

# MIDDLEBROOK PIKE

## Corridor Study

### Issues, Principles and Concepts

November 2000

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# Introduction

The Middlebrook Pike Corridor stretches approximately fifteen miles, touching three sector planning areas (Central City, Northwest City, Northwest County). It includes a wide variety of land uses from agricultural to heavy industrial. In the past decade, Middlebrook Pike has grown in importance as a major arterial for the movement of vehicular traffic across Knox County. As Knox County has grown, Middlebrook Pike has been in transition from a two-lane rural road to a four-lane urban arterial. With the completion of improvements to Middlebrook Pike between Proctor and Liberty and the impending improvements between Cedar Bluff Road and Hardin Valley Road, this corridor will be served by a 4-lane boulevard. There is increasing pressure for development to occur in more intensive land use patterns than envisioned during the sector planning process. Access is just one issue which must be addressed to not only protect the functional integrity of the road but also to better guide development and redevelopment requests. The changes that accompanied the expansion of Middlebrook Pike brought some unintended consequences. Right-of-way acquisitions, high traffic volumes, and changing land use patterns have reduced the livability of properties fronting on Middlebrook Pike. In addition, the commercial potential for property along Middlebrook Pike has been of increasing interest to developers.

In May 2000, MPC commissioners voted to postpone a number of rezonings located on Middlebrook Pike, due to their lack of conformity with the adopted Fifteen-Year Development Plans for the corridor. MPC Staff was directed to study land use patterns along the Middlebrook Pike corridor and to make specific recommendations concerning changing land use patterns and their implications for the proposed rezonings. This report includes a summary of issues identified during the public participation process, guiding principles for corridor development, recommended changes to the land use plan maps for the Central City, Northwest City, and Northwest County sectors, and an Action Plan consisting of implementation strategies. A summary of citizen comments and thoroughfare corridor development standards from other communities are included as appendices

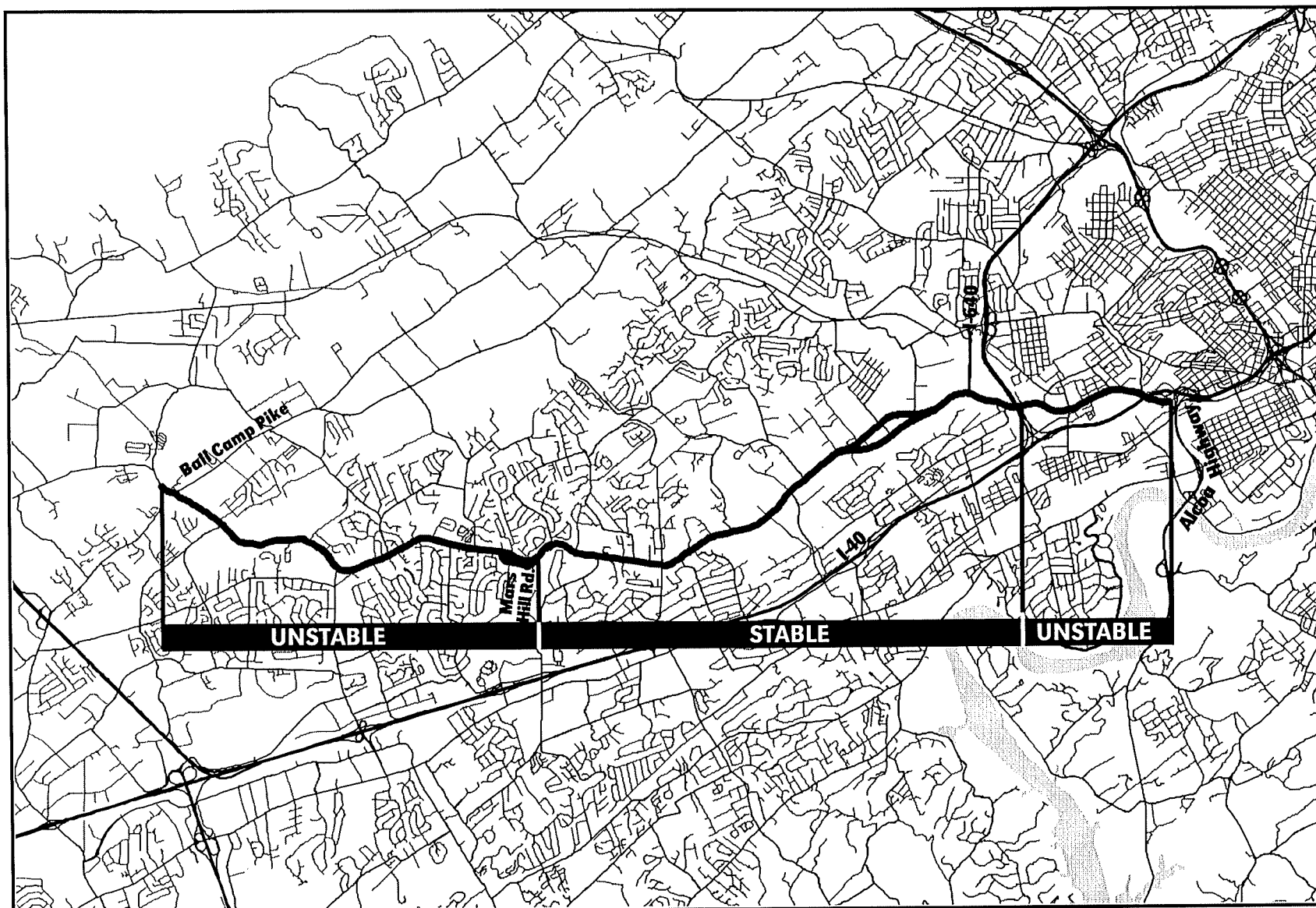


Figure 1. Middlebrook Pike Corridor Study Area

## SECTION 1: **Inventory and Analysis**

MPC staff started the review of Middlebrook Pike noting land uses that are “stable” (unlikely to change) and “unstable” (subject to change). Identifying areas based upon the stability of their existing land use is a useful indicator for determining areas that are in transition, that have the potential for transition, or that are not likely to transition in the near future. In *Figure 1*, the Middlebrook Pike Corridor Study Area has been labeled according to the stability of existing land uses. In identifying the stability of a land use, staff examined existing land use, recent changes in land use, structural age (residential), access and layout, planned and proposed transportation improvements, proposed rezonings and new development.

Once the staff had analyzed land use patterns along the Middlebrook Pike Corridor, proposals were made for modifying proposed land use maps developed during the sector planning process. Three sector plans were proposed for revisions: Central City, Northwest City, and Northwest County. The results of the proposed revisions were unveiled at two public meetings on July 6<sup>th</sup> at Ball Camp Elementary School and on July 11<sup>th</sup> at Middlebrook Pike United Methodist Church. Approximately fifty people reviewed the proposed land use changes for the Middlebrook Pike Corridor. A summary of comments collected at the public meetings can be found in Appendix 1.

In tandem with the field review of land use, MPC staff developed a list of issues and opportunities relating to the further development of Middlebrook Pike. Issue identification was concerned with addressing the conflicts present in the current development patterns. Opportunity identification was concerned with identifying policies, programs, and projects that could have a positive impact on the development of the Middlebrook Pike Corridor.



## Section 2: **ISSUES AND OPPORTUNITIES**

### ISSUES:

- The transition from residential land uses to commercial and office land uses leads to increased trip volume on arterial roads as well as increased cross flow movements into and out of these developments.
- Weak or uncontrolled access control measures result in adverse impacts on service levels, public safety and community appearance.
- Right of way dedications and land purchased for road expansions result in shallow residential lots fronting on an arterial road
- Residential properties fronting on arterial roads lead to a decreased quality of life for occupants.
- Shallow residential lots, being unsatisfactory for residential living, lend themselves to land uses more appropriate for an arterial road, such as commercial and office.
- Commercial land uses are not compatible with residential land uses unless there is substantial physical buffering or transitional land uses placed between these uses.
- Buffering and/or the use of transitional land uses between residential and commercial developments are often minimal or nonexistent in areas where residential properties are converting to commercial land uses.

#### OPPORTUNITIES:

- Arterial roads are valuable sites for commercial and office land uses.
- Right of way dedications and land purchased for road improvement projects can be determined with an eye toward the viability of present and future land uses.
- Land agglomeration has the potential to reduce curb and median cuts, thereby focusing cross-flow traffic patterns for greater efficiency of vehicular flow.
- Planned development promotes balanced and efficient land uses based on existing and proposed capital improvements.
- Adoption and implementation of an Access Control Plan for corridors in transition can preserve the integrity of the road, enhance the character of neighborhoods, businesses and offices and tends to provide a safer environment for vehicles and pedestrians.
- Through the application of planning principles, land use buffering, land use compatibility, and the planned phasing of capital improvements, land use transitions along arterial roads can lead to an improved quality of life for existing residents.

## Section 3: **GUIDING PRINCIPLES**

**The primary purpose of an arterial road is to facilitate vehicular movement in an efficient and orderly manner.**

- Median cuts, turn lanes, and curb cuts should be minimized in order to reduce impacts on traffic flow.
- Locate high trip generators (commercial land uses) at signalized intersections.
- Group high trip generators around a central parking area with limited access (maximum of two drives per parking lot).

**Right of way dedications and land purchased for road expansions should be selected so as to provide for viable land uses on the remaining parcel acreage.**

- Work with city and county engineering, and TDOT to select road expansions designs that preserves front yard setbacks on at least one side of the proposed expansion.
- Encourage developers and property owners to consolidate their parcels around a central parking area with limited access (maximum of two drives per parking lot).
- Work with the city and county to develop and adopt a Major Arterial Corridor Management/Access Plan as a working document for determining transportation and capital improvements.

**Housing development along arterial roads should be designed to reduce the noise and aesthetic impacts on the residential quality of life.**

- Encourage developers to turn new residential developments “inwards” and provide significant rear yard landscaping in order to reduce the impacts of “arterial road living” on residents.

- Encourage the transition of “old residential” properties fronting on an arterial to office, multifamily, or commercial uses dependent on location and adjacent land uses (*see Figures 2 and 3*).

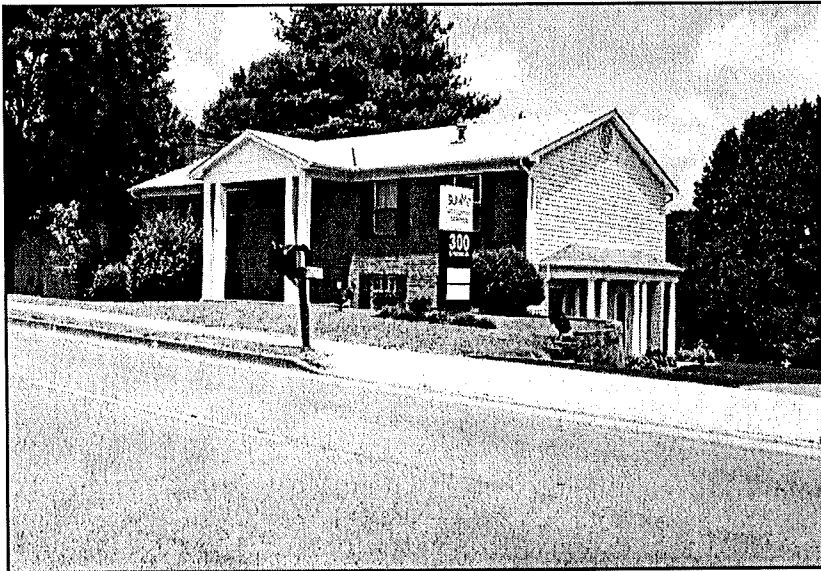


Figure2



Figure 3

**Human scale development principles should be employed in tandem with arterial road expansions to improve the quality of life of residents and commuters accessing the arterial.**

- Encourage monument style signs, street furniture, landscape buffering, sidewalks, sufficient separation from vehicular flow, vegetated planter strips, “build to the street”, parking in the rear, crosswalks, and handicap access.



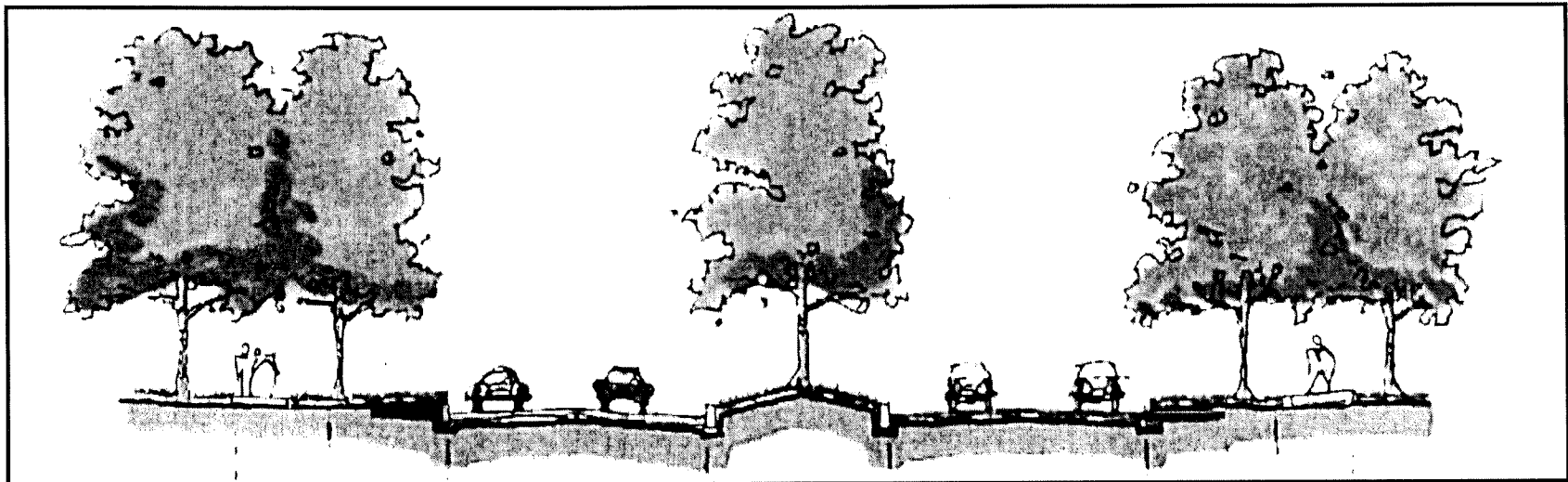


Figure 4

- Major arterial roads should be designed to maximize the efficiency and quality of vehicular movement to include the development of landscaped side and center strips where possible (*see Figure 4*).
- Develop a sign ordinance that promotes an improved visual aesthetic in regards to the uniformity of design, size, and style.

**Commercial districts should be located at arterial intersections in order to avoid strip commercial development, which impedes the flow of traffic along arterial roads (*see Figure 5*).**

- Set physical limits on the extension of commercial zoning from an intersection.
- Encourage developers and property owners to consolidate their parcels around a central parking area with limited access; two drives per parking lot.
- Promote a broad mix of land uses in order to diversify the economic base to include commercial, office, and low to moderate density residential.



Figure 5

**Lots fronting on arterial roads, but not located at an intersection are not appropriate for commercial land uses due to their impacts on vehicular traffic flows and related impacts on adjacent land uses (see Figure 6).**

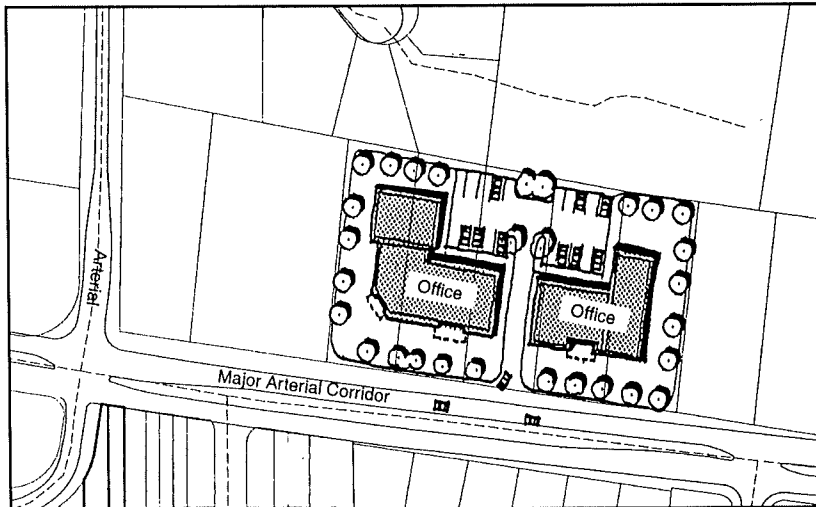


Figure 6

Example of Midblock Residential-to-Office Transition

- Consolidates small residential frontage lots
- Eliminates excessive curb cuts
- Provides buffering along arterial
- Provides buffering around common parking area
- Provides shared access and parking

- Alternative land uses for noncommercial parcels fronting on an arterial include Office, Public Institutional, Low to Moderate Residential Densities, Parks, and Open Space.
- Encourage developers to turn new residential developments “inwards” and provide significant rear yard landscaping in order to reduce the impacts of “arterial road living” on residents.

**Where property consolidation is not feasible, small parcels (< 2 acres) developed for commercial and office uses shall provide for access between adjacent parcels as a means for sharing access.**

- Development of a frontage road network
- Shared driveways or shared parking in rear with sidewalks connecting the parking areas with land uses.
- Driveways shall be separated from major highway intersections. Separation distance would be based upon arterial frontage of the individual lot or combined lots.

**Changes in land use should be based upon compatibility with adjacent land uses. Where compatibility of land uses is not possible, landscape or land use buffering should be required.**

- Promote the use of parking lot landscaping and landscape buffering.
- Office or medium density land uses should be used to transition between commercial and low-density residential land uses.
- Conversion of houses fronting on an arterial from residential to office provides a transition from residential to higher intensity uses (*see Figure 7*).



**Figure 7**



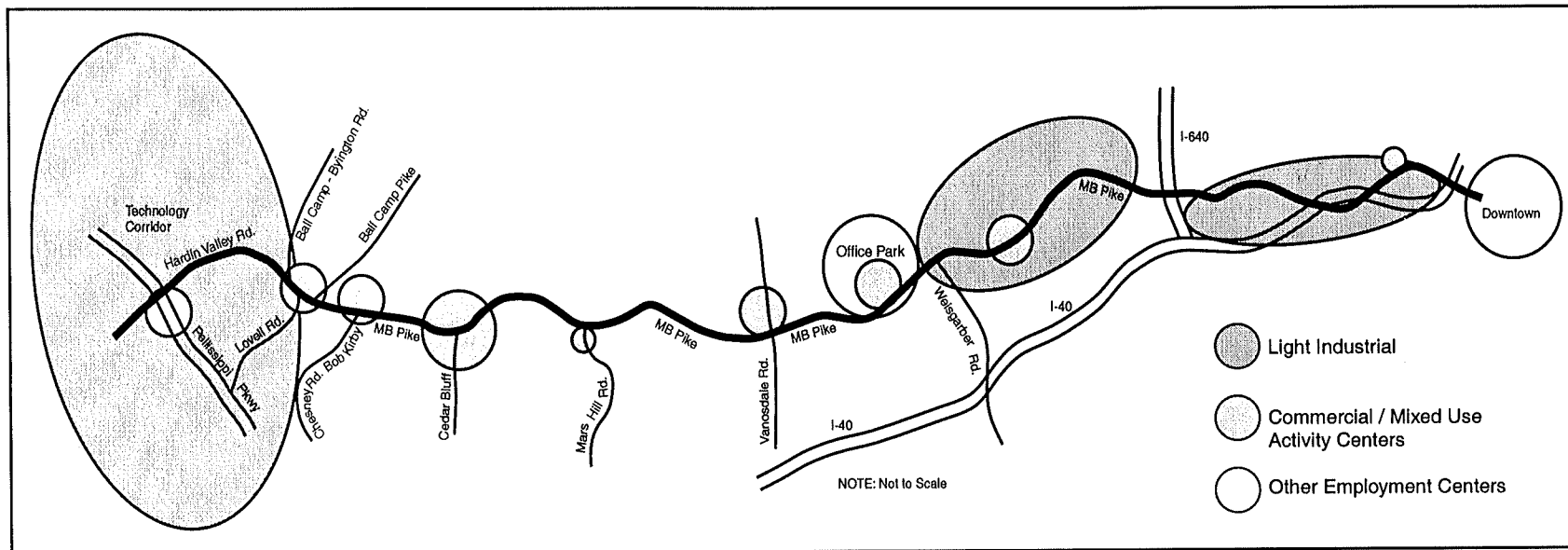
## Section 4: **LAND USE PLAN**

The Proposed Land Use Map (*see Map 1*) is the result of MPC staff investigations and community input. Changes to the proposed land use cover three sectors: Central City, Northwest City, and Northwest County. The suggested changes to the proposed land use are consistent with the guiding principles listed in Section 3 of this document. In applying these guiding principles, the ultimate goal of this study is to promote the efficient and equitable development of land uses along the Middlebrook Pike Corridor while improving the movement of vehicular traffic.

The Transportation and Capital Facilities Map (*see Map 2*) is a composite document detailing the planned and proposed transportation and capital facilities projects for the Middlebrook Pike Corridor. Transportation projects illustrated on this map include a rough depiction of the four-lane expansion of Middlebrook Pike between Ball Camp Road and Cedar Bluff. Capital Facilities illustrated include schools, parks, greenways, bicycle paths, and sidewalks.

The schematic, Employment Center Concept, (*see Figure 8 on the following page*) illustrates some of the principles used in updating the land use plans for the corridor. The Middlebrook Pike corridor connects two important employment centers: downtown Knoxville and the Tennessee Technology Corridor. Several other employment centers, including the new Dowell Springs office park and several industrial parks, are also located along the corridor.

The plan recommends against creating another Kingston Pike type commercial strip. Instead, the plan recommends clustering major commercial centers in nodes or “activity centers” at the intersections of major thoroughfares. Mixed land uses are encouraged within these activity centers. Where possible, the plan proposes medium intensity land uses such as offices or multifamily housing as buffers between residential and commercial areas.

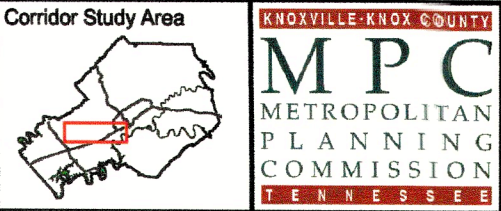


**Figure 8. Employment Center Concept**

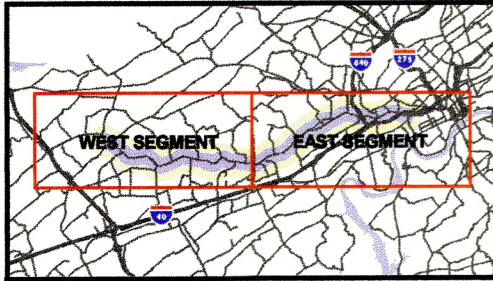


# MIDDLEBROOK PIKE CORRIDOR STUDY

## Proposed Land Use Map



Segment Locator Map



### Summary of Map Changes

Summary of Proposed Land Use Changes from adopted Sector Plans to the recommendations of the Middlebrook Pike Corridor Study

Current Proposed Land Use	Middlebrook Pike Study Proposed Land Use	Total Acres
From Proposed Land Use	To Proposed Land Use	
Low Density Residential	Medium Density Residential & Office	70,470
Low Density Residential	Medium Density Residential	44,180
Low Density Residential	Office	35,780
Medium Density Residential	Office	35,000
Medium Density Residential	Medium Density Residential & Office	34,800
Office	Commercial	34,160
Low Density Residential	Commercial	29,050
Low Density Residential	Public Institutional	24,834
Office	Light Industrial	13,400
Commercial	Low Density Residential	12,310
Commercial	Light Industrial	11,170
Medium Density Residential	Commercial	7,520
Light Industrial	Commercial	7,340
Office	Medium Density Residential & Office	6,870
Commercial	Public Institutional	5,301
Stream Protection Area	Medium Density Residential & Office	5,120
Stream Protection Area	Medium Density Residential	4,790
Office	Low Density Residential	4,940
Commercial	Medium Density Residential	2,930
Stream Protection Area	Commercial	1,770
Commercial	Medium Density Residential & Office	0,980
Commercial	Office	0,709
Commercial	Other Open Space	0,080

Total Reclassified Acres: 353

### Legend

#### Planimetric Features

- Citylimits
- Sections
- Edge of Pavement
- Middlebrook Pike Centerline

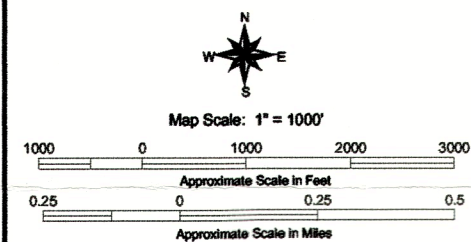
#### Proposed Land Use Changes

- Proposed Land Use Changes
- Proposed Land Use Change within Flood Fringe

#### Proposed Land Use

- Slope Protection Area
- Stream Protection Area\*
- Parks & Public Open Space
- Other Open Space
- Agricultural/Rural Residential
- Low Density Residential
- Medium Density Residential
- Medium Density Residential & Office
- Commercial
- Office
- Public Institutional
- Light Industrial
- Heavy Industrial
- Technology Park
- Water

\* The Stream Protection Area designation is intended to be an approximation of the 100 Year Flood Fringe Area. It is included for planning purposes only and should not be used to make determinations of the actual location of the Flood Fringe. Areas indicated as a Stream Protection Area may not lie within the Flood Fringe.

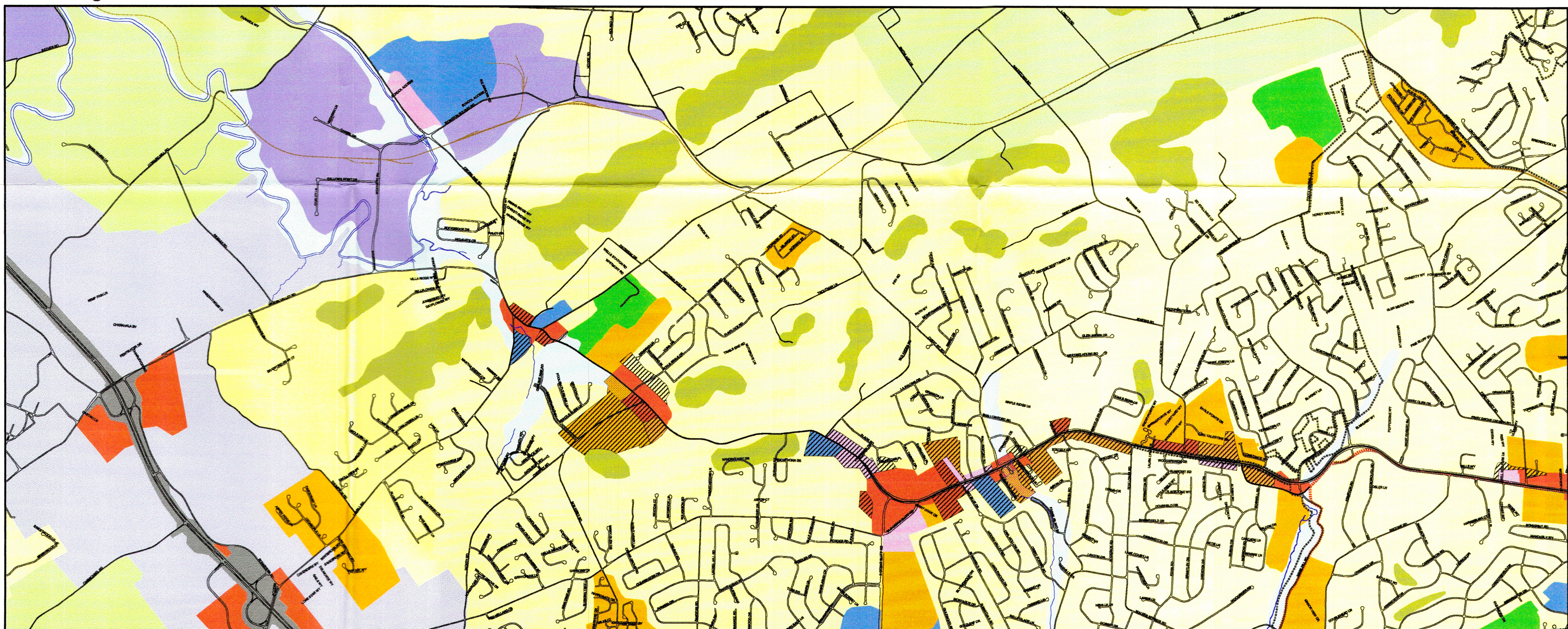


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East Segment



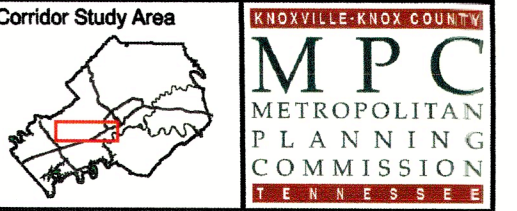
West Segment



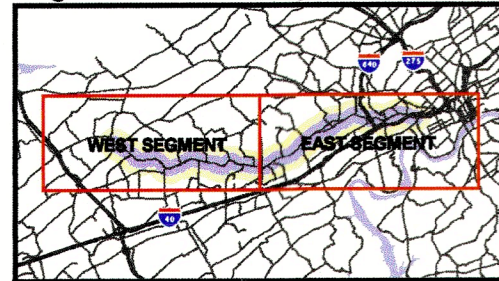


# MIDDLEBROOK PIKE CORRIDOR STUDY

## Capital Facilities and Transportation Improvements



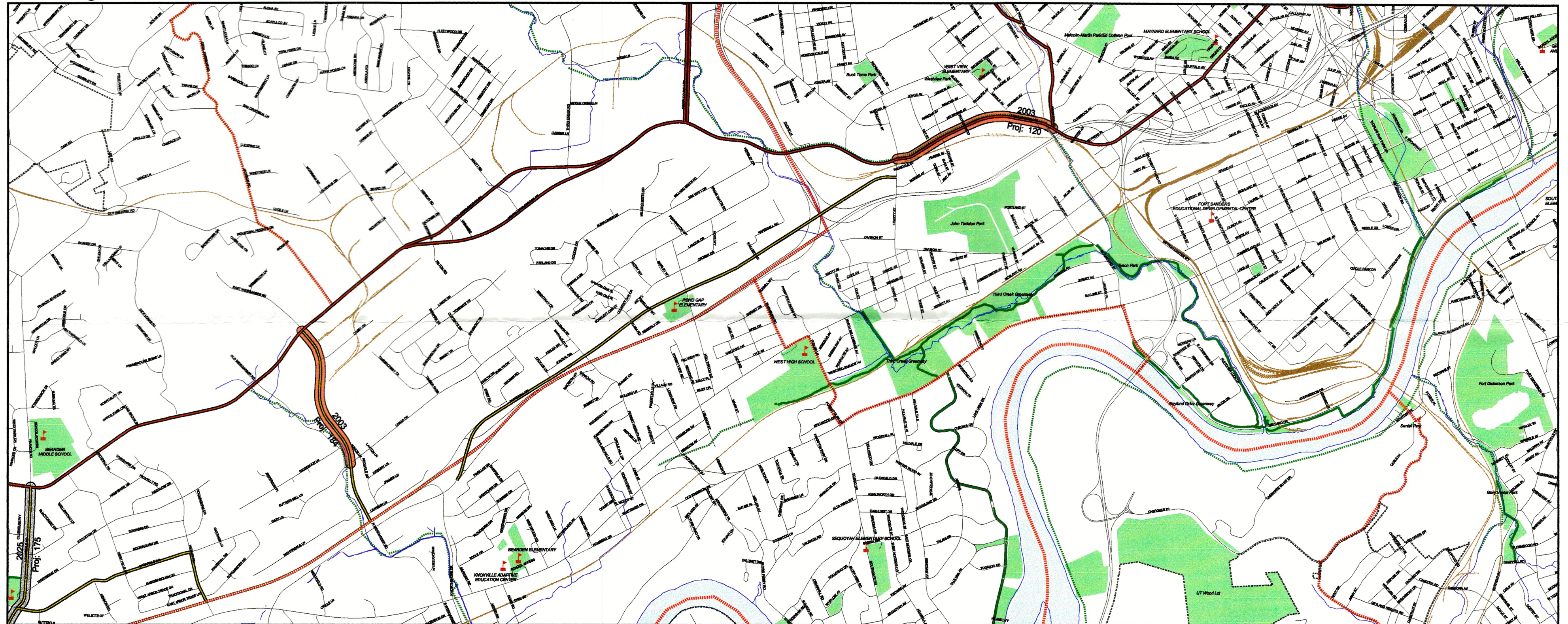
Segment Locator Map



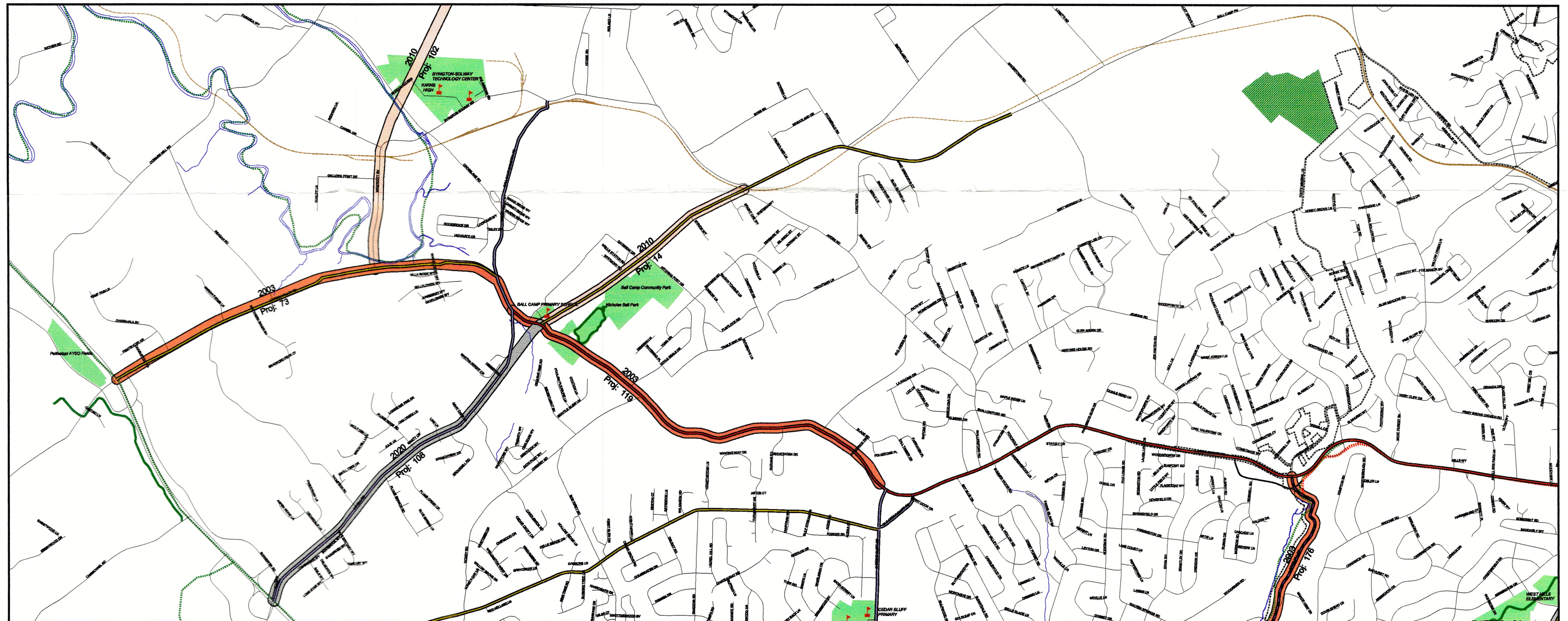
### Transportation Improvements

Map Number:	14
Year Programmed:	2010
Road:	Ball Camp Pike
Location:	Middlebrook Pike to Andes Road
Project Description:	Widen to 4 lane undivided
Map Number:	73
Year Programmed:	2003
Road:	Hardin Valley Road
Location:	Oak Ridge Highway to Middlebrook Pike
Project Description:	Widen to 4 lanes
Map Number:	102
Year Programmed:	2010
Road:	Kenna Connector (phase 2)
Location:	Oak Ridge Highway to Hardin Valley Road
Project Description:	New multi lane
Map Number:	108
Year Programmed:	2020
Road:	Lowell Road
Location:	Pellissippi Parkway to Middlebrook Pike
Project Description:	Widen to 4 lanes
Map Number:	119
Year Programmed:	2003
Road:	Middlebrook Pike
Location:	Hardin Valley Road to Cedar Bluff Road
Project Description:	Widen to 4 lane extension
Map Number:	120
Year Programmed:	2003
Road:	Middlebrook Pike
Location:	Liberty Street to Proctor Street
Project Description:	Widen to 4 lanes
Map Number:	175
Year Programmed:	2025
Road:	Vandorale Road
Location:	Buckingham Road to Middlebrook Pike
Project Description:	Widen to 4 lanes
Map Number:	176
Year Programmed:	2003
Road:	Walker Springs Connector
Location:	Kington Pike to Middlebrook Pike
Project Description:	Widen to 4 lanes
Map Number:	184
Year Programmed:	2003
Road:	Wellspring Road
Location:	Lones Road to Middlebrook Pike
Project Description:	Widen to 4 lanes

East Segment



West Segment



**Legend**

**Planimetric Features**

- Schools
- City Limits
- Planning Sector Boundary
- Middlebrook Pike Centerline
- Roadways
- Rail
- Water Feature
- Water Feature

**Planimetric Features**

- Greenways
- Potential Greenway
- Park Facility
- Potential Parks

**Planimetric Features**

- Major Roadway Signed/Striped Separated Path
- Major Roadway Signed/Striped Bike Lane
- Minor Roadway Signed/Striped Bike Lane
- Proposed Signed/Striped Bike Lane

**Road Improvements Year Programmed**

- 2000 - 2004
- 2005-2009
- 2010 - 2014
- 2015 - 2019
- 2020 - 2025

Map Scale: 1" = 1000'

Approximate Scale in Feet

Approximate Scale in Miles

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## Section 5: **ACTION PLAN**

Citizens reviewing the draft of this report stressed the need for implementation strategies to make sure new development along the Middlebrook Pike Corridor followed the guiding principles outlined in Section 3. The following actions are proposed to implement the plan:

- 1. Amend the adopted land use plan maps for the Central City, Northwest City, and Northwest County Sectors.** These plans are the basis for many of the development decisions made by the Planning Commission and elected bodies. The city charter and the Knoxville and Knox County Zoning Ordinances both require that development decisions such as rezonings and use on review site plan approvals. Arbitrary spot zonings can create an unattractive development pattern with impaired traffic flow. Rezonings should be carefully considered in light of the adopted plans and potential impacts on the corridor.
- 2. Adopt the guiding principles as part of the Knoxville-Knox County General Plan,** because the principles are applicable to many other thoroughfare corridors.
- 3. Assign “planned zones” when property along the corridor is rezoned.** These zoning districts require conditional development plan approval by MPC. This is necessary to realize the improvements in access control, aesthetics, economic development and traffic safety identified in the guiding principles. Appendix 3 lists planned zones included in the city and county zoning ordinances.
- 4. Where appropriate, use conditional zoning to encourage development consistent with the guiding principles of this plan.** MPC’s legal counsel has recently opined that, providing certain procedures

are followed, Tennessee case law would permit conditional rezoning of property. This would provide another zoning tool to encourage quality development and prevent traffic problems. For example, a recent rezoning of several residential lots for office use was a sound land use decision except for the potential for several , closely spaced curb cuts on Middlebrook Pike. Conditional rezoning could have been used to require the properties to share a common driveway and curb cut.

**5. Add a thoroughfare overlay zone to the City and County zoning ordinances.** This overlay could require additional standards for site design and traffic access, without restricting the right of the property owner to develop any of the uses permitted by the base-zoning district. Overlay zones add special requirements to “base” zoning districts. Appendix 2 contains some examples of corridor overlay zones.

**6. Enforce the Scenic Highway regulations that apply to portions of Middlebrook Pike and Hardin Valley Road.** With the exceptions of a few “grandfathered” properties, these state regulations regulate signs and other tall structures. A first step in promoting enforcement of these regulations would be for MPC to prepare a map of scenic highways and distribute the map to City and County building officials.

**7. Continue to improve transportation services in the Middlebrook Pike Corridor.**

#### ROAD IMPROVEMENTS

Plans adopted by the Knoxville Urban Area Metropolitan Planning Organization (MPO) contain the following proposals for road improvements:

- Widen Lovell Road (between Pellissippi Parkway and Middlebrook Pike) to 4 lanes within 20 years (2020).
- Widen Middlebrook Pike (between Cedar Bluff Road and Hardin Valley Road) to 4 lanes by 2003.

- Widen Ball Camp Pike (Middlebrook Pike to Andes Road) to 4 lanes with curb and gutter, sidewalks and selected turn lanes within 10 years (2010).
- Widen Weisgarber Road (between Middlebrook Pike and Nightingale Lane) to 5 lanes with shoulders on both sides within 3 years.
- Reconstruct and widen Walker Springs Connector (I-40 to Middlebrook Pike) Phases 1 and 2 (under construction).
- Widen Vanosdale Road (between Buckingham Road to Middlebrook Pike) by 2025.

#### MASS TRANSIT IMPROVEMENTS

The Knoxville Area Transit (KAT) system and the MPO are implementing a long-range plan to improve Knoxville's transit system. The Regional Transportation Alternative Committee is currently preparing a long-range, regional transportation plan that could include more attention to mass transit and the connection between transit and land use. Middlebrook Pike provides a major link in any future transit system, connecting downtown Knoxville with the Technology Corridor, an emerging employment center along the Pellissippi Parkway in Northwest Knox County. Any bus service improvements in the Middlebrook corridor will be developed as part of the overall transit system plan. The following transit improvements should be carefully evaluated during the update of KAT's transit plan in 2001:

- Extend bus service along Middlebrook Pike to Cedar Bluff Boulevard.
- Extend bus service to the Pellissippi Parkway via Hardin Valley Road.

## SIDEWALK AND BICYCLE SYSTEM IMPROVEMENTS

- Improvements to western Middlebrook Pike, Hardin Valley Road, and other publicly funded road improvements should include sidewalks.
- In approving new developments along the corridor and in adjacent neighborhoods, MPC shall require connections to the sidewalk system wherever feasible.
- Bike routes consistent with the MPO's Long Range Transportation Plan should be included in major road projects.

## GREENWAYS

Greenways developed by the city and county in this area should connect to the sidewalk and trail system along Middlebrook Pike. For example, in conjunction with the Walker Springs Connector project, a greenway is under construction that will connect to Middlebrook Pike and the Ten Mile Greenway. A long-term opportunity is the Third Creek Greenway extension that will cross Middlebrook Pike.

# Appendix 1

## Summary of Public Comments

### Public Meeting • July 6, 2000

#### Segment 1: Downtown to Midpark Road

- All Middlebrook Pike will be businesses soon-in some fashion or another-and the people who live there should be the ones who have the say as to what the property uses should be.
- Proposed Office development along east end of Lonas Dr. will require road improvements on Lonas. Current situation is dangerous—sight distances are short. Already a dangerous situation 300 ft. east of Weisgarber on Lonas.

#### Segment 2: Midpark Road to Albany Road

- The widening of Middlebrook Pike has made living there a nightmare; therefore, the requested rezoning should be granted.
- Concerned with the large amount of land around Dowell Springs, which is considered for change from Office to General commercial.
- Surprised at the proposed PI to O at Middlebrook Pike and Francis Rd.
- Opposed to the LDR to Commercial on Middlebrook Pike across from Weigels at Mars Hill because of the traffic problems at the intersection as well as the curve in the road, which causes sight distance problems.
- Trust that Dowell Springs development will be worked out to mutual satisfaction. Concerned about the planned Office south side of Middlebrook until more is known.
- Francis and Middlebrook Pike raise an alarm.
- Rezoning west of Shannondale will scare those living on intersection streets.
- Let's not rush Commercial/Office development at Mars Hill. The road isn't done yet.

#### Segment 3: Albany Road to Hardin Valley Road

- Property at 8533 Middlebrook Pike should be rezoned to commercial because the adjacent property is commercial. MPC is a fair organization and the fair thing to do is to provide me the same development opportunity as adjacent property owners.
- Change request to general commercial
- Strongly support the change from LDR to O of the section of Middlebrook Pike from Andes to Frederick. An excellent buffer from what would otherwise be commercial and the surrounding residential areas. Agriculture no longer appropriate for land along Middlebrook Pike between Andes and Frederick. (7 comments)

- Support OA zoning—have lived next to a commercial piece of property already. Have been consumed by commercial property in the last 30 years and see no reason why we can't have OA.
- Support OA zoning on Middlebrook Pike between Andes and Frederick. Existing zoning is not compatible with the area anymore. OA is best transition from the Kroger area and the surrounding area.
- Land use between Trails End (Bole Jenkins Road area) and the Kroger complex should be held at LDR to prevent a "horror corridor" down Middlebrook Pike. If the commercial "spots" and "strips" go together, we have another ugly part of Knoxville.
- The property along Middlebrook Pike should be zoned office/Planned commercial for the future services, which the people in subdivisions will need. There are properties, which could be developed and blended with the general plan, which would enhance the tax base for Knox County.
- No problems with the proposed plan.
- Recommend that office zoning be extended on the north side of Middlebrook Pike west of the present Office zoning in front of new subdivision developed by Schaad properties.
- Proposed intensive development along currently unimproved portion of Middlebrook Pike should be postponed until road improvements have been made and completed.
- NO SPOT ZONING should be allowed ever again.
- Proposed office development west of Cedar Bluff lies on steeply sloping land, which may be unsuitable for such development.
- Family wants property rezoned. Property is for sale. Mr. Arthur Seymour, Jr. will be representing the family when the rezoning case comes up. The property is across from Frederick Drive. (2 comments)
- Want property rezoned to commercial. Property is right next door to Kroger and the new Walgreen's. The property is surrounded by office and businesses.
- Ball Camp Elementary School is included in the change from PI to Commercial. Please change back. (Done)
- Unit #1 support the rezoning request from Ag to OA/Office Park for the Properties at 9237, 9241, 9245, 9249, 9253, 9251, 9261 Middlebrook Pike. (Letter attached to survey form).

**Public Meeting  
July 11, 2000**

**Segment 1: Downtown to Midpark Road**

- This should continue to be developed Commercial as planned.
- MPC is making Middlebrook Pike into another Kingston Pike.
- TDOT need to complete this.
- OK now
- Existing residential areas in Heavy Industrial should keep open use to go Industrial/Commercial if they choose to.
- The neighborhoods close to Middlebrook Pike should be protected.
- Large undeveloped tracts along Middlebrook should be developed very carefully. However, you can not expect it to be residential since it is a major arterial. It should be either commercial or office. The Franklin Square concept is one that should be considered. There should be neighborhood commercial on some of the large tracts.

**Segment 2: Midpark Road to Albany Road**

- Opposed to rezoning of Dowell Property to commercial.
- Do not think we need any more Commercial or High and Medium Density Residential.
- If there is to be a corridor development plan it should include land use and development standards (e.g. setbacks, limit curb cuts to high density through boulevards, etc.)
- Greatly concerned with the requested land use change for the school property at the corner of Middlebrook Pike and Francis Road.
- Suggested commercial use of property west of Dowell Springs has the potential of crating another bottleneck on Middlebrook Pike and will require yet another traffic light. This is already a gridlock area in rush hours. Location will not pay operator and a dead shopping center is the last thing we need.
- No need for additional commercial development on Middlebrook Pike - entire corridor - I understood that Middlebrook had been designated a scenic highway. I believe that commercial development is not compatible with a scenic designation.
- No more strip development on Middlebrook Pike where it bisects residential areas — from Old Weisgarber to Cedar Bluff Rd.
- Agree with the changes in this area.
- Middlebrook Pike had become a commercial area; therefore I support the development which is going on in this end of town.
- Need more Commercial. Middlebrook Pike is too noisy for residential within 300 feet.
- This area needs more neighborhood Commercial for small restaurant and dairy use.
- Need more direct connect between Middlebrook to Kingston Pike in Vanosdale Area.
- More mixed use with buffered areas in residential areas on Middlebrook Pike because of traffic and noise.

### **Segment 3: Albany Road to Hardin Valley Road**

- Family wants property rezoned. Property is for sale. Mr. Arthur Seymour, Jr. will be representing the family when the rezoning case comes up. The property is across from Frederick Dr. (2 comments)
- Make frontage planned commercial and office to provide services for the residents.
- Four-lane roads provide opportunity for the traffic flow.
- Keep this land open
- This property should generally remain Low Density Residential.
- OK now
- No need for additional commercial development on Middlebrook Pike - entire corridor - I understood that Middlebrook had been designated a scenic highway. I believe that commercial development is not compatible with a scenic designation.
- No more strip development on Middlebrook Pike where it bisects residential areas — from Old Weisgarber to Cedar Bluff Rd.
- Agree with zoning changes. Bring more services i.e. office and business nearer the point of need will have the effect of reducing the travel need to obtain these services. This will reduce the total traffic on Middlebrook and benefit energy consumption.
- After years in the Middlebrook and Andes Road area, the traffic has increased to the point it is very hard to get out of our driveway and is worse everyday. It is time to rezone this area to office.
- Need sewer brought through the block.
- Support OA zoning on Middlebrook Pike between Andes and Frederick. (3 Comments)
- Have lived in this area for almost 30 years and commercial has surrounded our area. We approve of the progress in our community. We would like to see Middlebrook Pike get sewer when TDOT 4-lanes the road.
- Follow same buffered guidelines for mixed uses. Neighborhoods need to be somewhat self contained.
- The neighborhoods close to Middlebrook Pike should be protected.
- Large undeveloped tracts along Middlebrook should be developed very carefully. However, you can not expect it to be residential since it is a major arterial. It should be either commercial or office. The Franklin Square concept is one that should be considered. There should be neighborhood commercial on some of the large tracts.



# Appendix 2

## Sample Corridor Development Standards

### Austin, Texas

#### Hill Country Roadway Corridor Regulations

Section 13-2-780.

##### PURPOSES

The Hill Country Roadway Regulations are designed to achieve the following purposes:

1. To maintain the rugged natural beauty of the eastern edge of the Texas Hill Country as currently exists along Hill Country Roadways;
2. To encourage development that is compatible with and, whenever possible, enhances such natural beauty;
3. To allow people of the city to be able to live, work, and enjoy recreation within the area without reducing its natural beauty;
4. To encourage safe and efficient traffic flow along Hill Country Roadways;
5. To preserve the environment by providing clean air, clean water, and a greenbelt of natural vegetation and wildlife;
6. To preserve the scenic character of the Hill Country Roadway Corridors and, where possible, scenic vistas from the roadways;
7. To encourage only orderly and sensitive development as appropriate in the city's environmentally sensitive watersheds; and,
8. To accomplish the foregoing goals through thoughtful and cooperative planning in order to benefit all the people of Austin.

Section 13-2-782.

##### ADDITIONAL SITE DEVELOPMENT REGULATIONS

##### FOR SITES IN A HILL COUNTRY ROADWAY CORRIDOR

Each site in a Hill Country Roadway Corridor is subject to the following additional site development regulations:

1. *Intensity Zones.* Floor-to-area ratios and height shall be determined relative to low-, moderate-, and high-intensity zones indicted below, consistent with applicable comprehensive plan.
  - A. *High Intensity*—All land within 1,000 feet of the right-of-way of two intersecting state-maintained roadways, and with frontage of both highways or on one highway and an intersecting arterial or collector roadway, as well as all land along Loop 360 within 3,500 feet from its intersection with US 290.
  - B. *Moderate Intensity*—All land not included in the High Intensity designation and with frontage on [a number of local roads are listed here]....

A Hill Country Roadway and an intersecting arterial or collector street, limited to land within 500 feet of the right-of-way of the intersecting street, but excluding intersections along RM 2222 east of Loop 360.

C. *Low Intensity*—All land not included in the Moderate- or High-Intensity designation.

2. *Nonresidential Floor-to-Area Ratio.* All nonresidential buildings shall be limited to a maximum floor-to-area ratios computed by reference to slope gradients and intensity level as follows:

Slope Gradient of Land	Intensity Level		
	Low	Moderate	High
0-15 %	.20	.25	.30
15-25 %	.08	.10	.12
25-35 %	.04	.05	.06

"Floor-to-area ratio," for purposes of this subsection, is the ratio of gross floor area (exclusive of parking structures and atriums) to site area within the appropriate slope class within the Hill Country Roadway Corridor. For purposes of calculating allowable floor area and impervious cover (where applicable), the gross site area shall exclude additional dedicated right-of-way only to a maximum of 60 feet from the centerline of a Hill Country Roadway. In no event shall the floor-to-area ratio on the 0 to 15 percent slopes exceed the following maximums, including any additional credits added by Sec. 13-2-783:

Low	Intensity Level	
	Moderate	High
.25	.30	.35

Hill Country floor-to-area ratio provisions shall not apply to Southwest Parkway.

3. *Construction on Steep Slopes.* No roadways or driveways shall be constructed on slopes in excess of 15 percent, except where necessary to provide access to areas of flatter slopes. Cuts and fills on roadways or driveways are to be restored as described herein. No building or parking areas shall be constructed on slopes in excess of 15 percent, provided, however, that buildings and parking structures may be located on slopes of 15 to 25 percent when the following criteria are met:

A. Structures located upslope of slopes over 15 percent area shall be constructed utilizing pier and beam techniques. Fill shall be placed to blend with the natural contour. No vertical walls shall extend beyond the lowest finished floor elevation, other than necessary to screen mechanical appurtenances, and shall be stepped, if appropriate. Terraced fill and walls shall be one-to-one grade limited to four feet in height for each terrace. More than one level of terrace is permitted.

B. Structures located downslope of slopes over 15 percent are encouraged to be terraced and consolidated into the hillside. Structural excavation shall not exceed a maximum of eight feet in depth. Areas of cut not hidden from view shall be effectively screened by additional landscaping.

C. Hillside vegetation shall not be disturbed other than that necessary to locate the structure. All disturbed areas shall be restored with native vegetation as per Chapter 13-7, Article III, Division 2.

D. If terraces are not provided, cuts and fill are to be restored to 3-to-1 slopes and with vegetation. Naturally restored slopes are limited to eight feet in length. Terraces are to be installed in between the slopes if more than a single eight-foot slope is required.

E. See Sec 13-2-580 for additional requirements for development on steep slopes. In the event of conflict between the requirement of this subsection and other ordinances, the more restrictive requirement shall apply.

#### 4. Height

A. For all Hill Country Roadway Corridors, unless otherwise specified, the maximum permitted height may increase as the distance from the right-of-way increases. Within 200 feet of the right-of-way of a Hill Country Roadway, no building shall exceed 28 feet. Beyond 200 feet from the right-of-way of a Hill Country Roadway, maximum height may increase but shall not exceed 28 feet in Low-Intensity areas, 40 feet in Moderate-Intensity areas, or 53 feet in High Intensity areas, except as provided in Sec. 13-2-783.

B. For the Southwest Parkway Corridor, the maximum height is that permitted by the zoning or approved site plan for the property or 60 feet, whichever is less.

5. *Underground Utilities.* All on-site utilities shall be located underground unless required by the utility to be otherwise located.

6. *Building Materials.* Buildings shall be designed to use to the greatest extent feasible building materials that are compatible with the Hill Country environment, such as rock, stone, brick, and wood. Mirrored glass with a reflectance greater than 20 percent is prohibited.

7. *Landscape, tree removal, and natural area.* See Sec. 13-7-66 of the Code [Landscape Requirements for Hill Country Roadway and Southwest Parkway Corridors] .

8. *Traffic Access Requirements.* Access to Hill Country Roadways must comply with the traffic access requirements established by Sec. 13-5-84.

Section 13-2-783.

#### PERFORMANCE INCENTIVES FOR SITES IN THE HILL COUNTRY ROADWAY CORRIDOR

a. The Commission and Council shall, as appropriate, approve any individual or combination of the following development bonuses in order to recognize design beyond that required to comply with this and other city regulations, and which is considered to better further the goals of the Hill Country Roadway Regulations:

1. Floor-to-area ratio increases of up to .05 to 1 for land of 0-15 percent slope.

2. Building height increase not to result in a maximum height exceeding 40 feet in Low-Intensity areas, 53 feet in Moderate-Intensity areas, and 63 feet in High-Intensity areas.

3. Reduced setbacks of up to 25 feet less than those required.
- b. Performance criteria to be considered in recommending bonuses should relate reasonably to the bonuses being approved and may include the following:
  1. Preserving scenic vistas, including the provision of public observation points. This incentive is allowed only where a view can be preserved. For the purposes of the Hill Country Roadway Regulations, a scenic vista means a generally recognizable, noteworthy view of Lake Travis, Lake Austin, the valleys of the Colorado River, Barton Creek, Bull Creek, and West Bull Creek, or the downtown area of Austin. The Office of Land Development Services shall develop a map indicating segments of Hill Country Roadways along which scenic vistas are prevalent.
  2. Limiting access to roadways other than Hill Country Roadways where such roadways do not encourage traffic through residential areas.
  3. Reducing impervious cover by 15 percent or more beyond the minimum standards allowed by this or other regulations.
  4. Increasing landscaping or setbacks by more than 50 percent and increasing natural areas.
  5. Providing mixed-use developments, particularly those that include residential uses and community facilities.
  6. Reducing building mass by breaking up buildings.
  7. Using "pervious pavers" when not receiving impervious cover credit.
  8. Consolidating small lots to create parcels with a minimum of 300 feet of frontage on a Hill Country Roadway.
  9. Using pitched-roof design features.
  10. Constructing or dedicating public facilities such as parks, roadways and rights-of-way, police, fire, or EMS sites, regional drainage facilities, or other facilities in excess of that required by city ordinances.
  11. Maintaining the construction of all buildings and parking areas on 0 to 15 percent slopes.
  12. Using energy-conserving or water-conserving devices that reduce consumption below what is required by city ordinances.
- c. In order to qualify for bonuses under this section a development should demonstrate compliance with at least 50 percent of the above criteria. The use of bonuses is limited to unusual circumstances that involve:
  1. An undue hardship imposed on a tract by the Hill Country Roadway Regulations or the cumulative effect of regulations in this Land Development Code, due to the peculiar configuration, topography, or location of the tract; or
  2. Demonstration of highly innovative architectural, site planning, and land-use design of a caliber not previously used in the Austin area, and of such a quality as to set an excellent example for subsequent developments.

Section 13-2-784.

HILL COUNTRY CORRIDOR MASTER FILE

The Office of Land Development Services of the city of Austin shall compile and maintain a current master file of the Hill Country Roadway Corridors consisting of the following:

1. A master contour map of all of the Hill Country Roadway Corridors indicating all proposed and approved land uses.
2. A master file of all site plans for the Hill Country Roadway Corridors, including all submitted site plans, whether ultimately approved, disapproved, or withdrawn.
3. A master map showing all specific existing or potential scenic vistas, scenic overlooks, etc, as identified by the Office of Land Development Services and by the scenic view analysis.

Section 13-2-785.

WAIVER OF HILL COUNTRY ROADWAY  
SITE DEVELOPMENT REQUIREMENTS

The Planning Commission may waive one or more of the specific requirements applicable to sites located in a Hill Country Roadway Corridor upon a showing by the applicant that the Hill Country Roadway Regulations impose an undue hardship on the tract due to its peculiar configuration, topography, or location, or that the proposed project demonstrates the use of highly innovative architectural, site planning, or land-use techniques. The Commission may approve any waiver to the minimum extent necessary to allow the project to be constructed. The applicant for any such waiver shall have the burden of showing that the proposed

project, with such waiver granted, will be as good or better than a project developed in compliance with the Hill Country Roadway Corridor Regulations in terms of environmental protection, aesthetic enhancement, land-use compatibility, and traffic considerations. The grant or denial or a waiver by the Commission pursuant to this section may be appealed to the Council .

## **Santa Fe, New Mexico**

### **Highway Corridor Protection District Regulations**

(Article 19C)

#### **HIGHWAY CORRIDOR PROTECTION DISTRICT**

##### **• BOUNDARIES**

The highway corridor protection district encompasses the lands within 600 feet of the edge of the right-of-way of both sides of the following streets designated as special review districts in the urban area general plan in the south central section of the city: St. Michael's Drive, Old Pecos Trail, St. Francis Drive, Rodeo Road, and Interstate 25 and its frontage roads. In cases where the rear lot depth exceeds the 600-foot boundary, a property owner shall have the right to petition the City Council at any time for inclusion of his or her property in the Highway Corridor Protection District in a rezoning application. A map of the highway corridor protection district . . . is shown in the urban area general plan.

Persons with property divided by the highway corridor protection district boundary are required to comply with the district standards only for that segment of the property within the boundary or as adjusted above.

#### **HIGHWAY CORRIDOR PROTECTION DISTRICT**

##### **• GENERAL STANDARDS**

Persons wishing to rezone or annex property within the highway corridor protection district shall comply with the standards as follows:

- A. The minimum building setback from the edge of the right-of-way from the street shall be 50 feet;
- B. The maximum building height shall be 25 feet, not including a parapet;
- C. The maximum density for residential development shall be 21 units per acre;
- D. For any nonresidential permitted use, a minimum of 35 percent of the lot and, for any residential permitted use, a minimum of 50 percent of the lot shall be open space, which shall not include heated spaces, driveways, parking spaces, garages, portals, carports, accessory buildings, or any improvements surfaces. The average dimensions of the opposite sides of open space shall equal no less than 10 feet. Residential development shall, in addition, meet all applicable private and open space standards as set forth in Chapter 3 SFCC 1981;
- E. The maximum floor area ratio for office, professional, and medical office uses allowed in this district are:

1. Office	one story	.25
	two story	.35
2. Medical Office	one story	.20
	two story	.30
3. For educational, hospital, institutional, and other uses allowed in the district, the open space, setback, and landscaping standards set forth in this section shall apply;

- F. The uses permitted in this district are those consistent with the policies set forth in the urban area general plan;
- G. Loading areas shall be screened and located on side or rear yards;
- H. Outdoor storage shall not be allowed in the district;
- I. Access to the property shall be approved by the city engineer and as shown on the development plan;
- J. The off-site impact of the site-generated traffic shall be based on a study performed by the developer using the latest edition of the Highway Capacity Manual. The results of the corresponding impacts shall be evaluated relative to the computed levels of service at various time frames and durations as defined in the manual. A plan for mitigating any adverse impacts shall be proposed by the developer and approved by the City Traffic Engineer prior to the issuance of any building permits. The Traffic Mitigation Plan shall be based on the results of the traffic impact study and shall include proposed improvements, a cost estimate, a construction schedule, and the extent of participation by the proposed development;
- K. New half or partial streets shall be prohibited in new developments. When a tract to be developed borders an existing street having a right-of-way width insufficient to conform to the minimum width standards required by these regulations, such additional right-of-way shall be platted and dedicated in such a way as to make the resulting street conform .

L. When nonresidential uses abut R-1 through R-7 residential densities, the following standards shall apply:

1. All of the structures for the nonresidential uses shall be set back 50 feet from the residential property line and a 25-foot landscape buffer meeting the standards set forth in Section 4 shall be located between the residential and nonresidential uses; or
2. All of the structures for the nonresidential uses shall have a 25-foot landscape buffer meeting in the standards set forth in Section 4 and a masonry wall or a fence, as approved by the planning department, located between the residential and nonresidential uses.

#### HIGHWAY CORRIDOR PROTECTION DISTRICT

##### • LANDSCAPING STANDARDS

Persons wishing to rezone or annex property within the highway corridor protection district shall comply with the landscaping standards as follows:

- A. Existing natural landscaping material shall not be disturbed within 25 feet of the property line that adjoins the street right-of-way. This area shall be labeled as open space setback. No structures, fences, walls, or parking are allowed in this setback;
- B. Landscaping shall be provided in the open space setback where landscaping has been disturbed and shall be provided surrounding buildings and parking areas at a minimum width of five feet. The intensity of landscaping shall be two plants per 30 square feet of landscaped area. One-half of vegetation shall be at least four-feet high, and one-half shall be one-foot high at

the time of planting. Trees shall be a minimum of 10 percent of the total planting. If parking is provided in the front setback, it shall be effectively screened by earth berms or landscaping, which shall be at least four feet above parking lot grade; and

- C. In order to preserve natural landscaping on the banks of the arroyos, an undisturbed setback of 10 feet shall be retained next to the major arroyos where 100-year floodplains have been recorded. Terrain management regulations as set forth in Chapter 3 SFCC 1981 are applicable to any development in the highway corridor protection district.

#### HIGHWAY CORRIDOR PROTECTION DISTRICT

##### • LIGHTING STANDARDS

Any lighting in the highway corridor protection district used to illuminate any off-street parking area shall be so arranged as to reflect the light away from adjacent residential property. Specifically, lights with no cutoff-type luminaire shall be no higher than 10 feet and shall have a minimum illumination, measured at the lot line at ground level, of .20 candlepower. Lights with a cutoff-type luminaire shall be no higher than 20 feet with a maximum illumination, measured at the lot line ground level, of .30 candlepower. Lights with a luminaire of less than 90 [degree] cutoff shall be no higher than 20 feet, with a maximum illumination, measured at the lot line at ground level, of .50 candlepower.

#### HIGHWAY CORRIDOR PROTECTION DISTRICT

##### • SIGN STANDARDS

Signs in the highway corridor protection district shall meet the requirements set forth in Section 3-4-14 SFF 1981 and in addition shall meet the following standards:

- A. For any one sign, including frame and poles, there shall be no more than three colors and no more than two lettering styles; and
- B. At least one of the colors in each sign shall match the predominant colors in the building.

#### HIGHWAY CORRIDOR PROTECTION DISTRICT

##### • ARCHITECTURAL STANDARDS

All commercial and multifamily structures in the highway corridor district shall meet the Architectural Design Ordinance as set forth in Article 3-29A SFCC 19821 and the city's architectural design review guidelines. In addition, all commercial and multifamily structures shall meet the following standards:

- A. Roof shall be flat or nearly flat and concealed by horizontal parapets;
- B. No more than 60 percent of the facade facing the highway corridor may be glass or reflective material; and
- C. A minimum of 80 percent of the surface material, excluding doors and windows, shall be stucco.

#### HIGHWAY CORRIDOR PROTECTION DISTRICT

##### • REQUIRED INFORMATION

When applying for an annexation or rezoning in the highway corridor protection district, applicants shall submit, in addition to the requirements set forth in Chapter 3 of the SFCC 1981, the following information.

- A. A development plan drawn to scale showing drainage; significant



natural features; access, including access to major arterials; arrangement, uses, and dimensions of buildings; parking and loading, landscaping, walls and fences; open space; setbacks; and existing adjacent land uses of abutting property; and

- B. Developers requesting approval for residential projects with 50 units or more, or commercial projects with over 10,000 square feet, within the highway corridor protection zones shall submit, as part of the application for the development plan, an approved traffic impact statement for the proposed development. The statement shall provide data on the traffic generated by the proposed development. Using existing traffic counts generated by the city and other sources, and the methods set forth in the Highway Resource Board's Special Report 87, Highway Capacity Manual, the statement shall also show the traffic impact on the city's relevant traffic network. The relevant traffic network includes all the subcollectors and collectors from the point of the origin at the proposed development up to and including intersections with secondary or major arterials. The statement must show the impact of the proposed development on the level of service of the relevant streets in the traffic network. "Level of service" refers to the categories A through F set forth by the Highway Capacity Manual.

**Tri-County Regional Planning Commission  
(Lansing, Michigan)  
Driveway Standards for Corridors**

**GENERAL PERFORMANCE STANDARDS**

It shall be unlawful to construct or use any direct access driveway that does not meet the following criteria:

- a. Any driveway design must allow an entering vehicle turning speed of 15 mph to help reduce interference with through street traffic.
- b. Driveway design and placement must be in harmony with internal circulation and parking design such that the entrance can absorb the maximum rate of inbound traffic during a normal weekday peak traffic period as determined by a competent traffic survey.
- c. There must be sufficient on-site storage to accommodate at least three queued vehicles waiting to park or exit without using any portion of the street right-of-way or in any other way interfering with street traffic.
- d. Provisions for circulation between adjacent parcels should be provided through coordinated or joint parking systems, or other methods as specified in the Municipal Comprehensive Plan.
- e. Driveway entrances must be able to accommodate all vehicle types having occasion to enter the site, including delivery vehicles.
- f. Driveway placement should be such that loading and unloading activities will in no way hinder vehicles ingress or egress.

- g. Direct-access driveway placement must be such that an exiting vehicle has an unobstructed sight distance according to the following schedule:

Highway Design Speed (mph)	Sight Distance (feet)
30	200
35	225
40	275
45	325
50	350

- h. Driveway design must be such that an entering vehicle will not encroach upon the exit lane of a two-way driveway. Also, a right-turning exiting vehicle will be able to use only the first through-traffic lane available without encroaching into the adjacent through lane.

**STANDARDS FOR RIGHT-TURN LANES AND TAPERS**

Right-turn lanes and tapers will be required when:

1. Expected right-turn ingress movements meet or exceed 50 per hour during a typical weekday peak traffic period.
2. Driveway volumes are expected to meet or exceed 1,000 vehicles per day.
3. The Highway Authority or Municipal Engineer can document, through traffic analysis, that such treatment is necessary to avoid congestion and/or unsafe conditions on the public thoroughfare.

## DRIVEWAY PROFILE

Driveway profiles shall be determined using the following criteria:

1. The grade of a two-way, one-way, or divided commercial driveway shall not exceed 1.5 percent for a minimum distance of 25 feet from the edge of the pavement. Beyond this distance, the grade shall not exceed eight percent.
2. If the highway is curbed and if the sidewalk is 10 feet or less from the edge of the pavement, the grade of a driveway shall be the grade required to meet the sidewalk elevation, but, if that grade would exceed the maximums specified in paragraph 1, the sidewalk shall be either tilted or inclined.
3. If the highway is uncurbed, the grade of the driveway between the highway edge of pavement and the edge of the shoulder shall conform to the slope of the shoulder to the edge of the driveway approach.

For a driveway on an upgrade towards the highway, a grade of 1.5 percent for a distance of 100 feet from the edge of the pavement is required. Beyond this distance, the grade shall not exceed 40 percent and the difference in grades where there is a change of grade shall not exceed three percent.

5. Vertical curves with a minimum length of 15 feet shall be provided at a change of grade of four percent or more.
6. If the sidewalk elevation has to be adjusted to meet the driveway, the sidewalk shall be inclined at a rate not to exceed one-foot vertical for every 24 feet horizontal.

## DRIVEWAY SPACING

Driveway spacing will be determined as a function of arterial highway operating speeds. Spacing will be determined according to the following schedule:

Highway Speed Limit (mph)	Minimum Spacing (Feet)
25	105
30	125
35	150
40	185
45	230
50	275

These spacings are based on average vehicle acceleration and deceleration rates and are considered necessary to maintain safe traffic operation. Spacing will be measured from the midpoint of each driveway. In the event that a particular parcel or parcels lack sufficient arterial frontage to maintain adequate spacing, the landowner(s) have one of two options:

1. They can seek a variance from the zoning administrator for minimum spacing, but in no case can the variance be greater than the next lowest classification on the table above. For example, on a 40 mph arterial requiring 185-foot spacing, the distance may be reduced to no less than 150 feet, which is the standard for a 35 mph facility.
2. The adjacent landowners may agree to establish a common driveway. In such cases, the driveway midpoint should be the property line between the two parcels. The driveway must meet standard specifications, and the estimated driveway volume will be the sum of the trip-generation rate of both land uses in question.

#### BONUS FOR COMBINING ACCESS POINTS

When two adjacent property owners agree to combine access points, the municipality will grant an incentive bonus. The total lot size and road frontage normally required will each be reduced by 15 percent for both landowners. In addition, the required number of parking spaces will be reduced by 15 percent for each development. Site circulation and safety standards will still be enforced.

perpendicular curb face of the intersecting street. Using a 15-foot driveway radius, the edge of the driveway throat shall be 50 feet from the curb face of the perpendicular intersecting street. The driveway radius shall not compound with the intersection corner radius.

#### NUMBER OF DRIVEWAYS PER PARCEL

1. A maximum of one driveway opening shall be permitted to a particular site from each of any one or two abutting streets.
2. When in the opinion of the municipality's or highway authority's traffic engineer, and in the view of the permittee, it is in the interests of good traffic operation, the Board may permit one additional driveway entrance along a continuous site with frontage in excess of 300 feet or two additional driveway entrances along a continuous site with frontage in excess of 600 feet.
3. Where a dual-service driveway is used, it will be considered, for purposes of this section, to be only one direct-access driveway.
4. In the case of dual one-way driveways, one pair may be used per 250 feet of frontage. Only one pair of one-way drives may be used per street frontage.

#### CORNER CLEARANCE

All direct-access driveways shall be constructed such that the point of tangency of the curb return radius closest to a signalized or stop-sign-controlled intersection be at least 40 feet from the

# Appendix 3

## Planned Zoning Districts in Knoxville and Knox County, Tennessee

### **Planned Zoning Districts From the Zoning Ordinance of The City of Knoxville, Tennessee**

#### **RP-1, RP-2, RP-3 PLANNED RESIDENTIAL DISTRICTS**

##### **GENERAL DESCRIPTION:**

The regulations established in this section are intended to provide optional methods of land development which encourage more imaginative solutions to environmental design problems. Residential areas thus established would be characterized by a unified building and site development program, open space for recreation and provision for commercial, religious, education, and cultural facilities which are integrated with the total project by unified architectural and open space treatment. In order to accomplish these objectives, a new RP-1, RP-2, or RP-3 Planned Residential District may be created to be developed specifically as planned unit development.

- District regulations shall be as outlined in this section and shall be the same for RP-1, RP-2, and RP-3 districts except for the overall population density permitted in each district.
- Each planned unit development shall be compatible with the surrounding or adjacent districts. Such compatibility shall be determined by the Planning Commission by review of development plans for the district.

- Commercial uses may be permitted in a planned unit development which contains not less than twenty acres as hereinafter provided. (Amended by Ordinance No. 5397, 8-15-72)

#### **SC-1 NEIGHBORHOOD SHOPPING CENTER DISTRICT**

##### **GENERAL DESCRIPTION:**

This commercial district is intended for a unified grouping, in one or more buildings, of retail shops and stores that provide for the regular needs and are for the convenience of the people residing in the adjacent residential neighborhoods. It is intended that the neighborhood shopping center be developed as a unit, with adequate off-street parking spaces for customers and employees, and with appropriate landscaping and screening materials.

#### **SC-2 COMMUNITY SHOPPING CENTER**

##### **GENERAL DESCRIPTION:**

The community shopping center is intended to be developed as a unified group of stores and shops with adjacent off-street parking for customers and employees and with appropriate landscaping and screening. A community center should provide convenience goods and shopping goods in a wider range than a neighborhood center. It should serve a population of twenty thousand to one hundred thousand with 10-20 minutes driving time.

### **SC-3 REGIONAL SHOPPING CENTER DISTRICT**

#### **GENERAL DESCRIPTION:**

The regional shopping center incorporates the same unified design requirements as neighborhood and community centers. A regional center is intended to provide a full range of merchandise and services including apparel, furniture and home furnishings, variety and foods. A regional center should serve a population in excess of one hundred thousand within a 30 minute driving radius.

### **PC-1 RETAIL AND OFFICE PARK DISTRICT**

#### **GENERAL DESCRIPTION:**

The PC-1 district is established to provide for the unified development of uses ranging from retail stores and services such as are found in neighborhood shopping centers and community shopping centers to businesses and professional offices. In the interest of promoting orderly design and development, the district regulations emphasize rational placement of activities, traffic and pedestrian circulation, access and parking, loading, landscaping, and the mitigation of adverse off-site impacts.

### **PC-2 RETAIL AND DISTRIBUTION PARK DISTRICT**

#### **GENERAL DESCRIPTION:**

The PC-2 District is established to provide for the unified development of uses ranging from those found in regional shopping centers to those found in distribution/light warehousing parks. Businesses within this district may cater to a variety of retail, wholesale, and service trades and may require limited outdoor storage for materials and equipment. As with other planned commercial districts, emphasis is placed on rational placement of activities, traffic and pedestrian circulation, access and parking, loading, landscaping, and the mitigation of adverse off-site impacts.

### **C-6 GENERAL COMMERCIAL PARK DISTRICT**

The legislative purpose, intent, and application of the General Commercial Park Development are as follows:

1. To encourage the clustering of commercial activities within areas specifically designed to accommodate the activities and to discourage the proliferation of commercial uses along major thoroughfares and noncommercial areas.
2. To provide for the orderly development of commercial activities so that any adverse impact on surrounding uses and on the general flow of traffic can be ameliorated.
3. To encourage an orderly and systematic development design providing the rational placement of activities, parking and auto circulation, pedestrian circulation, access and egress, loading, and landscaping.
4. To encourage commercial development which is consistent with the long-range, comprehensive, general plan for Knoxville and Knox County.
5. To allow for mixing of light industrial (manufacturing) uses with compatible commercial uses as stated within the following subsections.
6. To encourage general commercial activities to locate in areas that have access to a major street system.

## **Planned Zoning Districts From the Zoning Ordinance of Knox County, Tennessee**

### **PLANNED RESIDENTIAL ZONE (PR)**

#### **GENERAL DESCRIPTION:**

The regulations established in this zone are intended to provide optional methods of land development which encourage more imaginative solutions to environmental design problems. Residential areas thus established would be characterized by a unified building and site development program, open space for recreation and provision for commercial, religious, educational, and cultural facilities which are integrated with the total project by unified architectural and open space treatment. Each planned unit development shall be compatible with the surrounding or adjacent zones. Such compatibility shall be determined by the Planning Commission by review of the development plans. A planned unit development occupying not less than twenty acres may contain commercial uses as hereinafter provided.

### **PLANNED COMMERCIAL ZONE (PC)**

#### **GENERAL DESCRIPTION:**

The Planned Commercial Zone is intended for a unified grouping of commercial buildings which do not require or desire a central business district location. It is the objective of this zone to achieve the highest quality site design, building arrangement, landscaping and traffic circulation patterns possible.

#### **USES PERMITTED:**

It is not the intent of this zone to restrict potential development by limiting uses. In general, uses permitted shall include office, commercial services and light distribution centers. Child day care centers shall also be permitted, provided they meet the requirements of Article 4.91. Marinas and boat liveries shall also be permitted, provided they meet the requirements of Article 4.30 of these regulations. Since some permitted uses may be incompatible with others the developer of a planned commercial complex shall provide the Planning Commission with a list of uses permitted in his development which shall be compatible with each other and neighboring uses as authorized under restrictive covenants; provided, however, that no use that allows the selling of beer for consumption on premises shall be located within five hundred feet of any residential or agricultural zone.

### **SHOPPING CENTER ZONE (SC)**

#### **GENERAL DESCRIPTION:**

The general intent of this section is to encourage and insure the development of unified retail shopping centers which will promote the public health, safety, morals, and general welfare for the citizens of Knox County. The purposes of these subsections are:

- A. To promote safe and efficient movement of traffic within the site of the shopping center and in connection with adjacent access streets.
- B. To lessen the adverse effects which such shopping centers might have on the uses of adjacent land.
- C. To prohibit the development of uses of a heavy repair, wholesaling, industrial, and residential character in shopping center zones.

#### USES PERMITTED:

The list below specifies the uses which shall be permitted in shopping center zones. In addition to these uses, the Metropolitan Planning Commission may recommend the inclusion of other uses of a related nature, provided that the intent of this resolution is maintained, and provided that no use that allows the selling of beer for consumption on premises shall be located within five hundred feet of any residential or agricultural zone.

#### Uses permitted:

appliance, radio and television store, art supply store, bakery (retail), bank, barber shop, camera store, candy store, clinic (not veterinary), clothing, clothing accessories store, delicatessen, demolition landfills less than one (1) acre in size, restaurants, department store, drug store, film exchange, five and ten cent store, radio or television repair shop, shoe repair shop, flower shop, furniture store, gift shop, grocery store, hardware store, hobby store, ice cream parlor, jewelry store, laundry and dry cleaning establishments, meat market, music store, notion, variety store, photographic studio, business and professional offices, shoe store, sporting goods store, stationery store, toy store, and gasoline service station provided that such gasoline service station is designed as an integral part of the shopping center building group and yard and rummage sales.