



Downtown North Streetscape Project: *Schematic Design narrative*

The Project

Working for the City of Knoxville, a team of consultants prepared a schematic design plan for the major street corridors within the Downtown North Redevelopment Area. Bound by West Depot Avenue to the south, the Redevelopment Area includes the corridors along North Broadway Street to Glenwood Avenue, North Central Street to Woodland Avenue, and Gay Street to Emory Place. Also included is Fifth Avenue, which crosses each of the major street corridors in an east to west direction.

The Design Team:

This report is the result of a team effort, including the City of Knoxville, the Downtown North Streetscape Steering Committee, the Downtown North Community, and the following professional firms.

Elizabeth Eason Architecture analyzed existing building heights, development density, and undeveloped lots in the study area and reviewed the Knoxville-Knox County Metropolitan Planning Commission's draft form-based codes for the area. They then identified areas of potential development and recommended appropriate building height and mass, compatible with the changing character found along the street, for three of the potential development parcels.

Hedstrom Design led the design team and provided schematic design for the streetscape corridors as well as a cost estimate for target improvements.

S&ME prepared a preliminary environmental report that included a search of public databases to identify parcels within the project area with documented environmental concerns or cultural resource issues. Should redevelopment move forward, these areas may warrant further evaluation.

Vaughn & Melton provided civil engineering services for the streetscape corridors as well as a cost estimate for target improvements.

The Design Process:

Pre-Design:

Although schematic design is the first design phase in a process that leads to construction, pre-design research is a crucial component to a successful design process. Contributing to the initial path of the Downtown North Streetscapes Project, the Knoxville-Knox County Metropolitan Planning Commission (MPC) directed several studies, including the Broadway-Central-Emory Place Small Area Plan and the I-275/North Central Street Corridor Study, which identify specific goals for the area. Goals such as "Improve Broadway's Aesthetic Character" and "Enhance Non-Motorized Transportation" provided a springboard for the schematic design phase.

To help guide the design team, the City coordinated the formation of a steering committee comprised of business leaders and owners from the community. Throughout the design process, approximately 20 people volunteered their time to provide feedback from an informed perspective. In a project such as this, the community is the expert.

Site Analysis:

Following a thorough review of the previously conducted studies, the design process began by gathering and analyzing information about the site. The site analysis included historic and new development patterns, vehicular and pedestrian circulation, and the physical condition of the street corridors, as well as lighting, utilities, and neighborhood gateways. Findings and photographs of the site were presented to the steering committee members and they added comments to specific areas along the streets with which they are most familiar. See the Appendix for the site analysis plans and the steering committee's comments.

Public Involvement:

The diverse Downtown North Redevelopment Area is home to both newly-located and long-established businesses located primarily along the commercial corridors of Broadway Street and Central Street which provide direct connections to residential neighborhoods, and cater to a number of commuters and visitors. A primary goal throughout the project involved leveraging the area's positive attributes and building from these elements to create great spaces in an environment that meets the needs of the community, including business-owners, residents, and visitors alike. Public involvement played an important role in this project by helping define the community's needs. During an initial public meeting, the pre-design and site analysis findings were presented and comments from the public were received.

A number of public comments which were voiced time and again include the following:

- Create a more pedestrian friendly environment;
- Provide adequate parking;
- Recognize current popular pedestrian and cyclist connections;
- Ensure that intermediate improvements are in line with long term goals (design flexibility to allow for change without incurring huge costs);
- Improve safety with visible crosswalks, adequate lighting, and lower speed limits;
- Create a great impression to visitors.

See the Appendix for a complete list of comments for each phase of the process.

Schematic Ideas:

Based on the site analysis findings, the steering committee feedback, and the public meeting comments, initial schematic plans were prepared which identified areas of opportunity for redevelopment and defined areas with the potential for positive change. The schematic sketches and plans as well as draft design recommendations allowed the steering committee and the public to further review and comment on the direction of the Downtown North Streetscape Redevelopment Project. Taking this additional community feedback into account, final district-wide, corridor-specific, and phasing recommendations were developed. These recommendations constitute the remainder of this report.

Design Recommendations:

Although the corridors of Central Street, Gay Street, Broadway Street and Fifth Avenue traverse the project area in relatively close proximity, each sits within a unique context. Due to each corridor's uniqueness, specific recommendations for individual street corridors were developed in addition to district-wide recommendations.

The district-wide recommendations are as follows:

- Create "complete streets". Complete Streets are roadways designed and operated to enable safe and comfortable movement for people of all abilities as well as all modes of transportation;
- Add space to the pedestrian environment by extending roadway curbs to create "bump outs". This additional space decreases road crossing distances, adds room for seating, planting, public art, bike racks, newspaper vending machines and other elements that contribute to an active and lively street;
- Place utilities underground or reduce the amount of utility poles;
- Utilize fencing, planting, or walls to create a street edge along undeveloped lots or large parking areas;
- Use plant material that is appropriate to "green" the many narrow sections of street space under utility lines or between the right-of-way (ROW) and the street;
- Provide or supplement site furnishings such as benches, covered bus stops, and bike racks on each block;
- Implement sustainable practices with each new project such as treating the first flush stormwater prior to entering the City system, purchasing site furnishings that are made with recycled materials, and installing low energy lighting;
- Create opportunities for public art;
- Create opportunities to reinforce a district (Regas Square, Happy Hollow, Emory Place) identity through a family of site furnishings or special signage;
- Install visible crosswalks at each of the 14 signalized intersections and the 21 non-signalized intersecting streets.

Corridor-Specific Recommendations:

The following is a block by block summary of the schematic design recommendations for the corridors of Central Street, Gay Street, Broadway Street, and Fifth Avenue within the project area.

See the Appendix for existing street widths, plans, sections, and illustrative graphics of individual blocks and intersections. The final public meeting can be found in Appendix VI.

Central Street

The study area begins at Depot Street and ends at Woodland Avenue. Topography plays a major role in one's experience of the street. The corridor traverses a series of small hills and valleys. Views are extended over valleys, from Fifth Avenue to Pearl Place and over "Happy Hollow" from Pearl Place to Scott Avenue, for example. This is a huge benefit because improvements in the areas between high points are visible for every block and will provide a pleasant environment adjacent to undeveloped areas between existing businesses.

The existing street is constructed of concrete with an asphalt overlay that varies in depth but is generally 4" to 6" thick. Because of the overlay, the concrete curb heights vary significantly with some locations having little or no exposed curb. Storm water runoff is handled by a conventional catch basin and storm sewer system. Catch basins are generally located along radius returns at the side streets.

There are both underground and overhead utilities within the corridor. This is a primary transmission route for AT&T which has both overhead and underground facilities. There are several communication providers that utilize this corridor as a primary transmission route as well. KUB has overhead electric, water, gas and sanitary sewer facilities within the corridor. Much of the sanitary sewer has recently been rehabilitated. The water line is over 100 years old.

Depot Avenue to Fifth Avenue

Depot Avenue sits north of and runs parallel to the railroad tracks that border the Old City district, an area just east of the central business district. Looking north from Depot Avenue, the I-40 overpass at Old Magnolia frames the view to Fifth Avenue. Topography limits views beyond this point as Fifth Avenue forms a high-point between Depot Avenue to the south and Broadway Street to the north.

The design options under consideration for Central Street in the area between Depot Avenue and Fifth Avenue include the following:

1. Reduce the width of the travel lanes to 14' to accommodate bicyclists on a wide shoulder, and increase the sidewalk by approximately 5' on the east and west sides or just one side.
2. Reduce the width of the travel lanes to 11' and add two 5' striped bike lanes.

If funds are not available to move option #1 forward at this time, the consensus is to stripe the street as described in option #2.

Old Magnolia Avenue Intersection

Magnolia Avenue intersects Central Street with 5 lanes of traffic from the east and two lanes of traffic from the west. The schematic design plans show the intent to reduce the number of lanes on Magnolia Avenue to the east. To test this concept, conduct a traffic study during the next phase.

I-40 Underpass

Many people expressed concerns that the area around the I-40 underpass detracts from the streetscape because it is currently a "dead space". There is a tremendous opportunity to create a visible and memorable gateway because the underpass frames and therefore directs views into Downtown North. This underpass presents an opportunity for public art which should be explored.

Fifth Avenue Intersection

Extend curbs around parking areas to create "bump outs" that add space to the sidewalk and decrease the crossing distance at the intersection. Improve accessibility as needed at crossing areas. In areas where extra pavement is not beneficial, incorporate planting areas. Plant Trees where there is sufficient overhead space and adequate soil volume for roots. Add decorative crosswalks to connect each corner. A traffic study is recommended for Fifth Avenue and the results of this study may impact opportunities at this intersection.

Fifth Avenue to Broadway Street

Reduce the lanes from (3) to (2) 11' drive lanes, (2) 5' bike lanes, and (1) 8' parking lane. The design options under consideration for this block include the following:

1. Retain parking on the east side of the street.
2. Move parking to the west side of the street and provide the opportunity to create a curb "bump out" at the entrance to Emory Place.

Broadway Street Intersection

The intersection with Broadway Street is important as it is a crossroad to movement north. Improvements to this intersection should coincide with the ability to fund the placement of utilities underground. Extend curbs around parking to create "bump outs" that add space to the sidewalk and decrease the crossing distance at the intersection. Improve accessibility as needed at crossing areas. Incorporate gateway elements where possible. Incorporate planting areas in areas where extra pavement is not beneficial. Plant trees where there is sufficient overhead space and adequate soil volume for roots.

Broadway Street to Bernard Avenue

Continue the Fifth Avenue to Broadway street profile to Bernard Avenue. Reduce lanes from (4) to (2) 11' drive lanes, (2) 5' bike lanes, and a (1) 8' parking lane. In the next phase, explore options to increase the sidewalk or add planting to the east or west side of the street in places where the street is wider than the 40' pavement section.

Bernard Avenue to Pearl Place

Reduce lanes from (4) to (2) 11' drive lanes, (1) 10' center turn lane, and (2) 5' bike lanes. Place parking where there is sufficient width within the right-of-way and site distance permits. Where parking cannot be accommodated, extend the curb line to expand the sidewalk area and/or add planting. Where the center turn lane does not align with a side-street, there is an opportunity to build a lawn/planted median.

Pearl Place to Baxter Avenue

Reduce the street width by 27', from approximately 75' to 48', and create a linear park on the east side of the street. Include (2) 11' drive lanes, (1) 10' center turn lane or median and (2) 5' bike lanes.

Baxter Avenue Intersection

Continue the linear park along Baxter Avenue and extend the curbs at the intersection. Knox County has offered the possibility of public parking space at its Baxter Avenue facility which is accessed at the crest of a hill on Central Street. The linear park will lead to the retail districts on either side of the hill and help to emphasize the important gateway into the Old North Knoxville Neighborhood from Baxter Avenue. Also extend curbs around existing parking along the street to create "bump outs" that add space to the sidewalk and decrease the crossing distance at the intersection. Improve accessibility as needed at crossing areas. Incorporate planting areas in areas where extra pavement is not beneficial. Plant trees where there is sufficient overhead space and adequate soil volume for roots. Add decorative crosswalks to connect each corner.

Baxter Avenue to Anderson Avenue

Buildings along the block known as "Happy Holler" have undergone renovations by taking advantage of the City's façade grant program. Maintain the current street profile with (2) drive lanes and a center turn lane. Extend the curbs at parking spaces to create "bump outs" for planting or additional sidewalk space. Where the turn lane is not needed, create a lawn or planted median.

Anderson Avenue Intersection

Extend curbs around existing parking to create "bump outs" that add space to the sidewalk and decrease the crossing distance at the intersection. Incorporate planting areas in areas where extra pavement is not beneficial. Plant trees where there is sufficient overhead space and adequate soil volume for roots. Add decorative crosswalks to connect each corner. Improve accessibility as needed at crossing areas.

Anderson Avenue to Scott Avenue to Woodland Avenue

The two blocks between Anderson Avenue and Woodland Avenue should incorporate the district wide concepts as they fit. It is recommended that crosswalks be added at the non-signalized Scott Avenue intersection. A center median can be incorporated between Anderson Avenue and Scott Avenue.

Woodland Avenue Intersection

This intersection serves as the primary portal from I-275 to St. Mary's hospital; it also serves as an entry point to the Old North Knoxville and Oakwood Lincoln Park residential district. Previous studies have indicated that the intersection needs change to handle the volume of traffic must accommodate. It is recommended that the city conduct a traffic study and revise the intersection before any streetscape work is done.

Gay Street

Being less than a mile from the heart of Downtown and having light motorized vehicle traffic, the Gay Street route through Emory Place provides a popular path of travel back and forth from Downtown North to Downtown for pedestrians and bicyclist. This corridor is not nearly as heavy laden with utilities as the Central and Broadway corridors, there is KUB overhead electric, water, gas and sanitary sewer but no major communications transmission lines.

Depot Street to Old Magnolia Avenue

Named after Regas Restaurant, this block is part of “Regas Square” which borders Gay Street on the east. Extend curbs around existing parking to create “bump outs” that add space to the sidewalk and decrease the crossing distance at the intersection. Incorporate planting areas in areas where extra pavement is not beneficial. Plant trees where there is sufficient overhead space and adequate soil volume for roots.

I-40 Underpass

Many people expressed concerns that the area around the I-40 underpass detracts from the streetscape because it is currently a “dead space”. Gay Street shifts east from the Old Magnolia Avenue intersection under the I-40 underpass. Tall buildings that surround this intersection create a darkened environment. A number of examples were provided that used a combination of Art and adequate lighting to transform a dark underpass into a bright and interesting location. This underpass presents an opportunity for public art which should be explored.

Old Magnolia Avenue to Fifth Avenue

Rebuild the entire street and reduce the width to 48’ (the width varies) to include (2) 11’ drive lanes, (2) 8’ parking lanes, and (2) 5’ bike lanes. Extend curbs around existing parking to create “bump outs” that add space to the sidewalk and decrease the crossing distance at the intersection. Incorporate planting areas in areas where extra pavement is not beneficial. Plant trees where there is sufficient overhead space and adequate soil volume for roots.

Fifth Avenue Intersection

Extend curbs around existing parking to create “bump outs” that add space to the sidewalk and decrease the crossing distance at the intersection. Improve accessibility as needed at crossing areas. Incorporate planting areas in areas where extra pavement is not beneficial. Plant trees where there is sufficient overhead space and adequate soil volume for roots. Add decorative crosswalks to connect each corner. See attached “Fifth and Gay Intersection to Emory Place” plan. A traffic study is recommended for Fifth Avenue and the results of this study may impact opportunities at this intersection.

Fifth Avenue to Emory Place

Extend curbs around existing parking to create “bump outs” for additional planting. Plant trees where there is sufficient overhead space and adequate soil volume for roots. Remove the remaining utility poles and replace with pedestrian style light fixtures consistent with the rest of Emory place.

Broadway Street

The Corridor of Broadway Street may at first glance appear to be a copy of Central Street; however, they are in actuality two very different streets. Broadway Street carries more traffic and more utilities in a smaller right-of-way (ROW) than Central Street. Unlike Central Street, Broadway Street is a state route and all design changes must be coordinated through TDOT. This may add time and cost to a project.

Very similar to Central Street, there are both underground and overhead utilities within the corridor. Broadway Street is also a primary transmission route for AT&T which has both overhead and underground facilities. There are several communication providers that utilize this corridor as a primary transmission route as well. KUB has overhead electric, water, gas and sanitary sewer facilities within the corridor. The water line is over 100 years old.

The public would like to see the utilities on Broadway Street placed underground and they have indicated that they would rather wait for funding than invest in improvements in the short term that would be disturbed long term. Major changes within the Broadway Street corridor are not possible until this happens. The following represents a summary of initial recommendations for Broadway Street with the assumption that utilities will remain for the time-being.

Depot Avenue to Fifth Avenue

Broadway Street carries a 4-lane section with sidewalks on either side. Traffic counts show that this section of Broadway Street carries approximately 15,000 vehicles per day requiring that this section remain 4-lanes from Fifth Avenue and continuing south. Future bridge work on Broadway

Street South of Depot will have an affect on the traffic and function of this section of street that may potentially bring additional design changes within the street section. At present a potential change is to reduce width of the street by 4' and include (4) 11' drive lanes, no bike lanes, and no parking. Extend sidewalks by 4' on east side of street.

Fifth Avenue Intersection

The street width along Broadway Street will not change enough to accommodate "bump outs" at this intersection. Add decorative crosswalks to connect each corner and improve accessibility as needed at crossing areas. A traffic study is recommended for Fifth Avenue and the results of this study may impact opportunities at this intersection.

Fifth Avenue to Central Avenue

Maintain current street width. Reduce the lanes from 4 to 3 and include (2) 11' drive lanes, (1) 10' center turn lane at the intersection, no bike lanes, and 7.5' parking lanes on the east and west side of the street.

Central Street Intersection

Improvements to this intersection should coincide with the ability to fund the placement of utilities underground. This is an important intersection as it is a crossroad to movement north. Extend curbs around parking to create "bump outs" that add space to the sidewalk and decrease the crossing distance at the intersection. Add decorative crosswalks to connect each corner and improve accessibility as needed at crossing areas.

Incorporate gateway elements where possible. Incorporate planting areas in areas where extra pavement is not beneficial. Plant trees where there is sufficient overhead space and adequate soil volume for roots.

Central Street Intersection to Gill Avenue

North of Central Street, Broadway Street carries a 3-lane section with sidewalks on either side. The existing right-of-way width and lane configuration does not give much opportunity to accommodate parking, significantly wider sidewalks or bike lanes. Improve sidewalk surface.

Gill Avenue Intersection

Create a focus area for the entrance into the Fourth & Gill neighborhood with the addition of crosswalks and color, texture, or art to the sidewalk surface. The entrance is a potential location for artwork. Improve accessibility as needed at crossing areas.

Gill Avenue to Caswell Avenue to Wells Avenue to Glenwood Avenue

Reduce the street width by 3'- 4' and include (2) 12' drive lanes, (1) 10' turn lane, no bike lanes, and no parking. Extend the sidewalks by 4' on one side of the street and add appropriate street trees under power lines. Improve sidewalk surface.

Glenwood Avenue Intersection

This intersection is important because it represents a gateway into Old North Knoxville and the 4th and Gill neighborhoods and it is a transition intersection. The character of Broadway Street begins to change North of Glenwood Avenue. Create opportunities for gateway elements or public art. Add crosswalks and improve accessibility as needed at crossing areas. Reconfigure parking on the east side of the street so that parked cars do not impede sidewalk movement. Create "bump outs" to envelope parking at the corners and provide a potential identity location or space for benches, planting, bike racks, etc.

Fifth Avenue

The impact of the recent Smartfix 40 project has to Fifth Avenue is unknown at this time except that Fifth Avenue is now a state route. It is an important east to west neighborhood connection from Magnolia to Mechanicsville however, until a traffic study is conducted to determine how much traffic utilizes this connection and from where the connection begins (from the Broadway Street Intersection or the Central Street intersection for example), major changes such as reduction of lanes cannot be considered. Fifth Avenue is not a primary transmission route for AT&T or KUB and therefore there are fewer poles and it would be much less expensive to place

them underground. For a description of the intersections along Fifth Avenue reference the sections herein for Gay Street, Broadway Street, and Central Street.

I-40 Underpass to Central intersection to Gay street intersection to Broadway Street intersection
Improve sidewalk conditions where needed for accessibility. Reduce the number of utility poles or bury utilities. Add plant material where possible within the right of way; opposite the existing large trees on the North side of the street, in front of the Lucerne building, to complete the allee that was there historically. There is also an opportunity to screen views to the 1-40 interstate with plant material in the area between the 1-40 underpass and the Central Street intersection.

Phasing Recommendations:

The project area encompasses approximately 38 blocks, so moving the project forward as a whole is not feasible. Community feedback combined with renovation budget constraints and current City projects led to the following phasing recommendations.

1. Central Street:
 - a. Detail design for Central Street, from its intersection with Broadway Street to its intersection with Woodland Avenue, with the intent of tying this work to the City's current street repaving plans. See Appendix VII for the opinion of probable costs to perform this work.
 - b. Stripe pavement on Central Street from Depot Avenue to Broadway Street.
 - c. Initiate a traffic study of the Central Street and Woodland Avenue Intersection
2. Gay Street:
 - a. Detail Design for Gay Street from the intersection of Depot to Emory Place.
 - b. Improvements at the Fifth Avenue intersection should coincide with a traffic study for Fifth Avenue.
3. Broadway Street:
 - a. Investigation of cost to remove above ground utilities and place underground.
 - b. Identify priority projects that can tie into current or future planned work (such as improvements to the Bridge south of Depot Avenue).
 - c. Detail Design for selected priority projects.
4. Fifth Avenue:
 - a. Initiate a traffic study of Fifth Avenue.
 - b. Improve or add striping to intersections.
 - c. Detail Design.

Development Recommendations:

Elizabeth Eason Architecture looked at buildings, surface parking, and development opportunities. Below, see a brief description of each process, and two case studies within the project area.

Building Analysis:

The buildings in the project area have a relatively consistent height, with only a few buildings that are out of proportion. The Image below is color coded to show the building heights in the number of stories. The team noted the consistent heights and depths of the buildings, as well as a rhythm of building widths. This graphic allowed the design team with help from the community to locate key nodes in the project area. One of those nodes was the intersection of Central Street and Baxter Avenue, and is graphically represented in the site analysis.

Surface Parking:

The analysis of surface parking allowed the design team to find potential development areas, as well guided the team when exploring the possibilities of on street parking. There are numerous large surface parking lots that interrupt the street edge and do not belong in the central city. When comparing the parking and the building analysis, the design team found that even though the buildings are consistently setback, the parking lots disrupt the scale and rhythm of the street.

Preliminary Development Studies:

A number of potential development sites were chosen by the design team for further study. The team was asked to review and apply the MPC's draft Form Base Code. In a few locations the team suggested lowering the potential building heights to maintain consistency with the existing structures. Two of these locations are featured in the site analysis (see Appendix for graphics). These images are purely schematic and are intended as a starting point for development conversations.

Site Analysis: 0 Fulton Place, 834 and 830 N. Central Street:

In this development study the team used the maximum building footprint outlined in the MPC's draft Form Base Code. The design team adjusted the building setback from the one in MPC's draft code and added a vertical setback to maintain consistency with existing structures. Under current zoning such a building would not be feasible for many reasons including the current setback and onsite parking requirements. The building massing shown does not leave room for surface parking, and would necessitate a parking structure.

Site Analysis: Baxter Avenue at N. Central Street

Two potential development sites are shown in the image. The design team suggests lowering the development maximum height from that outlined in the draft form base code, and has represented the buildings at the appropriate scale. In the development study the team used the maximum building footprint outlined in MPC's draft Form Base Code, and potential development is hindered by many of the same issued outlined in the first site analysis.

Please see supporting graphics for the above in the Digital Appendix.

Environmental Recommendations:

Reference S&ME's full report, as Exhibit B, Attached to this document.

Appendix

- A. Development Recommendations.
- B. Site Analysis: recorded comments from the Steering Committee (See Exhibits).
- C. Steering Committee meeting: Result of Site Analysis and moving forward into preliminary Schematic Design.
- D. Public Meeting Agenda and Comments: Preliminary Schematic Design
- E. Steering Committee meeting: Result of public meeting and moving into final Schematic Design.
- F. Public meeting Agenda and comments: Final Schematic Design.
- G. Opinion of Probable Costs: Phase 1a.

Digital Appendix

- I. Development Recommendations Plans.
- II. Steering Committee meeting: Result of Site Analysis and moving forward into preliminary Schematic Design.
- III. Public Meeting presentation: Preliminary Schematic Design
- IV. Steering Committee meeting: Result of public meeting and moving into final Schematic Design.
- V. Public meeting presentation: Final Schematic Design.
- VI. Opinion of Probable Costs Plans: Phase 1a.

Exhibits

- H. Description of Existing and proposed street widths
 - I. S&ME full schematic design environmental report (Associated Map located in front pocket)
- Site Analysis Plans presented to the Steering Committee (see Attached)