Cumberland Avenue Corridor Advisory Committee

Wednesday, November 11, 2009
4:00 p.m. – 5:00 p.m.
University Visitors' Center
2704 Kingston Pike, Knoxville, TN

MEETING AGENDA

I. Welcome and Introductions

II. Streetscape project
   A. Environmental Clearance Request to TDOT
   B. Traffic Study Summary
   C. Next Steps

III. Urban Design Plan and Form Based Code

Public Meeting, November 12, 6:00pm, UT Visitors' Center

IV. Ft. Sanders Long Range Planning Update:

Final Committee Meeting, December 3, 3:00pm, Howard Baker Center

V. Next Meeting of the Advisory Board: February 10, 2009

Summary of Technical Memorandums #1-3
prepared by Gresham Smith & Partners

Memo #1: March 18, 2009

Purpose: document findings, conclusions and recommendations based on a review of previous Cumberland Ave. traffic analysis; to validate the projected traffic conditions.

Observations:

- Pedestrian volumes were not included in the model
- Bicycle volumes were not included in the model
- Transit bus blockages were not included in the model
- The default saturation flow rate of 1900 passenger cars per hour per lane was too high given the traffic "friction" due to driveway movements and the two-way left-turn lane interaction, recommend saturation flow rate of 1700 pc/hr/ln
- Traffic signal cycle length should be re-optimized given the additional information in the model
- Signal phases should always give priority to the thru movement on Cumberland
- Queue analysis for the thru & left turn movements should be evaluated for these movements on Cumberland

Findings:

- Vehicular delay was increased by the additional volumes and saturation flow rate change and more accurately portrays a ped and bike friendly corridor
- Shorter traffic signal length may increase delay, but yields a more ped friendly corridor
- Greater amount of traffic will divert from Cumberland than the 5-10% previously estimated, and may be as much as 15-20%
- Traffic analysis software cannot model TWLTL or the impact of numerous closely spaced driveways, delay/travel time can be expected to be greater than the model predicts

Conclusions: "it is our opinion that the previous analysis has likely under-stated, to a significant degree, the level of delay and congestion from the cross section changes <u>if</u> the corridor served the level of traffic that exists on Cumberland Ave. today." Conclusions do not necessarily imply that the corridor will reach the congestion levels shown in the model, because many drivers will likely diver to an alternative route. The drivers most likely to make this change are those with no local destination within the area; the end result is that the typical weekday traffic along the corridor settles at a level that most users will accept.

Memo #2: April 3, 2009

Purpose: Document findings based on a manual evaluation of the interaction of all unsignalized access points, especially with regard to left turn overlaps. Identify and prioritize major areas of potential conflict.

Method: Based on proposed Cumberland Ave. configuration; includes impact of left turn movements at intersections and at driveways (manually assigned, no simulation tool exists for TWLTL).

- Performedtrip generation to estimate the turning volumes at all driveways
- Evaluation of driveway interaction on the TWLTL operation
- Additional issues: truck deliveries, alley access, transit stop locations, ped & bike access

Prioritization of Conflict Zones: 13 analysis zones were prioritized based on their potential for causing friction in the TWLTL and potential increase in thru traffic delay. There were two sections that ranked High priority based on several factors; they were S. Twenty First St and S. Nineteenth St.

Conclusions:

- Unsignalized access points are negatively impacted by close proximity of other access points/intersections
- Opposing driveways that are closely spaced, but off center, have potential to cause head-on conflicts in the TWLTL
- Capacity of unsignalized access points will be reduced during time that movements are blocked by the thru queue from signalized intersections
- Potential for back up in the TWLTL is increased when left turning movements are blocked by thru queue from a signalized intersection
- Potential for head on conflicts between left turners who enter TWLTL prematurely to avoid waiting in the thru queue
- Friction to the thru movement may occur on Cumberland because of poor internal development circulation and extended open curb cuts along corridor
- Additional friction will be added by pedestrians, bicyclists and transit stop locations

Opportunities to consider – closing a development driveway because of other available access points, limit access to “right-in”/“right-out”. Access management, it would be beneficial to reduce the number of conflict points and associated congestion along the corridor by eliminating some of the left-turn movements, may not be feasible because of legal and financial issues.

Memo #3: July 29, 2009

Purpose: Evaluate and make recommendations for traffic operational improvements given the projected level and paths of diverted traffic from Cumberland and the

conversion of the one-way side streets to two-way operation. Also evaluate ped, bike, transit and parking needs and potential parking and loading zones.

Method: assess anticipated impacts for the following:

- Traffic Diversion
- One-way to Two-way Street Changes
- Intersection Traffic Controls (17th & Clinch/17th &White)
- Ped, Bike, Transit and Parking/Commercial Loading

Conclusion: The percentage of existing daily traffic that will either find a new route or use an adjacent parallel route may be as much as 15-20%. Overall, it is not anticipated that the additional traffic will cause significant changes in the delay or queue lengths at the unsignalized intersections in the study area. Recommended improvement alternatives have been provided for the 17th and Clinch and 17th and White intersections.

A key concern resulting from the conversion of one-way to two-way side street operations is the potential loss of on-street parking and loading/unloading on the side streets (loss of approx. 25-48 spaces). Recommend a single lane approach to Cumberland (left-thru-right) which will maximize on-street parking. Approaches to several intersections will need to have additional Stop signs and markings installed.

Improvements to 17th and Clinch recommend installing a traffic signal and skid resistant pavement. Recommended improvements to 17th and White include enhanced pedestrian crossings.

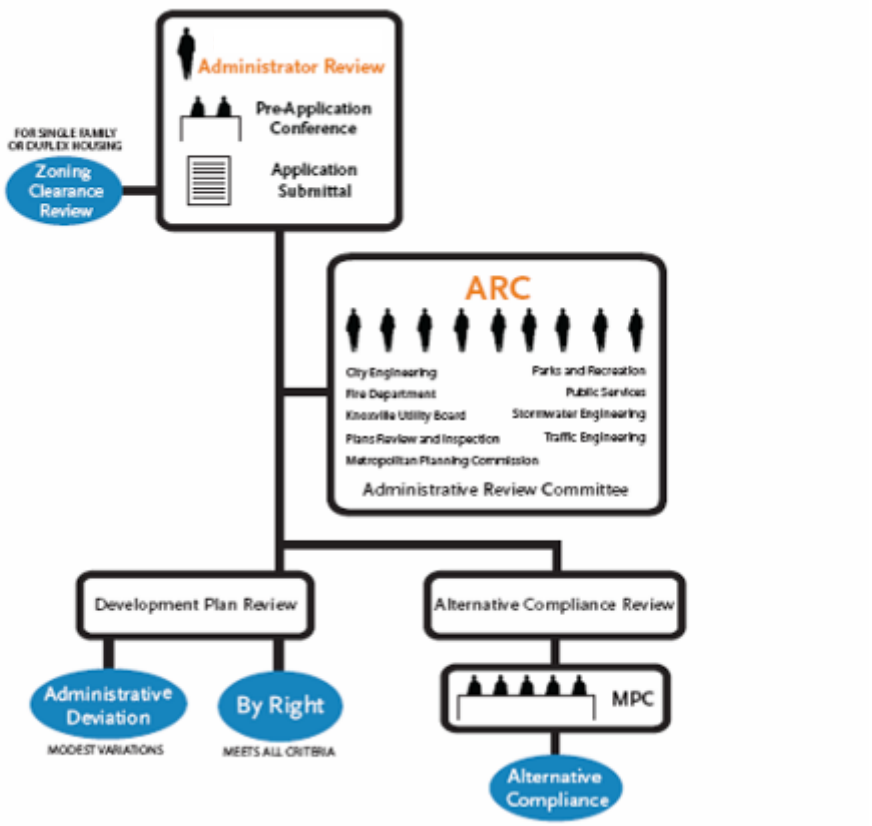
Pedestrian amenities should include ped signals and push buttons for each marked pedestrian crossing; keep two unprotected crosswalks (can use pavement, median islands, lighting and curb treatments to improve visibility and safety). Bikes should be considered with roadway design and provide racks such that the parked bikes do not block pedestrian paths. It is recommended at 6 stops remain for KAT trolley and transit services, locations will need to be determined with KAT during design. Transit bus pull outs are not recommended. Eight potential areas for loading and unloading have been identified with the new 3 lane section and may be used for parking during non-peak delivery times.

B. ADMINISTRATIVE PROCEDURES

1. Summary of Review Authority

	Administrator	Administrative Review Committee	MPC	Appeal Body	Reference
Zoning Clearance Review	D			<BZA>	Article 4, Section 4.2.B.6
Development Plan Review	D	R		<BZA>	Article 4, Section 4.2.B.7
Alternative Compliance Review	R	R	<D>	<CC>	Article 4, Section 4.2.B.8
Written Interpretations	D			<BZA>	Article 4, Section 4.2.B.9

R = Recommendation
CC = City Council
D = Decision
MPC = Metropolitan Planning Commission
< > = Public Hearing
BZA = Board of Zoning Appeals



2. General Administrative Provisions

a. **Applicability**. The requirements of this section apply to all development within any Form District as designated on the Zoning Map (See Article 3, Section 2).

b. **Conflicting Provisions**. Wherever there appears to be a conflict between the provisions of the Cumberland Avenue Corridor district regulations and requirements in Article 5 (Supplementary Regulations) of the Zoning Ordinance or the Knoxville and Knox County Subdivision Regulations, the requirements set forth in the Cumberland Avenue Corridor district regulations shall prevail.

c. **Applicable Standards**. Standards shall be applied as shown below to any portion of development to the extent possible, as determined by the Administrator.

Type of Development	Applicable Standards, if required in Specific District Regulations												
	Parking, Stacking and Loading	Landscaping	Buffers and Screening	Signs	Exterior Lighting	Street Walls	Setbacks and Yards, Required Building Line	Height	Fenestration (doors and windows)	Open Space Areas	Access and Circulation	Awnings, Canopies, Porches	Materials
Commercial, Office, Mixed Uses													
New Construction	X	X	X	X	X	X	X	X	X	X	X	X	X
Change of Use	X			X									
Expansion of Use within Existing Structure	X			X									
25% or less Expansion of Existing Gross Floor Area	X	X	X	X					X				
More than 25% up to 50% Expansion of Existing Gross Floor Area	X	X	X	X			X		X	X			
50% or more Expansion of Existing Gross Floor Area	X	X	X	X	X	X	X	X	X	X	X	X	X
Façade Changes (Increase/decrease in windows, doors and awnings)		X		X									X
Reconstruction of structure on same footprint (foundation or slab) if involuntarily damaged or destroyed	X	X	X	X									X
Attached Houses, Multi-Dwelling Residential Structures (three or more units)													
New Construction	X	X	X	X	X	X	X	X	X	X	X	X	X
Change of Use	X			X									
Expansion of Gross Floor Area	X			X			X	X					X
Reconstruction of structure on same footprint (foundation or slab) if involuntarily damaged or destroyed	X	X	X	X									X
Houses and Duplexes													
New Construction	X	X	X	X	X	X	X	X	X	X	X	X	X
Change of Use	X			X									
Expansion of Gross Floor Area	X			X			X	X				X	X
Addition of Structures (accessory structure, shed, detached garage)							X	X					X
Reconstruction of structure on same footprint (foundation or slab) if involuntarily damaged or destroyed	X	X	X	X				X					

Section 4.2 Cumberland Avenue Corridor Form District - Summary
November 11, 2009

A. Introduction
"Form Districts de-emphasize land use in favor of building form, type and scale".

B. Administrative Procedures
1. Review Authority
2. Applicability

C. Regulating Plan
"The zoning map for the district"; composed of four sub-districts CAC-1 through CAC-4.

D. Building Frontage Types
Seven building frontage types are discussed and allowed in CAC-1 through CAC-4.

E. Height Requirements
1. Building Height
2. Parking Structure Height
3. Ground Story Height
4. Street Wall Height

F. Siting Requirements
1. Street Façade
2. Open Space
3. Side Lot Setback
4. Garage & Parking
5. Alleys
6. Unbuilt RBL & Common Lot Line Treatment

G. Building Development Standards
1. General Principles & Intent
2. Building Entry Door & Windows
3. Building Facades
4. Building Projections
5. Building Roofs & Parapets
6. Exterior Building Materials
7. Older Existing Buildings & Additions
8. Lighting
9. Mechanical Equipment

H. Use Requirements
    1. Ground Level
    2. Upper Level
    3. Permitted Uses
    4. Exceptions for Incidental, Temporary Outdoor Display & Sales

I. Streets
    1. Intent
    2. Street Type Characterizations
    3. Cumberland Avenue Corridor District Street Characterizations

J. Streetscape Standards
    1. Intent
    2. General Principles
    3. Standards

K. Sign Standards
    1. Principle
    2. Maximum Allocated Sign Area
    3. Prohibited Signs
    4. Signs Not Requiring A Permit
    5. Signs Requiring A Permit
    6. Standards
    7. Design, Construction & Maintenance
    8. Illumination of Signs

L. Parking Requirements
    1. Allowed Off Street Parking Facilities
    2. Parking Spaces Required
    3. Surface Parking Lots
    4. Structured Parking Facilities
    5. Service Loading