

WIDENING OF SR 1175 (KERR AVENUE)
FROM RANDALL PARKWAY
TO SR 2649 (MARTIN LUTHER KING, JR. PARKWAY)
AND INTERCHANGE AT MARTIN LUTHER KING, JR. PARKWAY
NEW HANOVER COUNTY, NORTH CAROLINA

T.I.P. PROJECT NO. U-3338 B & C

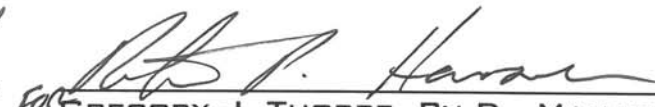
WBS ELEMENT 34932.1.1
FEDERAL AID PROJECT NUMBER STP-1175(8)




ADMINISTRATIVE ACTION
CATEGORICAL EXCLUSION ADDENDUM

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
N. C. DEPARTMENT OF TRANSPORTATION
SUBMITTED PURSUANT TO 42 U.S.C. 4332(2) (c)
AND 49 U.S.C. 303

APPROVED:

3/24/11
DATE for 
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3/28/11
DATE for 
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FEDERAL HIGHWAY ADMINISTRATION

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CATEGORICAL EXCLUSION ADDENDUM

MARCH 2011

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PROJECT COMMITMENTS

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S.T.I.P. PROJECT NUMBER U-3338 B & C

ROADWAY DESIGN, PROGRAM DEVELOPMENT AND DIVISION 3

Four-foot striped bicycle lanes will be provided along Kerr Avenue for the project length. The Wilmington MPO has requested that five-foot sidewalks be installed on both sides of Kerr Avenue for the extent of the project. In addition, a 10-foot multi-use path will be installed on the east side of Kerr Avenue between Patrick Avenue and Randall Parkway.

During design phase, a municipal agreement will be developed between NCDOT and the City. The City will commit to fund the additional construction and right-of-way costs incurred beyond those for a 14-foot outside lane, and a portion of the sidewalk and multi-use path on a costshare basis according to NCDOT policy.

ROADWAY DESIGN UNIT AND ITS & SIGNALS UNIT

During the design phase, NCDOT will coordinate with Wilmington MPO to review pedestrian aspects of signal designs, with the intention of incorporating pedestrian signals and protected crossing phases (possibly ped-actuated). At a minimum, pedestrian signals will be installed at the intersections of Kerr Avenue/Market Street, Kerr Avenue/Cinema Drive, Kerr Avenue/Birchwood Drive, and Kerr Avenue/Randall Parkway.

ROADWAY DESIGN UNIT AND NOISE/AIR GROUP

During design phase, NCDOT will re-evaluate justification of a noise wall in the vicinity of the Kerr Avenue interchange with Martin Luther King, Jr. Drive.

EXECUTIVE SUMMARY

The North Carolina Department of Transportation (NCDOT) proposes to widen Kerr Avenue from just south of Randall Parkway to just north of Martin Luther King Jr. Parkway and to construct an interchange at Martin Luther King Jr. Parkway (see Figure 1). The project is divided into sections for funding purposes. Section B includes the majority of the widening from just south of Randall Parkway to New Centre Drive. Section C includes the interchange area from New Centre Drive to just north of Martin Luther King Jr. Parkway. Section A, from US 76 (Oleander Drive) to Randall Parkway is not funded, and is not included in this document.

In May 2008, NCDOT completed environmental studies and approved a federal Categorical Exclusion (CE). The 2008 CE included a summary of impacts and a recommendation for a widening alignment and a half-clover interchange at Martin Luther King, Jr. Parkway. Prior to holding a public hearing, the Wilmington Metropolitan Planning Organization (MPO) requested NCDOT delay making a final recommendation on a preferred alternative until a MPO-funded study of the Market Street corridor could be completed. The purpose of the Market Street corridor study is to evaluate long-term transportation access management and land use strategies for the Market Street corridor to improve east-west transit. As a result of the MPO initiative, NCDOT agreed to revisit its planning study to assess a new “quadrant intersection” alternative (discussed in Chapter 3 of this report).

This CE Addendum documents these additional traffic and environmental studies, and the decisions made as a result.

ALTERNATIVES CONSIDERED

Alternative 1 (Conventional Widening Recommended in 2008 CE). The conventional widening, as presented in the 2008 CE, proposes to widen Kerr Avenue to a four-lane roadway divided by a raised 23-foot median, from Randall Parkway to Martin Luther King, Jr. Parkway. Alternative 1 provides conventional improvements to existing intersections by adding turn-lanes or modifying turn-lane configurations where needed, and then optimizing signal phasing/timing. The design includes five-foot sidewalks and four-foot striped bicycle lanes on both sides of Kerr Avenue. Turning lanes and median openings will be provided as appropriate. For Section C, a half-clover interchange is proposed at Martin Luther King, Jr. Parkway. This interchange design was recommended because it minimizes impacts to property and is more economical than other designs that were studied. Alternative 1 is shown in Figure 5.

Alternative 2 (Widening with a Quadrant Intersection at Kerr Avenue and Market Street – New Alternative). In Section C, Alternative 2 widens Kerr Avenue and retains the proposed half-clover interchange in the exact same manner as for Alternative 1. In Section B, Alternative 2 also incorporates most of the elements described above for Alternative 1 in Section B. The key difference between Alternative 2 and Alternative 1 within Section B, is near the intersection of Kerr Avenue with Market Street. In this location, a new quadrant intersection design was evaluated. With a quadrant intersection design, all northbound and southbound left turns at the Kerr Avenue intersection with Market Street will be removed. These turn movements will be directed onto identified connector streets that provide a protected left turn onto Market Street. In essence, this quadrant alternative design allows Kerr Avenue left turn movements to “cut the corner” to Market Street. Three quadrant intersection options were studied.

- Alternative 2 Option A.** Alternative 2 Option A utilizes connecting roadways in all four quadrants of the intersection at Kerr Avenue and Market Street (Figure 6), which would create three new roadway connections to complete the system. In the northwest quadrant, Birchwood Avenue is extended south-westerly to Market Street to align with existing Cinema Drive. In the northeast quadrant, a new roadway is constructed between McClelland Drive and Market Street. This connector would align with Wilmington Avenue. In the southeast quadrant, a new roadway connection is made from Cinema Drive to join with Wilmington Avenue. In the southwest quadrant, existing Cinema Drive would be utilized. Widening of Kerr Avenue, as well as four additional signals are required at each terminal point of these quadrant roadways. New signals would be installed at Kerr Avenue and Cinema Drive, Kerr Avenue and McClelland Drive, Market Street and Wilmington Avenue, and Market Street and Cinema Drive. Capacity analysis demonstrates that at these four signals, 8-phased signal control would be required. Due to less green-time for each movement, projected traffic levels operate at reduced capacity (i.e., more intersections operating at LOS F) than either of the two-quadrant roadway configurations (Options B and C). In addition, this four-quadrant alternative causes long queues at the newly-proposed signals on Market Street, when compared to Options B and C. It was decided to remove Alternative 2 Option A from further consideration.
- Alternative 2 Option B.** This quadrant intersection design utilizes two connector roads that are located in the southwest and northeast quadrants (see Figure 7). Existing Cinema Drive is utilized in the southwest quadrant. A northeast quadrant connector road will be constructed that connects Market Street (at Wilmington Avenue) to McClelland Drive and utilizes a portion of McClelland Drive until its intersection with Kerr Avenue. With Option B, northbound Kerr Avenue left turns will be rerouted onto westbound Cinema Drive and then to Market Street. Southbound left turns from Kerr Avenue will be rerouted onto McClelland Drive, then to the new connector road, and then to Market Street. The intersection of McClelland Drive and Kerr Avenue will be signalized and an unsignalized Birchwood Drive intersection will be converted to right in-right out access. In addition to the signal at McClelland Drive, new signals will be added at the intersections of Kerr Avenue/Cinema Drive, Market Street/Cinema Drive and Market Street/Wilmington Avenue. Minor widening will occur at the terminal points of the quadrant roadways to accommodate turning movements of diverted traffic.
- Alternative 2 Option C.** Alternative 2 Option C constructs a new-location connector road in the northeast quadrant that extends from Market Street (at Wilmington Avenue) to Kerr Avenue (at Birchwood Drive). This alternative also provides a short, north-to-south link from the connector road to McClelland Drive. Northbound Kerr Avenue left turns will be rerouted onto westbound Cinema Drive and then to Market Street. Southbound left turns from Kerr Avenue will be rerouted onto the new connector road and then to Market Street. A signal is provided at Birchwood Drive, and the existing Kerr Avenue intersection with McClelland Drive will be converted to right in-right out only. This alternative is shown in Figure 2 and Figure 3.

RECOMMENDATION

The Widening with Quadrant Alternative was selected over the Conventional Widening Alternative because of better traffic operations, particularly at the key intersection of Kerr Avenue and Market Street. In addition, there is less widening and less traffic passing through the intersection with this alternative than with the conventional widening. This provides added safety benefits for enhanced

bicycle and pedestrian travel at the intersection, an objective of the Wilmington MPO. The specific design option recommended (Option C) is shown in Figure 2 and Figure 3.

Presentations of all alternatives and options being assessed in this document were made to the Wilmington MPO Technical Coordinating Committee (TCC) on December 1, 2010 and to the Transportation Advisory Committee (TAC) on December 15. Traffic operations, environmental impacts, and estimated costs were presented. The TCC voted unanimously to recommend that NCDOT move forward with the quadrant alternative. At a meeting on December 15, 2010, the TAC adopted a resolution supporting a quadrant intersection design at the intersection of Kerr Avenue and Market Street (see Appendix A).

NCDOT concurs with the City of Wilmington’s recommendation and proposes the Widening with Quadrant Intersection (Alternative 2 Option C) as the preferred alternative.

SUMMARY OF IMPACTS

Table ES-1 summarizes environmental impacts of the preferred alternative for the two sections being studied. Section B includes the majority of the widening from just south of Randall Parkway to New Centre Drive and Section C includes the interchange area from New Centre Drive to north of Alandale Drive. The project will not cause any significant impacts to the natural or human environment.

ES-1. Summary of Impacts of the Preferred Alternative

Environmental Feature	Alternative 2 Option C		
	Section B ¹	Section C ²	Total
Residential Relocations	13	15	28
Commercial Relocations	11	1	12
Air Quality	No Impact		
Historic/Archaeological Resources	No Impact		
Section 4(f) Resources	No Impact		
Streams (linear feet)	0	232	232
Linear water features (ditches) –linear feet	259.5	0	259.5
Permanent Wetland Impacts (acres)	0	0.36	0.36
Temporary Wetland Impacts (acres)	0	0.55	0.55
Federally Protected Species	No Effect		
Cost ³	\$43,491,160	\$20,755,747	\$64,246,907

¹Section B includes the widening portion of the project from just south of Randall Parkway to New Centre Drive.

²Section C includes the interchange area from New Centre Drive to just north of MLK, Jr. Parkway. Impacts for Section C are for the half clover interchange design and are the same for both alternatives.

³Cost includes right of way, construction and utilities.

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Appendix A: Agency Correspondence

1.0 DESCRIPTION OF THE PROPOSED PROJECT

1.1 GENERAL DESCRIPTION

The project is located in the City of Wilmington in New Hanover County (see Figure 1). The North Carolina Department of Transportation proposes to widen SR 1175 (Kerr Avenue) from Randall Parkway to SR 2649 (Martin Luther King, Jr. Parkway). An interchange is proposed at the Kerr Avenue and Martin Luther King, Jr. Parkway junction. The project length is 1.7 miles, and it is subdivided into Sections B and C for funding purposes. Section B is from Randall Parkway to Martin Luther King, Jr. Parkway, and Section C is the proposed interchange at Kerr Avenue and Martin Luther King, Jr. Parkway (see Figure 2).

The proposed project is included in the approved 2009-2015 North Carolina Transportation Improvement Program (TIP) and the draft 2012-2018 TIP as U-3338. Right of way and construction let dates for Sections B and C are shown below.

Section	Kerr Avenue Limits	Right of Way Fiscal Year	Construction Fiscal Year
B	Randall Parkway to Martin Luther King, Jr. Parkway	2012	2014
C	Interchange at Martin Luther King, Jr. Parkway	2020	Unfunded

A federal Categorical Exclusion (CE) was approved for the project in May 2008. It is referred to as the 2008 CE in this document. It recommended widening Kerr Avenue using a best-fit alignment, including a half-clover interchange at Martin Luther King, Jr. Parkway. After the document was approved, the Wilmington Urban Area Metropolitan Planning Organization (MPO) requested that NCDOT consider an additional alternative involving a quadrant roadway configuration at Kerr Avenue and Market Street (discussed in Chapter 3). This intersection is one of the busiest in the City, and it is included in a larger planning study recommending improvements along Market Street. In 2009, after coordinating with the MPO and the City of Wilmington, NCDOT agreed to study the additional alternative. As a result, supplemental traffic, noise, natural resource, and community impact studies were prepared to assess the new alternative (and update the old one, as necessary). This document summarizes the results of those studies and documents the planning process. Only new or updated impacts are included in this report. For a comprehensive discussion of the project, refer to the 2008 CE.

1.2 COST ESTIMATES

Current estimates for the preferred alternative show a total project cost of approximately \$64.2 million.

	Section B	Section C	Total
Right of Way Cost	\$22,500,000	\$7,825,000	\$30,325,000
Utility Cost	\$1,691,160	\$1,030,747	\$2,721,907
Construction Cost	\$19,300,000	\$11,900,000	\$31,200,000
Total	\$43,491,160	\$20,755,747	\$64,246,907

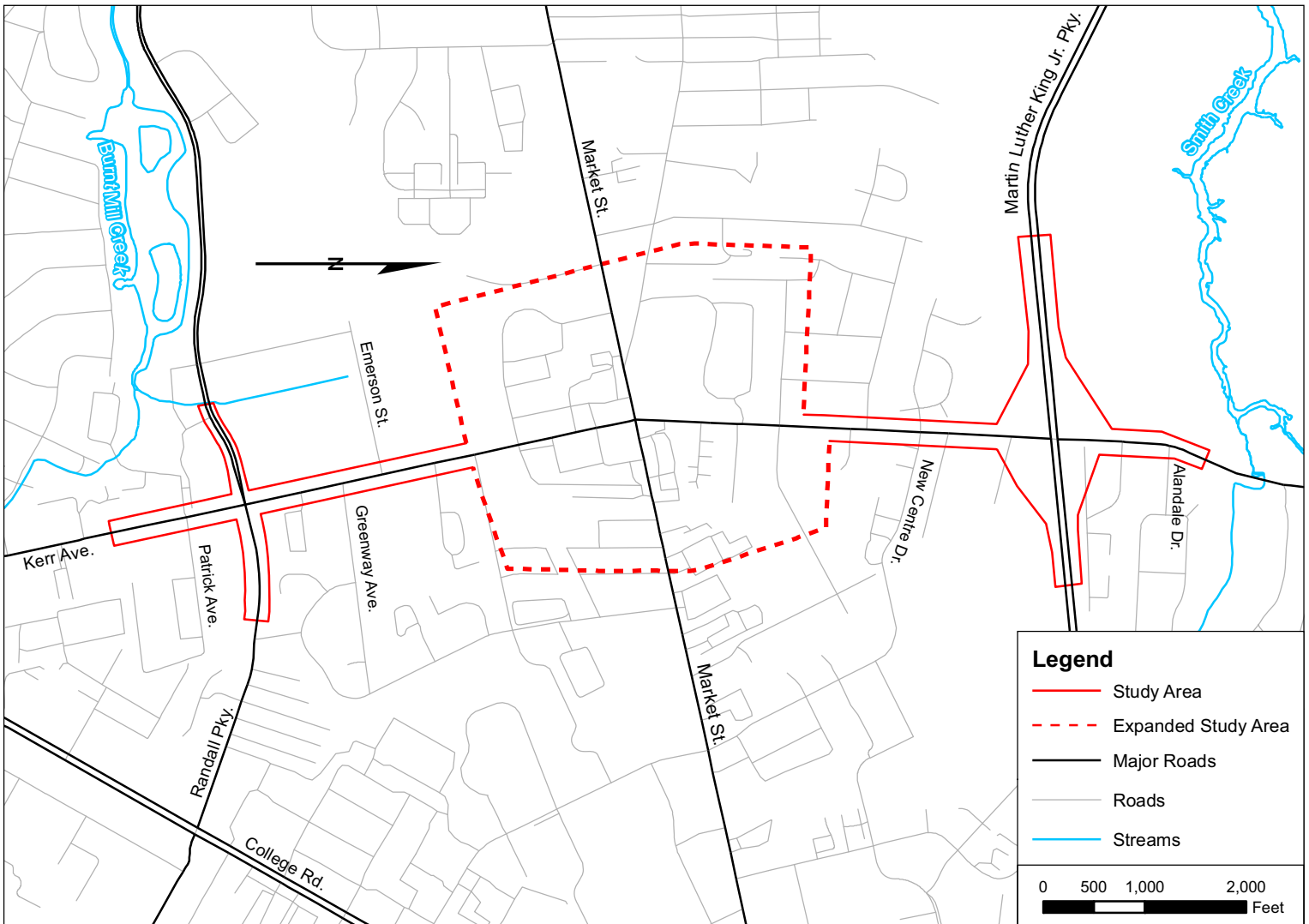
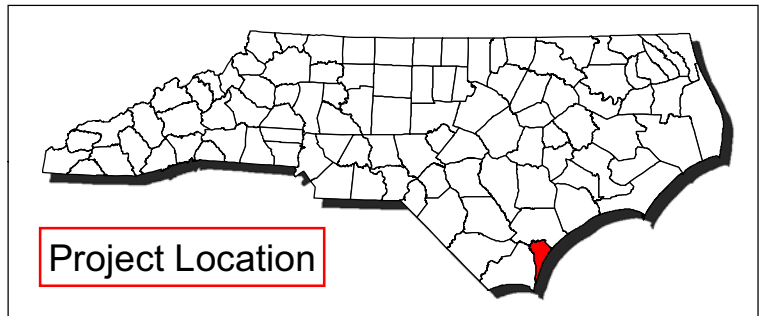
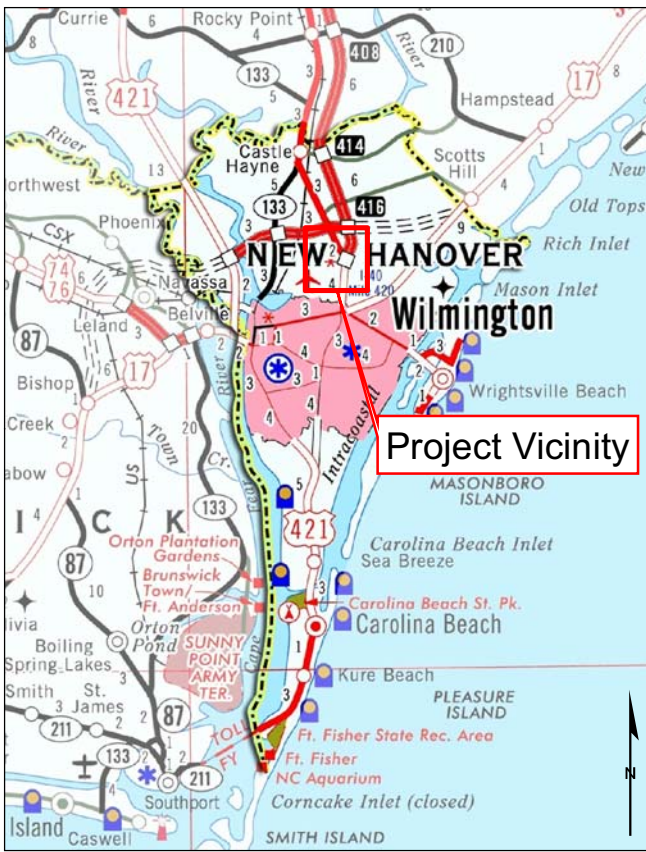
Figure No. 1

Project Vicinity

TIP No. U-3338
SR 1175 (Kerr Avenue) from Randall Pkwy.
to Martin Luther King, Jr. Pkwy.
New Hanover County, North Carolina



North Carolina
Department of Transportation



2.0 PURPOSE OF AND NEED FOR THE PROPOSED PROJECT

2.1 PROJECT PURPOSE

The primary purpose of the project is to increase capacity and improve traffic flow along Kerr Avenue. Improvements are needed to increase capacity in order to raise level of service conditions at most intersections in the proposed project area. A traffic capacity analysis summary is presented in Section 2.3.

2.2 EXISTING CONDITIONS

Refer to the 2008 Categorical Exclusion for a detailed discussion of existing conditions along the Kerr Avenue corridor.

2.3 TRAFFIC OPERATIONS ANALYSIS

This section presents a summary of the traffic analysis for existing and No-Build conditions, which was updated in May 2010 (*Kerr Avenue (SR 1175) Capacity Analysis TIP Project No. U-3338, Intersection Improvements Study*). An addendum memorandum was completed in August 2010 for Alternative 1. A copy of the complete report and memorandum are available in the project file. Table 1 summarizes the results of the analyses.

2.3.1 EXISTING TRAFFIC CONDITIONS

Existing (2009) traffic volumes were derived from daily 2009 forecasts using NCDOT's Intersection Analysis Utility (IAU) program. Existing volumes along Kerr Avenue range from 18,000 vehicles per day (vpd) north of Martin Luther King, Jr. Parkway to 23,000 vpd south of Cinema Drive.

Under existing (2009) conditions, the majority of intersections operate at acceptable levels of service. The Kerr Avenue and Market Street intersection currently operates at level of service (LOS) F during both peak periods, with long queues on multiple approaches. The Kerr Avenue and Martin Luther King, Jr. Parkway intersection operates at LOS F during the AM peak hour and LOS E during the PM peak hour. As shown in Table 1, several of the stop-controlled approaches in the study area operate below LOS D, but the majority of intersections operate acceptably.

2.3.2 2035 NO-BUILD CONDITIONS

The No-Build condition assumes that existing lane configurations on Kerr Avenue are maintained, and all projects contained in the fiscally constrained Long Range Transportation Plan (LRTP) are constructed. Under the No-Build scenario, a design-year analysis forecasts significantly increased delays and queues at most intersections. As a result, more than half of Kerr Avenue intersections will operate at LOS F during at least one AM or PM peak period.

Table 1. No Build Level of Service Summary

Intersection	Traffic Control	Existing (2009)		No-Build (2035)	
		AM	PM	AM	PM
Kerr Avenue (SR 1175) at Alandale Drive (SR 1374)	U	(WB-D)	(WB-D)	(WB-F)	(WB-F)
Kerr Avenue (SR 1175) at Greentree Road	U	(WB-E)	(WB-D)	(WB-F)	(WB-F)
Kerr Avenue (SR 1175) at US 74 (MLK Jr. Parkway)	S	F (NB-F) 123.5 sec	E (SB-F) 64.8 sec	F (WB-F) 121.5 sec	F (NB-F) 81.3 sec
Kerr Avenue (SR 1175) at US 74 WB Ramps	S	-	-	-	-
Kerr Avenue (SR 1175) at US 74 EB Ramps/Sagedale Drive	S	-	-	-	-
Kerr Avenue (SR 1175) at Sagedale Drive	U	(WB-C)	(WB-C)	(WB-C)	(WB-C)
Kerr Avenue (SR 1175) at Sunglow Drive/New Centre Drive	U	(EB-F)	(EB-F)	(EB-F)	(EB-F)
Kerr Avenue (SR 1175) at Fairlawn Drive	U	(EB-C)	(EB-D)	(EB-D)	(EB-F)
Kerr Avenue (SR 1175) at Yester Oaks Drive	U	(WB-C)	(WB-C)	(WB-C)	(WB-C)
Kerr Avenue (SR 1175) at McClelland Drive	U	(WB-D)	(WB-E)	(WB-F)	(WB-F)
Kerr Avenue (SR 1175) at Birchwood Drive	U	(EB-C)	(EB-C)	(EB-D)	(EB-D)
Kerr Avenue (SR 1175) at Market Street (US 17 Business)	S	F (EB-F) 128.6 sec	F (SB-F) 120.3 sec	F (NB-F) 94.8 sec	F (EB-F) 107.0 sec
Kerr Avenue (SR 1175) at Cinema Drive/ Commercial Driveway/Wilmington Avenue	U	(WB-D)	(WB-E)	(WB-F)	(WB-F)
Kerr Avenue (SR 1175) at Franklin Avenue	U	(WB-D)	(WB-C)	(WB-D)	(WB-C)
Kerr Avenue (SR 1175) at Emerson Street/Commercial Driveway	U	(EB-D)	(EB-D)	(EB-C)	(EB-C)
Kerr Avenue (SR 1175) at Greenway Avenue	U	(WB-E)	(WB-C)	(WB-F)	(WB-E)
Kerr Avenue (SR 1175) at Randall Parkway	S	E (EB-E) 59.2 sec	D (WB-E) 52.4 sec	E (SB-F) 71.7 sec	E (EB-F) 77.4 sec
Kerr Avenue (SR 1175) at Patrick Avenue	U	(EB-E)	(EB-E)	(EB-F)	(EB-F)
Market Street (US 17 Business) at Barclay Hills Drive	S	C (SB-F) 23.3 sec	B (SB-F) 19.2 sec	C (SB-F) 34.6 sec	C (SB-F) 23.7 sec
Market Street (US 17 Business) at Cinema Drive	U	(NB-E)	(NB-E)	(NB-F)	(NB-F)
Market Street (US 17 Business) at Princess Place Drive (SR 1301)/Shopping Center	S	B (NB-E) 13.4 sec	B (NB-E) 10.5 sec	B (NB-F) 15.2 sec	A (NB-F) 8.2 sec
Market Street (US 17 Business) at Wilmington Avenue	U	(NB-B)	(NB-D)	(NB-B)	(NB-F)
Market Street (US 17 Business) at Lullwater Avenue/ Commercial Driveway	S	C (NB-E) 22.2 sec	B (NB-E) 17.8 sec	C (NB-F) 26.3 sec	D (NB-F) 51.2 sec
Princess Place Drive (SR 1301) at Birchwood Drive	U	(SB-B)	(SB-B)	(SB-B)	(SB-B)
McClelland Drive at Wilmington Avenue	U	-	-	-	-

Notes: X = overall intersection LOS; (XX-X) = lowest operating approach and LOS; XX.X sec = overall average delay for signalized intersection.

2.4 CRASH ANALYSIS

A crash analysis of selected portions of Kerr Avenue and Market Street was performed based upon the most recent three years of available crash data. The data covered the period from November 1, 2006 to October 31, 2009. The summary includes crashes reported along Kerr Avenue from Alandale Drive to Patrick Avenue and along Market Street from Barclay Hills Drive to Lullwater Avenue. Table 2 shows accidents by type at intersections within the study area.

Table 2. Crash Summary by Intersection (2006-2009)

Intersection	Angle	Head On	Rear End	Side-swipe	Left Turns	Peds	Bikes	Other	Total
Kerr Ave at Patrick Ave	4		9		2				15
Kerr Ave at Randall Pkwy	7	2	6	2	7			1	25
Kerr Ave at Greenway Ave	3		10		2			1	16
Kerr Ave at Franklin Ave	3		4	2	1		1		11
Kerr Ave at Cinema Dr	4		4		2			1	11
Kerr Ave at Market St	30	1	8	1	14	2		2	58
Kerr Ave at Birchwood Dr	4		2	1	1			1	9
Kerr Ave at McClelland Dr	2	1	1	2	2			1	9
Kerr Ave at New Centre/Sunglow Dr	8		6		1				15
Kerr Ave at Sagedale Dr	2		2	1					5
Kerr Ave at MLK Jr Pkwy	20	1	18	2	7			3	51
Kerr Ave Corridor-wide Total	116	6	112	19	49	4	2	21	329
Market St at Barclay Hills Dr	4		13	1	2			2	22
Market St at Cinema Dr	8		10	3	4				25
Market St at Princess Place Dr	11		15	2	11	3		1	43
Market St at Kerr Ave	23		12	5	18	1		2	61
Market St at Wilmington Ave	2		3					1	6
Market St at Jacksonville Ave	2		3	1	1			2	9
Market St at Lullwater Dr	10	1	10		3	1		3	28
Market St Corridor-wide Total	118	3	146	23	68	11	3	14	386

The main collision type along the Kerr Avenue corridor involved angle crashes, with rear end and turning collisions causing the second and third greatest frequencies. Angle and turning collisions often indicate the need for more controlled access to side streets, thereby localizing the turning movements and making them more predictable to oncoming traffic. Rear end collisions occur primarily in areas with frequent “stop and go” traffic conditions or at traffic signals where vehicles

may stop suddenly to avoid running a red light. These types of collisions generally indicate traffic congestion issues.

The Market Street corridor shows similar crash trends. However, there were more collisions between major intersections than along Kerr Avenue, which had a large number of accidents at major intersections. This is likely caused by the high number of commercial driveways along this segment and the five-lane roadway (compared to three lanes on Kerr Avenue). As a result, there are more conflict points between turning vehicles and oncoming traffic on Market Street.

The intersection of Kerr Avenue and Market Street caused the highest overall number of collisions. The most common collision types were angle, left turn and rear end collisions. The intersection of Market Street and Princess Place Drive produced the second highest number of collisions, with the most common type being rear end collisions.

Corridor-wide crash rates in all categories for both Kerr Avenue and Market Street are higher than the statewide averages. Three fatal collisions were recorded within the study area. Two occurred along Market Street: one at Wilmington Avenue and the other at Westig Road (a minor intersection not shown in the summary table). The third fatality occurred at the Kerr Avenue and Martin Luther King, Jr. Parkway intersection. Table 3 compares crash rates for Kerr Avenue and Market Street with similar statewide corridors. (For the analysis, Kerr Avenue is classified as a three-lane, undivided Urban Secondary Route. Market Street is classified as a five-lane, undivided Urban US Route.) Note that the critical crash rates for both Kerr Avenue and Market Street exceed the statewide accident rates for similar roadways.

Table 3. Facility Crash Rate Comparison

Roadway	Total Crash Rate	Fatal Crash Rate	Non-Fatal Crash Rate	Critical Crash Rate*
Kerr Avenue	617.79	1.88	232.84	532.80
Statewide Urban Secondary Routes (3-lane, undivided)	482.35	1.09	130.10	
Market Street	610.58	3.16	261.00	514.04
Statewide Urban US Route (5-lane, undivided)	468.47	1.21	159.10	

*Rates are expressed in 100 Million Miles Traveled (MVMT)

3.0 PROPOSED IMPROVEMENTS

3.1 GENERAL DESCRIPTION

The proposed improvements include widening Kerr Avenue to a four-lane facility with a raised median, five-foot sidewalks on both sides of the road, dedicated four-foot bicycle lanes on both sides of the road, and a half clover interchange at Martin Luther King, Jr. Parkway. The improvements include a quadrant intersection design at the intersection of Kerr Avenue and Market Street.

With the quadrant intersection design, northbound and southbound left turns from Kerr Avenue to Market Street will be prohibited. Northbound traffic wishing to turn left will be redirected onto Cinema Drive, which will then carry traffic to a left-turn onto Market Street at a signalized intersection. Eastbound Market Street drivers who wish to turn right onto southbound Kerr Avenue may also use the Cinema Drive connector, just as they do presently. Southbound vehicles on Kerr Avenue that desire to turn left onto Market Street will be redirected at Birchwood Drive onto a new connector road that carries vehicles to a signalized left-turn onto Market Street, that is located across from existing Wilmington Avenue. Westbound Market Street drivers who wish to turn right onto northbound Kerr Avenue may also use the new connector road to “cut the corner” by accessing Kerr Avenue at Birchwood Drive.

Widening would occur on each side of Kerr Avenue, depending on land use and important environmental features, resulting in a “best-fit” alignment. These improvements are shown in Figure 2 and Figure 3. Detailed improvements along Kerr Avenue, including the interchange at Martin Luther King, Jr. Parkway, are described and shown in the 2008 CE.

The following discussion of proposed improvements includes the quadrant area only: between Cinema Drive and McClelland Drive on Kerr Avenue and between Wilmington Avenue and Cinema Drive on Market Street.

3.2 ROADWAY CROSS SECTION

Proposed typical sections for Kerr Avenue, Market Street and the two quadrant roadways are shown in Figure 4. The Kerr Avenue typical section is unchanged from the one described in the 2008 CE. Market Street in the quadrant area will include five to six 12-foot lanes. There is a six-foot refuge island at the intersection with Kerr Avenue.. Turning lanes of varying widths are included (10 feet or 12 feet) at the intersections. The proposed cross section for Cinema Drive includes three lanes whose widths vary between 10 ½ to 12 feet. Two westbound through lanes and one eastbound through lane are provided. Five-foot sidewalks are included on both sides of the roadway. The proposed typical section for the new connector road in the northeast quadrant of the intersection includes three 12-foot lanes (two eastbound through lanes and one westbound through lane). Five-foot sidewalks are also included on both sides of the road.

3.3 RIGHT OF WAY

The proposed right of way on Kerr Avenue between Cinema Drive and McClelland Drive ranges from approximately 115 feet to 140 feet. Along Market Street, between Cinema Drive and Wilmington Avenue, the proposed right of way ranges from approximately 125 feet to 140 feet. The proposed right of way on Cinema Drive and along the new connector road ranges from approximately 70 feet to 90 feet.

3.4 SPEED LIMIT

The proposed design speed along Kerr Avenue is 50 mph with an anticipated posted speed of 45 mph. The proposed design speed for Market Street is 45 mph with an anticipated posted speed of 40 mph. On Cinema Drive and the new connector road, the proposed design speed is 40 mph with an anticipated posted speed limit of 35 mph. Final decisions on actual speed limits will be made by the Division Traffic Engineer before the new facility is open to traffic.

3.5 ALIGNMENT

The alignment of Kerr Avenue in the area of the quadrant is unchanged from that described in the CE. The alignment for Market Street and Cinema Drive will follow the existing alignment. In the northeast quadrant of the Kerr Avenue/Market Street intersection, a roadway on new alignment is proposed. It would begin as an extension of the Wilmington Avenue alignment and follow a northwesterly arc, tying into Birchwood Drive (see Figure 3).

3.6 ACCESS CONTROL AND MEDIAN OPENINGS

Left turn access from Kerr Avenue to Market Street will be removed. Northbound drivers who want to turn left onto Market Street will be rerouted along Cinema Drive. Southbound drivers who want to turn left onto Market Street will be rerouted along the new connector road. Signalized median openings will be provided at Cinema Drive, Market Street and Birchwood Drive. Access at McClelland Drive will be provided as right in-right out turning movements. A connection will be constructed between McClelland Drive and the new connector road. This connection will allow residents of neighborhoods along McClelland Drive to make a left turn onto Kerr Avenue via the signal at Kerr Avenue and Birchwood Drive and avoid having to turn right onto Kerr Avenue and make a U-turn.

3.7 INTERSECTIONS/INTERCHANGES

No changes are proposed to the interchange improvements described in the 2008 CE. In addition, no changes are proposed at any of the intersections outside the quadrant area. There are a total of six intersections in the area being studied for the quadrant intersection alternative. Table 4 shows existing and proposed traffic control for these six intersections.

Table 4. Existing and Proposed Traffic Control

Intersection	Existing Traffic Control	Proposed Traffic Control
Kerr Avenue/Cinema Drive	Stop sign	Signal
Kerr Avenue/Market Street	Signal	Signal
Kerr Avenue/Birchwood Drive	Stop sign	Signal
Kerr Avenue/McClelland Drive	Stop sign	Stop sign/right in-right out
Market Street/Wilmington Avenue	Stop sign	Signal
Market Street/Cinema Drive	Stop sign	Signal

3.8 CULVERTS

There are no culverts in the quadrant area.

3.9 SIDEWALKS AND BICYCLE LANES

Five-foot sidewalks will be provided on both sides of Kerr Avenue and along both quadrant roadways – Cinema Drive and the new connector road. Bicycle accommodations are not included on the quadrant roadways. Pedestrian crossings and signals at major intersections will be addressed during final design.

3.10 NOISE BARRIERS

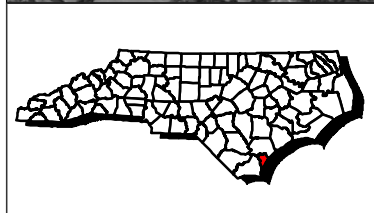
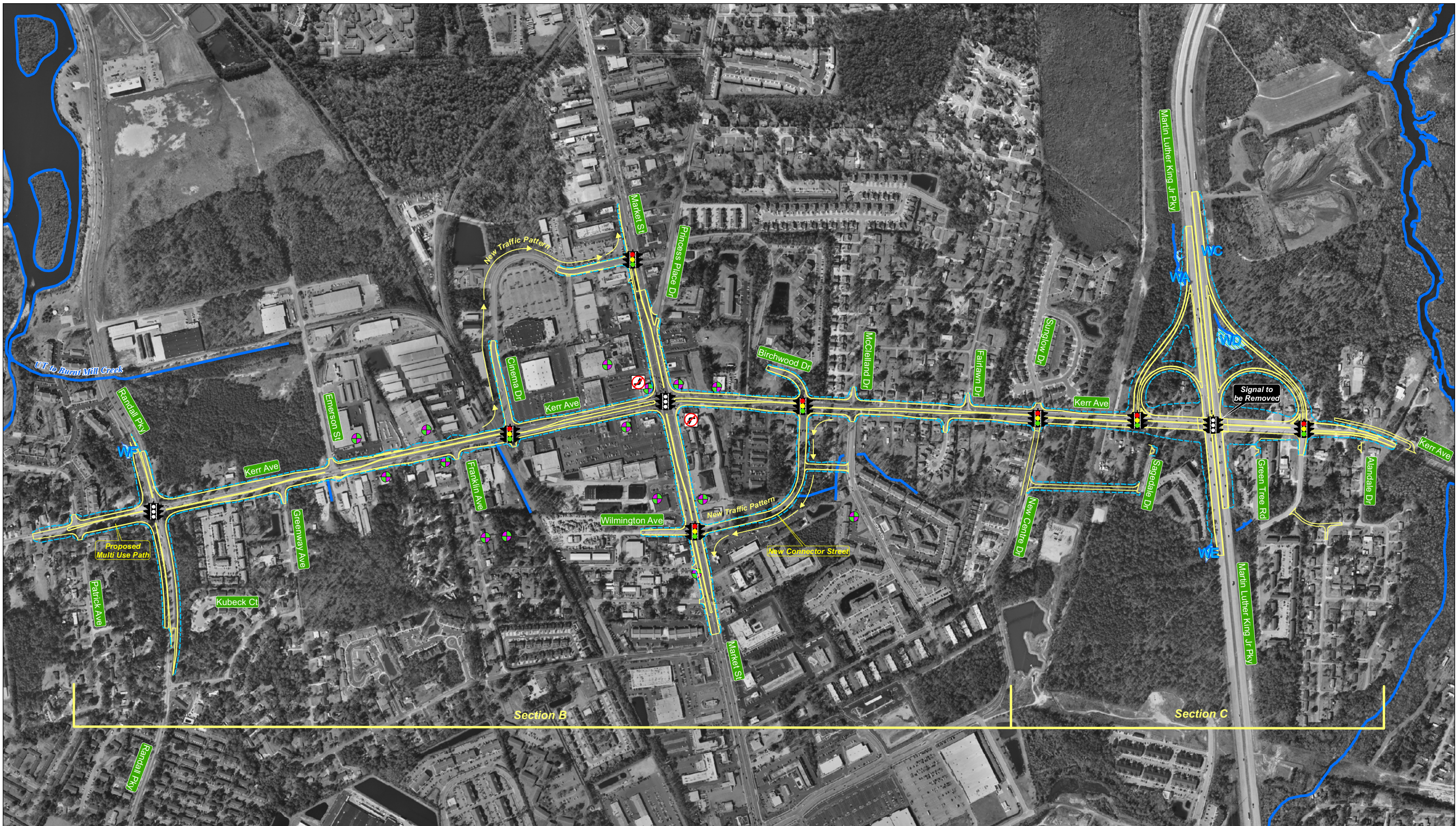
No noise barriers are proposed within the quadrant area.


3.11 DEGREE OF UTILITY CONFLICTS

Because of the abundance of utilities in the area (as described in the 2008 CE), it is likely that the project could have a high impact on utilities.

3.12 ANTICIPATED DESIGN EXCEPTIONS

No design exceptions are anticipated for the proposed improvements.



Prepared For: 

0 750 1,500 Feet
Data Source: New Hanover County and Mulkey Natural Resources

Proposed Improvements (Alternative 2 Option C)
 (Widening with Southbound Quadrant Roadway at Birchwood Drive)
 TIP No. U-3338
 SR 1175 (Kerr Avenue) from Randall Pkwy. to Martin Luther King, Jr. Pkwy.
 New Hanover County, North Carolina

Legend








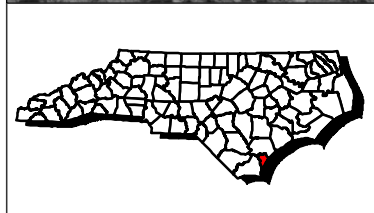


-  Proposed Roadway
-  Slope Stake
-  Hazmat/UST
-  Wetlands
-  Streams
-  Existing Signal
-  Proposed Signal

Figure No.
2



Prepared For: 



0 300 600 Feet

Data Source: New Hanover County and Mulkey Natural Resources

Proposed Improvements (Quadrant Area Detail)

TIP No. U-3338

SR 1175 (Kerr Avenue) from Randall Pkwy. to Martin Luther King, Jr. Pkwy.

New Hanover County, North Carolina

Legend








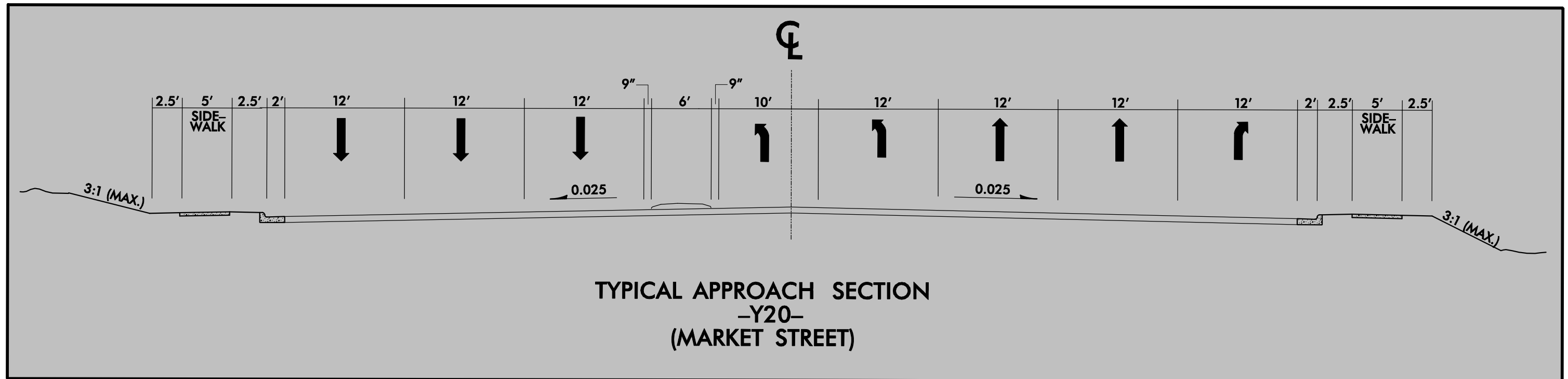
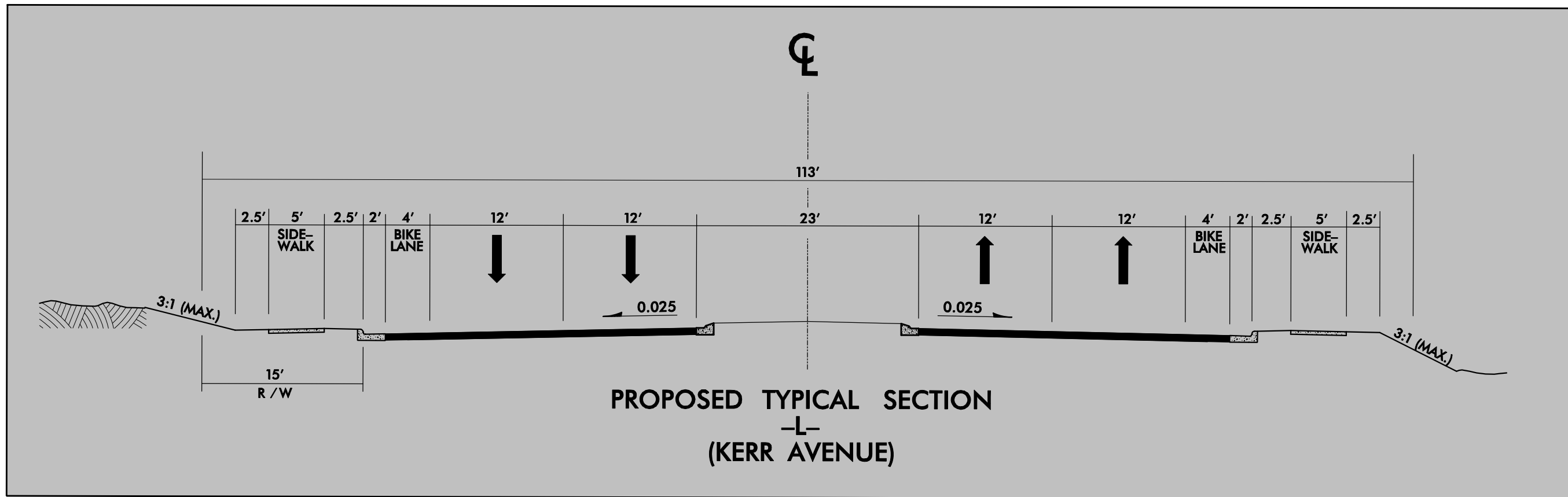
-  Proposed Roadway
-  Slope Stake
-  Hazmat/UST
-  Wetlands
-  Streams
-  Existing Signal
-  Proposed Signal

Figure No.

3



Prepared For:



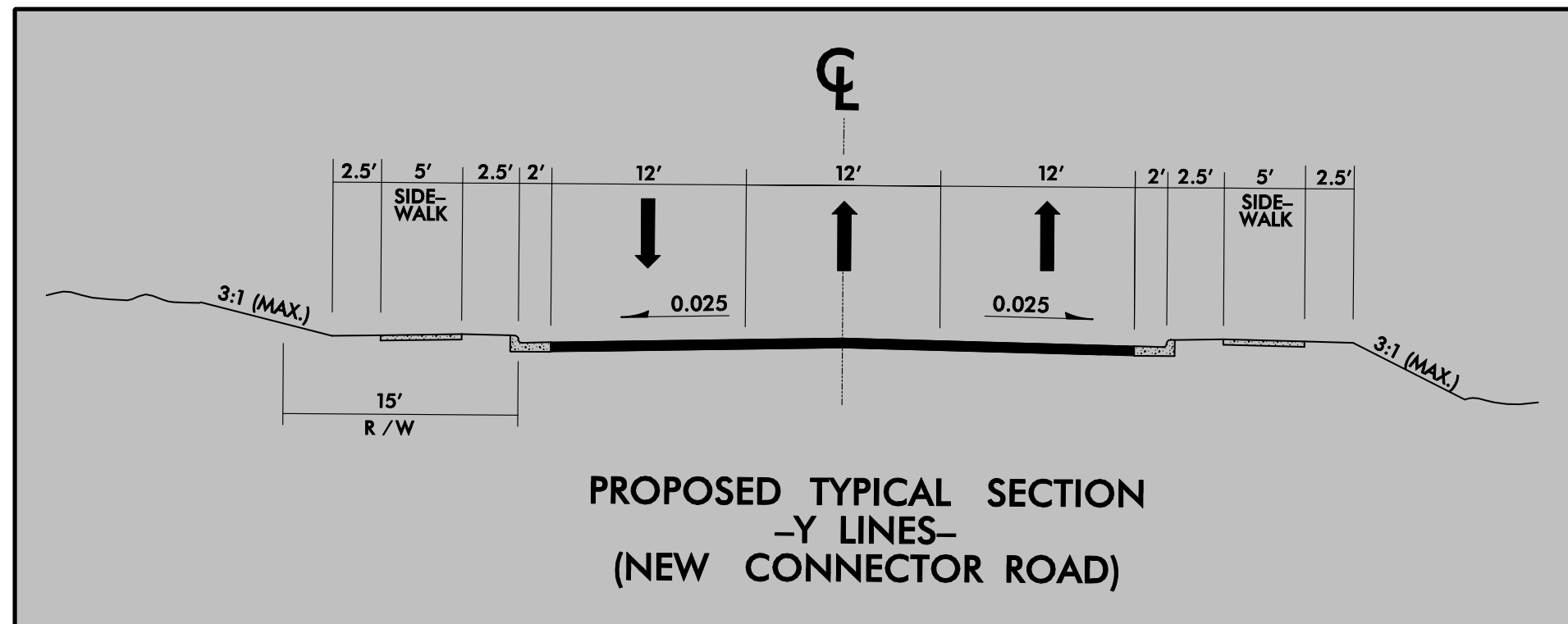
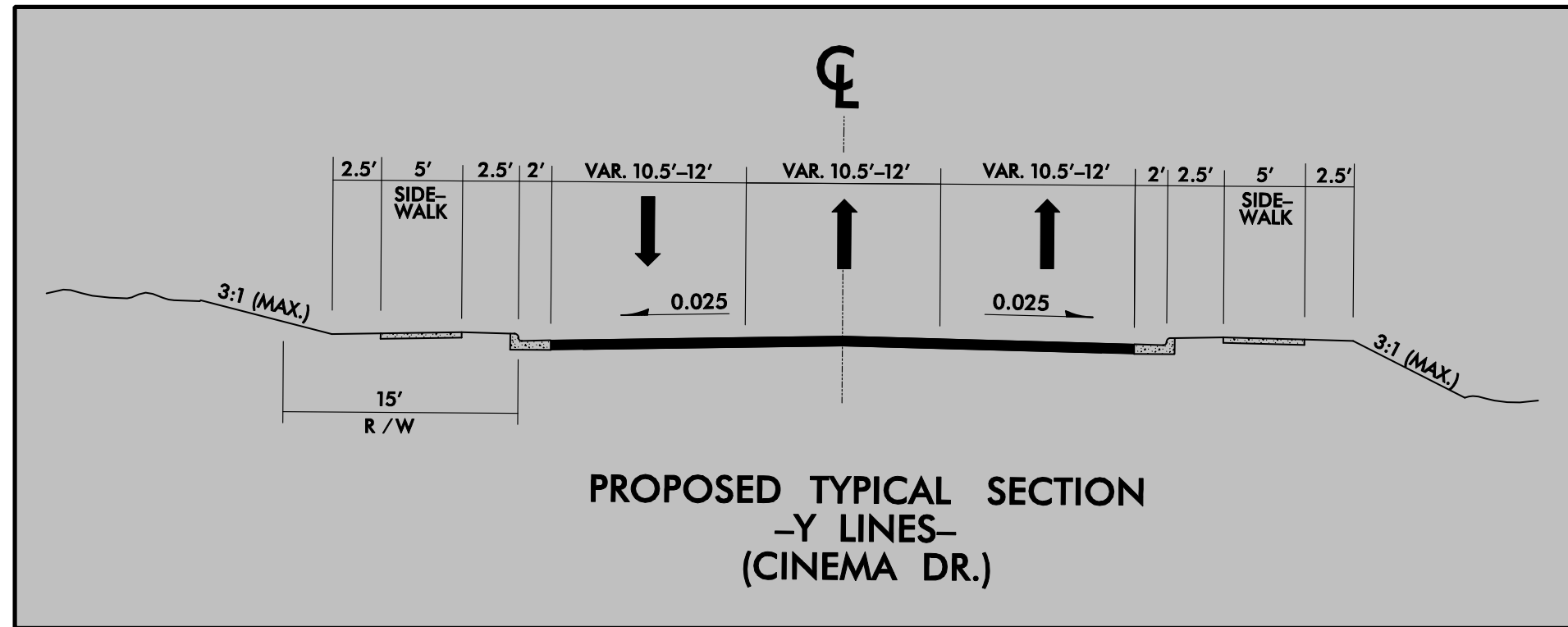
*Figure not to Scale

Proposed Typical Sections

TIP No. U-3338
SR 1175 (Kerr Avenue) from Randall Pkwy. to Martin Luther King, Jr. Pkwy.
New Hanover County, North Carolina

Figure No.

4A



Prepared For:

*Figure not to Scale

Proposed Typical Sections

TIP No. U-3338
 SR 1175 (Kerr Avenue) from Randall Pkwy. to Martin Luther King, Jr. Pkwy.
 New Hanover County, North Carolina

Figure No.

4B

4.0 ALTERNATIVES TO THE PROPOSED IMPROVEMENTS

4.1 RECOMMENDED IMPROVEMENTS

The recommended improvements, as described in Chapter 3, include widening Kerr Avenue to a four-lane facility using a “best-fit” alignment and providing a half clover interchange at Martin Luther King, Jr. Parkway. A quadrant intersection configuration will be utilized to improve the functionality of the Kerr Avenue/Market Street intersection. The quadrant design will reroute northbound and southbound left turns from Kerr Avenue to Market Street. The recommended improvements described in the 2008 CE are included in this chapter as Alternative 1. Several design options were considered for the quadrant intersection. These are described below. The 2035 Build Analysis is also included for each alternative and is summarized in Table 5.

4.2 ALTERNATIVE 1: CONVENTIONAL WIDENING (AS DESCRIBED IN THE 2008 CE)

Alternative 1 was described in the 2008 CE. It includes widening Kerr Avenue to four lanes with a raised 23-foot median, five-foot sidewalks on both sides of the road, dedicated four-foot bicycle lanes on both sides of the road, and a half clover interchange at Martin Luther King, Jr. Parkway. Widening is proposed on both sides of Kerr Avenue, utilizing a “best-fit” alignment. These improvements are referred to in this document as the Conventional Widening (see Figure 5).

Several changes have been made to the design since approval of the 2008 CE. These are noted below:

- On the east side of Kerr Avenue, between Patrick Avenue and Randall Parkway, the sidewalk was replaced with a 10-foot multi-use path. This was done at the request of the Wilmington MPO. The proposed path will be part of the City’s Cross-City Trail, which was adopted by the Wilmington City Council in June 2008. No relocations are caused by this change.
- A proposed signal at Emerson Street has been removed. Updated traffic analysis indicates a signal is not warranted at this location.
- The original 2008 CE stated that no noise walls are included with the proposed improvements. However, analysis indicates that a noise wall may be justified in the interchange area on the north side of Martin Luther King, Jr., Parkway, east of Kerr Avenue.

4.2.1 TRAFFIC OPERATIONS

The increased capacity resulting from widening Kerr Avenue generally provides improved intersection operations over the No-Build Alternative. Specifically, the proposed half-clover interchange at Martin Luther King, Jr. Parkway improves operations along Kerr Avenue while providing uninterrupted operations along Martin Luther King, Jr. Parkway. Most signalized intersections along the corridor are projected to operate at acceptable levels. The exception is Kerr Avenue at Market Street, which is projected to operate near the LOS E/F threshold during both peak periods. Poor operations will continue at several unsignalized, stop controlled approaches, particularly those with full access from a side street, such as Emerson Street.

In addition, the proposed, center median along Kerr Avenue will restrict access to some side roads and driveways. This will result in additional U-turns at signals and some unsignalized median breaks.

These additional U-turns will increase delay for those left turn movements, as compared to the No-Build condition. This restricted access, however, will result in fewer conflict points for drivers along Kerr Avenue. As a result, the system-wide delay is reduced by 42 percent over the No-Build in the AM and 31 percent over the No-Build in the PM.

4.3 ALTERNATIVE 2

Alternative 2 is similar to the conventional widening alternative, except in the vicinity of the Kerr Avenue and Market Street intersection. At that location, a quadrant roadway design will be utilized. With this design, all northbound and southbound left turns from Kerr Avenue onto Market Street will be removed and rerouted via connector or “quadrant” roads. An additional, key objective is to improve conditions for bicyclists and pedestrians by reducing the amount of traffic traveling through the Kerr Avenue and Market Street intersection. This alternative supports recommendations in the Wilmington MPO’s Draft *Market Street Corridor Study*. Three design options were evaluated for Alternative 2 and are described below.

4.3.1 ALTERNATIVE 2 OPTION A

Alternative 2 Option A utilizes “connector roads” in all four quadrants of the intersection at Kerr Avenue and Market Street (Figure 6). All north and southbound left turns from Kerr Avenue to Market Street would be diverted onto connector roadways. Option A proposes three new roadway connections to complete the system of roadways in all four quadrants. In the northwest quadrant, Birchwood Avenue is extended south to Market Street, aligning with Cinema Drive. In the northeast quadrant, a new roadway is constructed between McClelland Drive and Market Street. It would be aligned with Wilmington Avenue. In the southeast quadrant, a new roadway connection is made from the existing Cinema Drive intersection with Kerr Avenue, then connecting to Wilmington Avenue to Market Street. Existing Cinema Drive is maintained as a southwest quadrant connector roadway. Widened terminal points of these quadrant roadways will be required to accommodate turning lanes for the diverted traffic. Four new signals will be installed at Kerr Avenue and Cinema Drive, Kerr Avenue and McClelland Drive, Market Street and Wilmington Avenue, and Market Street and Cinema Drive.

4.3.2 ALTERNATIVE 2 OPTION B

As with Option A, this option involves eliminating left-turning movements from Kerr Avenue to Market Street and rerouting them to connector roads in the northeast and southwest quadrants of the intersection. Unlike Option A, no connections are made in the southeast and northwest quadrants (see Figure 7). With Option B, northbound Kerr Avenue left turns will be rerouted onto existing, westbound Cinema Drive and then to a left turn onto Market Street. A northeast-quadrant connector road will be constructed that connects Market Street (at Wilmington Avenue) to McClelland Drive, and then utilizes a portion of McClelland Drive until its intersection with Kerr Avenue. Southbound left turns from Kerr Avenue will be rerouted onto the new connector. The existing intersection of McClelland Drive and Kerr Avenue will be signalized, and the unsignalized Birchwood Drive intersection will be converted to right in-right out access. Option B results in four new signals at the intersections of: Kerr Avenue/McClelland Drive, Kerr Avenue/Cinema Drive, Market Street/Cinema Drive and Market Street/Wilmington Avenue. Minor widening will occur at the terminal points of the quadrant roadways to accommodate turning lanes for diverted traffic. This option is shown in Figure 7.

4.3.3 ALTERNATIVE 2 OPTION C (PREFERRED)

Alternative 2 Option C is shown in Figure 2 and Figure 3. This Option constructs a new-location connector road in the northeast quadrant that extends from Market Street (at Wilmington Avenue) to Kerr Avenue (at Birchwood Drive). This alternative also provides a short, north-to-south link from the connector road to McClelland Drive. Southbound left turns from Kerr Avenue will be rerouted onto the new connector road and then to Market Street. Northbound Kerr Avenue left turns will be rerouted onto westbound Cinema Drive and then to Market Street. Four new traffic signals will be provided at the intersections of: Kerr Avenue/Birchwood Drive, Kerr Avenue/Cinema Drive, Market Street/Cinema Drive and Market Street/Wilmington Avenue. The McClelland Drive intersection with Kerr Avenue will be converted to right in-right out only.

Due to their similarity, Alternative 2 Options B and C share similar traffic operations (discussed in Section 4.3.4). Both quadrant options provide improved traffic operations and reduce overall system delay (over the No-Build Alternative) by at least 77 percent in the AM peak, and 49 percent in the PM peak. The intersection with Market Street performs at LOS C/D, as opposed to LOS F with a conventional (Alternative 1) design. In the vicinity of Market Street, the quadrant designs enhance pedestrian safety by shortening the crossing distance over Kerr Avenue. Both options are also consistent with Wilmington MPO's vision for Market Street.

Option C was selected as the preferred quadrant option and the overall preferred alternative because it offers the best overall traffic operation, causes fewer residential relocations and less impacts to jurisdictional resources, and has a lower overall cost. Option C (as compared to Option B) does provide a slight inconvenience to eastbound traffic on McClelland Avenue that desires to turn onto northbound Kerr Avenue. Instead of a direct left-turn, travelers desiring this movement will have to turn right, and then make a U-turn at Birchwood Drive (approximately 400 feet away). However, when compared with Option B, the preferred alternative (Option C) avoids a greater inconvenience to eastbound drivers on Birchwood Drive that desire to turn north on Kerr Avenue. As Option B prohibits northbound left-turns from Birchwood Drive, drivers must instead turn right, travel south across Market Street, make a U-turn at the Cinema Drive intersection (approximately 0.5 mile), again cross Market Street, and then continue northward. Option C simply provides a signalized, left-turn movement from Birchwood Drive to northbound Kerr Avenue.

4.3.4 TRAFFIC OPERATIONS

Although delay is reduced at the primary intersection of Kerr Avenue and Market Street, traffic analysis indicates operational deficiencies with Alternative 2 Option A. The key issues include unacceptable delays for left turning vehicles at the McClelland Drive/Kerr Avenue intersection and unacceptable levels of service at the two new signals along Market Street. The analysis shows that traffic operates better (fewer intersections operating at LOS F) with a two-quadrant roadway configuration rather than a four-quadrant roadway design. Quadrant roadways in the northwest and southeast quadrants do not directly serve left turning vehicles and create long queues at the new signals on Market Street. Therefore, it was decided to remove Alternative 2 Option A from further consideration.

With Alternative 2 Option B, intersection operations are generally improved over the 2035 No-Build. The central Kerr Avenue and Market Street intersection is expected to operate at approximately 31 seconds of delay in the AM peak and approximately 43 seconds of delay in the PM peak, which is above the LOS D threshold. In addition, a corridor-wide analysis indicates a 78

percent reduction in delay over the No-Build in the AM and a 58 percent reduction over the No-Build in the PM. These delays are substantially lower than with Alternative 1.

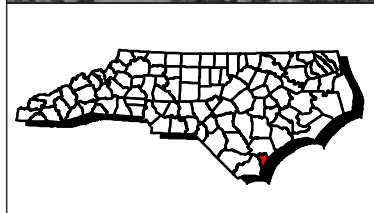
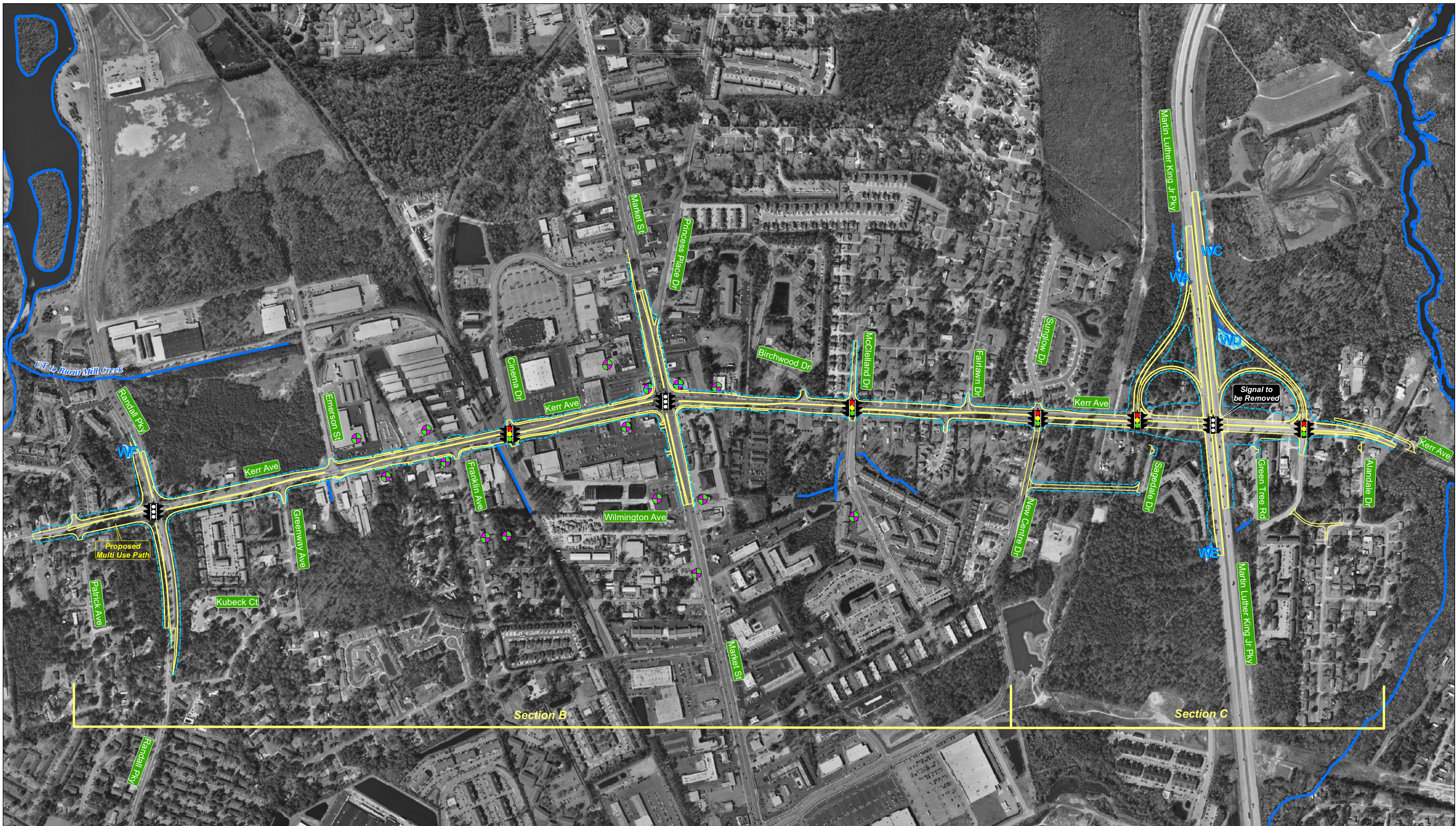
Under the 2035 Build Analysis, Alternative 2 Option C shows improvements similar to Alternative 2 Option B. The intersection at Kerr Avenue and Market Street has the shortest average delay (approximately 29 seconds in the AM peak and approximately 38 seconds in the PM peak) with this option. In addition, the corridor-wide simulation results show a systemwide reduction in delay of 77 percent over the No-Build in the AM and 49 percent over the No-Build in the PM.


Table 5. 2035 Build Analysis

Intersection	Traffic Control	Build (2035) Alternative 1		Build (2035) Alternative 2 Option A		Build (2035) Alternative 2 Option B		Build (2035) Alternative 2 Option C	
		AM	PM	AM	PM	AM	PM	AM	PM
Kerr Avenue (SR 1175) at Alandale Drive (SR 1374)	U	-	-	-	-	-	-	-	-
Kerr Avenue (SR 1175) at Greentree Road	U	-	-	-	-	-	-	-	-
Kerr Avenue (SR 1175) at US 74 (MLK Jr. Parkway)	S	-	-	-	-	-	-	-	-
Kerr Avenue (SR 1175) at US 74 WB Ramps	S	D (EB-E) 51.7 sec	C (WB-D) 34.2 sec	D (WB-E) 50.9 sec	C (WB-D) 33.6 sec	D (SB-D) 37.6 sec	C (WB-D) 26.1 sec	D (SB-D) 37.8 sec	C (WB-C) 25.9 sec
Kerr Avenue (SR 1175) at US 74 EB Ramps/Sagedale Drive	S	B (EB-C) 19.3 sec	C (EB-D) 21.5 sec	C (EB-D) 22.4 sec	C (EB-D) 26.5 sec	B (EB-D) 16.5 sec	B (EB-D) 16.1 sec	B (EB-D) 17.3 sec	B (EB-D) 15.8 sec
Kerr Avenue (SR 1175) at Sagedale Drive	U	-	-	-	-	-	-	-	-
Kerr Avenue (SR 1175) at Sunglow Drive/New Centre Drive	U	B (EB-D) 15.5 sec	B (EB-D) 14.7 sec	(EB-F)	(EB-F)	B (EB-D) 14.1 sec	B (EB-D) 16.3 sec	B (EB-D) 19.0 sec	C (EB-D) 22.7 sec
Kerr Avenue (SR 1175) at Fairlawn Drive	U	(EB-B)	(EB-C)	(EB-B)	(EB-D)	(EB-B)	(EB-C)	(EB-B)	(EB-C)
Kerr Avenue (SR 1175) at Yester Oaks Drive	U	(WB-B)	(WB-A)	(WB-B)	(WB-B)	(WB-B)	(WB-A)	(WB-B)	(WB-A)
Kerr Avenue (SR 1175) at McClelland Drive	U	C (WB-E) 21.6 sec	C (WB-E) 22.3 sec	(EB-F)	(EB-F)	C (WB-E) 23.1 sec	C (WB-E) 27.1 sec	(EB-C)	(EB-C)
Kerr Avenue (SR 1175) at Birchwood Drive	U	(EB-B)	(EB-C)	B (EB-C) 12.3 sec	B (EB-C) 13.7 sec	(EB-B)	(EB-B)	C (WB-E) 22.0 sec	C (WB-E) 28.9 sec
Kerr Avenue (SR 1175) at Market Street (US 17 Business)	S	E (NB-F) 78.1 sec	F (NB-F) 84.2 sec	D (NB-F) 50.5 sec	E (SB-F) 56.7 sec	C (NB-D) 30.7 sec	D (SB-E) 42.7 sec	C (NB-D) 29.0 sec	D (SB-E) 38.4 sec
Kerr Avenue (SR 1175) at Cinema Drive/ Commercial Driveway/Wilmington Avenue	U	C (EB-E) 29.0 sec	D (EB-E) 35.3 sec	C (EB-D) 27.3 sec	C (EB-D) 31.8 sec	C (EB-E) 30.4 sec	D (EB-D) 35.5 sec	C (EB-E) 29.1 sec	C (EB-D) 30.2 sec
Kerr Avenue (SR 1175) at Franklin Avenue	U	(WB-C)	(WB-B)	(WB-C)	(WB-B)	(WB-C)	(WB-B)	(WB-C)	(WB-B)
Kerr Avenue (SR 1175) at Emerson Street/Commercial Driveway	U	(EB-C)	(EB-C)	(EB-F)	(EB-F)	(EB-F)	(EB-F)	(EB-F)	(EB-F)

Intersection	Traffic Control	Build (2035) Alternative 1		Build (2035) Alternative 2 Option A		Build (2035) Alternative 2 Option B		Build (2035) Alternative 2 Option C	
		AM	PM	AM	PM	AM	PM	AM	PM
Kerr Avenue (SR 1175) at Greenway Avenue	U	(WB-F)	(WB-E)	(WB-C)	(WB-B)	(WB-C)	(WB-C)	(WB-C)	(WB-C)
Kerr Avenue (SR 1175) at Randall Parkway	S	E (SB-F) 71.7 sec	E (EB-F) 77.4 sec	D (WB-E) 54.3 sec	D (WB-E) 54.1 sec	D (WB-D) 47.5 sec	D (WB-D) 38.9 sec	D (EB-D) 38.8 sec	D (WB-D) 38.9 sec
Kerr Avenue (SR 1175) at Patrick Avenue	U	(EB-F)	(EB-F)	(EB-E)	(EB-F)	(EB-E)	(EB-F)	(EB-E)	(EB-F)
Market Street (US 17 Business) at Barclay Hills Drive	S	C (SB-F) 34.6 sec	C (SB-F) 23.7 sec	D (SB-F) 38.8 sec	C (SB-F) 22.1 sec	D (SB-F) 36.7 sec	B (SB-F) 19.9 sec	C (SB-F) 30.2 sec	B (SB-F) 18.1 sec
Market Street (US 17 Business) at Cinema Drive	U	(NB-F)	(NB-F)	E (NB-F) 59.1 sec	F (NB-F) 93.5 sec	B (EB-C) 16.3 sec	C (NB-D) 21.6 sec	B (EB-B) 17.6 sec	C (NB-D) 20.6 sec
Market Street (US 17 Business) at Princess Place Drive (SR 1301)/Shopping Center	S	B (NB-F) 15.2 sec	A (NB-F) 8.2 sec	(NB-B)	(NB-C)	(NB-B)	(NB-B)	(NB-B)	(NB-B)
Market Street (US 17 Business) at Wilmington Avenue	U	(NB-B)	(NB-F)	F (NB-F) 102.1 sec	F (NB-F) 91.7 sec	C (SB-E) 25.2 sec	B (NB-E) 19.8 sec	C (SB-E) 25.3 sec	C (SB-E) 21.0 sec
Market Street (US 17 Business) at Lullwater Avenue/ Commercial Driveway	S	C (NB-F) 26.3 sec	D (NB-F) 51.2 sec	D (NB-F) 43.5 sec	D (NB-F) 43.3 sec	C (NB-E) 26.5 sec	D (NB-E) 52.7 sec	C (NB-E) 26.2 sec	D (NB-E) 52.7 sec
Princess Place Drive (SR 1301) at Birchwood Drive	U	(SB-B)	(SB-B)	(EB-F)	(EB-F)	(SB-B)	(SB-B)	(SB-B)	(SB-B)
McClelland Drive at Wilmington Avenue	U	-	-	(NB-B)	(NB-B)	(NB-B)	(NB-B)	(NB-B)	(NB-B)

Notes: X = overall intersection LOS
 (XX-X) = lowest operating approach and LOS;
 XX.X sec = overall average delay for signalized intersection



Prepared For: 

0 750 1,500 Feet
Data Source: New Hanover County and Mulkey Natural Resources

Alternative 1
 (Conventional Widening from 2008 CE)
 TIP No. U-3338
 SR 1175 (Kerr Avenue) from Randall Pkwy. to Martin Luther King, Jr. Pkwy.
 New Hanover County, North Carolina

Legend








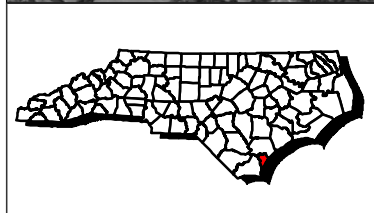
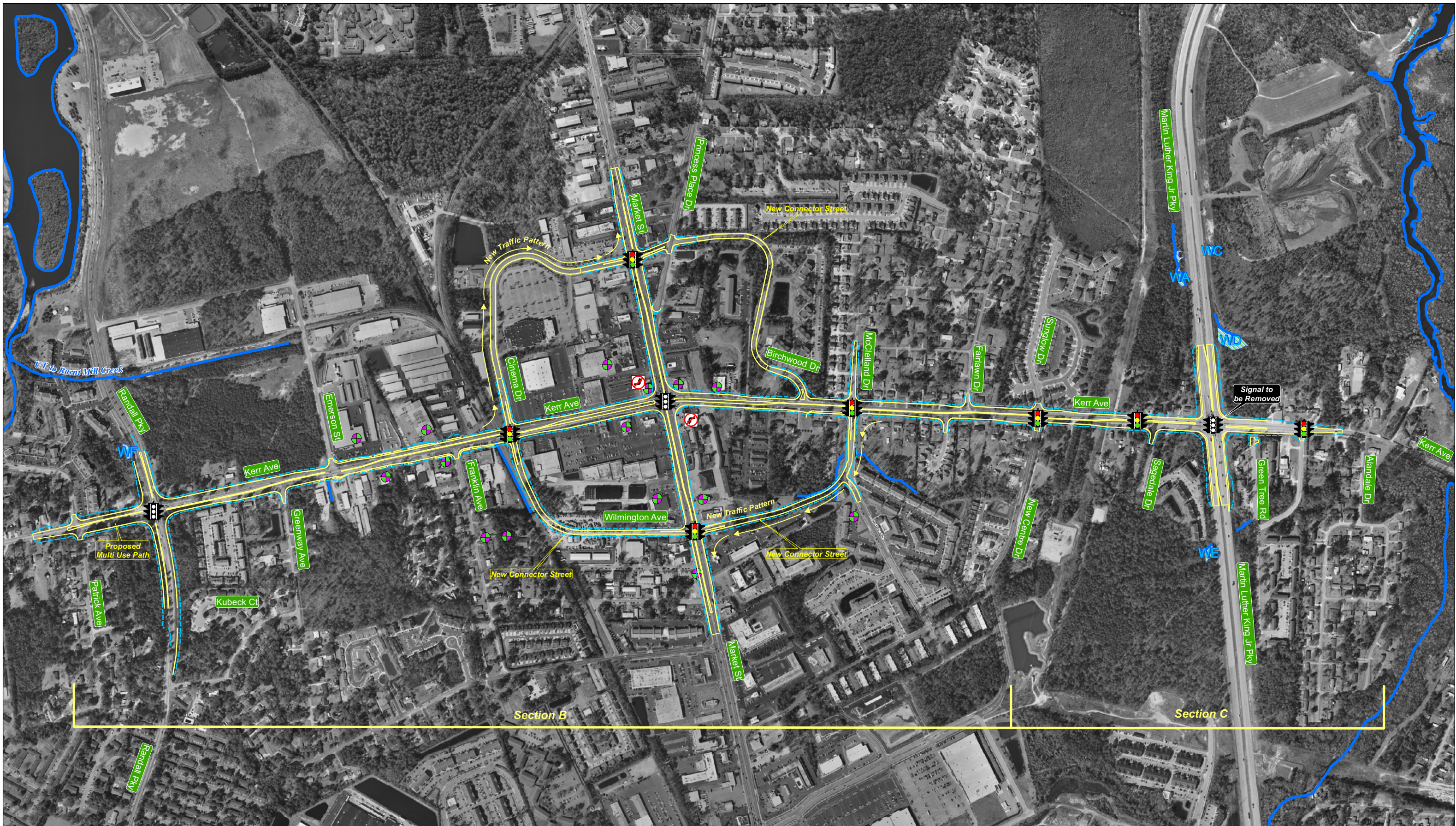

-  Proposed Roadway
-  Slope Stake
-  Wetlands
-  Streams
-  Existing Signal
-  Proposed Signal
-  Hazmat/UST

Figure No.
5



Prepared For: 

0 750 1,500 Feet

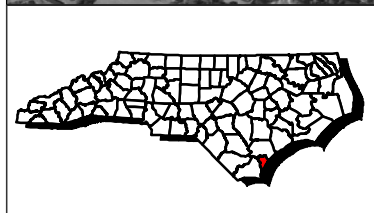
Data Source: New Hanover County and Mulkey Natural Resources


Alternative 2 Option A
 (Widening with Four Quadrant Roadways)
 TIP No. U-3338
 SR 1175 (Kerr Avenue) from Randall Pkwy. to Martin Luther King, Jr. Pkwy.
 New Hanover County, North Carolina

Legend

- Proposed Roadway
- Slope Stake
- Hazmat/UST
- Wetlands
- Streams
- Existing Signal
- Proposed Signal

Figure No.
 6



Prepared For: 

0 750 1,500 Feet
Data Source: New Hanover County and Mulkey Natural Resources

Alternative 2 Option B
 (Widening with Southbound Quadrant Roadway at McClelland Drive)
 TIP No. U-3338
 SR 1175 (Kerr Avenue) from Randall Pkwy. to Martin Luther King, Jr. Pkwy.
 New Hanover County, North Carolina

Legend








 Proposed Roadway	 Wetlands	 Existing Signal
 Slope Stake	 Streams	 Proposed Signal
 Hazmat/UST		

Figure No.
7

5.0 ENVIRONMENTAL EFFECTS OF PROPOSED IMPROVEMENTS

This chapter compares the impacts for Alternative 1 and Alternative 2 Options B and C. The interchange area (Section C) is the same for all of the alternatives so the evaluation focuses primarily on the widening portion of the project (Section B). Many of the impacts are limited to the quadrant area, described in Chapter 3. For a comprehensive discussion of impacts for the widening and interchange, refer to the 2008 CE.

5.1 LOCAL PLAN COMPATIBILITY

Alternative 2 Options B and C are consistent with local land use plans. The Wilmington MPO is completing a corridor study for Market Street that is expected to be approved in early 2011. This study will include a recommendation for a quadrant intersection design at Kerr Avenue and Market Street. Objectives of the Market Street corridor study include establishing positive access control within the corridor, and enhancing pedestrian and bicycle access and safety at the intersection of Kerr Avenue and Market Street. Compared to Alternative 1, a quadrant alternative provides fewer lanes for pedestrians and cyclists to cross at the Kerr Avenue/Market Street intersection. In addition, pedestrian refuge “islands” are under consideration at the intersection. Fewer cars will pass through the intersection with Alternative 2. As with Alternative 1, Alternative 2 is not expected to change land use patterns.

The quadrant alternative complies with the *Wilmington-New Hanover County Joint Coastal Area Management Plan* (2006 update) and *Choices: The Wilmington Future Land Use Plan* (2004).

5.2 COMMUNITY IMPACTS

A *Community Impact Assessment Addendum* (CIA Addendum) was approved in August 2010. Its results are summarized in this section.

5.2.1 ACCESSIBILITY/COMMUTING PATTERNS

With all of the alternatives, a median is proposed along Kerr Avenue. This change could make access less convenient for neighborhoods and businesses not located at a median break. For the shopping centers on Kerr Avenue south of Market Street, patrons who want to turn left onto Kerr Avenue will need to use the signal at Cinema Drive or make a U-turn at Market Street. The intersection will be designed to accommodate large trucks that need to make a U-turn. Parking will likely be affected at businesses that directly front Kerr Avenue. The primary difference in access between the alternatives is for left turning traffic at the intersection of Kerr Avenue and Market Street. These differences are described below.

ALTERNATIVE 1

With Alternative 1, vehicles are still allowed to make left turns from Kerr Avenue to Market Street. Within the quadrant area, signalized median openings will be provided at Cinema Drive, Market Street, and McClelland Drive. No median opening will be provided at Birchwood Drive, and access at this intersection will be right in-right out only.

ALTERNATIVE 2 OPTION B

With Alternative 2 Option B, drivers will no longer be able to make left turns from either direction of Kerr Avenue onto Market Street. Drivers traveling north who want to turn left onto Market

Street will be rerouted onto Cinema Drive. As a result, businesses along Cinema Drive will encounter higher traffic volumes.

Southbound drivers who want to turn left will be rerouted at McClelland Drive onto a new connector roadway that will align with Wilmington Avenue at Market Street. This new connector roadway will provide new access to the northeast quadrant of the Kerr Avenue/Market Street intersection that is not provided with Alternative 1.

Option B prohibits northbound left-turns from Birchwood Drive. Instead, drivers must turn right onto Kerr Avenue, travel south across Market Street, and make a U-turn north at the Cinema Drive intersection (approximately 0.5 mile), and then cross Market Street again. Thus, a noteworthy inconvenience is associated with this traffic movement.

ALTERNATIVE 2 OPTION C

Alternative 2 Option C access is similar to Alternative 2 Option B, in that traffic will no longer be able to make left-turns from Kerr Avenue onto Market Street. Drivers traveling north on Kerr Avenue who want to turn left onto Market Street will be rerouted onto Cinema Drive and then make a left-turn onto Market Street. Likewise in the northeast quadrant, southbound left-turns from Kerr Avenue will be routed onto the new connector road and then to a left-turn onto Market Street.

The key difference with this option is that the new connector road connects to Kerr Avenue at Birchwood Drive (rather than McClelland Drive). A traffic signal will be installed at the Birchwood Drive intersection, and access at McClelland Drive will be converted to right in-right-out only. Eastbound traffic on McClelland Drive that desires to turn left onto northbound Kerr Avenue, will have to turn right, and then make a U-turn at Birchwood Drive (approximately 400 feet).

5.2.2 NEIGHBORHOOD COHESION

Neither Alternative 1 nor Alternative 2 is expected to adversely affect neighborhood cohesion. Numerous single-family and some multi-family communities exist along the Kerr Avenue corridor, particularly north of Market Street. A number of single-family homes outside of the subdivisions line both sides of Kerr Avenue. Because of the amount of traffic along Kerr Avenue and the lack of pedestrian and bicycle facilities, there does not appear to be much interaction among the homes adjacent to Kerr Avenue. Some of the subdivisions and multi-family communities appear to be connected internally by a sidewalk system but there are no obvious connections between communities.

5.2.3 RELOCATIONS

Alternative 2 Option B will cause the most residential relocations, while Alternative 1 will cause the fewest. Commercial relocation will be similar for either alternative, with Alternative 2 (Option B or C) having one more than Alternative 1. Preliminary relocation estimates are shown in Table 6.

Table 6. Relocations

Relocations	Section B ¹			Section C ²
	Alternative 1	Alternative 2		
		Option B	Option C (preferred)	
Residential	10	16	13	15
Commercial	10	11	11	1

¹Section B includes the widening portion of the project from just south of Randall Parkway to New Centre Drive.

²Section C includes the interchange area from New Centre Drive to just north of MLK, Jr. Parkway. Impacts for Section C are for the half clover interchange design and are the same for both alternatives.

5.2.4 ENVIRONMENTAL JUSTICE

Within the study area, census data indicate the presence of persons meeting the criteria for Environmental Justice (*CLA Addendum*, August 2010). The percentage of non-white persons is nearly twice the percentage of non-white persons in New Hanover County. Field observations indicate a higher concentration of African-American persons north of Market Street and west of Kerr Avenue, particularly along Barclay Hills Drive and Princess Place Drive. Persons below the poverty level account for nearly 30 percent of the study area population. This is more than twice the percentage of persons below the poverty level in New Hanover County. A large college student population, particularly along Kerr Avenue north of Market Street, could account for some of the low income statistics. The Ahepa Apartments on Birchwood Drive is a 50-unit community that provides housing for low-income elderly and disabled persons.

The *CLA Addendum* determined that impacts to minority and low income populations as a result of Alternative 2 do not appear to be disproportionately high and adverse. Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community. For example, the median is proposed for the entire length of Kerr Avenue with both alternatives. Noise analysis results were also comparable along the project's length for both alternatives. In addition, relocations and right-of-way impacts for both alternatives are not expected to disproportionately affect Environmental Justice populations. Public involvement and outreach activities (described in Section 6.2) ensured full and fair participation of all potentially affected communities in the decision-making process.

5.3 BICYCLE AND PEDESTRIAN FACILITIES

Both Alternative 1 and Alternative 2 include sidewalks and marked bicycle lanes on both sides of Kerr Avenue.

Alternative 2 Options B and C also include sidewalks on Cinema Drive and the new connector road. Bicycle accommodations are not proposed on the quadrant roadways.

During the study, the City of Wilmington and Wilmington MPO requested a 10-foot multi-use trail on the east side of Kerr Avenue between Patrick Avenue and Randall Parkway. The trail was studied and is included as part of the proposed recommendations.

5.4 HISTORIC AND CULTURAL RESOURCES

5.4.1 SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

The project is subject to Section 106 of the National Historic Preservation Act of 1966, as amended. In a memorandum dated February 19, 2010 (see Appendix A), it was determined that no National Register-listed or eligible properties are located within the study area. In addition, there are no known recorded archaeological sites within the study area. Alternative 1 and Alternative 2 are in compliance with Section 106 of the US Department of Transportation (USDOT) Act of 1966 and GS 121-12(a) for historic architecture.

5.4.2 SECTION 4(F) OF THE DEPARTMENT OF TRANSPORTATION ACT

The project is also subject to Section 4(f) of the Department of Transportation Act of 1966, as amended. Section 4(f) of the US Department of Transportation (USDOT) Act of 1966 protects the use of publicly owned parks, recreation areas, wildlife/waterfowl refuges, and historic properties. No properties in the project study area qualify for protection under Section 4(f).

5.5 ECONOMIC EFFECTS

Alternative 2 is not expected to affect the economic vitality of businesses within the Kerr Avenue corridor any differently than Alternative 1. Both alternatives include a new median on Kerr Avenue, which will affect access to some businesses. Most of the businesses that rely on drive-by traffic, such as gas stations, are located at signalized intersections where access will likely remain consistent with what is currently available. It is possible that improving the transportation infrastructure and enhancing safety could positively affect the economic vitality of the corridor. Some businesses will lose left-turn access to and from Kerr Avenue. With redevelopment in the quadrant areas, however, businesses can apply for a driveway permit to the quadrant connector roads. Driveway access to quadrant connector roads will be evaluated further during final design and right-of-way phases.

5.6 NATURAL RESOURCE EFFECTS

5.6.1 JURISDICTIONAL ISSUES

A supplemental natural resources evaluation was prepared for the expanded study area and to update resources in the original study area (*Natural Resources Technical Report Addendum 2, February 2010*). No additional wetlands were identified. New resources identified include one jurisdictional stream, four jurisdictional water features (ditches) and two non-jurisdictional ponds. All are inside the expanded study area, with the exception of one ditch between Greenway Avenue and Franklin Avenue. All jurisdictional resources are shown on Figures 2, 3, and 4. Jurisdictional streams in the study area were designated as warm water streams for the purposes of stream mitigation. The linear water features are subject to Clean Water Act, Section 404/401 permitting for unavoidable impacts but are not subject to requirements for compensatory mitigation.

Natural resource impacts are shown in Table 7. Alternative 2 causes more impacts to streams and jurisdictional ditches than Alternative 1. These impacts are caused in the northeast quadrant, primarily by the construction of the new connector road. All wetland impacts are still associated with the interchange construction (Section C). As noted in the 2008 CE, most of the wetland areas are located within the right-of-way boundaries of previously permitted impacts for the Martin Luther King, Jr. Parkway project (TIP U-92).

Table 7. Impacts to Jurisdictional Resources

Resource	Section B ¹			Section C ²
	Alternative 1	Alternative 2		
		Option B	Option C	
Streams (linear feet)	0	36	0	232
Linear water features (ditches) – linear feet	57.8	570.6	259.5	0
Wetlands (acres)				
Permanent	0	0	0	0.36
Temporary	0	0	0	0.55

¹Section B includes the widening portion of the project from just south of Randall Parkway to New Centre Drive.

²Section C includes the interchange area from New Centre Drive to just north of MLK, Jr. Parkway. Impacts for Section C are for the half clover interchange design and are the same for both alternatives.

5.6.2 PERMITS REQUIRED

Nationwide Permit (NWP) No. 14 is issued when permanent wetland impacts are less than 0.5 acres and channel impacts are less than 300 feet. Impacts beyond these thresholds could require an Individual Permit (IP). The US Army Corps of Engineers (USACE) exercises final discretion as to which permit will be required to authorize project construction. In addition to the 404 permit, other required authorizations include the corresponding Section 401 Water Quality Certification (WQC No. 3404) from the NC Division of Water Quality (NCDWQ).

There are no Areas of Environmental Concern (AEC) and no wetlands subject to permitting under Coastal Area Management Act (CAMA) regulations. Consistency review is not required by the NC Division of Coastal Management (NCDCM) for Nationwide Permit applications.

5.6.3 CONSTRUCTION MORATORIA

Surface waters in the study area are part of the Burnt Mill Creek and Smith Creek drainage areas. The Smith Creek confluence with the Northeast Cape Fear River, which is anadromous fish habitat, is located over six river miles downstream from the study area. The US Fish and Wildlife Service (USFWS) has requested the general moratorium period for anadromous fish from February 15 to June 30 for in-water work. No in-water work is anticipated as part of this project.

5.6.4 NC RIVER BASIN RULES

The study area is located in the Cape Fear River Basin; therefore streamside riparian zones are not subject to buffer protections administered by the NC Division of Water Quality.

5.6.5 MITIGATION

During project design, NCDOT will attempt to avoid and minimize impacts to streams and wetlands to the greatest extent practicable.

NCDOT will investigate potential on-site stream and wetland mitigation opportunities for the preferred alternative. If on-site mitigation is not feasible, mitigation will be provided by the NC Department of Environmental and Natural Resources Ecosystem Enhancement Program (EEP).

5.6.6 ENDANGERED SPECIES ACT

As of January 14, 2011, the USFWS lists nine federally protected, endangered, or threatened species and one species listed as threatened due to similarity of appearance for New Hanover County (see Table 8). For species descriptions, refer to *Natural Resources Technical Report Addendum 2*, available in the project file. As of January 14, 2011, the USFWS does not list any candidate species for New Hanover County. No habitat is present for any of these protected species. Therefore, the proposed project would have no effect on them.

Table 8. Federally Protected Species Listed for New Hanover County

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Alligator mississippiensis</i>	American alligator	T(S/A)	No	Not Required
<i>Chelonia mydas</i>	Green sea turtle	T	No	No Effect
<i>Caretta caretta</i>	Loggerhead sea turtle	T	No	No Effect
<i>Charadrius melodus</i>	Piping plover	T	No	No Effect
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	No	No Effect
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	No	No Effect
<i>Trichechus manatus</i>	West Indian manatee	E	No	No Effect
<i>Lysimachia asperulaefolia</i>	Rough-leaved loosestrife	E	No	No Effect
<i>Thalictrum cooleyi</i>	Cooley's meadowrue	E	No	No Effect
<i>Amaranthus pumilus</i>	Seabeach amaranth	T	No	No Effect

5.7 NOISE ANALYSIS

A supplemental noise analysis was prepared for the expanded study area (*Noise Analysis Report Addendum, July 2010*). The results showed a total of five residences and two businesses within the expanded study area along Kerr Avenue will be affected by noise for Alternative 2 Options B and C; however these receptors do not meet the NCDOT feasibility and reasonableness requirements for consideration of noise abatement measures. The original 2007 noise analysis indicated a noise wall may be justified in the interchange area on the north side of Martin Luther King, Jr., Parkway, east of Kerr Avenue. As the study presented in this CE Addendum does not appreciably modify the interchange design as presented in the 2008 CE, the feasibility of a noise wall in the interchange location will be further evaluated during design phase.

5.8 AIR QUALITY ANALYSIS

The project is located in New Hanover County, which has been determined to comply with the National Ambient Air Quality Standards. The proposed project is located in an attainment area and

therefore, is not subject to Air Pollution Control Requirements. Neither alternative is anticipated to create adverse effects on the air quality of this attainment area. Refer to the 2008 CE for a discussion of Mobile Source Air Toxics (MSATs) for the project.

5.9 INDIRECT AND CUMULATIVE EFFECTS

Alternative 2 quadrant options permanently alter travel patterns and access to several properties near the intersection of Kerr Avenue and Market Street. It will reduce travel times systemwide by an estimated six minutes compared to the No-Build Alternative. The study area is nearly built-out and local planners do not expect either Alternative 1 or Alternative 2 to change land use patterns or encourage substantial new development. Therefore, a detailed indirect and cumulative effects study is not required (*CLA Addendum, August 2010*).

5.10 SUMMARY OF IMPACTS

Table 9 shows a comparison of impacts for Alternative 1 and Alternative 2, Options B and C. As discussed earlier, Alternative 2 Option B will cause the most relocations, cause the most jurisdictional impacts, and have the greatest cost. Alternative 1 will cause the fewest relocations, cause the fewest impacts to jurisdictional resources, and cost the least. Alternative 1, however, is not consistent with the Wilmington MPO's objective of enhancing bicycle and pedestrian travel at the Kerr Avenue/Market Street intersection. The MPO voted to reallocate funds from other projects to accommodate the approximately \$9 million additional cost of the quadrant alternative compared to the conventional widening.

Table 9. Summary of Impacts by Alternative

Environmental Feature	Section B ¹			Section C ²
	Alternative 1	Alternative 2		
		Option B	Option C (preferred)	
Residential Relocations	10	16	13	15
Commercial Relocations	10	11	11	1
Air Quality	No Impact			
Historic/Archaeological Resources	No Impact			
Section 4(f) Resources	No Impact			
Streams (linear feet)	0	36	0	232
Linear water features (ditches) –linear feet	57.8	570.6	259.5	0
Permanent Wetland Impacts (acres)	0	0	0	0.36
Temporary Wetland Impacts (acres)	0	0	0	0.55
Federally Protected Species	No Effect			
Cost ³	\$34,191,160	\$43,646,896	\$43,491,160	\$20,755,747

¹Section B includes the widening portion of the project from just south of Randall Parkway to New Centre Drive.

²Section C includes the interchange area from New Centre Drive to just north of MLK, Jr. Parkway. Impacts for Section C are for the half clover interchange design and are the same for both alternatives.

³Cost includes right of way, construction and utilities.

6.0 COMMENTS AND COORDINATION

6.1 AGENCY COMMENTS

Resource Agency correspondence received since the 2008 CE is included in Appendix A. These include a memorandum from the NC Department of Cultural Resources indicating that no survey for historic or archaeological resources is required as a result of expanding the study area. Early in the project, the Wilmington MPO requested bicycle lanes for the project length. The appendix includes a recent letter from the Wilmington MPO requesting bicycle lanes, as well as a December 2010 resolution from the MPO endorsing the quadrant alternative as the preferred alternative. Refer to Appendix B of the 2008 CE for prior agency correspondence.

6.2 CITIZENS INFORMATIONAL WORKSHOPS AND NEWSLETTERS

A newsletter updating the public on the project's status and introducing the new quadrant alternatives was mailed in March 2010. A Citizens Informational Workshop was held on April 19, 2010 at the Warwick Center on the campus of the University of North Carolina-Wilmington. The workshop was conducted in an open house-style format between 4:00 pm and 7:00 pm. Brief presentations were made at 4:00 and 6:00. The purpose of the workshop was to provide the public an opportunity to learn about the project, ask questions and make comments or offer input to project representatives. Fifty-one people signed in. Nine comment forms were completed. Comments were generally supportive of Alternative 2 quadrant options. Most concerns related to noise and right of way impacts of the widening portion of the project. Some property owners expressed concern about access to their properties as a result of the median and the quadrant configuration. The relevant properties are located near the intersection of Kerr Avenue and Market Street. A workshop summary as well as the newsletter can be reviewed in the project file.

A second newsletter and workshop are planned for Spring/Summer 2011.

6.3 ALTERNATIVES SELECTION MEETING

A meeting was held on November 3 to review the alternatives being evaluated in the CE Addendum and to select a recommended alternative. The alternatives were summarized, including a discussion of impacts, estimated costs, and traffic operations. After discussing pros and cons of each quadrant alternative, it was the consensus of the group to eliminate Option B and present the Conventional Design and Option C to the Wilmington MPO prior to making a final decision on quadrant vs. conventional. Reasons for eliminating Alternative 2 Option B included:

- Lack of connectivity at McClelland Drive
- Birchwood drivers who want to go north on Kerr Avenue would have to turn right onto Kerr Avenue, cross Market Street, make a U-turn at Cinema Drive, and then cross Market Street again. This is a much longer distance to travel, also requiring drivers to cross three more signals than Option C. Option C requires eastbound McClelland drivers who want to turn left onto Kerr Ave to travel a short distance southward on Kerr Ave before making a U-turn at Birchwood Drive.
- Three additional residential relocations.
- Higher overall cost.
- Comparable traffic operations.
- Higher impacts to jurisdictional resources.

As a part of the quadrant alternative consideration, the City of Wilmington indicated interest in routing cyclists around the Market Street/Kerr Avenue intersection. The City also requested pedestrian signals and crosswalks at intersections along Kerr Avenue.

6.4 MEETINGS WITH WILMINGTON MPO

6.4.1 TECHNICAL COORDINATING COMMITTEE (TCC)

The U-3338 project team made a presentation at the regular meeting of the Wilmington MPO Technical Coordinating Committee (TCC) on December 1, 2010. The team presented Alternative 1 and Alternative 2 Option C in order for the TCC to recommend an alternative. The alternatives were described, and the traffic operations, environmental impacts, and estimated costs of each were presented. After some discussion, the TCC voted to recommend to the Transportation Advisory Committee (TAC) that NCDOT move forward with Alternative 2 Option C.

6.4.2 TRANSPORTATION ADVISORY COMMITTEE (TAC)

The project team met with the Wilmington MPO Transportation Advisory Committee (TAC) on December 15, 2010. The team made a presentation similar to one done for the TCC on December 1. Alternative 1 and Alternative 2 Option C were described, including traffic operations, environmental impacts, and estimated costs. The TAC voted unanimously to support the quadrant configuration as the preferred alternative. A resolution to this effect is included in Appendix A.

APPENDIX A: AGENCY CORRESPONDENCE

09-12-0011

NO SURVEY REQUIRED FORM**PROJECT INFORMATION**

Project No: **U-3338** County: New Hanover
 WBS No: 34932.1.1 Document: CE Addendum
 F.A. No: None Funding: State Federal

Federal (USACE) Permit Required? Yes No Permit Type:

Project Description: Request a screening for an EXPANDED project area to evaluate a NEW project alternative. HEU has already done prior work on this project. See attached files that show you the conceptualized alternative, and the resulting NEW study area. CE already done in 2008. Since the document, City of Wilmington is requesting evaluation of a quadrant intersection design that "fits" their long-term vision for the Market Street corridor. Traffic warrants the project.

SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

The site files and maps at the Office of State Archaeology were reviewed on Friday, February 5, 2010. There are no known archaeological sites within the quadrant design for the Market Street/Kerr Avenue intersection in downtown Wilmington. Digital copies of HPO's maps (Wilmington quadrangle) were reviewed on Friday, February 19, 2010. Within the quadrant design, there are no recorded historic structures that may have intact archaeological deposits. In regards to the original design for this project, SHPO correspondence dated October 13, 2003 was copied and entered into the file. New Hanover County GIS provided aerial photos (updated 12/1/2009) of the project area, suggesting that most of the area has been commercially and/or residentially developed. The Soil Survey for New Hanover County (1977:Sheet No.15) reveals that the study area for proposed project consists of Seagate (Sc) fine sand, Leon (Le) sand, and Urban land, with numerous wet spots designated in all four quadrants. Various projects requiring OSA's environmental review have been conducted in the vicinity of the proposed project (e.g. Colony Woods townhouses [ER 84-C-0060], Twelve Oaks Mine [ER 90-7600], New Center Drive Extension [ER 97-8949], Twelve Oaks Apts. [ER 89-0884]), S. Kerr Ave. Widening [ER 89-8468], and Widening of S. Kerr Ave., Market St. to Wrightsville Ave. [ER 90-E-4220-0192]). "No Comment" was put forth by OSA for all of these projects. A reconnaissance survey of the project area was conducted on Thursday, February 18, 2010.

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

First, there are no previously recorded archaeological sites noted within the project area. Second, "No Comment" statements have been previously put forth by OSA for at least six (6) projects adjacent to and/or in the vicinity of proposed study area, which required some form of environmental review. Third, much of the property to be impacted is considered highly disturbed, either by commercial and residential development or by previous railroad activity. Fourth, areas that may appear undisturbed on aerials (i.e. the location of the connector road between Market Street and McClelland Drive) have either been graded out and filled in by previous developments or are considered woody wetland (per GIS and Soil Survey layers). It is not likely that a significant archaeological site will be adversely impacted by this project. Therefore, an archaeological survey is not recommended for this redesign.

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Correspondence
 Photocopy of County Survey Notes

FINDING BY NCDOT CULTURAL RESOURCES PROFESSIONAL

NO SURVEY REQUIRED



NCDOT Cultural Resources Specialist 2/19/10
Date

**Development Services**

320 Chestnut Street
PO Box 1810
Wilmington, NC 28402-1810

910 254 0900
910 341 3264 fax
wilmingtonnc.gov
Dial 711 TTY/

CITY OF WILMINGTON

NORTH CAROLINA

October 8, 2010

Mr. Al Edgerton
North Carolina Department of Transportation
124 Division Drive
Wilmington, North Carolina 28401

Re: Request for consideration of bicycle lanes for Kerr Avenue resurfacing project and for the continuation of the bicycle lanes on South Kerr Avenue between Patrick Avenue and Randall Parkway

Dear Mr. Edgerton:

The City of Wilmington requests the North Carolina Department of Transportation (NCDOT) consider the installation of bicycle lanes with the resurfacing of South Kerr Avenue from Patrick Avenue to College Road and for continuation of the bicycle lanes on South Kerr Avenue between Patrick Avenue and Randall Parkway as part of the Kerr Avenue widening project (U-3338).

The NCDOT is completing the planning and design for the widening of Kerr Avenue (U-3338) to a multi-lane facility between the Martin Luther King, Jr. Parkway and Patrick Avenue. The project is programmed in the "draft" 2011-2020 State Transportation Improvement Program (STIP) for right-of-way acquisition in FY 2011 and construction in FY 2013. The NCDOT also has an upcoming resurfacing project for Kerr Avenue between Patrick Avenue and College Road. The date of availability for the resurfacing project is anticipated to be March 2011.

On September 13, 2006, the City of Wilmington encouraged NCDOT to consider the installation of demarcated bike lanes as part of the Kerr Avenue widening project (U-3338). The City of Wilmington has identified funding for the construction of the demarcated bike lanes and sidewalks along South Kerr Avenue in the City's Capital Improvement Program. Funding for these improvements is programmed in fiscal year 2012-2014. The installation of these bicycle lanes would be consistent with NCDOT's Complete Streets Policy that was adopted by the NC Board of Transportation in July 2009.

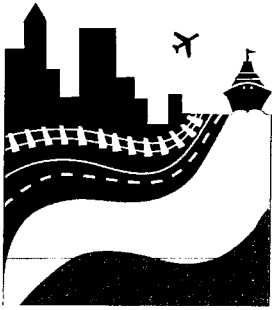
If you have any questions regarding this request or require any additional information, please contact me via e-mail at mike.kozlosky@wilmingtonnc.gov or call me at (910) 342-2781.

Sincerely,



Mike Kozlosky
Senior Transportation Planner

cc: Allen Pope, Division Engineer, NCDOT
Ted Devens, Planning Development Environmental & Analysis, NCDOT
Sterling Cheatham, City Manager, City of Wilmington



**WILMINGTON URBAN AREA
Metropolitan Planning Organization**

P.O. Box 1810
Wilmington, North Carolina 28402
910 341 3258 910 341 7801 FAX

Members:

City of
WILMINGTON
Lead Planning Agency

Town of
CAROLINA BEACH

Town of
KURE BEACH

Town of
WRIGHTSVILLE BEACH

NEW HANOVER
County

Town of
BELVILLE

Town of
LELAND

Town of
NAVASSA

BRUNSWICK
County

PENDER
County

CAPE FEAR
Public Transportation
Authority

North Carolina
BOARD OF
TRANSPORTATION

January 12, 2011

Mr. Jim Trogdon
Chief Operating Officer
North Carolina Department of Transportation
1501 Mail Service Center
Raleigh, North Carolina 27699

Re: Quadrant Design at Market Street/Kerr Avenue

Dear Mr. Trogdon:

On December 15, 2010 the Wilmington Metropolitan Planning Organization's Transportation Advisory Committee endorsed a resolution supporting the quadrant design for the intersection of Kerr Avenue and Market Street and supports utilizing the funds currently programmed in the "draft" Statewide Transportation Improvement Program for the Market Street Access Management improvements (U-4902) to construct the quadrant design. Additionally, the Wilmington MPO encourages NCDOT to try to secure alternative funding (high hazard mitigation funds, spot safety improvements, etc.) to construct the access management improvements along Market Street.

Enclosed please find a copy of the adopted resolution. If you have any questions regarding the enclosed resolution, please do not hesitate to contact me either via phone at (910) 342-2781 or via e-mail at mike.kozlosky@wilmingtonnc.gov.

Sincerely,

Mike Kozlosky
Executive Director

Enclosure: Resolution

cc: Jonathan Barfield, Chairman, TAC
Mike Alford, NC Board of Transportation
Allen Pope, Division Engineer, NCDOT
Rob Hanson, Project Development Unit Head, NCDOT
Ted Devens, Consultant Engineer, NCDOT
Kevin Lacy, State Traffic Engineer, NCDOT
Ray McIntyre, TIP Eastern Region Manager, NCDOT
Coke Gray, Regional Traffic Engineer, NCDOT

**WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE**

**RESOLUTION SUPPORTING THE QUADRANT DESIGN AT THE INTERSECTION OF
MARKET STREET AND KERR AVENUE AND SUPPORTING THE UTILIZATION OF
FUNDS FROM THE MARKET STREET ACCESS MANAGEMENT PROJECT (U-4902) TO
CONSTRUCT THE QUADRANT DESIGN**

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation, and

WHEREAS, the North Carolina Department of Transportation plans to widen Kerr Avenue to a 4-lane divided facility from Patrick Avenue to the Martin Luther King, Jr. Parkway (US 74) and construct an interchange at the intersection of Kerr Avenue and the Martin Luther King, Jr. Parkway (US 74); and

WHEREAS, Kerr Avenue is designated as an urban minor arterial on in the Wilmington MPO's long range transportation plan and currently carries approximately 17,000-23,000 vehicles per day between Randall Parkway and the Martin Luther King, Jr. Parkway; and

WHEREAS, the purpose of the project is to improve north-south access in Wilmington and provide access to various facilities in and around Wilmington; and

WHEREAS, the Market Street Corridor Study recommends and supports the quadrant design at this intersection; and

WHEREAS, NCDOT requested the quadrant design be included as an alternative to the conventional widening in the environmental document; and

WHEREAS, the conventional design will improve operations by adding additional capacity and signals and add dual left-turn lanes, exclusive right-turn lanes and an additional through lane at Kerr Avenue/Market Street intersection; and

WHEREAS, the quadrant alternative will improve operations by adding additional capacity and signals and removes left-turn movements from Kerr Avenue onto Market Street thus re-routing these left-turns through roadways in the 2 intersection quadrants; and

WHEREAS, with the conventional intersection design the intersection operates at an acceptable level of service D until 2029; and

WHEREAS, with the quadrant design the intersection operates at an acceptable level of service D until 2041; and

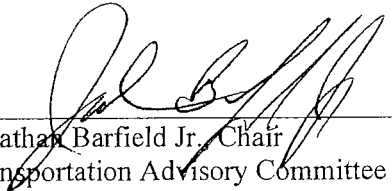
WHEREAS, the cost of the quadrant designed intersection is approximately \$9.5 million more expensive than the conventional intersection design; and

WHEREAS, the North Carolina Department of Transportation has funding programmed in the draft State Transportation Improvement Program for access management improvements on Market Street (U-4902) in FY 2012, 2017 and 2019.

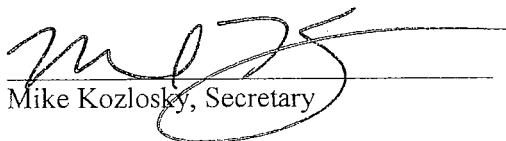
NOW THEREFORE, be it resolved that the Wilmington Metropolitan Planning Organization's Transportation Advisory Committee supports the quadrant design at the intersection of Market Street and Kerr Avenue and supports the utilization of funds from the Market Street Access Management project (U-4902) to construct the quadrant design at the intersection of Kerr Avenue and Market Street.

NOW THEREFORE, also be it resolved that the Wilmington Metropolitan Planning Organization's Transportation Advisory Committee encourages the Wilmington MPO to try to secure alternative funding to construct the access management improvements along Market Street (U-4902).

ADOPTED at a regular meeting of the Transportation Advisory Committee on December 15, 2010.



Jonathan Barfield Jr., Chair
Transportation Advisory Committee



Mike Kozlosky, Secretary