Draft Alternatives Refinement and Evaluation Memorandum

Prepared for
Oregon Department of Transportation and Benton County

May 2026

Parametrix

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Prepared for

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Acronyms and Abbreviations

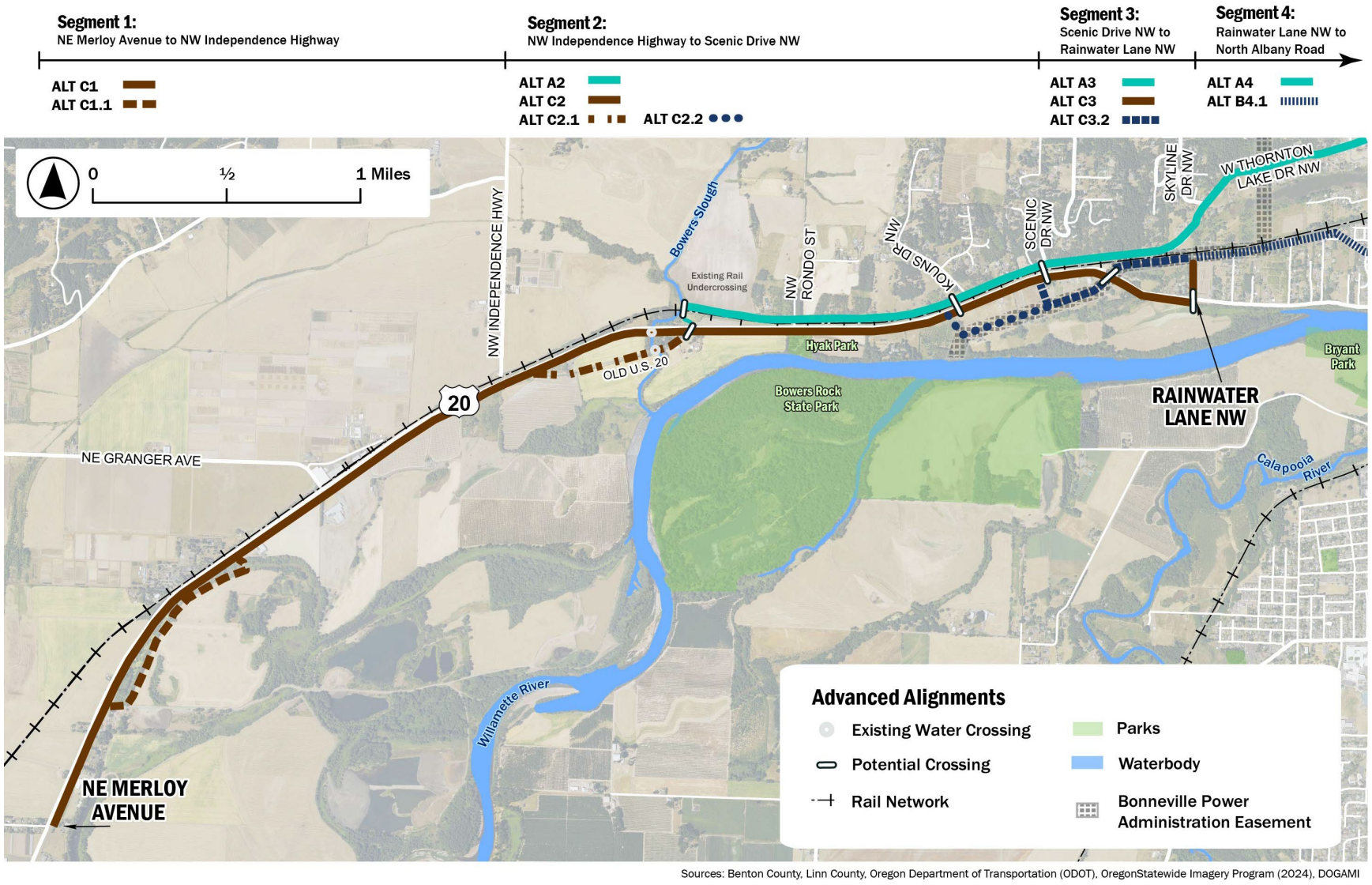
ADA	Americans with Disabilities Act
BPA	Bonneville Power Administration
DSL	Oregon Department of State Lands
EFU	Exclusive Farm Use
LWI	local wetland inventory
MP	milepost
mph	miles per hour
NWI	National Wetland Inventory
ODOT	Oregon Department of Transportation
PHB	pedestrian hybrid beacon

1. Introduction

This report summarizes and evaluates refined alternatives for the Corvallis to Albany Path between NE Merloy Avenue and Rainwater Lane NW. The alternatives included here were advanced for further review and analysis based on the outcomes of the Alignment Screening Report, which narrowed a wide range of potential alignments to a narrower list (see Appendix A). Alignment alternatives and crossings are developed further, including conceptual design, permitting and zoning analysis, cultural and historic resources documentation, environmental review, and planning-level cost estimates. The result of this report is a preliminary recommendation for the preferred path alternative. The project team will refine the recommendation based on community and partner feedback and present to the Benton County Commission to make a final recommendation on which alternative to advance.

2. Alternatives Summary

Alignments that were advanced from the Alignments Screening Report are shown in Figure 1. As shown in the figure, minor modifications were made to segment numbering to aid in development of conceptual designs, identification of challenges and constraints, and evaluation of the alternatives.



Sources: Benton County, Linn County, Oregon Department of Transportation (ODOT), OregonStatewide Imagery Program (2024), DOGAMI

Figure 1. Alignments Advanced for Further Evaluation

3. Alternatives Refinement

This section discusses the factors used to evaluate the alignment alternatives and how they correspond with the established evaluation criteria. These factors encompass design assumptions; key considerations that influence the feasibility of alternatives, including natural resources, right-of-way, rail interaction, and zoning, land use, and permitting; and a description of how planning-level cost estimates were developed. The information presented here supports the development and evaluation of alternatives, which is presented in Section 4.

3.1 Design Assumptions

Design criteria are documented in the Design and Evaluation Criteria memorandum (see Appendix B). Based on the facility selection criteria included in the Oregon Department of Transportation (ODOT) 2025 Highway Design Manual, alignments along U.S. 20 and West Thornton Lake Drive NW should follow ODOT design standards for a shared use path. Figure 2 represents a typical cross section for a shared use path, where the path is located at least 5 feet from the edge of the roadway. A physical barrier may be considered in these locations, but it is not required by the established design criteria. In more constrained locations where the path is located less than 5 feet from the edge of the roadway, a physical barrier must be used; in these cases, a minimum total shoulder width of 10 feet is required (an 8-foot minimum shoulder width plus a 2-foot shy distance). This is shown in Figure 3. As noted above, on-street facilities may also be considered in specific instances, such as on Rainwater Lane NW or for alignments that use private roadways. Specific design assumptions for those facilities will be documented through the design process.

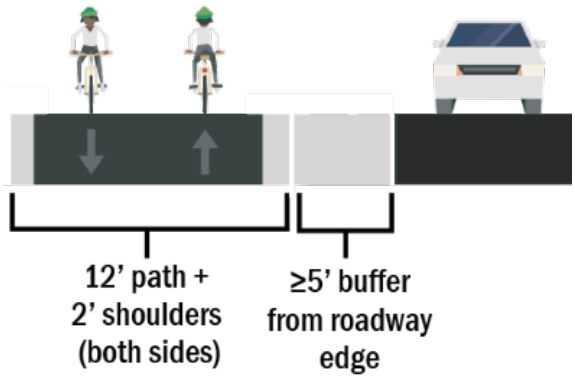


Figure 2. Preferred Typical Path Cross Section

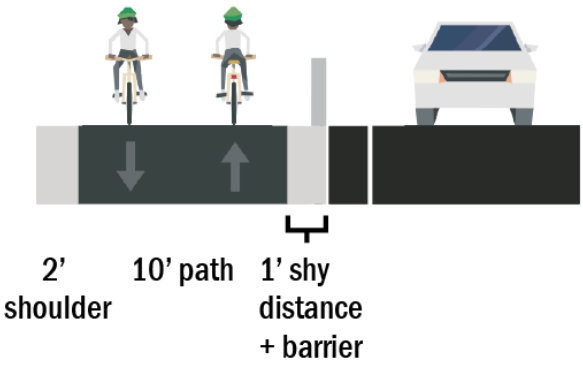


Figure 3. Constrained Typical Path Cross Section

3.2 Key Considerations

3.2.1 User Experience and Comfort

- Personal Security and Unwanted Use. Community members have identified potential concerns with path alternatives that would reduce visibility of the path from nearby residences, roadways, or U.S. 20. Design treatments could help to mitigate these concerns, including features such as path lighting and clear sight lines, fencing, as well as identifying feasible alternatives that maximize visibility for path users. In all instances, path signage can further support personal security. Mileage or location points can help people identify and communicate their location on the path in the instance of needing emergency support, and wayfinding signs with distance indicators to nearby connections can improve overall comfort.
- Path Management. Additionally, separate from this planning effort, Benton County and ODOT should establish a path management framework that guides future maintenance, operations, and enforcement activities. This framework should also include guidance on engaging local volunteers that can provide additional "eyes on the trail" that can help deter unwanted uses. Finally, the framework could consider a program for ensuring adjacent property owners have contact information if something occurs on the path that needs attention; this is often a non-emergency phone number for the responsible agency that all property owners have.
- U.S. 20 and Railroad Crossings. In addition to design, right-of-way, and permitting challenges, crossing U.S. 20 and/or the rail present challenges for user experience and comfort. While the project team has sought to minimize the total number of new highway and/or railroad crossings required, there will be at least one crossing included in the final preferred alignment. Prior phases of this project determined that a continuous route on the south side of U.S. 20 is likely not feasible east of Rainwater Lane NW. Specific considerations for crossings are explored in the evaluation sections for each segment.
- Noise, Traffic Separation, and Aesthetic Quality. Path users generally prefer routes that minimize exposure to highway noise, provide a sense of separation and safety from vehicle traffic, and offer scenic or visually pleasant surroundings. Alignments that run in close proximity to U.S. 20 may present challenges in meeting these preferences, and design treatments such as vegetative buffers, berms, or increased physical separation from the roadway should be considered where feasible.

3.2.2 Natural Resources

3.2.2.1 Wetlands and Waterways

- Permitting Requirements. Any impacts to waters of the United States or waters of the state would require authorization from the U.S. Army Corps of Engineers and the Oregon Department of State Lands (DSL). Where impacts to wetlands and waterway impacts cannot be avoided, the following permits and approvals would be required: Clean Water Act Section 404 Permit, Oregon Removal-Fill Permit, Clean Water Act Section 401 Water Quality Certification, and Endangered Species Act Section 7 Consultation and Magnuson-Stevens Fishery Conservation and Management Act compliance.

- **Defining Impacts.** Impacts are defined as placing or removing materials, organic or inorganic, within waters. Temporary impacts do not require mitigation; permanent impacts do. Thresholds are generally measured by volume (more than 50 cubic yards per calendar year) and by loss of waters. In salmonid habitat, however, the impact threshold is zero. Bowers Slough and its associated wetlands fall into this category and would therefore be subject to the strictest standards. Nearly all waterways in the study area connect, directly or indirectly, to the Willamette River and therefore qualify as Waters of the United States or state. The Oregon DSL Removal - Fill Guide (2024) serves as the primary reference document for these determinations.
- **Stormwater.** Increasing impervious surfaces can also trigger permitting requirements by affecting runoff. The project would need to address stormwater through treatment and detention. Depending on the extent of impact, directing runoff to upland areas for dispersal may be sufficient; the key requirement is ensuring runoff does not reach the stream.
- **Fish Passage.** Bridge structures crossing Bowers Slough must span at least 1.5 times the active channel width to meet Oregon Department of Fish and Wildlife fish-passage requirements. Reach-wide measurements of active channel width and site-specific stream function assessments may be required to support fish-passage design.
- **Avoidance and Design Mitigation.** The path should first seek to avoid any impacts to waterways or wetlands (see Figure 5). Where complete avoidance is not feasible, design-level mitigation measures should be employed to minimize impacts. Examples include the use of boardwalks with piles placed outside the wetland boundary to reduce added fill, open-grate decking to limit shading impacts, and the elimination of curbs to avoid concentrating stormwater runoff and altering natural precipitation flow patterns.
- **Compensatory Mitigation.** Where impacts remain unavoidable after avoidance and design mitigation have been exhausted, compensatory mitigation must be coordinated with DSL. Mitigation is calculated on a per-acre basis, and credits must be purchased through a mitigation bank. Several banks operate in the area, offering different credit types depending on the nature of the resource affected. The appropriate credits will depend on the type and quality of wetland impacted and the total extent of impact.

3.2.2.2 Wildlife and Habitat

- **Fish Habitat.** The study area provides habitat for number of federally and state-listed fish species within the Willamette River system, including Endangered Species Act–listed Upper Willamette River steelhead and Chinook salmon, and designated Essential Fish Habitat for Chinook and coho salmon. Bowers Slough is designated as Essential Salmonid Habitat by DSL. Consultation under Section 7 of the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act will be required if the preferred alignment impacts Bowers Slough or downstream waters of the Willamette River. Any project elements that affect fish-bearing waters, including those providing habitat for native migratory fish, will need to comply with Oregon Department of Fish and Wildlife fish-passage requirements.
- **Federally Proposed Threatened Species.** The study area also contains habitats that support northwestern pond turtle, a federally proposed threatened species. Given the presence of suitable habitat and nearby records, it is reasonable to assume pond turtle presence and to incorporate avoidance and minimization measures into project planning. In addition, Monarch butterfly, another proposed threatened species, may occur foraging in the study area. Coordination with the U.S. Fish and Wildlife Service may be warranted if proposed species are listed prior to project implementation or if project effects to listed species or their habitats are anticipated.

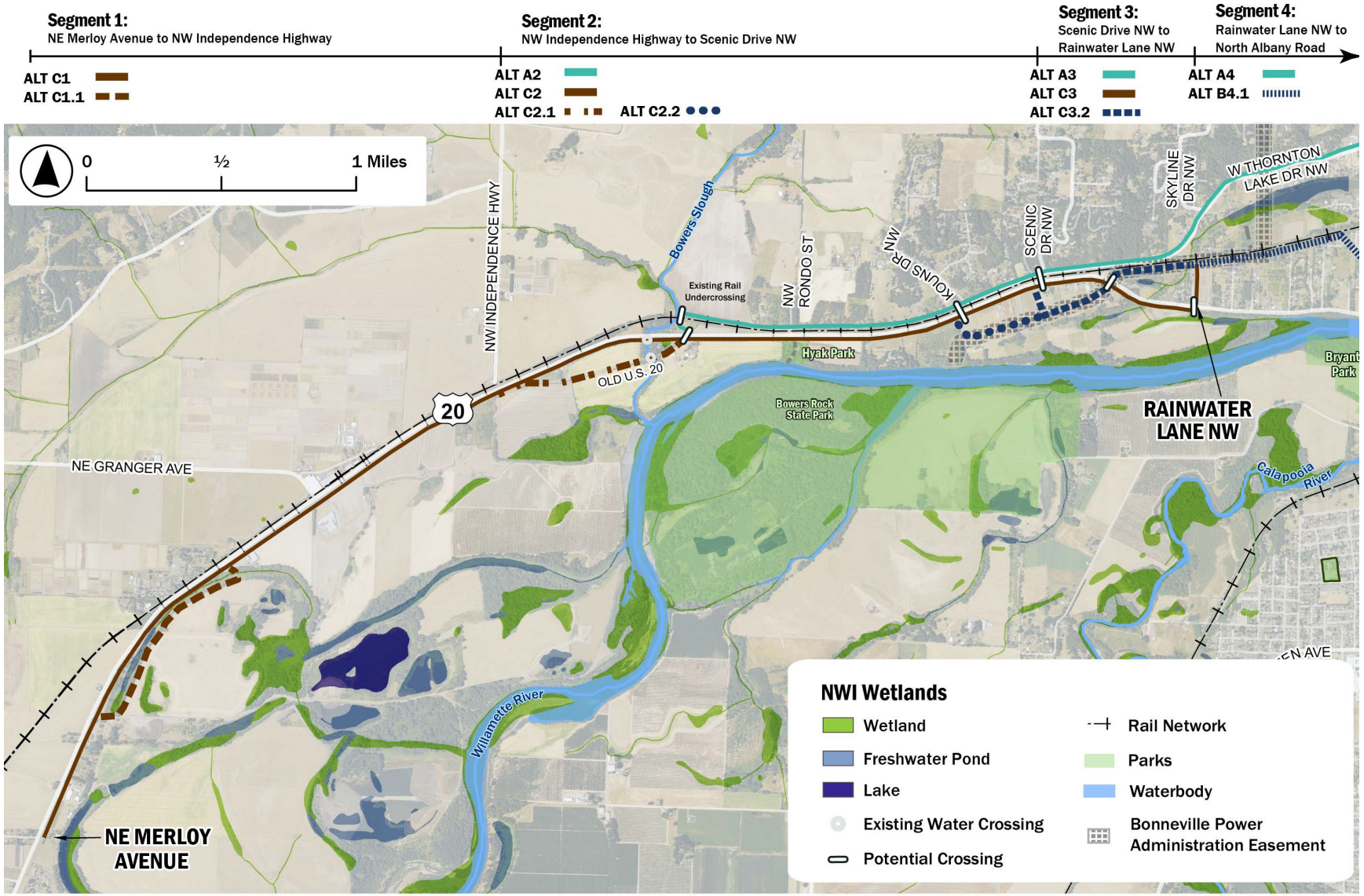
3.2.2.3 Floodplain

- **1% Annual Chance Flood Hazard Zone.** Floodplain requirements are outlined in Federal Emergency Management Agency (FEMA) Floodplain Mitigation Assessment – Regional Guidance for Oregon (2024). The path will aim to first avoid impacts to flood hazard zones. If avoidance is not feasible, mitigation will be required to achieve no net loss of the natural floodplain functions of floodplain storage, water quality, and vegetation. Mitigation requirements seek to address no net fill (loss of unoccupied space), increase in impervious surface, and loss of trees greater than 6 inches in diameter. Mitigation ratios are shown in Figure 4.

Basic Mitigate Ratios	Unoccupied Space (ft^3)	Pervious Surface (ft^2)	Trees (6"<dbh≤20")	Trees (20"<dbh≤39")	Trees (39"<dbh)
Floodway and/or RBZ	2:1	1:1	3:1	5:1	6:1
RBZ-Fringe	1.5:1	1:1	2:1	4:1	5:1
Mitigation multipliers					
Mitigation onsite to Mitigation offsite, same reach	100%	100%	100%	100%	100%
Mitigation onsite to Mitigation offsite, different reach, same watershed (5^{th})	200%	200%	200%	200%	200%

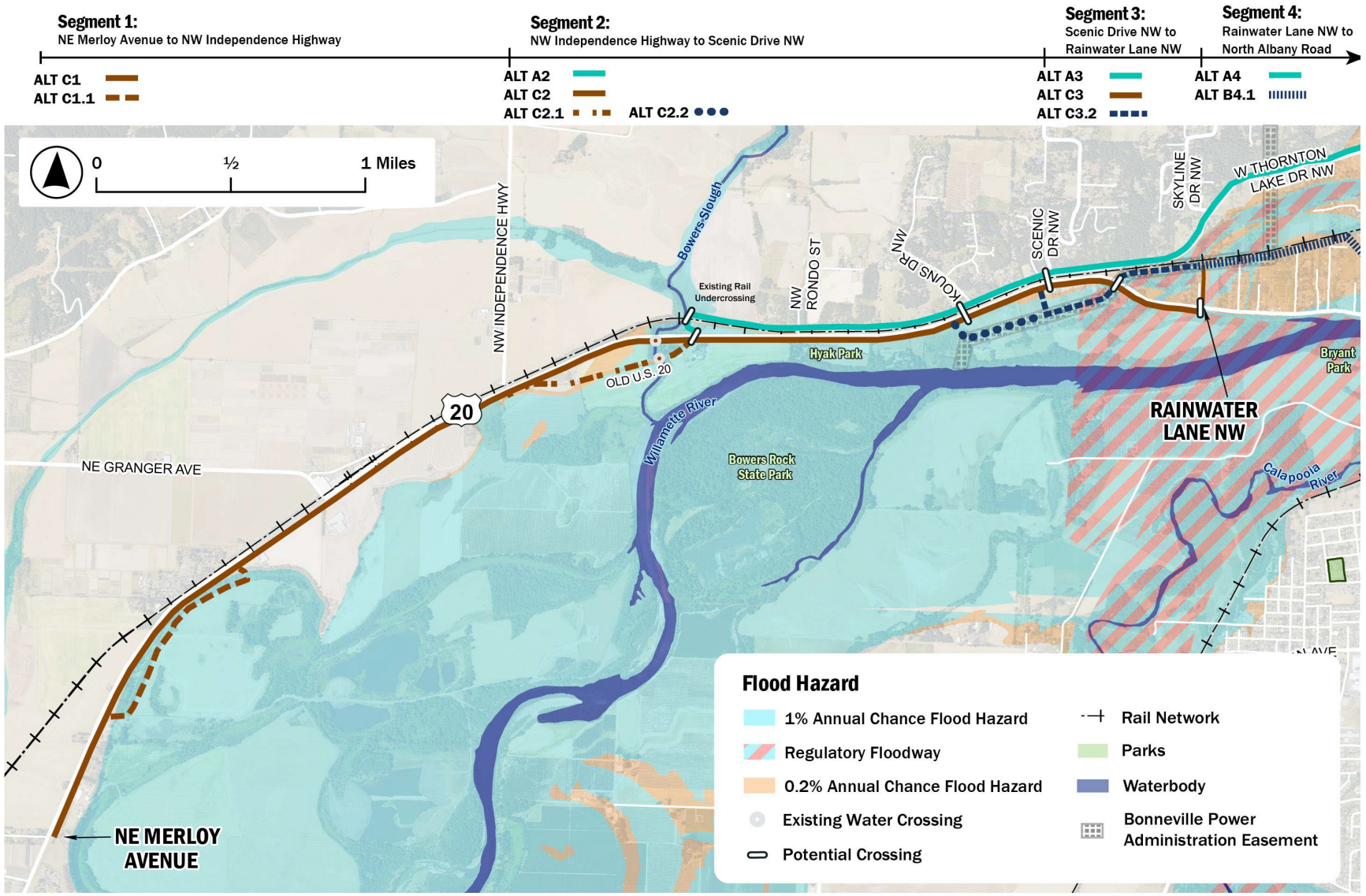
Figure 4. Mitigation Ratios Required to Achieve No Net Loss
Source: FEMA Floodplain Mitigation Assessment – Regional Guidance for Oregon, 2024.

- **Regulatory Floodway.** A number of areas are located within the regulatory floodway, as shown in Figure 6. Any development within the floodway not only poses significant constraints on the feasibility of the options but may result in significant safety risks. Within the regulatory floodway, no rise requirements are in place, meaning that there can be no change to base flood elevation. A no rise analysis would be required to confirm that base flood elevation would not change with the addition of a path and associated improvements.



Sources: Benton County, Linn County, Oregon Department of Transportation (ODOT), OregonStatewide Imagery Program (2024), DOGAMI

Figure 5. NWI Wetlands and Flood Hazards



Sources: Benton County, Linn County, Oregon Department of Transportation (ODOT), OregonStatewide Imagery Program (2024), DOGAMI

Figure 6. Flood Hazard

3.2.3 Zoning, Land Use, and Permitting

The Corvallis to Albany shared use path is identified in both the Benton County Transportation System Plan (TSP) and the City of Albany TSP and comprehensive plan, establishing it as a planned facility in the region's long-range transportation network. This designation supports the permitting process across the various zones and overlays described below, as the path reflects adopted local planning policy. While each zone carries its own permitting requirements and considerations, the path's inclusion in these plans provides an important foundation for advancing land use approvals.

- Exclusive Farm Use (EFU). This zone is established by Benton County. Bikeways, footpaths, and recreation trails are permitted in this zone. Permitting is completed through Administrative Review and requires a Notice of Decision to be mailed to the applicant, property owner, and property owners within 750 feet of the zone. Anyone can file an appeal of the official decision. The application requires a Farm Impact Assessment, which must find that the proposed use will not force a significant change in or will not significantly increase costs or efforts to perform accepted farm practices on surrounding lands devoted to farm use. Significant documentation is required for this permit.
- Floodplain Management Overlay. This overlay zone is established by Benton County. Floodplain permits are completed through Administrative Review. The application requires a floodplain analysis that addresses the effects of the project on the base flood elevation and the boundaries of the mapped flood hazard area, demonstrates compliance with the Endangered Species Act, and meets potential new floodplain development requirements that County staff have indicated may be in place upon application filing. Significant documentation is required for this permit.
- Greenway Management Overlay. This overlay zone is established by Benton County. A shared use path is permitted conditionally in this overlay zone. Permitting is completed through a conditional use review and requires a Notice of Decision to be mailed to the applicant, property owner, and property owners within 750 feet of the zone. Anyone can file an appeal of the official decision. A natural resource report is recommended by staff to address approval criteria and would include a general inventory of habitat, vegetation, and wildlife; statements of temporary and permanent impacts; and proposed mitigation of impacts.
- Rural Residential. This overlay zone is established by Benton County. Park or recreational facility and greenway corridor acquisition is permitted conditionally in this zone. Permitting is completed through a conditional use review and requires a Notice of Decision to be mailed to the applicant, property owner, and property owners within 750 feet of the zone. Anyone can file an appeal of the official decision. Applications for Rural Residential permits will always occur in combination with an application in the County EFU zone. No requirements of note were found in the code or on the conditional use application form.
- Albany Residential Reserve. The Albany Residential Reserve zone does not require a land use permit, as paths in a public right-of-way or a public easement are exempt.
- Albany Open Space. The Albany Open Space zone does not require a land use permit, as paths are permitted outright.

3.2.4 Right-of-Way

- **Alternatives on Private Property:** Some alternatives are located, at least in part, on private property. Alternatives in public right-of-way may require minor areas of private property as well; **at this stage of design development, all right-of-way impacts are preliminary and subject to change as design advances.** If these alternatives advance, the approach to private property is to first seek willing sellers; this could include acquisition of right-of-way or establishing an easement. In some instances, condemnation may be explored if there are no other feasible options at the discretion of the Board of Commissioners.
- **Mitigation of Trespassing on Private Property:** Community members and adjacent landowners have expressed concerns about trespassing and potential vandalism/theft on private property. Design features could be incorporated to help mitigate these concerns. In addition to signage that would clearly identify private property and no trespassing, fencing along the path could be used as a physical deterrent.

3.2.5 Rail

- **Railroad Right-of-Way.** Placement of the shared use path within or using any part of Union Pacific Railroad (UPRR) right-of-way is considered infeasible and is not supported. Acquisition of any portion of UPRR right-of-way for a bike or pedestrian facility is considered infeasible under current policies. Any intrusion into railroad right-of-way beyond a rail crossing—including toes of slopes, drainage infrastructure, retaining systems, or other structural encroachments—is highly unlikely to be permitted.
- **Mitigation of Trespassing on Rail Right-of-Way**. UPRR has expressed concerns regarding public paths and trails located close to active rail, citing the potential for increased trespass and safety risk. This concern limits the feasibility of alignments proximate to the rail corridor, but can be mitigated through fencing.
- **Rail Safety Zone and Proximity to Rail Crossings:** Any alignment located in close proximity to an existing rail crossing could require improvements and upgrades to the crossing. While this may not render an alignment infeasible, crossing upgrades are likely to have significant cost impacts and should be considered in the evaluation.

3.3 Cost Estimate Assumptions

Planning-level cost estimates are presented for each of the alternatives in the sections that follow. These cost estimates were developed using recent unit costs from ODOT and incorporate construction cost contingencies to account for items such as mobilization, surveying, erosion control, and similar. Right-of-way costs are incorporated with assumed land square-foot values. A general contingency of 30% is included to account for planning-level estimates. Additional assumptions include: 10% of constructions costs for environmental permitting and mitigation, 15% for design, and 10% for construction. Cost are presented in 2026 dollars and do not include escalation for future design or construction years. Costs are rounded to the nearest $100,000.

4. Alternatives Evaluation

Alternatives and design options are explored by segment in the sections that follow. Each segment, alternative, and design option are described in detail, then an evaluation is presented using the evaluation criteria established in the Design and Evaluation Criteria memorandum (Appendix B). Finally, a recommendation is presented for which alternatives and design options should advance.

4.1 Segment 1

Segment 1 extends from NE Merloy Avenue to NW Independence Highway, as shown in Figure 7. Two alternatives were explored in this segment: Alternative C1 and Alternative C1.1, a short deviation from C1. Both alternatives are located along the east and south sides of U.S. 20. Alternative C1 includes three design options : (1) an unconstrained shared use path accommodated through a U.S. 20 roadway realignment, which provides the greatest separation between the path and the highway; (2) a constrained path option maintaining the existing roadway geometry; and (3) a second constrained path option that similarly avoids roadway realignment but explores a different design approach. Alternative C1.1 represents a short deviation from the C1 alignment and is evaluated separately.

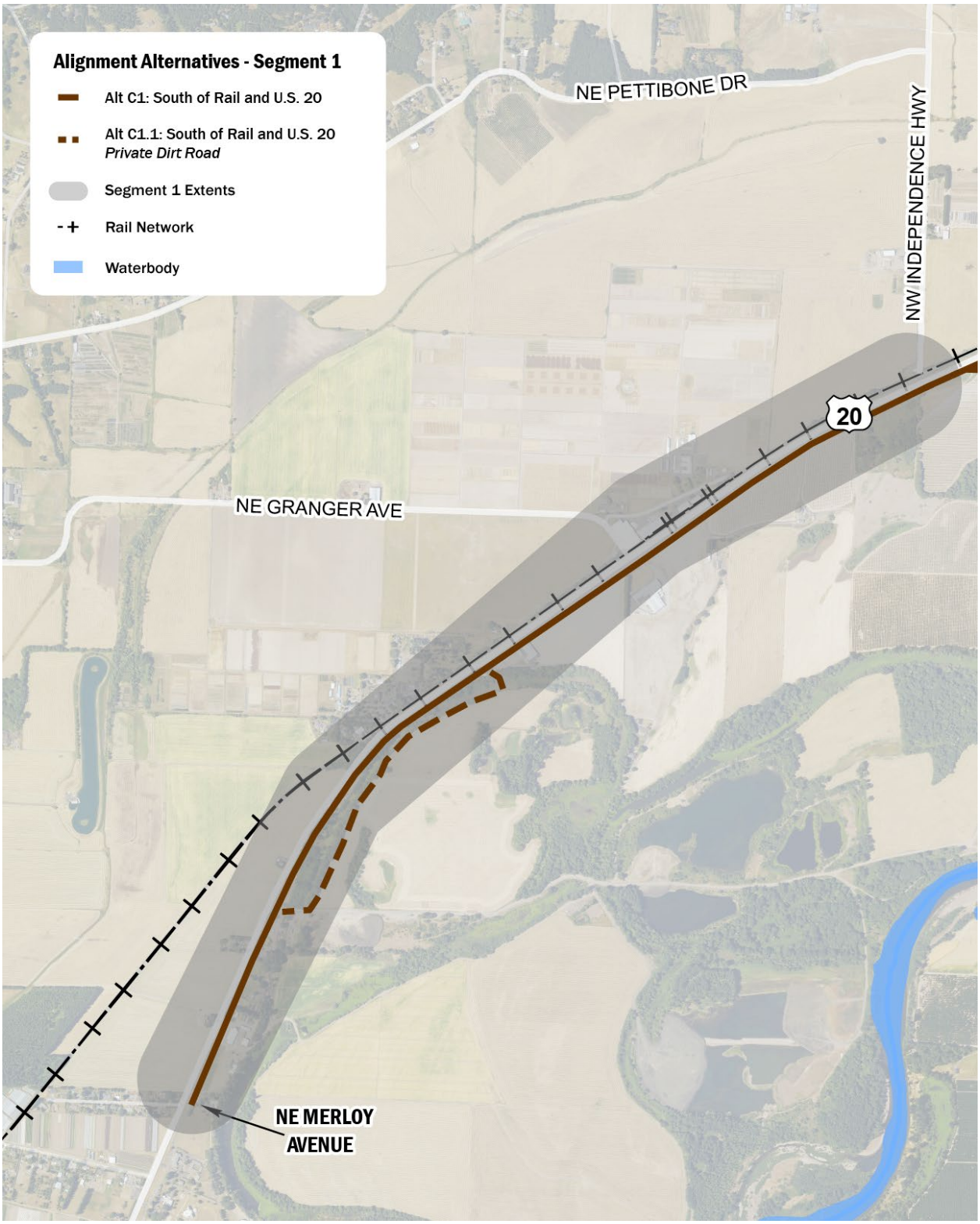


Figure 7. Segment 1 Alternatives Overview

4.1.1 Alternative C1

Alternative C1 follows the east/south side of U.S. 20 from NE Merloy Avenue to NW Independence Highway. The alignment would begin where the existing path south of NE Merloy Avenue terminates. While width will vary based on location context, the path will generally be 12 feet wide with 2-foot-wide shoulders on either side. A buffer will separate the path from the edge of pavement; the width of this buffer will vary from about 5 to 10 feet, as shown in Figure 8.

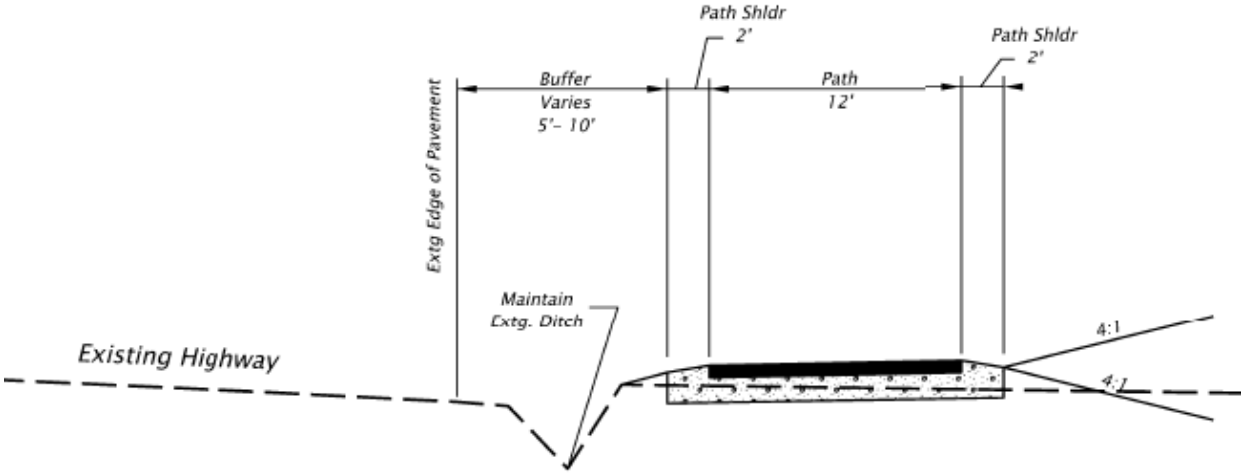


Figure 8. Alternative C1: Typical Cross Section

To address steep slopes adjacent to the highway, milepost (MP) 4.8 to MP 5.1, the proposed design would include retaining walls for approximately 1,700 feet, as shown in Figure 9.

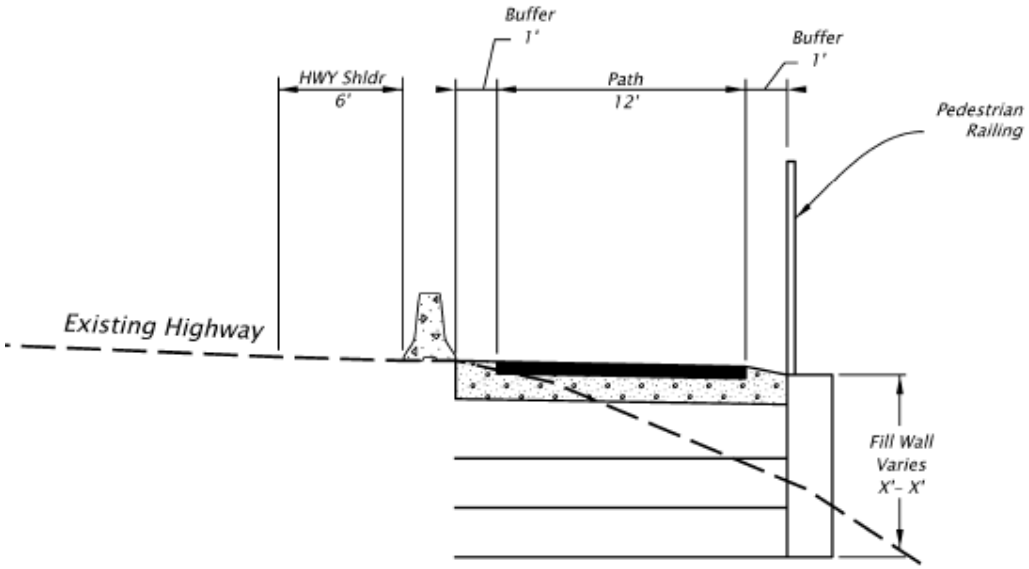


Figure 9. Alternative C1: Retaining Wall Typical Cross Section

Between approximately MP 4.5 and MP 5.3, the U.S. 20 corridor is highly constrained. Adjacent structures are located immediately adjacent to U.S. 20 and limit available right-of-way; an example is shown in Figure 10. In addition to reduced available width, frequent driveways and open frontages present further challenges in this location. Horizontal curves along this segment limit sight distance in several locations, further increasing safety concerns. To address this, the project team developed three design concepts for Alternative C1. These include realigning U.S. 20 and exploration of two design options to develop a path within the constrained portion of the corridor. These design options are described further in the sections that follow.

Figure 10. Example of Constrained Condition

On the east end of Alternative C1, from MP 5.3 to MP 5.8, the path would traverse between U.S. 20 and a frontage road near Autumn Seed (Figure 11). This frontage road is infrequently used by heavy farm equipment, primarily during harvest season. Existing utility poles located between the frontage road and U.S. 20 and an existing stormwater drainage ditch along the south side of U.S. 20 further limit the available space for a separated path facility.

Figure 11. Constrained Section Near Autumn Seed

The design concepts for this segment were developed to address these constraints, and two concepts are being carried forward for further evaluation:

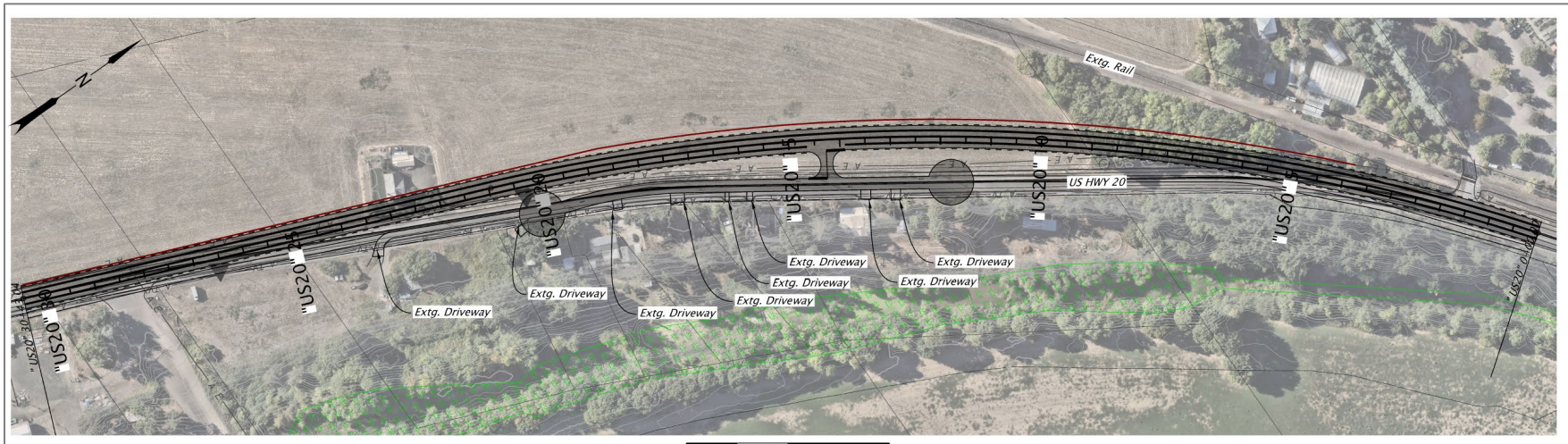
- **Constrained Path with Drainage Piping.** The path would be routed between the existing utility poles and U.S. 20, following the current alignment. This option would require piping the existing stormwater and water quality swale to accommodate the 12-foot path width within the available space.
- **Shared Use of Frontage Road.** The path would share the existing frontage road with farm equipment traffic. This option could be implemented in two ways: retaining the existing roadway width and adding bike pull-outs on one or both sides so path users can move clear of passing farm vehicles, or acquiring additional right-of-way to widen the frontage road, providing more space for bikes and farm vehicles to pass without the need for pull-outs. Both approaches would require coordination with the adjacent property owner.

Both options will be evaluated further as design advances, including outreach to the property owner and review of drainage and permitting implications.

As noted above, three design concepts were developed for Alternative C1. These include realigning U.S. 20 and exploration of two design options to develop a path within the constrained portion of the corridor.

4.1.1.1 Highway Realignment

The Highway Realignment option would shift U.S. 20 west to expand available space between existing structures and the highway. The realignment would occur between approximately MP 4.5 and MP 5. In addition to creating space for the path, this option would also create opportunities to integrate a frontage road with a new public road connection, improving circulation patterns and reducing conflict points along the corridor. Because this connection would function as a new roadway approach to U.S. 20, an Intersection Control Evaluation would be required to determine appropriate traffic control. In this option, the path would travel along the south/east side of U.S. 20 and would match the typical cross section. The path would become a shared use condition with the consolidated driveway access. A concept for the highway realignment is shown in Figure 12.



LEGEND

- *Extg. ROW*
- *Extg. Property Lines (GIS)*
- *Proposed ROW*
- *Proposed Paving*
- *Proposed Bridge*
- *Proposed Boardwalk*
- *Proposed Retaining Walls*
- *Proposed Cut Limits*
- *Proposed Fill Limits*
- *Wetlands*

Design Assumptions

Design speed – 60mph *(55mph posted speed)*
Horizontal curve – 1°30'
Number of lanes – 2
Spirals – 265' *(currently not shown, but plenty of space to fit these)*
Superelevation – 4.0%
Road cross section – (2) 12' lanes, (2) 10' shoulders *(matching highway section north and south)*

Conceptual Design

Figure 12. Highway Realignment Design Option

4.1.1.2 Constrained Option 1

This concept would add a facility along the east side of U.S. 20 within the highly constrained existing corridor. Due to limited available space, existing encroachments within the right-of-way, and potential impacts to mature trees, the width would be significantly reduced to 8 feet wide with a 2-foot buffer between the edge of pavement and the path (see Figure 13). Within the buffer, flexible delineators would be used to provide vertical separation. This constrained configuration introduces several design challenges that require further evaluation:

- Driveway and Access Point Conflicts. The placement of the path and vertical delineators within the buffer raises concerns about sight distance and maneuverability at driveway approaches and the new road connection. Drivers exiting driveways may need to pull forward into or across the path to find a safe gap in traffic, creating potential conflict with path users. Intersection sight distance will be a critical consideration, and the project team is developing sight distance exhibit examples at select driveways to evaluate the extent of these concerns.
- Stormwater Management. The constrained cross section will need to address stormwater conveyance and drainage, particularly given the limited space available for grading and drainage infrastructure. This will be further evaluated as design advances.
- Signing and Striping. Appropriate signing and striping at driveway approaches will be essential to alert both path users and drivers to potential conflict points. Specific treatments will be developed as part of the design process and will be of major importance given the safety implications of this configuration.

This approach would likely require a design exception for both the shoulder and the path width. While a reduced speed limit in this area - such as extending the existing 45 mile per hour (mph) speed zone south of this area north to approximately Garland Nursery - could improve comfort and safety for path users, establishing or modifying a speed zone on U.S. 20 would require a formal speed study initiated by Benton County after the path is fully constructed and traffic patterns have stabilized. Additionally, given the nature of this corridor and Oregon's speed zoning laws, lowering the speed below 55 mph may be outside of ODOT's authority, as the project does not introduce significant traffic calming features. These limitations should be considered when evaluating the overall safety profile of this constrained option.

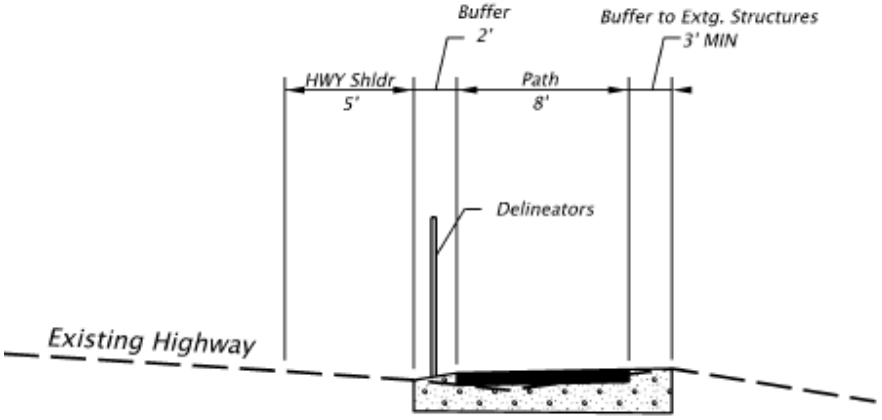


Figure 13. Alternative C1: Constrained Option 1 Typical Cross Section

4.1.1.3 Constrained Option 2

This concept would also locate the path on the east side of U.S. 20 within the existing constrained corridor. An 8-foot-wide path would be separated from the edge of pavement by a mountable curb to separate the path and highway shoulder (see Figure 14). The existing driveways would be reconstructed with standard concrete driveway aprons. This option, like Constrained Option 1, would require design exceptions for both the shoulder and path width. Additionally, sight distance concerns at driveway approaches remain a significant challenge in this constrained corridor and could make design exception approval difficult. These issues will be further evaluated through the intersection sight distance analysis being developed for select driveways, as noted under Constrained Option 1.

As with Constrained Option 1, a reduced speed limit in this area could improve comfort and safety for path users; however, the same constraints apply regarding ODOT's authority and the need for a formal speed study initiated by Benton County following project construction.

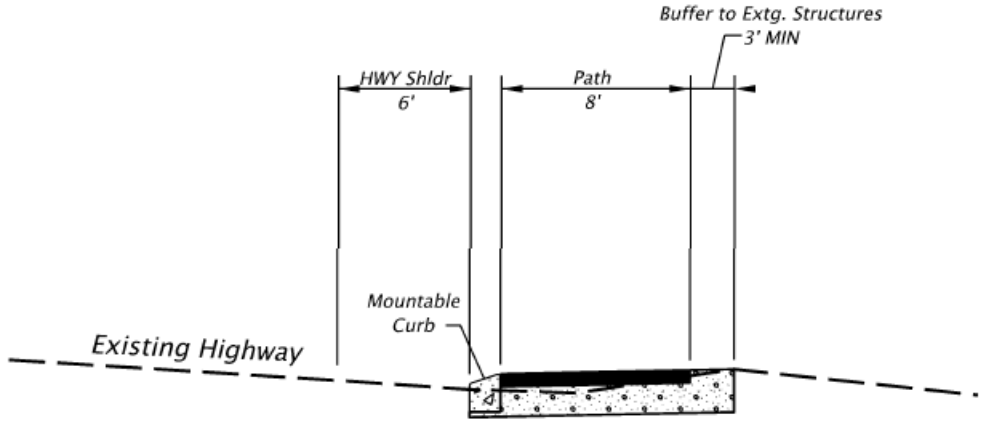


Figure 14. Alternative C1: Constrained Option 2 Typical Cross Section

4.1.1.4 Alternative C1 Evaluation

The following evaluation considers the entirety of Alternative C1; differences between design options are noted in Table 1.

- Design Challenges. This section of the corridor is significantly constrained. The proximity of houses and other existing structures to U.S. 20 limits available space for a separated path and creates constructability challenges that affect the range of feasible design options. A frontage road on the eastern end of the segment further limits space for a path adjacent to U.S. 20.
- User Safety and Comfort. The path's proximity to U.S. 20 would expose path users to more highway noise and traffic. The path would cross multiple driveway accesses, creating the potential for conflicts. Proximity to U.S. 20 may mitigate concerns regarding personal security due to increased visibility.
- Community and Partner Support. Feedback from property owners in the corridor highlights concerns about routing a path through EFU-zoned land; a highway realignment as outlined in Alternative C1 would likely create additional impacts.

- **Zoning, Land Use, and Permitting.** The permitting review identifies two required County permits (EFU administrative permit and floodplain development/administrative permit) for this segment. These permits require significant documentation. More information about permitting needs across all path segments and alternatives can be found in Appendix D.
- Impacts to Resources
  - → *Drainage and Stormwater.* At the east end of this segment, there are several existing stormwater management facilities that serve important water quality functions and manage runoff. A water quality bioslope/media filter strip is present near Granger Avenue, and water quality biofiltration swales are located between Granger Avenue and Independence Highway. Accommodating a separated path within this corridor would likely impact these facilities, potentially requiring their relocation or redesign. In some locations, maintaining adequate drainage may necessitate a wide roadside ditch or piping the existing ditch, which would introduce additional right-of-way constraints and property impacts.
  - → *Waterways.* Waterways are present south of NW Independence Highway and near Merloy Avenue. Waters may be impacted, requiring an Oregon Removal and Fill Permit.
  - → *Wetlands.* In addition to the National Wetland Inventory (NWI; USFWS 2025)-listed wetlands previously identified between the private dirt road and U.S. 20, preliminary wetlands were identified during field reconnaissance just north of Merloy Avenue, south of U.S. 20 in the vicinity of Garland Nursery, and just west of NW Independence Highway. A formal wetland and waters delineation would be required. Potential impacts to wetland areas would require permitting and mitigation.
- **Utility Conflicts.** Existing utility poles along the south and east side of U.S. 20 throughout the segment may conflict with the proposed path alignment depending on available right-of-way, potentially affecting constructability or necessitating pole relocation.
- **Right-of-Way Needs.** The Highway Realignment design option would be outside of existing ODOT right-of-way and would require property acquisition, while the two constrained options would be generally located within ODOT right-of-way but would likely require minor acquisitions or easements in some locations.
- **Interaction with Rail.** Alternative does not require interaction with the railroad within this segment.
- **Planning-Level Cost Estimate.** Approximately $9,700,000.This estimate assumes Constrained Option 1 without the C1.1 variation.

For the constrained segment of the highway, three design options have been identified for this Alternative C1, and are evaluated against the project criteria in Table 1.

Table 1. Alternative C1 Design Options Evaluation

	Highway Realignment	Constrained Option 1: *Shoulder with Flex Posts*	Constrained Option 2: *Mountable Curb with Path*
Design Challenges	▪ This concept involves significant complexity at multiple levels. Realigning U.S. 20 westward would require considerable unknown design work and substantial private property acquisition. ▪ Coordination would be required given impacts to the state highway, and frontage road or driveway consolidation elements would require additional design development.	▪ Proximity of houses and other existing structures to U.S. 20 limits available space for a separated path and creates constructability challenges. In some locations, there are approximately 20 feet or less between the shoulder stripe and adjacent structures. ▪ Not possible to achieve standard path, would require design exceptions.	▪ Similar limitations related to restricted space, right-of-way encroachments, and potential impacts to mature trees would require a path with a reduced width. ▪ This option would include a narrow, separated path with a mountable curb rather than a vertical barrier to separate the path. ▪ Drainage design would need to be considered as potential catch basins and under pipe may be required.
User Safety and Comfort	▪ Alternative would gain more space for path, which would allow a standard shared use path design and more separation from high-speed traffic for physical separation for safety and comfort. ▪ Would enable improved sight distance at driveway approaches, reducing conflict between path users and vehicles entering or exiting driveways, one of the primary concerns identified with the constrained options. ▪ Frontage road and driveway consolidation would provide a safety benefit for all users by reducing connections to the highway.	▪ Proximity to U.S. 20 without substantial separation creates greater exposure to high-speed, high-volume traffic. Substantial physical separation would be required to provide an acceptable level of safety and comfort for pedestrians and cyclists, which is likely not feasible, given the space constraints. ▪ This alternative would present safety and comfort concerns due to limited separation from high-speed traffic and challenges in providing continuous vertical protection at driveway crossings. Design exceptions would be required due to limited space for vertical separation.	▪ This option would reduce maintenance needs for flexible delineator posts while still increasing comfort and safety by creating separation between the roadway and the path. ▪ A mountable curb could also reduce user concerns around a sharp edge/drop associated with a standard curb. ▪ A mountable curb would create a different in elevation for the path. ▪ However, this option would still be proximate to U.S. 20, with exposure to high-speed, high-volume traffic.

Table 1. Alternative C1 Design Options Evaluation (continued)

	Highway Realignment	Constrained Option 1: *Shoulder with Flex Posts*	Constrained Option 2: *Mountable Curb with Path*
Community and Partner Support	▪ This design option has not yet been presented to the community, but its location outside of ODOT right-of-way would require acquisition of private property, which may raise concern among adjacent property owners.	▪ While community members expressed a desire for a separated path that extends the existing facility, meaningful separation from traffic is difficult to achieve in several stretches along this alternative. ▪ The path's proximity to U.S. 20 also limits the scenic, recreation-focused experience that users have indicated they want. ▪ The alignment's proximity to adjacent homes has raised concerns among property owners.	▪ The path's proximity to U.S. 20 limits the scenic, recreation-focused experience that users have indicated they want. ▪ The alignment's proximity to adjacent homes has raised concerns among property owners.
Zoning, Land Use, and Permitting	▪ All design options would likely require two County permits (EFU administrative permit and floodplain development/administrative permit)	▪ All design options would likely require two County permits (EFU administrative permit and floodplain development/administrative permit)	▪ All design options would likely require two County permits (EFU administrative permit and floodplain development/administrative permit)
Impacts to Resources	▪ The scale of highway reconstruction required for this alternative would likely result in impacts to natural resources. ▪ This alignment borders the 1% Annual Chance Flood Hazard Zone; further investigation is needed to confirm the exact flood zone limits.	▪ Use of space adjacent to U.S. 20 likely to have minimal impacts to natural resources. ▪ This alignment borders the 1% Annual Chance Flood Hazard Zone; further investigation is needed to confirm the exact flood zone limits.	Same as Constrained Option 1.
Utility Conflicts	▪ May result in impacts to existing poles on the north/west side of the highway.	▪ Multiple communications utility poles are anticipated to be in conflict in the constrained section near the residential houses.	▪ Same as Constrained Option 1.
ROW Needs	▪ This option would be outside of ODOT right-of-way and would result in private property impacts.	▪ This option would be within ODOT right-of-way. However, minor right-of-way acquisitions or easements are likely within this segment. Potential impacts include removal or relocation of fences, mailboxes, and other structures, as well as modifications to driveways and private property frontages.	▪ Same as Constrained Option 1.

Table 1. Alternative C1 Design Options Evaluation (continued)

	Highway Realignment	Constrained Option 1: *Shoulder with Flex Posts*	Constrained Option 2: *Mountable Curb with Path*
Interaction with Rail	▪ Location south of U.S. 20 avoids interaction with the rail and railroad right-of-way.	▪ Location south of U.S. 20 avoids interaction with the rail and railroad right-of-way.	▪ Location south of U.S. 20 avoids interaction with the rail and railroad right-of-way.
Planning-Level Cost Estimate	▪ $8,000,000 For Highway Realignment extent only. Final cost for alignment would also include improvements for remaining length of C1. This alternative is the most expensive of the three design options under consideration due to reconstruction of the highway within the constrained section.	▪ $9,700,000. This cost reflects the entire C1 alignment, assuming Constrained Option 1.	▪ $10,000,000. This option is approximately $300,000 more than Constrained Option 1 due to added costs for concrete driveways, mountable curbs, and potential drainage needs.

4.1.2 Alternative C1.1

Alternative C1.1 is a short deviation from Alternative C1 that avoids the most constrained portion of the U.S. 20 corridor by following an existing private dirt road for approximately 3,400 feet. Beginning near MP 4.44, the path departs U.S. 20 and travels east along the dirt road before turning north and rejoining Alternative C1 near MP 5.25.

One design concept was considered for this segment: constructing a path along the existing dirt road, built to standard width, surface, and accessibility requirements. The path will generally be a minimum of 12 feet wide with 2-foot-wide shoulders on either side (Figure 15). Where the path reconnects to U.S. 20 at the north end of the segment, the change in elevation presents a significant design challenge. The current concept incorporates switchbacks and retaining walls to address steep terrain in a manner that meets accessibility requirements, as shown in Figure 16 and Figure 17. However, several alternative approaches to this grade transition were also identified for further consideration, including:

- **Raised Path** – Switchbacks could potentially be eliminated by gradually raising the path elevation as it approaches the grade transition, incorporating a left-hand curve up to where the path levels off. This approach would require approximately 500 feet of significant fill and/or retaining walls but could provide a more direct and comfortable riding experience compared to switchbacks. This option would require a drainage structure or bridge to span the wetland areas.
- **Bridge Structure** – A bridge could span the grade change, providing a more direct connection but at significantly higher cost.
- **Existing Farm Access Road** – The path could follow the existing farm access road present in this area, which currently exceeds ADA slope requirements and would require significant grading or other modifications to meet accessibility standards.

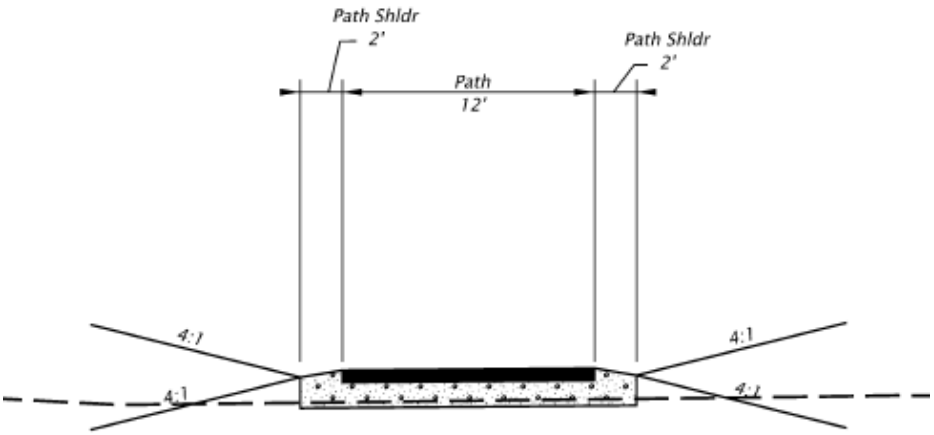


Figure 15. Alternative C1.1 Typical Cross Section

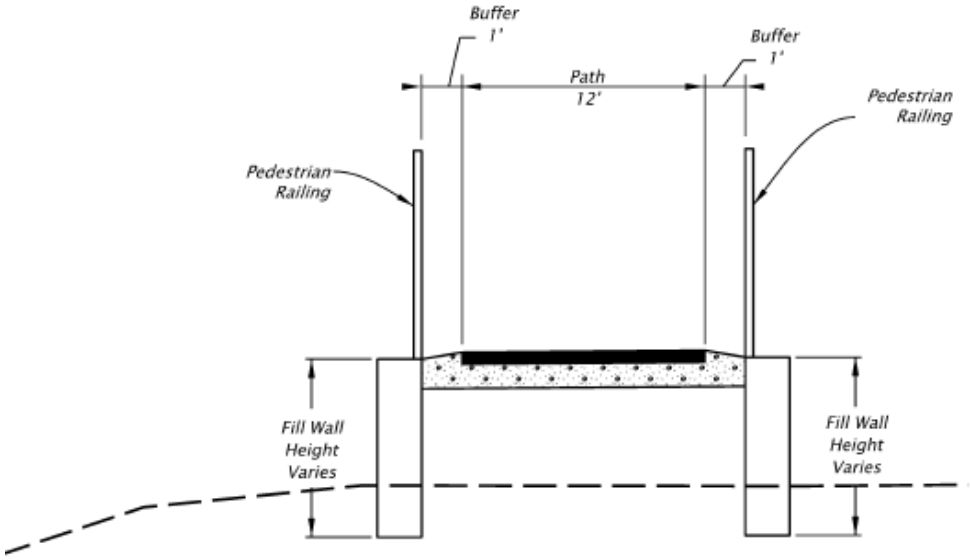


Figure 16. Alternative C1.1 Switchbacks Typical Cross Section

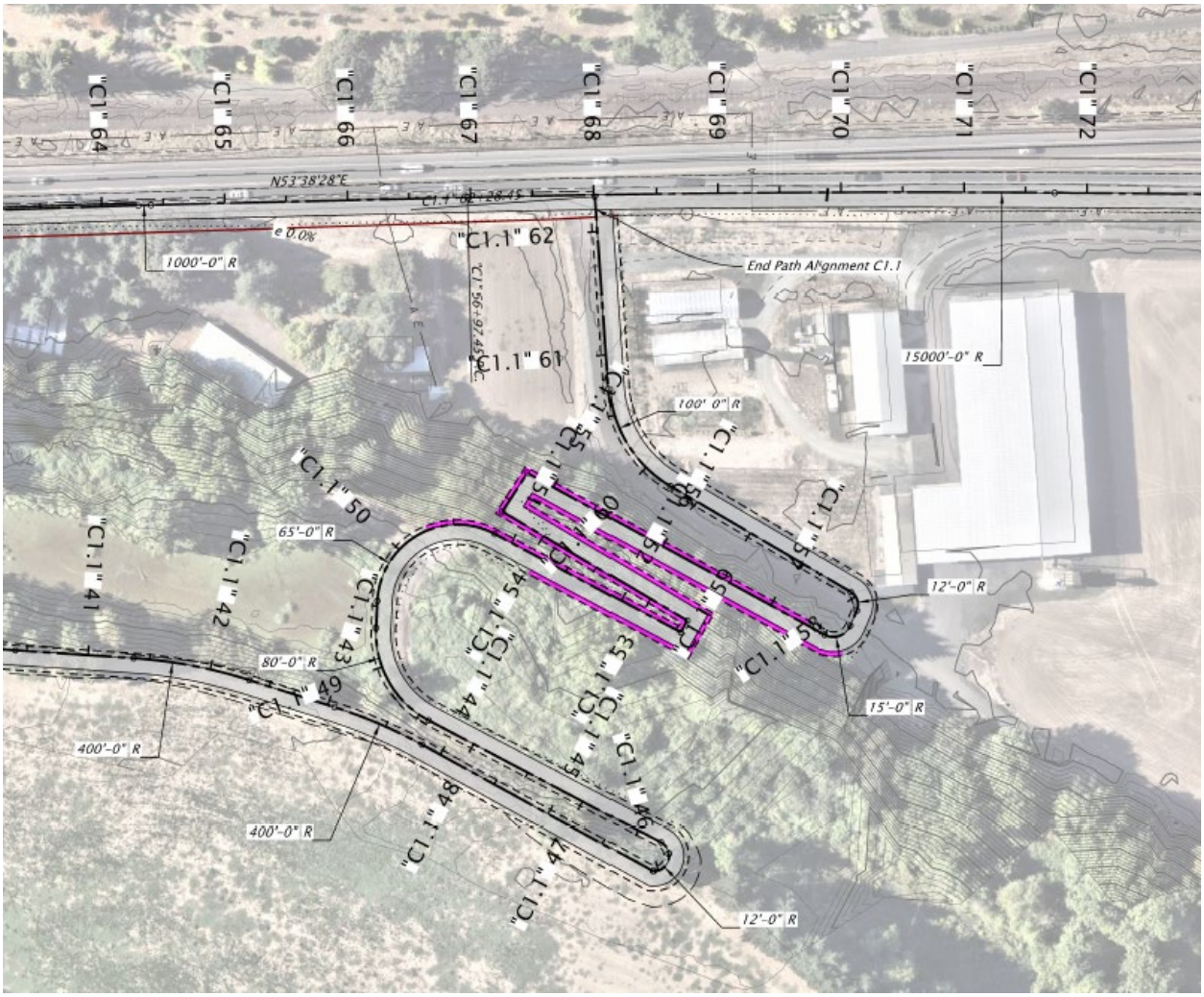


Figure 17. Alternative C1.1 Eastern Connection to U.S. 20

4.1.2.1 Alternative C1.1 Evaluation

- Design Challenges
  - → *Grade and Transition Challenges.* Significant grade differences exist at both ends of the private road connection, most notably at the northern/eastern end where the terrain drops steeply from U.S. 20 down to the dirt road. These elevation changes would require substantial earthwork, fill, and switchbacks to achieve Americans with Disabilities Act (ADA)-compliant grades and safe transitions between the highway corridor and the path. The switchback geometry needed to meet ADA standards would effectively preclude access for vehicles at the east end under the current design concept. An alternative approach would be to pursue a design exception and follow the existing dirt road alignment up the slope, which carries a grade of approximately 7% to 8%, a grade already navigated regularly by agricultural equipment using the road. However, this option raises concerns regarding shared use of the facility by trail users and agricultural equipment.

- → *Upgrades to Existing Dirt Road.* The private dirt road would require substantial upgrades to meet shared use path standards and provide an accessible, comfortable facility for users. Improvements would likely include grading, paving, drainage enhancements, and potential widening to accommodate the required path.
- → Where Alternative C1.1 reconnects to the U.S. 20 corridor, it would be subject to the same constraints identified for Alternative C1, including limited right-of-way, proximity to high-speed traffic, utility pole impacts, and frequent driveway and minor road crossings. However, by routing away from U.S. 20 for a portion of the alignment, Alternative C1.1 does reduce the overall distance over which these constraints apply compared to Alternative C1.

- User Safety and Comfort
  - → By using this private roadway, Alternative C1.1 would reduce conflicts with adjacent development and provide a lower-stress, lower-speed environment for pedestrians and bicyclists compared to travel directly adjacent to U.S. 20.
  - → However, the south end of this alternative is a driveway that is used to access a gravel pit. The frequency of heavy vehicles along this corridor introduces potential conflict with vulnerable road users and may make this connection uncomfortable for most.
  - → The switchbacks required to meet ADA standards where the path connects back to U.S. 20 on the north end of this segment, and out of direction travel, could make the route unappealing for users.
- Community and Partner Support
  - → *Private Property Concerns.* Property owners whose land would be affected by an easement on the private dirt road have raised concerns. The road is privately owned and involves multiple distinct ownership interests, including Knife River (for the initial driveway segment), the private road owner, and the property owner at the point where the alignment returns to access U.S. 20. For this alternative to be viable, Benton County or ODOT would need to acquire permanent easements or purchase the corridor outright.
  - → *Visibility and Security Concerns.* Community feedback highlights improved visibility as a personal security priority; this alternative would be set back from the highway, reducing visibility. However, feedback also notes a desire for more scenic routes, which this alternative would provide.
- Zoning, Land Use, and Permitting. The permitting review identifies two required County permits (EFU administrative permit and floodplain development/administrative permit) for this segment. These permits require significant documentation.
- Impacts to Resources
  - → *Wetlands and Environmental Constraints.* In addition to wetlands listed in the NWI and in the applicable local wetland inventory (LWI), preliminary wetlands were identified during field reconnaissance in several locations along the north and west sides of the dirt road, and in some locations on both sides of the alignment. At the south end of C1.1, a pond and marginal fringe wetlands were identified; the alternative would need to avoid this area. A formal wetland and waters delineation would be required. Potential impacts to wetland areas would require permitting and mitigation.
  - → *Floodplain.* Unlike Alternative C1, this alignment is located within the FEMA 1% Annual Chance Flood Hazard Zone. Mitigation would be required, as described in Section 3.2.2.3.

- **Utility Conflicts.** No known utility conflicts.
- **Right-of-Way.** The private dirt road is entirely outside ODOT right-of-way. This alternative would require right-of-way acquisition or easements along the private road corridor. Property owner support is uncertain, and there is potential for opposition due to increased public access adjacent to private residences and agricultural properties.
- **Interaction with Rail.** Alternative does not require interaction with the railroad.
- **Planning-Level Cost Estimate.** $8,175,000; this estimate reflects only the portion located along C1.1; if selected, total cost would include additional path length along U.S. 20, as described in Alternative C1.

4.1.3 Alternative Recommendation

Based on a comparison of the two alternatives, Alternative C1, Constrained Option 2, is recommended to advance. The rationale for this recommendation include the following:

- **Project Cost.** Constrained Option 2 presents project benefits related to overall construction costs as well as considerations for ongoing maintenance. The mountable curb reduces maintenance needs associated with flexible delineators.
- **User Comfort.** Compared to Constrained Option 1, this design option is expected to be more comfortable for path users; however, the approximately 300 feet long constrained section is still anticipated to be uncomfortable for many.
- **Permitting and Impacts to Resources.** Compared to Alternative C1.1, this design option is expected to have fewer environmental impacts, right-of-way needs, and design challenges associated with steep slopes. Further, it would not face the same challenges related to EFU zoning as in Alternative C1.1.

The **Highway Realignment** option addresses many concerns with the constrained section of U.S. 20 and likely provides additional all-user safety benefits, but has challenges associated with project cost, right-of-way needs, and EFU zoning. This alternative should be considered in the long-term as funding becomes available. While the highway realignment is recognized as the ultimate desired build-out for this portion of the corridor, the constrained shoulder option may serve as an interim solution. However, given the non-standard design requirements and potential approval challenges associated with the constrained options, it is recommended that the Highway Realignment alternative be advanced concurrently rather than deferred entirely.

4.2 Segment 2

Segment 2 extends from NW Independence Highway to Scenic Drive NW, as shown in Figure 18. Two main alternatives were advanced for further consideration in this segment: Alternative A2 and Alternative C2. Within Alternative C2, two potential deviations are possible: C2.1, which follows Old U.S. 20, a private road and/or a deviation (C2.2) onto the Bonneville Power Administration (BPA) utility easement south of U.S. 20.

A bridge crossing of Bowers Slough is required for all alternatives except C2.1, which uses an existing bridge along Old U.S. 20.

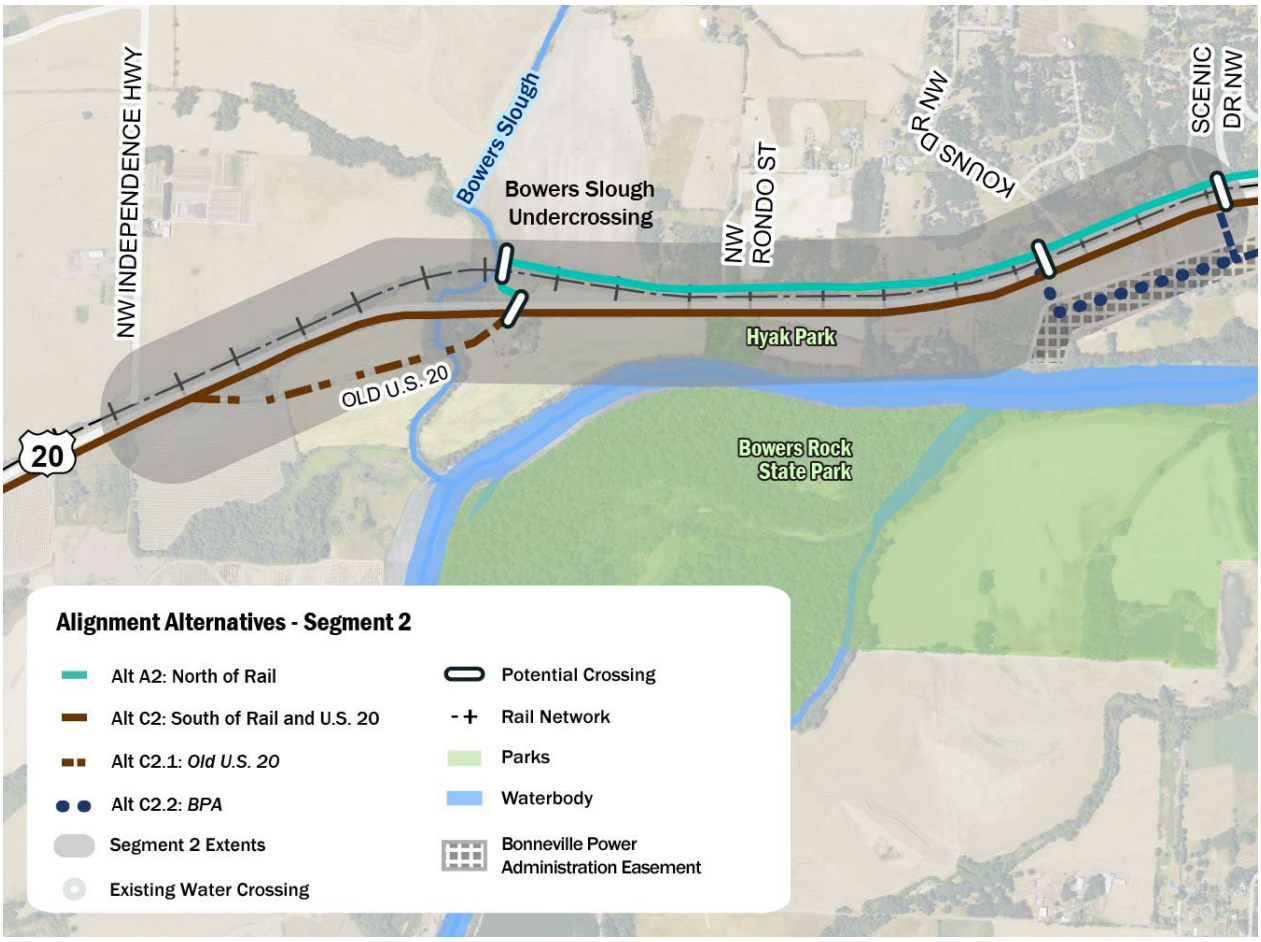


Figure 18. Segment 2 Alternatives Overview

4.2.1 Alternative A2

This alternative would follow the south side of U.S. 20 from NW Independence Highway to the vicinity of Bowers Slough, where it would need to cross U.S. 20 and the rail, before continuing along the north side of the rail to Kouns Drive NW. It would then cross Kouns Drive NW at an at-grade crossing and continue along the north side of Kouns Drive NW to Scenic Drive NW.

One design concept was considered for this alternative: a path along the north side of the rail and Kouns Drive NW. While widths will vary based on location context, the path will generally be 12 feet wide with 2-foot-wide shoulders and remain outside of rail right-of-way, as shown in Figure 19. To address steep slopes near NW Rondo Street, the proposed design would include retaining walls for approximately 1,500 feet (see Figure 20). For the segment of Alternative A2 north of Kouns Drive NW, retaining walls would also be included.

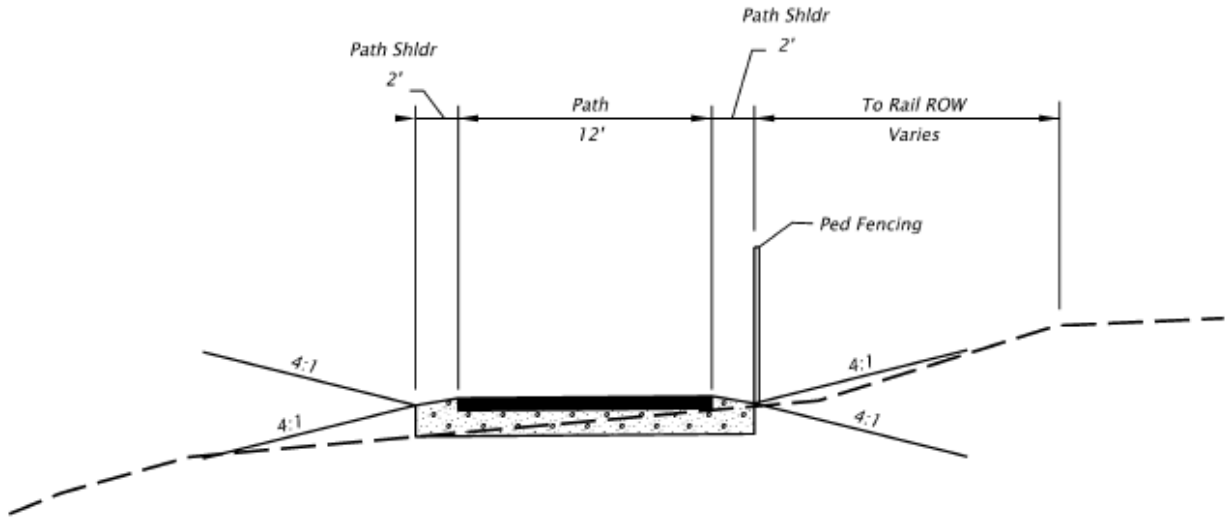


Figure 19. Alternative A2 Typical Cross Section

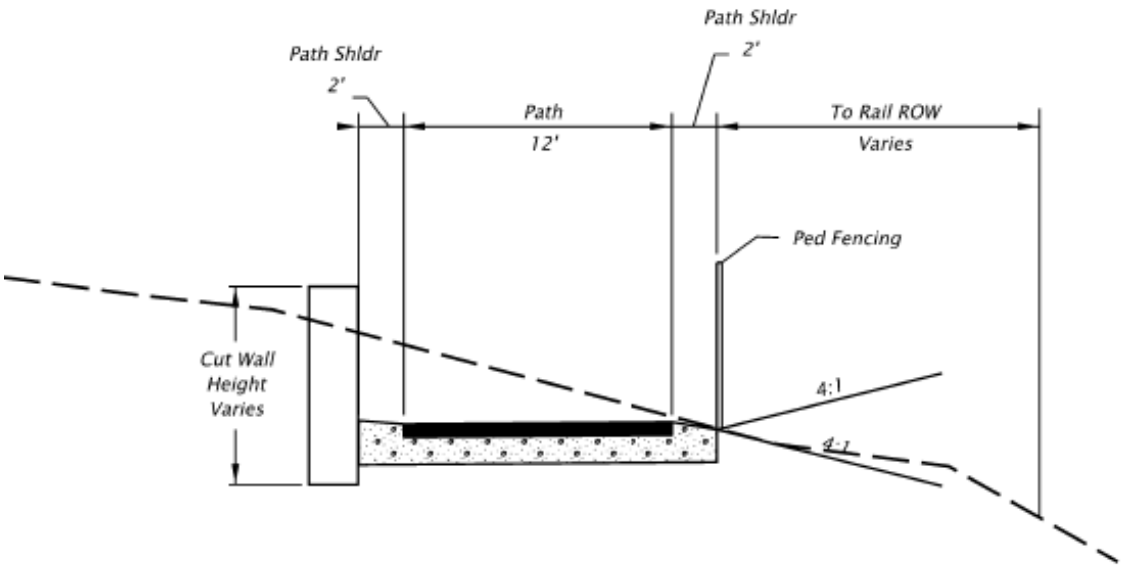


Figure 20. Alternative A2 Retaining Wall Typical Cross Section

4.2.1.1 Alternative A2 Evaluation

- Design Challenges
  - → *Significant Elevation Change.* Steep slopes along this section would require substantial cut walls to maintain accessible path grades while keeping the path outside of the rail right-of-way. This is most notable in the vicinity of NW Rondo Street where retaining wall heights would range from approximately 4 feet to more than 10 feet, and would extend for approximately 1,500 feet. Retaining walls would require blasting or excavating to meet grade requirements. Additionally, cut retaining walls along the vicinity of Kouns will be required.
  - → *Crossings Required.* A connection to alignment option A2 would require a crossing of both the highway and the rail. The highway crossing at this location would likely require a grade-separated structure, given the characteristics of U.S. 20 in this area, resulting in significant cost and design challenges. The rail crossing would require approval and coordination with the railroad.
- User Safety and Comfort. The location of the path north of the rail means that many locations of the path would not be visible from the highway; this is particularly true where the rail is located on an elevated berm. This could raise concerns about personal security or unwanted uses. However, given its separation from U.S. 20, it would provide a quieter and more comfortable route from a traffic stress perspective.
- Community and Partner Support
  - → *Desire for Highway Separation and Scenic Routes.* Community feedback reflects a preference for alternatives separated from U.S. 20, routed on the opposite side of the rail, and set back from the highway, which this alternative provides. Respondents also expressed interest in more scenic routes, which this alternative would offer.
  - → *Visibility and Security Concerns.* However, as noted above, the increased separation from the highway would reduce visibility, which has been noted as a concern for user security.
- Zoning, Land Use, and Permitting. Alternative is located within an EFU zone. The permitting review identifies three required County permits (EFU administrative permit, floodplain development/ administrative permit, and Rural Residential conditional use review) as well as Albany Residential Reserve for this segment. The County permits require significant documentation.
- Impacts to Resources
  - → *Floodplain.* This alternative largely avoids the floodplain impacts associated with alternatives south of U.S. 20, including Alternative C2 and its associated deviations. This alternative is not located within a floodplain or flood hazard area, with the exception of the area near Bowers Slough (1% Annual Chance Flood Hazard Zone).
  - → *Wetlands and Waterways.* While no NWI or LWI wetlands are documented along this alternative, preliminary wetlands were identified during field reconnaissance near Bowers Slough, in the vicinity of MP 7.4 and MP 7.8 (north of the rail), and near the proposed at-grade crossing of NW Kouns Drive. A formal wetland and waters delineation would be required. Potential impacts to wetland areas would require permitting and mitigation.
- Utility Conflicts. Minimal electrical utility conflicts. The project team will need to confirm the location and depth of Adair Village's water intake pipes to verify there are not impacts.

- **Right-of-Way Needs.** This alternative is located fully outside of ODOT right-of-way on private property. Since it would need to be fully outside of the rail right-of-way, it would have private property impacts and would require property acquisition or easements.
- **Interaction with Rail.** Proximity to the rail right-of-way presents significant feasibility constraints. Proximity of the path to the rail presents concerns from the rail owner about trespassing onto rail property. At a minimum, fencing would be required to mitigate this.
- **Planning-Level Cost Estimate.** $19,700,000. This cost assumes the full length of A2 and includes the U.S. 20 and railroad undercrossing east of Bowers Slough as well as the portion of Alternative C2 between Independence Highway and the new undercrossing.

4.2.2 Alternative C2

Alternative C2 follows the south side of U.S. 20 from NW Independence Highway to Scenic Drive NW. This alternative would require a crossing of Bowers Slough, either as a new structure in the vicinity of U.S. 20 or by using the existing crossing, as described under subalternative C2.1. The alignment includes two potential deviations from the mainline: Alternative C2.1, which routes onto Old U.S. 20 via a private road, and Alternative C2.2, which deviates onto the BPA utility easement south of U.S. 20.

Only one design concept was considered for this alternative: a separated path adjacent to U.S. 20. While widths will vary based on location context, the path will generally be 12 feet wide with 2-foot-wide shoulders and a buffer of varying width (about 1 to 30 feet), as shown in Figure 21.

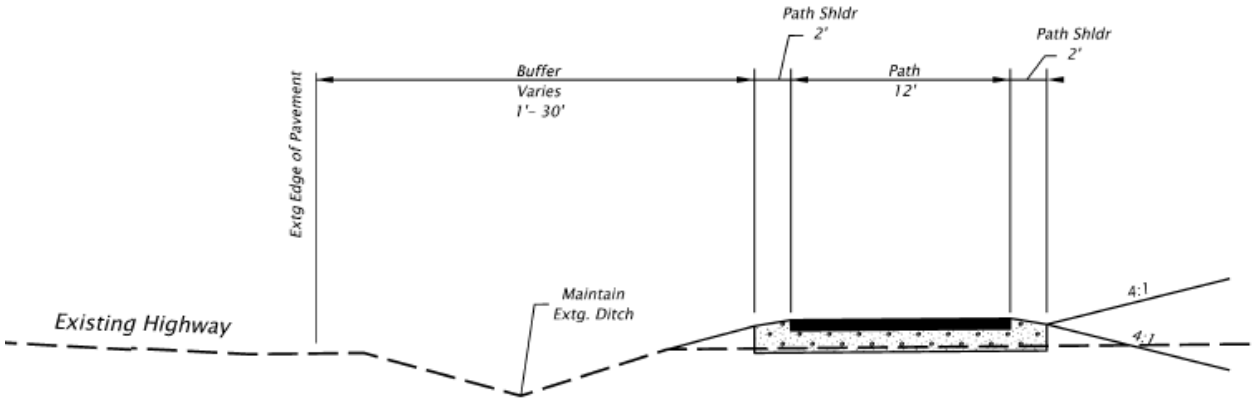


Figure 21. Alternative C2 Typical Cross Section

A new pedestrian bridge crossing Bowers Slough (see Section 4.2.5 for more details on crossings) would be constructed near the existing highway bridge to avoid wetland impacts (see Figure 22). To address steep slopes near Bowers Slough, the proposed design would include retaining walls for approximately 700 feet (Figure 23). If it is preferred to deviate the path's alignment further from the existing highway bridge, within the ODOT right-of-way, a boardwalk structure may be considered, though this would still constitute a potential wetland impact and require mitigation.

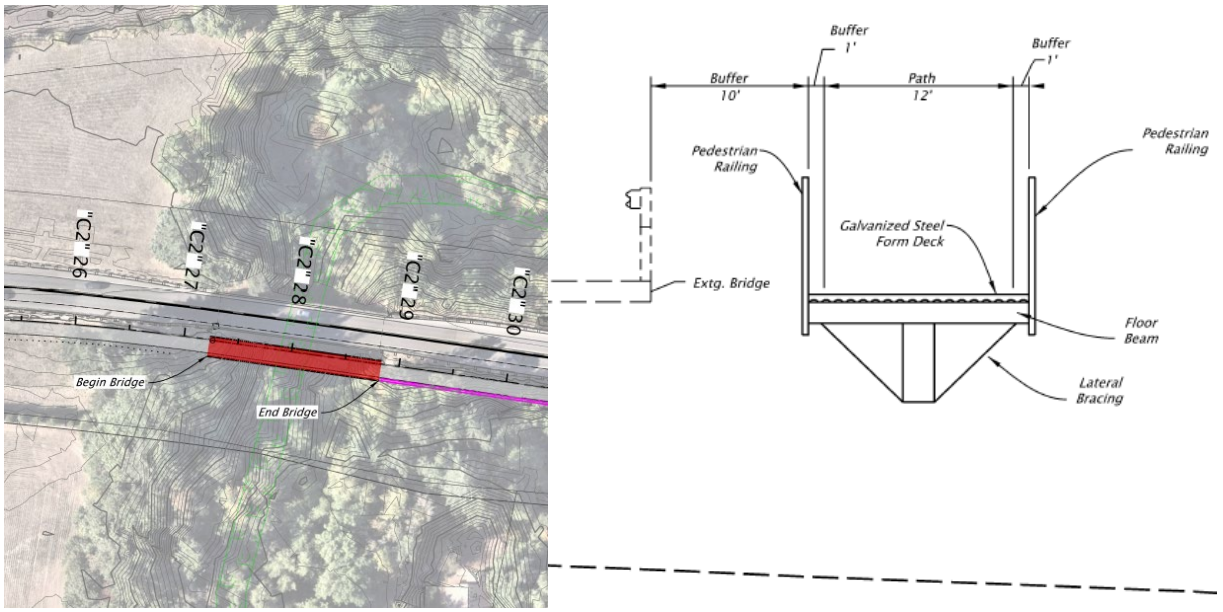


Figure 22. Bowers Slough Crossing

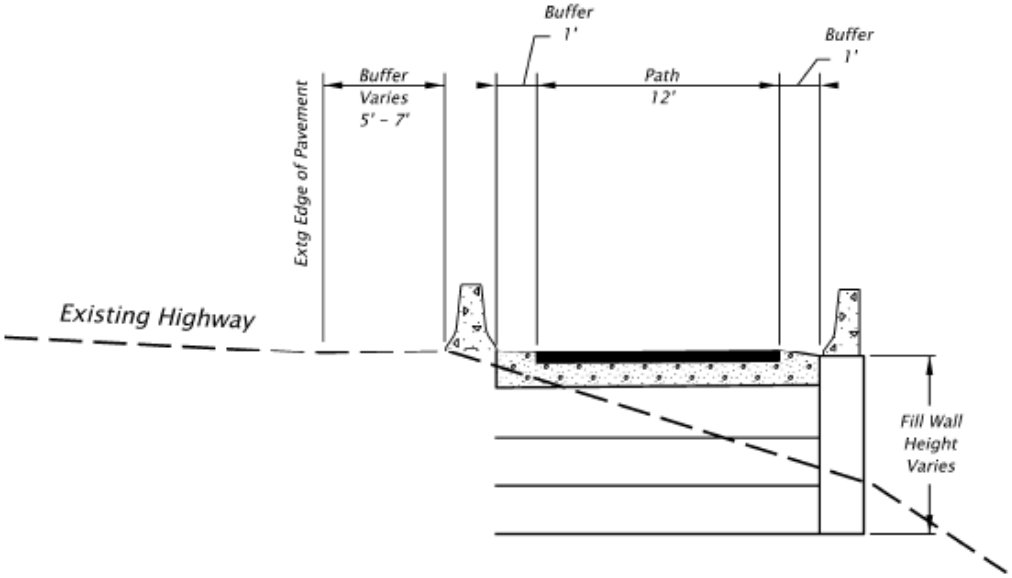


Figure 23. Alternative C2 Retaining Walls Typical Cross Section

An existing curb is present along the south side of U.S. 20 for a portion of Segment 2, from approximately MP 8.3 to the area approaching Scenic Drive NW (Figure 24). The proposed design would position the separated path behind the back of curb, with a buffer maintained in most locations. This approach is consistent with the existing path configuration south of Merloy Avenue and is anticipated to reduce impacts to adjacent structures and private property. The fill slopes required behind the path approaching Scenic Drive NW create additional property impacts. An alternative solution to reduce property impacts would be to propose a small fill wall at the back of path, although this would require pedestrian railing. Another solution - positioning the path at the back of the right-of-way - may also be considered. While this option would provide greater separation

from traffic and potentially improved user comfort and safety, it would likely result in more significant environmental impacts due to the fill slopes and land disturbance required at the outer edge of the ROW. All design alternatives warrant further evaluation to weigh the tradeoffs between traffic separation, environmental impact, and property impacts.

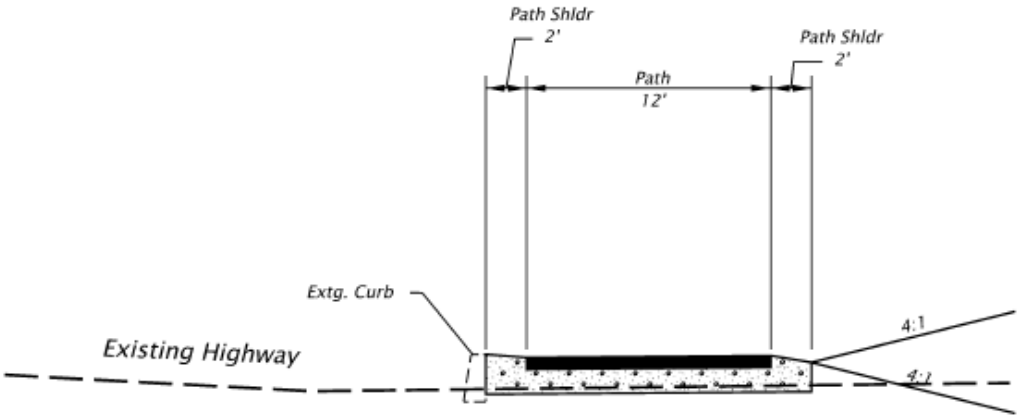


Figure 24. Alternative C2 Existing Curb Typical Cross Section

4.2.2.1 Alternative C2 Evaluation

- Design Challenges
  - → *Constrained Corridor.* This alternative is constrained in several locations, where existing structures limit the available space for a separated path. In these areas on the north end, the path would need to be positioned in close proximity to buildings or other infrastructure.
  - → *Fill Slopes.* There are several locations along this alternative where large fill slopes are required off the back of path, likely requiring additional right-of-way or slope easements. An alternative would be to provide fill walls with railing, which would significantly increase cost.
  - → *New Pedestrian Bridge Required.* The existing bridge over Bowers Slough cannot accommodate a separated path due to structural and spatial constraints. A cantilevered path attachment to the existing structure was evaluated; however, this option is not recommended for further consideration based on engineering assessment. It is therefore recommended that a new, separate pedestrian bridge be constructed adjacent to the existing structure.
- User Safety and Comfort. While the path would provide physical separation for safety and comfort, its proximity to U.S. 20 would expose path users to more highway noise and traffic. The path would cross multiple driveway accesses, creating the potential for conflicts. Proximity to U.S. 20 may mitigate concerns regarding personal security due to increased visibility.
- Community and Partner Support. Community feedback identifies the stretch from Hyak Park to the east as feeling particularly uncomfortable, citing high vehicle speeds, sharp curves, limited sight distance, frequent fog, and a history of vehicles leaving the roadway and pedestrian fatalities. Many community members suggested routing the path north of U.S. 20 along the railway to avoid traffic exposure in this segment. This alternative would not accomplish that, as it remains on the south side of the highway in close proximity to traffic. There are also neighbor concerns about impacts to driveways and private property.

- **Zoning, Land Use, and Permitting.** Alternative is located within an EFU zone. Zoning and permitting needs includes Benton County EFU, Floodplain Management Overlay, and Greenway Management Overlay. EFU and floodplain permits are based on administrative review; greenway permits are based on conditional use review. All three require notice; significant documentation is required.
- Impacts to Resources
  - → *Drainage and Stormwater.* As this alternative follows the south side of U.S. 20, construction of a path would likely affect drainage ditches running along the side of the highway. At the western end of the segment, several stormwater management facilities serve important water quality and runoff functions, including a water quality bioslope/media filter strip and a water quality biofiltration swale located near the access road. Path alignment should avoid impacting existing drainage facilities where feasible, which may result in additional right-of-way needs.
  - → *Wetlands and Waterways*
    - Construction of a new pedestrian bridge within or adjacent to the slough may impact jurisdictional wetlands and waterways, depending on whether a prefabricated bridge span would be sufficient to cross the slough without the use of pilings. The extent of impacts would depend on final bridge design. Wherever possible, this project will be designed to avoid wetland impacts. Depending on the path's alignment within the ODOT right-of-way near Bowers Slough, a boardwalk structure may be considered, though this would still constitute a potential wetland impact and require mitigation.
    - In addition to NWI and LWI wetlands, preliminary wetlands were identified during field reconnaissance in several locations along the south side of U.S. 20. These locations include near MP 6.55, near Bowers Slough, west of Hyak Park near MP 7.5, and near MP 8.3. A formal wetland and waters delineation would be required. Potential impacts to wetland areas would require permitting and mitigation.
  - → *Habitat.* Bowers Slough is designated Essential Salmonid Habitat by DSL, which carries a zero-impact threshold for waterway impacts, meaning any impact, regardless of size, would trigger permitting and mitigation requirements.
  - → *Floodplain.* Alternative is located within a 1% Annual Chance Flood Hazard Zone. Impacts are anticipated, as the paved path would introduce impervious surfaces and likely require retaining walls. Mitigation would be needed to address new fill, increased impervious surface area, and tree removal.
- **Utility Conflicts.** Utility pole conflicts are likely along this alignment. While the poles carry only communication lines, relocation or other accommodation may still be required during design and construction.
- Right-of-Way Needs
  - → *Limited Space and Presence of Existing Structures.* This alternative has the advantage of remaining within existing ODOT right-of-way, though minor acquisitions or easements may be required. However, the proximity of houses and other existing structures to U.S. 20 from Kouns Drive NW to Scenic Drive NW limits available space for a separated path and creates constructability challenges.

- → From MP 6.7 to MP 7.5, ODOT right-of-way along the south side of the highway is wide, which presents an opportunity to potentially route the path closer to the southern right-of-way boundary. This would increase separation from the highway, improving both noise buffering and user comfort. However, it would also likely result in greater environmental impacts and would place the path approximately 100 feet from the rear of an adjacent residence, which may raise privacy or compatibility concerns with the property owner.

- **Interaction with Rail.** Location south of U.S. 20 avoids interaction with the rail and railroad right-of-way within this segment.
- **Planning-Level Cost Estimate.** $11,000,000. This estimate assumes the full length of C2 between Independence Highway and Scenic Drive NW and includes a new pedestrian bridge.

4.2.3 Alternative C2.1

This short deviation of Alternative C2 follows the former route of U.S. 20 prior to the 1960s relocation of the highway to the north. The route is now a private road to the south of existing U.S. 20, from approximately MP 6.5 to MP 7.2. Property research indicates that the former U.S. 20 right-of-way was conveyed entirely to the private property owners in 1963 and no public rights were retained.

One design concept was considered: repaving the existing road to a width of 14 to 22 feet (see Figure 25) to accommodate one-way vehicle passing, creating a low-stress, low-volume shared connection for people walking, cycling, and driving.

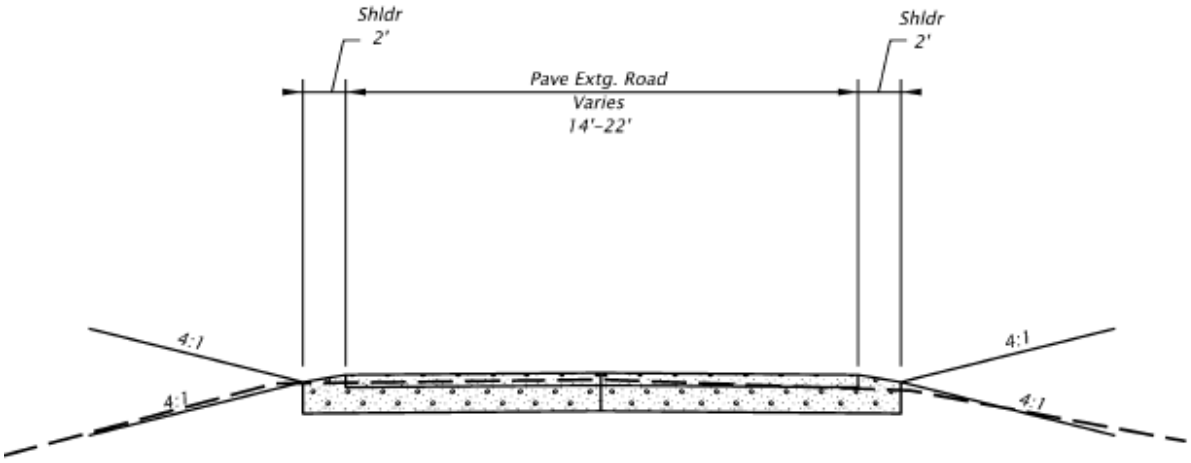


Figure 25. Alternative C2.1 Typical Cross Section

4.2.3.1 Alternative C2.1 Evaluation

- Design Challenges
  - → *Existing Bridge Structure.* This alternative would use an existing bridge on Old U.S. 20, constructed in 1925. Although the bridge is currently in use, its structural safety would need to be verified. Any required modifications could also have implications for historical preservation given the structure's age.
  - → *Repaving Existing Private Drive.* The existing private drive would need to be acquired and rebuilt, with repaving to a width of 14 to 22 feet.
- User Safety and Comfort. The likely use of farm equipment along this corridor introduces potential conflict with vulnerable road users and may make this connection uncomfortable for some, though traffic would likely be infrequent.
- Community and Partner Support
  - → *Visibility and Security Concerns.* Community feedback highlights improved visibility as a personal security priority; this alternative would be set back from the highway, reducing visibility. However, feedback also notes a desire for more scenic routes, which this alternative would provide.

- → *Property Owner Concerns.* Property owners along this alignment have provided mixed opinions. One property owner supports the project, in part because the alignment would pass in front of their farm stand and event venue, potentially increasing customer visibility and access. Another property owner raised concerns about the potential increase in public use, as Old U.S. 20 currently functions as a quiet private road. Residents are concerned about changes that would alter that character, and increased use by people walking, rolling, and biking could create conflicts.
- → *Proximity to Residences.* If the path were routed along Old U.S. 20, it would pass approximately 100 feet in front of the adjacent residences rather than 100 feet behind it, as would be the case with Alternative C2. . It would also offer reduced highway noise and improved user comfort. However, this alignment runs between residential front yards and working farm buildings and shops; active agricultural operations with an existing history of theft. Routing increased public traffic through this corridor could exacerbate security concerns for property owners and introduce conflicts between path users and ongoing farming activities.

- Zoning, Land Use, and Permitting
  - → *Permitting Requirements.* Alternative is located within an EFU zone. The permitting review identifies three required County permits (EFU administrative permit, floodplain development/administrative permit, and Greenway Management Overlay conditional use review) for this segment.
- Impacts to Resources. Natural resource impacts are expected to be minimal, though paving the existing dirt road would introduce impervious surface and may warrant further environmental review. Field reconnaissance did not cover the Old U.S. 20 segment, so the potential to avoid impacts along this alignment cannot be confirmed at this time.
- Utility Conflicts. Potential for utility conflicts along Old U.S. 20, though use of existing roadway would likely minimize impacts.
- Right-of-Way Needs. Old U.S. 20 is a private gravel road entirely outside ODOT right-of-way. This alternative would require right-of-way acquisition or easements along the private road corridor. Property owner support is mixed with support at the farm stand and opposition due to increased public access adjacent to private residences and agricultural properties.
- Interaction with Rail. Location south of U.S. 20 avoids interaction with the rail and railroad right-of-way.
- Planning-Level Cost Estimate. $2,400,000. This estimate includes the entire length of Alternative C2.1.

4.2.4 Alternative C2.2

This deviation of Alternative C2 departs from U.S. 20 between approximately MP 8.15 and MP 8.55, routing south onto private property along a BPA easement and access road before reconnecting to U.S. 20 in the vicinity of Kouns Drive NW or Scenic Drive NW. The alignment would be located primarily on private property within the utility easement

Only one design concept was considered for this alternative: an off-road fully separated path along the BPA easement. While widths will vary based on location context, the path will generally be 12 feet wide with 2-foot-wide wide shoulders and fencing along both sides, as shown in Figure 26. The path would be constructed to ensure BPA maintenance vehicles could use it.

Fencing type and height will be determined based on location-specific conditions, including adjacent property owner operations and needs. Where feasible, lower fencing such as 4-foot-high field fencing at the edge of cut and fill slopes is preferred over tall perimeter fencing, in order to avoid an enclosed tunnel-like experience that can reduce perceived comfort and personal security. Fencing decisions will be made collaboratively with adjacent property owners to balance safety, user experience, and operational needs.

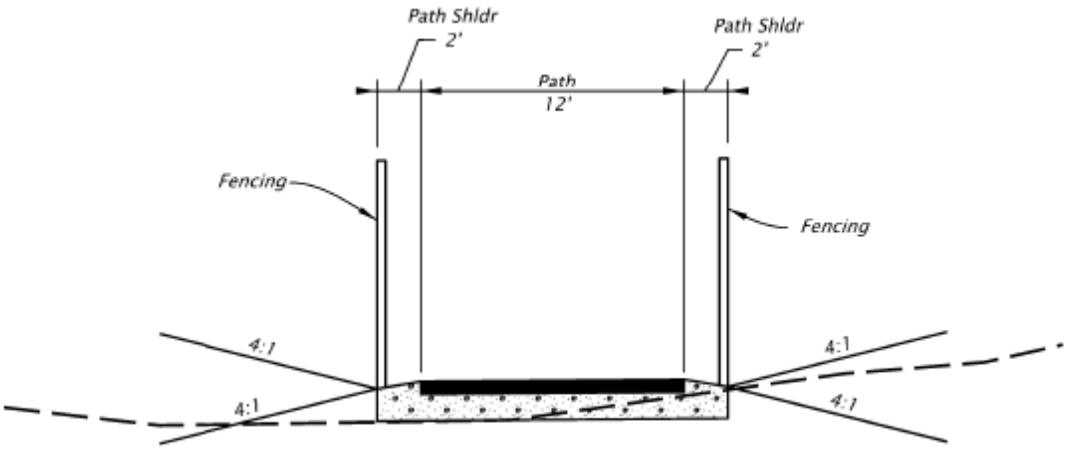


Figure 26. Alternative C2.2 Typical Cross Section

4.2.4.1 Alternative C2.2 Evaluation

- **Design Challenges.** Design challenges for this alternative are minimal.
- **User Safety and Comfort.** This alternative offers a dedicated path entirely separated from the roadway, creating a safer and more comfortable experience for all users. However, its distance from the highway reduces visibility, which could raise concerns about personal security and the potential for unwanted activity.
- **Community and Partner Support.** This alternative has faced strong opposition from affected property owners. Because the path would cross private parcels, fencing and gates would be required on both sides, effectively splitting properties in half. BPA has stated that demonstrated private property owner support would be required for them to consider a path along their own existing easement.

- Zoning, Land Use, and Permitting
  - → *Permitting Requirements.* Alternative is located within an EFU zone. The permitting review identifies three required County permits (EFU administrative permit, floodplain development/administrative permit, and Greenway Management Overlay conditional use review) for this segment. These permits require significant documentation.
- Impacts to Resources
  - → *Floodplain.* The western end of this alternative is within a regulatory floodway. The entirety of this alternative is within a FEMA 1% Annual Chance Flood Hazard Zone. For the flood hazard area, mitigation would be required to address new fill, increase in impervious surface, and tree removal.
  - → *Wetlands and Waterways.* Natural resource impacts are expected to be minimal. A preliminary wetland may be present at the west end of the BPA alignment; however, field reconnaissance did not cover this segment due to restricted access on private property.
- Utility Conflicts. Use of the BPA easement would require coordination with BPA utilities within the right-of-way.
- Right-of-Way Needs. This alternative would require an easement or property acquisition from private property owners, as well as a separate permit from BPA to operate within their easement would be necessary. As noted, there is strong opposition from property owners, driven by concerns over increased public access and the fact that the path would effectively bisect some parcels.
- Interaction with Rail. Location south of U.S. 20 avoids interaction with the rail and railroad right-of-way.
- Planning-Level Cost Estimate. $1,700,000.

4.2.5 Segment 2 Crossings

Two potential crossing locations are identified within Segment 2, including a crossing adjacent to Bowers Slough under U.S. 20 and under the railroad, as well as a crossing over U.S. 20 and the railroad west of Kouns Drive NW.

4.2.5.1 Crossings: East of Bowers Slough

A crossing of U.S. 20 and railroad east of Bowers Slough would connect Alternative C2 or C2.2 south of U.S. 20 to Alternative A2 north of the railroad. This would include both a new crossing under U.S. 20 as well as use of an existing private rail undercrossing (see Figure 27).

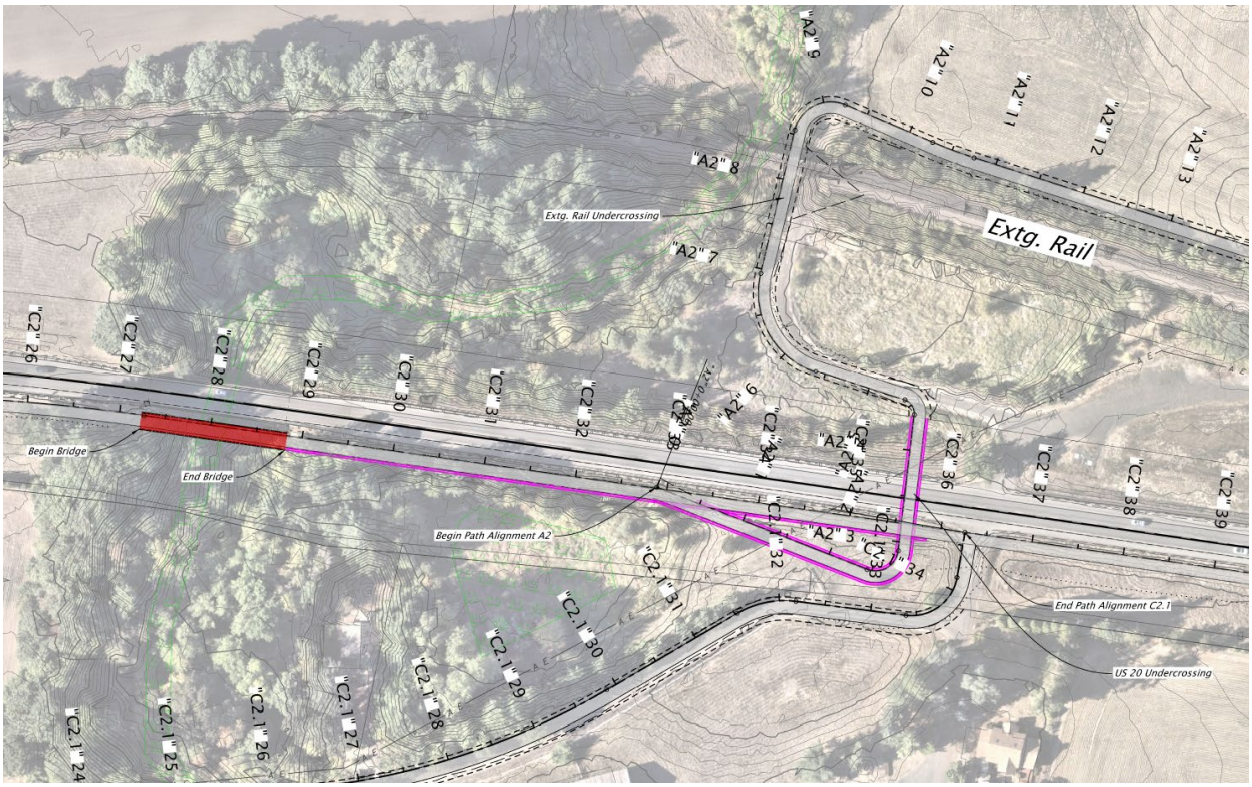


Figure 27. East of Bowers Slough Crossing

The path would cross under U.S. 20 in the vicinity of MP 7.16. The path would ramp down to achieve a clearance of at least 10 feet between the path surface and the top of the structure; this crossing would not change the grade of the existing highway. To maintain an accessible route, the path would ramp down over approximately 275 feet. Retaining walls would be required. On the north side of the highway, the existing elevation is approximately even with the undercrossing, meaning that the path would not need to ramp back up significantly. The path would then continue north along an existing unpaved access road toward the existing rail undercrossing and would cross under the railroad at an existing private undercrossing. It is expected to follow the existing unpaved access road through this location. This would connect the path with Alternative A2 north of the rail.

Evaluation of this U.S. 20 and railroad undercrossings are as follows:

- **Design Challenges.** In addition to the mitigation required for developing within the flood hazard zone, the design would need to account for potential flooding or inundation of the undercrossing. This would include water exclusion through the use of berms or similar design features. Further exploration would be needed to identify options for clearing incidental flows, such as through infiltration or if a pump would be required. Obtaining railroad approval is a significant challenge for this location. Improvements would be required for crossing under the railroad, such as fencing and other safety measures, and would need to consider potential impacts to drainage.
- **User Comfort and Safety.** Although a separated crossing provides a low-stress connection that eliminates exposure to highway traffic, an undercrossing could lead to concerns about personal security and/or unwanted uses due to limited visibility. Design elements, including illumination, could reduce these concerns.
- **Community and Partner Support.** Community engagement has not identified feedback about this specific location; however, feedback overall has shown that the community does not support at-grade crossings of U.S. 20 due to safety concerns. A grade-separated crossing is responsive to these concerns. The property owner is not supportive of this alignment.
- **Zoning, Land Use, and Permitting.** This crossing would be located on parcels zoned EFU. It would require approval from the railroad owner; in addition to design requirements, the private crossing would need to be converted to a public crossing, which could have additional requirements, including impacts to nearby crossings.
- **Impacts to Resources**
  - → *Floodplain.* The crossing is within the 1% Annual Chance Flood Hazard Zone.
  - → *Wetlands and Waterways.* A pond is present in the vicinity of the crossing, where Old U.S. 20 connects to U.S. 20. Railroad crossing location is immediately adjacent to Bowers Slough, which is identified as a wetland and fish bearing waters.
- **Utility Conflicts.** Further review and confirmation of underground utilities is required to confirm undercrossing depth. Overhead utilities travel adjacent to and across U.S. 20 in this area; design would need to account for existing utility poles to avoid conflict. No utility conflicts are identified for the railroad undercrossing.
- **Right-of-Way Needs.** This location would require acquisition of right-of-way or establishing easements as crossing and private roadway connection are fully on private land.
- **Interaction with Rail.** The existing private undercrossing would need to be converted to a public crossing, which is expected to result in a number of requirements by the railroad. This would likely include design elements, such as pedestrian fencing, to mitigate trespassing onto rail right-of-way. Further, this location along Bowers Slough may be classified as a drainage structure; this could result in this location not receiving approval from the railroad. Further coordination with the railroad would be required if this combination of segment alternatives and crossing options are preferred.
- **Planning-Level Cost Estimate.** Cost estimate is included in Alternative A2.

4.2.5.2 Crossing: West of Kouns Drive NW

Another option for connecting to Alternative A2 would be to cross over U.S. 20 and the rail west of Kouns Drive NW. The overcrossing would be located in the vicinity of MP 8.13. The crossing must achieve a clearance of 23 feet, 4 inches over the railroad, which would put the top of the structure close to 30 feet above the existing grade. To achieve an accessible route, this means that the path would have a ramp structure extending 700 feet, as shown in Figure 28. On the north side, the existing elevation is substantially higher, resulting in a shorter ramp distance. The ramp would tie into an existing private driveway.

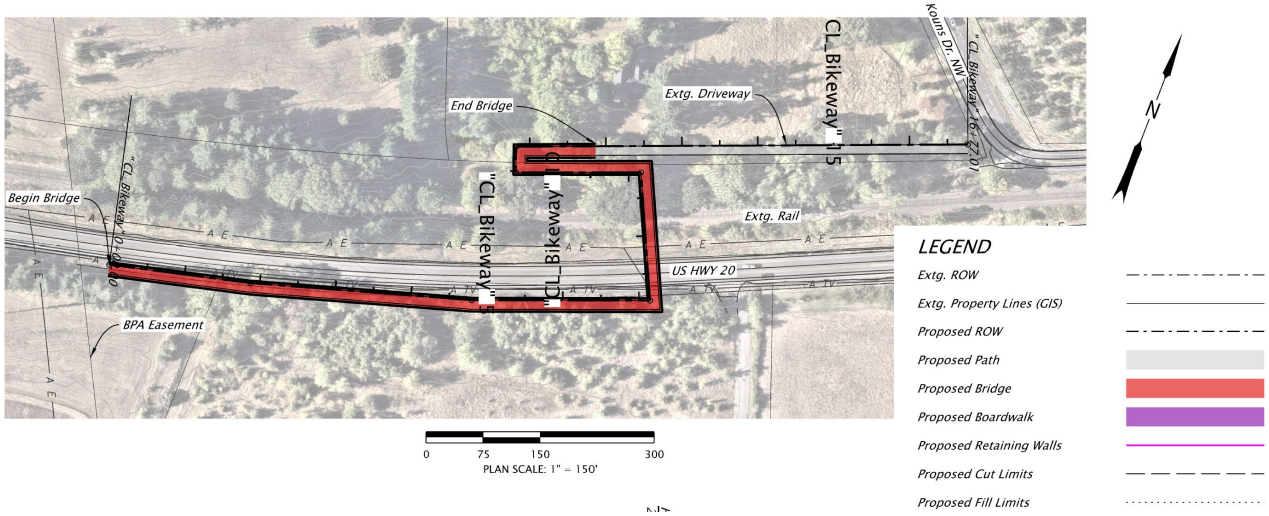


Figure 28. Overcrossing west of Kouns Drive NW

Evaluation of the overcrossing west of Kouns Drive NW is as follows:

- **Design Challenges.** The primary design challenge is related to the overall scale of the structure required to achieve necessary clearance heights over the highway and railroad while maintaining an accessible path. The placement of this crossing option avoids impacts to adjacent homes, structures, and access roads. However, the scale of the overcrossing is significant and not congruent with the surrounding landscape.
- **User Comfort and Safety.** Although a separated crossing provides a low-stress connection that eliminates exposure to highway traffic, an overcrossing could lead to concerns about personal security and/or unwanted uses due to limited visibility. Design elements, including illumination and railing design, could reduce these concerns.
- **Community and Partner Support.** Community members may not support this crossing location due to private property impacts and scale of structure. However, an overcrossing is responsive to community concerns associated with at-grade crossing options.
- **Zoning, Land Use, and Permitting.** This crossing location would require approval from the railroad owner. Additionally, this location is within property zoned EFU.
- **Impacts to Resources**
  - → *Floodplain*. South of U.S. 20, the crossing location is within the 1% Annual Chance Flood Hazard Zone. No flood hazard zones are identified north of U.S. 20 in this area.
  - → *Wetlands and Waterways*. There are no identified wetlands or waterways in the vicinity of this crossing.

- **Utility Conflicts.** Overhead utilities are present on both sides of U.S. 20. Utilities may need to be moved underground from the nearest poles on either side of the crossing to avoid conflict with the crossing structure.
- **Right-of-Way.** Right-of-way acquisitions or easements would be required. The north side of the crossing would tie into an existing private driveway, requiring not only acquisition or easements, but would also likely have impacts on the driveway/access for this property.
- **Interaction with Rail.** The overcrossing of the rail would require approval from the railroad owner and may result in additional design requirements to maintain safety and operations.
- **Planning-Level Cost Estimate.** $11,600,000

4.2.6 Alternative Recommendation

Based on the evaluation of segment alternatives and crossings explored above, **Alternative C2** and **Alternative C2.1** are recommended to advance. Both alternatives present opportunities for advancing the path, but also experience challenges that may limit feasibility.

- **Alternative C2** would provide a continuous facility that provides a consistent user experience with Segment 1. It is expected to have fewer challenges related to permitting, impacts to resources, and community support. However, it would require a new bridge across Bowers Slough that add significant project costs and potential environmental constraints.
- **Alternative C2.1** would not require a new bridge structure and would use an existing private roadway along Old U.S. 20; this would substantially reduce project costs while also routing the path away from the highway to increase separation and user comfort. However, it is known that the property owners are not supportive.

Neither of the crossing options of U.S. 20 and the railroad are recommended to advance for the following reasons:

- **Crossing East of Bowers Slough.** While this crossing location has a number of strengths, including lower cost relative to other crossing locations and fewer topography challenges, the crossing under the railroad presents a potential risk, both for obtaining approvals with the railroad and for minimizing impacts to adjacent wetlands. Design requirements for the railroad undercrossing could result in additional costs, and the conversion to a public crossing could introduce additional requirements or impacts. However, this crossing location is not fatally flawed and could be explored further if needed.
- **West of Kouns Drive NW.** This location poses substantial challenges regarding zoning and permitting, community support, and project costs. The scale of the overcrossing structure is not congruent with surrounding land use, and the placement of the structure and its associated ramps would impact adjacent private property within the EFU zone. These factors are associated with anticipated high project costs.

4.3 Segment 3

Segment 3 generally covers the area between Scenic Drive NW and Rainwater Lane NW (Figure 29). This segment considers three primary alignment alternatives with design options that respond to identified constraint; two potential U.S. 20 crossing locations and associated design options are also identified.

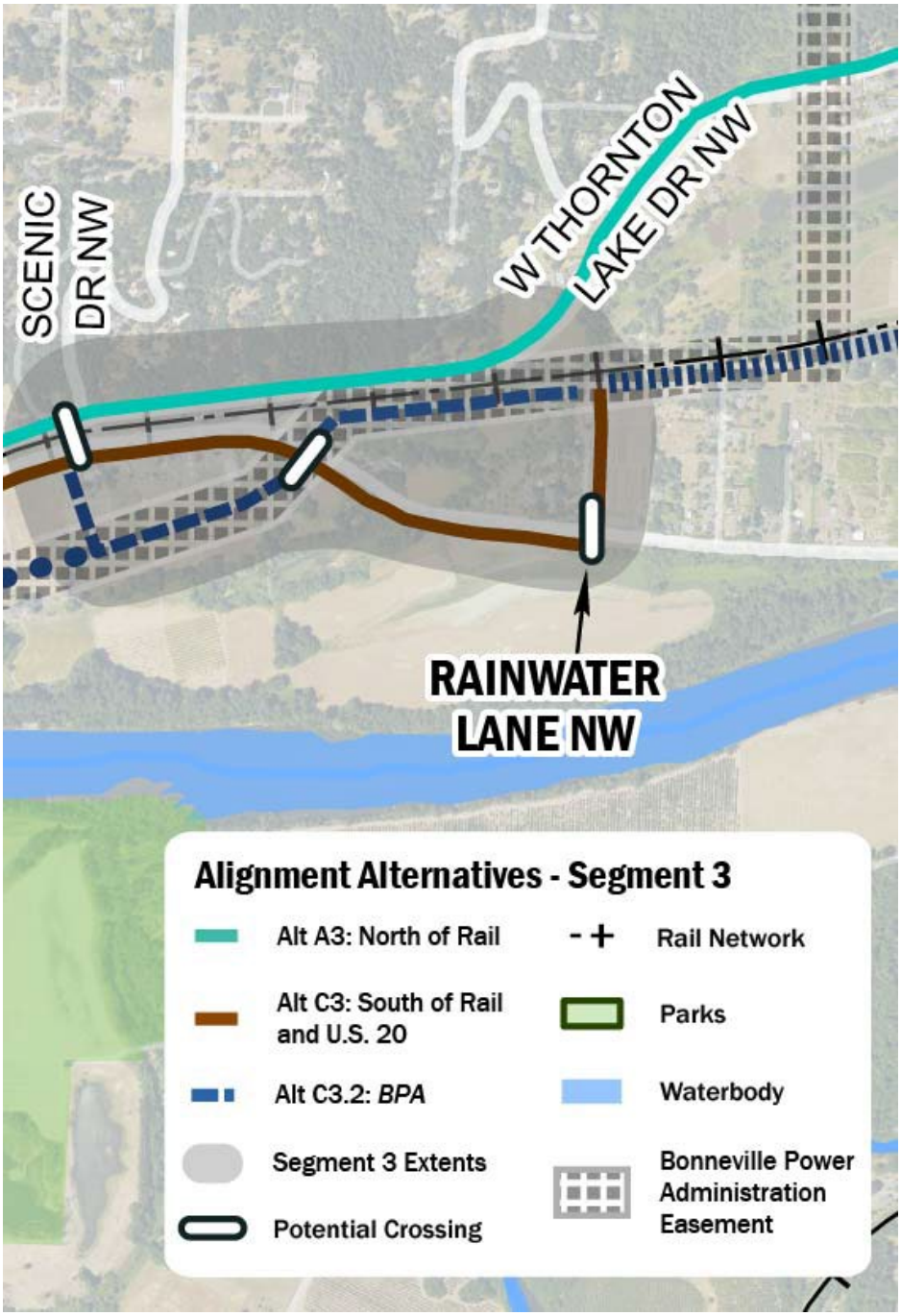


Figure 29. Segment 3 Alternatives Overview

4.3.1 Alternative A3

This alternative includes a path located along West Thornton Lake Drive NW. This narrow, two-lane roadway has relatively low traffic volumes (1,550 average daily traffic, 2019), intermittent shoulders, and no existing bikeways or sidewalks. There are steep slopes on either side of the roadway in many locations;

Path Alternative A3 would follow the north side of West Thornton Lake Drive NW. The path would typically be 12 feet wide with 2-foot-wide shoulders on either side of the path. An approximately 5-foot-wide buffer would be present between the path shoulder and the edge of pavement; the width varies across the corridor. The typical section is shown in Figure 30. It would require retaining walls (see Figure 31) in several locations, for approximately 2,000 feet. More information can be found in the exhibits included in Appendix C.

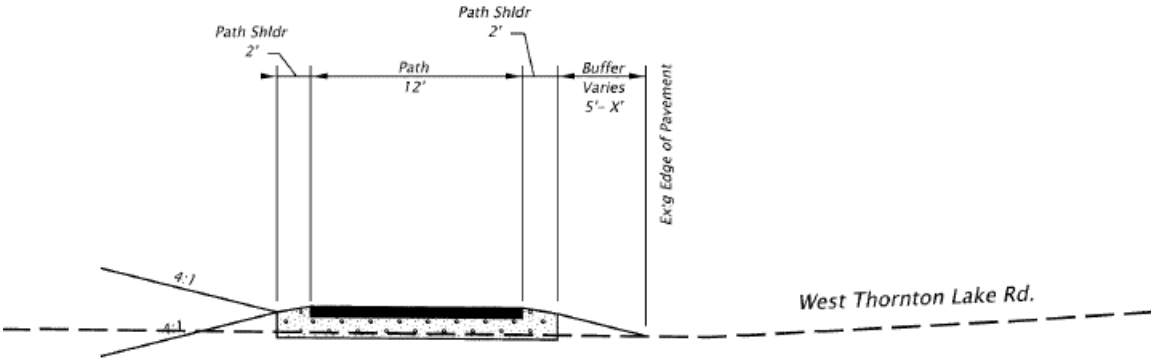


Figure 30. Alternative A3 Typical Cross Section

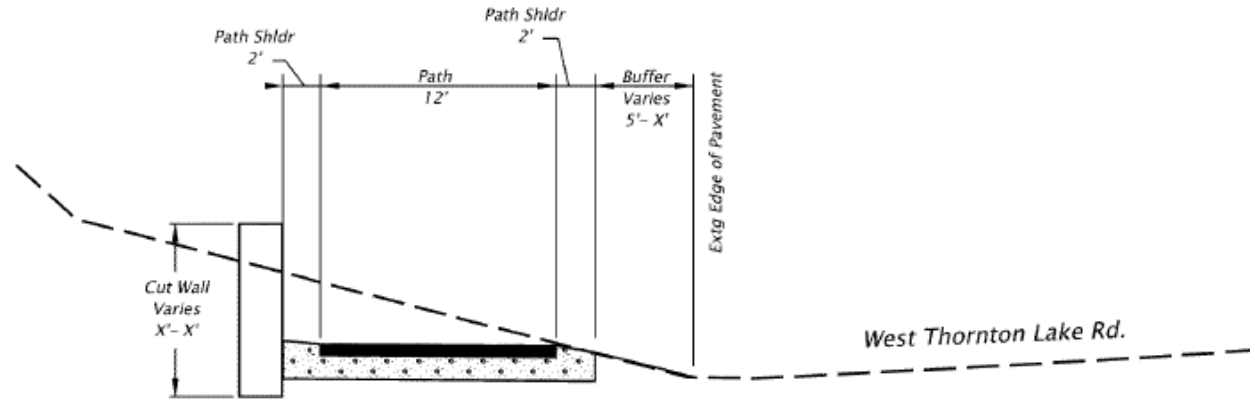


Figure 31. Alternative A3 Cut Wall Typical Cross Section

4.3.1.1 Alternative A3 Evaluation

- Design Challenges
  - → *Railroad Crossing.* While the alternative is located outside of railroad right-of-way, crossing Scenic Drive NW could trigger substantial upgrades to the existing rail crossing due to proximity.
  - → *Drainage.* A drainage ditch is located on the north side of the roadway. To minimize impacts and preserve existing drainage, the proposed path location is set back from the edge of pavement between 5 and 6 feet. Future design work will need to address potential drainage impacts and any necessary improvements to driveway culverts.
  - → *Steep Slopes.* Steep slopes north of West Thornton Lake Drive NW would require retaining walls to stabilize the slope adjacent to the path. These walls are expected to be approximately 3 feet tall on average and would likely require steeper driveway entrances.
  - → *Design Options.* This alternative assumes a 12-foot-wide path, as described above. However, a constrained path width could be considered in future design phases to reduce impacts, limits right-of-way needs, and lower costs.
- User Comfort and Safety. The proposed shared use path would support a high degree of comfort and safety for all users due to its physical separation from the roadway.
- Community and Partner Support. West Thornton Lake Drive NW was cited during public engagement as an important pedestrian connection, particularly for nearby neighborhoods. Multiple respondents noted the lack of sidewalks, narrow roadway, speeding vehicles, and children walking in the roadway as key existing concerns. A continuous sidewalk or multi-use path here is viewed as essential for pedestrian safety and access to the broader network, including transit stops and North Albany neighborhoods.
- Zoning, Land Use, and Permitting. This area is zoned Albany Residential Reserve; no land use permit would be required. Permitting related to wetlands may be required.
- Impacts to Resources
  - → *Historic/Cultural Resources*. Historic resources are present along this alignment, including National Register of Historic Places–eligible resources. However, the path is unlikely to impact them, unless significant alteration to property is required.
  - → *Wetlands and Waterways.* While available data does not indicate wetlands are present in this area, the reconnaissance-level site visit observed evidence of wetland indicators along the north side of West Thornton Lake Drive NW. A formal wetland and waters delineation would be required. Potential impacts to wetland areas would require permitting and mitigation.
- Utility Conflicts. Conflicts are anticipated with one existing power pole on the north side of West Thornton Lakes Drive NW.
- Right-of-Way. The proximity of homes to West Thornton Lake Drive NW near the eastern end of the segment would result in minor right-of-way impacts. Available space between County and private right-of-way ranges from 11 to 12 feet, which would likely require the path to encroach on private property. Further survey to determine the extent of private property impacts would help understand the challenges associated with minimizing right-of-way encroachment.

- **Interaction with Rail.** The railroad right-of-way is located immediately south of West Thornton Lake Drive NW. This precludes the development of a path along the south side of the roadway in this segment. Available tax parcel data suggests that there is adequate space for a path along the north side; however, additional survey would be required to confirm any right-of-way needs.
- **Planning-Level Cost Estimate.** $6,000,000

4.3.2 Alternative C3

This alternative follows the south side of U.S. 20, traveling east from Scenic Drive NW to Rainwater Lane NW. The path would then cross U.S. 20 and continue north on Rainwater Lane NW to connect to the previously designed trail segment south of the railroad. This alternative was originally rejected during the first phase of screening, but was considered further during this phase of work to more firmly establish its potential viability.

This alternative would continue the proposed cross section from Alternative C2, as shown in Figure 32. While widths will vary based on location context, the path will generally be 12 feet wide with 2-foot-wide shoulders on either side. The proposed design would extend existing curb east from Scenic Drive NW to approximately MP 8.8 to help reduce impacts to private properties; a 6-foot shoulder would be present between the travel lane and the curb. The fill slopes required behind the path in the vicinity of Scenic Drive NW create additional property impacts. An alternative solution to reduce property impacts would be to propose a small fill wall at the back of path, although this would require pedestrian railing.

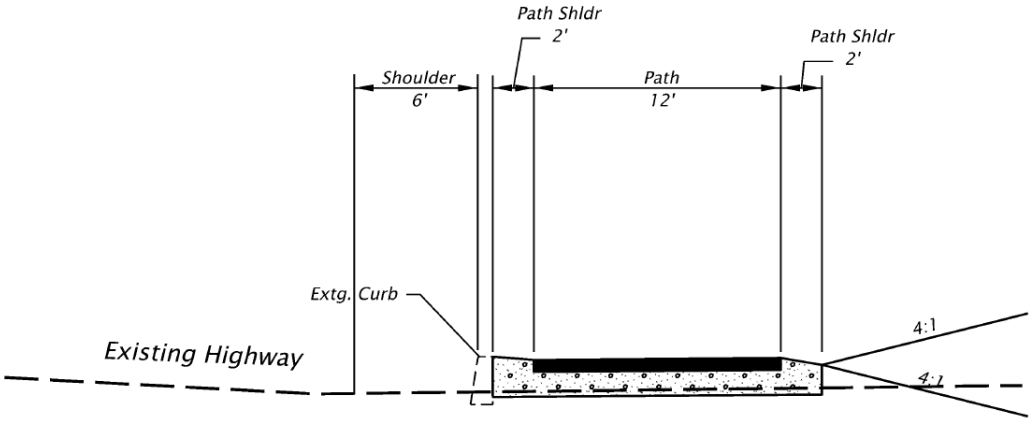


Figure 32. Alternative C3 Typical Cross Section

East of MP 8. 8, the roadway context changes, with more constrained space south of the highway, more existing trees, and steep slopes. Two design concepts were considered for this alternative to address key constraints in this area.

- **Paved Shared Use Path.** To continue a paved shared used path adjacent to U.S. 20, the highway would need to be widened between approximately MP 8.9 and MP 9. Additionally, this section would require a concrete barrier between the path and the roadway, as well as a 6-foot-high retaining wall to achieve the road widening (see Figure 33). This would result in impacts to numerous mature trees, would result in a large amount of fill within the floodplain, and would require the existing culvert to be extended or replaced. Mitigation would be required to address added fill, increase impervious surface, and tree impacts.

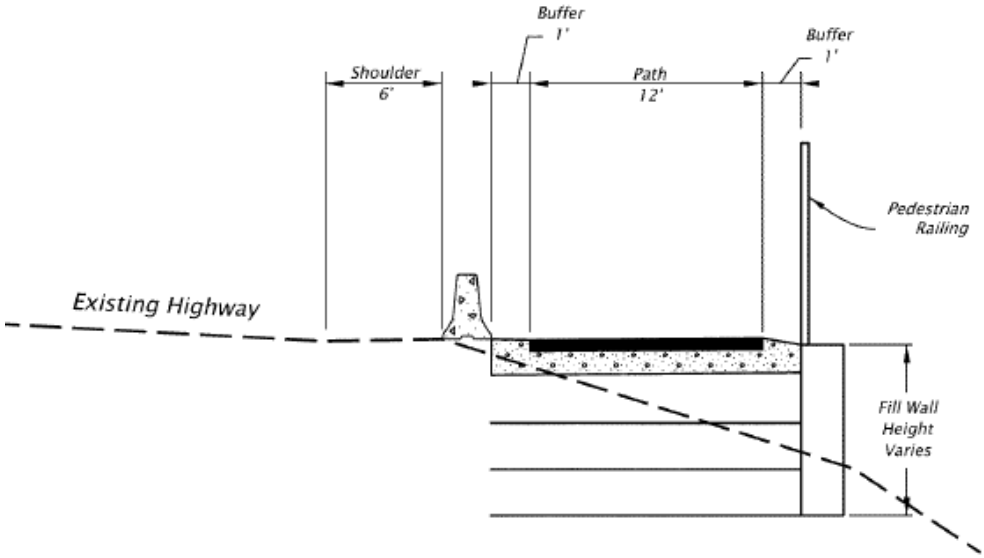


Figure 33. Alternative C3 Paved Shared Use Path Design Option

- **Elevated Boardwalk.** An elevated boardwalk would not require retaining walls, which is expected to result in fewer tree impacts, avoid culvert updates or replacement, and would significantly reduce fill within the floodplain. An elevated boardwalk would be required for 700 feet between approximately MP 8.85 and MP 9 just east of the BPA alignment; a paved shared use path would be used outside of these limits. The use of a boardwalk would require foundations, but the resulting connections to the boardwalk are relatively small (14 to 18 inches in diameter; see Figure 34). If this structure falls within the regulatory floodway, it would need to meet no rise requirements. Additionally, mitigation would be required to address tree impacts, increase in impervious surface, or added fill for locations within the flood hazard zone.

This alternative would then cross U.S. 20 at Rainwater Lane NW, and the route would continue on Rainwater Lane NW as a shared facility where bicycles, pedestrians, and vehicles share the roadway. Improvements would include repaving the roadway and adding signage and shared lane markings.

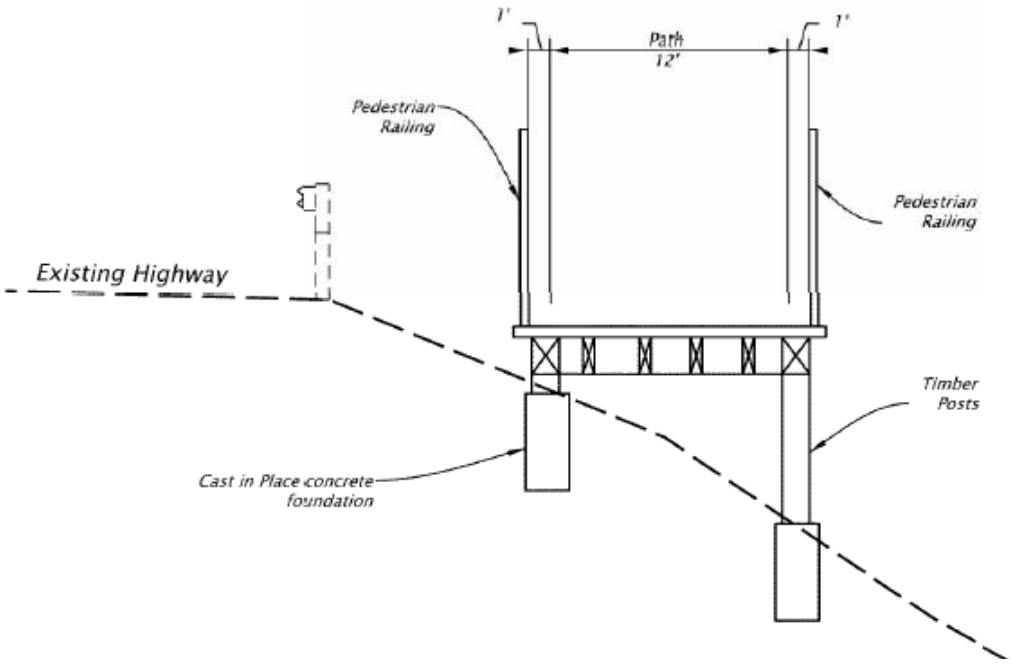


Figure 34. Alternative C3 Elevated Boardwalk Typical Cross Section

4.3.2.1 Alternative C3 Evaluation

The following evaluation considers the entirety of Alternative C3; differences between design options are noted where applicable. In general, the primary difference between design options is based in impacts to resources and planning-level cost estimates.

- Design Challenges
  - → *Constrained Right-of-Way and Environmental Resources.* As described above, the constrained section between approximately MP 8.85 and MP 9 limits path opportunities. Steep slopes and location within the flood areas further constrains path options. The elevated boardwalk option is likely more feasible with regard to these constraints due to the reduced impacts.
  - → *Floodplain Impacts.* An elevated boardwalk would not require retaining walls, which is expected to result in fewer tree impacts, avoid culvert updates or replacement, and would significantly reduce fill within the floodplain. Boardwalk piles would be located out of wetland areas if possible. Foundations of approximately 14 to 18 inches in diameter would be required. If the boardwalk must be located in wetland areas, design options such as an open-grate deck or no curbs would help mitigate potential impacts from the boardwalk, including precipitation flow concentration.
- User Comfort and Safety. While the path would provide physical separation for safety and comfort, its proximity to U.S. 20 would expose path users to more highway noise and traffic. The path would cross multiple driveway accesses, creating the potential for conflicts. Proximity to U.S. 20 may mitigate concerns regarding personal security due to increased visibility.

- Community and Partner Support
  - → *U.S. 20.* Community feedback expressed concerns about safety along U.S. 20, including high vehicle speeds, limited sight distance and sharp curves, and vehicles leaving the roadway. A path with vertical separation would provide a more comfortable route of travel but may not mitigate community concerns, especially related to high vehicles speed and roadway departures.
  - → *Rainwater Lane NW.* The community is not anticipated to be supportive of a shared facility on Rainwater Lane NW. This roadway currently serves local residential traffic; this alternative would result in increased bicycle and pedestrian travel on this corridor.
- Zoning, Land Use, and Permitting
  - → *U.S. 20*. Alternative is located within an EFU zone. The permitting review identifies three required County permits (EFU administrative permit, floodplain development/ administrative permit, and Greenway Management Overlay conditional use review) for this segment. These permits require significant documentation.
  - → *Rainwater Lane NW*. Route would primarily rely on public right-of-way; development of a shared facility would avoid EFU zoning on either side of the roadway. Connections to the previously designed path may pass through private property and EFU zoning.
- Impacts to Resources
  - → *Historic/Cultural Resources*. Historic resources are present along this alignment, including National Register of Historic Places–eligible resources. However, the path is unlikely to cause harm to them, unless significant alteration to property is required.
  - → *Wetlands and Waterways.* The City of Albany's Significant Wetlands Overlay and NWI wetlands are present between the BPA alignment and Rainwater Lane. Preliminary wetlands are also present on the south side of U.S. 20 at the BPA alignment. A formal delineation would be required to verify the presence, extent, and classification of aquatic resources throughout the segment. The elevated boardwalk is anticipated to have less impact as compared to the paved shared use path as it does not require use of retaining walls; the relatively small foundations and grated surface further reduce potential impacts.
  - → *Floodplain*. This alternative crosses areas identified as part of the 1% Annual Chance Flood Hazard Zone as well as the regulatory floodway. The elevated boardwalk is anticipated to have less impact as compared to the paved shared use path as it does not require use of retaining walls; the relatively small foundations and grated surface further reduce potential impacts.
- Utility Conflicts. Overhead utilities are located immediately adjacent to U.S. 20. Path design would need to avoid or mitigate impacts to adjacent overhead utilities.
- Right-of-Way. Right-of-way or easements are likely needed along most of this segment. This could result in impacts to private property and structures as well as property owner concerns.
- Interaction with Rail. Alternative does not require interaction with the railroad.
- Planning-Level Cost Estimate. $6,400,000. This cost estimate assumes the elevated boardwalk design option.

4.3.3 Alternative C3.2

This alternative follows an existing BPA easement across private property south of U.S. 20 on the west side of the highway, beginning at approximately Scenic Drive NW. The alignment crosses U.S. 20 at approximately MP 8.79, then continues east along the BPA easement north of the highway and south of the railroad, terminating at Rainwater Lane NW where it connects with Alternative B4.1. The proposed path would be 12 feet wide, with 2-foot-wide shoulders on both sides (Figure 35). On the north side of the highway, a new bridge south of the rail line and approximately 50 feet west of Rainwater Lane NW would be required. This bridge would cross the channel that connects Thornton Lakes to the Willamette River. This bridge is part of the previous trail project and has already been designed.

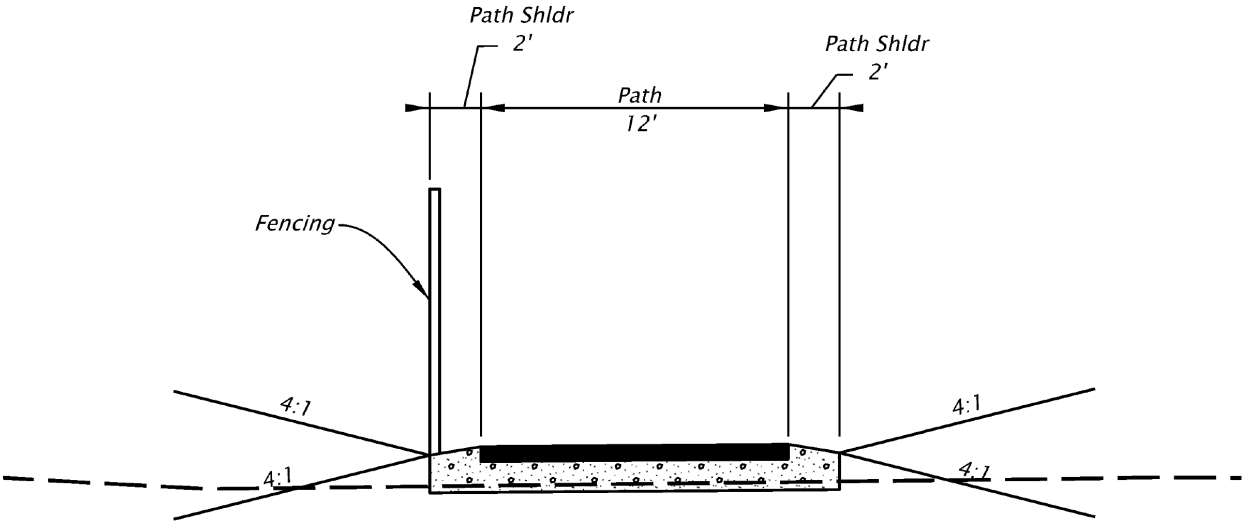


Figure 35. Alternative C3.2 Typical Cross Section

4.3.3.1 Alternative C3.2 Evaluation

- **Design Challenges.** To avoid impacts to the regulatory floodway, the new pedestrian bridge west of Rainwater Lane NW would need to span the floodway (approximately 200 feet) and would need to be located above the base flood elevation. Design should avoid impacts to wetlands and waterways.
- **User Comfort and Safety.** The proposed shared use path would support a high degree of comfort and safety for all users due to its physical separation from the roadway.
- **Community and Partner Support.** The portion of this alternative located west of U.S. 20 is not supported by members of the community, including adjacent private property owners.
- **Zoning, Land Use, and Permitting.** Alternative is located within an EFU zone. permitting review identifies three required County permits (EFU administrative permit, floodplain development/administrative permit, and Greenway Management Overlay conditional use review) for this segment. These permits require significant documentation.

- Impacts to Resources
  - → *Floodplain.* This alternative crosses areas identified as part of the 1% Annual Chance Flood Hazard Zone as well as the Regulatory Floodway.
  - → *Wetlands and Waterways.* Significant Wetlands Overlay City of Albany and NWI Wetlands are present near Rainwater Lane NW near the intermittent stream runoff from Thornton Lake. Preliminary wetlands were identified during field reconnaissance in several locations along the BPA easement. A formal delineation would be required to verify the presence, extent, and classification of aquatic resources throughout the segment.
- **Utility Conflicts.** Overhead utility lines and associated utility poles cross this area. Depending on the preferred crossing design option (see Section 4.3.4), existing overhead powerlines running east-west along the north side of U.S. 20 may need to be relocated underground in the vicinity of the crossing.
- **Right-of-Way.** This alternative would require an easement or property acquisition from private property owners, as well as a separate permit from BPA to operate within their easement.
- **Planning-Level Cost Estimate.** $12,400,000. This estimate includes the BPA – Undercrossing.

4.3.4 Segment 3 Crossings

4.3.4.1 Crossing: Scenic Drive NW

A crossing at Scenic Drive NW would connect path alternatives on the south side of U.S. 20 to Alternative A3 north of the highway. A crossing in this location would require crossing both U.S. 20 and the railroad. U.S. 20 is three lanes in this location with a posted speed limit of 45 mph; residences and other structures are present on the south side of the highway at Scenic Drive NW. Two design options were considered.

Scenic Drive NW – Grade-Separated

A grade-separated crossing would need to achieve applicable clearances for both the highway and rail. To maintain an accessible path, the footprint of the structure would likely exceed the space that is available without directly impacting existing structures and driveways. For this reason, a grade-separated crossing was not explored further.

Scenic Drive NW – Traffic Signal or Roundabout

An at-grade crossing with a traffic signal or roundabout is a potential solution. This area has an existing rail crossing, and community feedback identified this intersection as a challenging location for all modes.

Evaluation of this crossing is as follows:

- **Design Challenges.** A traffic signal would require both ODOT and railroad approvals. Traffic speeds and volumes do not support an uncontrolled pedestrian crossing in this location and pedestrian traffic signal warrants are not likely to be met. There is further complexity for design due to the close proximity of the intersection to the rail and West Thornton Lake Drive NW immediately north, which could have implications for user safety, rail operations, and traffic operations. Improvements would be substantial and need to minimize potential conflict between modes and consider vehicle queueing so as not to interfere with the railroad.
- **User Comfort and Safety.** A traffic signal would be expected to provide relatively high levels of comfort and safety for path users as it would provide a dedicated crossing phase and stop cross-traffic on U.S. 20. However, it is important to note that a traffic signal does not eliminate the risk of high-speed crashes. Crashes that occur at signalized intersections can still be severe or fatal due to the speeds involved. A roundabout, by contrast, naturally reduces vehicle speeds for all users and eliminates the types of high-speed collisions that occur at this intersection today, potentially offering greater long-term safety benefits despite lower perceived comfort among some user groups.
- **Community and Partner Support.** During the first phase of community engagement, participants expressed support for improving this intersection, particularly to facilitate turning from Scenic Drive NW onto U.S. 20. Several participants specifically identified a traffic signal as the preferred improvement type. It should be noted that this community preference is primarily oriented toward improving vehicle access and driver comfort at the intersection, rather than reflecting a focus on bicycle and pedestrian conditions.
- **Zoning, Land Use, and Permitting.** ODOT and rail approvals would be required for this location. Analysis would need to demonstrate that there is no other feasible alternative in the vicinity, and it is expected that the resulting design would require a design exception.

- **Impacts to Resources**. Crossing location is not within identified wetlands or within flood hazard areas.
- **Utility Conflicts.** Overhead utility lines are located on both sides of U.S. 20. Intersection design would need to account for these locations to avoid or minimize conflict.
- **Interaction with Rail.** Changes to the existing railroad crossing and intersection, including the addition of a path, would require improvements to the rail crossing such as upgrades to crossing equipment and fencing. These improvements are often high in cost and require approval by the railroad owner.
- **Right-of-Way.** This alternative would likely require additional right-of-way to accommodate the addition of signal equipment and potential adjustments to the intersection configuration.
- **Planning-Level Cost Estimate.** A planning-level cost estimate was not developed for this option. However, this improvement is expected to be high cost due to the addition of signal equipment, rail crossing improvements and coordination, right-of-way acquisition, and potential utility conflicts.

4.3.4.2 Crossing: BPA Easement

This crossing would be located co-sited with the existing BPA easement that crosses U.S. 20 approximately one-quarter mile east of Scenic Drive NW at MP 8.79. Three design options were evaluated at this location, including an interim at-grade crossing,[1] an overcrossing, and an undercrossing.

BPA Easement – At Grade

An at-grade crossing would provide an interim solution to crossing U.S. 20, allowing portions of the path to be constructed while funding and approvals are secured for a long-term separated crossing. Benefits of this location include that it does not require the path to cross the railroad and, relative to other crossing locations to the west, it has a lower posted speed (45 mph) and a relatively short crossing distance of approximately 40 feet. This location is shown in Figure 36. At grade enhanced or signalized crossing requires State Traffic Engineer approval.

[1] More information about the interim at-grade crossing locations considered can be found in Appendix E. This includes discussion of traffic signals.

Figure 36. BPA Easement At-Grade Crossing Alternative

However, a number of challenges limit the feasibility of this crossing. The evaluation of this crossing is as follows:

- **Design Challenges**. Design challenges for this crossing are primarily associated with providing a safe and comfortable crossing. More information is summarized in the evaluation criteria that follow.
- **User Comfort and Safety**
  - → *Sight Distance.* This crossing location is in the middle of a horizontal curve that restricts visibility along U.S. 20, as shown in Figure 40. A pedestrian crossing is not recommended at this location due to this lack of visibility, which will decrease the available stopping sight distance.
  - → *Safety Performance.* No crashes are documented in 2019 to 2023 crash data (the most recent 5 years of available data), and this location is not identified as a Safety Priority Index System (SPIS) site. However, the combination of horizontal curvature, roadway context, and higher travel speeds creates conditions where a pedestrian-vehicle conflict would carry a significantly elevated risk of a fatal or serious injury outcome. For this reason, a pedestrian crossing at this location is not recommended.
- **Community and Partner Support.** Community feedback has generally not been supportive of at-grade crossing locations due to safety concerns. Further, this crossing location would require use of private property for the connecting path; adjacent property owners are not supportive of this option.
- **Zoning, Land Use, and Permitting.** Zoning south and west of U.S. 20 is zoned EFU. North and east of U.S. 20 is zone Residential Reserve and Open Space with the City of Albany.
- **Impacts to Resources**. The crossing location is located within the regulatory floodway.

- **Utility Conflicts.** Overhead utility lines and associated utility poles are located in this area, including running along both side of U.S. 20. While a crossing in this location is not expected to conflict with existing utilities, placement of the crossing and associated signage would need to account for existing poles.
- **Interaction with Rail.** This crossing does not require interaction with the rail.
- **Right-of-Way.** The crossing would not require right-of-way; however, the connecting path likely would require right-of-way.
- **Planning-Level Cost Estimate.** A cost estimate was not developed for this option.

BPA Easement – Overcrossing

An overcrossing would provide a long-term, low-stress connection across U.S. 20. Crossing over U.S. 20 requires a clearance of 16 feet, 7 inches. To achieve this height while maintaining an accessible path, the path feature ramps that would extend approximately 300 feet (see Figure 41); the top of the structure would likely reach approximately 21 feet from the highway surface. One potential footprint is shown in Figure 37.

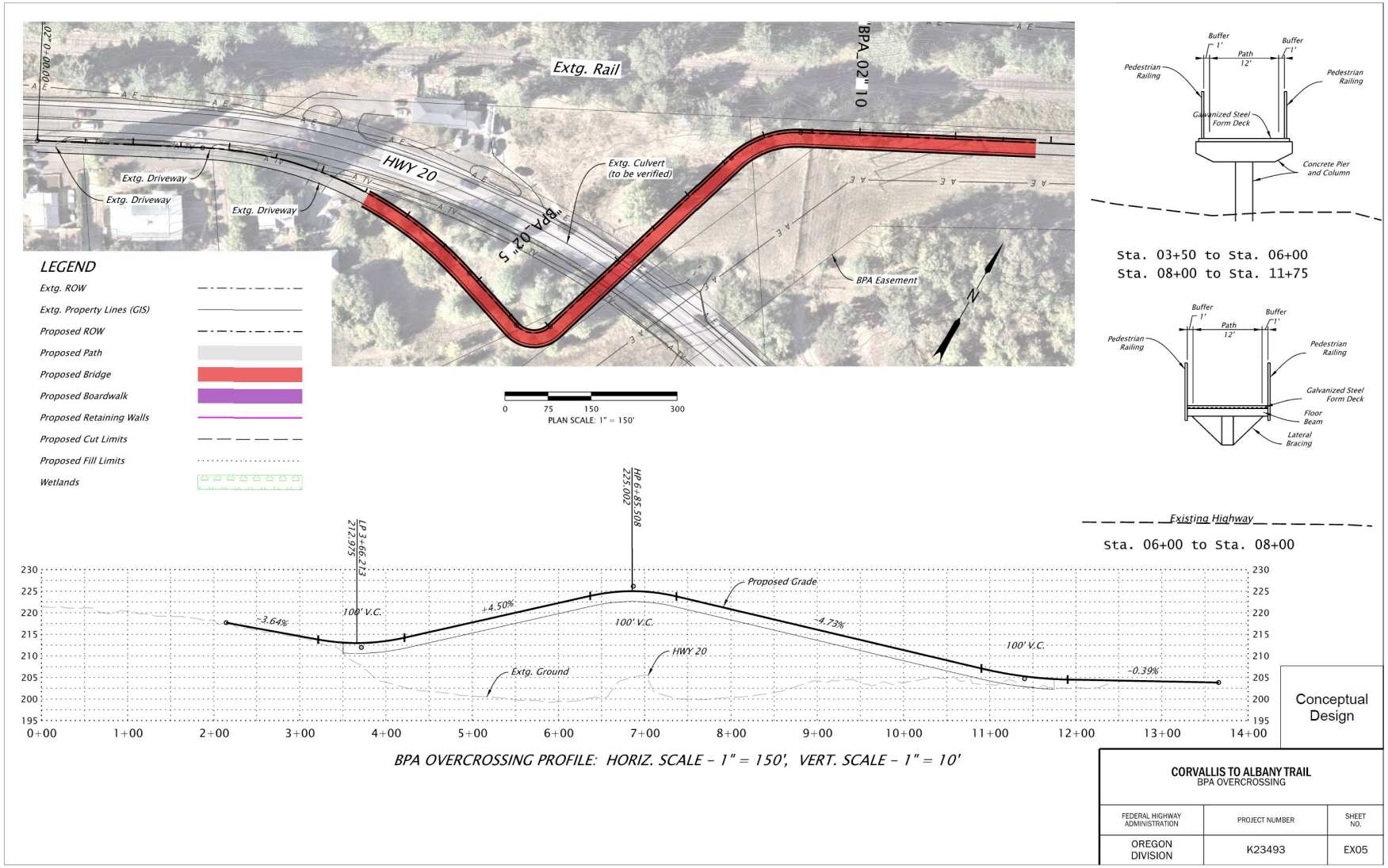


Figure 37. Overcrossing Concept at BPA Easement

Although this option provides a long-term, low-stress crossing option, there are several challenges associated with this evaluation:

- **Design Challenges.** Improvements within the regulatory floodway cannot result in any rise in base floodplain elevation; design elements would need to avoid changes to the base floodplain elevation and could require mitigation to achieve the no rise requirement. Further, the scale of the overcrossing is significant and not congruent with the surrounding landscape.
- **User Comfort and Safety.** A separated crossing provides a low-stress connection that eliminates exposure to highway traffic, a well-documented risk factor on high-speed corridors where pedestrian-vehicle crashes carry a high probability of fatal or serious injury outcomes. This represents the primary safety advantage of this option. While an overcrossing could lead to concerns about personal security and/or unwanted uses due to limited visibility, these concerns are secondary and can be effectively mitigated through design elements, including illumination and railing design.
- **Community and Partner Support.** Community members and adjacent property owners are not supportive of a path alternative or crossing in this location; it is also expected that the scale of the structure would cause community concerns. Use of private property, especially where it would split existing parcels, is not expected to receive the community support needed to advance this option.
- **Zoning, Land Use, and Permitting.** This crossing location would be primarily located on private property (see the right-of-way discussion below). The use of this easement would require coordination and approvals from BPA. The project team has been in contact with BPA to better understand this process. In all instances, support from the community is required first prior to seeking BPA approval to use their easement. This location is also zoned EFU. The permitting review identifies three County permits (EFU, floodplain, and greenway) needed for this segment, noting significant documentation needs.
- **Impacts to Resources**
  - → *Floodplain*. Based on available data, this crossing location is partially within the regulatory floodway and 1% Annual Chance Flood Hazard Zone. For the flood hazard area, mitigation would be required to address new fill, increase in impervious surface, and tree removal, as outlined in FEMA's Floodplain Mitigation Assessment – Regional Guidance for Oregon (2024). Within the regulatory floodway, no rise requirements are in place, meaning that there can be no chance to base flood elevation. An overcrossing structure would require drilled shaft foundations, with columns approximately 4 feet in diameter extending above the surface. Mitigation would be required to achieve the no rise requirement.
- **Utility Conflicts.** Overhead utility lines and associated utility poles cross this area. Existing overhead powerlines running east/west along the north side of U.S. 20 would likely need to be relocated underground in the vicinity of the overcrossing. The majority of the elevated structure would be outside of BPA's easement, although the northern limits of the structure will need to be verified to meet clearance requirements from BPA's overhead lines. If overhead clearance is an issue, the bridge could switchback down on the north side of U.S. 20.
- **Right-of-Way.** Right-of-way acquisition or easements would be required for this location. While U.S. 20 is public right-of-way, the crossing structure would likely be located primarily on private property.
- **Planning-Level Cost Estimate.** $8,700,000.

BPA Easement – Undercrossing

An undercrossing would provide a low-stress connection across U.S. 20. The proposed undercrossing would construct a structure below U.S. 20 and would not change the grade of the existing highway. A clearance of 10 feet between the path surface and the structure is required; to achieve this clearance while maintaining an accessible route, the path would have ramp structures extending 300 feet. As shown in Figure 38, the path would begin to ramp downward at MP 8.72; on the north side of U.S. 20, the path would return to the existing grade approximately 350 feet from the highway. Retaining walls would be required along the portions that ramp under the highway.

However, an undercrossing has a number of potential challenges and issues requiring further investigation. Evaluation of this crossing location is as follows:

- **Design Challenges.** Design would need to address potential for flooding in the undercrossing. This would include water exclusion through the use of berms or similar design features, as well as use restrictions/closures during flood events. A pump system could be considered; since the undercrossing would be below the base flood elevation, gravity pipes and infiltration are not likely solutions. The addition of a pump also introduces ongoing maintenance considerations. As described below, the potential for flooding presents a risk to public safety. For this reason, this crossing option would require confirmation from ODOT and Benton County on the preferred approach to addressing potential flooding issues in order to advance.
  - → Raising the grade of the highway may reduce the overall depth of the undercrossing, although it does not solve the underlying flooding concerns with the undercrossing alignment within the floodway.
- **User Comfort and Safety.** A separated crossing provides a low-stress connection that eliminates exposure to highway traffic, a well-documented risk factor on high-speed corridors where pedestrian-vehicle crashes carry a high probability of fatal or serious injury outcomes. This represents the primary safety advantage of this option. While an undercrossing could lead to concerns about personal security and/or unwanted uses due to limited visibility, these concerns are secondary and can be effectively mitigated through design elements such as illumination.
- **Community and Partner Support.** Community members and adjacent property owners are not supportive of a path alternative or crossing in this location. Use of private property, especially where it would split existing parcels, may not receive the community support needed to advance this option.
- **Zoning, Land Use, and Permitting.** This crossing location would be primarily located on private property (see the right-of-way discussion below). The use of this easement would require coordination and approvals from BPA. The project team has been in contact with BPA to better understand this process. In all instances, support from the community is required prior to seeking BPA approval to use their easement. This location is also zoned EFU. The permitting review identifies three County permits (EFU, floodplain, and greenway) needed for this segment, noting significant documentation needs.

- Impacts to Resources

  → *Floodplain.* Crossing location is primarily located within the regulatory floodway. Based on review of available data, this crossing is not recommended to advance due to the potential safety risks, high costs, and operational considerations. The project team reviewed data available from the Flood Insurance Study and the nearby gage to understand flood patterns in this area. Only data from 1970 to present was considered, as the last dam in the Willamette watershed was constructed in 1969. The results suggest that there is an approximately 23.5% annual chance of floodwater in this area. Over time, this translates to the following probabilities of a flood occurring one or more times within a given number of years (see Table 2).

Table 2. Probability of a Flood Event

Number of Years	Probability
1	24%
2	41%
3	55%
4	66%
5	74%
10	93%
20	100%

Based on data since 2007, when continuous data became more reliable, flood durations have been on average about 1 to 1.5 days. In 2019, the flood duration was over 4 days. This represents when floodwaters receded below the critical stage at the gage, but not necessarily across the floodway. During a flood event, the proposed undercrossing would need to be closed temporarily. The project team estimates that a temporary closure may be required approximately once every 4 years for several days to more than a week. Because flooding of the undercrossing would be a risk to public safety, a plan would need to be in place to initiate path closures based on prediction sources, such as information from the National Oceanic and Atmospheric Administration, and to notify or warn the public of this closure and the associated risk.

A pump would likely be required to clear incidental flows and dewater following a flood event. This would not mitigate flooding concerns. Although it is too early in the design process to design this system, it is likely that this could be accomplished through a short forcemain connected to a nearby access hole that would have a gravity pipe to an outlet. For permitting purposes, it would be recommended to discharge above the ordinary high water. Permitting, constructing, operating, and maintaining a pump is substantial and not desirable. More analysis would be required to determine if any other modifications in the area could be completed to mitigating flooding within the area of the BPA easement; however, as this area crosses both the Thornton Lakes Overflow and the Thornton Lakes East Overflow, any diversion of flow from one floodway to another would trigger no rise requirements and would likely require a Conditional Letter of Map Revision from FEMA.

→ *Wetlands and Waterways.* The crossing location is not located within identified wetlands; a pond, which is also identified in the City of Albany LWI (1999), is located approximately 250 feet to the east.

- **Utility Conflicts.** Further review and confirmation of underground utilities is required to confirm undercrossing depth. Impacts to utilities are reduced as compared to an overcrossing, but some impacts are likely.
- **Right-of-Way.** This option would require right-of-way acquisition or easements.
- **Planning-Level Cost Estimate.** $7,800,000

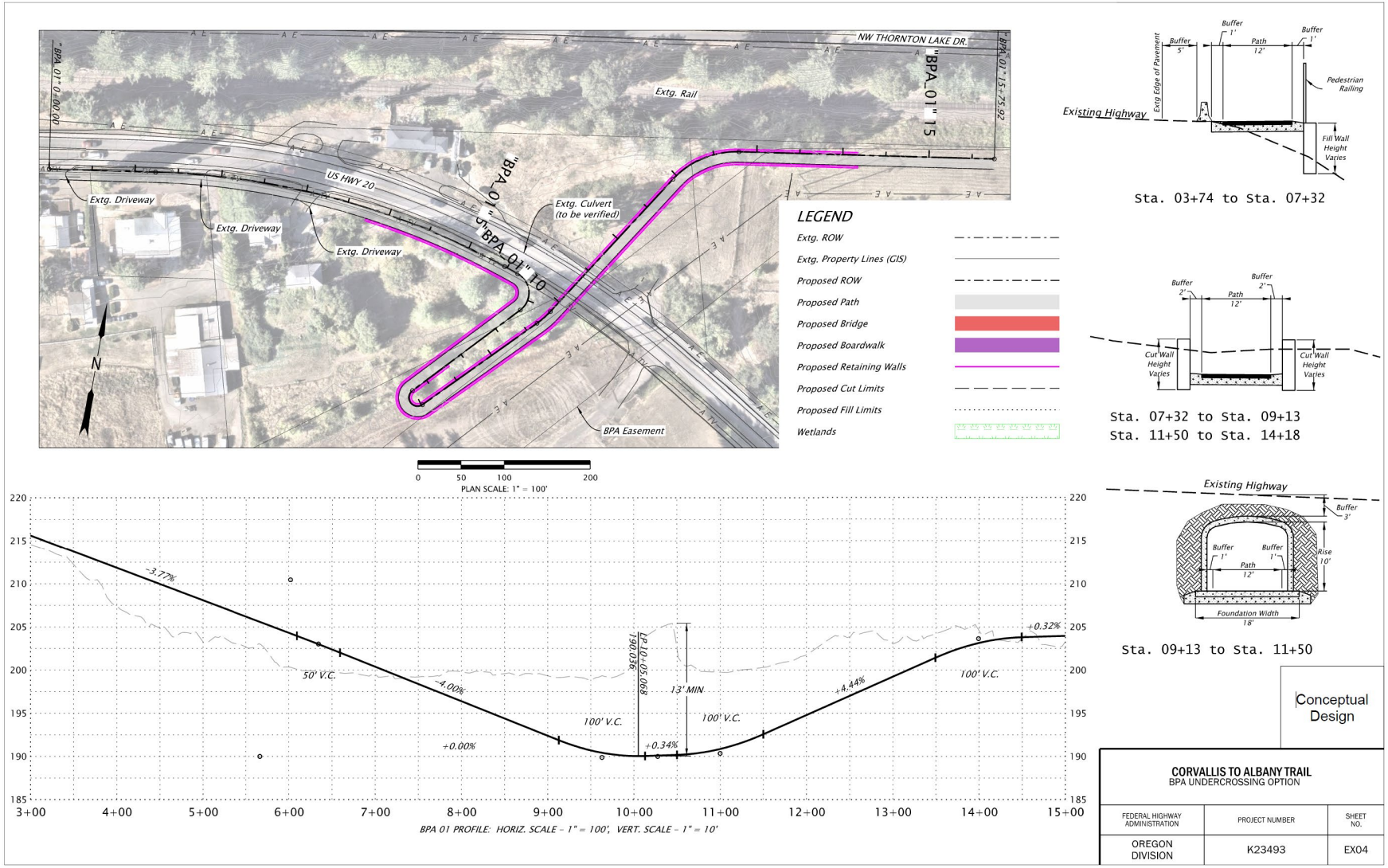


Figure 38. Undercrossing Concept at BPA Easement

4.3.4.3 Crossing: Rainwater Lane NW

Alternative C3 would cross U.S. 20 at Rainwater Lane NW, before continuing north to connect to Alternative B4.1 (see Figure 39). At this location, U.S. 20 is two lanes, resulting in a crossing distance of approximately 45 feet, and has a posted speed limit of 45 mph. Two design options were evaluated at this location.

Rainwater Lane NW – At Grade

An at-grade crossing would connect the path from south of U.S. 20 to the vicinity of Rainwater Lane NW. An at-grade crossing would require additional enhancements to improve safety for all roadway users. Because U.S. 20 is a Reduction Review Route, any crossing design will require a reduction review to ensure freight compatibility. In alignment with Table 310.3-A: Uncontrolled Marked Crosswalk Treatments in the ODOT Traffic Manual, the following treatments are recommended:

- Half signal crossing; includes pedestrian signal post with push button and pedestrian signal.
- High-visibility crosswalk markings, lighting, and crossing warning signs.
- Pedestrian refuge island (would require widening the existing pavement).

Other potential improvements include traffic calming installed before the crossing, likely chicanes in both directions. Chicanes would physically reduce vehicle speeds approaching the crossing, improving safety for all users and easing the transition into more developed areas of the city. Including chicanes in the design may also strengthen the case for a future speed limit reduction in this corridor. In combination with these improvements, it is also recommended that Benton County request that ODOT conduct a speed study to evaluate reducing the speed limit in this area. Based on current conditions and Oregon's speed-zoning laws, reducing the speed limit below its existing level may be outside of ODOT's authority without physical changes to the roadway environment, making the inclusion of chicanes particularly important to advancing that outcome.

Evaluation of this crossing is as follows:

- **Design Challenges:** To provide a refuge island, the roadway would need to taper out prior to the crossing location, which would likely result in some property, driveway, and potential utility conflicts. Any refuge island design should be forward compatible with ODOT's proposed U.S. 20 safety improvements, specifically the planned addition of a sidewalk and center turn lane between Rainwater Lane and N. Albany Road, to avoid conflicts with future construction and ensure long-term functionality of the crossing.
- **User Comfort and Safety:**
  - → *User Comfort.* The posted speed limit of 45 mph and high traffic volumes will limit the overall comfort and safety of an at-grade crossing location. While a half signal is an identified tool for reducing level of traffic stress,[1] it is expected that many users may not be comfortable crossing the highway at grade.

[1] The ODOT Analysis Procedures Manual (2025) notes that Pedestrian Hybrid Beacons are equivalent to signalized crossings for the purposes of evaluating the Level of Traffic Stress at crosswalks (Table 14-33 PLTS Adjustments for Arterial Crosswalk Enhancements).

→ *Safety.* The posted speed limit and highway alignment provides the best stopping sight distance as compared to other locations, though vegetation would need to be maintained to ensure pedestrian visibility. However, at the posted speed, an at-grade crossing carries a high likelihood of severe or fatal outcomes in the event of a crash, even with warning lights present. As a result, an at-grade crossing at this location should only be considered after all other alternatives have been demonstrated to be infeasible. At grade enhanced or signalized crossing requires State Traffic Engineer approval.

- **Community and Partner Support:** It is anticipated that residents along Rainwater Lane NW may not be supportive of an alignment that travels along this roadway. Community engagement has not identified feedback about this specific location; however, feedback overall has shown that the community does not support at-grade crossings of U.S. 20 due to safety concerns. More outreach to this area may be needed.
- **Zoning, Land Use, and Permitting:** Approval of an at-grade crossing at this location would be at the discretion of ODOT.
- **Impacts to Resources:**
  - → *Floodplain*. Crossing location is within the 1% Annual Chance Flood Hazard Zone.
  - → *Wetlands and Waterways*. Location is not within any identified wetlands or waterways.
- **Utility Conflicts:** Overhead utilities are located on both side of U.S. 20; placement of half signal equipment would need to account for utility locations.
- **Right-of-Way:** Some right-of-way may be required to widen existing pavement for pedestrian refuge island and placement of half signal equipment.
- **Planning-Level Cost Estimate:** $500,000.

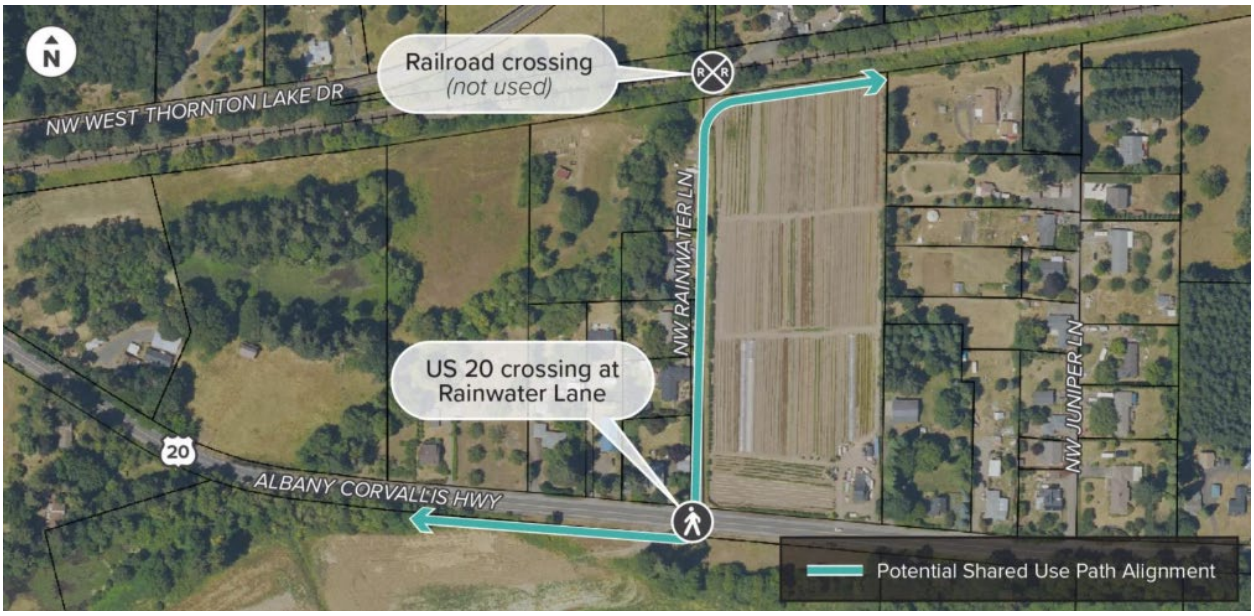


Figure 39. Rainwater Lane NW Interim Crossing

Rainwater Lane NW – Grade-Separated

A grade-separated crossing over U.S. 20 would require a clearance of 16 feet, 7 inches over the surface of the highway. To achieve this height while maintaining an accessible path, the path would need to ramp up over a distance, resulting in a structure that would impact both sides of the highway. This would likely require additional right-of-way and would have impacts to natural resources, including being within a flood hazard zone and partially within the regulatory floodway; additional impacts to existing structures and utilities would also be likely. Due to the constraints of this location both north and south of the highway, a grade-separated crossing is not recommended for further exploration.

Rainwater Lane NW – Roundabout

While it is not expected that warrants would be met for a traffic signal in this location, a roundabout could be considered to help facilitate a pedestrian crossing. U.S. 20 is a designated freight route and also classified as a Reduction Review Route, which means that the proposed roundabout would need to be designed to accommodate freight travel. A typical single lane roundabout has a diameter between 120 and 180 feet, which would result in right-of-way impacts at this intersection and a high overall project cost. This intersection is located within the 1% Annual Chance Flood Hazard Zone and may also impact the regulatory floodway depending on the scale and placement of the roundabout; this creates further complexities at this location that would require significant permitting, mitigation, and design considerations and would increase costs.

4.3.5 Alternative Recommendation

Based on the evaluation of segment alternatives and crossings explored above, **Alternative C3 Elevated Boardwalk Design Option** and **Alternative C3.2 east of U.S. 20** are recommended to advance. Highway crossings that will advance for further analysis include **Rainwater Lane NW – At Grade** and the **BPA Easement – Overcrossing.** The rationale for this recommendation includes:

- **Reduced Impact to Resources:** Although Alternative C3 will need to account for improvements within the regulatory floodway and flood hazard zones, Alternative C3 and the Rainwater Lane NW crossing offer more opportunities to reduce impacts.
- **No Rail Interaction:** These alternatives would not require any interaction with the railroad, reducing the complexity of approvals and potential cost increases. While Alternative A3 exhibits various strengths, it would require crossing the rail, which may pose a significant feasibility challenge.
- **Connects to Previously-Design Path Segment:** These alternatives would connect to Alternative B4.1, which was previously designed by Benton County. This maximizes prior public investment in the path.
- **Reduced Right-of-Way Needs.** While EFU permitting is likely still required, the path alignment for Alternative C3 is located primarily adjacent to or along public right-of-way.
- **Improved User Experience.** The BPA Easement – Overcrossing and Alternative C3.2 east of U.S. 20 would provide a path that is separated from the highway, improving overall comfort and safety.

However, despite these strengths, there are still several areas where these recommended alternatives would require further review or consideration, including:

- **Crossing Comfort and Safety.** An at-grade crossing at Rainwater Lane NW is expected to be uncomfortable for many users, even with crossing enhancements. Further review of this location should be completed in coordination with ODOT to determine design solutions that can further improve user comfort and safety.

- **Floodplain Impacts.** This combination of alternatives minimizes potential impacts to the floodplain relative to the alternatives considered. However, further review and design consideration will be required to mitigate impacts and meet requirements associated with floodplain and wetlands.

4.4 Segment 4

This segment includes the areas east of Rainwater Lane NW and represents the alternatives for how the path will connect to North Albany Road. While this segment is not included in the scope of this study, it is important to understand the relative opportunities and constraints associated with each option. Two primary alternatives are considered. The first (Alternative A4) travels along West Thornton Lake Drive NW; this alternative is applicable only if the path crosses both U.S. 20 and the railroad at a location west of Scenic Rd NW (see Figure 40). The second (Alternative B4.1) follows the previously designed route located south of the railroad along the BPA easement. This alternative is applicable if the path remains south of the railroad.

Figure 40. Segment 4 Alternatives Overview

4.4.1 Alternative A4

This alternative continues along West Thornton Lake Drive NW north of the railroad and north of U.S. 20. This alternative would include a shared use path on the north side of the roadway, ultimately connecting to existing on-street bicycle lanes and sidewalks on the North Albany Road.

This alternative is expected to have similar challenges to Alternative A3, including constrained right-of-way and adjacent steep slopes. This alternative is not expected to have permitting challenges. However, additional review would be required to determine if any additional right-of-way is required or if there are utility conflicts. Driveways become more frequent along both sides of the roadway as it travel east, which may introduce additional design challenges to minimize conflicts among travelers.

This alternative also limits direct connections to some destinations, such as the transit center and Downtown Albany. However, existing bike lanes and sidewalks on North Albany Road expand connections with some out-of-direction travel.

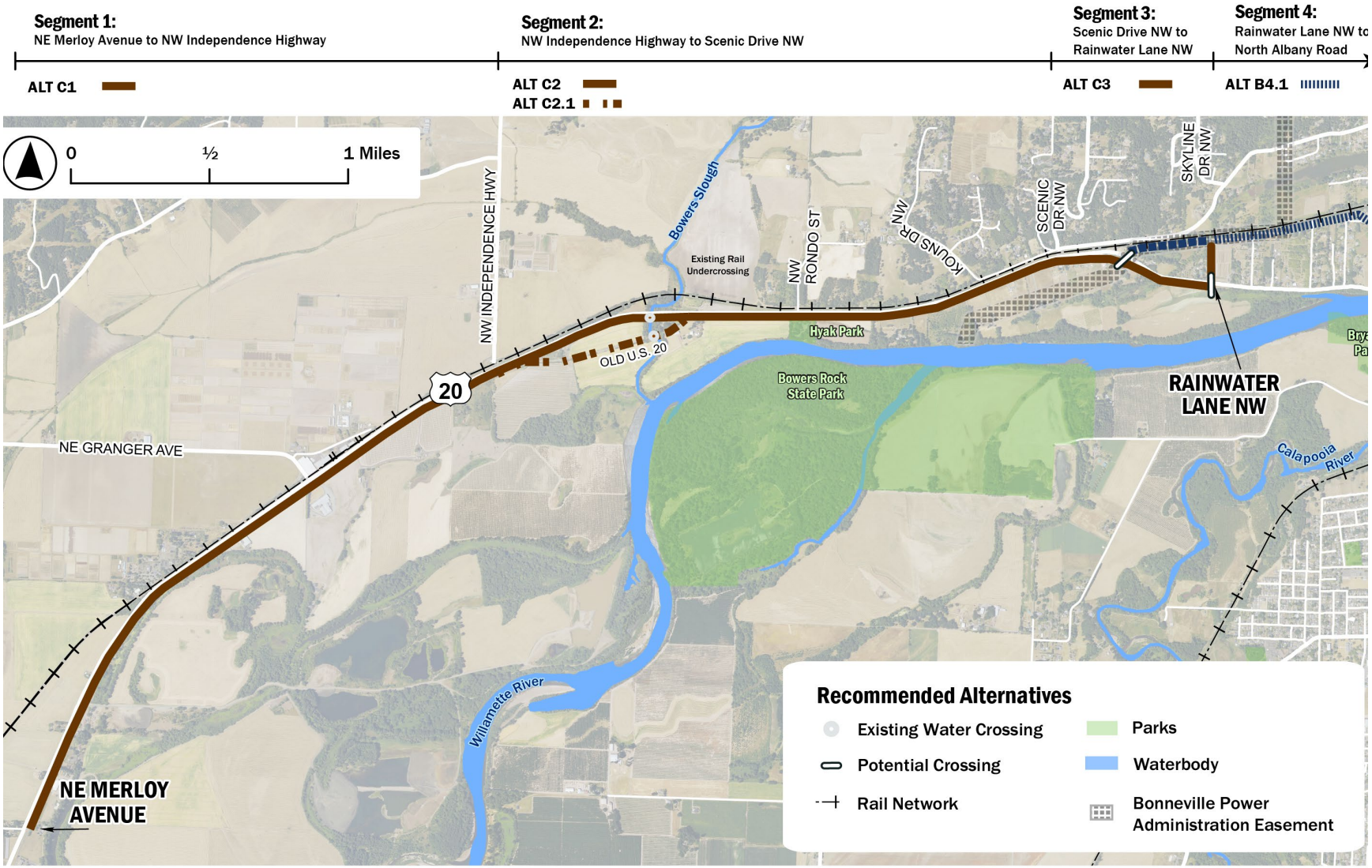
4.4.2 Alternative B4.1

This alternative follows the previously designed route that travels east from approximately Rainwater Lane NW toward North Albany Road. The path is located south of the railroad along the BPA easement until it turns south to follow local roadways before connecting to North Albany Road at Hickory Street NW. This alternative is applicable if the path west of this segment remains south of the railroad. As this alternative has previously-completed final designs, few challenges are expected. This alternative provides direct connections to the transit center, commercial destinations, and would be a more direct path to connect to downtown Albany.

5. Recommendations

Based on the analysis and discussion presented in this report, the following alternatives are recommended to advance for further analysis and development (see Figure 41):

- **Alternative C1, Constrained Option 2:** This option presents project benefits related to overall construction costs as well as considerations for overall maintenance. This option may also have fewer environmental impacts, right-of-way needs, and design challenges. While this alternative is recommended to advance, it should be noted that the Highway Realignment option should be considered in the long-term if funding becomes available.
- **Alternative C2** and **Alternative C2.1:** Alternative C2 would provide a continuous facility and consistent user experience with Segment 1. Overall, this alternative is expected to have fewer challenges related to permitting and community support. However, due to the high cost and potential environmental constraints associated with a new bridge over Bowers Slough, Alternative C2.1 should be explored further with private property owners. Alternative C2.1 would also provide a more comfortable user experience, as it would be set back from the highway.
- **Alternative C3, Elevated Boardwalk Design Option** and **Alternative C3.2, east of U.S. 20** are recommended for further review. The determination of a preferred alternative in Segment 3 will depend significantly on the preferred crossing option. Two crossings are recommended for further consideration: **BPA Easement, Overcrossing** and **Rainwater Lane NW, At Grade**. The resulting alternative could be a combination of these alignment and crossing options. In general, these alternatives do not require interaction with the railroad and connect to the previously-designed path, maximizing prior public investment. Continued exploration of these options will include design and permitting challenges associated with the regulatory floodway, EFU zoning, and crossing comfort and safety.
- **Alternative B4.1** is the path previously designed by Benton County located south of the railroad. The recommended alternatives identified for Segments 1, 2, and 3 would connect to this alternative as the path continues east toward North Albany Road.



Sources: Benton County, Linn County, Oregon Department of Transportation (ODOT), OregonStatewide Imagery Program (2024), DOGA

Figure 41. Alternatives Recommended to Advance

6. References

City of Albany. 1999. Willamette River, Calapooia River, and Oak Creek Local Wetland Inventory. Community Development Department, City of Albany.

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Appendix A

Alignment Screening Report

Available by Request

Appendix B

Design and Evaluation Criteria

Available by Request

Appendix C

Conceptual Design Exhibits

Available by Request

Appendix D

Permitting Strategy

Available by Request

Appendix E

At-Grade Crossing Evaluation

Available by Request