

6.1 Introduction

This chapter evaluates and documents the Livingston Avenue Bridge Project in terms of its compliance with the requirements of Section 4(f) of the USDOT Act of 1966 (49 USC § 303 and Title 23 USC § 138).¹³⁴ Section 4(f) governs the use of land from parks, recreation areas, and wildlife and waterfowl refuges and historic properties (sites that are listed on or determined eligible for listing on the National Register of Historic Places [NR-listed and NR-eligible]). Collectively, these are referred to as Section 4(f) properties. The requirements of Section 4(f) apply to the operating administrations of USDOT, including FRA. The following Section 4(f) properties located near the Livingston Avenue Bridge are discussed in this chapter:

- Corning Riverfront Park (Albany)
- Riverfront Preserve (Albany)
- Mohawk–Hudson Bike–Hike Trail (Albany)
- Albany Railroad Viaduct (Albany)
- Livingston Avenue Bridge (Albany and Rensselaer)

6.2 Regulatory Context

Section 4(f) protects parks and recreation areas of national, state, or local significance that are both publicly owned and open to the public; publicly owned wildlife and waterfowl refuges of national, state, or local significance that are open to the public; and historic sites of national, state, or local significance in public or private ownership, regardless of whether they are open to the public. Section 4(f) also protects Federally designated Wild and Scenic Rivers that are publicly owned and function as, or are designated in a management plan as, a significant park, recreation area, or wildlife and waterfowl refuge.

Section 4(f) of the USDOT Act stipulates that FRA and other USDOT operating administrations may not approve the use of Section 4(f) properties unless they have determined that one of the following conditions applies:

- There is no feasible and prudent alternative that would avoid the use of the Section 4(f) property and the action includes all possible planning to minimize harm to that property resulting from such use.
- The use of the Section 4(f) property, including any measures(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) will have a *de minimis* impact, as defined in 23 CFR § 774.17, on the property.

FRA uses the Federal Highway Administration's (FHWA's) *Section 4(f) Policy Paper*¹³⁵ as guidance for complying with the regulations.

¹³⁴ In 1983, Section 4(f) of the USDOT Act was codified as 49 USC §303(c), but this law is still commonly referred to as Section 4(f).

¹³⁵ Section 4(f) Policy Paper, FHWA Office of Planning, Environment and Realty, July 20, 2012.

6.2.1 Section 4(f) Use

The Section 4(f) regulations define three types of “use” of Section 4(f) properties (23 CFR § 774.17):

- Land from the Section 4(f) property is permanently incorporated into a transportation facility;
- There is a temporary occupancy of land that is adverse in terms of the statute’s preservation purpose, as determined by the criteria in 23 CFR § 774.13(d);¹³⁶ or
- There is a “constructive” use of a Section 4(f) property, as defined in 23 CFR § 774.15(a).¹³⁷

Whenever a Section 4(f) property would be used for a transportation project, the responsible USDOT operating administration must demonstrate that there is no feasible and prudent alternative to the use of the Section 4(f) property, and that the project includes all possible planning to minimize harm to the Section 4(f) property. Additionally, if there is no feasible and prudent avoidance alternative to the use of a Section 4(f) resource, and multiple alternatives would use Section 4(f) resources, FRA may approve only the alternative that causes the least overall harm in light of Section 4(f)’s preservation purpose. The responsible USDOT operating administration must coordinate with the U.S. Department of the Interior (DOI), and if appropriate, with the U.S. Department of Housing and Urban Development (HUD) and the U.S. Department of Agriculture (USDA), and the appropriate official(s) with jurisdiction over the Section 4(f) property, prior to approving the use of a Section 4(f) resource (23 CFR § 774.5(a)).¹³⁸ This coordination must be documented in a project’s Section 4(f) evaluation.

6.2.2 De Minimis Impacts

A *de minimis* impact involves the use of Section 4(f) property that is generally minor in nature. A *de minimis* impact is one that—after taking into account avoidance, minimization, mitigation, and enhancement measures that are committed to by the applicant—results in no adverse effect to a historic site and no adverse effect to the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f). Once FRA, through appropriate consultation and public involvement, determines that a transportation use of a Section 4(f) property results in a *de minimis* impact, and documents that determination, analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete.

6.2.3 Exceptions to the Requirement for Section 4(f) Approval

The Section 4(f) regulations (23 CFR § 774.13) identify various exceptions to the requirement for Section 4(f) approval, including, among others: (1) restoration, rehabilitation, or maintenance of transportation facilities that are NR-listed or NR-eligible when adverse effects will not occur; (2) archaeological sites that are NR-listed or NR-eligible when the resource is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place;

¹³⁶ Temporary occupancy results when Section 4(f) property, in whole or in part, is required for project construction-related activities. The property is not permanently incorporated into a transportation facility, but the activity is considered to be adverse in terms of the preservation purpose of Section 4(f).

¹³⁷ “A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired.”

¹³⁸ As defined in 23 CFR § 774.17, for public parks, recreation areas, and wildlife and waterfowl refuges, the official(s) with jurisdiction are the official(s) from the agency or agencies that own and/or administer the property in question, and who are empowered to represent the agency or agencies on matters related to the property. For historic sites, the official with jurisdiction is the relevant SHPO, as well as the ACHP if ACHP has chosen to participate in consultation in accordance with Section 106. There may be more than one official with jurisdiction for the same Section 4(f) property.

and (3) temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f).¹³⁹

6.2.4 Nationwide Programmatic Section 4(f) Evaluations

The Section 4(f) regulations (23 CFR § 744.3(d)) provide the authority to develop programmatic Section 4(f) evaluations as a time-saving alternative to individual evaluations for certain types of uses. An approved programmatic Section 4(f) evaluation may only be used if the project meets the specific conditions identified within the programmatic evaluation. FHWA developed the following five nationwide Section 4(f) programmatic evaluations:

1. Independent Walkway and Bikeway Construction Projects
2. Historic Bridges
3. Minor Involvements with Historic Sites
4. Minor Involvements with Parks, Recreation Areas and Waterfowl and Wildlife Refuges
5. Net Benefits to a Section 4(f) Property

On January 7, 2021, FRA and FTA adopted FHWA's nationwide programmatic Section 4(f) evaluations for certain transportation projects having a net benefit to Section 4(f) properties (Nationwide Net Benefit Programmatic Evaluation) and for certain transportation projects that use historic bridges (Nationwide Historic Bridges Programmatic Evaluation). These nationwide Section 4(f) programmatic evaluations provide the USDOT agencies with an alternative to the individual Section 4(f) evaluation process for demonstrating compliance with Section 4(f) requirements, as applicable.¹⁴⁰

6.3 Proposed Action

The proposed action would address the problems posed by the existing Livingston Avenue Bridge, which is near the end of its serviceable life, and improve reliability and reduce passenger and freight train delays along this segment of the Empire Corridor.

6.3.1 Need, Purpose, Goals and Objectives

The purpose of the Livingston Avenue Bridge Project is to improve reliability and reduce passenger and freight train delays along this segment of the Empire Corridor; achieve (at a minimum) a long-term state-of-good-repair for the bridge; eliminate existing bridge and track deficiencies; and maintain or improve navigation near the bridge. This will ensure that the Livingston Avenue Bridge meets modern passenger and freight rail capacity and load (weight) standards, maintains acceptable levels of safety, and supports the long-term utility and vitality of the Empire Corridor.

The superstructure of the existing bridge was erected in 1901-1903 on a substructure that dates to the 1860s and is near the end of its serviceable life. The bridge does not meet current design

¹³⁹ Under the provisions of 23 CFR § 774.13(d), a temporary occupancy does not constitute a Section 4(f) use if the following conditions are met: (1) The duration is less than the time needed for the project's construction and there is no change in ownership of land; (2) The scope of work is minor, in that both the nature and magnitude of changes to the 4(f) property are minimal; (3) No permanent, adverse physical impacts are anticipated, and there will be no temporary or permanent interference with the protected activities, features, or attributes of the property; (4) The land is fully restored, and returned to a condition at least as good as that which existed prior to the project; and (5) The agreement of the official(s) with jurisdiction over the Section 4(f) property regarding the above conditions is documented. If one or more of these conditions is not met, there is a use of the Section 4(f) property, even though the duration of construction related activities is temporary.

¹⁴⁰ <https://www.federalregister.gov/documents/2020/12/08/2020-26968/adoption-of-the-federal-highway-administrations-nationwide-section-4f-net-benefit-and-historic>.

standards related to load, speed, and vertical clearance. The two-track bridge can be used only by one train at a time and the maximum authorized speed is 15 mph, which is slower than the 40-mph maximum authorized speed on adjacent rail segments. The bridge essentially acts as a single-track bridge, restricting capacity. The vertical clearance for trains traveling across the bridge is nonstandard (18 feet 2 inches, compared to the 23-foot vertical clearance standard established by AREMA).

Recent inspections have confirmed that the bridge has significant deterioration. The superstructure and substructure are in fair to poor condition, including some components with substantial corrosion and several piers that are in critical condition, including piers that have substantial undermining of the timber foundations that support the stone piers. The bridge was not designed for and does not meet modern seismic codes.

The bridge also has non-standard vertical and horizontal clearances, which limit the types of carriages and freight that can traverse the span. The vertical clearance for trains traveling across the bridge is non-standard, at 18 feet 2 inches, compared to the 23-foot vertical clearance standard established by AREMA and used by Amtrak and CSX, and is not high enough to accommodate modern, double-stack freight trains.

The swing span frequently malfunctions, resulting in delays to passenger trains, freight trains, and boat traffic. In recent years, Amtrak has kept a maintenance team on site to address issues with the swing span which has reduced delays associated with malfunctions. Failure of any component of the existing system would cause delays to trains or, if the bridge was stuck or indicated as unable to open, to river traffic.

The current restrictions on bridge operations compromise the short- and long-term utility and vitality of New York's passenger and freight rail service via the Empire Corridor. High-speed passenger rail service along the Empire Corridor is critical to New York State's economic future and environmental sustainability. The Livingston Avenue Bridge is a restrictive bottleneck along the Empire Corridor that impedes future high-speed passenger rail service plans.

Improving the reliability of the movable span, and therefore the ability to open and close the bridge, is important for maintaining the navigation channel past Albany.

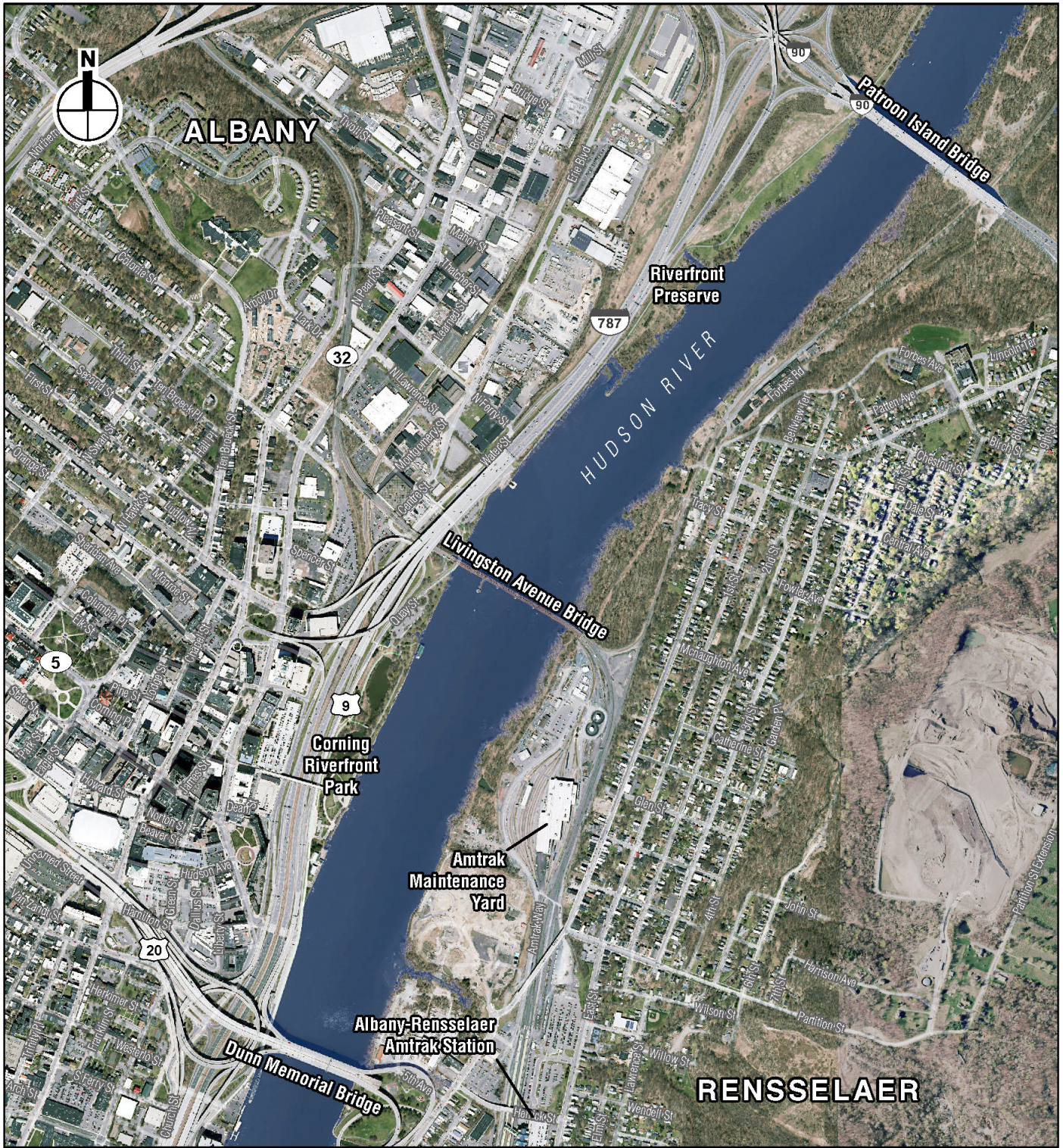
To evaluate the Project alternatives developed as part of the environmental review process, NYSDOT established Project goals. The Project goals, and related objectives that illustrate how those goals can be achieved, are listed in **Exhibit 6-1**.

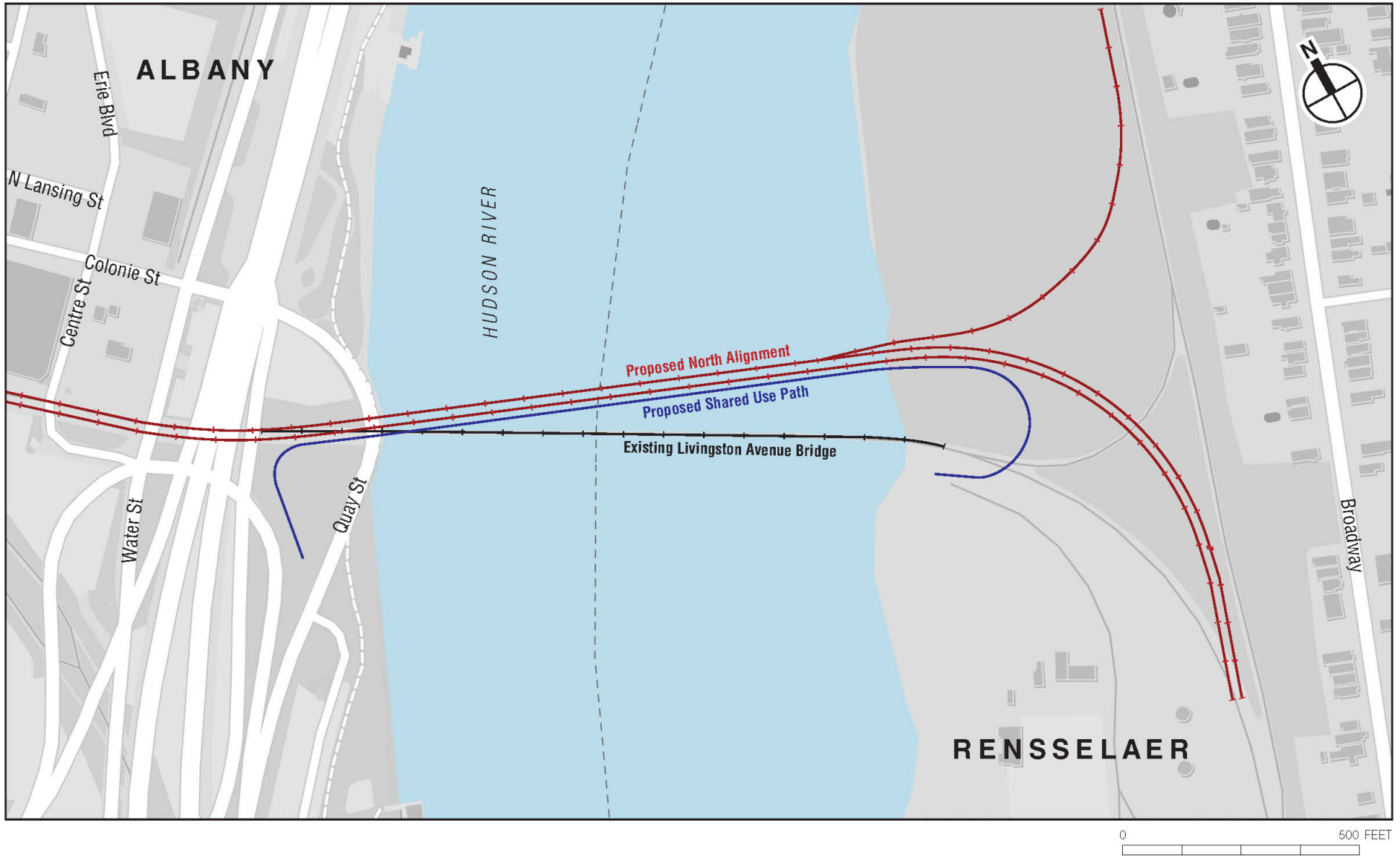
6.3.2 Project Alternatives

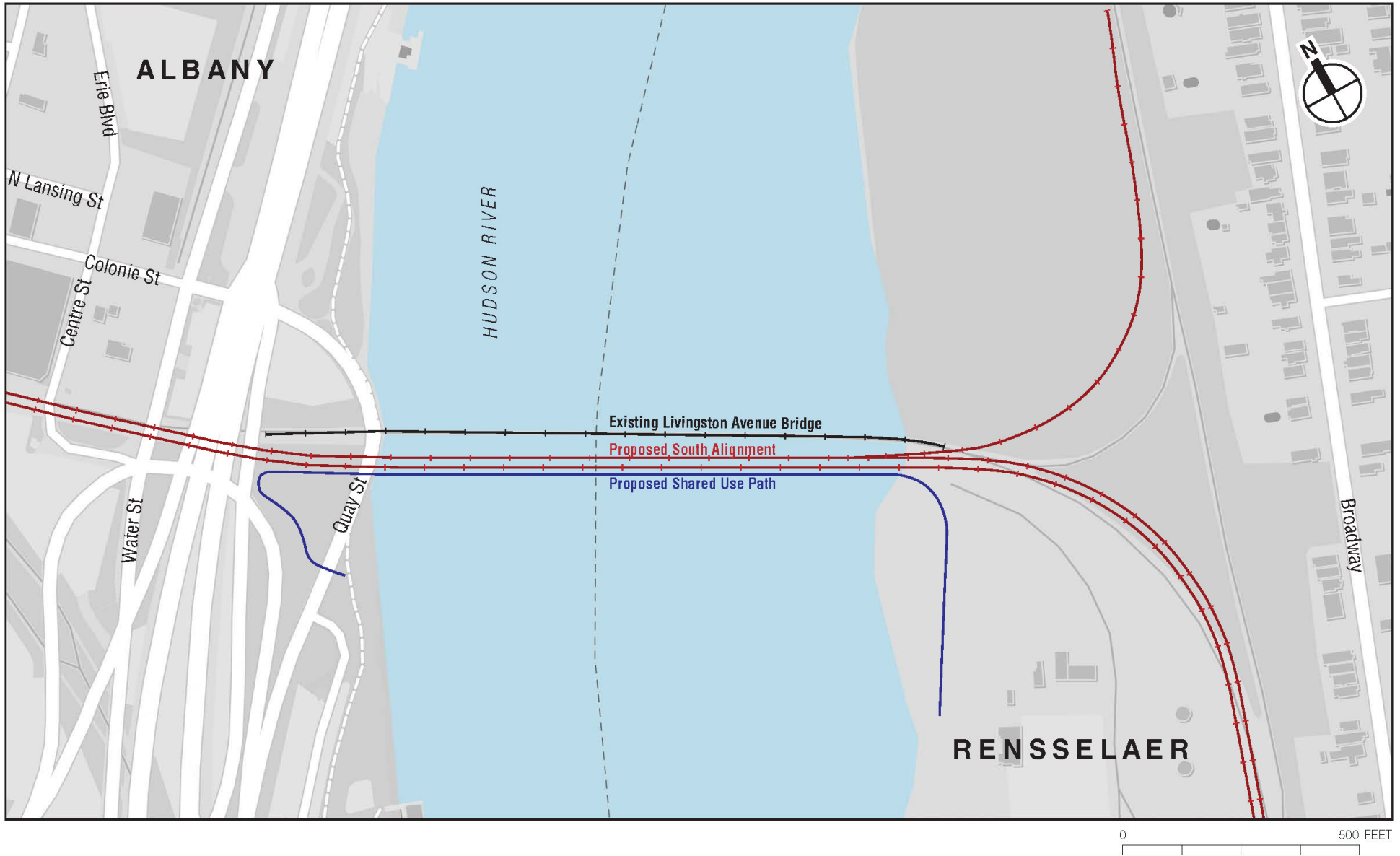
As described in **Chapter 2, "Project Alternatives,"** of the EA, numerous potential alternatives for the Project were evaluated to identify reasonable alternatives that would meet the Project's purpose and need as well as some or all of its goals and objectives. NYSDOT identified two Build Alternatives that would meet the Project purpose, need, goals, and objectives, which have been progressed for detailed evaluation in the Environmental Assessment: a replacement bridge to the north of the existing bridge and a replacement bridge to the south of the existing bridge, which is NYSDOT's Preferred Alternative (see **Figures 6-1 through 6-4**).

6.3.2.1 No Action Alternative

NEPA requires examination of a No Action Alternative, which is an alternative against which the potential benefits and impacts of Build Alternatives can be compared. In the No Action Alternative, the Livingston Avenue Bridge would remain in service as is, with continued routine maintenance and repairs. No major improvements to or replacement of the Livingston Avenue Bridge would be undertaken with the No Action Alternative. The No Action Alternative would not include any changes to the existing track configuration, including the track configuration of the wye to the east of the bridge. The bridge's live load capacity would not be improved, existing geometric









Proposed Replacement Bridge with Moveable Span in Raised Position



Proposed Replacement Bridge with Moveable Span in Lowered Position

deficiencies and vertical and horizontal clearance deficiencies would not be corrected, and the wye at the east approach to the bridge would not be realigned. With these substandard conditions, operations across the bridge would remain limited to single-track operation at 15 mph.

The No Action Alternative would result in the continued deterioration of the structure, resulting in increased maintenance and eventually could require the structure to be closed to rail traffic. This alternative would not meet the purpose and need for the Project or satisfy the Project goals and objectives or the programming goals of improving service reliability and operational flexibility, improving the load capacity and reducing the operational limitations, and minimizing conflicts with navigational traffic.

Exhibit 6-1 Project Goals and Objectives

Project Goals	Related Objectives
Goal 1: Improve passenger rail operations, service reliability, and operational flexibility	<ul style="list-style-type: none"> • Improve the bridge such that it can support simultaneous two-track operation, thereby removing delays to rail traffic. • Increase operational speeds along the bridge to a minimum of 30 mph.* • Correct all identified track deficiencies on the bridge and its approaches to meet current design standards. • Improve operations by providing a signal system that meets current standards and is consistent with the signal systems recently completed on the two adjacent rail projects (Albany to Schenectady Double Track and Albany-Rensselaer 4th Track projects). • Ensure consistency with plans for the Empire Corridor and HSIPR program. • Accomplish Goal 1 in a cost-effective manner.
Goal 2: Improve the load capacity of the corridor and remove existing structural operational limitations	<ul style="list-style-type: none"> • Maintain or improve freight movement across the bridge. • Provide a river crossing capable of meeting current AREMA live-load standards (Cooper E-80). • Provide a river crossing with a design life of a minimum of 100 years. • Provide a river crossing that meets AREMA structural design criteria. • Provide a river crossing with a track vertical clearance of 23 feet and 14-foot track centers, which will comply with Amtrak standards. • Provide the geometric clearances required by AREMA, CSX, and Amtrak for dual-track operation. • Accomplish Goal 2 in a cost-effective manner.
Goal 3: Minimize conflicts with navigational traffic	<ul style="list-style-type: none"> • Provide a river crossing that meets or exceeds existing horizontal navigational clearances. • Avoid or minimize disruptions to river traffic during bridge construction. • Avoid or minimize delays to trains or river traffic during bridge operation. • Accomplish Goal 3 in a cost-effective manner.

Note: * 30 mph is the maximum feasible speed on the bridge, given the curve of the approach tracks.

6.3.2.2 Build Alternative 1 – Replacement on an Adjacent North Alignment

This alternative would remove the existing bridge and construct a new bridge, including a lift navigation span, on a skewed alignment adjacent to and north of the existing bridge. The skewed alignment is necessary for a bridge north of the existing bridge so that the tracks could connect

back into the existing alignment on the west side of the Hudson River before it passes under the eight-lane I-787 viaduct, while also providing a straight alignment for the movable span. The alignment would be approximately 200 feet north of the existing bridge on the east side of the river and would abut the existing bridge on the west side. The new lift span navigational opening would be approximately 190 feet wide. The new bridge would be designed to accommodate two tracks with 30 mph operating speed.

This alternative would include rehabilitation and reconfiguration of the rail bridges over Water and Centre Streets in Albany to accommodate the shift in the track alignment. Alternative 1 would include a shared use path for bicycles and pedestrians connecting the proposed Rensselaer Riverfront Multi-Use Trail on the east side of the river with the Mohawk–Hudson Bike–Hike Trail on the west side. The path would be a 12-foot-wide walkway to provide two-way pedestrian and bicycle traffic across the river. The walkway would include scenic overlooks at each end of the movable span to provide an area for pedestrians to collect and bicyclists to dismount when the bridge is opening/closing and the walkway gates are closed.

6.3.2.3 Build Alternative 2 - Replacement on Adjacent South Alignment

This alternative would remove the existing bridge and construct a new bridge, including a lift navigation span, on an alignment parallel to and approximately 50 feet south of the existing bridge. The new bridge would be designed to accommodate two tracks of Cooper E-80 operating at 30 mph. The new lift span navigational opening would be approximately 190 feet wide. The new bridge would be designed to accommodate two tracks with 30 mph operating speed. This alternative would also require rehabilitation and reconfiguration of the rail bridges over Water and Centre Streets in Albany to accommodate the shift in the track alignment. Build Alternative 2 would also include a shared use path for bicycles and pedestrians, as described above for Build Alternative 1.

6.4 Use of Section 4(f) Properties

This section describes FRA's proposed determinations regarding the impacts of the Build Alternatives to Section 4(f) properties.

There are no publicly owned wildlife and waterfowl refuges or Federally designated Wild and Scenic Rivers in the vicinity of the Project site. The portions of the Hudson River designated as a New York State wild, scenic, and/or recreational river are more than 40 miles upstream of the Project site. The following subsections discuss the impacts of the Build Alternatives on public parks and recreation areas and on historic properties. **Exhibit 6-2** summarizes the Section 4(f) properties near the Project site and FRA's proposed determination related to Section 4(f) use of those properties.

6.4.1 Public Parks and Recreation Areas

Construction activities for either Build Alternative would occur in close proximity to three existing public parks and recreation areas in Albany: Corning Riverfront Park, the Riverfront Preserve, and the Mohawk–Hudson Bike–Hike Trail. These are considered Section 4(f) properties and are described in this section.

Exhibit 6-2
Section 4(f) Properties FRA Evaluated

Resource Type	Section 4(f) Property	Description	Project Activities at or Near Property	FRA's Proposed Determinations of Section 4(f) Use
Park or Recreational Resource	Corning Riverfront Park (Albany)	18-acre waterfront park with playgrounds, trails, and picnic areas	Construction activities near the park	No Use
Park or Recreational Resource	Riverfront Preserve (Albany)	Waterfront park and nature preserve extending 1.5 miles along river	Construction activities near the park	No Use
Park or Recreational Resource	Mohawk–Hudson Bike–Hike Trail (Albany)	Paved, off-road riverfront trail for biking and hiking	Short-term, temporary closures to trail at construction site	Section 4(f) exception applies: Temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f)
Historic Property	Albany Railroad Viaduct (Albany)	Railroad viaduct west of the Livingston Avenue Bridge consisting of three separate viaducts over local streets; NR-eligible	Minor modifications to the Centre Street and Water Street bridges designed to minimize the change in appearance of the bridges; no adverse effect under Section 106	<i>De minimis</i> impact
Historic Property	Livingston Avenue Bridge (Albany and Rensselaer)	Steel swing-span railroad bridge over the Hudson River; NR-eligible	Demolition and replacement of bridge; adverse effect under Section 106	Nationwide Historic Bridges Programmatic Section 4(f) Evaluation applies

There is a future recreational facility in Rensselaer – the Rensselaer Riverfront Multi-Use Trail – which FRA has determined is not a Section 4(f) property.¹⁴¹

6.4.1.1 Corning Riverfront Park

Corning Riverfront Park, an 18-acre City of Albany-owned park, extends along Albany's Hudson River shoreline just south of the existing Livingston Avenue Bridge. It has a number of park amenities including playgrounds, walking and biking trails, and picnic areas. While construction

¹⁴¹ The City of Rensselaer is planning to construct a multi-use riverfront trail along its Hudson River waterfront from the esplanade at DeLaet's Landing on the south, which is south of the Livingston Avenue Bridge, to the City's boat launch north of Tracy Street on the north, which is north of the Livingston Avenue Bridge in Rensselaer's Riverfront Park. The trail would be a paved, off-road trail for pedestrians and cyclists. The City of Rensselaer owns an easement for the trail right-of-way up to approximately 70 feet south of the existing Livingston Avenue Bridge; the City has not yet acquired the proposed trail right-of-way beneath and to the north of the existing Livingston Avenue Bridge, although it proposes to acquire this portion in the near future. The trail project is being funded in part through the Transportation Alternatives Program (TAP) and Congestion Mitigation and Air Quality Improvement (CMAQ) Program that NYSDOT administers. Projects that receive funding through those two programs must have a focus on non-motorized transportation. Construction activities for the Build Alternative would affect the proposed right-of-way of the Rensselaer Riverfront Multi-Use Trail. However, the City of Rensselaer, which is the official with jurisdiction over this proposed trail, indicated during coordination with NYSDOT that it does not consider the future trail to be a Section 4(f) property, given its primary purpose for transportation. Considering this as well as the uncertainty regarding when the proposed trail would be constructed and opened to the public and the lack of dedicated public ownership of a trail easement for the majority of the affected portion of the proposed trail right-of-way, FRA has determined that the Rensselaer Riverfront Multi-Use Trail is not a Section 4(f) property.

activities associated with both Build Alternatives would occur close to this park, they would not physically affect the park. In addition, construction and operation of the Build Alternatives would not result in adverse impacts on this park. Consequently, there would be no use of Corning Riverfront Park.

6.4.1.2 Riverfront Preserve

The Riverfront Preserve is a public park and nature preserve that extends along Albany's Hudson River shoreline for approximately 1.5 miles beginning just north of the existing Livingston Avenue Bridge. The Riverfront Preserve has walking and biking trails and also contains a boat launch and boathouse for the Albany Rowing Center. Near the Project site, the Riverfront Preserve is located on NYSDOT-owned land but is operated by the City of Albany. While construction activities associated with both Build Alternatives would occur close to this park, they would not physically affect the park. In addition, construction and operation of the Build Alternatives would not result in adverse impacts on this park. Consequently, there would be no use of the Riverfront Preserve.

6.4.1.3 Mohawk–Hudson Bike–Hike Trail

The Mohawk–Hudson Bike–Hike Trail runs parallel to the west side of the Hudson River, including through the Corning Riverfront Park and the Riverfront Preserve. It is part of the larger Canalway Trail, which, when complete, will follow the Erie Canal from Buffalo to Albany. Near the Project site, the Mohawk–Hudson Bike–Hike Trail is a paved off-road trail that NYSDOT owns and the City of Albany maintains.¹⁴² Short-term construction activities for the Livingston Avenue Bridge Project would occur at the Mohawk–Hudson Bike–Hike Trail for both Build Alternatives, where the trail passes beneath the existing Livingston Avenue Bridge and the right-of-way for the proposed replacement bridge. During brief periods when overhead work occurs, there may be temporary closures of a short segment of the trail. As necessary, detours would be clearly marked to divert pedestrians and cyclists around the construction zone to allow unimpeded continuity of the trail. Otherwise, the trail would remain open during construction of the new bridge under both Build Alternatives. The Project's impacts on the Mohawk–Hudson Bike–Hike Trail would be temporary; work affecting the trail would be minor; land ownership changes would not occur; and the trail would be returned to a condition at least as good as that which existed prior to construction. Therefore, this temporary occupancy would not constitute a Section 4(f) use as per the criteria in 23 CFR § 774.13(d). Instead, it would qualify for the exemption applied to temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f).

NYSDOT and the City of Albany are the officials with jurisdiction for the Mohawk-Hudson Bike-Hike Trail. FRA and NYSDOT coordinated with the City of Albany and in a letter dated January 8, 2021, the City of Albany concurred with this determination (see **Appendix B-9, "Section 4(f)"**).

6.4.2 Historic Sites

Section 4(f) applies to historic sites that are NR-listed or NR-eligible, unless one of the exceptions defined in the regulations (23 CFR § 774.13) applies. Section 4(f) historic sites are identified through the consultation process established under Section 106 of the National Historic Preservation Act and its implementing regulation, 36 CFR Part 800. **Section 4.5, "Cultural Resources,"** of this EA describes the results of the Section 106 consultation process for the Project.

Section 4(f) applies to archeological sites that are NR-listed or NR-eligible, including those discovered during construction. However, Section 4(f) does not apply if FRA determines, after consultation with SHPO and Federally recognized tribes (as appropriate), and the ACHP (if participating) that the archaeological resource is important chiefly because of what can be learned

¹⁴² <https://www.cdtcmpo.org/mohhudns.pdf>.

by data recovery (even if it is agreed not to recover the resource) and has minimal value for preservation in place, and SHPO, Tribal Nation(s), and ACHP (if participating) do not object to this determination (23 CFR 774.13(b)).

Based on investigations conducted, FRA and NYSDOT have concluded that the Area of Potential Effects (APE) is not sensitive for archaeological resources (i.e., it does not have the potential to contain buried archaeological resources). Therefore, no Section 4(f)-protected archaeological properties have been identified to date. If any archaeological resources are discovered prior to or during construction, they would undergo Section 4(f) evaluation to determine their eligibility as protected properties under Section 4(f) and, if necessary, to evaluate any feasible and prudent avoidance alternatives.

Two historic architectural properties are within the Project's APE, the NR-eligible Albany Railroad Viaduct and the NR-eligible Livingston Avenue Bridge, discussed below. Another historic property, the Central Warehouse and Centre Street railroad spur bridge, is immediately adjacent to the APE and would not be affected by the Project.

6.4.2.1 Albany Railroad Viaduct

This rail viaduct west of the Livingston Avenue Bridge includes the Water Street Railroad Bridge and the Centre Street-Erie Boulevard Railroad Bridge within the APE, and the Montgomery Street Railroad Bridge just outside the APE.¹⁴³ The original viaduct was built as the western approach to an earlier Hudson River crossing built by the Hudson River Bridge Company according to designs by prominent engineer Julius W. Adams. The original viaduct approach structure in this location consisted of a wood trestle, which was replaced in the 1870s by an earthen causeway faced with limestone blocks and incorporating three trestle bridges. The spans were replaced in 1882, at which point the structure was raised in height and transformed to a viaduct. The superstructures of the viaduct were replaced once more in 1901-1902. The earlier masonry walls of the viaduct were retained but encased in concrete. The span over Water Street was replaced in 1947. Documentation notes that elements that embody the historic character of the viaduct include: the three spans over Water, Centre, and Montgomery Streets; the concrete-encased structure that connects them; and distinctive details such as early 20th century date plates in the concrete. The Albany Railroad Viaduct was determined NR-eligible under Criterion A,¹⁴⁴ due to the fact that its various construction episodes are associated with the development of early national freight travel and the consolidation and modernization of passenger and freight rail service.

Both Build Alternatives would require modifications to the Centre Street and Water Street bridges of the Albany Railroad Viaduct. The bridges would be rehabilitated and reconfigured to accommodate the shift in the track alignment. At each of those bridges, the beam seats of the bridge abutments that support the bridge girders (i.e., the beam seats and girder bearings) would be modified or replaced and several pairs of the existing deck girders (i.e., bridge beams) would be repositioned to support the new alignment. At the Water Street bridge, a set of existing deck girders would be removed to accommodate this shift.

The proposed modifications are designed to minimize the change in appearance of the bridges. At the Water Street bridge, an interior pair of girders would be removed, and an exterior pair would be shifted inward so that the appearance from the street would be maintained. This would leave

¹⁴³ Two other bridges located outside of the APE (the North Pearl Street Bridge and the Broadway-Colonie Street Bridge) are commonly considered part of the Albany Railroad Viaduct structure; however, the Cultural Resources Survey for the Project did not identify these as part of the NR-eligible resource. The Broadway-Colonie Street Bridge is individually NR-listed and is a contributing element within the NR-listed Broadway- Livingston Avenue Historic District.

¹⁴⁴ NR Criterion A indicates that the property is associated with events that have made a significant contribution to the broad patterns of history.

an exposed portion of the bridge seats on the outside of the bridge abutments but would not otherwise change the appearance of the structure. At the Centre Street bridge, an interior pair of girders would be shifted, and the exterior girders would remain unchanged. No alterations to the Montgomery Street bridge (also part of the Albany Railroad Viaduct) would be required.

Although the proposed changes would directly affect the Water Street rail bridge and the Centre Street rail bridge, and therefore the Albany Railroad Viaduct as a whole, FRA and NYSDOT have concluded, and SHPO concurred, that the change would not constitute a Section 106 adverse effect under either Build Alternative. In both alternatives, the existing fascia girders would be retained (though sometimes shifted along the bridge seat). No new girders would be used. The existing reinforced concrete bridge seats and girder bearing pedestals would be repaired and/or reconstructed to conform to the new alignment of the girders above. The existing reinforced concrete abutments would be retained in their entirety. Some partial depth or surface repairs to the abutments may be necessary based on a full condition inspection of the abutments during final design. Changes in the appearance of the component bridges and the larger viaduct that would result from the proposed alterations would be relatively minor and would not change the characteristics of the viaduct that qualify it for inclusion on the NR. The integrity of the property's location, design, setting, materials, workmanship, feeling, or association would not be diminished to an extent that would disqualify the property for inclusion on the NR.

FRA is proposing to make a Section 4(f) finding of *de minimis* impact related to the Project's use of the Albany Railroad Viaduct. As defined in the Section 4(f) regulations, FRA may make a finding of *de minimis* impact on a historic site when FRA determines as part of the Section 106 process that the project would have no adverse effect on the historic site, or there would be no historic sites affected by the transportation project. SHPO and ACHP (if participating in the consultation process) must concur with this finding of no adverse effect in writing. In addition, FRA must consider the views of any consulting parties participating in Section 106 consultation. FRA must inform SHPO (and ACHP if participating) of its intent to make a *de minimis* impact determination based on their concurrence in the finding of "no adverse effect" or "no historic properties affected."

In a letter dated August 12, 2020, FRA notified SHPO of its finding of no adverse effect on the Albany Railroad Viaduct and its intention to make a *de minimis* impact finding to comply with Section 4(f) if SHPO concurred with the finding of no adverse effect. In a letter dated September 23, 2020, SHPO concurred with the finding of no adverse effect on the Albany Railroad Viaduct.

6.4.2.2 Livingston Avenue Bridge

This railroad bridge was built for the New York Central Railroad in 1901-1903 by the American Bridge Company. It is the third successive bridge in this location, preceded by an iron truss bridge in 1872-1875 and the original wood truss bridge of 1864-1866. The current bridge was built on the abutments and piers of the original bridge, constructed in the 1860s. It is a riveted steel, Baltimore-truss swing bridge that is 1,272 feet long. A 260-foot continuous truss swing span and four fixed trusses span the navigable portion of the Hudson River. The piers are mortared cut limestone with continuous timber piles. The swing span pivots 90 degrees clockwise to open the navigation channel on each side of the pivot pier. The span is operated by electric motors from a control booth positioned on top of the swing span truss above the pivot pier. Electricity is provided to the booth by wires suspended from steel frame towers at the ends of the adjacent fixed spans. It is eligible under NR Criterion C.¹⁴⁵ Both Build Alternatives would require demolition of the Livingston Avenue Bridge, which would constitute the use of a Section 4(f) property. FRA is proposing to

¹⁴⁵ NR Criterion C indicates that the property embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or is otherwise distinguished.

apply the Nationwide Historic Bridges Programmatic Evaluation to evaluate the use of the Livingston Avenue Bridge, as discussed below.

Historic bridges covered by the Nationwide Historic Bridges Programmatic Evaluation are unique because they are historic, yet also part of highway or railway systems that have continued to evolve over the years. Even though these structures are on or eligible for inclusion on the NR, they must perform as an integral part of a modern transportation system. When they do not or cannot, they must be rehabilitated or replaced in order to assure safety of the travelling public while maintaining system continuity and integrity. For the purpose of the Nationwide Historic Bridges Programmatic Evaluation, developed by FHWA and adopted by FRA in January 2021, a proposed action will “use” a bridge that is on or eligible for inclusion on the NR when the action will impair the historic integrity of the bridge either by rehabilitation or demolition. The programmatic evaluation applies when there are no feasible and prudent alternatives to the use of the historic bridge and the proposed rehabilitation or demolition project includes all possible planning to minimize harm resulting from such use. Additional information related to the applicability of this programmatic evaluation to the Livingston Avenue Bridge Project and FRA’s reliance on the Nationwide Historic Bridges Programmatic Evaluation is provided in **Sections 6.5 and 6.6**.

6.5 Nationwide Historic Bridges Programmatic Section 4(f) Evaluation and Applicability to the Livingston Avenue Bridge

In order to apply the Nationwide Historic Bridges Programmatic Evaluation to a rail project, FRA must first determine that the project meets the following criteria:¹⁴⁶

1. The bridge is to be replaced or rehabilitated with Federal funds.
2. The project will require the use of a historic bridge structure that is on or is eligible for listing on the NR.
3. The bridge is not a National Historic Landmark.
4. FRA conducted an evaluation of specific alternatives that would not affect the historic integrity of the bridge (a No Action Alternative, a new location alternative, and a rehabilitation alternative) and found that none of those alternatives would be feasible and prudent, and the Project includes specific measures to minimize harm set forth in the regulations.
5. FRA, SHPO, and ACHP have reached agreement through procedures pursuant to Section 106.

A summary of the applicability of each of these criteria to the Project is provided in **Sections 6.5.1 to 6.5.5** below.

6.5.1 Federal Funding

The Nationwide Historic Bridges Programmatic Evaluation may be applied only if the project would use Federal funds for the replacement or rehabilitation of the historic bridge. The Livingston Avenue Bridge Project would use Federal funding provided by the USDOT through FRA via the 2010 High Speed Intercity Passenger Rail Grant Program.

6.5.2 Use of a Historic Bridge Structure

To apply the Nationwide Historic Bridges Programmatic Evaluation, the project must require the use of a historic bridge structure that is on or eligible for listing on the NR. The New York State Museum completed a Cultural Resources Survey Report for the Project in June 2011 to identify

¹⁴⁶ https://www.environment.fhwa.dot.gov/legislation/section4f/4f_bridges.aspx

historic properties in the area near the Livingston Avenue Bridge. Based on the recommendations of that report, FRA determined that the Livingston Avenue Bridge was eligible for NR listing under NR Criterion C as an intact example of an early 20th century swing bridge. The SHPO concurred with FRA's NR eligibility finding on May 8, 2012. Both Build Alternatives would require demolition of the NR-eligible Livingston Avenue Bridge.

6.5.3 Not a National Historic Landmark

The Nationwide Historic Bridges Programmatic Evaluation may not be applied if the historic bridge is a National Historic Landmark (NHL). NHLs are properties that have been identified by the Secretary of the Interior as being nationally significant and are of exceptional value in representing an important theme in the history of the nation. The Livingston Avenue Bridge has not been recognized as an NHL and lacks the exceptional level of significance required for NHL designation.

6.5.4 Alternatives, Findings, and Mitigation

Before applying the Nationwide Historic Bridges Programmatic Evaluation, FRA must consider and evaluate the following alternatives and reach a finding that they are not feasible and prudent:

1. Do Nothing
2. Build on a new location without affecting the historic integrity of the old bridge.
3. Rehabilitate the historic bridge without affecting the historic integrity of the structure.

FRA's evaluation and findings for each of these alternatives is provided in **Section 6.5.6**.

Additionally, the project must include all possible planning to minimize harm. This occurs on projects involving the replacement of a historic bridge when:

1. FRA ensures that, in accordance with the Historic American Engineering Record (HAER) standards, or other suitable means developed through consultation, fully adequate records are made of the bridge.
2. The bridge is made available for an alternative use, provided a responsible party agrees to maintain and preserve the bridge; and
3. FRA, SHPO, and ACHP reach agreement through the Section 106 process on measures to minimize harm and those measures are incorporated into the project.

The incorporation of all possible planning to minimize harm into the Project is discussed in **Section 6.5.5** below.

6.5.5 Agreement Through Section 106 on Measures to Minimize Harm

To apply the Nationwide Historic Bridges Programmatic Evaluation to the Livingston Avenue Bridge Project, FRA, SHPO, and ACHP must reach an agreement on measures to minimize harm through the Section 106 process and these measures must be incorporated into Project design and implementation. Through consultation pursuant to the Section 106 regulations at 36 CFR 800.6(c), FRA, NYSDOT, and SHPO prepared a Draft Section 106 Memorandum of Agreement (MOA) to resolve the adverse effect of the Project on the NR-eligible Livingston Avenue Bridge. The Draft MOA includes the following stipulations:

- Documentation of the Livingston Avenue Bridge following HAER standards;
- Interpretive signage in waterfront parks on both sides of the river that conveys the history of the bridge, the railroad, and the area;
- A requirement that the new bridge be a truss bridge that incorporates key visual elements relating to the existing Livingston Avenue Bridge, the pulley housing and operator's building, as requested by SHPO on April 14, 2021;

- A requirement that NYSDOT actively seek new ownership of the Livingston Avenue Bridge for adaptive reuse or partial reuse at a new location. NYSDOT has begun marketing efforts for the bridge in coordination with publication of this EA. These marketing efforts consist of a combination of print and web-based ads that include an advertisement in the local newspaper for a minimum of 14 days and an announcement posted on the internet for a minimum of 2 months. NYSDOT will only consider viable offers that are consistent with the MOA stipulations. If ownership of the bridge is transferred for reuse, the transfer deed will include a preservation covenant that requires the new owner to retain the feature intact for a specified period of time.

6.5.6 Avoidance Alternatives: Findings

As noted above, prior to applying the Nationwide Historic Bridges Programmatic Evaluation, FRA must consider and evaluate the following alternatives and reach a finding that they are not feasible and prudent:

1. Do Nothing
2. Build on a new location without affecting the historic integrity of the old bridge.
3. Rehabilitate the historic bridge without affecting the historic integrity of the structure.

FRA and NYSDOT considered the following alternatives to avoid the use of the Livingston Avenue Bridge:

- **No Action Alternative:** “Do nothing” alternative (**Section 6.5.6.1**).
- **Build on a New Location Alternative:** FRA and NYSDOT considered two options for this alternative (**Section 6.5.6.2**).
 - **Permanent Detour Option:** Take the Livingston Avenue Bridge out of service, route train service to alternate routes, and leave the existing bridge in place for a non-rail use or as an unused monument (**Section 6.5.6.2.1**).
 - **Replacement Bridge on New Alignment Option:** Build a new bridge at a location farther from the existing bridge and leave the existing bridge in place for a non-rail use or as an unused monument (**Section 6.5.6.2.2**).
- **Rehabilitation Alternative/Bridge Repairs:** Rehabilitate through repairs to the existing Livingston Avenue Bridge and continue its use for rail traffic (**Section 6.5.6.3**).

6.5.6.1 No Action Alternative

Under the No Action Alternative, the existing Livingston Avenue Bridge would not be removed and would remain in operation, with continued routine maintenance and upkeep. No major improvements to or replacement of the Livingston Avenue Bridge would occur. For reasons of maintenance and safety, as described below, this alternative is not prudent.

6.5.6.1.1 Maintenance

The No Action Alternative would not address the existing conditions that cause NYSDOT to consider the bridge to be structurally deficient and deteriorated. Normal, routine maintenance is not adequate.

The No Action Alternative would not include any changes to the existing track configuration, including the track configuration of the wye to the east of the bridge. The bridge’s live load capacity would not be improved, existing geometric deficiencies and vertical and horizontal clearance deficiencies would not be corrected, and the wye at the east approach to the bridge would not be realigned. With these substandard conditions, operations across the bridge would remain limited to single-track operation at 15 mph.

The No Action Alternative would result in the continued deterioration of the structure, resulting in increased maintenance, and eventually could require the structure to be closed to rail traffic,

resulting in substantial operational difficulties along the Empire Corridor. If the bridge were to close in the future, trains would have to cross the Hudson River via an inefficient, longer route. In that situation, passenger trains could be diverted to lower class track and across another Hudson River crossing, the Alfred H. Smith Memorial Bridge, on the CSX Castleton Subdivision, which spans the river between Castleton-on-Hudson and Selkirk. In this case, routes would be longer and trains would either have to bypass the Albany-Rensselaer and Schenectady Stations completely or make circuitous routes to reach them that would add to the required detour (see **Section 6.5.6.2.1, “Permanent Detour Option”**).

In addition to operational limitations, the No Action Alternative would adversely affect river traffic. Existing horizontal clearance limitations would not be improved. The mechanical features of the swing span would continue to be subject to failure due to age and deterioration, limiting the reliability of the navigation channel.

6.5.6.1.2 Safety

While the Livingston Avenue Bridge is currently safe for rail use, the No Action Alternative would result in the continued deterioration of the structure, which eventually could result in the bridge becoming unsafe for continued rail operations.

6.5.6.1.3 Summary

The No Action Alternative would not meet the purpose and need for the Project or satisfy the Project goals and objectives of improving service reliability and operational flexibility, improving the load capacity and reducing the operational limitations, and minimizing conflicts with navigational traffic. While the No Action Alternative would be feasible, it would not be prudent, as it would not meet the Project’s purpose and need because it would not eliminate existing bridge and track deficiencies, nor would it meet modern passenger and freight rail standards. Additionally, this approach could result in adverse social, economic, and environmental impacts related to the continued deterioration and, potentially, eventual closure of the bridge, with the associated deleterious impacts to passenger and freight rail operations and induced shift to less energy-efficient transportation modes, such as automobiles and freight trucks.

The No Action Alternative would not address the basic transportation need and would not correct the situation that causes the bridge to be considered structurally deficient and deteriorated. Because of these deficiencies the bridge places intolerable restriction on transport and travel.

6.5.6.2 Build on a New Location:

FRA and NYSDOT considered two options for building on a new location: a permanent detour option and a replacement bridge on new alignment option.

6.5.6.2.1 Permanent Detour Option

There are no alternative passenger or freight routes that would be suitable as a permanent detour from the Livingston Avenue Bridge. The Livingston Avenue Bridge is one of two rail crossings of the Hudson River near Albany. The second crossing is the Alfred H. Smith Memorial Bridge on the CSX Castleton Subdivision, which spans the river between Castleton-on-Hudson and Selkirk approximately 10 miles south of Livingston Avenue Bridge. As an alternative to the Livingston Avenue Bridge, rail traffic could cross the Hudson River by way of the CSX route across this bridge, continuing northward using the CSX Selkirk Subdivision (see **Figure 2-1 in Chapter 2, “Project Alternatives”**). However, this routing would bypass Amtrak’s Schenectady and Albany-Rensselaer Stations, which are important station stops for Amtrak (the Albany-Rensselaer Station is the ninth busiest Amtrak station in the country and serves the New York State capital at Albany). To route passenger trains in this manner would likely require new bypass track around the Selkirk Yard to avoid potential conflicts between passenger and freight train traffic. The diversion would increase travel times by roughly 2.5 hours for through passengers on the Empire Corridor due to restricted speeds through the yard and over the Alfred H. Smith Memorial Bridge, and would

negatively affect ridership and Amtrak crew availability while requiring additional train sets. The cost of upgrading and placing new track within the existing rail right-of-way would be extensive. This routing would also make connections to CP's Canadian Mainline more difficult, thereby increasing travel times between New York City and points north of Albany, including Montreal and Vermont. For freight rail, this routing does not serve Schenectady, Rensselaer, and other communities currently served by CSX tracks crossing the Livingston Avenue Bridge.

Without a rail crossing at Albany, another alternative would be to reroute freight trains as noted above and eliminate passenger rail service north of Albany. Travelers could instead travel by passenger car using the New York State Thruway (I-87 and I-90), which is generally parallel to the Empire Corridor, and the Northway (I-87), which is generally parallel to Adirondack rail routes. Intercity buses are also available to most locations, but not all buses provide for the same point-to-point service as Amtrak. Travelers could also use airlines, which provide direct service between New York City and Albany, Syracuse, Rochester, and Buffalo. However, there is no direct air service between the upstate cities and many communities along Amtrak's Adirondack and Ethan Allen Express routes do not have commercial air service.

For reasons of adverse social, economic, and environmental effects; engineering and economy; and preservation of the old bridge, as described below, this alternative is not prudent.

Adverse Social, Economic, and Environmental Effects

As described above, this alternative would seriously disrupt established travel patterns, resulting in adverse social, economic, and environmental effects. This alternative would result in the elimination of passenger rail services at some stations, including Albany-Rensselaer Station, one of the busiest stations in Amtrak's network. It would increase travel times and negatively affect ridership and crew availability on the Empire Corridor. This alternative would also result in the elimination of freight rail service to existing customers. Passenger and freight trips that could no longer be served would either be cancelled entirely, or would have to switch to other, less environmentally-friendly modes such as passenger car or truck, resulting in additional pollutant emissions and roadway congestion. By complicating or eliminating passenger and freight rail connections to communities on the Empire Corridor and connecting rail corridors, this alternative could result in additional adverse social and economic effects on these areas by suppressing travel to and between these areas.

Engineering and Economy

As described above, this alternative would require substantial expense, including the cost to acquire land and construct new bypass track around the Selkirk Yard to avoid potential conflicts between passenger and freight rail traffic; costs associated with upgrading and placing new track within the existing freight rail right-of-way that would be converted for shared freight and passenger rail use; and the cost of purchasing additional train sets.

Preservation of the Existing Bridge

This alternative would not necessarily avoid adverse effects on the historic Livingston Avenue Bridge. Whether the bridge would remain for some other use, such as a pedestrian crossing, or remain as an unused historic monument, it has a number of deteriorated components that would require replacement or rehabilitation to remain in sufficient state of repair. As such, its historic integrity would be compromised. Further, the bridge would need to be transferred to a new owner who would be responsible for maintaining the structure. The USCG would likely require the swing span to remain in the open position to accommodate river vessels. This would also limit the practicality of maintaining the bridge for some alternative functional use.

Summary

Overall, directing trains to a route that is 2.5 hours longer or eliminating rail service north of Albany results in unacceptable rail service and operational problems; adverse social, economic, and

environmental effects; and substantial added cost. Furthermore, it would not necessarily avoid adverse effects on the existing Livingston Avenue Bridge. This alternative would not meet the Project's stated purpose and need. For these reasons, this alternative would not be prudent.

6.5.6.2.2 Replacement Bridge on New Alignment Option

Construction of a new crossing on another alignment and retaining the existing bridge in a manner that would preserve its historic integrity would avoid a use of the Livingston Avenue Bridge. Any replacement alternative that would tie into the existing bridge approaches (e.g., Build Alternatives 1 and 2) would not allow the existing bridge to remain in place, as the existing swing span would not have enough clearance to remain open for river traffic; therefore, FRA and NYSDOT evaluated a replacement alternative farther away on an alignment with Colonie Street (see **Figure 6-5**). With this alternative, a new rail crossing and approaches would be constructed approximately 500 feet north of the existing Livingston Avenue Bridge, aligned with Colonie Street in Albany. West of the Hudson River in Albany, the rail line would continue along present-day Colonie Street and tie in with the existing rail line between Montgomery Street and Broadway. On the east side of the Hudson River in Rensselaer, a new wye would be developed about 500 feet north of the existing wye to tie in with the existing north-south rail tracks.

For reasons of adverse social, economic, and environmental effects; engineering and economy; and preservation of the old bridge, as described below, this alternative is not prudent.

Adverse Social, Economic, and Environmental Effects

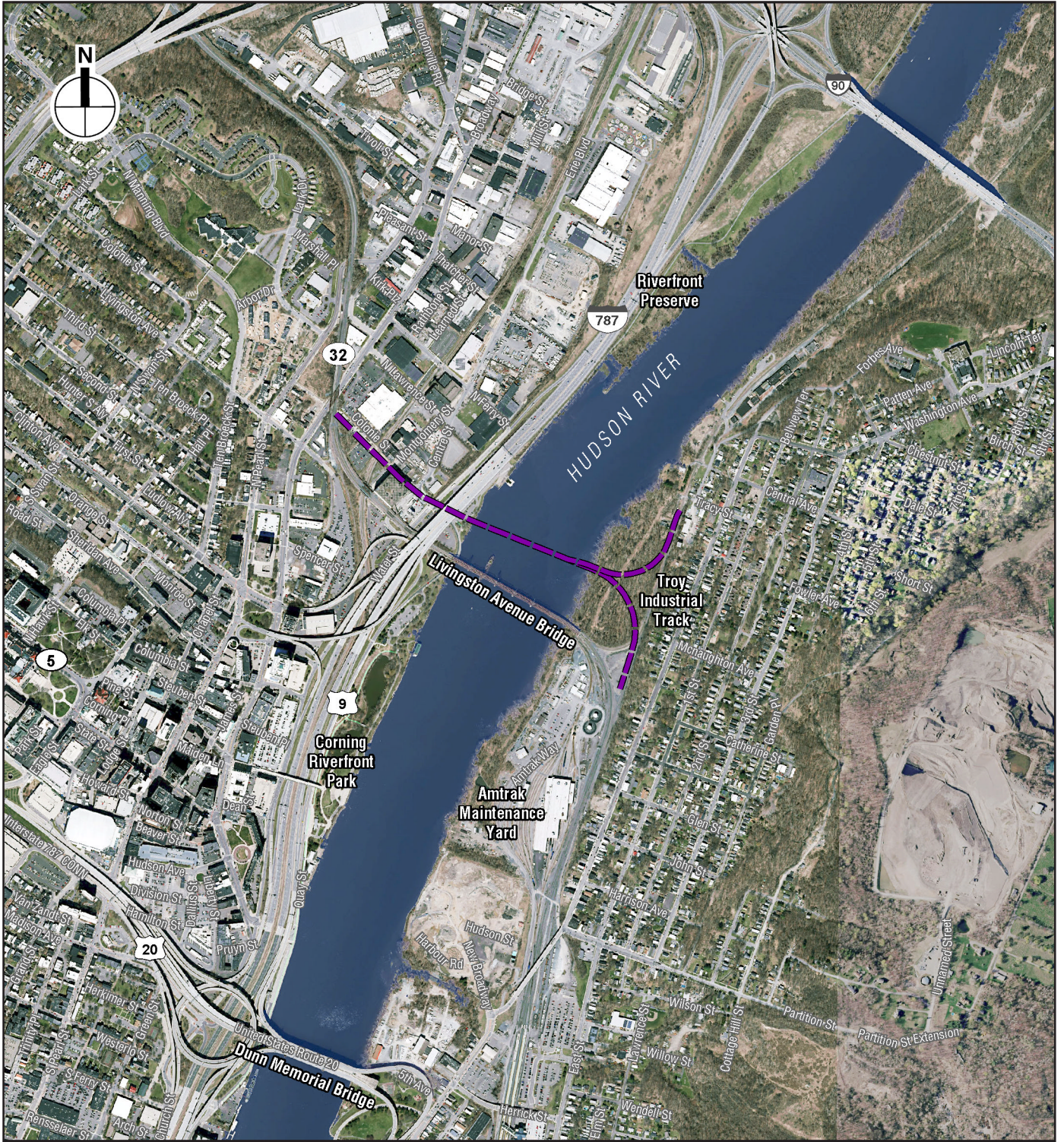
In Albany, this alternative would require new rail right-of-way through a developed urban area, displacing the existing Colonie Street right-of-way and requiring realignment of surrounding streets and affecting access to properties. The existing street right-of-way would need to be widened to accommodate the dual-track rail right-of-way and adequate safety standards, thereby requiring extensive property acquisition. This alternative would also affect access to publicly accessible recreational facilities such as the existing Mohawk-Hudson Bike-Hike Trail and the existing boat ramp at the Riverfront Preserve. The Broadway-Colonie Street Railroad Bridge (NR-listed) would be affected, potentially resulting in a Section 4(f) use of this property. In Rensselaer, the new alignment would require acquisition of vacant forested land, similar to the Build Alternatives.

A nearby southerly alignment providing sufficient clearance for the swing span of the existing bridge would have comparable challenges. West of the Hudson River, this alignment would require the crossing to pass over or through Corning Riverfront Park, potentially affecting the character and access to this park and potentially resulting in a Section 4(f) use of this property. Similar to the Colonie Street alignment discussed above, this alignment would require displacement of properties and structures within a densely developed urban environment and is further constrained by piers of the existing I-787–U.S. Route 9 interchange, which limit the ability to tie the new rail alignment to existing rail tracks. East of the Hudson River, this alignment would require realignment of numerous rail tracks in the Amtrak Maintenance Facility and would complicate tie-in with existing north-south rail tracks and the Albany-Rensselaer Station.

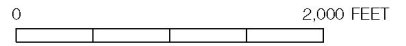
More remote realignments would have potentially extensive environmental impacts. These alignments would not be practical as they would not take advantage of the already established east-west rail right-of-way that serves this heavily traveled freight and passenger rail corridor, thereby requiring extensive property acquisition and substantial additional expenditures. In addition, maintaining the existing bridge would perpetuate existing horizontal and vertical clearance limitations.

Engineering and Economy

As described above, this alternative would not take advantage of the existing east-west rail right-of-way between Albany and Rensselaer, and would therefore require extensive expenditure



 *New Colonie Street Alignment*



Build at a New Location Alternative
Figure 6-5

associated with property acquisition to develop a new rail right-of-way through a densely developed urban area.

Preservation of the Existing Bridge

This alternative would not necessarily avoid use of the Livingston Avenue Bridge. Whether the bridge would remain for some other use, such as a pedestrian crossing, or remain as an unused historic monument, it has a number of deteriorated components that would require replacement or rehabilitation to remain in sufficient state of repair. As such, its historic integrity would be compromised. Further, the bridge would need to be transferred to a new owner who would be responsible for maintaining the structure. The USCG would likely require the swing span to remain in the open position to accommodate boats. This would also limit the practicality of maintaining the bridge for some alternative functional use.

Summary

Even if the Project could avoid the use of a Section 4(f) property, it would fail to meet the Project objective of improving freight and passenger rail capacity in a cost-effective manner (part of Goal 1); or the goal of minimizing conflicts with river traffic through improved clearances (Goal 3). Therefore, it would not meet the Project's stated purpose and need. It would also have a greater cost, require substantially more property acquisition, and would have greater environmental, social, and construction impacts. Furthermore, it would not necessarily avoid adverse effects on the existing Livingston Avenue Bridge. Therefore, although this alternative would be feasible, it would not be prudent. Structure replacement alignments that use the existing railroad right-of-way, such as the two Build Alternatives identified in the EA, would achieve the benefits of this alternative without the environmental impacts.

6.5.6.3 Rehabilitation Alternative/Bridge Repairs

This alternative would repair deficiencies and restore the existing Livingston Avenue Bridge to an as-built condition. Rehabilitation would include miscellaneous superstructure repairs; floor system repairs; bridge painting; pier repairs; new steel sheeting around piers for scour prevention; new fenders for pier protection; upgrading electrical, mechanical, and track systems; and safety improvements.

Due to the structurally and geometrically deficient condition of the existing bridge, as described below, this alternative is not prudent.

6.5.6.3.1 Structural and Geometric Deficiencies

Because the bridge's alignment and portions of the substructure and superstructure would remain unchanged and intact, the bridge's live load capacity could not be improved and its existing geometric deficiencies and poor vertical and horizontal clearances could not be corrected. Also, because there would be no realignment of the bridge, the wye at the east approach to the bridge would not be realigned. With these substandard conditions, operations across the bridge would remain limited to single-track operation at 15 mph. In addition, the design life of this alternative would be only 15 years.

Even with such a limited rehabilitation, this alternative would not avoid adverse effects on the historic Livingston Avenue Bridge. The bridge has a number of deteriorated components that would require replacement or rehabilitation to remain in sufficient state of repair. As such, its historic integrity would be compromised.

6.5.6.3.2 Summary

This alternative would not meet the Project's stated purpose and need, because it would not eliminate existing bridge and track deficiencies nor would it meet modern passenger and freight rail standards. Also, it would not satisfy the Project goals of improving service reliability and operational flexibility (Goal 1), upgrading the load capacity of the bridge (Goal 2), or the Goal 2

objectives of providing design life of a minimum of 100 years and eliminating the existing geometric deficiencies. The bridge is so structurally and geometrically deficient that it cannot be rehabilitated to meet minimum acceptable engineering standards without affecting the historic integrity of the bridge. Therefore, this approach would also result in unacceptable operational problems. For these reasons, this alternative would be feasible but not prudent.

6.6 Conclusions

In conclusion, FRA is proposing to make the following findings regarding the Project's use of Section 4(f) properties:

- **Mohawk–Hudson Bike–Hike Trail:** The Project's short-term construction activities would occur at the Mohawk–Hudson Bike–Hike Trail for both Build Alternatives, where the trail passes beneath the existing Livingston Avenue Bridge and the right-of-way for the proposed replacement bridge. This activity qualifies for the exemption applied to temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f).
- **Albany Railroad Viaduct:** Both Build Alternatives would require modifications to the Centre Street and Water Street bridges of the Albany Railroad Viaduct, which is eligible for listing on the NR. The bridges would be rehabilitated and reconfigured to accommodate the shift in the track alignment. FRA determined, and SHPO concurred, that the change would not constitute a Section 106 adverse effect under either Build Alternative. FRA is therefore proposing to make a Section 4(f) finding of *de minimis* impact related to the Project's use of the Albany Railroad Viaduct. In a letter dated August 12, 2020, FRA notified SHPO of its finding of no adverse effect on the Albany Railroad Viaduct and its intention to make a *de minimis* impact finding to comply with Section 4(f) if SHPO concurred with the finding of no adverse effect. In a letter dated September 23, 2020, SHPO concurred with the finding of no adverse effect on the Albany Railroad Viaduct.
- **Livingston Avenue Bridge:** Both Build Alternatives would require demolition of the Livingston Avenue Bridge, which is eligible for listing on the NR. FRA is proposing to apply the Nationwide Historic Bridges Programmatic Section 4(f) Evaluation to approve the Project's use of the Livingston Avenue Bridge. The Project qualifies for this evaluation because it would use a bridge that is eligible for the NR, there are no feasible and prudent alternatives to the use of the historic Livingston Avenue Bridge to be replaced as part of the Project, and the Project includes all possible planning to minimize harm resulting from such use.