

# US 17 Business Corridor Study

3<sup>rd</sup> Street to Covil Avenue

Wilmington, NC



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Wilmington, NC**

**April 2007**

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## **Introduction**

The existing traffic patterns in and around the Wilmington area are changing. Several large projects, (I-140/US 17 Bypass and Martin Luther King, Jr. Parkway) have given residents and visitors less congested, alternative routes to popular destinations in and beyond the city. Other proposed transportation initiatives will continue to provide a multitude of options for travelers and residents. Recognizing this shift, the City of Wilmington and the Wilmington Metropolitan Planning Organization (WMPO) felt that a fresh look at the US 17 Business Corridor (Market Street) should be taken. This study builds upon an initial broad-based study of the entire Market Street Corridor conducted by the city in which residents stated a desire for less congestion and improved aesthetics as well as preserving the historic resources found within the corridor. The Market Street Corridor Plan was adopted in 2004.

## **Study Purpose**

Frequently, large broad-based corridor studies produce general guidelines and objectives for an area, but do not look at specific ways to accomplish those objectives or how they will be funded. This study's purpose is to look at realistic alternatives that meet the vision for Market Street within the study area, recommend a preferred alternative, and devise policy recommendations and an implementation plan to guide the city in future decisions about the area.



## **Existing Conditions**

### **Study Area**

The study area consists of US 17 Business (Market Street) from 3rd Street to Covil Avenue and 16<sup>th</sup> and 17<sup>th</sup> Streets to Dawson and Wooster Streets (see Appendix A, Figure 1). Older residential homes dominate Market Street with a mixture of business and cultural resource uses. Market Street, along this section of the corridor, retains its historical charm and aesthetically pleasing views. Older residential homes are found on 16<sup>th</sup> and 17<sup>th</sup> Streets with commercial properties taking over closer to the hospital.

### **Roadway Geometry**

The typical section varies along Market Street. A 4-lane divided median section with limited on street parking is used between 3<sup>rd</sup> Street and 16<sup>th</sup> Street. Starting at 17<sup>th</sup> Street, the typical section drops to a narrow 36-foot section that has four 9-foot lanes with no median or center turn lane (see photo, right).

The typical section widens back out at Colonial Drive to match the 5-lane undivided section that is carried out to Porter's Neck Road. Market Street's horizontal alignment is mostly straight throughout the entire study area. The vertical alignment is essentially flat with small variations in grade until it approaches the downtown area and the Cape Fear River.



### **Traffic**

The existing traffic network was modeled using the regional travel demand model from the North Carolina Department of Transportation's Transportation Planning Branch (NCDOT/TPB). The study area for the traffic demand modeling is larger than the study area for improvements (see Appendix B, Figure 7) and consisted of the following routes.

- Market Street from 3<sup>rd</sup> Street to College Road
- Covil Avenue/Independence Blvd. from Market Street to Oleander Drive
- Oleander Drive from Independence Blvd. to 17<sup>th</sup> Street
- 16<sup>th</sup> and 17<sup>th</sup> Streets from Market Street to Dawson Street.
- Dawson and Wooster Streets from 3<sup>rd</sup> Street to 17<sup>th</sup> Street.
- Princess Place Drive from Market Street to 16<sup>th</sup> Street.

The city provided information on transit routes, bus stops, and bicycle and pedestrian facilities. Additional traffic counts were collected at critical intersections. The regional demand model provided projected traffic volumes for modeling alternatives in Synchro 6.0.

Market Street is an east-west connector and is classified as a principal arterial in the North Carolina Statewide Functional Classification System (NCSFCS) from Covil Avenue to 16<sup>th</sup> Street. From 16<sup>th</sup> Street to 3<sup>rd</sup> Street, it is classified as a minor arterial. Market Street currently carries from 13,600 – 46,300 vehicles per day (VPD) with traffic volumes lighter close to downtown and increasing toward Covil Avenue. However, the volumes are actually projected to decrease to 10,000 – 36,400 VPD by the year 2020. Level of Service (LOS), a measure of traffic congestion, was analyzed using Synchro 6.0. In urban areas intersection LOS tends to control the overall LOS of a corridor. Market Street falls into this category. During the evening (PM) rush hour the LOS ranges from “C” to “F” (see Appendix B, Table 1).

Between Market Street and Dawson Street and Wooster Street, 16<sup>th</sup> and 17<sup>th</sup> Streets are classified as principal arterials. The current traffic volumes on 16<sup>th</sup> and 17<sup>th</sup> Streets are approximately 15,130 VPD and 15,240 VPD respectively. By 2020, they are expected to carry 13,150 VPD and 17,530 VPD respectively. These two streets currently operate as one-way pairs but were analyzed for the possibility of returning them to two-way traffic. At the intersections of Dawson and Wooster Streets, a LOS of “F” was computed for the future condition, which is unacceptable (see Appendix B, Table 2.)

### **Accident Data**

Accident data for Market Street was analyzed for a three-year period from January 2003 to December 2005. Based on the information, there were approximately 1500 accidents along Market Street between 3<sup>rd</sup> Street and College Road. The total crash rate, which is a measure of the number of accidents per vehicle miles traveled, is 923.75 per 100 Million Vehicle Miles Traveled (MVMT) which is higher than the state average of 514.00 100MVMT for roads of similar function, location, and configuration. The majority of the accidents were either rear-end or angled collisions, which is indicative of a road that is over capacity. Within the defined study area, the higher concentrations of accidents in are from 17<sup>th</sup> Street to around Colonial Drive. This is the section of Market Street with the 4-lane, undivided typical section. Additionally, there were 18 pedestrian accidents and 12 bicycle accidents. A summary of the Accident Data can be found in Appendix B, Table 6.

### **Transit**

The Cape Fear Public Transportation Authority operates WAVE Transit. In the study area, WAVE has 16 existing bus stops. Two routes cover Market Street; Route # 2 (Marketplace Mall/UNCW) and Route # 4 (Eastwood Rd. /Mayfaire). Additionally, routes 5 & 6 also use Market Street between 2<sup>nd</sup> Street and 5<sup>th</sup> Avenue. Monday through Friday the routes run a bus every half hour from 6:30am to 8:30pm. However, in the transit authority is planning to completely restructure its routes. Continued coordination will need to take place as the project



goes to the preliminary and final design stages. The WAVE also operates two historic trolleys downtown.

## **Parks**

Wallace Park is situated between Market Street and Metts Avenue and is accessed from 21<sup>st</sup> Street. Burnt Mill Creek flows through the middle of the park. The facility is lighted and offers playgrounds, picnic areas, and athletic fields.

## **Cultural Resources**

Wilmington offers numerous cultural resources and historic sites from the USS North Carolina Battleship to the Historic Downtown District. The following cultural resources are found in the study corridor.

The Bellamy Mansion is under the stewardship of Preservation North Carolina and is an excellent example of antebellum architecture. It is located at the corner of Market Street and 5<sup>th</sup> Avenue and operates as a museum and gallery for design arts.

Another museum located along Market Street is the Cape Fear Museum of History and Science. Located at the corner of 8<sup>th</sup> Street and Market, it is the “oldest continuously operating museum of history in North Carolina.”

Wilmington National Cemetery is located adjacent to Burnt Mill Creek between Borden Avenue and 20<sup>th</sup> Street. It is listed on the National Register of Historic Places and was opened after the Civil War.

The Burgwin-Wright House, an example of Georgian architecture, is located on Market Street between 2<sup>nd</sup> Street and 3<sup>rd</sup> Streets. The house is also listed on the National Register of Historic Places and serves as the headquarters for the Colonial Dames of North Carolina.



The Market Street Mansion District runs from 17<sup>th</sup> Street to approximately 20<sup>th</sup> Street and is listed on the National Register of Historic Places. These homes were built between 1900 and 1924 and follow the Classical or Colonial Revival architecture style.

## **Bicycle and Pedestrian Facilities**

The majority of Market Street is not currently designated as a bicycle route and does not provide a designated lane. Market Street between 23<sup>rd</sup> Street and Forest Hills has recently been added as part of Wilmington’s local bike route system. Sidewalks line both sides of Market Street except on the north side between 23<sup>rd</sup> Street and Kenwood Avenue and between 25<sup>th</sup> Street and Barnard Drive. Sidewalk is continued from Barnard Drive out to College Road. The sidewalk in several locations is in need of repair. A Level of Service for both cyclists and pedestrians was analyzed. The LOS for bicycles and pedestrians is more complex than for vehicular traffic and is a measure of the comfort level they

experience in relation to vehicular traffic. The existing level of service for bicycles is “F” and the existing level of service for pedestrians ranges from “C” to “F” (see Appendix B, Table 4).

## **Zoning and Land Use**

Zoning in the study area is a combination of Commercial, Office & Institutional, and Single-Family homes. From 3<sup>rd</sup> Street to approximately 17<sup>th</sup> Street, the zoning is dominated by Office & Institutional on the north side and residential on the south side. Land use in this area includes law offices, churches, schools, cultural resources and private single family homes.

The land use from 17<sup>th</sup> Street to Covil Avenue is almost exclusively residential with a few commercial uses interspersed. The land use along 16<sup>th</sup> and 17<sup>th</sup> is predominately single family homes until Castle Street where it changes over to small commercial businesses and some vacant lots.

## **Adopted Corridor and Land Use Plans**

The City of Wilmington has taken a very proactive approach toward future planning. The Market Street Corridor Plan was adopted in 2004 and was the first attempt to qualify the vision citizens’ had for this area. The overwhelming request was for a return to aesthetics, less congestion, preservation of the residential areas, and future requirements for redevelopment in the area from Covil Avenue toward College Road to move away from strip development and poor access management practices.

Choices – The Wilmington Future Land Use Plan 2004-2025 lays the foundation for guiding the development of the remaining vacant tracks of land within the city’s limits. The plan sets guiding principals and then objectives to achieve the desired results. Along Market Street there are areas designated as Tier 1 and Tier 2 Redevelopment Areas, with Tier 1 areas having higher priority (see Appendix A, Figures 5 & 6).

The Wilmington Metropolitan Planning Organization prepared the Wilmington Urban Area 2030 Long Range Transportation Plan that addresses all modes of transportation needs and solutions coupled with the required financial needs. In particular, the plan stated that the main barriers to bicyclists are “a lack of direct, continuous, convenient, and safe system of bicycle facilities.” The plan also recognizes the need to improve pedestrian facilities to encourage walking as an alternate mode of transportation.

Corridor studies have also been adopted for College Road and Oleander Drive, which are part of the major transportation system within Wilmington.

Vision 2020 was adopted in 1997 to balance economic development with historic and natural environment preservation of Wilmington’s waterfront district.

## **Other Transportation Improvement Initiatives**

Several transportation improvement initiatives are underway or planned for the future that affect the study corridor. The North Carolina Department of Transportation (NCDOT) is studying access management options along Market Street starting at Colonial Drive and ending at SR 1402 (Porter’s Neck Road). Independence Blvd. Extension (U-4434), which is a new multi-lane roadway that will run from Randall Parkway to MLK Parkway, is in the planning and design phase with the construction phase having no funding. Military Cutoff Road Extension (U-4751) is in the planning and design phase, with right of way acquisition scheduled for Fiscal Year 2012 and construction currently unfunded.

The North Carolina General Assembly is reviewing a bill (House Bill 2682) to allow New Hanover County to hold a bond referendum to raise funds through sales and use taxes to pay for transportation and other infrastructure improvements. Both U-4434 and U-4751 are two of the projects slated to be accelerated with the additional funds.

**Public Involvement**

Public involvement was a key element in studying the US 17 corridor. A Steering Committee, composed of representatives from the City of Wilmington, NCDOT, the Chamber of Commerce, and WMPO, was put in place to assist in guiding the project. A total of four committee meetings were held. Minutes from the each meeting can be found in Appendix C. The committee was composed of the following people.

<u>Name</u>	<u>Organization</u>	<u>Name</u>	<u>Organization</u>
Mike Kozlosky	Wilmington MPO	Monica Kerr	NCDOT/TPB
Joshuah Mello	Wilmington MPO	Joe Blair	NCDOT
Christine Laughlin	City of Wilmington	Jackson Provost	NCDOT
Don Bennett	City of Wilmington	Anthony Law	NCDOT
Brian Chambers	City of Wilmington	Patrick Riddle	NCDOT
Tom Cunningham	Chamber of Commerce	Brock LaForty	STV/RWA

Two public workshops were held, one on August 3, 2006 and another on January 9, 2007. These were conducted in an informal setting at the New Hanover High School located on Market Street. People were given the opportunity to view the proposed changes to Market Street and offer their comments and suggestions. Citizens were given a 30-day period after each workshop to submit their comments. A summary of comments from each workshop can be found in Appendix C.

Additionally, individual stakeholder interviews were conducted based on recommendations from the City of Wilmington Planning Department. These were a combination of businesses and churches located on Market Street as well as the director of the Bellamy Mansion, the chief for the Wilmington Fire Department, and the principal for New Hanover High School. A summary of comments from each workshop can also be found in Appendix C. The major comments were:

- Do not place the median between 16<sup>th</sup> Street and 17<sup>th</sup> Street. The block is too short and many patrons to the businesses within this block are able to make a left turn in during the left turn cycle of the light at 16<sup>th</sup>.
- The worse section of Market Street is from 17<sup>th</sup> Street to Covil Avenue. Consider phasing the project to improve conditions in this area first, and then re-evaluate the corridor.
- Fix the drainage problem at 14<sup>th</sup> Street and Market. This area is prone to flooding. The high school and Trinity Methodist Church have suffered repeated flood damage.
- Discourage tractor-trailers from using Market Street.

- Provide EMS responders the ability to maintain current required standard of response times.
- Remove on street parking for Market Street. Seen as a safety hazard.
- Take into consideration the affect a median would have on existing businesses.
- Retain the existing trees and continue the decorative lighting.
- Reduce crime by stepping up patrols.
- Be consistent with the typical section used. Do not mix 2-lane and 4-lane sections.
- City of Wilmington Traffic Engineering expressed concerns on using the Road Diet concept from 3<sup>rd</sup> Street to 16<sup>th</sup> Street. This area has on street parking and numerous bus stops and there is the potential for traffic to be slowed or halted by parallel parking maneuvers and stopped buses.

These comments were reflective of the individual comments received from citizens that attended the two workshops.

## **Alternatives**

The project had several constraints that all alternatives had to meet. All alternatives must stay within the existing right of way to minimize costs and environmental impacts. Emergency Management Services (EMS) must not be hampered. The existing trees along Market Street must be preserved. Alternatives must look at combinations of access management and Road Diet concepts. For additional information on Road Diets, please reference Appendix D.

### **Alternatives Studied**

The study looked at a combination of alternatives and their potential impact on the rest of the transportation network in and around the study area. The study alternatives are described below.

- Alternative 1 - Do nothing.
- Alternative 2 - Reduce Market Street from four lanes of traffic down to one lane in either direction with a landscaped median, bike lanes, and limited on-street parking. Reduce the number of intersections with full access down to the major intersections. Return 16<sup>th</sup> and 17<sup>th</sup> Streets back to two-way traffic.
- Alternative 3 - Reduce Market Street from four lanes of traffic down to one lane in either direction with a landscaped median, bike lanes, and limited on-street parking. Reduce the number of intersections with full access down to the major intersections. Maintain 16<sup>th</sup> and 17<sup>th</sup> Street as one-way pairs.
- Additionally, traffic flow around New Hanover High School was evaluated for efficiency.

### **Alternatives Eliminated**

Alternative 1 would maintain Market Street in its current condition. However, this alternative would not discourage undesirable commercial development along Market Street in the transitional areas. Additionally, this alternative does not address the request for improvements in traffic congestion and safety and improved aesthetics.

Alternative 2 was eliminated because traffic modeling indicated that returning 16<sup>th</sup> and 17<sup>th</sup> Streets back to two-way traffic would not be possible without creating problems at the intersections with Dawson Street and Wooster Street. Although traffic volumes would be reduced in the future conditions, the signalized intersections along these streets would not operate at an acceptable level of service (see Appendix B, Table 2).

New Hanover High School's visitor parking and student drop-off area is on Market Street. Numerous comments were made about this area and the safety hazard it poses. The bus drop-off area is in the back of the school. A recommendation was made to move the bus drop-off to the front of the school and the visitor/drop-off area to the back of the school. However, in the stakeholder interview with the school, they requested this alternative be dropped. Visitors are required to check in at the office and parking in the back of the school would encourage them to cut through the school building, which is unacceptable. Observations of the bus loading in the afternoons made it clear that the school's current system works very efficiently with only minor interruptions to traffic on Princess Place. The buses were loaded and away within 10 minutes of the dismissal bell. Therefore, this alternative was also eliminated from further study.

### **Preferred Alternative**

Alternative 3 is the recommended alternative (see Appendix A, Figures 2-6). The proposed alternative applies the Road Diet concept and reduces the typical section from 4-lanes down to 2-lanes, with a raised, landscaped median, left turn lanes where appropriate, bike lanes and some on street parking. Median openings are provided as needed based on traffic modeling with Synchro and input from the Steering Committee and local citizens. In the narrow section between 17<sup>th</sup> Street and Colonial Drive, the median will have mountable curbs to allow traffic to move over for EMS vehicles. The project will be constructed in two phases. Phase I will run from 17<sup>th</sup> Street to Covil Ave. Phase II will encompass the remainder of the project from 3<sup>rd</sup> Street to 17<sup>th</sup> Street.

Designated bike lanes are provided on both sides of Market Street from 5<sup>th</sup> Avenue Street to Kenwood Avenue. It should be noted that the existing bridge over Burnt Mill Creek is not equipped with adequate bicycle rails. From Kenwood Avenue to Forest Hills, a bike lane will be provided on the north side of Market Street to accommodate the existing bicycle route at this location. Bike lanes will be provided on both sides of Market Street again beginning at 25<sup>th</sup> Street to the end of the project at Covil Avenue. Bike lanes are not designated from 3<sup>rd</sup> Street to 5<sup>th</sup> Avenue because of limited space for left turn lane storage. However, the outside lanes in this area can be wider than 10 feet to accommodate cyclists. Bicycle lanes were not revised to be on the outside of the paved roadway width as requested by the American Institute of Architects (see letter Appendix C). On street parking along Market Street is intermittent. Placing parking spaces between the travel lane and the bike lane would be confusing to motorists who would potentially see it as an additional lane. The bike lanes in this conceptual plan follow standard design practice. Sidewalks are added where needed to provide continuity. The future LOS for cyclists and pedestrians is estimated to range from "C" to "F" (see Appendix B, Table 5). A LOS of C or better is rarely obtained, based on current standards.



The Level of Service (LOS) for vehicular traffic was computed for the preferred alternative and compared to the future LOS for the no build scenario. Based on this analysis, the LOS for the preferred alternative is basically the same as the LOS for the no build scenario (see Appendix B, Table 3). Therefore, using a Road Diet along Market Street will maintain the expected future LOS while improving safety for all modes of transportation and meeting the desire for aesthetics.

The proposed alternative stays within the existing right of way and preserves the existing trees lining the street as well as the ones planted in the median from 3<sup>rd</sup> Street to 15<sup>th</sup> Street.

The existing bus stops were consolidated and bus turnouts provided to allow buses to get out of the travel lane while stopped. At several intersections, bulb outs were used to accommodate traffic making u-turns.

**Estimate**

Preliminary costs for the project were computed and are summarized in Table 1. Each phase of the project is shown in order to facilitate future decision making concerning funding. Quantities for the construction costs are based on the initial conceptual plans and typical section. The costs are based on NCDOT bid pricing. These are initial estimates and will need to be refined as future decisions are made. Concrete Sidewalk will only be required in Phase I.

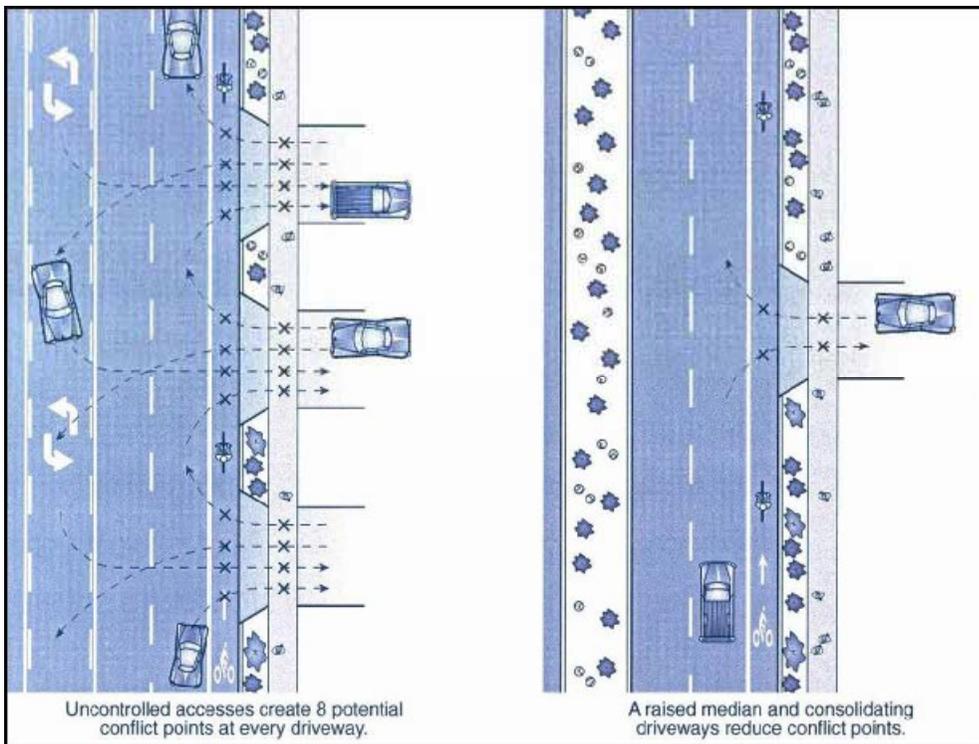
**Table 1**

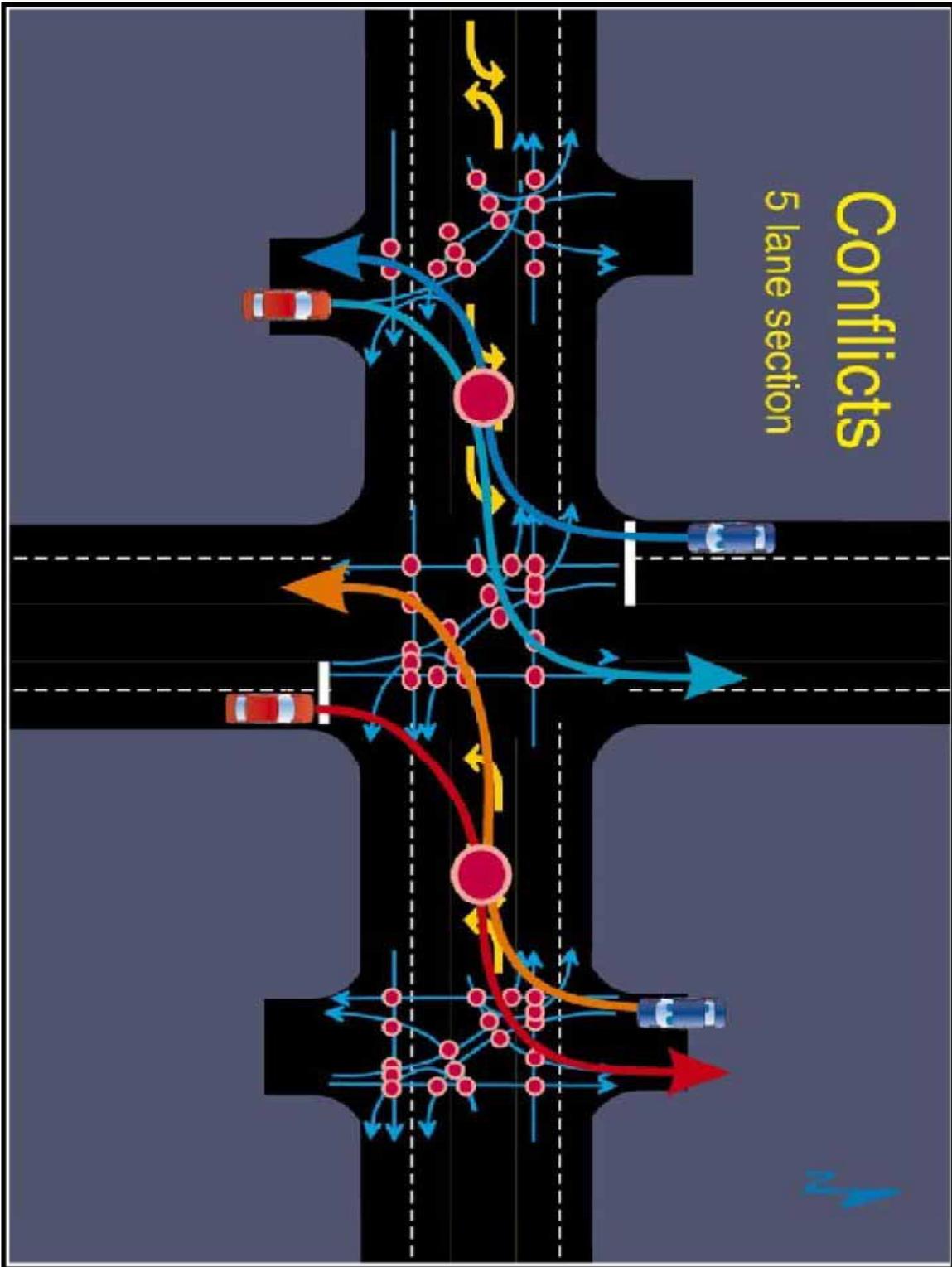
<b>Description</b>	<b>Phase I</b>	<b>Phase II</b>
Drainage	\$ 55,000	\$ 30,000
Earthwork	\$ 35,000	\$ 25,000
Pavement Resurfacing	\$ 320,000	\$ 345,000
New Pavement & Concrete Sidewalk	\$ 111,800	\$ 39,200
Pavement Removal	\$ 64,800	\$ 44,000
2'-6" Curb & Gutter	\$ 64,600	\$ 19,000
1'-6" Curb & Gutter	\$ 384,000	\$ 336,000
Traffic Signal Removal/Installation	\$ 62,510	\$ 10,520
Erosion Control	\$ 40,000	\$ 26,000
Traffic Control , Thermo and Markers	\$ 74,000	\$ 78,000
Landscaping	\$ 15,000	\$ 15,000
Mobilization Rdy (5%)	\$ 61,336	\$ 48,386
Contingency (40%)	\$ 490684	\$ 87,088
<b>Contract Cost</b>	<b>\$ 1,778,730</b>	<b>\$ 1,403,194</b>
<b>Engineering (15%)</b>	<b>\$ 267,000</b>	<b>\$ 211,000</b>
<b>Total Construction Cost</b>	<b>\$ 2,045,730</b>	<b>\$ 1,614,194</b>

**Note: All costs are based on NCDOT bid pricing.**

## Access Management Initiatives

Access management refers to controlling ingress and egress along a corridor in order to maintain or enhance the corridor's capacity and safety. Access management initiatives include providing full left and right turn movements only at major intersections, requiring developers to provide access between adjacent residential neighborhoods or connectivity between parking lots for commercial properties, and limiting the number of driveways within a corridor (see picture, right). Based on several studies, five lane sections with center turn lanes increase the number of accidents in a corridor by increasing the number of conflict points (see picture, next page). Synchro was used to model "what if" scenarios based on providing full access at some locations and right-in-right-out access at others. Recommendations from the Citizens' Informational Workshop on this issue were taken into account during the modeling. Because the area is predominately residential or homes converted to commercial use, requiring access from one property to another is not practical. Reducing the number of driveways in the corridor is also not feasible; again because of the predominately residential uses. The existing grid system in the study corridor does provide good connectivity; therefore, eliminating full access at some locations is feasible.





## **Policy Recommendations**

### **Access Management**

Future decisions concerning land use along Market Street should continue to following the adopted land use plans and the vision the residents want for this area. These land use decisions should take into account best practices for access management such as driveway density and required connectivity between commercial properties.

### **Design Elements**

#### Typical Section

The basic typical section should include a raised landscaped median with bike lanes. It should maintain one travel lane in each direction and provide for left turn storage where needed as well as on street parking.

#### Medians

The medians should be designed as raised medians with standard curb and gutter. In areas where space is limited, a mountable curb should be used with brick pavers to allow room for cars to move out of the travel lane for EMS equipment.



## Crosswalks

Crosswalk treatments should make a distinction between the travel lane and the pedestrians' space. When crosswalks stand out they encourage pedestrians to use them rather than cross where they please. Several options can be used for designing crosswalks. They are as simple as standard pavement markings with white paint to more aesthetically pleasing ones that use brick pavers or other construction materials for the crosswalk area. It is recommended that the city use materials, such as stamped asphalt or brick pavers, to highlight the crosswalks to increase visibility and safety.



## Bus Stop Areas

Bus stop pullouts are essential to maintaining the flow of traffic with the reduction of lanes. These pullouts allow for buses to get completely out of the travel lane to pick up passengers and not back up traffic. The designs for the pullouts need to follow the AASHTO guidelines which call for a width of 10 feet, 50-foot tapers, and 50 feet of storage. These pullouts should be accommodated within the existing Right-of-Way. Current and future bus stop placement should be analyzed to make sure citizens are adequately served without having a bus stop at every corner. Bus stops should be ADA accessible and provide shelters. Shelters and other features should not be placed in the main sidewalk area. The final shelter structure should blend in with the surrounding character of the area.



## Bike Lanes

Bike lanes should be a minimum of 4.0 feet in width and clearly delineated with distinctive markings as shown in the photographs below from Pedestrian and Bicycle Information Center's website ([www.pedbikeimages.org](http://www.pedbikeimages.org)). Signs should be posted to direct bicyclist and keep them on preferred routes. Bike racks should also be located at logical termini for cyclists to use and it is highly recommended that the WAVE Transit Authority provide for bike racks on the buses using this route.



## Bulb Outs

Bulb outs are placed at T-intersections to accommodate u-turn movements. The design for the bulb outs should be based on the minimum turning path radius of a passenger car as found in the AASHTO guidelines.

## **Implementation Plan**

### **Project Phasing**

The City of Wilmington and NCDOT will need to complete the Independence Blvd. extension from Market Street to MLK Parkway before work can begin on the proposed improvements to this section of Market Street. Once the project enters into the preliminary and final design stages, it will be divided into two phases. Phase I will be from Covil Avenue to 17<sup>th</sup> Street. Improvements in this area are needed in order to remove left turning traffic out of the through lane and to provide a divided median to enhance safety. Once this phase is complete, the traffic patterns will be analyzed again to determine if Phase II, from 17<sup>th</sup> Street to 3<sup>rd</sup> Street is feasible to implement.

### **Project Funding**

As discussed under other transportation initiatives, the North Carolina General Assembly is working on House Bill 2682, which would allow New Hanover County to hold a bond referendum proposing to raise sales and use taxes in order to fund needed infrastructure improvements. Other potential funding options that could be explored are public-private partnerships (PPP) and Garvey Bonds. Any PPP should be looked at with the vested interest toward the goals set by the citizens of Wilmington and the common good. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) enacted by Congress requires a state to set aside funding for enhancement projects. In North Carolina, these enhancement funds can be used to modify or add bicycle and pedestrian facilities to existing roadways. Since the proposed improvements to Market Street include enhancements for bicyclists, the project may be eligible for some funding through this program.

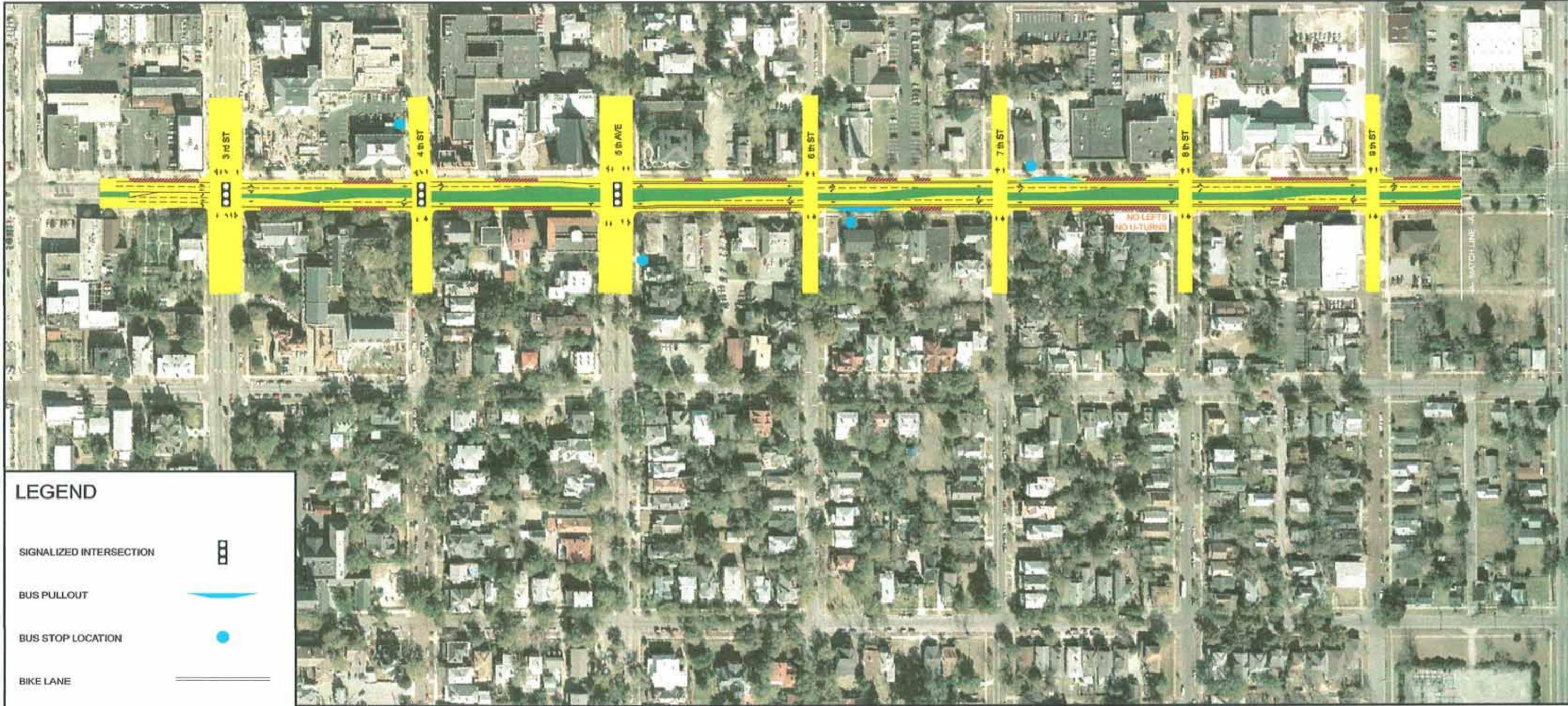
## **Conclusion**

US 17 Business (Market Street) served as a major route to several North Carolina beaches and provided the main Cape Fear River crossing. Additionally, it was the main thoroughfare into the historic downtown area. Recent transportation improvements offer alternate routes to popular destinations that reduce the need to use Market Street. A reduction in traffic has been seen and is expected to continue into the future as additional transportation initiatives are funded. This reduction in traffic allows the City of Wilmington and the Wilmington MPO to take a fresh look at Market Street in terms of function and aesthetics. A Road Diet conceptual plan was analyzed and found to function at an acceptable level of service while providing improved safety along the corridor and enhancing multimodal facilities. The citizens in the study area are in favor of the changes proposed in the conceptual plan. Therefore, it is recommended that the City of Wilmington use Alternate 3 for moving forward with improvements to Market Street.

# **APPENDIX A**

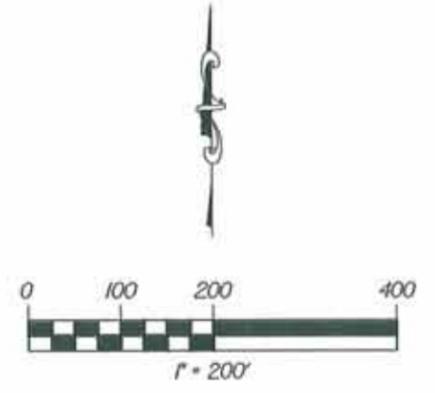
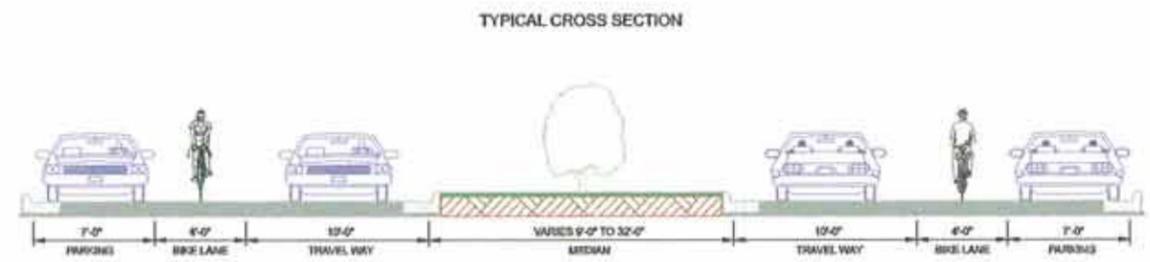
## **Figures**





**LEGEND**

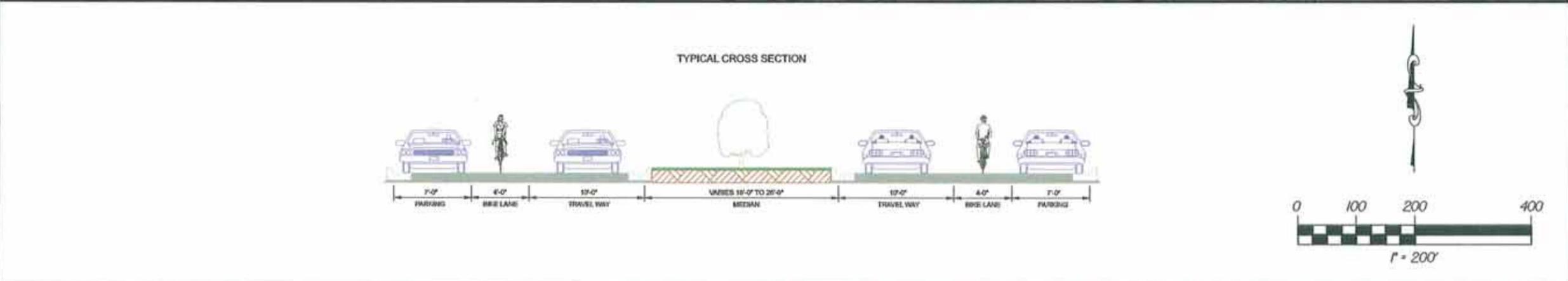
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- BUS PULLOUT
- BUS STOP LOCATION
- BIKE LANE
- EXISTING PARKING
- MEDIAN
- TIER I REDEVELOPMENT (COMMERCIAL)
- TIER II REDEVELOPMENT (COMMERCIAL)
- TRANSITIONAL AREA TO COMMERCIAL AND/OR HIGHER DENSITY RESIDENTIAL

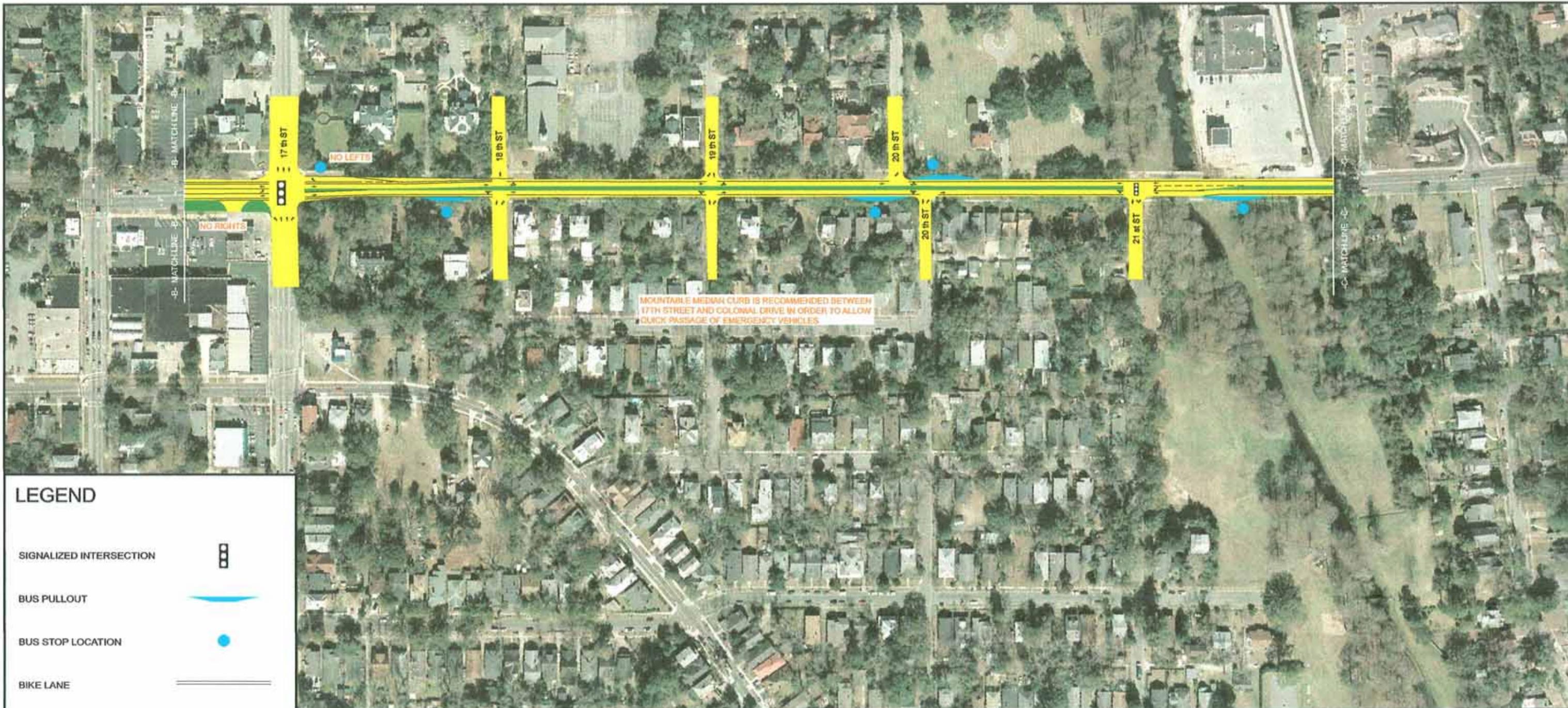




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- BUS PULLOUT
- BUS STOP LOCATION
- BIKE LANE
- EXISTING PARKING
- MEDIAN
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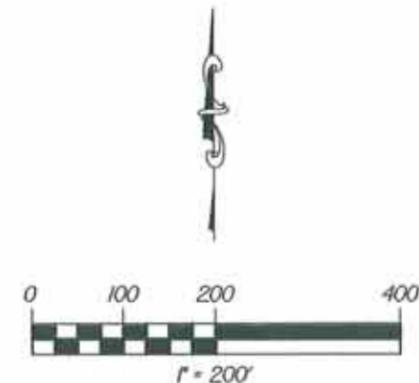
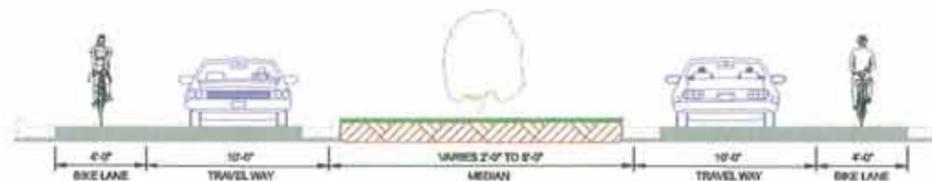


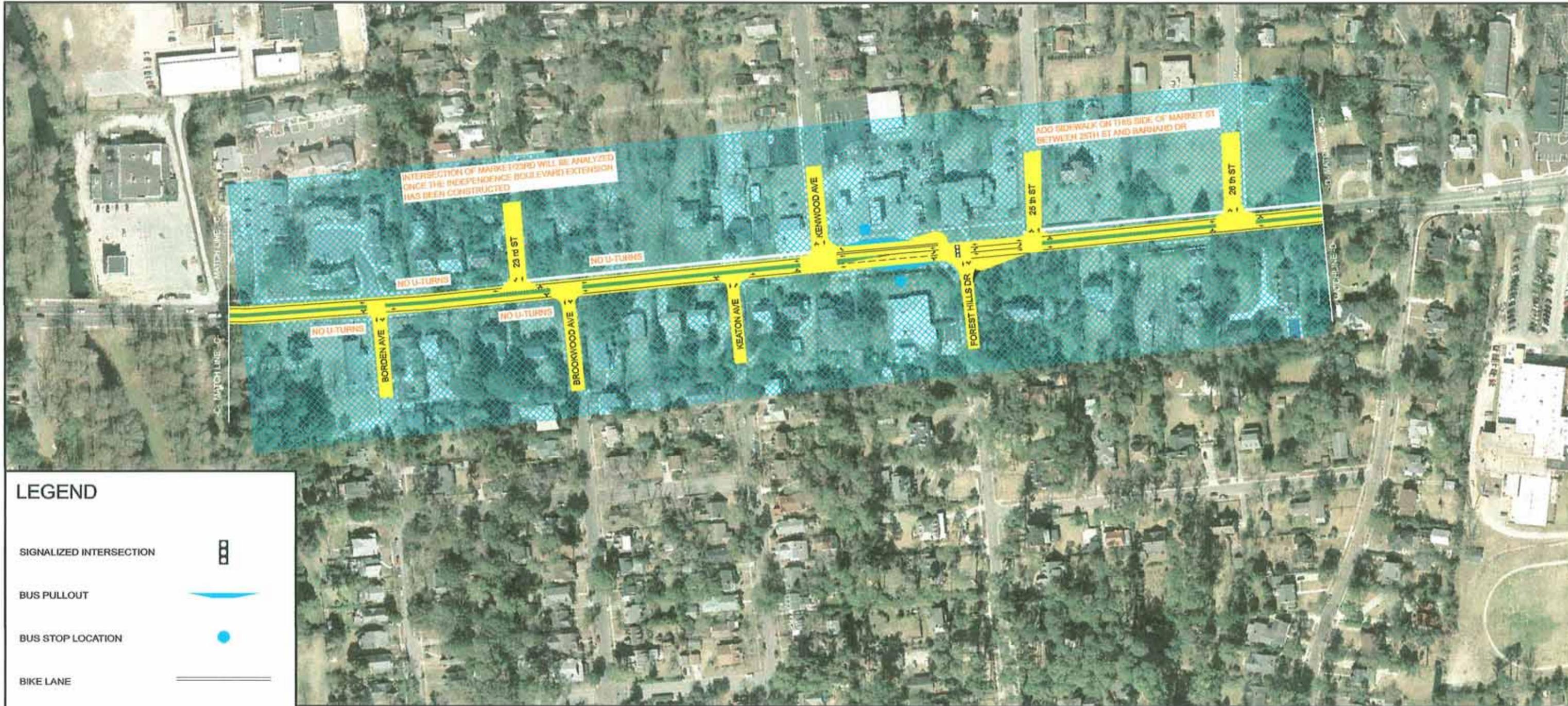


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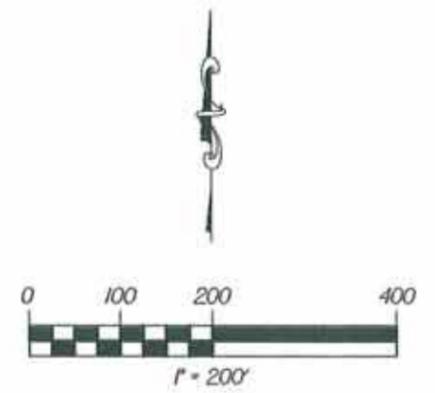
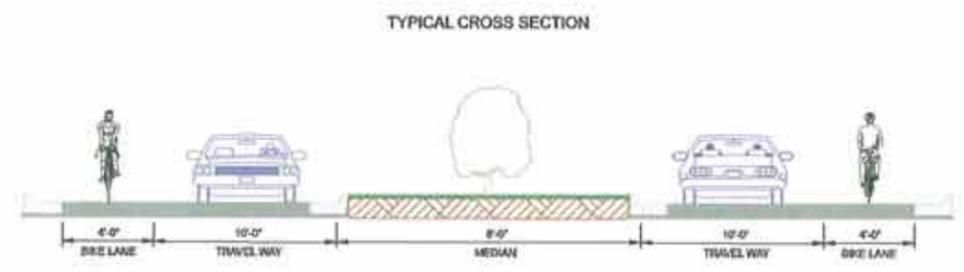
TYPICAL CROSS SECTION

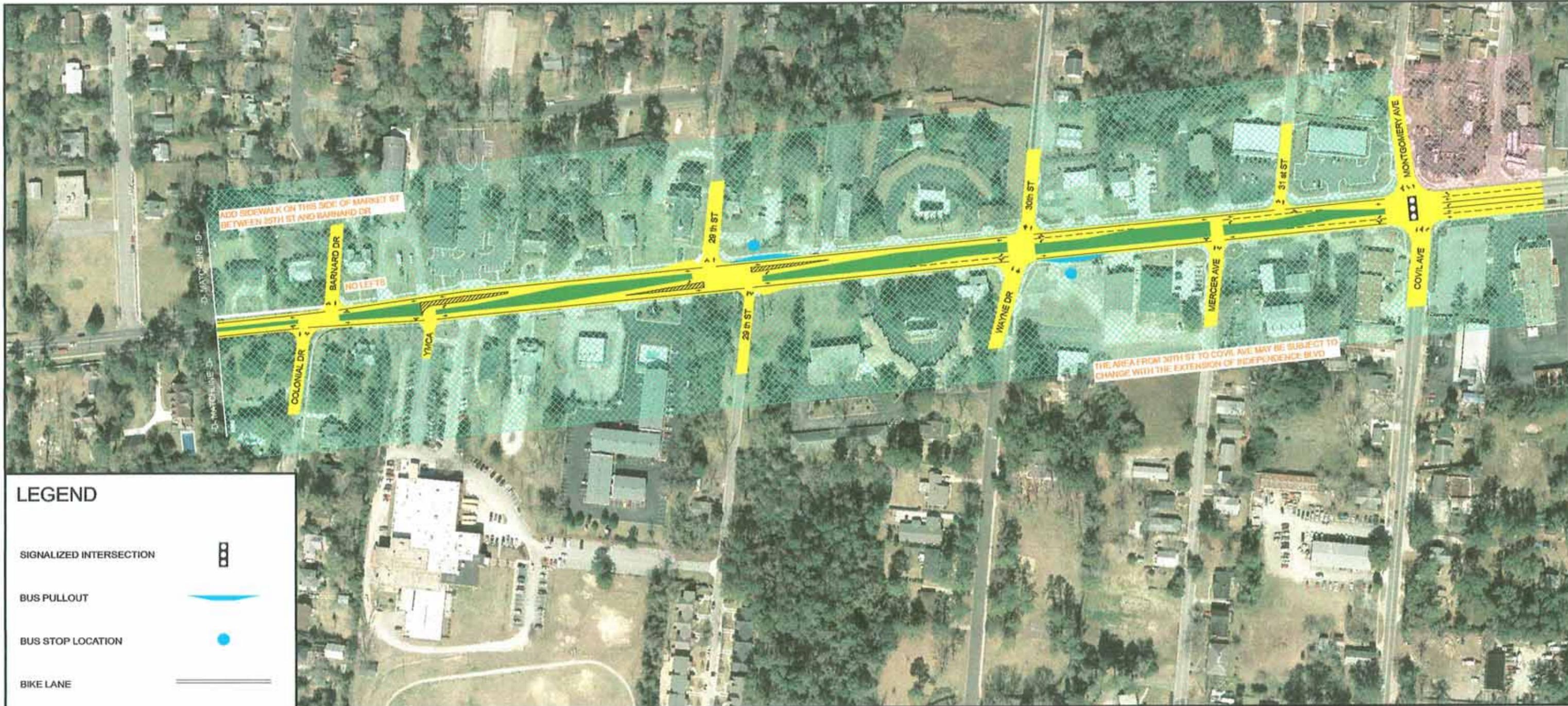




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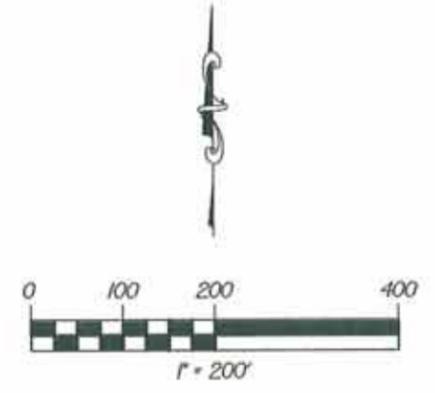
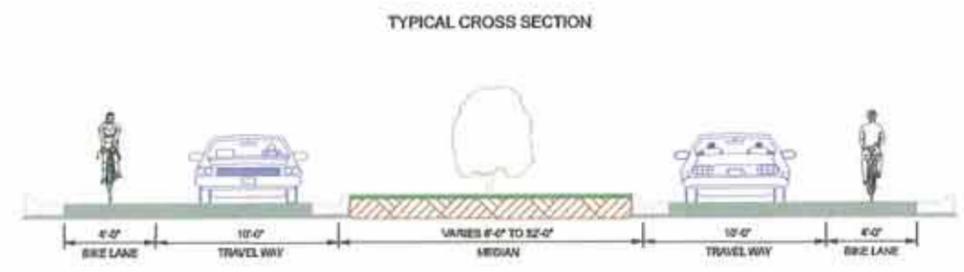
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**LEGEND**

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- BUS PULLOUT
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## **APPENDIX B**

### **Traffic Summary**

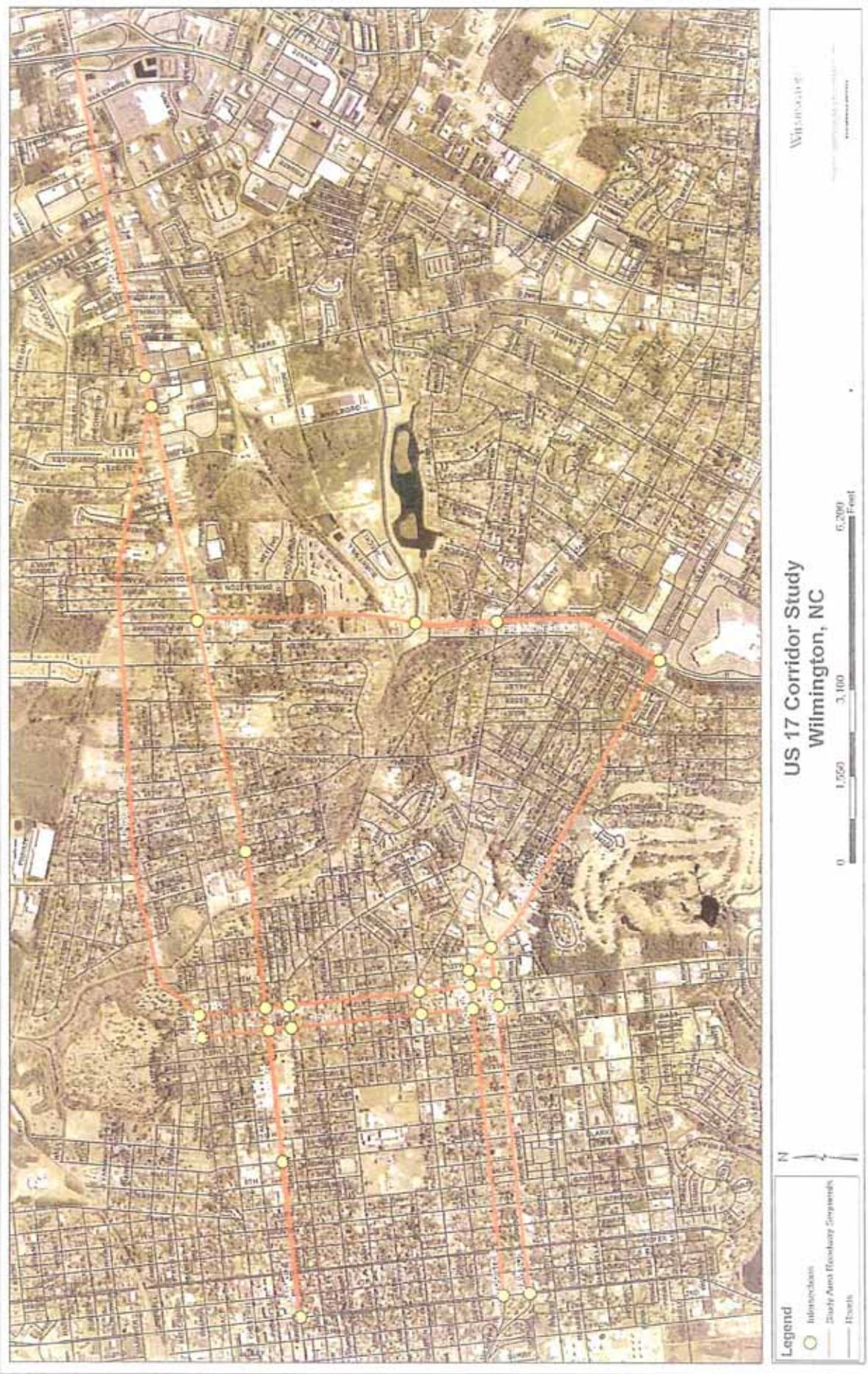


FIGURE 7

## Traffic Summary

Traffic patterns in Wilmington are changing due to the construction of new transportation facilities. The objective of this corridor study was to analyze alternatives that may improve mobility and safety along US 17 Business. Portions of the following roads were included in this study:

Market Street	Princess Place Drive
Oleander Drive	Independence Boulevard
Dawson Street	Wooster Street
16 <sup>th</sup> Street	17 <sup>th</sup> Street

The City of Wilmington recommended several alternative improvements to the US 17 corridor. One recommendation was to convert 16<sup>th</sup> Street and 17<sup>th</sup> Street into two-way streets. Both are currently multilane one-way streets. A second recommendation was to execute a road diet along part of Market Street. This section of Market Street would be converted from a four-lane to a two-lane facility.

The traffic operations analysis was performed for the following scenarios:

- 2006 Existing Peak Hour
- 2020 Projected Peak Hour
- 2020 Projected Peak Hour with improvements

Synchro 6.0 was used to analyze the intersections in the study area for these scenarios. The Synchro results give a level of service (LOS) for the intersections. The LOS is an important measure of roadway congestion. The LOS is determined by calculating the delay for the intersection and converting it to a letter. The LOS ranges from A (no congestion) to F (severe congestion). The LOS criteria for signalized and unsignalized intersections are shown in **Table 1: Existing Level of Service**.

**Table 1: Existing Level of Service Criteria**

<b>Signalized Intersections</b>		<b>Unsignalized Intersections</b>	
LOS	Delay per Vehicle (seconds)	LOS	Delay per Vehicle (seconds)
A	≤10	A	≤10
B	>10 and ≤20	B	>10 and ≤15
C	>20 and ≤35	C	>15 and ≤25
D	>35 and ≤55	D	>25 and ≤35
E	>55 and ≤80	E	>35 and ≤50
F	>80	F	>50

It was determined that 16<sup>th</sup> Street and 17<sup>th</sup> Street would not be suitable for two-way traffic flow. New traffic patterns in the area would reduce the traffic volumes on these streets. However, traffic signals along these streets would not operate at acceptable levels of service with a two-way design. **Table 2** summarizes the levels of service for the intersections along 16<sup>th</sup> Street and 17<sup>th</sup> Street.

**Table 2: Level of Service, 16<sup>th</sup> & 17<sup>th</sup> Streets**

Intersection		AM Peak			PM Peak		
		2006	2020	2020 TWO-WAY CONVERSION	2006	2020	2020 TWO-WAY CONVERSION
16 <sup>th</sup> & Princess Place	LOS	D	C	A	C	C	B
	Delay (sec.)	36.0	24.1	8.6	22.9	21.2	14.7
Market & 16 <sup>th</sup>	LOS	D	C	D	C	C	F
	Delay (sec.)	43.2	24.9	37.1	28.6	23.7	142.4
16 <sup>th</sup> & Dock	LOS	F	A	A	A	A	A
	Delay (sec.)	190.4	5.9	9.6	7.9	7.3	6.9
16 <sup>th</sup> & Castle	LOS	C	B	C	F	F	C
	Delay (sec.)	23.8	11.5	23.4	181.1	126.5	33.0
16 <sup>th</sup> & Wooster	LOS	D	C	F	F	F	F
	Delay (sec.)	39.0	23.0	306.2	86.3	144.0	456.0
16 <sup>th</sup> & Dawson	LOS	F	D	F	B	B	F
	Delay (sec.)	378.6	46.8	341.1	12.8	14.6	139.9
17 <sup>th</sup> & Princess Place	LOS	C	C	B	D	F	D
	Delay (sec.)	31.2	32.1	11.9	52.1	90.7	51.1
Market & 17 <sup>th</sup>	LOS	B	B	D	F	F	F
	Delay (sec.)	14.0	16.8	35.2	160.2	221.4	151.3
17 <sup>th</sup> & Wrightsville	LOS	A	A	A	B	B	A
	Delay (sec.)	8.0	8.2	5.4	10.7	13.2	5.8
17 <sup>th</sup> & Castle	LOS	B	B	B	B	B	C
	Delay (sec.)	16.1	17.6	12.8	15.0	17.6	20.6
17 <sup>th</sup> & Wooster	LOS	C	D	B	E	F	F
	Delay (sec.)	28.1	53.5	14.0	60.3	114.0	190.3
17 <sup>th</sup> & Dawson	LOS	B	E	C	D	F	F
	Delay (sec.)	19.6	72.7	28.6	54.5	98.8	97.3

The Martin Luther King Jr. Parkway will reduce the traffic volume on Market Street. Performing a road diet along Market Street would improve safety while maintaining mobility. The road diet would convert Market Street from a four-lane undivided roadway to a two-lane divided roadway. The median would separate opposing travel lanes while providing a space for landscaping. The traffic signals along Market Street would not be negatively affected by the road diet. **Table 3** summarizes the future levels of service for the intersections along Market Street. The existing LOS is included in this table for comparison.

**Table 3: Future Level of Service**

Intersection		AM Peak			PM Peak		
		2006	2020	2020 ROAD DIET	2006	2020	2020 ROAD DIET
Market & 3rd	LOS	C	C	C	D	C	C
	Delay (sec.)	29.5	26.0	20.1	36.4	29.9	24.8
Market & 10th	LOS	A	A	A	B	B	B
	Delay (sec.)	8.7	8.8	6.0	16.8	16.1	12.1
Market & 16th	LOS	D	C	D	C	C	C
	Delay (sec.)	43.2	24.9	38.8	28.6	23.7	29.1
Market & 17th	LOS	B	B	C	F	F	F
	Delay (sec.)	14.0	16.8	35.5	160.2	221.4	62.5
Market & 23rd	LOS	B	B	D	C	B	C
	Delay (sec.)	15.1	12.4	42.5	20.5	18.0	26.2
Market & Covil	LOS	E	F	F	E	F	F
	Delay (sec.)	60.0	174.0	136.4	61.6	264.6	181.0

The road diet on Market Street will include many changes. These changes will promote safety and alternative modes of travel. The removal of two through lanes will allow for the construction of bike lanes and medians. Bicyclists will find the corridor much safer to travel with the construction of bike lanes. The median will be landscaped which will give the area a sense of place. Gaps in the existing sidewalk will be connected to encourage pedestrian travel. Bus turnouts will be constructed to minimize the delay of through traffic. Some bus stops will be combined to minimize the number of needed bus turnouts. Limiting the number of left turns onto Market Street will minimize median cuts.

Computing a level of service for bicyclists and pedestrians is not a straightforward calculation like that for vehicular traffic. The level of service is more a measure of the comfort level the bicyclist or pedestrian feels on a facility along side vehicular traffic. The criterion developed by the Charlotte DOT was used to compute LOS and is summarized in Tables 4 & 5. Level of service ratings of "C" or higher are rarely achieved.

**Table 4: Ex. Pedestrian and Bicycle LOS**

Intersection	Pedestrian LOS		Bicycle LOS	
	LOS	Value	LOS	Value
Market & 3rd	D	42	F	16
Market & 10th	C	62	F	14
Market & 16th	C	70	E	19
Market & 17th	C	71	F	7
Market & 23rd	D	47	F	14
Market & Covil	D	38	F	13
Market & Princess Place	D	43	F	6
Market & Kerr	E	18	F	-4
16th & Dock	B	83	E	19
Independence & Oleander	F	2	F	1

**Table 5: Future Pedestrian and Bicycle LOS**

Intersection	Pedestrian LOS		Bicycle LOS	
Market & 3rd	D	48	F	17
Market & 10th	C	62	E	29
Market & 16th	B	78	D	37
Market & 17th	B	76	E	28
Market & 23rd				
Market & Covil	D	46	F	17
Market & Princess Place	NA	NA	NA	NA
Market & Kerr	NA	NA	NA	NA
16th & Dock	NA	NA	NA	NA
Independence & Oleander	NA	NA	NA	NA

**Table 6: Accident Data Summary**

Corridor	Major Crash Types	Intersections with High Crash Concentrations	Pedestrian And Bicycle Crashes
Market Street	Angle (30%) Rear End (34 %) Left Turns (11%)	College Rd. (w/80) Kerr Avenue (w/72) 17 <sup>th</sup> Street (w/64) New Centre Rd. (w/54)	Pedestrian (18) Bicyclist (12)
17 <sup>th</sup> Street	Angle (46 %) Rear End (23 %) Left Turns (13 %)	Dawson Street (w/37) Wooster Street (w/39) Market Street (w/59)	Pedestrian (0) Bicyclist (0)
16 <sup>th</sup> Street	Angle (50%) Rear End (17%) Sideswipe (14%)	Castle Street (w/31) Wooster Street (w/22) Market Street (w/21)	Pedestrian (1) Bicyclist (0)
Dawson Street	Angle (43%) Rear End (22%) Sideswipe (14%)	3 <sup>rd</sup> Street (w/37) 16 <sup>th</sup> Street (w/18%) 17 <sup>th</sup> Street (w/ 17%)	Pedestrian (0) Bicyclist (1)
Wooster Street	Angle (66%) Rear End (18%) Sideswipe (6%)	3 <sup>rd</sup> Street (w/83) 16 <sup>th</sup> Street (w/34) 17 <sup>th</sup> & 6 <sup>th</sup> Street (w/28)	Pedestrian (2) Bicyclist (2)

Corridor	Major Crash Types	Intersections with High Crash Concentrations	Pedestrian And Bicycle Crashes
Independence Blvd..	Angle (37%) Rear End (35%) Left Turn (6%)	Market Street (w/27) Wrightsville Ave (w/39) Oleander Dr. (w/27)	Pedestrian (0) Bicyclists (0)
Oleander Dr.	Angle (33%) Rear End (36%) Sideswipe (7%)	Dawson Street (w/14) Country Club Dr. (w/16) Independence Blvd.. (w/19)	Pedestrian (0) Bicyclists (2)
Princess Place Dr.	Angle (32%) Rear End (35%) Left Turn (12%)	17 <sup>th</sup> Street (w/23) 23 <sup>rd</sup> Street (w/ 15) 30 <sup>th</sup> Street (w/16)	Pedestrian (3) Bicyclists (3)

## **APPENDIX C**

### **Public Involvement Summary**

**Meeting Summary**  
**1<sup>st</sup> Public Workshop**

**PROJECT:** US 17 Corridor Study – City of Wilmington

**LOCATION:** New Hanover High School

**MTG. DATE:** August 3, 2006 4:00 pm – 8:00 pm

**ATTENDING:**

Mike Kozlosky	City of Wilmington
Aruna Reddi	City of Wilmington
Patrick Riddle	NCDOT/Div. 3
Jackson Provost	NCDOT/Div. 3
Brock Laforty	Ralph Whitehead Associates
Karen Capps	Ralph Whitehead Associates

**SUMMARY:**

A public workshop was held on August 3, 2006 to present a conceptual plan for improving traffic flow and aesthetics on Market Street from Covil Avenue to 3<sup>rd</sup> Street. The conceptual plan involves using the design elements of a Road Diet to allow for better utilization of existing ROW and roadway width.

Approximately 40 to 50 people attended the workshop. The questions tended to center around understanding the concept of a Road Diet and how it would help maintain good traffic flow. A summary of comments from the meeting follows:

The conceptual plan was well received and the citizens were positive and excited about the idea.

Citizens felt that the most dangerous stretch of Market Street was from Covil Ave. to 16<sup>th</sup> Street, with it concentrated in the area from 21<sup>st</sup> Street to 16<sup>th</sup> Street. This is the section of Market Street that has two lanes of traffic in both directions without a median or center turn lane.

Citizens have noticed a decrease in congestion since the bypass and Martin Luther King Parkway opened to traffic.

Speeders are still a problem in this area, even with stepped up enforcement according to most residents.

Parking on Market Street with its current configuration is dangerous. Many people have lost rear-view mirrors, especially in the area around New Hanover High School. Most citizens feel that parking on Market Street is not necessary and should be removed for safety reasons.

Going down to two lanes with a center raised median was not an issue for people. They feel that a “more beautiful” Market Street would help tourism.

The bike lanes were met with a lot of enthusiasm.

Citizens asked if the proposed median could be extended to further reduce the number of left turn movements along Market Street. They suggested directing everyone to intersections with traffic signals since there is good connectivity from side streets on both sides of Market Street.

Do not harm the existing oak trees that give Market Street its character.  
The plan should accommodate bus turnouts and not hinder EMS vehicles.  
Citizens would like to see the project happen soon.

The following are specific suggestions from the workshop:

Consider left turn access for National Cemetery.  
Consider brick pedestrian crossings like those used on Wrightsville Ave.  
Use decorative lighting and landscape the median.  
Eliminate truck traffic on Market St. from Covil toward downtown.  
Make sure bike lanes tie into rest of county and state system.  
Address problem of poles so close to the road in the narrow section between Covil and 16<sup>th</sup> Street.  
Replace the bridge over Burnt Mill Creek.  
Make sure sidewalk is connected and continuous throughout the study area.  
City needs to be proactive about reducing the traffic on Market St. so that the conceptual plan works.  
Concerns over safety at intersections that are offset. From approximately 17<sup>th</sup> St. back to Covil Ave.  
Left turns out of these streets often in conflict and there is confusion as to who has the right of way.  
Restrict as many left turns as possible. There is adequate connectivity in this area.  
Consider left turn lane at Carolina Place, but don't allow left turns out of Carolina Place onto Market Street.  
Place left turn at 26<sup>th</sup> Street for the veterinary hospital.  
Provide a signal at 29<sup>th</sup> Street so that YMCA patrons will be encouraged to use the entrance on 29<sup>th</sup>.  
Provide good signage.  
Be consistent with applying the left turn policy.

The meeting ended at approximately 8:00pm. Please see attached summaries of the individual stakeholder interviews conducted from August 2, 2006 to August 31, 2006.

Sincerely,

STV/RALPH WHITEHEAD ASSOCIATES

(Submitted via email)

Karen Capps, PE

Transportation Planner

**Meeting Summary**  
**2<sup>nd</sup> Public Meeting**

**PROJECT:** US 17 Corridor Study – City of Wilmington  
**LOCATION:** New Hanover High School  
**MTG. DATE:** January 9, 2007 4:30 pm – 7:00 pm  
**ATTENDING:**

Mike Kozlosky City of Wilmington  
Patrick Riddle NCDOT/Div. 3  
Brock Laforty STV/Ralph Whitehead Associates  
Karen Capps STV/Ralph Whitehead Associates

**SUMMARY:**

A public workshop was held on January 9, 2007 to present the revised conceptual plan for improving traffic flow and aesthetics on Market Street from Covil Avenue to 3<sup>rd</sup> Street. Approximately 30 to 40 people attended the workshop. The comments tended to center around access issues, bicycle lanes, and eliminating a lane. The comments that were generally voiced are summarized below.

Citizens opposed to the conceptual plan voiced the following concerns:

- Dropping a lane in either direction would not improve traffic flow and would, in fact, cause increased congestion.
- That the current and future planned transportation improvements will not reduce the volume of traffic on Market Street as the model predicts.
- Businesses that are currently located in the study area would be negatively impacted.
- Even with bicycle lanes and parking areas, emergency response vehicles would be hampered.
- City busses would not use the bus pullouts correctly. In other words, they would not pull all the way out of the travel lane and block traffic.
- During an emergency (either weather related or from the Brunswick Nuclear Power Plant near Southport) Market Street would become overwhelmed and people would be trapped.
- Traffic congestion would increase because of ingress and egress from all of the existing driveways.
- Traffic is never going to decrease, only increase and this is not a wise investment of funds.

Citizens in favor of the conceptual plan stated the following:

- Feel that one lane in either direction, especially from 17<sup>th</sup> Street to Covil Avenue would improve safety and better control traffic.
- The Road Diet concept would protect the residential neighborhoods in the study area and retain the character of the area.

- Would provide traffic calming.
- The bicycle lanes would be a great addition to the area, provided they are well connected to other routes.
- The priority for improvements should be from 17<sup>th</sup> Street to Covil Avenue.
- Felt that reducing traffic congestion on Market Street would improve the “dignity, decorum, and serenity of the cemetery.” Would also increase safety of visitors.
- One citizen stated that he lived in Charlotte at the time that a Road Diet plan was implemented along East Boulevard. He was originally against the change, but was amazed at how efficiently the traffic flowed even at the slower speed. And the change increased property values.

Additional suggestions and requests are:

- Consider not placing a median between 16<sup>th</sup> and 17<sup>th</sup> Streets. The businesses in this block have already been negatively affected by making Wrightsville Avenue one way. Many people take the opportunity to turn in mid-block while traffic is stopped at the light at 16<sup>th</sup>.
- Consider making Market Street one-way (outbound) and making Chestnut Street one-way (inbound).
- Consider extending the proposed median across 21<sup>st</sup> Street. Currently, traffic travels at an excessive speed when making the left turn off of Market Street. Residents along 21<sup>st</sup> must park on the street and are consistently concerned about the vehicles and themselves being hit. Feel that a light at this intersection would actually make matters worse as people speed up to beat the light.
- Do not implement the plan until Independence Blvd.. Extension is in place.
- Please improve deteriorating sidewalks and fix flooding problems along Market at the same time.
- Consider giving full access at Market and Barnard Dr. for resident at 2704 Market St. Resident also stated that felt road worked just fine when it was four narrow lanes all the way to the railroad tracks.

The meeting ended at approximately 7:00pm.

Sincerely,

RALPH WHITEHEAD ASSOCIATES, INC.

(Submitted via email)

Karen Capps, PE

Transportation Planner

## STAKEHOLDER INTERVIEWS US 17 CORRIDOR STUDY

### Commercial Block at 16<sup>th</sup> and 17<sup>th</sup> Streets.

Representing: Coastal Reality  
Coastal Antiques  
The Medicine Shoppe

- ❖ Most traffic comes down Market Street to 16<sup>th</sup> and turns left. Access beaches and hospital area.
- ❖ Major backups, especially Fridays/weekends from 16<sup>th</sup> to 19<sup>th</sup> Street. Was worse before bypass and MLK Blvd.
- ❖ Signage confusing for new routes. People use Market St. because of familiarity.
- ❖ Lots of accidents in this block.
- ❖ Feel that Market to 3<sup>rd</sup> is in pretty good shape
- ❖ Feel that median in this block would hurt. Many people turn mid-block while light at 16<sup>th</sup> either lets left turn movement onto 16<sup>th</sup> or while light allows 16<sup>th</sup> Street traffic to cross over Market.
- ❖ Request city to analyze Market from 17<sup>th</sup> up with new configuration and from 16<sup>th</sup> down to see if still need median in this block.
- ❖ Andrews Mortuary entrance (main) is mid-block. How would median affect them?
- ❖ Between 15<sup>th</sup> and 20<sup>th</sup> called Mansion District. Old homes on North side of Market, including the chancellor for UNCW.
- ❖ Remove parking along Market. Area in front of New Hanover High School especially dangerous.
- ❖ Bike lanes are not a good utilization of limited space within the existing ROW.
- ❖ Concerned about driving away business because hard to access.

In a separate meeting with Carolton Fisher – Coastal Reality

- ❖ He doesn't see accident problem in the narrow section of Market, or speeding problem since increased enforcement.
- ❖ Suggested inexpensive solutions such as eliminating trucks from Market St and restricting left turns during rush hour.
- ❖ Doesn't think enough time has passed to gauge effect of new road improvements on reducing traffic on Market.
- ❖ Retain the existing trees.
- ❖ Add decorative street lighting.
- ❖ Does feel improvements have made some impact on traffic, but will it cut it in "half" so that reducing the number of lanes works and doesn't cause worse congestion. In other words, will it really work?
- ❖ Request that city be consistent. Don't mix 2 lane/4 lane sections or switch between using a median and providing a center turn lane.
- ❖ Suggested that city eliminate on-street parking.

### **Trinity United Methodist Church**

Ron Fascher – Representing

- ❖ Really likes existing Market St. from 16<sup>th</sup> to waterfront with trees, medians.
- ❖ Concerned with congestion and speed along Market.
- ❖ Parking along Market St. dangerous. Church is located adjacent to the high school. Teachers use church for parking. Parking very limited for school and traffic flow is congested during school hours. Especially with buses. Buses unload behind the school on Princess Place.
- ❖ High crime area further back off of Market St.
- ❖ No parking on Market St. would hurt the church. The only ADA access for the church is the elevator located at the front of the building.
- ❖ They compete with St. Andrews on opposite corner for parking.
- ❖ Feels that it would be nice to have the bike lanes.
- ❖ Feels that the road would be safer with 1 lane in each direction.
- ❖ Get the truck traffic off of Market St.
- ❖ Aesthetics would help area a lot. Many young families buying older homes and fixing them up. Revitalizing the area.
- ❖ City needs to stick to good land use planning.
- ❖ Suggested that the study be broken up into two sections, 17<sup>th</sup> to Covil and 17<sup>th</sup> to 3<sup>rd</sup>.
- ❖ Noted that area the high school and church sit in is very flood prone.

### **Wilmington Fire Department**

Sam Hill – Chief

- ❖ Volume of traffic is a concern.
- ❖ The bypass is quicker and does help.
- ❖ Concept is nice. However, he is concerned about increased response times. Even now, it is faster to respond down Market St., with cars moving out of the way. Will plan accommodate room for EMS vehicles to pass cars on the way to a call?
- ❖ Some of the problem is that, like personal cars, EMS vehicles are getting larger.
- ❖ The fire/EMS crews are required to respond to a call in their jurisdiction within 4 minutes.

### **Bellamy Mansion Museum**

Beverly Ayscue – Executive Director

- ❖ Loves median from 16<sup>th</sup> to 5<sup>th</sup>.
- ❖ Thinks fountain is a must to keep.
- ❖ Does not feel that parking on Market St. not necessary. Especially dangerous at high school.
- ❖ At 29<sup>th</sup> Street, there is a jog in road causing safety problems with left turns.
- ❖ It is also difficult to turn into the YMCA on Market Street.
- ❖ Likes conceptual plan.
- ❖ Make sure mid-block openings are wide enough to accommodate u-turns. Not clog through lanes.
- ❖ Feels that bike lanes would be an asset on Market St.
- ❖ Would be willing to lose a traffic lane to improve area between Covil Ave. and 16<sup>th</sup> Street.

### **St. Andrews Covenant Presbyterian Church**

Steve Hein – Pastor

- ❖ Going down to 2 lanes would have no affect on church.
- ❖ Parking on street not needed. Can accommodate.
- ❖ Would like to see median across 15<sup>th</sup> St. for safety. Reduce through traffic at church for pedestrians.
- ❖ Personally avoids the area around New Centre Dr. (outside of study area).

### **Port City Java Corporate Office**

Don Reynolds – Manager

- ❖ Does like going down to 1 lane in either direction, but does not want median. Wants a center turn lane.
- ❖ Median would cut business at that location by 20%
- ❖ Most morning business comes from College Rd. to downtown and can make a right into the parking lot. But has good amount of day business from downtown that must turn left.
- ❖ Does feel like traffic has reduced some with bypass and MLK Blvd.
- ❖ Feels that bike lanes would enhance business and community appeal.
- ❖ Feels people still tend to speed even with enforcement.
- ❖ City needs to keep Market St. commercially viable or be ready to deal with problem of vacant lots and buildings.
- ❖ Port City Java at this location can only be accessed from Market St. Burnt Mill Creek on west side, school behind and other owners have land on east side.
- ❖ Port City Java is very community based. A lot of walkable traffic from surrounding neighborhoods. The company has made a lot of improvements to the property on Market St. One example is construction to reduce polluted runoff from the property into Burnt Mill Creek.

### **New Hanover High School**

Chris Furr – Principal

Jackie Blackmore – Assist. Principal

- ❖ School's main concern and problem areas are parking and safety
- ❖ Difficult to even provide enough teacher parking. Use parking lot of Trinity United Methodist Church
- ❖ When asked about recommendation to switch bus loading/unloading to the front and visitor parking and student drop off to back, felt this would make the current situation worse. There is no direct access from the back of the school to the front office. All visitors are required to sign in at the front office. Requiring visitors to wind through the school defeats the purpose of security.
- ❖ Buses actually are loaded and gone within 10-15 minutes of school dismissal.
- ❖ Big problem with parents dropping off students in the morning and backing up traffic in both lanes on Market Street.
- ❖ Angled parking might be an option, but only if it does not decrease available parking.
- ❖ Requested city to look at helping the school provide more parking.

**MINUTES OF MEETING: Steering Committee Mtg.#1**

**PROJECT:** US 17 Corridor Study

**LOCATION:** City Hall- 4<sup>th</sup> Floor Conference Room

**MTG. DATE:** April 4, 2004

**ATTENDING:**

Mike Kozlosky..... Wilmington MPO (WMPO)  
Aruna Reddi..... WMPO  
Joshuah Mello..... WMPO  
Christine Laughlin..... City of Wilmington  
Mark Teigler..... City of Wilmington  
Brian Chambers..... City of Wilmington  
Tom Cunningham..... Chamber of Commerce  
Monica Kerr..... NCDOT TPB  
Joe Blair.....NCDOT  
Jackson Provost.....NCDOT  
Anthony Law.....NCDOT  
Patrick Riddle.....NCDOT  
Brock LaForty.....Ralph Whitehead Associates

**MINUTES:**

The purpose of this meeting was to give the steering committee an overview of the US 17 Corridor Study process, schedule, and to have a general discussion on the study area and any issues and/or concerns. The meeting began at approximately 2:00 PM.

Mike Kozlosky opened the meeting and gave an overview of the study process and introduced the consultant working on this project. Mike discussed the Independence Boulevard Extension project and that for the purposes of this study, staff has estimated the completion by 2020, so that is the horizon year being used for the corridor study and that would allow the re-routing of US 17 traffic. NCDOT mentioned that they are currently working on signage plans to sign the Wilmington Bypass for US 17 once it opens. Mike asked if he could set up a meeting with NCDOT next week to discuss further.

Brock LaForty handed out the scope of work, schedule, and a study area map for the study and gave a brief overview of all of the materials. The study is scheduled to be complete by January 2007. Brock also added that two of the alternatives that RWA will be investigating are the one-way to two-way conversions of 16<sup>th</sup> and 17<sup>th</sup> Streets and a road diet along Market Street between Covil Avenue and 3<sup>rd</sup> Street. Brock discussed some data collection activities that are being done for this study and requested some information from the steering committee members, such as travel demand model information, a list of current NCDOT projects in the study area, and any available land use studies/plans for the area.

The following points were discussed during the meeting:

- Patrick asked if any counts would be done after the Wilmington Bypass was open. It may be beneficial to see how that impacts traffic on Market Street.
- NCDOT has had some internal discussions on turning 16<sup>th</sup> and 17<sup>th</sup> Street over to the City once US 17 is resigned onto the Wilmington Bypass.
- Josh mentioned that the Short Range Transit Plan calls for adding transit to 16<sup>th</sup> and 17<sup>th</sup> Streets; they currently do not have service. The plan is available on the WMPO website.
- Mike discussed the US 17 Business designation and that there have been some concerns from the residents on south 3<sup>rd</sup> Street. They would like to see US 17 Business Route resigned and send traffic north on 3<sup>rd</sup> Street.

Brock added he would send out an email in May to set-up to schedule the next Steering Committee meeting that is scheduled for the middle of July.

The meeting ended at approximately 2:50 PM.

These minutes serve as a formal record of the April 4, 2006 meeting.

Sincerely,

RALPH WHITEHEAD ASSOCIATES, INC.

(submitted via e-mail)

Brock LaForty, AICP

cc: All in attendance

**MINUTES OF MEETING: Steering Committee Mtg.#2**

**PROJECT:** US 17 Corridor Study

**LOCATION:** City Hall- 4<sup>th</sup> Floor Conference Room

**MTG. DATE:** July 24, 2006

**ATTENDING:**

Mike Kozlosky..... Wilmington MPO (WMPO)  
Aruna Reddi..... WMPO  
Joshuah Mello..... WMPO  
Brian Chambers ..... City of Wilmington  
Tom Cunningham ..... Chamber of Commerce  
Monica Kerr ..... NCDOT TPB  
Jackson Provost.....NCDOT  
Patrick Riddle.....NCDOT  
Brock LaForty .....Ralph Whitehead Associates

**MINUTES:**

The meeting began with Brock discussing the results of the traffic analysis for the Market Street road diet between downtown and Covil Ave. and the two-way conversion for 16<sup>th</sup> and 17<sup>th</sup> Streets. Brock handed out a table showing the traffic results and explained that the road diet did work along Market Street but the two-way conversions on 16<sup>th</sup> and 17<sup>th</sup> Street would not work due to the Wooster and Dawson Street traffic volumes.

Brock then handed out the conceptual plan for the road diet along Market Street. Brock went through the plan with the committee. Some general discussion occurred in regards to the plan. There were some comments on left turns at 5<sup>th</sup> Avenue and also at 16<sup>th</sup> Street. Brock added that all comments would need to be submitted by the end of the week so all the information, displays, etc could be prepared for the public meeting on August 3<sup>rd</sup>. Patrick added that they would need to pass along and discuss with NCDOT's Congestion Management folks as well.

Brock then went on to discuss the upcoming public meeting, which is scheduled for Thursday, August 3<sup>rd</sup> from 4PM – 8PM at the New Hanover High School Cafeteria. Brock handed out the newsletter that was sent out to the residents along the Market Street Corridor. Josh added that it would be nice to have a board at the meeting that showed what a road diet is, maybe use some Charlotte projects as an example. Brock said he would create a board as well as having the traffic simulation of the road diet available for people to view in case traffic concerns came up. Brock then mentioned that RWA was also conducting stakeholder interviews for some of the major stakeholders along Market Street. Brock handed out a list of possible stakeholders to get any comments from the committee on them. Josh added that there were a couple of churches along Market Street that may be good to talk with as well. Brock said that they would try to talk to the churches, but RWA was only scoped for 5 stakeholders and

that the list already contained 6 stakeholder locations and the commercial development at 17<sup>th</sup> Street had a number of different tenants.

The meeting ended at approximately 2:50 PM.

These minutes serve as a formal record of the July 24, 2006 meeting.

Sincerely,

RALPH WHITEHEAD ASSOCIATES, INC.

(submitted via e-mail)

Brock LaForty, AICP

cc: All in attendance

**MINUTES OF MEETING: Steering Committee Mtg. #3**

**PROJECT:** US 17 Corridor Study

**LOCATION:** City Hall- 4<sup>th</sup> Floor Conference Room

**MTG. DATE:** October 16, 2006

**ATTENDING:**

Mike Kozlosky..... Wilmington MPO (WMPO)  
Joshuah Mello ..... WMPO  
Brian Chambers ..... City of Wilmington  
Don Bennett ..... City of Wilmington  
Tom Cunningham ..... Chamber of Commerce  
Jackson Provost.....NCDOT  
Patrick Riddle.....NCDOT  
Joe Blair .....NCDOT  
Brock LaForty ..... STV/Ralph Whitehead Associates

**MINUTES:**

The meeting began with Brock discussing the comments received at the public meeting in August and the stakeholder interviews, as well as the current plan for Market Street. The following items and revisions to the plan were discussed:

- NCDOT will be having a scoping meeting on TIP #4902B on November 13<sup>th</sup>. Coordination will need to occur between the two projects, since there is an overlap in between the study areas.
- Landscaping is a possibility for the median as long as it is accepted by NCDOT. Crept Myrtles would be a possibility.
- Evaluate the parking in front of the school and look to see if a bus loading/unloading pullout can be established. It would be beneficial to discuss option with school.
- Evaluate opportunities for bus pullouts at existing transit bus stops along Market Street.
- Create right ins/right outs at 18<sup>th</sup>, 20<sup>th</sup>, 21<sup>st</sup>, 23<sup>rd</sup>, and Keaton Avenue. The signal at 23<sup>rd</sup> Street would be removed. A note should be added to the plan that says the intersection of Market/23<sup>rd</sup> will be analyzed in the future once the Independence Boulevard Extension has been constructed.
- A note should be included on the plan that the area from 30<sup>th</sup> Street to Covil Avenue may be subject to change with the extension of Independence Boulevard in this area.
- Left-overs with bulb outs for U-turns should be considered for the intersection of Market Street and 29<sup>th</sup> Street. Left-turn lanes with bulb-outs for U-turns should be considered for

Market Street and Forest Hills Drive. A left-over should be considered at the entrance into the YMCA from Market Street.

Mike discussed the schedule and mentioned the possibility of having the second public meeting the week after Thanksgiving. The study is expected to be finalized in January and presented to the MPO, etc.

The meeting ended at approximately 3:00 PM.

These minutes serve as a formal record of the October 16, 2006 meeting.

Sincerely,

STV/RALPH WHITEHEAD ASSOCIATES, INC.

(submitted via e-mail)

Brock LaForty, AICP

cc: All in attendance

**MINUTES OF MEETING: Steering Committee Mtg. #4**

**PROJECT:** US 17 Corridor Study

**LOCATION:** City Hall- 4<sup>th</sup> Floor Conference Room

**MTG. DATE:** March 15, 2007

**ATTENDING:**

Mike Kozlosky..... Wilmington MPO (WMPO)  
Anthony Prinz..... WMPO  
Brian Chambers ..... City of Wilmington  
Don Dennett ..... City of Wilmington  
Jackson Provost.....NCDOT  
Patrick Riddle.....NCDOT  
Karen Capps..... STV/Ralph Whitehead Associates  
Brock LaForty .....STV/Ralph Whitehead Associates

**MINUTES:**

The meeting began with Brock and Karen discussing the comments received at the public meeting in January and the final stakeholder interview with the high school. The following items were discussed:

- Overall majority of the comments received at the public meeting were in favor of the project.
- It was decided that the plan would be revised to remove the median along Market Street between 16<sup>th</sup> and 17<sup>th</sup> Streets to accommodate concerns by the commercial properties located in that area.
- After meeting with high school, it was decided to leave the vehicular and bus parking as it currently exists today.

Karen then went over the draft report with the committee. Any comments on the report should be submitted to Mike Kozlosky by Friday, March 30<sup>th</sup>. Mike will then compile all of the comments and submit to STV/Ralph Whitehead Associates. The following comments were made in regards to the draft report at the meeting:

- The vicinity map (Figure 1) should be updated
- The intersection of Forest Hills Drive/Market Street should be evaluated for a roundabout in place of the traffic signal
- The report should include the stakeholder meeting summaries.

It is anticipated that study will be presented to the MPO and the City in April.

The meeting ended at approximately 2:45 PM.

These minutes serve as a formal record of the March 15, 2007 meeting.

Sincerely,

STV/RALPH WHITEHEAD ASSOCIATES, INC.

(submitted via e-mail)  
Brock LaForty, AICP

cc: All in attendance

## **APPENDIX D**

### **Road Diet Information**

## WHAT IS A ROAD DIET?

A road diet is the reduction in the number of lanes of a roadway. A four-lane road can be converted into a two-lane road by removing one lane in each direction. The lanes that are removed can be used in other ways. Medians and turn lanes can be created along the road. Bicycle lanes can also be added. The new two-lane road is much safer for pedestrians and cyclists. Pedestrians have fewer lanes to cross. The median also provides a pedestrian refuge. Cyclists can benefit from the safety that comes with adding bicycle lanes. The turn lanes help maintain the current vehicle capacity of the road.



BEFORE ROAD DIET:  
4-lane road



AFTER ROAD DIET:  
2-Lane Road with  
Median, Bike Lanes,  
and Sidewalks