

7.0 SECTION 4(F) EVALUATION

7.1 Introduction

Potential impacts of USDOT projects on publicly owned parks and recreation areas, waterfowl and wildlife refuges, and privately or publicly owned historic resources must be addressed under the Section 4(f) provision of the Department of Transportation Act as amended by the Federal-Aid Highway Act of 1966 (Public Law 90-495, 49 USC 1653) (which was revised and recodified but still referred to as Section 4(f)). Under Section 4(f), the Secretary of Transportation shall not approve any program or project that “requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance as so determined by federal, state, or officials having jurisdiction thereof, or any land from a historic site of national, State or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreation area, wildlife and waterfowl refuge, or historic site resulting from such use.”

Parks and recreational lands include all properties that are publicly owned and open to the public that are expressly reserved for recreational purposes, such as neighborhood parks, golf courses, school playgrounds and ball fields, and similar facilities.

7.2 Description of the Proposed Action

The Project is located in the Towns of Derry and Londonderry and includes construction of a new interchange with I-93 (known as Exit 4A) and other transportation improvements to reduce congestion and improve safety along NH 102, from I-93 easterly through downtown Derry, and to promote economic vitality in the Derry/Londonderry area. Detailed discussions of the purpose and need and the alternatives under consideration are provided in Chapters 2 and 3, *Purpose and Need* and *Alternatives Analysis*, respectively.

7.3 Description of Section 4(f) Resources

7.3.1 Section 4(f) Historic Resources

As discussed in Section 4.18, *Cultural Resources*, the following individual resources and historic districts were found eligible for the NRHP (Table 7.3-1) (see Table 4.18-2 for detailed descriptions and Figure 4.18-4), and as such, are subject to Section 4(f). Although there are no known archaeological sites listed or eligible for the NRHP affected by the alternatives, the preferred alternative crosses two areas of pre-contact Native American archaeological sensitivity: (1) sensitive area P7 across the eastern extent of Tsienneto Road, in the vicinity of Jeff Lane; and (2) sensitive area P6 at the approach of the NH 102 intersection with Tsienneto Road.

Table 7.3-1. Historic Resources Subject to Section 4(f)

Name (ID)	Town	Historic District
Benson/Warren House (DER0029)	Derry	Broadway Historic District (Area B)
Veterans Memorial Building (DER0044)	Derry	
Central Fire Station (DER0047)	Derry	
Adams Memorial Building (DER0048)	Derry	
First National Bank (DER0062)	Derry	
First Baptist Church (DER0070)	Derry	
Masonic Temple (DER0078)	Derry	
St. Luke's Methodist Episcopal Church (DER0080)	Derry	
Greenough House (DER0085)	Derry	
Abbott/Cutlip House (DER0090)	Derry	
Arthur Greenough House (DER0099)	Derry	
Proctor House (DER0100)	Derry	Broadway Historic District (Area B)
Broadway Historic District (Area B)	Derry	Broadway Historic District (Area B)
Birch Street Residential Historic District (Area BI)	Derry	Birch Street Residential Historic District (Area BI)
Gilbert and Helen Hood House (DER0102)	Derry	NA
Derry Village Historic District (Area DV)	Derry	Derry Village Historic District (Area DV)
J&F Farms (DER0132)	Derry	NA
Palmer Homestead (DER0134)	Derry	NA
E.F. Adams House (DER0135)	Derry	NA
Amedee Cote House (DER0141)	Derry	NA
3 Manchester Road (DER0196)	Derry	NA
Manchester & Lawrence Railroad	Derry and Londonderry	Manchester & Lawrence Railroad Historic District
The Gearty House (LON0105)	Londonderry	NA
Reed Paige Clark Homestead (LON0114)	Londonderry	
The Robert J. Prowse Memorial Bridge (LON0116)	Londonderry	
The Moody House (LON0117)	Londonderry	

7.3.2 Section 4(f) Recreational Resources

As discussed in Section 4.19, *Parks, Recreation, and Conservation Lands*, 35 of the 49 properties identified within the study area are potentially subject to the provisions of Section 4(f) of the USDOT Act of 1966 (see Table 7.3-2 and Figure 4.19-1).

Conservation Lands

The Town of Londonderry has one conservation area potentially subject to Section 4(f) within the study area: the Dumont Conservation area (#10), which is bisected by the Old Trolley Line Trail. The Old Trolley Line Trail and Londonderry Rail Trail traverse the study area.

No wildlife or waterfowl refuges subject to Section 4(f) were identified in the study area.

Recreational Resources

In the Town of Derry, the study area contains a variety of parks, recreational areas, and trails, most of which would be considered Section 4(f) resources. Examples of public recreational resources include Rider Fields (#8) and Trail, which includes baseball, recreational areas, a small playground, and open space, and Hoodcroft Country Club (#1), a golf course partially owned by the Town of Derry that is open to the public and abuts a large wetland area associated with Beaver Brook. Trails within the study area include the Rider Fields Trail, as well as the Derry Bicycle Path, the Rail Trail Path, and the Derry Rail Trail. The Derry Bicycle Path encircles the downtown Derry area and overlaps with the Rail Trail Path, which connects the Londonderry and Derry Rail Trails. Note that the planned future segment of the Derry Rail Trail south of the crossing of the preferred alternative (see Figure 4.19-1) is under private ownership; therefore, Section 4(f) does not apply.

The Londonderry Rail Trail is a cooperative effort between the Town of Londonderry and the Londonderry Trailways organization to complete about 6 miles of trail on an abandoned rail corridor (Londonderry Trailways, 2016). This trail will link the Derry and Manchester Rail Trails and be part of the 20-mile Granite State Rail Trail that runs from Salem to Manchester. Currently, the Rail Trail is paved from Rockingham Road (NH 28) near North School west of I-93 to the intersection of Rockingham Road near Seasons Lane on the east side of I-93. The North Village, Little Cohas, and Airport segments are currently planned to pave the existing western terminus of the trail to the Manchester town line (2.3 miles). In addition, the Southeastern Border segment is planned to connect the existing eastern terminus of the trail to the Derry town line (0.6 mile). From the Derry town line to a point north of Hood Park, there is a gap in the Rail Trail (Figure 7.2-1). This planned segment will be completed in future years as Londonderry completes the Southeastern Border segment. Although this gap in the Rail Trail is passable on foot or mountain bike, the trail ROW north of North High Street is private property; therefore, it is not currently part of the trail network.

The Old Trolley Line Trail currently exists as a well-used trail by hikers and mountain bikers along an old trolley line, and the Londonderry Conservation Commission has identified the trail as a long-term opportunity to help complete an extensive loop trail originating at the town center (Londonderry Conservation Commission, 2014).

Table 7.3-2. Parks, Recreation, and Conservation Lands Subject to Section 4(f)

Parcel ID ^a	Name	Location	City	Ownership	Type of Use
1	Hoodcroft Golf Course	NH 102 (Chester Road)	Derry	Semi-Private	Golf course. Partially owned by Town of Derry, open members, and the general public
2	Veteran's & O'Hara Ball Fields	Wilson Avenue	Derry	Town of Derry	Baseball, soccer, playground, tennis, various recreational leagues
3	MacGregor Park	Birch Street	Derry	Town of Derry	Small park downtown, picnic area, benches, veterans memorial
4	Buckley Field	Hood Road	Derry	Town of Derry	Baseball, recreational areas, small playground
5	Pinkerton Academy Athletic Field	Crescent Street	Derry	Town of Derry	Recreational field
6	Pinkerton Academy Fields	Pinkerton Street	Derry	Pinkerton Academy	Baseball field, tennis courts
7	Pinkerton Academy Fields East	Pinkerton Street	Derry	Pinkerton Academy	Baseball field, football field, track
8	Rider Fields	Tsienneto Road	Derry	Town of Derry	Baseball, recreational areas, small playground, open space
10	Dumont	North and east of Trolley Car Lane, bisected by Old Trolley Line Trail	Londonderry	Private and Town of Londonderry	Hiking, cross-country skiing, nature observation
-	Old Trolley Line Trail	Various west of I-93	Londonderry	Town of Londonderry	Public recreational trail
-	Londonderry Rail Trail	Various east of I-93	Londonderry	Town of Londonderry	Public recreational trail
-	Rail Trail Path	Various east of I-93	Derry	Town of Derry	Public recreational trail
-	Derry Rail Trail	Various east of I-93	Derry	Town of Derry	Public recreational trail
-	Derry Bicycle Path	Downtown Derry	Derry	Town of Derry	Public recreational trail circles the downtown area
-	Rider Fields Trail	Near Rider Fields	Derry	Town of Derry	Public recreational trail

Sources: Town of Derry (2016b, 2017a, 2017b, 2017c); Derry Rail Trail Alliance (2017); NHFGD (2016c); Londonderry Conservation Commission (2014)

^a Parcel ID for reference on Figure 4.19-1.

7.4 Potential for Use and Impacts on Section 4(f) Resources

Identification of potential impacts on Section 4(f) resources is based on an evaluation of use. Use in the Section 4(f) context is defined in 23 CFR 774.17 as follows:

Except as set forth in §§ 774.11 and 774.13, a “use” of Section 4(f) property occurs:

- (1) When land is permanently incorporated into a transportation facility;
- (2) When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in § 774.13(d); or
- (3) When there is a constructive use of a Section 4(f) property as determined by the criteria in § 774.15.

Incorporation into a transportation facility occurs when land from a Section 4(f) property is either purchased as transportation ROW or when an interest in the property is acquired that allows permanent access (e.g., permanent easement).

Temporary occupancy results when a Section 4(f) property, in whole or in part, is required for project construction-related activities. While the property is not permanently incorporated into a transportation facility, the construction-related activity is considered to be adverse in terms of the preservation purpose of Section 4(f). Section 23 CFR 774.13(d) provides the conditions under which “temporary occupancies of land...are so minimal as to not constitute a use within the meaning of Section 4(f).” If all of the conditions in Section 774.13(d) are met, the temporary occupancy does not constitute a use. If one or more of the conditions for the exception cannot be met, then the Section 4(f) property is considered used by the Project even though the duration of onsite activities is temporary.

Constructive use involves no actual physical use of the Section 4(f) property via permanent incorporation of land or a temporary occupancy of land into a transportation facility. Rather, constructive use occurs when the proximity impacts of a proposed project adjacent to, or nearby, a Section 4(f) property result in substantial impairment to the property's activities, features, or attributes that qualify the property for protection under Section 4(f). A project's proximity to a Section 4(f) property is not in itself an impact that results in constructive use. The assessment for constructive use should be based upon the impact that is directly attributable to the proposed project (e.g., increased noise levels, visual effects), not the overall combined impacts to a Section 4(f) property from multiple sources over time.

If FHWA determines that a transportation use of Section 4(f) properties results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete.

A determination of *de minimis* impact on a historic site may be made when all three of the following criteria are satisfied:

1. The process required by Section 106 of the NHPA results in the determination of “no adverse effect” or “no historic properties affected” with the concurrence of the SHPO and/or Tribal Historic Preservation Officer (THPO), and ACHP, if the ACHP is participating in the Section 106 consultation;

2. The SHPO and/or THPO, and ACHP, if the ACHP is participating in the Section 106 consultation, is informed of USDOT's intent to make a *de minimis* impact determination based on its written concurrence in the Section 106 determination; and
3. USDOT has considered the views of any consulting parties participating in the Section 106 consultation.

A determination of *de minimis* impact on parks, recreation areas, and wildlife and waterfowl refuges, may be made when all three of the following criteria are satisfied:

1. The transportation use of the Section 4(f) resource, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f);
2. The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource; and
3. The official(s) with jurisdiction over the property are informed of FHWA's intent to make the *de minimis* impact finding based on their written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f).

7.4.1 Section 4(f) Historic Resources

No Build Alternative

The No Build Alternative would not result in the use of Section 4(f) historic resources.

Build Alternatives

Alternative A

Based on the effects tables provided to the SHPO on October 19, 2018 (Appendix K) and the adverse effects memorandum provided to the SHPO on August 8, 2019, Alternative A (the preferred alternative) would have No Adverse Effect under Section 106 to the Palmer Homestead, E.F. Adams House, and Knapp Brothers Shoe Manufacturing properties. The preferred alternative would have an adverse effect on the M&L Railroad Historic District; however, the SHPO concurs with FHWA's determination of a programmatic net benefit as outlined in Section 7.5.

DER0134 – Palmer Homestead, 76 Tsienneto Road, Derry – This Project will necessitate road widening and upgrades along Tsienneto Road as well as the intersection with Jeff Lane. The proposed back of sidewalk will match the existing back of sidewalk along the Tsienneto Road frontage, as a result of an alignment shift in this area to the south. No ROW would be acquired from the 1.52-acre parcel, and no permanent easements are anticipated. A temporary construction easement for slope work will be needed. The construction easement is anticipated to be about 150 square feet (0.003 acre). While the stone wall would be temporarily impacted during construction, it will be reconstructed in accordance with NHDOT's 2017 Stone Wall

Policy.²⁷ The policy calls for stone walls to be rebuilt “ ‘in kind’ with careful duplication of blending of existing stones and additional stones, and duplication of special features of the original wall, such as lintels, gate posts, openings, copings, markers, etc.” The project will introduce a slight increase in noise due to an increase in traffic, but this will not diminish the integrity of the design, materials, and workmanship, which are contributing features of the property under Criterion C.

DER0135 – E.F. Adams House, 72 Tsienneto Road, Derry – The proposed project will add a 1- to 3-foot-high retaining wall along the back of the sidewalk, and the front edge of the yard will be regraded. The texture and design of the wall will be chosen to match similar conditions along the same road. No ROW would be acquired from the 1.05-acre parcel; however, a permanent sight line easement of about 955 square feet (0.02 acre) will be acquired. The clearing of brush at the corner of Tsienneto Road and Scenic Drive associated with this permanent easement will not affect the integrity of setting, as this is not a formal hedge. A temporary easement of about 2,650 square feet (0.06 acre) will be needed for driveway, parking lot, and slope work. Additional plantings will be incorporated into the design, in coordination with the property owner and NHDHR. There will be an increase in traffic and associated noise but will not diminish the contributing aspects of the property’s significance for the National Register.

DER0196 – Knapp Brothers Shoe Manufacturing, 3 Manchester Road, Derry – This project will necessitate road widening and upgrades along Tsienneto Road and at the intersection with Manchester Road. Approximately 17 feet of widening will be required in the area of the right turn lane and 10 feet in the area of the additional through lane. About 11,910 square feet (0.27 acre) of the 8.96-acre parcel would be acquired to accommodate the road widening. A permanent easement of approximately 68,500 sf (1.57 acres) will be needed to accommodate a stormwater treatment basin. The majority of this area (66,000 sf) will be in the undeveloped eastern section of the parcel and 2,500 sf will be located in the existing parking area to provide maintenance access to the basin. In addition, the Project would require a temporary easement of about 8,300 square feet (0.19 acre) for driveway, parking lot, and slope work. The back curb, up to 18 inches high is proposed along the back of sidewalk to minimize impacts to this property. The proposed project will not introduce visual elements that diminish the integrity of this property. There will be an increase in traffic and associated noise, but the setting and location are not contributing aspects of the property’s significance for its National Register eligibility. The business sign and raised landscaped bed in which the sign sits will not be impacted as part of this project.

The temporary effects to the Palmer Homestead meet the conditions of temporary occupancy exemption as listed in 23 CFR 774.13(d). A finding of *de minimis* 4(f) impact applies to the E.F. Adams House and Knapp Brothers Shoe Manufacturing, as proposed easements and ROW acquisition would result in no adverse effects under Section 106.

The preferred alternative will have an adverse effect on M&L Railroad Historic District due to the modern intrusion within the National Register boundary of the rail corridor and consequent realignment of the historic corridor. Finally, a Programmatic 4(f) applies to the M&L Railroad Historic District. NHDHR and NHDOT agree with FHWA’s finding that this undertaking is a Net Benefit to the M&L Railroad Historic District under Section 4(f) due to its measures to

²⁷ <https://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/documents/StonewallGuidelinesFinalApril2017.pdf>.

minimize harm to the historic district by allowing the continuity of the M&L Railroad, even if off-alignment.

No known archaeological resources eligible for the NRHP would be disturbed by the preferred alternative. To mitigate for potential impacts to three areas of archaeological sensitivity (two pre-contact Native American sensitive areas and one historic-era sensitive area), Phase IB archaeological testing will be conducted during final design. Additionally, any investigations determined necessary based on the Phase IB, (e.g. Phase II, Phase III) will be conducted. FHWA and NHDHR will be consulting throughout all necessary phases of archaeology. All final mitigation stipulations will be formalized in an MOA. Impacts to NRHP-eligible archaeological sites are exempt from Section 4(f) requirements if the site is determined to be valuable for the information that can be gained through data recovery as opposed to preservation in-place (23 CFR 774.13(b)). Assuming any resources encountered would be valuable primarily for data recovery, no further Section 4(f) compliance steps would be necessary. If a resource requiring preservation in-place is unexpectedly encountered during the subsurface testing or during construction, Section 4(f) analysis of feasible and prudent avoidance options would be conducted at that time and coordinated with FHWA and NHDHR in accordance with 23 CFR 774.9(e).

Alternative B

Adverse effects to the M&L Railroad Historic District would be similar to those described under Alternative A. Alternative B would have no effect on any other known historic resources in the study area.

Alternative C

As discussed in the 2007 DEIS, it was determined that the west side of the Alternative C interchange would have an adverse effect to the Reed Paige Clark Homestead properties (LON0114) located immediately west of the I-93 corridor and south of Stonehenge Road) (see Figure 4.18-4). The adverse effect on the property would be for both the need to acquire land to build the Northern Interchange [specifically the associated former potato field (Londonderry Map 13/Lot 20)] and also the visual impact a major raised interchange would have on the Reed Paige Clark Homestead (Londonderry Tax Map 13/Lot 21) located on the north side of Stonehenge Road. The total estimated property taking on Lot 20 required for the ROW for the Alternative C interchange would be approximately 2.4 acres. Of this, approximately 1.4 acres would be located within the roadway footprint. Other than the Reed Paige Clark Homestead properties, no other known historic resources would be affected by Alternative C.

If Alternative C were selected as the preferred alternative, additional analysis of potential avoidance alternatives and measures to minimize harm would be required to comply with Section 4(f).

Alternative D

Similar to Alternative C, construction of the new Alternative D Interchange would require identical impacts on the same two Reed Paige Clark Homestead properties (Lots 20 and 21), resulting in an adverse effect. The adverse effect on these resources would be for both the need to acquire land to build the Northern Interchange and the visual impact a major raised

interchange would have on the Reed Paige Clark Homestead located on the north side of Stonehenge Road. No other historic resources would be affected by Alternative D.

If Alternative D were selected as the preferred alternative, additional analysis of potential avoidance alternatives and measures to minimize harm would be required to comply with Section 4(f).

Alternative F

As discussed in the 2007 DEIS, it was determined that Alternative F would have an adverse effect upon the potential Broadway Historic District (Area B) located along NH 102. As noted in the Cultural Resource Memorandum of Effect for Alternative F (Appendix K), if Alternative F were selected as the preferred alternative, additional investigations would need to be conducted to determine effects to the potentially eligible Broadway Historic District as well as potential effects to individually eligible properties within the district.

Alternative F would extend alongside the Derry Village Historic District and near the potential Birch Street Historic District but would have No Adverse Effect on these resources. The alternative would also traverse adjacent to one NRHP individually eligible property along NH 102 (Gilbert and Helen Hood House, DER0102), with no effect to the property.

If Alternative F were selected as the preferred alternative, additional analysis of potential avoidance alternatives and measures to minimize harm would be required to comply with Section 4(f).

7.4.2 Section 4(f) Parkland and Recreational Resources

No Build Alternative

The No Build Alternative would not result in the use of Section 4(f) recreational resources.

Build Alternatives

Alternative A

As outlined in Section 4.19, the preferred alternative would permanently impact 0.02 acre of the Rider Fields property (Site #8 on Figure 4.19-1), a 21-acre Section 4(f) resource owned by the Town of Derry that includes athletic fields, parking facilities, and undeveloped land. Within the 0.02 acre, the improvements to Tsienneto Road would result in the need to move the mailbox and sign for the Upper Room Family Resource Center. None of the recreational facilities within Rider Fields would be impacted. The Project would result in slope and driveway impacts beyond the proposed ROW that would require additional, temporary easements of 2,500 square feet (0.06 acre) on the Rider Fields property. The impacts associated with the temporary easement are limited to the vegetation between the Upper Room driveway and the Rider Fields driveway. This vegetated area near Tsienneto Road is not typically used for recreational purposes by the public and is approximately 346 feet from the sports fields to the north that constitute the primary recreational area of the park.

NHDOT would coordinate with the Town of Derry to move the mailbox and sign for the Upper Room Family Resource Center and to replace the stone walls and vegetation that would be impacted by the Project. The temporary easement would not impact the usability of the park, and

access to the park would be maintained throughout the construction period. Neither the Upper Room Family Resource Center nor the activities, features, and attributes of the Rider Fields would be adversely impacted on a permanent or temporary basis. As a result, the impact of the preferred alternative on Rider Fields is *de minimis*, and this conclusion was confirmed in writing with the Town of Derry (see Section 7.6, *Coordination and Public Involvement*).

Alternative B

Alternative B would impact a total of 1.31 acres of an undeveloped portion of Rider Fields (Site #8). The Alternative B alignment would cross this resource near its northern undeveloped edge, avoiding direct impacts to the athletic fields and parking facilities. This alternative would require impacts to 0.96 acre to provide needed ROW for the proposed roadway. An additional 0.35 acre of the property would be left as a remnant that would be separated from the athletic fields by the roadway and would be left inaccessible. An informal path used by locals traverses north-south across the northwest corner of the property. The path is used to access the site from residential properties and the powerline corridor located to the north and would be intersected by the alignment for Alternative B about 1,000 feet east of NH 28. Along with the direct impacts to the park, there would be increased noise levels and a decrease in scenic value. If Alternative B were selected for the Project, further analysis of avoidance alternatives and measures to minimize harm would be required.

Alternative C

Alternative C would result in impacts to two conservation lands—it would impact 0.05 acre of the Dumont conservation area (Site #10) and 0.04 acre of the Rockingham Road conservation area (Site #11). The impacts to the Dumont conservation area are related to the I-93 southbound entrance ramp, and the impacts to the Rockingham Road conservation area are limited to the small conservation lot along 28 near Seasons Lane. Alternative C would also impact Rider Fields near its northern property line. Impacts to Rider Fields would be identical to those already described for Alternative B. If Alternative C were selected for the Project, further analysis of avoidance alternatives and measures to minimize harm would be required.

Alternative D

Alternative D would impact the Dumont and Rockingham Road conservation areas. Impacts are identical to those already described for Alternative C. Alternative D would also impact 0.2 acre of Rider Fields. Impacts to Rider Fields would be identical to those already described for Alternative A.

Alternative F

Alternative F would impact two recreational areas. The Derry Bike Path, a Section 4(f) resource, crosses NH 102 in downtown Derry. Because Alternative F would involve improvements to NH 102, it would require construction activities within the existing road crossing for the Derry Bike Path. It is expected that any impacts on this existing crossing would occur during construction, and they would be temporary; further analysis would be required if this alternative were selected to determine whether the temporary impacts would meet the temporary occupancy exemption requirements. Acquisition of property in the area of the existing crossing of the Derry Bike Path would not be required. In addition, the existing crossing and access to the bike path at this

location would be maintained, including during the construction phase where practicable. Farther to the east on NH 102, and on the south side of the road, is Hoodcroft Country Club, a semi-private golf course. Alternative F would impact 0.18 acre of the golf course property but would not affect any of the facilities at the golf course.

7.5 Programmatic Net Benefit Section 4(f) Evaluation for the Manchester & Lawrence Railroad Historic District

This section contains supporting documentation for a “Net Benefit” Programmatic Section 4(f) determination for the Project. Alternatives A and B would affect a segment of the former M&L Railroad Historic District, which qualifies as a Section 4(f) resource because it is a historic district eligible for inclusion in the NRHP.

The segment of the former M&L Railroad Historic District that was determined eligible for the NRHP in 2009 extends from the New Hampshire state line in Salem to the Manchester airport in Londonderry. It is significant under Criterion A for its contribution to the history and development of the five communities that it passed through, and under Criterion C for its significance of railroad engineering and architecture.

Construction of Alternative A (the preferred alternative) and Alternative B would be within the ROW of the former railroad to expand the width of North High Street, create a new intersection with Madden Road at the proposed connector road, and accommodate a future proposed continuation of the Derry Rail Trail with an underpass under the connector road. No existing railway infrastructure remains within this section: the rails and ties were removed in the late twentieth century.

Under existing conditions, a portion of North High Street is constructed along the rail corridor south of the existing Madden Road. Madden Road also crosses the rail corridor. The Derry Rail Trail runs within the rail corridor from downtown Derry until it intersects with North High Street about 650 feet south of Madden Road. From this point, there is a gap section where trail users are forced to walk/ride along North High Street, which has insufficient shoulders and no sidewalks, and then cross heavily travelled North High Street and Madden Road at grade, to access an informal steep path that connects down to the informal, unmaintained trail located within the privately owned rail corridor north of Madden Road.

As currently designed, the Project (Alternative A, the preferred alternative) would realign North High Street to a “T” shaped connection with the proposed connector roadway, which would replace Madden Road in this area. North High Street would line up with a driveway serving American Excavating, a local road-building contractor, to make a four-way signalized intersection. Although lining up to form a 90-degree intersection is most desirable, the proposed North High Street roadway would tie into the connector road at an approximate 80-degree skew angle, which is within acceptable design standards. The proposed intersection would be constructed within an approximately 450-foot section of the rail corridor that is located on private property and has not been previously impacted by the existing North High Street alignment. A breakdown of the Project overlap within the rail corridor is as follows:

- 150 feet resulting from the re-alignment of North High Street (currently no trail in this area);

- 100 feet resulting from the increase in width from the current Madden Road to accommodate the new connector road width; and
- 200 feet resulting from the relocation of the American Excavating driveway (all along the unofficial trail north of existing Madden Road).

There would be no change in use as a result of the Project because the rail line has been abandoned, is privately owned, and is presently unused. The existing Derry Rail Trail terminates at its existing intersection with the Hood Park parking lot near Rollins Street, about 1,860 feet to the south of the juncture of the railroad ROW and North High Street. As part of the Project, accommodation for a possible future expansion of the Rail Trail would be facilitated by the construction of an underpass under Madden Road and provision of a 900-foot paved path connection to the former railroad ROW north of Madden Road that would allow the future proposed expansion of the Rail Trail to cross under Madden Road and back to the former railroad ROW, about 300 feet north of Madden Road. No historic physical features relating to the railroad historic district are within the area of construction for the Project. The Project would introduce audible elements with the increase in traffic, but this is not expected to diminish the integrity of the railroad historic district as a whole.

NHDHR concurs with FHWA's determination of an Adverse Effect finding on the M&L Railroad Historic District, due to the modern intrusion within the NRHP property boundary, which would alter the character of the historic railroad corridor. In response, this Programmatic Net Benefit Section 4(f) Evaluation has been prepared for the Project. When compared to the No Build Alternative and the present condition of the corridor, the proposed transportation use, measures to minimize harm, and the mitigation incorporated into the Project would result in an overall enhancement to the historic railroad corridor, considering the activities, features, and attributes that qualify the property for Section 4(f) protection.

7.5.1 Applicability

1. Does the proposed project use a Section 4(f) park, recreation area, wildlife or waterfowl refuge, or historic site?

Yes. The M&L Railroad Historic District is eligible for listing in the NRHP. Alternative A, the preferred alternative (also referred to as "the Project"), involves use of approximately 1.2 acres of the rail ROW to expand the width of North High Street, create a new intersection with Madden Road at the proposed connector road, and accommodate a future proposed continuation of the Derry Rail Trail with an underpass under the connector road (see Figure 1.2-1).

In addition, the preferred alternative crosses two areas of pre-contact Native American archaeological sensitivity: (1) sensitive area P7 across the eastern extent of Tsienneto Road, in the vicinity of Jeff Lane; and (2) sensitive area P6 at the approach of the NH 102 intersection with Tsienneto Road.

2. Does the proposed project include all appropriate measures to minimize harm and subsequent mitigation necessary to preserve and enhance those features and values of the property that originally qualified the property for Section 4(f) protection?

Yes. The Project would incorporate mitigation measures to preserve and enhance the railroad corridor's historic features and qualities as discussed in Section 7.5.4, *Mitigation and Measures to Minimize Harm*. These measures will:

- Encourage preservation of the rail corridor by constructing an underpass and 900-foot path (Figure 7.5-1). This will enable trail construction to the north as part of a separate future project by others, which in turn will help protect more of the historic district from other development.
 - Interpretive signage. NHDOT will work with the Town and the Derry Heritage Commission to develop an interpretive panel that will focus on the history of the Manchester-Lawrence Railroad and its association to the Town of Derry. The panel's content and material will be prepared by a 36 CFR 61-qualified architectural historian. The SHPO will be provided an opportunity to review one draft of the panel's content with a review period of 30 days. Upon approval of the panel, it will be fabricated and installed at a location to be determined in consultation with the Town of Derry, preferably along the rail trail near the new crossing. Digital copies of the panel will be provided to NHDOT and the Town of Derry.
 - Rail Trail Underpass Aesthetic Treatment. NHDOT and its consultant will work with the Town of Derry on the aesthetic treatment to the newly constructed underpass headwalls. The concrete will be stamped with a faux-stone design that will be chosen in consultation with the Town. The style of lighting will be chosen in consultation with the Town.
3. For historic resources, the project does not require the major alteration of the characteristics that qualify the property for the NRHP such that the property would no longer retain sufficient integrity to be considered eligible for listing? Does the project require the disturbance or removal of the archaeological resources that have been determined important for preservation in-place rather than for the information that can be obtained through data recovery?

No. The ties and rails have been removed. Although the Project would have an adverse effect, the effect is not extensive with regard to context of the overall corridor and would not result in the M&L Railroad Historic District no longer being NRHP-eligible as a linear historic district.

No known archaeological resources eligible for the NRHP would be disturbed by the preferred alternative. To mitigate for potential impacts to three areas of archaeological sensitivity (two pre-contact Native American sensitive areas and one historic-era sensitive area), Phase IB archaeological testing will be conducted during final design. Additionally, any investigations determined necessary based on the Phase IB, (e.g., Phase II, Phase III) will be conducted. FHWA and NHDHR will be consulting throughout all necessary phases of archaeology. All final mitigation stipulations will be formalized in an MOA.

4. Is there agreement among FHWA, NHDOT, and the SHPO on measures to minimize harm to the site consistent with 36 CFR 800?

Yes. The Section 106 mitigation requirements for this Project are expected to be satisfied under the terms of a pending MOA.

5. Have the officials with jurisdiction over the Section 4(f) property concurred in writing with the findings regarding assessment of impacts of the proposed project, the proposed measures to minimize harm, the mitigation necessary to preserve, rehabilitate, and enhance the features and values of the Section 4(f) property, and that such measures will result in a net benefit to the Section 4(f) property?

Yes. NHDHR concurs with FHWA's proposal of mitigation measures as described above to offset any adverse effects due to the character of the historic railroad and to improve the existing condition of the M&L Railroad Historic District such that the end result is a net benefit use of the Section 4(f) property. An Adverse Effects Memorandum was submitted to NHDHR on August 8, 2019. Written concurrence is provided in Appendix K.

6. Do the facts of the project match those set forth in the sections below: Applicability, Alternatives, Findings, Mitigation and Measures to Minimize Harm, Coordination, and Public Involvement?

Yes.

7.5.2 Alternatives

No Build Alternative

The No Build Alternative assumes that no major new construction would occur except for projects that are already planned and programmed (see FEIS Section 3.6.1 for detailed description). The No Build Alternative would not result in the use, temporary occupancy, or constructive use of any Section 4(f) resources. The No Build Alternative would not meet the transportation and economic-development elements of the Project's purpose and need, but it is evaluated in this Section 4(f) evaluation as the baseline for comparison to the Build Alternatives.

Improve the Transportation Facility in a Manner without a Use of the Section 4(f) Property

In addition to the No Build and Alternative A, the preferred alternative (the Project), four Build Alternatives are evaluated in the FEIS (Figure 1.2-1). These alternatives were eliminated during the alternatives analysis phase for a variety of reasons, as discussed below.

Alternative B

The Alternative B corridor is approximately 3.4 miles in length between I-93 and eastern Derry. With the exception of an 800-foot-long section of Ashleigh Drive that would be reconstructed, the remaining 3.2-mile corridor would consist of roadway construction on new alignment. It would originate from a new southern I-93 Exit 4A interchange, approximately 1 mile north of Exit 4, and travel northeast along a new alignment through a wooded area to the intersection of Ashleigh Drive and NH 28. From this intersection, this alternative would extend northeast towards the intersection of London Road and the NH 28 Bypass and then continue on new alignment to the intersection of Tsienneto Road and NH 102.

Alternative B would impact the M&L Railroad Historic District in a manner similar to Alternative A and would have a relatively greater effect on Rider Fields, a recreational Section 4(f) property. It would also result in relatively greater impacts to wetlands, streams, wildlife habitat, and open space compared to Alternative A. Although it would satisfy the traffic and economic development needs of the Project, it would entail the use of Section 4(f) properties.

Alternative C

The Alternative C corridor is about 3.7 miles in length between I-93 and eastern Derry. Approximately 2.9 miles of corridor would be on new alignment, while about 0.8 mile would reconstruct existing roadways. The alternative would start from a new northern I-93 Exit 4A interchange, approximately 1 mile south of Exit 5, and travel east about 0.7 mile along a powerline ROW to NH 28. Following NH 28 south to the intersection of Ashleigh Drive, it would follow the same alignment as Alternative B to the intersection of Tsienneto Road and NH 102.

Although Alternative C would not use the M&L Railroad Historic District, it would adversely affect other historic Section 4(f) properties (i.e., the historic Reed Paige Clark Homestead properties). It would also have a considerably greater effect on streams, open space, and wetlands, and it is the most expensive Build Alternative. Moreover, Alternative C would satisfy the traffic need, but would not contribute to economic development. As such, it would not fully meet the Project needs.

Alternative D

The Alternative D corridor is approximately 3.9 miles in length between I-93 and eastern Derry. Within this corridor, approximately 0.8 mile would be on new alignment, and 3.1 miles of existing roadways would be reconstructed. The alternative would commence from a new northern I-93 Exit 4A interchange, approximately 1 mile south of Exit 5, and travel east approximately 0.7 mile along a powerline ROW to NH 28. Following NH 28 south to Ross' Corner, the corridor would then follow the same path as Alternative A to the intersection of Tsienneto Road and NH 102.

Like Alternative C, Alternative D would not impact the M&L Railroad Historic District but would have an adverse effect on another historic Section 4(f) property. In addition, it would result in considerably greater impacts to streams and groundwater. Alternative D, similar to Alternative C, would not completely meet the Project needs because it would not contribute to economic development.

Alternative F

Alternative F focuses all improvements along the existing NH 102 corridor between Exit 4 at I-93 and downtown Derry. A two-way center left-turn lane would be constructed from Londonderry Road to Crystal Avenue/Birch Street (NH 28). The majority of existing on-street parking spaces would be lost to accommodate the center-turn lane.

Although Alternative F would not use the Section 4(f) property, it would have an adverse effect upon historic resources within the Broadway Historic District located along NH 102. This district covers 102 properties and contains 89 buildings with mixed uses, from residential to commercial business. The removal of 110 on-street parking spaces on NH 102/Broadway through downtown

Derry would have a detrimental impact to the local businesses that are located in NRHP-eligible historic buildings or those that contribute to the Broadway Historic District. This economic impact would not support the Project's purpose and need of improving economic benefits within the Town and could make the historic resources in the downtown area more vulnerable to falling in disrepair or demolition and replacement with new buildings. In addition, Alternative F would not meet the traffic need.

Alternative A Design Options

Modification to the current design of the Project (Alternative A) was explored to reduce construction within the railroad corridor. If the intersection of the connector road/North High Street/ American Excavating driveway were shifted to the west, the overlap with the railroad corridor would be reduced slightly, to 150 feet versus 450 feet as proposed. Figure 7.5-2 shows the potential design modification, which is represented by black dashed lines overlaid on the existing color plan. A breakdown of the revised construction within the railroad corridor would be as follows:

- 50 feet based on re-alignment of North High Street (currently no trail in this area);
- 100 feet width for the creation of the new connector road; and
- 0 feet based on the relocation of the American Excavating driveway, which would not be relocated onto the rail corridor north of existing Madden Road.

The disadvantages of shifting the aforementioned intersection are as follows:

- This intersection would be at a skew angle of 69 degrees, which would be substandard according to FHWA, which recommends intersection skew angles between 75 and 90 degrees for new construction (Highway Design Handbook for Older Drivers and Pedestrians (2001) and Handbook for Designing Roadways for the Aging Population (2014)). This design would result in reduced safety as drivers would be forced to view oncoming traffic by turning their heads more than allowed by these standards. Additionally, this design would result in the need to further widen the pavement area at the intersection to accommodate turning vehicles.
- North High Street would be shifted to the west and have a much greater impact to properties located on the west side of North High Street, especially the Borowski property located in the southwest quadrant of the intersection. At this location, the edge of pavement would be moved from 112 feet to within 87 feet of the home on this property.

Although the potential modifications to the proposed design would slightly reduce the Project's impact within the historic rail corridor, this modification would create undesirable design conditions, reduced safety, and additional impacts to property owners. Therefore, this modified design option would not be prudent and is not recommended.

As discussed above, there are no feasible and prudent alternatives to using the Section 4(f) resource.

Build the Transportation Facility at a Location that Does Not Require Use of the Section 4(f) Property

The No Build Alternative would not require use of the Section 4(f) property; however, it is not a viable option because it would not meet the Project purpose and need. Although Alternative B would meet the purpose and need, it is not a viable option because it would require use of the M&L Railroad Historic District Section 4(f) resource and result in greater impacts to Rider Fields, which is a recreational Section 4(f) resource. Build Alternatives C, D, and F would not require use of the M&L Railroad Historic District Section 4(f) resource; however, the purpose and need for the Project would not be fulfilled under these alternatives, and they would impact other historic and recreational resources that would qualify as Section 4(f) resources. Therefore, as discussed above, no feasible and prudent alternatives that do not require use of the Section 4(f) resources have been identified.

7.5.3 Findings

No Build Alternative

Although the No Build Alternative would avoid use of the M&L Railroad Historic District, it would not adequately address the traffic congestion and safety issues along NH 102 from I-93 easterly through downtown Derry for the Derry-Londonderry area, nor would it promote economic vitality in the Derry-Londonderry area. Therefore, because the No Build Alternative would not meet the Project purpose and need, it is not a feasible and prudent alternative.

Improve the Transportation Facility in a Manner without a Use of the Section 4(f) Property

Although Build Alternatives C, D, and F would not impact the M&L Railroad Historic District, they do not fully meet the Project purpose and need. These three alternatives generally would meet the identified traffic needs, but they would not facilitate economic development and thus would not meet the Project's economic need. Additionally, Alternatives C, D, and F would impact other historic and recreational resources subject to Section 4(f). Therefore, they are not deemed feasible and prudent alternatives.

Build the Transportation Facility at a Location that Does Not Require Use of the Section 4(f) Property

As noted above, there are no feasible and prudent alternatives that do not require the use of Section 4(f) properties.

7.5.4 Mitigation and Measures to Minimize Harm

The Project design has been developed with the intent of avoiding or minimizing potential impacts to Section 4(f) properties, including the M&L Railroad Historic District, which is eligible for the NRHP. However, it was determined that complete avoidance of impacts to the historic railroad corridor was not feasible and prudent. A full listing of the measures to minimize harm to this resource is provided in Section 7.5.1. To mitigate for potential impacts to areas of pre-contact Native American archaeological sensitivity across the eastern extent of Tsienneto Road and at the approach of the NH 102 intersection with Tsienneto Road, Phase IB field work will be completed during the design-build phase. A historic era site of archaeologically

sensitivity will also be addressed through the Phase IB. Additionally, any investigations determined necessary based on the Phase IB (e.g., Phase II, Phase III) will be conducted.

An MOA between FHWA, NHDOT, NHDES, and the Town of Derry addressing the Project and subsequent mitigation has been executed (Appendix K).

These mitigation measures would be incorporated into the Project, such that the Project would result in a net beneficial impact to the historic rail corridor. The path construction as well as the addition of an underpass would facilitate future completion of the Derry Rail Trail by others and help to preserve the rail corridor from development. The addition of interpretive signage would improve the value of the Section 4(f) resource by educating the public about the historic use of the railroad and its importance in the development of the communities along the railroad. The Section 4(f) property would be further enhanced by the construction of a suitably designed underpass that is complementary to the historic railroad corridor. With incorporation of these measures, the Project would preserve and enhance the historic features and values of the rail corridor, resulting in a net benefit use.

7.6 Coordination and Public Involvement

Public Meetings

Public Information Meeting 1 was held on September 27, 2016, at the Derry Municipal Center. The purpose of the meeting was to update the public on the status of the Exit 4A Project and receive feedback. Public input during the open comment session included questions and concerns about increased traffic on Tsienneto Road, accidents on Tsienneto Road near Scenic Drive, accommodation of the future rail trail, impacts to residences and businesses, Project costs, alternatives under consideration, water quality and chloride issues, the northern long-eared bat, and cumulative impacts.

Public Information Meeting 2 was conducted on May 24, 2018, at the Derry West Running Brook Elementary School. The meeting included open-house style presentation of the plans for the Build Alternatives A, B, C, D, and F and evaluation matrix, and the public was invited to discuss their questions with members of the Project team.

Public Information Meeting 3, which was a combined officials/public information meeting and public hearing for use of design-build procurement, was held on July 25, 2018, at West Running Brook Middle School in Derry. The purpose of the meeting was to present the additional detailed information on the preferred alternative (Alternative A) and to hold a public hearing on the potential use of design-build procurement for the Project.

A public hearing was held on December 5, 2018, at the West Running Brook Middle School in Derry. The hearing provided an opportunity for all interested parties to comment on the design layout, SDEIS, and permit applications under Section 404 of the CWA and New Hampshire Wetland Rules of the proposed Project.

Agency Coordination

NHDHR

Initial cultural resource coordination meetings were held with NHDHR, NHDOT, FHWA, and USACE to discuss the Project in February and October 2016. NHDOT and FHWA coordinated

with NHDHR regarding the eligibility of and anticipated effects to the M&L Railroad Historic District, Palmer Homestead, E.F. Adams House, and Knapp Brothers Shoe Manufacturing properties from the preferred alternative. An Adverse Effects Memorandum was submitted to NHDHR on August 8, 2019 (Appendix K). NHDHR concurs with FHWA's determination of effects to these properties.

Additionally, NHDOT and FHWA coordinated with NHDHR to identify specific measures to minimize harm to the M&L Railroad Historic District Section 4(f) resource. The mitigation measures identified above will be further defined through coordination with NHDHR and the Towns and incorporated into Project design. Pursuant to the provisions of Section 106 of the NHPA (36 CFR 800), an MOA has been executed that addresses unavoidable impacts to the historic property and appropriate mitigation (Appendix K).

Town of Derry, Parks and Recreation

A letter was sent to the Town of Derry Parks and Recreation Department on September 4, 2018 (see Appendix A), to inform the agency that impacts on Rider Fields from the preferred alternative are anticipated to be *de minimis*. The Town of Derry concurred with the *de minimis* finding on October 5, 2018.

Consulting Parties

Section 106 of the NHPA offers individuals and organizations with a demonstrated interest in potential impacts to historic resources the opportunity to become more involved in an advisory role during project development as "consulting parties." Input was solicited by correspondence and during the public informational meetings. To date, four consulting parties are participating in Section 106 consultation: Mr. Chris McCarthy, property owner in Derry; Ms. Colleen Madden, property owner in Derry; Mr. Mark Connors, concerned citizen; and the Cowasuck Band of Pennacook-Abenaki People.

7.7 Final Determination

7.7.1 Historic Resources

The temporary effects to the Palmer Homestead meet the conditions of temporary occupancy exemption under Section 4(f) as listed in 23 CFR 774.13(d). The effects to the E.F. Adams House and Knapp Brothers Shoe Manufacturing properties from the preferred alternative are not considered to be adverse and would constitute a *de minimis* use under Section 4(f).

With regard to the M&L Railroad Historic District, the programmatic evaluation in Section 7.5 satisfies the requirements of Section 4(f) for projects meeting the applicability criteria listed below.

1. The proposed transportation project uses a Section 4(f) park, recreation area, wildlife or waterfowl refuge, or historic site.

The segment of the former M&L Railroad that was determined eligible for the NRHP in 2009 extends from the New Hampshire state line in Salem to the Manchester airport in Londonderry. The Project's crossing of the M&L Railroad Historic District is a use of the Section 4(f) historic resource.

2. The Project includes all appropriate measures to minimize harm and subsequent mitigation necessary to preserve and enhance those features and values of the property that originally qualified the property for Section 4(f) protection.

The path construction as well as the addition of an underpass would facilitate future completion of the Derry Rail Trail and help to preserve the rail corridor from development. The addition of interpretive signage would improve the value of the Section 4(f) resource by educating the public about the historic use of the railroad and its importance in the development of the communities along the railroad. The Section 4(f) resource would be further enhanced by the construction of a suitably designed underpass that is complementary to the historic railroad corridor. In addition, the proposed update of the NHDHR Area Form for the M&L Railroad Historic District to reflect recent additions and removal of railroad features will help inform future projects and could result in the preservation of remaining corridor features. With incorporation of these measures, the Project would preserve and enhance the historic features and values of the rail corridor, resulting in a net benefit use.

3. For historic properties, the project does not require the major alteration of the characteristics that qualify the property for the NRHP such that the property would no longer retain sufficient integrity to be considered eligible for listing.

The Project area represents a small portion of the M&L Railroad Historic District. The ties and rails have been removed. The use of the Section 4(f) resource would not require a major alteration of the characteristics that qualify it for the NHRP. The mitigation measures would enhance the historic resources through the construction of a suitable underpass for the future trail crossing and interpretive signage to educate the public about the historic use of the railroad and its importance in the development of the communities along the railroad.

4. For historic properties, consistent with 36 CFR Part 800, there must be agreement reached amongst the SHPO and/or THPO, as appropriate, FHWA, and the Applicant on measures to minimize harm when there is a use of Section 4(f) property. Such measures must be incorporated into the project.

The measures to minimize harm and the mitigation outlined in this document will be incorporated into Project design.

5. The official(s) with jurisdiction over the Section 4(f) property agree in writing with the assessment of the impacts; the proposed measures to minimize harm; and the mitigation necessary to preserve, rehabilitate, and enhance those features and values of the Section 4(f) property; and that such measures will result in a net benefit to the Section 4(f) property.

An MOA has been prepared which addresses unavoidable impacts to the historic property and appropriate mitigation. A copy of the executed/completed MOA is included in Appendix K.

The Project facts meet all of the criteria included in this Section 4(f) programmatic evaluation, and the Project includes all possible planning to minimize harm to the Section 4(f) property resulting from such use.

7.7.2 Parkland and Recreational Resources

The effects to Rider Fields from the preferred alternative are not considered to be adverse and would constitute a *de minimis* use under Section 4(f).

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