Pembroke Master Plan

The Town of Pembroke, North Carolina

Allison Platt & Associates The Wooten Company Locklear, Locklear & Jacobs

September, 2016

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1.0 INTRODUCTION

1.1 Demographics

In January of 2016 a team led by Allison Platt & Associates and including The Wooten Company and Locklear, Locklear & Jacobs was hired to prepare a master plan for the downtown area of Pembroke. The map at right shows Pembroke's location within the state. In 2015 the Town received a grant of $96,107.00 for implementation projects. The Town was particularly interested in improving Third Street, which is a State road and the historic center of the community. Realizing that the grant amount would not be enough for implementation, they decided to create a master plan instead to prioritize projects, build consensus, establish costs, and identify possible sources of additional funding.

Pembroke is a community within Robeson County. The Town has a population of 2,973 (2010 census data), and is located in the south central portion of the state between Lumberton and Interstate 95 to the east, and Laurinburg to the west. The population grew nearly 25% between 2000 and 2010. The nearest mid-size cities are Fayetteville to the northeast (40 miles) and Florence, SC to the south (55 miles). Distances to larger cities are as follows: Charlotte, 110 miles; Columbia, SC 130 miles; Raleigh 106 miles, and Wilmington 88 miles.

Pembroke is the tribal headquarters for the Lumbee Tribe. 88.9% of the population of the community identify themselves as Native American, 8.15% as White, 2.2% as African-American, and 1.08% as Hispanic (all other races less than 1% each). The Median household income for Pembroke is $16,444.00, down from $18,355 in 2000. The statewide median income is $46,556.00, making Pembroke one of the poorest communities in the state, with about 40% of the population living below the poverty line.

1.2 History*

The area around Pembroke is estimated to have been consistently occupied for thousands of years going back to the Ice Age in the areas near the Lumber River, which provided a ready supply of water and food, and soils suited for agriculture. Archeological excavations reveal that the indigenous population developed "an extensive trade network with other regions of what is now the Southeast of the United States."

In 1725 English surveyors mapped the Native American village of Waccamaw on the Lumber River near what is now Pembroke. By 1754 it was reported that about 50 Irish and Scots families were also located along the river.

This map of North Carolina shows the location of Pembroke. It is about 40 miles from Fayetteville and about 50 miles from Florence, SC, 80 miles from Raleigh, and about a hundred miles from both Columbia, SC and Charlotte. Map by National Geographic Society.

Most theories suggest that the present day Lumbee Tribe evolved from Tuscarora, Saponi, Cheraw, and Waccamaw tribes who were forced to relocate as a result of white settlement along the Roanoke River. Intermarriage over many generations created a new tribal identity as Lumbee.

Today the tribe has a very strong presence in Pembroke and Robeson County. It is the largest state-recognized tribe east of the Mississippi, and the largest state-recognized tribe without a reservation.

In the late 1800's Lumbee and other people living near Pembroke petitioned the state to have their own Indian schools, since they were excluded from White schools. The State granted this petition in 1887, creating both the Pembroke High School and the Indian Normal School of Robeson County. The latter school provided only primary and secondary education when founded. In 1926 it became a two-year post-secondary school, and in 1939 a four-year college. In 1941 it was renamed the Pembroke State College for Indians, and in 1945 was opened to all federally recognized tribes.

Pembroke State was the only state-supported 4-year college for Native Americans in the United States from 1939-1953. The name was changed again in 1949 to the Pembroke State College, and with the *Brown v. Board of Education* Supreme Court decision of 1954 became open to all. In 1969 the college was incorporated into the University of North Carolina system, and with the advent of master's degree programs became the University of North Carolina at Pembroke in 1996.

In 2010 the enrollment at UNC-Pembroke was 6,944, and the school has been highly rated for small class size and for diversity. The impact of the University on the Town of Pembroke and its ties to the Lumbee Tribe make it a critical and economically powerful player in the life of the community.

1.3. Study Area Boundaries

The study area for this work is shown on the map, below. The historic downtown of Pembroke is located between the UNC-Pembroke campus to the west and the Lumbee Tribe headquarters to the east. Third Street (NC Route 711) is the direct connection through the downtown between the two destinations and points further east (Lumberton and I-95)and west (Laurinburg and I-74). The conditions, issues, and opportunities presented by the existing conditions will be discussed in the next section.

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The area outlined in red below is the study area for this plan. UNC-Pembroke is immediately to the west of the downtown and the Lumbee Tribe Headquarters are to be east just off the map.

2.0 ANALYSIS

In this section we will present strengths and weaknesses of the downtown area and analyze existing conditions as they relate to the task of downtown redevelopment.

2.1 Community Strengths

Pembroke has many strengths on which to build. The presence of the headquarters for the Lumbee Tribe is a tremendous asset for the community in terms of history, culture, sense of place, and people. The history of Native American people in this area stretches back thousands of years, providing a deep connection with the environment and a sense of place that is rare in our country of immigrants and population shifts. The culture of the Tribe and the celebration of traditions provides a source of pride for Tribe members and a source of interest for visitors.

UNC-Pembroke is another great asset for the community. As noted in the introduction, the University originated as a school for local Native Americans and grew from there to the diverse and world-class University it is today. The faculty, staff and students at the University represent a huge cultural and economic force within the community. The University recently renovated an historic building on Main Street to serve as a business incubator. Partnerships such as this set a positive example of reinvestment in the downtown and in the transformative power of university-town partnerships. Hopefully many future owners of local businesses will emerge from this program.

Another community asset is the Lumber River, which runs west to east just a short distance south of the downtown. The river has been designated

The top photo shows a central part of the UNC-Pembroke campus (UNCP photo). The photo at bottom left shows an angler on the beautiful Lumber River. The photo at bottom right is an aerial view of the Lumbee Tribe headquarters, built in the shape of a turtle, one of the symbols of the Tribe.

as a National Wild and Scenic River, and has opportunities for fishing, canoeing, and kayaking. There are major access points north of Pembroke at Chalk Banks, and southeast of Pembroke at Princess Anne. Better connections and signage to and from the downtown and the University to additional nearby access points on the Lumber River would be useful. There may also be opportunities for canoe and kayak rentals and guided trips. There is one boat launch west of town, and a canoe-in camping spot (John Culbreth campground) but there are many other opportunities to add additional access points immediately south of the downtown. Given the large population of young people at UNC-P and in the community, this would seem a natural fit.

The downtown has a core of historic commercial buildings, although quite a few have been demolished. Most of the remaining buildings are located on Third Street between Vance and Main Street, and between Third and Second Streets along Main and Union Chapel. Many have been covered over with siding and obscured by canopies. The conversion of the UNC-P Business Incubator on Main Street is an excellent example of historic building rehabilitation. As many of the remaining historic buildings as possible should be preserved and rehabbed.

2.2 Challenges

At the beginning of the master plan process many stakeholders expressed the desire to begin improvements along Third Street, which has been the historic center of the community. Beginning improvements along this road will be quite a challenge, however, because of the many overhead utility lines that run down both sides of the street. In order to make meaningful, noticeable improvements to this street, these lines will need to be either rerouted or buried. The Town Manager and the team met with representatives of Duke Energy to assess the feasibility and probable cost of the two alternatives (burying or rerouting). After walking the site and discussing the alternatives, it was decided that rerouting the lines to Fourth Street between Pine and Jones Streets would probably be more efficient and less costly than burying them, especially given the complication of getting the lines under the railroad tracks. This will be discussed further in the next sections.

Pembroke has major rail lines running through it. These include both an east-west line and a north-south line, and a connection between the two immediately to the north of Town Hall. In addition to freight trains, Amtrak passenger trains run along the north-south line, and although Amtrak does not currently stop in Pembroke, this could be an opportunity for the future. Each day more than 20 passenger and freight trains run through the center of town between Main Street and Union Chapel Road.

The state road designation for Third combined with the train traffic on Main/Union Chapel present another challenge to revitalization. In particular, the intersection of the three roads and the railroad

Major overhead utilities along Third Street must be rerouted or buried before improvements to the street can be considered.

Train tracks, signals, and traffic arms are a visually significant part of this important intersection of Third with Main and Union Chapel.

These historic building along Third Street have the potential to provide a greater sense of history and place once the siding and canopies have been removed.

There are more than 20 trains that roll through the center of Pembroke each day, a few of which are Amtrack passenger trains. Improved pedestrian crossing and careful consideration of the treatment on each side of the tracks can minimize the visual impact while providing possible ideas for creative uses, such as kinetic sculpture.

tracks will require review and approval by multiple agencies. In addition, lights and traffic arms for the railroad crossing have a significant visual impact, and these will of course remain in place. Upgrades to this intersection will be costly and will require review, approval and oversight by the relevant agencies.

The presence of the tracks and frequent train traffic between Main Street and Union Chapel on Third (and a second crossing one block north on Second) presents other challenges. The railroad will have to agree to how much of the right of way will be required to remain free of obstructions in order to redesign the streets. They have tentatively agreed to 30' on either side of the centerline of the tracks, but this must be affirmed prior to any changes.

The right of way for Third Street is 66', and at the present time the most historic block of Third between Main and Vance has two-three lanes of traffic, parking on two sides of the street and very narrow sidewalks (see cross-sections, next chapter). If Third Street is to be improved, it would be ideal to narrow the lanes and/or reduce the number of lanes and remove on-street parking in order to provide wider sidewalks and a more pedestrian-friendly environment.

If Main and Union Chapel will also be improved, utilities are not as much of a problem. There are a few overhead lines for the street lights, but overhead power to the buildings is supplied from the rear. This makes whatever improvements are to be made much easier and less expensive to accomplish.

Existing underground utilities such as stormwater, water and sewer must also be addressed when street improvements are made. As far as can be determined from existing mapping and observa-

*This drawing shows **Building Use** in the study area. It shows that there are few retail (red) or restaurant (magenta) uses in the downtown core (red box), where they would historically be located.*

tion, all of these systems are outdated and some, such as stormwater, are failing. It makes no sense to implement surface improvement without updating these systems, since otherwise when these underground utilities begin to fail, the improvements will have to be torn up to fix them.

While the historic buildings are an asset, or a potential asset, the current condition of most of these buildings is a problem. Many historic buildings are covered with inappropriate modern materials in a style not in keeping with their history. See the photo on the previous page. Fortunately this can be fairly easily remedied by removing the false facades and restoring the original look of the buildings.

Where infill buildings have been added on vacant land near the downtown, new buildings sometimes do not match the style, materials and/or quality of the historic buildings, and many are sited as if the area were a commercial strip instead of an historic downtown. Over time it would be desirable to improve the building and site design standards for the area in order to enhance the best buildings that remain and create an attractive heart for the community.

2.3. Building Use & Condition

The drawings on this page and the next illustrate Building Use (above) and Building Condition (next page). The Building Use drawing shows that there are a considerable number of buildings in the study area that are vacant (grey color). The core area of the historic downtown (outlined with a red box) also has a very high concentration of vacant buildings and office uses, with only a few restaurants or retail shops. This is not an unusual condition in downtowns that are in need of revitalization. Once conditions improve, vacant buildings and vacant properties will hopefully be occupied by commercial uses that will attract citizens, students and visitors to the downtown. Eventually, some office uses

*This drawing shows **Building Conditions** in the study area, with yellow and orange being good, red fair, and grey and black poor to derelict. Most buildings fair or above will remain, and individual evaluations will be needed as to whether other buildings should remain or be replaced as opportunities arise. Historic buildings should be saved if possible. Vacant and derelict buildings and vacant sites represent opportunities for new buildings/uses.*

may also switch to retail or restaurant as building occupants and owners change. Office and institutional uses are an essential part of a downtown, but a mix of uses is needed in a successful downtown to extend the cycle of activity into the evening and to provide needed services and amenities for residents and downtown workers. Some office uses might be located on upper levels or at a lower concentration in order to accomplish this.

The drawing above illustrates Building Conditions. In general, the condition of housing in the community is good, and Tribe, Town and UNC-P buildings are also in good to excellent condition. That said, the study area presents a more mixed picture. A few buildings, including most institutional uses and a few businesses, are in good to excellent condition (yellow and orange). Many buildings of all types are in fair condition (red), and quite a few were ranked as in poor (grey) or derelict (black) condition.

Both these drawings, taken together, should help to guide decisions regarding which buildings should be saved and which are good candidates for replacement with more viable uses and/or more appropriate materials and site design. Examples of this can be seen in Section 4.0.

2.4 Bike & Pedestrian Access

Bike and pedestrian facilities have received increased attention in recent years as an essential part of any downtown revitalization plan. Such access is especially important in a town with a University, where many students do not own cars or prefer to navigate the campus on two wheels or on foot. It is also an important element in any plan because funding agencies expect these facilities to be included.

There are excellent facilities for walking and cycling on the UNC-Pembroke campus, but at present bike and pedestrian access to the downtown and the Tribe headquarters is nearly nonexistent. Sidewalks are not continuous anywhere in the study area, and there are no marked bike lanes.

Third Street is the logical connection between the three destinations within the Town (University, Tribe, and downtown). When driving into the downtown from the east you can see worn turf where people are walking without the benefit of sidewalks. On the west side of downtown where there are strip commercial uses and few sidewalks, walking is in effect actively discouraged.

Third Street is probably not a good choice for bike lanes because of the narrow right of way and the amount of traffic. There are some very good alternatives for bike lanes into the downtown, and these will be discussed in the next section. The map at right shows possible bike routes that can also present a more leisurely route for pedestrians. NCDOT plans for improvements to Deep Branch Road should, if possible, also include additional space for bike lanes.

Many of the roads serving the downtown as shown in the drawing at right are rural in character and could easily become more welcoming for bicycles with “Share the Road” signage. This drawing also shows existing and possible additional launching sites for watercraft along the Lumber River and possible bike connections to them.

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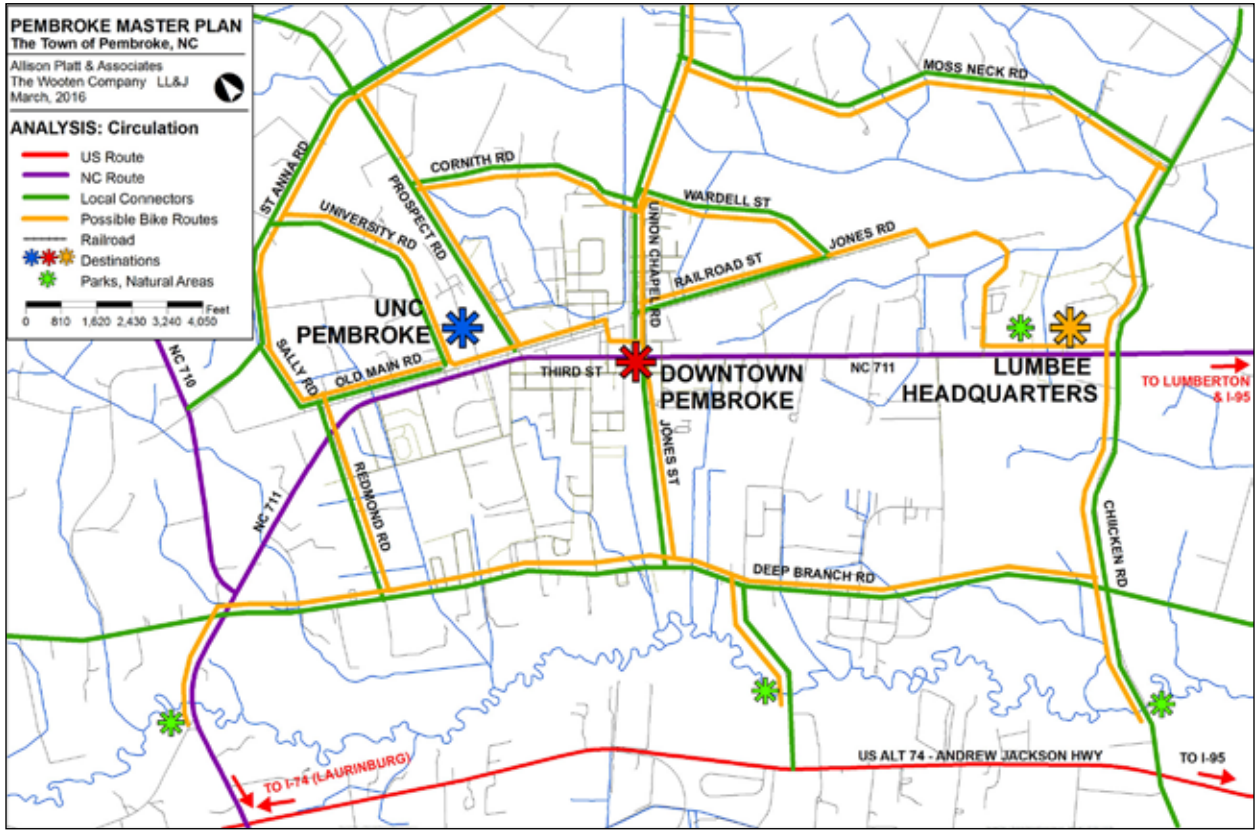


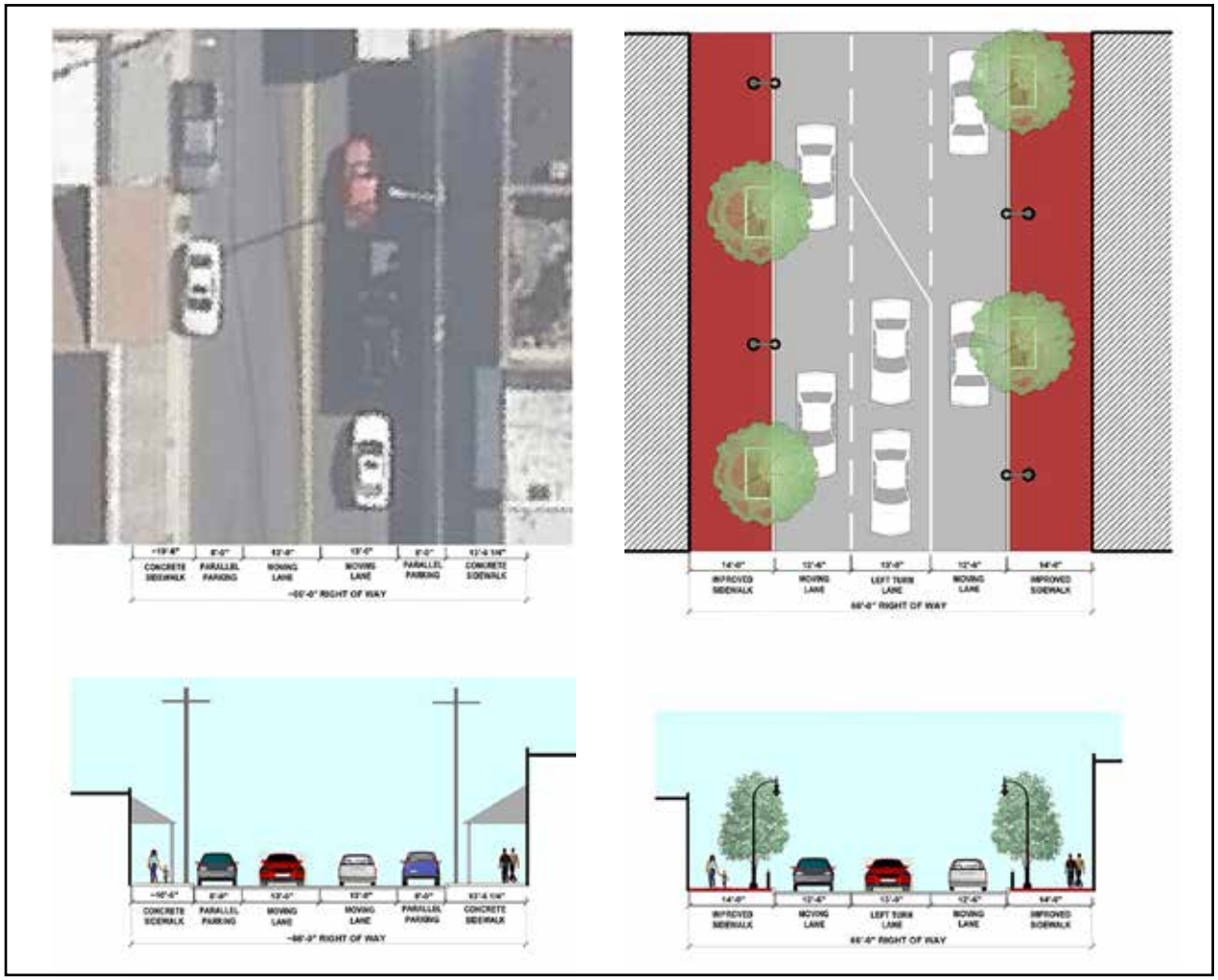
This drawing shows the various destinations near the downtown, main roads to and from the downtown, and possible bike and alternate pedestrian routes. Although the Third Street level of traffic is too high and the ROW too narrow to easily and safely support bike lanes, there are good alternatives bewteen various destinations. Deep Branch Road south of Third has been designated for future improvements by the NCDOT. This road provides an alternate parallel route for Third. Planning for these improvements should include bike lanes and possibly pedestrian accommodations, as well. On many other roads near the downtown, traffic is sufficiently light and rural in character to allow “Share the Road” signage and striping. An existing boat ramp is shown (green asterisk) on NC 711 at the Lumber River. Two othere possible locations for ramps and other facilities along the Lumber would encourage local kayaking, fishing and canoeing.

3.0 CONCEPTS

This section presents concepts for streetscape improvements. Alternative concepts for street cross-sections, materials, and furniture were presented at public meetings and the concepts shown here were the preferred alternatives. The area considered for streetscape improvements includes Third Street from Pine to Jones Street, and Main and Union Chapel from Fourth Street to College Street (just north of Town Hall). We have also illustrated the suggested types of improvement needed throughout the study area, although these are not presented in detail but rather to illustrate the design principles recommended.

3.1 Street Plans & Sections

The first task in developing a streetscape master plan is to decide on the allocation of space to vehicles, bikes, and pedestrians. Most older downtowns have until the last decade provided increasing priority to vehicles. This allocation of space had often discouraged pedestrian traffic, and new research on traffic has shown that narrower lanes in downtown areas do not necessarily reduce vehicular transportation, but instead cause traffic to move at a slower pace, increasing safety for all modes of transportation. The goal of the concepts presented here is to narrow traffic lanes where possible and increase the allocation of space for pedestrians in order to encourage people to visit the downtown and explore the area on foot. The ultimate goal is to increase occupancy in commercial buildings and improve the economy. Bicycles accommodations were also added in the design for Union Chapel and Main, but where not added on Third because of the narrow rights of way (see analysis map on page xx for conceptual bike route recommendations).



Third Street Existing and Proposed Plans and Sections. *Existing conditions on Third between Vance and Main are shown on the left, and proposed improvements are shown on the right. .*

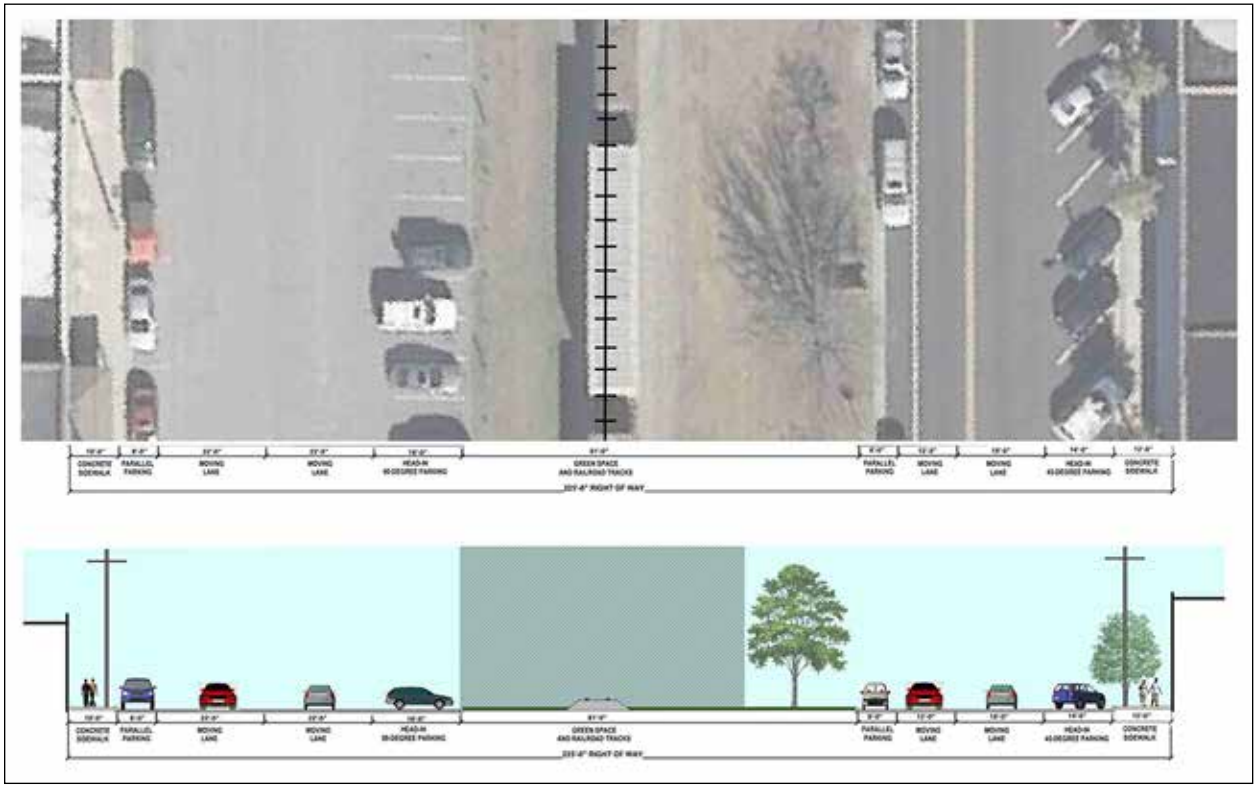
A. Third Street

Third Street existing conditions and the concept for improvements are shown on the previous page. Existing plan and section are shown at left and proposed plan and section at right. The existing conditions in the most historic section between Vance and Main includes two lanes of moving traffic and a limited number of on-street parallel parking spaces on the west end of the block, and three lanes (one left turn lane) on the section nearest the railroad tracks. The entire right of way is 66', and of that, ~43' is devoted to vehicles, and 23' to sidewalks, ~10' on the south side and 13' on the north side.

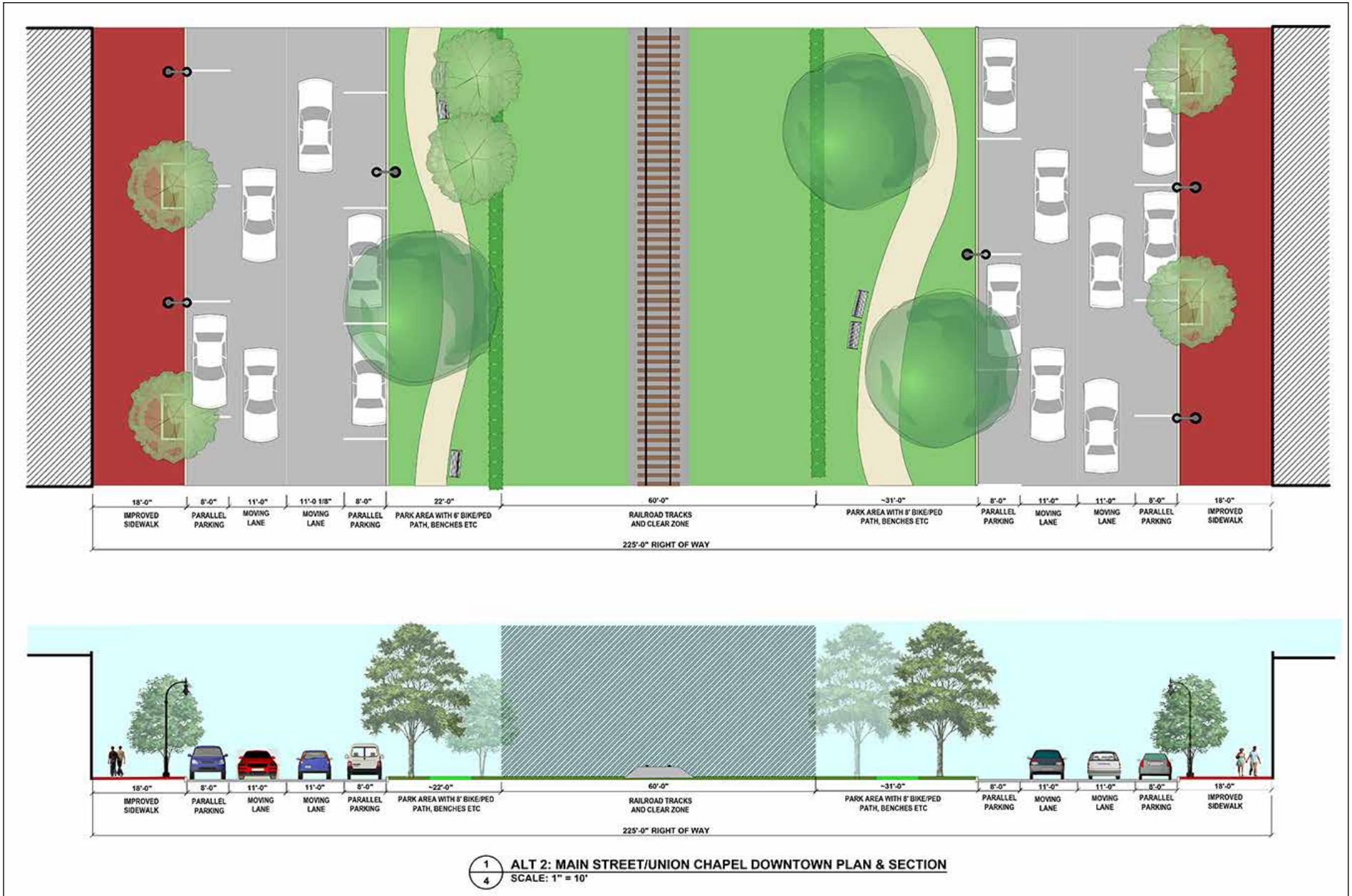
The usable space for pedestrians is further reduced because there are nearly continuous fixed canopies affixed to the front of the buildings. These are supported by columns on the sidewalk, and in the space between the columns and the curbs there are power/light poles that further restrict pedestrian traffic. See picture below left. This configuration and the overhead lines also make it impossible to plant street trees that could shade the sidewalk and allow better views to the storefronts.

The plan on the next page has no parallel parking, a continuous 3-lane road cross-section (center turn lane) with moving lane at 12' and the center turn lane at 13'. This allows the sidewalks to expand to 14', wide enough (once overhead lines are rerouted) to allow street trees and limited sidewalk dining or display. Because this proposed cross-section is on a State road, it will require NCDOT approval.

Overhead canopy supports and power poles restrict the area available for pedestrians along Third Street.



Existing Plan and Section on Main/Union Chapel. *The available right of way is restricted by a required 30' buffer from the centerline of the railroad tracks. This is shown as the grey area in the section. No trees, plantings, or structures can be located in this buffer.*



Preferred Plan and Section on Main/Union Chapel. *This is the cross section of Main and Union Chapel that the participants at the public meetings preferred. It provides shared bike and pedestrian paths in linear parks, wider sidewalks, and reorganized moving lanes and parking.*

B. Main Street and Union Chapel Road

The existing conditions on Main Street and Union Chapel Road are shown below right. Note from the aerial that the available space on Main Street (to the left of the railroad tracks) is narrower than the available space on Union Chapel (to the right). This is best shown by the fact that trees are planted in the median on the right (east) side of the tracks, but not on the left (west) side. The current cross-section reveals, as on Third, that space for vehicular traffic has been maximized and space for pedestrians and bikes minimized. The configuration on Main seems particularly generous to cars because of the very wide(~20') moving lanes. Sidewalks on each side are only about 10-12'.

Of the ~75' available on Main (outside the 30' railroad setback), only about 10' is provided for sidewalks. On Union Chapel, about 86' is available outside the railroad ROW. Of this, ~50' is provided for vehicles, ~12' is provided for sidewalks, and ~24' is allocated to a green space in front of the 30' railroad ROW. Because the 30' green space is unprogrammed, however, it does not serve as a park for the Town, although it could.

The preferred alternative for these roads is shown on the previous page. It reorganizes the parking to two moving lanes and two parallel parking lanes on each street. This allows the expansion of sidewalks to 18' and a linear park on each side of the 30' railroad setbacks.

The configurations shown have 2-way traffic on each of these streets, but a one-way pair might simplify the Third/Main/Union/railroad intersection. Traffic studies will be needed for this intersection in any case, so looking at the one-way pair option can be added to the mix.

The public reacted very positively to the idea of the linear parks. These areas would include grass, trees, accent planting areas,a wide pathway to serve both bikes and pedestrians, bike racks, benches, play areas, and artwork. More about this in Section 4.0.

3.2 Materials and Furnishings

Citizens were presented with a variety of options for paving materials, lighting, and furniture for the streets. The selected materials are shown in the images at right and on the following pages. These choices will have to be refined in the design development stage when construction drawings are prepared.

Paving Materials. There is a very wide variety of paving materials available today for consideration. Beyond poured concrete sidewalks, other possibilities include traditional brick pavers, concrete pavers in a very wide variety of shapes and sizes, stone, exposed aggregate, even plastic.

We did not encourage poured concrete sidewalks because although they will look great when installed, it is impossible to repair them seamlessly, since concrete changes color over time and matching colors is very difficult. Over time repairs and utility upgrades will require the sidewalks to be trenched, and while concrete patches would be obvious, pavers can be removed and replaced many times, extending the life of the Town's investment.

The people who attended the meetings preferred unit paving over poured surfaces, and brick over other options. Brick pavers are shown on the next page. Concrete pavers could be a good

BRICK

BLENDED REDS, RUNNING BOND

BASKETWEAVE PATTERN -- RED AND TAN

HERRINGBONE PATTERN (RED FIELD)
HEADER COURSE (BROWN BORDER)
SOLDIER COURSES (TAN AND RED BORDER)

PERMEABLE BRICK PAVERS

CHAMPHERED EDGE BRICK PAVERS

SQUARE EDGE BRICK PAVERS

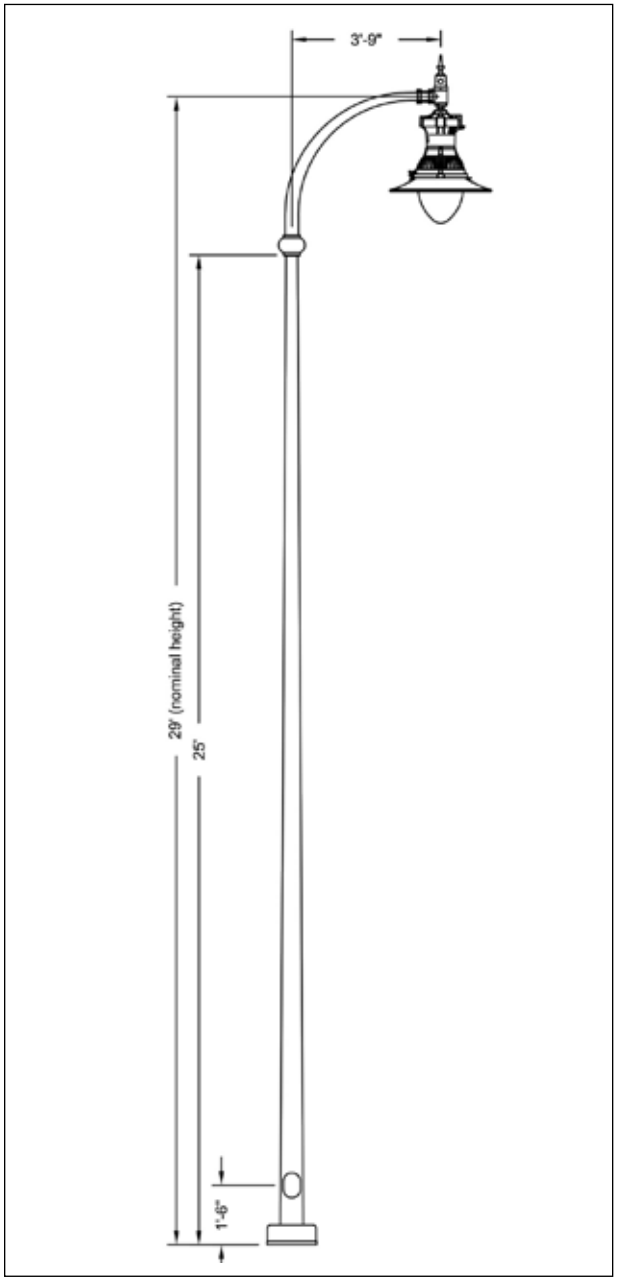
8"x8" SQUARE BRICK PAVERS

Brick Paving Options. *Various colors, patterns, sizes and shapes of brick. Many types of bricks are also available as permeable pavers.*

choice if a quality manufacturer is used. The colors of many concrete pavers will fade over time, and reds seem to be particularly unreliable. However, the more neutral or earth tone colors of concrete pavers can be an excellent option and there are many pavers that have interesting shapes and textures. This can be looked at in greater detail during design development. Stone and tile were also favored as accents.

Another option to consider is permeable pavers. These are now available in both brick and concrete, and can improve drainage and add LEED or Sustainable Site credits if these are desired or needed. Since drainage does seem to be an issue in the downtown area, this should be seriously considered.

Lights: The lights chosen were "depot" style that have down-facing luminaires and often a "shade" around the upper part of the light that directs the light downward and prevents glare. In order to control costs, we have suggested that taller street lights (as opposed to shorter pedestrian lights) be used, because it will allow for a wider spread of the light and thus a smaller number of fixtures overall. A drawing of this type of light is shown at right. The recommendation is that all lights and furniture be ordered in black. Black is the standard color for all manufacturers, so everything will match and there will be no upcharges. The pole shown is the one used in the intersections of the new streetscape in Goldsboro, NC. It is 29' high, and is made by Holophane with a glass lens (will not get cloudy over time) and a steel pole. There are a variety of manufacturers that make a similar type of light, so this can be explored during Design Development. Banner arms could be added with straps on the steel poles. Such lights range in cost from about $2,500-$3,000 each, depending on number purchased.



Holophane "Depot" style street lights.

If cost is a consideration, it is also possible to have Duke Energy supply and install the lights and to pay for them on a monthly lease. Duke maintains the lights, which relieves the Town of this responsibility, but the cost of the lease will, over time, far exceed the purchase cost, and Duke does not at this time have down-facing lights that would be suitable. Also, because the lights are direct-buried rather than bolted to a footer, the wiring for the lights must include a handhold box installed next to each light rather than connections within the base.

Benches. There is a tremendous number of materials and designs available for benches. Several choices were presented at the public meetings, and the preferred type of bench was one with metal supports and wood slats. This choice can also be refined at the Design Development stage. A few possibilities are shown below. The all-wood garden-type benches might also be considered for the linear parks.

Trash Receptacles. Trash receptacles should be very sturdy to withstand years of service. The standard for high quality trash receptacles is Victor Stanley that also has the advantage of being a well-established company that can reliably provide additional receptacles and parts in the future. They also carry a wide variety of styles and sizes. A few examples are shown above.

Bike Racks. Bike racks can provide a colorful accent on the sidewalk or in the linear parks. There a large number of manufacturers of bike racks, and each has a large number of styles, sizes, capacities and colors. It is also possible to design your own bike racks. The bike rack shown at the bottom of the photo at right was constructed from bike frames welded together and painted in bright colors.

Planters. Planters are a way to soften the streetscape through the introduction of plants for seasonal color and interest. The citizens who attended the public meetings expressed a preference for simple lines for the planters. Pictures of the types of planters they favored are shown at lower left. Planters do require regular maintenance, watering, and replanting in different seasons.

Tree Grates. Tree grates are only recommended where the sidewalk is very narrow and the additional walkable space (over the tree pit) is needed.

The photo above right shows a 4.5' x 10' tree pit planted with low shrubs on a wide sidewalk in Goldsboro. The lower left photo shows a 4' x 6' tree grate used on a very narrow sidewalk in New Bern.

The reason they are no longer in favor except in these circumstances is that unless they are properly maintained, the tree trunks are often girdled as they grow, killing or damaging the tree. The space under the grates also often collects trash and grows weeds. Because of this, and when space allows, larger tree openings, increased areas of soil, and plantings in the tree openings are more often used and are healthier for the trees.

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4.0 MASTER PLAN

4.1 Approach

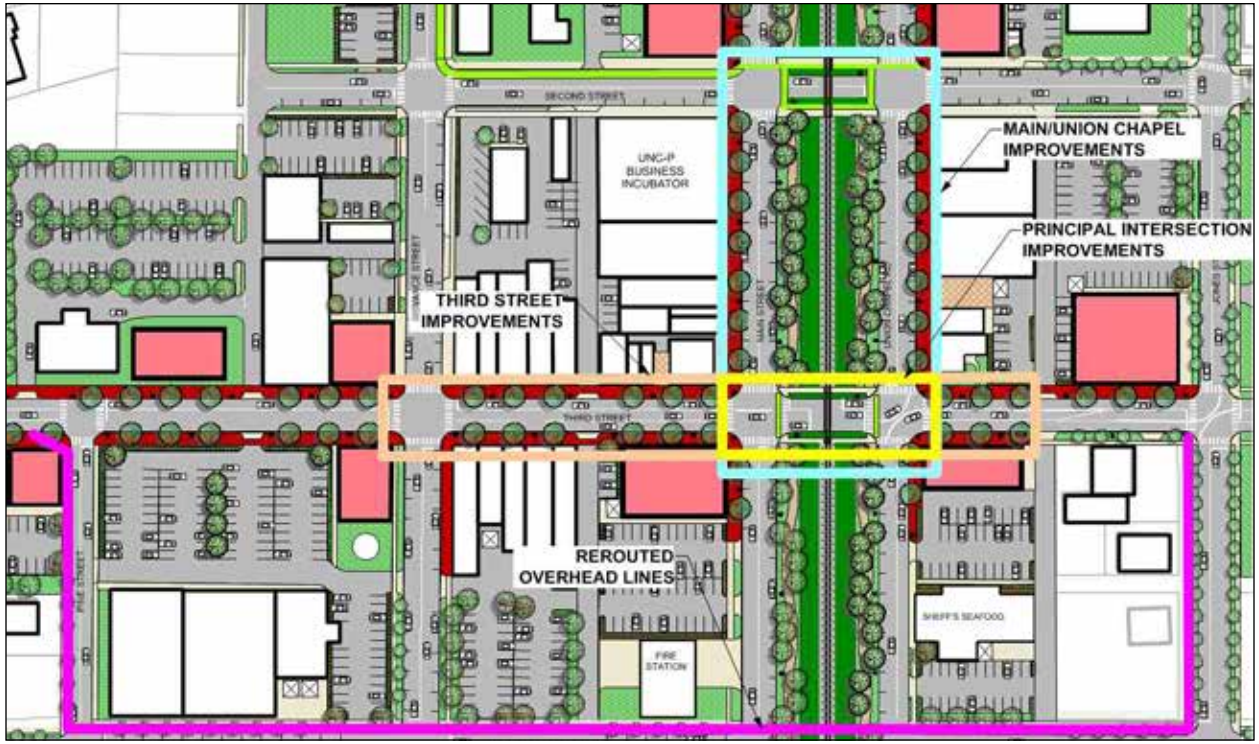
Usually in a master plan the overall plan would be the starting point and then more detailed discussions on smaller areas would follow. In this case, we will begin with the proposed street improvement area and work outwards to the entire plan because the Town's original area of interest was street improvements. The central area is the one we looked at in greatest detail, and for which we developed estimated costs that can be found in Appendix A. The overall plan is shown on page 20 to provide context for the smaller areas.

4.2 Downtown Street Improvements Areas

A. Design

Third Street and Main/Union Chapel will have similar sidewalk design, but the overall impression will be very different in the two areas because of the much wider right of way (ROW) on Main and Union Chapel, the railroad tracks, and the proposed linear parks.

The design for the two areas is based on preferences expressed by citizens at the public meetings as presented in the previous section. The proposed conceptual design for Third Street is shown in the next page. It includes slightly wider sidewalks and the preferred lights and materials as illustrated with a "before" photo and an "after" sketch. This design would create a more comfortable pedestrian zone by removing the overhead utility lines and building canopies to allow street trees to be installed, creating shade while allowing better views to the storefronts.



This detail from the overall plan shows two possible early implementation projects in the downtown. One would include Third from Vance to Union Chapel (shown in orange), and one would include Main/Union Chapel from Fourth southward to Third (shown in light blue). The yellow box between the two projects is the intersection of Third with Main/Union Chapel, and costs for this area were estimated separately in case the two projects are not completed at one time. Shown in magenta is the suggested rerouting of overhead lines from Third to Fourth. Any improvements to Third would require this relocation, but the improvements to Main/Union Chapel, if done first, would not require overhead line relocation.

Two Main/Union Chapel "before" and "after" sketches are shown on page 19. On the Main/Union Chapel design the sidewalks are considerably wider (existing 10-12' to proposed 18') to allow sidewalk dining. Existing angled or head in parking was removed in favor of two rows of parallel parking on each street, leaving sufficient room for a linear park on each side of the railroad ROW. The curvilinear paths in these park areas are meant serve both pedestrians and cyclists who travel from the University and the Tribe headquarters. These paths are discussed later in this Chapter in Section 4.3D, page 24.

Eventually, improvements to Third should extend beyond the areas shown on page 17 to just west of Pine eastward to and including the intersection of Third with Jones. This stretch of road takes

Third Street Before photo and Concept Sketch.

Union Chapel Looking South *"before" photo (above) and "after" sketch (left). This sketch best shows the width of the new sidewalks and the space available for sidewalk dining.*

Union Chapel Looking North *"before" photo (above) and "after" sketch (right). This sketch shows more detail of the linear park.*

The Master Plan *for the entire study area is shown above. Detailed views throughout this section will explain components of the plan.*

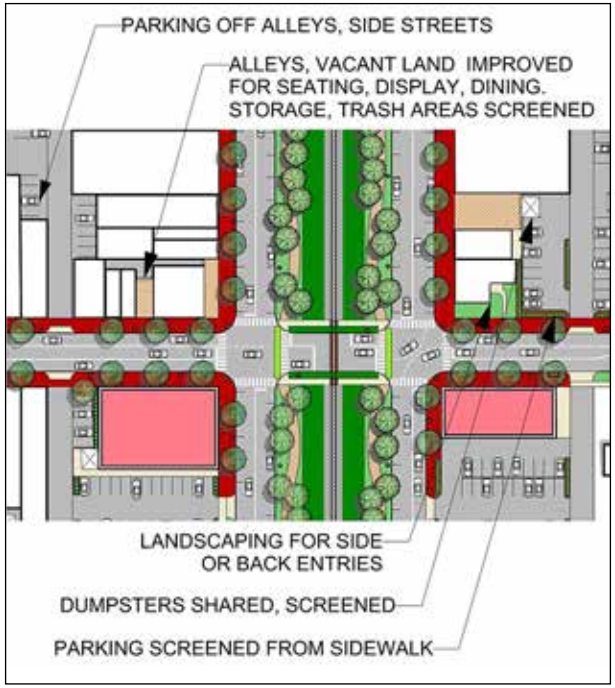
in most of the remaining historic buildings along Third, so this stretch would receive the highest level of street and sidewalk improvements. Likewise, improvements to Main/Union Chapel should eventually include the entire area from Fourth Street on the south to the railroad tracks immediately north of Town Hall. Improvements should also include connections from Main/Union Chapel to the proposed bike paths west along West Railroad Street to UNC-P and eastward along East Railroad Street toward the Lumbee Headquarters (see overall plan on page 20 and discussion of bike paths in Section 4.3D, page 24).

Design intent for both streets include minimizing curb cuts along these streets. Driveways are shown on Third at the designated alleys between Vance and Main and between Union Chapel and Jones. If possible entry drives to parking lots in the historic core area should be off the alleys or side streets, not Third.

The exception to this is that the plan shows curb cuts for parking/service access south of Third on Main and Union Chapel, where the low concentration of buildings create logical locations for parking to serve nearby businesses.

The rest of Main and Union Chapel north of Third is shown free of curb cuts, with parking and service access from side streets or alleys. By making these improvements on the two "highest and best" streets in the downtown area, the image of the downtown will be changed for the better in a significant way.

Along Main and Union Chapel, existing alleys (such as the one between Cynas Jewellers and the building to the north or between Tokyo Restaurant and the Native American Design Services building) are now used for storage. These alleys and any setbacks between the ROW and the buildings should 1) not be used for parking, and 2) either use these spaces as a courtyard or dining space or completely screen them from view from the sidewalk. See illustration below.



B. Street Improvement Cost Estimates

Complete estimates for streetscape improvements can be found in Appendix A. These estimates are for improvements to the areas outlined on the plan on page 17, including infrastructure, all surface treatments (paving, lights, furniture, roadways repaving, and intersection improvements such as signalization and signage), design fees for construction documents and construction observation, and contractor fees. Estimates err on the side of higher costs rather than lower costs in order to ensure adequate funding.

When we began the process of studying the downtown to determine the best locations for street improvements, we developed cost estimates for the larger downtown area including Third Street from Pine Street to Jones Street, and Main/Union Chapel from Second Street to the railroad tracks north of Town Hall. We soon realized that this was too large and expensive a project to start with, so the areas outlined on the plan on page 17 include smaller areas of Third from the intersection of Vance eastward to and including the intersection with Union Chapel, and Main/Union Chapel from Fourth south to and including the intersection of these streets with Third.

The intersection of Third with Main and Union Chapel was estimated separately so that Third could be improved without Main/Union Chapel and vice versa. Third will be the more expensive of the two possible projects because the overhead lines will have to be rerouted from Pine to Jones Street on Fourth. If Main/Union Chapel is done first, the overhead lines along Third could remain in place until Third is improved at a later date or until additional funding is available.

The estimate for rerouting the overhead lines is $288,000.00. It was not possible to get a firm quote from the utility companies without substantial fees, so this is an approximation from Wooten engineers who have experience with utility work.

The estimate for improving the intersection of Third with Main and Union Chapel is $947,000.00. This includes all subsurface utilities (water, sewer, etc)and all surface improvements within the intersection (street lights, sidewalks, traffic signalization, pavement, curbs, etc).

The improvements to Third are estimated at $1,593,000 including rerouting the overhead lines. Add to this the intersection at $947,000, and if

Third is done without Main/Union Chapel, this project would cost $2,540,000.00.

The improvements to Main/Union Chapel are estimated at $1,105,000.00. Once the intersection is added (i.e. if Third has not already been improved), the estimate of costs is $2,052,000.00. It might be possible to improve Main/Union Chapel without some of the improvements to the Third/Main/Union Chapel intersection at a cost closer to the $1.1 million figure.

If both projects were to be done at once, the cost would be $3,645,000.00, or slightly less because start up and construction management costs would be for one project instead of two or three.

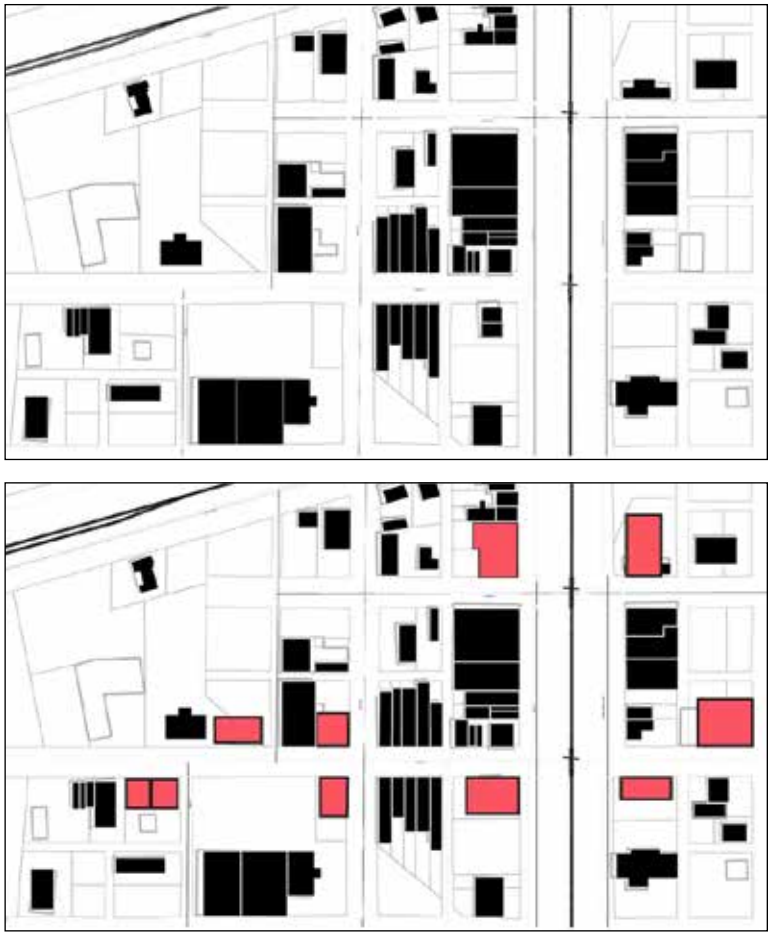
4.3 Overall Master Plan

The entire area of the master plan is shown on page 20. The salmon-colored buildings shown throughout the plan are suggestions for ways that infill building could be added to create a more cohesive and pedestrian-friendly environment in the downtown area. Many of the principles embodied in the plan are explained in greater detail and quantified in the Design Guidelines, Appendix XX. Understanding and implementing these principles going forward will be essential in order to attract funding and investment.

A. Building Density and Siting

The drawings shown at right are "Figure-Ground" drawings. The top drawing shows the existing buildings near the heart of the downtown and the lower drawing shows how more buildings could be added over time closer to the ROW. Historic downtowns were traditionally the most densely settled areas of towns and cities, allowing people to arrive in the downtown and shop for all the items they needed within walking distance. That began to change to more auto-oriented land use patterns in the 1950s, but the most successful downtowns retained downtown density while adding less-dense auto-oriented uses at the fringes of downtown.

In many smaller communities (especially in the United States) downtowns were often abandoned for suburban-style strip development. As historic downtown buildings deteriorated, parking lots and strip-commercial uses were added in an attempt to compete with this new model. The results are often the kind of disjointed development seen in the Existing Figure-Ground drawing. With vacant buildings and gaps in the storefronts these downtowns became unattractive for pedestrians, leading to further deterioration. The clearest example of suburban-type development in the downtown can be seen on the south side of the block between Pine and Vance, where the buildings are at the back of the block and the parking lot dominates the view along the street. This is further emphasized by the lack of a sidewalk along the street. The photo on the next page shows what this type of development looks like from the street. As these existing stores are likely to remain in the foreseeable future, an interim solution would be to install sidewalks and a hedge or wall between the sidewalk and the parking lot. This is illustrated in the plan.



Existing (top) and conceptual ***Figure-Ground Drawings*** *for the core downtown area.*

In the past few decades there has been an increasing appreciation for the character embodied

in historic downtowns. Historic Preservation organizations and Main Street programs have proven that vital, walkable downtowns are often the key to community economic revitalization. The Proposed Figure-Ground drawing shown on the previous page illustrates how thoughtful infill over time can help restore a more attractive and walkable urban fabric to downtown Pembroke.

B. Parking

Parking is an important part of any commercial area, and it should be organized to be readily available without being too visually prominent. Parking lots off public ROWs should be located to the side and rear of buildings, not in front of them. For places where parking in front of buildings already exists, it should be screened from view with a hedge or wall that is low enough to allow visual surveillance (for safety) and tall enough the hide the bumpers and tires of cars. Standards should include trees if space allows (e.g. for lots over a certain size).

There are many examples in the plan of ways that parking lots can be organized or reorganized throughout the downtown to make them more attractive. Space can be created for a hedge or wall by requiring a minimum 5' setback from the property line. Driveways entering properties should be no wider than 24', and only one driveway should be permitted per 100' of frontage. See right for one example of existing conditions (aerial photograph of existing parking) and a concept for parking reorganization (below right).

On-street parking is organized on a 22' parking space length. This corresponds to the spacing of street trees and lights so these elements fall between spaces, avoiding the problem of car doors opening into tree pits or hitting light poles.

Existing and Conceptual parking organization on the block between Union Chapel and Jones north of Third.

C. Sidewalks & Street Trees

Over time it should be a priority to install continuous sidewalks and street trees throughout the study area. Different communities approach this goal in different ways. Sometimes street corridor improvements can be used as an incentive for new development. Other times the community requires the installation of sidewalks by the developer. The highest priority should be to install sidewalks and trees between the core historic downtown and both UNC-P and the Tribe Headquarters along Third. Because Third is a state road and a major route to points east and west, these improvements would have a big impact relative to their cost. 4' or 5' concrete sidewalks set back from the edge of the road and a grass strip with Crepe Myrtles or other small trees that will fit under the overhead lines would be all that would be required.

UNC-P and the Town have implemented bus service between the University and various locations in Pembroke, and the design described above would allow installation of bus shelters along Third either at the curb or behind the sidewalks.

Although it will not be possible to install sidewalks everywhere in the foreseeable future, planning for new uses should include the assumption that they will be installed at a later time. This will ensure that parking screening and connections from future sidewalks to building entrances can be part of new development site planning, and that space is reserved for future sidewalks and tree planting areas.

D. Bicycles

In a town with many University students and young people, bike paths and facilities are not a gesture toward complete streets but a necessity if the downtown is to succeed. Bike/pedestrian paths or lanes are not recommended on Third because the ROW is too narrow to safely accommodate bikes, so other safe routes were identified.

All off-road bike/pedestrian paths are shown at 10' wide which will safely accommodate both bikes and pedestrians. The path from the University originates at N. Odom Street and follows the south side of W. Railroad Street to Vance Street, where it crosses the east-west tracks. From there the bike path is shown as a painted lane on Vance Street to Second Street and then to Main Street and the curvilinear bike/pedestrian paths shown along Main and Union Chapel.

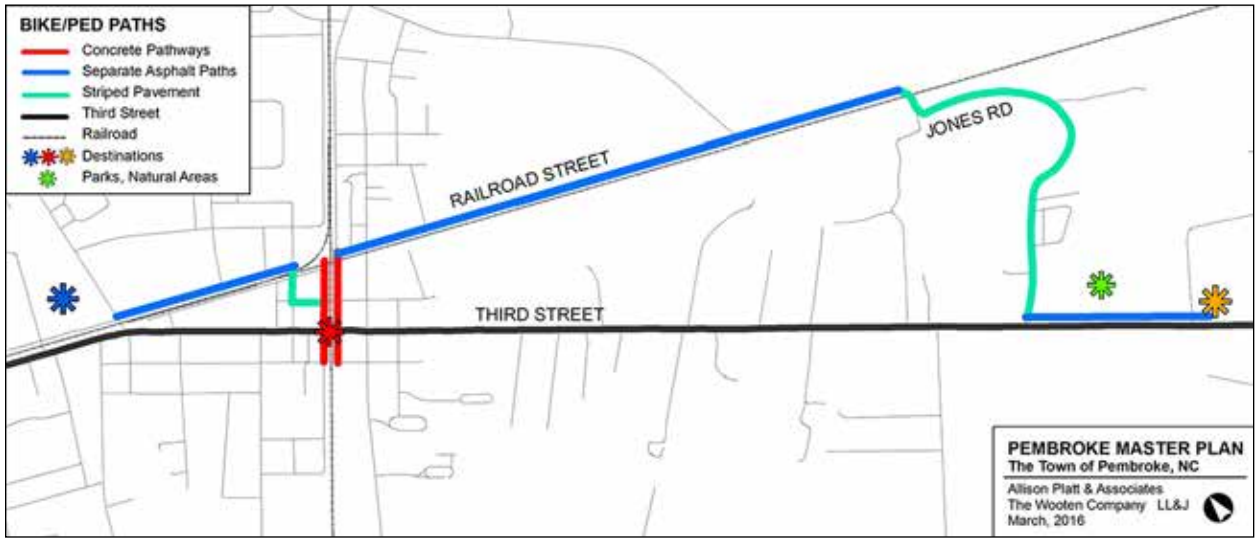
The bike route from the Tribe headquarters originates at the Headquarters building and follows the south edge of the park (or it could even go through the park) to Jones Road, then north on Jones across the railroad crossing to East Railroad Street, west to Union Chapel Road, then back across the tracks to connect to the curvilinear paths on Main and Union Chapel.

Along the paths on Main and Union Chapel there should be various locations with bike racks so people can shop and dine downtown. There has been increased funding available for bike infrastructure for the past 5 years or so, and this will be discussed in the next chapter.

Regarding types of paths, the paths along East and West Railroad Street are intended to be 10'-wide asphalt paths separated from the road (these are shown in blue at the diagram below). The price for this type of path is estimated to be ~$32/linear foot. The path shown is ~2100', resulting in a cost of $67,200.00. The east portion is much longer; the price for that section and the section along Third Street totals ~9100 l.f. and would cost ~$291,200.00. Separating them from the road means that they do not have to meet more stringent and expensive road construction standards, so this is the recommended treatment.

If they were constructed as a wider shoulder on the existing road the cost per linear foot would be ~$64. The cost for this type of pathway would be ~$134,400.00 for the west section and $582,400.00 for the east section.

Based on further evaluation of the widths and traffic volumes on East and West Railroad Streets, it might be possible in the short term to stripe the existing road shoulder or simply add "Share the Road" signage, but this is not recommended as a long-term solution.



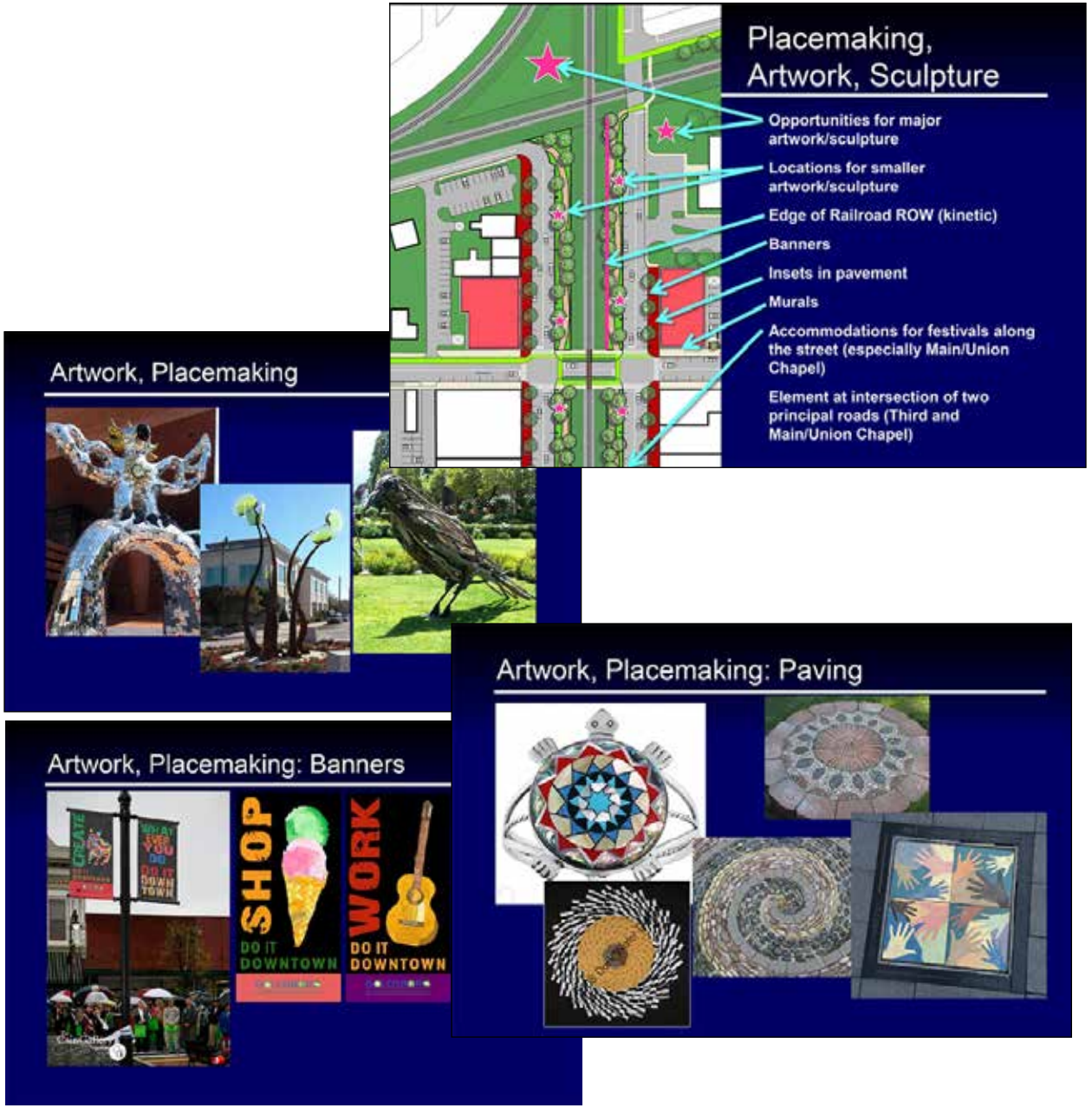
This drawing shows types of pedestrian paths. All except the green paths are 10' wide and intended for use by both pedestrians and bicycles. The green paths indicate painted stripes on the asphalt and are not intended for pedestrians. The blue paths would be typical asphalt pathways; the red lines indicate concrete for a more finished look in the downtown area.

Pathways within the linear parks would cost more because we are assuming these paths would be concrete and not asphalt, which is more appropriate for a downtown area with a higher concentration of pedestrian traffic. This cost is estimated at $60 per linear foot. The first section (1 block) of Main/Union Chapel was estimated to be ~$35,800.00, based on ~$6.00 per square foot. (The cost for the entire three blocks of Main Union Chapel was estimated to be ~$169,400.00.

Connections between the Railroad Street bike/ped paths and the linear park paths would be painted lines or lanes on existing asphalt, or in some cases “Share the Road” signage. An allowance for striped pavement between W. Railroad Street and Main Street is estimated at $8,800.00. “Share the Road” signage may work as a permanent solution on Jones Road because it is not presently heavily travelled. The same might be true for E. Railroad Street in the mid-term, because this appears to be a very lightly travelled road, but this should be evaluated further. See more discussion about funding possibilities for bike paths in the next chapter.

E. Placemaking/Art

The streetscape elements presented must be understood as the framework for improvements, not necessarily the final design. A unique character or sense of place is created over time through a more interactive process that will take the design framework and weave into it the unique culture and history of Pembroke. There are many ways in which placemaking can occur. For instance, the design for the sidewalks could provide locations and paving elements that can be changed out for tiles or designs prepared by local artists. Banners on light poles can also add a bright accent to the street, and can change for special events, in different locations, or seasonally. The image at top right on the previous page illustrates just a few locations



Typical locations for artwork and banners (top right); sculpture, banners, and paving elements that can help to make the downtown unique and interesting. Another element to consider is murals on the sides of buildings.

for artwork that can be added over time. The other images illustrate some of the elements that can personalize the streetscape. It is often difficult to place these elements as the streetscape is being installed, but a carefully thought-out plan can allow for these elements to be added over time.

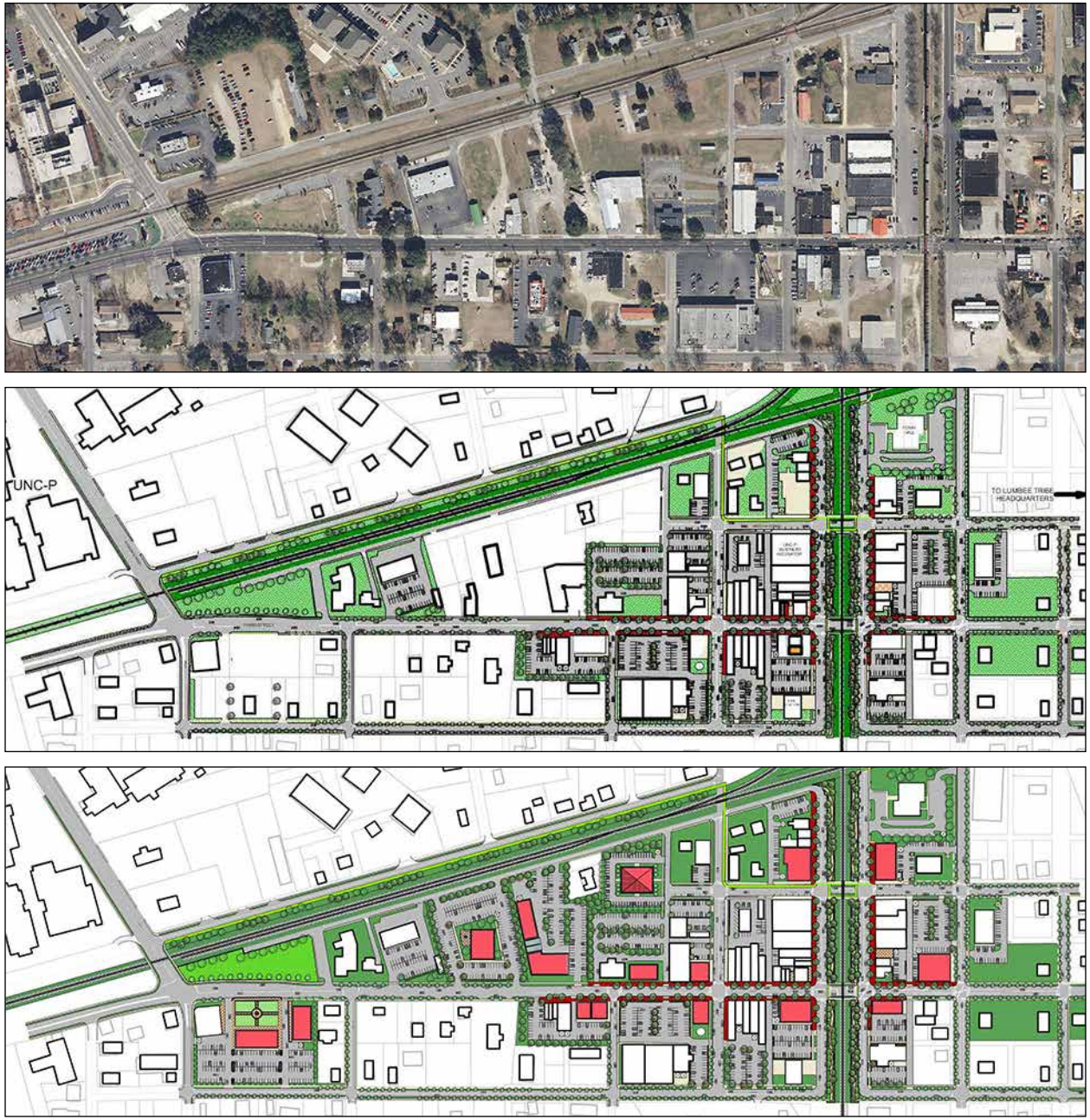
F. East and West Third Street Corridors

The eastern Corridor between the downtown and the Tribe headquarters is newer and better organized than the west side. It definitely has a strip commercial character, and there are some remnant homes mixed in, but the commercial buildings are newer and the spaces around the buildings are better organized. The installation of continuous sidewalks, crosswalks and small street trees would improve this area greatly.

The corridor to the west of the downtown area currently has a commercial strip character with some remnant houses, a church, and a new park near the University. This area at present does not have a consistent character, and vacant land, lack of continuous sidewalks, and many buildings in fair to poor condition make it a barrier between the downtown and the University.

The aerial photo at top right shows the existing conditions from the downtown to the University. The middle plan shows the master plan without improvements west of downtown. The middle drawing illustrates that this area will remain an impediment to students and faculty visiting the downtown. The plan at bottom right shows this area with conceptual redevelopment in areas with mostly vacant land or where the existing buildings are in poor condition.

Before discussing concepts for this area, it is important to remember that a master plan drawing presents possibilities rather than concrete recom-



Aerial showing existing conditions to the west of the historic downtown (top); center plan shows improvements to the downtown, but no changes to the west; bottom plan shows conceptual redevelopment of this area.

Key to Corridor Site Concept discussion.

mendations. No current uses will be removed unless the owner wants to sell the property or improve it themselves. Once the owner sells or requires approval for improvements, however, the design guidelines (not the plan itself) will apply.

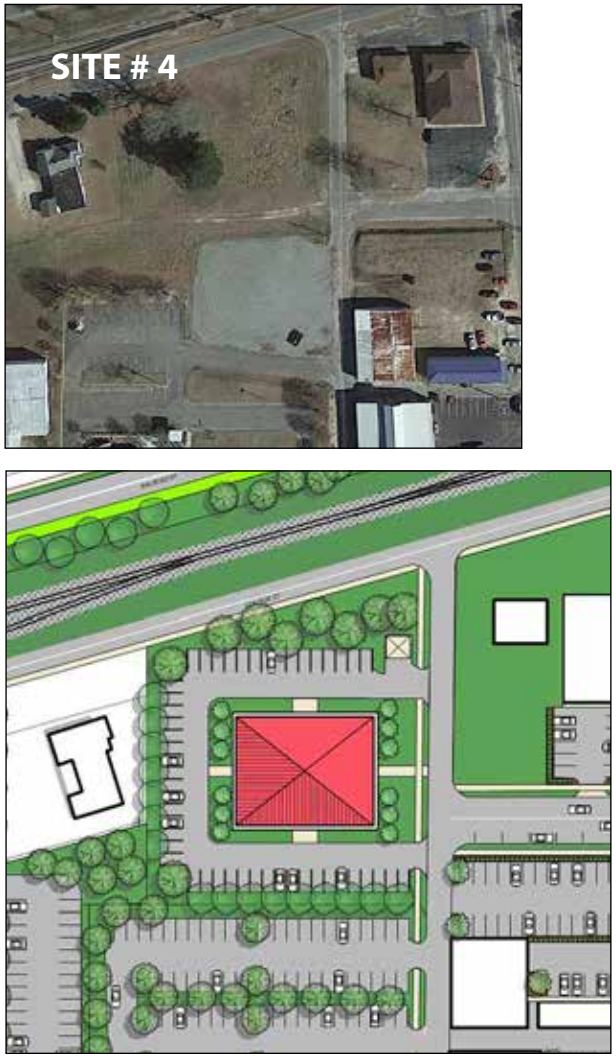
There are four areas on the western portions of Third for which we have prepared redevelopment scenarios to illustrate important site and building recommendations. These areas are outlined and numbered above.

Starting from the west, **Site #1** (right) is mostly vacant except for a couple of residences on Fourth Street and an existing and fairly new building on the northwest corner of the site (which remains in the redevelopment concept). These properties are not currently assembled into one holding, which would be necessary before development of this type could proceed. The site is very close to the University and for that reason redevelopment seems very feasible. Rather than developing the properties piecemeal, assembly would allow a more carefully designed project that would create an attractive gateway from the University towards the downtown. The buildings are clustered around a central green space and parking is to the rear. Driveways into the complex are accessible from Third Street, Odom, and Fourth. Uses for these buildings would most likely be mixed retail and restaurants. Existing and conceptual development is shown below.

Site #2 illustrates what a dine-in chain restaurant might look like in place of the current uses, which are not historic and were evaluated as in poor to derelict condition. The conceptual layout shows one bay of parking in front of the building. One bay should be the maximum amount of parking allowed in front of a building, and parking should be screened from the street. The type of restaurant envisioned is a Texas Roadhouse, Outback, or similar. Enclosed outdoor dining is shown on the west side of the building shown below.

Site #3 shows a configuration that would work for a consumer goods store selling items such as furniture, electronics, or appliances. Such a store near the campus might be ideal in this location where a changing group of students and faculty would have use for such items. Parking has been removed from the front of the building, with the main entrance from the side parking lot. The building is set back slightly to allow for landscaping since the scale of such buildings is quite large in comparison to other buildings in the area. Existing and proposed configurations are shown below.

Site #4 illustrates the way medium-density residential could be built near the downtown. The apartment complex on W. Railroad Street near this site demonstrates that this type of residential could work here, especially after the downtown area becomes more successful. This property is currently vacant so acquiring it would be less complicated than some of the other proposals.



4.4 Conclusion

More about the principles behind these recommendations can be found in the Design Guidelines, Appendix XX. Implementation priorities and responsibilities are outlined in the next chapter, along with responsibilities and timelines.

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5.0 IMPLEMENTATION STRATEGIES

5.1 Getting From Here to There

Pembroke has many assets on which to build a better future for its citizens. The best strategies require laying the groundwork for positive growth and making a commitment of public funds to the most promising project(s). Such projects will have the best chance of leveraging improved image, increased visitation and citizen pride, and ultimately, desired private investment. Once public agencies and private investment interests are confident that the community is committed to positive change, grants, loans, and development projects will follow.

There is a significant segment of the population that believes that any increased investment by a government body is likely to be unnecessary and should be avoided. But these same people understand completely the dynamics of, say, home ownership, which apply equally to town stability and growth. No one would suggest that if your house needs a new roof that you shouldn't figure out a way to get it done, because otherwise the value of your house and perhaps even your family's well-being is endangered. When the value of our homes or our communities begins to fall, action must be taken.

The time for action has arrived in Pembroke, and those who care about the community or are entrusted with its care should take action to reverse downward trends.

Improvements to the Third Street and Main/Union Chapel streetscape is investing in your highest and best public asset and supports the Town's partners, UNC-P and the Lumbee Tribe. Revitalization of historic downtowns throughout North Carolina in communities large and small has proven to be one of the most effective ways to begin revitalization not just of the downtown, but of the community that the downtown represents. The money invested in downtown and especially streetscape projects has proven time and again to generate private investment and increased tax base many times greater than the cost of the initial public investment.

Here are a few examples:

- *In New Bern (pop 27,000), ~$500,000/block (54' ROW) x 8 blocks ($4 million) resulted in $260 million in private and public (State and Federal) investment. Tourism was $12 million a year in the 80s; in 2007 tourism totaled $108 million;*
- *In Goldsboro, (pop. 36,000), since planning for the first block of downtown streetscape improvements was initiated in 2010, there have been:*
  - *49 new businesses opened in downtown;*
  - *9 homes purchased for rehab that were in condemnation proceedings;*
  - *9 new investors in downtown commercial buildings and numerous rehabs either completed or in process;*
  - *Award of several additional grants (including a SmART grant and designation) based on community momentum;*
  - *Won the "Great Main Streets in the Making" award from NCAPA before the streetscape was even finished. Won the "Best Outdoor Space Improvement" from the NC Main Street program and hosted the 2016 Main Street conference with record-breaking attendance.*
  - *Goldsboro began in the 90s by creating a downtown master plan and a neighborhood master plan, and recruiting partners such as Self-Help and Preservation NC. They also kept in constant contact with elected officials and agencies at the state and federal levels*
  - *In 2010-12 the City borrowed money to pay for the first block of streetscape at $1.4 million, and won grants to stabilize their train station*
  - *In 2013 the City paid for design services for two more blocks*
  - *In 2014 the City applied for and won a $10 million TIGER V grant based on all the activities up to that point*
  - *A third block of Center Street, a Transit Center near the Railroad Depot, and improvements to the street connecting Center Street and the Train Station were also funded through TIGER V.*
  - *Based on the success of the first TIGER grant, Goldsboro won an unprecedented second $5 million TIGER grant in 2016.*
- *In downtown Raleigh, a $10 million investment in Raleigh's Fayetteville Street produced about $3 billion in investment in 6 years.*
- *In Salisbury (population 34,000), since the 2001 master plan was adopted and they began addressing streetscape needs, they have seen over $60 million in investment.*

This section includes recommendations for:

- *Streetscape Improvements;*
- *Land use considerations;*
- *Citizen engagement and themes;*
- *Streetscape next steps including infrastruc-*

ture considerations, estimated costs and possible sources of funding.

5.2 Priority Actions

The first step in implementing this master plan should be for the Council to adopt it and the University and the Tribe to endorse it. The stakeholders in Pembroke must work together to accomplish these goals. A joint working group might be formed to begin exploring grants and loans and to develop a work plan, provide needed data and economic studies, and to advocate for State and Federal grants and loans with elected officials and agency representatives. This must be and ongoing advocacy for the foreseeable future in order to make a real difference in the life of the Town.

Within the Town itself, the highest priority should be the downtown core because there must be a "there" worth visiting. It is also critical because the Town needs to demonstrate that they are committed to change and invested in your future in order to be considered for the grants and loans that will be necessary to implement this program over the long term. Second priority should be the Third Street corridors and the bicycle/pedestrian connections from UNC-P and the Tribe headquarters.

5.3 Land Use Considerations

The highest priority for land use improvements should be core historic commercial area of Pembroke. While street improvements will help change perceptions about the downtown, standards are needed for historic building rehabilitation and site planning.

At the same time, commonsense standards for the commercial development outside the historic core are also needed to create attractive entries into the downtown and to strengthen ties between destination within the community. These types of improvements are discussed in Chapter 4 and Design Guidelines are provided in Appendix XX. These areas are important because visitors to Pembroke are likely to pass through them and begin to form an opinion about your community while on their way to primary destinations. Looking toward the future, the fringes of the downtown are especially important because once the downtown core begins to redevelop, these areas could be viewed by potential investors as either an opportunity or a constraint.

Figure 5.1: This new mixed-use project in Morganton is a great addition to their downtown.

Permitted uses in the downtown core should be revised to discourage auto-oriented uses and encourage uses more appropriate to a walkable downtown, including housing, institutional, office, retail and mixed use. A good example of a new mixed-use development (commercial and residential) in downtown Morganton is shown above in *Figure 5.1*. A more urban version of this type of development for downtown would also allow office uses that are currently on the first floor of commercial buildings to relocate to upper floors, allowing more pedestrian-friendly restaurants and retail shops to be located on the street. For this reason, new buildings in the core historic area might be encouraged to be at least two stories rather than one. While such uses might not be viable in Pembroke now, they could be in the future.

At the same time, design guidelines should be put in place and zoning controls should be more rigorously adhered to in the entire downtown area to create more urban, dense land-use patterns and site controls. A few examples are given throughout this report, and include standards for such elements as:

- *The location of buildings on the site (near the ROW);*
- *The location and design of parking (to the side or rear of buildings, screened from the sidewalk);*
- *Screening of stored vehicles, trash, and utilities;*
- *Allowed construction materials (e.g. no metal buildings or Drivit);*
- *Standards for landscaping, fencing, and setbacks between non-compatible uses.*

There are those who feel that having too many standards discourages investment, but observation of the revitalization process proves otherwise: High quality developers are unlikely to invest significant resources in a community where there is no guarantee that nearby properties will develop to the same high standards.

5.4 Citizen Engagement & Theme

Town leadership has a crucial role to play in revitalization, but citizen engagement is equally important in order to win approval of strategies and to develop a well-rounded and nuanced "character" or theme for the downtown area and the Town as a whole. Citizen engagement involves all age groups, many different perspectives, and many interests. A stakeholder group might begin the process of encouraging citizens to participate in the revitalization process through committees, visioning, participation on boards and commissions, and so on. Complete streets, downtown Wi-Fi access, bike paths, handicap access, concerts and other arts-related activities help to engage citizens and bring in new visitors. Such activities are also the best way to begin raising the profile of the community. The linear parks on Main and Union Chapel could easily become a preferred location for community activities, helping to create a sense of ownership in and support for improvements to Pembroke.

5.5 Streetscape Implementation

The highest priority project to begin the revitalization process should be implementation of streetscape improvements presented in Chapter 4. Early implementation projects were separated into three component, with estimated costs presented in Appendix A. The Town should choose one of these projects and work on implementing it as soon as possible. Without taking the initiative on some aspect of implementation (preparation of construction drawings, implementation of some portion of the plan, etc), it is less likely that funding agencies provide the necessary loans or grants needed for ongoing implementation. Funding agencies have less money to distribute, so competition for available funds is greater than ever.

A. Streetscape Materials

See Section 3.0 for images of materials favored by citizens and staff for the streetscape. These materials, furniture and light selections are preliminary and will need to be further developed in the CD (construction document) Design Development stage.

B. Infrastructure

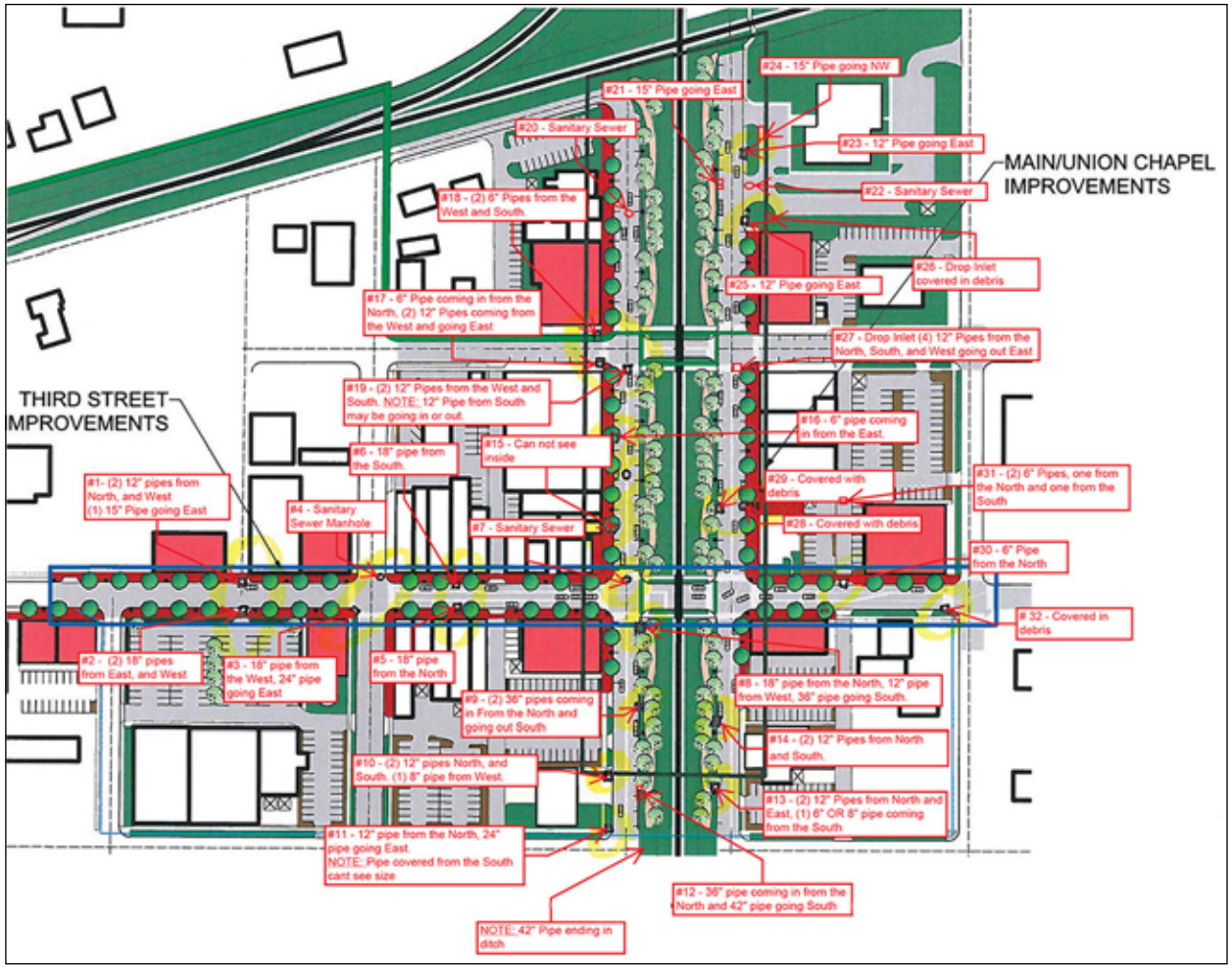
The Town of Pembroke has completed infrastructure assessment activities in various locations across their utility infrastructure systems over the years. Data collected in these assessments, historical data available, knowledge of the Town's staff and visual surveys performed by the team were used collectively to develop an understanding of current conditions.

The Town's existing water system dates back to the 1930s with the historic downtown area anticipated as being some of the oldest sections of the system. The water mains within the down-

Infrastructure improvements in Goldsboro, NC.

town area are primarily 6-inch diameter pipe. Fire hydrants are included at multiple locations through the area to provide fire protection. Based on the life expectancy of the materials which make up the water system within the downtown area, replacement of the existing water infrastructure is proposed. Further assessment, to possibly include internal pipe inspections, fire flow verifications, and valve and hydrant operability confirmation could be performed to further define existing condition and verify what segments if any have been upgraded since the original installation.

Pembroke's wastewater system also dates back to the 1930s with the historic downtown area anticipated as being some of the oldest sections of the system. The configuration of the wastewater system is such that two primarily gravity interceptors pass through the downtown area. One flow from west to east along Third Street conveys flow from the University area to a Jones Street flow and ultimately to the Town's Wastewater Treatment Plant. The second primary Interceptor begins at the Third Street Interceptor and extends north within the alley between Main and Vance Streets. This Interceptor serves a significant residential area on the north side of the downtown. Successful continued operation of these Interceptors is vital to maintaining service to a substantial portion of the system's customers.



This map overlay records information gathered on the stormwater system during the master plan process.

Prior assessment has verified a large portion of the wastewater collection mains consist of vitrified clay pipe and manholes constructed with clay brick and mortar. Operationally, the system can become inundated with rainfall-induced inflow and infiltration causing surcharge which can lead to backups into the properties served if it becomes severe enough. A combination of replacement and rehabilitation could be implemented to renew the collection system in the Downtown area. Considering the presence of the two significant Interceptors described previously, confirmation of the capacity needed in these lines in the future should be considered in conjunction with improvements.

Historical information associated with the storm drainage system within the downtown area is virtually nonexistent. It is likely that much of it was installed in conjunction with the paving of the streets. Generally the northern sections of Town drain to the north into Bear Swamp and its tributaries and the southern sections of Town drain to the south into the Lumber River. With the Downtown area being situated nearly on the dividing line it is anticipated that portions of the area may flow north while other portions flow south. As part of this Master Plan effort, a visual inspection of the existing storm drainage infrastructure within the Downtown Area was completed (see map above). Where possible pipe sizes were determined and flow configurations were approximated. In addition local knowledge provided verification that especial-

ly during periods of significant rainfall, the existing storm drainage network is insufficient.

As part of any selected improvement project it is recommended that the storm drainage needs of the project area be evaluated in detail and new infrastructure implemented to achieve proper drainage. In the interim, any efforts that the Town is able to devote to identifying the location and condition of the existing storm drainage network within and contiguous to the Downtown area will be beneficial as the project moves into design.

Replacement of all utilities must be in accordance with all applicable State and Local requirements. During construction it will be critical to minimize the interruption of service to the adjacent customers. To the extent possible, the improvements should be designed so that new lines are installed and ready to be put into service prior to taking the existing lines out of service.

C. Project Cost Estimates

Project cost estimates are located in Appendix A. The unit costs were taken from a comparable project bid in 2014. Estimates include "soft" costs such as design, bidding, construction observation, and contingency. Prices are valid at this time, but whether they remain valid depends on market conditions at the time the project is bid.

The estimates show that the cost of one block on Main/Union Chapel will be about $1 million (without considering the improvements to the intersection of Third and Main/Union Chapel). The cost for one block of Third is higher: including rerouting of the overhead lines and improvements to the Third/Main/Union Chapel intersection, the cost is estimated to be $2.4 million. However, once the overhead lines are rerouted and the intersection is improved, the cost for the two additional blocks on Third should be much lower. These figures include improvements to all of underground infrastructure.

Concerning costs, these are intimidating numbers. But considering that some of the downtown infrastructure needs to be replaced whether or not surface improvements are undertaken, it makes sense to do both. Without surface improvements, property and business owners would have to endure the inconvenience and disruption of replacing the lines (perhaps several times if all the underground utilities were not replaced at one time) without the benefits that will accrue from redesigned streets. All of these elements are estimated in Appendix A.

5.6 Possible Funding Sources

As the economy has improved in the past few years, an increasing number of communities are chasing a decreasing number and size of available funds. Because of this, it is more important than ever that the Town take actions that will demonstrate to State and Federal agencies and private funding organizations that the project has public support, includes forward-thinking of design elements, and has the financial commitment of the Town to pay for a portion of the cost. Here are some of the strategies employed by other cities that have been successful in winning state and federal dollars for planning work and construction projects (some of which the Town is already doing):

- *At least yearly contact with funding agencies and elected representatives at the state and federal level to demonstrate commitment and share goals;*
- *Partial implementation with local funds of "starter" projects or self-funding for smaller projects. Funding can come from loans, bonds, and other funding strategies such as establishment of Municipal Service Districts or Business Improvement Districts;*
- *Documentation of a public process for input on setting goals and developing plans;*
- *Willingness to contribute more than the minimum share of costs specified in the grant (e.g. offering to fund 25% matching instead of the required 20%);*
- *Shovel-ready plans;*
- *Active programs to identify other funding sources for parts of the project or for other projects. Examples might include winning an arts grant to help pay for the outdoor stage, setting up an MSD, establishing an arts council;*
- *Tactical urbanism actions such as painting the desired expanded sidewalk widths on the asphalt on Main/Union Chapel to allow people to experience what the increased space would do for pedestrians and businesses. This type of action could be either temporary (e.g. for a weekend) or semi-permanent (change head-in parking to parallel on one block and add bike lanes and painted bumpouts to shorten crosswalk distances).*
- *Work with local property owners to make building space available for artists for free or at a reduced cost;*
- *Active economic development strategies to help existing downtown business owners and attract new businesses (e.g. facade grants, publicity programs, downtown marketing, monthly concerts in the summer);*

- *Organized visits by citizens, business owners, elected officials and staff to other communities in the region that are further along in the redevelopment process to garner ideas and inspiration and to engender the determined optimism necessary to success;*

- *Active promotion of all positive actions and projects and all accomplishments, including press releases to local media, funding agencies and elected representatives.*

Here are some of the possible funding sources that may aid Pembroke in reaching its goals:

- ***Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant Program.*** *The consolidated and Further Continuing Appropriations Act, 2015 appropriated $500 million, available through September 30, 2017, for National Infrastructure Investments otherwise known as TIGER grants. Whether these funds will be available with a new Administration is unknown at this point, but the grants are very popular with cities and towns because they allow the communities themselves to define the project they want funded within the umbrella of transportation improvements. Funds for the TIGER program are to be awarded on a competitive basis for projects that will have a significant impact on the nation, a metropolitan area or a region. The minimum local match for most TIGER grants is 20%, although in some cases of rural areas this may be reduced.*

  Previously these funds were only given in amounts exceeding $10 million, so small to cities were at a competitive disadvantage. More recently, however, the program has placed more emphasis on rural communities and on Native American populations, and the minimum grant for these areas is $1 million. 20% of the grant amount in the 2016 round was earmarked from rural communities.

  Applying for TIGER Discretionary Grants would require a major commitment and the participation and/or support of the Town, University, Tribe, County and COG. Pembroke meets many of the criteria set up by the program as long as the effort is competitive and the groundwork have been completed.

- ***NCDOT Bicycle & Pedestrian Funds.*** *Funds for State distribution of Federal programs for bike and pedestrian funds has changed. While previously the funds were distributed through the Districts, now only 30% are distributed this way, and additional 30% distributed for Regional needs, and 40% for Statewide needs. This formula makes availability of funds for small local governments less likely, but still worth pursuing. The NCDOT administers Federal funds from with The formula for distribution of funds through Safe Routes to School (SRTS), Transportation Alternatives Program (TAP), Surface Transportation Program (STP), Congestion Mitigation and Air Quality Improvement Program (CMAQ), and the Highway Safety Improvement Program (HSIP). Inquiry into the best fit and requirements for the community should be clarified through the District offices.*

- ***NCDOT Contingency Fund.*** *The Statewide Contingency Fund is a $10 million fund administered by the Secretary of Transportation. The Division Engineer elicits written requests from municipalities, counties, businesses, schools, citizens, legislative members and NCDOT staff. The appeals are reviewed on their merits by the Contingency and Small Urban Funds Committee, which makes recommendations for funding to the Secretary. Written requests must provide technical information such as justification, location, improvements being requested, timing, etc., for thorough review.*

- ***Department of Commerce Programs****. The Rural Development division of the State Commerce Department has programs to assist rural communities. Some of their best know program are the Main Street and Small Town Main Street programs, but communities must apply and be designated for assistance to be available. Programs applicable to Pembroke include:*

  - ***The Economic Advancement and Planning Division*** *may be of help with economic development programs and grant writing;*

  - **The Rural Grants Program** provides building renovation and economic infrastructure grants for job creation;

  - **The Community Development Block Grant Program for Economic Development (CDBG-ED)** provides grants to local governments that partner with a private business to bring public infrastructure improvements and building renovation services to rural communities;

  - **The Industrial Development Fund/Utility Fund** provides grants to units of local government for public infrastructure in Tier 1 and Tier 2 counties to assist in job creation.

- **Building Reuse Grants.** The Building Reuse Program, under the Rural Grants/ Programs Section of the North Carolina Department of Commerce, will provide grants to local governments. Three categories of funding are available for 1) the renovation of vacant buildings *[this might be the most useful for Pembroke downtown]*, 2) the renovation or expansion of a building occupied by an existing North Carolina company wishing to expand in their current location and 3) the renovation, expansion or construction of health care entities that will lead to the creation of new, full-time jobs.

- ***NCDOT Bike and Pedestrian Planning Grant Initiative.*** *The Division of Bicycle and Pedestrian Transportation (DBPT) is accepting proposals from communities for the 2017 Bicycle and Pedestrian Planning Grant Initiative. The program provides funding for the development of comprehensive plans to provide facilities for biking, walking or a combination of both. Plans funded must represent a broad strategy for expanding bicycle and pedestrian opportunities within a community rather than a single project. Applications should address facilities, programs, policies and design guidelines that encourage safe walking and biking. The deadline for application is* ***Thursday, Nov. 10*** *at 5 p.m. Award recipients will be notified by March 2017. Cities with populations below 5,000 can apply to develop combined bicycle and pedestrian plans. If this deadline is not met, hopefully there will be another round next year.*

- ***NCDOT Small Construction Funds.*** *Each of the 14 NCDOT Highway Divisions administers $357,000 of small construction funds. The purpose of these funds is to finance improvements on the State System (US, NC, and SR routes) to be used for projects anywhere in the counties. These funds are used to fund a variety of transportation projects for municipalities, counties, businesses, schools, and industries throughout the state. There is a $250,000 maximum amount per request per fiscal year. Any project with a total cost greater than $150,000 requires a resolution or a letter of support for the project from the local jurisdiction.*

- ***State Water Infrastructure Funds.*** *These funds are administered by the N.C. Department of Environmental Quality (NCDEQ). The programs provide funding for eligible infrastructure (CDBG-I) grants and loans for water (DWSRF) and sewer (CWSRF) projects including the replacement of existing facilities. The State Revolving Funds are generally loans at one-half of market interest rates for a maximum of 20 years. In the past these programs have had 0% interest loans and a limited amount of principal forgiveness.*

5.7 Implementation Strategies

While it is clear that priorities always shift as opportunities and challenges present themselves, the implementation steps below are necessary to keep the plan moving forward towards implementation. Tasks are divided into priorities. Early tasks are essential to getting everything in place to make visible progress toward concrete goals. Those listed as **ongoing** start at the appropriate time and constitute long-term goals.

A. Short-Term Tasks (3-6 months)

- ***Adopt the Plan & Design Guidelines.*** Timeline: As soon as possible. Responsibility: Council and Town Manager.

- ***Define an Streetscape Implementation Project Funded Primarily by the Town.*** Make sure this project is realistic and significant, since further efforts and outside funding will depend on its success. If some assistance is available for this first project, that is great, but the primary impetus should come from the Town. Planning should include financing mechanisms and preparation of construction drawings. Timeline: by the end of 2016. Responsibility: Council and Town Manager.

- ***Convene an Advisory Committee.*** This committee should include stakeholders from all groups committed to Pembroke's future--UNC-P, Tribe representatives, property and business owners, the County, the COG, Advisors and others as needed. Their responsibilities will include advice, support, and advocacy. Timeline: as soon as possible, **ongoing**. Responsibility: Council and Town Manager.

- ***Begin Ongoing Advocacy with Funding Agencies and Elected Representatives.*** Set up a schedule and assign leads (individuals) for liaison with funding agencies and State and Federal representatives. Consider at least a once-yearly trip to Raleigh and Washington to meet with your representatives. Timeline: Begin as soon as plan is adopted and implementation projects are defined; re-contact at appropriate intervals, **ongoing**. Responsibility: Council, Town Manager, Advisory Committee.

- ***Define Intermediate and Long-Term Goals and Funding Sources.*** Begin in the first few months after adoption of the plan to prioritize mid-term and long-term projects (streetscape implementation, economic development) and define potential funding sources. Find possible sources of assistance with grant writing, including knowledgeable local citizens, agencies and consultants who can take major responsibility for spearheading different grants, loans, or other funding mechanisms. Timeline: will depend on potential sources of income, proposal deadlines, and priority of projects, **ongoing**. Responsibility: Town Manager with assistance from Agencies, consultants, and knowledgeable citizens and groups.

- ***Community Outreach, Communications.*** Begin immediately to keep the public informed about progress toward your goals. Consider the best ways to publicize your success: social media, website, press releases, events. Make sure to include funding agencies and elected officials in all communications. Timeline: begin immediately, ***ongoing***. Responsibility: Advisory Committee or interested individual or group.

- ***Appoint Design Review Commission***. This commission should be separate from the Planning Board, since guidelines and zoning have different legal status. Timeline: As soon as possible. Responsibility: Council.

- ***Consider Ways to Implement Bike Paths.*** Part of developing priorities for implementation should be planning for bike paths between the Tribe, UNC-P, and the downtown as discussed in previous chapters. Interim measures should be evaluated for feasibility and safety to allow early implementation and later improvements, if possible. Seek funding as available. Over time the paths should be improved and extended. Timeline: as soon as possible, **ongoing**. Responsibility: Advisory Committee or special committee of interested citizens, engineering/design consultants if/when needed, County Commission, Council approval.

B. Intermediate Tasks (6 months to 18 months)

- ***Implement First Project.*** As soon as funding is in place and CDs are complete, implement the first project. TImeline: as soon as possible after funding has been secured. Responsibility: Town Manager and Council with support from Advisory Committee.

- ***Seek Funding for Additional Streetscape Implementation Projects.*** As soon as the first project is heading towards implementation, begin seeking outside funding for additional improvements. Most will require some proportion of local matching funds, so plan for this. If the TIGER program is still in place, this would be the time to apply for it. The Town could apply in 2017, and if unsuccessful, could reapply in 2018. Timeline: As soon as the first project is moving toward implementation, during implementation, or immediately afterward; **ongoing**. Responsibility: Town Manager, Council, and Agency assistance or private consultants.

- ***Consider Applying for Small Town Main Street Program.*** This program provides access to additional downtown development assistance, capacity-building, publicity, and funding. Timeline: after first implementation project is underway. Responsibility: Town Manager, Council and Advisory Committee.

- ***Identify and Assist Key Properties for Redevelopment.*** Keep informed about the status of properties and individuals or groups that may be interested in redeveloping properties downtown. If there is interest in key properties, consider what incentives might be necessary to ensure appropriate redevelopment. Examples of assistance might include building nearby sidewalks, providing connections for street-side utilities and obtaining grants for building upgrades. Ensure adherence to Design Guidelines. Section 5.6 provides some possible sources of funding. Timeline: as opportunities arise, ***ongoing***. Responsibilities: Town Manager and Council, Advisory Committee, and Agency, property owner or consultant assistance with grants.

- ***Connect with the River/Expand Bike Paths and Lanes***. Expand bike/pedestrian paths to the River. Works with County and State Parks to expand access to the river near Pembroke. Explore ways to expand the bike paths around Pembroke and from Pembroke to other communities and destinations. Timeline: begin once in-town bike paths are established, **ongoing**. Responsibility: Town, County, State and County Parks Departments, interested advocates.

C. Long-Term Tasks

Long-term tasks include all the previous tasks that include the Timeline designation of **ongoing**. This includes:

- Maintain Advisory and Design Committees;
- Identify Funding Sources;
- Ongoing advocacy with agencies, elected representatives;
- Implement historic core streetscapes;
- Implement continuous sidewalks and street trees throughout the study area;
- Refine ongoing goals;
- Community outreach and communications;
- Implement and expand bike infrastructure;
- Improve park and river facilities;
- Assist/encourage property owners with appropriate redevelopment.

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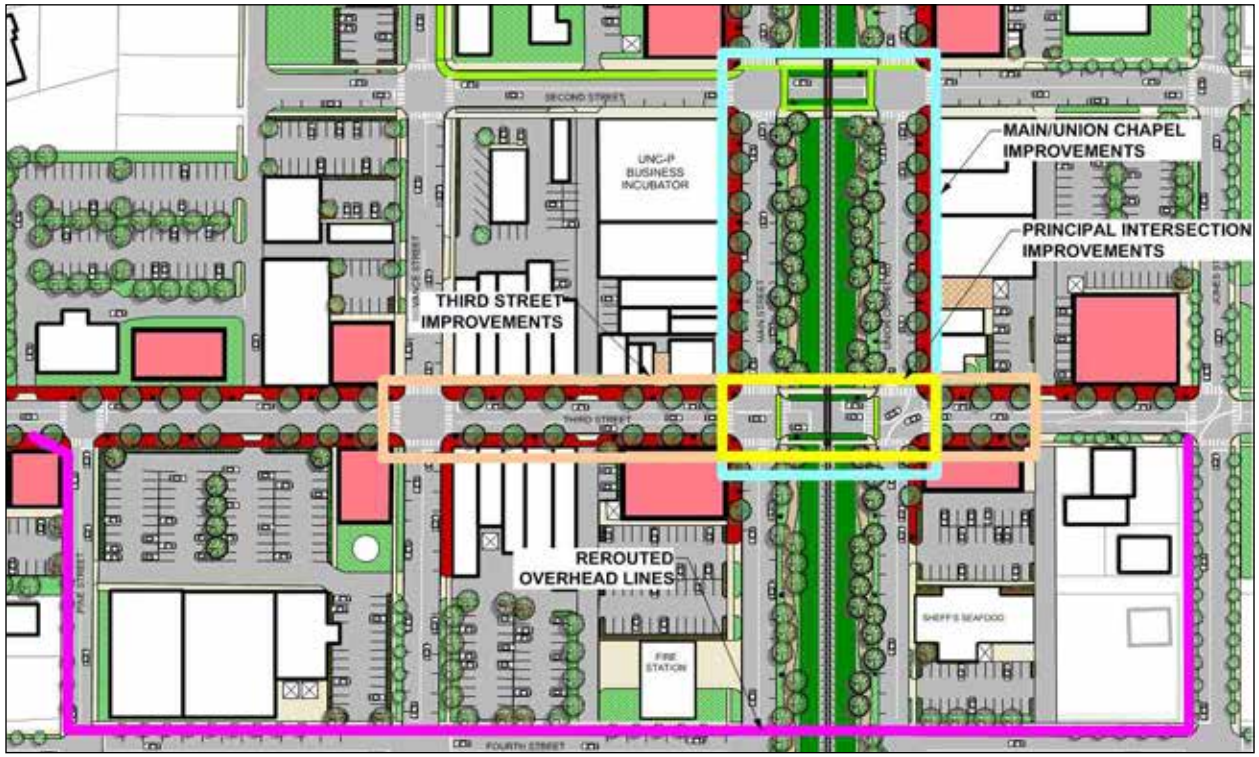
Appendix A: Estimate of Project Costs

1. Key to Improvement Area Cost Estimates

As presented in Chapter 4, the improvement areas are outlined at right. They include Third from the insection with Vance eastward to the alley east of the intersection of Union Chapel and Third. Improvements to Third include rerouting the overhead lines from Third to Fourth between Pine Street and Jones Street.

The area identified as the Principal Intersection includes the intersection of Third with both Main and Union Chapel, and all the buried utilities, surface improvements, traffic lights, railroad crossing improvements, and signalization coordination. This area is included as a separate cost so that if either Third or Main/Union Chapel but not both are chosen ad the first implementation project, the cost can be including in either.

The third area is Main/Union Chapel from the intersection of these two streets with Second Street south to just past the intersection with Third.



Appendix A: Estimate of Project Costs

Estimate of Probable Costs - Third Street Improvements -1-

	DESCRIPTION	UNITS	TOTAL QUANTITY	UNIT COST	EXTENDED COST
	Administration				
1	Mobilization	LS	1	$36,000.00	$36,000.00
2	Construction Staking	LS	1	$12,850.00	$12,850.00
3	Traffic Control & Temporary Measures	LS	1	$25,700.00	$25,700.00
4	Construction Coordination	LS	1	$33,500.00	$33,500.00
	Demolition				
5	Remove Storm Drainage Pipe	LF	200	$15.00	$3,000.00
6	Remove Storm Drainage Structure	EA	4	$450.00	$1,800.00
7	Remove Water Lines and Appurtenances	LF	525	$10.00	$5,250.00
8	Remove Fire Hydrant Assembly	EA	1	$700.00	$700.00
9	Remove Water Meter Service	EA	19	$500.00	$9,500.00
10	Remove Existing Sewer Service Lines	LF	630	$10.00	$6,300.00
11	Remove Existing Sanitary Sewer Manholes	EA	4	$900.00	$3,600.00
12	Remove Ex. Curb and Gutter	LF	1,300	$7.00	$9,100.00
13	Remove Asphalt Pavement	SY	345	$9.00	$3,105.00
14	Remove Existing Sidewalk	SY	1,215	$10.00	$12,150.00
	Water Distribution System				
15	6" DI Water Line	LF	525	$75.00	$39,375.00
16	Fire Hydrants	EA	1	$5,000.00	$5,000.00
17	6" Gate Valves & Box	EA	6	$1,300.00	$7,800.00
18	Connection to Existing 6" Water Main	EA	4	$1,500.00	$6,000.00
19	New Water Meter Service	EA	19	$1,400.00	$26,600.00
20	Water Service Line	LF	627	$5.00	$3,135.00
	Wastewater Collection System				
21	New 4' ID Sanitary Sewer Manhole 8 to 10'	EA	3	$5,600.00	$16,800.00
22	New 4' ID Sanitary Sewer Manhole 10 to 12'	EA	1	$6,100.00	$6,100.00
23	New Sanitary Sewer Service Line	LF	630	$25.00	$15,750.00
24	8" Sanitary Sewer, CIPP Lining	LF	200	$50.00	$10,000.00
25	10" Sanitary Sewer, CIPP Lining	LF	600	$60.00	$36,000.00
26	10" Sanitary Sewer, Point Repair	EA	1	$12,000.00	$12,000.00
27	Sanitary Sewer Cleanouts	EA	19	$900.00	$17,100.00
28	Connect Existing Sewer Line	EA	7	$2,500.00	$17,500.00
	Roadway & Drainage				
29	Pre-Cast Drop Inlet including Frame & Grate	EA	8	$2,800.00	$22,400.00
30	New Storm Manhole Depth 8-10'	EA	0	$4,500.00	$0.00
31	15" RCP, Depth 6 - 8'	LF	120	$51.00	$6,120.00
32	18" RCP, Depth 6 - 8'	LF	220	$55.00	$12,100.00
33	24" RCP, Depth 6 - 8'	LF	40	$70.00	$2,800.00
33	30" Standard Curb and Gutter	LF	997	$27.00	$26,919.00
34	Concrete Driveway Turnout	EA	4	$1,800.00	$7,200.00
35	1 1/2" Asphalt Overlay	SY	2,232	$20.00	$44,640.00
36	Asphalt Milling, 0 - 3" Depth	SY	2,232	$8.00	$17,856.00
37	Temporary Pavement Marking	LS	1	$3,000.00	$3,000.00
38	Thermoplastic Pavement Marking Symbol	EA	8	$250.00	$2,000.00
39	Thermoplastic Pavement Marking Lines 4", 120 mils	LF	1,112	$4.00	$4,448.00
40	Thermoplastic Pavement Marking Lines 24", 120 mils	LF	300	$13.00	$3,900.00

Estimate of Probable Costs - Third Street -2-

	Erosion Control				
41	Erosion and Sedimentation Control	LS	1	$5,000.00	$5,000.00
	Electrical, Phone & Cable				
	Handhold	EA	8	$800.00	$6,400.00
	Reroute Electrical and Phone Lines	LS	1	$288,000.00	$288,000.00
	Underground conduit (lights and power)	LF	1,780	$20.00	$35,600.00
	Cable Wiring Allowance	LS	1	$65,000.00	$65,000.00
	Streetscape Surface Improvements				
	Brick Pavers on 3/4" Sand Setting Bed	SF	13,024	$6.00	$78,144.00
	4" Concrete Slab under Pavers, No reinforcement	SF	13,024	$4.00	$52,096.00
	Concrete Bands, Tree Collars 19 l.f. each	LF	360	$20.00	$7,200.00
	Concrete Band at ROW (allowance)	LF	360	$22.00	$7,920.00
	6" Reinforced Concrete Driveway	SF	332	$8.00	$2,656.00
	Truncated Dome Pavers at Handicap Ramps	SF	120	$20.00	$2,400.00
	Concrete Sidewalk	SF	0	$6.00	$0.00
	Concrete Curb Ramp	EA	4	$1,400.00	$5,600.00
	Landscaping				
	3" Caliper Trees Installed in Tree Pits	EA	18	$400.00	$7,200.00
	Stalite 6' x 3' x 820'-	CY	456	$76.00	$34,656.00
	Prepared Topsoil for Tree Pits	CY	54	$60.00	$3,240.00
	Double Shredded Hardwood Mulch	CY	32	$60.00	$1,920.00
	Ornamental and Specimen Trees	LS	0	$500.00	$0.00
	Perennials and Annuals	LS	1	$2,000.00	$2,000.00
	Shrubs	EA	0	$10.00	$0.00
	Irrigation	LS	1	$18,000.00	$18,000.00
	French Drains- 4" Perforated PVC Pipe in Sleeve, in Fabric Wrapped Stone	LF	860	$10.00	$8,600.00
	Lights and Furniture				
	Street Lights on Concrete Base	EA	10	$2,500.00	$25,000.00
	Traffic Signal Allowance - Per Intersection	EA	0	$140,000.00	$0.00
	Benches	EA	0	$1,000.00	$0.00
	Bike Bollards	EA	4	$400.00	$1,600.00
	Bike Racks	EA	0	$1,000.00	$0.00
	Signs Allowance 10 per block	EA	20	$600.00	$12,000.00
	Low Voltage Lighting, 18 Lights, 2 Transformers, Cable/Conduit	LS	1	$16,000.00	$16,000.00
	Trash Receptacles	EA	4	$1,000.00	$4,000.00

Construction Sub-Total	($1,225,330.00)
Construction Contingency - 15%	($183,799.50)
Engineering:	
Design, Permitting, CA,CO - 15%	($183,799.50)
Total Estimated Project Cost	**($1,592,929.00)**

Estimate of Probable Costs - Third/Main/Union Chapel Intersection -1-

	DESCRIPTION	UNITS	TOTAL QUANTITY	UNIT COST	EXTENDED COST
	Administration				
1	Mobilization	LS	1	$21,000.00	$21,000.00
2	Construction Staking	LS	1	$3,350.00	$3,350.00
3	Traffic Control & Temporary Measures	LS	1	$6,700.00	$6,700.00
4	Construction Coordination	LS	1	$8,710.00	$8,710.00
	Demolition				
5	Remove Storm Drainage Pipe	LF	100	$15.00	$1,500.00
6	Remove Storm Drainage Structure	EA	1	$450.00	$450.00
7	Remove Water Lines and Appurtenances	LF	230	$10.00	$2,300.00
8	Remove Fire Hydrant Assembly	EA	2	$700.00	$1,400.00
9	Remove Water Meter Service	EA	0	$500.00	$0.00
10	Remove Existing Sewer Service Lines	LF	0	$10.00	$0.00
11	Remove Existing Sanitary Sewer Manholes	EA	0	$900.00	$0.00
12	Remove Ex. Curb and Gutter	LF	164	$7.00	$1,148.00
13	Remove Asphalt Pavement	SY	155	$9.00	$1,395.00
14	Remove Existing Sidewalk	SY	200	$10.00	$2,000.00
	Water Distribution System				
15	6" DI Water Line	LF	291	$75.00	$21,825.00
16	Fire Hydrants	EA	2	$5,000.00	$10,000.00
17	6" Gate Valves & Box	EA	2	$1,300.00	$2,600.00
18	Connection to Existing 6" Water Main	EA	2	$1,500.00	$3,000.00
19	New Water Meter Service	EA	0	$1,400.00	$0.00
20	Water Service Line	LF	0	$5.00	$0.00
	Wastewater Collection System				
21	New 4' ID Sanitary Sewer Manhole 8 to 10'	EA	0	$5,600.00	$0.00
22	New 4' ID Sanitary Sewer Manhole 10 to 12'	EA	0	$6,100.00	$0.00
23	New Sanitary Sewer Service Line	LF	0	$25.00	$0.00
24	8" Sanitary Sewer, CIPP Lining	LF	0	$50.00	$0.00
25	10" Sanitary Sewer, CIPP Lining	LF	0	$60.00	$0.00
26	10" Sanitary Sewer, Point Repair	EA	0	$12,000.00	$0.00
27	Sanitary Sewer Cleanouts	EA	0	$900.00	$0.00
28	Connect Existing Sewer Line	EA	0	$2,500.00	$0.00
	Roadway & Drainage				
29	Pre-Cast Drop Inlet including Frame & Grate	EA	2	$2,800.00	$5,600.00
30	New Storm Manhole Depth 8-10'	EA	0	$4,500.00	$0.00
31	15" RCP, Depth 6 to 8'	LF	0	$51.00	$0.00
32	18" RCP, Depth 6 - 8'	LF	100	$55.00	$5,500.00
33	30" Standard Curb and Gutter	LF	997	$27.00	$26,919.00
34	Concrete Driveway Turnout	EA	0	$1,800.00	$0.00
	Asphalt Pavement, Full Depth	SY	1,223	$65.00	$79,495.00
35	1 1/2" Asphalt Overlay	SY	0	$20.00	$0.00
36	Asphalt Milling, 0 - 3" Depth	SY	0	$8.00	$0.00
37	Temporary Pavement Marking	LS	1	$1,500.00	$1,500.00
38	Thermoplastic Pavement Marking Symbol	EA	4	$250.00	$1,000.00
39	Thermoplastic Pavement Marking Lines 4", 120 mils	LF	96	$4.00	$384.00
40	Thermoplastic Pavement Marking Lines 24", 120 mils	LF	696	$13.00	$9,048.00

Estimate of Probable Costs - Third/Main/Union Chapel Intersection -2-

	Erosion Control				
41	Erosion and Sedimentation Control	LS	1	$2,500.00	$2,500.00
	Electrical				
	Handhold	EA	4	$800.00	$3,200.00
	Conduit	LF	100	$20.00	$2,000.00
	Underground Wiring Allowance	LS	1	$8,400.00	$8,400.00
	SMFO Communication Cable	LF		$15.00	$0.00
					$0.00
	Streetscape Surface Improvements				
	Brick Pavers on 3/4" Sand Setting Bed	SF	1,280	$6.00	$7,680.00
	4" Concrete Slab under Pavers, No reinforcement	SF	1,280	$4.00	$5,120.00
	Concrete Bands, Tree Collars	LF	0	$20.00	$0.00
	Concrete Band at R/W (allowance)	LF	80	$22.00	$1,760.00
	6" Reinforced Concrete Driveway	SF	0	$8.00	$0.00
	Truncated Dome Pavers at Handicap Ramps (8sf each)	SF	64	$20.00	$1,280.00
	Concrete Sidewalk	SF	1,384	$6.00	$8,304.00
	Concrete Curb Ramp	EA	16	$1,400.00	$22,400.00
	Rubber RR crossing mats	LF	60	$250.00	$15,000.00
	Landscaping				
	3" Caliper Trees Installed in Tree Pits	EA	0	$400.00	$0.00
	Stalite 6' x 4' x 840'	CY	0	$76.00	$0.00
	Prepared Topsoil for Tree Pits and Planting Beds	CY	0	$60.00	$0.00
	Double Shredded Harwood Mulch	CY	0	$60.00	$0.00
	Ornamental and Specimen Trees	LS	0	$500.00	$0.00
	Perennials and Annuals	LS	1	$4,000.00	$4,000.00
	Shrubs	EA	0	$10.00	$0.00
	Irrigation	EA	0	$22,000.00	$0.00
	French Drains- 4" Perforated PVC Pipe in Sleeve, in Fabric Wrapped Stone	LF	0	$10.00	$0.00
	Lights and Furniture				
	Pedestrian Lights on Concrete Base	EA	0	$3,200.00	$0.00
	Street Lights on Concrete Base	EA	6	$3,100.00	$18,600.00
	Traffic Signal Allowance - Per Intersection (2 arms each)	EA	2	$200,000.00	$400,000.00
	Benches	EA	0	$1,200.00	$0.00
	Bike Bollards	EA	0	$400.00	$0.00
	Bike Racks	EA	0	$1,000.00	$0.00
	Signs Allowance 10 per block	EA	14	$600.00	$8,400.00
	Low Voltage Lighting, 25 Lights, 2 Transformers, Cable/Conduit	LS	0	$25,000.00	$0.00
	Trash Receptacles	EA	0	$1,000.00	$0.00
	Concrete Planters	EA	8	$400.00	$3,200.00

Construction Sub-Total	$728,668.00
Construction Contingency - 15%	$109,300.20
Engineering:	
Design, Permitting, CA,CO - 15%	$109,300.20
Total Estimated Project Cost	**$947,268.40**

Estimate of Probable Costs - Main/Union Chapel -1-

	DESCRIPTION	UNITS	TOTAL QUANTITY	UNIT COST	EXTENDED COST
	Administration				
1	Mobilization	LS	1	$25,000.00	$25,000.00
2	Construction Staking	LS	1	$6,000.00	$6,000.00
3	Traffic Control & Temporary Measures	LS	1	$12,000.00	$12,000.00
4	Construction Coordination	LS	1	$15,600.00	$15,600.00
	Demolition				
5	Remove Storm Drainage Pipe	LF	550	$15.00	$8,250.00
6	Remove Storm Drainage Structure	EA	8	$450.00	$3,600.00
7	Remove Water Lines and Appurtenances	LF	0	$10.00	$0.00
8	Remove Fire Hydrant Assembly	EA	0	$700.00	$0.00
9	Remove Water Meter Service	EA	0	$500.00	$0.00
10	Remove Existing Sewer Service Lines	LF	0	$10.00	$0.00
11	Remove Existing Sanitary Sewer Manholes	EA	0	$900.00	$0.00
12	Remove Ex. Curb and Gutter	LF	1,480	$7.00	$10,360.00
13	Remove Asphalt Pavement	SY	450	$9.00	$4,050.00
14	Remove Existing Sidewalk	SY	1,025	$10.00	$10,250.00
	Water Distribution System				
15	6" DI Water Line	LF	0	$75.00	$0.00
16	Fire Hydrants	EA	0	$5,000.00	$0.00
17	6" Gate Valves & Box	EA	0	$1,300.00	$0.00
18	Connection to Existing 6" Water Main	EA	0	$1,500.00	$0.00
19	New Water Meter Service	EA	0	$1,400.00	$0.00
20	Water Service Line	LF	0	$5.00	$0.00
	Wastewater Collection System				
21	New 4' ID Sanitary Sewer Manhole 8 to 10'	EA	0	$5,600.00	$0.00
22	New 4' ID Sanitary Sewer Manhole 10 to 12'	EA	0	$6,100.00	$0.00
23	New Sanitary Sewer Service Line	LF	0	$25.00	$0.00
24	8" Sanitary Sewer, CIPP Lining	LF	0	$50.00	$0.00
25	10" Sanitary Sewer, CIPP Lining	LF	0	$60.00	$0.00
26	10" Sanitary Sewer, Point Repair	EA	0	$12,000.00	$0.00
27	Sanitary Sewer Cleanouts	EA	0	$900.00	$0.00
28	Connect Existing Sewer Line	EA	0	$2,500.00	$0.00
	Roadway & Drainage				
29	Pre-Cast Drop Inlet including Frame & Grate	EA	13	$2,800.00	$36,400.00
30	New Storm Manhole Depth 8-10'	EA	0	$4,500.00	$0.00
31	15" RCP, Depth 6 to 8'	LF	180	$51.00	$9,180.00
32	18" RCP, Depth 6 - 8'	LF	591	$55.00	$32,505.00
33	30" Standard Curb and Gutter	LF	1,575	$27.00	$42,525.00
34	Concrete Driveway Turnout	EA	0	$1,800.00	$0.00
35	Asphalt Pavement, Full Depth	SY	0		
36	1 1/2" Asphalt Overlay	SY	3,360	$20.00	$67,200.00
37	Asphalt Milling, 0 - 3" Depth	SY	3,360	$8.00	$26,880.00
38	Temporary Pavement Marking	LS	1	$1,500.00	$1,500.00
39	Thermoplastic Pavement Marking Symbol	EA	0	$250.00	$0.00
40	Thermoplastic Pavement Marking Lines 4", 120 mils	LF	1,172	$4.00	$4,688.00
41	Thermoplastic Pavement Marking Lines 24", 120 mils	LF	170	$13.00	$2,210.00

Estimate of Probable Costs - Main/Union Chapel -2-

	Erosion Control				
42	Erosion and Sedimentation Control	LS	1	$5,000.00	$5,000.00
	Electrical				
	Handhold	EA	14	$800.00	$11,200.00
	Conduit	LF	1,500	$20.00	$30,000.00
	Underground Wiring Allowance	LS	1	$10,250.00	$10,250.00
	SMFO Communication Cable	LF	0	$15.00	$0.00
					$0.00
	Streetscape Surface Improvements				
	Brick Pavers on 3/4" Sand Setting Bed*	SF	10,624	$6.00	$63,744.00
	4" Concrete Slab under Pavers, No reinforcement	SF	10,624	$4.00	$42,496.00
	Painted Bike Paths on Ashphalt	SF	1,467	$6.00	$8,802.00
	Bike/Ped Paths in Parks	SF	5,970	$6.00	$35,820.00
	Concrete Bands, Tree Collars	LF	320	$20.00	$6,400.00
	Concrete Band at R/W (allowance)	LF	720	$22.00	$15,840.00
	6" Reinforced Concrete Driveway	SF	0	$8.00	$0.00
	Truncated Dome Pavers at Handicap Ramps 8 sf x 16	SF	128	$20.00	$2,560.00
	Concrete Sidewalk	SF	1,980	$6.00	$11,880.00
	Concrete Curb Ramp	EA	16	$1,400.00	$22,400.00
	Rubber RR crossing Mats	LF	36	$225.00	$8,100.00
	Landscaping				
	3" Caliper Trees Installed in Tree Pits	EA	16	$400.00	$6,400.00
	3" Caliper Trees Installed in Park Areas	EA	27	$300.00	$8,100.00
	Stalite 6' x 3' x 720' (480-	CY	400	$76.00	$30,400.00
	Prepared Topsoil for Tree Pits	CY	48	$60.00	$2,880.00
	Test, Amend, and Prepare Park Soil 3' Deep	LS	1	$20,000.00	$20,000.00
	Double Shredded Harwood Mulch	CY	60	$60.00	$3,600.00
	Ornamental and Specimen Trees	LS	0	$500.00	$0.00
	Perennials and Annuals	LS	0	$1,000.00	$0.00
	Sod	SF	38,550	$1.10	$42,405.00
	Shrubs (Hedges)	EA	350	$12.00	$4,200.00
	Irrigation--Street Trees	EA	1	$16,000.00	$16,000.00
	Irrigation--Controller, backflow, electrical (entire project)	EA	1	$12,000.00	$12,000.00
	French Drains- 4" Perforated PVC Pipe in Sleeve, in Fabric Wrapped Stone	EA	1,440	$10.00	$14,400.00
	Lights and Furniture				
	Street Lights on Concrete Base	EA	17	$2,500.00	$42,500.00
	Benches	EA	10	$1,000.00	$10,000.00
	Bike Bollards	EA	4	$1,000.00	$4,000.00
	Bike Racks	EA	6	$600.00	$3,600.00
	Signs Allowance 10 per block	EA	16	$600.00	$9,600.00
	LV Lighting, 25 Lights, 2 Transformers, Cable/Conduit	LS	1	$16,200.00	$16,200.00
	Concrete Planters	EA	12	$400.00	$4,800.00
	Trash Receptacles	EA	6	$1,000.00	$6,000.00

Construction Sub-Total	$849,775.00
Construction Contingency - 15%	$127,466.25
Engineering:	
Design, Permitting, CA,CO - 15%	$127,466.25
Total Estimated Project Cost	**$1,104,707.50**