



**Oasis Trail
PID 122971
Feasibility Study**

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Prepared for:
Great Parks of Hamilton County
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1. Introduction

Great Parks of Hamilton County (Great Parks), in coordination with the City of Cincinnati, the Southwest Ohio Regional Transit Authority (SORTA), and the Indiana & Ohio Railway Company (IORY), is advancing the conversion of the northern track of the Oasis rail corridor into a paved shared-use path (PID 122971). This effort is being undertaken in accordance with the guidelines laid out in the *Trail Development Coordination Agreement established on May 13, 2024*.

The proposed shared-use path (SUP) extends from Sawyer Point, near the Montgomery Inn Boathouse, along the downtown Cincinnati riverfront to Carrel Street in the East End neighborhood. The corridor travels through or provides access to several communities, including Mt. Adams, Walnut Hills, East Walnut Hills, Columbia Tusculum, Hyde Park, and the East End. Along its length, the project interfaces with notable landmarks such as the Montgomery Inn, International Friendship Park, and the former Torrence Road Station. The alignment follows the existing Oasis transportation corridor, which parallels the Ohio River.

The project consists of converting the northern railroad track into a paved multi-use path. The path will interact with several notable infrastructure facilities, including the Collins Bridge, the Congress and Delta Avenue pedestrian underpass, the Riverside Drive rail overpass, and the Lancaster and Walworth tunnels.

The southern track has remained in operation for many years, typically seeing about one train movement per week as it continues to serve the dinner train operating on Saturday evenings except during January and February. The dinner train departs from the rear parking lot of the Green Sales Company located at 2172 E. Seymour Avenue, travels south to the Montgomery Inn Boathouse, and then returns along the same route.

A Feasibility Study has been conducted to evaluate access points along the corridor, specifically their locations and design options. The study also examines the mainline trail design, with particular attention to areas where design standards may need to be modified due to limited space, structural constraints, or other corridor conditions. The findings of this study will inform design decisions in the next phase of the project, which will advance directly into Stage 1 engineering design.

The project supports long-standing goals to develop a bike trail within Cincinnati's East Community. When complete, the trail will provide a continuous connection between downtown Cincinnati and the Lunken Field area, closing the final gap needed to link Cincinnati to Cleveland via the Ohio to Erie Trail and providing a link to the Little Miami Scenic trail. The corridor will also enhance access for adjacent neighborhoods and businesses.

A. Project History

State Route 32, an east–west highway connecting Cincinnati to Belpre, was constructed in the mid-20th century to provide an improved transportation corridor into and through Appalachian Ohio. Its western terminus is located at I-275, east of downtown Cincinnati. Beginning in the 1990s, Hamilton County and regional partners initiated the Eastern Corridor Program to evaluate how a multimodal transportation corridor could be developed between downtown Cincinnati and the State Route 32 corridor for the benefit of the surrounding communities.

In 1992, A.M. Kinney, Inc. conducted the *Bike Trail in the East Community* study for the City of Cincinnati. The study report, developed in coordination with the City Manager's Office, the Department of Neighborhood Housing and Conservation, and the Department of Public Works, summarized the investigation of a bicycle connection between downtown Cincinnati and the Lunken bicycle corridor. The study recommended developing a trail alignment that would run along the Oasis rail corridor. In February 2001, Cincinnati City Council motioned for a bike/hike trail connection to be built between Lunken and downtown, and a preliminary engineering study was completed by the city as an expansion of the 1992 study. This preliminary engineering study provided an updated alignment for the rail-with-trail concept that reflected changes that had occurred along the corridor over the years including new development, property transfers, and evolving railroad operations. The report presented options to either maintain the rail for continued use or remove the track and use its property for the trail.

A workgroup of participants from 10 organizations collaborated in 2006 and 2007 to initiate the planning strategy for the use of the Oasis line for a bike trail. In 2008, Great Parks, Arcadis (formerly M-E Companies, IBI Group), Ohio River Way, and Human Nature began work on preliminary planning and engineering. A 30% preliminary engineering plan package was produced in 2017, providing an alignment of an asphalt multi-use path to be constructed in place of the northern railroad track. This alignment was presented at an OKI subcommittee meeting in 2018. The Great Parks Comprehensive Master Plan for 2019-2029, adopted in 2019, addressed the need for enhancing access points and increasing active transportation access to parks. The ensuing Parks and Facilities Master Plan for 2021-2030, adopted in 2021, specifically listed the Ohio River Trail – The Oasis Corridor as one of four regional trail priorities that would connect the Lunken Airport Trail to the Ohio River Trail at Sawyer Point in downtown Cincinnati. Project development entered a new phase in March 2021 when SORTA, the City of Cincinnati, IORY, and Great Parks executed the *Oasis Corridor – Binding Term Sheet*. This agreement outlined each party's responsibilities and allowed the public agencies to begin pursuing easements and property rights necessary for trail

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construction. In May 2024, the same parties executed the *Trail Development Coordination Agreement*, further clarifying roles and enabling SORTA to advance property acquisition for a SUP on the northern track.

B. Purpose Statement

The purpose of this project is to improve active transportation connectivity between Lunken Airport Trail and the Ohio River Trail at Sawyer Point.

C. Need Elements

Regional active transportation advocates have identified regional trail connectivity along the Ohio riverfront in Hamilton County as a critical infrastructure since the 1970s. Trail connectivity along this corridor provides non-motorized vehicles access to parks and recreational activities along the Ohio River and creates alternate transportation options between downtown Cincinnati businesses and surrounding communities, with the goal of eventually providing a cross-county corridor connecting to other regional trails such as the Little Miami Scenic Trail. Multiple transportation entities in the Hamilton County region, including OKI (the area Metropolitan Planning Organization), regional trail advocates, Anderson Township, Clermont County, the Village of New Richmond, and the Ohio Department of Transportation (ODOT), have partnered with Hamilton County and Great Parks to identify opportunities to provide active transportation infrastructure in this corridor.

The Great Parks of Hamilton County regional park district adopted the Comprehensive Master Plan for 2019-2029 to establish goals and priorities for the regional park and trail system. “Create outstanding experiences” was one of five goals identified in the plan, which would be accomplished by creating new shared-use trails, enhancing access points, and increasing alternative transportation access to parks. Identified priorities in the Comprehensive Master Plan include building more trails and expanding access for all users. One way to expand access is by enhancing active transportation connections between neighborhoods and parks. Pursuant to the Comprehensive Master Plan, development of the Park and Facilities Master Plan for 2021-2030 considered public input on how to implement the goals and priorities for the park district. Providing a trail connection along the Ohio River between Lunken Airport Trail and the existing Ohio River Trail head at Sawyer Point in downtown Cincinnati is one of four regional trail priorities included in the Parks and Facilities Master Plan. In addition, OKI includes this connection in its 2050 Long Range Transportation Plan and Regional Bicycle Plan and the City of Cincinnati includes the connection in its 2010 Bike Plan.

D. Logical Termini and Independent Utility

The western terminus of the corridor is at Sawyer Point in downtown Cincinnati, where the existing Ohio River Trail alignment is suspended. The eastern terminus of the corridor is at the Lunken Airport Trail that surrounds the Cincinnati Municipal Airport – Lunken Field, which connects to the eastern section of the existing Ohio River Trail and to the Little Miami Scenic Trail.

The proposed project does not rely on any other project to meet the established purpose and need. Additionally, the project is independent of any other transportation improvement in the area and does not preclude any future project. Therefore, independent utility is established for the proposed project.

2. Alternatives

The upcoming section provides an overview of the options being considered for the SUP corridor, outlining both the No-Build and Build alternatives in greater detail. The No-Build alternative reflects current conditions and assumes no new improvements, while the Build alternatives introduce a continuous SUP designed to enhance safety, connectivity, and user experience. These Build options incorporate the desired 12-foot path width and identify areas where physical constraints may limit full implementation. Together, these descriptions outline the available options and how each could shape the corridor moving forward.

A. No Build Alternative

Under the no build alternative, bicycle connectivity within Cincinnati's East Community would not improve, leaving the gap between downtown Cincinnati and the Lunken Field area in place and preventing completion of the connection to the Ohio to Erie Trail and the Little Miami Scenic Trail.

B. Build Alternatives

The corridor is divided into three distinct segments for the build alternative analysis to allow the characteristics, constraints, and opportunities within each portion of the corridor to be presented in a more organized manner. Evaluating Segments 1, 2, and 3 individually allows for more effective comparison of alternatives, assessment of potential access points, and a clearer understanding of how each segment contributes to the overall connectivity and functionality of the proposed trail corridor. See **Figure 1**.

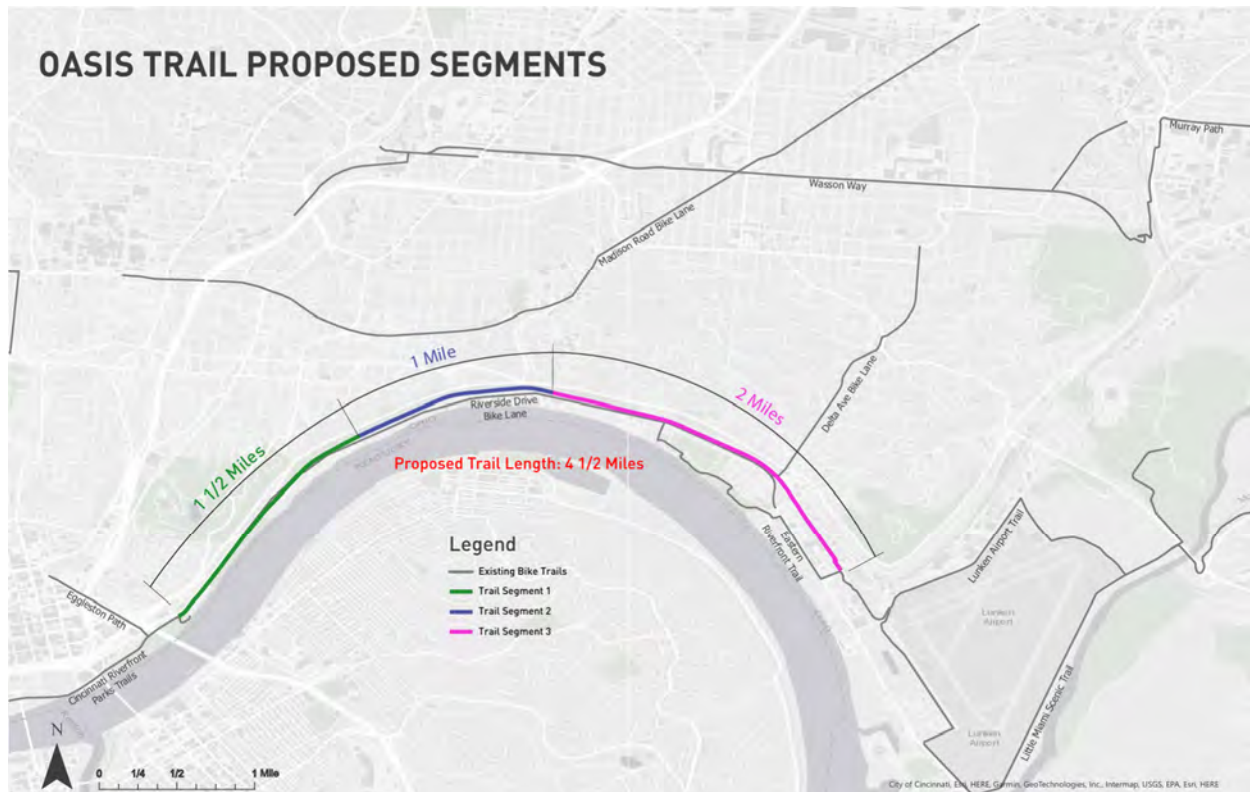


Figure 1 – Segments

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Across Segments 1, 2, and 3, the primary objective is to construct a continuous 12-foot-wide shared-use path that reflects Great Parks' desire for a full 12-foot SUP, meets current ODOT Multi-Modal Design Guide standards, and comfortably supports two-way bicycle traffic and pedestrian traffic. See **Figure 2**. During stage 1 design, opportunities for larger SUP widths - particularly within high pedestrian-congestion zones - will be further evaluated to determine where additional width may improve safety, user comfort and operational performance.



Figure 2 – Desired Shared-Use Path

However, several constrained conditions occur throughout the corridor due primarily to the limited widths of existing bridges, the presence of retaining walls, and the need to maintain AREMA-compliant rail clearances. These constraints restrict where the full trail width can be accommodated and shape the range of feasible design alternatives, including reduced-width trail sections, structural modifications, alignment shifts, or other context-sensitive treatments that balance safety, constructability, cost, and user experience. Refer to **Figure 3** for the applicable clearance envelope and dimensional requirements.

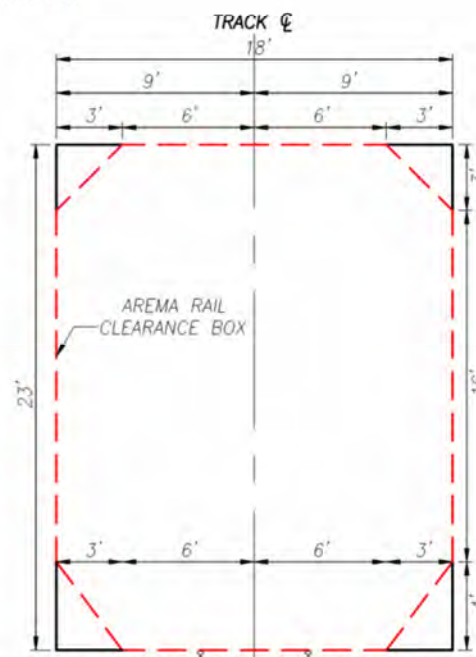


Figure 3 – AREMA Rail Clearance Box

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These structural constraints reduce the space available to maintain the desired 12-foot trail width and minimum 2-foot buffers in certain locations. As a result, reduced-width constrained sections and other feasible design treatments were evaluated and are discussed in detail in the sections below.

Across the corridor, potential pedestrian access points were identified to strengthen connections between the trail, nearby neighborhoods, and adjacent business districts. These locations are intended to offer convenient entry and exit opportunities for residents, improve walkability within the East Community, and support local commercial areas by increasing foot traffic and enhancing links between the corridor and surrounding destinations. Several of these access points are expected to function as ADA-accessible connections, with slopes, surfaces, and clearances designed to meet accessibility requirements. Preliminary spacing for each access point has been documented, with detailed distances provided in **Attachment A**.

As part of The Crown urban trail loop, the Oasis Trail will play a key role in connecting several currently disconnected trail segments and improving access between neighborhoods and their business districts. The connection to Walnut Hills will be strengthened through the Oasis link to Sawyer Point and the access point between Kemper Lane and the Rookwood Bridge, creating a direct route via Kemper Lane. Additional access points at Collins and Torrance Station will connect East Walnut Hills to the existing Madison Road bike lane, while the Delta Avenue bike lane will continue to support access from Columbia Tusculum and guide users toward the Mount Lookout Business District.

The most significant challenges to these connections are the steep roadway grades north of the Oasis Trail and the difficulty of crossing Columbia Parkway, a high-speed, multi-lane roadway that presents safety concerns for cyclists and pedestrians. Overcoming these barriers will require additional projects focused on improving safety and comfort at key conflict points, ultimately supporting a more complete and connected trail network for the city.

In addition to access improvements, several locations along the corridor may accommodate trailhead amenities such as bike racks, repair stations, benches, informational signage, and wayfinding elements. Opportunities for scenic viewpoints, including small overlooks or seating areas oriented toward the river, rail corridor, or surrounding hillsides, will be further evaluated during detailed design.

As part of the access-point review, several locations were also identified where street-parking opportunities could be incorporated, either through new pull-off parallel parking or added striping. Walworth Avenue and Hoff Avenue are the two streets with available space to support new on-street parking near proposed access points. Other

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access points can rely on existing public parking lots or current on-street parking, particularly in areas such as parks or the recreation center, where public restrooms are also available for trail users. Some of these restroom facilities may have seasonal availability. Additional restrooms may be accessible at nearby restaurants and cafés, though these should not be promoted as official trail amenities.

Emergency access needs were also evaluated throughout the corridor to identify emergency access points where vehicles can enter or exit the proposed Oasis Trail during an emergency. The suitability of each location depends on grading conditions and proximity to adjacent roadways, allowing emergency vehicles to transition smoothly from the right-of-way onto the trail. Tennyson Street, McCullough Street, Carrel Street, and St. Andrews Street are locations where the trail intersects public roads, providing straightforward access for emergency response. Similar conditions exist at Sawyer Point and at the two International Friendship Park access locations, where the trail crosses areas already used by vehicles or lies within park property. The access point between Kemper Lane and the Rookwood Bridge could also support emergency entry using the existing gated connection from Riverside Drive. In addition, the proposed configuration along Gladstone—where the trail briefly joins automobile traffic—would naturally allow emergency vehicles to enter and exit the corridor.

Potential emergency access points were identified at intervals that enable first responders to reach the trail efficiently while minimizing impacts on adjacent properties. Distances between these locations are provided in **Attachment A**, with final spacing and design to be refined during detailed design in coordination with local emergency services.

Across all three segments, certain areas along the trail were identified where design constraints, potential alternatives, and pedestrian access opportunities vary based on surrounding conditions. Identification of these areas help to organize the evaluation of where full-width trail construction is feasible, where reduced-width sections may be required, and where additional treatments—such as retaining walls, bridge modifications, or access improvements—may be necessary. Within these constrained locations, the study identifies where structural limitations occur, outlines the range of feasible design responses, and highlights opportunities for new or improved pedestrian access points, ADA-compliant connections, trailhead amenities, emergency access locations, and potential vista points.

In contrast, areas outside of these constrained locations can accommodate the desired 12-foot path width with standard buffer zones and typical construction treatments. These more flexible areas also present opportunities to incorporate trailhead features—such as bike parking, seating, wayfinding signage, and scenic overlooks—to support user needs and reinforce the trail’s role as a community asset.

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The alternatives associated with both the constrained areas and the pedestrian access opportunities are discussed in the following sections to provide a clear understanding of the design considerations and tradeoffs associated with each segment of the corridor. The build alternatives and pedestrian access alternatives within each segment are described below, proceeding from the beginning of the project (Sawyer Point) to the Ohio River Trail at Carrel St.

Segment 1 extends from Sawyer Point near The Boathouse and follows the existing railroad corridor to the Lancaster Street pedestrian access tunnel. The segment includes pedestrian access points at Friendship park and a potential pedestrian access point near the Kemper Lane/Rookwood Bridge.

Segment 2 begins at the Lancaster Street pedestrian access tunnel and follows the existing railroad corridor to the vicinity of the former Torrence Road Station. This segment includes several potential pedestrian access points at Lancaster Street, Hazen Street, Gladstone Avenue, and Torrence Road Station.

Segment 3 extends from the former Torrence Road Station area to the eastern terminus at the Carrel Street connection with the Ohio River Trail. This segment includes potential pedestrian access points at St. Andrews Street, the Walworth Tunnel, Delta Avenue, Stanley Avenue, Eastern Avenue, Donham Street, and the Carrel Street connection.

Additional discussion is provided in the sections that follow.

Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel

1. Montgomery Inn Boathouse Drive to International Friendship Park – Plaza of the Sun

Three build alternatives were developed for this portion of Segment 1. These alternatives are the following:

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Alternative A1: In this section, the SUP utilizes the existing space behind the bollard fence line along the abandoned railroad corridor. See **Figure 4**.



Figure 4 – Existing Space Boathouse Drive

This area provides sufficient width to accommodate a constrained 10-foot-wide SUP with 2-foot buffers between the existing bollard fence and the proposed fence separating the trail from the active railroad. To fit the trail within these limits, the SUP will be paved up to the proposed fence line. See **Figure 5**.

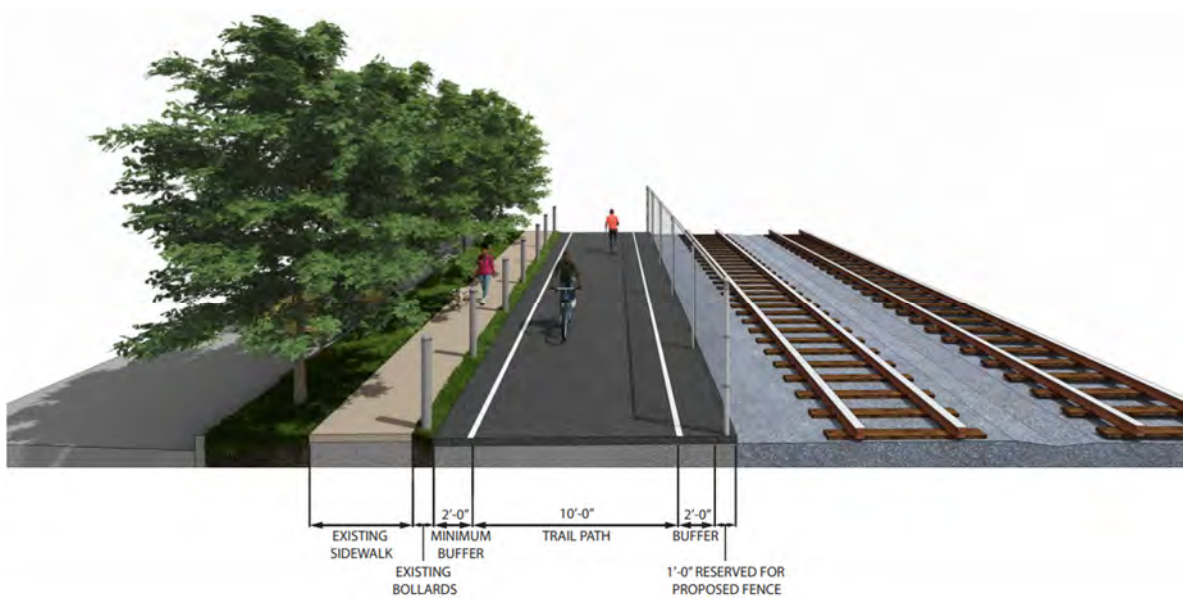


Figure 5 – Alternative A1

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Alternative A2: In this alternative, the SUP occupies the space along the abandoned railroad corridor after removal of the existing sidewalk and bollard fence. This configuration allows for an 11-foot-wide SUP with 2-foot buffers on both sides. To support stormwater quality, an 11-foot tree lawn matching the trail width will be added between the existing curb line and the proposed SUP. The trail surface will extend to the proposed fence line separating the trail from the active railroad. See **Figure 6**.

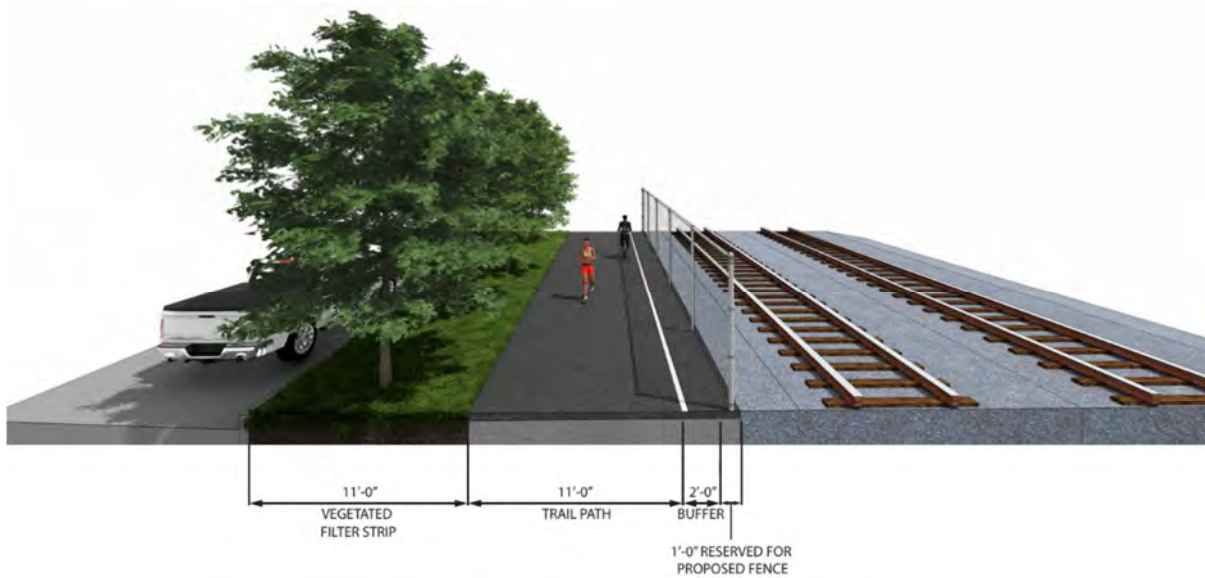


Figure 6 – Alternative A2

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Alternative A3: In this alternative, the SUP also utilizes the abandoned railroad corridor following removal of the existing sidewalk and bollard fence. This alignment accommodates a 12-foot-wide SUP with 2-foot fence line buffer. A 10-foot tree lawn will be provided to avoid disturbing the root structures of existing trees. See **Figure 7**.



Figure 7 – Alternative A3

2. International Friendship Park – Plaza of the Sun

Alternative B1: Within this section, the SUP follows the available space between the existing retaining wall and the active railroad line, while maintaining required rail clearances and providing a continuous trail connection. See **Figure 8**.



Figure 8 – Existing Condition

This corridor can accommodate a constrained 8-foot-wide SUP with 2-foot buffers on both sides. To fit the trail within the existing limits, the trail surface will extend directly to both the existing retaining wall and the proposed fence separating the trail from the railroad. This constrained condition continues for approximately 200 feet before the corridor widens enough to support the preferred 12-foot trail width. This alignment reflects the most feasible configuration and demonstrates how the trail can be accommodated without major structural modifications. See **Figure 9**.

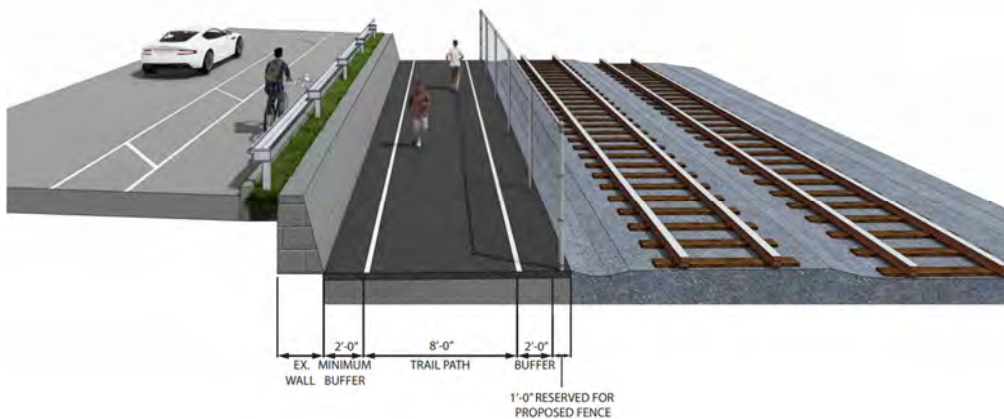


Figure 9 - Alternative B1

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Alternative B2: In this alternative, the SUP is positioned between a new retaining wall and the proposed fence along the active railroad. This configuration provides a full 12-foot-wide SUP with 2-foot buffers on both sides. To achieve this width, the existing retaining wall must be removed and rebuilt approximately five feet into Riverside Drive, occupying the space currently used by the on-street bicycle lane. The bicycle lane buffer would be removed to accommodate the shifted wall. This condition continues for approximately 200 feet until the corridor widens enough to fit the desired 12-foot width within the existing wall location. See **Figure 10**.

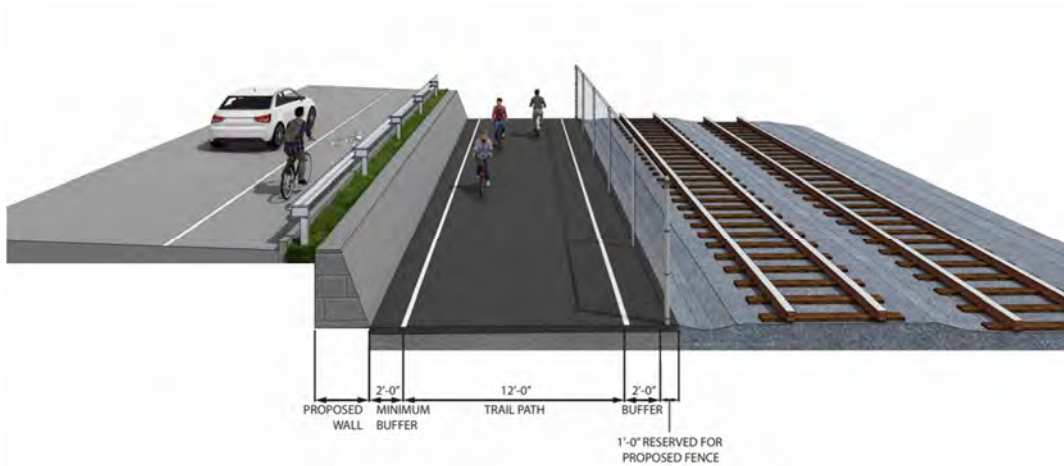


Figure 10 – Alternative B2

3. Kemper Lane Pedestrian Access Point to the Rookwood Bridge

A potential **pedestrian access point** could be established at the existing drive near Kemper Lane on Riverside Drive, providing a convenient and intuitive connection between the Walnut Hills neighborhood and the proposed trail corridor. The existing drive offers a direct approach to the SUP, making it well suited for an ADA-accessible access point with minimal grading or structural modifications. The existing swing gate would be removed, and any broken pavement between the current sidewalk and the proposed SUP would be replaced. This location would give nearby residents a safe, visible entry to the trail and strengthen overall network connectivity within the East Community. Its suitability—along with spacing relative to other access points and emergency access needs—will be further refined during detailed design. See **Figure 11**.



Figure 11 – Existing Kemper Lane Potential Access Point

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Alternative C1: This alternative places the SUP within the narrow corridor between the existing retaining wall and the active railroad line **See Figure 12**, making use of the limited space available while maintaining required rail clearances. The existing retaining wall, shown in **Figure 13**, defines the northern edge of the trail envelope, while the active track limits expansion to the south.



Figure 12 – Existing Space



Figure 13 – Existing Retaining Wall

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Within these constraints, the alignment is designed to preserve continuous trail connectivity and accommodate appropriate buffer widths wherever feasible. This corridor can support a constrained 9-foot to 10-foot-wide SUP with 2-foot buffers on both sides. To fit the trail within the existing limits, the trail surface will extend directly to both the retaining wall and the proposed fence separating the trail from the railroad. This constrained condition continues for approximately 600 feet before reaching the bridge. See **Figure 14**.

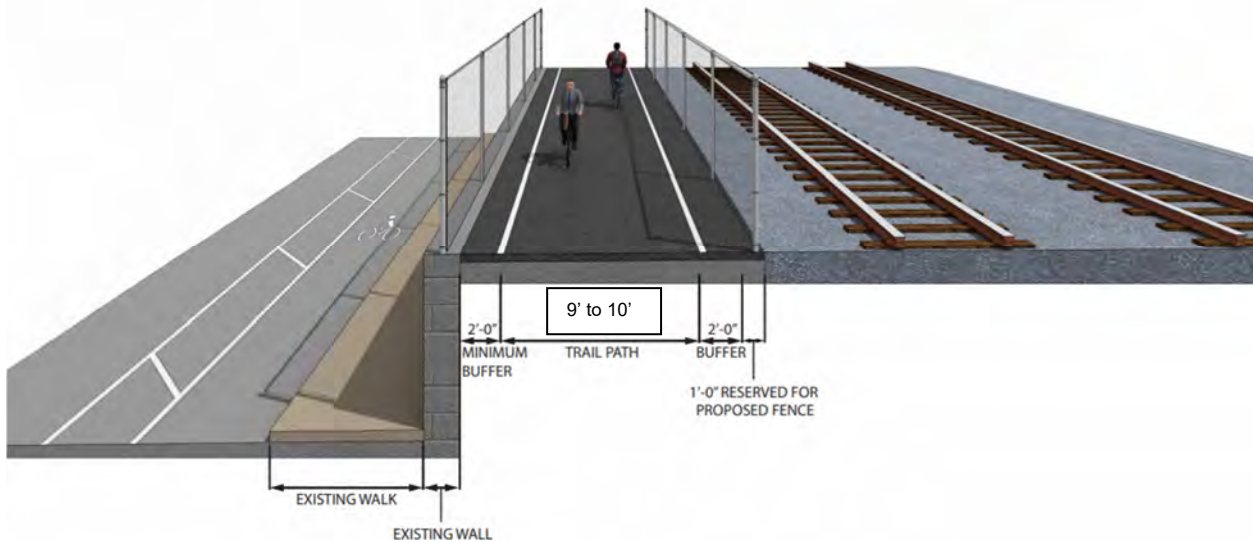


Figure 14 – Alternative C1

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Alternative C2: This alternative positions the SUP between a new retaining wall and the proposed fence along the active railroad, allowing for a full 12-foot-wide SUP with 2-foot buffers on both sides. Achieving this width requires removal of the existing retaining wall and construction of a new wall in a shifted alignment. To accommodate the revised wall location, the existing sidewalk and curb inlets will be relocated, and the on-street bicycle-lane buffer will be removed. Within this configuration, the alignment maintains required rail clearances and provides a consistent, unobstructed trail section through the corridor. This condition extends for approximately 600 feet. See **Figure 15**.

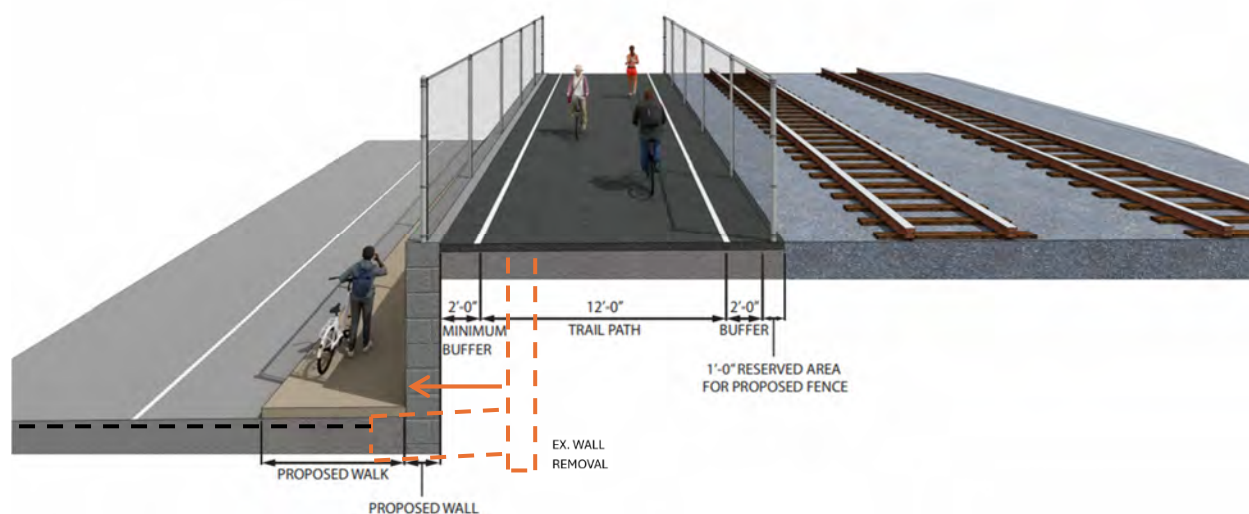


Figure 15 – Alternative C2

Alternative C3: This alternative allows for a full 12-foot SUP with 2-foot buffers on both sides by removing the inactive north track and shifting the active south (main) track approximately 5 feet to the south to accommodate the trail. A sidetrack located south of the main line—from the Rookwood Bridge west to the entrance of International Friendship Park—would also be shifted to match the new alignment. To the south, the relocated tracks would tie back into the existing alignment where the current tracks curve toward the shifted position. To the north, the main line would reconnect through a realigned horizontal curve. In total, approximately 2,750 track-feet of main line and 1,050 track-feet of siding, including the turnout at the north end of the siding, would be shifted as part of this rail realignment.

4. Rookwood Bridge

The Rookwood Bridge is a built-up steel through-plate girder bridge with built-up box floor beams oriented perpendicular to the substructures (abutments and pier). The floor beams frame into the plate girders or bear directly on the substructures at their ends. A deck plate above the floor beams contains ballast that supports the rail ties and tracks. B&N performed a bridge assessment that was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. This assessment is included within **Attachment E** and provides recommendations regarding the existing condition of the bridge. It should be noted that the Southwest Ohio Regional Transit Authority (SORTA) has released the referenced 2024 repair plans for construction bidding, with submissions due in June 2026.

In addition to the work recommended in the bridge assessment report, additional modifications will be required to convert the bridge for shared-use trail purposes. Two trail widths are under consideration for the Rookwood Bridge: a full-width 12-foot trail and a temporarily narrowed 8-foot trail.

8-Foot-Wide Trail on Rookwood Bridge

Alternative D1: If an 8-foot-wide trail is carried over the existing Rookwood Bridge, minimal additional structural work would be required. Within the proposed trail area, ballast, rail ties, and tracks would be removed to create space for construction of the full-depth trail section. Protective fencing would be required on both sides of the trail to prevent users from interfacing with the active rail lines and to protect users from falling from the bridge.

This constrained condition continues along the full length of the bridge approx. 100 feet

Estimated Bridge Construction Cost: \$50,000

12-Foot-Wide Trail on Rookwood Bridge

With the current configuration of the two railroad tracks, there is insufficient space to maintain the southern rail line and construct a 12-foot-wide trail within the footprint of the existing northern track. Two alternatives are proposed to accommodate a 12-foot-wide trail on the Rookwood Bridge: (1) maintain the southern rail line in its current location, or (2) relocate the southern rail line.

Alternative D2: This alternative provides a full 12-foot-wide shared-use trail with 2-foot buffers on both sides. Maintaining the southern rail line in its current location while providing the full trail width would require construction of a moment slab that overhangs the existing northern girder by approximately 5 feet 6 inches. A moment slab is designed with sufficient counterbalance on the opposite side such that loads applied to the overhanging portion do not result in overturning. Preliminary calculations show that

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the slab would be 1' thick in the overhang and 2' thick in the portion over the current bridge to provide the counterbalance weight that can support the dead and live loads in the overhang portion. A 5 feet 6 inch overhang is well beyond standard and would be extremely difficult and costly to construct.

Estimated Bridge Construction Cost: \$425,000

Alternative D3: The Rookwood Bridge was originally designed and constructed to accommodate four rail lines; however, only two were ultimately built. As a result, sufficient width exists to relocate the southern rail line farther south, allowing construction of a full-width trail without the addition of major structural elements. Under this alternative, minimal additional bridge work would be required. Within the proposed trail area, ballast, rail ties, and tracks would be removed to allow for construction of the full-depth trail section. Protective fencing would be required on both sides of the trail to separate trail users from active rail operations and to provide fall protection.

Estimated Bridge Construction Cost: \$50,000

Implementing this configuration would involve removing the inactive north track and shifting the active south (main) track approximately 5 feet to the south to accommodate the trail. A sidetrack located south of the main line—from the Rookwood Bridge west to the entrance of International Friendship Park—would also be shifted to match the new alignment. To the south, the relocated tracks would tie back into the existing alignment where the current tracks curve toward the shifted position. To the north, the main line would reconnect through a realigned horizontal curve. In total, approximately 2,750 track-feet of main line and 1,050 track-feet of siding, including the turnout at the north end of the siding, would be shifted as part of this rail realignment.

Estimated Rail Realignment Cost: \$192,000

Segment 2 – Lancaster Street Pedestrian Access Tunnel to Torrence Road Station

1. Lancaster Street Pedestrian Access Tunnel

The Lancaster Tunnel is a reinforced concrete structure constructed in 1914 to provide pedestrian access from Riverside Drive to the northern railroad track. The tunnel is currently in a state of severe degradation and has been closed to pedestrian use. See **Figure 16**.



Figure 16 – Lancaster Tunnel

Based on its present condition, rehabilitation is not considered feasible, and use of the existing tunnel or retaining walls for the trail is not recommended. Three alternatives were evaluated: abandonment, rehabilitation, and replacement. Relocating the tunnel was not evaluated, as it offers no significant benefit and would likely result in higher costs due to the need to abandon the existing structure.

Alternative E1: Rehabilitation

The tunnel exhibits significant structural distress, including large cracks in the headwall (approximately 2 inches wide), concrete crushing at the tunnel crown, and heaving of the tunnel floor. These conditions indicate that the tunnel walls and foundations have shifted inward.

The retaining walls at the north end of the tunnel, which support the stairway, display multiple extensive longitudinal cracks (up to 1.5 inches wide) and appear to be separating from the tunnel structure.

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Based on these findings and previous inspection reports, the advanced state of deterioration precludes rehabilitation to a condition suitable for public use. Rehabilitation is therefore not recommended.

Estimated Tunnel Construction Cost: N/A

Alternative E2: Abandonment

This alternative involves permanently discontinuing pedestrian use of the existing tunnel. The tunnel would be blocked from public access by either constructing walls at the entrances or filling the tunnel.

If only the entrances are sealed, the structure would continue to deteriorate—potentially at an accelerated rate due to increased humidity—and could fail while trail users or rail traffic are present above. Therefore, filling the tunnel is recommended.

Due to the geotechnical properties of the Oasis Corridor, the fill material should be lightweight to minimize fill-induced settlement.

Estimated Tunnel Construction Cost: \$150,000

Pedestrians could instead be directed to a potential at-grade connection at nearby Hazen Street.

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This abandonment of the tunnel allows the SUP to maintain a full 12-foot width with 2-foot buffers on both sides as it passes above the former tunnel location. See **Figure 17**.



Figure 17 – Alternative E2 Shared-Use Path

Alternative E3: Replacement

Replacement of the tunnel would require removal of the existing structure and installation of a precast concrete three-sided arch. The existing stairs and retaining walls would be replaced with an ADA- and ODOT-compliant ramp.

This alternative would require a long-term temporary closure of the railroad tracks, including removal and replacement of the southern tracks. Removal of the tunnel would necessitate excavation of the fill material above the structure. Due to the compromised condition of the existing tunnel, partial removal is not recommended; complete removal should occur prior to new construction.

Construction of the new tunnel would include a three-sided precast concrete structure and ADA- and ODOT-compliant ramps leading to the trail. The ramp would ascend at a slope of 1 vertical to 13 horizontal, with 5-foot landings provided for every 30 inches of vertical rise. Meeting these requirements would result in a ramp approximately 350 feet in length.

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A retaining wall along the trail side of the ramp would extend the full length of the ramp and vary in height from approximately 20 feet to 1 foot. Given the site's geotechnical conditions, anchoring of this wall is anticipated.

To minimize disturbance to the hillside north of the corridor, construction of a drilled shaft retaining wall behind the existing wall is recommended. This wall would vary in height from approximately 30 feet to 1 foot and would require multiple rows of ground anchors along most of its length.

The retaining walls along the north side of the corridor would be significant in size and complex to construct due to the soil conditions and slopes typical of the site. These walls would be the main cost driver of the replacement alternative.

Estimated Tunnel Construction Cost = \$43,000,000

2. Hazen Street Pedestrian Access Point

The Hazen Street location presents an opportunity to establish a new pedestrian access point that would strengthen connectivity between the surrounding neighborhood and the proposed SUP corridor. Although Hazen Street does not continue across the rail corridor and dead-ends before the tracks, and no formal crossing or designated access route exists at this location, its proximity to Riverside Drive and the rail line makes it a logical and intuitive connection point for trail users. Establishing a new crossing at this location would enhance local mobility and improve trail visibility for nearby residents, however its implementation would require coordination with the railroad to ensure the crossing is designed in compliance with railroad requirements. See **Figure 18**.



Figure 18 – Hazen Street Access Point

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Alternative F1: In this alternative, the SUP descends from the proposed alignment, crosses the southern active track, and continues over the existing tie-back wall, see **Figure 19**, before transitioning down Hazen Street to Riverside Drive using a 12-foot-wide, ADA-compliant switchback pathway.



Figure 19 – Existing Tie-Back Wall

The design would follow the principles outlined in ODOT's Multimodal Design Guide, incorporating accessible grades, appropriate turning radii, and required landings where slopes reach up to 7.69%. The alignment affects six private parcels, and the inclusion of intermediate landings ensures compliance with accessibility standards as the trail descends to Riverside Drive. See **Figure 20**.

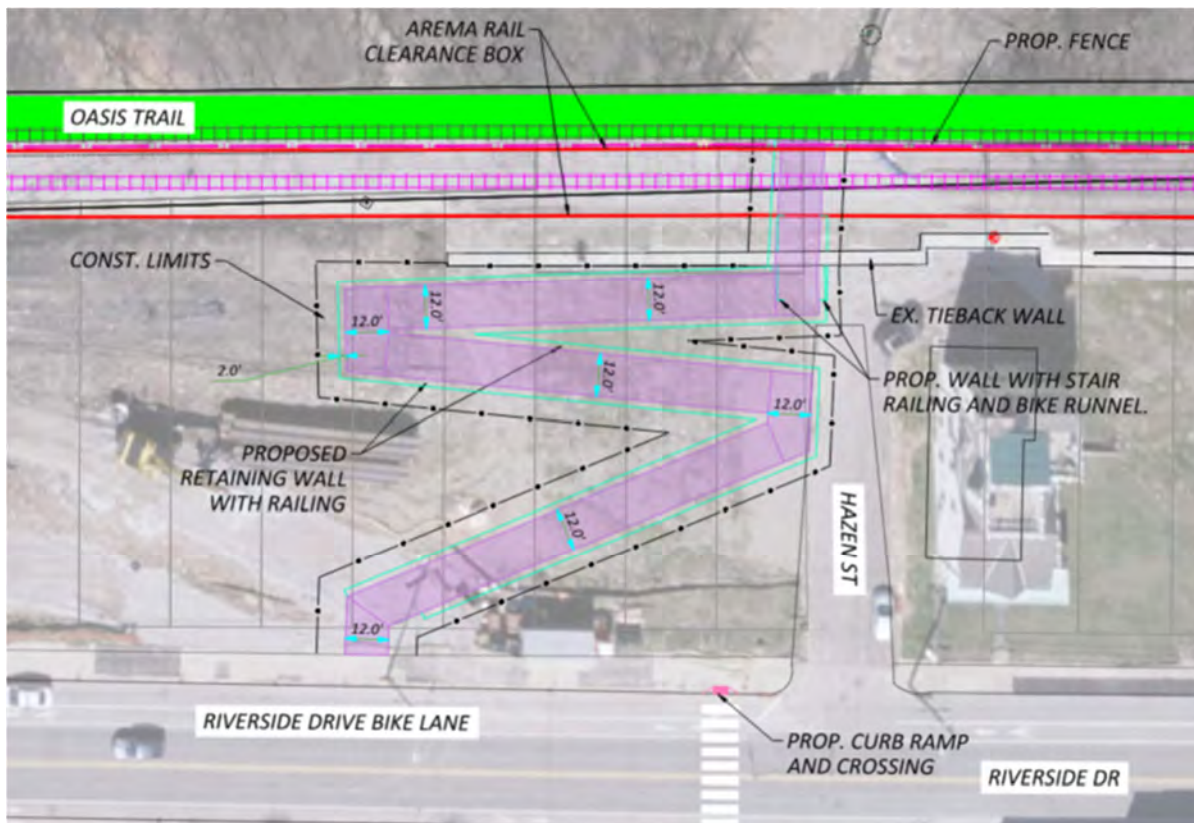


Figure 20 – Alternative F1

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Alternative F2: This alternative utilizes the existing steep roadway grade (16.0%) along Hazen Street by introducing a 10-foot-wide **side path** that follows the current right-of-way and existing street grades. To rise above the existing tie-back wall, the design incorporates a set of proposed steps with an adjacent runnel to support bicycle and stroller access. The alignment affects one private parcel and provides a direct, space-efficient connection. See **Figure 21**.

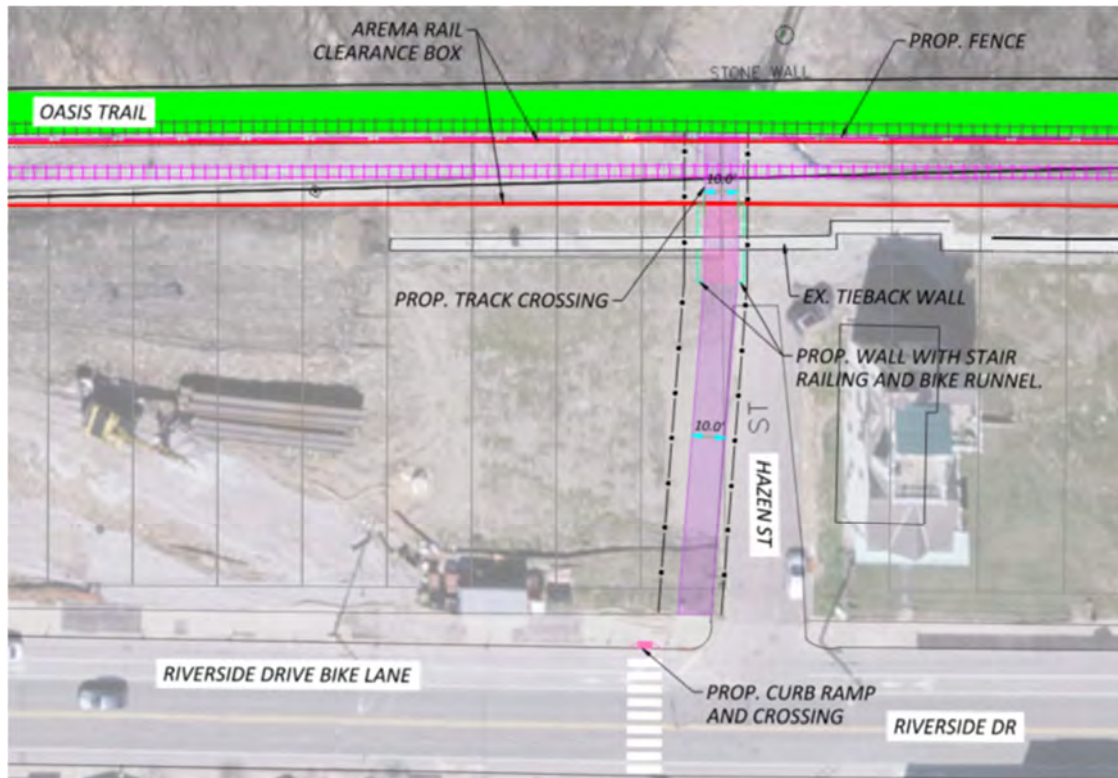


Figure 21 – Alternative F2

3. Collins Avenue Bridge

The existing bridge over Collins Avenue is a through-girder superstructure consisting of three through-plate girders that carry two railroad tracks over Collins Avenue. See **Figure 22**.



Figure 22 – Collins Avenue Bridge

The bridge was rehabilitated in 2021. Major work items included heat straightening of damaged steel, in-kind replacement of portions of the backwalls, and repainting of the structure.

The bridge currently provides a minimum vertical clearance of 10'-6", located beneath the northern girder (G1) over the northbound traffic lane. Girder 1 has a history of vehicular impacts and was subject to the heat straightening noted above. The existing superstructure has an approximate depth of 22 inches from the bottom of girder to the top of ballast, which would become the top of the proposed trail. Original construction plans are not available; therefore, information regarding foundation design is unknown. The rear (west) abutment appears to be a full-height reinforced concrete abutment, while the forward abutment appears to consist of a reinforced concrete cap on a stone abutment.

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Four superstructure options were evaluated using the 12-foot SUP section:

- Option 1 – Composite Prestressed Concrete Box Beams
- Option 2 – Reinforced Concrete Slab
- Option 3 – Prefabricated Steel Pedestrian Truss
- Option 4 – Reinforced Concrete Deck on Existing Superstructure

All options were analyzed using a 90 psf pedestrian live load and an H10 vehicular live load in accordance with the AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges.

Utilities

Several utilities are located near the bridge, including underground telecommunications, water, and gas lines, as well as overhead electric lines. One utility pipe is carried by the bridge; it is located underground outside the bridge limits and runs along the south face of Girder 2 (G2).

Option 1 – Composite Prestressed Concrete Box Beams

This option involves removing all existing bridge material north of the middle through-girder (G2) and constructing a new, independent trail superstructure. G2 and G3 would remain in service for railroad operations.

The proposed superstructure would consist of CB12-48 prestressed concrete box beams designed in accordance with archived ODOT Standard Drawing PSBD-1-13, bearing on the existing abutments. A minimum 6-inch-thick concrete deck would be cast on the beams, resulting in an overall superstructure depth of approximately 19 inches, including camber effects. Concrete barriers (2 feet high by 1 foot wide) would be constructed on the deck, with fencing mounted to the barriers. This configuration allows drainage to be controlled and prevents runoff from discharging onto the railroad structure or roadway below.

Given the history of vehicular impacts at this location, prestressed concrete box beams may present long-term maintenance considerations. Per ODOT Bridge Design Manual Section 404.4.1, damage to box beams can require specialized repair techniques. Because these beams rely on bond between concrete and prestressing strand, timely repair of cracks and spalls is critical to maintaining structural performance.

Beam erection would require crane access. Due to the steep grade of Collins Avenue, crane operations from the roadway are likely impractical, and use of the railroad corridor is anticipated. Delivery trucks would likely stage north of the bridge on Collins Avenue to minimize reach requirements and avoid conflicts with overhead utilities. Tree removal or trimming would also be required.

Option 2 – Reinforced Concrete Slab

This option consists of removing all existing bridge material north of G2 and replacing it with a new reinforced concrete slab superstructure, independent of the railroad structure. G2 and G3 would remain in service.

The proposed structure would consist of a 16-inch-thick reinforced concrete slab supported on the existing abutments. Concrete barriers and fencing would be similar to Option 1, providing consistent drainage control.

Construction would require temporary closure of Collins Avenue during formwork, shoring, and curing operations.

This option is expected to be the most resilient to vehicular impacts. Due to the roadway alignment, impacts are likely to occur at relatively low speeds and would likely result in minor surface repairs.

Option 3 – Prefabricated Steel Pedestrian Truss

This option includes removal of all existing bridge material north of G2 and replacement with a prefabricated steel pedestrian truss, independent of railroad operations.

The truss would consist of weathering steel with an asphalt walking surface. To minimize structural depth, an underhung floor beam configuration would be used. Preliminary estimates indicate an overall depth of approximately 1 foot-6 inches from the walking surface to the lowest structural element.

Concrete barriers and fencing would be consistent with the previous alternatives.

Prefabricated trusses are typically constructed from tubular steel members with welded connections. For a structure of this size, member sizes would be relatively small, resulting in limited lateral impact resistance. Given the history of vehicular impacts at this location, this option may present maintenance challenges and could require trail closures for inspection and repair following impacts.

Erection would require crane access similar to Option 1 and would likely utilize the railroad corridor. Tree removal or trimming would also be required.

Option 4 – Reinforced Concrete Deck on Existing Superstructure

This option retains the existing superstructure with minor modifications. The northern railroad track and ties would be removed and replaced with a reinforced concrete deck. The existing minimum vertical clearance of 10'-6" would remain unchanged.

To reduce the frequency of vehicular impacts, installation of low-clearance warning bars is recommended. While this alternative does not improve vertical clearance, the existing structure has demonstrated resilience to impacts.

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Vertical Clearance

The purpose of the superstructure options is to evaluate options for increasing vertical clearance over Collins Avenue for the proposed trail crossing. The existing minimum clearance is 10'-6" under G1, while the clearance under G2 is approximately 11'-9".

ODOT standards require a minimum vertical clearance of 14'-6" over local roads, with an additional 1 foot for pedestrian bridges, resulting in a total requirement of 15'-6" per the ODOT Location and Design Manual (L&D), Volume 1.

Each option was evaluated to determine the required increase in trail profile to meet the following criteria: maintain existing clearance, exceed G2 clearance by 1 inch, or achieve 15'-6" clearance.

Profile Increase Required for Vertical Clearance			
Superstructure Alternative	Maintain Existing*	G2 Controls**	Provide 15'-6"
Option 1	0'-0"	1'-1"	4'-9"
Option 2	0'-0"	0'-10"	4'-7"
Option 3	0'-0"	1'-0"	4'-8"
Option 4	0'-0"	N/A	N/A

* Existing minimum vertical clearance is 10 feet 6 inches under G1 and over northbound lane.

** Existing vertical clearance at G2 is 11 feet 9 inches.

Limitations and Considerations

Change in Exposed Height of Abutment for Profile Changes			
Superstructure Alternative	Maintain Existing	G2 Controls	Provide 15'-6"
Option 1	0%	8%	36%
Option 2	0%	6%	35%
Option 3	0%	8%	36%
Option 4	0%	N/A	N/A

Average exposed height of the abutment under the proposed trail is 13.1 feet.

Due to the absence of original construction plans, the capacity of the existing abutments and foundations cannot be verified. Therefore, the ability of the abutments to support additional loads associated with profile increases is uncertain. Potential mitigation measures include the use of lightweight fill.

Adjustments to the trail profile can be made without impacting the southern active railroad track; however, grading cannot extend into required railroad clearances. As a

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result, a short retaining wall or self-stabilizing material would be required to accommodate grade transitions.

Estimate of Probable Costs

Estimated construction costs have been calculated for each of the proposed superstructure alternatives. ODOT's Summary of Contracts Awarded and bid data from similar projects were used to determine the costs of each of the major bridge work items. The cost estimates shown in this report are based on 2025 cost data and contain no contingency or inflation as they have been applied to the overall project costs by the prime consultant.

The primary goal of Options 1, 2, and 3 is to raise the minimum vertical clearance to reduce the amount of bridge impacts by vehicles on Collins Ave.; therefore, the construction cost estimate for these alternatives includes the costs to raise the profile needed to make G2 the location of minimum vertical clearance. Option 4 cannot accommodate changes in vertical clearance without major impacts to the adjacent railroad and does not include any costs for profile adjustments.

Construction Cost Estimate	
Superstructure Alternative	Initial Construction Cost
Option 1	\$280,000
Option 2	\$270,000
Option 3	\$330,000
Option 4	\$100,000

Recommendation

B&N does not recommend the use of Options 1, 2, or 3 without adjustments to the trail profile as it would not significantly increase the vertical clearance and the existing superstructure has proven to be very resilient to vehicular impact. Due to the large cost difference between B&N recommends the use of Option 4 with 12ft SUP. As stated above we would also recommend installing low clearance bars over Collins Avenue to help reduce vehicular impacts to the bridge.

4. Gladstone Avenue

Gladstone Avenue is planned to function as a low-speed shared street where vehicles, pedestrians, and cyclists operate within the same roadway environment. The corridor already includes several speed humps that help manage vehicle speeds and reinforce the intended traffic-calming character. See **Figure 23**.



Figure 23 – Existing Gladstone Avenue

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To maintain a continuous and accessible SUP, the proposed 12-foot-wide SUP will be positioned as close as possible to the active track AREMA zone to maximize usable width within the constrained Gladstone Avenue corridor. Approximately 25 feet minimum of cross-sectional space is available between the railroad fence line and the existing retaining walls; accounting for a 7-foot parked-vehicle envelope leaves roughly 18 feet for the operational shared space zone. See **Figure 24**.



Figure 24 – Gladstone Avenue Access Point

The entire Gladstone Avenue corridor will be resurfaced, with full-depth pavement reconstruction provided where it is necessary to support SUP structural requirements and accommodate vehicular loading. New speed humps will be installed to reinforce traffic calming and maintain appropriate operating speeds. The corridor will also incorporate sharrow pavement markings and associated signage to delineate shared-use operations and guide user movement.

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Existing homeowners currently place their trash bins on the abandoned rail line, see **Figure 25**, where the SUP will be constructed; therefore, coordination will be required to identify new bin-placement locations or to establish a centralized collection area within the existing turnouts that maintains operational efficiency and minimizes conflicts with trail users.



Figure 25 – Gladstone Ave Trash Bins

A new fence line is proposed along the edge of the trail alignment adjacent to the railroad, establishing a controlled interface with the rail corridor and enhancing user safety. Collectively, these treatments formalize the shared-use environment and provide a technically compliant, multimodal connection along Gladstone Avenue.

5. Torrence Road Station

Torrence Road Station serves as a key multimodal access point along the corridor, blending its historic rail-related features with modern active-transportation improvements. The station area retains several legacy elements that reflect its long-standing role in local mobility, and the proposed design approach seeks to respect and complement this historic character. See **Figure 26**.



Figure 26 – Existing Torrence Road Station

To enhance connectivity between Torrence Road Station and the surrounding neighborhoods, four pedestrian access alternatives have been developed—two providing connections to Riverside Drive and two linking to Columbia Parkway. Each option is designed to integrate seamlessly with the proposed SUP and maintain compatibility with the historic character of the station area. Together, these alternatives offer a range of approaches for improving neighborhood access while supporting safe, multimodal circulation throughout the corridor.

Riverside Drive Connection Alternatives

Alternative G1: This alternative is primarily contained within City property and the Torrence Road right-of-way, with one private property impact required to accommodate the necessary horizontal and vertical geometry. Under this configuration, Torrence Road will be removed and replaced with the proposed 12-foot-wide SUP, establishing a dedicated multimodal corridor in place of the existing roadway. The SUP is designed with a maximum 5% running slope in accordance with the ODOT Multimodal Design Guide.

To achieve an accessible connection between the SUP and Riverside Drive, the alignment incorporates an ADA-compliant switchback pathway that manages the elevation change while maintaining comfortable, accessible grades for all users. A series of new retaining walls with protective railings is required to support grade transitions, provide structural stability, and ensure adequate width throughout the accessible route.

The alignment is intentionally configured to avoid disturbance to the historic Torrence Station, preserving the structure in place and creating an opportunity to incorporate interpretive plaques, benches, and other context-sensitive amenities that highlight the corridor's rail history. This approach provides a direct, fully accessible connection to Riverside Drive while maintaining ADA compliance, minimizing property impacts, and respecting the historic character of the site. See **Figure 27**.

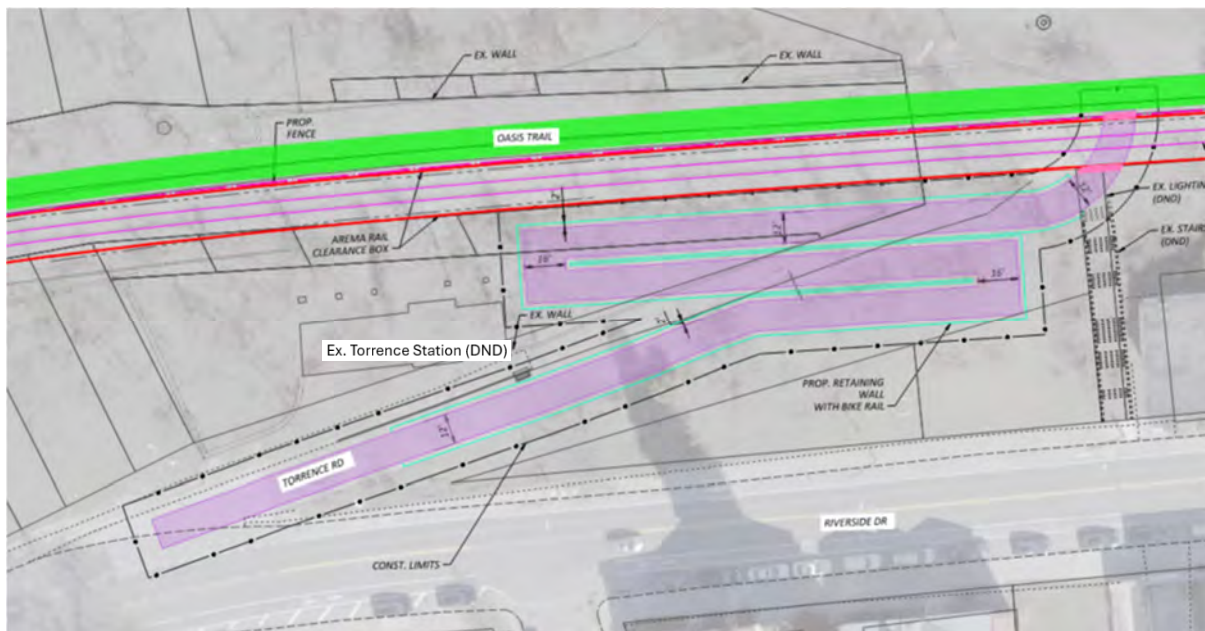


Figure 27 – Alternative G1

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Alternative G2: This alternative shifts the access route to follow the previously designed Torrence Road Station subdivision improvement plan submitted to the City in 2024. See **Figure 28**.

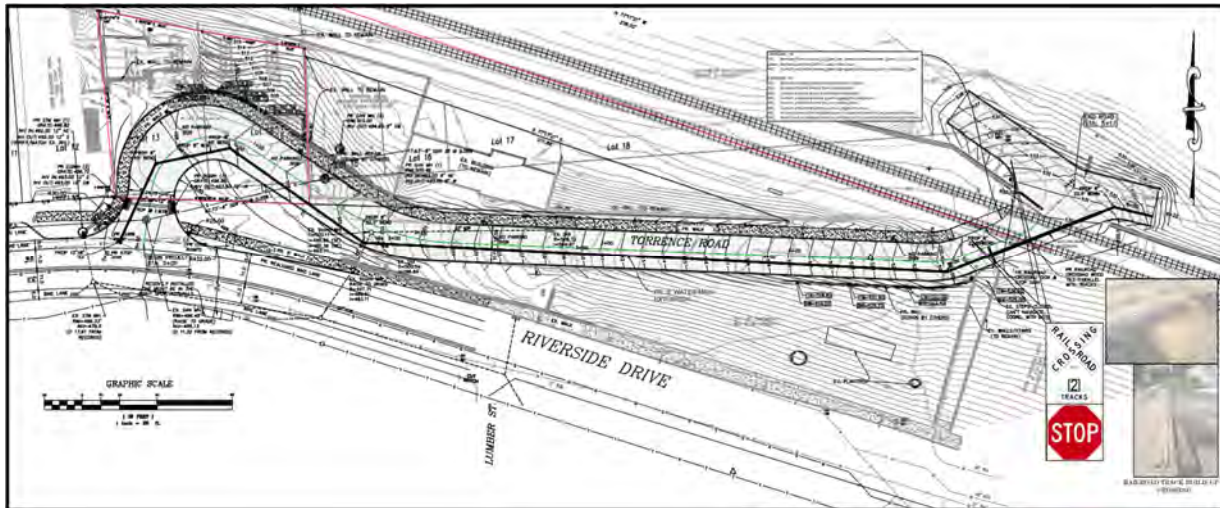


Figure 28 – Subdivision Improvement Plan

By aligning the connection with the proposed roadway configuration it supports long-term maintainability, preserves the historic setting of the station area, and reduces overall project costs.

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In the interim, before development of the improvement plan begins, a 8-ft sidewalk could be installed within the Torrence Road right-of-way, following the existing roadway grade of approximately 8% to maintain pedestrian access and continuity. See **Figure 29**.

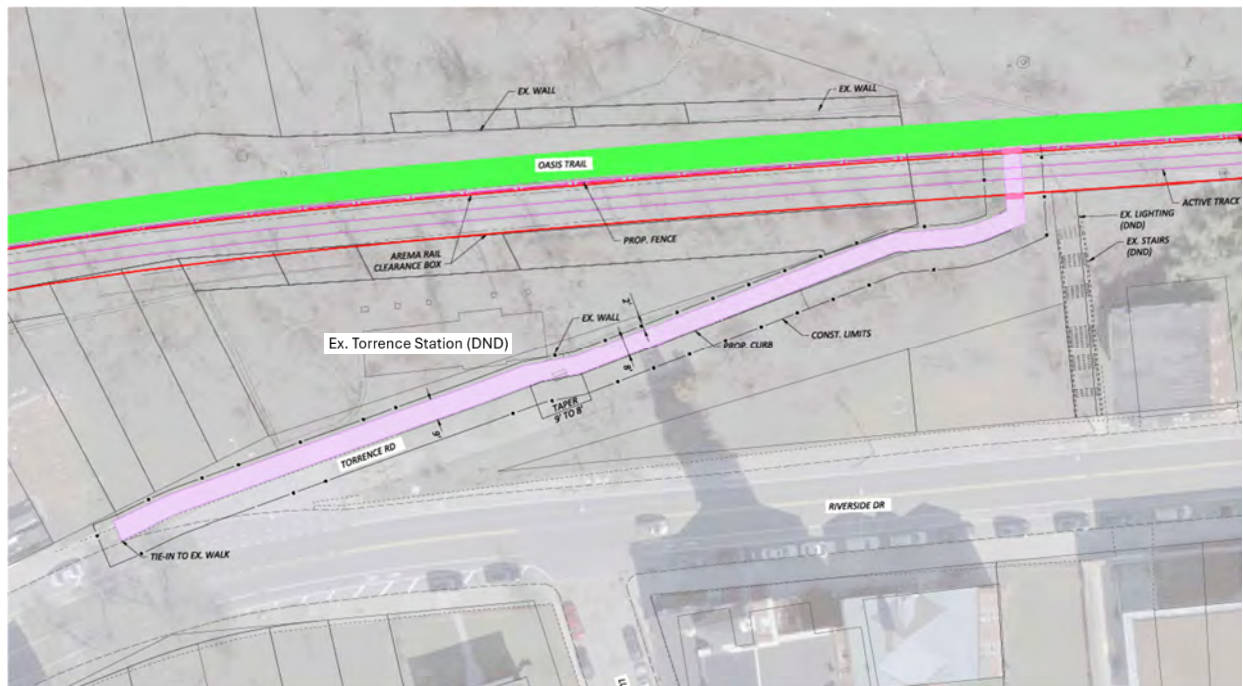


Figure 29-Alternative G2

This facility provides a safe, functional connection while avoiding premature grading or disturbance and ensuring compatibility with the future permanent configuration.

Given the benefits of leveraging the previously designed Torrence Road Station subdivision improvement plan submitted to the City in 2024, the preferred approach is to wait for the planned development to proceed. This strategy ensures that the permanent access route is constructed in coordination with the future roadway configuration, improving overall constructability, reducing redundant work, and lowering long-term costs. It also preserves the historic character of the station area while allowing a temporary sidewalk to maintain pedestrian connectivity in the interim. Collectively, these factors make deferring construction until the planned development begins the most efficient, cost-effective, and context-sensitive alternative.

Columbia Parkway Alternatives

Alternative G3: This alternative provides pedestrian access to Columbia Parkway and the hillside neighborhoods of East Walnut Hills, Evanston, and Hyde Park, which are located north of the station. See **Figure 30**.



Figure 30 – Alternative G3

The proposed 12-foot-wide SUP is designed to maintain maximum grades of 5%, requiring substantial earthwork and the construction of new retaining walls to navigate the steep topography. Achieving ADA-compliant slopes and landings may further expand the footprint of required earthwork and structural elements, resulting in impacts to 11 City-owned parcels as well as portions of the Torrence Road right-of-way.

The steep terrain also introduces significant slope stability concerns, necessitating detailed slope stability evaluations and potentially additional structural measures to ensure long-term safety and performance. These geotechnical constraints heighten the importance of careful grading design and may influence alignment selection, wall heights, and construction methods.

Given the sensitivity of the surrounding landscape and the proximity of historic resources, thoughtful design will be essential to ensure that new structural and grading elements integrate with and complement the historic character of the station area while minimizing encroachments. Figures illustrating the conceptual are provided in **Attachment D**.

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Alternative G4: This alternative shifts closer to Columbia Parkway before traversing down the hillside toward Torrence Station, allowing the 12-foot-wide SUP to maintain maximum grades of 5% while following a more favorable terrain profile. See **Figure 31**.



Figure 31 – Alternative G4

This shift reduces required earthwork and limits the need for extensive retaining-wall structures, decreasing construction complexity and long-term maintenance demands. The revised routing results in a slightly longer walking distance, but the improved terrain conditions help offset more intensive structural and grading requirements. Even with these refinements, achieving ADA-compliant slopes and landings results in impacts to 11 City-owned parcels as well as portions of the Torrence Road right-of-way.

To address remaining grade challenges along steeper segments, portions of the alignment transition to an elevated boardwalk structure, enabling the trail to maintain ADA-compliant slopes while minimizing disturbance to the hillside. This approach also helps avoid deeper cuts that could exacerbate slope stability concerns, which will require detailed slope stability evaluations and potentially targeted structural measures to ensure long-term safety and performance. These geotechnical constraints reinforce the importance of careful grading design and may influence final alignment selection, boardwalk lengths, and construction methods.

Implementation of this alternative will also require coordination with the potential Torrence Road Subdivision Improvement Plan, ensuring that the SUP alignment, grading transitions, and right-of-way needs are compatible with future roadway and utility improvements. Early coordination will help avoid redundant construction, reduce long-term conflicts, and support a cohesive multimodal network.

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Given the sensitivity of the surrounding landscape and the proximity of historic resources, thoughtful design will be essential to ensure that new structural and grading elements integrate with and complement the historic character of the station area while minimizing encroachments.

Alternative G5: An access point located between Gladstone Avenue and Torrence Road Station provides a direct connection from the hillside neighborhoods to the SUP, giving users a straightforward, convenient path down to the trail where they can travel east or west along the corridor. See **Figure 32**.

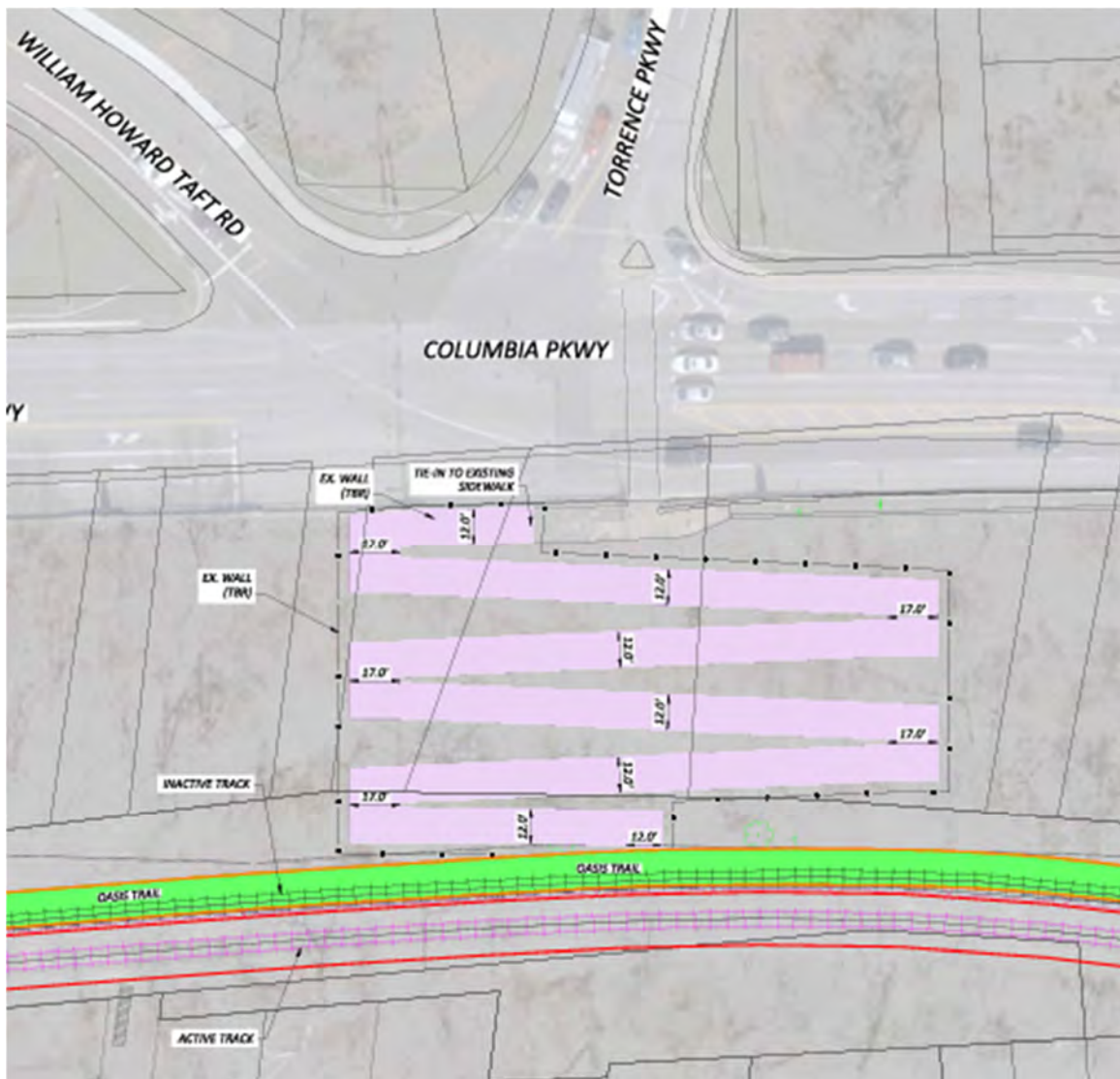


Figure 32 – Alternative G5

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The proposed 12-foot-wide connection is designed to maintain a maximum slope of 5%, utilizing an elevated switchback boardwalk to navigate the steep hillside while preserving ADA-compliant accessible grades. The elevated structure minimizes earthwork and slope disturbance, reducing the need for large retaining-wall systems and limiting impacts to the surrounding terrain. It also creates opportunities for vista overlooks and small seating areas at landing points, enhancing the user experience and highlighting views of the river valley and the historic station setting.

The steep terrain however introduces significant slope stability concerns, necessitating detailed slope stability evaluations and potentially additional structural measures to ensure long-term safety and performance. These geotechnical constraints heighten the importance of careful grading design and may influence alignment selection, wall heights, and construction methods. The elevated boardwalk helps address these challenges by spanning unstable or erosion-prone areas, reducing the need for deep cuts, heavy fills, or large retaining structures that could further destabilize the slope. By distributing loads through piers and minimizing ground disturbance, the boardwalk provides a more stable and predictable solution on steep, sensitive terrain.

The footprint associated with the boardwalk, landings, and trail width introduces property impacts along the hillside, including localized vegetation removal and property impacts affecting 3 City-owned parcels. Even with these considerations, the configuration provides a stable, predictable, and fully accessible connection between the hillside neighborhoods and the SUP while supporting seamless east–west mobility along the SUP and minimizing long-term impacts to the natural and historic setting.

Alternative G5, while comparatively more costly, is identified as the preferred option because it delivers the most direct, intuitive, and fully accessible connection between the hillside neighborhoods and the station area, all while remaining outside the Torrence Road right-of-way. Its elevated boardwalk configuration minimizes disturbance to the steep hillside, addresses slope-stability challenges, and enhances user experience through predictable grades and improved views. The design also creates opportunities for vista overlooks and small seating areas at landing points, showcasing the river valley and the historic station setting.

Importantly, G5 can be advanced independently of the potential Torrence Station Subdivision Improvement Plan, ensuring compatibility with future roadway, utility, and access modifications without creating conflicts or rework. Because of these long-term mobility, safety, and connectivity benefits, G5 is well-positioned not only as the preferred alternative but also as a strong candidate for inclusion in a **future city project** focused on resilient trail design and thoughtful station access across the corridor.

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Segment 3 – Torrence Road Station to End of Project

1. Hoff Avenue Connection

In this section, the existing Hoff Avenue access from Riverside Drive provides a direct but limited pedestrian route into the corridor. The current configuration includes a narrow approach path and a stairway that limits movement for pedestrians and bicyclists. See **Figure 33**.



Figure 33 – Existing Hoff Avenue Access

The proposed improvements widen the existing access path to approximately 5 feet and enhance the stairs with a bicycle runnel to support rolling access. See **Figure 34**.

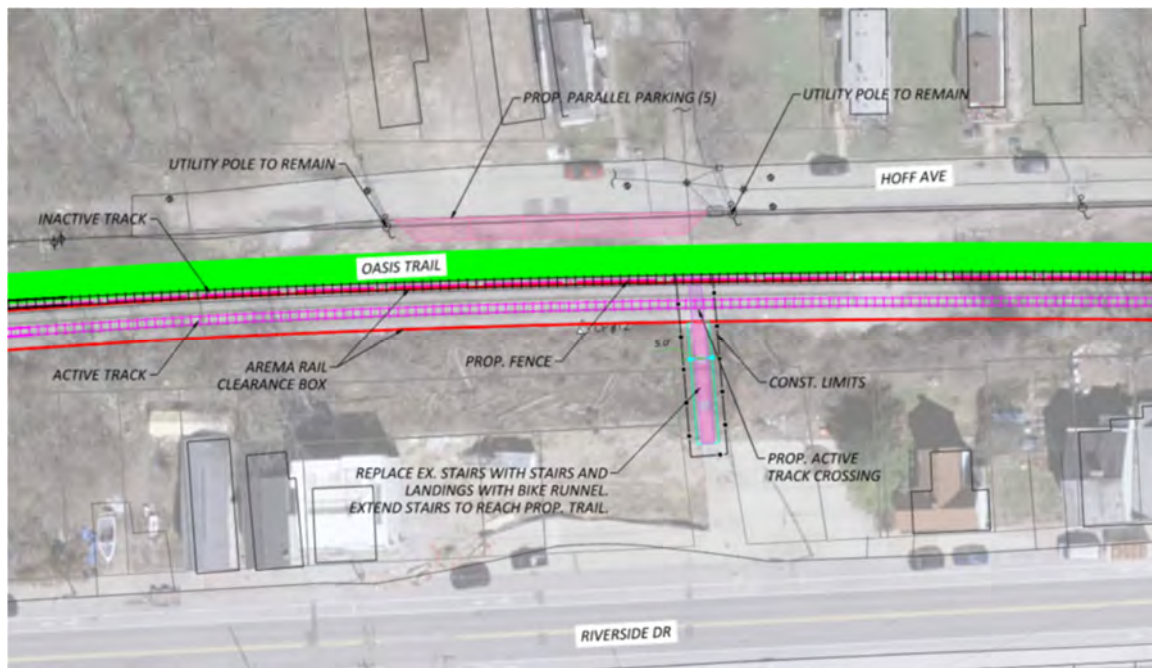


Figure 34 – Hoff Avenue Access Point

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While these upgrades improve overall usability, the configuration still limits full ADA access, as the steep topography and stair-based approach prevent the path from meeting accessible-route standards. However, this option remains inexpensive relative to other alternatives, relying on modest modifications rather than major structural interventions. To complete the connection, a designated pedestrian crossing of the active railroad will be added, creating a safer and more direct multimodal link for users approaching the corridor. The adjacent right-of-way along Hoff Avenue also offers the potential to accommodate limited pedestrian parking, further supporting access and improving overall access planning. Although not fully accessible, the improvements provide a more predictable and functional connection for most users and strengthen multimodal connectivity through thoughtful trail design.

2. St. Andrews Street

The existing St. Andrews Street railroad crossing provides a direct at-grade connection between the neighborhood and the rail corridor, but its current configuration offers limited pedestrian accommodation. The crossing surface, approach grades, and pedestrian delineation require improvement to support safe and comfortable multimodal use. See **Figure 35**.



Figure 35 – Existing St. Andrews Street

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Oasis Trail (PID 122971)

Alternative H1 – Switchback Path: In this alternative, a 12-foot-wide connection is constructed using a switchback alignment to create a more gradual and accessible route from Riverside Drive to the St. Andrews Street crossing. The configuration is designed to maintain 5% maximum grades, supporting ADA accessibility and providing controlled slopes that improve user comfort while navigating the steep hillside. Achieving these grades requires new retaining structures and careful grading design to balance cut-and-fill needs and maintain slope stability. The alignment remains entirely within SORTA property. This approach enhances accessibility and offers a predictable, comfortable walking and rolling experience while preserving a direct connection to the crossing. See **Figure 36**.

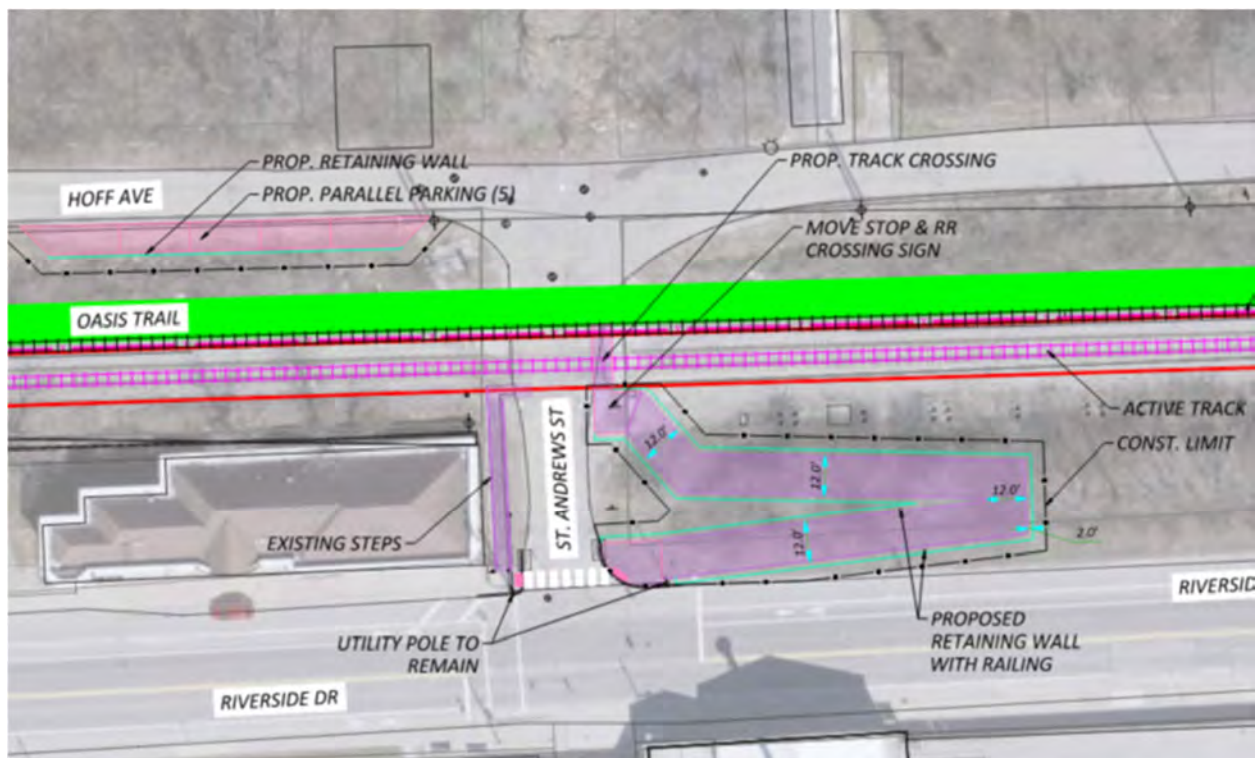


Figure 36 – Alternative H1

Feasibility Study

Oasis Trail (PID 122971)

Alternative H2: This alternative reconstructs the existing stairway with improved tread geometry, new handrails, and a bicycle runnel to support rolling access. While the configuration remains inexpensive compared to more extensive structural options, it does not provide full ADA accessibility due to the steep topography and stair-based design. Even so, it offers a more direct and compact connection between Riverside Drive and the crossing, improving overall user convenience. See **Figure 37**.

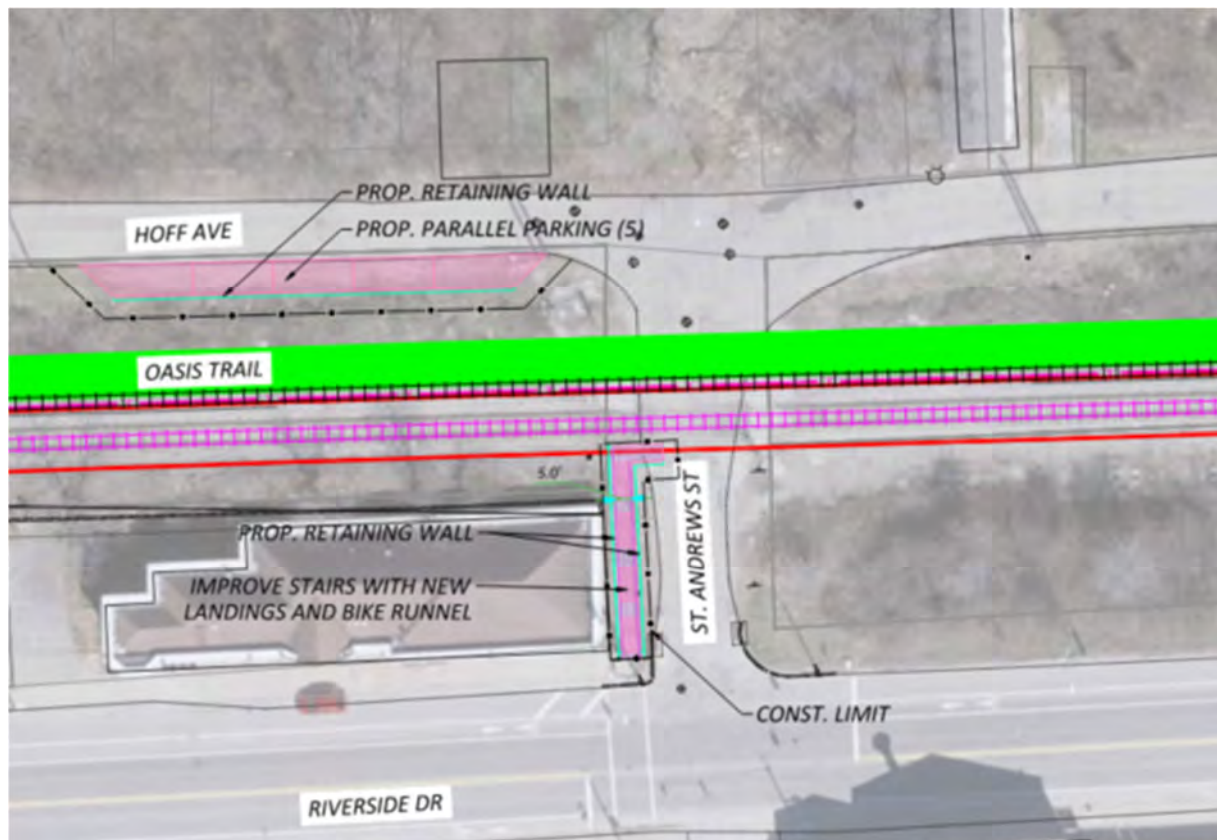


Figure 37 – Alternative H2

Alternative H2—the stair option—is identified as the preferred alternative due to its low cost, compact footprint, and straightforward constructability. While it does not provide full ADA accessibility from Riverside Drive, the improved tread geometry, new handrails, and integrated bicycle runnel create a direct and functional connection between Riverside Drive and the corridor. To support accessible access needs, ADA-compliant parking spaces are proposed along Hoff Avenue, allowing users with mobility limitations to reach the corridor from a flatter, more manageable approach.

Users seeking an alternate route may also travel along St. Andrews Street, which carries very low traffic volumes, though its 25% grade makes it significantly steeper and less comfortable for many travelers.

3. Walworth Tunnel

The existing Walworth Tunnel provides a unique grade-separated connection beneath the active railroad, but the current stairway and approach conditions limit its usability for pedestrians and bicyclists. See **Figure 38**.



Figure 38 – Walworth Tunnel

B&N has completed a structure assessment of the Walworth tunnel including our recommendations for the structure's current condition, which was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. There are no structure modifications that would be required to convert the rail to trail above the tunnel with the full-width trail.

Estimated Construction Cost = \$20,000

Feasibility Study

Oasis Trail (PID 122971)

Potential improvements include upgrading the existing tunnel stairs with improved tread geometry, new handrails, and a bicycle runnel to better support rolling access. At the top of the stairs along Walworth Avenue, a small collector node would be created to organize pedestrian movements and provide space for bicycle amenities such as short-term parking or a basic repair station. From this collector node, a new connector path would follow the curb line to reach more favorable terrain, allowing less than 5% slopes and meet ADA accessibility expectations. Together, these enhancements would transform the tunnel approach into a more inclusive connection. See **Figure 39**.

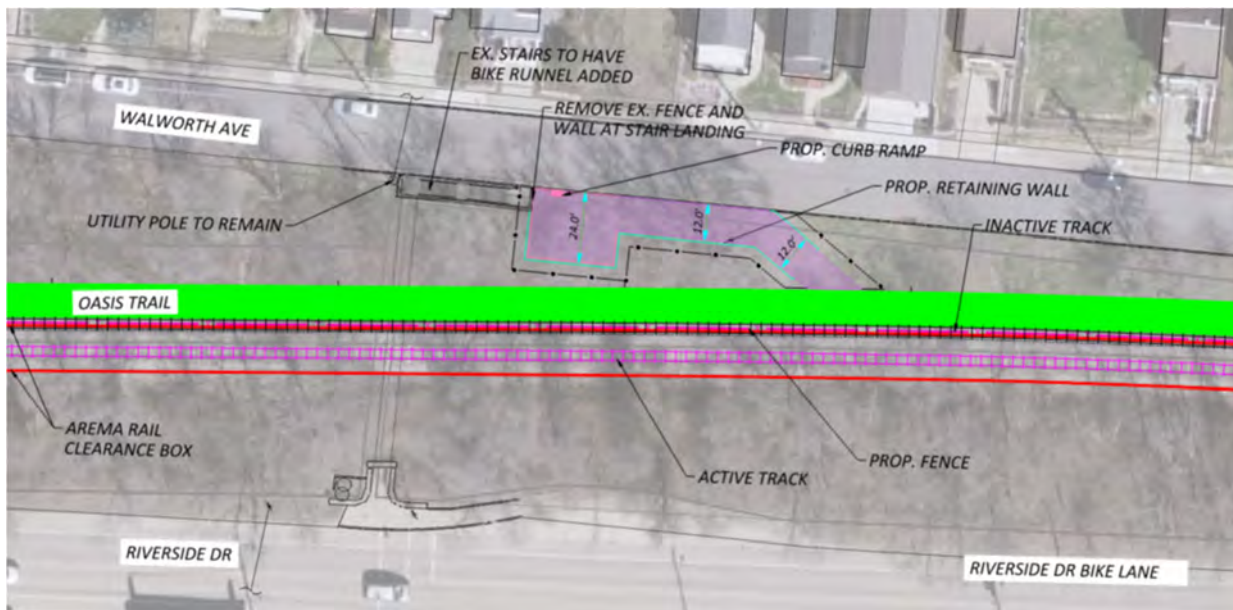


Figure 39 – Walworth Tunnel Access Point

4. Delta Avenue Bridge

The Delta Avenue bridge and the approximately 500-foot preceding retaining-wall segment present several feasibility considerations related to available corridor width, existing structural constraints, and the proximity of the active railroad. See **Figure 40**.



Figure 40 – Delta Avenue Bridge

The Delta Bridge is a built-up steel through-plate girder bridge with built-up box floor beams oriented perpendicular to the substructures (abutments and pier). The floor beams frame into the plate girders or bear directly on the substructures at their ends. A deck plate above the floor beams contains ballast that supports the rail ties and tracks. B&N performed a bridge assessment that was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. This assessment is included in this feasibility study as an appendix and provides recommendations regarding the existing condition of the bridge. It should be noted that the Southwest Ohio Regional Transit Authority (SORTA) has released the referenced 2024 repair plans for construction bidding, with submissions due in June 2026.

In addition to the work recommended in the bridge assessment, additional modifications will be required to convert the bridge for shared-use trail purposes. Two trail widths are under consideration for the Delta Bridge: a full-width 12-foot trail and a constrained 8-foot trail.

Three alternatives were evaluated to determine how the SUP could be accommodated within this constrained area.

8-Foot-Wide Trail on Delta Bridge

Alternative J1: In this alternative, the existing retaining wall remains in place, and the SUP is fitted within the current corridor limits. If an 8-foot-wide trail is carried over the existing Delta Bridge, minimal additional structural work would be required. Within the proposed trail area, ballast, rail ties, and tracks would be removed to create space for construction of the full-depth trail section. Protective fencing would be required on both sides of the trail to prevent users from interfacing with the active rail lines and to protect users from falling from the bridge. See **Figure 41**.

Estimated Bridge Construction Cost: \$50,000

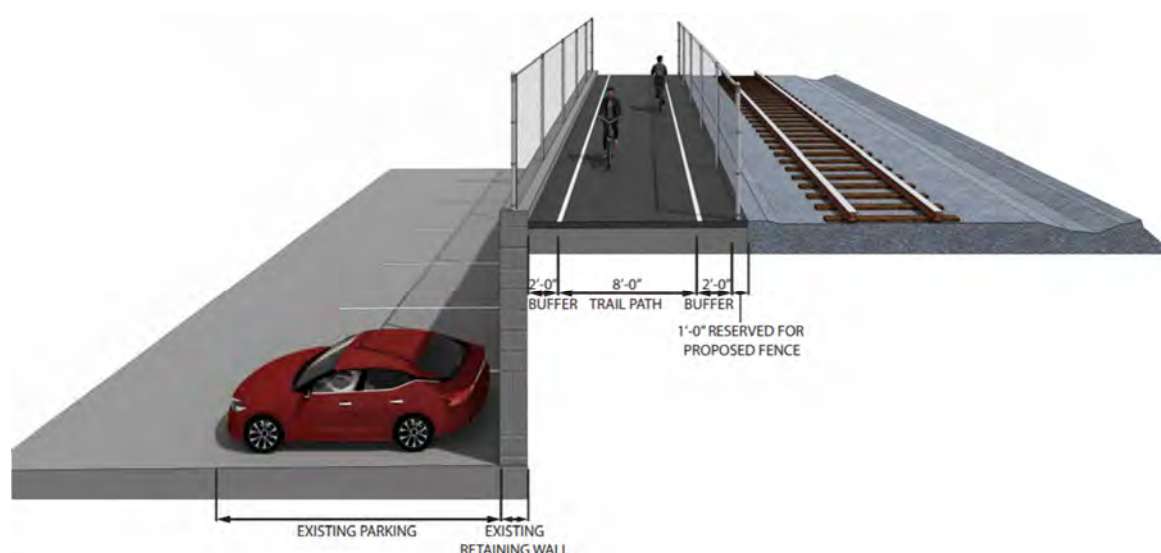


Figure 41 – Alternative J1

12-Foot-Wide Trail on Delta Bridge

With the current configuration of the two railroad tracks, there is insufficient space to maintain the southern rail line and construct a 12-foot-wide trail within the footprint of the existing northern track and the retaining wall and Delta Ave Bridge. Two alternatives are proposed to accommodate a 12-foot-wide trail on the Delta Bridge: (1) maintain the southern rail line in its current location, or (2) relocate the southern rail line.

Alternative J2: Maintaining the southern rail line in its current location while providing the full trail width would require construction of a moment slab that overhangs the existing northern girder by approximately 5 feet 6 inches. A moment slab is designed with sufficient counterbalance on the opposite side such that loads applied to the overhanging portion do not result in overturning. A 5 feet 6 inches overhang is beyond standard and would be difficult to construct.

Estimated Bridge Construction Cost: \$450,000

Feasibility Study

Oasis Trail (PID 122971)

The new alignment accommodates a 12-foot-wide shared-use trail with 2-foot buffer widths, improving user comfort and safety and meeting modern trail design expectations. However, achieving this width requires the existing retaining wall also to be shifted approximately 5 feet into the current parking lot, resulting in the loss of roughly 25 parking spaces and forcing a full reconfiguration of the remaining lot. This has a significant negative impact, reducing valuable parking capacity and disrupting existing site operations. Additionally, the structural work needed to relocate the retaining wall, reconstruct the parking area, and integrate the new trail geometry introduces a high expense, making this option substantially more costly than other alternatives. While the trail improvements enhance multimodal comfort, the combined effects of parking loss and elevated construction costs remain major drawbacks that must be carefully weighed. See **Figure 42**.

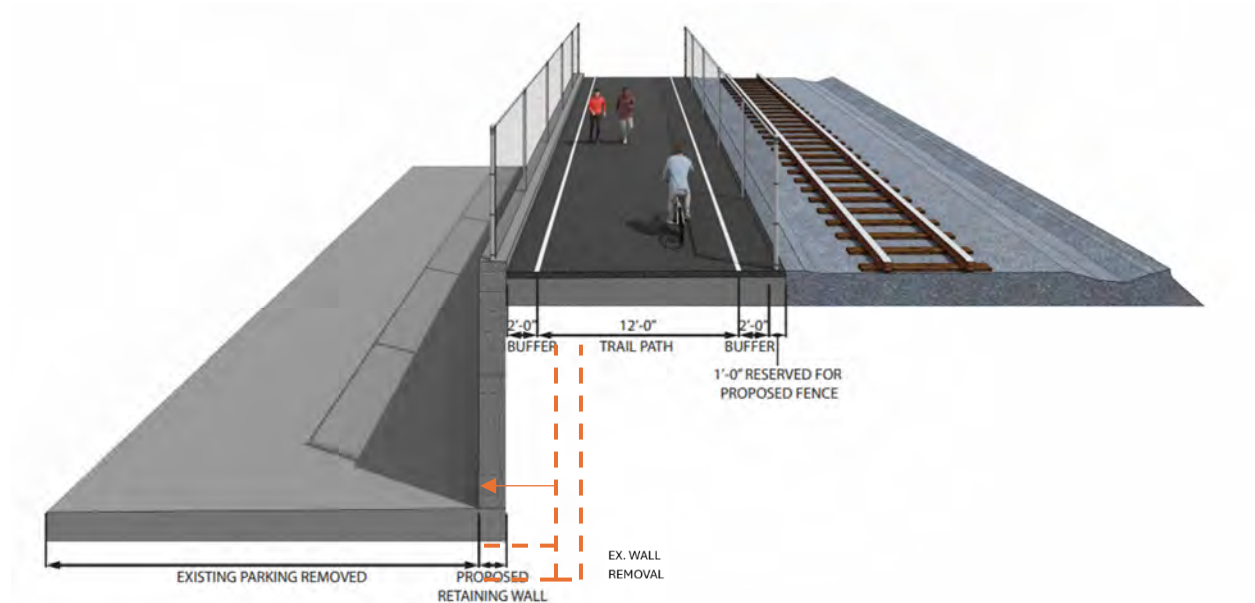


Figure 42 – Alternative J2

Feasibility Study

Oasis Trail (PID 122971)

Alternative J3: The Delta Bridge was originally designed and constructed to accommodate four rail lines; however, only two were ultimately built. As a result, sufficient width exists to relocate the southern rail line farther south, allowing construction of a full-width trail without the addition of major structural elements. Under this alternative, minimal additional bridge work would be required. Within the proposed trail area, ballast, rail ties, and tracks would be removed to allow for construction of the full-depth trail section. Protective fencing would be required on both sides of the trail to separate trail users from active rail operations and to provide fall protection.

Estimated Bridge Construction Cost: \$50,000

In this alternative, the existing retaining wall remains in place, and the adjacent railroad tracks are shifted laterally to create additional horizontal clearance. This shift allows for a 12-foot-wide shared-use trail with standard buffers without requiring new retaining-wall construction

Implementation of this configuration would involve removing the inactive north track and shifting the active south (main) track by flattening the existing horizontal curvature—from approximately 2°00'30" (approximate 2,877-foot radius) to 1°50'00" (approximate 3,125-foot radius). This adjustment shifts the main track roughly 8 feet south across the Delta Bridge and along the adjacent retaining walls. In total, approximately 1,750 track-feet of main line would be realigned as part of this rail geometry modification.

Estimated Rail Realignment Cost: \$70,000

5. Delta Avenue Pedestrian Access Point

A potential pedestrian access point on the east side of the Delta Avenue bridge could provide a 12-foot-wide ADA-accessible connection from the SUP to Eastern Avenue. To establish this link, a portion of the existing site wall would be removed to create a clear opening from the new access path to the existing sidewalk. The descending alignment is organized into two legs: Leg 1 at approximately a 4% grade and Leg 2 at approximately a 7.69% grade, balancing the steep site conditions while remaining within acceptable ADA requirements for accessible routes. Achieving these controlled slopes requires careful layout to maintain appropriate landings and transitions. Retaining walls with railings are necessary along the upper portion of the path near its connection with the shared-use trail to manage elevation changes and support the widened corridor. See **Figure 43**.

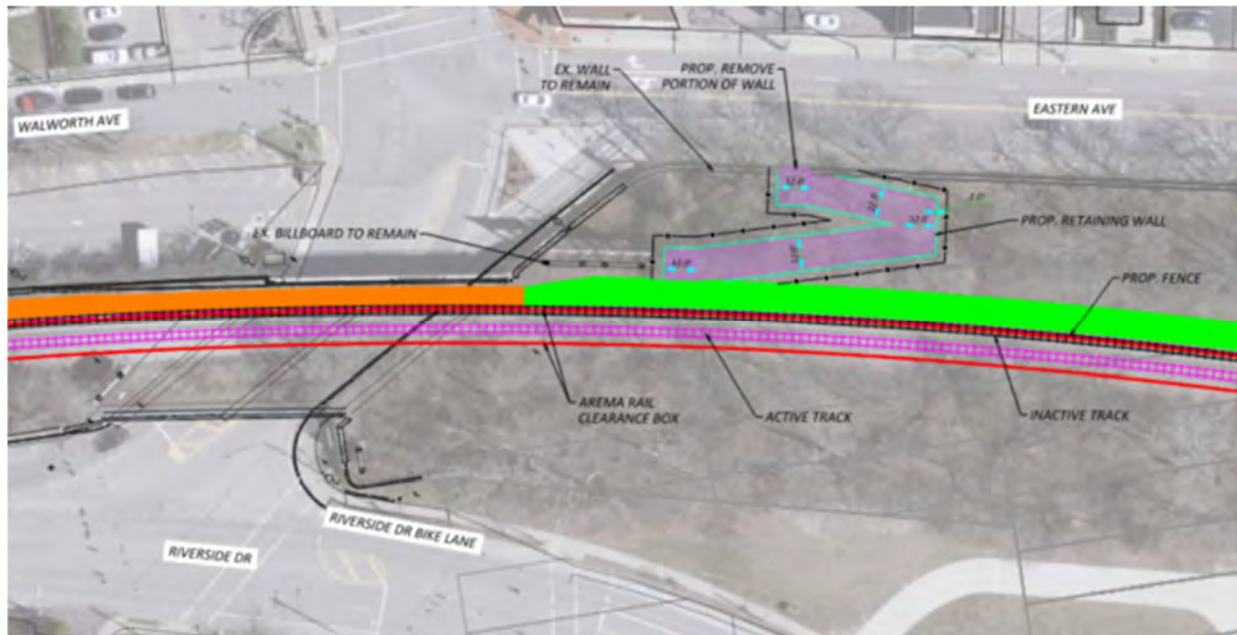


Figure 43 – Delta Avenue Access Point

6. Stanley Avenue Bridge

B&N has completed a structure assessment of the Stanley Avenue Bridge including our recommendations for the structures current condition, which was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. To convert the northern track to the trail would require the removal of the rail tracks, ties, and some ballast with the proposed trail replacing them. A fence on both north and south sides of the trails would be required to separate trail users from active rail and prevent users from falling off the bridge.

Estimated Bridge Construction Cost = \$50,000

In this section, the existing Stanley Avenue Bridge provides sufficient width to accommodate an 11-foot-wide SUP within the current structural and horizontal constraints. While narrower than the desired full 12-foot section with buffers, the 11-foot width remains feasible and provides adequate space for two-way bicycle and pedestrian travel. This option minimizes construction impacts and avoids the need for track shifts or structural widening. See **Figure 44**.

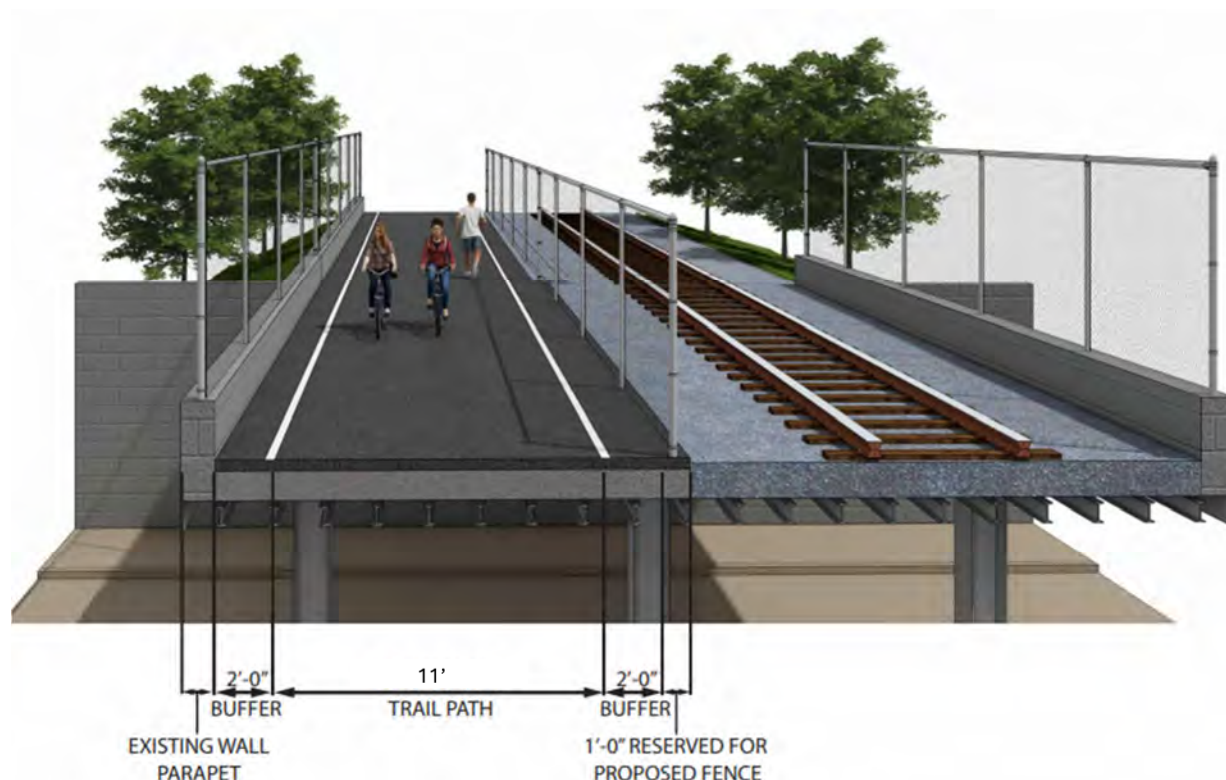


Figure 44 – Stanley Avenue Bridge

7. Stanley Ave Pedestrian Access

A potential pedestrian access point on the west side of the Stanley Avenue Bridge could provide a 12-foot-wide ADA-accessible connection from the shared-use trail to Stanley Avenue. To establish this link, a portion of the existing site wall must be removed to create a clear opening that ties the new access path into the existing sidewalk network. The descending alignment consists of two legs: Leg 1 at approximately a 3% grade over 200 feet, followed by Leg 2 at approximately a 4.7% grade over 190 feet. This configuration allows the path to navigate the existing topography while remaining within acceptable ADA requirements for accessible routes. Achieving these controlled slopes requires careful layout to maintain appropriate landings and transitions that support accessibility and user comfort. Due to the elevation change between the bridge and street level, new retaining walls are required along the upper portion of the path to support the widened corridor and maintain stable grades. Together, these improvements create a more intuitive and inclusive access point informed by thoughtful access planning. See **Figure 45**.

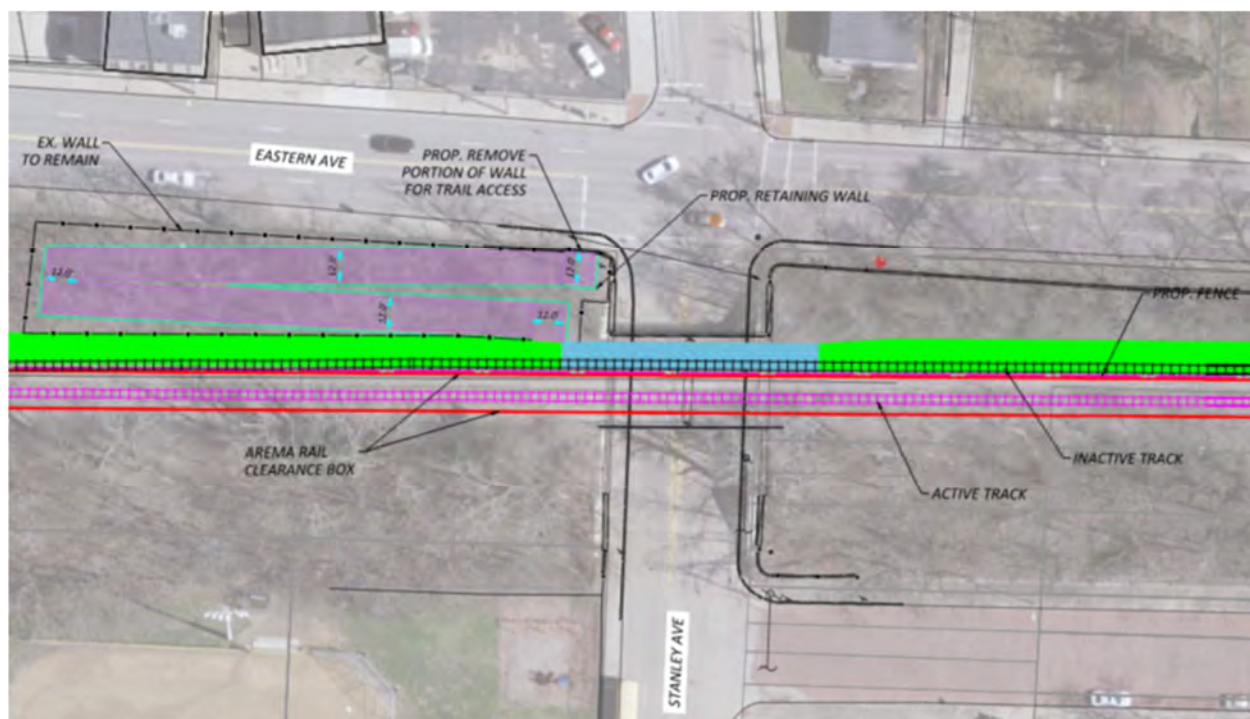


Figure 45 – Stanley Avenue Access Point

8. Congress Avenue Tunnel/Eastern Avenue Pedestrian Access

Congress Avenue Tunnel: B&N has completed a structure assessment of the Congress tunnel, See **Figure 46** including our recommendations for the structures current condition, which was submitted to Great Parks of Hamilton County and the City of Cincinnati Department of Transportation and Engineering on April 2, 2026. There are no structure modifications that would be required to convert the rail to trail above the tunnel with the full-width trail.



Figure 46 – Congress Avenue Tunnel

Estimated Construction Cost = \$20,000

Although the tunnel does not directly connect to the proposed SUP, users can comfortably reach the corridor by traveling along Eastern Avenue, which carries a low volume of vehicular traffic and offers a suitable on-street route for pedestrians and cyclists. See **Figure 47**.

From Eastern Avenue, users can access the SUP through the potential new connection points described in the Stanley Avenue access point alternative as well as the existing approach from Tusculum Avenue below. Together, these access



Figure 47 – Eastern Avenue

points create multiple opportunities for neighborhood-level entry into the corridor and significantly strengthen overall trail connectivity. This distributed access network enhances local mobility and supports more intuitive, equitable movement throughout the area, consistent with thoughtful access planning.

9. Tusculum Avenue Access Point:

The existing Eastern Avenue crosswalk at Tusculum Avenue provides a natural pedestrian crossing point and a logical location for a new 12-foot-wide connection to the shared-use path. Establishing this link would require removal of the end of the existing site wall to create a clear opening into the corridor, resulting in only a small impact to adjacent private property. The existing curb ramp can remain, allowing the new connection to tie seamlessly into the current sidewalk network. With low traffic volumes along Eastern Avenue, this location supports comfortable walking and biking access, enabling users from Tusculum Avenue and nearby residential blocks to transition easily onto Eastern Avenue and continue toward the proposed access points at Stanley Avenue or Delta Avenue. See **Figure 48**.

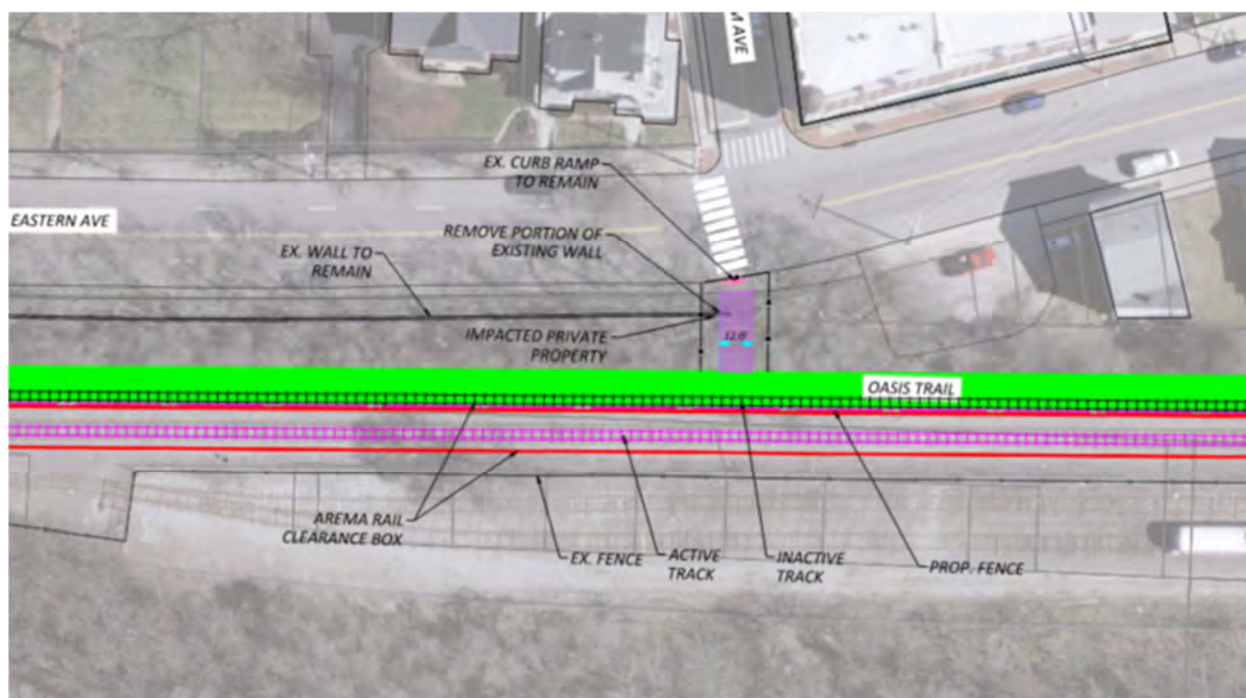


Figure 48 – Tusculum Avenue Access Point

Feasibility Study

Oasis Trail (PID 122971)

10. Donham Street

A potential pedestrian access point to Donham Street behind Daylily Deli could create an additional neighborhood-scale connection to the shared-use path. The concept includes an 11-foot-wide connection approximately 80 feet long, descending at about a 5% grade, which aligns well with the gentle topography leading toward Donham Street. Establishing this connection would allow residents and visitors approaching from the Donham Street corridor to reach the SUP without relying solely on Eastern Avenue or the larger access points at Stanley and Tusculum Avenues, strengthening corridor-wide trail connectivity. See **Figure 49**.

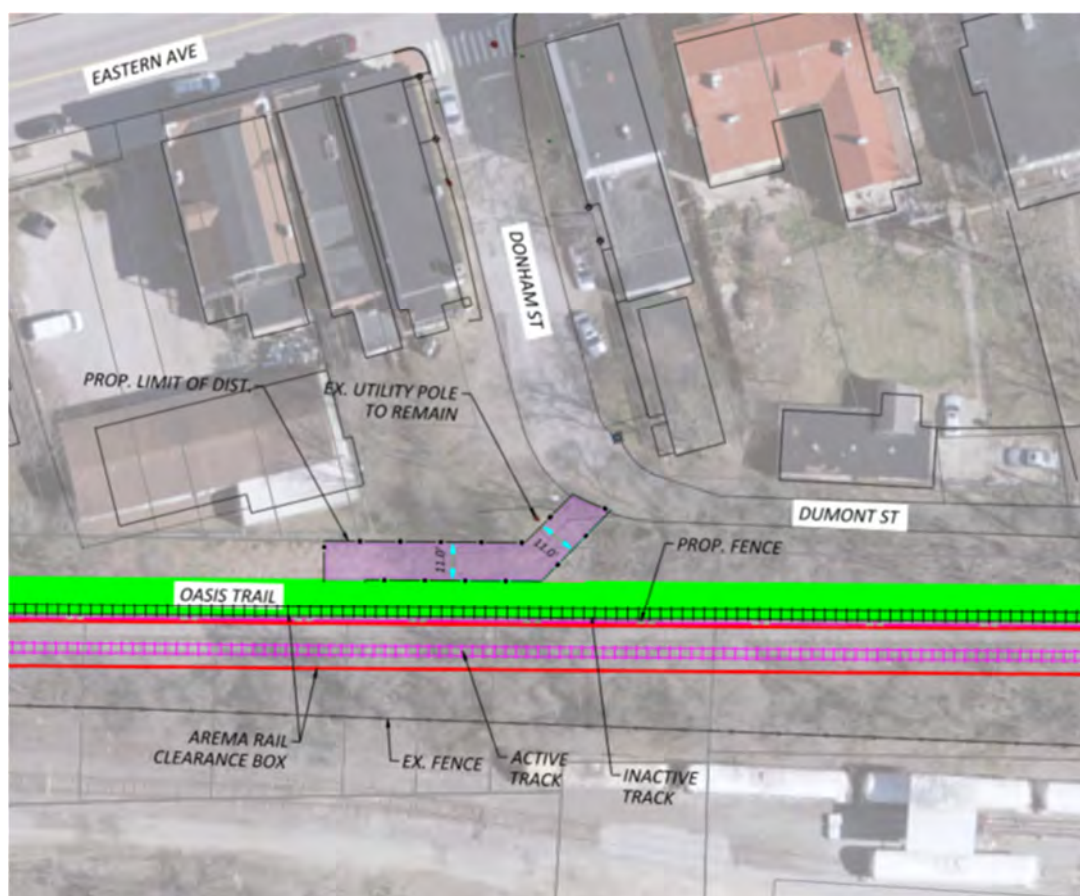


Figure 49 – Donham Street Access Point

11. End of Project (Carrel Street Connection)

The Carrel Street access point serves as the eastern terminus of the project and provides a connection between the Oasis Trail and the Ohio River Trail. Pedestrians and bicyclists accessing or exiting the trail at this location must cross the railroad, Dumont Street, and Carrel Street. Existing conditions include a steep grade change between the top-of-rail/trail elevation and Carrel Street, creating challenges related to accessibility, user comfort, and compliance with current design guidelines.

Two alternatives were developed to address these constraints.

Alternative K1: This alternative provides a direct, straight 12-foot-wide connection on the east side of Carrel Street. The alignment crosses the existing railroad tracks and follows the existing grade of Carrel Street, which reaches an approximately 11% slope for a short distance before connecting to Dumont Street. New curb ramps are installed at the Dumont Street intersection crossing to support accessible movement and tie the facility into the Ohio River Trail. The simplified geometry, which avoids the need for switchbacks, results in a more streamlined and constructible design. See **Figure 50**.

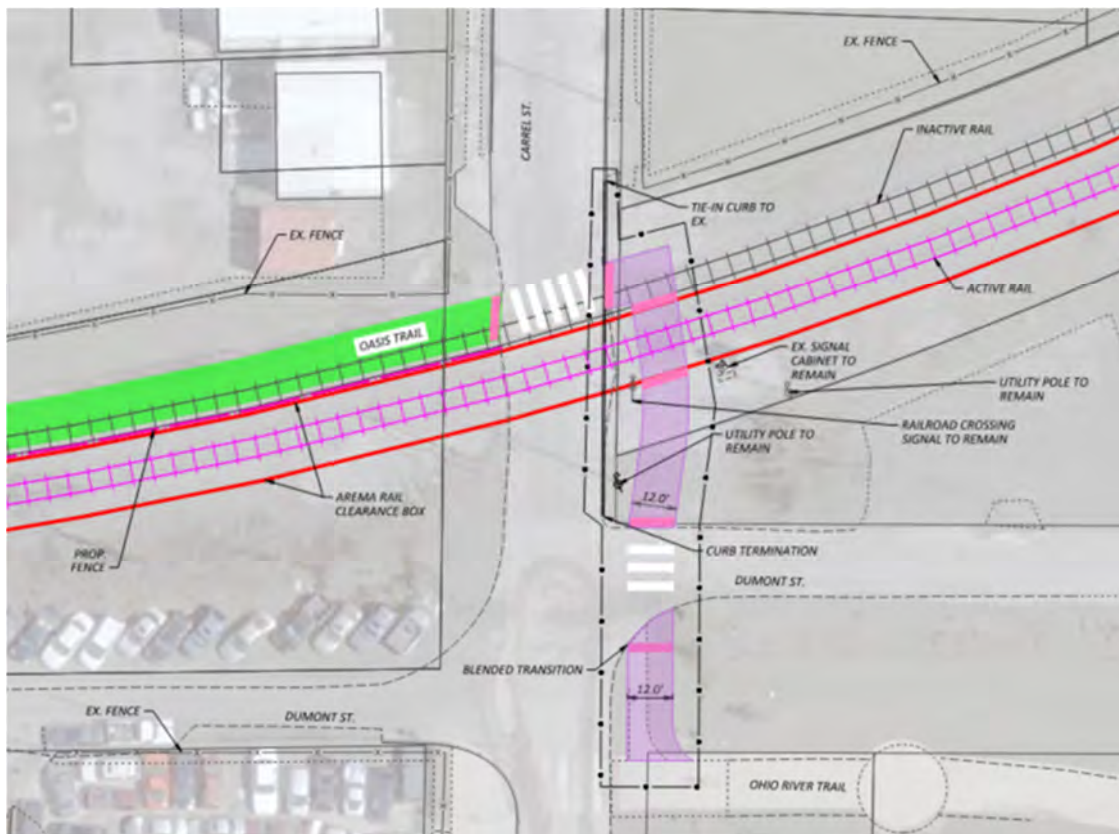


Figure 50 – Alternative K1

Feasibility Study

Oasis Trail (PID 122971)

Alternative K2: This alternative proposes a switchback alignment on the east side of Carrel Street, providing a 12-foot-wide connection designed to with 5% grades along the ramp segments. Implementing this option requires a curb extension that removes one travel lane on Carrel Street to accommodate the additional ramp length needed for compliant slopes. The configuration results in one property impact, limited to the area necessary to fit the switchback within the constrained area. To further minimize effects on adjacent business parking and nearby utilities, the switchback is arranged within a compact footprint, reducing the horizontal envelope relative to other alternatives. See **Figure 51**.

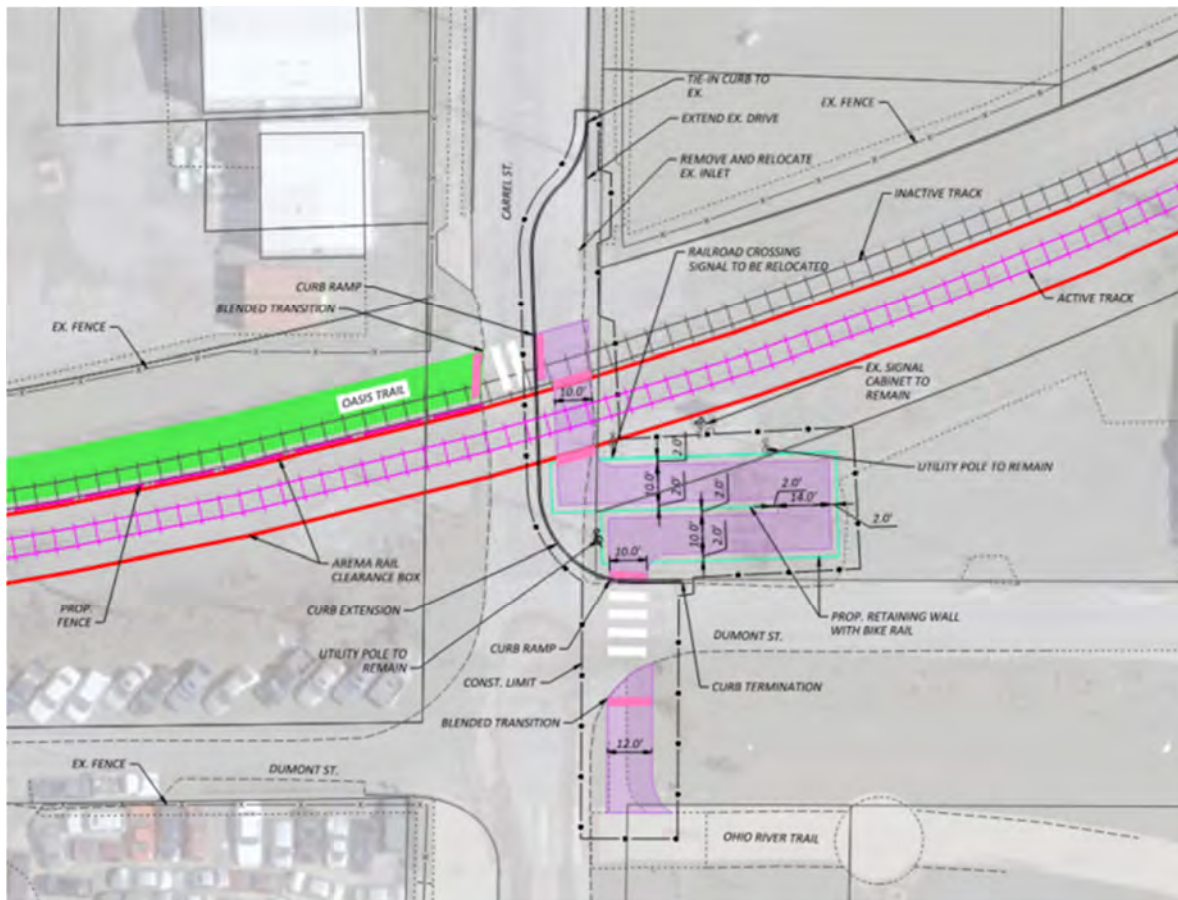


Figure 51– Alternative K2

Alternative **K1**, which follows the Carrel Street alignment, is the preferred option due to its strong balance of constructability, user experience, and cost efficiency. By utilizing the existing Carrel Street corridor, K1 minimizes structural needs, reduces grading complexity, and limits property impacts—resulting in a less expensive solution compared to alternatives requiring switchbacks or more extensive retaining structures.

3. Key Issues

This section summarizes the technical studies and other information considered as part of the evaluation and selection of a preferred alternative.

A. Safety Analysis

i. No Build Alternative

Under the condition that no path is built, bicyclists would continue to rely on the existing bike lanes along Riverside Drive in the western portion of the project area and the Ohio River Trail in the eastern portion. Between the western project terminus and the eastern entrance to International Friendship Park, no dedicated bicycle facilities are present. In this segment, bicyclists must either share the roadway with vehicular traffic or share the internal park path with pedestrians to continue traveling east–west.

Pedestrians currently utilize the sidewalk along Riverside Drive; however, several segments lack a tree lawn buffer and have little separation from moving traffic. Additionally, pedestrians are required to make an unsignalized and unprotected crossing at the intersection of Riverside Drive and Kemper Lane, which is a safety concern and may present discomfort for pedestrian users.

User experience along the existing corridor can be evaluated using ODOT’s Level of Traffic Stress (LTS) methodology, which rates bicycle comfort on a scale from 1 (very low stress) to 4 (high stress). Riverside Drive currently has an LTS rating of 3 according to ODOT’s Safety Viewer, indicating a medium-stress environment generally suitable for “enthused and confident” cyclists rather than the broader bicycling population. The Ohio River Trail maintains an LTS rating of 1, offering a low-stress facility appropriate for users of all ages and abilities.

A review of pedestrian crash data for the project area using the ODOT Transportation Information Mapping System (TIMS) indicates that no pedestrian-related crashes have been reported within the past five years. However, this absence of reported incidents may be attributable, at least in part, to low levels of bicycle and pedestrian activity resulting from the limited availability of comfortable, continuous facilities throughout the corridor.

ii. Build Alternatives

The proposed shared-use path will be separated from roadway traffic and is expected to have an LTS rating of 1. An LTS 1 environment is suitable for users of all ages and abilities and is anticipated to make the facility more appealing to a broader range of users than the no build alternative. Any segment-specific safety considerations or variations in LTS associated with the individual build alternatives are described below.

Segment 1

Potential bicycle and pedestrian conflicts with automobiles could occur at the drive openings for The Boathouse and both International Friendship Park entrances.

Segment 2

Potential bicycle and pedestrian conflicts with automobiles may occur within the shared-space section along Gladstone Avenue and the crossing at St Andrews Street.

Segment 3

Potential bicycle and pedestrian conflicts with automobiles may occur at the crossings of St. Andrews Street, Tennyson Street, McCullough Street, Carrel Street, and Bumont Street.

B. SUP Design Issues

This section describes the design criteria used for the SUP alternatives. Across all three segments, the desired minimum width for the SUP is 12 feet to support two-way bicycle and pedestrian travel and to meet current design guidance for regional trail facilities. In constrained locations where the available corridor narrows due to adjacent roadway features, retaining walls, or railroad right-of-way limitations, the trail width may be reduced to 8 feet. A significant challenge throughout the corridor is ensuring that all pedestrian access points meet ADA accessibility guidelines for horizontal and vertical alignments. Because all three segments are adjacent to an active rail line, coordination with the Indiana & Ohio Railway is required.

In several locations, the existing hillside and retaining-wall configurations encroach into the available corridor, further limiting the ability to maintain the desired trail width. To address these limitations, retaining walls may be required along the uphill side of the trail to support the widened trail platform, stabilize the slope, and minimize grading impacts. These walls will help maintain consistent trail width and alignment while reducing impacts to adjacent properties and existing vegetation. Further evaluation of retaining-wall locations, heights, and structural requirements will occur during detailed design, when refined survey data, geotechnical information, and grading analyses are available. This additional evaluation will ensure that wall placement is optimized for constructability, cost, and long-term performance.

Feasibility Study

Oasis Trail (PID 122971)

Throughout the corridor, fencing is proposed between the trail and the active railroad to enhance user safety. The trail is designed for a 20-mile-per-hour design speed, consistent with AASHTO guidance for SUPs with moderate bicycle volumes and rolling terrain. The proposed horizontal and vertical alignments have been developed to comply with current ADA accessibility guidelines, with grades, cross slopes, and transition areas falling within allowable limits. As design progresses, additional verification will confirm that all accessibility requirements continue to be met. Existing conditions plans, build alternative plan sheets, and structure type studies are provided in **Attachments B, C, D, and E**, respectively.

Segment 1 – Design Considerations

Within Segment 1, several locations require reduced trail widths due to existing physical constraints, including narrow sections adjacent to retaining walls, roadway features, and railroad right-of-way limits. Achieving the desired 12-foot width in this segment could require modifications to the Rookwood Bridge and the preceding retaining wall if the track shift is not chosen as the preferred alternative. These improvements may include widening the bridge deck, adjusting parapet locations, or reconstructing portions of the retaining wall to provide adequate lateral clearance for the trail. These structural adjustments ensure that the trail can maintain a consistent width where feasible while accommodating the constrained geometry of the corridor.

Segment 2 – Design Considerations

A notable challenge within this segment is the shared-space condition along Gladstone Avenue, where the roadway is narrow and bordered by residential properties on one side and the active rail corridor on the other. These constraints limit available construction space and will require detailed coordination, phased construction, and open communication with residents to minimize disruptions. Achieving the desired 12-foot trail width will also require modifications to the Collins Avenue Bridge, including widening the bridge deck, adjusting parapet locations, reconstructing portions of the retaining wall, and raising the trail profile to achieve the necessary vertical clearance over Collins Avenue. These improvements provide for a continuous, accessible alignment through one of the most constrained areas of the corridor.

Segment 3 – Design Considerations

Several street-crossing improvements are required to support the proposed trail alignment and to provide safe, accessible connections to the surrounding roadway network. Pavement repairs and upgrades are needed at the Tennyson Street, McCullough Street, and Carrel Street crossings to address existing surface deficiencies and provide smooth transitions between the roadway and the SUP. These improvements may include localized pavement replacement, curb-ramp reconstruction, crosswalk enhancements, and adjustments to drainage structures. Achieving the desired 12-foot width in this segment will require modifications to the Delta Avenue Bridge and the preceding retaining wall, including potential bridge-deck widening, parapet adjustments, or retaining-wall reconstruction to provide adequate lateral clearance for the trail.

C. Post-Construction Stormwater Best Management Practices

This section summarizes the post-construction stormwater best management practices (BMPs) considered for the project. BMPs are measures designed to reduce pollutant loading and manage runoff quality by treating, detaining, or infiltrating stormwater generated by new impervious surfaces. The investigation of BMPs was conducted to determine which practices are likely to be incorporated into the project area while also meeting treatment requirements.

i. No Build Alternative

No post-construction stormwater BMPs would be required under the no build alternative.

ii. Build Alternatives

The total project earth-disturbed area used to evaluate post-construction stormwater BMP requirements is estimated at approximately 20.0 acres. This total includes the pedestrian-access alternatives and the larger earth-disturbed area associated with Torrence Road Station. The expanded earth-disturbed area reflects the combined footprint of the SUP, associated access points, grading limits, and structural modifications anticipated throughout the corridor. The final earth-disturbed area footprint will be fully calculated and verified during the detailed design phase, when refined survey data and construction limits are available. Based on the estimated 20.0-acre project earth-disturbed area, the required post-construction stormwater treatment area is 4.0 acres. The BMP analysis is provided in **Attachment F**.

Given the project site's location in an urban corridor, constraints such as retaining walls, roadways, railroad tracks, steep grades, and limited grassy areas are predominantly present. Thus, there are limited locations where BMPs can be effectively sited, built, and maintained. In cases where proposed BMPs are determined to be unmaintainable due to

physical or operational limitations, ODOT's standard process for BMP mitigation will be followed. This process includes investigating the feasibility of BMP utilization and securing compensatory mitigation in coordination with ODOT to ensure regulatory compliance.

1. Segment 1 – Beginning of Project (Sawyer Point) to Lancaster Street Tunnel

Alternative A2: This alternative provides an opportunity to incorporate vegetated filter strips—vegetated areas designed to treat runoff from adjacent surfaces—alongside the path. Beginning at The Boathouse drive entrance and continuing to the International Friendship Park – Plaza of the Sun entrance, an 11-foot-wide filter strip is proposed to treat surface runoff from the adjacent 11-foot trail. The overall treatment provided is approximately 1.50 acres.

2. Segment 2 – Lancaster Street Tunnel to Torrence Road Station

Due to the steep hillside on the north side of the trail and the proximity of the active railroad on the south side, there is insufficient space within Segment 2 to accommodate any post-construction BMPs. The corridor is significantly constrained by both the natural topography and the minimum clearance requirements associated with the active railroad, leaving no feasible area for stormwater treatment features without compromising trail width, railroad safety, or slope stability. As a result, no post-construction BMP alternatives have been identified or selected for Segment 2.

3. Segment 3 – Torrence Road Station to End Project

Similar to Segment 2, the steep hillside on the north side of the trail and the proximity of the active railroad on the south side create substantial spatial limitations within Segment 3. These constraints prevent the incorporation of post-construction BMPs, as the available corridor width is fully occupied by the trail, required buffers, and railroad safety clearances. Given these conditions, no post-construction BMP alternatives have been identified or selected for Segment 3.

D. MOT

This section discusses the temporary traffic impacts required to construct the various build alternatives.

i. No Build Alternative

There would be no maintenance of traffic (MOT) impacts under the no build alternative.

ii. Build Alternatives

The MOT impacts that would occur for the project alternatives are discussed below.

1. Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel

Construction of all build alternatives will result in temporary traffic impacts along Riverside Drive, particularly at driveways where curb ramp, grading, or access adjustments will require short-term lane closures or brief access restrictions. Temporary traffic control will also be required at the Rookwood Bridge underpass, with the extent and duration of temporary traffic control dependent on the preferred alternative selected. Structural activities—such as deck installation, structural member replacement, or abutment repairs—may necessitate short-duration lane restrictions or temporary closures to traffic traveling beneath the bridge to maintain safe work zones.

Rail service will remain active throughout construction; therefore, railroad flaggers will be required to maintain safe operations and coordinate train movements during work activities.

2. Segment 2 – Lancaster Street Tunnel to Torrence Road Station

Construction of all alternatives will result in temporary traffic impacts along Collins Avenue at the Collins Avenue Bridge. Structural work on the existing trestle—such as installing a new deck or replacing structural members—may require short-term closures or lane restrictions on the roadway beneath the structure.

All alternatives will also require temporary traffic impacts along Gladstone Avenue. A full closure of Gladstone Avenue will be necessary to construct the proposed path adjacent to the roadway. During this closure, residents will be directed to park on Collins Avenue. A minimum of a 4-foot pedestrian access route will be maintained along Gladstone Avenue to provide continued pedestrian access between Collins Avenue and residential properties.

Rail service will remain active throughout construction; therefore, railroad flaggers will be required to maintain safe operations and coordinate train movements during work activities.

3. Segment 3 – Torrence Road Station to End Project

Construction of all alternatives will result in temporary traffic impacts along St. Andrews Street, Walworth Avenue, Stanley Avenue, Eastern Avenue, Tennyson Street, McCullough Street, and Carrel Street. Work at intersections—including curb ramp and crosswalk construction—will require temporary lane and shoulder closures. Structural work on the existing bridges, including the Delta Avenue Bridge and the Stanley Avenue Bridge, may also require short-term closures or lane restrictions to accommodate deck replacement, structural repairs, or abutment work depending on the preferred alternative chosen.

The railroad line will remain active for the duration of the project; therefore, railroad flaggers will be required throughout construction to maintain safe rail operations.

Construction access will be required from multiple points along the corridor to accommodate equipment, materials, and staging needs. However, no significant access challenges are anticipated for any of the alternatives; the corridor provides adequate opportunities for contractor ingress and egress with appropriate coordination and temporary traffic control measures.

E. Right-of-Way Requirements

This section outlines the anticipated impacts on private property and provides an estimate of the permanent property acquisition required for construction of each SUP alternative and pedestrian access points within each segment. As project development progresses, the project team will coordinate with adjacent property owners to discuss the proposed improvements and potential impacts.

i. No Build Alternative

There would be no right-of-way impacts under the no build alternative.

ii. Build Alternatives

1. Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel

Private property impacts would occur under both Hazen Street pedestrian access alternatives. Alternative F1 would affect 0.32 acres across six parcels, while Alternative F2 would affect 0.06 acres on a single parcel. No other permanent private property impacts are anticipated within Segment 1. All remaining improvements are fully contained within existing public or SORTA-owned property, utilizing available space without requiring additional acquisition. The proposed trail alignment, buffer zones, and supporting features—such as retaining walls, drainage components, and safety fencing—can be accommodated within the current corridor limits. As design development continues, the project team will verify right-of-way boundaries to ensure all

elements remain fully contained within the existing footprint. The impacted areas described above are illustrated in **Attachment D**.

2. Segment 2 – Lancaster Street Tunnel to Torrence Road Station

Private property impacts are associated with four of the five Torrence Road Station pedestrian access build alternatives. Alternative G1 would affect 0.06 acres across two parcels—the southern parcel owned by the City of Cincinnati/Greater Cincinnati Water Works, and the larger northern parcel privately owned. Alternative G2 remains entirely within the public right-of-way of Torrence Road, avoiding any additional property impacts. Alternative G3 would impact 1.53 acres across nine parcels, seven owned by the City of Cincinnati (Cincinnati Parks Board), with the remaining two parcels privately owned or owned by an undetermined entity. Alternative G4 would impact 0.53 acres across eleven parcels, two of which are not City-owned. Alternative G5 would affect 0.64 acres across three parcels, all owned by the City of Cincinnati (Cincinnati Parks Board). No other permanent right-of-way impacts are anticipated within Segment 2 for any design alternatives. All proposed improvements fall entirely within existing public or SORTA-owned right-of-way, utilizing available space without requiring additional property acquisition. The proposed trail alignment, buffer areas, and supporting features—such as retaining walls, drainage components, and safety fencing—can be constructed within the current corridor limits. As design progresses, the project team will continue to verify right-of-way boundaries to ensure all elements remain fully accommodated within the existing footprint. The impacted areas described above are illustrated in **Attachment D**.

3. Segment 3 – Torrence Road Station to End Project

Private property impacts are associated with the Delta Avenue Bridge Alternative J2, which would affect 0.10 acres on one privately owned parcel if the bridge is widened. The Tusculum Avenue pedestrian access alternative would also result in private property impacts, affecting 0.001 acres within a single privately owned parcel. Both Carrel Street pedestrian access alternatives would require the use of private property: Alternative K1 would impact 0.01 acres, and Alternative K2 would impact 0.05 acres, with both alternatives affecting the same privately owned parcel. No other permanent right-of-way or private property impacts are anticipated within Segment 3 for any associated design alternatives. All remaining improvements are fully contained within existing public or SORTA-owned right-of-way, utilizing available space without requiring additional property acquisition. The proposed trail alignment, buffer areas, and supporting features—such as retaining walls, drainage elements, and safety fencing—can be constructed within the current corridor limits. In addition to permanent right-of-way impacts, localized encroachment issues occur where existing private improvements, such as fences are located within or immediately adjacent to the

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proposed construction limits of the trail. These features may require temporary disturbance, relocated, adjustment, or coordination with affected property owners during final design. As design advances, the project team will continue to verify right-of-way boundaries to ensure all elements remain fully accommodated within the existing footprint. The impacted areas described above are illustrated in **Attachment D**.

F. Utility Issues

Utility impacts for each segment are summarized below. Further coordination with the utility providers will occur throughout project development.

No Build Alternative

There would be no impacts to utilities under the no build alternative.

Build Alternatives

1. Segment 1 – Begin Project (Sawyer Point) to Lancaster Street Tunnel

No major utility impacts are anticipated within Segment 1, which lies along the railroad corridor. However, caution will be required during construction due to the proximity of existing overhead electric lines at the Bains Street intersection signal and at the overhead crossing near the Rookwood Bridge.

2. Segment 2 – Lancaster Street Tunnel to Torrence Road Station

No major utility impacts are anticipated within Segment 2, which lies along the railroad corridor. However, caution will be required during construction due to the proximity of existing overhead electric lines at Gladstone Avenue and at the Torrence Road Station.

3. Segment 3 – Torrence Road Station to End Project

No major utility impacts are anticipated within Segment 3, which lies along the railroad corridor. However, caution will be required during construction due to the proximity of existing overhead electric lines at all street crossings.

G. Environmental Analysis

The following is a summary of environmental resources within the Oasis Trail (PID 122971) project vicinity and the anticipated involvement with those resources. The summary is based on readily available literature review sources and a field survey for ecological resources.

No Build Alternative

There would be no impact to ecological features (habitats), Section 4(f)/6(f) resources, cultural resources, regulated materials, or drinking water resources under the no build alternative.

Build Alternatives

The following is a summary of environmental resources within the project vicinity and the anticipated involvement with those resources. The summary is based on readily available literature review sources and a field survey for ecological resources.

Ecological Resources: An ecological field survey was completed in early 2026. Ecological resource mapping is included in **Appendix G**. Survey findings are summarized below:

Aquatic Ecology: No streams, wetlands, or jurisdictional ditches were identified. A stormwater retention pond is located east of 3107 Walworth Avenue.

Vegetative Communities: The project study area land cover consists of 59.47 acres of Developed, Medium Intensity (DM), 30.181 acres of Upland Forested (UF), and 0.070 acres of Developed Open Space (DS).

Federally Threatened and Endangered Species: 30.18 acres of suitable wooded habitat for endangered bat species was identified within the project study area. Periods of tree cutting restrictions will likely be required to avoid impacts during the bat summer roosting season.

State Listed Species: Suitable habitat for two state listed species, Maypop (*Passiflora incarnata*) and Running buffalo clover (*Trifolium stoloniferum*), was identified within the project study area. Presence/absence surveys will be required for these state listed species during the appropriate seasons to determine impacts.

Soil Types: The project study area is made up primarily of Eden Urban land complex, 25 to 40 percent slopes; Eden flaggy silt clay loam, 40 to 60 percent slopes; Urban land-Alfic Udarents-Eden complex, 25 to 60 percent slopes; Urban land-Mollic Udarents complex, loamy substratum, 0 to 12 percent slopes, occasionally flooded; urban land, 0 to 12 percent slopes, occasionally flooded; Urban land-Udorthents complex, 0 to 12 percent slopes; and Urban land-Udorthents complex, 0 to 12 percent slopes, occasionally flooded.

Waterway Permits: The project study area is located in an ineligible watershed as identified on the Ohio Environmental Protection Agency (EPA) 401 Water Quality Certification mapper. No streams, wetlands, or jurisdictional ditches were identified during the ecological field survey; therefore, waterway permits are not likely to be required.

Floodplains: Based on a review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels, the project study area contains designated special flood hazard areas. The project area falls within Zone AE. A copy of the FEMA FIRM is included in **Appendix G**.

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Cultural Resources: Based on a review of the Ohio State Historic Preservation Office (OHPO) geographic information system (GIS) database, several sites listed in the National Register of Historic Places (NRHP) are located in the project study area. A Section 106 Scoping Request Form will be required. Several Ohio Historic Inventory sites, but no Ohio Archaeological Inventory sites, have been identified in the project study area. There are also buildings that are at least 50 years old in the project vicinity. If these properties are impacted and are found to be eligible for listing in the NRHP, additional consideration will be required. The OHPO database map is included in **Appendix G**.

Section 4(f) Cultural Resources: Because NRHP listed sites are present within the project study area, Section 4(f) coordination is anticipated.

Section 4(f) Recreational Resources: TM Berry International Friendship Park is a narrow strip of green space between Riverside Drive and the Ohio River that will intersect the Great Parks Oasis Trail. Section 4(f) coordination will be required.

In addition, Section 4(f) coordination may be required for Sawyer Point Pickleball & Tennis Courts, a series of publicly owned racquetball sport courts along E Pete Rose Way, and for Ferry Street Park, just south of Riverside Drive.

Section 6(f) Resources: TM Berry International Friendship Park was acquired using Land & Water Conservation Fund (LWCF) Grant No. 39-00990 in 1984. It was acquired to extend Eden Park along the Ohio River. Section 6(f) coordination will be required for TM Berry International Friendship Park. The LWCF Grant Listing is included in **Appendix G**.

Noise and Air Quality: Noise and air quality impacts will be evaluated in accordance with ODOT Office of Environmental Services (OES) guidance after a preferred alternative has been selected. Any option that adds capacity, moves travel lanes more than 50 percent closer to sensitive receivers, or alters the vertical alignment of the travel lanes will require a noise analysis. If necessary, a noise analysis and, if warranted and feasible, consideration for noise abatement will be undertaken. Because this is an all-purpose trail project, noise and air quality impacts are not anticipated.

Drinking Water Resources:

Drinking Water: Based on a review of the Ohio EPA's Drinking Water Source Protection Areas Map, the study area is partially located within the Greater Miami SSA. A copy of the map is included in **Appendix G**.

Water Wells: Based on the Ohio Department of Natural Resources' Water Wells Database Maps, 4 water wells and 19 sealed wells are recorded in the project vicinity. Impacts to water wells will be evaluated as the project design progresses.

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Farmland: Based on a review of TigerWEB Mapping by the US Census Bureau, the project is located within the Cincinnati Urbanized Area boundary. No farmland impacts are anticipated.

Regulated Materials: A search of the Ohio Regulatory Property Search (ORPS) identified the following sites within or adjacent to the project study area:

Resource Conservation and Recovery Act (RCRA) Database (US EPA)

- City of Cincinnati (1108 Eastern Avenue)
- Lackner Sign Co. (1120 Eastern Avenue)
- Pendleton Heritage Center (2760 Eastern Avenue)
- Railroad Bridge Over Eastern Avenue (3450 Eastern Avenue)

Bureau of Underground Storage Tank Regulations (BUSTR) Database – Leaking Underground Storage Tank (LUST) Locations

- Adams Landing (1262 Eastern Avenue) – 1 SUS/CON from regulated underground storage tank (UST)
- Value Oil Co. (2740 Eastern Avenue) – 1 SUS/CON from regulated UST
- Columbia Square/Cell Tower Site (3526 Eastern Avenue)
- George Brandstetter & Sons (4021 Dumont Street) – 6 tanks
- Diversified Ophthalmics (250 McCullough Street) – 6 tanks

Division of Environmental Response and Revitalization Database (Ohio EPA)

- American Compress Steel Co., Cincinnati (925 Eastern Avenue)

Superfund Enterprise Management System (SEMS) (US EPA)

- Kinder Morgan Emergency Response (3806 Kellogg Avenue) – Superfund (Non-National Priorities List)

Based on the identified database listings, additional research and coordination would be required if excavation near these parcels exceeds 6 feet or if right-of-way acquisition from these parcels is necessary. A Regulated Materials Review (RMR) Screening with file reviews will be required. The ORPS Report is included in **Appendix G**.

Public Involvement: Great Parks has posted articles explaining the Oasis Trail Feasibility Study, published a press release, and made several social media posts requesting public input on the proposed project. Great Parks received written comments that will be considered during the design phase of the project. Public involvement

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activities will continue through detailed design of the project to gather feedback from residents in the area, consistent with ODOT's public involvement guidance.

Conclusion: The project would likely meet the thresholds of a C2 level categorical exclusion (CE) document. The document would be completed using ODOT's online EnviroNet system. Once Stage 1 plans are available, the technical studies will be completed and submitted for review and coordination.

4. Public Involvement

To be included after the public meeting.

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5. Cost Estimates

Preliminary construction cost estimates have been developed for each build alternative within Segments 1, 2, and 3, including all potential pedestrian access points at Kemper Lane, Hazen Street, Riverside Drive, Columbia Parkway, Hoff Avenue, St. Andrews Street, Walworth Avenue, Delta Avenue, Stanley Avenue, Tusculum Avenue, Congress Avenue, Donham Street, and the Carrel Street trail connection. These preliminary estimates are summarized below and provided in **Attachment I** as well as within the evaluation matrices shown in **Tables 1** through **15** in Section 6. More detailed construction cost estimates will be prepared during development of the preferred alternative in the detailed design phase, when project elements and construction assumptions can be refined and validated.

COST ESTIMATE SUMMARY OF OASIS TRAIL					
	To and From	Alternatives			
BEGIN PROJECT (SAWYER POINT) TO MONTGOMERY INN BOAT HOUSE	\$111,771.01	0			
MONTGOMERY INN BOAT HOUSE TO INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN (ALTERNATIVES)		A1	A2	A3	
		\$386,829.59	\$1,213,736.01	\$1,155,087.02	
INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN (ALTERNATIVES)		B1	B2		
		\$116,793.56	\$361,603.42		
INTERNATIONAL FRIENDSHIP PARK - PLAZA OF THE SUN ALTERNATIVES TO KEMPER LN ACCESS POINT	\$929,636.84				
KEMPER LN ACCESS POINT TO ROCKWOOD BRIDGE (ALTERNATIVES)		C1	C2	C3	
		\$228,347.14	\$1,831,544.88	\$255,279.42	
ROCKWOOD BRIDGE (ALTERNATIVES)		D1	D2	D3	
		\$30,509.23	\$533,807.94	\$361,339.20	
ROCKWOOD BRIDGE TO LANCASTER TUNNEL	\$630,799.57				
LANCASTER ST. PEDESTRIAN ACCESS TUNNEL		E1	E2	E3	
		N/A	\$172,950.00	\$49,611,220.72	
LANCASTER ST. PEDESTRIAN ACCESS TUNNEL TO HAZEN ST. ACCESS POINT	\$266,136.67				
HAZEN ST. ACCESS POINT		F1	F2	No Build	
		\$487,832.53	\$60,568.68		
HAZEN ST. ACCESS POINT TO COLLINS AVE. BRIDGE	\$1,214,720.97				
COLLINS AVE BRIDGE MODIFICATIONS		\$325,444.80	\$313,914.80	\$383,094.80	\$117,904.80
GLADSTONE AVE.	\$533,256.81				
GLADSTONE AVE. TO TORRENCE RD STATION	\$544,070.07				
TORRENCE RD STATION		G1	G2	G3	G4
		\$496,988.81	\$70,489.24	\$459,485.72	\$2,788,793.63
TORRENCE TO HOFF AVE. CONNECTION	\$587,147.01				
HOFF AVE. CONNECTION	\$87,237.95				
HOFF AVE. CONNECTION TO ST. ANDREWS ST.	\$622,277.55				
ST. ANDREWS ST.		H1	H2		
		\$354,856.36	\$120,297.94		
ST. ANDREWS ST. TO WALWORTH TUNNEL	\$1,234,306.91				
WALWORTH TUNNEL	\$65,887.77				
WALWORTH TUNNEL TO DELTA AVE. BRIDGE		J1	J2	J3	
		\$278,874.96	\$1,686,574.80	\$427,848.97	
DELTA AVE. PEDESTRIAN ACCESS POINT	\$258,462.83				
DELTA AVE. ACCESS POINT TO STANLEY AVE. ACCESS POINT	\$305,962.84				
STANLEY AVE. ACCESS POINT	\$276,030.69				
STANLEY AVE. BRIDGE	\$87,704.84				
STANLEY AVE. BRIDGE TO CONGRESS TUNNEL/TUSCULUM AVE. ACCESS POINT	\$259,615.01				
TUSCULUM AVE. ACCESS POINT	\$9,777.89				
TUSCULUM AVE. ACCESS POINT TO DONHAM ST. ACCESS POINT	\$197,234.07				
DONHAM ST. ACCESS POINT	\$19,918.21				
DONHAM ST. ACCESS POINT TO CARREL ST.	\$597,515.02				
CARREL ST		K1	K2		
		\$42,268.12	\$214,234.12		
INCIDENTALS	\$970,000.00				

The project has secured \$8 million and \$6 million in US EPA Community Multiscale Air Quality Model (CMAQ) grants; however, a remaining funding gap of approximately \$3.52 million exists for design and construction, excluding real estate acquisition and transfers. This gap will be covered through Great Parks' local match. Great Parks continues to lead efforts to secure additional grant funding and private contributions to close the shortfall. For this project, "local match" refers to funds available to support capital construction, which may or may not include levy revenue.

6. Comparison of Alternatives

The following section presents a series of comparison matrices used to evaluate the project's design alternatives and potential access points. Each matrix provides a structured, side-by-side review of the options based on the key criteria identified within the matrix. Together, these evaluations establish a clear basis for determining the most practical and effective configuration for advancing the SUP project.

Evaluation Matrices for Segment 1 Shared-Use Path Alternatives and Associated Pedestrian Access Points (Oasis Trail, PID 122971)

Table 1 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 1				
Feature Consideration	The Montgomery Boathouse Inn to International Friendship Park – Plaza of the Sun			
	No Build Alternative	Alternative A1	Alternative A2	Alternative A3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	There are no off-street existing bicycle facilities within this segment. Traveling next to vehicular traffic is a safety concern.	Three pedestrian bicycle conflict points with vehicular traffic – at driveway entrances	Three pedestrian bicycle conflict points with vehicular traffic – at driveway entrances	Three pedestrian bicycle conflict points with vehicular traffic – at driveway entrances
Bicycle Level of Traffic Stress	LTS 4	LTS 2	LTS 2	LTS 2
Engineering Issues				
Width of SUP (feet)	N/A	10 feet	11 feet	12 feet
Trail Design Issues	N/A	Constrained	None	None
Structures Required	None	None	None	None
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.00
Ecological Resources				
Threatened & Endangered Species	No impact	No impact	No impact	No impact
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	TM Berry International Friendship Park	TM Berry International Friendship Park	TM Berry International Friendship Park
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$986,830	\$1,213,736	\$1,155,087
Conclusion				
Recommendation	Not Recommended	Not Recommended	Not Recommended	Recommended as Preferred Alternative

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Table 2 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 1				
Feature Consideration	International Friendship Park – Plaza of the Sun			
	No Build Alternative	Alternative B1	Alternative B2	
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	
Safety Analysis				
Safety Issues	There are no off-street existing bicycle facilities within this segment. Traveling next to vehicular traffic is a safety concern.	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	
Bicycle Level of Traffic Stress	LTS 4	LTS 1	LTS 1	
Engineering Issues				
Width of SUP (feet)	N/A	8 feet (200ft)	12 feet	
Trail Design Issues	N/A	Constrained 8ft width that gradually opens up to 12ft over 110ft	None	
Structures Required	None	None	Retaining Wall	
Utility Relocations/Issues	None	None	Storm and Sanitary Sewer Relocation	
ADA Accessibility	N/A	Yes	Yes	
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	
Ecological Resources				
Threatened & Endangered Species	No impact	No impact	No impact	
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	TM Berry International Friendship Park	TM Berry International Friendship Park	
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$116,794	\$361,603	
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative	Not Recommended	

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Table 3 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 1				
Feature Consideration	International Friendship Park – Plaza of the Sun to Rookwood Bridge			
	No Build Alternative	Alternative C1	Alternative C2	Alternative C3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	There are no off-street existing bicycle facilities within this segment. Traveling next to vehicular traffic is a safety concern.	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	LTS 4	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	9 to 10 feet (600ft)	12 feet	12 feet
Trail Design Issues	N/A	Constrained	None	None
Structures Required	None	None	Retaining Wall Relocation	Railroad Track shift
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.00
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$228,347	\$1,831,545	\$255,279
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative 2	Not Recommended	Recommended as Preferred Alternative 1

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Table 4 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 1				
Feature Consideration	Rookwood Bridge			
	No Build Alternative	Alternative D1	Alternative D2	Alternative D3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	There are no off-street existing bicycle facilities within this segment. Traveling next to vehicular traffic is a safety concern.	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	LTS 4	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	8 feet	12 feet	12 feet
Trail Design Issues	N/A	Constrained condition without required 1 foot minimum side buffers on both sides of trail	None	None
Structures Required	None	None	Bridge widening reconstruction	Railroad track shift
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.00
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$90,509	\$533,808	\$381,339
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative 2	Not Recommended	Recommended as Preferred Alternative 1

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Evaluation Matrices for Segment 2 Shared-Use Path Alternatives and Associated Pedestrian Access Points (Oasis Trail, PID 122971)

Table 5 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 2				
Feature Consideration	Lancaster Tunnel Pedestrian Access Point			
	No Build Alternative	Alternative E1	Alternative E2	Alternative E3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	No	Yes
Safety Analysis				
Safety Issues	The existing tunnel is currently closed due to deterioration and safety reasons.	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	LTS 4	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	8 feet	12 feet	12 feet
Trail Design Issues	N/A	Renovation or replacement of tunnel would require the construction under the existing active track and replacement of existing stairs	None	None
Structures Required	None	Rehabilitate existing tunnel walls and stairway	Abandon existing tunnel and stairway	Replace tunnel and stairway
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	No	N/A	No
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.00
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	N/A	\$172,950	\$49,611,221
Conclusion				
Recommendation	Not Recommended	N/A	Recommended as Preferred Alternative	Not Recommended

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Table 6 — Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 2				
Feature Consideration	Hazen Street Pedestrian Access Point			
	No Build Alternative	Alternative F1	Alternative F2	
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	
Safety Analysis				
Safety Issues	N/A	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	
Engineering Issues				
Width of SUP (feet)	N/A	12 feet	10 feet	
Trail Design Issues	N/A	Grades and tieback wall require the use of switchbacks and retaining walls to make an accessible path to proposed trail	Grades and tieback wall require the use of steps	
Structures Required	None	Retaining walls and railings	Retaining walls/curbs, railings, bicycle runnel, and steps	
Utility Relocations/Issues	None	None	None	
ADA Accessibility	N/A	YES	No	
Property Impacts				
Property Impacts (acres)	None	0.32 (6 Parcels)	0.06 (1 Parcel)	
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$487,833	\$60,569	
Conclusion				
Recommendation	Recommended as Preferred Alternative	Not Recommended	Not Recommended	

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Table 7 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 2				
Feature Consideration	Columbia Parkway Pedestrian Access Point			
	No Build Alternative	Alternative G5		
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes		
Safety Analysis				
Safety Issues	N/A	No pedestrian/bicycle conflict points with vehicular traffic		
Bicycle Level of Traffic Stress	N/A	LTS 1		
Engineering Issues				
Width of SUP (feet)	N/A	12 feet		
Trail Design Issues	N/A	Grades require the use of switchbacks and retaining walls or elevated boardwalk to make an accessible path to proposed trail		
Structures Required	None	Retaining walls or elevated boardwalk with railings		
Utility Relocations/Issues	None	None		
ADA Accessibility	N/A	Yes		
Property Impacts				
Property Impacts (acres)	None	0.64 (3 Parcels)		
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats		
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None		
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$3,570,867		
Conclusion				
Recommendation	Recommended as Preferred Alternative	Not Recommended		

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Table 8 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 2					
Feature Consideration	No Build Alternative	Torrence Road Station Pedestrian Access Point			
		Alternative G1	Alternative G2	Alternative G3	Alternative G4
	Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes	Yes
	Safety Analysis				
Safety Issues	N/A	No pedestrian/ bicycle conflict points with vehicular traffic	No pedestrian/ bicycle conflict points with vehicular traffic	No pedestrian/ bicycle conflict points with vehicular traffic	No pedestrian/ bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	LTS 1	LTS 1
	Engineering Issues				
Width of SUP (feet)	N/A	12 feet	8 feet to 9 feet	12 feet	12 feet
Trail Design Issues	N/A	Grades require the use of switchbacks and retaining walls to make an accessible path to proposed trail	Walk follows existing grade of Torrence Road	Grades require the use of switchbacks and retaining walls to make an accessible path to proposed trail	Grades require the use of switchbacks and retaining walls to make an accessible path to proposed trail
Structures Required	None	Retaining walls or elevated boardwalk with railings	None	Retaining walls with railings	Retaining walls, elevated boardwalk with railings
Utility Relocations/Issues	None	None	None	None	None
ADA Accessibility	N/A	Yes	YES	YES	YES
	Property Impacts				
Property Impacts (acres)	None	0.06 (1 Parcel)	0.00	1.53 (11 Parcels)	0.53 (9 Parcels)
	Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
	Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None	None
	Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$496,989	\$70,489	\$459,486	\$2,788,794
	Conclusion				
Recommendation	Not Recommended	Not Recommended	Recommended as Preferred Alternative	Not Recommended	Not Recommended

Feasibility Study
Oasis Trail (PID 122971)

Evaluation Matrices for Segment 3 Shared-Use Path Alternatives and Associated Pedestrian Access Points (Oasis Trail, PID 122971)

Table 9 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Hoff Avenue Pedestrian Access Point			
	No Build Alternative	Build Alternative		
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes		
Safety Analysis				
Safety Issues	N/A	Access requires crossing of active track		
Bicycle Level of Traffic Stress	N/A	LTS 1		
Engineering Issues				
Width of SUP (feet)	N/A	5 feet		
Trail Design Issues	N/A	Existing steps need renovation for use with a bicycle		
Structures Required	None	Steps with bicycle runnel, railings, and retaining walls		
Utility Relocations/Issues	None	None		
ADA Accessibility	N/A	No		
Property Impacts				
Property Impacts (acres)	None	0.00		
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats		
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None		
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$87,238		
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative		

Feasibility Study

Oasis Trail (PID 122971)

Table 10 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	St. Andrews Street Pedestrian Access Point			
	No Build Alternative	Alternative H1	Alternative H2	
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	
Safety Analysis				
Safety Issues	N/A	Access requires crossing of active track	Access requires crossing of active track	
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	
Engineering Issues				
Width of SUP (feet)	N/A	12 feet	5 feet	
Trail Design Issues	N/A	Grades require switchback to create an accessible path to trail access	Existing steps need renovation for use with bicycle	
Structures Required	None	Retaining walls and railings	Steps with bicycle runnel, railings, and retaining walls	
Utility Relocations/Issues	None	None	None	
ADA Accessibility	N/A	Yes	No	
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	No impact	
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$354,856	\$120,298	
Conclusion				
Recommendation	Not Recommended	Not Recommended	Recommended as Preferred Alternative	

Feasibility Study

Oasis Trail (PID 122971)

Table 11 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Walworth Tunnel Pedestrian Access Point			
	No Build Alternative	Build Alternative		
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes		
Safety Analysis				
Safety Issues	N/A	Walworth Avenue is low stress and the tunnel is easy to use. Adding a runnel to existing stairs will improve usability.		
Bicycle Level of Traffic Stress	N/A	LTS 1		
Engineering Issues				
Width of SUP (feet)	N/A	12 feet		
Trail Design Issues	N/A	None		
Structures Required	None	Retaining walls and railings		
Utility Relocations/Issues	None	None		
ADA Accessibility	N/A	Yes		
Property Impacts				
Property Impacts (acres)	None	0.00		
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats		
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None		
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$85,888		
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative		

Feasibility Study
Oasis Trail (PID 122971)

Table 12 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Delta Avenue Bridge			
	No Build Alternative	Alternative J1	Alternative J2	Alternative J3
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	N/A	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	8 feet	12 feet	12 feet
Trail Design Issues	N/A	Constrained	None	None
Structures Required	None	None	Bridge widening and retaining wall relocation	Railroad track shift
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	None	0.10 (1 Parcel)	None
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$278,875	\$1,686,575	\$427,849
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative 2	Not Recommended	Recommended as Preferred Alternative 1

Feasibility Study
Oasis Trail (PID 122971)

Table 13 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Delta Avenue, Stanley Avenue, and Tusculum Avenue – Pedestrian Access Point			
	No Build Alternative	Delta Avenue Access Build Alternative	Stanley Avenue Access Build Alternative	Tusculum Avenue Access Build Alternative
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	Yes
Safety Analysis				
Safety Issues	N/A	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic	No pedestrian/bicycle conflict points with vehicular traffic
Bicycle Level of Traffic Stress	N/A	LTS 1	LTS 1	LTS 1
Engineering Issues				
Width of SUP (feet)	N/A	12 feet	12 feet	12 feet
Trail Design Issues	N/A	Requires switchbacks in trail access	Requires switchbacks in trail access	None
Structures Required	None	Removal of existing retaining wall section, reinforcement of slope with new retaining walls	Removal of existing retaining wall section, reinforcement of slope with new retaining walls	None
Utility Relocations/Issues	None	None	None	None
ADA Accessibility	N/A	Yes	Yes	Yes
Property Impacts				
Property Impacts (acres)	None	0.00	0.00	0.001 acres (1 Parcel)
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats	Suitable habitat for federally listed bats
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	None
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$258,463	\$276,031	\$9,778
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative	Not Recommended	Recommended as Preferred Alternative

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Oasis Trail (PID 122971)

Table 14 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Donham Street Pedestrian Access Point			
	No Build Alternative	Build Alternative		
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes		
Safety Analysis				
Safety Issues	N/A	No pedestrian/bicycle conflict points with vehicular traffic		
Bicycle Level of Traffic Stress	N/A	LTS 1		
Engineering Issues				
Width of SUP (feet)	N/A	11 feet		
Trail Design Issues	N/A	Avoiding existing utility poles and/or existing vegetation		
Structures Required	None	None		
Utility Relocations/Issues	None	None		
ADA Accessibility	N/A	Yes		
Property Impacts				
Property Impacts (acres))	None	0.00		
Ecological Resources				
Threatened & Endangered Species	No impact	Suitable habitat for federally listed bats		
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None		
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$19,918		
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative		

Feasibility Study

Oasis Trail (PID 122971)

Table 15 – Evaluation Matrix: Oasis Trail (PID 122971) Project Alternatives – Segment 3				
Feature Consideration	Carrel Street – Eastern Terminus			
	No Build Alternative	Alternative K1	Alternative K2	
Purpose and Need				
Improve Neighborhood Bicycle and Pedestrian Connectivity	No	Yes	Yes	
Safety Analysis				
Safety Issues	N/A	Two pedestrian bicycle conflict points with vehicular traffic – at street crossings	Two pedestrian bicycle conflict points with vehicular traffic – at street crossings	
Bicycle Level of Traffic Stress	N/A	LTS 2	LTS 2	
Engineering Issues				
Width of SUP (feet)	N/A	12 feet	10 feet	
Trail Design Issues	N/A	Follows existing grade of Carrel Street	Requires road diet of Carrel Street with switchback	
Structures Required	None	None	Retaining wall and railings	
Utility Relocations/Issues	None	None	None	
ADA Accessibility	N/A	Yes	Yes	
Property Impacts				
Property Impacts (acres)	None	0.01 (1 Parcel)	0.05 (1 Parcel)	
Ecological Resources				
Threatened & Endangered Species	No impact	No impact	No impact	
Section 4(f)/6(f) Resources				
Section 4(f)/6(f) Impacts	None	None	None	
Preliminary Cost Estimates				
Estimated Construction Costs	N/A	\$42,268	\$214,234	
Conclusion				
Recommendation	Not Recommended	Recommended as Preferred Alternative	Not recommended	

7. Preferred Alternatives

The preferred alternatives for Segments 1, 2, and 3 were selected based on the engineering and environmental analyses summarized in this Feasibility Study report, along with public input received throughout the project. In coordination with the City of Cincinnati and Great Parks, these alternatives reflect the agencies' shared priorities for safety, connectivity, and long-term maintainability. A summary of the preferred alternative for each segment is provided below.

A. Segment 1 – Begin Project to Lancaster Tunnel

The Montgomery Boathouse Inn to International Friendship Park – Plaza of the Sun

Alternative A3 places the shared-use path within the abandoned railroad corridor, made available through removal of the existing sidewalk and bollard fence. Given the heavy pedestrian use in this area, this alignment is designed to support a preferred 12-foot-wide shared-use path, providing comfortable two-way travel and reducing user conflicts. A 2-foot buffer is included along the fence line to enhance safety and separation. To protect existing mature trees, the alternative incorporates a 10-foot tree lawn, ensuring construction avoids disturbance to critical root zones. This alternative effectively accommodates high user demand while maintaining the corridor's existing environmental features. International Friendship Park – Plaza of the Sun. **See Figure 52.**



Figure 52 – Preferred Alternative A3

International Friendship Park – Plaza of the Sun

Alternative B1 was selected as the Preferred Alternative for the International Friendship Park – Plaza of the Sun segment. This alternative was chosen based on its minimal construction impacts and associated costs while accommodating the constraints of the corridor. The proposed trail width is constrained to 8 feet for a portion of the alignment, widening to 12 feet over a 110-foot section, allowing it to fit within the available space while still providing areas of expanded width for improved user flexibility. A key advantage of Alternative B1 is that it eliminates the need to replace the existing retaining wall, avoiding structural work, utility relocations, and preventing the removal of the buffered bike lane along Riverside Drive, and eliminating the need for relocation of existing storm and sanitary sewer infrastructure. As a result of these reduced impacts and avoided improvements, Alternative B1 is also the least costly option for this segment. See **Figure 53**.

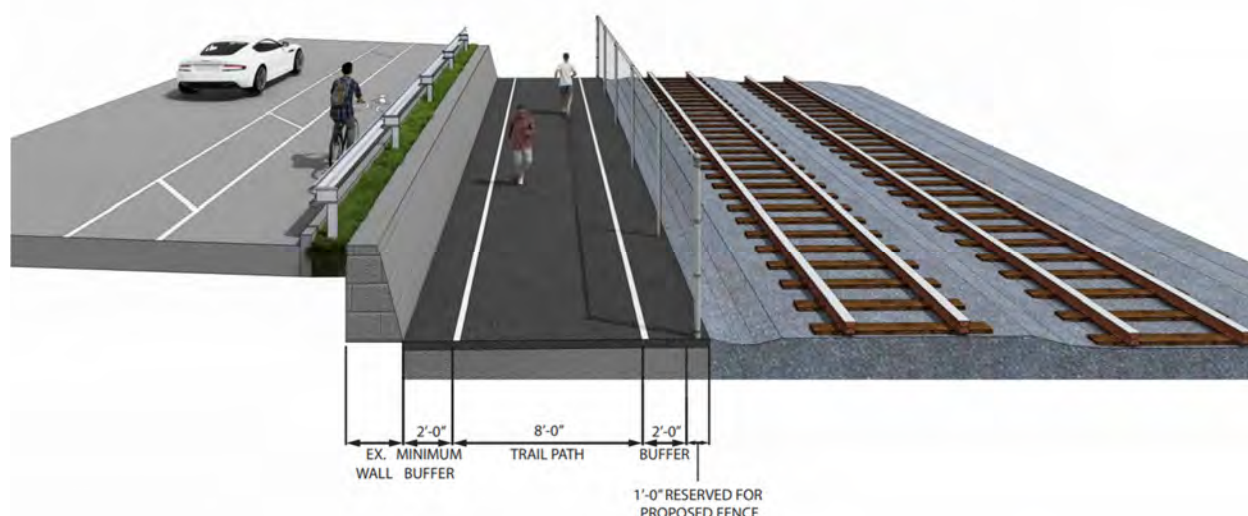


Figure 53 – Preferred Alternative B1

International Friendship Park – Plaza of the Sun to Rookwood Bridge

Alternative C3 was selected as **Preferred Alternative 1** for the International Friendship Park – Plaza of the Sun to Rookwood Bridge segment. This alternative provides a standard-compliant shared-use path width while avoiding the significant costs associated with reconstructing the existing retaining wall. By shifting the active rail tracks to the south, the design accommodates a **12-foot-wide** trail without requiring major structural modifications. Although coordination with the railroad will be necessary due to the proposed track realignment, this approach eliminates the need for extensive retaining wall reconstruction, making Alternative C3 substantially more cost-effective than Alternative C2 while still meeting desired trail width standards. **See Figure 53.**

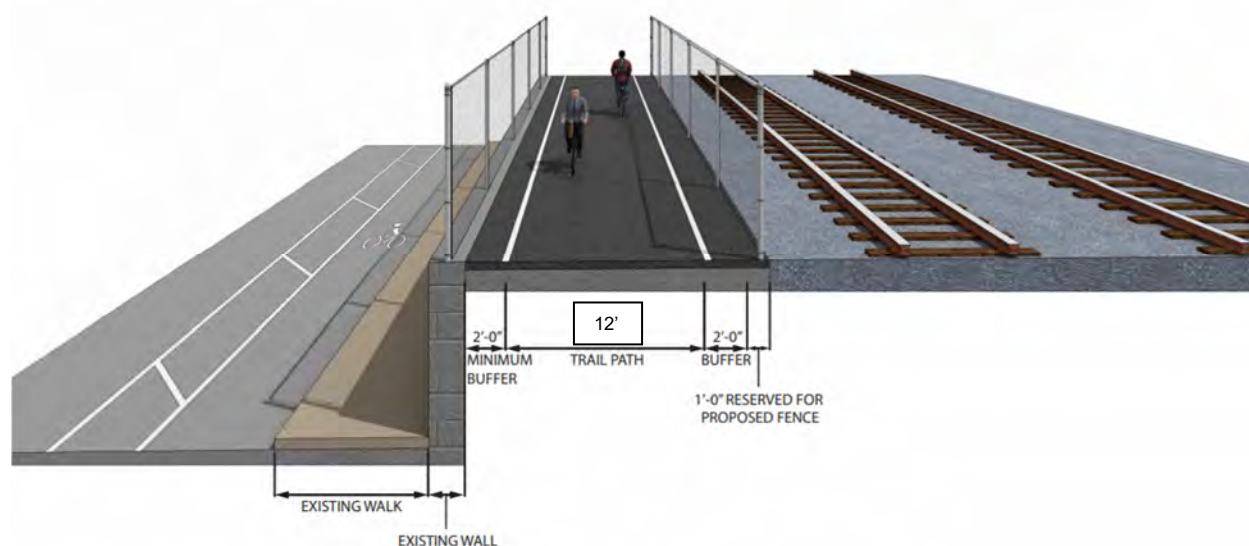


Figure 54 – Preferred Alternative C3

If coordination with the railroad for **Alternative C3** is unsuccessful, **Alternative C1** (Constrained Condition) serves as a viable fallback option. This alternative provides a constrained 9- to 10-foot-wide trail where right-of-way and structural limitations restrict available space. It remains a practical and financially responsible solution given the substantial **costs** associated with **Alternative C2**, which would require major retaining wall reconstruction to achieve a full 12-foot width.

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To maintain pedestrian mobility within this constrained segment, pedestrians could continue using the existing sidewalk along Riverside Drive, allowing the narrower trail to function primarily as a shared-use facility for bicyclists and higher-speed users.

Although the reduced width does not meet the 11-foot minimum standard, it remains safe, functional, and context-appropriate within the corridor's physical limitations. As a result, **Alternative C1** offers a feasible, lower-cost option where achieving the full trail width is not possible due to structural constraints or unsuccessful railroad coordination.

See Figure 55.

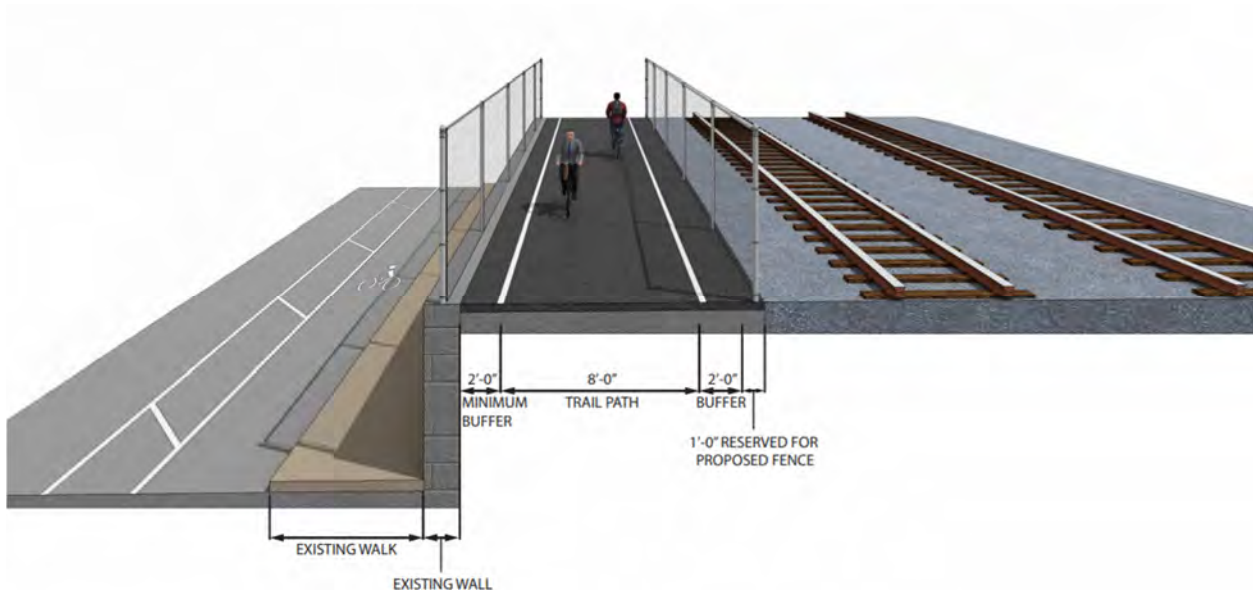


Figure 55 – Preferred Alternative C1

Preferred Pedestrian Access Point – Kemper Lane

A preferred pedestrian access point location is identified at the existing drive near **Kemper Lane** on Riverside Drive, providing a convenient and intuitive connection between the Walnut Hills neighborhood and the proposed shared-use path corridor. The existing drive offers a direct approach to the SUP, making it well suited for an ADA-accessible access point with minimal grading or structural modifications. Under this alternative, the existing swing gate would be removed, and any broken pavement between the current sidewalk and the proposed SUP would be replaced to create a smooth, continuous route.

This location gives nearby residents a safe, visible entry to the trail and supports overall network connectivity within the East Community. Its suitability—along with spacing relative to other access points and emergency access needs—will be further refined during detailed design. The **Kemper Lane** access point serves as the preferred location for pedestrian access in this segment of the corridor. **See Figure 56.**



Figure 56 –Preferred Kemper Lane Access Point

Rookwood Bridge

Alternative D3 is identified as the **preferred alternative 1** for accommodating the shared-use path across the Rookwood Bridge. The bridge was originally designed to support four rail lines, though only two were ultimately constructed. This unused structural capacity provides sufficient width to relocate the southern rail line farther south, enabling construction of a full-width trail without the need for major new structural elements. As a result, only minimal additional bridge work is required. Within the proposed trail zone, ballast, rail ties, and tracks would be removed to allow installation of the full-depth trail section, and protective fencing would be added on both sides to separate trail users from active rail operations and provide fall protection.

Implementing this configuration involves removing the inactive north track and shifting the active south (main) track approximately 5 feet south to create the necessary trail width. A sidetrack located south of the main line—from the Rookwood Bridge west to the entrance of International Friendship Park—would also be shifted to match the new alignment. To the south, the relocated tracks would tie back into the existing alignment where the current tracks curve toward the shifted position, while to the north, the main line would reconnect through a realigned horizontal curve. This approach leverages existing bridge capacity, minimizes structural modifications, and provides a cost-efficient path to achieving a full-width trail.

If coordination with the railroad for Alternative D3 is unsuccessful, Alternative D1 (Constrained Condition) serves as a viable fallback option. This alternative provides a constrained 8-foot-wide trail where right-of-way and structural limitations restrict available space.

To maintain pedestrian mobility within this constrained segment, pedestrians could continue using the existing sidewalk along Riverside Drive, allowing the narrower trail to function primarily as a shared-use facility for bicyclists and higher-speed users.

Although the reduced width does not meet the 11-foot minimum standard, it remains safe, functional, and context-appropriate within the corridor's physical limitations. As a result, **Alternative D1** offers a feasible, lower-cost option where achieving the full trail width is not possible due to structural constraints or unsuccessful railroad coordination.

B. Segment 2 – Lancaster Tunnel to Torrence Road Station

Lancaster Tunnel Pedestrian Access Point

Alternative E2 (abandoning the tunnel) is identified as the preferred alternative for addressing long-term safety and structural concerns associated with the existing tunnel. Maintaining public access to the tunnel would require significant structural rehabilitation and ongoing monitoring, and the cost of keeping the tunnel open is prohibitive. Under this alternative, pedestrian use of the tunnel would be permanently discontinued, and public access would be eliminated by sealing the structure.

By removing the tunnel from service and stabilizing it through abandonment, Alternative E2 provides a long-term, low-risk solution that addresses structural deterioration while ensuring the safety of both trail users and rail operations.

Hazen St. Pedestrian Access Point

The **No-Build Alternative** is identified as the preferred alternative for the Hazen Street location. Although Hazen Street could physically serve as a potential access point to the proposed shared-use path corridor, the surrounding area along Riverside Drive experiences low pedestrian activity, reducing the need for an additional connection at this location. Hazen Street dead-ends before the rail corridor, and no formal railroad crossing exists. Furthermore, all proposed build alternatives at Hazen Street would result in a non-ADA-compliant connection due to steep grades and permanent right-of-way.

Establishing a new crossing would also require extensive coordination with the railroad, and the associated regulatory requirements and construction costs make implementation impractical. Importantly, a safe and functional pedestrian access point exists nearby at Kemper Lane, providing a suitable connection to the shared-use path corridor without the need for new infrastructure or railroad coordination.

For these reasons, the No-Build Alternative is preferred, as it avoids substantial cost and complexity, prevents the creation of a non-ADA-compliant facility, and relies on the preferred Kemper Lane pedestrian access point to meet pedestrian access needs in this area.

Collins Ave. Bridge

There are 4 bridge options discussed in the study. The recommendation is leaning towards Option 4, which utilizes the existing superstructure and adds a concrete deck for a 12-foot trail. This has the lowest costs of all the options, but does not raise the bridge clearance. The City of Cincinnati is reviewing these options and will make their recommendation in July.

Gladstone Avenue

Gladstone Avenue is identified as the preferred alternative for providing local access to the shared-use path corridor. The street is planned to function as a low-speed shared street, where vehicles, pedestrians, and cyclists operate within the same roadway environment. **See Figure 57.** The goal is this shared roadway will give priority to the trail users. Details for this prioritization will be developed in Stage 1 design.



Figure 57 – Preferred Gladstone Avenue

Columbia Parkway Pedestrian Access Point

There are currently no plans by any local agencies to connect communities north of Columbia Parkway to the Columbia Parkway intersection. Due to this, the mitigation needed for the tree removal and the \$3.6M costs to make the connection from Columbia Parkway to the Oasis trail, the recommended alternative is the no-build. However, should connections north of Columbia Parkway take place, **Alternative G5** could be considered as a future project as G5 provides the most direct, intuitive, and fully accessible route between the hillside neighborhoods and the station area, all while remaining outside the Torrence Road right-of-way.

C. Segment 3 – Torrence Road Station to End Project

Torrence Station Pedestrian Access Point

Alternative G2 is identified as the preferred alternative to connect Riverside Drive to the Oasis Trail. This 8'-9' sidewalk connection follows the existing Torrence Road alignment. The major benefits of this alternative compared to the others evaluated is there are no property impact, maintain the existing surrounding properties for future developments, and has no retaining walls or boardwalk, significantly less costly than the other alternatives evaluated. **See Figure 58.**

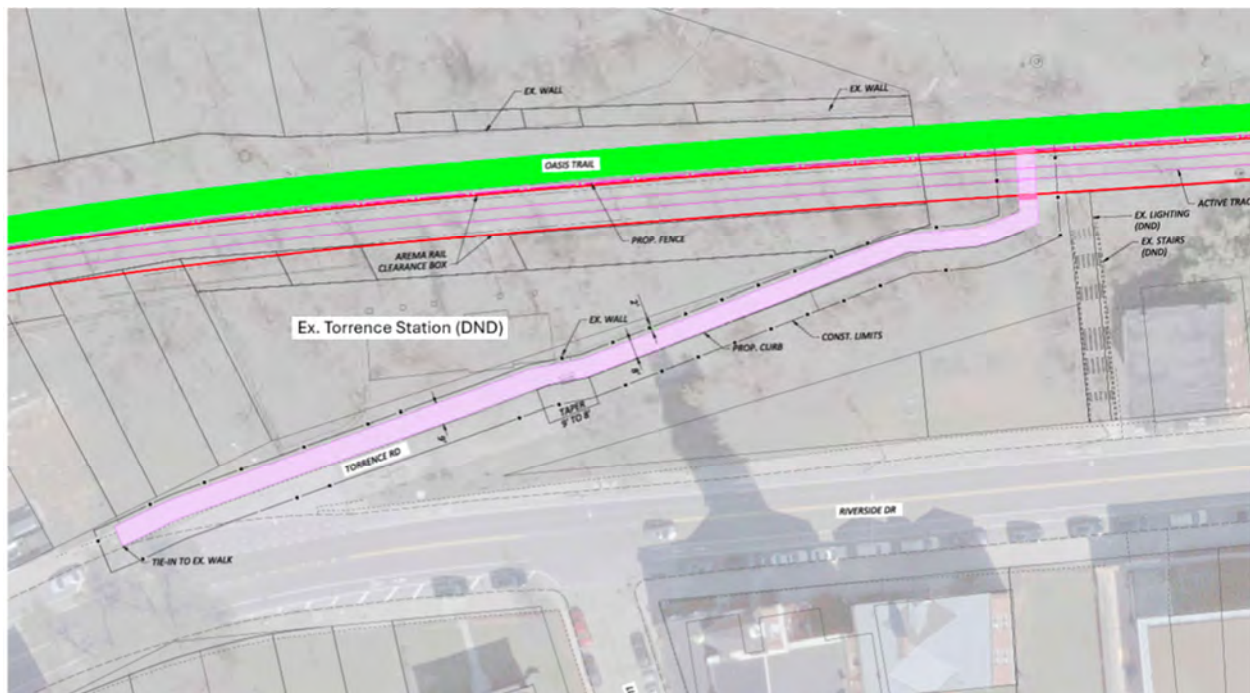


Figure 58 – Preferred Alternative G2

Hoff Ave Pedestrian Access Point

The recommended alternative at this location is the no build alternative as it doesn't provide ADA access and there is no existing railroad crossing.

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Oasis Trail (PID 122971)

St. Andrews Pedestrian Access Point

The preferred alternative at this location is **Alternative H2** if ADA parking can be accommodated. This will provide ADA access from Riverside Drive to the Oasis Trail without any impacts to adjacent private property. During the Stage 1 design phase, options to provide ADA parking will be evaluated. **See Figure 59.**

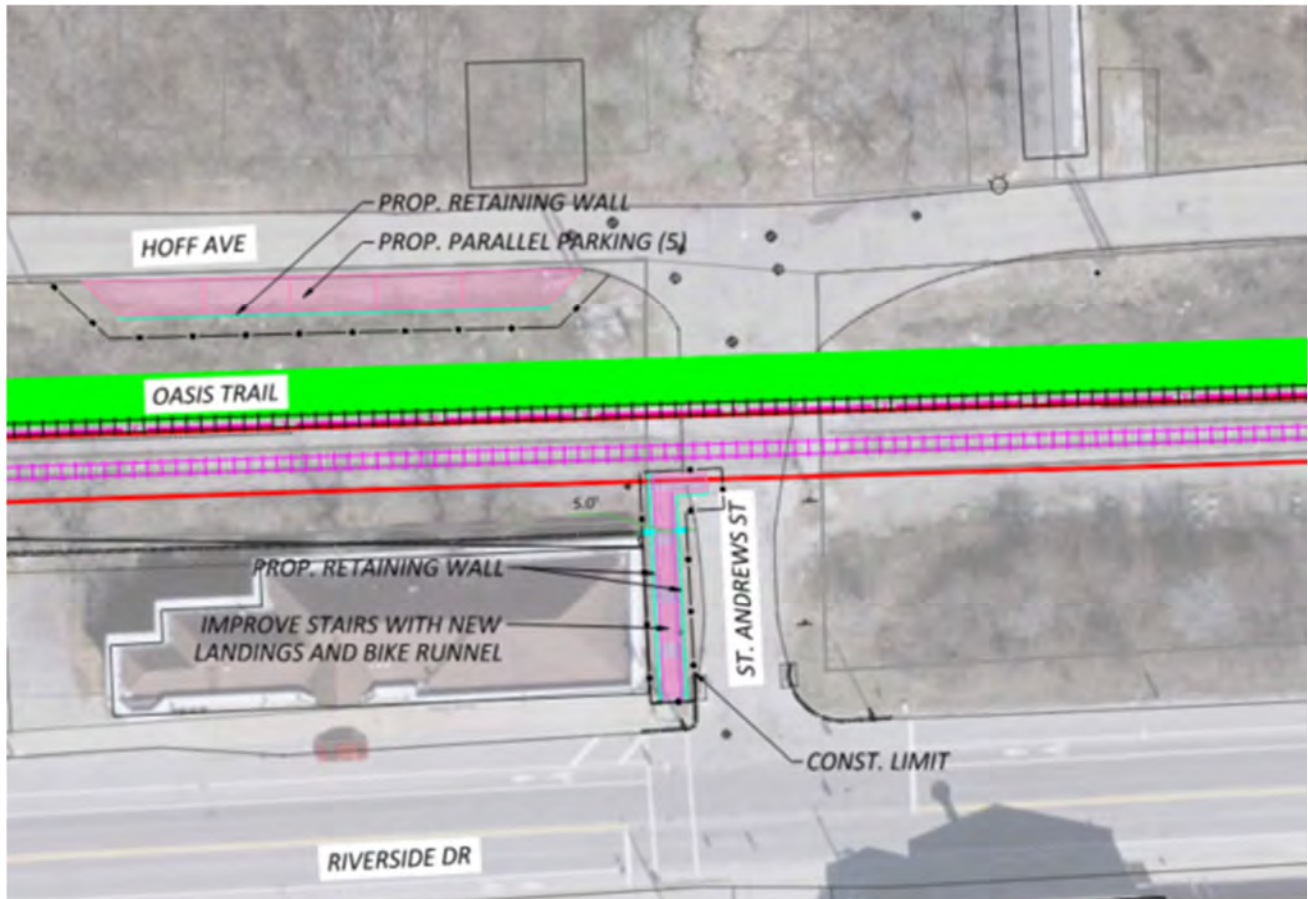


Figure 59 – Preferred Alternative H2

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Oasis Trail (PID 122971)

Walworth Tunnel Pedestrian Access Point

Upgrade the existing tunnel stairs with improved tread geometry, new handrails, and a bicycle runnel to better support rolling access. A connection from the top of the stairs to the Oasis Trail will be provided. Additional space could be provided for bicycle amenities such as repair station. **See Figure 60.**

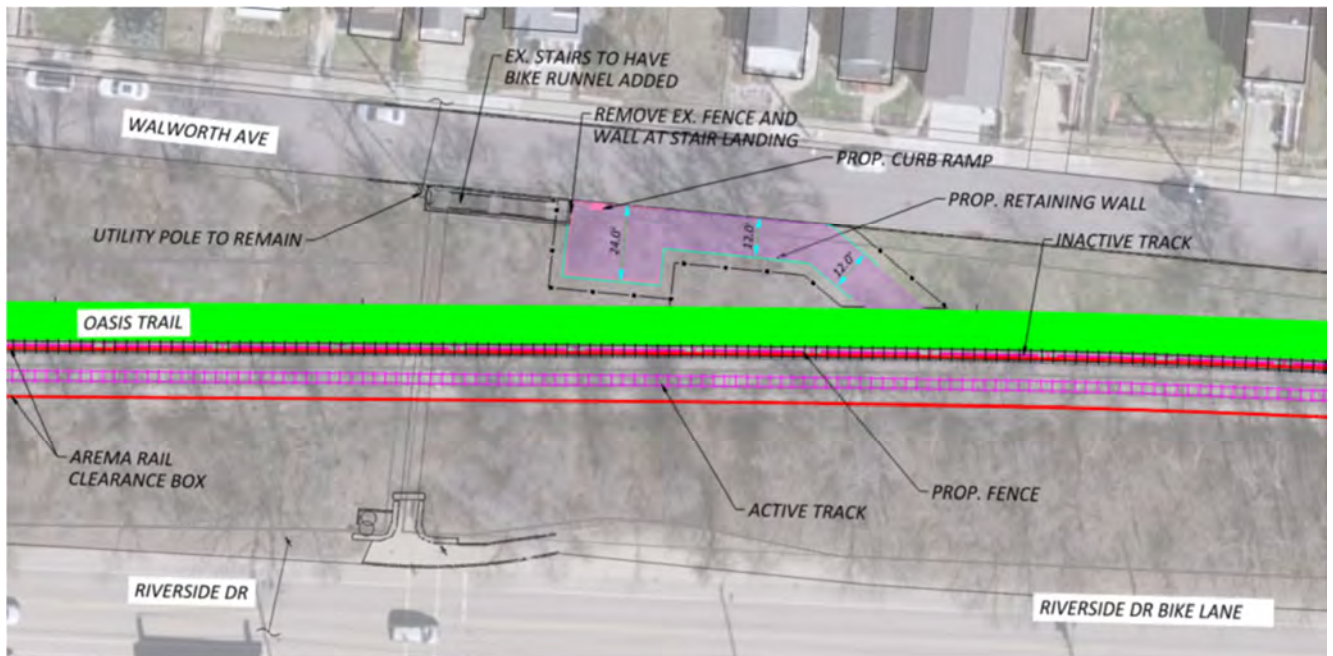


Figure 40 – Preferred Walworth Tunnel Pedestrian Access Point

Delta Ave. Bridge and Preceding Retaining Wall

Alternative J3 is identified as the preferred alternative for providing a 12-foot trail across the Delta Avenue Bridge and preceding retaining wall. Similar to the Rookwood Bridge, this bridge was originally designed to support four rail lines and only two were built. The unused structural capacity allows for the existing rail line to be shifted to the south, allowing for a 12-foot trail to be provided prior to the bridge along the existing retaining wall and across the bridge. See **Figure 61**.

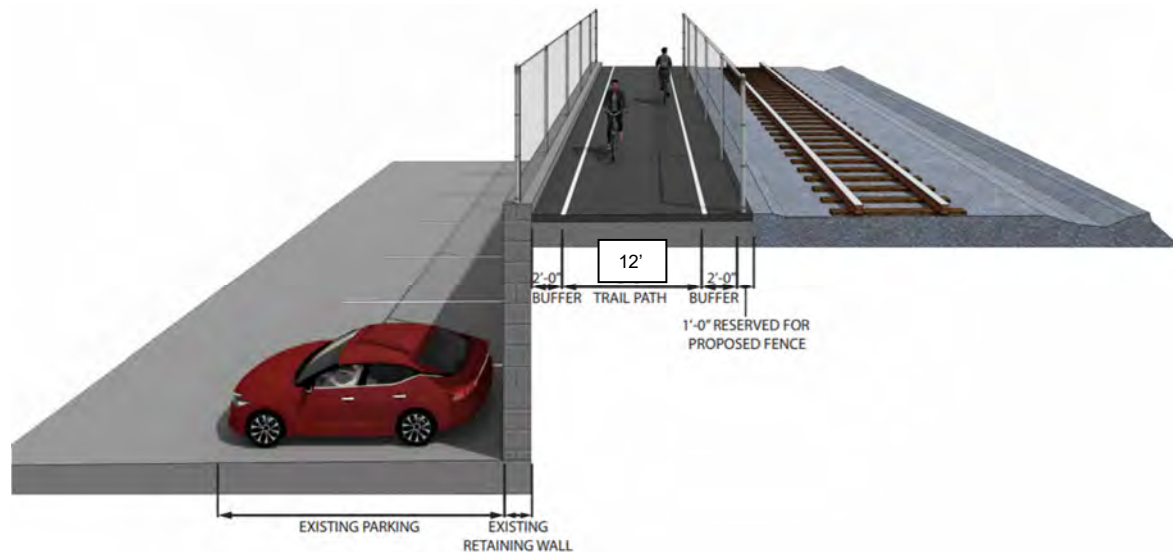


Figure 61 – Preferred Alternative J3

This shift in the tracks involves removing the inactive north track and shifting the active south (main) track approximately 8-feet to create the 12-foot trail width. This alternative has significantly less costs (\$400,000 compared to Alternative J2 at \$1.4M), no property impacts and no parking lot impacts.

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Oasis Trail (PID 122971)

If coordination with the railroad is unsuccessful, Alternative J1 (Constrained Condition) is a fallback option. It provides a constrained 8-foot wide trail for 590-feet, has no property impacts and costs are approximately \$250,000. See **Figure 62**.

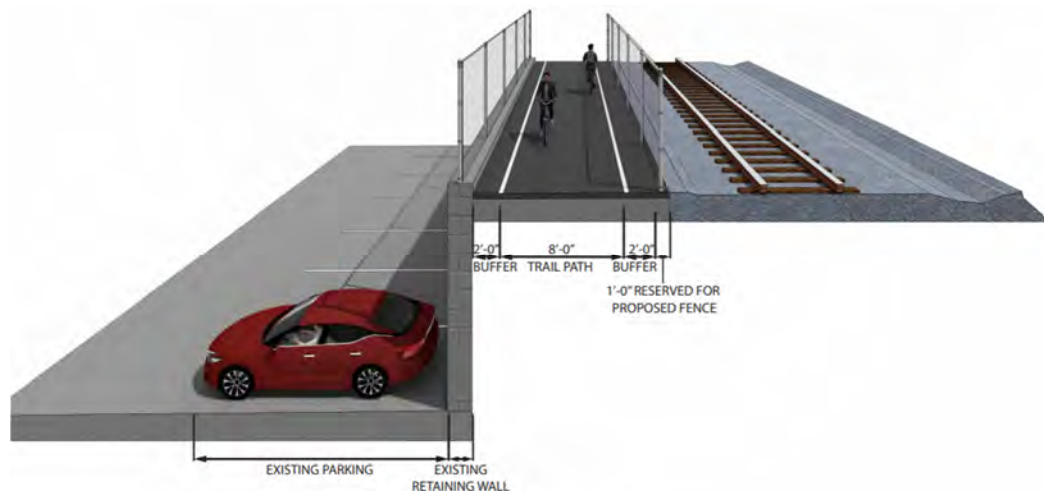


Figure 62 – Preferred Alternative J1

Delta Ave. and Tusculum Ave. Pedestrian Access Points

There are feasible options for each of these locations to provide access from the surrounding communities to the Oasis Trail. The Delta Ave. can provide ADA access but require switchbacks and retaining walls. See **Figures 63**.

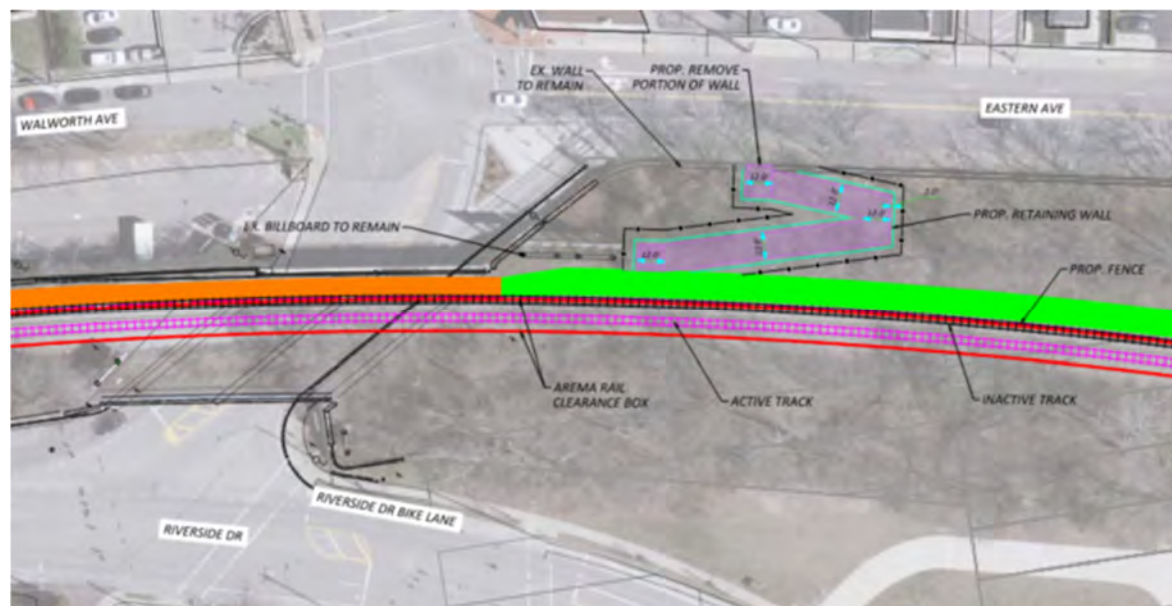


Figure 63 – Preferred Delta Ave. Pedestrian Access Point

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Oasis Trail (PID 122971)

There is also an opportunity to provide a connection at the existing Tusculum Ave./ Eastern Ave. intersection to the Oasis Trail. The access is low cost, but does impact one property owner. See **Figure 64**.

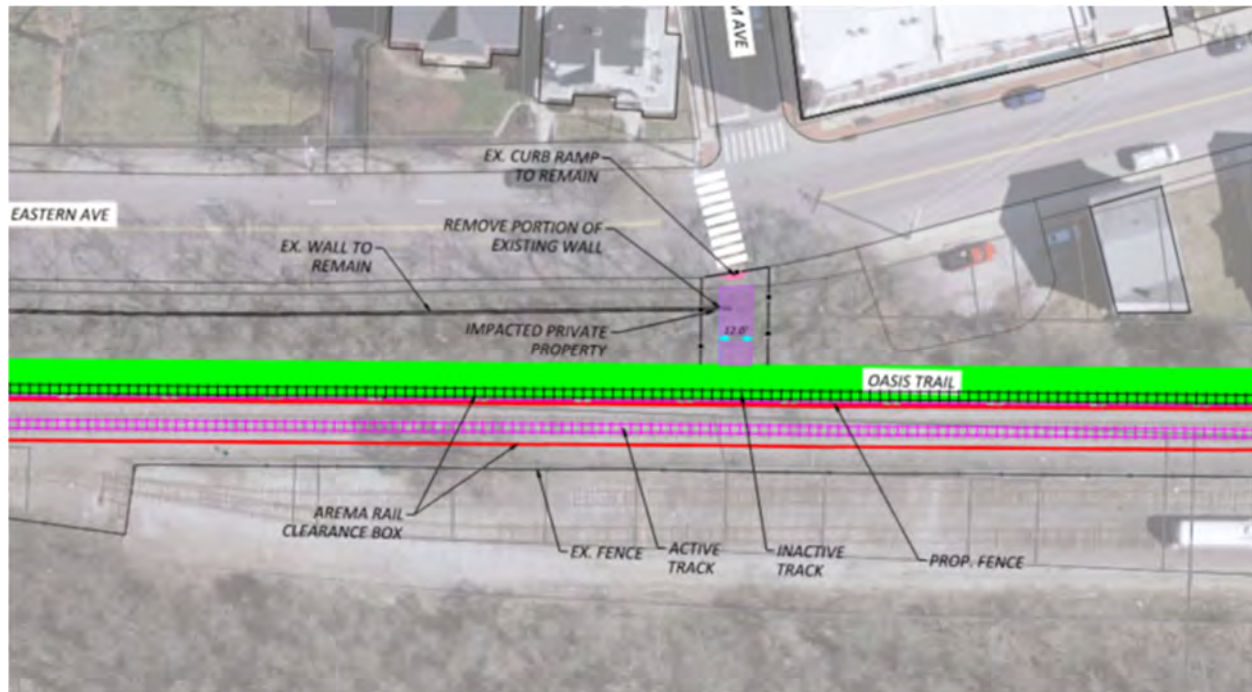


Figure 64 – Preferred Tusculum Pedestrian Access Point

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Oasis Trail (PID 122971)

Donham St. Pedestrian Access Point

Along Donham St., behind Daylily Deli, there is an opportunity to connect to the Oasis Trail with a 11-foot path and under a 5% grade. This is a low-cost on a low-volume roadway that provides connectivity to the surrounding communities. **See Figure 65.**

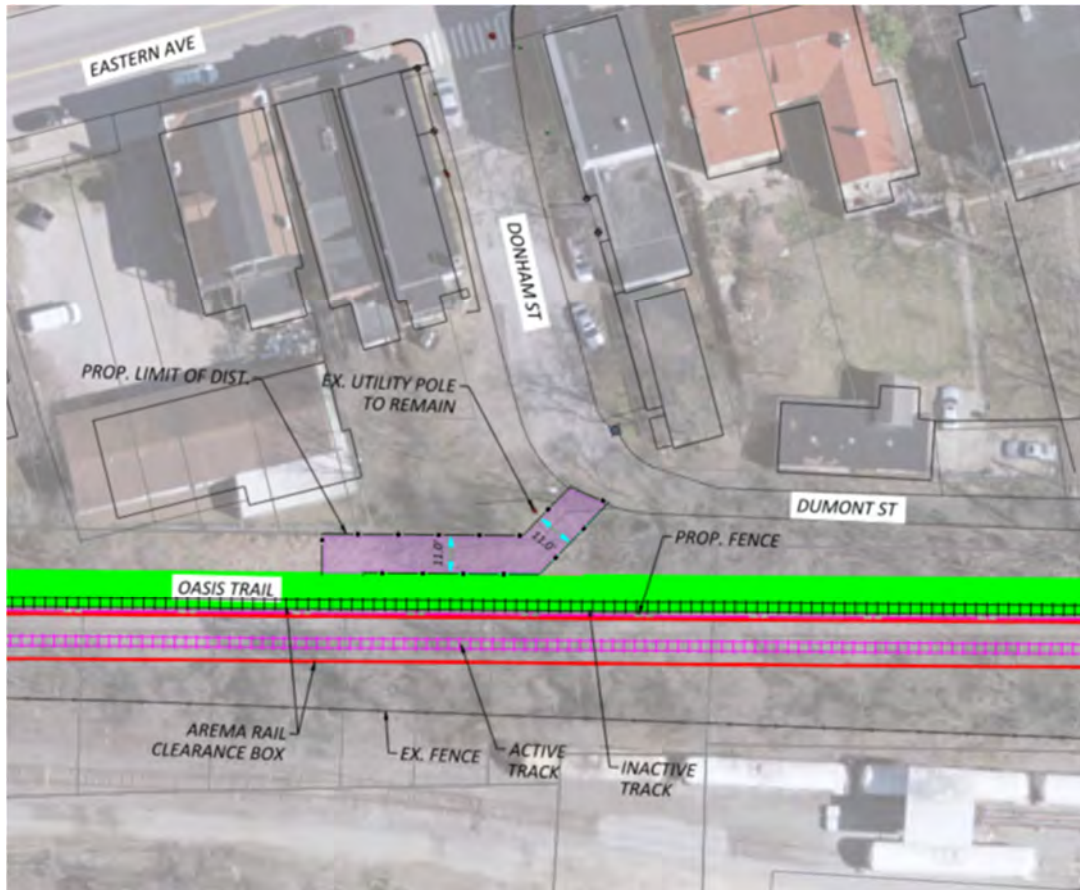


Figure 65 – Preferred Donham St. Pedestrian Access Point

Feasibility Study

Oasis Trail (PID 122971)

Carrel St. Eastern Terminus Connection

Alternative K1 is the preferred alternative to connect the proposed Oasis Trail to the existing trail at Carrel Street. This alternative would provide a 12-foot SUP along the east side of Carrel St., following the existing road grade, and has no impacts to Carrel St.

One property may be impacted on the east side of Carrel Street. However, working with the City of Cincinnati, options during the design development will be evaluated to eliminate impacts to the adjacent private property. See **Figure 66**.

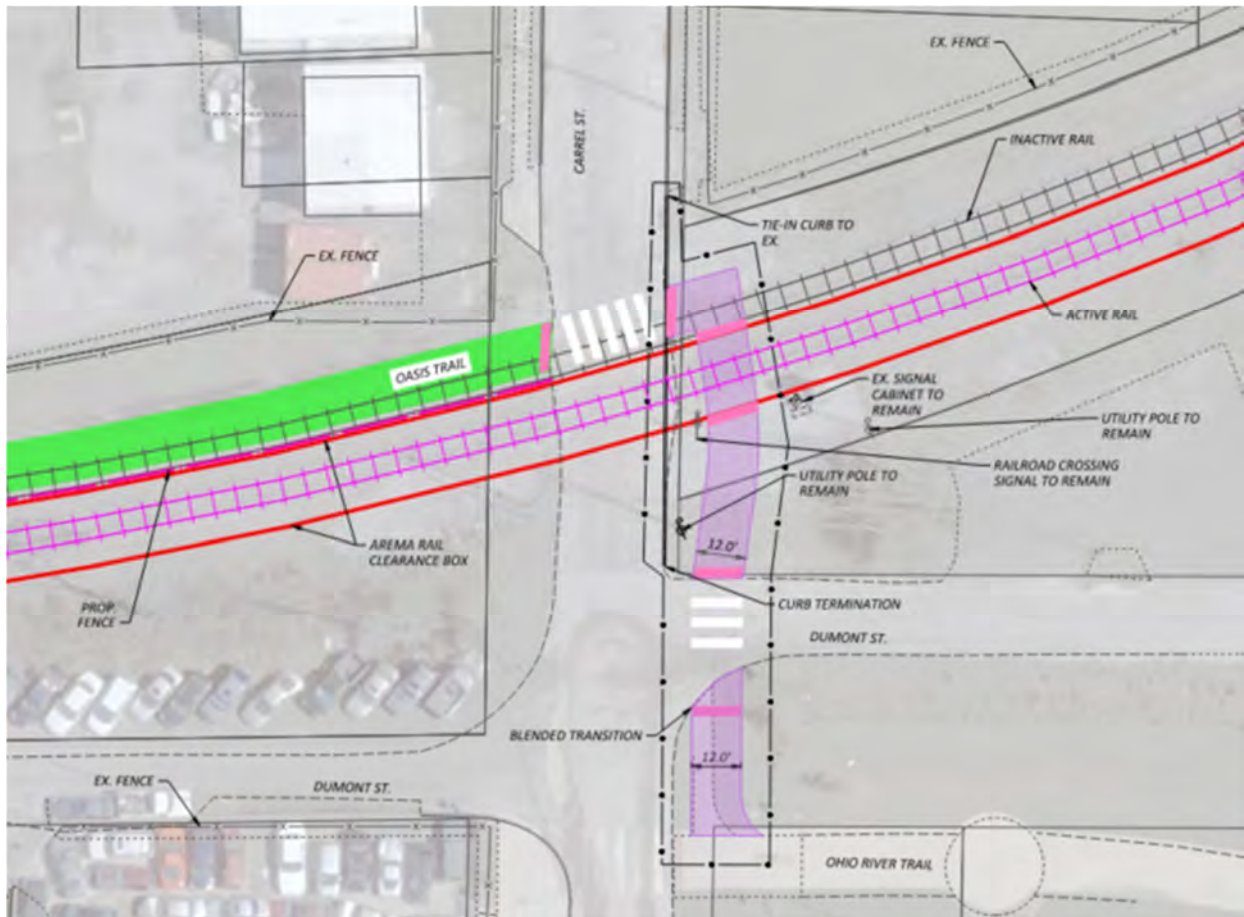


Figure 66 – Preferred Alternative K1