CHAPTER 4

4.0 ANALYSIS OF FUTURE ALTERNATIVE

The two conceptual alternatives selected in Chapter 3, the Superstreet and Freeway with Local Street Enhancements alternatives, were examined in greater detail to consider their merits as long term solutions for the US 1 corridor. The detailed analysis examined how well the two alternatives met the following concerns:

- Compatibility with future land use
- Mobility and safety on US 1
- Provision of access for existing and future development;
- Incorporation of bicycle and pedestrian uses; and
- Incorporation of transit.

Options for the roadway type, interchanges, local roads, and multi-modal facilities were also compared.

4.1 Design Philosophy and Approach

Recognizing the long term vision of a freeway with local streets providing local access, each jurisdictional agency should develop and adopt guidelines or standards for application in the development of US 1 and the local street network. These guidelines or standards should reflect the design philosophy and approach utilized in the development of this study. Two key components in the overall design philosophy are Access Management and Complete Streets. The US 1 Council of Planning, as identified in the Memorandum of Understanding associated with this study, should be responsive to local jurisdictions in the development, approval, and application of these guidelines. Information on these two concepts is included in Appendix F.

4.1.1 Access Management

These best access management practices should be applied to all future roads and local streets built within the study area to ensure the capacity and safety objectives are maintained for each capital roadway investment. The US 1 Council of Planning as identified in the Memorandum of Understanding associated with this study should be responsible for the future corridor wide access management guidelines and its implementation.

With the conversion of the US 1 corridor to a freeway facility, it will be critical to implement access management along the corridor to assure safe and efficient traffic operations. The most substantial access management improvement is the proposed local street system. The provision of access on the proposed two-way local street system will allow for the ultimate closure of all access directly onto US 1 as required for a freeway.

In addition, the provision of superstreets on US 1 is an access management technique that can be applied to individual intersections or an entire corridor. The provision of turn restrictions associated with superstreets substantially reduces conflict points for increased safety. In addition, corridor capacity can be improved with the removal and/or replacement of conventional signal phasing with two phased signals thereby reducing delays and allowing for improved through capacity on the corridor. Intersection access, spacing, and turn restrictions on US 1 are subject to the access permit approval process controlled by NCDOT.

This change in access philosophy may require modifications to the existing development access, as well as having new development and/or redevelopment orient their access to the new local street system. As new development is approved, there also would be an opportunity for property owners to contribute toward the construction of the local street system adjacent to and supporting access to their site. Good access management guidelines on the local street system will need to be applied to locate and design local access that will provide safe and efficient traffic operations.

Access management in the vicinity of interchanges will also be required to divert access away from interchange ramp terminals (usually signalized). NCDOT access management standards will need to be applied related to restricted access in interchange areas. If possible, NCDOT's planning guidelines suggest a minimum of 1,000 feet between the ramp terminal signal and the first major cross street intersection (i.e., frontage or backage road).

4.1.2 Complete Streets

A key objective of the US 1 Corridor Study has been the provision of accommodations to support increased safety and access for all modes including bicyclists, pedestrians, and transit in addition to cars and trucks. To apply this vision, it is assumed that a Complete Streets philosophy will be applied in the construction of local streets with a particular focus on providing sidewalks, bicycle lanes, and or wider shoulders as part of the initial construction of facilities.

NCDOT is currently developing Complete Streets Guidelines for application across the state. These guidelines would provide insights and could serve as a starting point for including

Complete Streets within the standards of the local jurisdictions. The provision of bicycle and pedestrian features in the initial construction of projects is essential for multiple reasons, the key one being the need to develop a fully connected network of bicycle and pedestrian facilities.

It should be noted that although Complete Streets are applicable to many road types, freeways are not a desired location for bicycles and pedestrian due to safety concerns. For this reason, bicycles and pedestrians are legally prohibited from using freeways. Recognizing the different purposes of the road system, the plan provides an extensive network of bicycle and pedestrian facilities as part of the ultimate local street network.

4.2 Land Use

A key question to ask when seeking to balance land use and roadway design is: which came first? Land uses that are established before the construction of a new roadway will greatly influence the new roadway's design. Likewise, roadways that are established before the construction of new land uses will greatly influence the developmental pattern of the new land uses. Factors that come into play in this relationship include: having an established land use and/or zoning plan and the availability of roadway access and other design features that facilitate/accommodate future land uses. These concerns were considered in the analysis.

4.2.1 No-Build

With the No-Build Alternative, land use development along the US 1 corridor is assumed to follow existing zoning ordinances and developer trends. The result of this trend along US 1 would include industrial development south of Franklinton, additional highway oriented retail in Franklinton, and the likely addition of low density residential subdivisions north of Franklinton. The expansion of industrial development may be accelerated with improved railroad access that is proposed to occur with the SEHSR project that is assumed to be in place even in the No-Build scenario for US 1.

If land use development follows the existing trend for the area, it is very likely that developers will request access directly onto US 1 for each lot they develop. This would increase pressure for both unsignalized and signalized access points. These additional unsignalized or signalized access points would diminish capacity and increase crash rates along US 1 due to potential conflicts associated with through traffic and turning vehicles.

A limiting factor to the otherwise unmitigated addition of access points is the fact that NCDOT is the approver of US 1 access permits. As such, NCDOT could moderate the number of new US 1 access points. Given this, should businesses disagree with NCDOT's manner of access

permit approvals, they could decide not to build along US 1 and shift to other locations in the region.

4.2.2 Future Land Use Vision

4.2.2.1 *Land Use Based on Opportunity Analysis*

Themes that are evident in Franklin County's future land use policy for areas along the US 1 corridor includes:

- Optimizing business opportunities associated with future upgrades and capacity increases along US 1 and the CSX rail line;
- Efficiently developing the transition zone between Raleigh's exurban area and Franklin County's rural area; and
- Recognizing the separate growth agendas of established towns in the area.

These themes help explain why the Franklin County future land use strategy appears to favor industrial /commercial development along the US 1 and CSX rail corridors, gives preference to low-density residential and agricultural uses north of Franklinton, and defines towns and their extra-territorial jurisdictions as "activity centers."

4.2.2.2 *Public Input*

During a public meeting that was held on March 6, 2012 the public expressed a desire for greater farmland preservation and protection of conservation and recreation areas. There was negative regard for implementing traditional heavy manufacturing uses and dense urban development anywhere in the corridor. Public input is summarized for each segment of the corridor.

- **South Segment:** Suburban commercial (retail and office) and low-density, single-family residential land uses are preferred by the public for this segment. Flex space and warehouse space was also considered appropriate by some participants. Light industrial was preferred to heavy industrial development by the general public.
- **Central Segment:** Preservation of Franklinton's traditional land use pattern (i.e. historic single family homes, Main Street retail, and nearby farms) is considered a critical issue. The public also stated that commercial development, including strip commercial, would be appropriate if well-designed and compatible with existing structures. They also recognized a need for hotels and entertainment facilities in this segment.

- **North Segment:** The public indicated a great desire to protect rural areas and allow only low-density, single family residential development in this segment. They also stated that they did not consider strip commercial, office or manufacturing uses appropriate for this segment.

The public's input indicates that although the area is growing and suburbanizing, the general public values the rural nature of the corridor. Any expansion that will occur over time should preserve a small-town land use pattern and character in and near Franklinton.

4.2.3 Future Land Use Opportunities

There are a number of commercial office and light industrial land uses on US 1A Park Avenue located south of the southern project limit. This area represents a concentration of land uses (a node) that likely developed as the result of the close proximity of the US 1/NC 96 and US 1/Park Avenue intersections, and the CSX rail alignment. Recognizing that changes in the transportation system in the US 1 corridor will have impacts on land use patterns, this study examines land use opportunities, Therefore, future land use development options were analyzed further at two key development nodes: the US 1/Bert Winston Road Extension and the US 1/NC56 Bypass junctions. Both locations will include future interchanges with US 1.

4.2.3.1 *The Bert Winston Road Extension Development Node*

The Bert Winston extension is included in the CTP and involves a rerouting of the existing Bert Winston Road onto a new alignment. The long term vision is that the extension will connect to US 1 across from Materials Drive. An interchange is proposed in the long term at this location.

The Bert Winston Extension interchange location occupies the center of the only substantial land area zoned for heavy industrial in Franklin County. This is a key economic development area for the county, and the prospect for business attraction would be enhanced by the future interchange. It is largely in a natural state although one-third of the land west of US 1 is occupied by existing businesses.

A detailed summary of the breakdown of the node area indicates that the overall acreage of the node is 1,875 acres. Of this approximately 80 percent (1,495 acres) is zoned for heavy industrial and the remaining 20 percent (380 acres) is zoned for light industrial.

Of the 1,495 acres zoned heavy industrial, 395 acres (26 percent) are already developed, 120 acres (8 percent) are wetlands, and approximately 504 acres (34 percent) are difficult to develop due to future right of way needs as well as terrain and other constraints. This leaves 476 acres (32 percent) divided over multiple development zones.

A similar analysis of the 380 acres zoned light industrial was also conducted. In these areas, 68 acres (18 percent) are already developed, 0 acres are wetlands, and approximately 130 acres (34 percent) are difficult to develop due to future right of way needs as well as terrain and other constraints. This leaves 182 acres (48 percent) divided over multiple development zones.

Future Zoning

This location is identified as the future Bert Winston Extension interchange and is shown on the Franklin County zoning map as being a General Business, Light Industrial and Heavy Industrial District. The future zoning indicates that this location is a key economic development area for the Franklin County. Interchange access and the CSX rail line adds to the attractiveness of this area for future businesses.

Factors Constraining Development

The project Study Team analyzed constraining factors to the development capacity of the US 1/Bert Winston Road intersection area. The constraining factors include:

- Existing properties with land uses that are unlikely to change;
- Existing and proposed road and rail rights of way;
- Wetlands and watersheds; and
- Topography (difficult or prohibitive slopes).

Figure 4-1 presents the locations of these constraining factors at the Bert Winston node. Observations made from this analysis include the following:

- **Development Pad Size:** Disregarding parcel lines, the resulting development pads could range from 30 to 90 acres, though some larger pads could be obtained through redevelopment or re-combination. High concentrations of the smaller pads are on the east side of US 1 which may be less conducive to large operations focused on railroad access.
- **Development Pads West of US 1:** Most of the larger pads are located west of US 1. However, these are constrained by wetlands and existing businesses.
- **Development Pads East of US 1:** The realignment of the CSX rail line under the Southeast High Speed Rail (SEHSR) project in this area will create more space for development, but would not significantly change the pattern of small pads east of US 1.

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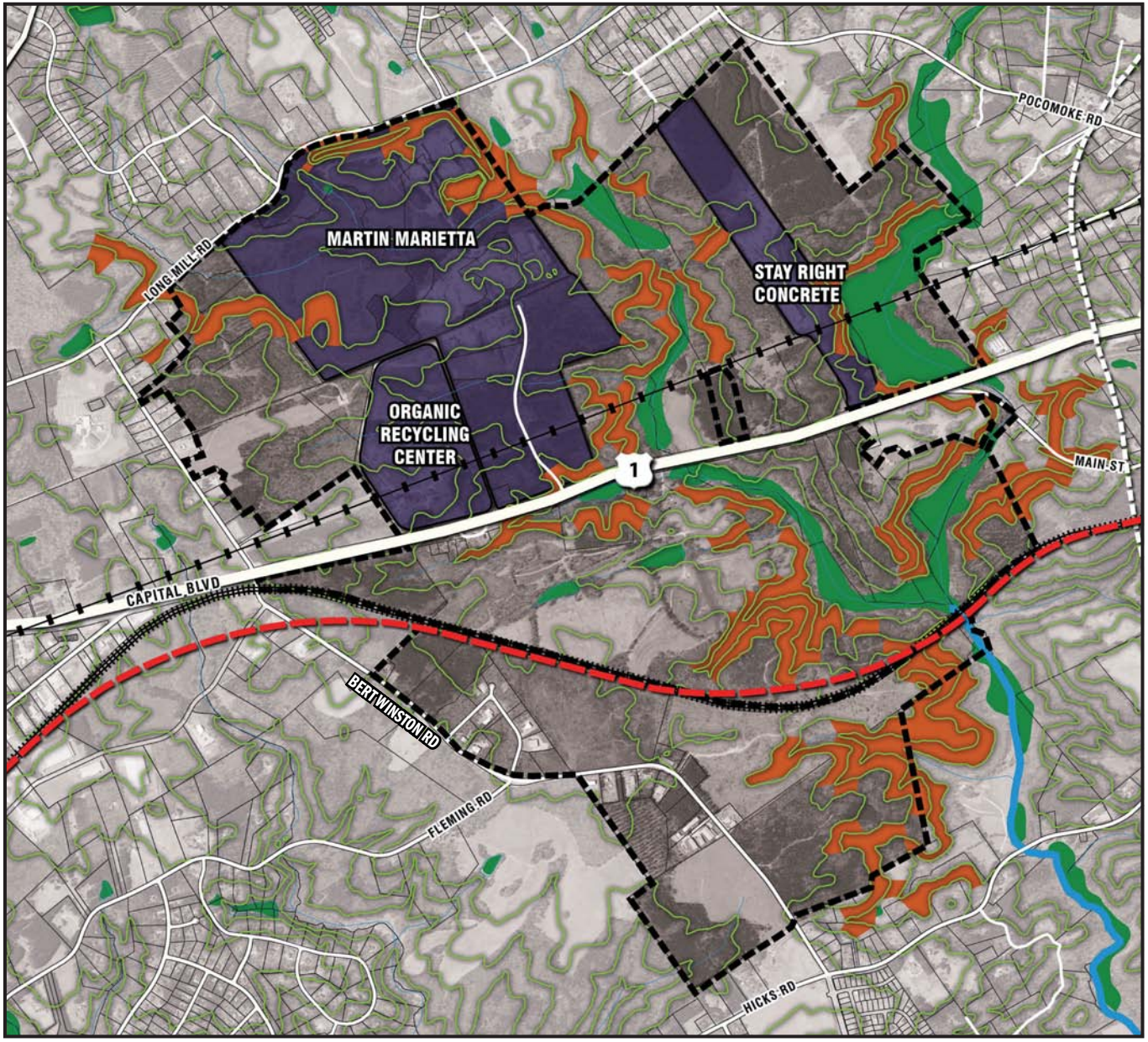
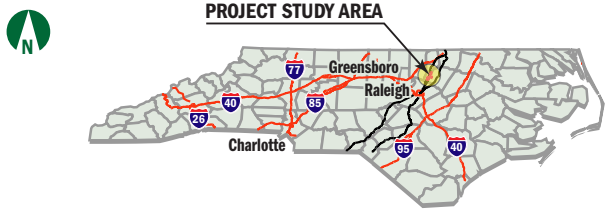


0 Miles 0.125 0.25 0.375 0.5 0.75

LEGEND

- Existing Development
- Surface Water
- Floodplain
- Contours - 20 Feet
- Difficult Slopes
- Contour Elevation Lines



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URBAN Collage

Factors Constraining Development: Bert Winston Extension Node

Figure 4-1

Land Consumption per Land Use Type

The project Study Team also reviewed other local and regional land uses to estimate the amount of land each land use type typically consumes. Based on this review, it appears that office and Research & Development land uses can consume as little as 10 acres; flex space and warehouse land uses can consume up to 100 acres; manufacturing land uses can consume up to 140 acres; and comprehensive freight-oriented development or "freight village" can consume over 3,000 acres.

Comparisons of Similar Industrial Sites

The team also assembled a variety of local and regional comparisons to examine the rough space implications of various types of industrial and office development. Two local manufacturing plants – Novozymes in Franklin County and Covidien Pharmaceuticals in Wake County – both need a minimum of about 140 acres for their facilities. Flex-space warehouses observed in Henderson also require about 100 acres for a large footprint building. Similarly, true freight villages are also space-intensive with 3,000 acre developments not uncommon.

In contrast, office and R&D uses are more easily accommodated on smaller development pads; and though the development economics of office parks may dictate larger land assembly, they can be more easily accommodated on rolling topography.

The results of this comparison suggest several opportunities for future refinement of the vision for the Bert Winston Extension node.

- The overall node is sizable and can accommodate many different uses. Development pads identified in the Bert Winston node total over 600 acres. Each interchange quadrant has between 125 to 200 acres of developable land.
- Existing environmental conditions, topography, and offsets to adjacent development limit the size of easily developed parcels. The development pads in the Bert Winston Extension node are generally 70 acres or smaller, although there may be options for combining some nodes.
- Large scale industrial development can often exceed 100 acres. This indicates that there may be potential to selectively consider alternative development patterns in isolated development pads.
- The surrounding roadway network is well-positioned to support multiple business types in the node.

Reasonable Future Development

With this being the case, the following land uses and land use type interactions can be reasonably foreseen. Figure 4-2 shows these land uses:

- A heavy industrial / manufacturing zone south of Martin Marietta, buffered from Bert Winston Road by future commercial development, with the existing organic recycling facility redeveloped as part of a larger assembly;
- A light industrial / flex-warehousing zone at the northwest, with a direct connection to Pocomoke Road and the future NC56 bypass interchange for greater flexibility of truck access, and a land use pattern more compatible with adjacent residential;
- An office / research / corporate zone straddling the forks of Cedar Creek, exploiting the desirable natural landscape, the visibility to the future freeway, and the connection to downtown Franklinton; and
- A rail-based manufacturing / warehousing / distribution zone on either side of the CSX line, with room for smaller businesses that might benefit from rail access as in Garner's Greenfield North Business Park, or line synergies as in the Charlotte's Red Line, but less integrated than a true freight village.

Collectively, the four combinations discussed above reframe the current heavy industrial district not as one massive land use / industrial park, but as multiple "mini-parks" that take advantage of localized assets and connections. As such, they could provide economic flexibility to help weather uncertain markets and balance the goals of Franklin County and Franklinton.

An industrial market assessment and competitive analysis can be conducted as a next step to provide supplemental information for future land use decisions in the Bert Winston node development area.

4.2.3.2 *The NC 56 Bypass / Franklinton South Node*

A site on US 1 that is approximately one mile south of the existing US 1/NC 56 interchange is slated to become a future NC 56 Bypass interchange. This location is at the southern extent of Franklinton's extra territorial jurisdiction. A small residential development parallels US 1 to the west and a handful of businesses front the highway. Otherwise the surroundings in this area are largely undeveloped. A fork of Cedar Creek and a major wetland bisect US 1 immediately south of the proposed NC 56 Bypass interchange, and the CSX line parallels US 1 approximately one-half mile to the east.

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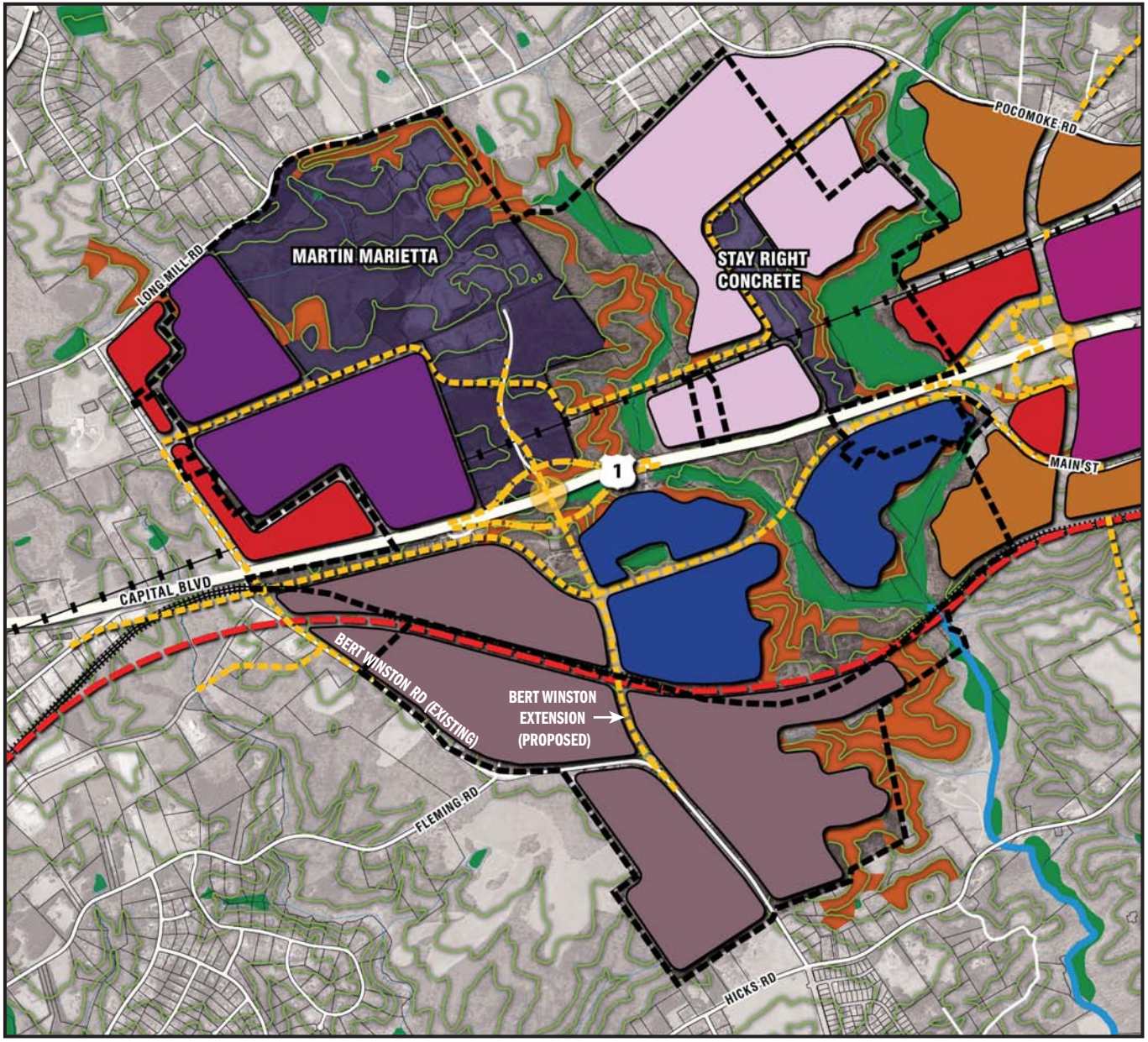
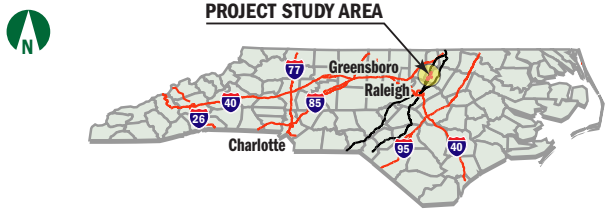


LEGEND

- Node Potential Impact Boundary (Premise: Industrial Zoning District)
- Commercial
- Office / R&D
- Mixed-Use
- Mixed Residential
- Heavy Industrial
- Light Industrial / Warehousing
- Rail-based Industrial
- Proposed Interchange
- Proposed Road / Street
- Possible SEHSR Alignment
- Contour Elevation Lines



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Foreseeable Development: Bert Winston Extension Node

Figure 4-2

Future Zoning

Because the Franklinton town limits extend to the proposed NC 56 Bypass, this node could be thought of as a complement to the more developed areas near the existing NC 56 junction to the north, and a strategic growth area for the city. However, current zoning reinforces the strip commercial and highway commercial land use pattern that is prevalent in the south US 1 segment. Highway Business (HB/C3H) and Light Industrial (LI) districts line both sides of US 1 in the Franklinton area except in established residential areas. With the exception of one parcel that carries a development proposal anchored by big-box commercial, mixed-use districts are not present. While appropriate for current conditions, this zoning does not take full advantage of the variety of uses and economic potential an interchange can bring.

Factors Constraining Development

The project Study Team analyzed the constraints to development capacity for this node in the same manner as the Bert Winston Extension. Figure 4-3 presents the locations of these constraining factors. What became evident from this analysis is that future development in this area is far more constrained. Pads are concentrated to the north of the potential interchange location because of watershed and topography (slope) issues to the south. Moreover, the network of existing streets and town development significantly limit pad sizes; the largest is approximately 80 acres, with an average pad size closer to 25 acres.

Comparisons of Similar Retail Oriented Interchange Nodes

Three similar North Carolina interchanges were reviewed for comparison to this node. Two interchanges are along Interstate 77 north of Charlotte, and the other is along the US 1 Phase 1 segment in Wake County. The interchange locations were identified based on their characteristics including proximity to small towns, high levels of development that would serve as a comparison with future land use, and a focus on retail type development. The three comparison interchanges are:

- **I-77 / NC 73 in Huntersville:** This interchange contains major suburban development and the Birkdale Village retail center. Its development intensity reflects its position as the primary economic center for the Lake Norman area.
- **Gilead Road Interchange, south of I-77:** This interchange is more modest in scale and anchored by the mixed-use Rosedale Village, Presbyterian Hospital and a large office park. It is roughly one mile from the center of historic Huntersville.

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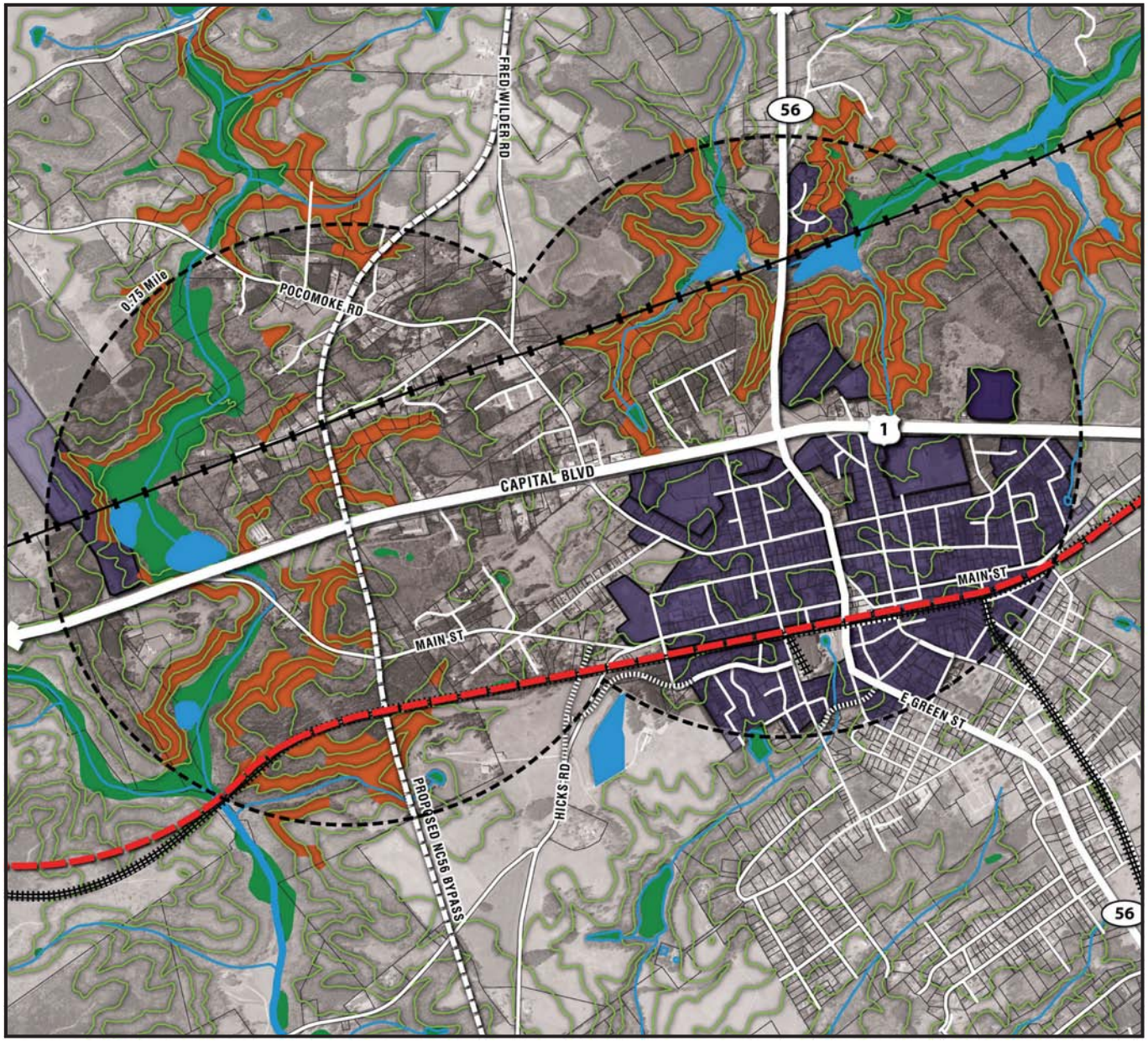
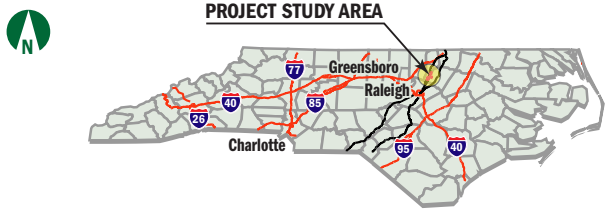


LEGEND

- Existing Development
- Surface Water
- Floodplain
- Contours - 20 Feet
- Difficult Slopes
- Contour Elevation Lines



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Factors Constraining Development: NC 56 Bypass/Franklin South Node

Figure 4-3

- **New Falls of Neuse Road at US 1:** This interchange is twelve miles south of Franklinton at US 1 and the New Falls of Neuse Road. It is similar in scale to the Gilead Road interchange, though more populated by big-box retail and car dealerships.

While future land use and development, especially in the long-term, is highly contingent on economic conditions and the construction of the interchange, there are some lessons to be learned from this very general comparison. These include:

- Unlike the Bert Winston Extension node, there is quite a wide variety of development that could be physically accommodated in the NC 56 Bypass/Franklinton South Node if enough land could be assembled to make project economics work at this node.
- The Gilead Road Interchange used for comparison is approximately one mile from historic Huntersville. The future NC 56 Bypass will be roughly the same distance from historic downtown Franklinton. The land uses in the Gilead Road Interchange node appear to be considerate of their neighboring historic lands uses. Similarly, land use decisions for future development in NC 56 Bypass node should consider how to compliment the neighboring historic Franklinton downtown area.

Reasonable Future Development

Considering the above, the following land uses can be reasonably foreseen as illustrated in Figure 4-4:

- Providing for transit-oriented development at or near the interchange to minimize transit routing through Franklinton while providing good connectivity and access through the local street network.
- Encouraging mixed-use at the center of the node to allow for denser (but contained) residential and commercial development to complement downtown Franklinton.
- Broadening the market for future retail by including areas of mixed residential (single-family detached and attached homes, four-unit townhouses, small apartment buildings) away from Franklinton's historic neighborhoods but close to downtown, transit and open space.
- Preserving (limited) space for straight auto-oriented commercial, close to interchange locations to minimize spillover traffic into downtown and residential areas.
- Expanding Franklinton's traditional / historic single-family fabric in key infill locations.
- Preserving sensitive environmental areas with residential cluster development.

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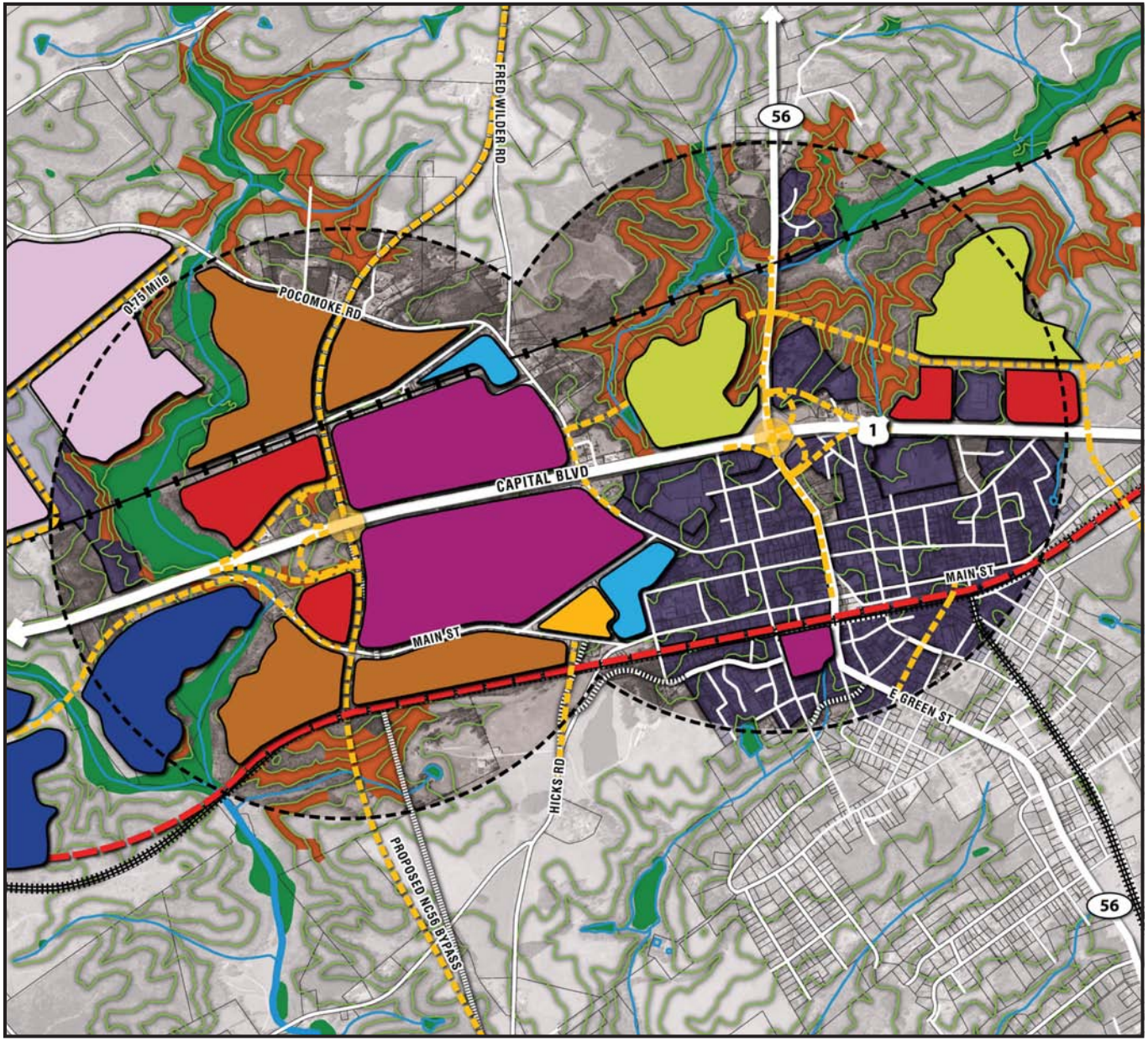
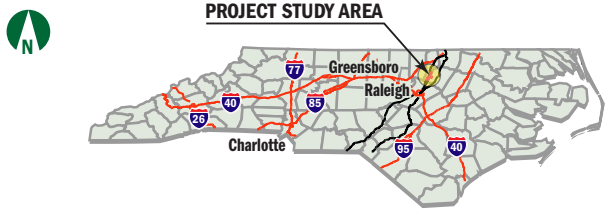


0 Miles 0.125 0.25 0.375 0.5 0.75

LEGEND

- Node Potential Impact Boundary (Premise: Accessibility)
- Commercial
- Office / R&D
- Mixed-Use / TOD
- Institutional / Public Utility
- Cluster Residential
- Low-Density / Traditional Residential
- Mixed Residential
- Light Industrial / Warehousing
- Proposed Interchange
- Proposed Road / Street
- Possible SEHSR Alignment
- Contour Elevation Lines



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Foreseeable Development: NC 56 Bypass/Franklinton South Node

Figure 4-4

The project Study Team recommends that Franklinton work with Franklin County to undertake a community-based visioning and development plan for the town and this growth area that considers the economic opportunity of the future interstate and interchanges, and the potential for greater Franklinton to become a key activity center in the county and region.

The visioning should be informed by a comprehensive market study that would use community input and land use observations. One of the outcomes of the plan would be land use and zoning modifications that could enable development offering high economic return to the city without compromising its small-town character.

4.3 US 1

Chapter 4 evaluated a detailed comparison of four US 1 conceptual alternatives. Two conceptual alternatives were recommended for more detailed analysis:

- Superstreet Alternative: The superstreet alternative was highly rated. Although it does not meet the ultimate freeway vision, it is substantially less expensive and also provides a potential interim solution.
- Freeway with Local Streets Improvements Alternative: This alternative ranked highest and meets all goals of the study. It involves numerous local street projects beyond improvements to US 1, and would result in increased impacts as well as higher costs. It may be possible, however, to offset some or most of the local street costs by requiring construction or funding as part of private development.

4.3.1 Superstreet Alternative

As discussed in Chapter 3, a Superstreet is a facility that maximizes through capacity on a roadway by restricting access and left turns. As shown on Figure 3-1, the unique characteristic of a superstreet is the configuration of the intersections. Side-street traffic wishing to turn left or cross the highway must turn right onto the divided highway then make a U-turn through the median a short distance away from the intersection. After making a U-turn, drivers can then either go straight (the equivalent of an intended left turn) or make a right turn at their original intersection (the equivalent of a crossing of the highway).

The Superstreet Alternative involves a 4-lane divided arterial highway typical section as illustrated in Figure 4-5. The paved shoulders would not be required, but may be provided near intersections. In general, the existing right of way (180 ft-220 ft as shown in Table 2-3) will be adequate for the superstreet with isolated exceptions.

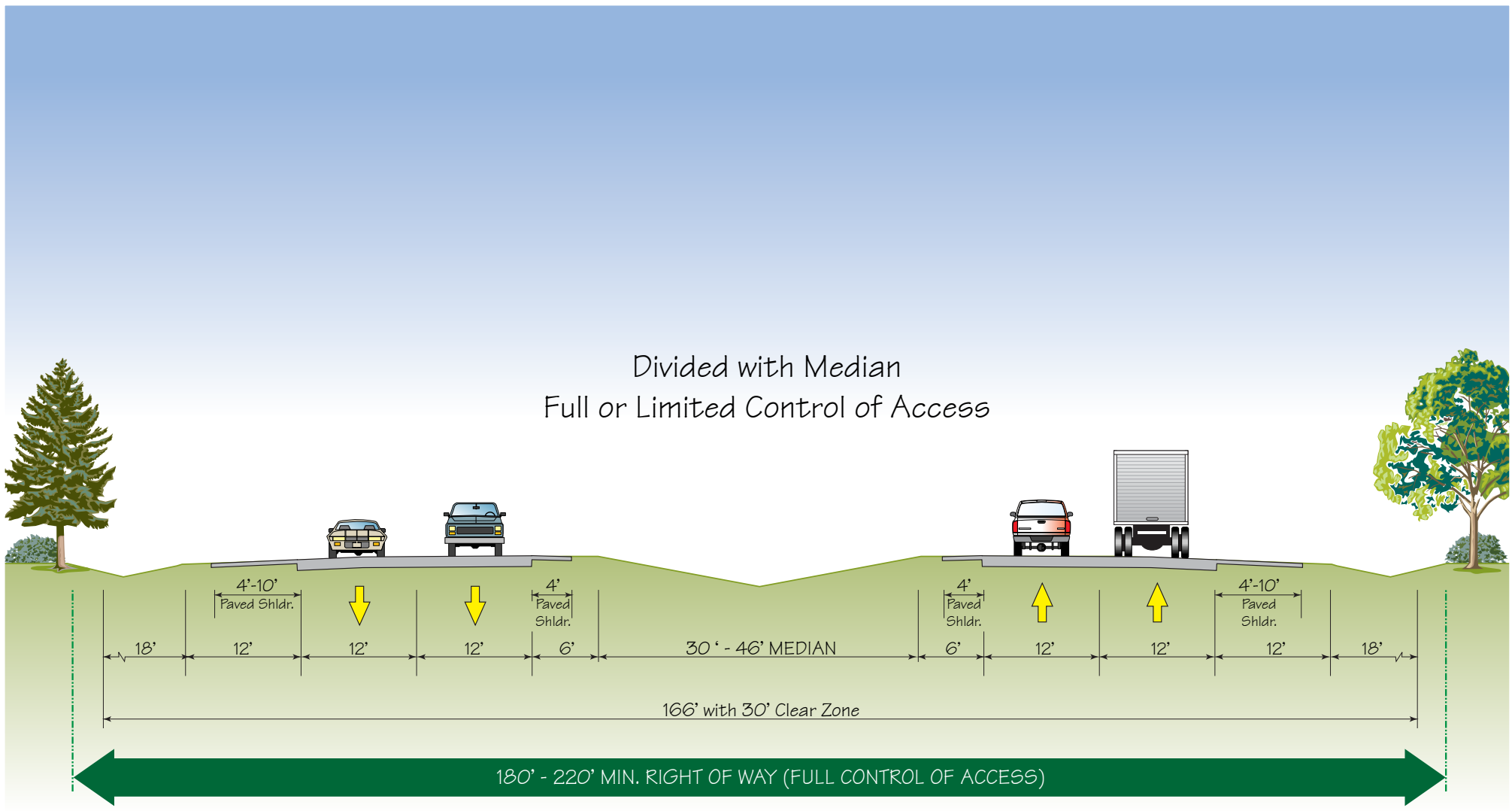
In addition, superstreet intersection improvements will be implemented at the intersections shown in Table 4-1.

4.3.2 Freeway with Local Street Enhancements

A Freeway alternative with Local Street enhancements was identified as a viable long term alternative for the US 1 corridor. Compared with the Superstreet, the Freeway alternative is the only alternative that serves traffic beyond the 2040 planning horizon identified for US 1.

Figure 4-5 also illustrates the assumed typical section for the freeway. Specifically it is assumed that the freeway will utilize the existing roadway. This will require some design exceptions, but provides a proper balance of minimizing impacts. Specific exceptions include:

- The current median width in the south section is 30 feet as shown in Table 2-2. It is proposed that this median be maintained to minimize impacts. This is not atypical of other freeways in North Carolina, specifically for upgrades of older road sections. Median treatments may be needed to prevent crossover crashes.
- The existing roadway does not have paved shoulders. It is proposed that the freeway upgrade include paved shoulders in order to incorporate rumble strips, but that this paving would effectively entail paving the existing grass shoulder, not widening the width of the shoulder.
- The current right of way width varies from 180 feet to 220 feet as shown in Table 2-2. This is less than the 250 foot minimum typically specified for full access control facilities. Nevertheless, the proposed typical section does fit within the current right of way with an assumed 30 foot clear zone. Exceptions may occur in areas where regrading is needed to improve vertical curves, but this would be determined at a more advanced stage. In addition, it may be possible to incorporate expressway gutter or other treatments to minimize the roadway footprint.



*Maintain existing right-of-way.

Table 4-1. Superstreet Alternative Intersection Improvements

Intersection	Improvement Type	Location	Reason
US 1A/Park Avenue	Dual left over	At this intersection	To maintain access at this intersection
Bert Winston Road	Dual left over	At this intersection	To maintain access at this intersection (replacement of existing conventional signalized intersection to maximize through capacity). This assumes the new Bert Winston extension is built.
Private driveway to the Organic Recycling Center	Dual left over	At this intersection	To maintain access at this intersection
Materials Drive/ New Bert Winston Extension	Superstreet intersection with signal	From the private driveway at the Organic Recycling Center to the new access south of Stay Right Concrete Co.	Signalized superstreet intersection to maintain access and maximize through capacity
Access south of Stay Right Concrete Co. driveway	Dual left over	At this access	To accommodate the superstreet intersection at Materials Drive. Provides new median break for northbound lefts into Stay Right.
Private driveway at Stay Right Concrete Co.	Dual left over	At this intersection	To maintain access at this intersection and accommodate the superstreet intersection at US 1A
US 1A south of Franklinton	Superstreet intersection with signal	From the private driveway to Stay Right Concrete Co. to a dual left over at Budget Inn	Signalized superstreet intersection to maintain access and maximize through capacity
Access in front of Budget Inn	Dual left over	At this access	To maintain access and accommodate the superstreet intersection at US 1A
Access south of Pocomoke Road/Cheatham Street	Dual left over	At this access	To maintain access and accommodate the superstreet intersection at Pocomoke Road/Cheatham Street
Pocomoke Road/Cheatham Street	Superstreet intersection with signal	From a dual left over south of Pocomoke Road/Cheatham Street to a dual left over at Oak Crest Drive	Signalized superstreet intersection (replacement of signalized conventional intersection) to maximize through capacity
Oak Crest Drive	Dual left over	At this intersection	To maintain access and accommodate the superstreet intersection at Pocomoke Road/Cheatham Street. Janice Avenue is to be closed.

Table 4-1. Superstreet Alternative Intersection Improvements (concluded)

Intersection	Improvement Type	Location	Reason
Janice Avenue	Close median opening	At this intersection	To improve safety by eliminating crossover that can impact flows from the NC 56 southbound ramp (See Section 2.3.1 Access Issues)
Mason Street	Left Over	At this intersection	To maintain access at this intersection (See Section 2.3.1 Access Issues)
Swannanoa Street	Dual left over	At this intersection	To maintain access at this intersection
Cheatham Street north of Franklinton	Dual left over	At this intersection	To maintain access at this intersection and accommodate the superstreet intersection at US 1A
US 1A/Main Street	Superstreet intersection with future signal	From a dual left over at Cheatham Street to a dual left over north of US 1A	Signalized superstreet intersection to maintain access and maximize through capacity
Access north of US 1A	Dual left over	At this access	To maintain access and accommodate the superstreet intersection at US 1A
Access north of Interdenominational Church	Dual left over	At this access	To maintain access
Access south of Cone Drive	Dual left over	At this access	To maintain access
Cone Drive	Dual left over	At this intersection	To maintain access at this intersection
Bradleys Way	Dual left over	At this intersection	To maintain access at this intersection
Walden Lane	Dual left over	At this intersection	To maintain access at this intersection and accommodate the superstreet intersection at Carnell Drive
Carnell Drive	Superstreet intersection with future signal	From a dual left over at Walden Lane to a dual left over at Winston Street	Non-signalized superstreet intersection to maintain access and maximize through capacity
Winston Street	Dual left over	At this intersection	To maintain access at this intersection and accommodate the superstreet intersection at Carnell Drive
Access north of Winston Street	Dual left over	At this access	To maintain access. McGhee Farms to be closed.
Access and median crossover at McGhee Farms	Close median opening	At this access	To improve safety.
Access south of the Tar River	Dual left over	At this access	To maintain access

- Some deficiencies were noted in the vertical grades in Table 2-3. One element that occurred at 14 locations was sag vertical curves that met the posted speed of 55 mph, but not the design speed of 60 mph. It is proposed that a design exception be applied to these locations.
- The review and recommendations for future typical sections, horizontal and vertical curves, and potential design exception is based on an assumption that US 1 would remain posted at 55 miles per hour (mph) with a desired 60 mph design speed. If the decision were made in final design to utilize a higher design speed, additional modifications to the existing roadway would be required likely increasing impacts, right of way requirements, and costs. It is recommended that the future vision maintain the existing 55 mph posted speed on US 1 for these reasons.
- The US 1 Corridor Study Phase II Study examined in detail and proposed the implementation of High Occupancy Vehicle (HOV) lanes south of NC 98 in Wake Forest. As part of the initial traffic analysis it was confirmed that HOV or other managed lanes would not be required for the study corridor.

4.3.2.1 *Interchange Locations*

In developing a freeway alternative, the primary considerations are the locations for the interchanges access and type of interchanges for each location. Three interchange locations are proposed as part of the Franklin County CTP. The three CTP interchange locations are:

- **Bert Winston Road Extension/Materials Drive:** A new interchange north of Bert Winston Road
- **NC 56 Bypass:** A new interchange between US 1A and Pocomoke Road/Cheatham Street
- **NC 56:** The existing interchange in downtown Franklinton which will require upgrading when US 1 is improved to a freeway for safety and operations.

As part of the steering committee process, it was verified that these three locations were appropriate for interchanges. It was also noted that each of these interchanges were spaced approximately one mile apart. In general, it is preferable to have a one mile minimum spacing between interchanges. Therefore no additional interchange locations were considered south of NC 56. Two additional interchange locations were considered as part of the CTT process. The general consensus of the CTT was that an interchange would be required on the northern section of the corridor. Two locations were considered:

- **US 1A Main Street at the north end of Franklinton:** This location was considered recognizing that US 1A Main Street provides direct access from the north to the center of

Franklinton. After discussions with the CTT, however, it was determined that an interchange at this location would be redundant with the existing NC 56 interchange. Therefore, no interchange is proposed at this location.

- **Northern Franklin County:** It was identified that the northern part of Franklin County required access to US 1 (as evidenced by numerous residential and farm access points onto US 1). Without an interchange, all trips would need to travel south to the NC 56 interchange and through downtown Franklinton. Therefore, an interchange was investigated and proposed. After evaluation it was identified that the intersection of Swan Street and a proposed SEHSR connector between Montgomery Street and US 1 was the best location for the interchange. Swan Street was the preferred location because it allows for simplified connections to the local street network, can be connected directly into a proposed SEHSR rail crossing, and minimizes impacts to buildings. In addition, an interchange can be constructed without impacting the Person-McGhee Farm property. A more detailed analysis is presented in Section 4.4.2.5.

4.3.2.2 *Selection of Preferred Interchange Types*

Multiple interchange types were considered for the interchange locations discussed above. This section provides an overview of interchange types considered. It must be noted, however, that as projects are pursued in the future, the specific interchange types may be re-examined as part of the formal environmental analysis and final design. Nevertheless, the recommended interchange types in the study will provide guidance to planners and engineers in evaluating proposed developments and future roadway investments within the area.

For the locations that interchanges are proposed, multiple interchange types were investigated. Concerns considered included:

- Interchange Traffic Operations
- Impacts to Local Roads
- Provisions for Bicyclists and Pedestrians
- Providing Local Access for Land Use
- Natural Environment Impacts
- Human Environment Impacts
- Conceptual Cost

The outcomes of the above investigation were tabulated and coded in Table 4-2 through Table 4-5 using the same color/numeric coding system utilized in Table 3-4. To re-cap: green is a

positive assessment (worth 4 points); yellow is generally positive although there are constraints (worth 3 points); orange is generally negative (worth 2 points), and red represents a scenario that is negative (worth 1 point).

It is important to note that in the tables below, although an interchange type could have red under one or more comparison measures, it may still be a viable alternative. Similarly, although an interchange type could have green under one or more comparison measures, it may not be the best alternative. Table 4-2 through Table 4-5 are provided to demonstrate the subjective considerations used to compare and select the preferred interchange types. Figure 4-6 through Figure 4-9 provide a conceptual layout for the recommended alternative.

Table 4-2. Interchange Type Comparisons for the Bert Winston Extension

Interchange Type	Interchange Traffic Operations	Impacts to Local Roads	Provisions for Bicyclists and Pedestrians	Providing Local Access for Land Use	Natural Environment Impacts	Human Environment Impacts	Conceptual Cost	Other Issues	Recommendation
New Bert Winston Extension Interchange	Future side street volumes less than 10,000 vpd. High volume of trucks related to industrial development.	Local street proposed both west and east of US 1.	Overpass will provide opportunity for bicyclists/pedestrians to cross US 1. Possible conflict between industrial oriented traffic versus bicycle pedestrian.	Industrial development planned on west. Industrial development oriented to RR access planned on east. Local roads need to be continuous north-south.	Wetlands and pond/stream located in NE quadrant	4 houses located adjacent to US 1 in SE quadrant. 1 house located in NE quadrant near pond.	Based on CAMPO cost estimation for interchanges. Does not include ROW.	If Bert Winston Extension occurs prior to 2030, at-grade signalized superstreet intersection would be adequate as interim improvement.	
Simple Diamond	Sufficient long term traffic capacity. Diamond works well with trucks. No weaves on US 1 or overpass.	1200 ft spacing can be provided to west and east.	Diamond interchange provides signals that can be phased to include pedestrians.	Local roads offset from US 1 with 1200 ft spacing	Interchange area for simple diamond likely 35 acres. Wetland/ stream impact in NE quadrant.	Between 1-4 houses in SE quadrant may be impacted. 1 house in NE quadrant may be impacted.	$7.1 million	24 pts	Simple Diamond Recommended for Bert Winston Extension
Partial Cloverleaf SW and SE quadrants	Sufficient long term traffic capacity. Loop ramps can be unsafe for higher speed trucks. Weave on EB section of overpass.	1000 ft spacing can be provided west and east.	Sidewalk can be provided on north side with no crossing traffic	Local roads offset from US 1 with 1000 ft spacing	Interchange area for partial clover varies, but approximately 40 acres. SW and SE quadrants have minimal environmental issues.	4 houses in SE quadrant will be impacted.	$10.7 million	19 pts	
Partial Cloverleaf NW and SE quadrants	Sufficient long term traffic capacity. Loop ramps can be unsafe for higher speed trucks. No weaves on US 1 or overpass.	1000 foot spacing can be provided west and east.	Loop ramps can introduce safety issues for bicyclists/ pedestrians since movements do not stop at intersection.	Local roads offset from US 1 with 1000 ft spacing	Interchange area for partial clover varies, but approximately 40 acres. SW and SE quadrants have minimal environmental issues.	4 houses in SE quadrant will be impacted.	$10.7 million	18 pts	

Legend:

Green = Positive (4 Points)	Yellow = Generally positive with some negatives (3 Points)	Orange = Generally negative, but does function (2 Points)	Red = Negative (1 Point)

Back of Table 4-2 (11x17 table)

Table 4-3. Interchange Type Comparisons for the NC 56 Bypass Interchange

Interchange Type	Interchange Traffic Operations	Impacts to Local Roads	Provisions for Bicyclists and Pedestrians	Providing Local Access for Land Use	Natural Environment Impacts	Human Environment Impacts	Conceptual Cost	Other Issues	Recommendation
NC 56 Bypass	Future side street volumes will exceed 25.000 vpd to east, 10,000 vpd to west.	US 1A spaced 1200 feet to east. Pocomoke Road spaced 2400 feet to west.	Overpass will provide opportunity for bicyclists/pedestrians to cross US 1.	Between NC 56 Bypass & NC 56, local plans anticipate extensive retail focus. Multiple existing businesses need local access road for back side access in future.	Wetlands and pond/stream located in NE and SE quadrant	Isolated houses & businesses with direct access to US 1	Based on CAMPO cost estimation for interchanges. Does not include ROW.	Interchange would be constructed as part of NC 56 Bypass project	
Simple Diamond	Sufficient long term traffic capacity. Diamond works well with trucks. No weaves on US 1 or overpass.	1200 ft spacing can be provided to US 1A, but 2400 ft to Pocomoke Rd. Trucks and local trips must divert to Pocomoke or US 1A. Higher volumes on these roads since new local streets difficult to access.	Diamond interchange provides signals that can be phased to include pedestrians.	On the west, Pocomoke Rd spaced too far from interchange to serve planned development. On the east, development existing and future access required near US 1, not off US 1A.	Interchange area for simple diamond likely 35 acres in 4 quadrants. Wetland/ stream impact in NE & SE quadrants.	6 lots impacted: 1 business in SW quadrant, 2 businesses in NW quadrant. 1 house, 1 business, & 1 hotel in NE quadrant	$7.1 million	19 pts	
Partial Cloverleaf SW and SE quadrants	Sufficient long term traffic capacity. Weave on EB section of overpass. Adding local street intersection as 4th leg not preferred, but adequate capacity can be provided.	In addition to offset to US 1A and Pocomoke Rd, local streets can be connected directly to interchange ramps.	Sidewalk can be provided on north side with no crossing traffic.	New local streets planned directly off interchange ramp intersections to serve future development west and east of US 1. Strong desire of local stakeholders.	Interchange area for partial clover varies, but approximately 40 acres in 2 quadrants. Wetland/ stream impact in SE quadrant.	1 business impacted in SW quadrant	$10.7 million	22 pts	Partial Cloverleaf with loops in SW and SE quadrants recommended

Legend:

Green = Positive (4 Points)	Yellow = Generally positive with some negatives (3 Points)	Orange = Generally negative, but does function (2 Points)	Red = Negative (1 Point)

Back of Table 4-3 (11x17 table)

Table 4-4. Interchange Type Comparisons for the NC 56 Interchange

Interchange Type	Interchange Traffic Operations	Impacts to Local Roads	Provisions for Bicyclists and Pedestrians	Providing Local Access for Land Use	Natural Environment Impacts	Human Environment Impacts	Conceptual Cost	Other Issues	Recommendation
NC 56	Future side street volumes will exceed 25.000 vpd to east, 10,000 vpd to west.	US 1A spaced 1200 feet to east. Pocomoke Road spaced 2400 feet to west.	Overpass will provide opportunity for bicyclists/ pedestrians to cross US 1.	Between NC 56 Bypass & NC 56, local plans anticipate extensive retail focus. Multiple existing businesses need local access road for back side access	Wetlands and pond/stream located in NE and SE quadrant	Isolated houses & businesses with direct access to US 1	Based on CAMPO cost estimation for interchanges. Does not include ROW.	Interchange would be constructed as part of NC 56 Bypass project	
Existing Interchange – Diamond interchange (1950s standards)	Very poor in future. Bridge will likely require 4 lanes & signals. Stop signs at merge area with US 1 have safety and capacity issues.	As currently designed, spaced too close to Janice Avenue and East Mason Street. Future spacing, congestion, & safety issues on NC 56.	Existing interchange has paved shoulders on NC 56 & allows crossing of US 1 at grade separation.	Poor access to local streets & development on west side of US 1.	No impacts since interchange already in place.	No impacts since interchange already in place.	Existing interchange, therefore assuming no cost.	20 pts, but does not meet current standards for safety or design.	
Simple Diamond	Sufficient long term traffic capacity. No weaves on US 1 or overpass.	Offset to local streets may require widening of NC 56 to Cheatham.	Diamond interchange provides signals that can be phased to include pedestrians.	No direct access provided to local streets. Ramps in SE and SW quadrant will minimize development potential or impact existing business.	Interchange area for simple diamond likely 35 acres in 4 quadrants. No sensitive environmental features noted.	22 lots impacted: 4 businesses in SE quadrant, 2 businesses in SW quadrant, 5 houses & 1 business in NW quadrant, 6 houses, 3 businesses, & 1 church in NE quadrant	$7.1 million	20 pts	
Partial Cloverleaf NW and NE quadrants	Sufficient long term traffic capacity. Weave on WB section of overpass. High volume of lefts into Franklinton.	Local street access to west will require new street. NC 56 requires widening to Cheatham.	Sidewalk can be provided on south side with no crossing traffic.	Local access requires turning onto NC 56 and diverting to either Cheatham or new local street on west.	Interchange area for partial clover varies, but approximately 40 acres in 2 quadrants. No sensitive natural features noted.	16 lots impacted: 5 houses & 1 business in NW quadrant, 6 houses, 3 businesses, & 1 church in NE quadrant	$10.7 million	19 pts	
Partial Cloverleaf NW and NE quadrants with ramp in SE quadrant	Sufficient long term traffic capacity. Weave on WB section of overpass. SE quadrant ramp improves flow to Franklinton.	Local street access to west will require new street. NC 56 requires widening to Cheatham.	Sidewalk on south side has crossing traffic from SE ramp.	Local access requires turning onto NC 56 and diverting to either Cheatham or new local street on west.	Interchange area for partial clover varies, but approximately 40 acres in 2 quadrants. No sensitive natural features noted.	16 lots impacted: 5 houses & 1 business in NW quadrant, 6 houses, 3 businesses, & 1 church in NE quadrant, tight ramp in SE quadrant has no building impact	$12.7 million	20 pts	Partial Cloverleaf with loops in NW and NE quadrants with ramp in SE quadrant recommended.
Partial Cloverleaf SW and NE quadrants	Sufficient long term traffic capacity. No weaves on US 1 or overpass.	In addition to offset to US 1A and Pocomoke Rd, local streets to NW can be connected directly to interchange ramps. NC 56 requires widening to Cheatham	Sidewalk will be directed through intersection & loop ramp.	New local streets can serve SW and NE quadrants well. SW quadrant may not link NC 56 and Cheatham. West and east of US 1.	Interchange area for partial clover varies, but approximately 40 acres in 2 quadrants. No sensitive natural features noted.	12 lots impacted: 2 businesses in SW quadrant, 6 houses, 3 businesses, & 1 church in NE quadrant,	$10.7 million	22 pts	Steering Committee did not select this alternative.

Legend:

Green = Positive (4 Points)	Yellow = Generally positive with some negatives (3 Points)	Orange = Generally negative, but does function (2 Points)	Red = Negative (1 Point)

Back of Table 4-4 (11x17 table)

Table 4-5. Interchange Type Comparisons for the Northern Franklin County Interchange

Interchange Type	Interchange Traffic Operations	Impacts to Local Roads	Provisions for Bicyclists and Pedestrians	Providing Local Access for Land Use	Natural Environment Impacts	Human Environment Impacts	Conceptual Cost	Other Issues	Recommendation
Northern Franklin County Interchange	Future side street volume less than 5,000 vpd. Isolated housing units on West require access. SEHSR will construct initial connection from Winston Rd to US 1.	Local street proposed both west and east of US 1.	Overpass will provide opportunity for bicyclists/pedestrians to cross US 1. Possible conflict between industrial oriented traffic versus bicycle pedestrian.	Industrial development planned on west. Industrial development oriented to RR access planned on east. Local roads need to be continuous north-south.	Wetlands and pond/stream located in NE quadrant	Residential and business in all 4 quadrants. McGhee Farm historic/ conservation area located 2000 feet north of Swan St.	Based on CAMPO cost estimation for interchanges. Does not include ROW.	Location assumed at Swan Street to balance impacts to SW quadrant residential and avoid ramp construction impacts to McGhee Farm. Likely a long term plan item.	
Simple Diamond	Sufficient long term traffic capacity. No weaves on US 1 or overpass.	Trudy St, Walden Ln, Miss Kitty Ave, & Carnell Dr closed on west. Winston St closed on east.	Diamond interchange channels all movements to 2 simple intersections, but no signals for phasing.	Spacing to west cannot be easily provided without new local street around Swan Lake on west.	Interchange area for simple diamond likely 35 acres in 4 quadrants. Pond in NE quadrant impacted.	Impacts to 12 lots: 1 motel in SE quadrant. 3 houses & 1 business in NE quadrant. 4 houses in NW quadrant. 2 houses & 1 business in SW quadrant.	Total: $9.1 million $7.1 million interchange plus extra local street $2.0 million	16 pts	
Partial Cloverleaf NW and NE quadrants	Sufficient long term traffic capacity. Weave on WB section of overpass. Adding local street intersection as 4th leg not preferred, but capacity is adequate.	Carnell Dr closed on west. Winston St closed on east.	Loop ramps can introduce safety issues for bicyclists/ pedestrians since movements do not stop at intersection, but sidewalk can be provided on south side with no traffic conflicts.	Local roads feed directly to the south into the interchange ramps.	Interchange area for partial clover varies, but approximately 40 acres in 2 quadrants. Pond in NE quadrant impacted.	Impacts to 9 lots: 1 motel in SE quadrant (due to access). 3 houses & 1 business in NE quadrant. 4 houses in NW quadrant.	$10.7 million	21 pts	Partial clover with loops in NW and NE quadrants recommended

Legend:

Green = Positive (4 Points)	Yellow = Generally positive with some negatives (3 Points)	Orange = Generally negative, but does function (2 Points)	Red = Negative (1 Point)

Back of Table 4-5 (11x17 table)

4.3.2.3 *Recommended Interchange Types*

Utilizing the comparison measures shown in the top rows of Table 4-2 through Table 4-5, the interchanges illustrated in Figure 4-6 through Figure 4-9 are recommended for the four interchange locations.

Figure 4-6. Simple Diamond Interchange
Recommended for Bert Winston Extension

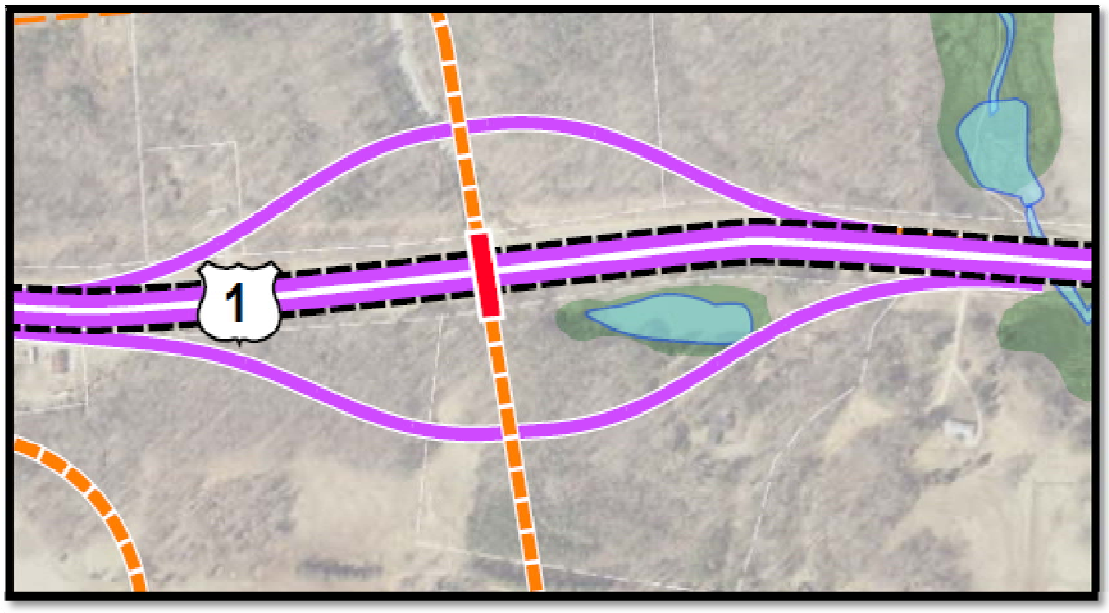


Figure 4-7. Partial Cloverleaf with Loops in SW and SE Quadrants
Recommended for NC 56 Bypass

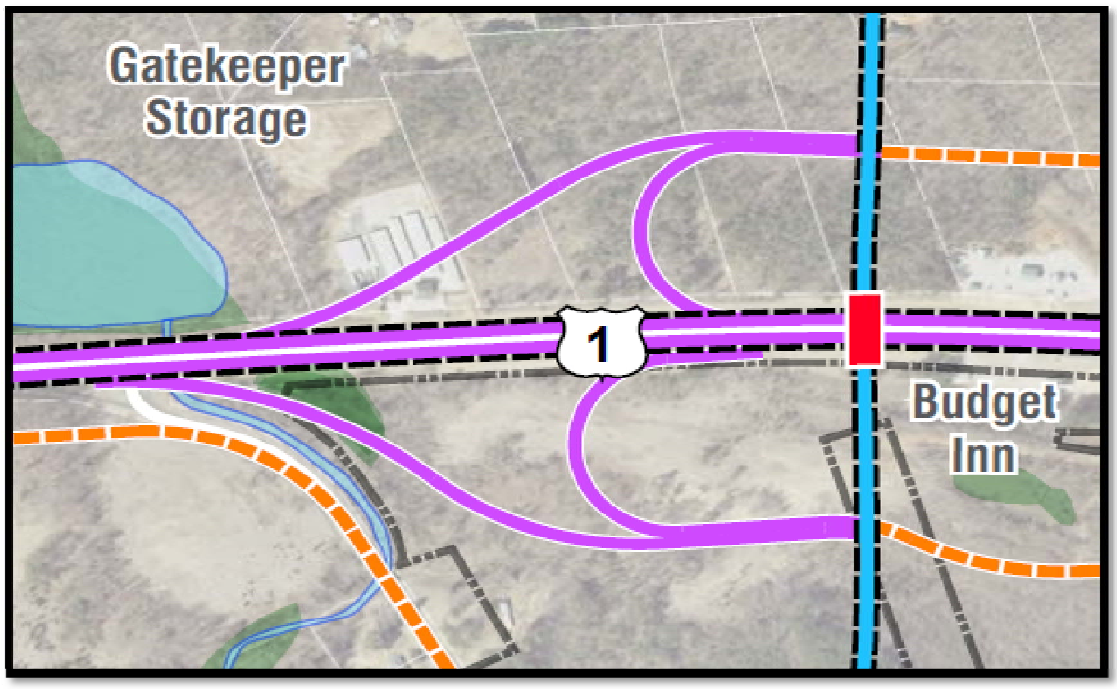


Figure 4-8. Partial Cloverleaf Interchange with Loops in NW and NE Quadrant & Ramp in SE Quadrant - Recommended for Upgrade to NC 56 Interchange

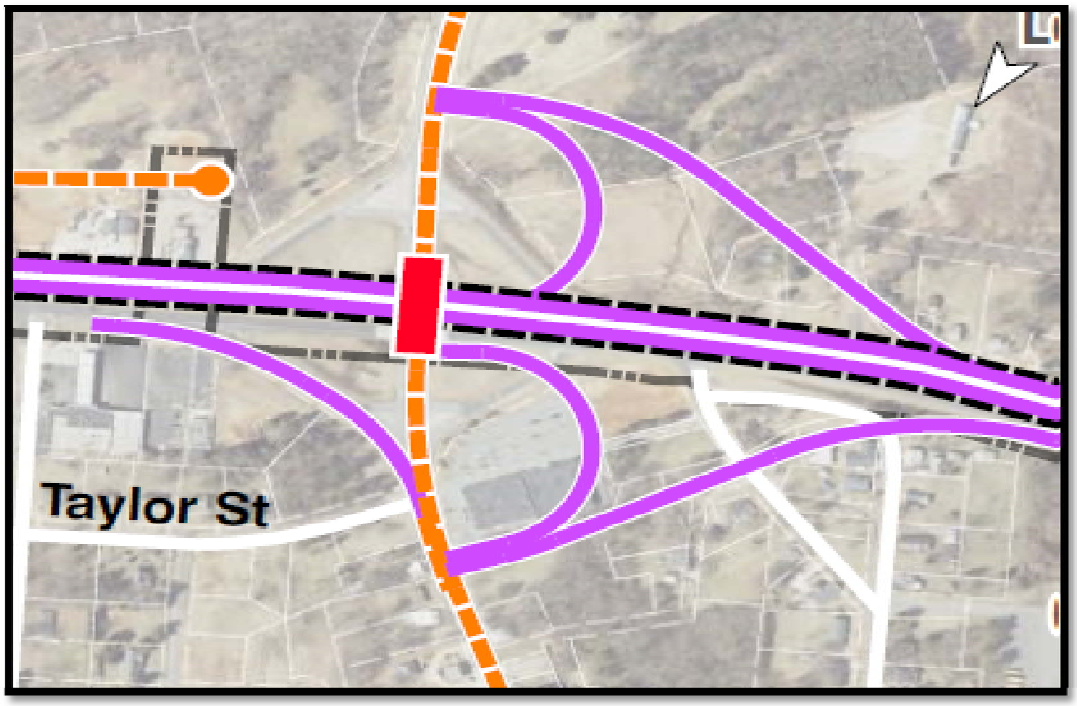
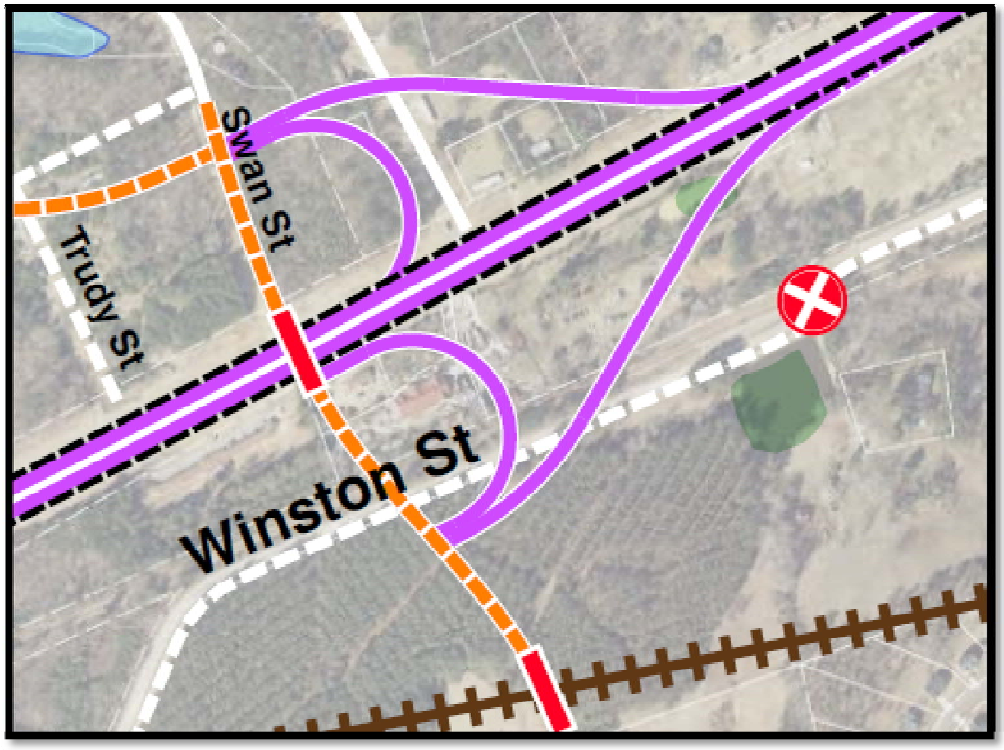


Figure 4-9. Partial Cloverleaf Interchange with Loops in SW and SE Quadrant Recommended for Interchange in Northern Franklin County



4.3.2.4 *Intelligent Transportation Systems (ITS)*

Intelligent Transportation systems (ITS) are a combination of computer and communication technologies, as well as institutional partnerships, which can allow higher volume facilities to operate more efficiently and safely. In addition, they can be utilized for guidance to motorists or as part of an incident management program. Within the study area, the implementation of ITS technology on US 1 would offer potential advantages in the management of future traffic, particularly as part of a freeway section.

ITS technology that may be applicable on the US corridor includes:

- Traffic monitoring through detectors and closed circuit video equipment as well as better traffic management through computerized signal systems on arterials
- Transit management systems (i.e., Transit Signal Priority), regional transportation management centers, and provision of real-time information to travelers through the use of electronic message signs and other means
- 511 telephone services, websites, road weather information systems, and other devices that are used to communicate with drivers to manage, monitor, and control traffic in order to improve traffic flow

In the interim period with the Superstreet implementation, it is recommended that signals associated with the Superstreet be coordinated with signals to the south including Youngsville. If Express Bus were to be implemented prior to a freeway upgrade, transit signal priority (TSP) could be considered. It should be noted, however, that the lower volumes and reduced levels of congestion on this section of US 1 will result in fewer benefits than application of signal coordination or TSP in a more congested corridor.

The primary implementation of ITS would likely occur as part of upgrades to a freeway. The ITS needs in this corridor are more applicable for driver information and incident management than congestion relief for the same reasons discussed for the interim solution. Nevertheless, the upgrade of US 1 to a freeway will increase the demand for variable message signs and cameras for remote viewing. It would likely involve an extension of an ITS system extending northward from I-540 in Raleigh.

It should be noted, however, that NCDOT does currently maintain a variable message sign on I-85 on the approach to the US 1 exit. Extension of the ITS communication and system through the study area in order to link the I-85 system with Raleigh would allow for management of flows from Virginia to the Durham and Raleigh regions.

ITS provisions on US 1 would also likely serve to provide driver information to longer distance traffic approaching Wake Forest and Raleigh from the north. In the interim period, it is likely that a variable message sign would be located on US 1 just north of the NC 98 Bypass. In the longer term, however, High Occupancy Vehicle (HOV) lanes were proposed as part of the Phase 1 study south of NC 98. When this would occur, there would be need to utilize the variable message signs and other equipment near NC 98 for HOV operations. Therefore, it could be reasonable to expect a variable message sign would be located in the study area, likely located north of NC 96 and the future NC 96 Bypass.

In addition, as ITS applications become more prevalent, ITS strategies to assist in incident response as well as non-recurring congestion should be implemented on US 1. This would include monitoring of speed data as well as video cameras to detect incidents and respond appropriately. Tying the communication and operation into NCDOT's system would also be required.

4.4 Local Street Network

As determined in Chapter 3.0, the ultimate alternative for US 1 is a Freeway with Local Street Enhancements to replace access that would be removed in the future due to the conversion of US 1 to a freeway. The local street network is critical not just to serve existing development, but also to assure prospective new development in the corridor that long term access will be available. A key goal of the local street plan would be to develop a plan that could be implemented in incremental steps in response to development projects. In addition, it is anticipated that substantial sections of the local street network connections could be constructed with funding assistance, dedication of right of way, and/ or construction by the prospective development.

4.4.1 No-Build

Local street improvements would be limited in the No-Build scenarios. New development would likely provide internal access to their site with minimal improvements to the public network. If improvements to the local network were required for a development, it could be anticipated that the improvements would be sporadic if no local plan was in place to guide the

improvements. In addition, there would likely be a continuation of the past trends that new development would request access directly onto US 1.

Note that the No-Build scenario assumes that the SEHSR project will occur. Under this scenario there will be local street improvements. In all there are six SEHSR local roadway projects anticipated to be in place. The primary purpose of these projects is to replace or mitigate for the closure of nine railroad crossings within the Franklin County study area. More detail and a listing of these improvements are included in Section 5.6.

4.4.2 Future Enhancements to Local Road Network

As part of the Freeway Alternative with Local Street Enhancements and prior to implementation of full access management, the local street network would have to be improved with backage and/or frontage roads to establish connectivity between local streets, proposed interchanges, and US 1. The recommended improvements are shown in Chapter 5.

It is anticipated that the improved local street network would run north-south along the east and west sides of US 1. Three types of roadways were evaluated for future enhancements including:

- **Frontage Roads:** This alignment option would run immediately adjacent to US 1. In general, these types of roadways require a number of land takes and would impact existing developments fronting US 1.
- **Backage Roads:** This alignment option would run farther away from US 1 along the backs of existing developments on US 1. With these types of roadways, existing lots can be served by the backage road, and new lots could be developed on the opposite side of the backage road, generating less of the above noted impacts. Ideally the backage roads would be located 350 feet to 500 feet off the US 1 right of way.
- **Independent Alignments:** These options would be located further from US 1, but could run between the locations of frontage and backage roads. They would generally allow for alignment shifts to minimize impacts and provide adequate offset to interchange ramps.

4.4.2.1 *Description of Coding Convention*

Each proposed local street alignment, new bridges, or roadway improvement was given a unique project number that is shown in the code column of the following tables. These codes are explained in detail below.

Location

On its east-west axis, the project area is broken into two sections using US 1 as the break point. On its south-north axis, the project area is broken into seven sections from south to north, these sections include south sections 1 and 2 (S1 and S2), central sections 1, 2 and 3 (C1, C2 and C3), and north sections 1 and 2 (N1 and N2). Hence, WS1 would indicate an improvement on the west of US 1, in the south section 1. The breaks for these sections are presented below and shown in Figure 4-10.

- **S1:** Park Avenue/US 1A to the proposed Bert Winston Road Extension
- **S2:** Proposed Bert Winston Road Extension to the proposed NC 56 Bypass
- **C1:** Proposed NC 56 Bypass to Pocomoke Road/Cheatham Street
- **C2:** Pocomoke Road/Cheatham Street to NC 56
- **C3:** NC 56 to Collins Road
- **N1:** Collins Road to Carnell Road
- **N2:** Carnell Road to the Vance County line
- **W:** West of US 1
- **E:** East of US 1

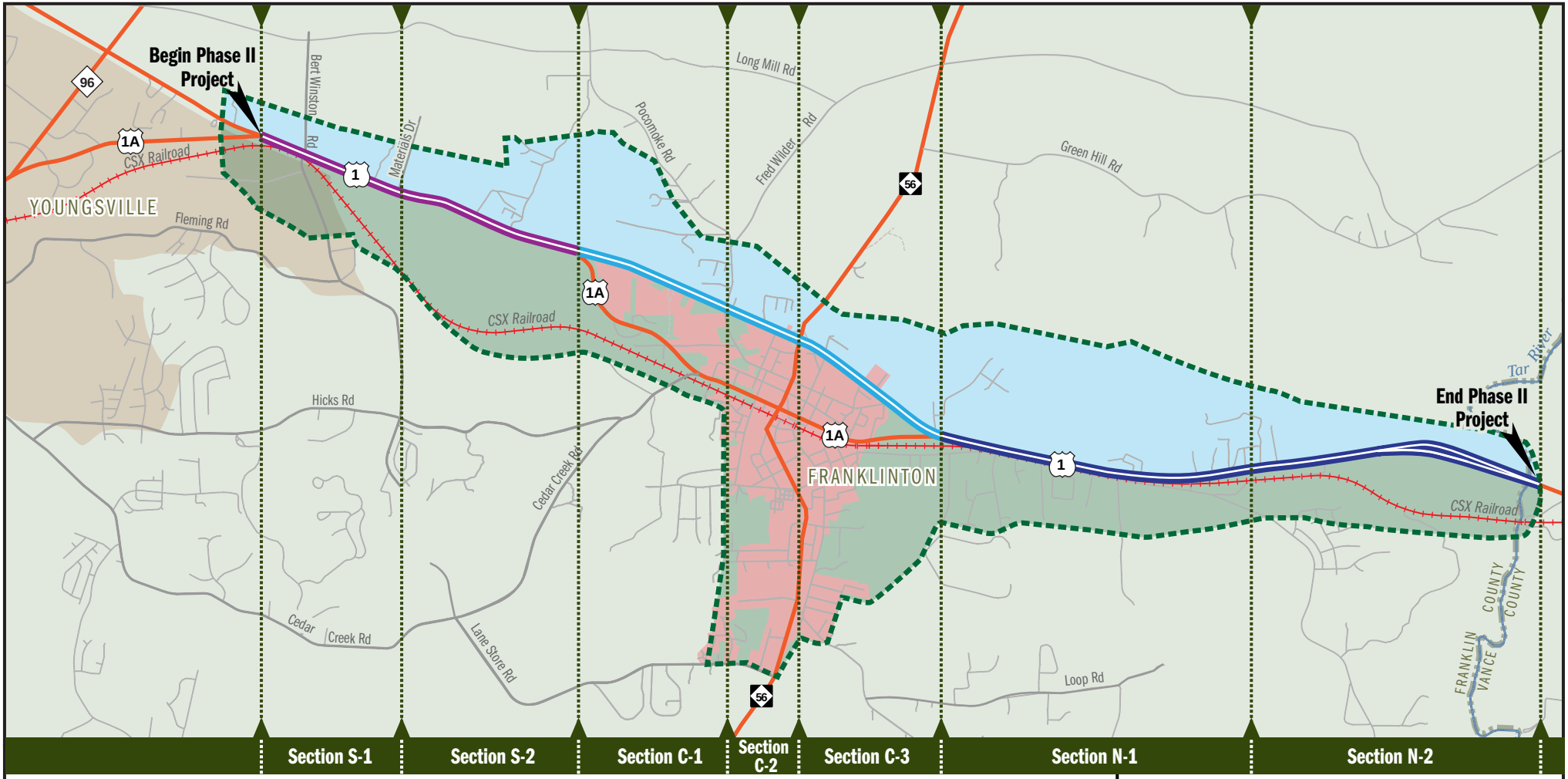
Improvement Type

The improvement types are coded "L" for local street and local street connectors, "bypass" for bypasses, and "B" for bridges. These are followed by numbers to add greater specificity. Hence, WS1-L1 would indicate an improvement on the west of US 1, in the south section 1 that is a local street or local connector designated number 1.

Improvement Versions

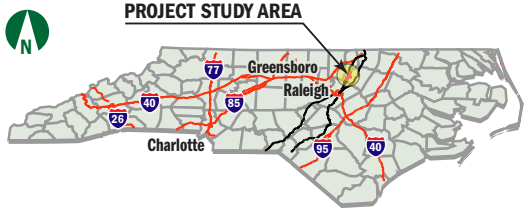
Improvement versions will typically be designated A through F, depending on the number of versions. Hence, WS1-L1-A would indicate an improvement on the west of US 1, in the south section 1, that is a local street or local connector designated number 1, that is the A variant thereof.

US1 North Corridor Study Phase II



LEGEND

- Phase II Study Boundary
- South Segment
- Central Segment
- North Segment
- East Section
- West Section
- Franklin Town Limits



US 1 Phase II Study - Franklin County

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Project Sections and Section Breaks

Figure 4-10

4.4.2.2 *Local Street Alternatives for Streets Parallel to US 1*

A key component to providing an alternate access to US 1 is providing parallel local streets to US 1 on both the east and west. For these streets, multiple alignments were evaluated and discussed with the CTT and SOT. Table 4-6 describes the alignment options considered for running parallel to US 1 as well as identifying key features or impacts of each alignment. The proposed alignment is highlighted in green. For reference, the alignment options are illustrated in Figure 4-11.

4.4.2.3 *Local Street Connectors*

In addition to the local streets paralleling US 1, there are multiple cross street intersecting US 1 or providing other connections in the network. Typically, these did not have multiple alignment options. Table 4-7 identifies these local street connectors.

4.4.2.4 *NC 56 Bypass*

The most significant project planned for the study area is the NC 56 Bypass. Envisioned as an Expressway as part of the 2035 CTP, this project would provide a four-lane divided high speed route crossing US 1 roughly one mile south of the existing NC 56 interchange. The project is projected to carry more than 20,000 vpd east of US 1 and less than 10,000 vpd west of US 1.

The primary purpose of this facility is to divert vehicular and freight through traffic from using NC 56 through Franklinton. The existing NC 56 is on a very tight two-lane section and widening would have extensive impacts to buildings through the center of Franklinton and therefore is likely not a viable option. It is anticipated that by 2040 volumes on NC 56 will exceed the capacity of NC 56 through town and at the two signalized intersections on NC 56 if a bypass is not built.

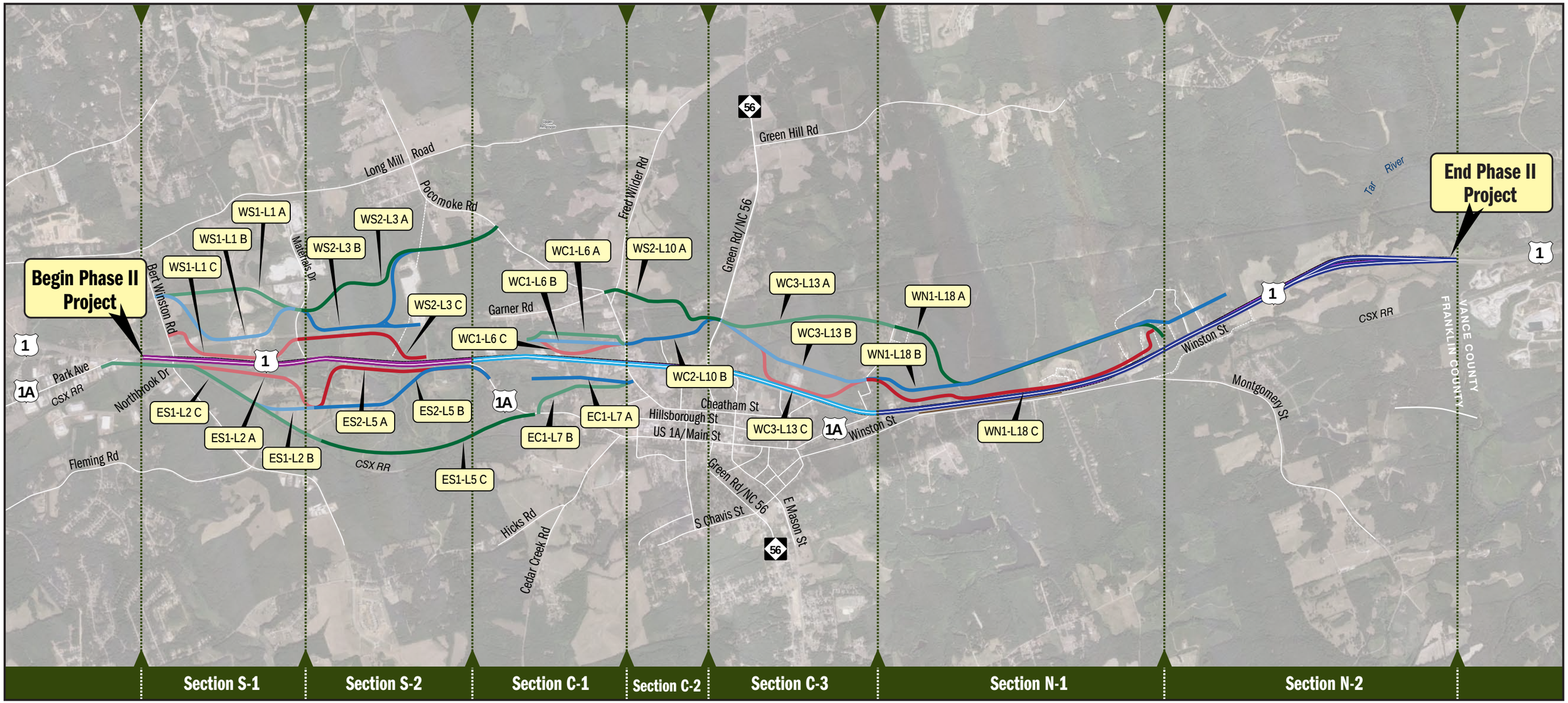
The NC 56 Bypass is considered as a separate project from the US 1 Corridor Study. Nevertheless, it has been included in the phasing analysis for this study. The interchange configuration of US 1 at the NC 56 Bypass was evaluated since it is a critical interchange for US 1. Before construction, detailed environmental studies and final design would be required to determine the final alignment for the NC 56 Bypass.

US1 North Corridor Study Phase II

N

0 0.5 1Mile

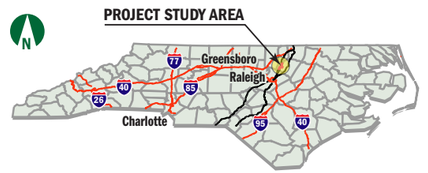
Scale in miles



LEGEND

- South Segment
- Central Segment
- North Segment

XXX-XX X Local Street Alignment Option Name



US 1 Phase II Study - Franklin County

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Local Street Alignment Options

Figure 4-11

Back of Figure 4-11 (11x17 figure)

Table 4-6. Local Street Alternatives East and West of US 1

Street	Street Orientation	Proposed Improvement	Code
West of US 1			
Bert Winston Road to Materials Drive	Independent	Local street alternative with diamond interchange Materials Drive.	WS1-L1-A
	Backage	Local street alternative with no interchange at Materials Drive.	WS1-L1-B
	Frontage		WS1-L1-C
Independent road selected as preferred alignment in order to provide spacing from future Material Dr interchange. In addition, this alignment parallels the existing overhead utility easement that effectively divides lots. Finally, the local stakeholders on the CTT indicated it provided best alignment for attracting desired industrial development.			
Materials Drive to Pocomoke Road	Independent	Local street alternative with Interchange Option S1-IA at Materials Drive.	WS2-L3-A
	Backage	Local street alternative with no interchange at Materials Drive.	WS2-L3-B
	Frontage		WS2-L3-B
Near Materials Drive, independent road selected as preferred alignment in order to provide spacing from future Material Dr interchange. In addition, this alignment parallels the existing overhead utility easement that effectively divides lots. Finally, the local stakeholders on the CTT indicated it provided best alignment for attracting desired industrial development. In the longer term, an extension would be provided from Stay Right Concrete to Pocomoke Rd. Options were examined east of Stay Right, but wetlands and contours prevented crossing to the east. Therefore, alignment west of Stay Right north to Pocomoke is proposed.			
NC 56 Bypass to Pocomoke	Independent	Not possible due to NC 56 Bypass access restrictions. Traffic would need to utilize Pocomoke.	WC1-L6B
	Backage	Local street alternative with partial cloverleaf interchanges at the NC 56 Bypass and NC 56 Business. Backage road can be served by connection opposite the southwest loop ramp.	WC1-L6A
Backage Road located approximately 350 feet off of US 1 was selected due to access requirements. By tying into the ramp terminal of the partial cloverleaf loop ramps, access can be provided directly to the proposed development node. If not provided, access to the local street would be limited to Pocomoke Avenue which is too far to serve growth adjacent to US 1 in this section with envisioned retail and related development. A frontage road was considered for this area, but it impacted all existing businesses west of US 1.			

Table 4-6. Local Street Alternatives East and West of US 1(continued)

Street	Street Orientation	Proposed Improvement	Code
Pocomoke Road to NC 56	Independent	Local street alternative with conventional diamond interchanges at the NC 56 Bypass and NC 56 Business.	WC2-L10-A
	Frontage	Local street alternative with partial cloverleaf interchanges at the NC 56 Bypass and NC 56 Business.	WC2-L10-B
North of Pocomoke Road connection was desired to NC 56 in order to provide alternate route to traveling on US 1 between NC 56 and NC 56 Bypass. In order to minimize impacts, road was connected to existing residential road at Oak Crest Drive. Local street was extended to NC 56 to intersection 1,200 ft north of existing NC 56 interchange. Avoided impacts to Franklinton County reservoir to the north. Note that the option tying in the loop ramp from NW quadrant of NC 56 were considered. This connection was not supported by the CTT due to impacts to the two existing businesses located on US 1 just west of NC 56.			
NC 56 to Collins Road	Independent	Local street alternative with conventional diamond interchange at the NC 56 Business.	WC3-L13-A
	Backage	Local street alternative with partial cloverleaf interchange at the NC 56 Business.	WC3-L13-B
	Frontage		WC3-L13-C
Alignment selected that connected 1200 ft north of NC 56 interchange. Aligned past the American Legion to provide access and then carried north past back of properties on US 1 including Griffin Trucks. Independent alignment also allowed for overpass to be placed over US 1 in north Franklinton providing a mini-loop connection of east and west Franklinton.			
Collins Road to Overpass "D"	Independent	Local street alternative to provide access to land uses west of US 1 and north of Franklinton. This roadway connector would mostly be within the property limits of Taylor's Creek Tree Farm.	WN1-L18-A
Collins Road to Overpass "F"	Backage	Local street alternative to provide access to land uses west of US 1 and north of Franklinton. This roadway connector would be adjacent to the property limits of Taylor's Creek Tree Farm and behind frontage properties to US 1.	WN1-L18-B

Table 4-6. Local Street Alternatives East and West of US 1(concluded)

Street	Street Orientation	Proposed Improvement	Code
Collins Road to Miss Kitty Drive	Frontage	Local street alternative to provide access to land uses west of US 1 and north of Franklinton. This roadway connector would be adjacent to US 1.	WN1-L18-C
The intermediate road option was identified as the preferred alignment in this section. The frontage road would impact a high number of residences and other buildings. The intermediate road provides access along the back side of the existing parcels that front US 1.			
East of US 1			
US 1A (Youngsville) to Bert Winston Road Extension	Independent	Local street alternative with diamond interchange Materials Drive.	ES1-L2-A
	Backage	Same	ES1-L2-B
	Frontage	Same	ES1-L2-C
The independent was selected. It would run from Park Avenue (US 1A) as a frontage road, then follow independent alignment to avoid wetlands near the proposed Bert Winston extension.			
Bert Winston Road Extension to US 1A	Backage	Local street alternative with diamond interchange at Materials Drive.	ES2-L5-A
	Independent	Same	ES2-L5-B
	Frontage	Same	ES2-L5-C
The independent was selected to provide offset from the Bert Winston extension and to minimize impacts to wetlands and streams.			
NC 56 Bypass to Cheatham	Independent	Local street alternative connecting to US 1A with diamond interchange at NC 56 Bypass. Requires all traffic to use US 1A to access businesses.	EC1-L7A
	Backage	Local street alternative connecting US 1A to Cheatham Street, with an NC 56 Bypass partial cloverleaf interchange.	EC1-L7B
Independent Road located approximately 300 feet off of US 1 was selected due to access requirements with the preferred partial cloverleaf interchange at the NC 56 Bypass and NC 56 Business.			

Table 4-7. Local Street Connectors

Street
West of US 1
NC 56 Bypass Connector west of US 1 (CTP, NCDOT)
Oak Crest Drive Extension
Miss Kitty Avenue Realignment from Bradleys Way to Carnell Drive
East of US 1
Realignment of North Brook Drive (SEHSR)
Realignment of Bert Winston Road and Bridge (SEHSR)
Bert Winston Road Extension to Materials Drive and Bridge
NC 56 Bypass Connector from US 1 to east of Franklinton–(CTP, NCDOT)
Cedar Creek Extension from US 1A to proposed connector EC1-L7
Cedar Creek Realignment to US 1A and Bridge (SEHSR)
Howard Harris Road connector to Hillsborough Street
Hawkins Street Connector to Cedar Creek Road (SEHSR)
Green Road/NC 56 widening and improvements (SEHSR)
Tanyard Street Improvements from Green Road to Mason Street (SEHSR)
Tanyard Street Extension to US 1A with railroad bridge
Connector from US 1A to Winston Street (SEHSR)
East-West Connector
North-East Connector
Connector from Montgomery Street to US 1 with railroad bridge
Connector from Swan Street to Carnell Drive

4.4.2.5 *Bridges over US 1*

As part of the study, overpasses were identified for three locations on the corridor. For each of these a review was conducted to determine an appropriate project alignment over US 1 and tie-in to the local streets network. Note that these overpasses are independent of interchange locations. The overpasses/bridges below would cross US 1 when a freeway is ultimately provided. No interchange ramps are proposed at these locations.

South

Existing Bert Winston Road: This location is currently a 4-leg signalized intersection with US 1. It is not appropriate for conversion to an interchange, because it is spaced too closely to the proposed NC 96 interchange (Phase I recommendation). There was a strong desire to keep this connection in place to provide access from residential areas on the east side of US 1 to the Long Mill Elementary School west of US 1. Note, however, that as part of the Phasing plan, it may not be possible to keep this link in place continuously, and it may be necessary to close this crossing until a time that an overpass can be constructed.

Central

Cheatham/Pocomoke: The existing intersection of Cheatham and Pocomoke at US 1 is signalized. It is located roughly half-way between NC 56 and the future NC 56 Bypass. It is a crucial link between the east and west sides of US 1 in Franklinton. It is also a safe option for bicyclists and pedestrians crossing US 1 without having to travel through an interchange.

North Franklinton town limits: At the intersection of US 1A North Main Street, there is currently a four-leg at-grade intersection with US 1. Although it had been determined that an interchange was not desired at this location, an overpass to connect the western and eastern sides of US 1 was identified as a future need for both connectivity and bicycle/ pedestrian provisions. Three alignments were investigated, the western-most using Cheatham Street and the eastern-most using Main Street. A new alignment between the Cheatham and Main street was selected since it reduced impacts and connected directly into a proposed SEHSR rail underpass increasing connectivity. The comparison analysis is provided in Table 4-8. The three tested alignments are shown in Figure 4-12.

North

Northern Franklin County: The CTT identified the need for a future interchange located in northern Franklin County as discussed in Section 4.3.2.1. It was determined that the future interchange should utilize the proposed SEHSR connector between Montgomery Road and US 1. As shown in Table 4-9, the recommended overpass alignment was Alignment E linking with Swan Street. Three locations were identified as potential crossings are illustrated in Figure 4-13.

4.4.2.6 *Local Streets Serving Eastern Franklinton*

Three local street traffic improvements would improve local connectivity, improve connections to proposed SEHSR and railroad grade separations, and indirectly reduce traffic on NC 56 and US 1. These are discussed below.

Table 4-8. Possible Overpass Locations in Northern Portion of Franklinton

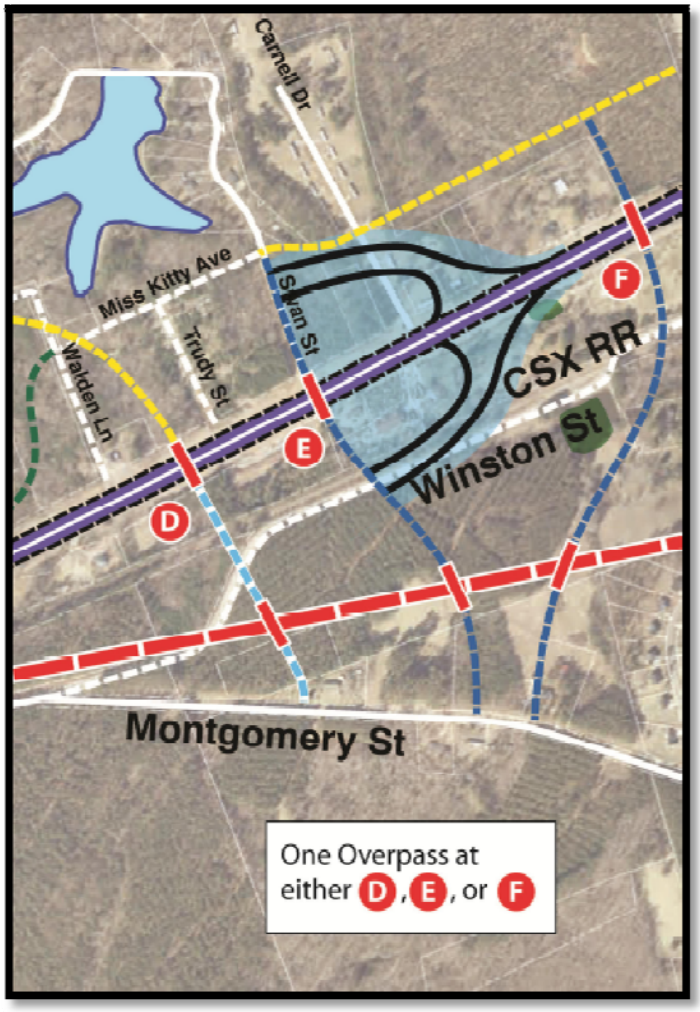
	Traffic	Local Street Connections	Railroad Crossings	Impact	Points
Alignment A at Cheatham	Very low (<1,000 VPD)	Through residential	No Direct connection	Multiple residences on Cheatham	7
Alignment B connected with SEHSR crossing	Low (<2,000 VPD)	Creates continuous east-west route	Tie directly with railroad crossing linking sections west and east of US 1 and east of railroad tracks.	Minimal	15 Recommended
Alignment C at US 1 (Main St./Mann St.)	Low (<2,000 VPD)	Maintains US 1A	No direct connection	Multiple residences on US 1A and Mann St.	10

Figure 4-12. US 1 Bridge Options in Northern Franklinton

Table 4-9. Possible Overpass Locations in Northern Franklin County

	Traffic	Local Street Connections	Railroad Crossings	Impact	Points
Alignment D at Trudy Street	Moderate (up to 4,000 VPD)	Poor connection to Miss Kitty Avenue	Difficult to have alignment at grade and on overpass.	Impacts residences on Miss Kitty Avenue, Swan Street and Cornell Drive	10
Alignment E at Swan Street	Moderate (up to 4,000 VPD)	Connects well to Swan Street loop	Can provide different horizontal and vertical for ay grade and overpass	Impacts residences o Swan Street and Cornell Drive	15 Recommended
Alignment F at Winston St	Moderate (up to 4,000 VPD)	Connects into Cornell Drive, but requires new roads	Can provide different horizontal and vertical for ay grade and overpass	Impacts residences on Cornell Drive and McGhee Farms	12

Figure 4-13. US 1 Bridge Options in Northern Franklin County



Southeast Connector of Lane Store Road and Bert Winston Road

A key desire of the steering committee was to identify an alternate connection southeast of Franklinton. The intent was to provide a local access road linking US 1 near Youngsville to NC 56 east of downtown Franklinton. This connection is not intended as a replacement of the NC 56 Bypass, and would be limited to two lanes. Figure 4-14 shows the layout and location of this connector. The future roadway linkage would also include bicycle and pedestrian facilities. Two sections of new construction are required to make this linkage:

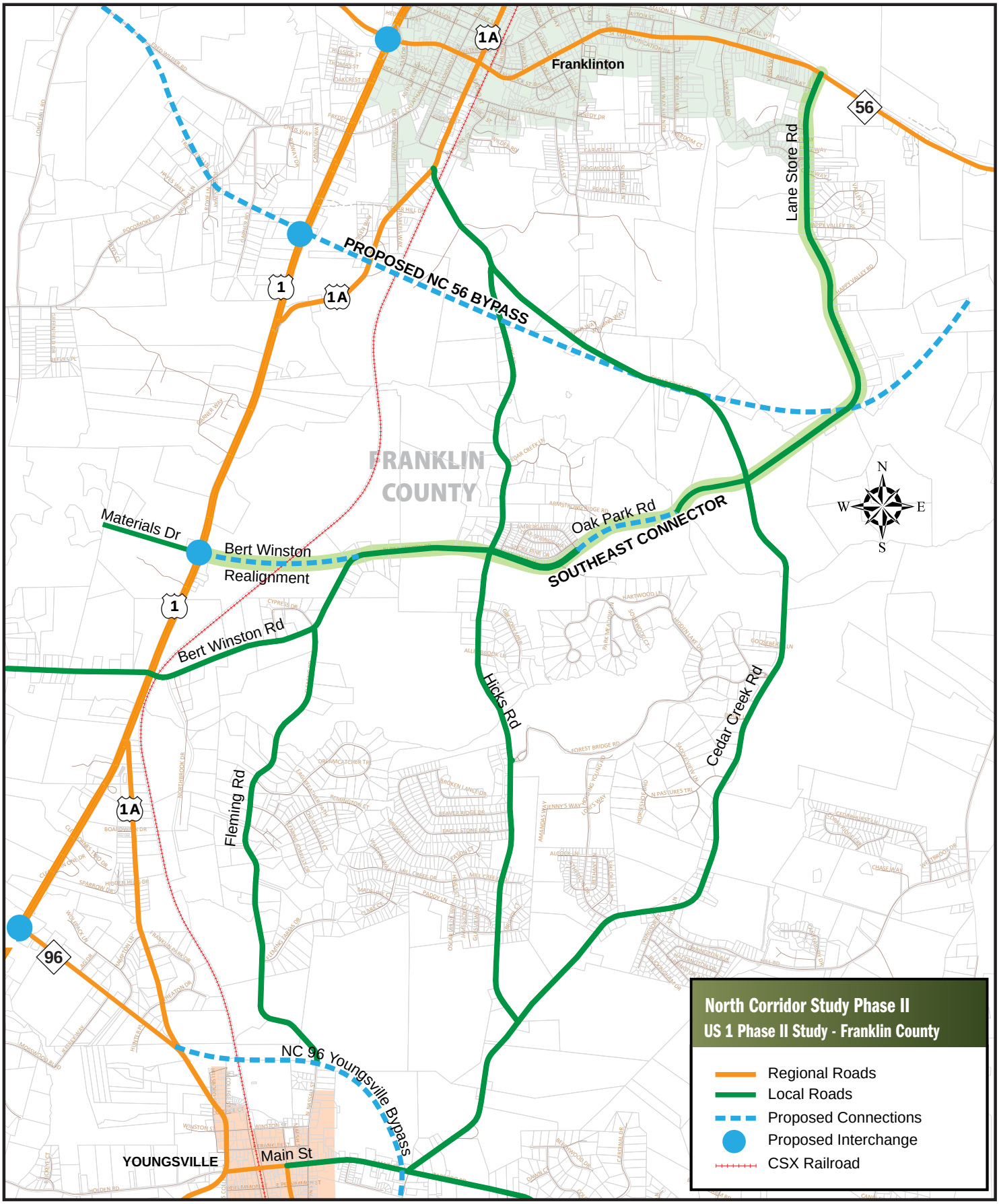
- **Bert Winston Road Extension:** This new alignment section is recommended in the current CTP. It provides a new linkage to a future interchange with US 1. It is important to note that this section may be an option as part of the SEHSR (although it is a change from the draft EIS).
- **Oak Park Road Extension:** This one half mile extension would provide a direct connection to the Lane Store Road from Bert Winston Road. The design should be sensitive to the residential development in this area. This connection would also improve access to the new Franklinton High School.

Northeast Connector

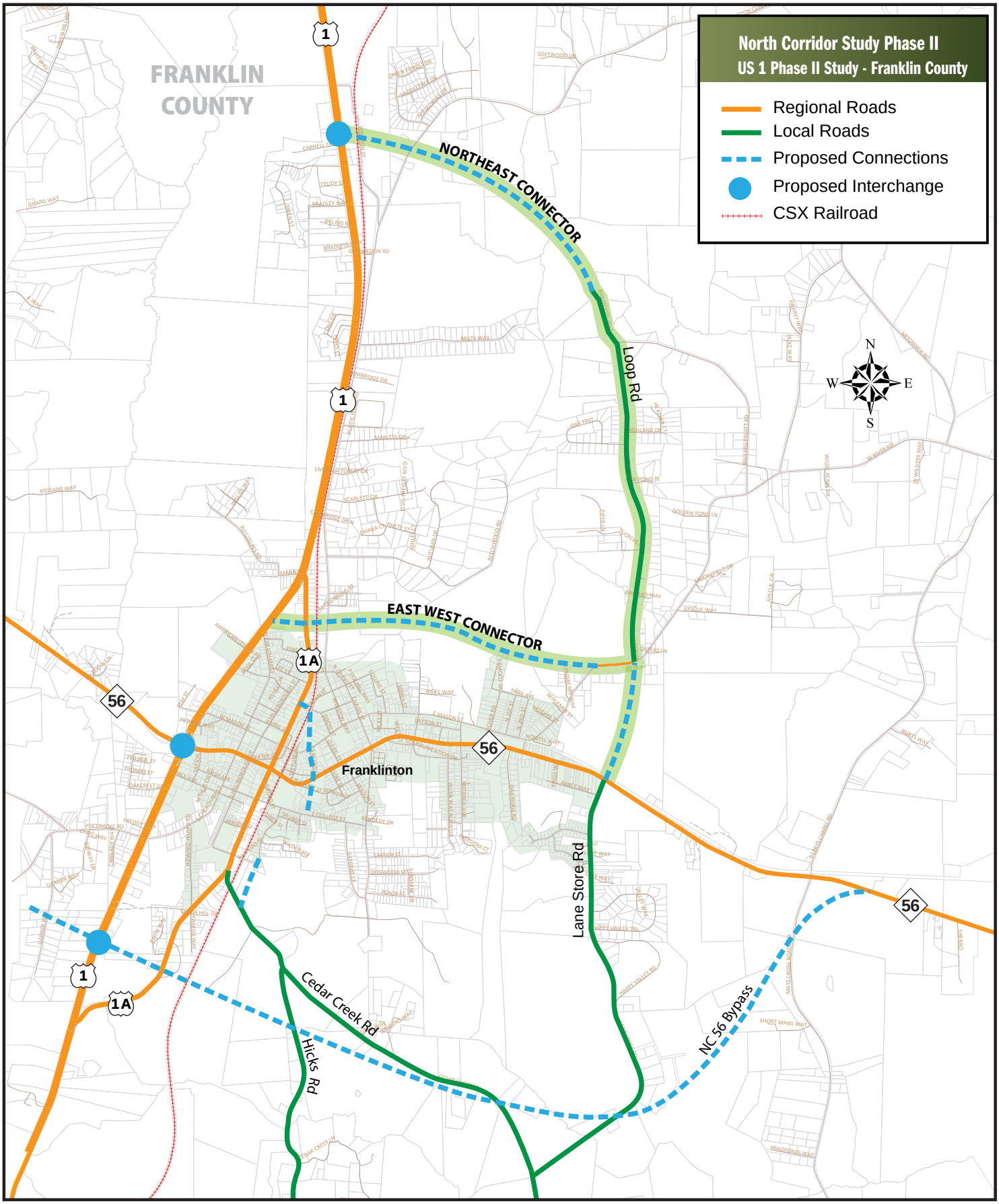
The steering committee also wished to provide an improved linkage from northern Franklin County to east of Franklinton. Currently a significant amount of residential development is located along Winston Road and Montgomery Street. In order to improve connectivity with this area and reduce the demand on NC 56 in downtown Franklinton, the new roadway would utilize the proposed SEHSR railroad overpass connecting Montgomery Street with US 1. The northeast connector would require the four improvements discussed below. Figure 4-15 shows the layout and location of the Northeast Connector.

- SEHSR connector of US 1 with Montgomery Street including the overpass of the rail line
- New alignment for approximately one mile connecting Montgomery Street to the north end of existing Loop Road.
- Potential improvements to approximately two miles of existing Loop Road
- New alignment for approximately one quarter mile from Loop Road to NC 56 at Lane Store Road.

The future connector should include bicycle and pedestrian facilities. It is envisioned that this connection could be provided incrementally as part of proposed development, although improvement to the existing Loop Road would require public funding.



US 1 Phase II Study - Franklin County	Southeast Connector	Figure 4-14
PARSONS BRINCKERHOFF		



US 1 Phase II Study - Franklin County	Northeast and East West Connectors	Figure 4-15
PARSONS BRINCKERHOFF		

East-West Connector

This roadway was identified as a parallel roadway north of NC 56 that would serve as an alternate east-west route. Initially, it would be envisioned as a developer access road, but ultimately it would provide the backbone for a grid system between itself and NC 56. A key benefit of this roadway would be linking eastern and western Franklinton with the proposed SEHSR grade separation connecting Winston Street to US 1. West of the SEHSR, the roadway would extend over US 1 at a new overpass to Western Service Road. The alignment this roadway is divided into three primary sections, which are discussed below. The layout and location of the East West Connector is shown in Figure 4-15.

- From the proposed northeast connector west to Winston Street, this section would be on new alignment. It would need to avoid the Franklinton Park north NC 56.
- SEHSR connector and railroad underpass between Winston Street and US 1A.
- New alignment from US 1A west to the overpass at US 1 and connection to Western Service Road.
- As with the other local streets, accommodations for bicycle and pedestrians would be provided. The sections of this roadway east of Winston Street may be funded by developer participation.

4.5 Bicycle and Pedestrian

4.5.1 No-Build

Under the No-Build Alternative conditions, the provision of bicycle facilities within downtown Franklinton and throughout the project study area will remain as it is currently. This includes some sidewalks within Franklinton itself, but limited connectivity. No continuous connections would be in place connecting key local destinations such as the Food Lion, the new Franklinton High School, or residential developments outside the town limits. There would continue to be a lack of connections between Youngsville and Louisburg with Franklinton.

The primary source of pedestrian and bicycle improvements under this scenario would be the Southeast High Speed Rail project. Assuming this project is pursued, three pedestrian crossings of the railroad tracks in downtown Franklinton would be provided. In addition, a greenway alignment linking Franklinton to the East Coast Greenway would be identified although no funding for construction would be provided by the project.

4.5.2 Future Enhancements

To analyze existing and future bicycle and pedestrian conditions, the project Study Team gathered information from the following resources: Franklin County *Comprehensive Transportation Plan;* NCDOT's *Draft Complete Streets Guidelines; US 1 Corridor Study* (Phase I); the Southeast High Speed Rail (SEHSR) studies; and input from the public as well as SOT/CTT members. In addition, a meeting was held with the Town of Franklinton to specifically discuss the Town's bicycle and pedestrian needs.

What is evident from the review of the above resources is that one of the overarching goals of Franklin County is to plan facilities for pedestrians and bicyclists that would provide regional connectivity, improve safety, and allow for travel parallel to and across US 1. Currently, the design of local streets within the project limits do not safely allow for such bicyclist and pedestrian travel because they are typically rural, two-lane undivided roadways with shared lanes for bicycles and no sidewalks.

4.5.2.1 *Existing Plan Improvements*

The Franklin County *Comprehensive Transportation Plan* includes planned bicycle and pedestrian facilities that focus on downtown Franklinton. The project Study Team, with guidance from the steering committees and stakeholders, evaluated and expanded the *Comprehensive Transportation Plan* to update bicycle and pedestrian facilities in downtown and throughout the remainder of the project study area.

4.5.2.2 *Connectivity with US 1 Corridor Study Phase I*

The US 1 Corridor Study Phase I included widened outside lanes for bicycles and sidewalks for pedestrians on proposed frontage and backage roads along US 1 between I-540 and Park Avenue/US 1A in Franklin County. The US 1 Corridor Study Phase II proposed local street network in the South Section connecting to Long Mill Road west of US 1 and US 1A Park Avenue east of US 1. The new local street network in the Phase II study will continue the same bicycle and pedestrian improvements consistent with the Phase I study. These improvements will be maintained, where applicable, in all new local street connectivity and grade-separated crossings, including those over the SEHSR and US 1, throughout the project study area.

4.5.2.3 *Coordination with Local Officials*

An initial meeting was held with the Town to discuss specific bicycle desires, needs, and recommendations. Some of the key items included:

- Separation of bicycle and pedestrian facilities (i.e. multi-use paths, sidewalks, and bicycle lanes).
- Connection to schools, parks, and downtown area.
- Roadway crossing improvements.
- Focus improvements in downtown Franklinton.
- Preference for bicycle/pedestrian crossings on overpasses.
- Separated greenways.
- Pedestrian accommodations on local streets throughout Franklinton

4.5.2.4 *Recommendations*

Long-term recommendations would include greenways, multi-use paths, and side-paths. These are discussed in greater detail and illustrated in Chapter 6. Future multi-use paths and side-paths within the study area include:

- A Multi-use Greenway (north-south) along the SEHSR that may be incorporated into the East Coast Greenway. The SEHSR is developing a preferred alternative, but no funding for construction is to be provided.
- An east-west greenway utilizing Franklin County owned easement from Cedar Creek Road to NC 56 between downtown Franklinton and Lane Store Road.
- A north-south greenway utilizing an abandoned CSX railroad from downtown Franklinton heading to Louisburg (north of NC 56). This rails to trails project has been constructed in Louisburg, but not in Franklinton or between the two towns.
- A greenway connector from Peach Street in southeast Franklinton to the recommended north-south greenway.
- A side-path on Long Mill Road from the Phase I study improvements to Pocomoke Road.
- A side-path on Bert Winston Road from Long Mill Road to Cedar Creek Road.
- A side-path on Pocomoke Road from Long Mill Road to the east end of the grade-separated crossing over US 1.

- A side-path on Cedar Creek Road from the Bert Winston intersection to the west end of the grade-separated crossing over the SEHSR.
- A side-path on the NC 56 Bypass from the Cedar Creek Road intersection to Fred Wilder Road.

Appendix F shows additional toolkit items or consideration with the bicycle and pedestrian implementation.

4.6 Transit

4.6.1 No-Build

Under the No-Build Alternative conditions, existing transit service in the study area will remain. It is assumed that KARTS will still provide on-demand transportation services throughout Franklin County and in Franklinton.

4.6.2 Transit

The goals of providing future transit services in the US 1 Phase II corridor study area can be summarized as follows:

- Provide transit mobility for US 1 corridor commuters;
- Connect the Town of Franklinton with regional destinations to the south and east;
- Identify short-term and long-term park & ride locations in the study area to support transit services and transit-oriented developments; and
- Identify transit connection opportunities with adjacent communities.

Note, however, that the transit options identified below would be subject to more rigorous demand testing and cost analysis before specific routes or alternatives could be provided. Specific alternative concepts that were examined are discussed in the following sections.

4.6.2.1 *US 1 Express Bus Service*

In order to serve current and future commuters along the US 1 corridor that are traveling to such destinations as Wake Forest, Triangle Town Center and Raleigh, it is recommended to provide a regional express bus route along US 1 between downtown Franklinton and Triangle Town Center with limited number of stops. This is consistent with the 2035 CTP which calls for extension of Express Bus service to Franklinton along US 1 by 2035. The decision to extend the bus service, however, would be subject to future operational decisions, studies, and comparisons with other options for the region.

The express bus service would likely start as a peak hour service, operating only during the morning and afternoon commute times. In the near term, this express bus service could use the Food Lion shopping plaza as the temporary Park-and-Ride location. This arrangement would require a shared use agreement with the Food Lion shopping plaza parking lot (for up to 25 spaces). This service would make limited number of stops and connect with Youngsville at NC 96, Capital Plaza shopping center (south of NC 98), and the Triangle Town Center.

In the long range, this express bus service should originate from a permanent Park-and-Ride/Multi-modal Hub in Franklinton with good access to the US 1 corridor. In order to support the land use vision developed for the US 1 Phase II study area, it is recommended that this site be the northwest quadrant of the future US 1/NC 56 Bypass interchange. This future park-and-ride lot/multi-modal hub should accommodate approximately 100 parking spaces, and should have good access to/from US 1 and the future interchange with NC 56 Bypass.

4.6.2.2 *Local Circulator Serving Louisburg, Franklinton and Youngsville*

The US 1 Phase II corridor study stakeholders commented on the need to have bus routes along NC 56 connecting the Town of Franklinton with the Franklin county seat – Louisburg and other destinations along the NC 56 and US 401 corridors such as the Vance-Granville Community College, Wal-Mart shopping center, Louisburg College and Franklin Regional Medical Center. This connection is a 12-mile and 25 minute (by bus) one-way trip between Franklinton city center to the Franklin Regional Medical center, and could be best served by transit if it is operated along NC 56 and US 401 as an hourly service. Peak period service would not be feasible in the near term, but should be brought online at some date in the future when land use density and ridership numbers necessitate service. In addition, there was a desire to provide similar service to Youngsville, possibly as far south as the NC 98 Bypass.

This circulator service should have a coordinated schedule with the US 1 Express Bus Service such that it can serve riders connecting to/from the Youngsville area. It should be noted, however, that a full circulator route connecting these three communities in Franklin County with a single bus route would be inefficient to serve due to the length of the route and lack of population density along rural routes. Circulators typically work in urban settings where there

are many walkable destinations around bus stops. It is possible, however, that conditions could change and future analysis would be more optimistic.

4.6.2.3 *Potential Commuter Rail Station*

The SEHSR is improving the railroad line through Franklinton. There are no plans for a high speed rail station within Franklinton. There has been some interest expressed in investigating the feasibility of commuter rail along the rail line to Raleigh. In order to serve Franklinton, a depot station would be required. In order to pursue this option, a cost-benefit analysis would need to be completed as part of a more detailed study. Note that demand from the Town of Franklinton would likely not provide the demand required to justify a commuter rail line. It may be possible, however, that the stop could be provided as part of a longer system. There has been some discussion of a commuter rail service linking Raleigh to locations as far north as Henderson.

4.7 Southeast High Speed Rail (SEHSR)

4.7.1 No-Build

The Southeast High Speed Rail project is the primary project that is assumed to be in place under the No-Build conditions. This assumption is made because the funding sources are separate from the traditional funding mechanisms that would be utilized for US 1 improvements.

According to the SEHSR Tier II Draft EIS, the SEHSR plan has been developed to provide faster passenger train service between Washington, D.C. and Charlotte, NC. In the section of the corridor in Franklin County, the design speed would be 110 mile per hour requiring the closure of all at-grade railroad crossings. As currently planned, the SEHSR would not have a stop in Franklinton although there are local desires that a depot stop would be provided.

Based on the Tier II study future service options, the year chosen for the ticket revenue forecasts, and future stations, it is anticipated that the SEHSR recommended alternative alignment (Preferred Alternative NC1) would be constructed through the project limits prior to 2025. For the purposes of the US 1 corridor study, it is anticipated that construction would

occur before 2020. The primary impacts of the SEHSR in Franklinton and the study area are the closure of nine at-grade railroad crossings. The locations of grade crossing closures include:

South of Franklinton

- Bert Winston Road

Within Franklinton

- Cedar Creek Road
- Hawkins Street
- College Street
- Mason Street
- Joyner Street
- Pearce Street

North of Franklinton

- Eric Medlin Road
- Winston Street

In order to mitigate for the closures, the SEHSR has proposed some local roadway projects and bridge separated crossings of the railroad tracks. These seven projects are identified in Table 4-10.

As part of the SEHSR project there would also be the provision of some pedestrian improvements. Similar to the local street projects, the primary purpose of the pedestrian improvements is to provide a replacement for current access that is allowed at the location of at-grade crossings. Three pedestrian crossings of the railroad are proposed:

- Pedestrian crossing near existing Cedar Creek Road
- Pedestrian crossing near College Street
- Pedestrian crossing near Mason Street

In addition, the SEHSR project will identify a recommended route for a bicycle and pedestrian route near the railroad corridor. This facility is anticipated to ultimately become part of the national East Coast Greenway extending from Florida to Maine. Note, however, that the SEHSR does not provide funding for this facility.

Table 4-10. Southeast High Speed Rail Roadway Projects

SEHSR Project	Improvement Type	Includes	Purpose
Existing Bert Winston and Northbrook Road realignment	Relocate local roads	• Railroad bridge • Closure of at-grade RR crossing • New alignment for Northbrook Rd • Revised alignment for Bert Winston • Improved intersection at US 1	Realign railroad tracks to improve RR speeds Provide access to Northbrook
Cedar Creek Road realignment and railroad bridge	Relocate local road & construct RR bridge	• Railroad bridge • Closure of at-grade RR crossing • Revised alignment for Cedar Creek • Improved intersection at US 1A	Provide RR grade separation.
Hawkins Road extension	New local connector	• Local roadway	Provide connectivity between Green Rd and Cedar Creek Road east of the RR tracks
NC 56 Green Street Improvement	Railroad underpass	• Local roadway railroad underpass • Intersection improvements	Closing of Mason Street will increase volume.
Tanyard Street improvements	New local connector	• Local roadway	Provide connectivity between Green Rd and Mason St east of the RR tracks
Local connector from US 1A to Winston St	New local connector & RR underpass	• Connection from US 1A to Winston St • Railroad underpass	Provide replacement of multiple closed RR crossings
Montgomery Road connector to US 1 and railroad bridge	New local connector	• Local roadway • RR bridge • New intersection at US 1 (superstreet type)	Replace closed RR crossings at Eric Medlin Rd & Winston St

4.7.2 Changes if SEHSR Is Not Built

It is recognized that it is possible that the SEHSR project will not be pursued. It should be noted, however, that two of the projects that are key components of the local roadway network proposed as part of this study are needed with or without the SEHSR. These two projects are the realigned Bert Winston Road and the connector between US 1 and Winston Street in the

northern part of Franklin County. The other projects are primarily local access road improvements required because of the closure of current at-grade projects.

The delay of the SEHSR construction would affect the planned US 1 project phasing. Delay or cancellation of the SEHSR construction would result in delay of the following transportation projects shown in Table 4-11.

Table 4-11. Impact of Delays or Cancellation of SEHSR

SEHSR Project	Potential Impact on US 1 Corridor Study
Realignment of North Brook Drive (SEHSR) ES1-L22	Not required initially if railroad not realigned.
Realignment of Bert Winston Road and Bridge (SEHSR) ES1-L23	Not required initially if railroad not realigned. This project will be needed for the US 1 project. In addition, SEHSR funding would not be available for US 1 Superstreet improvement in the south. In the long term, an overpass could be provided as part of a single project involving both a railroad bridge and US 1 overpass.
Cedar Creek Realignment to US 1A and Bridge (SEHSR) EC1-L9	Minimal effect on project in short term. In long term may impact desired alignment for connector from US 1A, through Howard Harris Rd to the proposed local street paralleling US 1 on the east.
Hawkins Street Connector to Cedar Creek Road (SEHSR) EC2-L12	Minimal effect on the US 1 project in short term and long term.
Green Street/NC 56 and improvements (SEHSR) EC2-L30	Likely that an intersection improvement will be required at US 1A and Green Street just west of the railroad underpass. SEHSR was considering this as part of the SEHSR evaluation, but it would require local financing if SEHSR does not proceed.
Tanyard Street Improvements from Green Road to Mason Street (SEHSR) EC3-L14	Minimal effect on the US 1 project in short term and long term.
Connector from US 1A to Winston Street (SEHSR) EC3-L16	This connector provides a new railroad crossing in the northern section of Franklinton. No east-west roads connect into it, however. For this reason, this short section of roadway is proposed for extension to the west, over US 1, to the west side of US 1. If this project is not completed, the East-West Connector would be of limited value since it would not cross the RR tracks.
Connector from Montgomery Street to US 1	This connector is a critical link for northern Franklin County. If the Winston Street railroad crossing already closed, the Eric Medlin crossing would need to be open to provide access without travelling south to Franklinton. In the long term, the northern Franklinton interchange and the Northeast Connector were proposed to connect with this roadway. If this project were not built by SEHSR, it would likely be constructed when US 1 is converted to a freeway (i.e., the north Franklin interchange is constructed).