CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

The probable effects of implementing the proposed project on the human, physical, cultural, and natural environments within the project study area are described in this chapter. The existing conditions for the human, physical, cultural, and natural environments are presented in Chapter 3.

4.1 DIRECT IMPACTS

4.1.1 HUMAN ENVIRONMENT

Community impact assessment is a process to evaluate the effects of a transportation project on a community and its quality of life. The assessment process is an integral part of project planning and development and describes how the proposed project will affect the people within the DCIA.

4.1.1.1 Community Facilities and Services

Parks and Recreational Facilities

Both Carrier Park, which is located partially within the DCIA, and the French Broad River Greenway, which will eventually link Carrier Park with Hominy Creek River Park, would be directly affected by the project. The NCDOT project team is coordinating with City of Asheville officials to minimize effects. To the greatest extent possible, efforts to avoid and minimize impacts to these resources were applied during preliminary design of the project alternatives, and these efforts will continue throughout the subsequent project development phases of the project.

Schools

While no schools would be displaced by any alternatives of any sections of the project, it is anticipated that temporary impacts and changes in access would result for the Isaac Dickson Elementary School located on Hill Street as a result of Alternatives 4 and 4-B. In addition, existing driveways into the entrance ramp to eastbound I-240 from Haywood Road on Section A would require access modifications at the Asheville City Schools Preschool.

Churches

The EIS Relocation Reports indicate that Community Baptist Church in the Burton Street Community would be displaced as a result of Section A (NCDOT 2015e). The Christian Church of Hope in the Emma Road Community would be displaced for Section B – Alternatives 3 and 4.

The First Church of God at 20 Hanover Street south of Haywood Road may be affected, but not relocated, by the project. Widening existing I-240 and modifying the exit ramp to Haywood Road may change the existing access to the First Church of God due to the closure of Hanover Street at Haywood Road.

Daycare Facilities, Cemeteries, Public Housing Units, Post Offices, and Hospitals

No daycare facilities, cemeteries, public housing units, post offices, or hospitals would be directly affected by the proposed project.

Commercial Corridors and Nodes

The proposed project would affect several of the commercial corridors located within West Asheville; however, it is not anticipated that the proposed project would have a substantial effect on the Western North Carolina Farmers Market or downtown Asheville. The following section includes a summary of effects to the commercial corridors from the Community Impact Assessment (URS 2015f).

Haywood Road Commercial Corridor

Overall, the net effect of the project on the Haywood Road Commercial Corridor in Section A would be a moderate negative effect. This determination is the result of the economic effects associated with the loss of on-street parking, short-term access impacts associated with construction activities, and potential impacts to public transportation.

Depending on the construction staging and proposed traffic control, the proposed project could have negative short-term impacts resulting from decreased vehicular accessibility during periods of construction. These effects would result from temporary closures of Haywood Road interchange ramps. Based on the *Pedestrian Work Zone Accommodations Assessment for I-26 Connector* (URS 2015h), Haywood Road pedestrian traffic can be safely accommodated on-site during construction.

Based on a review of existing aerial photography, several on-street parking spaces between Parkman Place and Argyle Lane could be lost as a result of the proposed project. Although parking could possibly still be accommodated on the intersecting streets in the area, this loss of store-front parking may affect the long-term viability of the existing businesses within the Haywood Road Commercial Corridor.

The ATS provides bus service along Haywood Road (Route 1 and Route 9). These routes utilize Hanover Street and will need to be modified due to the closing of the intersection at Hanover Street and Haywood Road. Public transportation in this area may also be temporarily impacted during construction, as access to Haywood Road may be affected during construction of the project.

Patton Avenue Commercial Corridor

Overall, the net effect of the project on the Patton Avenue Commercial Corridor for each of the Section B alternatives would be a moderate negative effect. This determination is the result of the anticipated economic effects associated with short-term access and mobility impacts during construction activities. Although high negative short-term effects are anticipated during construction of the proposed project, it is anticipated that some of the effects would be tempered by the fact that a few of the businesses are regional destinations and do not rely on drive-by traffic for patronage.

Riverside Drive Commercial Corridor

Overall, the net effect of the project on the Riverside Drive Commercial Corridor for each of the Section B alternatives would be a low negative effect. This determination is primarily the result of visual impacts related to construction of a bridge structure over the roadway. Alternatives 3 and 3-C would result in the construction of a single new bridge over the French Broad River, while Alternatives 4 and 4-B would include three new bridges. There are local concerns that a new bridge structure(s) would be out of character with the community and may affect the viewshed along the French Broad River. This effect may be less pronounced for Alternatives 3 and 3-C than with the other alternatives, because these alternatives would require fewer structures to cross the French Broad River.

In addition, for Alternatives 4 and 4-B, the exit ramp from US 19-23-70 northbound to Hill Street and from Riverside Drive to US 19-23-70 southbound would be removed, reducing the accessibility to the Montford and Houston/Courtland neighborhoods. Hill Street between Riverside Drive and Montford Avenue would become a local roadway without connection to the proposed freeway.

Police, Fire, and Emergency Services

According to local officials, the Buncombe County Rescue Squad Station Number 2 is the only emergency services facility within the DCIA and approximately 90 percent to 94 percent of the responses utilize Patton Avenue, including the Captain Jeff Bowen Bridges and/or existing I-240 south of Patton Avenue.

According to local officials, the proposed project could affect emergency response times. Response times may temporarily increase during construction of the project due to increased congestion resulting from construction activities, potential access restrictions in construction zones, lane closures, and detours. Local officials indicated that alternative access to the Buncombe County Rescue Squad was available, but requested that construction phasing details be coordinated with local emergency service providers. This coordination would include Buncombe County Rescue Squad, Buncombe Emergency Service, and the City of Asheville Fire Department. Upon completion of the project, it is anticipated that emergency response times along the corridor may decrease, especially during peak hour traffic, due to improved system linkages, interchange modifications, reduced congestion, and greater capacity along the corridor.

4.1.1.2 Relocations

It is the policy of the NCDOT to provide assistance to those affected by transportation improvements as required under the Federal Uniform Relocation Assistance and Real Properties Acquisition Act of 1970 and its revisions. This Act is intended to ensure that displaced individuals, families, and businesses receive fair, consistent, and equitable treatment, and are not affected disproportionately by projects that benefit the general public. The NCDOT Relocation Unit provides relocation assistance and benefits to those who are displaced during acquisition for highway projects.

A relocation report was prepared by the NCDOT in May and August 2015 (included in Appendix C) and the estimated residential, business, and non-profit relocations associated with each alternative of each section, as described in the report, are summarized in Table 4-1.

Table 4-1: Relocations Associated with each Alternative

Alternative	Estimated Total Residential Relocations	Estimated Minority Residential Relocations	Estimated Total Business Relocations	Estimated Minority Business Relocations	Estimated Total Non-Profit Relocations
Section C					
Alternative A-2	50	8	6	0	0
Alternative C-2	32	4	6	0	0
Alternative D-1	38	2	7	0	0
Alternative F-1	31	4	5	0	0
Section A					
I-240 Widening	81	0	17	0	1
Section B					
Alternative 3	34	10	24	0	2
Alternative 3-C	23	8	33	0	1
Alternative 4	46	14	24	0	2
Alternative 4-B	33	9	34	7	1

Source: *EIS Relocation Reports for STIP Project I-2513* (NCDOT 2015e).

Relocations related to Section C would be generally concentrated in areas west of Sand Hill Road, where all alternatives are equivalent. There is also a concentration of relocations where the missing movement for I-40 West to I-26 West is being added in all alternatives.

Relocations related to Section A – I-240 Widening Alternative, would be generally concentrated at the south end of the Fairfax/Virginia Avenue neighborhood, the east and west side of I-240 south of Haywood Road, and the west side of I-240, north of Haywood Road.

Relocations related to Section B would be generally concentrated in the proposed interchange areas.

The EIS Relocation Reports indicate that there may be a problem of housing within financial means, but that last-resort housing will enable any person(s) being displaced to obtain housing within their financial means.

According to North Carolina General Statute 133-10.1, Authorization for Replacement Housing, as a last resort, if a project cannot proceed to actual construction because of the lack of availability of comparable sale or rental housing, or because federal-aid payments are in excess of those otherwise authorized by this Article, the state or its agencies may provide for the construction and renovation of housing through private contractors, purchase sites and improvements, or sell or lease the premises to the displaced person. Local governments and agencies may also provide assistance authorized under the Federal Uniform Relocation and Real Property Acquisition Policy Act of 1970, as amended, for last resort housing.

4.1.1.3 Overall Study Area Effects

The effects on the human environment within the study area have been broken into separate sections. This section focuses on the effects of the project on the overall study area and addresses larger scale effects. The second level of analysis, included in Section 4.1.1.4, is a

more fine-grained analysis of the impacts on each of the identified communities within the study area.

Using the FHWA publication entitled *Community Impact Assessment: A Quick Reference for Transportation* as a guide, the following nine impact categories requiring consideration as part of the community studies process were identified (USDOT/FHWA 1996):

- Social and Psychological Aspects
- Physical Aspects
- Visual Environment
- Land Use
- Economic Conditions
- Mobility and Access
- Provision of Public Services
- Safety
- Displacement

The following sections summarize the evaluations for these nine categories.

Social and Psychological Aspects

Changes in Population

The proposed project is not anticipated to result in substantial changes in the population within the study area. The proposed project, in general, is the widening of an existing facility with a short portion of new location roadway across the French Broad River. No new access is proposed that would invite development into areas that are not currently developed.

Community Cohesion

Several of the communities located within the study area for the project show signs of cohesion and several communities have strong neighborhood bonds. The effects on the cohesion of individual communities are included in the community level evaluation in Section 4.1.1.4. Overall, the proposed project is not anticipated to result in substantial negative effects to the cohesiveness of the overall study area.

Isolation

The proposed project, in general, is the widening of an existing roadway with a short extension across the French Broad River. Over the past 40 years, many communities have developed around existing I-240 and other area roadways. The proposed project would not sever any communities or isolate any populations. Many of the impacts would be to the periphery of the communities and would not result in the isolation of any members of the community.

Social Values

The Asheville area is known for its natural beauty, rich architectural legacy, vibrant arts, and cultural environment and as a relaxing, soothing tourist destination. The social values within the region largely support these unique attributes. There has been concern locally about the proposed project related to the extent of the improvements and whether they fit into the unique context of the region. The design of the project has been developed to accommodate the traffic

needs of the growing region, and extensive measures have been taken to minimize the footprint of the project. Overall, the magnitude of the project is perceived to be out of context with the surrounding community and may have a minor negative effect on the social values; however, it is not anticipated that the proposed project would change the existing social values of the region.

Quality of Life

Similar to the social values of the region, the quality of life in the Asheville area is closely tied to the attributes that have made Asheville a community that is consistently rated as one of the best places to live, work, and visit. According to the Asheville Area Chamber of Commerce, "Asheville successfully embodies a fresh mix of eclectic sophistication within a culturally and economically diverse community. The city's location in the spectacular mountains of Western North Carolina makes it especially attractive to business as a place where lifestyle meets business opportunity, and technology meets creativity. Asheville offers an unparalleled quality of life, with its combination of small-town charm and extraordinary urban sensibility. There is no end to the range of offerings here, from arts and culture to outdoor sports, all played against the rich backdrop of Appalachian tradition and history" (Asheville Area Chamber of Commerce 2010). There has been concern locally that the magnitude of the project would have a negative effect on the qualities that make Asheville such a highly desirable place to live. The scope and scale of the project may have some negative effects on the quality of life for those adjacent to the project construction; however, it is not anticipated that the proposed project would have a substantial negative effect on the overall quality of life within the area.

Physical Aspects

Barrier Effect

In general, the proposed project is the widening of the existing freeway through West Asheville with a short extension across the French Broad River. While the controlled access nature of I-240 provides an existing barrier, communities have developed along the highways in the area over the past 40 years in a manner such that the freeway defines the borders of these communities. The new location portion of the project would create an additional barrier north of Patton Avenue; however, access in this area is greatly limited already by the steep terrain and presence of the railroad corridor and French Broad River.

In Section A, the extension of Amboy Road to Brevard Road would reduce the barrier effect between the neighborhoods in the Fairfax/Virginia Avenue area and the recreational amenities along the French Broad River on the east side of I-240.

In Section B, Alternatives 4 and 4-B would relocate I-240 to the north and convert Patton Avenue and the Captain Jeff Bowen Bridges to a local street, which would remove a substantial barrier created by the existing freeway and the French Broad River. The conversion would enhance the ability to cross from downtown Asheville to West Asheville for pedestrians and bicyclists (although an existing pedestrian bridge provides this access to a lesser extent) and reduce the barrier effect that exists due to the French Broad River.

The proposed project includes recommendations for noise walls along each of the alternatives in Section A, Section B, and Section C, which would introduce an additional barrier effect along the roadways; however, the effect is not likely to be substantial due to the existing control of access in the area not resulting in a substantial change from the existing condition.

Sounds

Noise effects for the proposed project are included in Section 4.1.3.1.

Other Physical Intrusions

Temporary effects such as dust and noise may be detected by some of the communities along the corridor during construction activities associated with the proposed project. These effects, if any, would be temporary and would cease upon completion of construction. Avoidance and minimization of some of these impacts could also occur through incorporation of NCDOT Best Management Practices (BMP) (NCDOT 2003a).

Visual Environment

The evaluation of the effects to the visual environment is included in Section 4.1.3.5.

Land Use

Overall, the proposed project is consistent with the local land use plans for the study area. However, the proposed project is not completely consistent with several of the local vision plans within the study area. A detailed evaluation of consistency with the local plans is included in Section 4.1.2.

Economic Conditions

The economic effects of the proposed project are evaluated in Section 4.1.1.6.

Mobility and Access

Pedestrian and Bicycle Access

Effects on pedestrian and bicycle access are evaluated in Section 4.1.2.2.

Public Transportation

Effects on public transportation are evaluated in Section 4.1.2.2.

Vehicular Access

Effects on vehicular access are evaluated in Section 2.7.3.

Provision of Public Services

The effects on use of public facilities and the ability to provide public services are evaluated in Section 4.1.1.1.

Safety

Bicycle and Pedestrian Safety

In general, the proposed project would maintain or enhance the existing bicycle and pedestrian amenities along the corridor. The safety of these facilities is closely related to the type and

design of the proposed bicycle and pedestrian facilities. Additional information on the bicycle and pedestrian elements included in each of the alternatives is included in Section 4.1.2.2.

Emergency Response

It is anticipated that emergency response times along the corridor may decrease, especially during peak hour traffic, due to improved system linkages, interchange modifications, and decreased congestion through addition of roadway capacity along the corridor. Emergency response times may temporarily increase during construction of the project due to increased congestion resulting from construction activities, potential access restrictions in construction zones, lane closures, and detours.

Displacement

Displacements or relocations due to the proposed project are evaluated in Section 4.1.1.2.

4.1.1.4 Community Effects

The community effects for the individual communities within the study area are presented in the following section. This evaluation includes determining the potential community impacts as a result of the build alternatives for the proposed project. The intent of the effects evaluation process is to understand the relationship between the proposed transportation project and the communities contained within the study area. This section includes an evaluation for each of the 15 communities described in Section 3.1.4.1.

Analysis Methodology and Impact Criteria

Using the FHWA publication entitled *Community Impact Assessment: A Quick Reference for Transportation* (USDOT/FHWA 1996) as a guide, the nine impact categories evaluated for the overall study area were utilized as part of the community studies process.

Within each impact category, a number of subcategories were also identified using the FHWA guidance. The subcategories were intended to allow for a full consideration of both the positive and negative effects on the community. In addition, in order to consider the context and intensity of each potential community impact, both quantitative and qualitative rating criteria were developed for use in the analysis process. In general, the vast majority of rating criteria were qualitative in nature. For additional information on the criteria used in the analysis, please refer to the *I-2513 Community Impact Assessment Update* (URS 2015f).

Each community received a ranking for each impact category, and the rankings ranged from high benefit to high burden. There were seven possible rankings:

- High benefit
- Moderate benefit
- Low benefit
- Neutral
- Low burden
- Moderate burden
- High burden

After evaluating the level of benefit or burden as a result of each identified impact category, an overall effect determination was developed for each community. Because of the qualitative nature of the impact analysis process, the overall effect determination was made on a qualitative basis as well. No explicit or quantitative weighting was directly applied to the impact categories. However, because each community is different and unique, an implicit weighting was applied to provide the appropriate consideration of context and intensity of anticipated impacts. The implicit weighting was based on resident and local planner input, as well as professional judgment.

The implicit weighting was integral to the overall impact assessment process and to meeting the goal of capturing the nuances between the qualitative impact categories. It incorporates the relative nature of anticipated benefits and burdens and provides the appropriate consideration of context and intensity as part of the overall effect determination for each community.

Community Effects Evaluation Findings

Table 4-2, Table 4-3, and Table 4-4 include a summary of the findings of the community effects evaluation for each of the 15 identified communities in Sections C, A, and B, respectively.

Table 4-2: Overall Community Effect by Community in Section C

Community	Alternative A-2	Alternative C-2	Alternative D-1	Alternative F-1
Clairmont Crest Mobile Home Park [a]	Low Burden	Low Burden	Neutral	Low Burden
Willow Lake Mobile Home Park [a]	Low Burden	Low Burden	Neutral	Low Burden

[a] Potential environmental justice community.

Table 4-3: Overall Community Effect by Community in Section A

Community	I-240 Widening Alternative
Morningside Park	Neutral
Fairfax/Virginia Avenue	Low Burden
Kentucky/Hanover/Pisgah View Area [a]	Low Burden
Burton Street [a, b]	See Table 4-4
Westwood Place[b]	See Table 4-4

[a] Potential environmental justice community.

[b] Community located in multiple sections of the proposed project. Impacts are assessed cumulatively on the overall community for each combination of alternatives.

Table 4-4: Overall Community Effect by Community in Section B

Community	Alternative 3	Alternative 3-C	Alternative 4	Alternative 4-B
Burton Street [a, b]	Moderate Burden	Moderate Burden	Low Burden	Low Burden
Westwood Place [b]	Low Burden	Low Burden	Low Burden	Low Burden
Emma Road/Bingham Road [a]	Low Burden	Low Burden	Low Burden	Low Burden
Murphy Hill	Low Burden	Low Burden	Moderate Burden	Moderate Burden
West End/Clingman [a]	Neutral	Neutral	Low Benefit	Low Benefit
River Arts District [a]	Neutral	Neutral	Low Benefit	Low Benefit
Hillcrest Apartments [a]	Neutral	Neutral	Moderate Benefit	Moderate Benefit

Community	Alternative 3	Alternative 3-C	Alternative 4	Alternative 4-B
Houston/Courtland [a]	Neutral	Neutral	Moderate Burden	Moderate Burden
Montford [a]	Low Burden	Low Burden	Low Burden	Low Burden
UNC-Asheville	Neutral	Neutral	Neutral	Neutral

Source: *I-2513 Community Impact Assessment Update* (URS 2015f).

[a] Potential environmental justice community.
[b] Community located in multiple sections of the proposed project. Impacts are assessed cumulatively on the overall community for each combination of alternatives.

The analysis shows that for Section C of the project, Alternative D-1 would have the least effect on the two communities located in proximity to the I-26/I-40/I-240 interchange. In Section A of the proposed project, the three communities located south of US 19-23 Business (Haywood Road) would have an overall effect of neutral or low burden. For the two neighborhoods in Section A that are located north of Haywood Road (Burton Street Community and Westwood Place Community), the evaluation was completed for the overall neighborhood and included the combination of Section A with the effects of the four alternatives being considered in Section B.

For the alternatives in Section B (including the entirety of the Burton Street Community and the Westwood Place Community), the alternatives that would provide the most benefits to the communities would be Alternatives 4 and 4-B, with one community rated a moderate benefit and two rated as low benefit, while Alternatives 3 and 3-C would have no communities rated as having a benefit. Both Alternatives 4 and 4-B include two communities with an overall effect of moderate burden, while Alternatives 3 and 3-C would have one community rated as a moderate burden.

The following sections summarize the findings for each individual community.

Clairmont Crest Mobile Home Park Community

Section C – Alternatives A-2 and C-2 (Low Burden)

Overall, the effect on the Clairmont Crest Mobile Home Park Community would be low burden due to noise impacts. The proposed project may slightly alter the visual environment due to the increased elevation of the I-26/I-40/I-240 interchange; however, field observations revealed that there is adequate vegetation to screen these effects. In addition, the proposed project would aid regional travel for the residents of this community.

Section C – Alternative D-1 (Neutral)

Overall, the effect on the Clairmont Crest Mobile Home Park Community would be neutral due to the proximity of the community related to the project and the relatively minor effects to the community. The proposed project may slightly alter the visual environment due to the increased elevation of the I-26/I-40/I-240 interchange; however, field observations revealed that there is adequate vegetation to screen these effects. In addition, the project would aid regional travel for the residents of the Clairmont Crest Mobile Home Park Community residents.

Section C – Alternative F-1 (Low Burden)

Overall, the effect on the Clairmont Crest Mobile Home Park Community would be low burden due to further proximity and reduced noise impacts. The project would aid regional travel for the residents of the Clairmont Crest Mobile Home Park Community.

Willow Lake Mobile Home Park Community

Section C – Alternatives A-2 and C-2 (Low Burden)

Overall, the effect on the Willow Lake Mobile Home Park Community would be low burden due to noise impacts. The proposed project may slightly alter the visual environment due to the increased elevation of the I-26/I-40/I-240 interchange; however, field observations revealed that there is adequate vegetation to screen these effects. In addition, the proposed project would aid regional travel for the residents of this community.

Section C – Alternative D-1 (Neutral)

Overall, the effect on the Willow Lake Mobile Home Park Community would be neutral due to the proximity of the community related to the project and the relatively minor effects to the community. The proposed project may slightly alter the visual environment due to the increased elevation of the I-26/I-40/I-240 interchange; however, field observations revealed that there is adequate vegetation to screen these effects. In addition, the project would aid regional travel for the residents of the Willow Lake Mobile Home Park Community.

Section C – Alternative F-1 (Low Burden)

Overall, the effect on the Willow Lake Mobile Home Park Community would be low burden due to further proximity and reduced noise impacts. The project would aid regional travel for the residents of the Willow Lake Mobile Home Park Community.

Morningside Park Community

Section A – I-240 Widening Alternative (Neutral)

Overall, the effect on the Morningside Park Community would be neutral due to the proximity of the community related to the project and the relatively minor effects to the community. The extension of Amboy Road would result in some benefits to the residents through improved vehicular and pedestrian/bicycle access to some areas east of I-26/I-240, such as Carrier Park. The proposed project would not result in any displacements or physical intrusions in Morningside Park.

Fairfax/Virginia Avenue Community

Section A – I-240 Widening Alternative (Low Burden)

Overall, the effect on the Fairfax/Virginia Avenue Community would be low burden. The proposed extension of Amboy Road is anticipated to provide better local connectivity to and circulation within the Fairfax/Virginia Avenue area, as well as a direct vehicular and pedestrian connection to Carrier Park. In addition, the proposed project has the potential to convert some residential land uses along Amboy Road within the community to commercial uses, which may in turn increase some property values in this area. The proposed project is also expected to benefit the safety of the area with an efficient decrease in emergency response times and improved pedestrian and bicycle safety.

Although the project is anticipated to benefit the Fairfax/Virginia Avenue area in some categories, the context and intensity of the burdens associated with other impact categories, particularly the physical aspects and displacements, are anticipated to be more pronounced. A

few long-time Fairfax/Virginia Avenue area residents were impacted by the original construction of I-240 in the 1960s and, therefore, would experience recurring impacts with regard to the proposed project. Residents adjacent to the project corridor are expected to experience changes to their visual environment due to potential noise walls, retaining walls, and the removal of mature landscaping/vegetation. In addition, the proposed project is anticipated to displace housing units in the Fairfax/Virginia Avenue area.

Kentucky/Hanover/Pisgah View Area Community

Section A – I-240 Widening Alternative (Low Burden)

Overall, the effect of the proposed project on the Kentucky/Hanover/Pisgah View Area Community would be low burden. The proposed project would increase mobility and access, as well as provide modest improvements in safety. These positive effects are evident on the bicycle and pedestrian side with the construction of striped bicycle lanes on Amboy Road and the provisions in the design to allow for future construction of pedestrian facilities in several areas. However, the benefits would be offset by the context and intensity of the burdens associated with the proposed project. The burdens of the proposed project would include recurring impacts to a residential neighborhood, noise impacts, visual impacts, and the potential difficulties with finding replacement housing within financial means. In addition, the proposed project is anticipated to displace housing units in the Kentucky/Hanover/Pisgah View Area Community.

Burton Street Community

Section A – I-240 Widening Alternative and Section B – Alternatives 3 and 3-C (Moderate Burden)

Overall, the effect of the proposed project on the Burton Street Community would be moderate burden. Although the proposed project is anticipated to benefit the community in the form of improved emergency response times, the context and intensity of the burdens associated with other impact categories are anticipated to be more pronounced. These negative effects would include recurring impacts to community cohesion, the physical aspects of the project, potential difficulties associated with finding replacement housing within financial means, inconsistencies with local goals and land use plans, as well as anticipated effects to the visual environment within the community. In addition, Alternatives 3 and 3-C are anticipated to displace housing units in the Burton Street Community.

Section A – I-240 Widening Alternative and Section B – Alternatives 4 and 4-B (Low Burden)

Overall, the effect of the proposed project on the Burton Street Community would be low burden. Although the proposed project is anticipated to benefit the community in the form of improved emergency response times, the context and intensity of the burdens associated with other impact categories are anticipated to be more pronounced. These negative effects would include recurring impacts to community cohesion, the physical aspects of the project, the potential difficulties associated with finding replacement housing within financial means, as well as anticipated effects to the visual environment within the community. In addition, Alternatives 4 and 4-B are anticipated to displace housing units in the Burton Street Community.

Westwood Place Community

Section A – I-240 Widening Alternative and Section B – Alternatives 3 and 3-C (Low Burden)

Overall, the effect on the Westwood Place Community would be low burden. The community is anticipated to benefit from a decrease in emergency response times following construction of the project. However, the project may have a minor effect on community cohesion in Westwood Place. In addition, the community is expected to be burdened by the loss of some mature vegetation and housing units, loss of vehicular access via Hazel Mill Road from I-240 eastbound/I-26 westbound, and physical intrusions along the north and west periphery of the community.

Section A – I-240 Widening Alternative and Section B – Alternatives 4 and 4-B (Low Burden)

Overall, the effect on the Westwood Place Community would be low burden for both Alternative 4 and Alternative 4-B. The proposed project would provide sidewalks and bicycle lanes on both sides of Patton Avenue from Regent Park Boulevard to downtown Asheville. This would provide the community with a direct pedestrian/bicycle connection to Patton Avenue at Hazel Mill Road, as well as a pedestrian/bicycle connection across the French Broad River. Since pedestrian and bicycle activity is an important value to the Westwood Place Community, the new pedestrian and bicycle facilities on Patton Avenue may increase the quality of life within the community. The community is also anticipated to benefit from improved pedestrian and bicycle safety on Patton Avenue and a decrease in emergency response times following construction of the project. In addition, the project would not change the traffic patterns on the surface streets within the Westwood Place Community. However, the community is expected to be burdened by the loss of some mature vegetation and housing units, and physical intrusions along the north and west periphery of the community.

Emma Road/Bingham Road Community

Section B – All Alternatives (Low Burden)

Overall, the effect of the proposed project on the Emma Road/Bingham Road Community would be low burden. Although the proposed project is anticipated to benefit the community in the form of improved emergency response times, the context and intensity of the burdens associated with other impact categories are anticipated to be more pronounced. These negative effects would include noise impacts, visual impacts associated with clearing of vegetation and alteration of the visual environment, as well as displacements and the potential difficulties associated with finding replacement housing within financial means.

Murphy Hill Community

Section B – Alternatives 3 and 3-C (Low Burden)

Overall, the effect of the proposed project on the Murphy Hill Community would be low burden. Although some benefit may be experienced by the community through ultimate decreases in emergency response times along the I-26 Corridor, they are somewhat tempered by the context and intensity of the burdens associated with other impact categories. These negative effects would include a slightly altered visual environment and slight increase in noise for residents in close proximity to the project corridor when compared with Alternatives 4 and 4b, as well as a potential decrease in property values. In addition, the proposed alternatives may contribute to

the isolated nature of the Murphy Hill Community, and residents would experience inconvenience due to access limitation during construction of the project.

Section B – Alternatives 4 and 4-B (Moderate Burden)

Overall, the effect of the proposed project on the Murphy Hill Community would be moderate burden. Although some benefit may be experienced by the community through ultimate decreases in emergency response times along the I-26 Corridor, they are tempered by the context and intensity of the burdens associated with other impact categories. These negative effects would include an altered visual environment and an increase in noise for residents in proximity to the project corridor and a potential decrease in property values. In addition, the proposed alternatives may contribute to the isolated nature of the Murphy Hill Community, and residents would experience inconvenience due to access limitation during construction of the project.

West End/Clingman Area Neighborhood (WECAN)

Section B – Alternatives 3 and 3-C (Neutral)

Alternatives 3 and 3-C would not include construction on the east side of the French Broad River. Therefore, the overall effect of the proposed alternatives on the WECAN would be neutral. Some benefit may be experienced by the community through decreases in emergency response times along the I-26 Corridor. However, on the whole, no effects (positive or negative) are anticipated to the WECAN.

Section B – Alternatives 4 and 4-B (Low Benefit)

Overall, the effect of Alternatives 4 and 4-B on the WECAN community would be low benefit. The benefit of the proposed project is primarily attributed to the enhanced pedestrian connections that could have some benefit to WECAN, as well as the separation of local and interstate traffic. WECAN may also benefit through decreases in emergency response times. The separation of local and interstate traffic would also provide opportunities for enhanced community connections that are identified in several local plans. Although not part of the proposed project, the implementation of these local connections as part of future project(s) could provide the WECAN community with benefits beyond those identified for this project.

River Arts District (RAD) Community

Section B – Alternatives 3 and 3-C (Neutral)

Alternatives 3 and 3-C would not include construction on the east side of the French Broad River. Therefore, the overall effect of the proposed alternatives on the RAD Community would be neutral. Some benefit may be experienced by the RAD Community through decreases in emergency response times along the I-26 Corridor. However, on the whole, no effects (positive or negative) are anticipated to the RAD Community.

Section B – Alternatives 4 and 4-B (Low Benefit)

Overall, the effect of Alternatives 4 and 4-B on the RAD Community would be low benefit. The benefit of the proposed project is primarily attributed to the enhanced pedestrian and bicycle connections that could have some benefit to the RAD Community, as well as the separation of local and interstate traffic. The RAD Community may also benefit through decreases in

emergency response times. The separation of local and interstate traffic would also provide opportunities for enhanced community connections that are identified in several local plans. Although not part of the proposed project, the implementation of these local connections as part of future project(s) could provide the RAD Community with benefits beyond those identified for this project.

Hillcrest Apartments Community

Section B – Alternatives 3 and 3-C (Neutral)

Alternatives 3 and 3-C would not include construction on the east side of the French Broad River. Therefore, the overall effect of the proposed alternatives on the Hillcrest Apartments would be neutral. Some benefit may be experienced by the Hillcrest Apartments Community through decreases in emergency response times along the I-26 Corridor. However, Alternatives 3 and 3-C are inconsistent with detailed local plans in that they would not separate local and interstate traffic.

Section B – Alternatives 4 and 4-B (Moderate Benefit)

Overall, Alternatives 4 and 4-B would result in a moderate benefit to the Hillcrest Apartments Community. The benefit received by the residents of Hillcrest Apartments would be primarily the result of the improved vehicular, bicycle, and pedestrian connections and facilities that would be constructed as part of the proposed project. In addition to enhanced access and mobility through transportation options, the additional connectivity would also provide social and psychological benefits by reducing the isolation of the community. Some benefit may be experienced by the Hillcrest Apartments Community through decreases in emergency response times along the I-26 Corridor.

Houston/Courtland Community

Section B – Alternatives 3 and 3-C (Neutral)

Alternatives 3 and 3-C would not include construction on the east side of the French Broad River. Therefore, the overall effect of the proposed alternatives on the Houston/Courtland Community would be neutral. Some benefit may be experienced by the community through decreases in emergency response times along the I-26 Corridor. However, on the whole, no effects (positive or negative) are anticipated to the Houston/Courtland Community.

Section B – Alternative 4 (Moderate Burden)

Overall, the effect on the Houston/Courtland Community would be moderate burden. This community was previously impacted by the original construction of I-240 in the 1960s and US 19-23-70 in the 1970s, and, therefore, would experience recurring impacts due to the proposed project. It is anticipated that the proposed project may somewhat alter the visual environment for some residents close to the project corridor. Although the proposed project is expected to benefit the safety of the Houston/Courtland Community by decreasing emergency response times, a public transportation bus stop on Hill Street may be temporarily impacted during construction of the project. In addition, the proposed project is anticipated to housing units in the community, and the ability to find housing within financial means could be problematic for some of these residents.

Section B – Alternative 4-B (Moderate Burden)

Overall, the effect on the Houston/Courtland Community would be moderate burden. This community was previously impacted by the original construction of I-240 in the 1960s and US 19-23-70 in the 1970s, and, therefore, would experience recurring impacts due to the proposed project. It is anticipated that the proposed project may somewhat alter the visual environment for some residents in proximity to the project corridor. Although the proposed project is expected to benefit the safety of the Houston/Courtland Community by decreasing emergency response times, a public transportation bus stop on Hill Street may be temporarily impacted during construction of the project. In addition, the proposed project is anticipated to displace housing units in the community, and the ability to find housing within financial means could be problematic for some of these residents.

Montford Community

Section B – Alternatives 3 and 3-C (Low Burden)

Overall, the effect of the proposed project on the Montford Community would be low burden. Although some benefit may be experienced by the community through decreases in emergency response times along the I-26 Corridor, the context and intensity of the burdens associated with an altered visual environment for residents in proximity to the project corridor and inconsistencies with local goals would cumulatively and slightly outweigh the benefits of the project.

Section B – Alternative 4 (Low Burden)

Overall, the effect of the proposed project on the Montford Community would be low burden. Although some benefit may be experienced by the community through decreases in emergency response times along the I-26 Corridor, the context and intensity of the burdens associated with an altered visual environment for residents in proximity to the project corridor would slightly outweigh the benefits of the project.

Section B – Alternative 4-B (Low Burden)

Overall, the effect of the proposed project on the Montford Community would be low burden. Although some benefit may be experienced by the community through decreases in emergency response times along the I-26 Corridor, the context and intensity of the burdens associated with altered visual environment for Riverside Cemetery and residents in proximity to the project corridor and the residential displacements would cumulatively outweigh the benefits of the project.

UNC-Asheville Community

Section B – All Alternatives (Neutral)

Overall, the effect on UNC-Asheville Community would be neutral due to the proximity of the community to the project and the relatively minor effects to the community. The proposed project is anticipated to benefit the community in the form of more efficient emergency response times. The UNC-Asheville Community would not experience physical impacts such as physical intrusions, increased noise, or displacements.

4.1.1.5 Environmental Justice

The USDOT Order on Environmental Justice states that the USDOT shall determine whether programs, policies, and activities for which they are responsible will have an adverse impact on protected minority and low-income populations, and whether that adverse impact will be disproportionately high.

Based on the evaluation, it was determined that, for any community with an overall effect of moderate or high burden, the project would potentially have a disproportionately high and adverse effect on a protected low-income or minority community. Therefore, to make a conclusion on Environmental Justice, it is recommended that additional public outreach occur for any protected population that would incur a moderate or high burden as a result of the proposed project. Based on this method, it is recommended that the following communities receive additional public outreach and evaluation in order to determine whether the project would result in a disproportionately high and adverse effect on a protected population:

- Burton Street Community (Section A and Section B – Alternatives 3 and 3-C)
- Houston/Courtland Community (Section B – Alternatives 4 and 4-B)

4.1.1.6 Economic Effects

The economic effects of the proposed project were evaluated in the *Direct Land Use and Economic Effects Assessment* prepared for the proposed project (URS 2014a). The summary of economic impacts is based on considering the overall economic impact as a result of constructing the proposed project. Individual build alternatives were not evaluated because the economic impact can only be evaluated based on the combinations of alternatives that make up the proposed project. With 4 alternatives in Section C, 1 in Section A, and 4 in Section B, a total of 16 combinations of alternatives are included for evaluation. In general, the economic effects of individual alternatives within each section of the project would be proportional to the right-of-way cost included in the cost estimate for the project.

Effect on Tax Base

The effect of the proposed project on property tax receipts for any of the build alternatives would not likely be substantial as the combination of alternatives that would result in the greatest right-of-way cost would reduce the property tax base by approximately 0.6 percent. The overall potential range, set by taking the proportional impact as the low end of the range and completely acquiring all affected parcels as the upper end of the range, shows that the effect on property value would be within the range of 0.4 to 0.7 percent of both the tax value and the assessed value. Therefore, even under the worst-case scenario, the effect on the property tax base would be less than 1.0 percent of the tax value. It is also likely that, due to the relocation of residences and businesses, the money paid to the relocatees would be used for new development and the effect on the tax base may be offset to some degree (URS 2014a).

In summary, it is not likely that the construction of any of the build alternatives for the proposed project would result in a substantial adverse effect on the regional or local economy due to a loss in tax revenues.

Effect on Public Expenditures

The proposed project is not likely to notably increase public expenditures within the study area. The proposed project would not likely result in a substantial economic effect on taxing authorities as the construction of the project would not require excessive additional expenditures, such as maintenance operations or extension of public utilities to new land that would be opened for increased development. However, the proposed project may result in local taxing authorities incurring some cost, through joint development of project amenities such as sidewalks and bicycle facilities. NCDOT has established a Bicycle Policy (NCDOT 2009f) and a Pedestrian Policy (NCDOT 1993b) that allow for the inclusion of such facilities on projects; however, construction of these facilities would require that the local government share in the cost of including facilities that do not currently exist and assume the cost for maintaining the facilities. Additionally, the proposed project would include additional lighting that may require public expenditures in the form of electrical costs.

Effect on Employment Opportunities

The proposed project would result in the relocation of up 54 businesses. The Relocation Reports evaluate several criteria to determine the potential effect on businesses as a result of the proposed project, including the following (NCDOT 2015e):

- Will business services still be available after the project?
- Are suitable business sites available?

It was determined in the Relocation Report that for all alternatives business, services would still be available after the project and that suitable sites for businesses to relocate are available. Because the project is not diverting traffic away from the existing highway corridor, it is likely that there would not be any negative long-term effects on businesses or employment opportunities as a result of the proposed project. During the construction phase of the project, some local businesses may be negatively affected by the construction activities; however, employment opportunities for construction services would likely increase based on the magnitude of the proposed project.

Effect on Accessibility

In general, the proposed project would result in maintaining or improving the existing accessibility to businesses. Several businesses within the study area may incur a loss of some parking areas due to the proposed project; however, it is not anticipated that this loss would result in a substantial effect to the businesses.

Effect on Retail Sales

Because the project is not diverting traffic away from the existing highway corridor, it is likely that there would not be any negative long-term effects on retail sales as a result of the proposed project. It is likely that some negative effects on retail sales may occur during the construction of the proposed project; however, it is not likely that the project would result in a substantial long-term stagnation or decline on retail sales in the area of the proposed project.

Impacts on the Economic Vitality of Highway-Related Businesses

The impacts on the economic vitality of highway-related businesses are related to the availability of access and the change in traffic volumes that are diverted or attracted by the proposed project. The proposed project would not substantially change access to and from the freeway, nor would it divert traffic away from highway-related businesses; therefore, it is not likely to have a substantial adverse effect on highway-related businesses.

Impacts on Established Business Districts

As stated in the FHWA guidance, this concern is likely to occur on a project that might lead to or support new large commercial development outside of a central business district. The proposed project would not substantially alter existing access to and from the freeway and is not likely to lead to any large commercial developments outside of the central business district; therefore, it is not likely to have a substantial adverse effect on established business districts.

4.1.2 LAND USE AND TRANSPORTATION PLANNING

The compatibility of the project with local land use and transportation planning is assessed in this section. The Purpose and Need for the proposed project does not require that the alternatives considered for the project meet the recommendations for any of the plans evaluated. Consistency with local land use plans may not be required, but it is desirable and lack of consistency with land use plans is a factor when considering the scope and intensity of each alternative's impacts.

4.1.2.1 Land Use Plans

Existing Land Use and Zoning

Since much of the land along the corridor and surrounding interchanges is currently developed, the project would not be likely to result in any major land use conflicts. The general concept for the project is supported by the City of Asheville, Buncombe County, the Town of Woodfin, and FBRMPO, among others.

Compatibility with Future Land Use Plans

Generally, land use plans call for maintaining the concentration of development within previously urbanized areas while redeveloping certain underutilized areas such as the riverfront and the Haywood Road corridor. Land use changes as a result of the proposed project are expected to be minimal within the FLUSA. The pace of infill and redevelopment may be accelerated somewhat as a result of the proposed project; however, commercial, residential, and industrial growth and redevelopment is already occurring in many of the areas within the FLUSA and is expected to continue with or without the proposed project. These likely effects of the project are generally consistent with existing and future land use plans developed for the local agencies within the FLUSA.

Direct Impacts to Land Use

The quantification of the land use impacts was developed to determine the area of properties that would be acquired for each of the alternatives beyond the property that is currently utilized as transportation right-of-way.

A summary of the land use impacts for each alternative is included in Table 4-5.

Table 4-5: Land Use Impacts by Zoning Category (in acres)

Zoning Type	Section C				Section A	Section B			
	A-2	C-2	D-1	F-1		3	3-C	4	4-B
Residential Single-Family Districts	19.3	12.7	19.7	12.5	8.4	4.0	4.3	6.4	7.5
Residential Multi-Family Districts	21.4	15.4	15.2	16.0	26.5	26.5	17.0	27.6	17.0
Neighborhood Business District	0.00	0.00	0.00	0.00	0.00	0.2	0.2	0.3	0.1
Community Business Districts	0.00	0.00	0.00	0.00	4.9	0.1	0.1	0.04	0.00
Institutional District	38.6	38.6	35.4	34.5	13.6	0.4	0.4	0.2	0.4
Highway Business District	11.4	9.6	9.7	7.8	1.9	14.8	15.8	14.0	14.3
Regional Business District	32.3	32.4	34.1	27.1	0.00	15.4	15.4	9.3	10.5
Central Business District	0.00	0.00	0.00	0.00	0.4	0.00	0.00	0.2	0.3
Resort District	0.00	0.00	0.00	0.00	0.00	22.1	21.5	37.2	19.6
River Arts District	0.00	0.00	0.00	0.00	6.3	11.2	24.8	16.1	22.3
Industrial Districts	0.00	0.00	0.00	0.00	0.00	4.0	0.00	2.4	0.4
Office	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial	28.7	31.4	30.8	24.8	2.7	0.0	0.0	0.0	0.0
TOTALS	**151.8**	**140.1**	**144.9**	**122.6**	**64.7**	**98.9**	**99.7**	**113.7**	**92.5**

Section C

The overall area of land that would be required for each of the alternatives being considered in Section C would range from 122.6 to 151.8 acres. Alternative F-1 would have the smallest footprint while Alternative A-2 would have the greatest land use impacts of the alternatives considered in Section C.

Section A

The overall area of land impacted by the single alternative for Section A would include acquiring 64.7 acres of property that is generally located along the existing I-240 corridor and at the proposed interchanges. The greatest amount of the impacts would be to Residential Multi-Family Districts (26.5 acres).

Section B

The overall area of land that would be required for each of the alternatives being considered in Section B would range from 92.5 to 113.7 acres. Alternative 4-B would have the smallest footprint while Alternative 4 would have the greatest land use impacts of the alternatives considered in Section B.

4.1.2.2 Transportation Plans

Compatibility with Highway Plans

FBRMPO 2035 Long Range Transportation Plan (2035 LRTP) (2010)

The proposed project is included in the FBRMPO's *2035 Long Range Transportation Plan* (2035 LRTP) adopted on September 23, 2012. The plan calls for the promotion of aesthetic treatments and improvements along the I-26 Corridor through Asheville, the proposed widening to eight lanes and the identification of other transportation projects with a direct relationship to the I-26 Corridor. Therefore, assuming aesthetic treatments are made to the proposed project, all sections of the proposed project would be consistent with the recommendations included in this plan.

Comprehensive Transportation Plan for French Broad River MPO and Rural Areas of Buncombe and Haywood Counties (2008)

The *Comprehensive Transportation Plan for French Broad River MPO and Rural Areas of Buncombe and Haywood Counties* (NCDOT 2008) includes a plan recommendation for I-240/Future I-26 from I-40 to Broadway and notes that recurring congestion is already a problem along the length of the corridor. The recommendation, labeled as Highway Project A2 for the segment, is as follows:

> "This project has already been identified in the LRTP and the TIP as project I-2513. It should be coordinated with bicycle project A1.
>
> The facility should be widened and a new connector constructed, facilitating the through movement of north-south traffic. Several alternatives and design scenarios are currently under evaluation and their outcome will guide the ultimate design and cross-section of the new and widened facilities. Current plans call for a cross-section of at least a 6-lane along the length of the corridor, with portions 8-lane. The project may construct an additional river crossing approximately parallel to the Smoky Park Bridge."

Bicycle project A1 is defined as constructing an off-road bicycle/pedestrian connector across I-240 in tandem with widening from Hazel Mill Road/Regent Park Boulevard to West Haywood Street.

The Comprehensive Transportation Plan also includes several other projects within the study area for the proposed project as follows:

- Highway Project A21 – Wilma Dykeman RiverWay: Plan calls for sections of two or four lanes with a median or a three-lane section with parallel parking.
- Highway Project A22 – Amboy Road: Plan states that the corridor should be upgraded to include a median to preserve the de facto level of access control and improve the streetscape. Depending upon redevelopment plans for the area and the accompanying future traffic volumes, a four-lane section may be warranted.
- Highway Project A27 – Amboy Road Extension: A proposed extension with one lane eastbound and two lanes westbound.

- Highway Project A48 – US 19-23 Business (Haywood Road): Plan recommends that along this corridor, turn lanes should be added at intersections or possibly a two-way left turn lane be installed for all or part of the corridor.
- Highway Project A67 – Roberts Street/Lyman Street: The Plan recommends that the roadway should be upgraded in coordination with the Wilma Dykeman RiverWay plans.
- Public Transportation Project A15: Local bus service along the Wilma Dykeman RiverWay.
- Public Transportation Project A22: Proposed park and ride lot at old National Guard Armory.
- Bicycle Project A4: Plan recommends constructing an off-road connector from NC 191 (Brevard Road) to the French Broad River Greenway in the vicinity of the I-240 intersection.

The Comprehensive Transportation Plan is applicable to all sections of the proposed project. The following recommendations would be within the project study area, but would not be affected by the construction of the proposed design. Therefore, the project alternatives would be consistent with the plan as they do not preclude the improvements from being made.

- Highway Project A21
- Highway Project A22
- Highway Project A48
- Highway Project A67
- Public Transportation Project A15
- Public Transportation Project A22
- Bicycle Project A4

Therefore, the consistency evaluation was based on the following recommendations:

- Highway Project A2 – I-240/Future I-26 from I-40 to Broadway (all sections)
- Highway Project A27 – Amboy Road Extension (Section A)
- Bicycle Project A1 – Plan recommends constructing an off-road bicycle/pedestrian connector across I-240 in tandem with widening from Hazel Mill Road/Regent Park Boulevard to West Haywood Street (Section B)

Section C

All four of the alternatives proposed for Section C would be consistent with the plan that recommends at least six lanes on I-26 and includes interchanges at I-26/I-40/I-240 and I-40/NC 191.

Section A

The single widening alternative proposed for Section A would be consistent with the plan that recommends at least six lanes on I-26 and includes interchanges at I-26/I-240 with NC 191, I-26/I-240 with SR 3556 (Amboy Road), and I-26/I-240 with US 19-23 Business (Haywood Road). The proposed design includes an eight-lane freeway throughout the length of the section, which is consistent with the statement that portions of the corridor will be eight lanes.

The Section A alternative would also be mostly consistent with the recommendation for a new roadway from existing Amboy Road to NC 191 (Brevard Road), with the exception that the proposed design includes two lanes in each direction. The need for two lanes in each direction was to match the proposed design for NCDOT STIP Project U-4739 and provide for adequate traffic operations.

Section B

The four alternatives proposed in Section B would be consistent with the recommendations in the plan for the I-26/I-240 corridor with a six-lane new location extension of I-26 across the French Broad River.

None of the alternatives proposed for Section B would be completely consistent with the recommendation for an off-road bicycle/pedestrian connector across I-240 in tandem with widening from Hazel Mill Road/Regent Park Boulevard to West Haywood Street.

Alternatives 3 and 3-C

The proposed designs do not include an off-road connection across the French Broad River but would not preclude a connection being made as part of a future project.

Alternatives 4 and 4-B

The proposed designs for Alternatives 4 and 4-B are very similar along Patton Avenue and would not include construction of an off-road connection across the French Broad River, nor would they preclude a connection being made as part of a future project. The proposed designs would allow for the ability to construct bicycle and pedestrian facilities along the existing Captain Jeff Bowen Bridges, which would fulfill the goal of bicycle and pedestrian connectivity across the river.

Compatibility with Transit Plans

Coordinated Public Transportation and Human Services Transportation Plan (2008)

The FBRMPO *Coordinated Public Transportation and Human Services Master Plan* stipulates the need for high frequency local service along major corridors (FBRMPO 2008). The proposed project should help alleviate congestion on local roadways, thereby improving the efficiency of public transportation on arterial roads within the project study area; therefore, all sections of the proposed project would be consistent with the recommendations included in this plan.

City of Asheville Final Transit Master Plan (2009)

The *City of Asheville Final Transit Master Plan* outlines the planned improvements for the transit system (HDR Engineering, Inc. of the Carolinas 2009). The plan highlights opportunities to improve frequency of buses, efficiency of bus routes, and improved pedestrian mobility that would help improve ridership. The proposed project is not specifically addressed by the plan, but it would help improve overall transportation efficiency and reduce congestion; therefore, all sections of the proposed project would be consistent with the recommendations included in this plan.

Compatibility with Local Bicycle, Pedestrian, and Greenway Plans

The evaluation of multi-modal transportation for the I-26 Connector is based on the NCDOT policies for integration of multi-modal elements into transportation projects and includes determining the consistency with the following multi-modal plans:

- *City of Asheville Pedestrian Plan* (City of Asheville 2005b)

- *City of Asheville Comprehensive Bicycle Plan* (City of Asheville 2008)
- *City of Asheville, North Carolina Parks, Recreation, Cultural Arts, & Greenways Master Plan* (City of Asheville 2013)

City of Asheville Pedestrian Plan

The *City of Asheville Pedestrian Plan* includes a section on pedestrian connectivity and the I-26 Corridor, describing opportunities for providing pedestrian access through both the proposed project and the NCDOT TIP Project A-10. Additionally, the Pedestrian Plan shows three existing pedestrian bridges crossing I-240 within the project study area. One pedestrian bridge is located slightly west of the I-240 interchange with US 19-23-70/Patton Avenue and one is located slightly east of this interchange. The third pedestrian bridge, which is now closed, is located slightly north of the I-240 interchange with SR 3556 (Amboy Road). The Pedestrian Plan also denotes Patton Avenue across the French Broad River as a corridor in need of pedestrian linkage.

City of Asheville Comprehensive Bicycle Plan (2008)

The City of Asheville completed the *City of Asheville Comprehensive Bicycle Plan* (Bicycle Plan), which was adopted by the Asheville City Council on February 26, 2008. This plan complements the *City of Asheville Pedestrian Plan* (Pedestrian Plan), which was adopted in February 2005 and supersedes the 1999 *Pedestrian and Bicycle Thoroughfare Plan.* The Bicycle Plan includes recommendations for bicycle facilities on Pond Road, Sand Hill Road, Brevard Road, Amboy Road, Fairfax Avenue, State Street, Haywood Road, Patton Avenue, Emma Road, Riverside Drive, Hill Street, Pearson Bridge Road, and Broadway. The Bicycle Plan also recommends that the proposed project include bicycle access across the Smoky Park Bridges and as a part of the extension of Amboy Road.

City of Asheville, North Carolina Parks, Recreation, Cultural Arts, & Greenways Master Plan (2009, Updated 2013)

This plan is intended to help meet the needs of current and future residents by positioning Asheville to build on the community's unique parks and recreation assets and identify new opportunities. The citizen-driven plan establishes a clear direction to guide city staff, advisory committees, and elected officials in their efforts to enhance the community's parks, recreation, and cultural arts programs, services, and facilities.

The plan identified two future park sites within the DCIA: Jean Webb Park and Progress Energy Park. Jean Webb Park has since been constructed. The 2013 update to the plan specifically mentions the I-26 Connector and that the eventual selected alternative "can impact the proposed greenway network."

NCDOT Policies Relating to Multi-Modal Transportation

NCDOT has a long standing set of policies that strive to integrate bicycle and pedestrian accommodations into the planning, design, and construction of highway projects. The following policies apply to multi-modal transportation.

Board of Transportation Resolution: Bicycling & Walking in North Carolina, a Critical Part of the Transportation System

The North Carolina Board of Transportation has strongly demonstrated its commitment to improving conditions for bicycling and walking in North Carolina by passing a resolution to make bicycling and walking a critical part of the state's transportation system (NCDOT 2009c). Although the department incorporated bicycle and pedestrian elements—including bike lanes and sidewalks—into many of its highway projects prior to September 8, 2000, this resolution exemplifies the department's dedication to integrating these elements into its long range transportation system. It also acknowledges the benefits that bicycling and walking offer: cleaner air, reduced congestion, more livable communities, more efficient use of road space and resources, and healthier people.

The resolution also encourages cities and towns across the state to make bicycling and pedestrian improvements an integral part of their transportation planning and programming.

NCDOT Bicycle Policy

In 1978, the North Carolina Board of Transportation adopted the nation's most comprehensive set of bicycle policies in response to the enabling legislation of 1974. These policies were unique at that time in that they detailed how the state DOT would institutionalize bicycle provisions into everyday departmental operating functions. They declared "bicycle transportation to be an integral part of the comprehensive transportation system in North Carolina" and formalized the inclusion of bicycle provisions in highway construction projects.

In 1991, the policy document was updated to clarify responsibilities regarding the provision of bicycle facilities upon and along the 77,000 mile state-maintained highway system. The newer policy details guidelines for planning, design, construction, maintenance, and operations pertaining to bicycle facilities and accommodations (NCDOT 2009c). All bicycle improvements undertaken by NCDOT are based on this policy.

NCDOT Pedestrian Policy Guideline

A sidewalk policy was initially developed in 1993 whereby NCDOT may participate with localities in the construction of sidewalks as incidental features of highway improvement projects. Prior to this policy, NCDOT participation in sidewalk construction was limited to replacing sidewalks that were disturbed during road construction. Now, at the request of a locality, state funds for a sidewalk are made available as part of an incidental project if matched by the requesting locality, which will be responsible for maintaining the sidewalk. The matching share is a sliding scale based on population.

Administrative Action to Include Local Adopted Greenway Plans in the NCDOT Highway Planning Process

In 1994, the NCDOT adopted administrative guidelines to consider greenways and greenway crossings during the highway planning process (NCDOT 2009b). This policy was incorporated so that critical corridors that have been adopted by localities for future greenways will not be severed by highway construction. This policy further details the responsibilities for both NCDOT as well as for localities. Guidelines for NCDOT include recommendations for coordination with localities, consideration of existing and locally adopted greenways and plans, division between

NCDOT and the localities when greenways are included as part of highway transportation projects, and the maintenance responsibilities of any greenways.

NCDOT Bridge Policy

NCDOT's Bridge Policy establishes controlling design elements for new and reconstructed bridges on the state road system. It includes information to address sidewalks and bicycle facilities on bridges, including minimum handrail heights and sidewalk widths.

NCDOT Complete Streets Policy

The North Carolina Board of Transportation approved this policy at the July 2009 board meeting (NCDOT 2009d). The policy requires planners and designers to consider and incorporate multi-modal alternatives in the design and improvement of all transportation projects within a growth area of a municipality unless certain circumstances exist. The implementation and guidance on how this policy is to be applied was released in July 2012 (NCDOT 2012).

FHWA Policies Relating to Multi-Modal Transportation

FHWA also has a long standing set of policies that strive to integrate bicycle, pedestrian, and non-motorized transportation into projects involving federal funding.

Guidance on Bicycle and Pedestrian Provisions of the Federal-aid Program

FHWA has a strong commitment to improving conditions for bicycling and walking. The non-motorized modes are an integral part of the mission of FHWA and critical elements of the local, regional, and national transportation system. Bicycle and pedestrian projects and programs are eligible for, but not guaranteed, funding from almost all of the major federal-aid funding programs. FHWA expects every transportation agency to make accommodation for bicycling and walking a routine part of their planning, design, construction, operations, and maintenance activities (USDOT/FHWA 2005a).

Mainstreaming Nonmotorized Transportation

Federal transportation policy is to increase nonmotorized transportation to at least 15 percent of all trips and to simultaneously reduce the number of nonmotorized users killed or injured in traffic crashes by at least 10 percent. This policy, which was adopted in 1994 as part of the National Bicycling and Walking Study (FHWA 1994), remains a high priority for the USDOT. The Safe, Accountable, Flexible Efficient Transportation Equity Act – A Legacy for Users continued to provide funding opportunities, planning processes, and policy language by which states and metropolitan areas can achieve this ambitious national goal.

A US DOT Policy Statement: Integrating Bicycling and Walking into Transportation Infrastructure

"Accommodating Bicycle and Pedestrian Travel: A Recommended Approach" is a policy statement adopted by the USDOT. The USDOT hopes that public agencies, professional associations, advocacy groups, and others adopt this approach as a way of committing themselves to integrating bicycling and walking into the transportation mainstream.

The Design Guidance incorporates the following three key principles:

- A policy statement that bicycling and walking facilities will be incorporated into all transportation projects unless exceptional circumstances exist
- An approach to achieving this policy that has already worked in state and local agencies
- A series of action items that a public agency, professional association, or advocacy group can take to achieve the overriding goal of improving conditions for bicycling and walking

The Policy Statement was drafted by the USDOT in response to Section 1202(b) of the Transportation Equity Act for the 21st Century (TEA-21) with the input and assistance of public agencies, professional associations, and advocacy groups.

Consistency with Multi-Modal Plans

The following sections summarize the findings from the evaluation. The summary includes evaluating the designs against the NCDOT and FHWA plans and policies.

Section C – Alternatives A-2, C-2, D-1, and F-1

The following design features were determined to be consistent with the existing local plans and the NCDOT and FHWA policies:

- NC 191 (Brevard Road) pedestrian accommodations
- Pond Road as a shared roadway bicycle facility
- SR 3413 (Bear Creek Road) as a future crossing for the Hominy Creek Greenway

The following design features would not meet the improvements included in the local plans, but would not preclude the planned elements from being implemented as a future project. These elements should be coordinated with local officials to determine whether they can be incorporated in the proposed design through one of the NCDOT or FHWA policies:

- NC 191 (Brevard Road): Future Hominy Creek Greenway along the roadway (current design would not preclude implementation)
- Pond Road: Sidewalk Linkage needed along roadway (current design would not affect Pond Road, but bridge would provide adequate clearance for future sidewalk)

The following design features would not meet the improvements included in the local plans, and additional coordination with local officials is needed to determine whether they can be incorporated in the proposed design through one of the NCDOT or FHWA policies:

- SR 3412 (Sand Hill Road) as a facility with bike lanes and sidewalks (current design includes an open shoulder roadway)
- NC 191 (Brevard Road) facility with bicycle lanes (current design includes wide outside lanes but not a full bicycle lane)

Section A:

The following design features were determined to be consistent with the existing local plans and the NCDOT and FHWA policies:

- NC 191 (Brevard Road) pedestrian accommodations
- SR 3556 (Amboy Road) Extension bicycle lanes
- Hanover Street pedestrian accommodations include replacing sidewalk on one side

- US 19-23 Business (Haywood Road) bicycle and sidewalk accommodations provided
- Greenway along Section A and in all of the Section B alternatives would begin at Haywood Road and follow the I-26 Corridor to Patton Avenue and cross the French Broad River. This is consistent with the "West Asheville Greenway," as proposed in the *City of Asheville, North Carolina Parks, Recreation, Cultural Arts, & Greenways Master Plan* (2009, Updated 2013)

The following design features would not meet the improvements included in the local plans, but would not preclude the planned elements from being implemented as a future project. These elements should be coordinated with local officials to determine whether they can be incorporated in the proposed design through one of the NCDOT or FHWA policies:

- Hominy Creek Road – Sidewalk Needed Linkage and Future Hominy Creek Greenway along roadway (current design would not affect Hominy Creek Road, but bridge would provide adequate clearance for future sidewalk/greenway)
- Shelburne Road – Future Rhododendron Creek Greenway located west of proposed construction (current design would not affect this area of Shelburne Road and would not preclude implementation of the greenway in the future)
- State Street – Coordination with City recommends sidewalk on both sides (current design would not affect State Street, but bridge would provide adequate clearance for future sidewalk and bicycle lanes)

The following design features would not meet the improvements included in the local plans. Additional coordination with local officials is needed to determine whether they can be incorporated in the proposed design through one of the NCDOT or FHWA policies:

- Shelburne Road – Sidewalk Needed Linkage (current design would only reconfigure intersection and overlay existing roadway and would not preclude installing sidewalk in the future)
- NC 191 (Brevard Road) facility with bicycle lanes (current design includes wide outside lanes but not a full bicycle lane)

Section B – Alternatives 3 and 3-C

The following design features were determined to be consistent with the existing local plans and the NCDOT and FHWA policies:

- Patton Avenue, west of Captain Jeff Bowen Bridges pedestrian accommodations
- Patton Avenue, east of Captain Jeff Bowen Bridges pedestrian accommodations
- Greenway along Section A and in all of the Section B alternatives would begin at Haywood Road and follow the I-26 Corridor to Patton Avenue and cross the French Broad River. This is consistent with the "West Asheville Greenway," as proposed in the *City of Asheville, North Carolina Parks, Recreation, Cultural Arts, & Greenways Master Plan* (2009, Updated 2013)

The following design features would not meet the improvements included in the local plans, but would not preclude the planned elements from being implemented as a future project. These elements should be coordinated with local officials to determine whether they can be incorporated in the proposed design through one of the NCDOT or FHWA policies:

- Emma Road, at I-26 Crossing – Identified as a facility with bike lanes and a sidewalk needed linkage (current design would not affect Emma Road, but bridge would provide adequate clearance for future bicycle lanes/sidewalk)

- Riverside Drive, at I-26 Crossing – Identified as a facility with bike lanes, a sidewalk needed linkage, and the location for the future French Broad River Greenway (current design would not affect Riverside Drive, but bridge would provide adequate clearance for future bicycle lanes/sidewalk/greenway)
- Broadway – Identified as a facility with bike lanes and a sidewalk needed linkage (current design would not affect Broadway, but bridge would provide adequate clearance for future bicycle lanes/sidewalk)

It was determined that the bicycle improvements on Patton Avenue, west of Captain Jeff Bowen Bridges would not meet the improvements included in the local plans (the current design does not include bicycle lanes or bicycle facilities). Additional coordination with local officials is needed to determine whether they can be incorporated in the proposed design through one of the NCDOT or FHWA policies.

Section B – Alternatives 4 and 4-B

The following design features were determined to be consistent with the existing local plans and the NCDOT and FHWA policies:

- Patton Avenue, west of Captain Jeff Bowen Bridges pedestrian accommodations
- Patton Avenue, east of Captain Jeff Bowen Bridges pedestrian accommodations
- Greenway along Section A and in all of the Section B alternatives would begin at Haywood Road and follow the I-26 Corridor to Patton Avenue and cross the French Broad River. This is consistent with the "West Asheville Greenway," as proposed in the *City of Asheville, North Carolina Parks, Recreation, Cultural Arts, & Greenways Master Plan* (2009, Updated 2013)
- Atkinson Street pedestrian accommodations

The following design features would not meet the improvements included in the local plans, but would not preclude the planned elements from being implemented as a future project. These elements should be coordinated with local officials to determine whether they can be incorporated in the proposed design through one of the NCDOT or FHWA policies:

- Emma Road, at I-26 Crossing: Identified as a facility with bike lanes and a sidewalk needed linkage (current design would not affect Emma Road, but bridge would provide adequate clearance for future bicycle lanes/sidewalk)
- Riverside Drive, at I-240 Crossing: Identified as a facility with bike lanes, a sidewalk needed linkage, and the location for the future French Broad River Greenway (current design would not affect Riverside Drive, but bridge would provide adequate clearance for future bicycle lanes/sidewalk/greenway)
- Riverside Drive, at I-26 Crossing: Identified as a facility with bike lanes, a sidewalk needed linkage, and the location for the future French Broad River Greenway (current design would not affect Riverside Drive, but bridge would provide adequate clearance for future bicycle lanes/sidewalk/greenway)
- Hill Street: Identified as a lane diet and a sidewalk needed linkage with a greenway north of Atkinson Street (current design includes 12-foot lanes and a berm with no sidewalk; the bridge over Hill Street would provide adequate clearance for the sidewalk/greenway)
- Broadway: Identified as a facility with bike lanes and a sidewalk needed linkage (current design would not affect Broadway, but bridge would provide adequate clearance for future bicycle lanes/sidewalk)

It was determined that the bicycle improvements on Patton Avenue, west of Captain Jeff Bowen Bridges would not meet the improvements included in the local plans (the current design does not include bicycle lanes or bicycle facilities). Additional coordination with local officials is needed to determine whether they can be incorporated in the proposed design through one of the NCDOT or FHWA policies.

4.1.2.3 Other Local Plans

Compatibility with Other Local Plans

Haywood Road Corridor Study (1999)

The *Haywood Road Corridor Study* evaluated the existing roadway from Patton Avenue to the French Broad River, a distance of 2.5 miles (City of Asheville 2005d). The plan includes a discussion of the desired land uses along the corridor and recommends a typical section for the Haywood Road bridge over I-240. The recommendation includes a curb and gutter crossing with 5-foot sidewalks on both sides and raised median with seven travel lanes across the bridge. The recommendation also calls for 14-foot wide outside lanes, presumably to accommodate bicycle traffic.

The *Haywood Road Corridor Study* is applicable to the I-240 Widening Alternative in Section A. The proposed design for the Haywood Road bridge over I-240 includes a curb and gutter facility with 5-foot sidewalks on both sides and a raised median with five travel lanes across the bridge. The proposed design does not currently include any provisions for bicycle traffic; however, additional coordination with the City of Asheville is needed to determine whether bicycle accommodations can be included in the design.

The proposed design for Section A would not be consistent with the recommendations included in the plan because it provides fewer travel lanes and does not include wide outside lanes for bicycles. As noted, additional coordination with the City of Asheville is needed to determine whether bicycle provisions can be accommodated in the proposed design.

Asheville City Council Resolution 00-168 – Resolution Supporting the Report and Recommendations of the Community Coordinating Committee Regarding the I-26 Connector Project (2000)

The resolution adopting the nine design goals applies to all sections of the project. The following design goals can be evaluated on an overall project level or cannot be determined at this stage of project development and are identical for all alternatives being considered:

- **Goal**: Separation of local and interstate traffic

  Evaluation Criteria: Reclaim land for community use (including expansion of taxable base)

  Project Evaluation: NCDOT and FHWA may potentially revert some areas of existing right-of-way back to private ownership. The reuse of current right-of-way is not determined until after a project is completed and would need to be conducted in accordance with the NCDOT "Surplus Right of Way Disposal and Control of Access Review Committee Operating Procedures" (NCDOT 2010c). Therefore, at this time it is not possible to determine whether the project is consistent with this goal.

- **Goal**: Matching scale of project to character of community

  Evaluation Criteria: Select the lowest design speed compatible with safe and proper functioning of the various components of the highway facility

  Project Evaluation: The design speeds selected for the proposed project are safe and proper for the various components of the highway facility and are consistent with the design goal.

- **Goal**: Minimization of neighborhood and local business impacts

  Evaluation Criteria: Prioritize safety and traffic routing during construction; maximize opportunities for hiring of local workers for construction of project

  Project Evaluation: The safety and traffic routing will be fully considered during the final design stage of the project. The ability to hire local workers during construction cannot be determined at this time; therefore, it is not possible to determine whether the project is consistent with this goal.

- **Goal**: Use of updated traffic modeling software and data

  Evaluation Criteria: Determine that project scale achieves safe and adequate traffic flow with the minimal number of lanes; create an opportunity to reinforce and/or redirect land use decisions that relate to transportation; optimize transportation alternatives (balancing of thoroughfare plan with mass transit, bike/pedestrian, local street grid improvements, and other alternatives); assess "induced traffic" phenomenon and interrelationship of highway capacity and development patterns

  Project Evaluation: The traffic modeling software utilized in the development of the proposed project is consistent with the design goal as it meets or exceeds the current industry standards and accounts for the changes in land use, multi-modal trips, and changes in travel patterns as a result of the proposed project.

- **Goal**: Maintenance of compatibility with community's design vision and plans

  Evaluation Criteria: Achieve compatibility with "smart growth" direction of city planning; reclaim land for non-highway use; create recognizable community character in design features; develop unique and attractive bridge design(s); include gateway elements; Include local artists in creating design features; use quality materials

  Project Evaluation: In general, the proposed project would be consistent with the smart growth initiative as it does not provide a substantial level of new access to areas that currently are undeveloped. All of the alternatives would improve traffic flow within the area, which may result in some sprawl development patterns due to reduced commute times, but the effect would be the same for all alternatives. As stated, the ability to reclaim land cannot be determined until the project has been constructed. NCDOT has established the Aesthetics Advisory Committee (AAC) to integrate aesthetic features into the proposed design once a preferred alternative is selected and final design begins; therefore, at this time it is not possible to determine whether the project is consistent with these goals.

- **Goal**: Creation of full interstate movements between I-26 and I-40

  Evaluation Criteria: Reduce through-traffic volume (especially trucks) in Asheville central district (I-240); enhance driving safety on I-240; remove interstate traffic (especially trucks) from West Asheville street network

  Project Evaluation: All of the alternatives being considered for the proposed project would provide full interstate movements at the I-26/I-40/I-240 interchange; therefore, the proposed project is consistent with the design goals.

- **Goal**: Minimization of air quality and other environmental impacts

  Evaluation Criteria: Determine best highway design with least impact on air quality

  Project Evaluation: All of the alternatives would allow for free flowing traffic along the interstate and would not exceed the air quality standards set forth under the Clean Air Act; therefore, all alternatives would be consistent with this goal.

- **Goal**: Emphasis on safety during construction and in the design of the final product

  Evaluation Criteria: Provide for incident management; provide effective maintenance of traffic flow during construction

  Project Evaluation: The effective maintenance of traffic flow during construction will be fully considered during the final design stage of the project and the ability to provide for incident management would occur at a later date; therefore, it is not possible to determine whether the project is consistent with this goal.

The following sections present an evaluation of the consistency for each alternative based on the design goals and the evaluation criteria that are unique to each alternative:

Section C – Alternative A-2

The following goal would not be applicable to this alternative:

- Separation of local and interstate traffic

The consistency of Alternative A-2 with the design goals is included as follows:

- **Goal**: Matching scale of project to character of community

  I-40 and the interchanges are existing infrastructure within the study area. The designs for Alternative A-2 include reconstruction of portions of existing infrastructure with similar characteristics as currently exists.

- **Goal**: Reunification and connectivity of community

  The design for Alternative A-2 provides for good connections for bicycles and pedestrians and maintains the existing connections in the vicinity as well as providing the missing movements at the I-26/I-40/I-240 interchange. The area in Section C has very good

connectivity already, and there are not many opportunities to provide any additional connectivity in the area; therefore, Alternative A-2 would be consistent with this goal.

- **Goal**: Minimization of neighborhood and local business impacts

  Measures were taken to minimize impacts to residences and businesses during the development of the preliminary design; however, unavoidable impacts to residences and businesses would be required for Alternative A-2. In general, Alternative A-2 would meet the goal of minimizing impacts, as reasonable measures were undertaken to avoid impacts.

- **Goal**: Maintenance of compatibility with community's design vision and plans; incorporation of community selected design features

  The design for Alternative A-2 would be consistent with this goal because it would not impact any land that is zoned within the River Arts District (RAD)

- **Goal**: Minimization of air quality and other environmental impacts

  Measures were taken to minimize impacts to the environment during the development of the preliminary design; however, unavoidable impacts to environmental features would be required for Alternative A-2. In general, Alternative A-2 would meet the goal of minimizing impacts, as reasonable measures were undertaken to avoid impacts; however, this alternative would impact streams and wetlands .

- **Goal**: Emphasis on safety during construction and in the design of the final product

  The design for Alternative A-2 would likely improve safety by improving the simplicity of the design and alleviating the complexity of the current roadway configuration; therefore, it is consistent with the goal.

Section C – Alternative C-2

The following goal would not be applicable to this alternative:

- Separation of local and interstate traffic

The consistency of Alternative C-2 with the design goals is included as follows:

- **Goal**: Matching scale of project to character of community

  I-40 and the interchanges are existing infrastructure within the study area. The designs for Alternative C-2 include reconstruction of portions of existing infrastructure with similar characteristics as currently exists.

- **Goal**: Reunification and connectivity of community

  The design for Alternative C-2 provides for good connections for bicycles and pedestrians and maintains the existing connections in the vicinity, as well as providing the missing movements at the I-26/I-40/I-240 interchange. The area in Section C has very good connectivity already, and there are not many opportunities to provide any additional connectivity in the area; therefore, Alternative C-2 would be consistent with this goal.

- **Goal**: Minimization of neighborhood and local business impacts

  Measures were taken to minimize impacts to residences and businesses during the development of the preliminary design; however, unavoidable impacts to residences and businesses would be required for Alternative C-2. In general, Alternative C-2 would meet the goal of minimizing impacts, as reasonable measures were undertaken to avoid impacts.

- **Goal**: Maintenance of compatibility with community's design vision and plans; incorporation of community selected design features

  The design for Alternative C-2 would be consistent with this goal as it would not impact any land that is zoned within the RAD.

- **Goal**: Minimization of air quality and other environmental impacts

  Measures were taken to minimize impacts to the environment during the development of the preliminary design; however, unavoidable impacts to environmental features would be required for Alternative C-2. In general, Alternative C-2 would meet the goal of minimizing impacts, as reasonable measures were undertaken to avoid impacts; however, this alternative would impact streams and wetlands.

- **Goal**: Emphasis on safety during construction and in the design of the final product

  The design for Alternative C-2 would likely improve safety by improving the simplicity of the design and alleviating the complexity of the current roadway configuration; therefore, it is consistent with the goal.

Section C – Alternative D-1

The following goal would not be applicable to this alternative:

- Separation of local and interstate traffic

The consistency of Alternative D-1 with the design goals is included as follows:

- **Goal**: Matching scale of project to character of community

  I-40 and the interchanges are existing infrastructure within the study area. The designs for Alternative D-1 include reconstruction of portions of existing infrastructure with similar characteristics as currently exists.

- **Goal**: Reunification and connectivity of community

  The design for Alternative D-1 provides for good connections for bicycles and pedestrians, maintains the existing connections in the vicinity, and provides the missing movements at the I-26/I-40/I-240 interchange. The area in Section C has very good connectivity already, and there are not many opportunities to provide any additional connectivity in the area. Therefore, Alternative D-1 would be consistent with this goal.

- **Goal**: Minimization of neighborhood and local business impacts

Measures were taken to minimize impacts to residences and businesses during the development of the preliminary design; however, unavoidable impacts to residences and businesses would be required for Alternative D-1. In general, Alternative D-1 would meet the goal of minimizing impacts, as reasonable measures were undertaken to avoid impacts.

- **Goal**: Maintenance of compatibility with community's design vision and plans; incorporation of community selected design features

  The design for Alternative D-1 would be consistent with this goal as it would not impact any land that is zoned within the RAD.

- **Goal**: Minimization of air quality and other environmental impacts

  Measures were taken to minimize impacts to the environment during the development of the preliminary design; however, unavoidable impacts to environmental features would be required for Alternative D-1. In general, Alternative D-1 would meet the goal of minimizing impacts, as reasonable measures were undertaken to avoid impacts; however, this alternative would impact streams and wetlands.

- **Goal**: Emphasis on safety during construction and in the design of the final product

  The design for Alternative D-1 would likely improve safety by improving the simplicity of the design and alleviating the complexity of the current roadway configuration; therefore, Alternative D-1 would be consistent with the goal.

Section C – Alternative F-1

The following goal would not be applicable to this alternative:

- Separation of local and interstate traffic

The consistency of Alternative F-1 with the design goals is included as follows:

- **Goal**: Matching scale of project to character of community

  I-40 and the interchanges are existing infrastructure within the study area. The designs for Alternative F-1 include reconstruction of portions of existing infrastructure with similar characteristics as currently exists.

- **Goal**: Reunification and connectivity of community

  The design for Alternative F-1 provides for good connections for bicycles and pedestrians and maintains all of the existing connections in the vicinity, as well as providing the missing movements at the I-26/I-40/I-240 interchange. The area in Section C has very good connectivity already, and there are not many opportunities to provide any additional connectivity in the area. Therefore, Alternative F-1 would be consistent with this goal.

- **Goal**: Minimization of neighborhood and local business impacts

  Measures were taken to minimize impacts to residences and businesses during the development of the preliminary design; however, unavoidable impacts to residences and

businesses would be required for Alternative F-1. In general, Alternative F-1 would meet the goal of minimizing impacts; however, this alternative would impact streams and wetlands.

- **Goal**: Maintenance of compatibility with community's design vision and plans; incorporation of community selected design features

  The design for Alternative F-1 would be consistent with this goal as it would not impact any land that is zoned within the RAD.

- **Goal**: Minimization of air quality and other environmental impacts

  Measures were taken to minimize impacts to the environment during the development of the preliminary design; however, unavoidable impacts to environmental features would be required for Alternative F-1. In general, Alternative F-1 would meets the goal of minimizing impacts, as reasonable measures were undertaken to avoid impacts.

- **Goal**: Emphasis on safety during construction and in the design of the final product

  The design for Alternative F-1 would not change the existing configuration of the I-26/I-40/I-240 interchange, which includes left exits that can be confusing to unfamiliar drivers. In general, the design for Alternative F-1 would be only partially consistent with the goal.

Section A

The following goal would not be applicable to this alternative:

- Separation of local and interstate traffic

The consistency of the Section A design with the goals is included as follows:

- **Goal**: Matching scale of project to character of community

  The design for Section A includes a median planter instead of "Jersey barriers," which is consistent with the goal; however, several elements of the design include measures that are more subjective. The design for Section A is minimized to the greatest extent possible, while still allowing for traffic operations. The Section A alternative would provide improved connectivity to the river by extending Amboy Road to Brevard Road and minimize the impact to the area zoned as the RAD. Due to the volume of traffic forecast in Section A, the design includes eight travel lanes and would require the taking of properties and potentially divide neighborhoods.

- **Goal**: Reunification and connectivity of community

  The design for Section A provides for good connections for vastly improved facilities for bicycles and pedestrians over what currently exists. The design includes extending Amboy Road to Brevard Road, which allows for connectivity similar to what existed prior to the construction of I-240. The proposed design would improve the connectivity to the RAD and improve the local street network, which would relieve interstate traffic pressure. Therefore, the Section A design would be consistent with this goal.

- **Goal**: Minimization of neighborhood and local business impacts

  Measures were taken to minimize impacts to residences and businesses during the development of the preliminary design; however, unavoidable impacts to residences and businesses would be required for the Section A design. The design for Section A has been minimized, while still allowing for traffic operations. However, the magnitude of impacts to residences and businesses may be perceived by the community as not meeting this goal.

- **Goal**: Maintenance of compatibility with community's design vision and plans; incorporation of community selected design features

  The design for Section A would be consistent with this goal as it would minimize impacts to land that is zoned within the RAD and substantially improve access to the River and adjacent properties, such as Carrier Park and the French Broad River Greenway.

- **Goal**: Minimization of air quality and other environmental impacts

  Measures were taken to minimize impacts to the environment during the development of the preliminary design; however, unavoidable impacts to environmental features would be required in Section A of the proposed project. In general, the design for Section A meets the goal of minimizing impacts, as reasonable measures were undertaken to avoid impacts; however, this alternative would impact streams and wetlands.

- **Goal**: Emphasis on safety during construction and in the design of the final product

  The design for Section A would likely improve safety by improving the simplicity of the design and alleviating the complexity of the current roadway configuration, including providing entrances and exits on the right side of the roadway. The extension of Amboy Road would allow for local trips to be able to cross I-240 without using the freeway, and providing for movements at the Amboy Road interchange would allow for improved safety and fewer weaving movements along the freeway. Therefore, the design for Section A is consistent with the goal.

Section B – Alternative 3

The consistency of Alternative 3 with the design goals is included as follows:

- **Goal**: Separation of local and interstate traffic

  The design for Alternative 3 would not be consistent with the goal to separate local and interstate traffic by eliminating the Captain Jeff Bowen Bridges as an interstate link. The design for Alternative 3 would not create the possibility for a gateway along Patton Avenue; however, it would create a more convenient and safer driving environment than the existing configuration by removing several roadway deficiencies on the west side of the French Broad River.

- **Goal**: Matching scale of project to character of community

  The design for Alternative 3 includes a median planter instead of "Jersey barriers" for several portions of the roadway that are not located on bridges, which is consistent with the goal; however, several elements of the design include measures that are more subjective.

The design for Alternative 3 is generally consistent with the measure that calls for the design to be sensitive to the unique topography, landscape, and built environment as it fits into the surrounding environment due to its lower elevation and fewer flyover bridges. While measures were taken to avoid impacts, the design for Alternative 3 would create unavoidable impacts to the Burton Street, Westwood Place, and Emma Road communities due to the taking of residences in the neighborhoods and would not be consistent with evaluation criteria to consider the impact to property takings and neighborhood division. In addition, Alternative 3 would not provide additional access to the east side of the French Broad River because the alternative would not include construction at the US 19-23-70/Patton Avenue interchange with I-240. Therefore, Alternative 3 would not improve access to the RAD, but would include the acquisition of the smallest amount of land zoned as RAD in order to construct the Section B portion of the project.

- **Goal**: Reunification and connectivity of community

  The design for Alternative 3 allows for some improvements in nonmotorized transportation but to a much lesser extent, especially along Patton Avenue and the Captain Jeff Bowen Bridges. The Alternative 3 design would be consistent with the measure that the design improve opportunities for reconnecting neighborhoods and downtown with the riverfront, as a greenway is proposed that would begin at Haywood Road and follow the I-26 corridor to Patton Avenue and cross the French Broad River.

- **Goal**: Minimization of neighborhood and local business impacts

  Measures were taken to minimize impacts to residences and businesses during the development of the preliminary design; however, unavoidable impacts to residences and businesses would be required for Alternative 3. The design for Alternative 3 has been minimized, while still meeting design standards; however, the impacts to residences and businesses may be perceived by the community as not meeting this goal.

- **Goal**: Maintenance of compatibility with community's design vision and plans; incorporation of community selected design features

  The design for Alternative 3 would generally not be consistent with this goal as it would not include construction to the I-240 interchange with US 19-23-70/Patton Avenue, which does not include improved access to the riverfront. Alternative 3, however, would be the most consistent of the four alternatives in Section B based on the measure that the design would minimize the loss of property in the RAD zoning category.

- **Goal**: Minimization of air quality and other environmental impacts

  Measures were taken to minimize impacts to the environment during the development of the preliminary design; however, unavoidable impacts to environmental features would be required for Alternative 3. In general, the design for Alternative 3 would meet the goal of minimizing impacts; however, this alternative would impact streams and wetlands.

- **Goal**: Emphasis on safety during construction and in the design of the final product

  The design for Alternative 3 would improve safety by improving the roadway geometry and eliminating the concern for vehicles transitioning from freeway to non-freeway facilities. Therefore, the design for Alternative 3 is consistent with the goal.

Section B – Alternative 3-C

The consistency of Alternative 3-C with the design goals is included as follows:

- **Goal:** Separation of local and interstate traffic

  The design for Alternative 3-C would not be consistent with the goal to separate local and interstate traffic by eliminating the Captain Jeff Bowen Bridges as an interstate link. The design for Alternative 3-C would not create the possibility for a gateway along Patton Avenue; however, it would create a more convenient and safer driving environment than the existing configuration by removing several roadway deficiencies on the west side of the French Broad River.

- **Goal:** Matching scale of project to character of community

  The design for Alternative 3-C includes a median planter instead of "Jersey barriers" for several segments of the roadway that are not located on bridges, which is consistent with the goal; however, several elements of the design include measures that are more subjective. The design for Alternative 3-C is generally consistent with the measure that calls for the design to be sensitive to the unique topography, landscape and built environment as it fits into the surrounding environment due to its lower elevation and fewer flyover bridges. While measures were taken to avoid impacts, the design for Alternative 3-C would create unavoidable impacts to the Burton Street and Westwood Place communities due to the taking of residences in the neighborhoods and would not be consistent with evaluation criteria to consider the impact to property takings and neighborhood division. Additionally, Alternative 3-C would not provide additional access to the east side of the French Broad River because the alternative would not include construction at the US 19-23-70/Patton Avenue interchange with I-240. Therefore, Alternative 3-C would not improve access to the RAD.

- **Goal***:* Reunification and connectivity of community

  The design for Alternative 3-C allows for some improvements in nonmotorized transportation but to a much lesser extent, especially along Patton Avenue and the Captain Jeff Bowen Bridges. The Alternative 3-C design would be consistent with the measure that the design improve opportunities for reconnecting neighborhoods and downtown with the riverfront, as a greenway is proposed that would begin at Haywood Road and follow the I-26 corridor to Patton Avenue and cross the French Broad River.

- **Goal***:* Minimization of neighborhood and local business impacts

  Measures were taken to minimize impacts to residences and businesses during the development of the preliminary design. The design for Alternative 3-C has been minimized, while still meeting design standards; however, the impacts to residences and businesses may be perceived by the community as not meeting this goal.

- **Goal***:* Maintenance of compatibility with community's design vision and plans; incorporation of community-selected design features

The design for Alternative 3-C would not be consistent with this goal as it would not include construction to the I-240 interchange with US 19-23-70/Patton Avenue, which does not include improved access to the riverfront.

- **Goal***:* Minimization of air quality and other environmental impacts

  Measures were taken to minimize impacts to the environment during the development of the preliminary design; however unavoidable impacts to environmental features would be required for Alternative 3-C. In general, the design for Alternative 3-C would meet the goal of minimizing impacts; however, this alternative would impact streams and wetlands.

- **Goal***:* Emphasis on safety - during construction and in the design of the final product

  The design for Alternative 3-C would improve safety by improving the roadway geometry and eliminating the concern for vehicles transitioning from freeway to non-freeway facilities. Therefore, the design for Alternative 3-C would be consistent with the goal.

Section B – Alternative 4

The consistency of Alternative 4 with the design goals is included as follows:

- **Goal**: Separation of local and interstate traffic

  The design for Alternative 4 would be consistent with the goal to separate local and interstate traffic by eliminating the Captain Jeff Bowen Bridges as an interstate link and would also create the possibility for a gateway along Patton Avenue. The design for Alternative 4 would reconfigure the I-240 and US 19-23-70/Patton Avenue interchange, which would simplify the traffic movements and create a more convenient and safer driving environment by eliminating many of the existing roadway deficiencies on the west side of the French Broad River.

- **Goal**: Matching scale of project to character of community

  The design for Alternative 4 includes a median planter instead of "Jersey barriers" for several portions of the roadway that are not located on bridges, which is consistent with the goal. Alternative 4 would provide the opportunity for additional access to the east side of the French Broad River because the alternative would include converting Patton Avenue to a non-controlled access facility, allowing improved connectivity to the RAD. The design for Alternative 4 is generally not consistent with the measure that calls for the design to be sensitive to the unique topography, landscape and built environment as it may not fit into the surrounding environment due to visual effect of the flyover bridges. While measures were taken to avoid impacts, the design for Alternative 4 would create unavoidable impacts to the Westwood Place and Emma Road communities due to the taking of residences in the neighborhood and would not be consistent with evaluation criteria to consider the impact to property takings and neighborhood division.

- **Goal**: Reunification and connectivity of community

  The design for Alternative 4 allows for some improvements in nonmotorized transportation but to a much lesser extent, especially along Patton Avenue and the Captain Jeff Bowen Bridges. The Alternative 4 design would be consistent with the measure that the design

improve opportunities for reconnecting neighborhoods and downtown with the riverfront, as a greenway is proposed that would begin at Haywood Road and follow the I-26 corridor to Patton Avenue and cross the French Broad River.

- **Goal**: Minimization of neighborhood and local business impacts

  Measure were taken to minimize impacts to residences and businesses during the development of the preliminary design; however, unavoidable impacts to residences and businesses would be required for Alternative 4. The design for Alternative 4 has been minimized, while still meeting design standards; however, the impacts to residences and businesses may be perceived by the community as not meeting this goal.

- **Goal**: Maintenance of compatibility with community's design vision and plans; incorporation of community selected design features

  The design for Alternative 4 would generally be consistent with this goal as it would include construction to the I-240 interchange with US 19-23-70/Patton Avenue, and the conversion of Patton Avenue to a noncontrolled access facility, which would allow the opportunity for improved access to the riverfront. Alternative 4, however, is less consistent than Alternative 3 and more consistent than Alternative 4-B based on the measure that the design minimizes the loss of property in the RAD zoning category.

- **Goal**: Minimization of air quality and other environmental impacts

  Measure were taken to minimize impacts to the environment during the development of the preliminary design; however, unavoidable impacts to environmental features would be required for Alternative 4. In general, the design for Alternative 4 would meet the goal of minimizing impacts; however, this alternative would impact streams and wetlands.

- **Goal**: Emphasis on safety during construction and in the design of the final product

  The design for Alternative 4 would improve safety by improving the roadway geometry, reducing weaving movements on the Captain Jeff Bowen Bridges and eliminating the concern for vehicles transitioning from freeway to non-freeway facilities. Therefore, the design for Alternative 4 is consistent with the goal.

Section B – Alternative 4-B

The consistency of Alternative 4-B with the design goals is included as follows:

- **Goal**: Separation of local and interstate traffic

  The design for Alternative 4-B would be consistent with the goal to separate local and interstate traffic by eliminating the Captain Jeff Bowen Bridges as an interstate link and would also create the possibility for a gateway along Patton Avenue. The design for Alternative 4-B would reconfigure the I-240 interchange at US 19-23-70/Patton Avenue, which would simplify the traffic movements and create a more convenient and safer driving environment by eliminating many of the existing roadway deficiencies on the west side of the French Broad River.

- **Goal**: Matching scale of project to character of community

The design for Alternative 4-B includes a minimal length of median planter instead of "Jersey barriers" for areas not located on bridges; however, due to the amount of the alternative that is located on bridge, Alternative 4-B would only be minimally consistent with this measure. Alternative 4-B would provide the opportunity for additional access to the east side of the French Broad River because the alternative includes converting Patton Avenue to a noncontrolled access facility, allowing improved connectivity to the RAD. The design for Alternative 4-B is generally not consistent with the measure that calls for the design to be sensitive to the unique topography, landscape, and built environment as it may not fit into the surrounding environment due to visual effect of the flyover bridges and the increased elevation of the roadway near Riverside Cemetery. While measures were taken to avoid impacts, the design for Alternative 4-B would create unavoidable impacts to the Westwood Place Community due to the taking of residences in the neighborhood and would generally not be consistent with the evaluation criteria to consider the impact to property takings and neighborhood division.

- **Goal**: Reunification and connectivity of community

  The design for Alternative 4-B allows for some improvements in nonmotorized transportation but to a much lesser extent, especially along Patton Avenue and the Captain Jeff Bowen Bridges. The Alternative 4-B design would be consistent with the measure that the design improve opportunities for reconnecting neighborhoods and downtown with the riverfront, as a greenway is proposed that would begin at Haywood Road and follow the I-26 corridor to Patton Avenue and cross the French Broad River.

- **Goal**: Minimization of neighborhood and local business impacts

  Measure were taken to minimize impacts to residences and businesses during the development of the preliminary design; however, unavoidable impacts to residences and businesses would be required for Alternative 4-B. The design for Alternative 4-B has been minimized, while still meeting design standards; however, the impacts to residences and businesses may be perceived by the community as not completely meeting this goal.

- **Goal**: Maintenance of compatibility with community's design vision and plans; incorporation of community selected design features

  The design for Alternative 4-B would generally be consistent with this goal as it would include construction to the I-240 interchange with US 19-23-70/Patton Avenue, and the conversion of Patton Avenue to a noncontrolled access facility, which would allow the opportunity for improved access to the riverfront. Alternative 4-B, however, would be less consistent than Alternatives 3 and 4 based on the measure that the design minimizes the loss of property in the RAD zoning category due to it having the greatest area land taken from the RAD zoning category.

- **Goal**: Minimization of air quality and other environmental impacts

  Measures were taken to minimize impacts to the environment during the development of the preliminary design; however, unavoidable impacts to environmental features would be required for Alternative 4-B. In general, the design for Alternative 4-B would meet the goal of minimizing impacts; however, this alternative would impact streams and wetlands.

- **Goal**: Emphasis on safety during construction and in the design of the final product

  The design for Alternative 4-B would improve safety by improving the roadway geometry, reducing weaving movements on the Captain Jeff Bowen Bridges, and eliminating the concern for vehicles transitioning from freeway to non-freeway facilities. Therefore, the design for Alternative 4-B is consistent with the goal.

A Strategic Plan for the Sustainable Economic Development of the City of Asheville, North Carolina (2004)

A Strategic Plan for the Sustainable Economic Development of the City of Asheville, North Carolina, was adopted in May 2004 (City of Asheville 2004). The plan discusses the need to maintain an efficient transportation network and recommends that these needs be addressed in the area's long range transportation plan. Therefore, all sections of the proposed project would be consistent with the recommendations included in this plan.

Broadway Corridor Action Plan (2002)

The *Broadway Corridor Action Plan* references the proposed project from the long range transportation plan and recognizes that the project would be be an opportunity to redevelop portions of Broadway as a gateway into downtown (City of Asheville 2002b). Therefore, all sections of the proposed project would be consistent with the recommendations included in this plan.

Asheville City Development Plan 2025 (2002)

The recommendations of the CCC for the I-26 Connector were presented to the Asheville City Council and the FBRMPO, and unanimously approved as clear indicators of community consensus. These recommendations for the project, as listed in the *Asheville City Development Plan 2025* (City of Asheville 2002a), include:

- The alternative alignment concept developed at the Design Forum should receive serious study for inclusion in the project EIS.
- NCDOT, FHWA, and local citizens should work together as a Committee on Visual Design to develop ideas for bridge design, signage, overpass design, landscaping, and other aesthetic issues that reflect the community's character.
- NCDOT and FHWA should expedite the development of new and updated traffic models for use on the ultimate design of the project, including regional air quality modeling.
- NCDOT and FHWA should explore engineering and signage options to improve the north to east connection of eastbound I-26 traffic with I-40 in an easterly direction as part of this project or a simultaneous project. The specific concerns involve limiting commercial truck through traffic on I-240 and on lesser classified roadways proximate to residential areas.
- Roadway design should reflect the CCC's general consensus that the bicycle and pedestrian connectivity be restored to link neighborhoods and the French Broad River while simultaneously exploring traffic calming measures to reduce the vehicular impact on residential streets.
- NCDOT and FHWA should ensure that all interchange design is community sensitive. To achieve this end, it would be helpful to provide artist's renditions of feasible design alternatives for public review.

- NCDOT and FHWA should seriously examine safety issues in project construction and design including maintenance of traffic during construction and emergency access after construction.
- NCDOT and FHWA should release any unneeded right-of-way at the completion of this project to the City of Asheville to be zoned and used in accordance with a land use plan to be developed by the City in cooperation with NCDOT.
- NCDOT and FHWA should keep the I-26 Connector project on its current, or, preferably, an expedited schedule.

The plan also states that "The I-26 Connector project presents a potential opportunity to provide a dedicated route for Patton Avenue that is separate from I-240. This would be highly beneficial in that it would separate local and interstate traffic, reclaim land for community use, and provide an enhanced gateway into Downtown." The plan includes a goal to improve and strengthen connections between downtown and surrounding areas that includes a strategy that states: "Separate Patton Avenue and the Captain Jeff Bowen Bridges from interstate traffic to reclaim land for community use and allow Patton Avenue to serve as an enhanced gateway into Downtown."

The *Asheville City Development Plan 2025* is applicable in general to the project as a whole and specifically to the four Section B alternatives (City of Asheville 2002a). In general, the proposed project is consistent with the established recommendations in the plan, including:

- The alternative alignment concept developed at the Design Forum has received serious study and has been included in the project EIS.
- The AAC was established in 2004.
- NCDOT and FHWA have completed the development of new and updated traffic models for use on the ultimate design of the project, including regional air quality modeling.
- NCDOT and FHWA have included the upgrade of the I-26/I-40/I-240 interchange into the proposed project.
- Roadway design includes numerous multi-modal improvements and additional coordination with the City of Asheville will be undertaken to determine the viability of additional multi-modal improvements.
- NCDOT and FHWA have developed the interchange designs to be as community sensitive as they can be in order to meet the interstate design standards and have provided visualization of the project alternatives for public review.
- NCDOT and FHWA have examined safety issues in project construction and design, including maintenance of traffic during construction and emergency access after construction.
- NCDOT and FHWA could potentially revert some areas of existing right-of-way back to private ownership. The reuse of current right-of-way is not determined until after a project is completed and would need to be conducted in accordance with the NCDOT "Surplus Right of Way Disposal and Control of Access Review Committee Operating Procedures" (NCDOT 2010c).
- NCDOT and FHWA have made every effort to keep the I-26 Connector project on its current schedule.

Section B – Alternatives 3 and 3-C

Although the proposed design of Alternatives 3 and 3-C would remove I-26 traffic from the Captain Jeff Bowen Bridges, they would not provide a dedicated route for Patton Avenue that is

separate from I-240, would not allow land to be reclaimed for community use, and would not provide an enhanced gateway into downtown. Therefore, Alternatives 3 and 3-C would not be consistent with the plan.

Section B – Alternatives 4 and 4-B

The proposed designs for Alternatives 4 and 4-B would provide a dedicated route for Patton Avenue that is separate from I-240 and would provide the opportunity for an enhanced gateway into downtown. As stated, the reuse of current right-of-way is not determined until after a project is completed; therefore, the consistency with this recommendation cannot be determined at this point. Therefore, Alternatives 4 and 4-B would be considered consistent with the plan.

Land of Sky Regional Council "Regional Vision 2010"

The Land of Sky Regional Council "Regional Vision 2010" identifies the need for an efficient transportation system to support economic development in the region. The proposed project corridor of I-26 is specifically referenced in the plan as part of a proposed urban cluster. Therefore, all sections of the proposed project would be consistent with the recommendations included in this plan.

Wilma Dykeman RiverWay Master Plan (2004)

The *Wilma Dykeman RiverWay Master Plan* (RiverWay Master Plan) serves as a blueprint for the riverfronts in Asheville that would creatively link the French Broad and Swannanoa Rivers into a continuous multi-access parkway (Riverlink 2004). The plan notes that the I-26 bridge "must be sympathetic to the river and provide access to the Riverway and urban riverfront." The plan further states that there is an opportunity to reconnect parts of the city by reclaiming large areas of land now occupied by ramps along I-240 on the eastern side of the French Broad River. When these ramps were built, the West End/Clingman neighborhood lost vital street linkages to downtown Asheville, as well as access to the riverfront. Physical barriers to the riverfront have created psychological barriers, which exaggerate the perceived distance between the riverfront and downtown. With land reclaimed from the interstate system, Patton Avenue can be extended to the RiverWay on the French Broad River, providing a direct connection between downtown Asheville and the Riverfronts Arts District. Patton Avenue could be developed as an important urban boulevard with mixed use buildings in accordance with the The River Arts Districts WECAN neighborhood plan.

The plan also includes a map that shows a portion of the I-240/US 19-23-70/Patton Avenue interchange denoted as "Patton Avenue Extension." District 3 of the plan includes SR 3556 (Amboy Road) from the I-240 interchange to the French Broad River as a two lane roadway with a median and sidewalks and multi-use paths.

In addition to the *Wilma Dykeman RiverWay Master Plan* (Riverlink 2004), an accompanying Riverway Engineering Study was completed that included the evaluation of traffic operations and provides a plan view of the recommended roadway improvements. The Engineering Study includes the following elements:

- A two-lane divided roadway from Broadway to slightly south of the Norfolk Southern mainline bridge with a 6-foot sidewalk on the east side and a 12-foot path on the west side.

- A two-lane roadway with center turn lanes from the Norfolk Southern mainline bridge to beyond the southern end of the I-26 Connector study area with on-street parking and a 6-foot sidewalk on the east side and a 12-foot path on the west side.
- A recommendation that the Norfolk Southern mainline bridge be reconstructed.
- A two-lane divided roadway along existing Amboy Road from I-240 to the French Broad River with a 6-foot sidewalk on the north side and a 12-foot path on the south side.
- The Patton Avenue Extension, which would remove the connection from Patton Avenue to the Captain Jeff Bowen Bridges and connect it directly to the RiverWay opposite West Haywood Street. The recommended design would include severing the existing I-240 eastbound roadway and the connection from US 19-23 southbound to I-240 westbound. The recommended design would include 6-foot sidewalks on both sides of the extension.

The RiverWay Master Plan is applicable to Sections A and B of the proposed project. In general, none of the four alternatives being considered in Section B or the I-240 Widening Alternative in Section A would be consistent with the plan.

Section A

The proposed design of the SR 3556 (Amboy Road) interchange includes a four-lane divided roadway for a distance of approximately 900 feet beyond the interchange, then tapers back to the existing two lane roadway. The proposed design matches the typical section for NCDOT STIP Project U-4739. Therefore, the lane configuration would not be consistent with the RiverWay Master Plan. The proposed design would be consistent with the plan for the path on the south side as it provides connectivity to the French Broad River Greenway included in the Plan, but is inconsistent with the recommendation for a sidewalk on the north side of Amboy Road. Additional coordination would be needed with the City of Asheville to determine whether a sidewalk can be provided on the north side of the roadway.

Section B – Alternative 3

The proposed design for Alternative 3 does not include construction on the east side of the French Broad River in the vicinity of Patton Avenue/I-240; therefore, it would not be consistent with the RiverWay Master Plan. Implementation of the plan may be possible as a separate project that addresses the I-240 crossing of the French Broad River that could be undertaken at a later date. The new I-26 bridge over the RiverWay would not include implementing the recommendations but would be designed in a manner that would be consistent with the RiverWay Master Plan.

Section B – Alternative 3-C

The proposed design for Alternative 3-C does not include construction on the east side of the French Broad River in the vicinity of Patton Avenue/I-240 and, therefore, would not be consistent with the RiverWay Master Plan. Implementation of the plan may be possible as a separate project that addresses the I-240 crossing of the French Broad River that could be undertaken at a later date. The new I-26 bridge over the RiverWay would not include implementing the recommendations but may be designed in a manner that would be consistent with the RiverWay Master Plan.

Section B – Alternative 4

The proposed design for Alternative 4 would be partially consistent with the RiverWay Master Plan's desire to improve connectivity to the RAD and reduce the barriers between downtown Asheville and the riverfront. The proposed design may potentially result in some areas of existing right-of-way being reverted to private ownership. The reuse of current right-of-way would not be determined until after a project is completed and would need to be conducted in accordance with the NCDOT "Surplus Right of Way Disposal and Control of Access Review Committee Operating Procedures" (NCDOT 2010c). In addition, because this is an interstate project, approval from FHWA may also be required if federal funds are utilized in the purchase of the original right-of-way. Numerous additional issues could still exist that may be problematic for redevelopment of the reverted property, especially due to the utilities and associated easements remaining in place once the property is transferred, if they are not required to be relocated as part of the construction of the project. Many of the recommended improvements for the RiverWay would occur outside the limits of the proposed construction and would not be precluded from being implemented. One element of the proposed design for Alternative 4 that is not consistent with the RiverWay Master Plan is the Patton Avenue Extension connecting to the RiverWay opposite West Haywood Street, as the design includes Patton Avenue extending as a boulevard across the Captain Jeff Bowen Bridges. The new I-26 bridge over the RiverWay would not include implementing the recommendations but would be designed in a manner that would be consistent with the RiverWay Master Plan.

Section B – Alternative 4-B

Similar to Alternative 4, the proposed design for Alternative 4-B would be partially consistent with the RiverWay Master Plan's desire to improve connectivity to the RAD and reduce the barriers between downtown Asheville and the riverfront. The proposed design may potentially result in some areas of existing right-of-way being reverted to private ownership. The reuse of current right-of-way is not determined until after a project is completed and would need to be conducted in accordance with the NCDOT "Surplus Right of Way Disposal and Control of Access Review Committee Operating Procedures" (NCDOT 2010c). In addition, because this is an interstate project, approval from FHWA may also be required if federal funds are utilized in the purchase of the original right-of-way. Numerous additional issues could still exist that may be problematic for redevelopment of the reverted property, especially due to the utilities and associated easements remaining in place once the property is transferred, if they are not required to be relocated as part of the construction of the project. Many of the recommended improvements for the RiverWay would occur outside the limits of the proposed construction and would not be precluded from being implemented. One element of the proposed design for Alternative 4-B that is not consistent with the RiverWay Master Plan is the Patton Avenue Extension connecting to the RiverWay opposite West Haywood Street, as the design includes Patton Avenue extending as a boulevard across the Captain Jeff Bowen Bridges. The new I-26 bridge over the RiverWay would not include implementing the recommendations but would be designed in a manner that would be consistent with the RiverWay Master Plan.

Brevard Road Corridor Study (2005)

The *Brevard Road Corridor Study* (City of Asheville 2005a) was adopted by the Asheville City Council in 2005 and resulted in the rezoning of 18 properties along NC 191 (Brevard Road) near Dogwood Road and Sardis Road, south of the proposed project. The study does not include areas that would be affected by the construction of the proposed project. Therefore, all sections of the proposed project would be consistent with the recommendations included in this study.

City of Asheville River Redevelopment Plan (2005)

The *City of Asheville River Development Plan* (City of Asheville 2005e) discusses redevelopment of the areas located along the French Broad River and Swannanoa River. The plan frequently references the *Wilma Dykeman RiverWay Master Plan* (Riverlink 2004) but does not include specific recommendations that would be affected by the proposed project. Therefore, all sections of the proposed project would be consistent with the recommendations included in this plan.

Consolidated Strategic Housing and Community Development Plan (2005)

The *Consolidated Strategic Housing and Community Development Plan* (City of Asheville 2005c) emphasizes the need for affordable housing, as well as the need for improvements to public infrastructure that will aid in community development. Haywood Road is specifically referenced as an area that needs commercial development to support the local residents. The proposed project would have an interchange with Haywood Road, and thus may help encourage economic development along this corridor. Therefore, all sections of the proposed project would be consistent with the recommendations included in this plan.

West End/Clingman Small Area Plan

The *West End/Clingman Small Area Plan* (City of Asheville 1996) is also known as the *WECAN Citizens Master Plan* (adopted 2008). The plan began in 1996 and was updated based on a charrette held following the Design Forum in 2000. The plan calls for separating local traffic on Patton Avenue from I-240 traffic, returning Patton Avenue to a city entry boulevard. The plan states that, “Patton Avenue will be proposed as a grand entrance with the magnitude of a Parisian Boulevard.” The plan also calls for a roundabout or “traffic oval” at the intersection of Patton Avenue and Clingman Avenue to allow traffic calming that would be filled with a fountain of magnificent proportions. The plan also includes recommendations on land use and opportunities for infill and for improved connectivity to the RAD and the Arts District.

The *WECAN Citizens Master Plan* is applicable to the four alternatives being considered in Section B of the proposed project. The proposed design for Alternative 3 and 3-C do not include construction on the east side of the French Broad River (where the study area of the plan is located), and Alternatives 4 and 4-B are identical within the study area of the plan. In general, Alternative 3 and 3-C would not be consistent with the plan and would not provide any of the recommendations included in the plan, while Alternatives 4 and 4-B would be mostly consistent with the plan.

Section B – Alternatives 3 and 3-C

The design of Alternatives 3 and 3-C, as stated, does not include construction in the vicinity of West End/Clingman and maintains I-240 traffic across the existing Captain Jeff Bowen Bridges. The implementation of the plan may be possible as a separate project that addresses the I-240 crossing of the French Broad River that could be undertaken at a later date.

Section B – Alternatives 4 and 4-B

Alternatives 4 and 4-B would return Patton Avenue to a boulevard by relocating I-240 to the north on new flyover bridges. The proposed designs also provide a connection from I-240 eastbound to Patton Avenue as detailed in the plan. The plan also includes a new ramp from

Clingman Avenue to I-240 westbound, which would provide a similar movement to the ramp located west of Clingman Avenue in the proposed design. The recommended ramp to I-240 westbound included in the plan was considered to be not viable from an engineering standpoint as it would require a substantial grade change and would impact the Haywood Street United Methodist Church historic property. The roundabout at Patton Avenue/Clingman Avenue was not included in the proposed design as it was at the eastern end of the construction limits and would require additional property takings and extending the project farther into downtown Asheville. It is possible that this improvement could be included as a separate project at a later date. The proposed design would also improve connectivity to the RAD and the Arts District.

Asheville Downtown Master Plan (2009)

The *Asheville Downtown Master Plan* calls for Patton Avenue to become the primary link between the traditional downtown and the RAD. The plan also states that this plan would benefit if land is able to be reclaimed from the reconfiguration of the I-240 interchange with I-26 (City of Asheville 2009a).

The Downtown Master Plan is applicable to the four alternatives being considered in Section B of the proposed project. The proposed design for Alternative 3 does not include construction on the east side of the French Broad River (where the study area of the plan is located) and Alternatives 4 and 4-B are identical within the study area of the plan. In general, Alternatives 3 and 3-C would not be consistent with the plan and would not provide any of the recommendations included in the plan, while Alternatives 4 and 4-B would be mostly consistent with the plan.

Section B – Alternatives 3 and 3-C

The designs of Alternatives 3 and 3-C, as stated, do not include construction in the vicinity of the western edge of downtown and maintain I-240 traffic across the existing Captain Jeff Bowen Bridges. While the alternatives would not prohibit Patton Avenue from being the primary link between downtown and the RAD, they would not improve the existing condition. Implementation of the plan may be possible as a separate project that addresses the I-240 crossing of the French Broad River that could be undertaken at a later date.

Section B – Alternatives 4 and 4-B

Alternatives 4 and 4-B would return Patton Avenue to a boulevard by relocating I-240 to the north on new flyover bridges. The proposed design would also improve connectivity to the RAD. The reuse of current right-of-way is not determined until after a project is completed and would need to be conducted in accordance with the NCDOT “Surplus Right of Way Disposal and Control of Access Review Committee Operating Procedures” (NCDOT 2010c). Therefore, the alternatives would be generally consistent with the plan except that determining the reuse of existing right-of-way cannot be fully evaluated at this time.

Sustainability Management Plan (2009)

The *Sustainability Management Plan* outlines ambitious goals of reducing VMT and fuel consumption by employees and citizens (City of Asheville 2009d). The proposed project will help reduce congestion and travel times, in part by encouraging alternative means of commuting, including via bicycle and walking. This project would help alleviate congestion, as well as generally facilitate the city’s plan for its bicycle and pedestrian network. Therefore, all

sections of the proposed project would be consistent with the recommendations included in this plan.

4.1.3 PHYSICAL ENVIRONMENT

4.1.3.1 Noise Impact Analysis

This section is based on the *Traffic Noise Analysis for the I-26 Connector* (NCDOT 2015d). In this technical memorandum, traffic noise impacts were determined from the procedures for the abatement of highway traffic noise and construction noise, appearing as 23 CFR 772.

Traffic Noise Impacts and Noise Contours

The maximum number of receptors in each project alternative predicted to become impacted by future traffic noise is shown in Table 4-6. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria (NAC) or by a substantial increase in exterior noise levels.

Table 4-6: Predicted Traffic Noise Impacts by Alternative

Alternative	Traffic Noise Impacts [a]				
	No-Build Total	Residential (NAC B)	Places of Worship/Schools, Parks, etc. (NAC C & D)	Businesses (NAC E)	Build Total
Section C – Alternative A-2	137	156	57	5	218
Section C – Alternative C-2	137	192	57	6	255
Section C – Alternative D-1	137	152	57	5	214
Section C – Alternative F-1	137	239	60	5	304
Section A	150	163	35	0	198
Section B – Alternative 3	86	182	8	3	193
Section B – Alternative 3-C	86	122	8	3	133
Section B – Alternative 4	140	266	33	13	312
Section B – Alternative 4-B	140	181	30	13	224

[a] Per TNM 2.5 and in accordance with 23 CFR 772.

Predicted build-condition traffic noise level contours are not a definitive means by which to assess traffic noise level impacts; however, they can aid in future land use planning efforts in presently undeveloped areas. Correlating to the traffic noise impact thresholds for FHWA NAC “E” and NAC “B” and “C” land uses, the TNM-predicted for 66 dB(A) noise level contours were calculated to reach a maximum of approximately 875 feet from the edge of the proposed travel lane. The 71 dB(A) contour is approximately 220 feet from the edge of proposed travel lane.

Traffic Noise Abatement Measures

Measures for reducing or eliminating traffic noise impacts were considered for all impacted receptors in each alternative. The primary noise abatement measures evaluated for highway projects include highway alignment changes, traffic system management measures, and establishment of buffer zones, noise barriers, and noise insulation (NAC D only). For each of these measures, benefits versus costs (reasonableness), engineering feasibility, effectiveness and practicability, and other factors were included in the noise abatement considerations.

Substantially changing the highway alignment to minimize noise impacts is not considered to be a viable option for this project due to engineering and/or environmental factors. Traffic system management measures are not considered viable for noise abatement due to the negative impact they would have on the capacity and level of service of the proposed roadway. Costs to acquire buffer zones for impacted receptors would exceed the NCDOT base dollar value of $37,500 plus an incremental increase of $525 (as defined in the 2011 NCDOT Abatement Policy) per benefited receptor, causing this abatement measure to be unreasonable.

Noise Barriers

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb, and reflect highway traffic noise. For this project, earthen berms are not found to be a viable abatement measure because the additional right-of-way, materials and construction costs are estimated to exceed the NCDOT maximum allowable base quantity of 7,000 cubic yards, plus an incremental increase of 100 cubic yards per benefited receptor, as defined in the NCDOT Policy.

A noise barrier evaluation was conducted for this project utilizing the TNM 2.5 software developed by the FHWA. Table 4-7 summarizes the results of the evaluation. Based upon criteria defined in the NCDOT *Traffic Noise Abatement Policy* (NCDOT 2011), the following barriers are preliminarily justified and recommended for construction, contingent upon completion of the project design and the public involvement process. The locations of noise study areas are shown on Figure 4-1 through Figure 4-9.

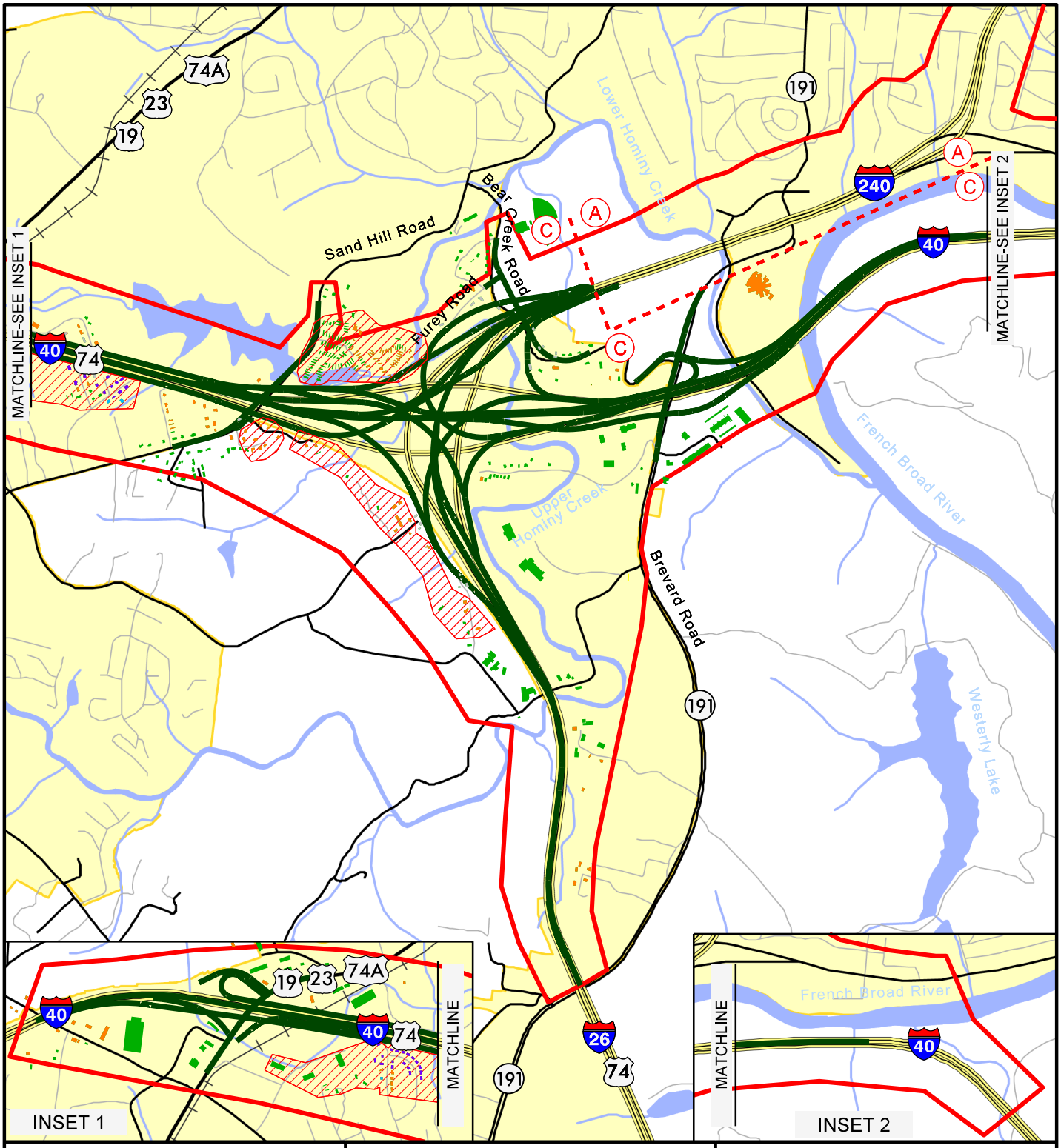
Table 4-7: Preliminary Noise Barrier Evaluation Results

Noise Barrier Location (Alternative)	Length (feet)	Area (feet^2)	Number of Benefited Receptors	Area per Benefited Receptor/ Allowable Area per Benefited Receptor (feet^2)	Preliminarily Recommended for Construction [a]
A-1 (Sect. A) I-26 westbound between Amboy Road and Haywood Road	3,430	85,830	87	987 / 2,640	Yes
A-2 (Sect. A) I-26 eastbound between Amboy Road and Haywood Road	3,800	94,864	79	1,201 / 2,675	Yes
B3-1 (Sect. B Alt. 3) I-26 eastbound between Patton Avenue and Riverside Drive	4,150	103,740	91	1,140 / 2,955	Yes

Noise Barrier Location (Alternative)	Length (feet)	Area (feet^2)	Number of Benefited Receptors	Area per Benefited Receptor/ Allowable Area per Benefited Receptor (feet^2)	Preliminarily Recommended for Construction [a]
B3-2 (Sect. B Alt. 3) I-26 westbound between Haywood Road and Patton Avenue	3,900	88,984	46	1,934 / 2,640	Yes
B3-3 (Sect. B Alt. 3) I-26 eastbound between Haywood Road and Patton Avenue	3,250	62,525	59	1,060 / 2,605	Yes
B3-C-2 (Sect. B Alt. 3-C) I-26 westbound between Haywood Road and Patton Avenue	3,880	93,670	58	1,615 / 2,640	Yes
B3-C-3 (Sect. B Alt. 3-C) I-26 eastbound between Haywood Road and Patton Avenue	3,340	66,180	58	1,141 / 2,605	Yes
B3-C-5 (Sect. B Alt. 3-C) I-26 westbound near Broadway	1,300	24,825	14	1,773 / 2,570	Yes
B4-1 (Sect. B Alt. 4) I-26 eastbound between Patton Avenue and Riverside Drive	3,740	93,380	64	1,459 / 2,990	Yes
B4-2 (Sect. B Alt. 4) I-26 westbound between Haywood Road and Patton Avenue	4,890	114,120	44	2,594 / 2,640	Yes
B4-3 (Sect. B Alt. 4) I-26 eastbound between Haywood Road and Patton Avenue	3,790	65,604	46	1,426 / 2,640	Yes
B4-6 (Sect. B Alt. 44-B) Patton Avenue and I-240 near Atkinson Street	1,630	40,824	84	486 / 2,500	Yes
B4-B-2 (Sect. B Alt. 4-B) I-26 westbound between Haywood Road and Patton Avenue	4,980	105,336	76	1,418 / 2,640	Yes
B4-B-3 (Sect. B Alt. 4-B) I-26 eastbound between Haywood Road and Patton Avenue	3,290	55,315	39	1,418 / 2,605	Yes
B4-B-5 (Sect. B Alt. 4-B) I-26 westbound near Broadway	1,540	32,176	15	2,145 / 2,535	Yes

Noise Barrier Location (Alternative)	Length (feet)	Area (feet^2)	Number of Benefited Receptors	Area per Benefited Receptor/ Allowable Area per Benefited Receptor (feet^2)	Preliminarily Recommended for Construction [a]
B4-B-6 (Sect. B Alt. 4-B) Patton Avenue and I-240 near Atkinson Street	1,630	40,824	82	498 / 2,500	Yes
C-1-1 (Sect. C Alts. A-2, C-2, D-1, F-1) I-40 eastbound from Smoky Park Highway to Sand Hill Road	2,900	54,230	32	1,695 / 2,710	Yes

[a] The recommendation for barrier construction is preliminary and subject to change, pending completion of final design and the public involvement process.



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- Section (A)
- Noise Study Area
- Noise Receptor (not Impacted or Benefitted)
- Impacted Noise Receptor
- Noise Receptor Within ROW
- Impacted & Benefitted Noise Receptor
- Benefitted Noise Receptor

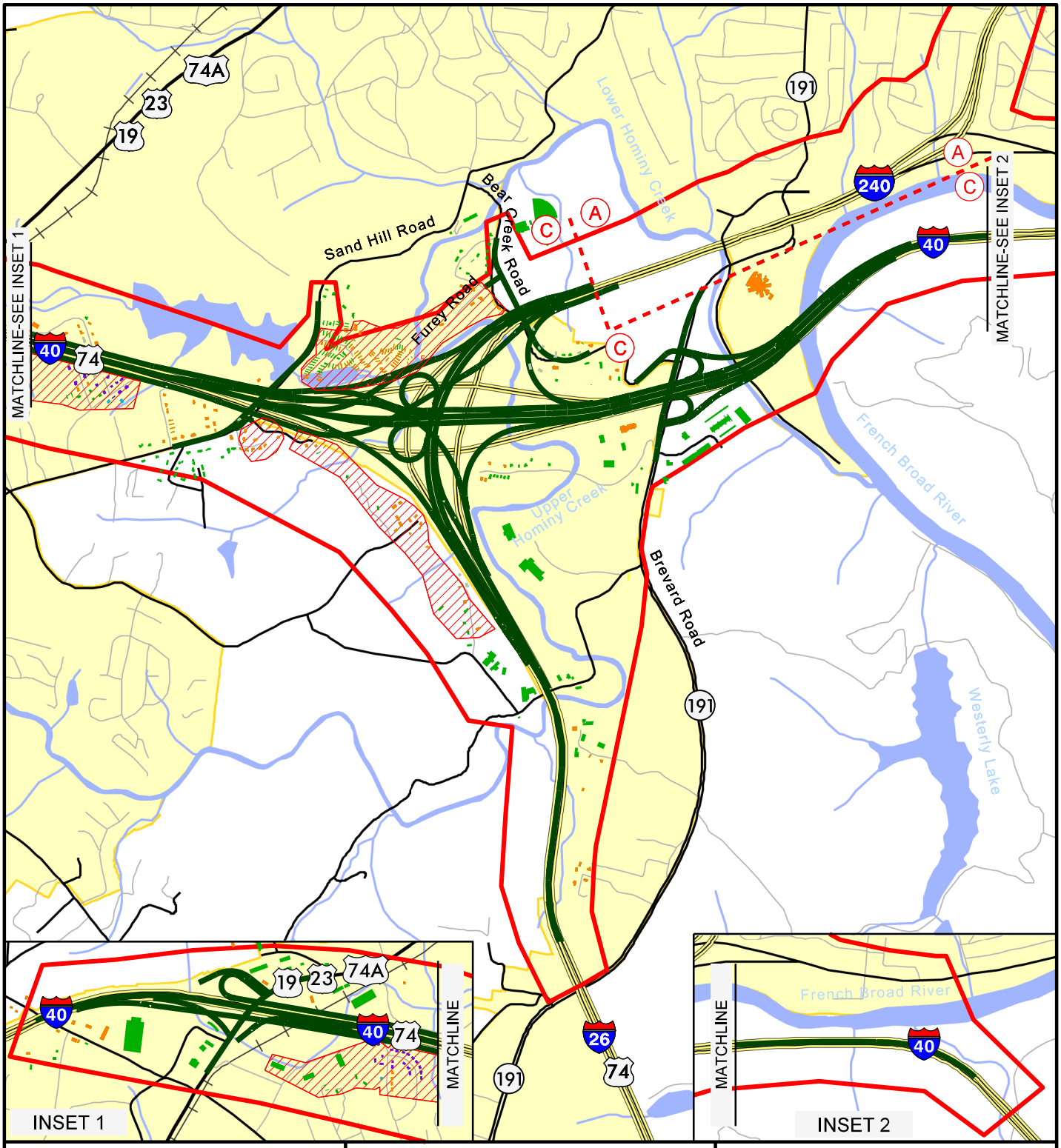
Date: September 2015

N W E S

0 1000 2000 FEET

Figure 4-1

Section C Alternative A-2
Noise Study Areas
and Receptors



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- Section
- Noise Study Area
- Noise Receptor (not Impacted or Benefitted)
- Impacted Noise Receptor
- Noise Receptor Within ROW
- Impacted & Benefitted Noise Receptor
- Benefitted Noise Receptor

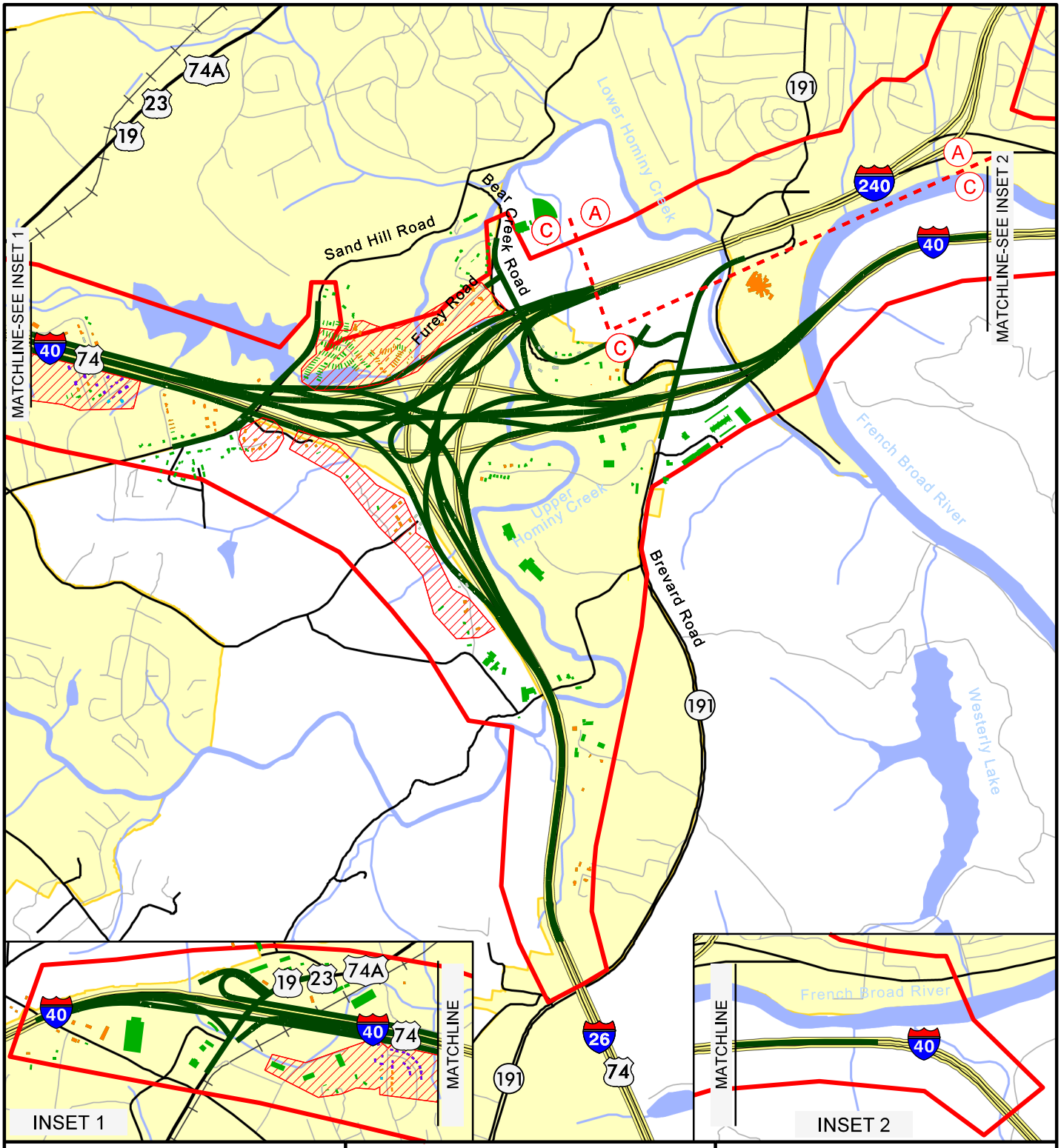
Date: September 2015

N W E S

0 1000 2000 FEET

Figure 4-2

Section C Alternative C-2
Noise Study Areas
and Receptors



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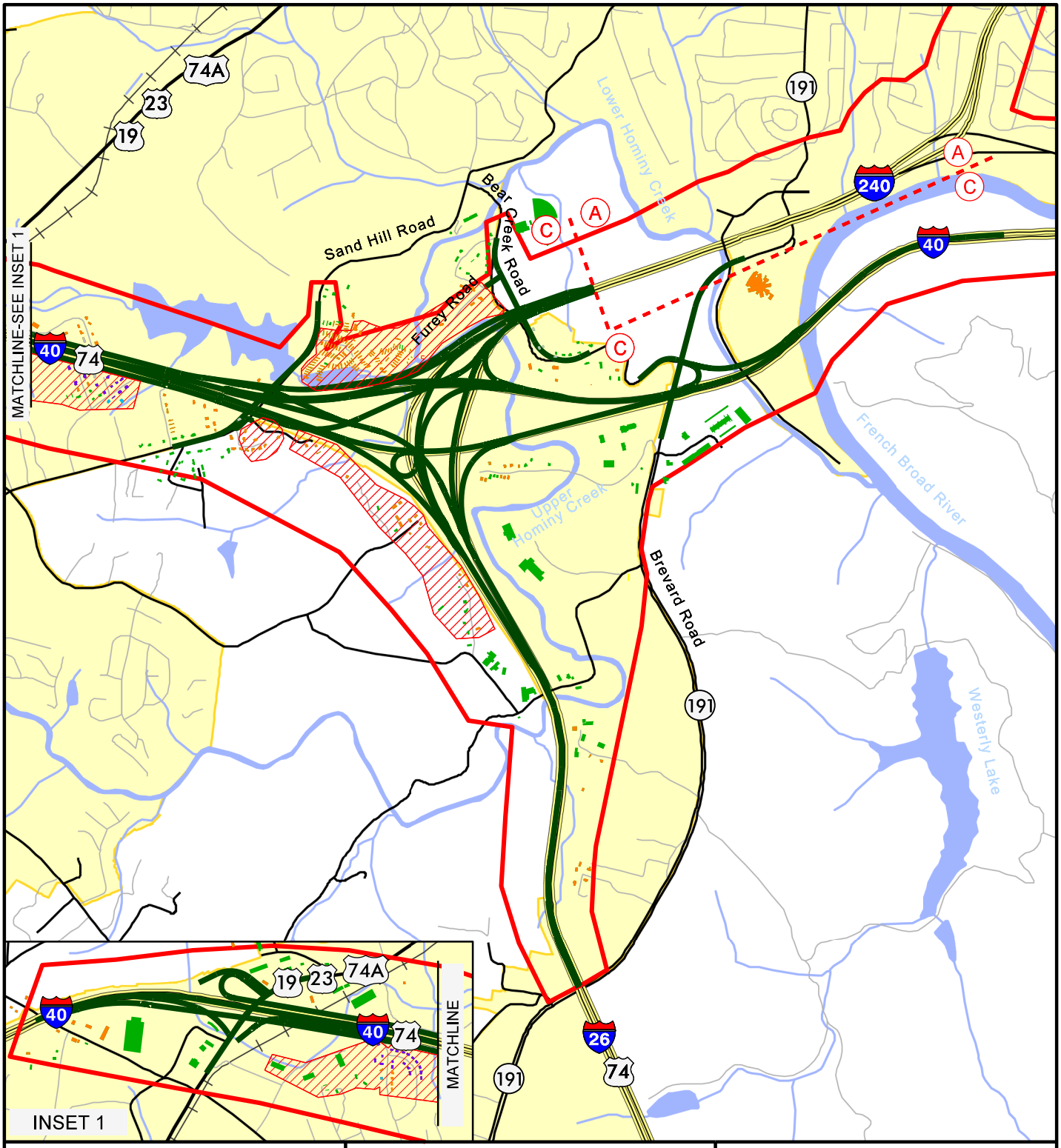
I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-3

Section C Alternative D-1 Noise Study Areas and Receptors



North Carolina
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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
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- Railroad
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- Streams
- Water
- Section
- Noise Study Area
- Noise Receptor (not Impacted or Benefitted)
- Impacted Noise Receptor
- Noise Receptor Within ROW
- Impacted & Benefitted Noise Receptor
- Benefitted Noise Receptor

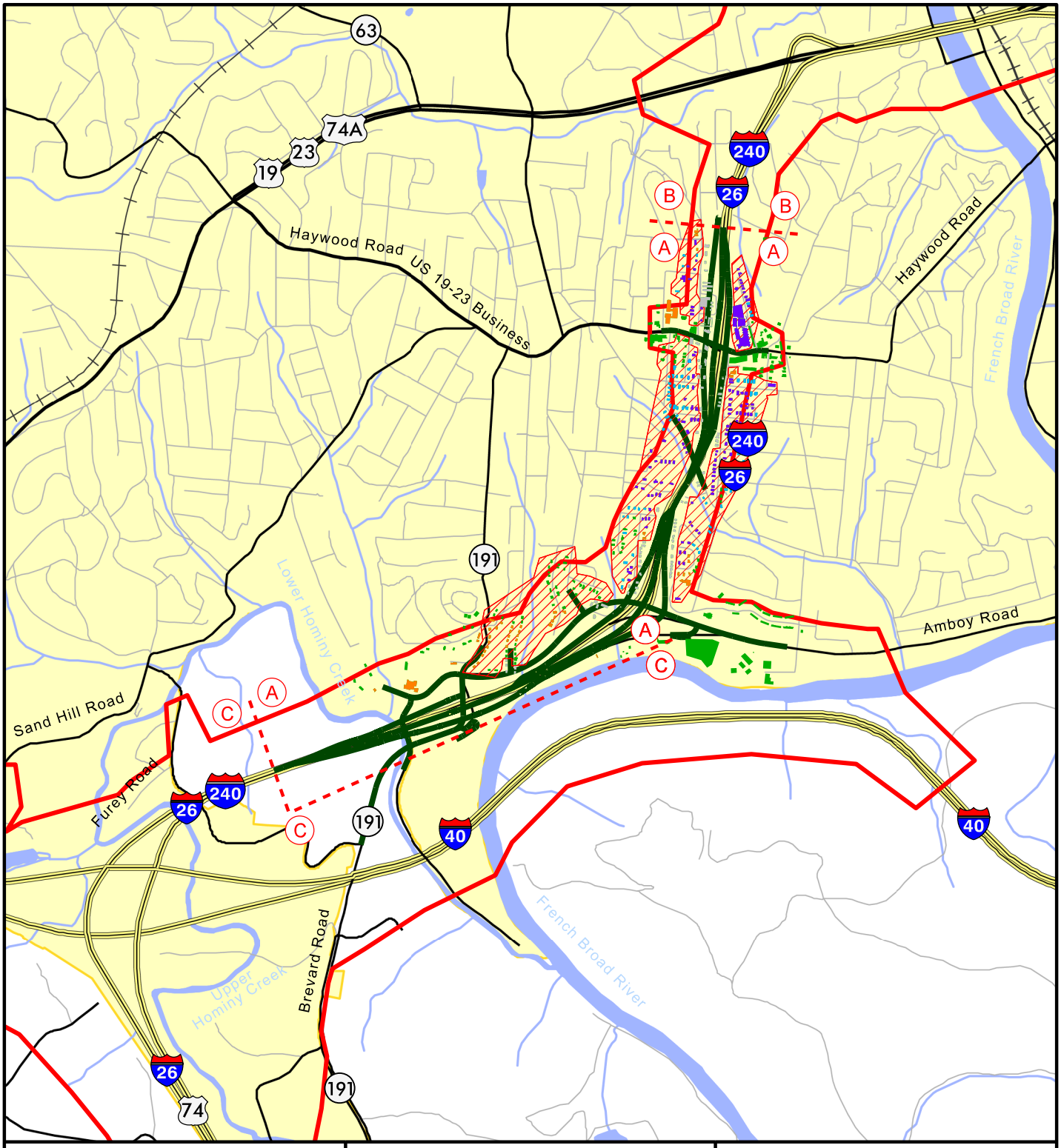
Date: September 2015

N W E S

0 1000 2000 FEET

Figure 4-4

Section C Alternative F-1
Noise Study Areas
and Receptors



North Carolina
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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
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- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- Section
- Noise Study Area
- Noise Receptor (not Impacted or Benefitted)
- Impacted Noise Receptor
- Noise Receptor Within ROW
- Impacted & Benefitted Noise Receptor
- Benefitted Noise Receptor

Date: September 2015

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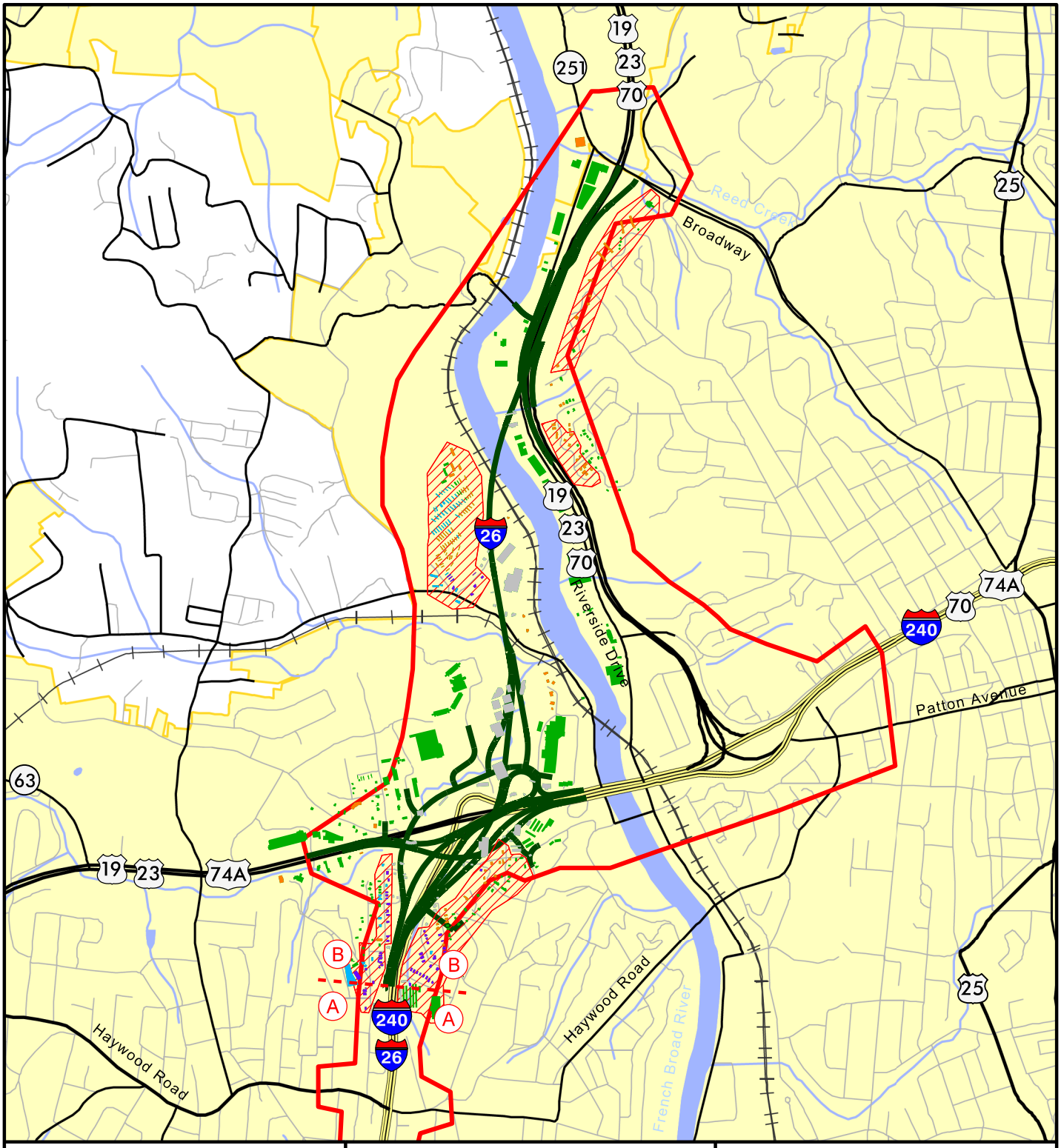
Figure 4-5

Section A
Noise Study Areas
and Receptors



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

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- Section
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- Noise Receptor (not Impacted or Benefitted)
- Impacted Noise Receptor
- Noise Receptor Within ROW
- Impacted & Benefitted Noise Receptor
- Benefitted Noise Receptor

Date: September 2015

N W E S

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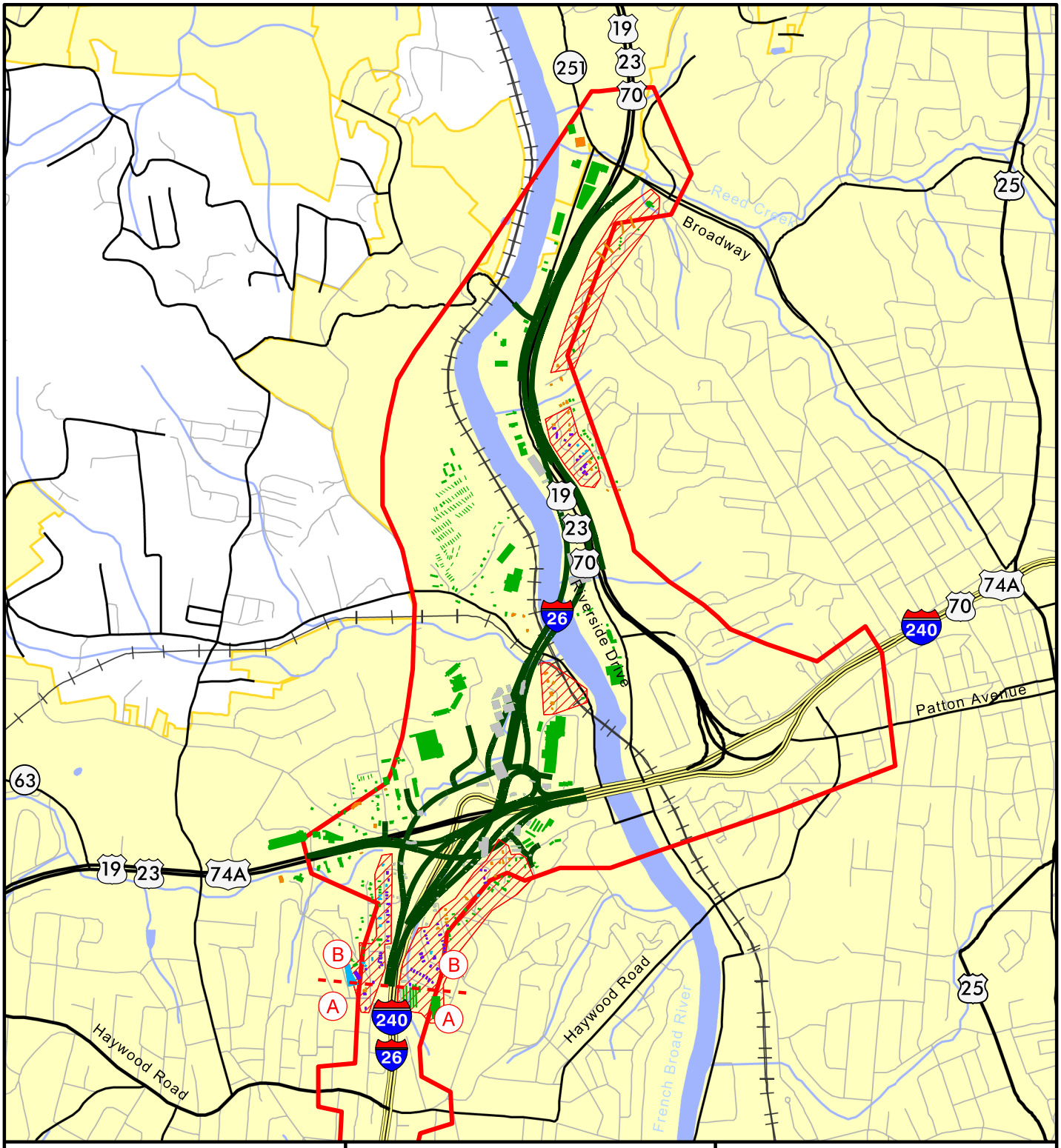
Figure 4-6

Section B Alternative 3
Noise Study Areas
and Receptors



North Carolina
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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A — Section
- Noise Study Area
- Noise Receptor (not Impacted or Benefitted)
- Impacted Noise Receptor
- Noise Receptor Within ROW
- Impacted & Benefitted Noise Receptor
- Benefitted Noise Receptor

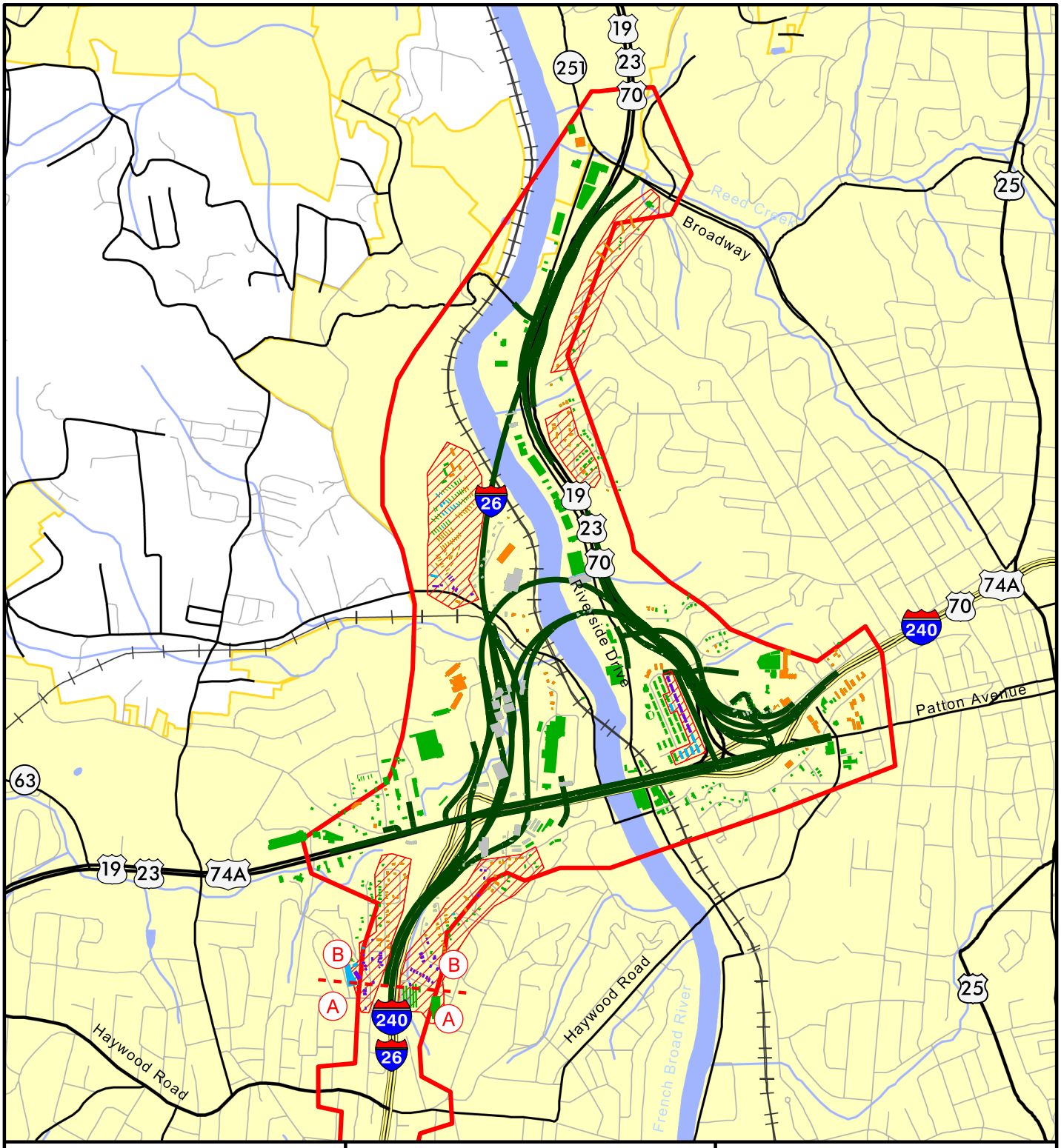
Date: September 2015

N W E S

0 1000 2000 FEET

Figure 4-7

Section B Alternative 3C
Noise Study Areas
and Receptors



North Carolina
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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
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- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A — Section
- Noise Study Area
- Noise Receptor (not Impacted or Benefitted)
- Impacted Noise Receptor
- Noise Receptor Within ROW
- Impacted & Benefitted Noise Receptor
- Benefitted Noise Receptor

Date: September 2015

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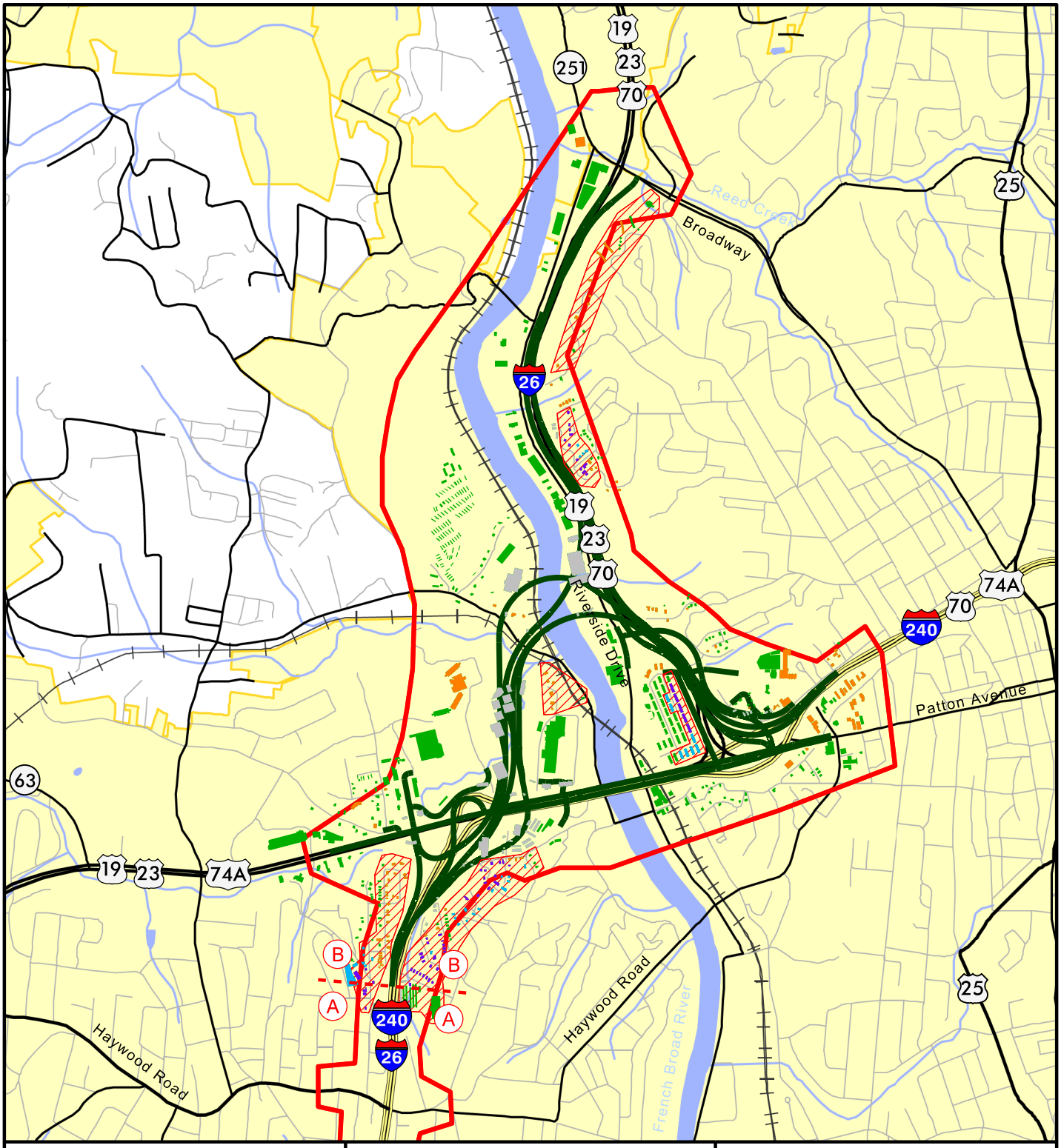
Figure 4-8

Section B Alternative 4
Noise Study Areas
and Receptors



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
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- NC Highways
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- Railroad
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- Streams
- Water
- A — Section
- Noise Study Area
- Noise Receptor (not Impacted or Benefitted)
- Impacted Noise Receptor
- Noise Receptor Within ROW
- Impacted & Benefitted Noise Receptor
- Benefitted Noise Receptor

Date: September 2015

N W E S

0 1000 2000 FEET

Figure 4-9

Section B Alternative 4B
Noise Study Areas
and Receptors

The locations of noise study areas where noise barriers are reasonable and feasible are indicated below.

Section C – Alternatives A-2, C-2, D-1, and F-1
Area C-1-1 - I-40 eastbound from Smoky Park Highway to Sand Hill Road

Section A – I-240 Widening Alternative
Area A-1 - I-26 westbound between Amboy Road and Haywood Road
Area A-2 - I-26 eastbound between Amboy Road and Haywood Road

Section B – Alternative 3
Area B3-1 - I-26 eastbound between Patton Avenue and Riverside Drive
Area B3-2 - I-26 westbound between Haywood Road and Patton Avenue
Area B3-3 - I-26 eastbound between Haywood Road and Patton Avenue

Section B – Alternative 3-C
Area B3-C-2 -I-26 westbound between Haywood Road and Patton Avenue
Area B3-C-3 - I-26 eastbound between Haywood Road and Patton Avenue
Area B3-C-5 - I-26 westbound near Broadway

Section B – Alternative 4
Area B4-1 - I-26 eastbound between Patton Avenue and Riverside Drive
Area B4-2 - I-26 westbound between Haywood Road and Patton Avenue
Area B4-3 - I-26 eastbound between Haywood Road and Patton Avenue
Area B4-6 - Patton Avenue and I-240 near Atkinson Street

Section B – Alternative 4-B
Area B4-B-2 - I-26 westbound between Haywood Road and Patton Avenue
Area B4-B-3 - I-26 eastbound between Haywood Road and Patton Avenue
Area B4-B-5 - I-26 westbound near Broadway
Area B4-B-6 - Patton Avenue and I-240 near Atkinson Street

Preliminary noise barriers were also considered in other locations, but did not meet the criteria for being both preliminarily feasible and reasonable. These locations are described in Table 4-8.

Summary

A preliminary noise evaluation was performed and a more detailed review will be completed during project final design. Noise barriers found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis due to changes in proposed project alignment and other design considerations, surrounding land use development, or utility conflicts, among other factors. Conversely, noise barriers that were not considered feasible and reasonable may meet the established criteria and be recommended for construction. This evaluation completes the highway traffic noise requirements of 23 CFR 772.

Table 4-8: Preliminary Noise Barriers Not Feasible and Reasonable

Noise Barrier Location (Alternative)	Length (feet)	Area (feet^2)	Number of Benefited Receptors	Area per Benefited Receptor/ Allowable Area per Benefited Receptor (feet^2)	Preliminarily Recommended for Construction [a]
A-3 (Sect. A) I-26 eastbound between Amboy Road and Brevard Road	2,510	62,664	30	2,089 / 2,675	No[b]
B3-5 (Sect. B Alt 3) I-26 westbound near Broadway	1,140	23,130	3	7,710 / 2,500	No
B3-C-1 (Sect. B Alt 3-C) B4-B-1 (Sect. B Alt 4-B) I-26 westbound north of Patton Avenue near Westwood Place	1,100	25,320	4	6,330 / 2,920	No
B4-5 (Sect. B Alt 4) I-26 westbound near Broadway	2,290	41,115	1	41,115 / 2,535	No
CA-2-1 (Sect. C Alt A-2) C-C-2-1 (Sect. C Alt. C-2) C-D-1-1 (Sect. C Alt. D-1) C-F-1-1 (Sect. C Alt. F-1) I-40 westbound ramp near Sand Hill Road	3,200 to 4,885	79,984 to 122,060	0	0 / 2,570	No[c]
C-A-2-2 (Sect. C Alt. A-2) C-C-2-2 (Sect. C Alt. C-2) C-D-1-2 (Sect. C Alt. D-1) C-F-1-2 (Sect. C Alt. F-1) I-40 eastbound to I-26 eastbound from Sand Hill Road to Pond Road	1,880	31,720	8	3,965 / 2,640	No
C-1-2 (Sect. C Alts. A-2, C-2, D-1, F-1) I-40 eastbound from Monte Vista Road to Smoky Park Highway	1,225	13,475	3	4,491 / 2,570	No
C-1-3 (Sect. C Alts. A-2, C-2, D-1, F-1) I-40 westbound from Monte Vista Road to Smoky Park Highway	1,525	20,060	3	6,687 / 2,570	No

[a] The recommendation for barrier construction is preliminary and subject to change, pending completion of final design and the public involvement process.
[b] Barrier is not reasonable due to an inability to achieve at least 7 dB(A) of noise reduction for at least one front row impacted receptor.
[c] Barrier is not feasible due to an inability to achieve at least 5 dB(A) of noise reduction for at least one impacted receptor.

In accordance with NCDOT Traffic Noise Abatement Policy, federal/state governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the Record of Decision (ROD). For development occurring after this date, local governing bodies are responsible to insure that noise compatible designs are utilized along the proposed facility.

4.1.3.2 Air Quality

This section is based on the *Air Quality Analysis Update Technical Memorandum for the I-26 Connector Project, TIP No. I-2513* (NCDOT 2015a).

Attainment Status

The project is located in Buncombe County, which has been determined to comply with the NAAQS. The proposed project is located in an attainment area; therefore, 40 CFR 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

Qualitative MSAT Analysis

A qualitative MSAT analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives* (FHWA 2015).

For each alternative in this DEIS, the amount of MSAT emitted would be proportional to the vehicle miles travelled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. Because the VMT estimated for the No-Build Alternative is higher than the build alternative, higher levels of MSAT are not expected from the build alternative compared to the No–Build Alternative. Refer to Table 4-9 for VMT values for this project area.

Table 4-9: Vehicle Miles Travelled (VMTs)

Alternative Considered	Approximate Length (miles)	2033 Design Year Average Daily Traffic (vehicles/day) [a]	2033 Design Year Vehicle Miles Travelled (VMT)
No-Build Alternative			
Sections A, B & C	7.5	110,000	825,000
Build Alternative			
Sections A, B & C	7.0	110,000	770,000

[a] 2033 Design Year Average Daily Traffic Volumes were estimated using a representative value of estimated daily traffic referenced from traffic forecasts.

The additional travel lanes contemplated as part of the project alternatives would have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher under certain build alternatives than the No-Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections involving construction on new location with Section B – Alternatives 3, 3-C, 4, and 4-B.

However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. When a highway is widened, the localized level of MSAT emissions for the build alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

In summary, under all build alternatives in the design year, it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to the reduced VMT associated with more direct routing, and due to EPA's MSAT reduction programs.

MSAT Conclusion

What is known about mobile source air toxics is still evolving. As the science progresses FHWA will continue to revise and update this guidance. FHWA is working with stakeholders, EPA, and others to better understand the strengths and weaknesses of developing analysis tools and the applicability on the project-level decision documentation process.

Construction Air Quality

Air quality impacts resulting from roadway construction activities are typically not a concern when contractors utilize appropriate control measures. During construction of the proposed project, materials resulting from clearing and grubbing, demolition, or other operations will be removed from the project, burned, or otherwise disposed of by the contractor. Any burning done will be done in accordance with applicable local laws and ordinances and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 North Carolina Administrative Code (NCAC) 2D.0520. Care will be taken to ensure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Operational agreements that reduce or redirect work or shift times to avoid community exposures can have positive benefits. Burning will be performed under constant surveillance. Also during construction, measures will be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

Summary

Vehicles are a major contributor to decreased air quality because they emit a variety of pollutants into the air. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. New highways or the widening of existing highways increases localized levels of vehicle emissions, but these increases could be offset due to increases in speeds from reductions in congestion and because vehicle emissions will decrease in areas where traffic shifts to the new roadway. Significant progress has been made in reducing criteria pollutant emissions from motor vehicles and improving air quality, even as vehicle travel has increased rapidly.

This project is not anticipated to create any adverse effects on the air quality of this attainment area. This evaluation completes the assessment requirements for air quality of the 1990 CAAA and the NEPA process, and no additional reports are necessary.

4.1.3.3 Farmlands

In accordance with the FPPA and state EO 96, the impact of the project on prime, unique, and statewide important farmlands was assessed. Due to the urban setting of the project, this project is in compliance with the FPPA and Farmland Conversion Impact Rating Form (United States Department of Agriculture [USDA] Form AD-1006) for federally funded projects was not required.

4.1.3.4 Utilities

Electric

All the alternatives would cross electric distribution and transmission lines owned by Duke Energy. It is anticipated distribution poles and transmission towers would need to be either adjusted or relocated due to the construction of the project. NCDOT would work with Duke Energy in efforts to minimize impacts to the electric lines and to coordinate the adjustments or relocations required while trying to minimize disruption in service.

Sewer Facilities

Most development within the study area uses sanitary sewer facilities. Thus, each of the build alternatives would require relocation of municipal sewer lines. None of the build alternatives would impact City of Asheville or Buncombe County water or wastewater treatment plants or private treatment facilities within the study area; however, the Metropolitan Sewerage District (MSD) has identified multiple sewer lines that would need to be relocated or adjusted. NCDOT would also work with sewer authorities in the area to minimize any impacts to sewer lines and to coordinate their relocation, as necessary.

Water Service

Project construction would require relocation of water lines owned by the City of Asheville. Wells within the right-of-way of the recommended alignment would be surveyed prior to project construction. NCDOT would purchase these wells and cap and abandon them in accordance with North Carolina well construction standards. Any subsurface contamination would be reported to the Asheville Regional Office of NCDEQ. During the During the final design phase of the project, NCDOT would also identify wells adjacent to the project right-of-way that could be impacted by roadway construction. Mitigation for these wells could be provided through land purchase, compensation for damages, or the provision of new wells. NCDOT would also work with water and sewer authorities in the area to minimize any impacts to water lines and to coordinate their relocation, as necessary.

Gas

Multiple gas lines owned by the Public Service Company exist within the study area. Gas lines ranging from 2 inch to 12 inch in diameter have been identified that would require adjustment or relocation. NCDOT would work with Public Service Company to minimize any impacts to gas lines and to coordinate their relocation, as necessary.

Phone/Fiber Optics

BellSouth and AT&T own phone lines and fiber optic routes within the study area. Construction of the project would impact four major duct banks (multiple cables within a conduit used to protect from accident breakage) and six fiber optic routes owned by BellSouth and three major fiber optic routes owned by AT&T. NCDOT would work with BellSouth and AT&T to minimize any impacts to phone lines/fiber optic routes and to coordinate their relocation, as necessary. All four of the Section B alternatives would impact the fiber optic routes and would require relocation.

4.1.3.5 Visual Quality

This section describes the potential effects of the project on visual quality within the project study area. As indicated in Section 3.3.5, visual and aesthetic effects are a concern for both users of the transportation facility and those that view the facility from afar. Construction of the proposed project would have a visual impact on adjacent areas. One of the problems inherent in designing a controlled access freeway involves providing sufficient right-of-way to comply with design criteria while minimizing disruption to the surrounding area. The effects to visual quality are presented for each project section.

No-Build Alternative

Under the No-Build Alternative, no change in the existing visual environment would occur.

Section C

Visual impacts of the project would be similar among three of the four build alternatives being considered for this section of the project. Alternatives A-2, C-2, and D-1 would include a four level interchange at the junction of I-26/I-40/I-240, which would include flyover ramps approximately 60 feet above the existing grade. The visual effect for adjacent areas for these three alternatives may have a negative effect on the visual quality; however, several of the areas adjacent to the interchange are at a substantially higher elevation than the existing roadway and these areas may not have a considerable change in the viewshed. Alternative F-1 would maintain the existing configuration and would not change the viewshed substantially from the existing condition. Each of the build alternatives would be consistent with the existing viewshed, which includes the existing I-40/I-26 interchange.

Section A

Construction of the build alternative in this section of the proposed project would have a visual impact on adjacent areas. The project would be designed and constructed as a multi-lane, divided, controlled access freeway, which would be consistent with the context of the existing viewshed of which I-240 is a prominent feature. Widening of the highway would, however, increase its visual prominence for people traveling the freeway, as well as those viewing the freeway from afar. Visual impacts would occur in this section of the project but are not anticipated to be adverse.

Section B

Visual impacts of the project for the four build alternatives being considered for this section of the project would generally be enhanced or improved for those using the facility and degraded

for those viewing the freeway from off the road. Each build alternative would adversely impact the viewshed, to varying degrees, from outside the project area in this section of the project. Visual impacts would be adverse because each build alternative would introduce a new prominent feature that will be out of context with the existing viewshed. Conversely, opportunities for views and new vistas of Asheville, the French Broad River, and surrounding mountains and hills would exist for motorists using the new roadway.

Alternatives 3 and 3-C would be relatively consistent with the existing visual environment in the vicinity of the I-26/I-240 interchange with Patton Avenue as I-26 would cross under Patton Avenue. Farther north, the I-26 roadways would cross over the French Broad River along a single bridge crossing that would introduce a new prominent feature that would be out of context with the existing viewshed. The proposed design for Alternatives 3 and 3-C do not include any construction to the I-240 interchange with US 19-23-70/Patton Avenue; therefore, there would be no change in the visual environment in this location.

Alternative 4 would also be relatively consistent with the existing visual environment in the vicinity of the I-26/I-240 interchange with Patton Avenue as I-26 would also cross under Patton Avenue. Alternative 4 would include the same design as Alternative 3 for the I-26 crossing of the French Broad River, but would also include two additional flyover bridges across the French Broad River 0.5 mile south of the I-26 crossing. The three new bridges across the French Broad River would introduce new prominent features that would be substantially out of context with the existing viewshed. The proposed design that would reconfigure the I-240 interchange with US 19-23-70/Patton Avenue would generally be consistent with the existing visual environment.

Alternative 4-B would also be relatively consistent with the existing visual environment in the vicinity of the I-26/I-240 interchange with Patton Avenue as I-26 would also cross under Patton Avenue. Alternative 4-B would cross the French Broad River in approximately the same location as Alternative 3-C's crossing of the river. Alternative 4-B would also include two additional flyover bridges across the French Broad River; one approximately 285 feet south and one approximately 550 feet to the north of the I-26 crossing. The three new bridges across the French Broad River would introduce new prominent features that would be substantially out of context with the existing viewshed. The proposed design that would reconfigure the I-240 interchange with US 19-23-70/Patton Avenue would generally be consistent with the existing visual environment.

Mitigation

Future highway-oriented development that may be constructed adjacent to the proposed roadway could be designed to reduce the visual impacts of the freeway. The inclusion of treatments such as coloring of structural elements, buffer areas, and landscape screening into a new development's design can lessen the visual impacts of the freeway. In addition, it is the policy of the NCDOT to include aesthetic features in its roadway designs. NCDOT will consider incorporating the following principals in the roadway design in order to create an aesthetically acceptable and functional roadway and to minimize visual impacts:

- Integrate landscaping into the project design to promote visual continuity of the highway and to blend it into the natural landscape as much as possible
- Minimize the loss of vegetation, especially during construction when equipment and material access, storage, and staging are required
- Design noise attenuation features, if reasonable and feasible, to be compatible with surrounding natural features and development

In response to a recommendation by the I-26 Connector Coordinating Committee, an AAC has been established by the City of Asheville to work with NCDOT and the city to address aesthetic issues throughout the planning and design of the I-26 Connector project. Activities of the AAC are presented in Section 8.2.3.2. Coordination with the AAC will continue after selection of the preferred alternative and through the design phase of the project.

4.1.3.6 Hazardous Material

Potential impacts relative to contaminated sites can occur in different forms. First, the costs and schedule of the transportation improvement project can be adversely affected. Second, construction of the project could result in the disturbance or release of contaminated or hazardous materials during construction activities, or long-term impacts on or near these sites.

Based on the *Revised Geotechnical Pre-scoping Report,* two UST sites are anticipated to have a moderate to high severity of impacts and are located within the alternative corridors as summarized in Table 4-10 (NCDOT 2014c).

Table 4-10: USTs, Landfills, and Other Potentially Contaminated Sites

Site#	Type	Location	UST Facility ID	Anticipated Impacts	Anticipated Severity
13	Landfill/Recycling	79 Pond Road	N/A	Brownfields Program Pond Road Landfill 09032-05-11	Low to Moderate
45	Landfill	Along the Bank of the French Broad River	N/A	Landfill materials of unknown composition	High

Source: *Revised Geotechnical Pre-Scoping Report* (NCDOT 2014c).

Although the *Geotechnical Pre-Scoping Report* prepared in 2006 notes that no obvious contamination or hazardous materials were observed during previous site analysis, sampling was not conducted and avoidance of the landfill (site #45) is also recommended (NCDOT 2006a). If the landfill cannot be avoided, designs that minimize impacts need to be considered. Further evaluation in 2008 determined that, based on the alternatives currently proposed, the landfill on the east bank of the French Broad River should be reclassified as a low to moderate risk. Samples collected during past investigations indicate low levels of contaminants. No areas tested contained contaminants at hazardous levels. Additional testing will be done after the preferred alternative is selected, and a work plan will be developed based on the final design to address any contaminated material that may be encountered during construction.

4.1.3.7 Mineral Resources

As previously discussed, there are no mines or quarries located within or near the project study area. As such, none of the project alternatives would directly impact the production of mineral resources. Construction of the project may temporarily increase the demand for locally crushed stone and sand. However, such an increase in demand would not adversely impact mineral resources.

4.1.3.8 Floodplains/Floodways

A hydraulic technical report was prepared for the project in 2010 (TGS Engineers 2010). The proposed project was mapped showing the established limits of the 100-year floodways and

floodplains and the major stream crossing sites for the project. An amendment to this report was prepared for the project in 2015 by URS (URS 2015d), which re-evaluated crossings that changed or were added since the original TGS report.

This section contains information corresponding to the analysis of impacts to floodplains and floodways. EO 11988, Floodplain Management (42 CFR 26951) requires the following:

- All federal actions must avoid the occupancy and modification of floodplains and avoid direct or indirect support of floodplain development wherever there is a practicable alternative.
- If an action must be located on the base floodplain, the agency shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains.
- Each agency shall also provide opportunity for early public review of any plans or proposals for actions in floodplains.

It has been determined that, due to the linear nature of the project and existing roadway configuration, no practicable alternative exists to completely avoid impacts to floodplains. Efforts are being made to minimize the impacts to floodplains and to diminish the risk to human safety associated with the encroachments.

Consideration must be given to the floodplain's "natural and beneficial values," which are discussed in FEMA's Unified National Program for Floodplain Management. According to FEMA, surface waters, their floodplains, and their watersheds must be viewed as parts of one ecological system. This system exists in a state of dynamic equilibrium. If one of the parts of the system is disturbed, the entire system will readjust toward a new equilibrium. The geological and biological effects of the system's readjustments toward its new equilibrium are often felt far from the original site of the disturbance and can last for decades. For this reason, if for no other, floodplain development and modification should be viewed with caution and with careful assessment of the potential adverse impacts on natural values.

Floodplains in their natural or relatively undisturbed state provide three broad sets of natural and beneficial resources and, hence, resource values: (1) water resources values including natural moderation of floods, water quality maintenance, and groundwater recharge; (2) living resources values including large and diverse populations of plants and animals; and (3) cultural resource values including historical, archaeological, scientific, recreational, and aesthetic sites, in addition to sites generally highly productive for agriculture, aquaculture, and forestry where these uses are compatible with natural values.

The construction of the proposed improvements would encroach in several areas on the designated floodplain associated with several local stream systems. Table 4-11 includes a summary of the impacts to floodplains and floodways within the project study area from each of the detailed study alternatives.

A description of streams and the proposed hydraulic crossings is provided in the following sections.

Section C

Section C includes 11 existing hydraulic crossings, as described in Chapter 3.

Table 4-11: FEMA Floodplain and Floodway Impacts (in acres)

Alternative	Impacts to 100-year Floodplain	Impacts to Floodway	Total Impact
Section C			
Alternative A-2	20.53	2.74	23.37
Alternative C-2	20.39	4.23	24.62
Alternative D-1	18.06	2.27	20.33
Alternative F-1	16.63	2.00	18.63
Section A			
I-240 Widening Alternative	8.36	1.94	10.30
Section B			
Alternative 3	9.36	2.88	12.24
Alternative 3-C	7.65	2.96	10.53
Alternative 4	8.13	0.69	8.82
Alternative 4-B	3.91	0.38	4.29

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).

Alternative A-2

Alternative A-2 would include 12 proposed hydraulic crossing sites. The hydraulic crossing site are shown on Figure 4-10 and summarized in Table 4-12. Some sites have more than one crossing.

Section C – Alternative A-2 would include 13 new bridges and 6 major culvert crossings described in Table 4-12. These crossings would impact 20.53 acres in the 100-year floodplain and 2.74 acres in the floodway.

Alternative C-2

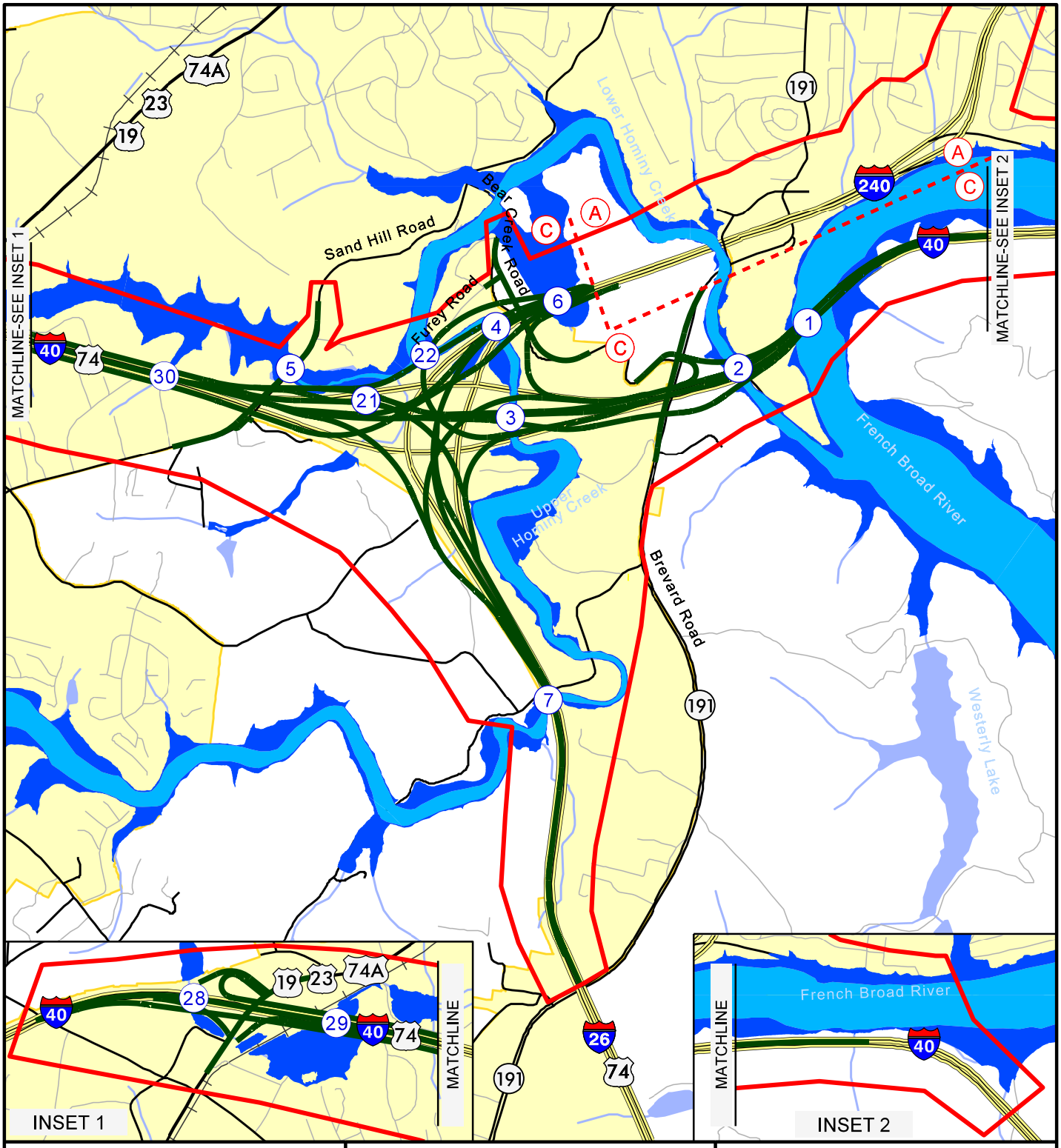
Alternative C-2 would include 12 proposed hydraulic crossing sites. The hydraulic crossing sites are shown on Figure 4-11 and summarized in Table 4-13.

Section C – Alternative C-2 would include 10 new bridges and 6 major culvert crossings. These crossings would impact 20.39 acres in the 100-year floodplain and 4.23 acres in the floodway.

Alternative D-1

Alternative D-1 would include 12 proposed hydraulic crossing sites. The hydraulic crossing sites are shown on Figure 4-12 and summarized in Table 4-14.

Section C – Alternative D-1 would include 13 new bridges and 6 major culvert crossings. These crossings would impact 18.06 acres in the 100-year floodplain and 2.27 acres in the floodway.



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A — Section
- 100-Year Floodplain
- Floodway
- # — Crossing Site Number

Date: May 2015

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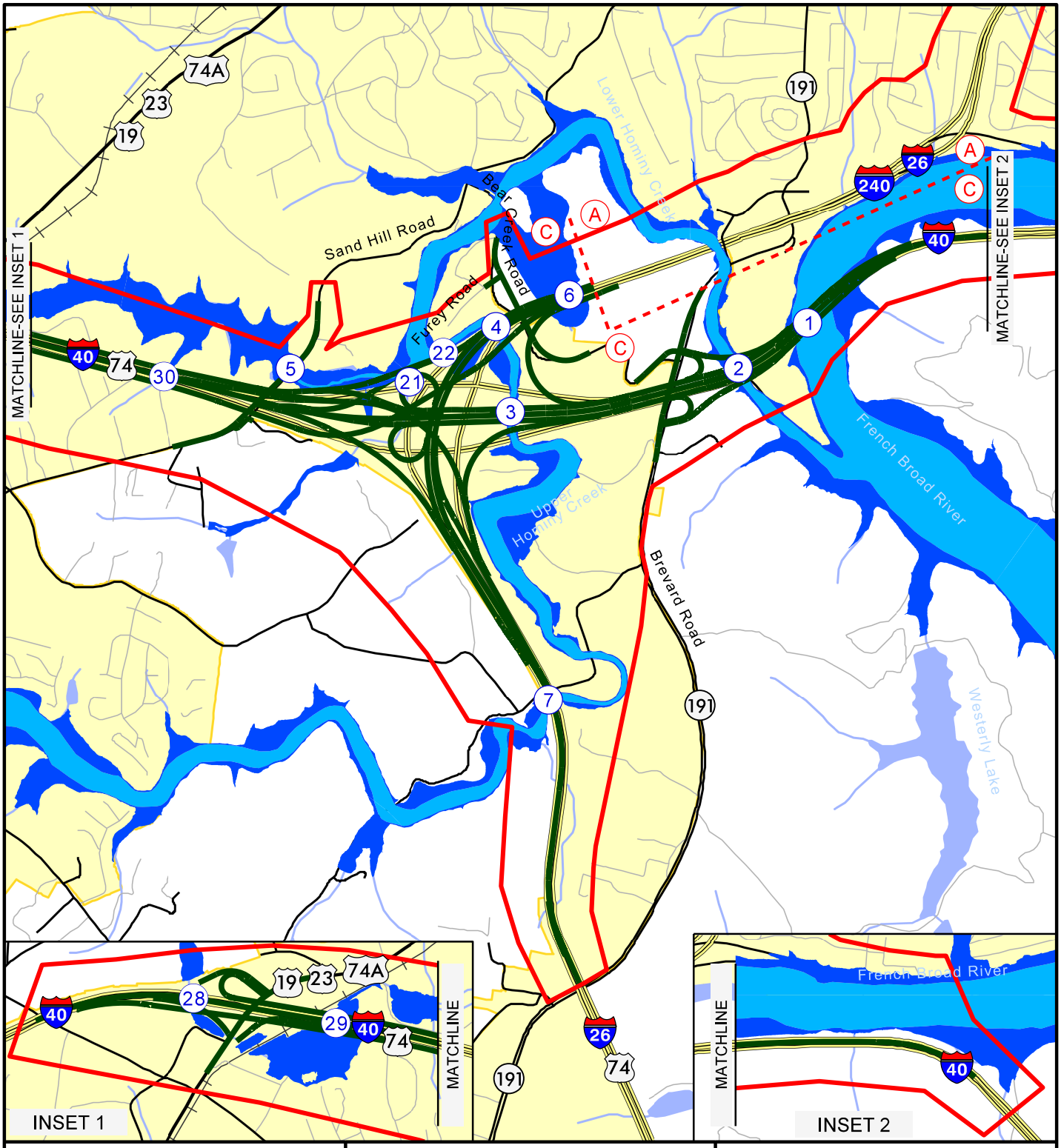
Figure 4-10

Section C Alternative A-2
Proposed Hydraulic Crossings

Table 4-12: Proposed Hydraulic Crossings – Alternative A-2

Site	Location	Facilities on Structure	Feature Under Structure	Comments
1	I-40 and WBCD Over French Broad River	I-40 EB and WB; WBCD; Ramp E; Ramp H	French Broad River	New Bridge
2A	I-40 and WBCD Over Hominy Creek	I-40 EB and WB; WBCD	Hominy Creek	New Bridge
2B	Ramp E Over Hominy Creek	Ramp E	Hominy Creek	New Bridge
2C	Ramp H Over Hominy Creek	Ramp H	Hominy Creek	New Bridge
3A	I-40 Over Hominy Creek	I-40 EB and WB	Hominy Creek	New Bridge
3B	Ramp BD Over Hominy Creek	Ramp D	Hominy Creek	New Bridge
3C	Ramp G Over Hominy Creek	Ramp G	Hominy Creek	New Bridge
3D	Ramp AC Over Hominy Creek	Ramp AC	Hominy Creek	New Bridge
4A	I-26 Over Hominy Creek	I-26 NB and SB	Hominy Creek	New Bridge
4B	Ramp CA Over Hominy Creek	Ramp CA	Hominy Creek	New Bridge
4C	WBCD Over Hominy Creek	WBCD	Hominy Creek	New Bridge
5	SR 3412 (Sand Hill Road) Over Ragsdale Creek	SR 3412	Ragsdale Creek	Raise Headwall on Existing 2 @ 8'wX8'h RC Box Culvert
6	I-26 Over UT	I-26 NB and SB; Ramp BD	UT to Hominy Creek	Extend 48" CMP
7	I-26 Over Hominy Creek	I-26 NB and SB	Hominy Creek and Pond Road	New Bridge
21	Ramp DB Over UT	Ramp DB	UT to Ragsdale Creek	Extend Existing 1 @ 6'wX9'h RC Box Culvert
22	Ramp BD Over Hominy Creek	Ramp BD	Hominy Creek; I-26 NB; I-26 SB; I-40 EB; I-40 WB; Ramp AC; Ramp CA; Ramp B	New Bridge
28	WBCD, EBCD Over Ragsdale Creek	WBCD, EBCD	Ragsdale Creek	Extend Existing Triple 7'x9' RC Box Culvert
29	WBCD, EBCD Over Ragsdale Creek	WBCD, EBCD	Ragsdale Creek	Extend Existing Triple 8'x8' RC Box Culvert
30	WBCD, EBCD Over UT	WBCD, EBCD	UT to Ragsdale Creek	Extend Existing Triple 48" RCP

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A — Section
- 100-Year Floodplain
- Floodway
- # — Crossing Site Number

Date: May 2015

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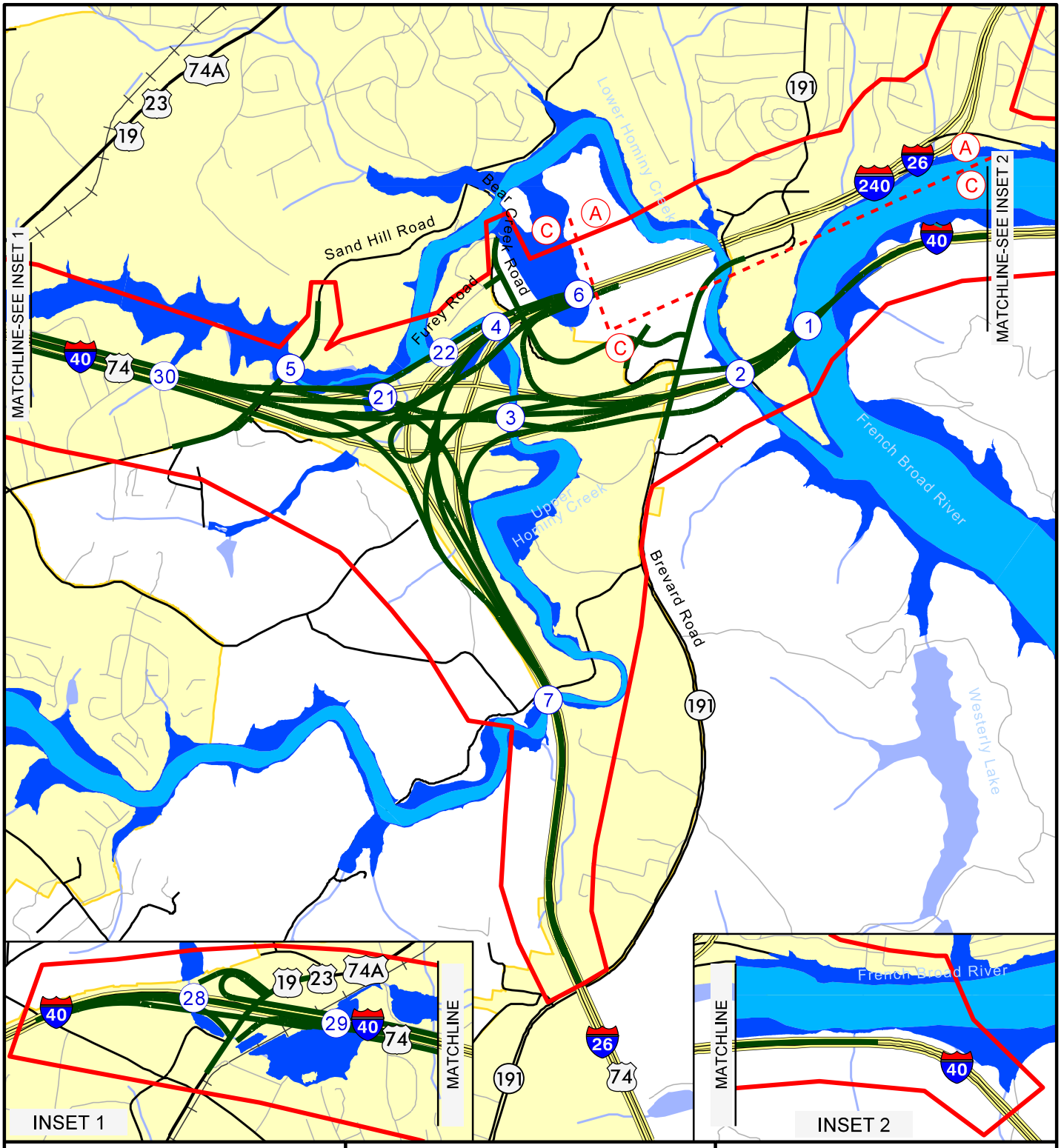
Figure 4-11

Section C Alternative C-2
Proposed Hydraulic Crossings

Table 4-13: Proposed Hydraulic Crossings – Alternative C-2

Site	Location	Facilities on Structure	Feature Under Structure	Comments
1	I-40 and WBCD Over French Broad River	I-40 EB and WB; WBCD; Ramp E; Ramp H	French Broad River	New Bridge
2A	I-40 and WBCD Over Hominy Creek	I-40 EB and WB; WBCD	Hominy Creek	New Bridge
2B	Ramp E Over Hominy Creek	Ramp E	Hominy Creek	New Bridge
2C	Ramp H Over Hominy Creek	Ramp H	Hominy Creek	New Bridge
3A	I-40 Over Hominy Creek	I-40 EB and WB	Hominy Creek	New Bridge
3B	Ramp BD Over Hominy Creek	Ramp D	Hominy Creek	New Bridge
4A	I-26 Over Hominy Creek	I-26 NB and SB	Hominy Creek	New Bridge
4B	Ramp CA Over Hominy Creek	Ramp CA	Hominy Creek	New Bridge
5	SR 3412 (Sand Hill Road) Over Ragsdale Creek	SR 3412	Ragsdale Creek	Raise Headwall on Existing 2 @ 8'wX8'h RC Box Culvert
6	I-26 Over UT	I-26 NB and SB; Ramp BD	UT to Hominy Creek	Extend 48" CMP
7	I-26 Over Hominy Creek	I-26 NB and SB	Hominy Creek and Pond Road	New Bridge
21	Ramp DB Over UT	Ramp DB	UT to Ragsdale Creek	Extend Existing 1 @ 6'wX9'h RC Box Culvert
22	Ramp BD Over Hominy Creek	Ramp BD	Hominy Creek; I-26 NB; I-26 SB; I-40 EB; I-40 WB; Ramp AC; Ramp CA; Ramp B	New Bridge
28	WBCD, EBCD Over Ragsdale Creek	WBCD, EBCD	Ragsdale Creek	Extend Existing Triple 7'x9' RC Box Culvert
29	WBCD, EBCD Over Ragsdale Creek	WBCD, EBCD	Ragsdale Creek	Extend Existing Triple 8'x8' RC Box Culvert
30	WBCD, EBCD Over UT	WBCD, EBCD	UT to Ragsdale Creek	Extend Existing Triple 48" RCP

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).



North Carolina
Department of Transportation

Date: May 2015

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-12

Section C Alternative D-1
Proposed Hydraulic Crossings

Table 4-14: Proposed Hydraulic Crossings – Alternative D-1

Site	Location	Facilities on Structure	Feature Under Structure	Comments
1	I-40 and WBCD Over French Broad River	I-40 EB and WB; WBCD; Ramp E; Ramp H	French Broad River	New Bridge
2A	I-40 and WBCD Over Hominy Creek	I-40 EB and WB; WBCD	Hominy Creek	New Bridge
2B	Ramp E Over Hominy Creek	Ramp E	Hominy Creek	New Bridge
2C	Ramp H Over Hominy Creek	Ramp H	Hominy Creek	New Bridge
3A	I-40 Over Hominy Creek	I-40 EB and WB	Hominy Creek	New Bridge
3B	Ramp BD Over Hominy Creek	Ramp D	Hominy Creek	New Bridge
3C	Ramp G Over Hominy Creek	Ramp G	Hominy Creek	New Bridge
3D	Ramp AC Over Hominy Creek	Ramp AC	Hominy Creek	New Bridge
4A	I-26 Over Hominy Creek	I-26 NB and SB	Hominy Creek	New Bridge
4B	Ramp CA Over Hominy Creek	Ramp CA	Hominy Creek	New Bridge
4C	WBCD Over Hominy Creek	WBCD	Hominy Creek	New Bridge
5	SR 3412 (Sand Hill Road) Over Ragsdale Creek	SR 3412	Ragsdale Creek	Raise Headwall on Existing 2 @ 8'wX8'h RC Box Culvert
6	I-26 Over UT	I-26 NB and SB; Ramp BD	UT to Hominy Creek	Extend 48" CMP
7	I-26 Over Hominy Creek	I-26 NB and SB	Hominy Creek and Pond Road	New Bridge
21	Ramp DB Over UT	Ramp DB	UT to Ragsdale Creek	Extend Existing 1 @ 6'wX9'h RC Box Culvert
22	Ramp BD Over Hominy Creek	Ramp BD	Hominy Creek; I-26 NB; I-26 SB; I-40 EB; I-40 WB; Ramp AC; Ramp CA; Ramp B	New Bridge
28	WBCD, EBCD Over Ragsdale Creek	WBCD, EBCD	Ragsdale Creek	Extend Existing Triple 7'x9' RC Box Culvert
29	WBCD, EBCD Over Ragsdale Creek	WBCD, EBCD	Ragsdale Creek	Extend Existing Triple 8'x8' RC Box Culvert
30	WBCD, EBCD Over UT	WBCD, EBCD	UT to Ragsdale Creek	Extend Existing Triple 48" RCP

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).

Alternative F-1

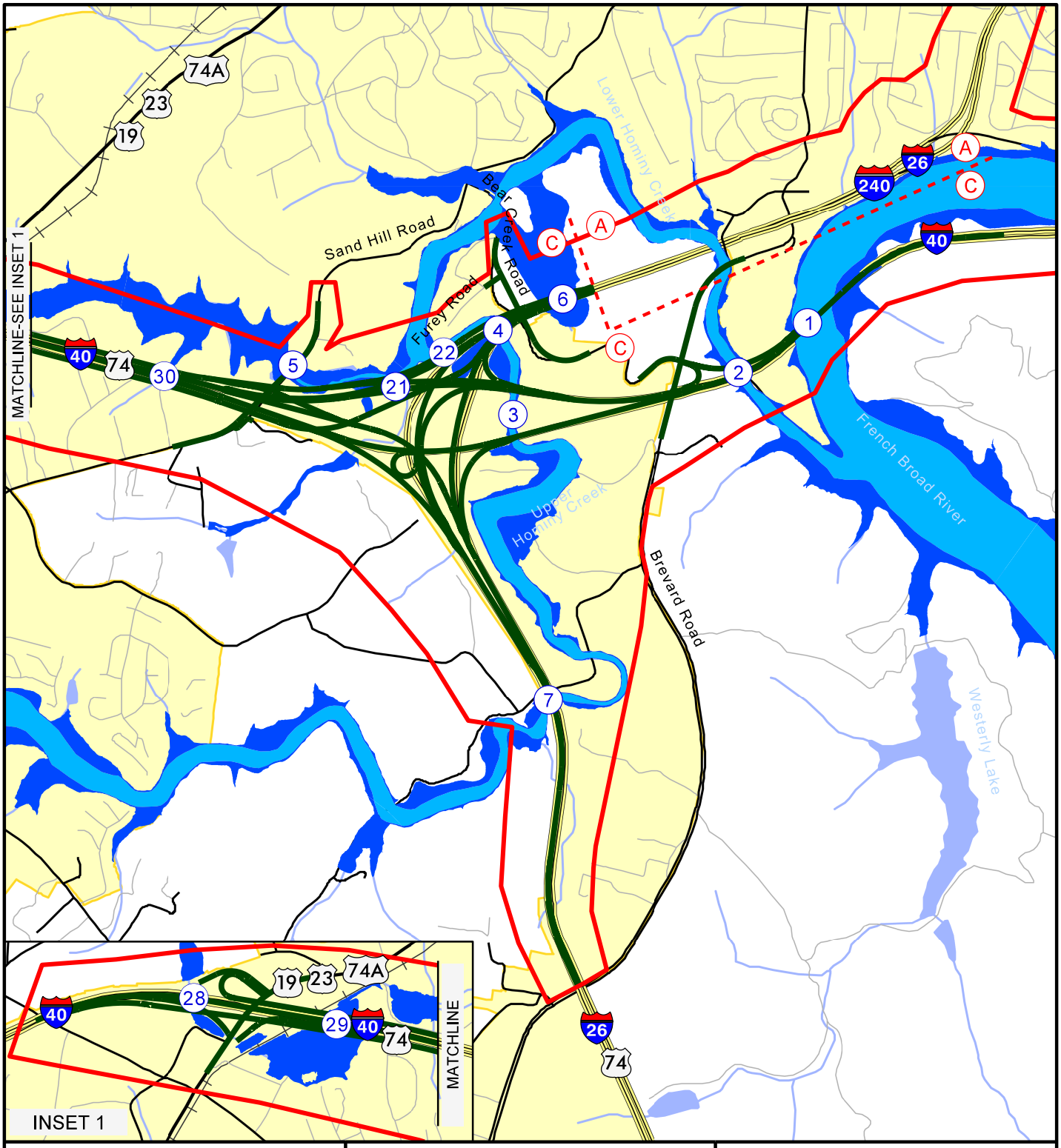
Alternative F-1 would include 12 proposed hydraulic crossing sites. The hydraulic crossing sites are shown on Figure 4-13 and summarized in Table 4-15.

Section C – Alternative F-1 would include 9 new bridges and 6 major culvert crossings. These crossings would impact 16.63 acres in the 100-year floodplain and 2.00 acres in the floodway.

Table 4-15: Proposed Hydraulic Crossings – Alternative F-1

Site	Location	Facilities on Structure	Feature Under Structure	Comments
1	I-40 and WBCD Over French Broad River	I-40 EB and WB; WBCD; Ramp E; Ramp H	French Broad River	New Bridge
2A	I-40 and WBCD Over Hominy Creek	I-40 EB and WB; WBCD	Hominy Creek	New Bridge
2B	Ramp E Over Hominy Creek	Ramp E	Hominy Creek	New Bridge
3B	Ramp BD Over Hominy Creek	Ramp D	Hominy Creek	New Bridge
3D	Ramp AC Over Hominy Creek	Ramp AC	Hominy Creek	New Bridge
4A	I-26 Over Hominy Creek	I-26 NB and SB	Hominy Creek	New Bridge
4C	WBCD Over Hominy Creek	WBCD	Hominy Creek	New Bridge
5	SR 3412 (Sand Hill Road) Over Ragsdale Creek	SR 3412	Ragsdale Creek	Raise Headwall on Existing 2 @ 8'wX8'h RC Box Culvert
6	I-26 Over UT	I-26 NB and SB; Ramp BD	UT to Hominy Creek	Extend 48" CMP
7	I-26 Over Hominy Creek	I-26 NB and SB	Hominy Creek and Pond Road	New Bridge
21	Ramp DB Over UT	Ramp DB	UT to Ragsdale Creek	Extend Existing 1 @ 6'wX9'h RC Box Culvert
22	Ramp BD Over Hominy Creek	Ramp BD	Hominy Creek; I-26 NB; I-26 SB; I-40 EB; I-40 WB; Ramp AC; Ramp CA; Ramp B	New Bridge
28	WBCD, EBCD Over Ragsdale Creek	WBCD, EBCD	Ragsdale Creek	Extend Existing Triple 7'x9' RC Box Culvert
29	WBCD, EBCD Over Ragsdale Creek	WBCD, EBCD	Ragsdale Creek	Extend Existing Triple 8'x8' RC Box Culvert
30	WBCD, EBCD Over UT	WBCD, EBCD	UT to Ragsdale Creek	Extend Existing Triple 48" RCP

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- (A) Section
- 100-Year Floodplain
- Floodway
- (#) Crossing Site Number

Date: May 2015

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Figure 4-13

Section C Alternative F-1
Proposed Hydraulic Crossings

Section A

Section A would include four existing hydraulic crossings, as described in Chapter 3.

I-240 Widening Alternative

The single alternative in Section A would include five proposed hydraulic crossing sites. The hydraulic crossing sites are shown on Figure 4-14 and summarized in Table 4-16.

Section A would include one new bridge and no major culvert. These crossings would impact 8.36 acres in the 100-year floodplain and 1.94 acres in the floodway.

Section B

Section B would include six existing hydraulic crossings as described in Chapter 3.

Alternative 3

Alternative 3 would include seven proposed hydraulic crossings, The hydraulic crossings are shown on Figure 4-15 and summarized in Table 4-17.

Section B – Alternative 3 would include three bridges and four major culvert crossings. These crossings would impact 9.36 acres in the 100-year floodplain and 2.88 acres in the floodway.

Alternative 3-C

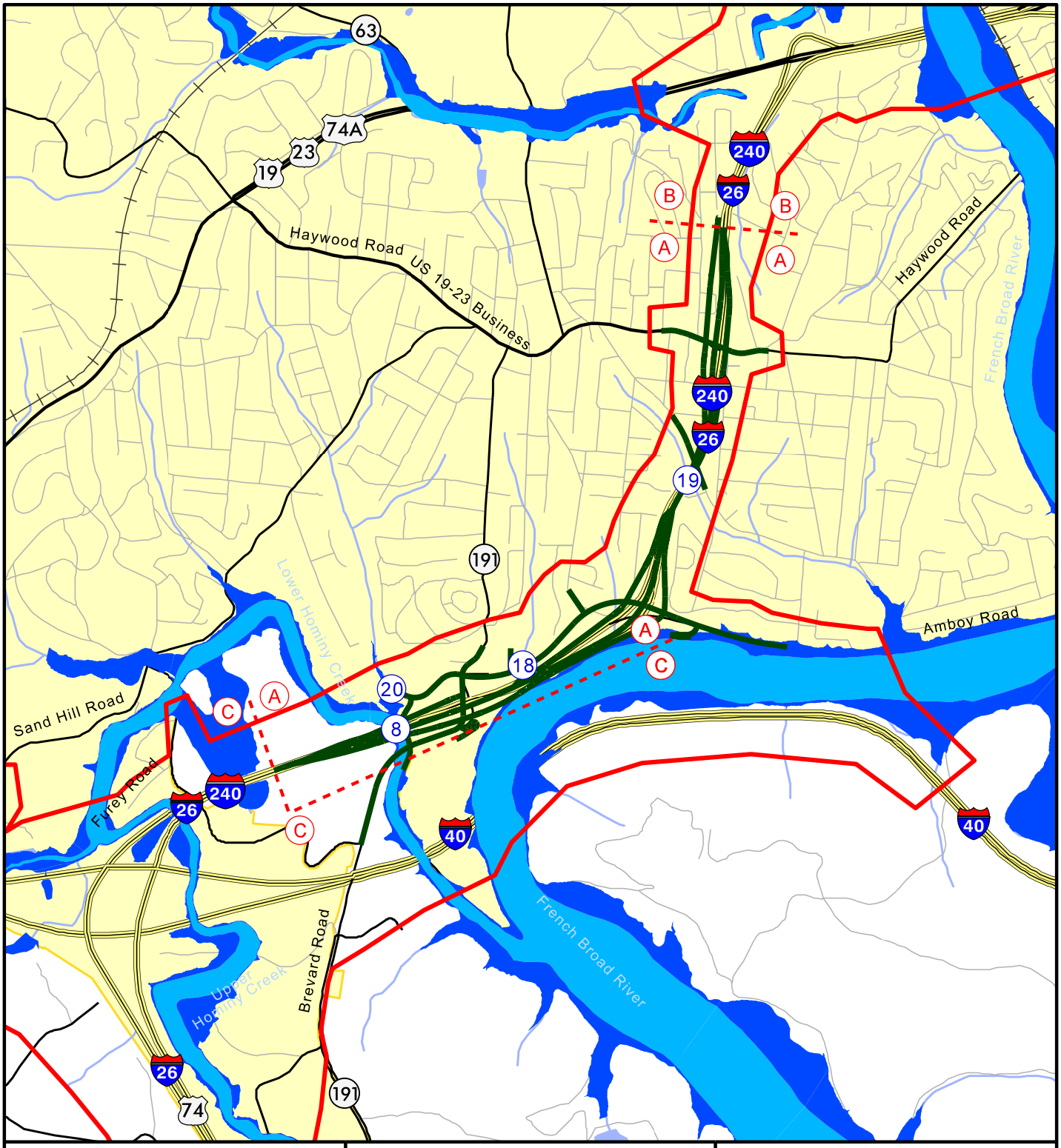
Alternative 3-C would include five proposed hydraulic crossings, The hydraulic crossings are shown on Figure 4-16 and summarized in Table 4-18.

Section B – Alternative 3-C would include three bridges and four major culvert crossings. These crossings would impact 7.65 acres in the 100-year floodplain and 2.96 acres in the floodway.

Table 4-16: Proposed Hydraulic Crossings – I-240 Widening Alternative

Site	Location	Facilities on Structure	Feature Under Structure	Comments
8	I-26/I-240 and Ramps Over Hominy Creek	I-26/I-240: Ramp 3B; Ramp 3C	Hominy Creek; SR 3620; Greenway Bridge	New Bridge
18	I-26/I-240 and Amboy Road Over UT	I-26/I-240; Ramp 3D; Amboy Road	UT to French Broad River	Replace Existing CM Pipe with 2 @ 66” CM Pipe.
19	I-26/I-240 over Moore Branch	I-26/I-240	Moore Branch	Replace Existing 66” CM Pipe with 2 @ 60” CM Pipe.
20	Shelburne Road Over UT	Shelburne Road	UT to Hominy Creek	Not affected by project.
26	I-26 over the French Broad River	I-26	French Broad River	Fill into floodplain adjacent to I-26

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A — Section
- 100-Year Floodplain
- Floodway
- # — Crossing Site Number

Date: May 2015

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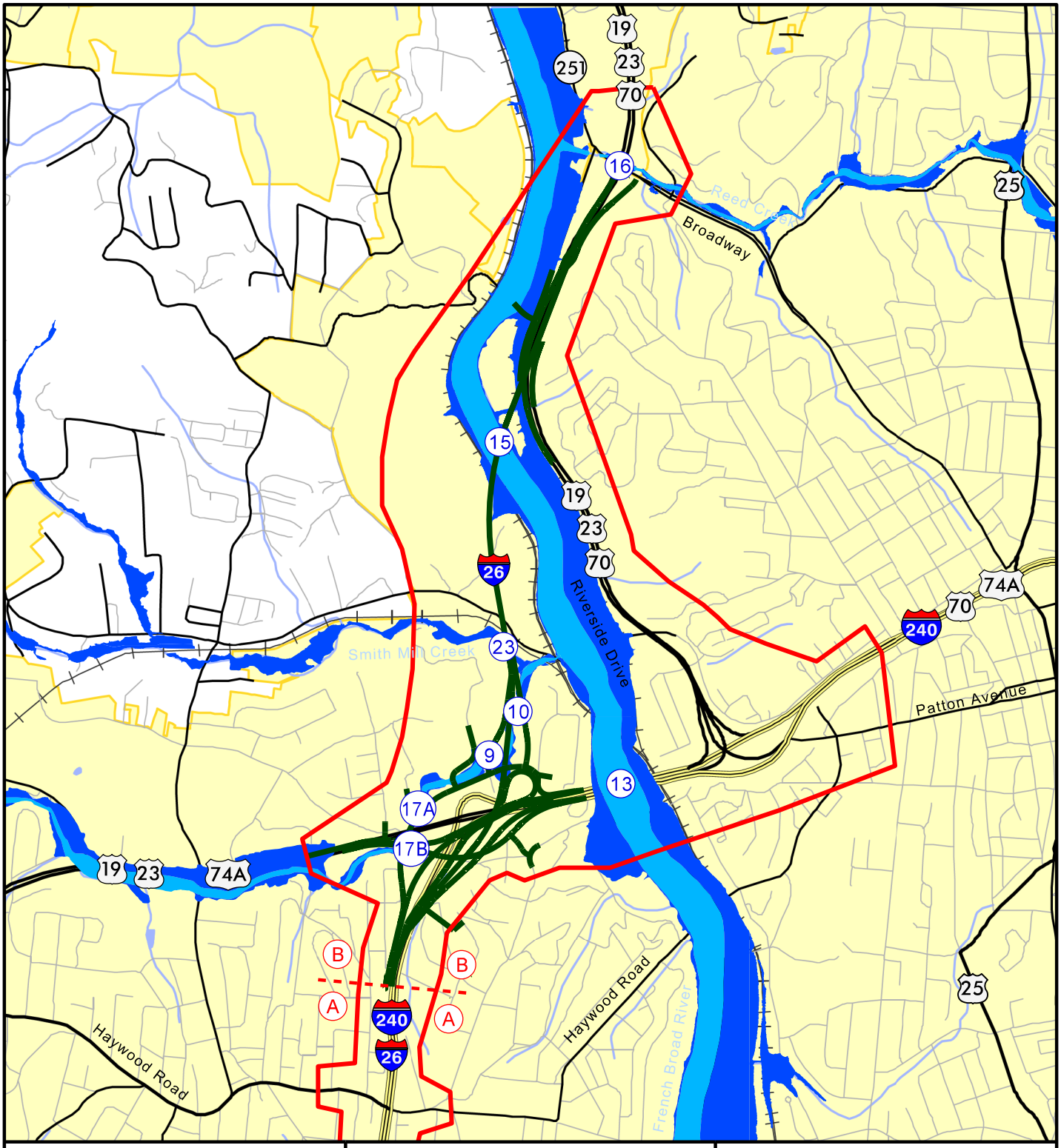
Figure 4-14

Section A
Proposed Hydraulic Crossings



North Carolina
Department of Transportation

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A — Section
- 100-Year Floodplain
- Floodway
- # — Crossing Site Number

Date: May 2015

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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-15

Section B Alternative 3
Proposed Hydraulic Crossings

Table 4-17: Proposed Hydraulic Crossings –Alternative 3

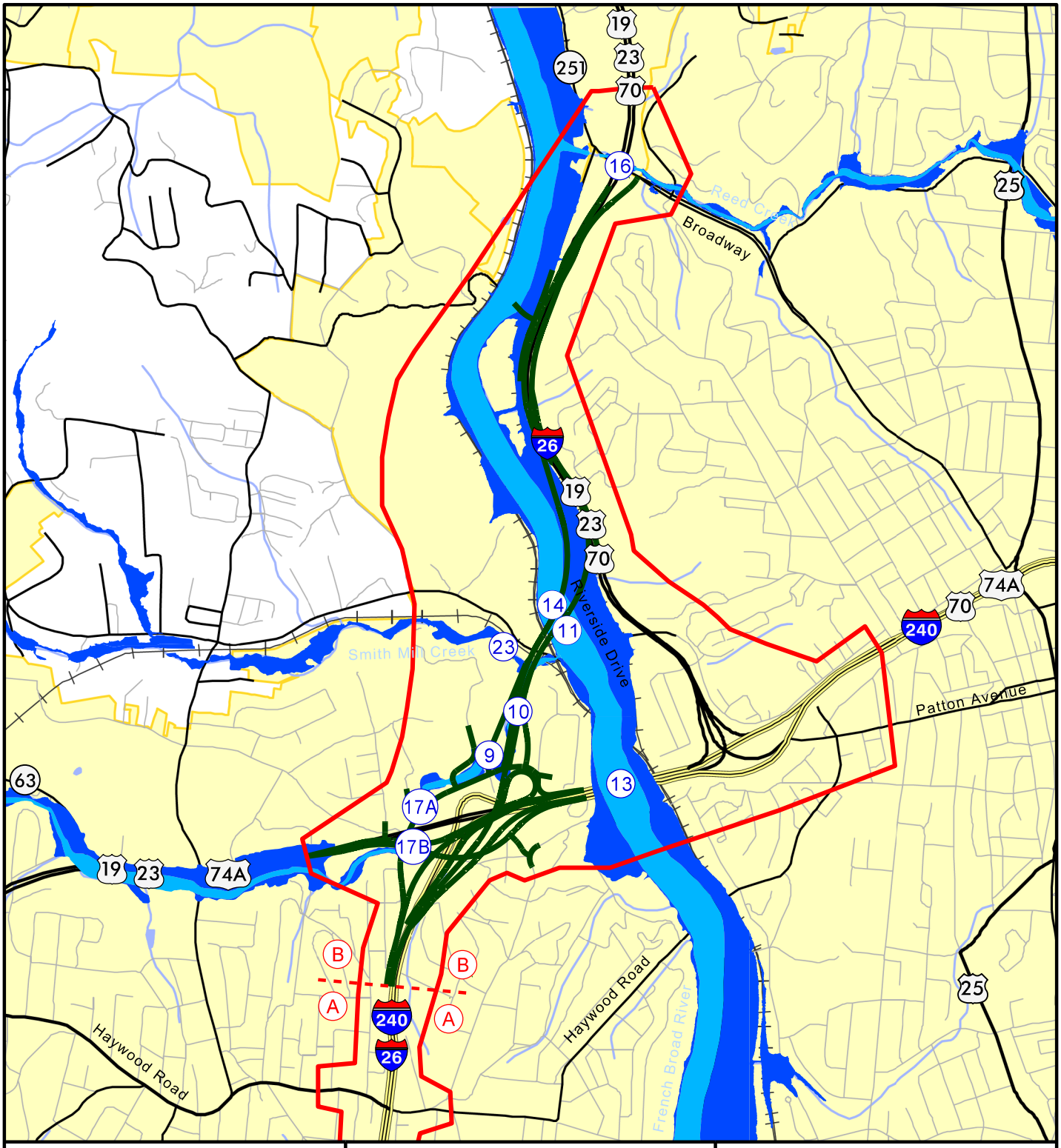
Site	Location	Facilities on Structure	Feature Under Structure	Comments
9	Resort Drive and RPA Over Smith Mill Creek	Ramp A, Resort Drive	Smith Mill Creek	2 @ 12'wX10'h RC Box Culvert – 805' Long
10	I-26 and Ramps Over Smith Mill Creek	I-26 NB; I-26 SB; Ramp A; Ramp D	Smith Mill Creek	New Bridge Site 10 and 23 are one structure
13	I-240 and Patton Avenue Over French Broad River	I-240; Patton Avenue Dual Bridges	Westgate Access Road; Emma Road; French Broad River; 3 RR Tracks; Riverside Drive	Not affected by project. Retain existing.
15	I-26 Over French Broad River	I-26 NB; I-26 SB	Southern RR (3 Tracks); Riverside Drive; US 19-23 SB	New Bridge
16	Ramp AC over Reed Creek	Ramp D2	Reed Creek	Extend Existing 4 @ 8'wX9'h RC Box Culvert
17A	Patton Avenue Over Smith Mill Creek	Patton Avenue EB; Patton Avenue WB; Y7l	Smith Mill Creek	Extend Existing 3 @ 8'wX11'h RC Box Culvert approx. 300'
17B	Ramp B Over Smith Mill Creek	Ramp B, Y7 EB	Smith Mill Creek	New 3 @ 8'wX11'h RC Box Culvert
23	I-26 Over Tributary to Smith Mill Creek	I-26	Tributary to Smith Mill Creek; I-26	New Bridge Site 10 and 23 are one structure

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).

Table 4-18: Proposed Hydraulic Crossings –Alternative 3-C

Site	Location	Facilities on Structure	Feature Under Structure	Comments
9	Resort Drive and RPA Over Smith Mill Creek	Ramp A, Resort Drive	Smith Mill Creek	2 @ 12'wX10'h RC Box Culvert – 805' Long
10	I-26 and Ramps Over Smith Mill Creek	I-26 NB; I-26 SB; Ramp A; Ramp D	Smith Mill Creek	New Bridge Site 10 and 23 are one structure
13	I-240 and Patton Avenue Over French Broad River	I-240; Patton Avenue Dual Bridges	Westgate Access Road; Emma Road; French Broad River; 3 RR Tracks; Riverside Drive	Not affected by project. Retain existing.
16	Ramp AC over Reed Creek	Ramp D2	Reed Creek	Extend Existing 4 @ 8'wX9'h RC Box Culvert
17A	Patton Avenue Over Smith Mill Creek	Patton Avenue EB; Patton Avenue WB; Y7l	Smith Mill Creek	Extend Existing 3 @ 8'wX11'h RC Box Culvert approx. 300'
17B	Ramp B Over Smith Mill Creek	Ramp B, Y7 EB	Smith Mill Creek	New 3 @ 8'wX11'h RC Box Culvert

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).



North Carolina
Department of Transportation

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- (A) Section
- 100-Year Floodplain
- Floodway
- (#) Crossing Site Number

Date: May 2015

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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-16

Section B Alternative 3C
Proposed Hydraulic Crossings

Alternative 4

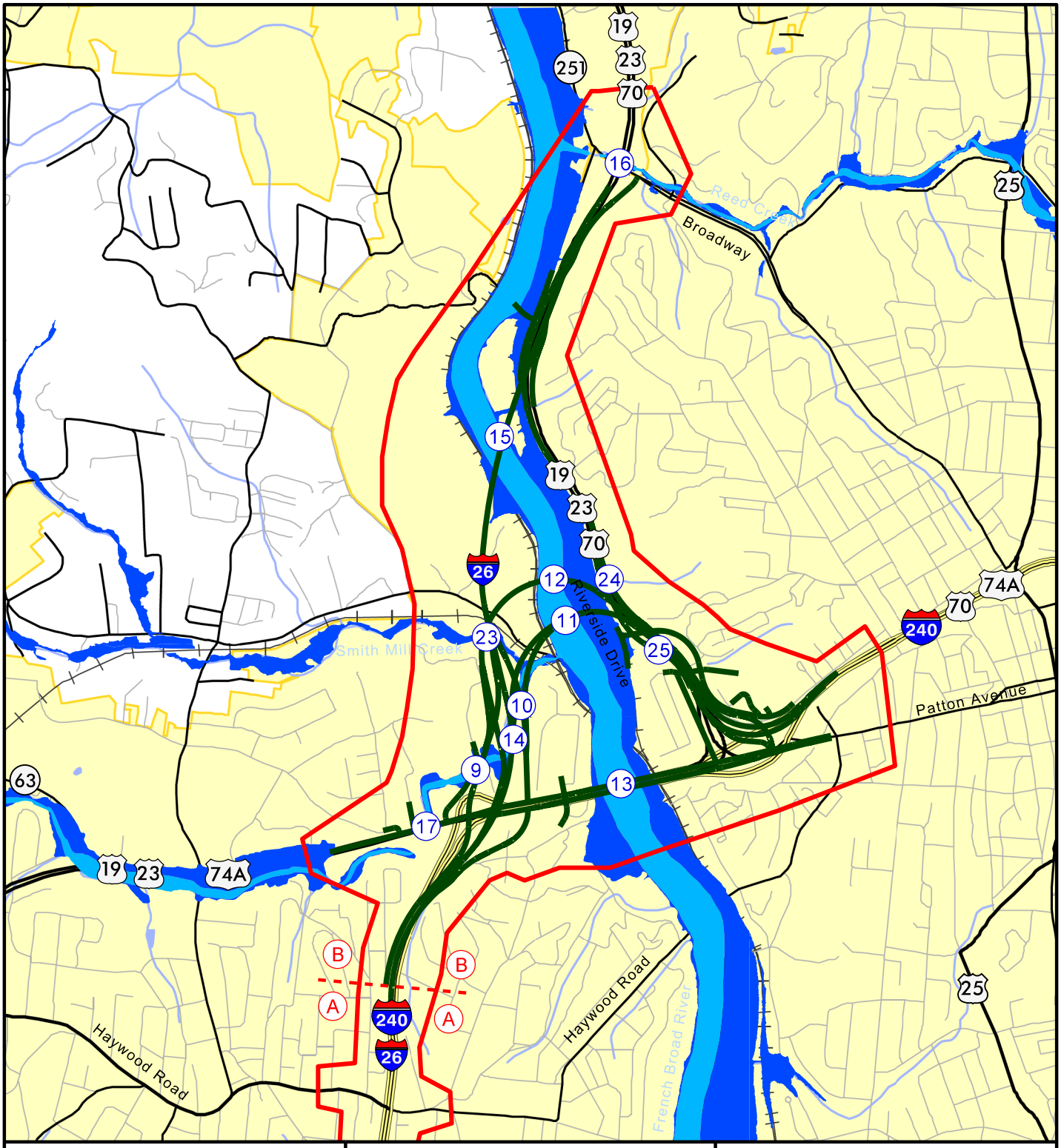
Alternative 4 would include 10 proposed hydraulic crossings. The hydraulic crossings are shown on Figure 4-17 and summarized in Table 4-19.

Section B – Alternative 4 would include five bridges and three major culvert crossings. These crossings would impact 8.13 acres in the 100-year floodplain and 0.69 acres in the floodway.

Table 4-19: Proposed Hydraulic Crossings –Alternative 4

Site	Location	Facilities on Structure	Feature Under Structure	Comments
9	Resort Drive and RPA Over Smith Mill Creek	Ramp A, Resort Drive	Smith Mill Creek	2 @ 12'wX10'h RC Box Culvert – 805' Long
10	I-26 and Ramps Over Smith Mill Creek	I-26 NB; I-26 SB; Ramp A; Ramp D	Smith Mill Creek	New Bridge Sites 10 and 11 are one structure
11	I-240 EB Over French Broad River	I-240 EB	Smith Mill Creek; Emma Road; Southern RR (4 Tracks); French Broad River; Riverside Drive; US 19-23 SB	New Bridge Sites 10 and 11 are one structure
12	I-240 WB Over French Broad River	I-240 WB	Southern RR (3 Tracks); French Broad River; Riverside Drive; US 19-23 SB	New Bridge
13	Patton Avenue Over French Broad River	Patton Avenue Dual Bridges	Westgate Access Road; Emma Road; French Broad River; 3 RR Tracks; Riverside Drive	Not affected by project. Retain existing.
15	I-26 Over French Broad River	I-26 NB; I-26 SB	Southern RR (3 Tracks); Riverside Drive; US 19-23 SB	New Bridge
16	Ramp AC over Reed Creek	Ramp D2	Reed Creek	Extend Existing 4 @ 8'wX9'h RC Box Culvert
23	I-240 WB Over Tributary to Smith Mill Creek	I-240 WB	Tributary to Smith Mill Creek; I-26 EB; I-26 WB	New Bridge
24	US 19-23 and Riverside Drive Over Tributary to French Broad River	US 19-23NB; US 19-23 SB; Riverside Drive	Tributary to French Broad River	Retain one 8'x8' RC Box Culvert
25	Y31 Over Tributary to French Broad River	I-240EB; I-240WB; US 19-23 SB; Riverside Drive	Tributary to French Broad River	Retain one 84" CM Pipe

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).



North Carolina
Department of Transportation

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- (A) Section
- 100-Year Floodplain
- Floodway
- (#) Crossing Site Number

Date: May 2015

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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-17

Section B Alternative 4
Proposed Hydraulic Crossings

Alternative 4-B

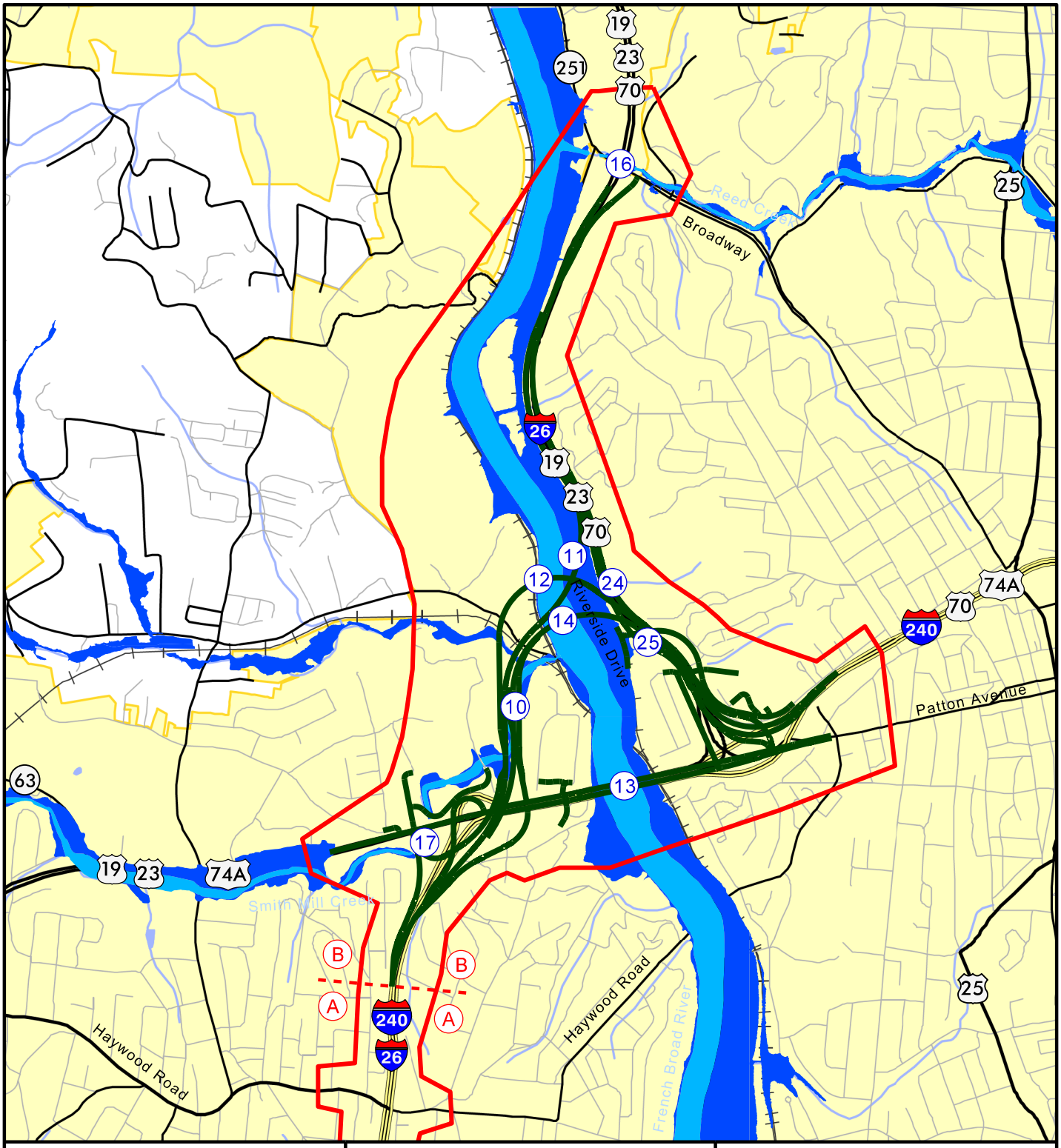
Alternative 4-B would include 10 proposed hydraulic crossings. The hydraulic crossings are shown on Figure 4-18 and summarized in Table 4-20.

Section B – Alternative 4-B would include four bridges and four major culvert crossings. These crossings have a total floodway impact of 3.91 acres in the 100-year floodplain, and 0.38 acres in the floodway.

Table 4-20: Proposed Hydraulic Crossings –Alternative 4-B

Site	Location	Facilities on Structure	Feature Under Structure	Comments
10	I-26 and Ramps Over Smith Mill Creek	I-26 NB; I-26 SB; Ramp A; Ramp D	Smith Mill Creek	New Bridge Sites 10, 11, and 14 are one structure
11	I-240 EB Over French Broad River	I-240 EB	Smith Mill Creek; Emma Road; Southern RR (4 Tracks); French Broad River; Riverside Drive; US 19-23 SB	New Bridge Sites 10, 11, and 14 are one structure
12	I-240 WB Over French Broad River	I-240 WB	Southern RR (3 Tracks); French Broad River; Riverside Drive; US 19-23 SB	New Bridge
13	Patton Avenue Over French Broad River	Patton Avenue Dual Bridges	Westgate Access Road; Emma Road; French Broad River; 3 RR Tracks; Riverside Drive	Not affected by project. Retain existing.
14	I-26 over Smith Mill Creek	I-26	Smith Mill Creek	New Bridge Sites 10, 14, and 23 are one structure
16	Ramp AC over Reed Creek	Ramp D2	Reed Creek	Extend Existing 4 @ 8'wX9'h RC Box Culvert
17A	Patton Avenue Over Smith Mill Creek	Patton Avenue EB; Patton Avenue WB; Y7l	Smith Mill Creek	Extend Existing 3 @ 8'wX11'h RC Box Culvert approx. 300'
23	I-240 WB Over Tributary to Smith Mill Creek	I-240 WB	Tributary to Smith Mill Creek; I-26 EB; I-26 WB	New Bridge
24	US 19-23 and Riverside Drive Over Tributary to French Broad River	US 19-23NB; US 19-23 SB; Riverside Drive	Tributary to French Broad River	Retain one 8'x8' RC Box Culvert
25	Y31 Over Tributary to French Broad River	I-240EB; I-240WB; US 19-23 SB; Riverside Drive	Tributary to French Broad River	Retain one 84" CM Pipe

Sources: *Hydraulic Technical Report for I-2513 the I-26 Asheville Connector* (TGS Engineers 2010); *Final Hydraulic Aspects Report Addendum to the I-2513 Hydraulic Technical Report* (URS 2015d).



North Carolina
Department of Transportation

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- (A) Section
- 100-Year Floodplain
- Floodway
- (#) Crossing Site Number

Date: May 2015

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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-18

Section B Alternative 4B
Proposed Hydraulic Crossings

Buncombe County and the City of Asheville are participants in the National Flood Insurance Program. Coordination with local authorities and FEMA will occur during the final design if floodway modifications are required to ensure compliance with applicable floodplain management ordinances.

The 100 year flood will be accommodated by new bridge crossings without a significant increase in flood elevation. The project will parallel the French Broad River in the vicinity of river milepost 150.5 near Amboy Road and cross the river along new location between river mileposts 146 and 147. As such, filling in the floodway for roadway construction may occur near Amboy Road. With improvements to existing I-240 over Hominy Creek, the French Broad River could be impacted up to river milepost 151.5, at the mouth of Hominy Creek. However, as previously noted, any floodway modifications will be conducted in accordance with FEMA and City of Asheville regulations.

Due to the proposed placement of structures (including the bridge piers) within the floodplain, the potential exists for the floodplain elevation to rise above the existing level. If the floodplain level rises and affects an insurable structure within the floodplain, then the structure would have to be relocated. The detailed evaluation of floodplain impacts will not be completed until the final design plans are developed

The overall effect of the project due to the encroachment on floodplains is anticipated to be minor and is not likely to be significant, as the project will increase the bridge lengths for most crossings allowing for increased passage of water. The encroachments on the floodplain will also not present an increased danger to human safety as a result of the construction, nor will it promote development within the floodplain for any of the detailed study alternatives.

4.1.3.9 Protected Lands

The project would not impact federal designated wild and scenic rivers, State or National Forests, gamelands, or preservation areas.

4.1.4 CULTURAL RESOURCES

4.1.4.1 Historic Architecture Resources

The determination of effect for each historic architectural resource in the area of potential effects (APE) is described in this section and summarized in Table 4-21. The expected property takings from historic architectural resources for each alternative are listed in Table 4-22.

The concurrence form signed by the State Historic Preservation Officer (SHPO) agreeing to the determinations is included in Appendix A2.

Biltmore Estate

Pursuant to Section 106, of the National Historic Preservation Act, the SHPO has concurred with the determination that each of the Section C study alternatives would have “no adverse effect” on the Biltmore Estate property. Alternatives D-1 and F-1 would avoid taking additional right-of-way from Biltmore Estate without the use of retaining walls. Alternatives A-2 and C-2 would require a small amount of additional right-of-way from the Biltmore Estate property.

Table 4-21: Determination of Effect to Historic Resources According to Section 106

Property	Section C				Section A	Section B			
	Alt. A-2	Alt. C-2	Alt. D-1	Alt. F-1		Alt. 3	Alt. 3-C	Alt. 4	Alt. 4-B
Biltmore Estate	No adverse effect	No adverse effect	No adverse effect	No adverse effect					
Asheville School	No adverse effect	No adverse effect	No adverse effect	No adverse effect					
Buncombe County Bridge 216					No adverse effect				
Calvary Baptist Church					No effect				
Baker Building					No adverse effect				
West Asheville/Aycock School Historic District					**Adverse effect**				
William Worley House						No adverse effect	No adverse effect	No adverse effect	No adverse effect
Freeman House						No adverse effect	No adverse effect	No adverse effect	No adverse effect
Buncombe County Bridge 323						No effect	No effect	No effect	No effect
Southern Railroad Bridge						No effect	No effect	No effect	No effect
Montford Area Historic District						No effect	No effect	No adverse effect	**Adverse effect**
Montford Hills Historic District						No effect	No effect	No effect	No adverse effect
Montford Hills/Hibriten Drive Boundary						No adverse effect	No adverse effect	No adverse effect	No effect
Mrs. Minnie Alexander Cottage						No effect	No effect	No effect	No effect
Whiteford G. Smith House						No effect	No effect	No effect	No effect
Haywood Street United Methodist Church						No effect	No effect	No effect	No effect

Table 4-22: Property Takings (in acres) of Historic Architectural Resources by Alternative (Right-of-way/Easement)

Property	Section C				Section A	Section B			
	Alt. A-2	Alt. C-2	Alt. D-1	Alt. F-1		Alt. 3	Alt. 3-C	Alt. 4	Alt. 4-B
Asheville School	2.51/0.59	3.11/0.58	2.55/0.57	2.79/0.58					
Biltmore Estate	0.42/0.02	2.18/0	0/0	0/0					
Buncombe County Bridge 216					Over				
Calvary Baptist Church					0/0				
Baker Building					0/0				
West Asheville/Aycock School Historic District and Boundary Increase					0.35/0.25				
William Worley House						0.15/0.13	0.15/0.13	0.1/0.08	0.1/0.22
Freeman House						0/0	0/0	0/0	0/0
Buncombe County Bridge 323						0/0	0/0	0/0	0/0
Southern Railroad Bridge						0/0	0/0	0/0	0/0
Montford Area Historic District						0/0	0/0	0/0	0/0
Montford Hills Historic District						0/0	0/0	0/0	0/0.03
Montford Hills and Hibriten Drive Expansion						0.03/0	0.04/0	0.16/0	0/0
Mrs. Minnie Alexander Cottage						0/0	0/0	0/0	0/0
Whiteford G. Smith House						0/0	0/0	0/0	0/0
Haywood Street United Methodist Church						0/0	0/0	0/0	0/0

Expected linear feet of impacts to the Biltmore Estate along I-40 beginning where I-40 crosses the French Broad River and headed eastbound are provided below.

Alternative	Linear Feet Along I-40 Westbound Lanes	Linear Feet Along I-40 Eastbound Lanes
Section C – Alternative A-2	3,470	3,790
Section C – Alternative C-2	4,230	6,220
Section C – Alternative D-1	1,750	3,700
Section C – Alternative F-1	2,910	3,180

Pursuant to Section 110, federal agencies shall exercise a higher standard of care when considering undertakings that may directly and adversely affect NHL. The law requires that agencies, "to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark." In those cases when an agency's undertaking directly and adversely affects an NHL, or when federal permits, licenses, grants, and other programs and projects under its jurisdiction or carried out by a state or local government pursuant to a federal delegation or approval so affect an NHL, the agency should consider all prudent and feasible alternatives to avoid an “adverse effect” on the NHL. Coordination with respect to Section 110 is ongoing and will continue throughout the project development process.

Asheville School

All Section C alternatives would require taking additional right-of-way from this resource. Pursuant to Section 106, the SHPO concurred with a determination of “no adverse effect” for each of the Section C study alternatives because there are minimal right-of-way acquisitions and, taken as a whole, they would not substantially diminish the integrity or significance of the property. However, to the greatest extent possible, NCDOT has implemented efforts to avoid and minimize impacts to this resource during preliminary design of the project alternatives. Avoidance and minimization efforts will continue through the subsequent phases of the project development and construction process.

Buncombe County Bridge 216

Pursuant to Section 106, the SHPO has concurred with the determination that the project would have “no adverse effect” on this historic resource from Section A because the bridge would remain in place and protective measures would be utilized during construction.

Calvary Baptist Church

Current preliminary plans for Section A will not require right-of-way from this property. Pursuant to Section 106, the SHPO has concurred with the determination that the project would have “no effect” on this historic resource because no construction activities would directly impact the property.

Baker Building

Current preliminary plans for Section A show a small easement to modify the sidewalks in front of the Baker Building in order to accommodate the revised grade of Haywood Road. Pursuant to Section 106, the SHPO has concurred with the determination that the project would have “no

adverse effect" on this historic resource. This resource was previously referred to as the "Friendly Grocery Store."

West Asheville/Aycock School Historic District

Pursuant to Section 106, the SHPO has concurred with the determination that there would be an "adverse effect" on this resource associated with Section A due to expected noise, visual, and parking impacts to the property of the Aycock School. Right-of-way would need to be acquired within the historic district's boundaries; however, with regard to the existing stone wall, arrowhead monument, and several trees at the school, protective measures will be utilized during construction.

William Worley House

As proposed, all build alternatives in Section B of the project would result in physical impacts to the property. Impacts to this property would be minimized by the construction of a retaining wall that would limit the amount of property to be disturbed. Each of the Section B alternatives would permanently incorporate less than 0.10 acre from the 3-acre property. Each alternative would also require an underground easement for anchoring the proposed retaining wall. Pursuant to Section 106, the SHPO has concurred with the determination that there would be "no adverse effect" because the proposed effects would not degrade the historic character of the house and the house would be screened by existing wooded area that lies between the house and the proposed right-of-way. This resource was previously referred to as the "C.G. Worley House."

Freeman House

None of the Section B alternatives would require right-of-way from this resource. Pursuant to Section 106, the SHPO has concurred with the determination that the project would have "no adverse effect" on this historic resource.

Buncombe County Bridge 323 (Formerly Great Smoky Mountains Park Bridge)

Pursuant to Section 106, the SHPO has concurred with NCDOT's determination that all of the Section B alternatives would have "no effect" on this historic resource because there would be no construction activities that directly impact this bridge. This resource is the northen span of the Captain Jeff Bowen Bridges.

Southern Railroad Bridge

Pursuant to Section 106, the SHPO has concurred with NCDOT's determination that all of the Section B alternatives would have "no effect" on this historic resource because there would be no construction activities that directly impact this bridge.

Montford Area Historic District

Pursuant to Section 106, the SHPO has concurred with NCDOT's determination that Section B – Alternatives 3, 3-C, and 4 would have "no effect" on this historic resource because there would be no construction activities that directly impact this historic resource. Section B – Alternative 4-B was determined to have an "adverse impact" due to the retaining walls and elevated bridges creating visual impacts to the historic district.

Montford Hills

Pursuant to Section 106, the SHPO has concurred with NCDOT's determination that Alternatives 3, 3-C, and 4 would have "no effect" on this historic resource because there are no physical impacts to the site. Alternative 4-B would require an underground easement for anchoring the proposed retaining wall; therefore, Alternative 4-B was determined to have "no adverse effect" because the proposed improvements would not degrade the character of the historic resource.

Montford Hills/Hibriten Drive Boundary Expansion

As proposed, Section B Alternatives 3, 3-C, and 4 would permanently incorporate less than 0.20 acre from the historic resource. Pursuant to Section 106, the SHPO has concurred with NCDOT's determination that Alternatives 3, 3-C, and 4 would have "no adverse effect" on this historic resource given there would be minimal tree removal and the project would not impact any contributing resources. Alternative 4-B was determined to have "no effect" on this historic resource because there would be no physical impacts to the site.

Mrs. Minnie Alexander Cottage

None of the Section B alternatives would require right-of-way from this property. Pursuant to Section 106, the SHPO has concurred with the determination that the project would have "no effect" on this historic resource because no construction activities would directly impact the property.

Whiteford G. Smith House

There are no construction activities associated with all alternatives for Section B that would directly impact the property; construction activities would have "no effect" on the Whiteford G. Smith House.

Haywood Street United Methodist Church

There are no construction activities associated with all alternatives for Section B that would directly impact the property; construction activities would have "no effect" on the Haywood United Methodist Church.

Mitigation

Measures to minimize harm and to mitigate unavoidable "adverse effects" will be developed through coordination among FHWA, SHPO, NCDOT, and other consulting parties and documented in a Memorandum of Agreement (MOA) after selection of the preferred alternative. Methods for minimizing harm to historic resources will continue throughout subsequent engineering and design phases of the project.

4.1.4.2 Archaeological Resources

In order to comply with Section 106 of the NHPA (1966, as amended), FHWA and NCDOT must evaluate the project's impact upon any archaeological resources in existence and determine whether additional measures would be necessary to mitigate any adverse effects of the project upon any significant archaeological sites.

An archaeological survey was performed in 2005 and 2006. That survey relocated or identified 29 archaeological resources (28 sites and 1 isolated find) within the proposed APE for the project's alternatives. Of these, four sites (31BN623, 31BN825, 31BN826, and 31BN828) are eligible for the NRHP. Site 31BN623, the Lower Hominy Hydroelectric Power Plant site, is recommended NRHP-eligible under Criterion A due to its association with the early hydroelectric and streetcar industries. However, site 31BN623 does not appear to retain intact archaeological research potential. Should this site be affected by the project, appropriate mitigation will consist of additional documentary research and the preparation of interpretative materials concerning the facility and its role in providing electricity to Asheville's early streetcar system. Sites 31BN825, 31BN826, and 31BN828 are NRHP-eligible under Criterion D, and as such, should they be affected by the project, mitigation could be accomplished through data recovery excavations.

Depending upon what design alternative is chosen and carried forward, additional investigations may be required at seven other sites (31BN814, 31BN823, 31BN867, 31BN868, 31BN870, 31BN871, and 31BN873). Two of these sites (31BN823 and 31BN870) are situated on the French Broad River floodplain and/or terraces and contain substantial historic alluvium. Mechanized deep trench testing would be needed at these sites to identify and assess possible buried archaeological materials and deposits. Site 31BN814, also on a river terrace, contains substantial historic fill. Additional exploratory work is needed to determine whether intact deposits are present beneath the fill. This could include mechanized stripping of the fill layer as well as deep trench testing. The final four sites (31BN867, 31BN868, 31BN871, and 31BN873), each of which is situated within the NHL boundary of the Biltmore Estate, appear to have the potential to contain intact prehistoric and/or nineteenth century historic period features and deposits. Mechanized stripping of these sites is recommended to search for and assess these likely features and to establish a definitive characterization of the NRHP eligibility of these sites. Site 31BN868 may also require mechanized deep trench testing to identify and assess possible deeply buried archaeological materials and deposits.

In addition, depending upon what design alternative is chosen and carried forward, further investigations may be required at 11 other survey areas that contain substantial historic alluvial deposition or extensive fill deposits. As mentioned, these depositions could be covering deeply buried archaeological deposits. Deep testing, including mechanized trenching, would be needed at these areas to identify and assess possible buried archaeological materials and deposits.

The survey report was submitted to the North Carolina Historic Preservation Office (NC HPO) on March 19, 2007. Concurrence from NC HPO was received on September 10, 2007. The survey report was submitted to the Biltmore Estate and the Eastern Band of Cherokee Indians on October 8, 2007. Following the selection of a preferred alternative and in consultation with the NC HPO and the Eastern Band of Cherokee Indians, NCDOT will proceed with the requisite additional archaeological investigations, including data recovery operations, at those areas that are proposed to be impacted.

4.1.5 NATURAL ENVIRONMENT

Impacts to the existing natural environment in the project study area are presented in this section. Unless otherwise cited, impact information regarding these topics was obtained from the NRTR prepared for the proposed project (Atkins Engineering 2015).

4.1.5.1 Soils/Topographical/Geological

Properties of the soils within the proposed corridors of the detailed study alternatives examined can affect the final engineering design of the new roadway alignment. Soil limitations for the build alternatives include erosion hazard, shrink/swell potential, differential settlement, low strength, corrosivity, and flood hazard. The No-Build Alternative would not have soil impacts.

Since the project is located in the mountainous region of North Carolina, overcoming topographical issues would be important for each of the build alternatives. While areas of cut and fill would be necessary to some extent for the alternatives in each section of the project, retaining walls would be used in several locations to reduce potential adverse effects to the human and natural environment from earthwork activities. The new location build alternatives in Section B of the project would require earthwork in order to provide level road bed. However, the project design would utilize the existing grade to the extent possible to minimize cut and fill.

A detailed geotechnical investigation has not been conducted for this phase of project development, but will be conducted in a subsequent engineering phase once the preferred alternative has been identified. However, the *Geotechnical Pre-Scoping Report* does not anticipate rock cuts (NCDOT 2006a). The No-Build Alternative would not have geology impacts. A preliminarily evaluation of the study area by the NCDOT Geotechnical Unit determined that it is not likely that acidic rock formations would be encountered along the corridor.

Once the preferred alternative is chosen and roadway plans are forwarded to the NCDOT Geotechnical Unit, the actual investigation will produce hand samples and rock cores in the cut areas and along foundations for walls and bridges. These will be tested for Net Neutralization Potential, the indicator for the level and volume of acidic rock, if it exists.

Mitigation

The soil limitations would be overcome through proper engineering design, incorporating techniques such as soil modification, appropriate choice of fill material, use of non-corrosive subgrade materials, and design of drainage structures capable of conveying estimated peak flows. If the Net Neutralization Potential indicates the presence of acidic rock formations, the actual amount of treatment required will determine the various levels of mitigation. These may include (1) treatment in place, (2) treatment of rock that has been excavated and used in fill or backfill areas, and (3) treatment of very acidic material that would require fully separate and contained areas.

4.1.5.2 Biotic Resources

Terrestrial Communities

Potential impacts to plant communities resulting from highway construction reflect the relative abundance of communities within the project study area. Much of the project study area is within residential and commercial/industrial regions of Asheville, and as such, urban/disturbed land is the dominant mapped community. Areas mapped as alluvial hardwood forest and mesic mixed forests are considered to be the only natural areas present within the project study area. Since this project would involve some construction on new location, fragmentation of these forested natural plant communities would be expected. Impacts to plant communities are expected to be limited to cut or fill sections and additional 10 foot clearing limits required for construction

purposes. Anticipated impacts to vegetative communities by the build alternatives are tabulated in Table 4-23.

No-Build Alternative

The No-Build Alternative would have no impact on terrestrial communities.

Section C

In Section C, Alternative A-2 would impact 342.55 acres of vegetative communities, while Alternative F-1 would impact 289.74 acres.

Section A

In Section A, the I-240 Widening Alternative would impact 139.99 acres of vegetative communities.

Section B

In Section B, Alternative 4 would impact 169.63 acres of vegetative communities, while Alternative 3-C would impact 122.04 acres.

Terrestrial Wildlife

The No-Build Alternative would have no direct impact on wildlife. However, increased traffic on existing roads would proportionately result in increased roadkills.

Fragmentation and loss of wildlife habitat is an unavoidable consequence of all the detailed study alternatives. However, the proposed project is not expected to result in adverse impacts to wildlife due to the existing urbanized nature of the project study area. Short-term displacement of local wildlife populations would occur during initial construction. Most local species are habituated to human-related disturbances and are expected to return to the vicinity after construction. Movement through the area would become more dangerous for many transient species due to the increase in width of the new facility.

No economically important game species are expected to be adversely affected by the project due to the primarily urban and suburban setting.

Some wildlife species that occur within the project study area may be displaced through a permanent change in location of community boundaries. Local large mammal populations, such as deer, fox, and bobcat, may experience disruptions in mating, feeding, or migratory patterns as a result of construction. Increased urbanization has already resulted in diminished habitat opportunities as woodlands and adjacent agricultural lands are committed to development. Migratory and resident bird species that require forest interiors for nesting may be displaced by reduction in community tract size.

Table 4-23: Anticipated Vegetative Community Impacts

Vegetative Community	Impacts by Alternative (acres)								
	Section C				Section A	Section B			
	Alt. A-2	Alt. C-2	Alt. D-1	Alt. F-1		Alt. 3	Alt. 3-C	Alt. 4	Alt. 4-B
Maintained/Disturbed	192.86	191.47	188.84	171.93	91.08	87.85	83.96	126.50	124.82
Mesic Mixed Forest	140.72	137.11	135.08	111.26	47.41	39.02	33.32	40.02	40.67
Alluvial Hardwood Forest	8.97	9.11	8.33	6.55	1.50	5.87	4.76	3.10	3.88
Total	**342.55**	**337.69**	**332.25**	**289.74**	**139.99**	**132.74**	**122.04**	**169.62**	**169.37**

Aquatic Communities and Wildlife

The No-Build Alternative would have no impact on aquatic communities and wildlife.

Impacts to water resources in the project study area may result from activities associated with the construction of any of the detailed study alternatives. Activities that would result in impacts are clearing and grubbing on streambanks, riparian canopy removal, in stream construction, fertilizers and pesticides used in revegetation, and pavement/culvert installation. The following impacts to surface water resources could result from the construction activities mentioned above:

- Increased sedimentation and siltation downstream of the crossing and increased erosion in the project study area
- Alteration of stream discharge due to silt loading and changes in surface and groundwater drainage patterns
- Changes in light incidence and water clarity due to increased sedimentation and vegetation removal
- Changes in and destabilization of water temperature due to vegetation removal
- Alteration of water levels and flows due to interruptions and/or additions to surface and groundwater flow from construction
- Increased nutrient loading during construction via runoff from exposed areas
- Increased concentrations of toxic compounds in roadway runoff
- Increased potential for release of toxic compounds such as fuel and oil from construction equipment and other vehicles

Temporary construction impacts due to erosion and sedimentation would be minimized through implementation of a stringent erosion control schedule and the use of BMPs.

Long-term impacts to streams along the eventually selected corridor would be limited to stream reaches within the road facility footprint only. Impacts to stream reaches adjacent to the facility footprint would be temporary and localized during construction. Long-term impacts to adjacent reaches resulting from construction are expected to be negligible.

Invasive Species

Invasive species are species that are non-native to the ecosystem under consideration whose introduction causes or is likely to cause economic or environmental harm or harm to human health. EO 13112 was signed in 1999 and requires that federal agencies shall use relevant programs and authorities to:

- Prevent the introduction of invasive species
- Detect and respond rapidly to and control populations of such species in a cost effective and environmentally sound manner
- Monitor invasive species populations accurately and reliably
- Provide for restoration of native species and habitat conditions in ecosystems that have been invaded
- Conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species
- Promote public education on invasive species and the means to address them

FHWA has developed guidance on addressing the potential problems associated with roadside invasive plants. Additionally, the proposed project will comply with the requirements set forth in EO 13112 and the *Federal Highway Administration Guidance on Invasive Species* (FHWA 1999).

4.1.5.3 Natural Heritage Program Identified Priority Areas

No Identified Priority Areas were identified in the project study area; therefore, impacts are not anticipated.

4.1.5.4 Water Resources

Groundwater

The No-Build Alternative would have no impact on groundwater.

Expected effects of the project on groundwater are similar among the detailed study alternatives. Any wells within the project's right-of-way would be surveyed prior to project construction. NCDOT would purchase these wells and cap and abandon them in accordance with North Carolina Well Construction Standards. Any subsurface contamination would be reported to the Asheville Regional Office of the NCDEQ. During the final design phase of the project, NCDOT would also identify wells adjacent to the project right-of-way that could be impacted by roadway construction. Mitigation for these wells could be provided through land purchase, compensation for damages, or the provision of new wells.

A roadway alignment is in a cut section if the elevation of the roadway is below the original ground elevation. Well drawdown (reduced yield) may occur around areas of cut sections. Construction of the build alternatives would contribute to a cumulative decrease in available recharge area for the Piedmont and Blue Ridge crystalline-rock aquifers. However, due to the already urban/disturbed land areas in the vicinity, the proposed project is not expected to substantially impact aquifer recharge volumes.

Pollutants associated with highway construction and use could potentially affect aquifer groundwater quality in localized areas. Possible pollutants include pesticides, herbicides, fertilizers, petrochemicals, oil, grease, heavy metals, and hazardous materials. It should be noted that no sole or principal drinking water aquifers are present in the project area (EPA 2007). Construction impacts are presented in Section 4.1.6.

The majority of the drinking water in the project study area is supplied by reservoirs. Impacts to these reservoirs are not anticipated.

Surface Water

The No-Build Alternative would have no impact on surface water.

Significant impacts on drainage patterns and groundwater are not anticipated for any of the build alternatives; however, the amount of impervious surface would be increased by the project. The effects on surface water would likely be proportional to the increase in impervious surface and are included in Table 4-24.

Table 4-24: Impervious Surface Area

Alternative	Existing Impervious Area (acres)	Increase in Impervious Area (acres)	Percent increase in Impervious Area
Section C			
Alternative A-2	78.50	152.93	95%
Alternative C-2	81.36	163.39	101%
Alternative D-1	77.44	138.77	79%
Alternative F-1	77.45	134.57	74%
Section A			
I-240 Widening Alternative	36.36	63.81	75%
Section B			
Alternative 3	38.24	67.92	78%
Alternative 3-C	41.20	69.57	69%
Alternative 4	58.27	96.53	66%
Alternative 4-B	59.28	99.73	68%

Source: *Updated Impervious Surface Calculations Memorandum* (URS 2015l).

For Section C, Alternative F-1 would have the smallest increase in impervious area and, therefore, would likely have the lowest effect on water quality. The other three alternatives would have more substantial increases in impervious area and would require more extensive mitigation measures to minimize the impacts to water quality. Section A of the proposed project would include a 75% increase in impervious surface. For the four alternatives in Section B – Alternative 4 would have the smallest percent increase in impervious area, while Alternative 3 would result in the largest percent increase. Due to the proximity to the French Broad River and Smith Mill Creek, mitigation measures to minimize any impacts to water quality are needed.

The increase in impervious surface area would have minimal impact on the French Broad River basin as a whole, but would increase both the peak and total volume of runoff to the tributaries and smaller drainage basins with the project study area. These impacts would be reviewed and addressed during the final design stage of the project. The smaller receiving streams feed directly into the larger streams (Hominy Creek, Smith Mill Creek, and the French Broad River), so the impacts on downstream properties would be minimal. There are no high quality receiving waters in the watershed that would be degraded by runoff from the project.

The following pollutants may be contained in the stormwater runoff:

- Sediment eroded during construction activity
- Pesticides, herbicides, and fertilizers used to plant and maintain highway landscaping
- Petrochemicals, oil, grease, and heavy metals associated with operation of vehicles
- Trash and debris discarded by highway users
- Chemicals and hazardous materials accidentally spilled during transport

The project has the potential to temporarily degrade the quality of water in the surrounding streams by means of soil erosion during construction. Construction impacts are presented in Section 4.1.6.

Mitigation

As part of the Highway Stormwater Program, NCDOT will develop and implement numerous programs on a statewide basis to protect and promote stormwater quality impacted by NCDOT discharges. Programs will be developed to ensure compliance with the NPDES permit. The NCDOT will incorporate measures to control nonpoint source water quality impacts as described in NCDOT's *Best Management Practices for Protection of Surface Waters* (NCDOT 1997). The goal of these BMPs is "to prevent degradation of the state's waters through the location, construction, or operation of the highway system". These measures will be incorporated into the final engineering design of the project and will be detailed in an erosion and sedimentation control plan. This plan will be prepared in accordance with the guidelines and requirements of the North Carolina Sedimentation Pollution Control Act (15A NCAC 4B.0101 0130).

During construction, BMPs for in water and over water construction will be implemented, which will incorporate monitoring and enforcement of operational standards. A list of BMPs and NCDOT standards is included in Section 4.1.6.6.

BMPs to control stormwater runoff include directing sheet flow over grassed shoulder slopes and shallow flat slope ditches, using stone-lined ditches in lieu of rigid concrete pavement, and using storage where necessary and practicable to reduce discharge of roadway runoff into sensitive receiving waters (NCDOT 1991). In flat areas, such as the project site, long-term stormwater drainage is typically provided through grass swales parallel to the roadway. Vegetated swales will reduce water quality impacts to surface water by catching oil, grease, and other pollutants and preventing them from draining to the area streams and rivers.

Stormwater runoff from the project will be contained as part of the project. NCDOT has no jurisdiction to impose land use and development controls. However, local government has the ability to control development through zoning, issuance of permits, and water quality objectives. State stormwater certification (15A NCAC-2H.1000) will be required. Requirements for this certification vary by the classifications of waters to which the project would drain.

Specific stormwater management devices for treating the runoff from the project will be determined during the final design phases of the project. Both quality and quantity management will be addressed, with particular attention paid to the increased impervious area and to the runoff collected from the extensive bridge structures. Possible devices include vegetated swales, wet and/or dry detention basins, infiltration basins, filtration basins, and stormwater wetlands. Numerous opportunities for these devices exist within the footprint of the proposed project. Potential locations include the following:

Section C

Section C, with its characteristically spread footprint due to the nature of a directional interchange, would create large areas in the ramp infields that may be readily used for stormwater management devices.

Emergency oil and chemical spill response plans are in effect for Buncombe County. The state of North Carolina has organized a system of Hazardous Materials Regional Response Teams strategically located in the state to provide hazardous materials response services. The City of Asheville Fire and Rescue serves Buncombe County and 19 other counties in western North Carolina and provides hazardous materials emergency response.

The project would impact stream systems for which permitting will be required. Permits required for impacts to streams are discussed in Section 4.4.1.

Section A

Section A is the most urban and the most site constrained section of the project and thus contains the fewest opportunities for stormwater management devices. Still, the infield areas of the Brevard Road interchange and the Amboy Road interchange offer opportunities for stormwater management devices. Locating opportunities for stormwater treatment will be challenging in the Haywood Road interchange area and at the northern terminus of the section.

Section B

The area beneath the structures west of the French Broad River in the vicinity of the existing Crowne Plaza Resort golf course offers numerous opportunities for stormwater management devices for any chosen alternate in Section B. In addition, the areas east of the French Broad River and west of the existing railroad under the proposed bridges offer ample opportunities for stormwater treatment on all alternatives. Finally, there would be areas created around the interchange ramp infield that may also be utilized if needed.

Navigable Waterways

Navigable waterways associated with existing bridges within the project study area would not be affected by the proposed project. For the No-Build Alternative, no impacts are anticipated as the existing navigational clearance would remain the same.

New bridges are proposed for Section B – Alternatives 3, 3-C, 4, and 4-B. All Section B alternatives include a proposed bridge carrying I-26 over the French Broad River. In addition to the I-26 bridge, Section B – Alternatives 4 and 4-B propose two new flyover bridges north of the existing Patton Avenue carrying I-240 traffic over the river. These bridges would not affect navigation of the French Broad River. New bridges proposed for project alternatives would meet or exceed existing upstream and downstream navigational clearances. Coordination with USACE and the U.S. Coast Guard (USCG) is ongoing and will continue throughout the course of the project.

4.1.5.5 Jurisdictional Issues

Wetlands and Streams

The crossing of jurisdictional features, including streams and wetlands, is unavoidable for the build alternatives being considered for the proposed project. However, all practicable efforts have been taken during the preliminary design to minimize these impacts. The area impacted for jurisdictional features is comprised of the cut and fill limits plus a 25 foot buffer for all alternatives and bridge locations.

No-Build Alternative

The No-Build Alternative would have no impact on jurisdictional wetlands and streams.

Section C

The impacts to jurisdictional features are shown on Figure 4-19 through Figure 4-22, with impacts to wetlands included in Table 4-25 and stream impacts included in Table 4-26. Section C – Alternative F-1 would impact the least wetlands (1.86 acres) and streams (1,984 linear feet).

Section A

The impacts to jurisdictional features are shown on Figure 4-23, with impacts to wetlands shown in Table 4-27 and stream impacts included in Table 4-28. The I-240 Widening Alternative in Section A would impact 0.01 acre of wetlands and 798 linear feet of stream.

Section B

The impacts to jurisdictional features are shown on Figure 4-24 through Figure 4-27, with impacts to wetlands are shown in Table 4-29 and stream impacts included in Table 4-30. Within Section B, Alternative 4-B would have the least impact on wetlands (0.10 acre) and Alternative 4 would have the lowest stream impact (1,839 linear feet). Alternatives 3 and 4 would have the greatest wetland impact (0.22 acre) and Alternative 3 would have the greatest stream impacts (3,874 linear feet). Alternative 3-C would impact 0.11 acre of wetland and 3,639 linear feet of streams. Alternatives 3 and 4 would also include 0.6 acre and 0.53 acre of impacts to ponds, respectively.

Mitigation

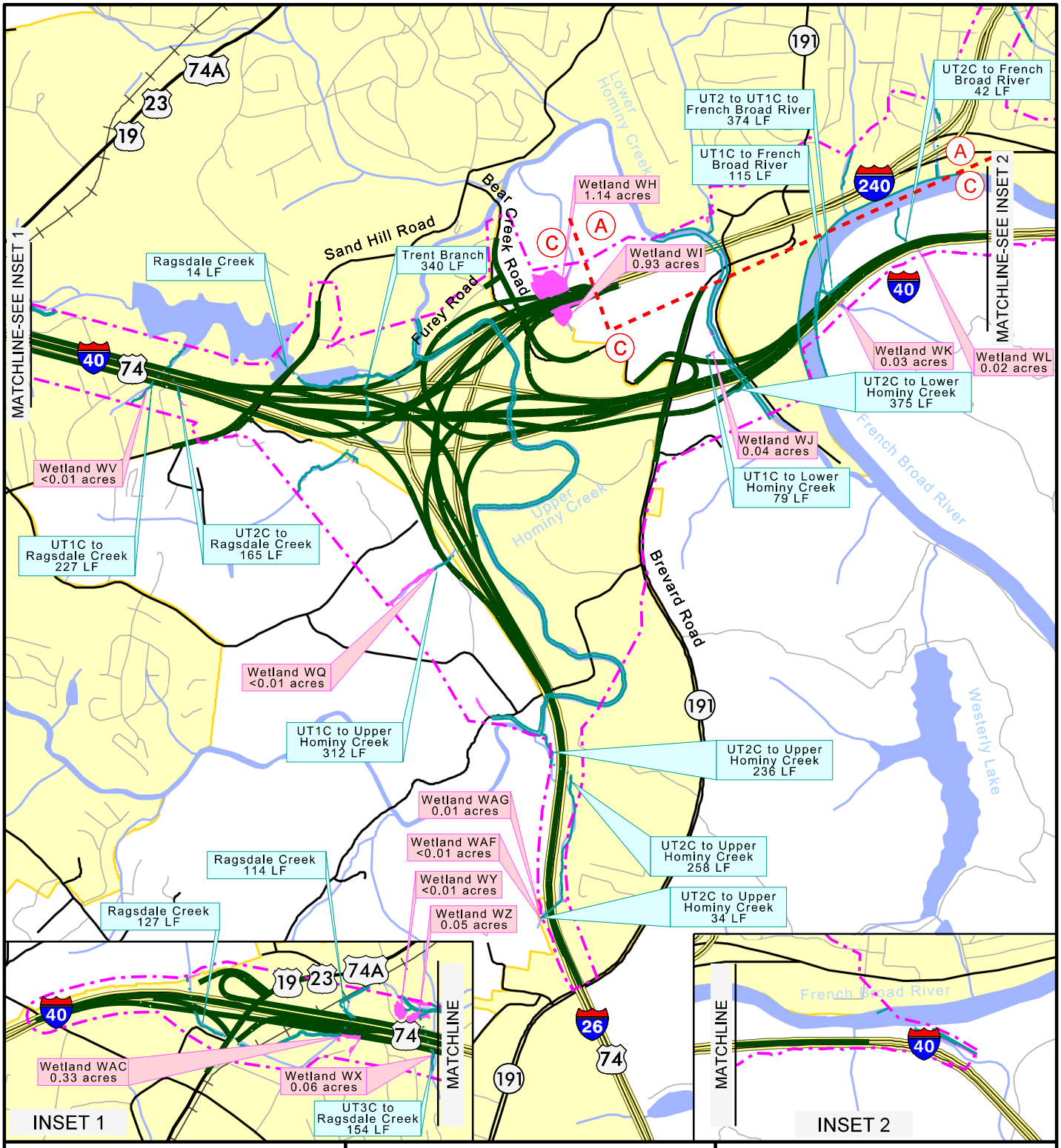
USACE has adopted, through CEQ, a wetland mitigation policy that embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of waters of the United States, and specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include avoiding impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization, and compensatory mitigation) must be considered sequentially.

Avoidance

Avoidance mitigation examines appropriate and practicable possibilities of averting impacts to waters of the United States. According to a 1990 MOA between EPA and USACE (EPA 1990), in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes. Impacts to streams are expected due to the nature of the project. Not all sediment can be prevented from entering waters of the United States.

Minimization

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction of median widths, right-of-way widths, fill slopes, and/or road shoulder widths. As work on I-40 and I-240 will involve



North Carolina Department of Transportation

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A Section
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

Date: October 2015

N W E S

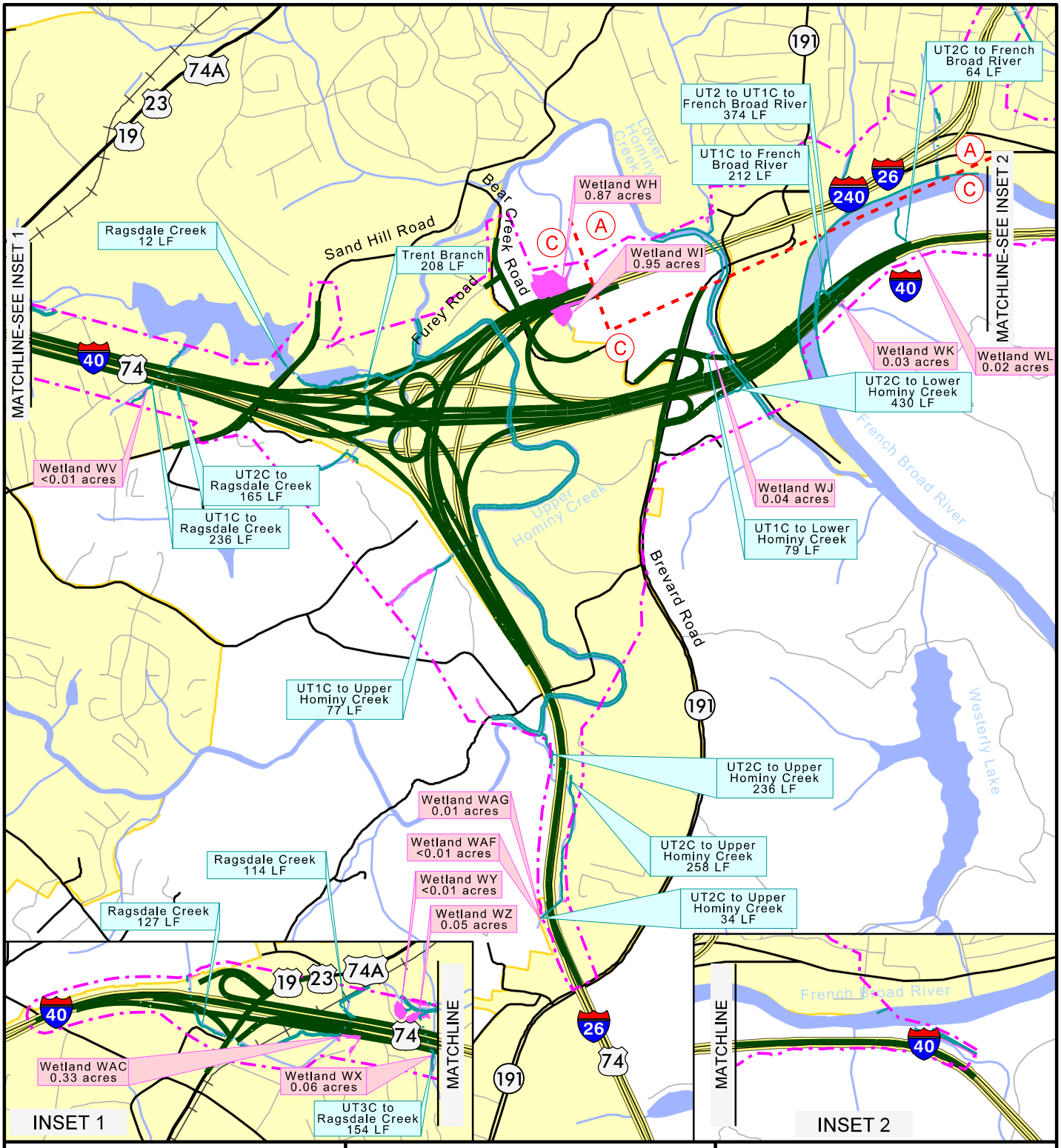
0 1000 2000 FEET

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-19

Section C Alternative A-2
Jurisdictional Impacts



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A Section
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

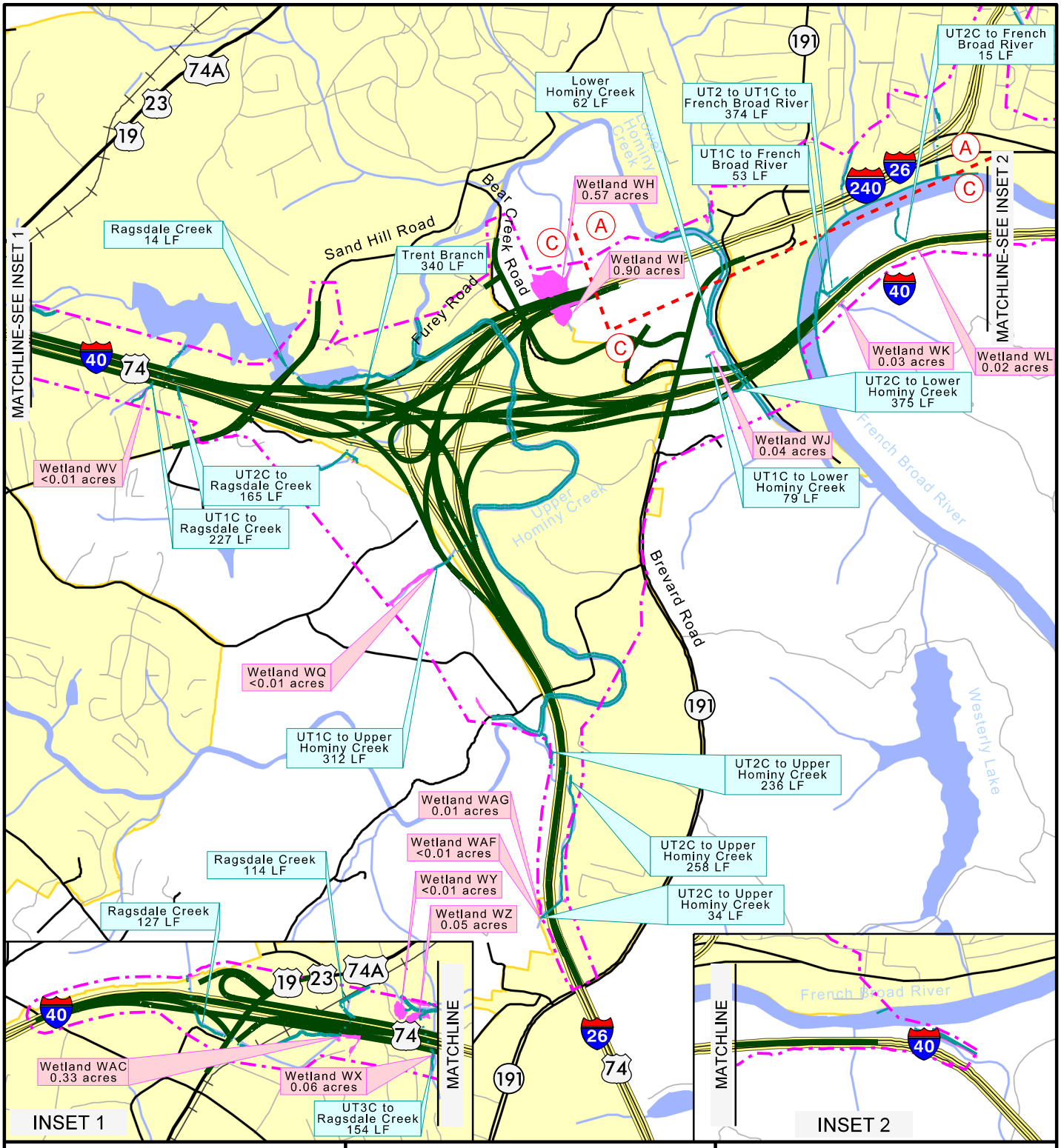
Date: October 2015

N W E S

0 1000 2000
FEET

Figure 4-20

Section C Alternative C-2
Jurisdictional Impacts



North Carolina Department of Transportation

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- Section
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

Date: October 2015

N W E S

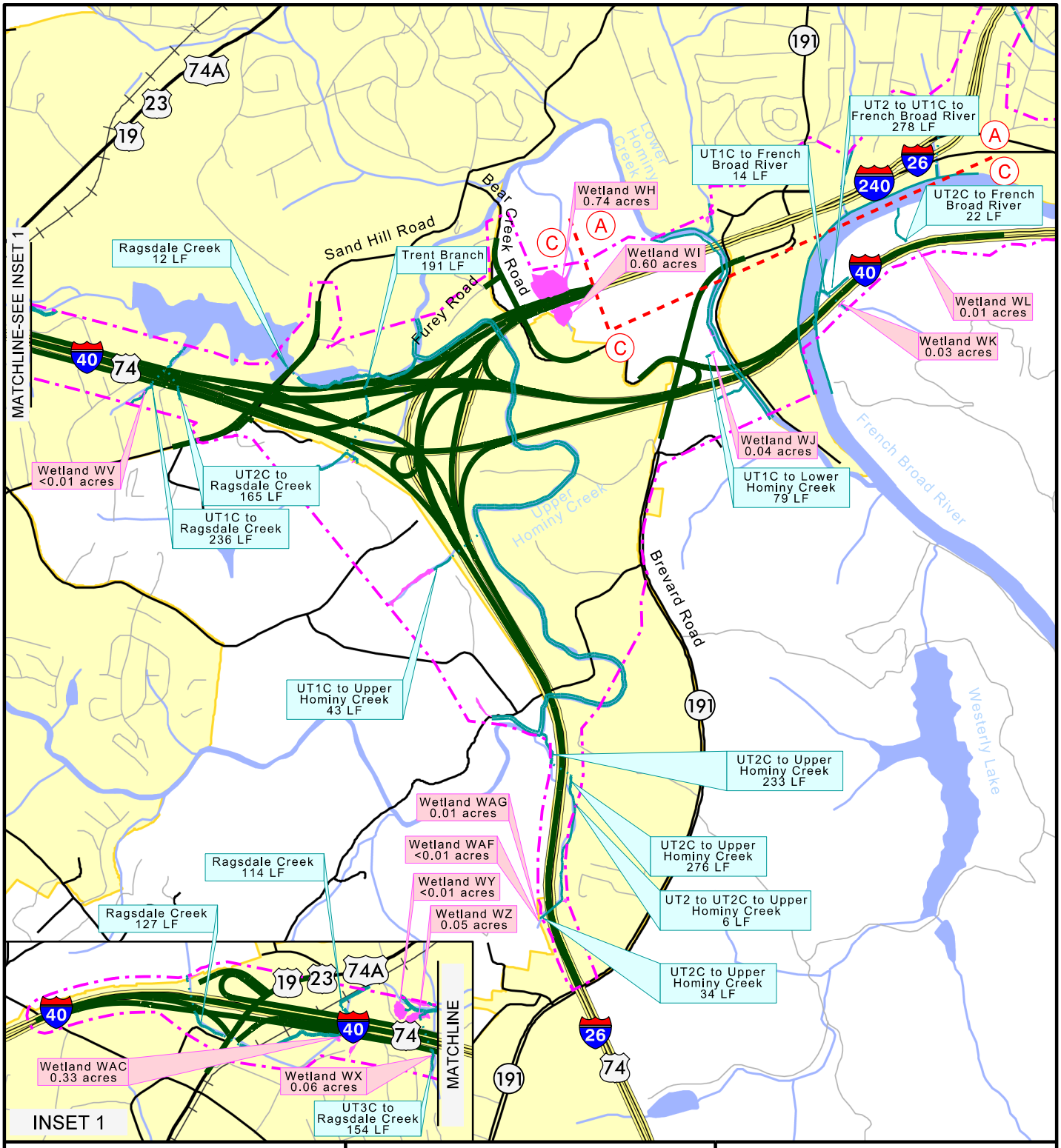
0 1000 2000 FEET

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-21

Section C Alternative D-1
Jurisdictional Impacts



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- (A) Section
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

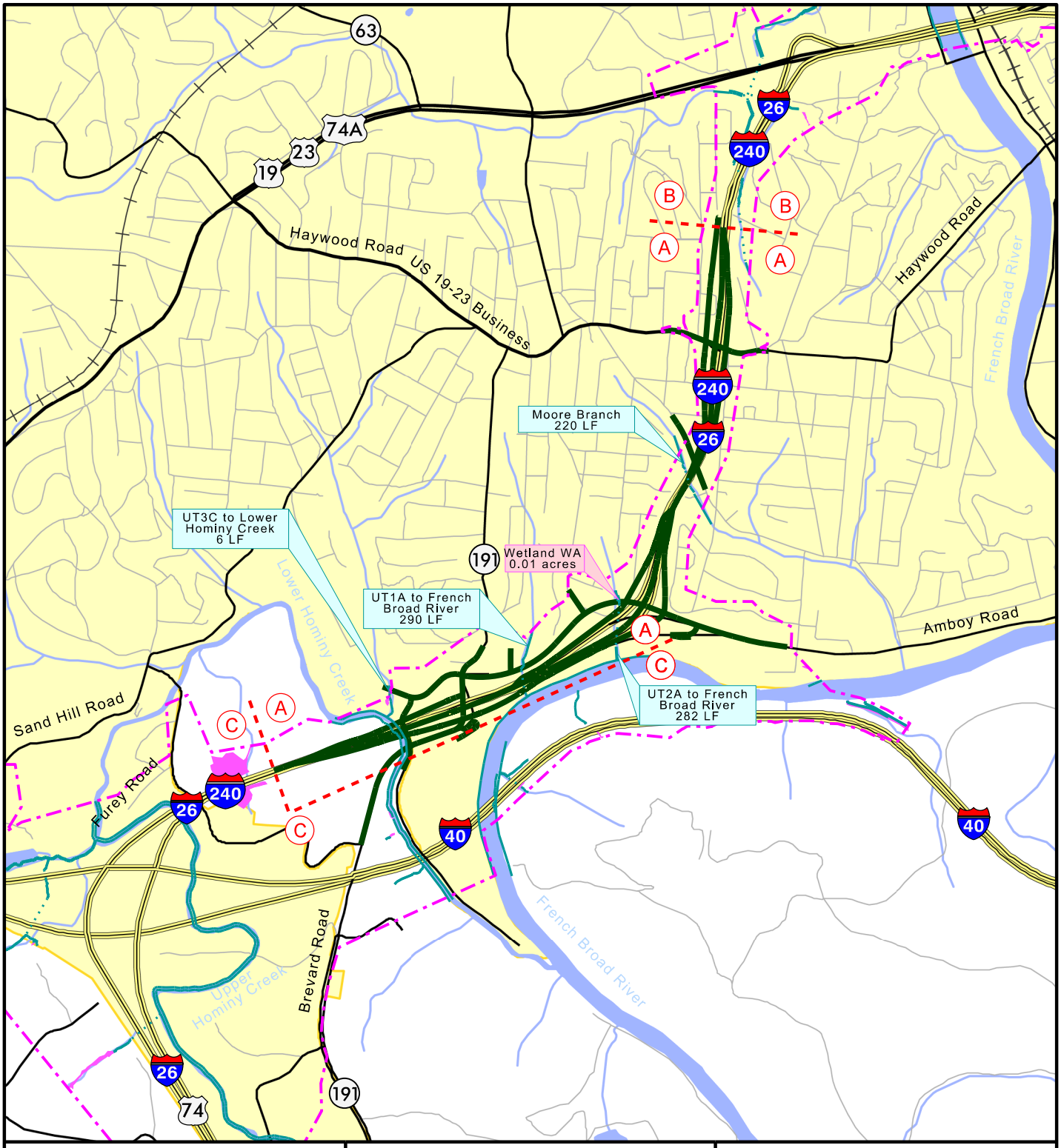
Date: October 2015

N W E S

0 1000 2000 FEET

Figure 4-22

Section C Alternative F-1
Jurisdictional Impacts



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- A — Section
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

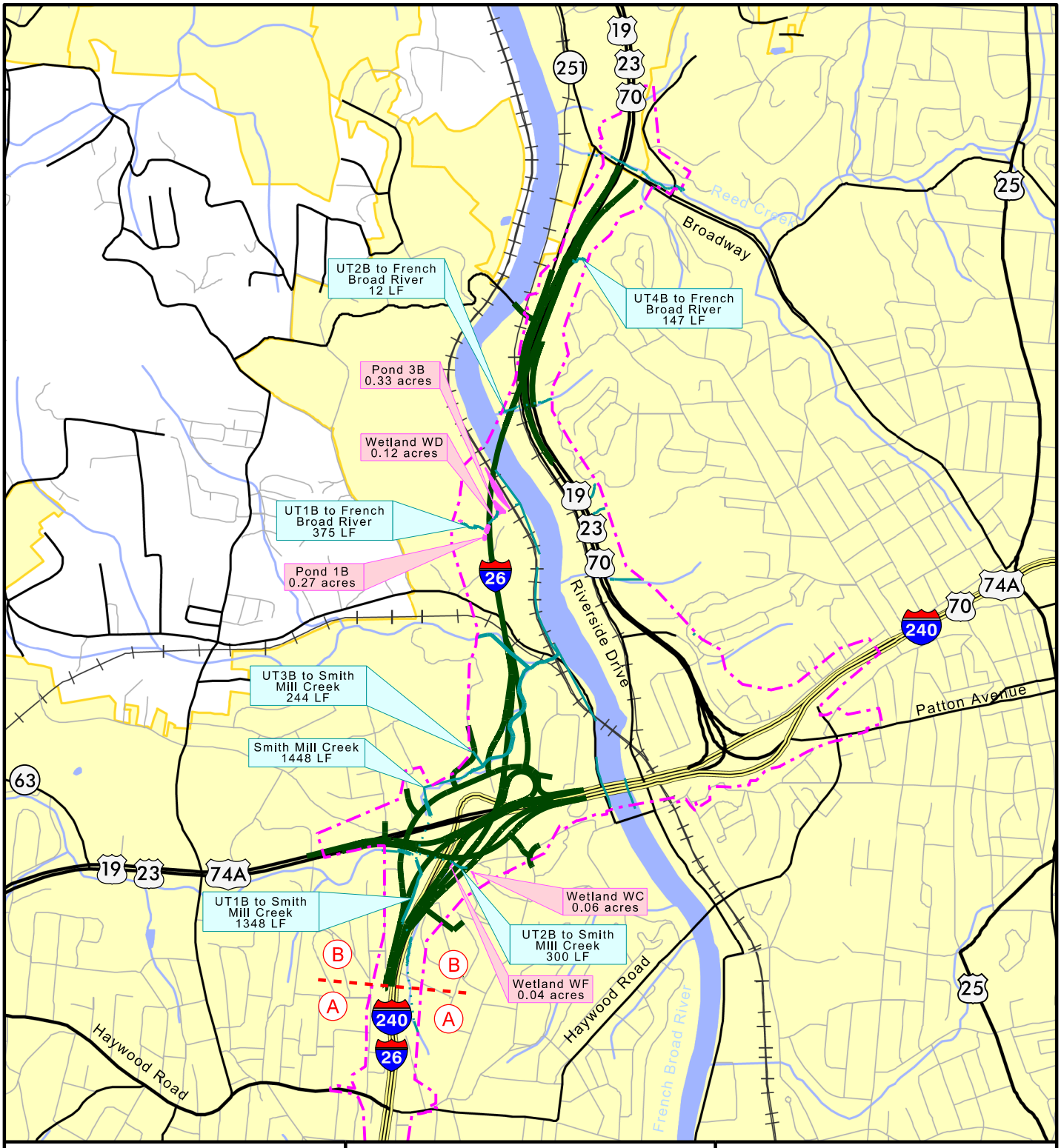
Date: October 2015

N W E S

0 1000 2000
FEET

Figure 4-23

Section A
Jurisdictional Impacts



North Carolina
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I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- Section
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

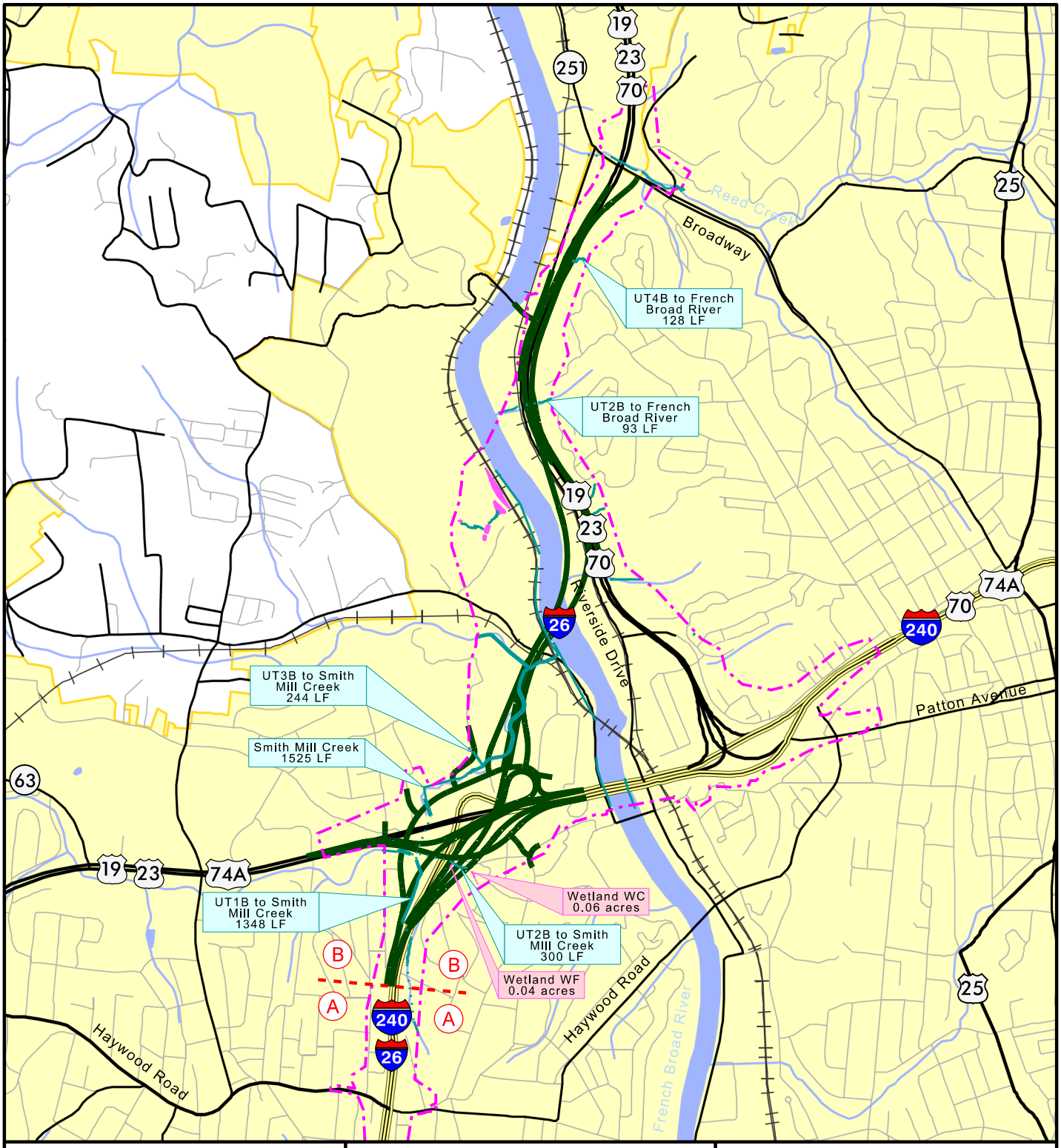
Date: October 2015

N W E S

0 1000 2000 FEET

Figure 4-24

Section B Alternative 3
Jurisdictional Impacts



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- Section
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

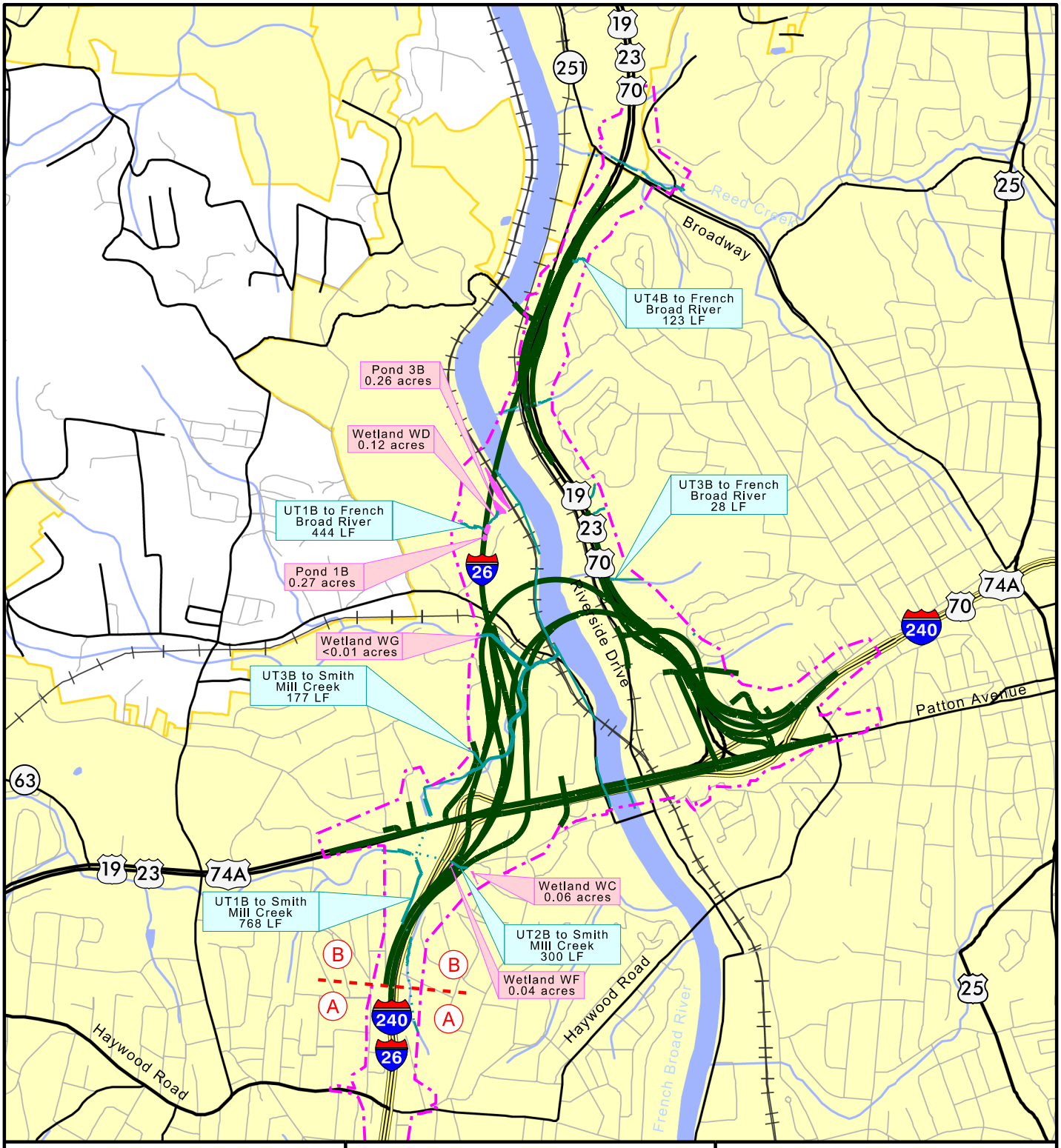
Date: October 2015

N W E S

0 1000 2000 FEET

Figure 4-25

Section B Alternative 3C
Jurisdictional Impacts



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- Section (A)
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

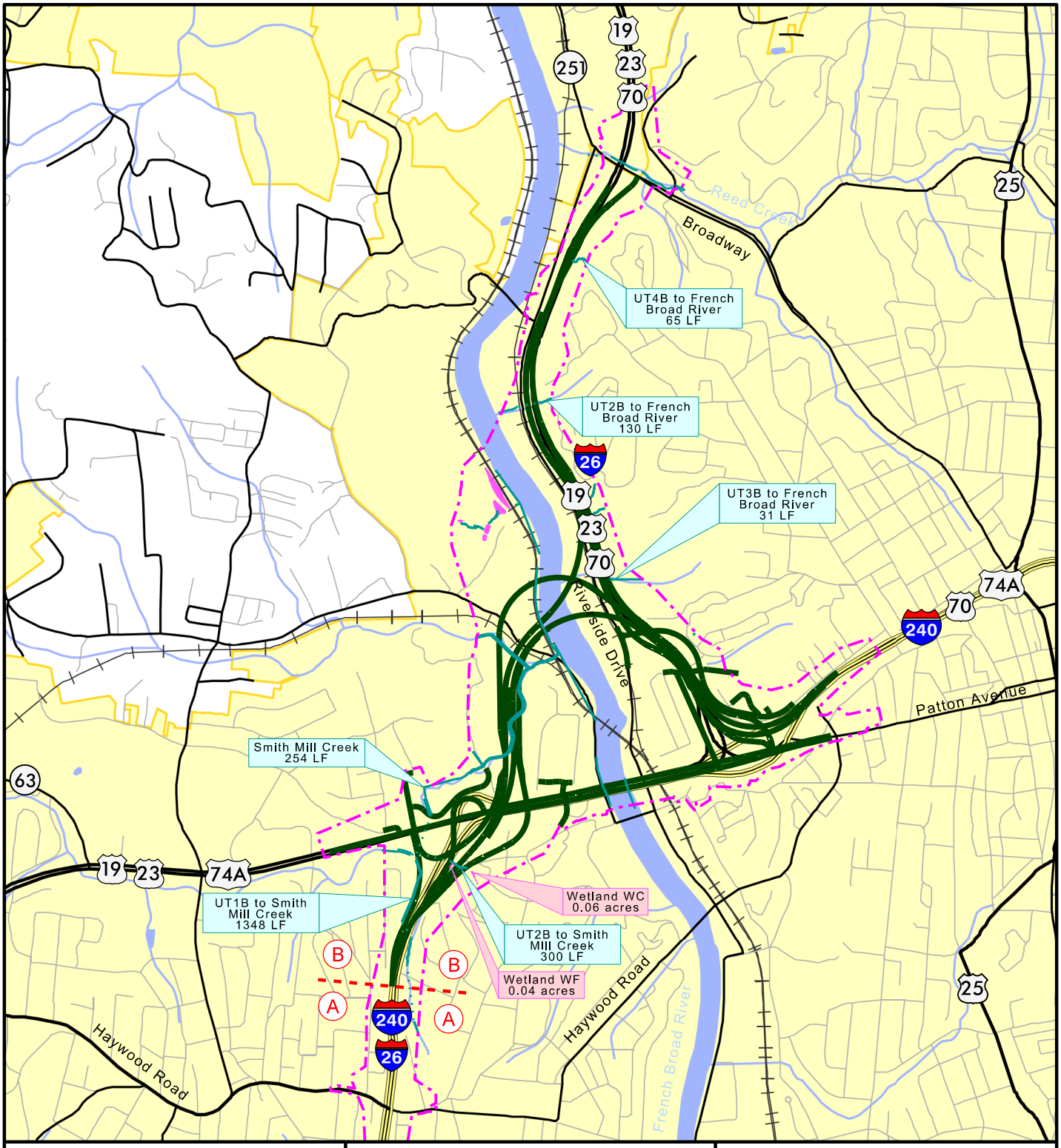
Date: October 2015

N W E S

0 1000 2000 FEET

Figure 4-26

Section B Alternative 4
Jurisdictional Impacts



North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Interstate
- US Highways
- NC Highways
- Local Road
- Railroad
- Municipal Boundaries
- Streams
- Water
- Section
- Natural Resources Study Area
- Jurisdictional Stream
- Jurisdictional Wetland

Date: October 2015

N W E S

0 1000 2000 FEET

Figure 4-27

Section B Alternative 4B
Jurisdictional Impacts

Table 4-25: Wetlands Impacts for Section C Alternatives

Wetland ID	NCDWR Rating	Wetland Impacts (acres)			
		Alternative A-2	Alternative C-2	Alternative D-1	Alternative F-1
WL	35	0.02	0.02	0.02	0.01
WK	35	0.03	0.03	0.03	0.03
WH	71	1.14	0.87	0.57	0.74
WI	71	0.93	0.95	0.90	0.60
WAC	59	0.33	0.33	0.33	0.33
WX	46	0.06	0.06	0.06	0.06
WZ	40	0.05	0.05	0.05	0.05
WJ	43	0.04	0.04	0.04	0.04
WAF	39	<0.01	<0.01	<0.01	<0.01
WAG	39	0.01	0.01	0.01	0.01
WV	54	<0.01	<0.01	<0.01	<0.01
WQ	Unknown	<0.01	No Impact	<0.01	No Impact
WY	40	<0.01	<0.01	<0.01	<0.01
Total	**N/A**	**2.62**	**2.36**	**2.01**	**1.86**

Table 4-26: Stream Impacts for Section C Alternatives

Description	Classification [a]	Stream Impacts (linear feet)			
		A-2	C-2	D-1	F-1
French Broad River	P	0	0	0	0
Lower Hominy Creek	P	0	0	62	0
Ragsdale Creek	P	255	253	255	253
Trent Branch	P	340	208	340	191
Upper Hominy Creek	P	0	0	0	0
UT1C to French Broad River	I	115	212	53	14
UT1C to Lower Hominy Creek	I	79	79	79	79
UT1C to Ragsdale Creek	P	227	236	227	236
UT1C to Upper Hominy Creek	P	312	77	312	43
UT2 to UT 1C to French Broad River	I	374	374	374	278
UT2 to UT2C to Upper Hominy Creek	P	0	0	0	6
UT2C To French Broad River	P	42	64	15	22
UT2C to Lower Hominy Creek	P	375	430	375	0
UT2C to Ragsdale Creek	I	165	165	165	165
UT2C to Upper Hominy Creek	P	528	528	528	543
UT3C To Ragsdale Creek	P	154	154	154	154
Total	**N/A**	**2,965**	**2,779**	**2,938**	**1,984**

[a] P = Perennial stream (typically contains permanent, flowing water); I = Intermittent stream (characterized by temporal flow interruptions).

Table 4-27: Wetlands Impacts for Section A – I-240 Widening Alternative

Wetland ID	NCDWR Rating [a]	Wetland Impacts (acres)
WA	40	0.01
Total	N/A	0.01

[a] Wetland rating procedure from *A Field Guide to North Carolina Wetlands* (NCDNR 1996). Wetlands are rated on a scale of 1 to 100, with 100 indicating the highest quality.

Table 4-28: Stream Impacts for Section A – I-240 Widening Alternative

Description	Classification [a]	Stream Impacts (linear feet)
UT1A to French Broad River	P	290
UT2A to French Broad River	P	282
UT3C to Lower Hominy Creek	P	6
Moore Branch	P	220
Total	N/A	798

[a] P = Perennial stream (typically contains permanent, flowing water).

Table 4-29: Wetlands Impacts for Section B Alternatives

Wetland ID	NCDWR Rating [a]	Wetland Impacts (acres)			
		Alternative 3	Alternative 3-C	Alternative 4	Alternative 4-B
WC	43	0.06	0.06	0.06	0.06
WF	29	0.04	0.04	0.04	0.04
WD	33	0.12	No Impact	0.12	No Impact
WG	20	No Impact	No Impact	<0.01	No Impact
Total	N/A	0.22	0.11	0.22	0.10

[a] Wetland rating procedure from *A Field Guide to North Carolina Wetlands* (NCDNR 1996). Wetlands are rated on a scale of 1 to 100, with 100 indicating the highest quality.

Table 4-30: Stream Impacts for Section B Alternatives

Description	Classification [a]	Stream Impacts (linear feet)			
		3	3-C	4	4-B
Smith Mill Creek	P	1,448	1,525	0	254
UT1B to Smith Mill Creek	I	1,348	1,348	768	1,348
UT2B to Smith Mill Creek	P	300	300	300	300
UT3B to Smith Mill Creek	P	244	244	177	0
UT1B to French Broad River	I	375	0	444	0
UT2B to French Broad River	I	12	93	0	130
UT3B to French Broad River	P	0	0	28	31
UT4B to French Broad River	P	147	128	123	65
UT6B to French Broad River	I	0	0	0	0
Total	N/A	3,874	3,639	1,839	2,128

[a] P = Perennial stream (typically contains permanent, flowing water) I = Intermittent stream (characterized by temporal flow interruptions).

widening the existing roadway, multiple opportunities will occur to minimize the lengths of culvert extensions and fill slopes. Efforts will be made to decrease impacts to surface waters.

Compensatory

Compensatory mitigation is not normally considered until anticipated impacts to waters of the United States have been avoided and minimized to the maximum extent possible. It is recognized that “no net loss of wetlands” functions and values may not be achieved in each and every permit action. In accordance with 67 FR 2020, 2092; January 15, 2002, USACE requires compensatory mitigation when necessary to ensure that adverse effects to the aquatic environment are minimal. The size and type of the proposed project impact and the function and value of the impacted aquatic resource are factors considered in determining acceptability of appropriate and practicable compensatory mitigation. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts that remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, preservation and enhancement, and creation of waters of the United States. Such actions should be undertaken first in areas adjacent to or contiguous to the discharge site.

In July 2010, a new legal document (or instrument) for the operation and use of the Ecosystem Enhancement Program's (EEP) In-Lieu Fee programs for stream and wetland mitigation was signed by USACE and NCDEQ.

The instrument complies with federal rules governing compensatory mitigation that became effective in June 2008, and supersedes the 2003 MOA among USACE, NCDEQ, and NCDOT (EPA 2003) governing EEP operations, as well as a 1998 Memorandum of Understanding between NCDEQ and USACE (NCDNR and USACE 1998).

EEP worked with USACE, USEPA, and other state and federal regulatory and resource agencies to develop the new instrument.

Opportunities for compensatory mitigation are limited within the project area. Existing downcutting, eroded drainages can be improved with streambank grading and planting or more comprehensive restoration strategies. Almost all stream and wetland areas in the project area are invaded by exotic, invasive plant species including Chinese privet, Japanese honeysuckle, multiflora rose, and Oriental bittersweet (*Celastrus orbiculatus*). Removal of these invaders, along with riparian buffer enhancements, may constitute further mitigation opportunities.

Protected Species

Federally listed endangered and threatened species are legally protected under the provisions of Section 7 of the ESA of 1973, as amended, and any action likely to adversely affect a species afforded federal protection is subject to review by USFWS and/or NMFS. Species classified as FSC are not protected under the provisions of Section 7 of the ESA, but are defined as species under consideration for listing as threatened or endangered. North Carolina provides limited protection to "at risk" species under the North Carolina Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979. NCWRC and the North Carolina Department of Agriculture are responsible for enforcing and administering species protection. The federally protected species found in Buncombe County and the biological conclusions regarding the potential effects of the project are summarized in Table 4-31. Concurrence with these findings will be requested from USFWS after selection of a preferred alternative.

Table 4-31: Federally Protected Species listed for Buncombe County

Scientific Name	Common Name	Federal Status [a]	Habitat Present	Biological Conclusion [a]
Clemmys muhlenbergii	Bog turtle	T(S/A)	No	Not required
Glaucomys sabrinus coloratus	Carolina northern flying squirrel	E	No	No effect
Myotis grisescens	Gray bat	E	Yes	Unresolved[b]
Myotis septentrionalis	Northern Long-eared Bat	T	Unknown	Unresolved[b]
Hybopsis monacha	Spotfin chub [c]	T	Yes	No effect
Alasmidonta raveneliana	Appalachian elktoe [c]	E	Yes	MA-NLAA
Microhexura montivaga	Spruce-fir moss spider	E	No	No effect
Epioblasma florentina walker	Tan riffleshell [c, d]	E	Yes	MA-NLAA
Solidago spithamaea	Blue Ridge goldenrod [c]	E	No	No effect
Sagittaria fasciculata	Bunchedarrowhead [c]	E	Yes	No effect
Sarracenia jonesii	Mountain sweet pitcher plant [c]	E	No	No effect
Geum radiatum	Spreading avens	E	No	No effect
Spiraea virginiana	Virginia spiraea [c]	T	Yes	No effect
Gymnoderma lineare	Rock gnome Lichen	E	No	No effect

[a] E - Endangered; T - Threatened; T(S/A) - Threatened due to similarity of appearance; MA-NLAA – May Affect-Not Likely to Adversely Affect
[b] NCDOT Biolgoical Surveys Group will be responsible for habitat screening and surveys for this project.
[c] Historic record (the species was last observed in the county more than 50 years ago).
[d] Obscure record (the date and/or location of observation is uncertain).
Source: Atkins Engineering 2015

The following biological conclusions are a result of integrating the findings from all field visits.

Bog turtle

Biological Conclusion: Not Required

Species listed as threatened due to similarity of appearance do not require Section 7 consultation with the USFWS. A review of NCNHP records, updated October 2014, indicates an occurrence recorded in 1978 within Section C of the study area and extending southeast of the French Broad River. Records indicate that three individuals were observed on Biltmore Estate property by a reliable source but considered unverified. The occurrence record is considered historic by NCNHP. However, this project is not expected to affect the bog turtle because no suitable habitat is present within the study area. The study area occurs in historically developed and disturbed areas, and palustrine wetlands proposed for potential impacts offer poor bog turtle habitat. There are no bog wetlands in the study area. Freshwater wetlands within the study area are forested riparian systems. Based on NCNHP records and professional judgment, no impact to the bog turtle is expected as a result of this project.

Carolina northern flying squirrel

Biological Conclusion: No Effect

As elevations in the project study area range from 1,980 feet to 2,150 feet, the study area contains no suitable habitat for Carolina northern flying squirrel. Spruce-fir forests and adjacent hardwoods do not occur in or near the study area. NCNHP records, updated October 2014, document no occurrence of Carolina northern flying squirrel within 1.0 mile of the study area. Based on NCNHP records, field observations, and habitat characteristics, this project is not expected to affect the Carolina northern flying squirrel.

Gray bat

Biological Conclusion: Unresolved

NCNHP records, updated October 2014, document no occurrence of gray bat within 1.0 mile of the study area. No limestone formations or other cave habitats occur in or near the study area. However, suitable foraging habitat does occur over open water and within floodplains of larger streams within the study area. On June 19-23, 2006, NCDOT biologists conducted a habitat assessment for the gray bat in the project area. All existing bridges were examined for evidence of roosting bats. Rock outcrops and abandoned buildings were also examined. No evidence of roosting bats was found. A Gray bat habitat assessment will be conducted by NCDOT after a preferred alternative is chosen for the project.

Northern Long-eared Bat

Biological Conclusion: Unresolved

Screening for the NLEB and subsequent surveys will be the responsibility of the NCDOT Biolgoical Surveys Group. Construction authorization will not be requested until ESA compliance is satisfied for the NLEB.

Spotfin chub

Biological Conclusion: No Effect

Hominy Creek, Ragsdale Creek, and Reed Creek are medium-sized streams of moderate gradient. These waters do not appear to be experiencing heavy siltation and all have moderate flowing water with sand, gravel, and cobble beds. However, NCDOT consulted with USFWS on March 2, 2006, and asked whether there was a need for a spotfin chub survey for this project. It was determined a spotfin chub survey was not needed because the spotfin chub record was historic and the water quality in the French Broad had not improved enough to warrant a survey. NCNHP records, updated October 2014, document no occurrence of spotfin chub within 1.0 mile of the study area. Records for this species within Buncombe County are over 50 years old. Based on NCNHP records and professional judgment, no impact to the spotfin chub is expected as a result of this project. NCDOT will be updating surveys for the spotfin chub after a preferred alternative is chosen for the project.

Appalachian elktoe

Biological Conclusion: May Affect, Not Likely to Adversely Affect

NCNHP records, updated October 2014, indicate a pre-1981 record for Appalachian elktoe approximately 3,200 feet upstream of the existing I-240 bridge crossing of the French Broad River. Another pre-1981 occurrence is recorded in the Swannanoa River approximately 1.0 mile

east of the study area. Both occurrence records are considered historic. The proposed project is expected to potentially affect Appalachian elktoe habitat due to the placement of bridge supports in the French Broad River bed. Surveys for the mussel were conducted in September 2005 along the French Broad River. These surveys involved the use of snorkel and SCUBA equipment. The survey results indicated that the Appalachian elktoe is not present in the surveyed reach of the French Broad River. Concurrence with the USFWS will be required. Bridging of major water sources, such as the French Broad River and Hominy Creek, in combination with stringent erosion control plans, should be implemented to minimize impacts to any habitat potentially utilized by the Appalachian elktoe. NCDOT will be updating surveys for the Appalachian elktoe after a preferred alternative is chosen for the project.

Spruce-fir moss spider

Biological Conclusion: No effect

As elevations in the project study area range from 1,980 feet to 2,150 feet, the study area contains no suitable habitat for spruce-fir moss spider. Spruce-fir forests do not occur in or near the study area. NCNHP records, updated October 2014, document no occurrence of spruce-fir moss spider within 1.0 mile of the study area. Based on NCNHP records, field observations, and habitat characteristics, this project is not expected to affect the spruce-fir moss spider.

Tan riffleshell

Biological Conclusion: May Affect, Not Likely to Adversely Affect

Within the study area, many of the tributaries are headwaters of larger systems with sand and gravel substrates. Therefore, suitable habitat for tan riffleshell exists within the project study area. Surveys for mussels were conducted in September 2005 along the French Broad River. These surveys involved the use of snorkel and SCUBA equipment. The survey results indicate that the tan riffleshell is not present in the surveyed reach of the French Broad River. Concurrence with the USFWS will be required. NCNHP records document only one occurrence of tan riffleshell within 1.0 mile of the study area: a pre-1874 destroyed population in the French Broad River approximately 2 river miles downstream of the I-40 crossing. Records for this species within Buncombe County are over 50 years old. Bridging of streams, such as Reed Creek and Hominy Creek, in combination with stringent erosion control plans, should be implemented to minimize impacts to any habitats utilized by the tan riffleshell. NCDOT will be updating surveys for the tan riffleshell after a preferred alternative is chosen for the project.

Blue Ridge goldenrod

Biological Conclusion: No Effect

As elevations in the project study area range from 1,980 feet to 2,150 feet, the project study area contains no suitable habitat for high-elevation plant species such as Blue Ridge goldenrod. NCNHP records, updated October 2014, document no occurrence of Blue Ridge goldenrod within 1.0 mile of the study area. Based on NCNHP records, field observations, and professional judgment, the project would have no effect on the Blue Ridge goldenrod.

Bunched arrowhead

Biological Conclusion: No Effect

USFWS records indicate that this species has not been documented within Buncombe County for over 50 years. NCNHP records, updated October 2014, document no occurrence of bunched arrowhead within 1.0 mile of the study area. The study area may contain suitable habitat for bunched arrowhead in the shallower, sluggish stream systems and wetland areas. Surveys were conducted of the entire study area for bunched arrowhead during June 2006 field visits. Additional surveys in subsequently added sections of the study area, as well as in the original study areas, were conducted from June 8 to June 10, 2010, and from July 21 to 31, 2014. The larger wetlands in the project study area were surveyed (including Wetlands WD, WH, WI, WN, WY, WZ, WAA, and WAC) for bunched arrowhead.

The best suitable habitat for this plant was found at Wetland WAC, which included areas with standing water and good sun exposure. However, the wetland has been impounded by beavers and therefore does not support the constant sheet flow favored by the arrowhead. The other wetlands are drier and support extensive canopy and shrub coverage and therefore would be unlikely to sustain a population of bunched arrowhead. No plants of this species were found. Based on NCNHP records, survey data, and professional judgment, this project would not affect bunched arrowhead.

Mountain sweet pitcher plant

Biological Conclusion: No Effect

The project study area contains no bogs or granite rock faces that might provide suitable habitat for the mountain sweet pitcher plant. NCNHP records, updated October 2014, document no occurrence of mountain sweet pitcher plant within 1.0 mile of the study area. Based on NCNHP records, field observations, and professional judgment, the project would not impact the mountain sweet pitcher plant.

Spreading avens

Biological Conclusion: No Effect

As elevations in the project study area range from 1,980 feet to 2,150 feet, the project study area contains no suitable habitat for high-elevation plant species such as spreading avens. NCNHP records, updated October 2014, document no occurrence of spreading avens within 1.0 mile of the study area. Based on NCNHP records, field observations, and professional judgment, the project would have no effect on the spreading avens.

Virginia spiraea

Biological Conclusion: No Effect

NCNHP records, updated October 2014, indicate that an occurrence of Virginia spiraea has been documented approximately 900 feet east of the project study area located in the northern portion of Section A. The known population of Virginia spiraea was planted by the Asheville Botanical Gardens on the banks of Reed Creek. The population is located upstream of the project study area in an undeveloped area of Reed Creek with suitable habitat. Areas along Reed Creek within the project study area contain unsuitable habitat. Surveys were conducted of the entire project study area for this plant during June 2006 field visits. All large streams and the French Broad River within the study area were visited and walked. All scoured banks, point bars, braided features, natural levees, and lower stream reaches were investigated for Virginia

spiraea, but no evidence of this species was found. However, Virginia spiraea is considered by the USFWS to be an unstable species that can colonize new areas rapidly, and requires that surveys be conducted within two years of the project let date. Additional surveys were conducted from June 8 to 10, 2010, and from July 21 to 31, 2014, within the entire study area. Each named stream and their larger tributaries were examined for habitat suitability for Virginia spiraea. For the most part, stream banks in the project study area support extensive hardwood growth. Some of these streams do not have the flow or gradient to produce scoured banks or point bars. These streams maintain stable, muddy banks that support lush growths of trees, shrubs, and vines, including invasive species. Many streams were too narrow to admit sunlight through the buffer vegetation onto the stream itself. Named streams (and their tributaries) that failed to contain spiraea habitat for some or all of these reasons include Reed Creek, Smith Mill Creek, Moore Branch, lower Hominy Creek, Trent Branch, and Ragsdale Creek. Suitable spiraea habitat was found in rocky or gravelly islands in mid-stream French Broad River and upper Hominy Creek. Scoured banks, shoals, and point bars in these streams were surveyed for the presence of Virginia spiraea. No occurrences of this species were found. Based on field surveys, NCNHP records, and habitat suitability, this project would have no effect on Virginia spiraea.

Rock gnome lichen

Biological Conclusion: No Effect

NCNHP records, updated October 2014, indicate that rock gnome lichen has not been documented within 1.0 mile of the study area. Rock gnome lichen was not observed during field surveys. Suitable habitat for rock gnome lichen (elevations above 5,000 feet or deep gorges characterized by high humidity) does not occur within or near the study area. The proposed project would not adversely impact rock gnome lichen.

4.1.6 CONSTRUCTION

The construction activities associated with development of the project would create environmental impacts. These impacts are generally short-term in nature and can be controlled, minimized, or mitigated through conformance with BMPs and standard NCDOT procedures. For detailed information concerning BMPs, refer to the NCDOT guide, *Best Management Practices for Construction and Maintenance Activities* (NCDOT 2003a). The potential construction impacts of the project are presented in this section.

4.1.6.1 Energy

Construction of the project is expected to result in less total energy utilization than the No-Build Alternative. Although construction of the project would initially require the consumption of energy and resources that would not be used if the project were not built, operation of the facility would compensate for the energy lost during construction by increasing the efficiency of the region's roadway system.

Increased energy efficiency from the roadway improvements would be attributed to its controlled access features and would result in (1) decreased vehicle delays, (2) more efficient vehicle operating speeds, and (3) diversion of traffic away from less convenient and less efficient roadways. Furthermore, the project is consistent with the Federal Energy Policy Act of 2005.

4.1.6.2 Visual

Short-term visual impacts are expected to occur due to construction activities and equipment. To reduce the potential for visual impacts, construction activities would be contained within as minimal an area as practical. Construction easements on parcels outside the alignment, where required, would be managed to minimize potential visual impact. Following construction, ground cover, landscaping, or related materials may be utilized to restore or enhance areas to preconstruction conditions or better.

4.1.6.3 Noise

Construction of the project would result in temporary increases in noise levels within the vicinity of the project. Noise would be generated primarily from heavy equipment used to transport materials and construction. Sensitive receivers located close to the construction activities may temporarily experience increased noise levels.

Construction noise can be controlled by regulating the hours of construction and equipping machinery with noise reduction devices. Certain construction activities could also be limited during the evening, weekends, and holidays. Storage and staging areas would be located as far from noise sensitive areas as practicable. NCDOT specifications require the contractor to limit noise levels to 80 dBA Leq in noise sensitive areas adjacent to the project. NCDOT also reserves the right to monitor construction noise and to require noise abatement where limits are exceeded. NCDOT can also limit work that produces objectionable noise during normal sleeping hours.

4.1.6.4 Air

Construction activities could have a short-term impact on air quality, primarily during site preparation. PM (dust) is the pollutant of primary concern during the construction period. Dust would be generated during earth moving activities; handling of cement, asphalt, or aggregate; and equipment travel over unpaved haul roads. Wind erosion of exposed areas and material stockpiles would also generate PM.

The amount of dust generated would vary, depending on the construction activity and local weather conditions. Where excess dust is anticipated to be a problem, effective dust control measures would be implemented in accordance with standard NCDOT procedures. Dust control would be the responsibility of the contractor and could include the following:

- Minimizing exposed earth surface
- Temporary and permanent seeding and mulching
- Watering working and haul areas during dry periods
- Covering, shielding, or stabilizing material stockpiles
- Using covered haul trucks

Emissions from construction equipment are regulated by federal standards. Any burning of cleared materials would be conducted in accordance with applicable state and local laws, regulations, and ordinances. Specifically, a Burning Permit from the North Carolina Division of Forest Resources must be obtained for burning within woodlands or 500 feet of woodlands under the protection of the Division of Forest Resources.

4.1.6.5 Utilities

Construction of the project would require some adjustment, relocation, or modification to existing public utilities such as natural gas pipelines, power transmission/distribution lines, water and sewer lines, and telephone and cable television lines. The impacts to these utilities are described in Section 4.1.3.4. Any disruptions to utility service during construction would be minimized by phased adjustments to the utility lines.

It is anticipated that the construction techniques to be used in the relocation of buried utilities would include a combination of trenching and boring. Utility relocation impacts would be more succinctly defined and minimized at Concurrence Points 4B and 4C of the Section 404/NEPA Merger Process as a result of utility relocation design in the final design phase of the project. All modifications, adjustments, or relocations would be coordinated with the affected utility.

4.1.6.6 Water Quality

Runoff from the project construction site could impact water quality by the transport of sediment, nutrients, or hazardous materials. In accordance with the North Carolina Sedimentation and Pollution Control Act (15A NCAC 4B.0001.0027), an erosion and sedimentation control plan must be prepared for land disturbing activities that cover one or more acres to protect against runoff from a 10-year storm. Thus, prior to the start of project construction activities, an erosion and sedimentation control plan will be prepared in accordance with the NCDEQ publication *Erosion and Sediment Control Planning and Design Manual* (NCDNR 1993), and the NCDOT guidelines in *Best Management Practices for Protection of Surface Waters* (NCDOT 1997). BMPs to minimize sedimentation and erosion impacts during construction include, but are not limited to, the following:

- Scheduling construction activities to minimize exposed area and duration of exposure
- Clearing only minimal distances ahead of grading
- Temporary seeding, sodding, and/or mulching of disturbed areas
- Using gravel or straw on exposed surfaces prior to revegetation
- Revegetating as soon as possible after construction
- Using energy dissipators at outfalls
- Constructing temporary sediment traps
- Using silt fences
- Covering stockpiled materials
- Wetting exposed areas during windy conditions

In addition, NCDOT's standard practices will be adhered to during construction of the project. The standard practices require the proper use and handling of construction materials. Every precaution should be taken by the contractor to avoid erosion and discharge of wastewater, bitumens, or hazardous materials, including fuel, lubricants, solvents, or other chemicals, to ground or surface waters.

4.1.6.7 Erosion Control

In accordance with the North Carolina Sedimentation and Pollution Control Act (15A NCAC 4B.0001.0027), an erosion and sedimentation control plan must be prepared for land disturbing activities that cover one or more acres to protect against runoff from a 10-year storm. Thus, prior to the start of project construction activities, an erosion and sedimentation control plan will be prepared in accordance with the NCDNR publication *Erosion and Sediment Control Planning*

and Design Manual (NCDNR 1993) and the NCDOT sediment and erosion control program. The plan will identify BMPs to be used to reduce erosion and sedimentation. BMPs would include, but are not limited to, the following:

- Minimizing exposed earth surface
- Installing silt fencing
- Temporary and permanent seeding and mulching
- Watering working and haul areas during dry periods
- Covering, shielding, or stabilizing material stockpiles

4.1.6.8 Geodetic Markers

National Geodetic Survey geodetic monuments are located across the country to provide a physical marker that is primarily used for land survey controls. There are 26 monuments that fall within the project limits. Table 4-32 provides the current status of each monument.

Table 4-32: Geodetic Monuments

Designation	Northing	Easting	Status	Impact
Amboy	680739.7999	933890.4057	Last Recovery: 05 Good Condition	Would be destroyed during construction of I-2513A.
Annie	688516.8316	936493.8389	Monumented 85: Status Unknown	Would be destroyed during construction of I-2513B.
Bear	678192.0622	927542.6560	Monumented 85: Status Unknown	Would be destroyed during construction of I-2513C.
Brevard	679448.9691	931415.4205	Recovered in 2005 Good Condition	Set in bridge over I-240 on NC 191. Would be destroyed during construction of I-2513A.
Bun 3	676928.2290	929834.5520	Recovered in 1995 Good Condition	Set in bridge over I-40 on NC 191. Would be destroyed during construction of I-2513C.
Courtland	691562.4423	938080.9059	Monumented 85: Status Unknown	Would be destroyed if I-2513B Alternative 4 is built.
Footbridge	682078.4881	934150.5036	Recovered in 1998 Good Condition	Would be destroyed during construction of I-2513A.
Ford	694841.9633	936700.1048	Recovered in 1995 Good Condition	Would be destroyed during construction of I-2513B.
French	677760.0322	931431.3851	Recovered in 1981 Good Condition	Would be destroyed during construction of I-2513C.
Gate	688976.9619	937290.0020	Recovered in 1991 Good Condition	Would be destroyed during construction of I-2513B.
Green Horn	670526.1753	928095.1286	Recovered in 1981 Good Condition	May be destroyed during construction of I-2513C, contingent on revised design.
Haywood	684484.8481	934968.8747	Recovered in 1998 Good Condition	Would be destroyed during construction of I-2513A.
Hilton	688560.7291	935746.0024	Recovered in 1998 Good Condition	Would be destroyed during construction of I-2513B.
Hominy	672575.1115	928177.7630	Recovered in 1985 Good Condition	May be destroyed during construction of I-2513C, contingent on revised design.

Designation	Northing	Easting	Status	Impact
Hump	679395.2881	936591.0270	Recovered in 1981 Good Condition	May be destroyed during construction of I-2513C, contingent on revised design.
LHT 1800	680332.9840	933595.1910	TVA Benchmark Status Unknown	Might be destroyed during construction of I-2513A.
LHT 1801	676527.0790	929737.3290	TVA Benchmark Status Unknown	Possibly unaffected by any alternative.
Pearson Bridge Gauging Station	695696.4140	936794.3210	Recovered in 2006 Good Condition	Unaffected by any alternative.
R 126	690819.8050	937362.1770	Recovered in 2006 Good Condition	Unaffected by any alternative.
Reflector	676482.1707	925762.3315	Recovered in 1985 Good Condition	May be destroyed during construction of I-2513C, contingent on revised design.
State	683036.8623	934702.1824	Recovered in 2005 Good Condition	Would be destroyed during construction of I-2513A.
Stellar	693885.1083	936897.2043	Recovered in 2005 Good Condition	Unaffected by any alternative.
Stowaway	686403.4697	934975.9877	Recovered in 1997 Good Condition	Would be destroyed during construction of I-2513A.
Thurston	675806.4305	926580.2236	Recovered in 1985 Good Condition	May be destroyed during construction of I-2513C, contingent on revised design.
Venable	676927.4224	929757.7501	Was Destroyed during Bridge construction in ‘98	N/A
White Pine	679248.8777	933118.7866	Recovered in 1981 Good Condition	Possibly unaffected by any alternative.

Source: NCDNR 2014.

Mitigation for the impacted monuments will be replacement at a nearby location to maintain the network of survey controls along these two interstates.

4.1.6.9 Borrow and Disposal Sites

Construction waste material generated during clearing, grubbing, and other construction phases would be removed from the project site and burned or disposed of by the contractor in accordance with state and local regulations. Litter and other general trash would be collected and disposed of at local landfill locations. Construction waste and barrow with regard to wetlands would not be allowed unless properly permitted by USACE. Specific locations of barrow and disposal sites will be determined during the final design phase of the project.

4.1.6.10 Traffic Maintenance and Detour Accessibility

An evaluation of the construction effects was conducted to determine the magnitude of potential effects and is included in the *Section A Project Footprint Scenarios Memorandum* (URS 2015m). The level of detail included in the evaluation is a good faith effort to identify possible impacts due to construction activites based on a general evaluation of the preliminary plans. Since construction phasing evolves considerably throughout the duration of the planning,

design, and construction phases of the project, substantial additional work is required to determine the ultimate construction effects of the project. The intent of the evaluation is to compare the construction effects of each alternative relative to one another. The additional refinement of construction phasing that will occur in later stages of the design process would likely result in a similar level of change for each of the alternatives being considered. Therefore, the evaluation method is adequate for selection of a preferred alternative, and any improvements made beyond the decision of a preferred alternative would likely be of the same magnitude for any of the alternatives being considered.

The methodology for evaluating the construction effects includes determining the potential effects due to construction of the proposed project, including the following:

- Estimated duration of construction
- Closures or major detours required to construct the project
- Lane reductions required to construct the project
- Temporary changes in access to businesses required to construct the project

For each of the effects identified, a qualitative evaluation was conducted to determine the likely overall magnitude of the effect. Four categories were established for determining the magnitude of the effects. The evaluation measures are described in general for each of the four categories as follows:

- Low or Moderate: The construction effect would not be substantial and would be considered normal for a major interstate construction project in an urban area.
- High: The construction effect would be substantial and would be beyond what would be considered normal for a major interstate construction project in an urban area.
- Severe: The construction effect would be substantial and may have adverse effects on the traveling public and/or adjacent properties and businesses and would be considered to be substantially beyond what would be normal for a major interstate construction project in an urban area.

Section C Construction Effects Summary

The construction effects evaluation indicates that all four alternatives are expected to have similar levels of impacts, with all alternatives having multiple sites that rate as severe. All alternatives are expected to utilize permanent road closures, temporary road closures, temporary detours, and have user delays due to mainline construction. Business access impacts occur on Alternatives A-2 and D-1 near the existing NC 191 interchange, with impacts expected to be low.The expected construction duration for Alternatives A-2, C-2, and D-1 is 5 years, with Alternative F-1 estimated as 4.5 years.

Section A Construction Effects Summary

The Section A construction effects evaluation concluded that multiple sites in this section will have construction effects considered high or severe. Section A construction is expected to utilize permanent road closures, temporary road closures, temporary detours, and have user delays due to mainline construction. Business access impacts are expected to be moderate to high. It is expected that the construction duration for Section A will be 4 years.

For Section A, local officials requested a review of the typical section and its impact on the project's construction effects. These officials were interested in reviewing the constructability of

Section A and the resulting reduction in the project's footprint if the project were to utilize a six-lane typical section with auxiliary lanes in lieu of the eight-lane typical section (Figure 4-28). It was determined that the eight-lane typical section utilized in the development of the preliminary designs was required to operate at an acceptable level of service in the design year. Cross-sections depicting a conceptual construction phasing scheme (Exhibits 4.1 through 4.6) show step-by-step phases for three locations within Section A.

The final phase for each location also shows a composite of the limits for the six-lane typical section with auxilarary lanes compared to the limits for the preliminary designs which are based upon the eight-lane typical section.The evaluation revealed that reducing the typical section to six-lanes with auxiliary lanes would minimally reduce the purchase of new right-of-way as much of the mainline is anticipated to be constructed within existing right-of-way.

Section B Construction Effects Summary

The construction effects evaluation indicates that all four alternatives will have multiple sites with impacts that rate high or severe. All alternatives are expected to utilize permanent road closures, temporary road closures, temporary detours, and have user delays due to mainline construction. Business access impacts are expected to be severe for all four altenatives it is estimated that construction for Alternatives 3 and 3-C is 4 years; for Alternatives 4 and 4-B, the construction duration is estimated to be 4.5 years.

4.1.6.11 Pedestrian Work Zone Accommodations During Construction

The evaluation of the need to provide pedestrian accommodation during construction was conducted in accordance with the NCDOT procedure, "Evaluating Temporary Accommodations for Pedestrians During Construction," and summarized in the *Pedestrian Work Zone Accommodations Assessment* (URS 2010a). As the project moves into the final design and construction phases, pedestrian accomodations will be developed in further detail to be consistent with the Traffic Control Plans Pedestrian activity was observed in some of the studied areas and was determined by the presence of existing sidewalks, worn paths, bus stops, or observing pedestrians in the vicinity. The locations found to have pedestrian activity include the following:

- Broadway and Riverside Drive
- East of the French Broad River on Hill Street, Atkinson Street, Patton Avenue, Clingman Avenue, and Haywood Street
- West of the French Broad River on Patton Avenue, Access Road for Westgate, Crowne Plaza Resort, and Sam's Club, Regent Parkway, Florida Avenue
- Haywood Road, Burton Street, and Hanover Street
- Brevard Road at I-240 and Shelburne Road
- Amboy Road

Exhibit 4.1 Phase Construction Concepts – Between Brevard Road and Amboy Road

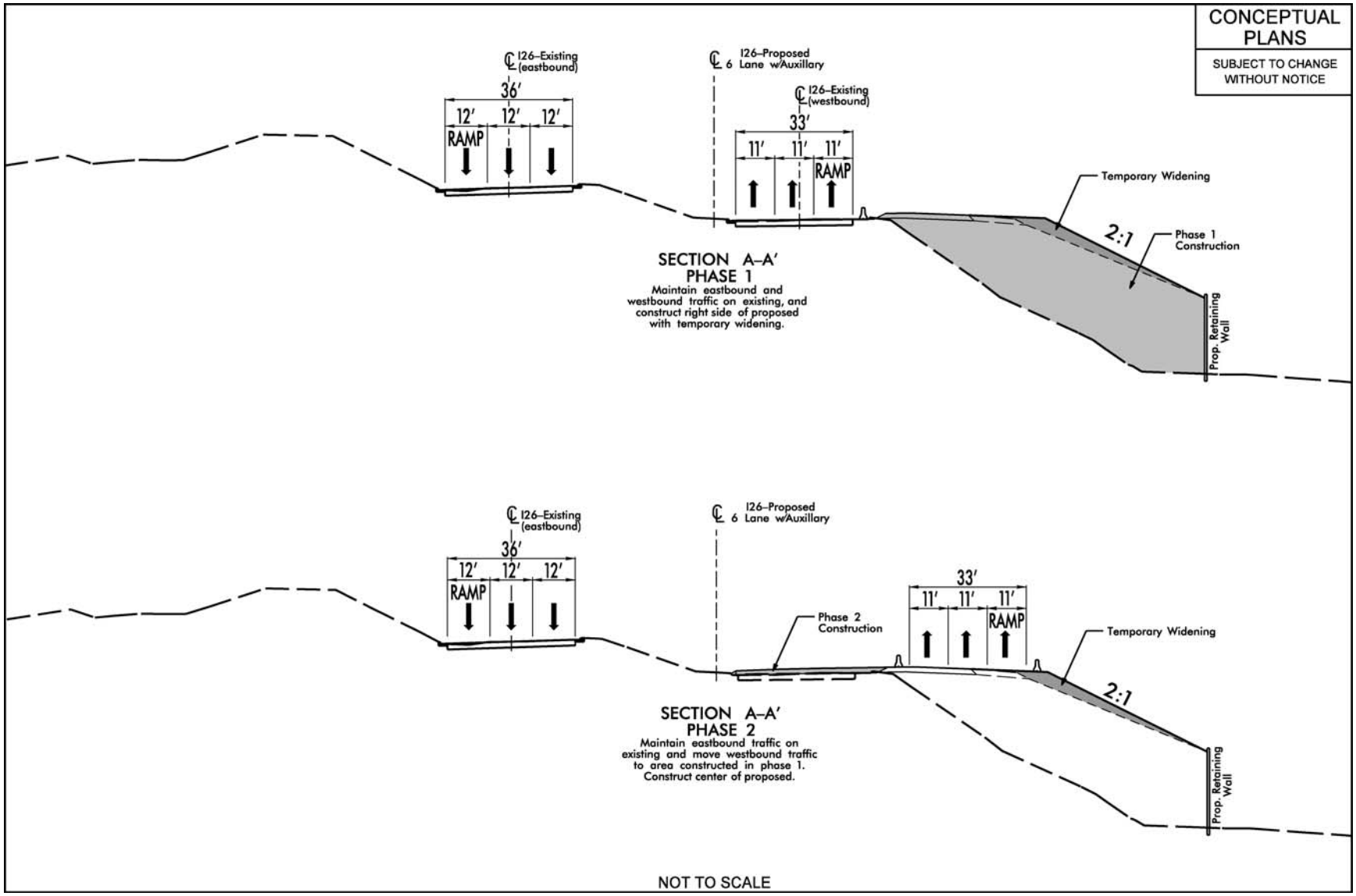


Exhibit 4.2 Phase Construction Concepts – Between Brevard Road and Amboy Road

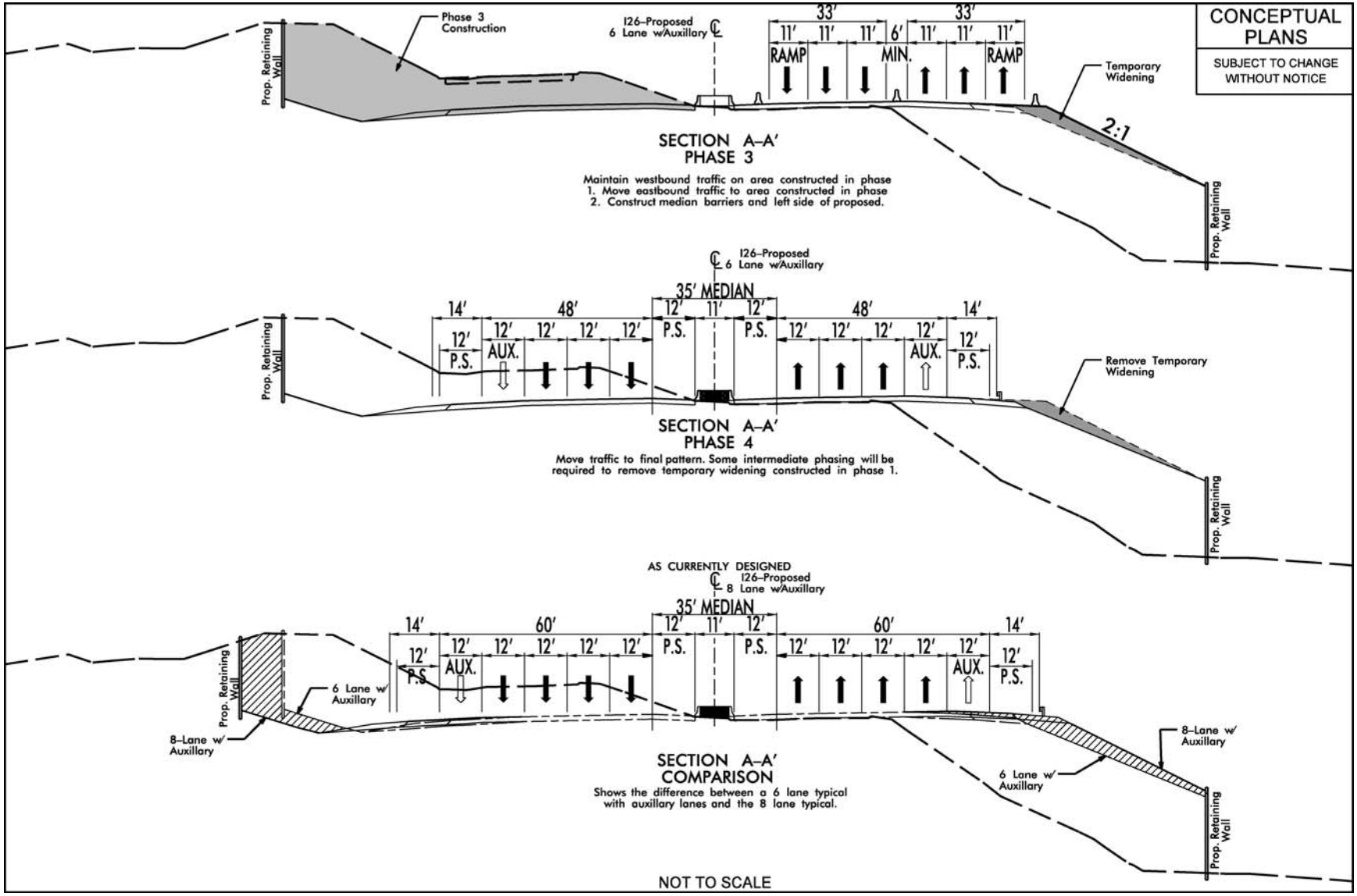


Exhibit 4.3 Phase Construction Concepts – South of bridge over State Street

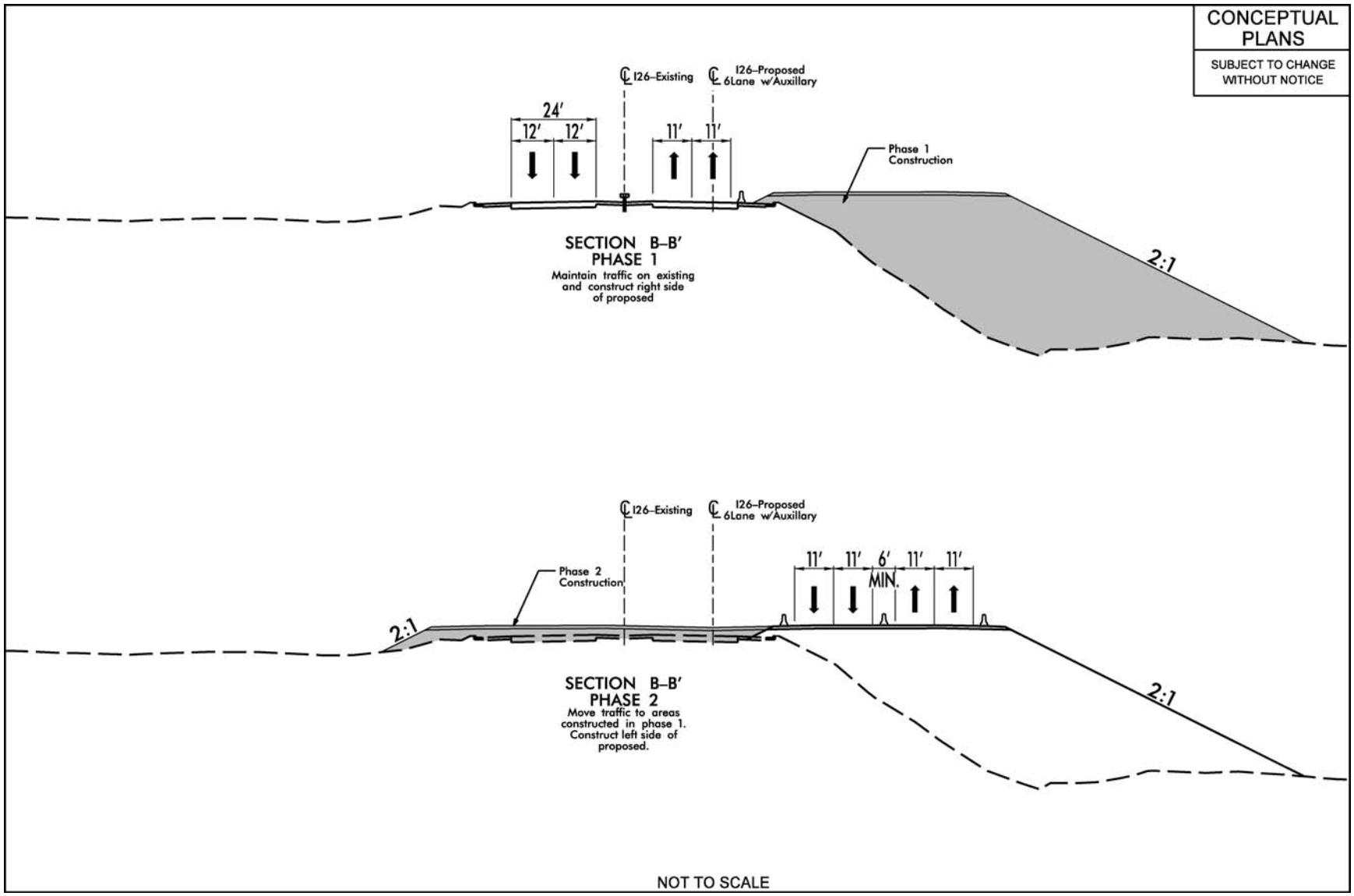


Exhibit 4.4 Phase Construction Concepts – South of bridge over State Street

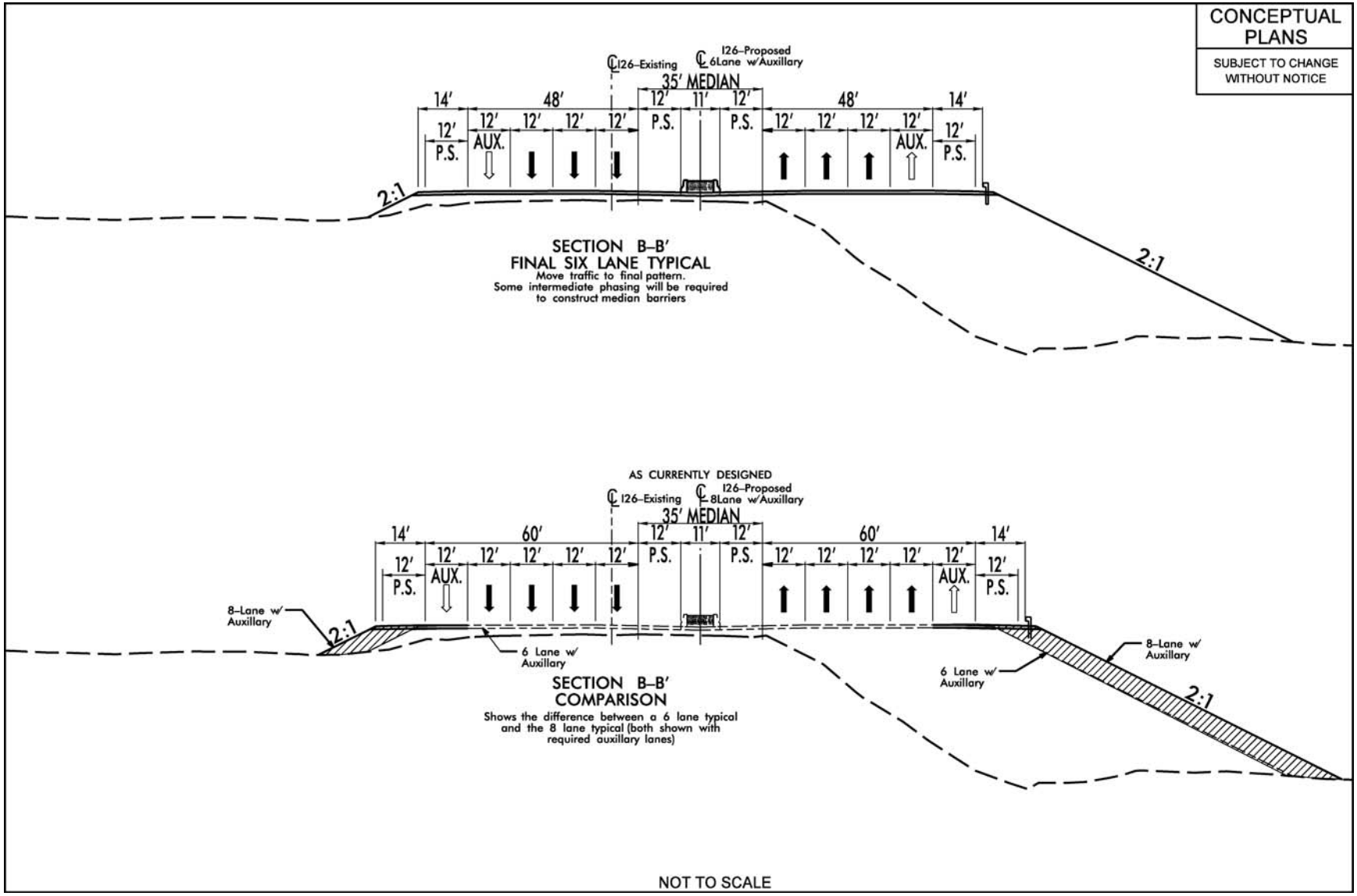


Exhibit 4.5 Phase Construction Concepts – North of Haywood Road Interchange

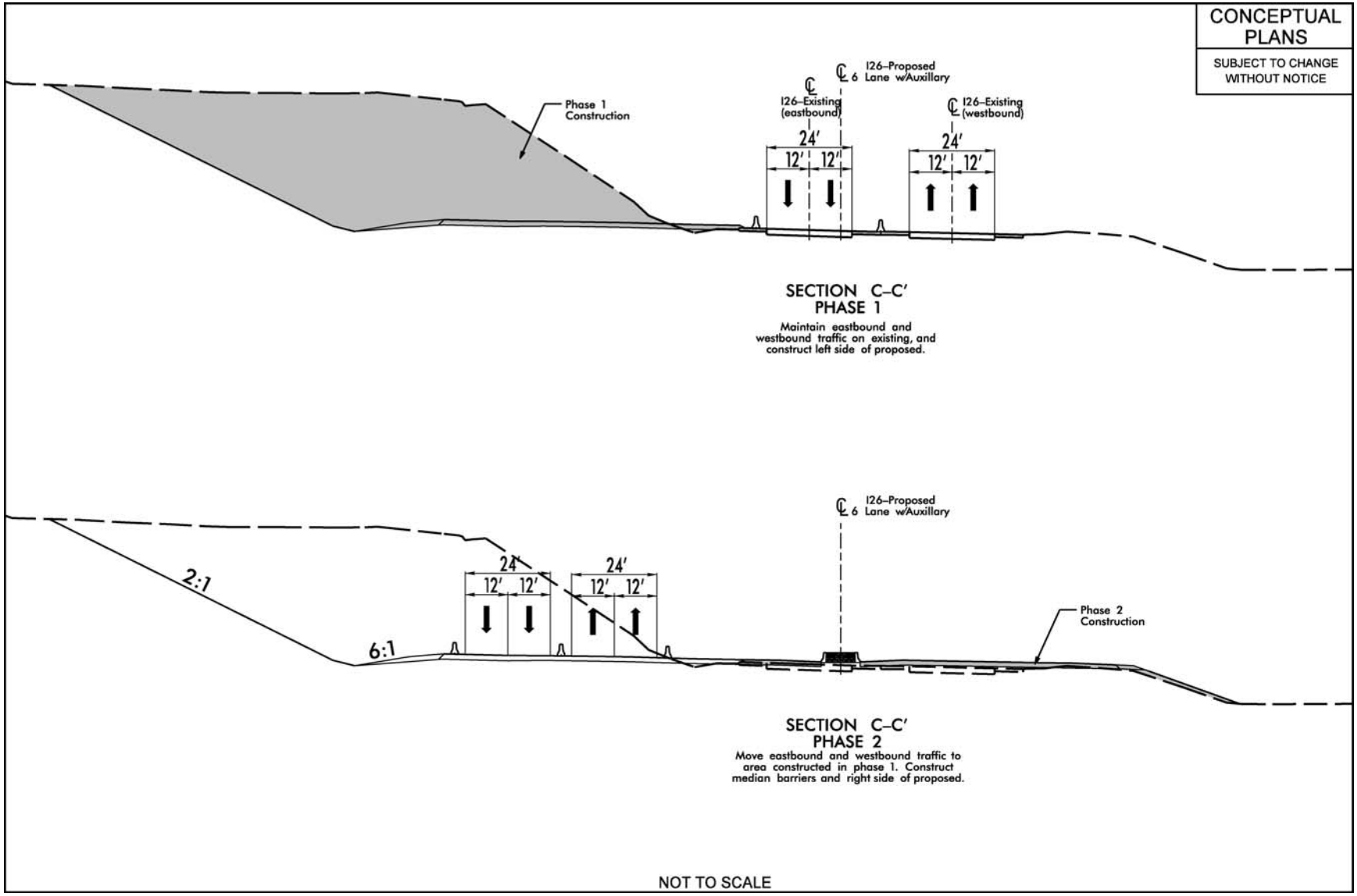
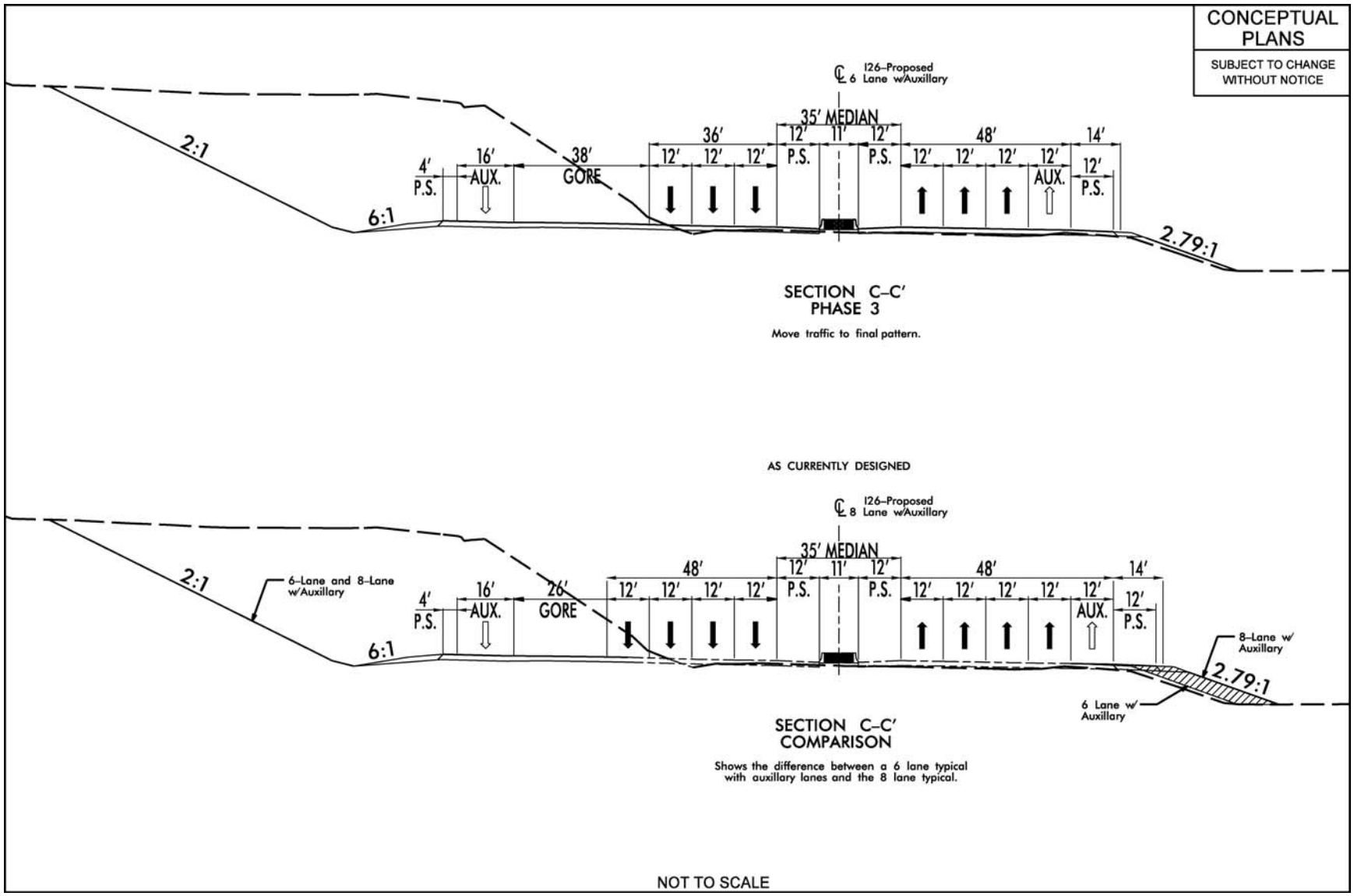
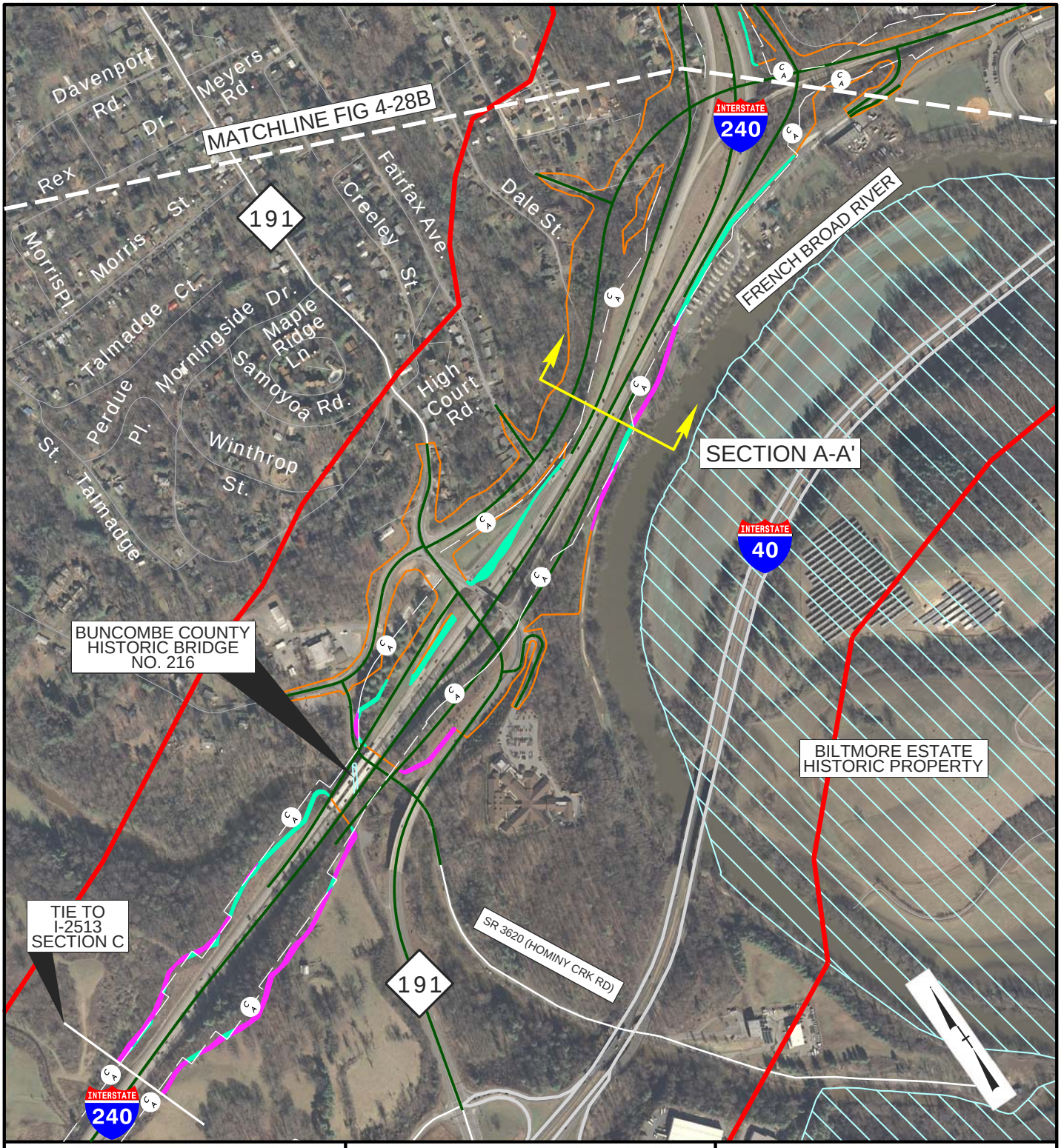


Exhibit 4.6 Phase Construction Concepts – North of Haywood Road Interchange





North Carolina
Department of Transportation

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Proposed Roadway Alignment
- Project Study Area
- Existing Control of Access
- Section with Construction Phasing Concept
- Matchline
- Design slopestake limit required regardless of 6 lane or 8 lane mainline typical section
- Increase in slopestake limits required going from a six lane typical section with auxiliary lanes to an eight lane typical section as shown in the current preliminary designs (Inside existing control of access limits)
- Increase in slopestake limits required going from a six lane typical section with auxiliary lanes to an eight lane typical section as shown in the current preliminary designs (Outside existing control of access limits)

Date: October 2015

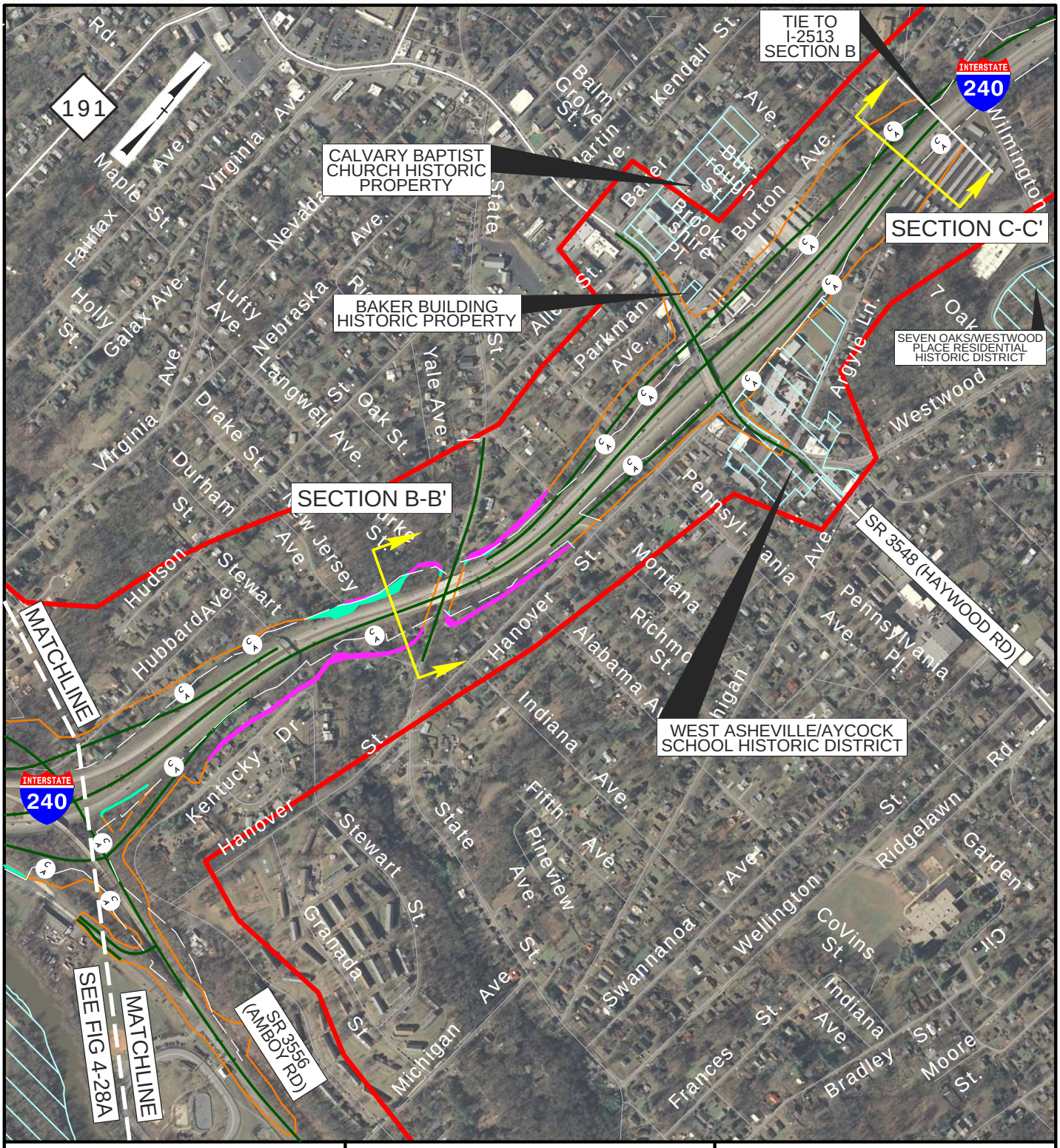
NOTE:

- Lane configurations considered included required auxiliary lanes.
- Scenarios are preliminary and subject to change as project designs are refined.

0 350 700 FEET

Figure 4-28a

SECTION A
PROJECT FOOTPRINT
SCENARIOS



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- Increase in slopestake limits required going from a six lane typical section with auxiliary lanes to an eight lane typical section as shown in the current preliminary designs (Outside existing control of access limits)

Date: October 2015

NOTE:

- Lane configurations considered included required auxiliary lanes.
- Scenarios are preliminary and subject to change as project designs are refined.

0 350 700 FEET

Figure 4-28b

SECTION A
PROJECT FOOTPRINT
SCENARIOS

The area around Broadway has sidewalks on the east side of US 19-23-70 and worn paths on the west side of the interchange. The areas east of the French Broad River have sidewalks provided and multiple transit stops. The areas west of the river have worn paths along the side of the road from heavy pedestrian activity and multiple transit stops. The area around Haywood Road and the residential areas along Hanover Road and State Street have sidewalks with several transit stops. The neighborhood on Fairfax Avenue and Virginia Avenue, which is residential, did not have sidewalks or worn paths, so it is assumed that any pedestrian activity would be in the street. The area around Brevard Road at I-240 has sidewalks on the bridge and worn paths along Shelburne Road. Amboy Road has sidewalks that start in the RV park and continue through Carrier Park. The area around Brevard Road at I-40 did not have sidewalks or worn paths and no pedestrians were observed during the site visit. No pedestrian activity was observed on Sand Hill Road, Pond Road, and South Bear Creek Road.

Data Evaluation and Recommendations

Temporary pedestrian accommodations would be needed during construction at the locations identified in the previous section. The locations where pedestrian accommodations would be needed have been further classified into three categories: on-site accommodations, off-site detour accommodations, and those where accommodating pedestrians would be difficult and require further evaluation.

On-site Pedestrian Accommodations

Based on the construction phasing for all sections of the project, the following locations are recommended and can safely maintain pedestrian traffic on-site during construction:

- Broadway
- Riverside Drive
- Hill Street and Atkinson Street (for all Section B alternatives)
- Patton Avenue east of the French Broad River
- Westbound Captain Jeff Bowen Bridge
- Haywood Road and Burton Street
- State Street
- Amboy Road

Off-site Detour Pedestrian Accommodations

Due to the phasing of the construction, some locations would not be able to safely maintain pedestrian access during construction and may need to detour pedestrians to an off-site location. Based on the construction phasing concepts for Section A, the Brevard Road bridge over I-240 would be closed while a new bridge is built. During this time pedestrians would require an off-site detour. The recommended detour would be to use Shelburne Road to Hominy Creek Road to the old Brevard Road bridge that crosses under I-240 and over Hominy Creek. The old Brevard Road is closed to vehicles and is a part of the *Asheville Greenways Master Plan Report* (City of Asheville 1998) as the Hominy Creek Greenway – Western Segment. Shelburne Road has a worn path that meets with a sidewalk at the intersection with Hominy Creek Road, which has no sidewalks or worn paths. The Hominy Creek Greenway is accessed from Hominy Creek Road, approximately 200 feet from the intersection with Shelburne Road.

Further Action

Further investigation is needed in order to determine a pedestrian detour for the access road to Westgate Shopping Center, Crowne Plaza Resort, and Sam's Club, and access to Regent Park, which is identified as an area having difficulty accommodating pedestrians. Because this area is so heavily traveled by pedestrians, it is important to search for a feasible detour to avoid pedestrians unsafely traversing the area. It is recommended that additional evaluations be initiated to determine whether a viable solution can be developed to adequately accommodate pedestrians during construction at this location.

4.1.6.12 Construction Waste

Construction waste material generated during clearing, grubbing, and other construction phases will be removed from the project site and burned or disposed of by the contractor in accordance with state and local regulations. Disposal of construction waste in wetlands will not be allowed unless properly permitted by USACE. Litter and other general trash will be collected and disposed of at local landfill locations.

NCDOT will require contractors to conduct historic, archaeological, wetland, and threatened and endangered species surveys prior to approval, and use of construction waste disposal and/or barrow sites identified for the proposed project.

4.1.7 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

As with any new roadway project, construction of the project would require certain irreversible and irretrievable commitments of natural resources, manpower, materials, and fiscal resources. Lands within the right-of-way would be converted from their present use to transportation use. Use of these lands is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land, or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion would ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous material would be expended to complete the project. In addition, large amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, while demand has increased, they are not in short supply and their use would not have an adverse effect on the availability of these resources. Any construction would also require a substantial one time expenditure of state and federal funds that are not retrievable.

Construction of the project would, however, improve a critical link in the long range transportation system for the region. The project is consistent with the long range transportation goals and objectives of the NCDOT TIP and the FBRMPO. It is anticipated that the proposed project would provide a freeway-to-freeway connection between I-26 south of Asheville and US 19-23 north of Asheville, improve the capacity of existing I-240 west of Asheville, and reduce traffic delays and congestion. It is also anticipated that the improved roadway would enhance long-term access opportunities around and through the Asheville area, and would support local and regional commitments to transportation improvement and economic viability. Benefits of the project would include improved mobility and system linkage.

In summary, the anticipated beneficial effects would balance the irretrievable commitment of resources caused by the project. The project is consistent with state and local goals of improving transportation service in the region and strengthening the area's economic base.

4.1.8 RELATIONSHIP BETWEEN LONG-TERM AND SHORT-TERM USES/BENEFITS

The most disruptive local short-term impacts associated with the project would occur during project construction. Existing homes and businesses would be displaced. However, adequate replacement housing, land, and space are available for homeowners, tenants, and business owners within the project area. Improved mobility and access to and from the study area could stimulate economic and business growth and viability as well as long-term residential interest.

Construction activities could create short-term air quality, noise, and visual impacts for nearby residents and businesses. Normal traffic patterns would also be disrupted. Implementation of BMPs and NCDOT standard construction procedures would help minimize these impacts.

Specifically, increased turbidity levels in creeks and streams adjacent to construction activities could temporarily affect localized water quality. BMPs, as described in Section 4.1.6.6, would minimize potential water quality impacts. In addition, NCDOT will consult with USACE in order to determine measures that will minimize impact to waterways and wetlands.

The local short-term impacts and use of resources by the proposed action would be consistent with the maintenance and enhancement of long-term productivity. Completion of the project would, over the long term, be consistent with local, county, regional, and state transportation plans.

4.2 INDIRECT AND CUMULATIVE EFFECTS

Indirect and cumulative effects of the project were studied for both the proposed project and for a larger regional area that encompasses the reasonable and foreseeable projects along the I-26 Corridor. The indirect and cumulative effects for the project study area are included primarily in the ILUS/LUSA (URS 2015g), and supporting information is also provided in the *Community Impact Assessment Update* (URS 2015f) conducted for the project.

The potential cumulative effects of reasonable and foreseeable projects within the regions for the I-26 Corridor were evaluated in the *Asheville Regional Cumulative Effects Study* (CES) (NCDOT 2014a).

4.2.1 INDIRECT AND CUMULATIVE EFFECTS – PROJECT STUDY AREA

The FLUSA was established as the area within which the proposed project alternatives have the potential to induce land use change. This study area encompasses areas examined for potential increases in development pressure as a result of project construction.

The 2010 ILUS/LUSA report verified the FLUSA developed for previous indirect effects analyses conducted for I-2513 (HNTB North Carolina, PC 2010b). The FLUSA is based on a 2-mile radius of the interchanges along the project. At the time of the report, the FLUSA was re-evaluated with regard to revised designs and conversations with local planners and determined to still be valid.

The time horizon for the 2010 report was 2030, which was consistent with the FBRMPO *Transportation 2030: A Multi Modal, Long Range Transportation Plan for Buncombe, Haywood and Henderson Counties* (FBRMPO 2005). While the FBRMPO report still maintains the 2030 date, the design year for I-2513 is currently 2035, and therefore the horizon year for this validation will be 2035.

Based on available information, notable features within the FLUSA include numerous NRHP sites and districts, including the Biltmore Estate. Also within the FLUSA are several conservation properties, several hazardous disposal sites, a portion of the Pisgah National Forest, UNC-Asheville, and the North Carolina Western Farmers Market.

As part of this assessment, an Indirect Land Use Effects Screening Matrix was developed, which qualitatively assesses factors that influence land development decisions. Each factor receives a rating from high concern for indirect effects to less concern for indirect effects. Based on the information gathered, the factors in the screening tool indicate a lower concern for indirect and cumulative effects as a result of the project. The result of the Indirect and Cumulative Land Use Effects Screening Matrix suggests “Possible Indirect Effects.” Given the scope of the proposed project and concerns about cumulative effects associated with all of the I-26 improvement projects, an *Indirect Screening and Land Use Scenario Assessment* (URS 2015g) was also completed to identify possible areas potentially subject to change in land use and whether indirect (secondary) and cumulative effects are anticipated, both with and without the project.

Seven subareas within the FLUSA are identified as "probable development areas.” Probable development areas are those identified in ICE Land Use Scenario Assessment studies where the Screening ICE indicates likely or probable changes in land use as a result of the project. The probable development areas include the following:

- US 19-23/I-40 interchange area
- Sand Hill Road/Oakview Road/Sardis Road area
- Brevard Road corridor
- Haywood Road/I-240 interchange area
- I-240/Patton Avenue/Westgate Shopping Plaza area
- I-240/Patton Avenue/Clingman Avenue/RAD area
- US 19-23 /Broadway interchange area

Based on a close examination of these seven probable development areas, land use changes as a result of the proposed project are expected to be minimal within the FLUSA. The pace of infill and redevelopment may be accelerated somewhat as a result of the project; however, commercial, residential, and industrial growth and redevelopment is already occurring in many of these areas and is expected to continue with or without the proposed project.

The construction of the proposed project is not expected to substantially influence regional population growth. Most of the project is a widening project, with no new access being provided to properties other than the extension of Amboy Road across I-240. However, though West Asheville is experiencing somewhat of a renaissance, the restoration of Patton Avenue to a local street (as is provided with Alternatives 4 and 4-B), along with associated streetscape improvements, could modestly increase interest in this area that does not already exist. Nonetheless, any potential effects to water quality as a result of this planned development would be tempered by existing land use controls and development regulations covering

watershed protection, stream buffers, erosion and sedimentation control, and post-construction runoff.

Given the minimal indirect effects of the project, any contribution of the project to cumulative effects resulting from current and planned development patterns should be minimal. For these reasons, potential indirect and cumulative effects to downstream water quality should be minimal.

4.2.1.1 Indirect Assessment Summary

Previous studies have determined, based on land use and transportation trends, local and regional land use planning and policy, and economic indicators, that future growth and development within the boundary of the FLUSA is anticipated to occur in previously identified areas. The project may have the ability to accelerate current growth and development patterns, particularly near interchange modifications; however, local ordinances are in place to regulate such growth, and land use plans will guide future development so as to meet the goals and objectives as described by the city.

Although the construction of the proposed project has the potential to somewhat accelerate planned infill, redevelopment, and development within the FLUSA, the build scenario is not expected to result in notable impacts to natural resources or downstream water quality that would not otherwise occur. The water quality concerns associated with future development in both the No-Build and build scenarios would be mitigated by regulations covering watershed protection, stream buffers, and stormwater management.

Generally, the widening of existing I-240 (Section A) and the creation of a new location I-26 Connector should provide better connectivity in the interstate network throughout this portion of Asheville and Buncombe County, as well as address forecasted traffic deficiencies, reduce congestion and traffic delays along the existing I-240 French Broad River crossing, and increase the remaining useful service of the existing I-240/Patton Avenue bridge by reducing traffic volumes.

Much of the future growth within the overall FLUSA could likely be attributed to the proximity of I-26, I-40, and the City of Asheville. Growth is restricted within the project FLUSA by the presence of the Biltmore Estate, lack of existing or planned public sewer, steep topography, and the predominantly built up nature of much of the FLUSA. Because of these development constraints, new development, redevelopment, or infill related to the proposed project would likely be limited to specific areas of the FLUSA. Commercial development or redevelopment would likely occur along the French Broad River (RiverLink areas), surrounding or near existing interchanges (including the US 19-23/I-40, I-240/Patton Avenue, and I-26/Broadway interchanges), and along the built up Haywood Road, Patton Avenue, Brevard Road, and Broadway corridors.

In terms of different impacts by alternatives, Section B is likely the only section that would have different impacts depending on the chosen alternative. Although the other sections have different alternatives under consideration, the alternatives within these sections follow the existing alignment, or remain mostly within the existing right-of-way. Section B includes four alternatives, two of which – Alternatives 3 and 3-C –would likely have different impacts than Alternatives 4 and 4B. Alternatives 3 and 3-C would not separate local traffic from I-240 through traffic, whereas Alternatives 4 and 4B would. Planners noted that alternatives that would return Patton Avenue to handling only local traffic would likely result in increased development along

the Patton Avenue corridor. Alternatives 4 and 4-B would also provide a new interstate access point in close proximity to underutilized areas along the east side of the French Broad River, albeit in an area where steep slopes and land use controls would help control growth.

Overall, Alternatives 4 and 4-B would provide the greatest potential for land use change; however the lack of available land and existing land use controls in the area would temper any large-scale land use changes.

Specific alternatives are listed below.

Alternative 3 and 3-C

With respect to estimating the specific indirect effects for the proposed project, Alternatives 3 and 3-C would have a low to moderate potential to cause land use changes or accelerate previously planned development throughout most of the FLUSA. Both Alternatives 3 and 3-C would generally bisect medium- and high-density residential areas, industrial areas (with many vacant or underutilized tracts of land), and commercial nodes/corridors (generally associated with the interchanges along the corridor). Some infill development may take place, despite the presence of steep topography and an already built up environment. Neither alternative would include new access to undeveloped tracts of land or the creation of new interchanges.

In general, development trends in the defined probable development areas are expected to be similar across all four Section B alternatives. However, infill and development trends in the probable development area for I-240/Patton Avenue/Clingman Avenue/RAD area are expected to be less influenced by Alternatives 3 and 3-C, as they would not separate the local Patton Avenue traffic from the I-240 through traffic similar to Alternatives 4 and 4-B.

These factors, coupled with the proposed controlled access nature of the facility, would likely limit development related to these alternatives.

Alternatives 4 and 4-B

With these alternatives, I-240 access to US 19-23-70 would be shifted slightly north from its current location, but a new interchange would not be created. The two proposed I-240 bridges across the French Broad River would connect to the new section of I-26 west of the river, but access would be fully controlled. Some infill development may take place, despite the presence of steep topography and an existing urban environment. However, unlike Alternatives 3 and 3-C, Alternatives 4 and 4-B would include the construction of new interstate access points close to underutilized areas along the French Broad River associated with RiverLink. Since plans are already in place for these areas (i.e., *Wilma Dykeman Riverway Master Plan*), Alternatives 4 and 4-B are not expected to induce development in these areas; however, the project may accelerate these already planned developments.

Overall, these alternatives have a low to moderate potential to indirectly cause land use changes or accelerate previously planned development throughout the identified probable development areas in the FLUSA.

4.2.2 CUMULATIVE EFFECTS – REGIONAL LEVEL

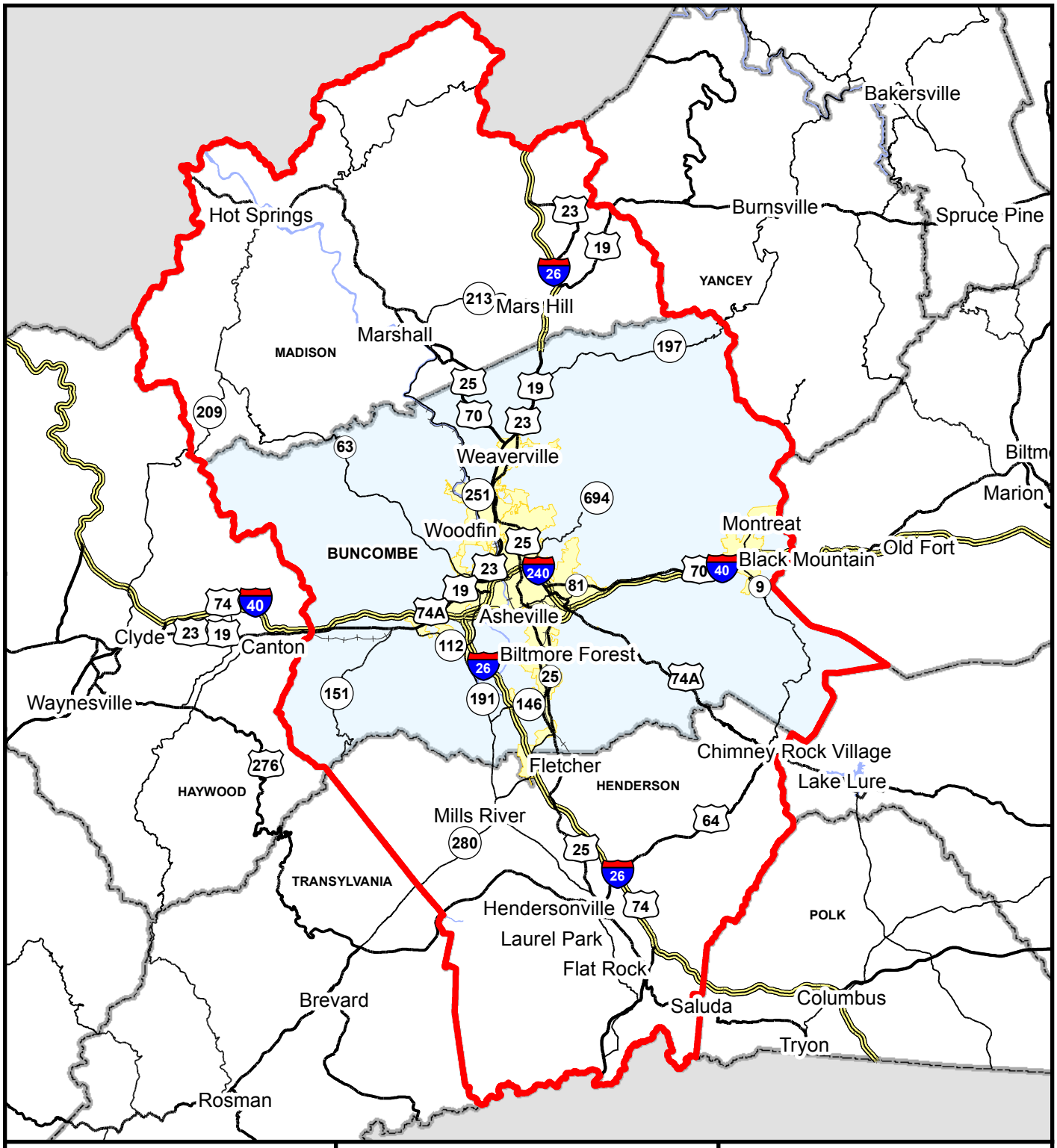
The *Asheville Regional Cumulative Effects Study* (NCDOT 2014a) assessed the regional context of development within Madison, Buncombe, and Henderson counties with respect to a

number of transportation projects, including STIP I-2513. Through interviews with local planners and a grid base analysis of available GIS data, a Growth Potential Map, Community Features Map, and Environmental Sensitivity Maps were developed and assessed.

The CES study area was developed to encompass the area for projects included in the 2012-2020 State Transportation Improvement Plan (NCDOT 2009a), the fiscally constrained FBRMPO Transportation Plan (FBRMPO 2008) and the prioritized NCDOT Draft 5 year work plan and includes portions of Madison, Buncombe, Henderson, and Haywood counties. The study area is shown on Figure 4-29 and includes the following projects:

- Madison County
  - R-2518, US 19 Widening (13.8 miles)
- Buncombe and Madison Counties
  - A-10, I-240, Multi-lane Freeway
- Buncombe and Henderson Counties
  - I-4400, I-26 Interstate Widening (13.6 miles)
  - I-4700, I-26 Interstate Widening (8.6 miles)
  - U-3403, NC 191 (Brevard Road Old Haywood Road) NC 280 to NC 112 (Sardis Road); Widen to Multi-lanes (9.1 miles)
- Buncombe and Haywood Counties
  - R-4406; US 19-23 Widening – Candler to Canton (9.1 miles)
- Buncombe County
  - I-2513, New Route Multi-lane Freeway (5.1 miles)
  - I-4401, I-40 Add Lanes (2 miles)
  - I-4409, I-40 Widening and Upgrades
  - I-4759, I-40 Construct Roadway
  - R-2813, NC 146 Widening (3.5 miles)
  - U-2801, US 25A/Sweeten Creek Road Widening (7.3 miles)
  - U-3301, Leicester Highway/NC 63 Widening and Relocation (4.3 miles)
  - U-3601, NC 191 Widening (1.8 miles)
  - FS-0213A, SR 3412 (Sand Hill Road) NC 112 (Sardis Road), US 19-23 (Smoky Park Highway to NC 191 (Brevard Road), Widen to multi-lanes (5 miles)
  - U-3302, I-240, US 25 (Merrimon Avenue) and SR 1781 (Broadway), Revise Interchange
  - U-5019, Wilma Dykeman Riverway
  - U-4715B, Asheville Signal System
  - I-4759, I-40 Liberty Road – New Interchange
- Henderson County
  - R-505, NC 225 Upgrade to Freeway
  - R-2588, NC 191 Widening (7.3 miles)
  - R-4430, SR 1783 Widening/Improvements (2.7 miles)
  - U-4428, US 64 Widening (3 miles) Balfour Parkway – New Expressway, four lanes on new location between NC 191 and US 64 (6.69 miles)

The study included interviews with local planners, site visit observations, data collection, evaluation of other development activities in the study area, growth trends, water and sewer services, and water resource/development regulations. The CES also included development of an inventory of notable features, including natural or manmade features that were large enough to be notable on a regional scale.



North Carolina Department of Transportation

Legend

- Interstate
- US Highway
- NC Highway
- Railroad
- Cumulative Effects Study Area
- Water
- Municipal Boundary
- County Boundary

Date: June 2015

0 3 6 Miles

I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Figure 4-29

Cumulative Effects Study Study Area

The study included development of a series of maps to assess how environmentally sensitive different parts of the CES study area are to growth potential, the human environment, and the natural environment. The conclusions from the mapping exercise are included in the following sections.

4.2.2.1 Growth Potential Mapping

Growth potential in the region was determined through analyzing a number of different sources. Data collection of population and employment projections, examination of local development plans and existing and planned permits, availability of water and sewer services, presence of steep slopes, and the availability of land figure heavily into the creation of a growth map. Interviews with local planners, regional entities, and other public and private entities help supplement this information to create a robust growth potential area. The following presents the details of a number of these data.

Growth in the region is largely limited by natural constraints (steep slopes, floodplains, and conservation areas). Furthermore, most counties and municipalities have enacted various regulations to promote growth in certain areas, while discouraging growth in others. Local planners indicated they are noticing a shift in industrial development returning to Asheville. This reverses a trend of industry leaving the region for cheaper and less environmentally challenging development areas in South Carolina. Business operations including Sierra Nevada and Oskar Blues Breweries in Henderson County, New Belgium Brewery (along the I-2513 corridor), Jacob Homes manufacturers, and a Buncombe County Distribution Center near the I-4759 project along US 19-23-25, (all 90,000+ square feet) have anchored the increase in development and helped attract additional industry. In addition, as the economy rebounds, local planners indicated that many industries are relocating to existing industrial sites that were abandoned and still for sale as a result of the economic downturn. These areas already have access to the transportation network, are located in flat areas, and are relatively cheap to retrofit.

The strong growth areas are identified as areas of more intense growth potential, which is anticipated to include regional and community shopping centers, major employment centers, and large residential developments. Moderate growth areas are expected to be more modest in terms of intensity and scale, and weak growth areas have notable challenges to development, such as steep slopes or limited access. Specific areas of expected or anticipated growth include development pressures along Upward Road, Howard Gap Road, and the proposed Balfour Parkway in Henderson County. Buncombe County has designated a substantial portion of its land for the purposes of open use, in which all uses are allowed by right. Buncombe County planners indicated that they are trying to concentrate development along existing transportation corridors and focus development on infill by limiting and prohibiting development on certain percentage slopes, through the creation of zoning ordinances, and not actively expanding public water and sewer services. Buncombe County now requires developers to present plans that address slope percentages, conform to existing zoning (or make clear why a rezoning is necessary), and include provisions for water/sewer service during the development review process. They further indicated the fastest growing areas within the county were in the communities of Arden and Candler, notably between Exits 37 and 40 along I-40, while areas such as Leicester, Cane Creek, and Fairview areas did not experience the growth that was anticipated several years ago.

The projects discussed in the *Asheville Regional Cumulative Effects Study* fall within Buncombe County's Public Storm Sewer System and are governed by a National Pollutant Discharge

Elimination System (NPDES) Phase II Stormwater Permit. In addition, the City of Asheville is governed by a Phase I Stormwater Permit, required for those municipalities with populations over 100,000 or more that owned and operated a municipal separate stormwater sewer system. All construction activities must comply with these permits. The City of Asheville, the Town of Woodfin, and Buncombe County each have an associated Stormwater Management Program that also requires compliance with their respective ordinances.

The FBRMPO completed both population and employment projections for 2040. Population and employment projections were based on the North Carolina Office of State Budget and Management projections (April 2012) that were extrapolated to 2040. In all cases, population is expected to increase, independent of any transportation improvements. Henderson County has the highest growth rate for both population and employment, while Buncombe County retains a high percentage of the overall population and employment due to the presence of the Asheville urban area. Madison County is expected to grow at just under 1 percent per year, but experience a notably higher increase in employment. Local planners in Madison County did not indicate any particular areas where employment would be concentrated, while Buncombe and Henderson counties indicated that employment would be concentrated in the urban centers of Asheville, Hendersonville, and Fletcher.

As noted in interviews with FBRMPO, the regional employment concentrations are largely in the Hendersonville, Asheville, and Fletcher areas. In Henderson County, downtown Hendersonville and adjacent areas around the I-26 interchange with US 64 have employment concentrations, likely due to the concentration of downtown businesses. The area around Asheville Regional Airport also is heavily concentrated with employment centers. There are several major industrial employers in the vicinity of the airport, including Meritor Heavy Vehicle Systems and Continental Tire Solutions – two of the largest employers in Henderson County.

In Buncombe County, employment is concentrated in downtown Asheville and southern Asheville, along US 25. Asheville is home to several of Buncombe County's largest employers, including Mission Health and the Biltmore Company. Additional employment concentrations are located along I-40 and I-26. As healthcare constitutes approximately 20 percent of the total employment and is continuing to grow, it will likely continue to anchor employment in the region.

Fewer employment concentrations are found in Madison County. The two main concentrations, one in the Town of Marshall and one in the Town of Mars Hill, are associated with county government and Mars Hill University, respectively.

During an interview with Buncombe County, the comment was made that the Asheville Connector will have negligible influence on the timing, pattern, and intensity of development in the county. It is believed that the project is more likely to influence the intensity and character of development in downtown Asheville.

4.2.2.2 Human Sensitivity Mapping

For this study, the human sensitivity mapping consists of historic districts and places; institutional structures such as schools, hospitals, and churches; and areas with minority populations. The human sensitivity mapping is a "here and now" snapshot of the areas that humans have impacted in the CES study area through the process of development and human settlement. The areas around Asheville, Weaverville, and Hendersonville accurately depict where humans have settled, built churches and hospitals, and where minority populations live. Moving away from the developed areas, the analysis indicates less population and fewer

structures. Much of the development that has taken place is along the main transportation corridors in the region.

The areas of high sensitivity generally are located primarily in or near urban areas. In these areas, development will generally have notable impacts on the human environment due to proximity to structures and minority populations. The areas around Asheville are to be expected because Asheville has a rich historical heritage, and, since it is an urban area, there is a high concentration of medical facilities and churches. Moving away from the urban centers, the areas do not include as many manmade structures or minority populations. During the interviews, minority communities were noted in the Swannanoa area, through Weaverville and Woodfin, and in the Brickton community.

The areas of low sensitivity are characterized by the lack of any major human constraints. These areas may consist of very low minority populations or the absence of manmade structures. There is expected to be little or no impact to the human environment in these grids. Areas east of Fletcher, east of Asheville, and around Mars Hill are examples on the map of low sensitivity. These pockets within the study area are sparsely populated and contain few or no historical structures.

STIP Project I-2513 would connect I-26 from southwest Asheville to just north of Asheville in Buncombe County. This area has already had notable human impacts as the Asheville area is urbanized with an established road network and numerous historic sites, churches, schools, and hospitals. The proposed widening of the roadway on partial relocation would be occurring in an area that is already urbanized.

4.2.2.3 Natural Environment Sensitivity Mapping

The natural environment components include water bodies, 303(d) streams, trout waters, floodplains, agricultural soil, slopes, watersheds, natural heritage, and wetlands. The mapping indicates areas that are environmentally sensitive and may be impacted during development.

The natural environment sensitivity mapping indicates urbanization has already occurred in areas that are highly sensitive. Asheville, Hendersonville, Mills River, Fletcher, Woodfin, and Mars Hill are all near the more sensitive areas on the map. The topography of the CES study area consists of hills, mountains, ridges, and steep slopes. As development has occurred in the region, mankind picked out locations that were the most accessible, and in this case, it was in the valleys, along waterways, and in the lower elevations. As infrastructure was built and services became available, they were predominately built in the lowlands—the same location as streams, trout waters, 303(d) streams, floodplains, and watersheds. The topography of the region dictates that development occurs in the same locations as many of these environmental features.

Buncombe County and the City of Asheville have implemented ordinances and land use controls to help protect and minimize impacts to the surrounding natural elements. Settlement patterns have already occurred such that many of the sensitive areas were affected by development prior to the implementation of these ordinances and land use controls. A number of controls are in place through the UDO, including the following:

- Zoning
- Floodplain protection
- Protected mountain ridges

- Hillside area development
- Soil erosion
- Sediment control
- Stormwater management

Buncombe County has also responded to help preserve and protect the natural environment by adopting the following ordinances:

- Erosion and sediment control
- Flood hazard reduction
- Land development and subdivision
- Stormwater management
- Water supply watershed protection
- Zoning

Because the topography of the area dictates that settlement take place in areas often considered more sensitive, the City of Asheville and Buncombe County have responded by regulating the amount and types of impacts that development in the region can have in the future.

4.2.3 CUMULATIVE EFFECTS STUDY CONCLUSIONS

4.2.3.1 Regional Cumulative Effects Summary

As discussed in the *Asheville Regional Cumulative Effects Study* (NCDOT 2014a), regional cumulative effects can be expected for notable cultural, community, water quality, and natural habitat features. This is predominantly due to features having minimal incorporation in local planning protections and/or policies. For community, water quality, and natural habitat features, present and future policies indicate shifts including these attributes, but they have historically not been prioritized. Recently, NCDOT produced a draft Indirect and Cumulative Effects Screening Tool aimed at evaluating study areas for the resources listed above. For the purposes of the CES an initial analysis was completed using the tool to rate cumulative impacts to cultural, community, water quality, and natural habitat features from low to high concern (low, medium-low, medium, medium-high, and high concern). A detailed explanation for each group of resources follows.

4.2.3.2 Regional Cumulative Effects

Despite the large tracts of available land, local officials suggest there are a number of constraints to development in the region, notably natural environmental features and topography. Potential land use effects as a result of the projects noted in Section 4.2.2 are further tempered by the fact that the projects are not expected to provide a large number of new access points or opportunities for traffic exposure to properties along the major roadways and will generate marginal travel time savings. Local planners have indicated that commercial, industrial, and residential development is anticipated to occur regardless of whether the projects advance forward. The extent of potential indirect land use effects as a result of these projects will be largely dependent upon several key variables, including the future local economy and market for development, public infrastructure projects (most notably water and sewer), and the limited supply of developable land.

Regional Cultural Resource Impacts

Impacts and effects on cultural resources, both historic architecture and archaeological, are typically conducted on a project-by-project basis through coordination, as impacts are either typically direct or indirect (through viewshed or proximity). In addition, there are very few resources located within the individual project study areas or close to the transportation corridors. Potential impacts are addressed in three different ways: avoidance, minimization, and mitigation. Avoidance is the first strategy employed, selecting an alternative that avoids a resource. Minimization modifies the design alternatives to reduce the level of impact to a resource. Finally, if no reasonable or prudent alternative exists, mitigation is employed to offset the impact to a resource. Cumulative effects to these resources were determined to be medium-low to low based on relative protection and lack of density along the corridors.

Regional Community Resource Impacts

As the proposed projects have been appropriately planned for and expected over the past several years, many of the updated plans, policies, and local projects have incorporated elements of the projects. As such, many of the new parks and recreational facilities have been constructed outside of the immediate vicinity of the study areas and are not expected to experience major impacts as a result. In addition, many of the churches, cemeteries, and schools have either relocated after the original construction, or are located at a sufficient distance from the projects to be avoided. The potential for recurring impacts to a number of communities and resources along both the I-26 and I-40 corridors, including some minority and low-income communities, exists. Close coordination with local, state, and federal agencies as well as potential avoidance, minimization, or mitigation should be considered in any such cases.

Potential cumulative effects to the Montford community and the Biltmore Estate in Asheville as a result of these projects should continue to be closely coordinated as the design options and environmental documents are completed, as these two resources are major features and establishments within the City of Asheville.

While the travel time savings for the individual projects are minimal, collectively the projects may benefit the region's community resources by increasing regional mobility and generally relieving congestion. Decreases in congestion could enhance some of the user benefit of community resources, depending on the type of resource.

For regional community resources such as the national forests in the area, increasing regional mobility could result in an increase in usage as more residents of the area are willing to travel to the forests to recreate. Locally, community resources could be enhanced by the diversion of traffic away from the community resources (i.e., church or community center). This could enhance the user experience by decreasing noise and improving local air quality around the resource.

Benefits to regional mobility may extend to the region's agricultural industry, which includes, among other types of farming, Christmas tree and berry farming. Increased regional mobility would allow farmers in the region to more easily access markets within the region, as well as outside the region such as Charlotte, the Triad, and the Triangle.

Relocations and other direct impacts may result in additional stress to low income and minority communities that had been previously impacted by the original construction of the highways. Although individually the projects may not have notable effects on these communities,

cumulatively the projects could result in additional stress to regional low-income and minority populations.

Cumulative effects to these resources were determined to be medium-high to medium-low based on the previous impacts to communities and potential positive community benefit.

Regional Water Quality Resource Impacts

There are very few large areas of undeveloped land within the project study area. The few available areas of large, undeveloped land are located in rural areas, such as northwestern Buncombe County and western Madison County. The projects would not provide additional access to these areas and, given the distance of these areas from the projects, any increases in mobility associated with the projects would not influence development of these areas.

All of the projects would address increases in impervious surfaces in the individual project design through the use of BMPs. It is possible that these projects could have cumulative impacts when combined with the ongoing urbanization and suburbanization of the region. The increases in impervious surfaces associated with the construction of buildings, homes, and parking areas could lead to a deterioration of water quality in the absence of BMPs.

Cumulative effects to these resources were determined to be medium to medium-low due to the lack of comprehensive protection standards and ordinances, potential of urbanization and suburbanization, and presence of BMPs.

Regional Natural Resource Impacts

Most of the regional study area in the vicinity of the projects has been previously developed and is located in the low sensitive areas of the region. Through county regulations, steep slopes and other natural features, conservation efforts and lack of development are located on the periphery of the study area. In addition, those sensitive areas located adjacent to the projects are protected as part of the Pisgah National Forest, the Blue Ridge Parkway, and under conservation agreements. It is unlikely that the currently identified projects would have a cumulative impact on any of these resources.

There are several tracts and areas of agricultural lands located along and within the project study areas that do have the potential to be impacted/redeveloped as growth occurs along the corridors. These areas are afforded some level of protection through the Voluntary Agricultural District (VAD) and the Enhanced Voluntary Agricultural District (EVAD) system as well addressed as goals and objectives through comprehensive and small-area, community plans.

Cumulative effects to these resources were determined to be medium to low based on the previous impacts to natural areas and efforts to protect lands through steep slope ordinances and national/state park designations and efforts to purchase conservation lands.

4.3 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

4.3.1 DIRECT IMPACTS

Estimated environmental impacts associated with the proposed alternatives are provided in Table 4-33. The impacts for the project throughout this DEIS are discussed for each of the individual sections of the project. To allow for a comprehensive evaluation of the total impacts

that would occur as a result of the proposed project, an additional table is included (Table 4-34) that shows the total impacts for each of the combinations of alternatives being considered.

Some of the projected effects of the project can only be presented qualitatively and, therefore, are summarized in Table 4-35. These issues include community cohesion, economic effects, regional planning consistency, visual impacts, water quality, soils, and mineral resources. These impacts are briefly summarized below.

4.3.1.1 Consistency with Land Use, Transportation, and Other Local Plans

An evaluation of the consistency with local land use, transportation, and other locally developed plans was developed to determine how well each of the detailed study alternatives met the goals set forth in the plans. The evaluation is largely qualitative, as many of the goals included in the plans do not include quantitative performance measures. Each of the plans was evaluated and rated on a scale depending on how consistent the alternative was with each of the goals. The following scale was utilized in the qualitative evaluation:

● Consistent with Plan

⦿ Mostly Consistent with Plan

◉ Partially Consistent with Plan

⊙ Minimally Consistent with Plan

○ Inconsistent with Plan

The summary of the consistency evaluation is included in Table 4-35.

4.3.1.2 Visual Effects

Located in the mountainous regional landscape of North Carolina, the visual background of the project study area is comprised of changes in elevation punctuated by peaks, ridge lines, valleys, and the winding course of the French Broad River. The city of Asheville is generally situated on a hill crest on a mountainous plateau along the French Broad River. The project study area runs in a north-south direction just west of the Asheville downtown area.

Section C

Visual impacts of the project would be similar among three of the four build alternatives being considered for this section of the project. Alternatives A-2, C-2, and D-1 would include a four level interchange at the junction of I-26/I-40/I-240, which would include flyover ramps approximately 60 feet above the existing grade. The visual effect for adjacent areas for these three alternatives may have a negative effect on the visual quality; however, several of the areas adjacent to the interchange are at a substantially higher elevation than the existing roadway and may not cause a considerable change in the viewshed. Alternative F-1 would maintain the existing configuration and would not change the viewshed substantially from the existing condition.

Table 4-33: Summary of Project Impacts by Section

Resource	Section C (I-26/I-40/I-240 Interchange)				Section A	Section B (New Location across French Broad)			
	Alt. A-2	Alt. C-2	Alt. D-1	Alt. F-1	I-240 Widening	Alt. 3	Alt. 3C	Alt. 4	Alt. 4B
Project Features									
Length (miles)									
I-26	2.2	2.2	2.2	2.2	2.0	2.4	2.5	2.4	2.5
I-40/I240	2.9	3.2	2.8	2.8	0.0	0.6	0.6	1.5	1.5
Total Length	5.1	5.4	5.0	5.0	2.0	3.0	3.1	3.9	4.0
Interchanges	3	3	3	3	3	2	2	3	3
Railroad Crossings	2	2	2	2	0	3	3	8	5
Navigable Waterway Crossings	1	1	1	1	0	2	3	4	4
Construction Cost	$286,100,000	$269,700,000	$263,100,000	$203,300,000	$105,700,000	$190,200,000	$191,200,000	$255,600,000	$291,300,000
Right-of-Way Cost	$26,600,000	$22,400,000	$33,800,000	$17,100,000	$29,400,000	$42,800,000	$36,200,000	$45,500,000	$36,800,000
Utilities Cost	$2,200,000	$2,000,000	$2,300,000	$2,100,000	$3,400,000	$3,100,000	$3,300,000	$3,600,000	$3,900,000
Total Cost	$314,900,000	$294,100,000	$299,200,000	$222,500,000	$138,500,000	$236,100,000	$230,700,000	$304,700,000	$332,000,000
Socioeconomic Features									
Relocations									
Residential	50	32	38	31	81	34	23	46	33
Business	6	6	7	5	17	24	33	24	34
Nonprofit	0	0	0	0	1	2	1	2	1
Total	**56**	**38**	**45**	**36**	**99**	**60**	**57**	**72**	**68**
Schools Relocated	0	0	0	0	1	0	0	0	0
Churches Relocated	1	1	1	1	1	0	0	1	1
Parks and Recreational Areas Impacted	1	1	1	1	2	0	0	0	0
Cemeteries Impacted	0	0	0	0	0	0	0	0	0
Physical Environment									
Noise Impacts (No-Build)	193	193	193	193	181	94	94	243	243
Noise Impacts (before abatement)	218	255	214	304	198	193	133	312	224
Noise Impacts (after abatement)	188	225	184	274	94	60	37	126	89
Hazardous Material Sites (moderate or high) Impacted	1	1	1	1	0	1	1	1	1

Resource	Section C (I-26/I-40/I-240 Interchange)				Section A	Section B (New Location across French Broad)			
	Alt. A-2	Alt. C-2	Alt. D-1	Alt. F-1	I-240 Widening	Alt. 3	Alt. 3C	Alt. 4	Alt. 4B
Floodplain Impacts (acres)	20.53	20.39	18.06	16.63	8.36	9.36	7.65	8.13	3.91
Floodway Impacts (acres)	2.74	4.23	2.27	2.00	1.94	2.88	2.96	0.69	0.38
Land Use Impacts by Zoning Category (acres)									
Residential Single-Family Districts	19.3	12.7	19.7	12.5	8.4	4.0	4.3	6.4	7.5
Residential Multifamily Districts	21.4	15.4	15.2	16.0	26.5	26.5	17.0	27.6	17.0
Neighborhood Business District	0	0	0	0	0	0.2	0.2	0.3	0.1
Community Business Districts	0.0	0.0	0.0	0.0	4.9	0.1	0.1	0.04	0.0
Industrial	0	0	0	0	0	4.0	0.0	2.4	0.4
Institutional District	38.6	38.6	35.4	34.5	13.6	0.4	0.4	0.2	0.4
Office	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway Business District	11.4	9.6	9.7	7.8	1.9	14.8	15.8	14.0	14.3
Regional Business District	32.3	32.4	34.1	27.1	0.0	15.4	15.4	9.3	10.5
Central Business District	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.3
Commercial	28.7	31.4	30.8	24.8	2.7	0.0	0.0	0.0	0.0
Resort District	0.0	0.0	0.0	0.0	0.0	22.1	21.5	37.2	19.6
River District	0.0	0.0	0.0	0.0	6.3	11.2	24.8	16.1	22.3
Total	**151.8**	**140.1**	**144.9**	**122.6**	**64.7**	**98.9**	**99.7**	**113.7**	**92.5**
Human Environment									
Community Effects (# of communities within or adjacent to study area with benefit or burden from proposed alternatives)									
High Benefit	-	-	-	-	-	-	-	-	-
Moderate Benefit	-	-	-	-	-	-	-	1	1
Low Benefit	-	-	-	-	-	-	-	2	2
Neutral	-	-	2	-	1	5	5	1	1
Low Burden	2	2	-	2	3	4	4	4	4
Moderate Burden	-	-	-	-	1	1	1	2	2
High Burden	-	-	-	-	-	-	-	-	-
Cultural Resources									
Historic Properties – Section 106 Effects	0	0	0	0	1 Adverse Effect	0	0	0	1 Adverse Effect

Resource	Section C (I-26/I-40/I-240 Interchange)				Section A	Section B (New Location across French Broad)			
	Alt. A-2	Alt. C-2	Alt. D-1	Alt. F-1	I-240 Widening	Alt. 3	Alt. 3C	Alt. 4	Alt. 4B
Historic Properties Impacted	2	2	1	1	2	2	2	2	2
Archeological Sites Impacted	5	6	5	6	2	1	1	1	0
Natural Environment									
Biotic Resources (acres)									
Maintained/ disturbed	192.86	191.47	188.84	171.93	91.08	87.85	83.96	126.50	124.82
Mesic Mixed Forest	140.72	137.11	135.08	111.26	47.41	39.02	33.32	40.02	40.67
Alluvial Hardwood Forest	8.97	9.11	8.33	6.55	1.50	5.87	4.76	3.10	3.88
Open Water	0.19	0.39	0.24	0.17	0	0.00	0.00	0.00	0.00
Total	**342.75**	**338.07**	**332.49**	**289.90**	**139.99**	**132.74**	**122.04**	**169.63**	**169.37**
Impervious Surface Increase (acres)	74.43	82.03	61.33	57.12	27.45	29.68	28.37	38.26	40.45
Stream Impacts (#)	12	12	13	12	4	7	6	6	7
Stream Impacts (linear feet)	2,965	2,779	2,938	1,984	798	3,874	3,639	1,839	2,128
Wetland Impacts (#)	13	12	13	12	1	3	2	4	2
Wetland Impacts (acres)	2.62	2.36	2.01	1.86	0.01	0.22	0.11	0.22	0.10
Pond Impacts(#)	0	0	0	0	0	3	0	3	0
Pond Impacts(acres)	0	0	0	0	0	0.6	0	0.53	0
Protected Species Adversely Affected	0	0	0	0	0	0	0	0	0

[a]Stream, wetland, and pond impacts calculated using design slope stakes plus 25-foot buffer. All other impacts calculated using right-of-way.

Table 4-34: Summary of Project Impacts

Resource	Section C: A-2 Section A Section B: 3	Section C: C-2 Section A Section B: 3	Section C: D-1 Section A Section B: 3	Section C: F-1 Section A Section B: 3	Section C: A-2 Section A Section B: 3-C	Section C: C-2 Section A Section B: 3-C	Section C: D-1 Section A Section B: 3-C	Section C: F-1 Section A Section B: 3-C	Section C: A-2 Section A Section B: 4	Section C: C-2 Section A Section B: 4	Section C: D-1 Section A Section B: 4	Section C: F-1 Section A Section B: 4	Section C: A-2 Section A Section B: 4-B	Section C: C-2 Section A Section B: 4-B	Section C: D-1 Section A Section B: 4-B	Section C: F-1 Section A Section B: 4-B
Project Features																
Length (miles)																
I-26	6.6	6.6	6.6	6.6	6.7	6.7	6.7	6.7	6.6	6.6	6.6	6.6	6.7	6.7	6.7	6.7
I-40/I240	3.5	3.8	3.4	3.4	3.5	3.8	3.4	3.4	4.4	4.7	4.3	4.3	4.4	4.7	4.3	4.3
Total Length	10.1	10.4	10.0	10.0	10.2	10.5	10.1	10.1	11.0	11.3	10.9	10.9	11.1	11.4	11.0	11.0
Interchanges	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9
Railroad Crossings	5	5	5	5	5	5	5	5	10	10	10	10	7	7	7	7
Navigable Waterway Crossings	3	3	3	3	4	4	4	4	5	5	5	5	5	5	5	5
Construction Cost (millions)	$582.0	$565.6	$559.0	$499.2	$583.0	$566.6	$560.0	$500.2	$647.4	$631.0	$624.4	$564.6	$683.1	$666.7	$660.1	$600.3
Right-of-Way Cost (millions)	$98.8	$94.60	$106.0	$89.3	$92.2	$88.0	$99.4	$82.7	$101.5	$97.3	$108.7	$92.0	$92.8	$88.6	$100.0	$83.3
Utilities Cost (millions)	$8.7	$8.50	$8.8	$8.6	$8.9	$8.7	$9.0	$8.8	$9.2	$9.0	$9.3	$9.1	$9.5	$9.3	$9.6	$9.4
Total Cost	$680.8	660.20	$665.0	$597.1	$684.1	$663.3	$668.4	$591.7	$758.1	$737.3	$742.4	$665.7	$785.4	$764.6	$769.7	$693.0
Socioeconomic Features																
Relocations																
Residential	165	147	153	146	154	136	142	135	177	159	165	158	164	146	152	145
Business	47	47	48	46	56	56	57	55	47	47	48	46	57	57	58	56
Nonprofit	3	3	3	3	2	2	2	2	3	3	3	3	2	2	2	2
Total Relocations	215	197	204	195	212	194	201	192	227	209	216	207	223	205	212	203
Schools Relocated	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Churches Relocated	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3
Parks and Recreational Areas Impacted	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Cemeteries Impacted	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physical Environment																
Noise Impacts (No-Build)	468	468	468	468	468	468	468	468	617	617	617	617	617	617	617	617
Noise Impacts (before abatement)	609	646	605	695	549	586	545	635	728	765	724	814	640	677	636	726

Resource	Section C: A-2 Section A Section B: 3	Section C: C-2 Section A Section B: 3	Section C: D-1 Section A Section B: 3	Section C: F-1 Section A Section B: 3	Section C: A-2 Section A Section B: 3-C	Section C: C-2 Section A Section B: 3-C	Section C: D-1 Section A Section B: 3-C	Section C: F-1 Section A Section B: 3-C	Section C: A-2 Section A Section B: 4	Section C: C-2 Section A Section B: 4	Section C: D-1 Section A Section B: 4	Section C: F-1 Section A Section B: 4	Section C: A-2 Section A Section B: 4-B	Section C: C-2 Section A Section B: 4-B	Section C: D-1 Section A Section B: 4-B	Section C: F-1 Section A Section B: 4-B
Noise Impacts (after abatement)	342	379	338	428	319	356	315	405	408	445	404	494	371	408	367	457
Hazardous Material Sites (moderate or high) Impacted	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Floodplain Impacts (acres)	38.3	38.1	35.8	34.3	36.5	36.4	34.1	32.6	37.0	36.9	34.5	33.1	32.8	32.7	30.3	28.9
Floodway Impacts (acres)	7.6	9.1	7.1	6.8	7.6	9.1	7.2	6.9	5.4	6.9	4.9	4.6	5.0	6.5	4.6	4.3
Land Use Impacts by Zoning Category (acres)																
Residential Single-Family Districts	31.8	25.2	32.2	24.9	32.1	25.5	32.5	25.3	34.2	27.6	34.5	27.3	35.3	28.6	35.6	28.4
Residential Multifamily Districts	74.4	68.5	68.2	69.1	64.9	59.0	58.7	59.6	75.5	69.5	69.2	70.1	64.8	58.9	58.6	59.5
Neighborhood Business District	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.1
Community Business Districts	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Industrial District	4.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	2.4	2.4	2.4	2.4	0.4	0.4	0.4	0.4
Institutional District	52.7	52.6	49.5	48.5	52.7	52.7	49.5	48.5	52.5	52.4	49.3	48.3	52.7	52.6	49.5	48.5
Office	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway Business District	28.2	26.3	26.5	24.6	29.2	27.3	27.5	25.6	27.4	25.5	25.7	23.8	27.7	25.8	25.9	24.0
Regional Business District	47.7	47.8	49.5	42.5	47.7	47.8	49.5	42.5	41.6	41.7	43.4	36.4	42.8	42.9	44.6	37.6
Central Business District	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
Commercial	31.5	34.2	33.5	27.5	31.5	34.2	33.5	27.5	31.5	34.2	33.5	27.5	31.5	34.2	33.5	27.5
Resort District	22.1	22.1	22.1	22.1	21.5	21.5	21.5	21.5	37.2	37.2	37.2	37.2	19.6	19.6	19.6	19.6
River District	17.4	17.4	17.4	17.4	31.1	31.1	31.1	31.1	22.4	22.4	22.4	22.4	28.6	28.6	28.6	28.6
Total Land Use Impacts by Zoning Category (acres)	**315.5**	**303.7**	**308.5**	**286.3**	**316.3**	**304.6**	**309.3**	**287.1**	**330.3**	**318.6**	**323.4**	**301.1**	**309.0**	**297.3**	**302.1**	**279.9**
Human Environment																
Community Effects																
High Benefit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moderate Benefit	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Low Benefit	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2
Neutral	6	6	8	6	6	6	8	6	2	2	4	2	2	2	4	2

Resource	Section C: A-2 Section A Section B: 3	Section C: C-2 Section A Section B: 3	Section C: D-1 Section A Section B: 3	Section C: F-1 Section A Section B: 3	Section C: A-2 Section A Section B: 3-C	Section C: C-2 Section A Section B: 3-C	Section C: D-1 Section A Section B: 3-C	Section C: F-1 Section A Section B: 3-C	Section C: A-2 Section A Section B: 4	Section C: C-2 Section A Section B: 4	Section C: D-1 Section A Section B: 4	Section C: F-1 Section A Section B: 4	Section C: A-2 Section A Section B: 4-B	Section C: C-2 Section A Section B: 4-B	Section C: D-1 Section A Section B: 4-B	Section C: F-1 Section A Section B: 4-B
Low Burden	9	9	7	9	9	9	7	9	9	9	7	9	9	9	7	9
Moderate Burden	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3
High Burden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cultural Resources																
Historic Properties – Section 106 Effects	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Historic Properties Impacted	6	6	5	5	6	6	5	5	6	6	5	5	6	6	5	5
Archeological Sites Impacted	8	9	8	9	8	9	8	9	8	9	8	9	7	8	7	8
Natural Environment																
Biotic Resources (acres)																
Maintained/ disturbed	371.8	370.4	367.8	350.9	367.9	366.5	363.9	347.0	410.4	409.0	406.4	389.5	408.8	407.4	404.7	387.8
Mesic Mixed Forest	227.2	223.5	221.5	197.7	221.4	217.8	215.8	192.0	228.2	224.5	222.5	198.7	228.8	225.2	223.2	199.3
Alluvial Hardwood Forest	16.3	16.5	15.7	13.9	15.2	15.4	14.6	12.8	13.6	13.7	12.9	11.1	14.4	14.5	13.7	11.9
Open Water	0.2	0.4	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.4	0.2	0.2
Total Biotic Resources	615.5	610.8	605.2	562.6	604.8	600.1	594.5	551.9	652.4	647.7	642.1	599.5	652.1	647.4	641.8	599.3
Impervious Surface (acres)	131.6	139.2	118.5	114.3	130.3	137.9	117.2	112.9	140.1	147.7	127.0	122.8	142.3	149.9	129.2	125.0
Stream Impacts (#)	23.0	23.0	24.0	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	22.0	23.0	23.0	24.0	23.0
Stream Impacts (linear feet)	7,636.5	7,451.0	7,609.6	6,655.8	7,402.2	7,216.7	7,375.3	6,421.5	5,602.1	5,416.6	5,575.2	4,621.4	5,891.1	5,705.6	5,864.2	4,910.4
Wetland Impacts (#)	17	16	17	16	16	15	16	15	18	17	18	17	16	15	16	15
Wetland Impacts (acres)	2.8	2.5	2.2	2.0	2.7	2.4	2.1	1.9	2.8	2.5	2.2	2.0	2.7	2.4	2.1	1.9
Pond Impacts(#)	3	3	3	3	0	0	0	0	3	3	3	3	0	0	0	0
Pond Impacts(acres)	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
Protected Species Adversely Affected	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[a]Stream, wetland, and pond impacts calculated using design slope stakes plus 25-foot buffer. All other impacts calculated using right-of-way.

Table 4-35: Qualitative Evaluation of Consistency with Local Plans

Plan	Section C				Section A	Section B			
	A-2	C-2	D-1	F-1		3	3-C	4	4-B
French Broad River MPO 2035 Long Range Transportation Plan (2012)	●	●	●	●	●	●	●	●	●
Comprehensive Transportation Plan for French Broad River MPO and Rural Areas of Buncombe and Haywood Counties (NCDOT 2008)	●	●	●	●	●	●	⊙	●	●
Coordinated Public Transportation and Human Services Transportation Plan (FBRMPO 2008)	●	●	●	●	●	●	●	●	●
City of Asheville Final Transit Master Plan (HDR Engineering, Inc. of the Carolinas 2009)	●	●	●	●	●	●	●	●	●
City of Asheville Pedestrian Plan (City of Asheville 2005b)	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
City of Asheville Comprehensive Bicycle Plan (City of Asheville 2008)	⊙	⊙	⊙	⊙	⊙	◉	◉	⊙	⊙
City of Asheville, North Carolina Parks, Recreation, Cultural Arts, & Greenways Master Plan (City of Asheville 2013)	⊙	⊙	⊙	⊙	⊙	●	●	●	●
Haywood Road Corridor Study (City of Asheville 2005d)	N/A	N/A	N/A	N/A	◉	N/A	N/A	N/A	N/A
Asheville City Council Resolution 00-168 – Resolution Supporting the Report and Recommendations of the CCC Regarding the I-26 Connector Project									
Goal: Separation of Local and Interstate Traffic	N/A	N/A	N/A	N/A	N/A	○	○	●	●
Goal: Matching Scale of Project to Character of Community	⊙	⊙	⊙	●	⊙	⊙	⊙	◉	◉
Goal: Reunification and Connectivity of Community	●	●	●	●	●	⊙	⊙	●	●

Plan	Section C				Section A	Section B			
	A-2	C-2	D-1	F-1		3	3-C	4	4-B
Goal: Minimization of Neighborhood and Local Business Impacts	●	●	●	●	⊙	⊙	⊙	⊙	⊙
Goal: Use of Updated Traffic Modeling Software and Data	●	●	●	●	●	●	●	●	●
Goal: Maintenance of Compatibility with Community's Design Vision and Plans	●	●	●	●	●	⊙	○	◉	◉
Goal: Creation of Full Interstate Movements Between I-26 and I-40	●	●	●	●	N/A	N/A	N/A	N/A	N/A
Goal: Minimization of Air Quality and Other Environmental Impacts	●	●	●	●	●	●	●	●	●
Goal: Emphasis on Safety - During Construction and in the Design of the Final Product	●	●	●	●	●	●	●	●	●
A Strategic Plan for the Sustainable Economic Development of the City of Asheville, North Carolina (City of Asheville 2004)	●	●	●	●	●	●	●	●	●
Broadway Corridor Action Plan (City of Asheville 2002b)	N/A	N/A	N/A	N/A	N/A	●	●	●	●
Asheville City Development Plan 2025 (City of Asheville 2002a)	●	●	●	●	●	○	○	●	●
Land of Sky Regional Council "Regional Vision 2010"	●	●	●	●	●	●	●	●	●
Wilma Dykeman RiverWay Master Plan (Riverlink 2004)	N/A	N/A	N/A	N/A	◉	○	○	◉	◉
Brevard Road Corridor Study (City of Asheville 2005a)	●	●	●	●	●	●	●	●	●
City of Asheville River Redevelopment Plan (City of Asheville 2005e)	●	●	●	●	●	●	●	●	●
Consolidated Strategic Housing and Community Development Plan 2005-2010 (City of Asheville 2005c)	●	●	●	●	●	●	●	●	●

Plan	Section C				Section A	Section B			
	A-2	C-2	D-1	F-1		3	3-C	4	4-B
West End/Clingman Small Area Plan (City of Asheville 1996)	N/A	N/A	N/A	N/A	N/A	○	○	◘	◘
Asheville Downtown Master Plan (City of Asheville 2009a)	N/A	N/A	N/A	N/A	N/A	○	○	◘	◘
Sustainability Management Plan (City of Asheville 2009d)	●	●	●	●	●	●	●	●	●
Buncombe County Comprehensive Land Use Plan Update (Buncombe County 2013)	●	●	●	●	●	●	●	●	●
City of Asheville Complete Streets Policy	●	●	●	●	●	●	●	●	●
City of Asheville Unified Development Ordinance (City of Asheville 2009b)	●	●	●	●	●	●	●	●	●
Burton Street Community Plan (ADC 2010a)	N/A	N/A	N/A	N/A	○	○	○	◉	◉
I-26 Alternative 4B CommunityBased Design Update (ADC 2010b)	N/A	N/A	N/A	N/A	N/A	○	○	◘	●
Downtown Asheville Center City Plan	N/A	N/A	N/A	N/A	N/A	○	○	○	○

● Consistent with Plan, ◘ Mostly Consistent with Plan, ◉ Partially Consistent with Plan,
⊙ Minimally Consistent with Plan, ○ Inconsistent with Plan

Each alternative would, however, adversely impact the sensitive view from the Biltmore Estate. The determination of adverse visual effect is based on each alternative altering the existing views from Biltmore Estate property. Each alternative would require widening of I-40 within the boundaries of the property, which may remove roadside vegetation, add pavement, and alter bridge structures.

Section A

Construction of the build alternative in this section of the proposed project would have a visual impact on adjacent areas. Widening of the highway would increase its visual prominence for people traveling the freeway, as well as those viewing the freeway from afar.

Section B

Visual impacts of the project for the four build alternatives being considered for this section of the project would generally be enhanced or improved for those using the facility and degraded for those viewing the freeway from off the road. Each build alternative would adversely impact the viewshed, to varying degrees, from outside the project area in this section of the project. Visual impacts would be adverse because each build alternative would introduce a new prominent feature that would be out of context with the existing viewshed. Conversely, opportunities for views and new vistas of Asheville, the French Broad River, and surrounding

mountains and hills would exist for motorists using the new roadway. In general, visual quality would be enhanced.

All alternatives would include a new crossing of the French Broad River, which would be out of context with the existing viewshed. Alternative 4 would include the same design as Alternative 3 for the I-26 crossing of the French Broad River, but would also include two additional flyover bridges across the French Broad River 0.5 mile to the south of the I-26 crossing. Alternative 4-B would cross the French Broad River in a similar location as Alternative 3-C, but would include two flyover ramps similar to Alternative 4. Of the four alternatives in Section B, Alternative 3-C is anticipated to have the least impact to the overall viewshed due to the location which it crosses the French Broad River and the area where it connects with existing US 19-23-70.

Mitigation

Future highway-oriented development that may be constructed adjacent to the proposed roadway could be designed to reduce the visual impacts of the freeway. The inclusion of treatments such as coloring of structural elements, buffer areas, and landscape screening into a new development's design can lessen the visual impacts of the freeway. In addition, it is the policy of NCDOT to include aesthetic features in its roadway designs. NCDOT will consider incorporating the following principals in the roadway design in order to create an aesthetically acceptable and functional roadway and to minimize visual impacts:

- Integrate landscaping into the project design to promote visual continuity of the highway and to blend it into the natural landscape as much as possible.
- Minimize the loss of vegetation, especially during construction when equipment and material access, storage, and staging are required.
- Design noise attenuation features, if reasonable and feasible, to be compatible with surrounding natural features and development.

In response to a recommendation by the I-26 Connector Coordinating Committee, an AAC has been established by the City of Asheville to work with NCDOT and the City to address aesthetic issues throughout the planning and design of the I-26 Connector project. Activities of the AAC are presented in Section 8.2.3.2. Coordination with the AAC will continue after selection of the preferred alternative and through the design phase of the project.

4.3.1.3 Water Quality

Expected effects of the project on surface water would be generally proportional to the amount of increase in impervious surface and are presented in Table 4-24 for each of the alternatives. Stormwater runoff rates would increase slightly due to the increase in impervious roadway surface area. This is an unavoidable, long-term impact resulting from construction of any build alternative. The following pollutants may be contained in the stormwater runoff:

- Sediment eroded during construction activity
- Pesticides, herbicides, and fertilizers used to plant and maintain highway landscaping
- Petrochemicals, oil, grease, and heavy metals associated with operation of vehicles
- Trash and debris discarded by highway users
- Chemicals and hazardous materials accidentally spilled during transport

The project has the potential to temporarily degrade the quality of water in the surrounding streams by means of soil erosion during construction.

4.3.1.4 Soils and Geology

Properties of the soils within the proposed corridors of the DEIS build alternatives studied can affect the final engineering design of the new roadway alignment. Soil limitations for the build alternatives include erosion hazard, shrink/swell potential, differential settlement, low strength, corrosivity, and flood hazard.

Since the project is located in the mountainous region of North Carolina, overcoming topographical issues would be important for each of the build alternatives. The new location build alternatives in Section B of the project would require substantial earthwork in order to provide level road bed, and existing development limits the use of existing grade. A detailed geotechnical investigation has not been conducted for this phase of project development, but will be conducted in a subsequent engineering phase once the preferred alternative has been identified.

4.4 REQUIRED PERMITS AND ACTIONS

4.4.1 REQUIRED PERMITS

4.4.1.1 North Carolina Division of Water Quality

Section 401 Certification. Any activity that may result in discharge to navigable waters and that requires a federal permit must obtain a certification that such discharge will be in compliance with applicable state water quality standards.

Authority. North Carolina General Statute 143, Article 21, Part 1. Regulations promulgated in 15A NCAC-2H and 2B.

Stormwater Certification. The NPDES stormwater permit addresses stormwater discharges that impair water quality. NCDOT construction activities are covered under NCDOT's Phase I stormwater permit, which is administered through the Department's sediment and erosion control program. Specific requirements vary and are affected by the classifications of the water to which the project would drain. NCDOT was granted its current permit on March 18, 2005.

Authority. North Carolina General Statute 143, Article 215, Part 1. Regulations promulgated in 15A NCAC-2H.1000 and 2B.0200.

4.4.1.2 North Carolina Division of Forest Resources

Burning Permit. A permit is required to start a fire in woodlands or within 500 feet of woodlands under the protection of the Division of Forest Resources. Thirty day permits can be issued for highway construction.

Authority. North Carolina General Statute 113, Article 4C, Subsection 60.21 60.31. Regulations promulgated in 14 NCAC 9C.0200 .0203.

4.4.1.3 United States Army Corps of Engineers

Section 404 Permit. A permit from USACE is required for any activity in water or wetlands that would discharge dredged or fill materials into waters of the United States and adjacent wetlands. To obtain permit approval, impacts to wetlands must be mitigated through avoidance,

minimization, and compensation measures in accordance with the "Memorandum of Agreement (MOA) between the Department of the Army and the Environmental Protection Agency: Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines" (EPA 1990).

Authority. Federal Water Pollution Control Act Amendments of 1972 and Section 404 of the CWA of 1977. Regulations promulgated in 33 CFR 323.

Section 10 Permit. A permit is required for construction of structures such as piers and jetties and excavation and placement of fill material in or affecting navigable waterways, including the French Broad River.

Authority. River and Harbor Act of 1899, Section 10.

4.4.1.4 United States Coast Guard

Section 9 Permit. A bridge permit is the written approval of the location and plans of the bridge or causeway to be constructed or modified across a navigable waterway and would be required for any structures crossing the French Broad River. Bridge clearances are reviewed under this permit.

Authority. River and Harbor Act of 1899, Section 9.

4.4.1.5 United States Fish and Wildlife Service

Section 404 and Section 10 Permit Review. The USFWS' responsibilities include review of Section 404 and Section 10 permits to determine a project's impact on public fish and wildlife resources. USFWS provides recommendations to USACE on how the proposed project could avoid or minimize impacts to existing fish and wildlife resources and their habitats, including wetlands.

Authority. Fish and Wildlife Coordination Act, as amended.

Section 7 Consultation. Consultation with USFWS is required for any project that may impact endangered or threatened plants and animals and their Designated Critical Habitat. The proposed project is expected to potentially affect Appalachian elktoe habitat due to the placement of bridge supports in the French Broad River bed. Habitat for the tan riffleshell is found in the river; however, recent surveys did not find the presence of the species in the area. The biological conclusion for both species is may affect, but not likely to affect.

Authority. ESA of 1973, Section 7.

4.4.1.6 Tennessee Valley Authority

Section 26a of the Tennessee Valley Authority Act. The Tennessee Valley Authority requires that approval be obtained prior to the construction, operation, or maintenance of any dam, appurtenant works, or other obstruction affecting navigation, flood control, or public lands or reservations along or in the Tennessee River or any of its tributaries.

4.4.2 REQUIRED ACTIONS/ISSUES TO BE RESOLVED

The following lists the required actions and issues to be resolved consequent to selection of a preferred alternative.

- Historic architecture studies and 106 effects: Prepare MOA regarding project effects and mitigation measures.
- Section 110: Continue coordination related to Biltmore Estate for Section 110.
- Archaeological survey and 106 effects: Additional investigations will be conducted for the preferred alternative and Section 106 effects will evaluated. An MOA will be prepared regarding project effects and mitigation measures.
- Hazardous materials investigations: Supplemental investigations will be conducted for the preferred alternative.
- Coordination with USFWS: A request for concurrence with the biological conclusion will be submitted to USFWS after selection of the preferred alternative.
- Environmental justice: Coordination with affected populations/communities will continue throughout the project development process.
- Agency Coordination: Coordination with resource agencies will be maintained throughout the entire project development process.