# A History of Connection

**Table of Contents**

1. **Introduction**
   - Purpose of this Plan: 1-1
   - Executive Study Area: 1-1
   - Organization of this Plan: 1-1
   - Study Area: 1-2
   - Process: 1-3
   - A History of Connection: 1-4

2. **Context Analysis**
   - Major Stakeholders: 2-1
   - Built Environment: 2-2
   - Parking: 2-3
   - Street Network & Signalized Intersections: 2-4
   - Traffic Volumes: 2-5
   - Open Space & Bicycle Comfort Levels: 2-6
   - Transit: 2-6
   - Transit Routes: 2-7
   - Existing Land Use: 2-8
   - Existing Zoning: 2-9
   - Topography: 2-10
   - Existing Street Sections: 2-11
     - Cumberland Avenue-West of Rail Bridge: 2-11
     - Cumberland Avenue-22nd Street to 17th Street: 2-12
     - Cumberland Avenue-East of 17th Street: 2-13
     - Clinch Avenue: 2-14
     - 17th Street: 2-15
     - Lake Avenue and White Avenue: 2-16
   - Commercial Business: 2-17
   - Major Property Owners: 2-18
   - Cumberland Avenue Block Data: 2-19

3. **Issues & Challenges**
   - Traffic Operations: 3-1
   - Safety: 3-1
   - Service & Deliveries: 3-2
   - Hospitals & University: 3-2
   - Transit: 3-2
   - Development Standards: 3-3
   - Landmarks: 3-3
   - Parking: 3-3
   - Character: 3-4
   - Vision Statement: 3-4

4. **The Street**
   - Cumberland Avenue Today: 4-1
   - Road Diet Concept: 4-1
   - Cumberland Avenue: Existing & Proposed: 4-2
   - Traffic Analysis: 4-4
     - Proposed Configuration: 4-4
     - Traffic Performance: 4-5
   - Important Conclusion: 4-5
     - Why 30,000 Vehicles can be Carried on a 3-Lane Street: 4-6
   - Streetscape Concept Plan: 4-7
   - Streetscape Design Intent: 4-10

5. **The Urban Design Plan**
   - The Urban Design Plan: 5-1
   - The University: 5-2
   - Mountcastle Park: 5-3
   - The Strip: 5-4
   - Development Opportunities: 5-5
   - Key Concepts for Block Development: 5-6
   - Cumberland Avenue: Existing & Proposed: 5-7
   - Cumberland Avenue: Site Section: 5-8

6. **Design Guidelines**
   - Intent: 6-1
   - General Principles: 6-1
   - Frontage Requirements: 6-2
   - Cumberland Avenue Frontage: 6-3
   - Lake Avenue Frontage: 6-4
   - White Avenue-Neighborhood Frontage: 6-5
   - White Avenue-Hospital Frontage: 6-6

7. **Implementation**
   - Cumberland Avenue Corridor Plan Implementation: 7-1
   - Implementation Structure: 7-1
   - Funding: 7-1
   - Cumberland Avenue Streetscape: 7-2
   - Utilities: 7-3
   - Private Redevelopment: 7-3
   - Mountcastle Park Redevelopment: 7-4
   - Parking: 7-4

8. **Public Input**
   - Advisory Committee Input: 8-1
   - Public Brainstorming Input: 8-1
   - Public Charrette Table Session Input: 8-3

**Supporting Documents**

These supporting documents are available as separate documents through the Knoxville-Knox County MPC.

1. Cumberland Avenue Traffic Signal Basic Inventory Report (prepared by URS, November 2006)
3. Utility Assessment Memo (prepared by JIG, February 2007)
4. 3-Lane Traffic Analysis Memo (prepared by Glattting Jackson, March 2007)
5. Case Studies: 3-Lane Conversions
Acknowledgements

Knoxville-Knox County Metropolitan Planning Commission
Mark Donaldson, Executive Director (Advisory Committee Chair)
Mike Carberry, Comprehensive Planning
Ken Pruitt, Development Services
Renee Davis, Comprehensive Planning

Knoxville Regional Transportation Planning Organization
Jeff Welch, Director
Mike Conger

City of Knoxville
Bill Lyons, Director of Economic Development
Steve King, Director of Engineering
Councilman Joe Hultquist, Knoxville City Council
Captain Gordon Catlett, Knoxville Police Department
Captain Paul Dunn, Knoxville Fire Department
Belinda Woodiel-Brill, Knoxville Area Transit

Fort Sanders Regional Medical Center
Julie Dougherty
Tony Blair

East Tennessee Children’s Hospital
Rudy McKinley

Fort Sanders Neighborhood Association
Randal DeFord
Mark Hipshire
Cathy Irwin

Cumberland Avenue Merchants
Rob Dansereau
Jennifer Stubbs
Debbie Billings
Nancy Stanley
Andy Williamson

Knoxville Utilities Board
Ed Medford

Rural Metro
Mike Collins
John Brinkley

Knox County
Cindy Pionke-Engineering & Public Works
Grant Rosenberg-Office of Neighborhoods

Tennessee Department of Transportation
John Houghton
Amanda Snowden

University of Tennessee
Denise Barlow, Vice Chancellor for Finance and Administration
Jan Simek, Special Assistant to the Chancellor
John McRae, Dean, College of Architecture
Stephen Langdon, Student Representative
Ed Jepson, Planning Department
Mark Schimenti, College of Architecture
Sergeant Vincent Busico, UT Police

Consultant Team
Glatting Jackson Kercher Anglin, Inc.
Kennedy Coulter Rushing & Watson
Jordan Jones & Goulding
URS Corporation

This project was prepared in cooperation with the U.S. Department of Transportation, the Federal Highway Administration and the Tennessee Department of Transportation
1.0 Introduction
Introduction

Purpose of this Plan

The purpose of this plan is to chart the course for a more attractive, economically successful, vibrant and safe Cumberland Avenue.

This is a distinct challenge because Cumberland Avenue serves as the major transportation facility serving the University of Tennessee, Fort Sanders Regional Medical Center, the East Tennessee Children’s Hospital and downtown Knoxville. This state and federally designated highway carries between 24,000 and 32,000 vehicles per day (between West Volunteer and 11th Street), and thousands of pedestrians from the University and hospitals use the corridor day and night.

The planning process examined alternative street design and configuration options for Cumberland Avenue and a supporting long-term urban design vision for the corridor in order to create a mixed-use, pedestrian-friendly environment. The result will be a corridor that serves as an attractive gateway to the University of Tennessee, the hospital campuses and downtown, improves the residential and retail character of the district and balances the movement of pedestrians, motorized vehicles and bicycles.

Executive Summary

The following summarizes and highlights the key results, concepts and recommendations of the Cumberland Avenue Corridor Plan.

Streetscape

• **Implement the three-lane reconfiguration.** There is strong public and stakeholder support and the technical analysis suggests that the impact on traffic in the evening peak hour results in an additional 1 minute of travel time through the corridor.

• The proposed reconfiguration and streetscape provides wider sidewalks, street trees, is more bicycle friendly, accommodates transit and delivery trucks in pull-out stops, is safer and slower, and is attractive and development supportive.

• Estimated Streetscape Cost: $5.8 million.

• Estimated Utility Relocation Cost: $1.1 million (relocated to alleys) or $2.3 million (relocated underground).

The Urban Design Plan

• While a market analysis has not been conducted for this study to determine its development potential, the urban design plan calculated the potential for more than 1,400 new housing units and 130,000 square feet of ground floor commercial uses in mixed-use redevelopment on key sites likely to redevelop.

• This amount of development, calculated roughly at $200,000/residential unit and $200/square foot of commercial use, could conceivably result in more than $280 million in new private investment.

• **Rewrite the C-7 Design District Regulations.** These regulations are outdated and do not support the type of redevelopment envisioned in the urban design plan. Use a form-based code model (Knoxville South Waterfront) as the basis for developing a specific Cumberland Avenue Design District Development Code.

• **Reconfigure Mountcastle Park** to create an important open space and development connection between the University, Cumberland Avenue, the hospitals and the Fort Sanders neighborhood.

• Support the development of a public parking resource in the corridor. Further study is required, but it is clear that there is a need for an organized public parking resource. There is an opportunity to work with the hospitals and the University to develop shared parking resources as part of their long-term parking plans.

Organization of this Plan

1.0 **Introduction** – Introduces the study goals, planning area, process and the area’s historic context.

2.0 **Context Analysis** – Summarizes the key aspects of the area’s physical context that influence its existing character and shape its future vision.

3.0 **Issues & Challenges** – Outlines the range of major issues identified by stakeholders and the public that need to be considered in the development of urban design alternatives.

4.0 **The Street** – Describes and illustrates the recommended street design and configuration and streetscape of Cumberland Avenue based on travel time and public input.

5.0 **The Urban Design Plan** – Describes and illustrates the long-term urban design/development vision for the corridor as shaped by public and stakeholder input.

6.0 **Design Guidelines** – Documents the basic design components that need to be regulated in order to guide private and public investment.

7.0 **Implementation** – Frames the key actions, steps and implementation options for achieving the goals of the plan.

8.0 **Public Input** – Documents the public involvement process.

---

Cumberland Avenue: Existing

Cumberland Avenue: Proposed
The overall study area extends from Neyland Drive on the west, the Tennessee River on the south, Downtown Knoxville on the east and Interstate 40 on the north. The primary focus of the study is on the Cumberland Avenue corridor from Neyland Drive to 11th Street with a specific urban design emphasis on “The Strip” from West Volunteer to 17th Street.
Introduction

Public design table sessions

Table presentation from public design session

Drawing from public design session

Public review of products

Process

The planning process included a public outreach component that guided the planning and design efforts throughout the project. A key component of the public process is the Advisory Committee, made up of a diverse representation of stakeholders in the corridor. This committee met regularly over the course of the project to provide input and guidance.

The project team also met individually with many other stakeholders, including property owners, developers, neighborhood representatives, business owners, city agencies, emergency service providers and others to gain direct insight into the issues and concerns facing the Cumberland Avenue corridor.

In addition, several public meetings and design sessions were facilitated during the development of design concepts to gain a broader community perspective. These included:

- A public kick-off meeting (November 9th, 2006), which included a public brainstorming session of ideas and vision for the corridor.
- A public design session (December 5th, 2006) in which participants used base maps to draw a set of specific ideas and design alternatives for the corridor, producing a range of concepts for the project team to incorporate.
- A project design studio (December 5th-7th, 2006) where the project team worked in an open house format at the UT Student Center developing and refining design concepts while meeting with stakeholders to share the evolving ideas.
- A design studio summary presentation (December 7th, 2006) where the alternatives and concepts developed during the design studio were presented for initial public review and comment.
### A History of Connection

A central theme for the Cumberland Avenue corridor is its evolving function over time and the need to adapt its form and design to meet new roles and purposes.

Cumberland Avenue (historically Kingston Pike) has played a vital role in the history and development of Knoxville, dating back before the Civil War as an important corridor for trade and commerce. Over time, Cumberland Avenue became the transportation spine from which the University of Tennessee, Fort Sanders neighborhood, Fort Sanders Regional Medical Center and East Tennessee Children’s Hospital grew westward from downtown.

Today, Cumberland Avenue is no longer the sole transportation corridor in the area but one of several important corridors including Interstate 40, Neyland Drive and Alcoa Highway. In addition, with the growth of the University and hospitals, Cumberland Avenue is now also a place to “go to” in addition to a place to “go through.” This new role requires a new attitude, an attitude that balances the street’s vehicular transportation role with the area’s emerging role as many things: a gateway, a place to live, a place to do business, a place of entertainment, an extension of downtown, a location for redevelopment, etc.

Adapting Cumberland Avenue and its surrounding development pattern to its new role as one of Knoxville’s important “places” is the central challenge of this study.
2.0 Context Analysis

Existing conditions throughout the Cumberland Avenue area are analyzed in the context analysis. Field surveys, Geographic Information Systems, and stakeholder and advisory committee meetings were used to gather information. This section is both an inventory and an analysis of the physical conditions and the potential for development.
Context Analysis

Major Stakeholders

Cumberland Avenue is surrounded and influenced by a set of major area stakeholders.

The University of Tennessee – The University’s beginnings in the area date back to the 1820s with its first building built on “the hill”. The University has experienced significant expansion since the 1950s and is currently planning on accommodating an additional 8,000 students in the coming years.

The Fort Sanders Regional Medical Center – This hospital has been in this location since 1919 and is a major institution and employer in the area. Its growth and expansion continue to serve as an important economic engine for the Cumberland Avenue.

The East Tennessee Children’s Hospital – This hospital has been in this location since 1937 and is continuing to grow and expand.

The Historic Fort Sanders Neighborhood – This neighborhood dates back to the area’s original urban expansion from downtown after the Civil War with many historic homes dating to the 1890s. It faces the challenge of continued growth of student housing, parking demands and protection of historic resources.
**Context Analysis**

**Built Environment**

The built environment reflects a variety of patterns and scales that are sometimes conflicting.

**University**
- Large-scale built form/buildings
- Large blocks
- Campus inwardly focused

**Hospitals**
- Large-scale built form/buildings
- Built within the historic block pattern
- Absorbing surroundings for surface and structured parking

**Fort Sanders Neighborhood**
- Small-scale built form/buildings
- Built within historic block pattern
- Increasingly encroached upon by University and hospitals
- Transitioning from historic single-family homes to multi-family student housing

**Cumberland Avenue Strip**
- Small-scale, single-story commercial strip pattern of buildings
- Built within historic block pattern
- Inconsistent building-to-street relationship creates a “missing tooth” pattern along Cumberland Avenue
Parking

Parking is a major issue for all the stakeholders along the Cumberland Avenue strip. This diagram highlights the pattern of surface parking lots and structures in the area. Key issues include:

- The University’s parking approach has been to locate new parking structures on the “edges” of the campus in order to minimize vehicular traffic in the center.

- The hospitals follow a similar strategy but on a smaller geographic scale with their parking decks located in a 3-4 block area, focused on Highland Ave. and 22nd Street for access.

- A significant amount of land along the Cumberland Avenue strip and around the hospitals is taken up in surface parking lots, owned and managed by many different entities.

- There exists a clear potential to work with the hospitals and the University to strategically plan future parking decks to accommodate shared parking that could serve both the strip and the institutions.
Context Analysis

Street Network & Signalized Intersections

The pattern of access and connectivity in the area is a major influence on development and the character of Cumberland Avenue. Key issues include:

- The Tennessee River, railroads and Interstate 40 effectively “box in” the area, limiting connections to surrounding areas. Cumberland Avenue, Neyland Drive, 17th Street, Clinch Avenue and 11th Street are the only streets that connect to outside of the study area.

- The pattern of one-way streets is largely due to the desire to maximize on-street parking, it results in a confusing pattern for visitors and limits the effectiveness of the area’s street network.

- The restricted left turns (17th, 18th, 19th) reflect the lack of a left-turn lane on Cumberland Avenue and add to the area’s confusing way-finding and limit accessibility.
Traffic Volumes

The volume of traffic on key streets reflects how drivers gain access to the destinations of the University and hospitals.

- 17th Street from Interstate 40 decreases in volume, reflecting trips going to the hospitals using Highland Avenue.
- Cumberland Avenue from west of Alcoa Highway decreases in volume reflecting the use of Neyland Drive and West Volunteer as access to the University, and 22nd Street as access to the hospitals.
- The University’s parking and transportation strategy will continue to reinforce this pattern with an emphasis on Neyland Drive, major entrances at West Volunteer, and future emphasis on the James Agee Street entrance as the major eastern point of access.
- This volume pattern offers a clue to where critical access routes are and where flexibility exists on Cumberland Avenue to explore lane alternatives (between West Volunteer and 16th Street).
Context Analysis

Open Space & Bicycling Comfort Levels

The area is bordered by significant open spaces and greenways, but is limited in its ability to connect these resources to Cumberland Avenue.

- Tyson Park and the Third Creek Greenway run along the western edge of the study area but are disconnected from the Cumberland Avenue strip by the railroad overpass that limits space for sidewalks or bike lanes on Cumberland Avenue. The existing sidewalk is narrow and in disrepair.

- Cumberland Avenue is an important link in the area’s bicycle system yet it is designated as a “low comfort” street due to the traffic conditions and lack of bicycle accommodations on the street.

Transit

The Cumberland Avenue corridor is well served by Knoxville Area Transit (KAT), encompassing three distinct services: the T (funded by the University of Tennessee), the Trolley (connecting to downtown), and KAT’s fixed routes.
Context Analysis

Transit Routes

The University of Tennessee

T-Routes:
- East-West Route
- North-South Route
- The T
- The T: Late Night
- Ag Express Route

(T Source: University of Tennessee Transportation System, July 2006)

Transit Routes

Trolley Routes

KAT Fixed Routes

Route 10
Route 11
Route 44

(T Source: University of Tennessee Transportation System, July 2006)
The pattern of existing land use reflects influence of the University and hospitals on the surrounding area. The Cumberland Avenue strip sits clearly in the middle of an expanding pattern of institutional uses and a densifying historic neighborhood.

Cumberland Avenue is well-positioned for new housing and mixed-use development to help take pressure off of the Fort Sanders neighborhood and reconnect the University and hospitals to the strip.
Context Analysis

Existing Zoning

The zoning pattern further reflects and codifies the important role the University and hospitals play in the land use of the area.

A critical issue is the boundary of the commercial (C-7) district that encompasses the Cumberland Avenue strip. The current boundary along the alleys does not recognize either the importance and value of regulating the form and use of the full blocks, or the long-term likelihood that development along Cumberland will get larger in scale and begin to expand to White and Lake Avenues.
Context Analysis

Topography

The area’s topography has been an important factor in its history, including the location of Fort Sanders at the top of what is now 17th Street and the early development of the University of Tennessee on “the hill.” This topography influences development today as Cumberland sits on the side of a significant slope, affording the ability to “tuck” development and structured parking into the hill, allowing for more density at potentially less cost and physical height.
Context Analysis

Existing Street Sections:
Cumberland Avenue-West of Rail Bridge

Cumberland Avenue at the Third Creek Bridge looking west

Cumberland Avenue at railroad bridge looking east

A History of Connection
CUMBERLAND AVENUE CORRIDOR PLAN
Knoxville, Tennessee
Context Analysis

Existing Street Sections:
Cumberland Avenue-22nd Street to 17th Street

Cumberland Avenue at 19th Street looking west

60'-0" setbacks along Cumberland Avenue at 21st Street looking west

Sidewalk condition along Cumberland Avenue looking east

A History of Connection
CUMBERLAND AVENUE CORRIDOR PLAN
Knoxville, Tennessee

2-12
Context Analysis

Existing Street Section:
Cumberland Avenue-East of 17th Street

Key Map

Cumberland Avenue at 16th Street looking west

Approach to 16th Street on Cumberland Avenue looking west
Context Analysis

Existing Street Section:
Clinch Avenue

Key Map

Clinch Avenue at 12th Street

Residential section along Clinch Avenue
Context Analysis

Existing Street Sections: 17th Street

17th Street north of Cumberland Avenue looking north

Melrose Avenue south of Cumberland Avenue looking north

17th Street north of Cumberland Avenue

Melrose Avenue south of Cumberland Avenue
Context Analysis

Existing Street Sections:
Lake Avenue and White Avenue

- Typical on-street parking along Lake Avenue
- Sidewalk condition along Lake Avenue east of 19th Street

Key Map

A History of Connection
CUMBERLAND AVENUE CORRIDOR PLAN
Knoxville, Tennessee
Context Analysis

Commercial Business
**Major Property Owners**

There are several property owners along the Cumberland Avenue corridor who own more than one parcel. Those property owners are identified below, along with the number of parcels they own and the total acreage.
Context Analysis

Cumberland Avenue Block Data

An analysis of the existing block data reveals the existing condition of parking along the Cumberland Avenue corridor. Public parking in the corridor is limited, there is no shared parking and private parking areas are tightly controlled. The lack of shared parking in the area can be seen during business hours when all available public parking spaces are full while a significant amount of private parking areas are available.

While the area has a typical suburban parking ratio of almost 4 parking spaces per 1,000 square feet of commercial this parking is not open to all visitors in the corridor and much of it is being used by university commuters and hospital staff and visitors.