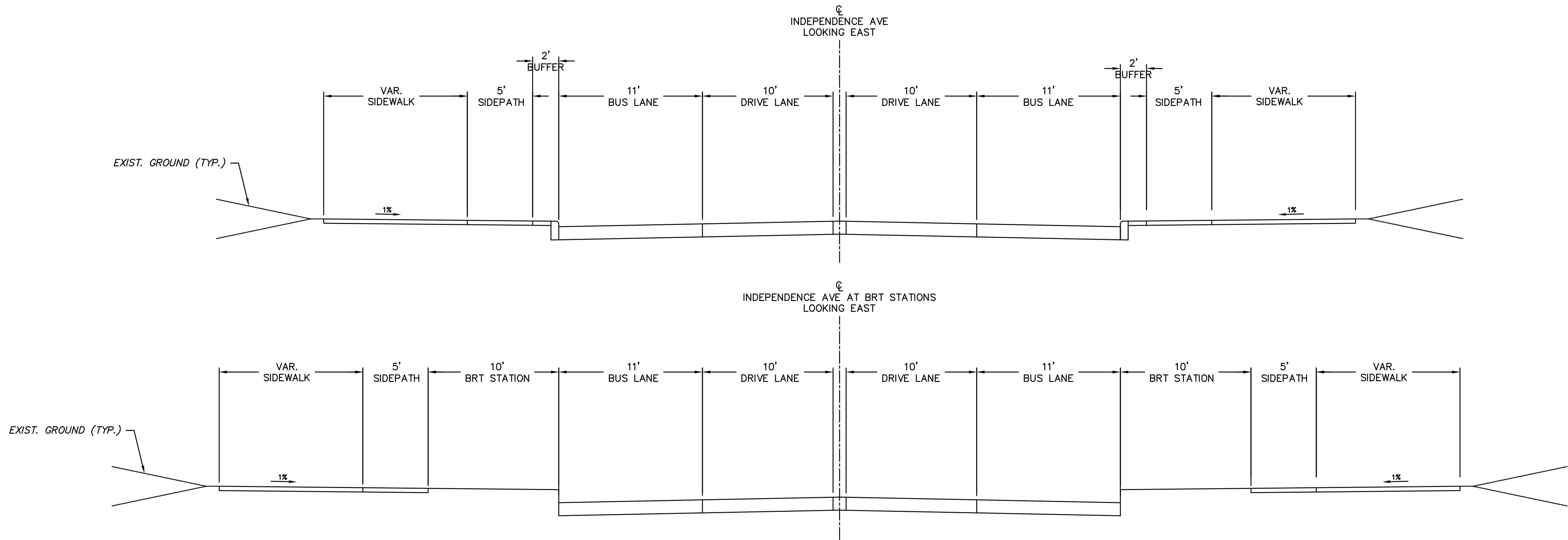
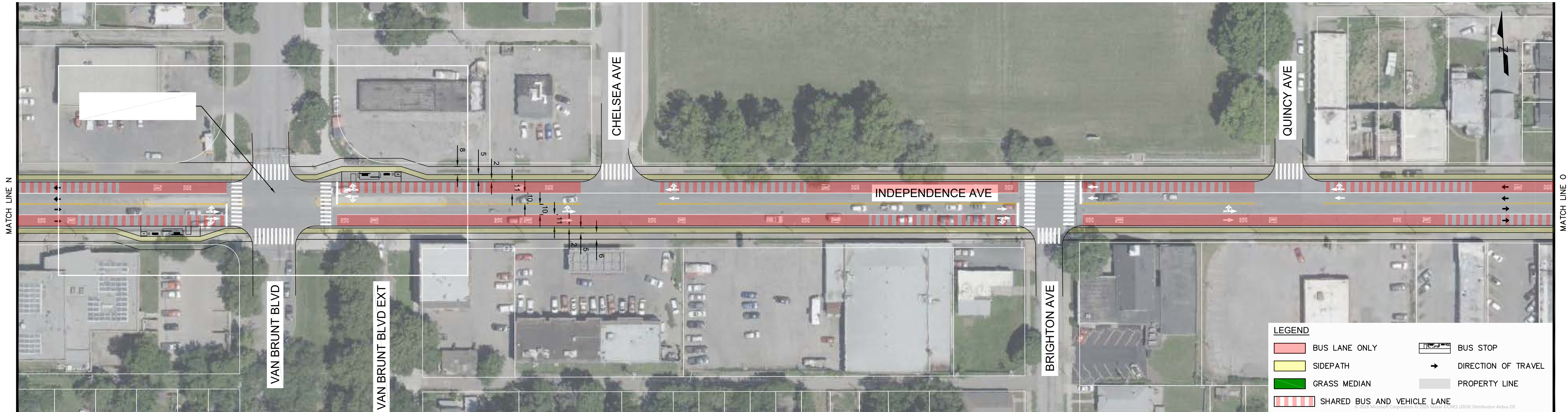
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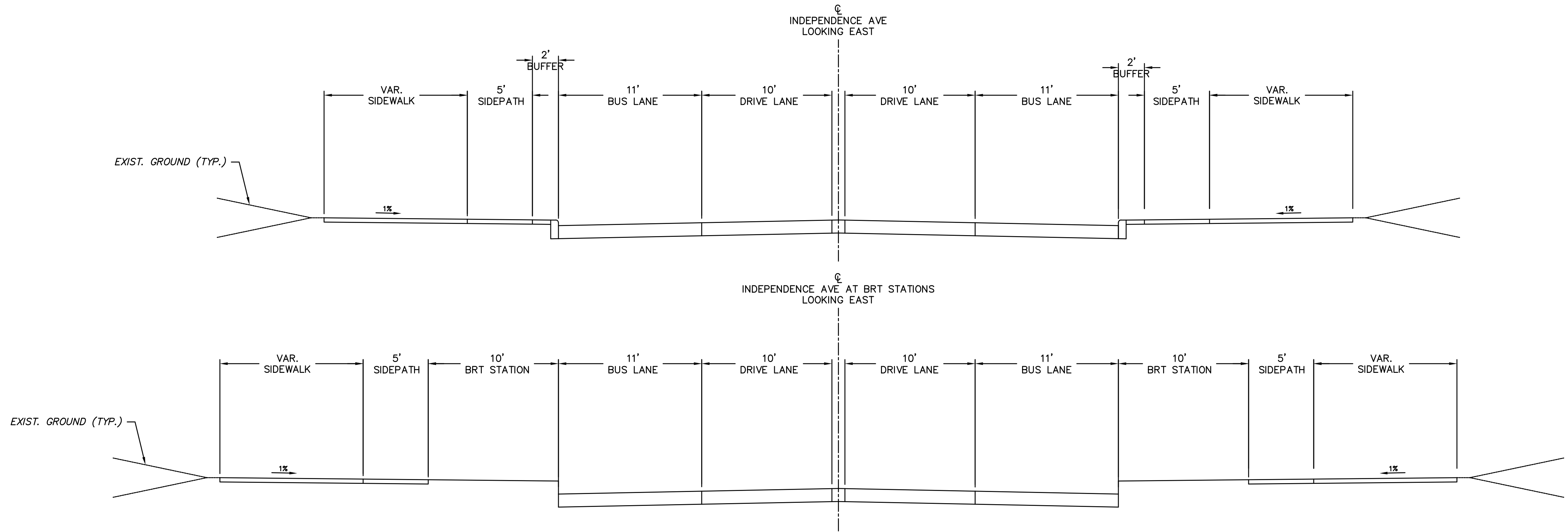
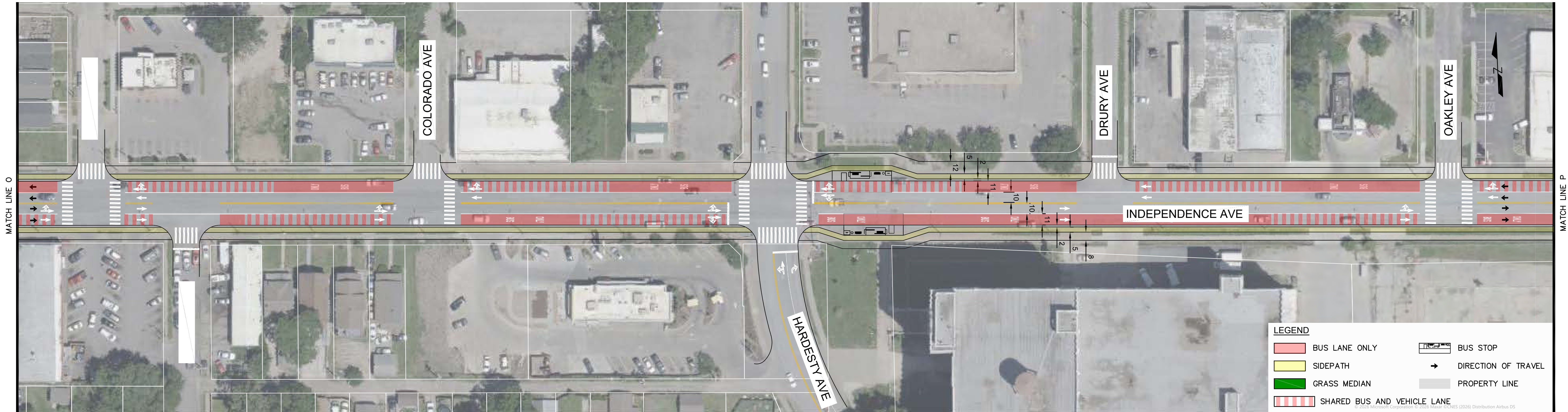
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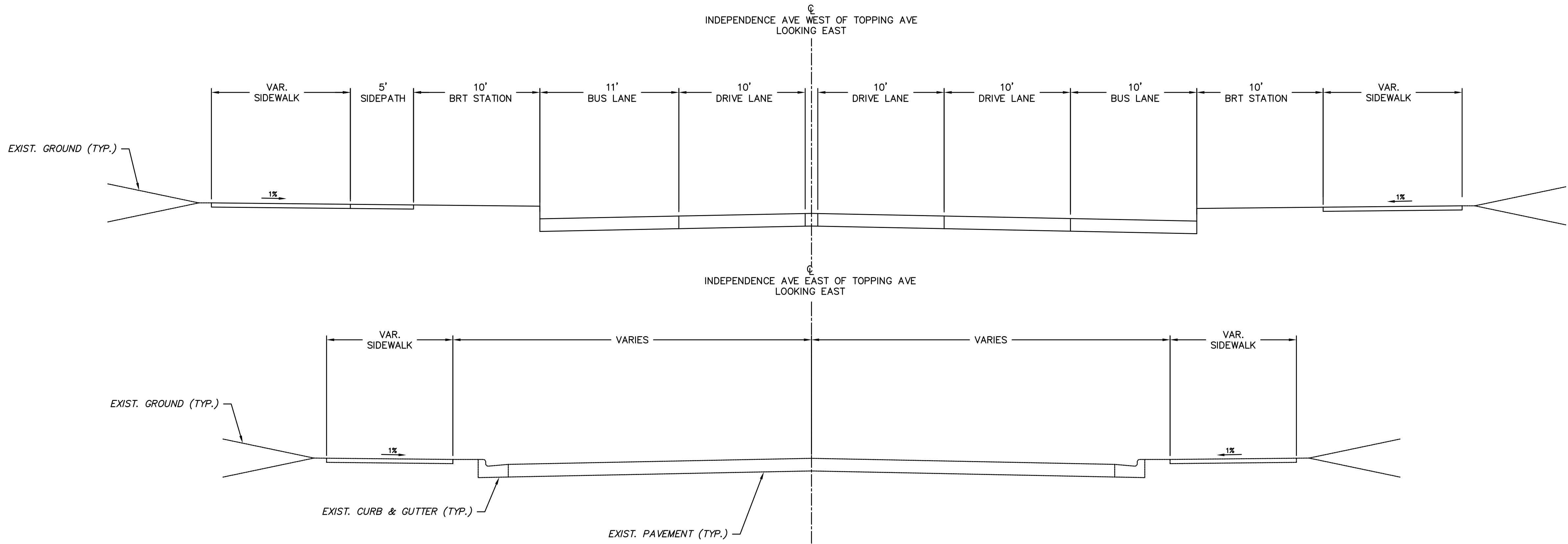
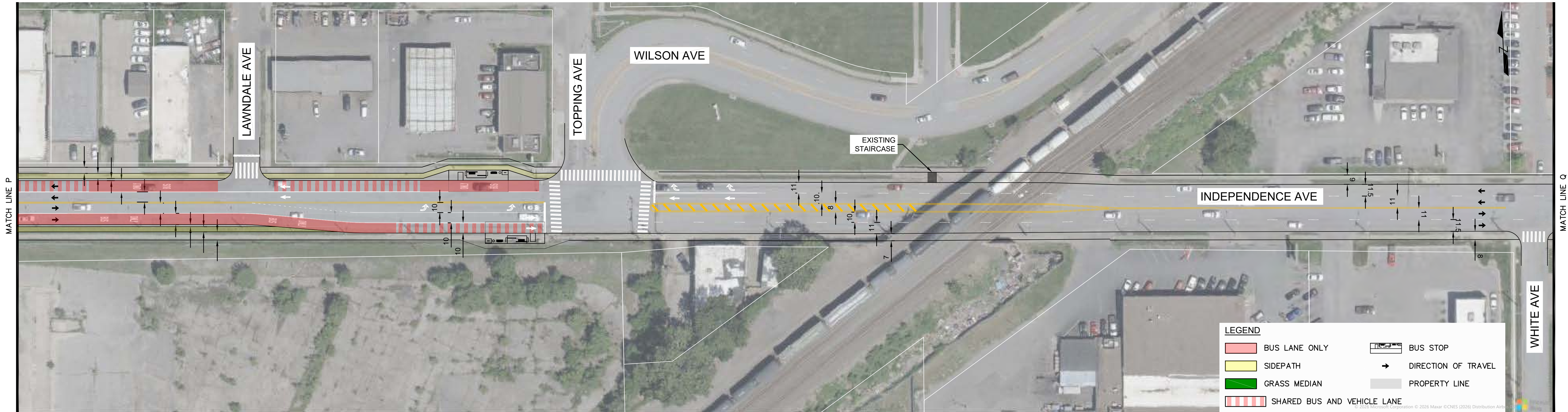
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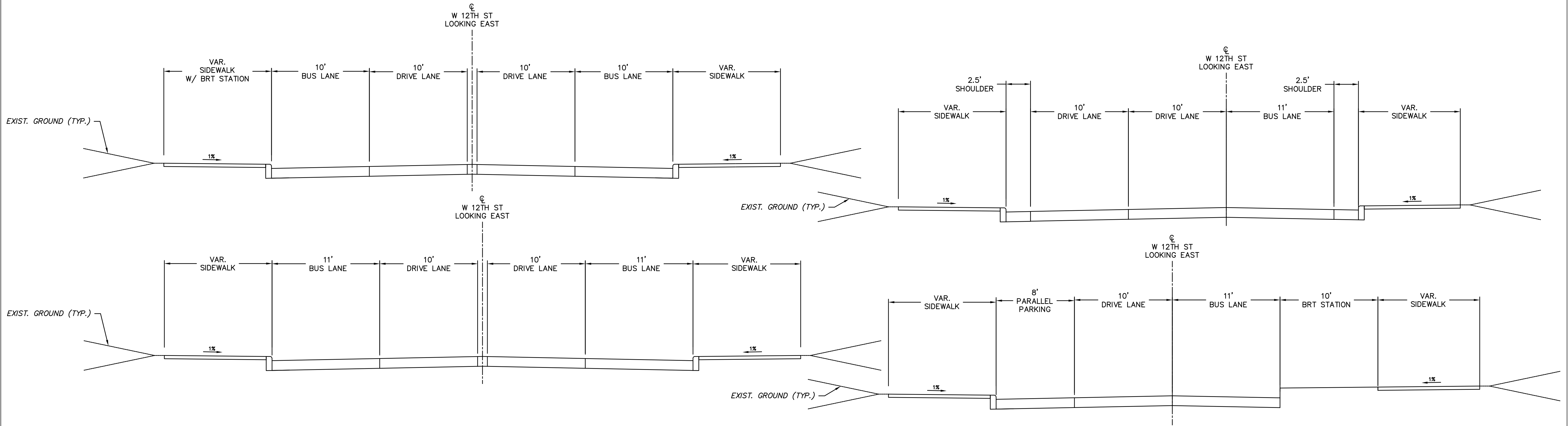
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Reference: Cost Estimation Technical Memo

A.4 Appendix D: Concept Drawings for 12th St (Segment 3, Missouri)

MATCH LINE - SEE 11TH ST PLANS

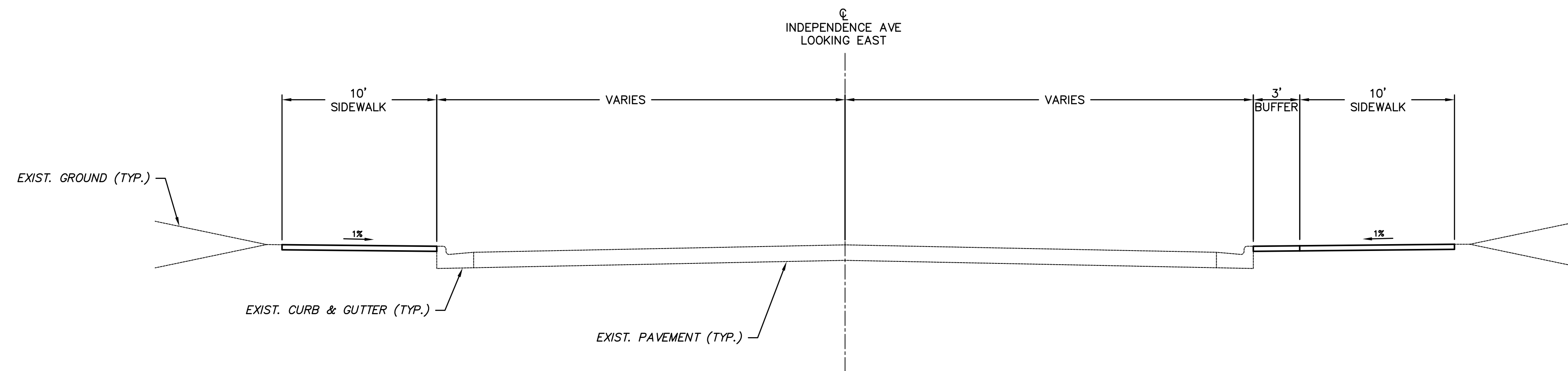


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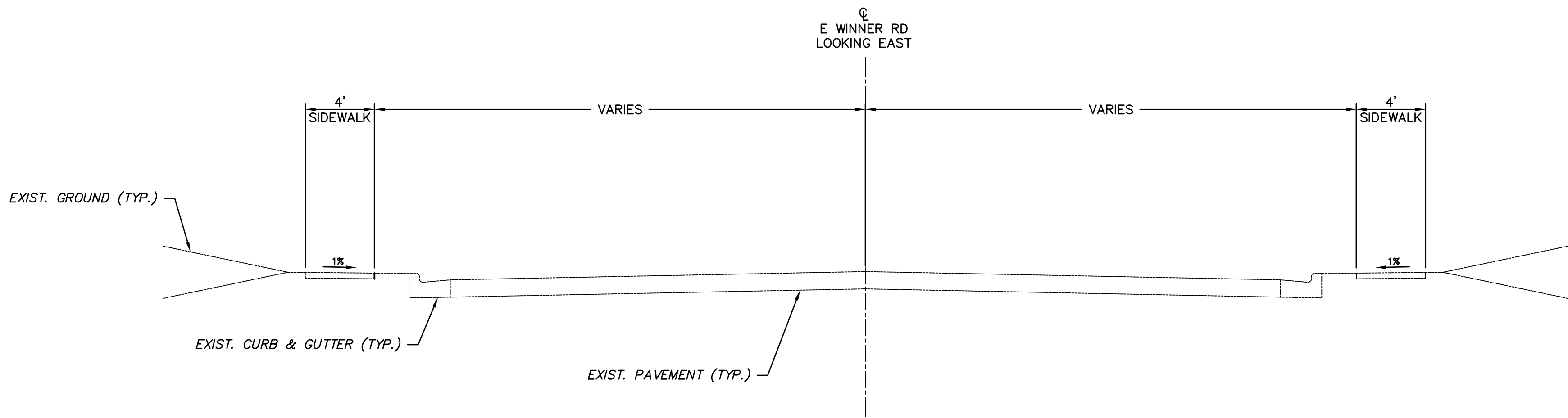
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Reference: Cost Estimation Technical Memo

A.5 Appendix E: Concept Drawings for Independence Ave, U.S. 24, Noland Rd (Segment 5, Missouri)

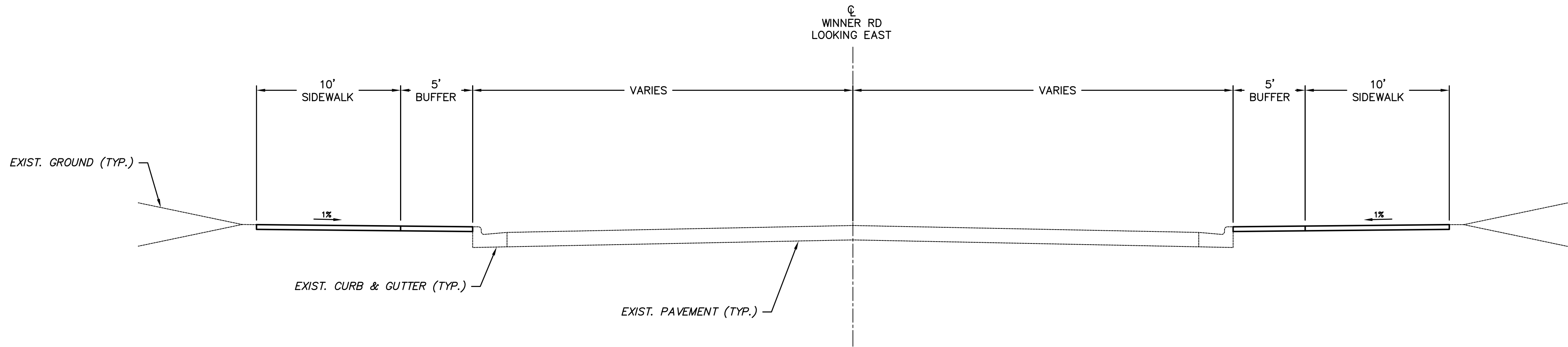


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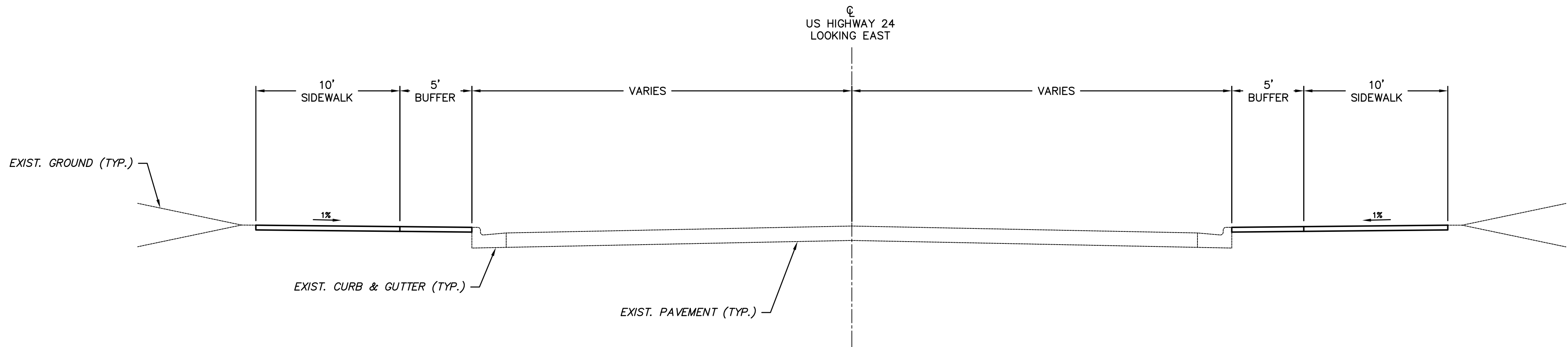
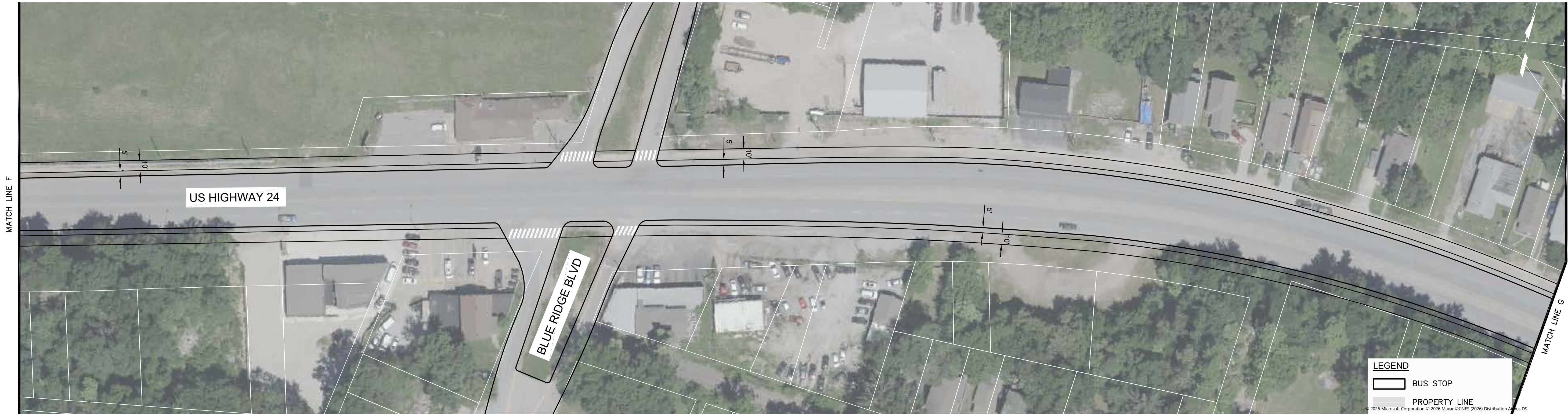
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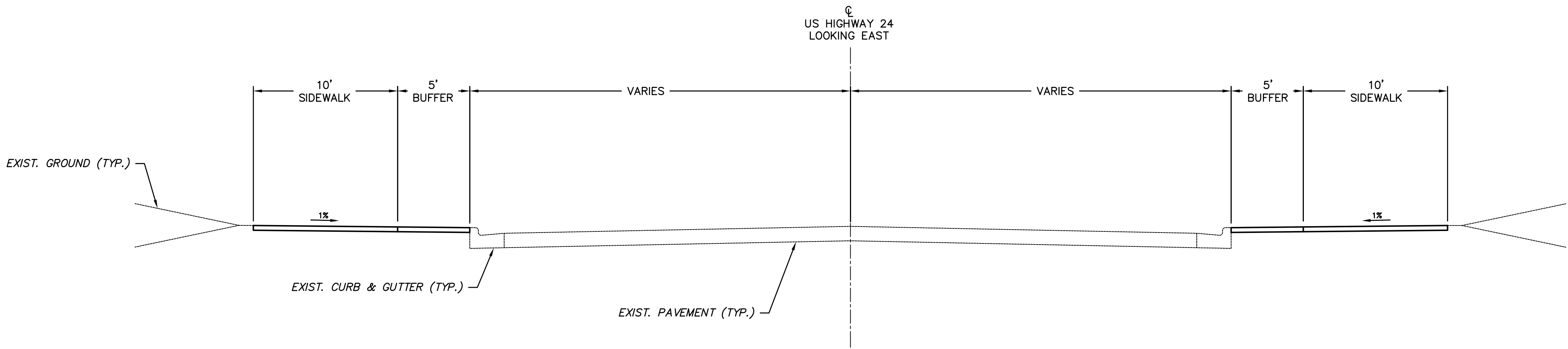
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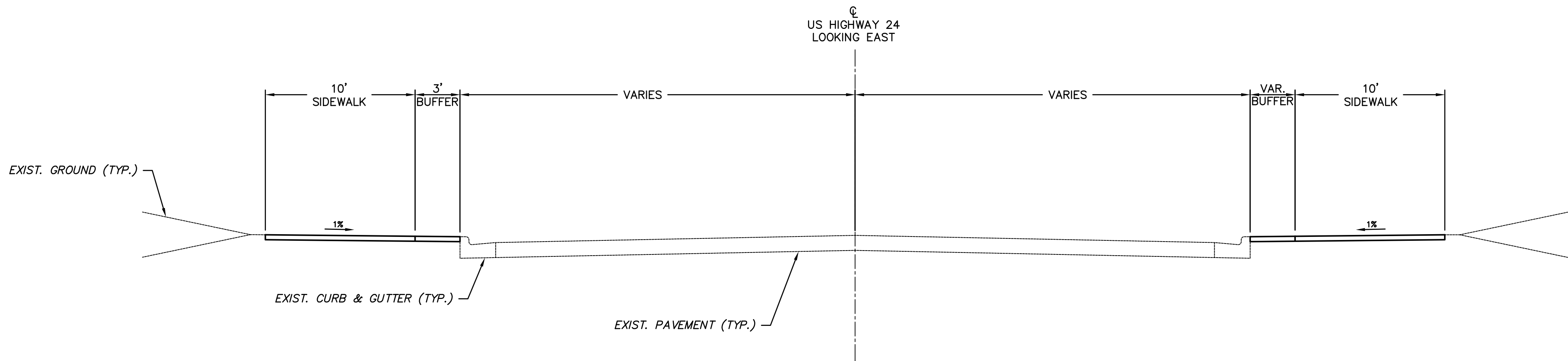
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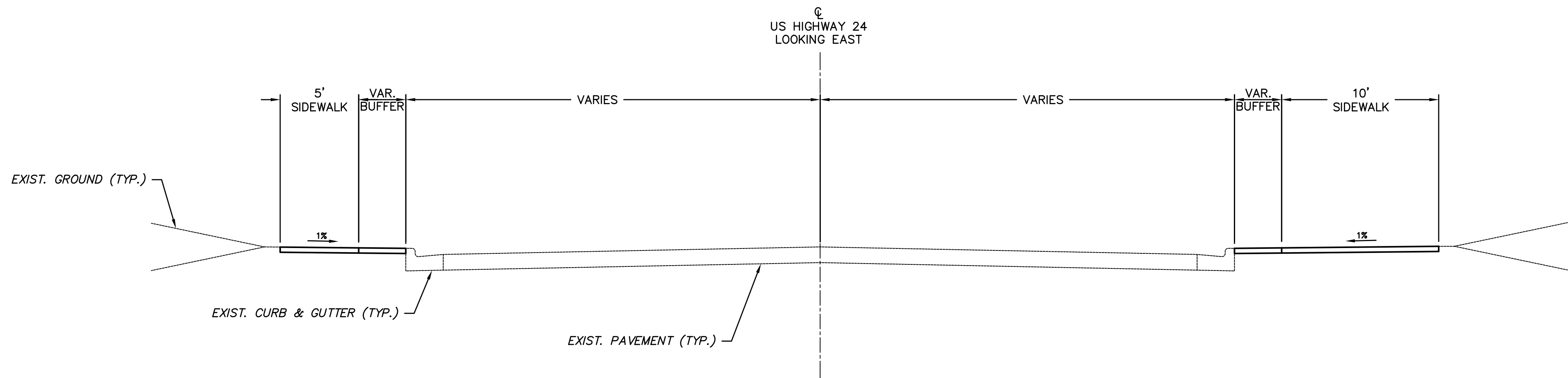
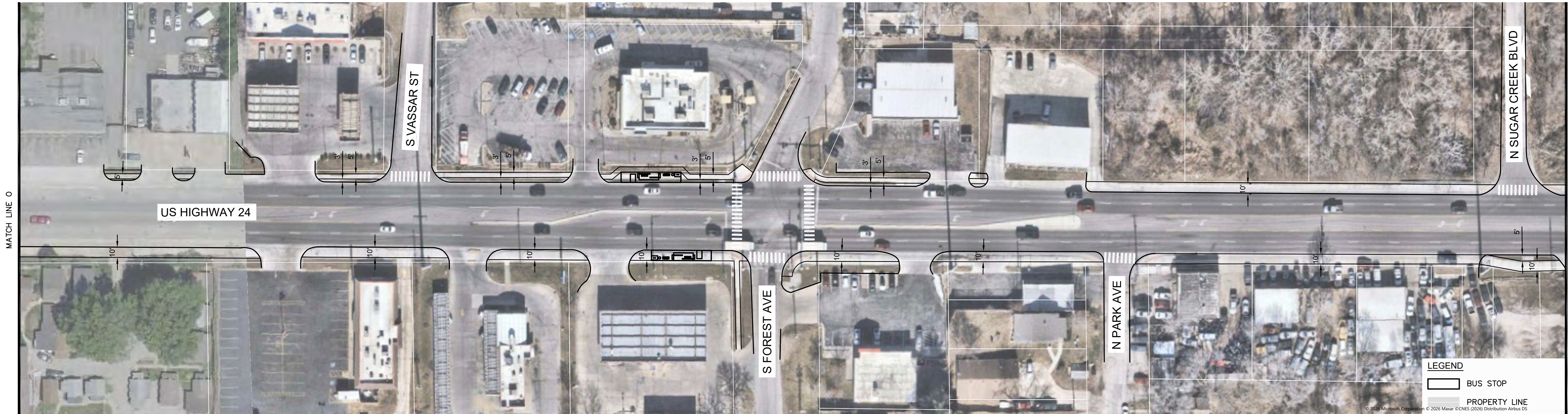
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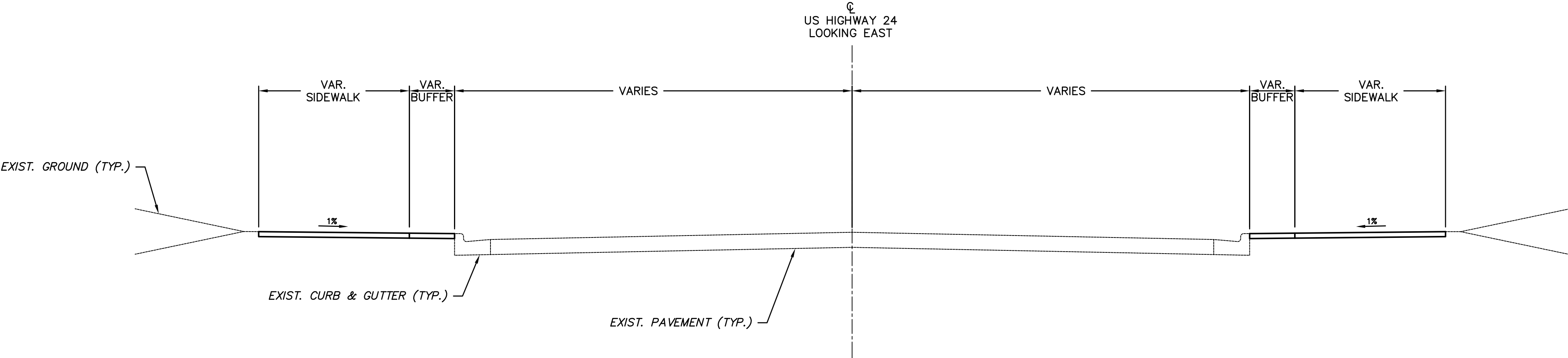
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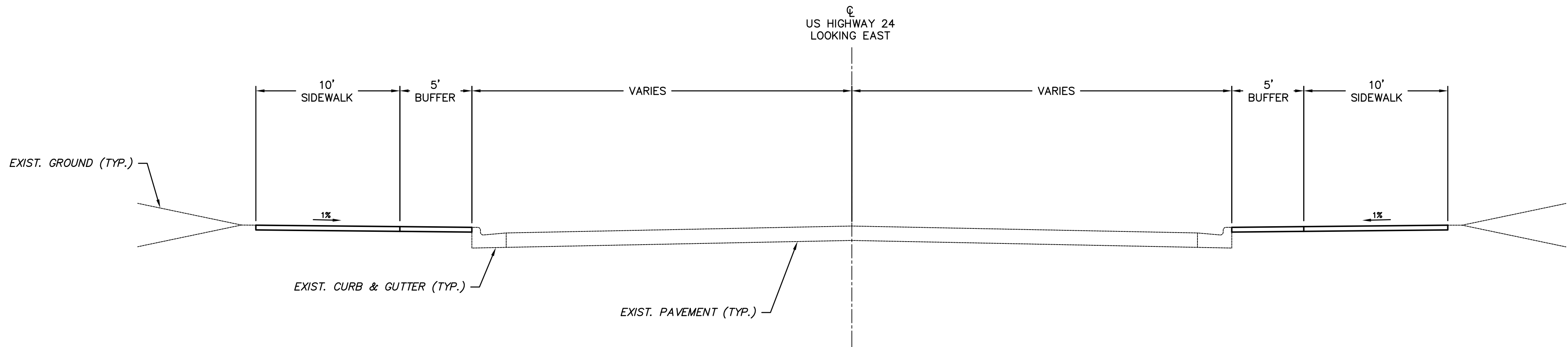
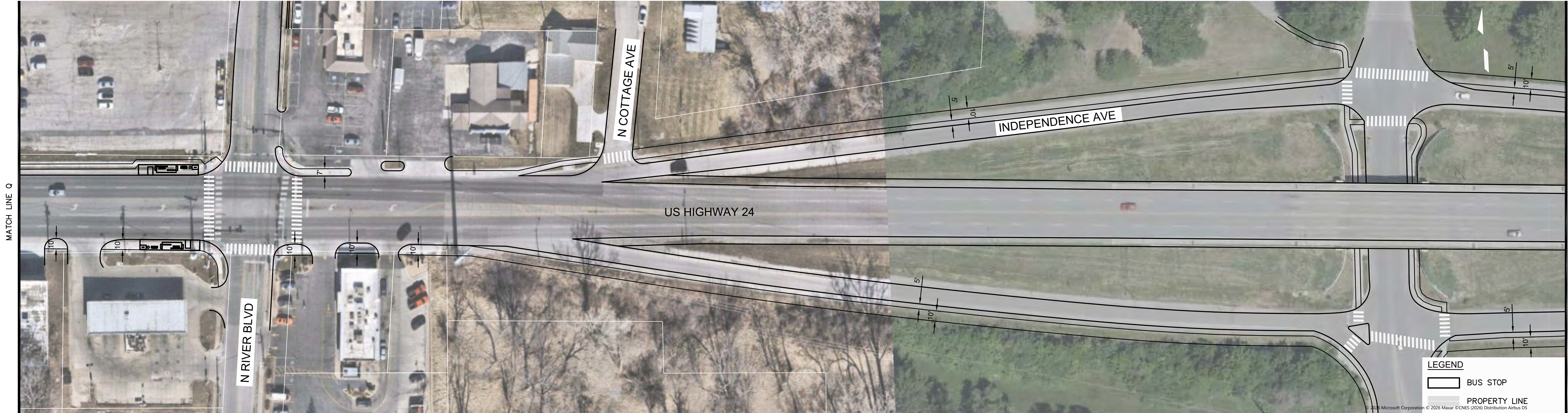
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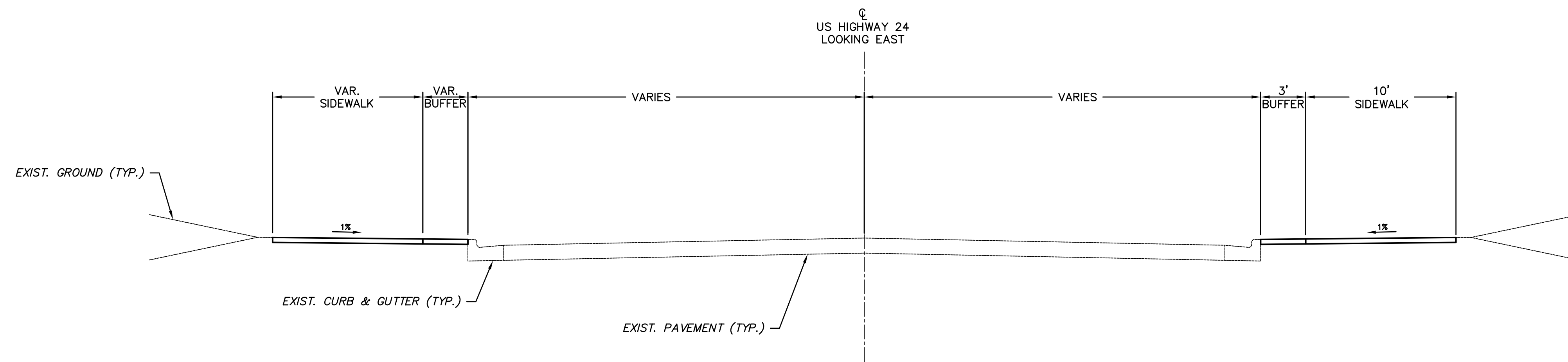
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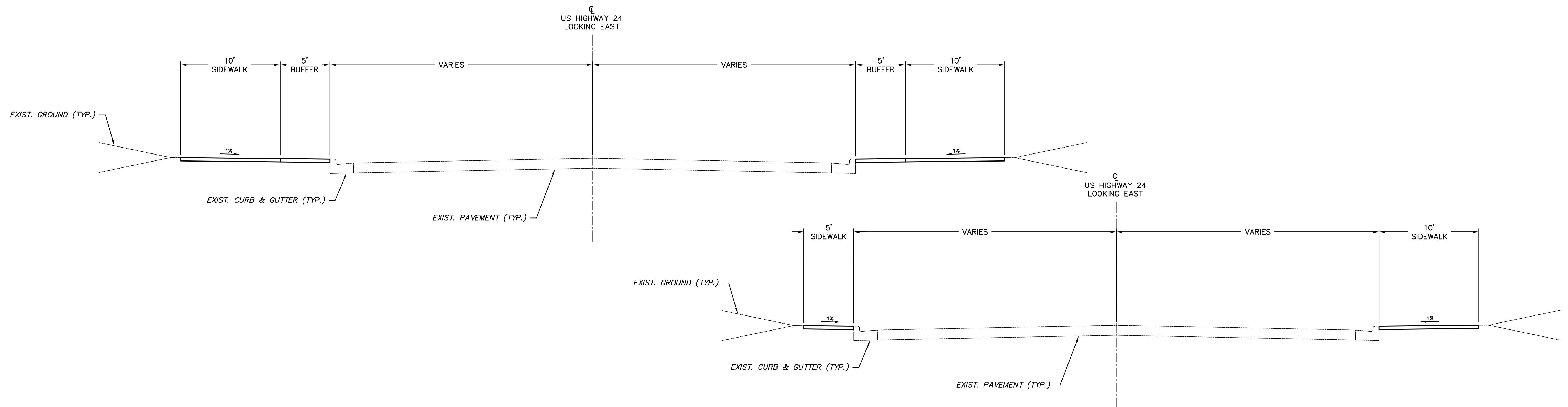


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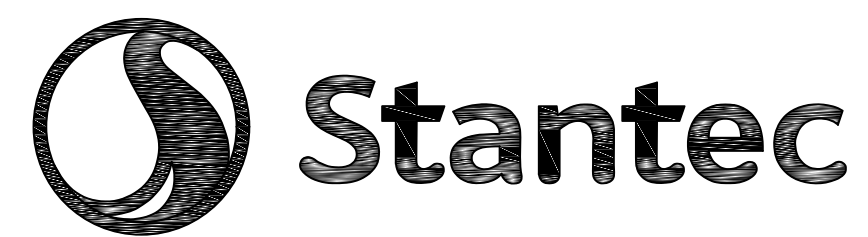


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Client/Project

MID-AMERICA REGIONAL COUNCIL

REGIONAL TRANSIT AND INFRASTRUCTURE
IMPROVEMENT PROJECT

Kansas City, Missouri/Kansas

File Name: BSRC-1

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Title

BI-STATE SUSTAINABLE
REINVESTMENT CORRIDOR

Project No.
190300478

Drawing No.

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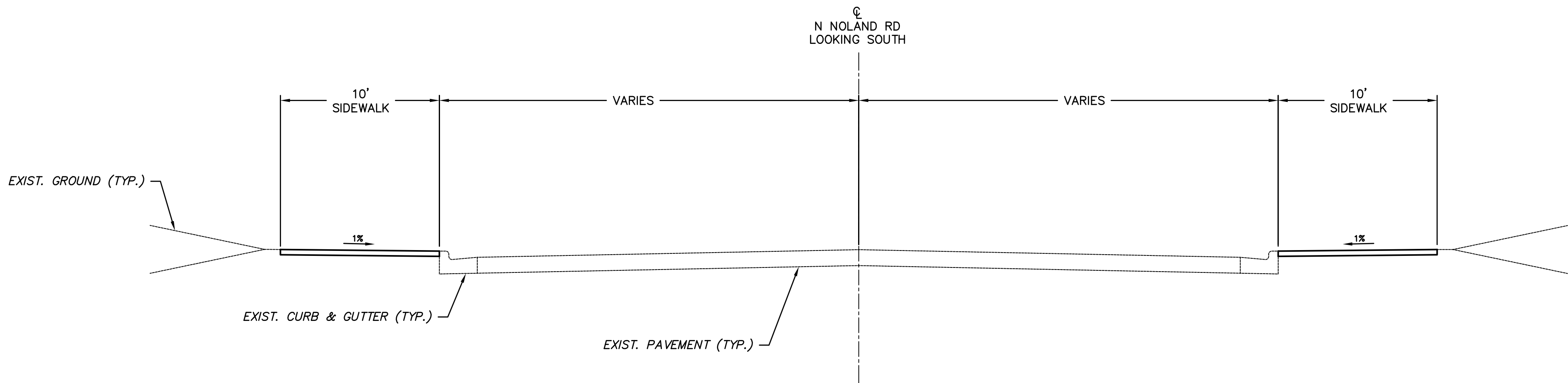
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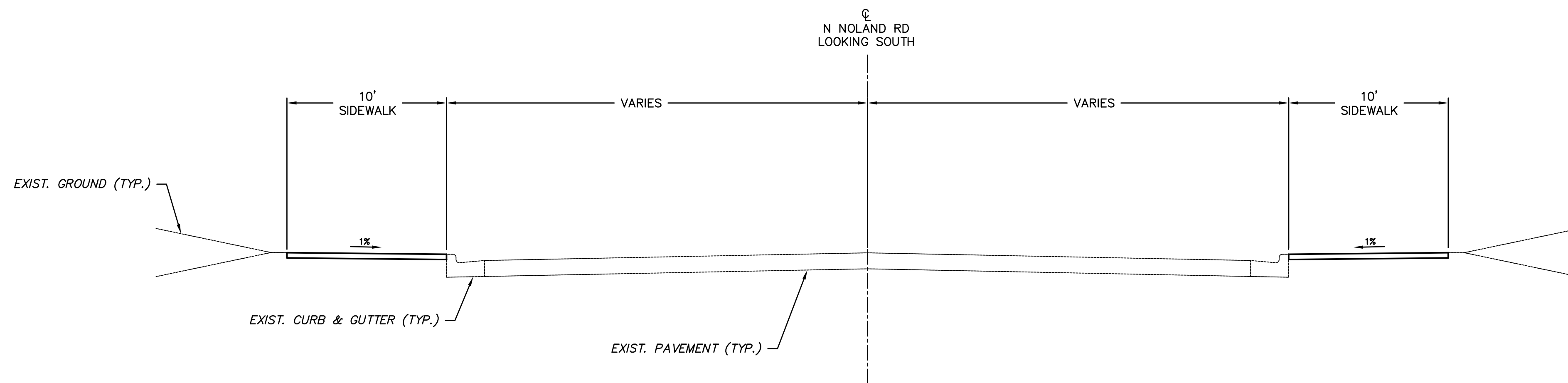
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Appendix H - PEL Questionnaire

Bi-State Sustainable Reinvestment Corridor (BSRC)

Planning and Environment Linkages (PEL) Questionnaire

1. Background

Who is the sponsor of the PEL study? (state DOT, Local Agency, Other)

The Bi-State Sustainable Reinvestment Corridor (BSRC) Planning and Environment Linkages (PEL) study was sponsored by the Mid-America Regional Council (MARC), the Metropolitan Planning Organization (MPO) for the Kansas City metropolitan area. MARC led the study on behalf of its member jurisdictions and in coordination with state departments of transportation, transit agencies, and local governments in both Missouri and Kansas.

What is the name of the PEL study document and other identifying project information (e.g., sub-account or STIP numbers, long-range plan, or transportation improvement program years)?

The planning document is titled **Bi-State Sustainable Reinvestment Corridor (BSRC) Planning and Environment Linkages Study Report (April 2026)**. The study was conducted as a corridor-level planning effort and is not associated with a single programmed project, sub-account, or STIP number. Instead, the PEL study supports long-range transportation planning objectives identified in the metropolitan transportation plan and is intended to inform future project development and potential programming decisions.

Who was included on the study team (Name and title of agency representatives, consultants, etc.)?

The study team included representatives from MARC, local governments, transit agencies, and partner jurisdictions across state lines. The consultant team, led by Stantec, provided multidisciplinary expertise including transportation planning, transit planning, engineering, environmental planning (PEL/NEPA), public involvement, and economic development. Federal coordination and review were provided by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

Provide a description of the existing transportation facility within the corridor, including project limits, modes, functional classification, number of lanes, shoulder width, access control and type of surrounding environment (urban vs. rural, residential vs. commercial, etc.)

The BSRC corridor is in a highly urban, multimodal corridor spanning Missouri and Kansas within the Kansas City metropolitan area. Existing transportation facilities include principal and minor arterial roadways, local streets, freight rail and passenger rail facilities, transit routes and stations, bicycle facilities, pedestrian infrastructure, and intermodal connections. Roadways within the corridor generally function under urban access conditions, with frequent intersections, multiple points of access, and limited access control. Surrounding land uses are varied and include residential neighborhoods, commercial and employment centers, institutional uses, industrial areas, and historically disinvested communities. The corridor serves regional mobility, local access, transit connectivity, goods movement, and economic activity.

Provide a brief chronology of the planning activities (PEL study) including the year(s) the studies were completed.

The Phase I Report was initiated in August 2024 and served as a foundation for the BSRC PEL study. During this phase, the project team conducted early coordination with partner agencies and stakeholders, initiated public engagement, and completed the existing conditions analysis that informed the study. This included data collection, site visits, and corridor-wide assessments related to transportation, land use, environmental resources, and community context.

The BSRC PEL study was conducted during 2025 and 2026. Initial phases focused on review of preceding corridor and reinvestment studies and development of a shared corridor vision. Draft technical work and interim report sections were completed and reviewed in early 2026. Public and stakeholder engagement activities, including public webinars, occurred in March 2026. The study culminated in a consolidated draft and near-final PEL report issued in April 2026.

Are there recent, current, or near-future planning studies or projects in the vicinity? What is the relationship of this project to those studies/projects?

Yes. The BSRC PEL study builds upon and complements prior transportation, transit, land use, and economic development studies in and near the corridor. The PEL study does not replace those efforts; instead, it integrates findings into a unified, multimodal framework and provides continuity between planning and future project development. The Study is intended to help align near- and long-term investments across jurisdictions and modes.

2. Methodology used

What was the scope of the PEL study and the reason for completing it?

The scope of the BSRC PEL study was to evaluate transportation and reinvestment strategies at the corridor level while integrating environmental considerations early in the planning process. The study was undertaken due to the corridor's complexity, multimodal nature, bi-state governance structure, and strong community interest. Conducting a PEL study allowed the project sponsors to identify shared goals, evaluate alternatives, and reduce risk and duplication during the formal future NEPA reviews.

Did you use NEPA-like language? Why or why not?

The study used NEPA-informed, but not formal NEPA language. Terminology was selected to support eventual use of PEL study products in NEPA while avoiding premature conclusions or regulatory determinations. This approach maintains flexibility for NEPA lead agencies and aligns with FHWA guidance on appropriate use of planning-level terminology.

What were the actual terms used and how did you define them? (Provide examples or list)

Terms used included "corridor vision," "planning-level alternatives," "screening considerations," "fatal flaws," "environmental context," and "potential environmental considerations." These terms were defined within the PEL study report to distinguish planning-level analysis from project-level NEPA findings and to support later refinement during environmental review.

How do you see these terms being used in NEPA documents?

These terms are intended to transition into NEPA documents through refinement rather than replacement. For example, the corridor vision and goals inform the project-level purpose and need, planning-level alternatives inform the range of alternatives, and planning-level environmental context informs development of the affected environment section.

What were the key steps and coordination points in the PEL study decision-making process? Who were the decision-makers and who else participated in those key steps?

Key steps included development of the corridor vision and goals, identification of multimodal strategies, establishment of screening criteria, evaluation and screening of alternatives, and identification of planning-level alternatives to advance. Decision-making was led by MARC in coordination with partner agencies, with input and coordination from FHWA, FTA, local governments, transit agencies, stakeholders, and the public.

How should the PEL study information be presented in NEPA?

PEL study information should be incorporated by reference or appended to NEPA documents where appropriate, particularly for purpose and need, alternatives considered, environmental context, and agency coordination. The level of detail should be supplemented and refined based on project-specific needs and formal agency coordination for concurrences to meet NEPA needs will be necessary.

3. Agency coordination

Provide a synopsis of coordination with Federal, tribal, state and local environmental, regulatory and resource agencies. Describe their level of participation and how you coordinated with them.

The study team coordinated with FHWA, FTA, state transportation agencies, transit agencies, and local governments throughout the PEL study process. Coordination included meetings, review of draft materials, and discussion of methodology, assumptions, and findings. Coordination focused on planning-level issues rather than formal consultation.

What transportation agencies (e.g., for adjacent jurisdictions) did you coordinate with or were involved during the PEL study?

Transportation agencies from both Missouri and Kansas were involved, including transit providers and local agencies responsible for roadway planning, operations, and maintenance within the corridor. This ensured consistency across jurisdictions and modes.

What steps will need to be taken with each agency during NEPA scoping?

During NEPA scoping, agencies will need to confirm roles, identify cooperating agencies, refine issues for analysis, confirm data needs, and establish project-specific methodologies consistent with regulatory requirements.

4. Public coordination

Provide a synopsis of your coordination efforts with the public and stakeholders.

Public and stakeholder engagement occurred throughout the PEL study and included public meetings, workshops, targeted stakeholder outreach, and two publicly advertised BSRC PEL study webinars held in March 2026. Public input informed development of the corridor vision, goals, evaluation criteria, and alternatives screening.

5. Purpose and Need for the PEL study

What was the scope of the PEL study and the reason for completing it?

The PEL study addressed corridor-level transportation and reinvestment challenges in a complex, urban, bi-state environment. Completing the PEL study provided a structured approach to integrating transportation planning, environmental considerations, and community priorities early in decision-making.

Provide the purpose and need statement, or the corridor vision and transportation goals and objectives to realize that vision.

The corridor vision emphasizes improved multimodal connectivity, enhanced safety and accessibility, support for economic reinvestment, responsiveness to community priorities, and promotion of equitable outcomes. Transportation goals and objectives are documented in the PEL study report and reflect both regional policy direction and stakeholder input.

What steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

During NEPA, the corridor-level vision will be refined to reflect specific project limits, updated data, operational needs, and agency and public input. This refinement will result in a project-level purpose and need statement suitable for environmental review.

6. Range of alternatives

What types of alternatives were looked at? (Provide a one or two sentence summary and reference document.)

The PEL study considered roadway, transit, active transportation, operational, and multimodal alternatives at a planning level. Alternatives were documented in the BSRC PEL Study Report.

How did you select the screening criteria and screening process?

Screening criteria were derived from the corridor vision, goals, feasibility considerations, and identification of planning-level fatal flaws. The process was designed to be transparent and appropriate for corridor-level planning rather than project-level impact minimization.

For alternative(s) that were screened out, briefly summarize the reasons for eliminating the alternative(s).

Alternatives were screened out when they did not support the corridor vision, did not meet transportation goals, or exhibited planning-level fatal flaws related to feasibility, constructability, or consistency with adopted plans.

Which alternatives should be brought forward into NEPA and why?

Alternatives that best aligned with the corridor vision, met transportation objectives, and remained reasonable from a planning perspective were identified for advancement into NEPA.

Did the public, stakeholders, and agencies have an opportunity to comment during this process?

Yes. Public, stakeholder, and agency input was solicited throughout the alternatives development and screening process.

Were there unresolved issues with the public, stakeholders, and/or agencies?

No unresolved fatal-issue concerns were identified during the PEL study.

7. Planning assumptions and analytical methods

What is the forecast year used in the PEL study?

The PEL study used a long-range forecast year consistent with regional transportation planning practice.

What method was used for forecasting traffic volumes?

Traffic forecasting relied on regional travel demand modeling and supporting qualitative analysis appropriate for corridor-level planning.

Are the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?

Yes. Planning assumptions were consistent with the regional long-range transportation plan and supported the corridor vision and goals. Assumptions will be revisited and updated during NEPA.

What were the future year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?

Assumptions reflected adopted regional policies, anticipated land use and economic development patterns, planned transportation investments, and known network expansion initiatives.

8. Environmental resources reviewed

In the PEL study, at what level of detail was the resource reviewed and what was the method of review?

Environmental resources were reviewed at a planning level using existing datasets, GIS analysis, desktop reviews, and previous studies.

Is this resource present in the area and what is the existing environmental condition for this resource?

Resources such as natural habitats, cultural resources, parks, environmental justice communities, and developed land uses are present within the corridor. Existing conditions were described using available data.

What are the issues that need to be considered during NEPA, including potential resource impacts and potential mitigation requirements?

NEPA will need to evaluate project-specific impacts, avoidance and minimization opportunities, and mitigation requirements through detailed technical analyses and consultation. Formal consultation with respective regulatory agencies units for concurrence on impacts will be required once specific projects have been identified.

How will the planning data provided need to be supplemented during NEPA?

Planning-level data will be supplemented with field investigations, technical studies, and agency consultation during NEPA.

9. List environmental resources you are aware of that were not reviewed in the PEL study and why.

Resources requiring site-specific surveys—such as detailed wetland delineations, archaeological surveys, noise analysis, and hazardous materials evaluations—were not fully reviewed due to the planning-level scope of the study and will be addressed in NEPA.

10. Were cumulative impacts considered in the PEL study? If yes, provide the information or reference where the analysis can be found.

Yes. Cumulative impacts were considered qualitatively at a planning level, focusing on regional growth trends, transportation investments, and reinvestment patterns. Additional analysis will occur during NEPA.

11. Describe any mitigation strategies discussed at the planning level that should be analyzed during NEPA.

Planning-level mitigation strategies focused on avoidance, context-sensitive solutions, and opportunities for community enhancement. NEPA will evaluate specific mitigation measures once projects are defined.

12. What needs to be done during NEPA to make information from the PEL study available to the agencies and the public? Are there PEL study products which can be used or provided to agencies or the public during the NEPA scoping process?

PEL study products may be shared with agencies and the public during NEPA scoping through incorporation by reference, appendices, and public meeting materials. These products provide transparency and continuity between planning and environmental review. Information in the study can and should be used as supporting information for the formal NEPA scoping process once federal funding for implementation has been secured.

13. Are there any other issues a future project team should be aware of?

Future project teams should be aware of the corridor's bi-state governance, dense urban context, multimodal complexity, strong community interest, and equity considerations. Continued coordination and engagement will be critical as projects advance as the corridor extends across two states. Recognizing that each state might have varying processes leading up to and during the implementation phases will be crucial.