



East County Sector Plan



February 2010

Knoxville-Knox County Metropolitan Planning Commission



EAST COUNTY SECTOR PLAN

February 2010

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Also, thanks are in order to Linda Rust and Grant Rosenberg (Knox County) and Liz Albertson, Mike Brusseau, and Mike Reynolds (MPC) for facilitating at public meetings.

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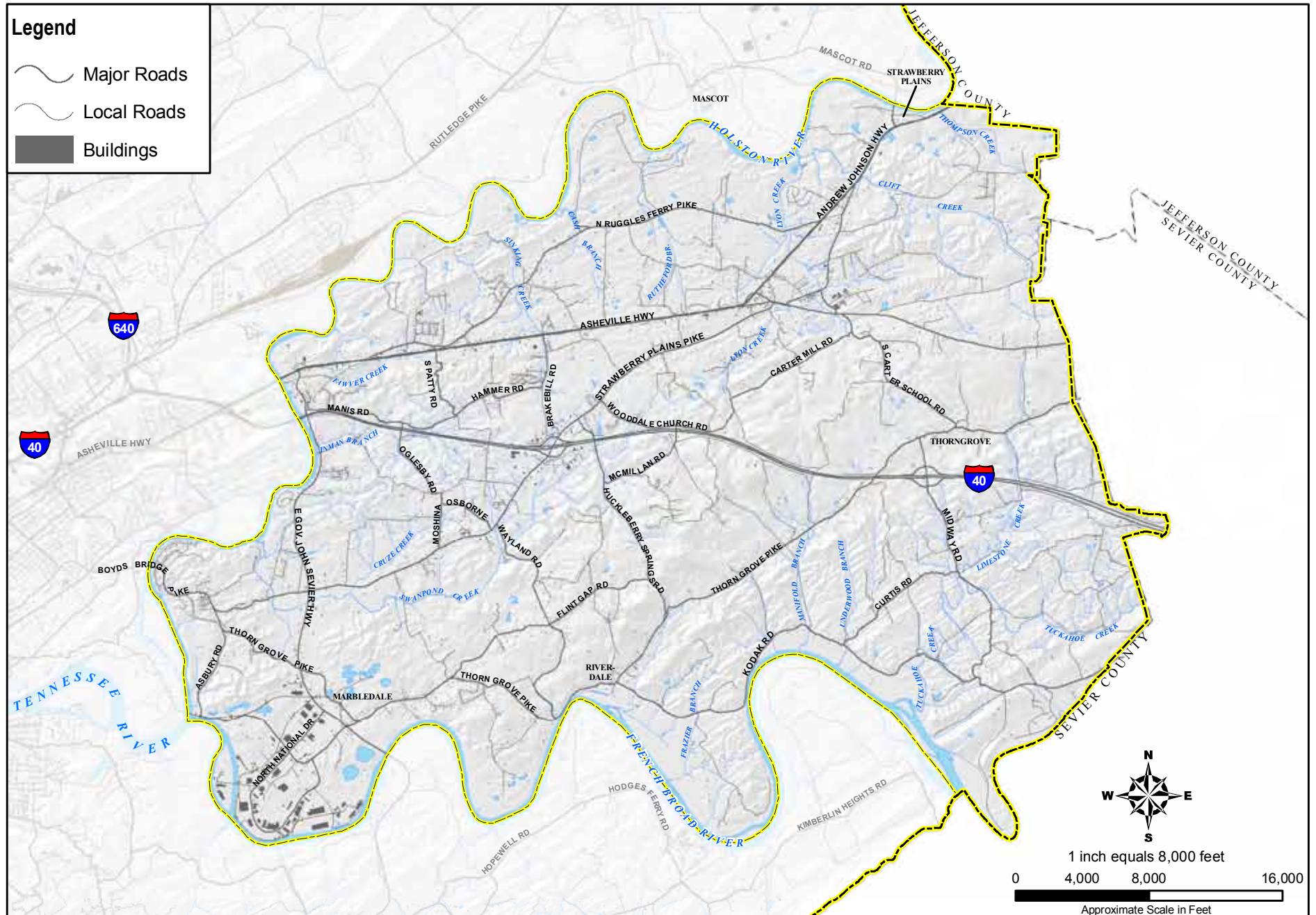
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Map 1: Boundary, Roads, and Buildings



BACKGROUND REPORT

INTRODUCTION

The background report provides information on demographics, development, transportation, environmental resources, and community facilities within the East County Sector.

LOCATION AND BOUNDARIES

The East County is 65.3 square miles and bounded by the French Broad River to the South, Holston River to the North, and Sevier County to the East. It is comprised entirely of Census Tracts 53 and 54. Map 1 provides an overview of the boundaries and extent of existing buildings.



Outside of Forks of the River, most of the development is characterized by houses, which are often dispersed because of extensive rural areas.

ENVIRONMENTAL CONSTRAINTS

In the East County, 57 percent of all land has a slope of 15 percent or less, 22 percent has a slope of 15 to 25 percent, and 21 percent is found with a slope of 25 percent or greater (see Map 2: Environmental Constraints). Because soil erosion and other environmental impacts can be greater on steeper slopes several policies have been created to reduce density of development and keep hillsides in tact. Streams and river resources are also significant. The riparian (streamside) areas along these resources are most significant, filtering and storing runoff. Both the city and county have regulations to protect riparian areas.



Steep slopes, like this ridge above Thorngrove Pike, characterize substantial portions of the sector.

The General Plan policies regarding steep slopes and hillsides are:

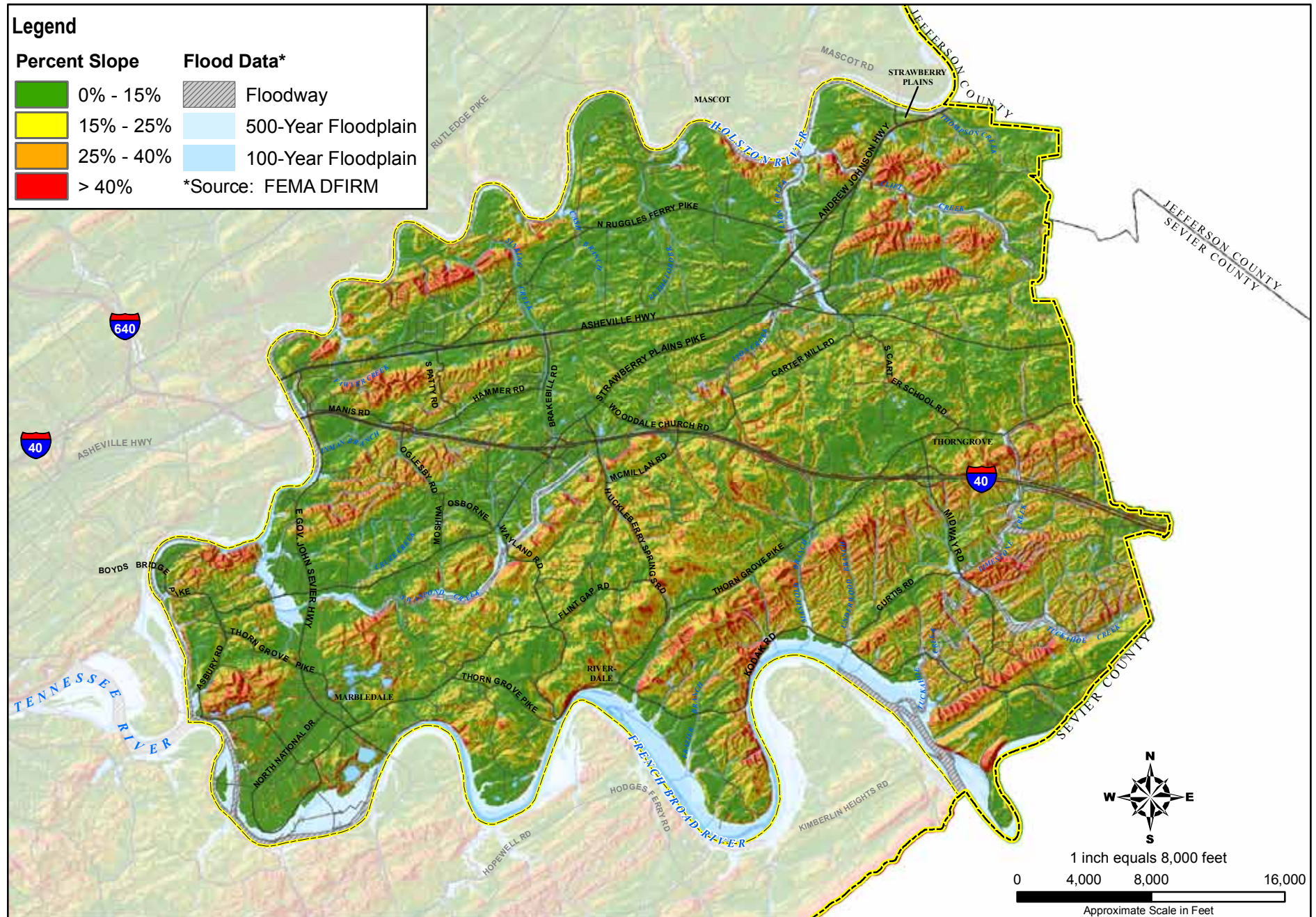
- Restrict development on slopes greater than 15% and along streams and rivers. Housing densities on 15-25% slopes: no more than 2 dwelling units per acre. Housing densities on slopes greater than 25%: no more than 1 dwelling unit per 2 acres. Non-residential uses on slopes over 15%: via a planned development zone.
- Floodplains: Limit uses to 50% of flood fringe area.

Early in 2008, the city and county created a task force to study and make recommendations for hillside and ridge protection. Their work is periodically updated and is available through MPC's website.



The French Broad floodplain is often quite wide.

Map 2: Environmental Constraints



EXISTING LAND USE

Agriculture/Forestry/Vacant Land comprised 62 percent of all acreage in East County. Residential combined for 22 percent, while Industrial recorded a two percent share. Commercial development, accounting for about one percent of land uses is largely confined to the Strawberry Plains Pike interchange and Asheville Highway. One of the largest changes in land use was the creation of the Seven Islands Wildlife Refuge, a conservation area that exceeds 300 acres. Table 1 and Map 3 provide an overview of the land use characteristics.

Rezoning

Since 2000, 1,263 acres have been rezoned in East County. Land rezoned to a non-residential use (such as commercial, industrial and public uses) accounted for 581 acres or 46 percent, while residential totaled 682 acres or 54 percent. Agricultural land accounted for 76 percent of all acreage rezoned.

Table 1. Existing Land Use

Land Use	2000 Acreage	(%) Share	2006 Acreage	(%) Share
Agriculture/Forestry/Vacant Land	27,430	64.0	26,526	62.0
Commercial	355	0.8	398	0.9
Industrial (Manufacturing)	806	1.9	893	2.1
Multi-Dwelling	94	0.2	70	0.2
Office	137	0.3	203	0.5
Private Recreation	45	0.1	253	0.6
Public Parks	103	0.2	526	1.2
Public/Quasi Public Land	430	1.0	515	1.2
Right of Way/Open Space	2,384	5.6	2,133	5.0
Single Dwelling/Rural Residential	8,750	20.4	9,129	21.3
Trans/Communication/Utilities	133	0.3	132	0.3
Under Construction/Other Uses	234	0.5	103	0.2
Water	1,926	4.5	1,864	4.4
Wholesale	30	0.1	30	0.1
TOTAL	42,857		42,775	

DEMOGRAPHICS

From 1990 to 2000, East County's population grew only eight percent, compared to 14 percent for Knox County. The largest growth in this planning sector occurred among those aged 35 years and over from 53 percent of the total population in 1990, to 58 percent in 2000. The share of people 19 years and under decreased slightly from 26 percent in 1990, to 24 percent of the total population in 2000. Females comprised 51 percent of sector residents in 2000, although males grew at a faster rate (nine percent).

Since 1990, the majority of Knox County's total population shifted from 51 percent found in Knoxville, to only 43 percent in 2007, signifying the county balance population grew at a faster rate.

From 1990 to 2007, growth in Knox County occurred predominately in the Southwest (73.6 percent), North (56.4 percent), and Northwest



Farmland accounts for most of the existing land use.

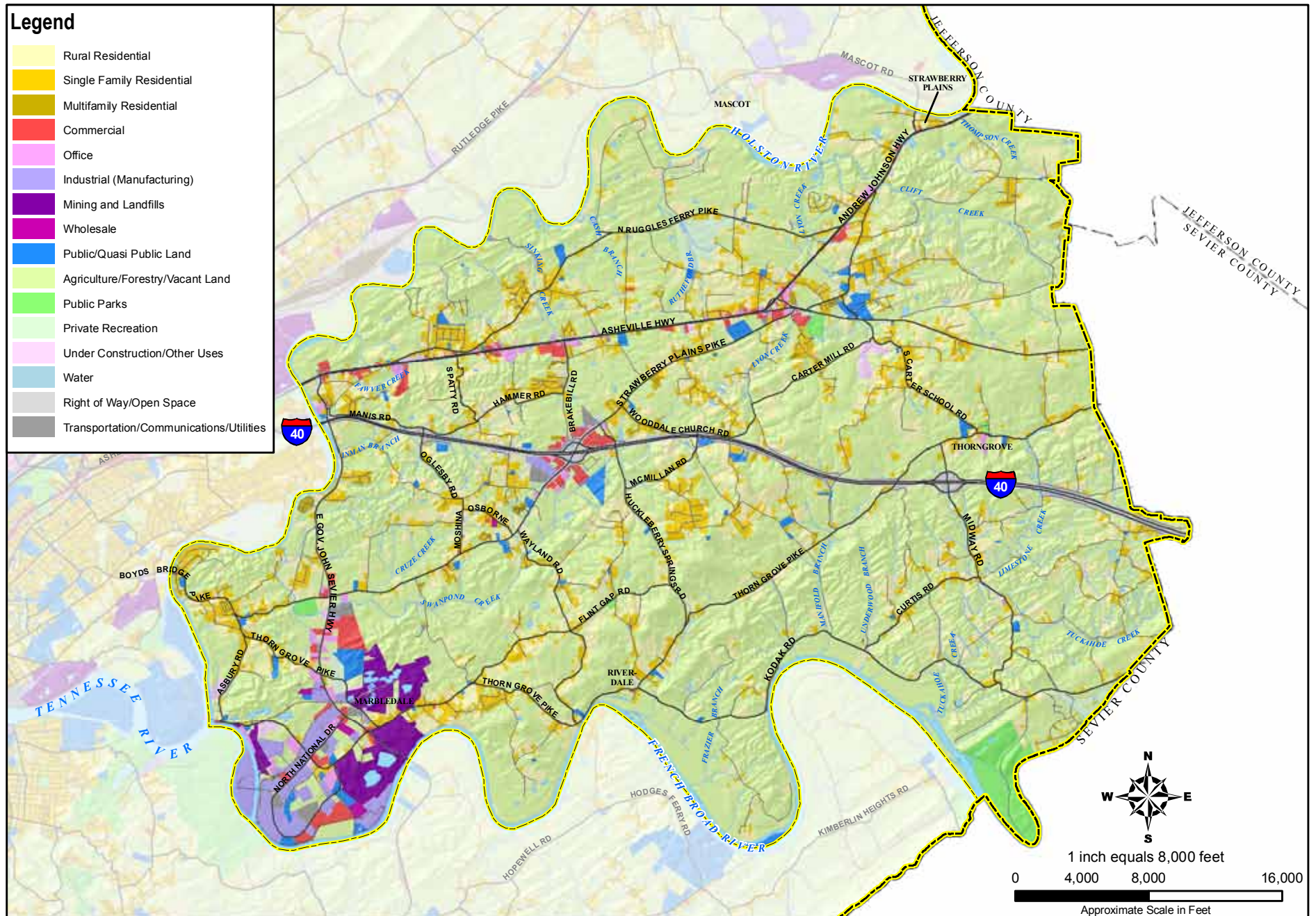
Table 2. East County Population By Age and Sex (%)

	1990	2000	Change
Total Population	12,357	13,313	7.7
14 years and under	2,319	2,385	0.3
15 to 19 years	869	842	-3.1
20 to 24 years	800	651	-18.6
25 to 34 years	1,834	1,706	-7.0
35 to 44 years	1,835	2,064	12.5
45 to 54 years	1,648	2,010	22.0
55 to 59 years	698	886	26.9
60 to 64 years	664	753	13.4
65 to 74 years	1,040	1,192	14.6
75 years and over	650	824	26.8
Male	5,967	6,527	9.4
Female	6,390	6,786	6.2

Table 3. Knoxville/Knox County Population

	1990 (%)	Share	2000 (%)	Share	2007 (%)	Share
Knoxville	169,761	50.6	173,890	45.5	183,546	43.3
Knox County (balance)	165,988	49.4	208,142	54.5	240,328	56.7
Knox County Total	335,749		382,032		423,874	

Map 3: Existing Land Use



(51.8 percent) County sectors. East County's population declined from a seven percent share in 1990, to six percent in 2007.

HOUSING

Total housing units in East County increased 40 percent since 1990, to 6,857 units in 2007. The percent share of detached dwellings declined, while attached dwellings, multi-dwellings, and mobile homes increased. The average household size also decreased from 2.7 in 1990 to 2.5 in 2000.

Residential Building Permits and Conditions

Although total housing units increased, East County's percent share of county sector totals was small. In 2007, East County comprised a 6.5 percent share of detached dwellings, 2.7 percent of attached dwellings, and two percent of multi-dwellings. While East County continues to grow, it is small in comparison to other county sectors.

In general the vast majority of the housing stock is in good to excellent condition. There are very few clusters of houses that are in less than good condition (see Map 4: Residential Building Conditions).

Table 4. County Sector Populations

	1990	(%) Share	2000	(%) Share	2007	(%) Share	(%) Change 1990 to 2007
East County	12,357	7.2	13,313	6.2	15,777	6.1	27.7
Northeast County	18,993	11.1	21,816	10.1	26,508	10.2	39.6
North County	32,391	19.0	42,557	19.7	50,645	19.5	56.4
Northwest County	49,422	28.9	62,864	29.1	75,030	28.9	51.8
Southwest County	39,990	23.4	56,419	26.1	69,430	26.8	73.6
South County	17,759	10.4	19,236	8.9	22,119	8.5	24.6
TOTAL	170,912		216,205		259,509		51.8

Table 5. Housing Units

	1990	(%) Share	2000	(%) Share	2007	(%) Share
Total housing units	4,895		5,773		6,857	
Detached dwelling	3,870	79.1	4,612	79.9	5,184	75.6
Attached dwelling	39	0.8	48	0.8	209	3.0
Multi-dwelling	138	2.8	164	2.8	236	3.4
Mobile home	815	16.6	949	16.4	1,228	17.9
Other (boat, RV, van)	33	0.7	0	0.0	0	0.0
Occupied housing	4,650	95.0	5,333	92.4		
Owner-occupied	3,675	79.0	4,396	82.4		
Renter-occupied	975	21.0	937	17.6		
Vacant housing	245	5.0	440	7.6		
Avg. household size	2.66		2.49			



Detached houses, generally on large lots, are the primary types of housing.

Map 4: Residential Building Conditions

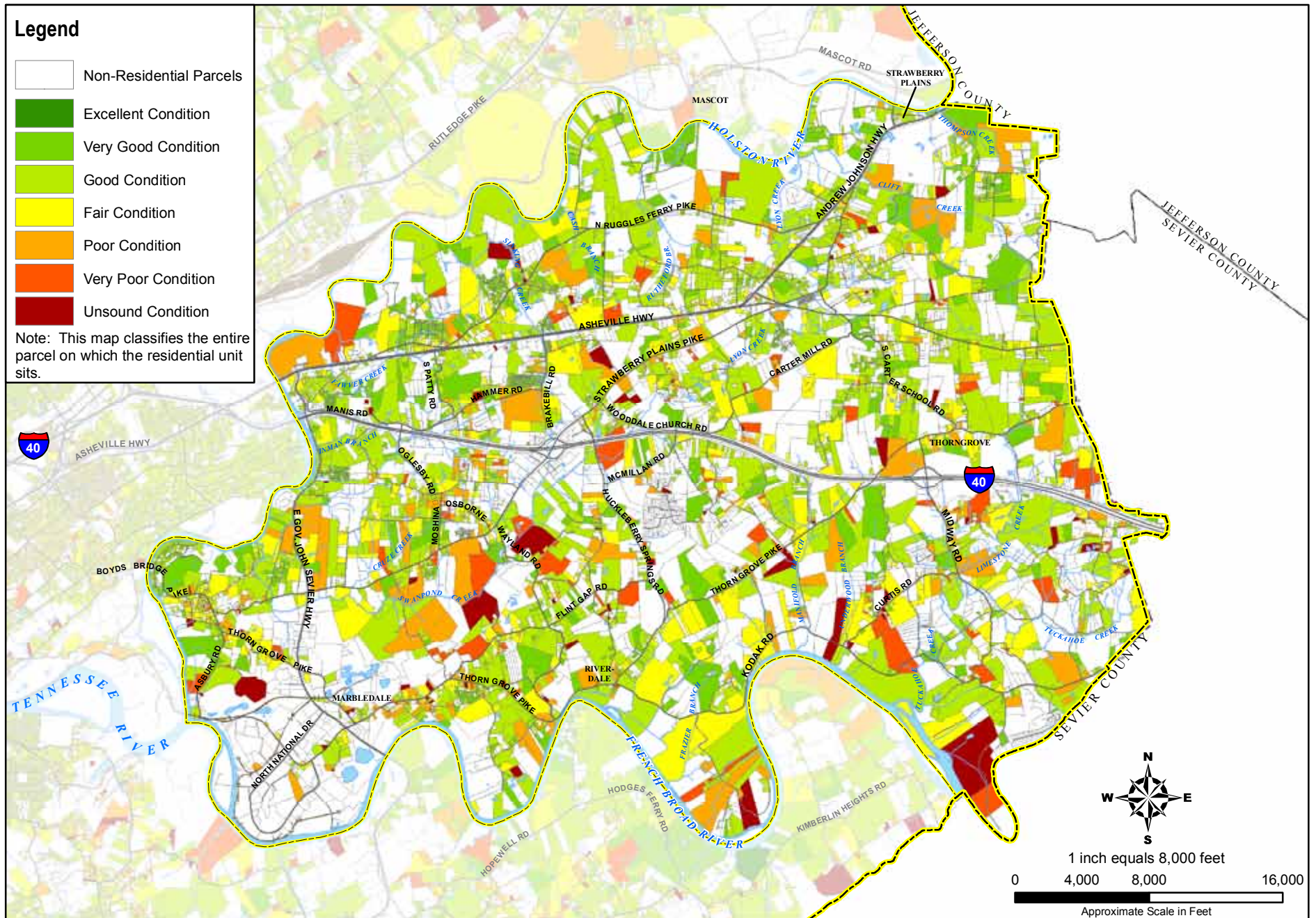


Table 6. Detached Dwellings

	1990	(%) Share	2000	(%) Share	2007	(%) Share
East County	3,870	7.7	4,612	6.9	5,184	6.5
Northeast County	5,700	11.4	7,422	11.1	9,206	11.5
North County	9,440	18.9	12,668	19.0	15,113	18.9
Northwest County	13,213	26.4	17,558	26.3	20,919	26.1
Southwest County	12,047	24.1	17,677	26.5	22,099	27.6
South County	5,712	11.4	6,774	10.2	7,490	9.4
TOTAL	49,982		66,711		80,011	

Table 7. Attached Dwellings

	1990	(%) Share	2000	(%) Share	2007	(%) Share
East County	39	2.0	48	1.0	209	2.7
Northeast County	54	2.8	82	1.7	194	2.5
North County	143	7.5	834	16.8	1,484	19.3
Northwest County	584	30.4	1,928	38.8	2,875	37.3
Southwest County	942	49.1	1,817	36.6	2,375	30.8
South County	156	8.1	258	5.2	565	7.3
TOTAL	1,918		4,967		7,702	

Table 8. Multi-Dwelling

	1990	(%) Share	2000	(%) Share	2007	(%) Share
East County	138	1.7	164	1.6	236	2.0
Northeast County	211	2.7	226	2.2	233	1.9
North County	905	11.4	1,346	13.0	1,467	12.2
Northwest County	4,640	58.7	5,549	53.5	6,409	53.4
Southwest County	1,521	19.2	2,592	25.0	2,861	23.8
South County	495	6.3	504	4.9	800	6.7
TOTAL	7,910		10,381		12,006	

Table 9. Residential Subdivision Permits, 2000 to 2007

	East County	Knox County	(%) Share
Subdivided acreage	1,336	14,887	9.0
Subdivisions	111	1,458	7.6
Number of Lots	1,077	20,238	5.3

Table 10. Non-Residential Permits, 2000 to 2007

		(%) Share	(%) Share
East County	Commercial 60	5.9	27 28.1
North County	122	11.9	10 10.4
Northeast County	47	4.6	17 17.7
Northwest County	437	42.7	29 30.2
South County	49	4.8	4 4.2
Southwest County	309	30.2	9 9.4
TOTAL	1,024		96

From 2000 to 2007, the average subdivision in East County was 12 acres in size with 10 lots at 1.2 acres per lot, while Knox County's average subdivision was 10 acres with 14 lots at 0.7 acre per lot.

Non-Residential Building Permits and Building Conditions

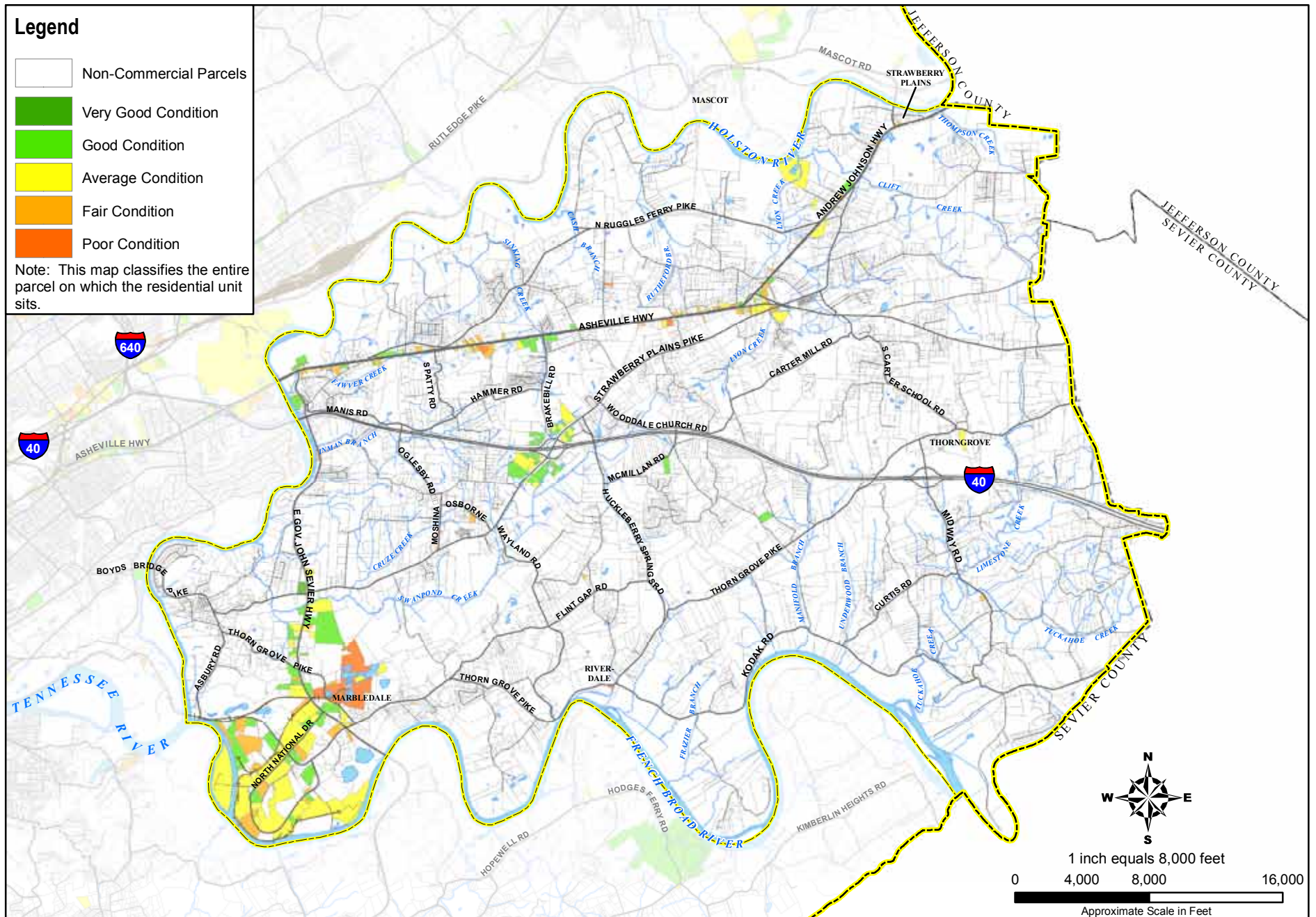
East County recorded 60 commercial building permits from 2000 to 2007, a six percent share of all county sector commercial permits. During the same period 27 industrial permits were recorded, a 28 percent share of all industrial county sector permits.

Most commercial and industrial buildings are in average or good condition, although several buildings in Marbledale and along Asheville Highway, where some of the oldest commercial structures exist, are in fair condition. See Map 5: Commercial Building Conditions.



With extensions in sanitary sewer lines, over 100 subdivisions have been created this decade.

Map 5: Commercial Building Conditions



PROPERTY MARKETS

East County has five office buildings totaling 70,370 square feet, just 0.4 percent of all rentable office space in Knox County.

At the retail level, the sector recorded 86,326 square feet of leasable shopping center space, or 0.6 percent of the Knox County total.

Industrial made up the largest portion of non-residential activity. In 2007, the East County registered 53 buildings totaling 5,024,847 square feet of industrial space and a vacancy rate of 18.1 percent. The majority of industrial property is located in Forks of the River Industrial Park with over 4.7 million square feet and a vacancy rate of 14.1 percent. The sector accounted for 15.6 percent of all industrial square footage in Knox County.

Table 11. Industrial Properties, 2007

Name	Address	Total Sq. Ft.	Name	Address	Total Sq. Ft.
3109 E Gov John Sevier Hwy	Gov John Sevier Hwy, E, 3109	13,300	Pepsi Warehousing	National Dr, N, 5005	27,600
3109 Water Plant	Water Plant Rd, 3109	334,000	Pepsi/Atlantic	Federal Dr, 2708	106,282
5008 N National Dr	National Dr, N, 5008	158,968	Philips Consumer	Strawberry Plains Pk, 7201	221,172
5049 S National Dr	National Dr, S, 5049	60,974	Republic Plastics	National Dr, S, 5300	161,470
5061 S National Dr	National Dr, S, 5061	49,647	Rocore	National Dr, S, 5050	109,644
5205 N National Dr	National Dr, N, 5205	17,115	Ross Prestressed Concrete	Independence Ln, 2701	11,423
5336 Counselor Ln	Counselor Ln, 5336	30,054	Rowe Transfer	National Dr, S, 5320	48,131
American Safety	Media Dr, 2820	120,330	Sea Ray Boats	Island River Dr, 5502	205,535
Aqua-Chem, Inc	Gov John Sevier Hwy, E, 2823	174,600	Sea Ray Boats	Sea Ray Dr, 2601	244,694
Ashland Chemical Inc	National Dr, N, 5263	29,025	Smoky Mountain Materials	National Dr, S, 5218	76,500
Bedford Building	National Dr, N, 5427	60,000	Southeastern Mach.	Asheville Hwy, 8426	46,350
Bike Building	Red Dog Ln, 2801	207,983	Superior Drainage	Gov John Sevier Hwy, E, 3131	10,000
Briggs Industries	National Dr, S, 5040	336,000	Superior Steel	National Dr, N, 5225	80,000
Burkhart Enterprises	Asbury Rd, 2435	24,000	Tennessee Guardrail	Pickel Ln, 2620	14,630
Champion Safe Company	Trebor Ln, 5411	24,154	Teton Motor Freight	National Dr, S, 5651	13,950
Cherokee Porcelain	Independence Ln, 2717	69,177	Thermo King	Strawberry Plains Pk, 7126	12,720
Conway Southern	National Dr, S, 5301	55,142	Transmission Tech.	National Dr, N, 5428	96,880
Diamond Hill Plywood	Water Plant Rd, 3118	45,074	USF Holland Motor Express	National Dr, N, 5409	17,220
Duracap Asphalt	Asbury Rd, 2535	10,000	Valley Proteins	Johnson Rd, 9300	30,742
Energy Systems	National Dr, S, 5055	42,000	Wilson Trucking	Strawberry Plains Pk, 7125	11,898
Evertite	National Dr, S, 5324	36,188	Woodstream Manufacturing	National Dr, N, 5360	111,614
FedEx	Asbury Rd, 2645	40,000			
Garnet Distribution	National Dr, S, 5260	50,932			
Global Testing Labs	Gov John Sevier Hwy, E, 3029	25,681			
House Hasson	Water Plant Rd, 3125	311,661			
Kel-San Products	National Dr, N, 5109	81,250			
Knoxville Door & Millwork	Gov John Sevier Hwy, E, 3015	167,620			
MDSI/Worldwide	National Dr, N, 5209	50,681			
Melaleuca/B & V Tech.	National Dr, N, 5301	176,000			
Morris Coupling	National Dr, N, 5112	164,025			
Panasonic Electronics	National Dr, S, 5105	363,554			
Pepsi Bottling Group	Federal Dr, 2708	37,257			



Almost all of the manufacturing and distribution facilities are in the Fork of the River area.

East County has 16 hotels totaling 878 guestrooms. This is 10.7 percent of the total number of guestrooms found in Knox County. Six of the hotels in this planning sector were constructed since 2000.

ECONOMIC DEVELOPMENT STUDIES

Economic development is a function of county and regional organizations to serve the present and future employment needs of Knox County. Because of mobility across county, other nearby counties and their populations are served by economic growth. Identification of appropriate land for office, business and research/development parks and related opportunities is critical to the process. Because of changes in land availability, infrastructure, types of job creation (for instance, preferences for locating complementary industries or offices in proximity to each other) and labor force, governments must

be proactive in the potential site identification and marketing processes.

Various studies have been conducted to identify potential office park and business park sites in Knoxville-Knox County. These include redevelopment of older industrial land in the city as well as undeveloped land. The two most pertinent studies regarding unincorporated areas are the Inventory of Potential Sites for Business and Office Parks (2002) and Potential Locations for Business Park Development Locations (2005). The 2005 study was improved through the use of geographic information system technology, while some prior sites were removed due to development for other purposes in the intervening years. Several of the sites in the East County Sector and other portions of the city and county are no longer opportunities,

having been developed for residential purposes. The former business park proposal along Lyon's Creek near the Holston River (2001 sector plan) is a primary example.

TRANSPORTATION

Following completion of the Interstate system in the early 1970s, travel patterns shifted markedly from Asheville and Andrew Johnson Highways to I-40. This resulted in a significant reduction in traffic on the sector's two east-west arterials, leaving them with considerable traffic-carrying capacity for the future.

John Sevier Highway (Hwy 168) was built as a first phase of an inner beltway leading to Alcoa Highway. It was intended to cross the Tennessee River (Fort Loudoun Lake) and join I-40, a

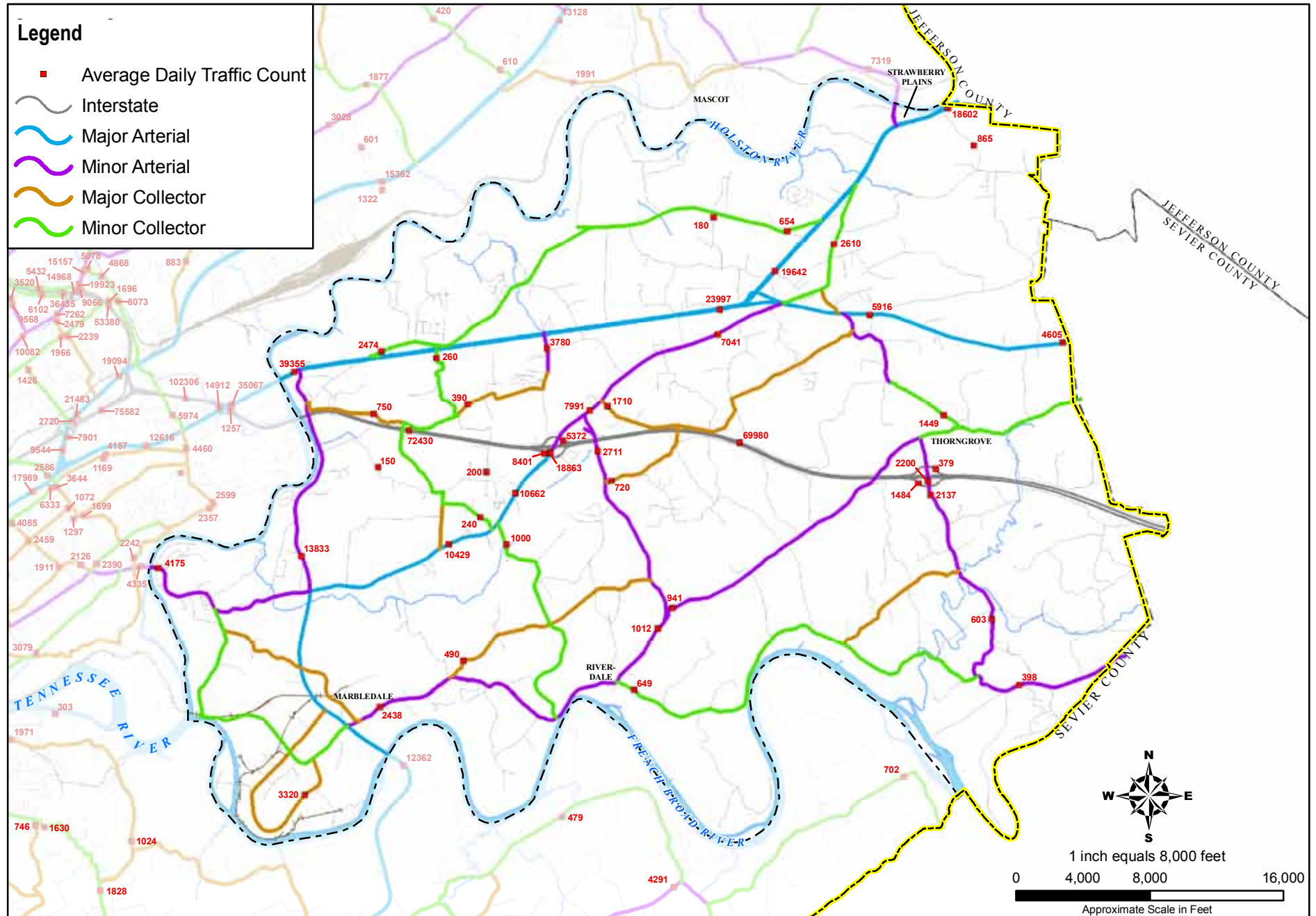
Table 12. Hotel Properties, 2007

Name	Address	Guestrooms	Year Built
Arrow Motel	Asheville Hwy, 8709	22	1950
Baymont Inn & Suites	Brakebill Rd, 814	0	
Best Western Strawberry Inn	Saddlerack St, 7260	64	2004
Comfort Suites Inn	Region Ln, 7230	68	2007
Country Inn & Suites East	Crosswood Blvd, 7525	56	1996
Econo Lodge Inn & Suites	Strawberry Plains Pk, 7424	72	1991
Fairfield Inn By Marriott	Cracker Barrel Ln, 1551	105	1995
Gateway Inn	Asheville Hwy, 6300	30	
Hampton Inn	Sawyer Ln, N, 7445	81	2007
Holiday Inn Express East	Rufus Graham Rd, 730	77	2005
La Quinta Inn & Suite East	Saddlerack St, 7210	65	2000
Motel Six East	Cracker Barrel Ln, 1550	65	2004
Quality Inn East	Crosswood Blvd, 7471	54	1995
Ramada Limited East	Brakebill Rd, 722	58	1995
Sunbeam Motel	Asheville Hwy, 6933	0	
Super 8 Motel East	Crosswood Blvd, 7585	61	1994



A potential business park site in the vicinity of the Strawberry Plains Pike interchange.

Map 6: Existing Transportation System



proposal which is no longer feasible, nor necessary given I-140. Long range plans still call for expansion to four lanes.

MPC occasionally gets asked: “what’s so scenic about East Knox County’s portion of John Sevier Highway that is designated a Tennessee Parkway?” It is a fair question because billboards happen to be allowed along some Tennessee Parkways, like John Sevier Highway. The following summary outlines the difference between the two designations.

Scenic Highways:

Under State law, several roads in Knox County are designated Scenic Highways, like John Sevier Highway between Alcoa and Chapman Highways. The provisions of this 1971 act prohibit junkyards and billboards within 2,000 feet of the designated highway. With few exceptions, the act also limits



This part of John Sevier Highway is a state-designated Tennessee Parkway (a meaningless designation in areas with zoning).

building height to 35 feet within 1,000 feet of a designated route. If a local government has adopted or adopts a more stringent standard, such as design standards for signs, buildings and landscaping, the local provision shall guide scenic highway protection.

Tennessee Parkway:

There is also a provision for Tennessee Parkways, which has the same restriction on junkyards and trash dumping as the Scenic Highway (see above). However, billboards are not regulated in such areas as East Knox County, which is comprehensively zoned. The Parkway designation, which does affect building height, is made by the Tennessee Department of Transportation (TDOT) Commissioner. A change to the zoning ordinance creating local standards protecting or enhancing scenic qualities is an alternative that could improve scenic quality.

Local measures such as the Knoxville-Knox County Forest Protection and Tree Planting Plan (adopted 2007) call for conservation of the landscape along Thorngrove Pike, Kodak Road and Huckleberry Springs Road. Legislation could also be introduced to the State legislature to have these roads or other roads designated as Scenic Highways. Code changes, such as sign control and landscape standards, would be needed to conserve such beautiful landscapes.

Congestion and Other Issues

Several intersections are slightly congested at peak evening hours, including John Sevier/Asheville Highway intersection, the John Sevier/National

Drive intersection and Huckleberry Springs Road. Adopted transportation plans currently contain proposals for turn lanes and similar improvements to reduce congestion.

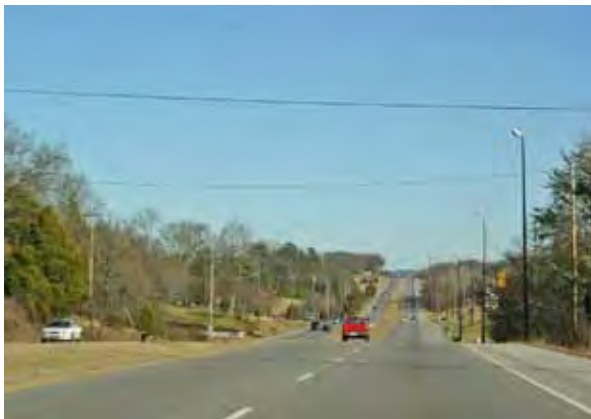
While traffic carrying capacity is good, several issues remain:

- Inadequate roads in the Urban Growth Boundary and Planned Growth Area: the existing road system is a series of rural roads that are not consistently improved to recognized traffic engineering standards (for example, adequate width). Road alignment and connectivity is also a problem. The roads around the Strawberry Plains Pike/I-40 interchange, including connections to Brakebill Road and Asheville Highway have long been recognized as a problem. Road systems where development is warranted should enable safe access, while allowing through traffic to move efficiently. Until recent years, much of the development has been directly adjacent to the existing roads. New local connecting roads, as opposed to cul-de-sacs, offer alternative means for people to reach a destination and can provide internal access to future parks and other community facilities.
- Road design should be in relation to the natural and cultural setting: known as “Context Sensitive Solutions.” The basic objective of CSS is to respect or enhance the landscape and surrounding communities when designing a road system. This can mean sign standards, tree planting and

conservation, and creating sidewalks that are comfortably separated from fast moving traffic. Related to these principles are scenic roads.

- Pedestrian and bicycle systems are almost non-existent as a result of the sector being rural and having very little sidewalk construction. However, increases in new subdivision housing densities (within the Urban and Planned Growth areas) can provide opportunities to incorporate bike and pedestrian connections to schools, parks and employment centers.

The existing road network and the classifications of those roads and traffic volumes is presented in Map 6: Existing Transportation System. Because of the relatively low volumes of traffic, there are only a few major planned improvements in the adopted Long Range Mobility Plan. These are reflected in the Transportation Plan (see page 50 in the following section of this document).



In general, there are no major congestion issues in the sector.

COMMUNITY FACILITIES

Parks and Open Space

East County has five community parks: Carter, Paschal Carter, Riverdale, Folks of the River and Thorngrove Parks (see Map 7). With the exception of Carter and Paschal Carter Parks, they are dispersed and well positioned to serve the places which have developed around historic communities of the sector. Community parks are those places generally reached by automobile that are used for sports and community-based recreation, like swimming. They are expected to be composed of 20 or more acres. Along with the other major resource, Seven Islands Wildlife Refuge, and school grounds that are used for playfield and recreation purposes, there are approximately 610 acres of park and public or quasi-public open spaces in the sector. This gives the sector the second highest portion of park acres per number of residents in the city and county: 42.2 acres per 1,000 people.



Seven Islands Wildlife Refuge is one of region's premier conservation and outdoor recreation areas.

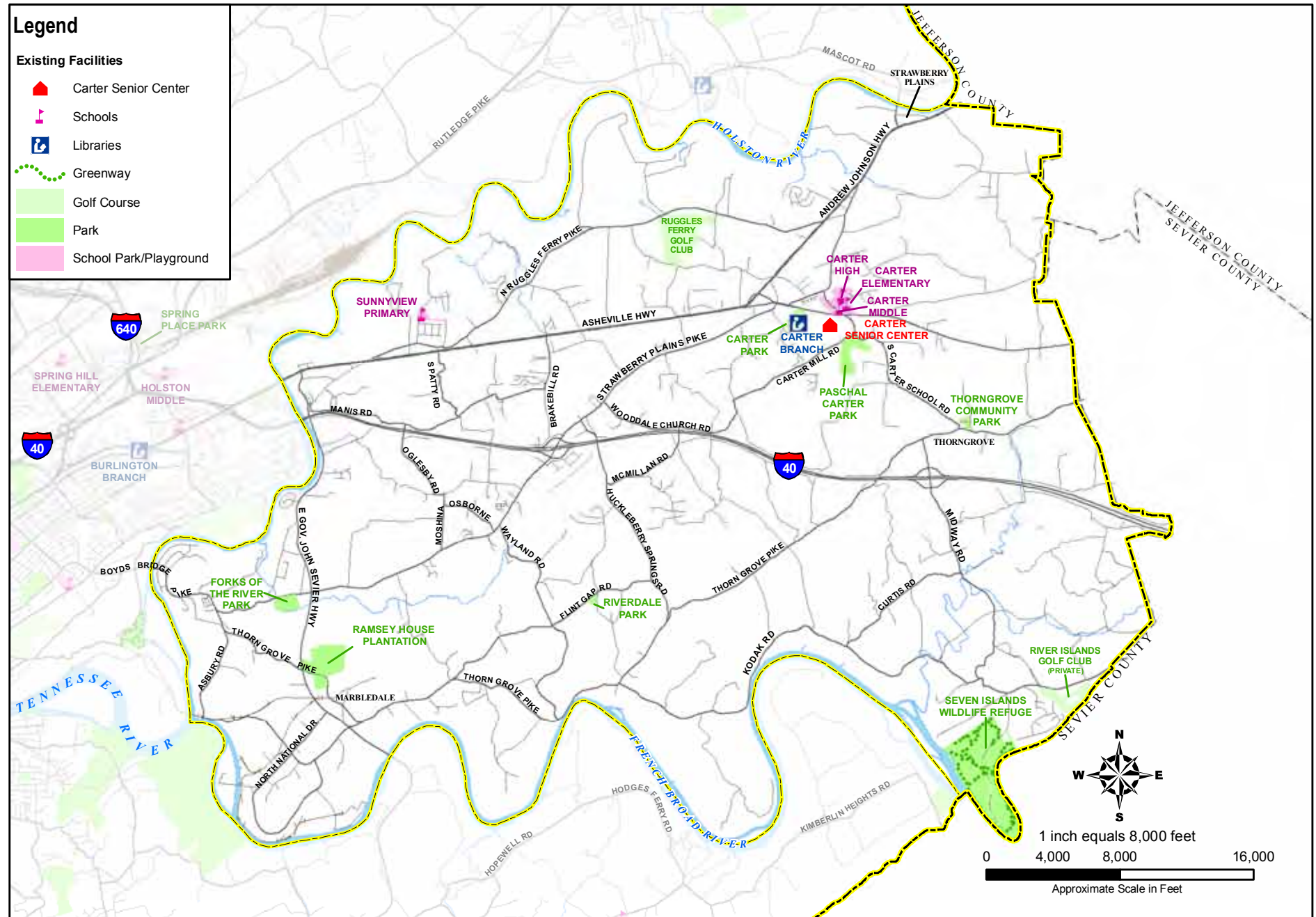
A significant future concern is the creation of neighborhood parks that are evenly distributed in the Urban Growth Area and Planned Growth Area. Neighborhood parks are typically 5 to 20 acres in size and are created within a half-mile walking distance of suburban neighborhood residents.

During the creation of this sector plan, the Knoxville/Knox County Park, Recreation, and Greenways Plan has been adopted. That plan is presented in the 15-Year Plan section of this document.

Greenways

A greenway is an open space set aside for conservation and, usually but not always, for recreation. Many greenways feature a paved or unpaved path, accommodating bicyclists and pedestrians. When they are created as linear parks, greenways wind through natural open spaces, often along side a creek. They can provide access to nature and, when a paved trail is created, a safe route

Map 7: Existing Community Facilities



for reaching such destinations as parks, schools, suburban areas, and places of employment. The East County sector currently has one greenway-related trail, which is the walking trail around Seven Islands Wildlife Refuge.

PUBLIC UTILITIES

The Knoxville Utilities Board (KUB) provides water, sanitary sewer, natural gas and electrical utility services.

Sewer services

Historically, the construction of wastewater treatment plants and the extension of sanitary sewer lines has been a major determinant of suburban growth. Otherwise, households have had to rely on septic tanks and drain fields to treat wastewater. These systems require relatively large lots and must be approved by the Knox County Health Department. In recent years, on-site community-based sewer systems have also played a role in suburban development in Tennessee. The differences between the two systems are outlined below.



The drip irrigation system for an onsite treatment system can be used for recreation purposes.

The major components of an onsite treatment system are a septic tank, effluent pump, collection system (gravity or low pressure), treatment system (typically a recirculating sand filter or a membrane system), and a drip irrigation field. These community-based systems have been created in response to technology that allows a number of households and/or businesses to share a decentralized wastewater treatment system rather than a conventional public sanitary sewer backbone. The drip irrigation field can be an open space that can be used for recreation purposes or “natural” area such as an artificial wetland. These systems have changed the nature of conventional development, which usually relied on the extension of the traditional public sanitary sewer system at the suburban fringe. The on-site systems can be used to create new development with some percentage of open space. In contrast, they can also enable development in outlying rural areas known as sprawl, adversely impacting schools and roads.

These systems must be approved by the Tennessee Department of Environment and Conservation (TDEC). KUB has the sole right to develop and manage any wastewater treatment system within its service area, including on-site systems, but can at its discretion permit a private entity to design, develop and maintain such a system. That permission would have to be granted by KUB in writing and be permitted by TDEC.

Conventional sewer services are dependent on the location of treatment plants, gravity lines and pump stations to create the system. Pumps stations and force mains are used to move sewage uphill.

Force mains are not a source for connections to nearby houses or businesses. Currently, all the treatment plants that serve East County are located beyond the sector (Eastbridge in Mascot, Love’s Creek Plant near Holston Hills, and Kuwahee near Second Creek). Within the urban growth and planned growth areas (see Growth Policy Plan Map), KUB has the authority to make the necessary facility improvements for the collection, pumping, and treatment of wastewater to meet the needs of development. However, KUB is not obligated to provide sewer services if the city annexes parts of the Urban Growth Area. KUB ratepayers are not asked to fund sewer extensions for the benefit of private developments or entities; in other words, line extensions and other needed facilities are completed at the cost of the developer or the local government.

Water Services

KUB provides a network of water lines that covers most of the sector. Much of the Tuckahoe drainage basin and some of the farmland along the French Broad do not have a network of water lines. Many residents, especially in those areas, continue to rely on well water. The primary purpose of the original water utility, East Knox Utility District, was to provide safe drinking water, which was accomplished by a system of undersized two-inch lines. That size, however, does not provide reliable pressure for fire protection. KUB recognizes the problem and has an improvement program to upgrade water volumes and pressures in the distribution system.

Electrical Services

The regional power transmission system is the responsibility of the Tennessee Valley Authority. Because of growth to the south and east, particularly in Sevier and Blount Counties, TVA foresees the need to upgrade its transmission facilities, including a new switching yard near the Midway Road/I-40 intersection and a new transmission line connecting the new switching yard to TVA's Volunteer Substation in Corryton. The Midway Road/I-40 intersection is the area selected for the switching yard because several transmission lines come together in that vicinity. TVA provides power to KUB, which has its own substations to distribute power to local residents. KUB foresees the need to develop another substation in the sector to meet future electrical needs.

SCHOOLS

According to MPC's "Enrollment Projections for Knox County Schools" all East County schools under the high-growth scenario show a modest 10-year growth in enrollment numbers.

Table 13: School Enrollment

School	2006/2007	2016/2017	(%) Change
Carter Elementary	473	550	16.3
Carter Middle	747	849	13.7
Carter High	942	948	0.6

In view of the slow growth rates and anticipated number of children, school capacity is not a significant issue. However, capacity is only one dimension to facility planning. Also important is

school condition. In 2006-2007, the Partnership for Educational Facilities Assessment, which included representatives of the School Board, MPC and Public Building Authority, examined building conditions throughout the county's school system. Carter Elementary was found to be one of the schools in great need of improvement. Consequently, two options have been discussed: extensive renovation and new construction.

HISTORIC RESOURCES

With its two rivers and fertile land, East Knox County has a fascinating heritage. The first Native Peoples were Paleo-Indians who arrived as early as 12,000 years ago near the end of the last Ice Age. For thousands of years, Native Peoples took advantage of the game, and nut and fruit-bearing riches of the land as they seasonally came through the region. About 1000 B.C., settlement began to take place as people grew crops and constructed villages. This pattern became more sophisticated during the Mississippian Period (1000 to 1600 A.D.) when these ancestors of the Cherokee established towns, with permanent housing, centered around religious and political life. They built mounds, surrounded their settlements with walls, and placed communal buildings around a central plaza. These settlements were severely altered by European-introduced disease, first brought by Spanish explorers in the 16th century. By the arrival of the Scotch-Irish descendents and other settlers from North Carolina, there apparently were no remaining Native settlements immediately upstream from the Forks of the River.

In 1783, the State of North Carolina fostered settlement in the French Broad Valley through what has been dubbed the "Land Grab Act", allowing for the sale of land to settlers and speculators. This act was passed to bring revenue into the State's treasury. James White and Francis Ramsey were among the early speculators, who bought thousands of acres. Also contributing to settlement were land grants to North Carolina's militia for their Revolutionary War service.

Some of the earliest settlers in Knox County could be found in what are now Riverdale, Frazier's Bend and Asbury. They included Alexander McMillan, whose house still stands on Strawberry Plains Pike, Ramsey, who built his stone Federal-style house on Thorngrove Pike, and White, who later moved to the fort in what was to become downtown Knoxville.

The Frazier Bend Community, located on Frazier Bend Road, is separated from the west side of the Seven Islands Community by bends of the French Broad River.



The rich bottomland along the French Broad was a catalyst for settlement.

Brief summaries of the historic resources follow and Table 14 provides an overview of the dates of construction and status for listing on the National Register of Historic Places. (In looking at that table, “eligible” under the heading NHR means that the property is considered to eligible but has not yet been listed on the National Register). Map 8: Historic Resources provides an overview of the locations of the sites.

Frazier Bend Community

Located on Frazier Bend Road, it is separated from the west side of the Seven Islands Community by bends of the French Broad River. Its historic resources are:

McNutt-Pickel-Caylor House:

Built in 1893, this house is a two-story frame house in Queen Anne style, with a large back ell and located at 3031 Frazier Road.

Cruze House:

This two-story frame Federal style house is on Frazier Bend Road and built in 1820. It is one of the earliest on this road, and is an example of early settlements along the French Broad River.



The Cruze Farm, now protected by a conservation easement, is representative of the Frazier Bend historic landscape.

Amos Pickel House:

In 1893, Molly and Amos Pickel built this two-story frame Gothic Revival House on Frazier Bend Road.

Ambrose Frazier House:

Originally built as a one-story Gothic Revival house in 1895, it was altered to a one-and-one-half story structure on Frazier Bend Road in 1941.

Thomas-Frazier House:

Most likely built in 1795 by William Thomas, this house was sold to George Stout in 1798. A year later, Jacob Kimberlin purchased the house from Stout and it was not lived in until it became the home of Alexander Frazier's family around 1830, whose wife was Kimberlin's granddaughter.

Bethel United Methodist Church:

Built in 1900 on Kodak Road, this church is a one-story frame church with standing seam metal covered gable roof.

William Thomas Walker House:

This two-story frame house was built in 1830 and located on a private drive to the east and south of 2301 Kodak Road.

First Nichols House:

Originally constructed in 1845, this two-story frame house currently is in the golf course east and south of 2301 Kodak Road.

Riverdale Community

Located on the French Broad River it is significant for its history as a river community. Various 19th century building still stand, including:

McNutt-Campbell-Kennedy House:

This house stands on the land which is reputed to be James White's first settlement in the county, prior to settling present day Knoxville. John McNutt built this two-story heavy timber frame with noggin infill, which was typical of the era. James Campbell owned the house in 1834, until selling it to James Kennedy in 1865.

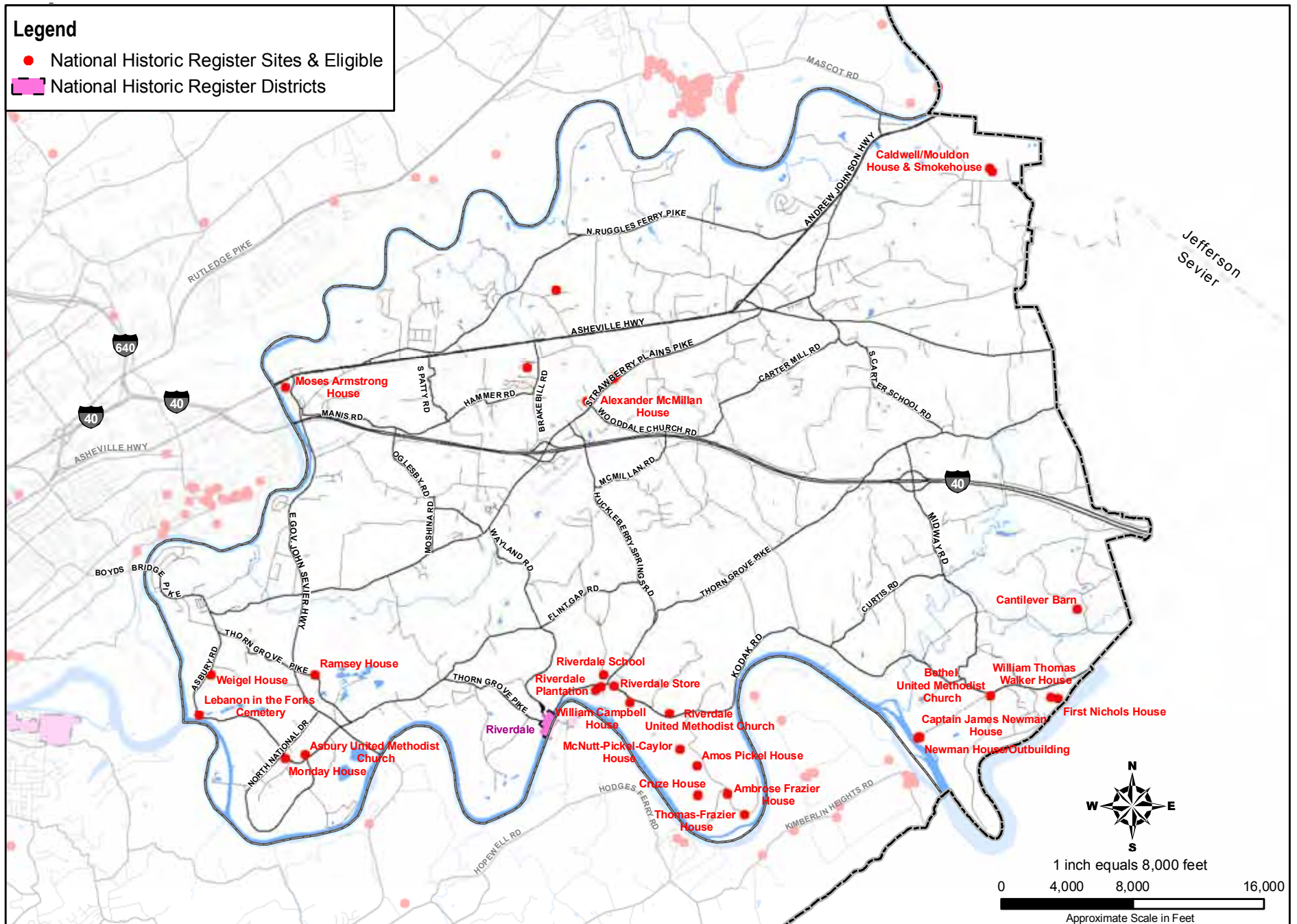
Riverdale Presbyterian Church:

Around 1857 a church was built at Riverdale. Being educated for the ministry in Ireland and Edinburgh, James Kennedy brought with him the tenets of the Seceders from Scotland, singing only Psalms in the services. The first pastor was James Spencer Mills, and after a time the members returned to previous churches and the church lot was eventually deeded by the Kennedy heirs for use as a community cemetery.

Kennedy-Pickel House:

Located at Thorngrove Pike and Kodak Road, the original portion was constructed in 1805 by Reverend James Kennedy, after purchasing the property from Alexander McMillan. Reverend

Map 8: Historic Resources



Kennedy was one of the first settlers of the Riverdale community and lived in this house until 1816 when he built a brick house in Knoxville. Ed Pickle and his wife Martha bought the house in 1875, and it is thought they built the front section of the house. The house was used as the Riverdale Post Office for a time after the Pickles acquired it.

Alexander Campbell House (Riverdale Plantation):

Originally built in 1800, this two-story timber frame house was expanded around 1905 and is associated with the earliest settlement along the French Broad River. An original settler in 1791, Alexander Campbell was an early settler moving along the French Broad River, staying in James White's log house then traveling back to Campbell's Station in west Knox County because of an "Indian" threat. By 1793, he found himself back to the French Broad River and built this large house in Riverdale to accommodate his "commodious" family.

Riverdale Store:

Constructed in 1880 by T.R.C. Campbell, this two-story frame store has served the Riverdale Community continuously since its construction on Thorngrove Pike. This store was typical of the small rural trade centers that were in Knox County and throughout most of its existence, postal services were provided through the store. Now it is the H&H Service Mart.

William Campbell House:

William Campbell was a son of Alexander Campbell and in 1815 he built this two-story brick

house, which was later expanded to include a front section around 1900.

Riverdale School:

Located on Kodak Road, this Knox County school was built with the assistance of the Federal Emergency Administration of Public Works in 1938. It was designed by Barber and McMurray, Architects and is significant for its neoclassical design. This was a community school for the Thorngrove and Riverdale neighborhood, a model among the elementary schools in the Depression Era, serving as a school until 1985.

Riverdale United Methodist Church:

This Church was built in 1898 on land donated by Samuel Campbell and the carpenters of this one-story frame church were the members of the congregation.

Other historic resources in East County are:

Weigel Bungalow:

Built in 1908, this bungalow encloses a much older,

1860 building and is located on 2208 Asbury Road. The architectural elements used in designing the front porch are particularly noteworthy.

Weigel-Shell House:

Located on 2721 Asbury Road, this two-and-one-half Queen Anne styled brick house shows the importance of the marble industry in Knox County. The house was constructed in 1890.

Asbury United Methodist Church:

Originally constructed in 1855 and later expanded in 1893, this one-story frame Victorian Gothic church is significant for its architecture and history.

Captain James Newman House:

Located at 9120 Newman Lane, this two-story Queen Anne house was built by Captain James Newman, who owned and operated the river boat Lucille Borden on the French Broad River. Travel on the French Broad River from Knoxville to Dandridge to Sevierville was most prevalent in the 1880s and 1890s. This property had a steamboat landing in its front yard, which was typical of houses along the river.



Captain Newman's house, farm and boat landing site.

2301 Asbury Road:

Built in 1900, this neoclassical two-and-one-half story frame house is significant for early suburban development.

Riverdale-Kennedy-Pickel-Fraser Mill:

Located on Wayland at Thorngrove Pike, this mill represents industrial and economic significance for the Riverdale community. It was constructed

in 1858, making it one of the oldest mills in Knox County, few of which have survived from the early settlement. The milldam was built in 1916 to substitute for the earlier flume that led from the nearby stream.

Moses Armstrong House:

Located on the banks of the Holston River, at 6110 Asheville Highway, this 1805 two-story brick house

represents a transportation historic resource because of its association with Armstrong Ferry. Moses, the son of Robert Armstrong, an original settler and Revolutionary War veteran, was a farmer and owner of Armstrong Ferry.

Lebanon "in the Fork":

Founded in 1791 by Reverend Samuel Carrick, who brought his family from Carrick's Ford across the Holston into the territory of Lebanon congregation, helped the Church expand in 1793 when it became necessary to build on a larger scale. Built on land originally donated by Francis Alexander Ramsey, the Church also is home to one of the oldest cemeteries in Knoxville. The church building burned in 1980.

Marbledale (Ramsey House Swan Pond):

Built in 1797 by Francis Alexander Ramsey, who fathered the famous historian, Dr. James G.M. Ramsey, and Knoxville's first elected Mayor, William B.A. Ramsey. Francis Alexander served on the Board of Blount College, later becoming the University of Tennessee. A Ramsey family member lived in the house until the civil war when they moved to South Carolina for safety. The house was sold and continued to change hands until 1952 when the Association for the Preservation of Tennessee Antiquities acquired the property and began restoration.

Alexander McMillan House:

Arriving to Knox County in 1783 with Robert Love, James White and Francis Ramsey, Alexander McMillan bought one of the original land grants from the state of North Carolina. On the land he

Table 14: Historic Resources

Address	Name	NHR	Date
2205 Asbury Rd	Weigel Bungalow	Eligible	1908
2301 Asbury Rd		Eligible	1900
2400 Asbury Rd	Lebanon "in the Fork"	Listed	1793
2721 Asbury Rd	Weigel-Shell House	Listed	1890
2820 Asbury Rd	Asbury United Methodist Church	Listed	1855
6110 Asheville Hwy	Moses Armstrong House	Listed	1805
3031 Frazier Rd	McNutt-Pickel-Caylor House	Eligible	1893
3127 Frazier Rd	Amos Pickel House	Eligible	1893
3321 Frazier Rd	Cruze House	Eligible	1820
3406 Frazier Rd	Ambrose-Frazier House	Eligible	1895
3530 Frazier Rd	Thomas-Frazier House	Eligible	1795
7011 Kodak Rd			
7048 Kodak Rd	William Campbell House	Eligible	1815
7115 Kodak Rd	Riverdale United Methodist Church	Eligible	1898
9400 Kodak Rd	Bethel United Methodist Church	Eligible	1900
9604 Kodak Rd	William Thomas Walker House	Eligible	1830
9620 Kodak Rd	First Nichols House	Eligible	1945
9120 Newman Ln	Captain James Newman House & Outbuildings	Listed	1893
Forks of the River	Strawberry Plains Fortifications Railroad Bridge	Listed	1931
7703 Strawberry Plains Pk	Alexander McMillan House	Listed	1785
7911 Strawberry Plains Pk	Wooddale House	Eligible	
2700 Thorngrove Pk	Ramsey House	Listed	1797
6516 Thorngrove Pk	McNutt-Campbell-Kennedy House	Listed	
6544-6604 Thorngrove Pk	Riverdale Historic District	Listed	1790
6603 Thorngrove Pk	Kennedy-Pickel House	Listed	1805
6920 Thorngrove Pk	Alexander Campbell House	Eligible	1800
7002 Thorngrove Pk	Riverdale Store	Eligible	1880
7009 Thorngrove Pk	Riverdale School	Listed	1938
2929 Wayland Rd	Riverdale-Kennedy-Pickel-Fraser Mill	Listed	1858

NHR = National Historic Register

built this house in 1785 in what was then known as New Market Rd, now present day 7703 Strawberry Plains Pike. Around 1810 a front addition was added to the home and a third room in 1860. This house stayed within the McMillian family until the mid 20th century.

***Strawberry Plains Fortifications Rail Bridge
(McBee or Mascot Bridge):***

In 1929, Knox County approved construction of this bridge to replace a ferry that crossed the Holston. The plans were completed by the Freeland-Roberts firm in January 1930 and the county soon granted a construction contract for \$250,000 to the Southern Company of Birmingham. Dedication ceremonies for this bridge were held on October 12, 1931. This bridge is 785 feet and contains three concrete arches and five concrete deck girder approaches.

Effects of National Register listing: Listing or eligibility for listing on the National Register of Historic Places does not affect an individual's property rights. Private owners can do what they please with their National Register resource. However, there are three potential advantages to individuals:

1. During the review process for federally licensed or federally funded projects, their effects of project must be assessed. If impacts were found to be negative, mitigation must be undertaken. For example, if a federally funded highway was to come through a historic district, alternative routing proposals would have to be investigated.

2. Federal income tax credits may be available to private individuals for repair/restoration costs used to upgrade income-producing properties.
3. Some federal programs, which have advantages to private property owners like the conservation easement program under the USDA Farm and Ranch Land Program, award points for higher consideration when National Register properties are on the site.

Local historic zoning overlay districts and that effect: The Ramsey House is the only property protected by a historic overlay. Such a designation does not affect the uses that are allowed under the base zoning (for example, if a property is zoned Rural Commercial [CR], all uses under CR zoning would be permitted). The overlay does, however, require review by the Historic Zoning Commission if exterior changes, new construction or demolition is to be considered.



The Ramsey House

Knoxville, Farragut and Knox County Growth Policy Plan

In 2001, Knoxville, Farragut and Knox County agreed to and adopted the Growth Policy Plan. The document identifies specific areas for urban and suburban growth as well as a rural area, which under state law has to be set aside to:

1. "Identify territory that, over the next twenty (20) years, is to be preserved as agricultural lands, forests, recreational areas, wildlife management areas or for uses other than high density commercial, industrial or residential development." These are the Urban Growth Boundary (an area where the City of Knoxville may annex under provisions of the State Act) and the Planned Growth Area in the unincorporated area of the County.
2. "Reflect the county's duty to manage growth and natural resources in a manner which reasonably minimizes detrimental impact to agricultural lands, forests, recreational areas and wildlife management areas." This is the Rural Area, depicted on the plan map.

Under existing state law, this plan can be changed by mutual agreement of the local governments which agreed to the original plan. No changes have been made since 2001 adoption.

In some sector plans, MPC recognizes potential changes that should be considered when the Growth Policy Plan is updated. MPC staff sees no reason to make such recommendations to the

Rural Area, Urban Growth Boundary and Planned Growth Area, depicted on the Policy Plan (see the map, page 27).

The plan and its policies are among the strongest measures to preserve the Rural Area of the East County Sector.

Public Participation

MPC staff held eight public meetings concerning the update of the East County Sector Plan. These meetings included two advisory committee meetings, five East County Sector Plan meetings, and one roundtable discussion concerning Midway Road Interchange area. The various meetings are presented in chronological order.

The comment summary under each of the meetings represents views that were noted during the meetings through public comments via comment cards, expression by several individuals or points raised by an organization or agency representative.

Advisory Committee Meetings:

The advisory committee was formed by MPC because some residents were dissatisfied with MPC's staff use of a survey as the initial step in gathering public input for the plan update. After two meetings in the summer of 2008, several members of the Advisory Committee made recommendations on the types of meetings that they would prefer: MPC proceeded accordingly.

Sector Plan Meetings:

First Sector Plan Meeting (July 31, 2008): At the request of the advisory committee, MPC staff held the first East County Sector Plan Meeting to review MPC's comprehensive planning program and provide an overview of the adopted plan in 2001. MPC staff answered questions during the meeting and used comment cards for those that were unable to speak during the meeting.

Summary of comments:

- Need for agricultural/ rural preservation
- Need to redesign "four way in"
- Need areas for employment
- No sewage plant on French Broad
- No business park
- Need to encourage green building practices
- Need to encourage large lot zoning and cluster development
- Concerns about TVA transmission
- Need to examine a new Carter Elementary.

Second Sector Plan Meeting: Held during October of 2008, MPC staff, TPO staff, and county staff served as facilitators of small break out groups that identified issues pertaining to rural areas, employment areas, commercial development, transportation improvements and community facilities. The facilitators answered questions during the meeting and used tablets to record public comment.

Summary of comments and issues:

- Plan should remain the same
- No business park

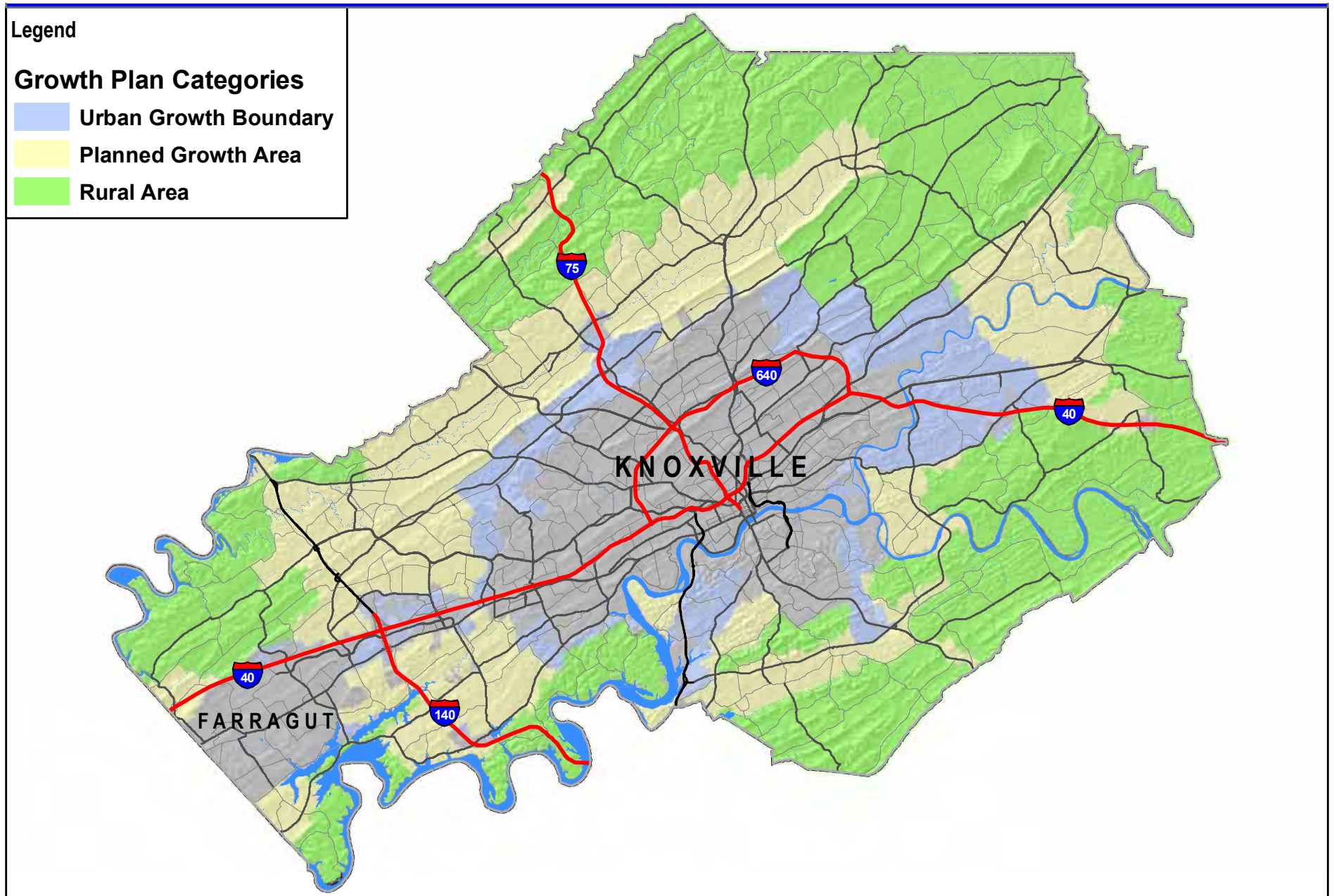
- Town centers should be located in existing commercial areas
- Employment needs in the county should be considered
- Sidewalks are needed
- Limit signage along Asheville Highway
- Thorngrove Pike and Kodak Road should have scenic designation
- Preserve French Broad at all costs
- Ridge trails should be encouraged
- Do not widen roads in rural areas
- Consider a conservation/blueway on both sides of the French Broad.

Third Sector Plan Meeting: Held during June of 2009, MPC staff presented draft recommendations, including no proposed changes to the Growth Policy Plan, town center and other mixed use development approaches, economic development strategies, park concepts, and French Broad conservation concepts. MPC staff answered questions during the meeting and used comment cards for those that were unable to speak during the meeting.

Summary of comments:

- No business park
- In favor of scenic corridors
- In favor of French Broad preservation
- Strawberry Plains commercial area is a "lost cause" (aesthetics and form of development) with its highway oriented commercial development
- Consider agricultural uses as economic development
- Look at agricultural tourism.

Map 9: Knoxville-Knox County Growth Policy Plan Map



Fourth Sector Plan Meeting: Held during July of 2009, MPC staff presented draft policies and plan recommendations concerning land use, community facilities, and transportation. MPC staff answered questions during the meeting and used comment cards for those that were unable to speak during the meeting.

Summary of comments:

- No business park
- Leave area as is
- Preserve agricultural/rural character and provide more specific proposals for the French Broad corridor
- Traffic calming needed
- No big box commercial developments
- What are the intentions of KUB, TVA, the Development Corporation, and MPC in the Midway Road Interchange area?
- Is a mediated session with Midway interests possible?
- Asheville Highway should not be all commercial

Roundtable Meeting: The roundtable discussion meeting was set up at the request of the residents during the third sector plan meeting. The meeting was held on September 29, 2009 was facilitated by a third party, Professor Becky Jacobs and Professor Brian Krumm of the UT Law School. The Midway Road Interchange area landholders and stakeholders were invited to the meeting as were representatives of the French Broad Preservation Association, Thorngrove Community Club, Eighth District

Preservation Association, TVA, KUB, MPC and the Development Corporation of Knox County. Each group was asked to talk about their interest in the area. During this meeting the French Broad Preservation Association announced they would have an independent study by the Ochs Center that would be completed within three weeks and would examine economic development alternatives for the Midway Interchange area.

Summary of comments, including implications of presentations (comments were specific to the presenters related to the specific projects and audience inquiries):

- MPC learned that TVA was locating their switching station on the north side of the interstate on the Development Corporations land, instead of the prior site, located south of the interstate.
- TVA dismissed rumors that they were extending transmission lines across the French Broad and Seven Island Wildlife Refuge.
- KUB indicated that they are not seeking a sewage plant along the French Broad.
- Thorngrove Community Club representative noted that any Midway business park consideration is unacceptable
- Representatives of commercial property owner asked about potential changes to commercial zoning to east of Midway Road.

Fifth Sector Plan Meeting: Held January of 2010, MPC staff presented the draft East County Sector Plans for economic development in the area. Both MPC staff answered questions during the meeting and used comment cards for those that were unable to speak during the meeting.

Summary of comments:

Sixty-one people signed in at the meeting. About two-thirds stood up when asked if they opposed the Midway business park proposal. Nine comment cards were handed to staff, and responses indicated that all nine people did not support a Midway business park as part of the Midway Northwest Quadrant proposal (see page 32 of the Land Use Plan). Support was generally expressed for the other proposals (Carter School improvements, Scenic and French Broad Conservation Corridors). One person suggested a continuation of Roundtable discussion. Another person wondered how a scenic corridor could be created if a road is to be widened (this can be done through context sensitive design; see page 54 of the Transportation Plan. For example, a landscape median is one potential solution).

An additional six cards were received by MPC after the January 25 meeting. Three respondents generally agreed with the Midway area proposals; three did not. Several residents pointed out that improvements in sidewalks and intersections are needed in the Carter schools area. The school improvement and park and open space proposals were favored by these six respondents.

Summary of MPC staff responses that were integrated into the following proposed 15 Year Plan

1. MPC staff notes that no changes will be recommended to the Rural Area as identified in the Growth Management Plan.
2. MPC staff refines Carter Town Center recommendation (including “four-way in”) and recommends future county/MPC consulting assistance for its realization.
3. MPC staff recommends that the French Broad corridor be protected through the use of a conservation overlay area, including the scenic attributes of Thorngrove Pike and Kodak Road.
4. MPC staff has not proposed any more commercial areas than were in the previous sector plan, although staff gave more details to the recommendations to make them clearer during implementation.
5. MPC developed highway corridor design proposals for Asheville Highway and John Sevier Highway and recommends a highway corridor overlay zone to address safety, landscape and related design issues along on these highways.
6. Scenic road corridor proposals are presented for portions of Strawberry Plains Pike, Thorngrove Pike, Kodak Road, Huckleberry Springs Road and Midway Road.
7. MPC staff examined previous published studies on the condition of Carter Elementary Schools, which noted several poor conditions, and recommends further consideration of improvements or a new school.

8. MPC staff held a roundtable meeting at the suggestion of a resident’s comment made during the fourth sector plan meeting.

9. MPC staff revised Asheville Highway land use recommendations to include several non-commercial and mixed use districts.



A portion of Kodak Road



The designated Rural Area is 55 percent of the sector’s land area.

THE 15 YEAR LAND USE, COMMUNITY FACILITIES AND TRANSPORTATION PLANS

LAND USE PLAN

Introduction

The 15-Year Land Use Plan is a basis for land development and conservation, including rezoning decisions. Those zoning decisions are made periodically through recommendations of the Metropolitan Planning Commission and the changes to existing zones via the decisions of City Council or County Commission.

To provide an example of a typical rezoning case, consider the following. Low density residential (LDR) land use is the most common designation in growing suburban areas (see the land use plan map at the end of this document). Many times such land was zoned agricultural back in the 1950s. A rezoning to allow detached houses in such areas is almost always approved.



An example of a typical low density residential subdivision.

The list of zoning districts that are recommended in relation to the following land use plan designations and policies are outlined in Appendix A.

Proposed Land Use Policies

Agricultural (A): For use in the Rural Area of the Growth Policy Plan, this designation includes other farm and agricultural-related uses and very low density residential uses (not to exceed one dwelling unit per acre).

Low Density Residential (LDR): Primarily residential at densities of less than 6 dwelling units per acre (city); 5 dwelling units per acre (county).

Medium Density Residential (MDR): Primarily residential at densities from 6 to 24 dwelling units

per acre (city) and 5 to 12 dwelling units per acre (county).

Medium Density Residential/Office (MDR/O): Areas designated to accommodate medium density or office uses, occasionally used as buffers to low density residential areas.

Office (O): Business and professional offices and office parks.

Community Commercial (CC): Retail and service-oriented development that includes supermarkets, shops and restaurants. Located within a reasonable driving distance of most sector residents.



An example of attached houses in a low density residential area

Rural Commercial (RC): Retail and service-oriented commercial uses intended to provide rural communities with goods and services that meet day-to-day and agricultural-related needs.

General Commercial (GC): Primarily existing strip commercial corridors, providing a wide range of retail and service-oriented uses. In some areas, such as Asheville Highway, with (CB) Business and Manufacturing Zoning, warehousing and light manufacturing may be created.

Community Mixed Use Center (MU-CC): This type of center is envisioned to be developed at a moderate intensity with a variety of housing types (5 to 24 dwelling units/acre). The core of the district, with its predominant commercial and office uses, should be within ¼ mile of the higher intensity residential uses (such as townhouses and apartments). The district should be located within a ¼-mile radius of an intersection of the thoroughfare system (a collector/arterial or arterial/arterial intersection). In addition to sidewalks, the district should be at a location that would logically

be served by transit in the future. Redevelopment of a vacant or underutilized shopping center is a consideration for such a center. These types of uses are recommended in the Holston River Gateway (see E. Co 1 proposal on page 35).

Business Park (BP) Type 1: Primary uses are light manufacturing, offices, and regionally- oriented warehouse/distribution services. A zoning category which requires site plan review is expected in the development or redevelopment of such areas. Site plans must include provisions for landscaping, lighting and signs. Substantial landscaped buffers are necessary between uses of lesser intensity, particularly residential, office and agricultural uses. This type of use is listed as an alternative in the Brakebill Mixed Use area (see E. Co 2, page 35). It is not a separate designation on the plan map.

Business Park (BP) Type 2: Primary uses are light manufacturing, offices, and locally-oriented warehouse/distribution services. Retail and restaurant services, which are developed to serve tenants and visitors to the business park can be

considered. A zoning category which requires site plan review is expected in the development or redevelopment of such areas. Site plans must include provisions for landscaping, lighting and signs. Substantial landscaped buffers are necessary between uses of lesser intensity, particularly residential, office and agricultural uses. This type of use is listed as an alternative in E. Co 4: Marbledale Quarry Area (see E. Co 4 and page 36). It is not a separate designation on the land use plan map.

Technology Park (TP): Primarily includes offices and research and development facilities. The target area for such development has been the Pellissippi Technology Corridor. Additional districts could be created in other areas of the city or county. The development standards that are adopted by the Tennessee Technology Corridor Development Authority should be used for such districts. This type of use is listed as an alternative in the Brakebill Mixed Use area (see E. Co 2 on page 35). It is not a separate designation on the land use plan map.

Light Industrial (LI): This classification is used to identify older industrial areas, which were intended for manufacturing, assembling, warehousing and distribution of goods. Light industrial uses include such manufacturing as assembly of electronic goods and packaging of beverage or food products.

Mining (HIM): Quarry operations and asphalt plants are a particular form of heavy industrial, generally located in rural areas.



This shopping center along Asheville Highway serves community commercial needs.

Civic/Institutional (CI): Land used for major public and quasi-public institutions, including schools, colleges, churches, correctional facilities, utilities and similar uses.

Public Parks and Refuges (PP): Existing parks, wildlife refuges or similar public or quasi-public parks, open spaces and greenways.

Other Open Space (OS): Cemeteries, private golf courses and similar uses.

Hillside/Ridge Line Protection Areas (HP): Ridge crests, and hillsides and ravines that have a slope of 15 percent or more. Future development should be limited on hillsides and ridge tops.

- Prohibit commercial and industrial development on hillsides greater than 15 percent and on ridge tops. Where a pre-existing commercial or industrial-zoned property exist, consider a zoning overlay and incentives to reduce extent and impacts of



The slope of this East Knox County ridge exceeds 25 percent.

future development; the overlay's purpose would be to reduce the amount of grading and clearing and the incentives would be to cluster the development at the toe of slopes.

- Limit density as follows:
 - Slopes between 15 and 25 percent: no more than two houses per acre in the low density residential areas; no more than one house per acre in the agricultural and rural residential areas.
 - Slopes between 25 and 40 percent: one house per two acres.
 - Slopes between 40 and 50 percent: one house per four acres.
 - Slopes over 50 percent: no development or clearing (note: there are no parcels in this sector that are entirely on a 50 percent slope).
- Limit the height of new buildings on hillsides and ridge lines to 35 feet.
- In this sector, medium density residential development is not recommended on slopes exceeding 15 percent.



Large lot residential development on a forested steep slope

Stream Protection Areas (SP): Areas subject to flooding as identified on Knox County flood maps. For streams that do not have a mapped flood zone, state and local storm water regulations, creating non-disturbance areas, apply.

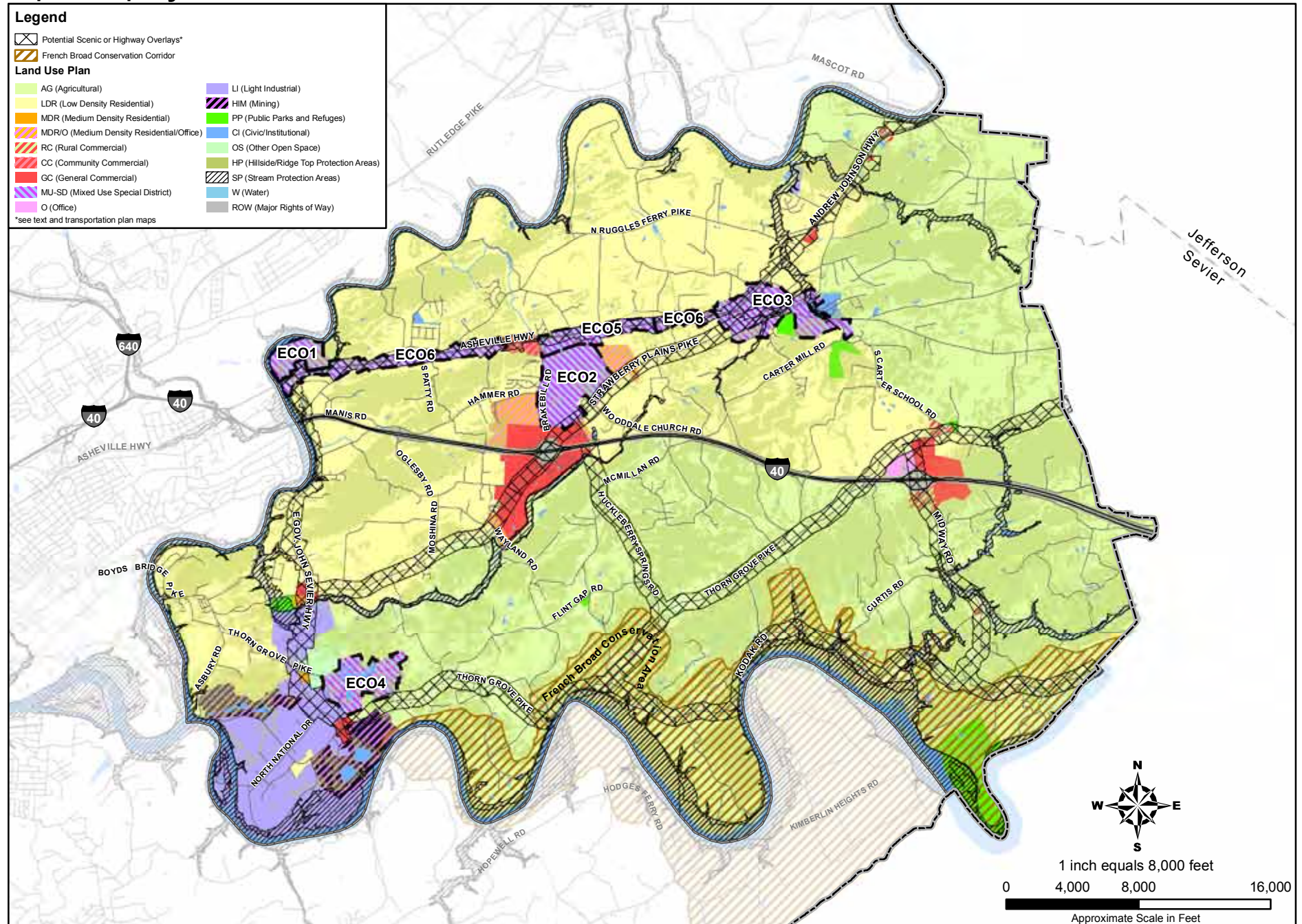
Water (W): Primarily the French Broad River and Holston River.

Major rights-of-way (R-O-W): Generally, the rights-of-way of interstates and very wide parkways and arterial highways.

Notes: A number of properties that are zoned for commercial and industrial purposes are not depicted on the proposed land use map. They are not considered to be in the most appropriate locations in relation to the long-term development of the community. In particular, the Industrial (I) zoned land along the Holston River, which is hilly and has poor access, should be rezoned for low density residential purposes.

During the course of the public meetings, concern was expressed to limit commercial strip development and offer alternatives for other uses that would be more compatible with nearby neighborhoods that are being established. Consequently, this plan calls for concentration of the most intense commercial activities at John Sevier Highway and Brakebill Road. Areas, not developed nor zoned for commercial purposes, are looked upon as better situated as new mixed use residential and office districts.

Map 10: Proposed Land Use Plan



Special Land Use Districts

There are several areas that are capable of sustaining different mixes of land uses. In other words, a broad brush of proposing only one land use may not be prudent in view of changing conditions and the dynamics of the local economy (for example, the reuse of older commercial properties and mining sites for other land development purposes). All the following proposed districts are well located in terms of good transportation systems and generally have good infrastructure.

E Co-1: Holston River Gateway

Recommended uses: This river-oriented site, which is currently zoned Planned Commercial, surrounds the existing shopping center. A portion of the site is used as a borrow pit (that is, for soil extraction). Several uses are appropriate: (1) a planned commercial development, (2) a mixed use project (which could include various types of residential structures, and office and commercial uses), or (3) low and medium density residential uses. If residential units are developed, road and



An example of townhouses in a mixed use center

sidewalk connections to the shopping center and pedestrian/bicycle connections to Sunnyview School are warranted. The Community Mixed Use Center designation (see page 32) would be appropriate.

Recommended zoning: A planned zone should be used in its development (appropriate zoning in regard to these concepts: PC, PC-1, PR, RP-1 or 2, TC or TC-1, TND-1).

E Co-2: Brakebill Road area

Recommended uses: This area is located less than one-half mile from the Strawberry Plains/I-40 Interchange and can be developed more intensively in view of its topography and nearby infrastructure (highways and utilities). A variety of uses are appropriate: a business park, a technology (research and development) park (see the description in the preceding land use categories), a town center, or office/medium density residential uses.

Some of the design features and guidelines that should be included in a master plan for the site's development include:

- Extension of Huckleberry Lane to connect to Brakebill Road
- Stream protection
- Bicycle/pedestrian systems
- Architectural guidelines: form, scale and material of buildings
- Lighting (pedestrian-oriented and shielded from surrounding properties)
- Best management practices for storm water and Green Building techniques



This proposed mixed use site contains approximately 270 acres, which has potential for a variety of uses, including office and technology park buildings.

Recommended zoning: A planned zone should be used in its development (appropriate zoning in regard to these concepts: EC, PC, PC-1, PR, RP-1 or 2, TC or TC-1, TND-1).

E Co-3: Carter Town Center

Recommended uses: The concept for a town center was introduced in 2001. The center should be created to include mixed use development, allowing low and medium density residential with respect to the variety of public facilities that exist in the area, namely the three schools, the parks, library, senior center and Lyon's Creek greenway (proposed). A mix of pedestrian-oriented commercial uses and vertical mixed uses should be allowed (for instance, apartments or office space above a shop). The road and sidewalk network should be developed to connect future neighborhood and retail developments to those resources and each other to realize a town center.

The low density and rural residential areas that surround the town center should be connected with new roads and sidewalks as they develop in the future.

Recommended programs:

1. Work with area stakeholders to consider the town center concept, including a “vision plan” to establish the land use relationships, future road and bicycle/pedestrian network and connections to schools and parks (responsibility: a consultant working in conjunction with Knox County, MPC and area residents).
2. Should the vision plan be acceptable to stakeholders, MPC or a consultant can develop the new form based zoning.

Recommended zoning: In the interim before a form based zoning district is in place, appropriate zoning includes TC, PC and PR (conditioned by the residential development standards of the TC zoning district).

E Co-4: Marbledale Quarry Area

Recommended uses: These former quarries have potential for a variety of uses. They are now zoned Industrial (I). Potential future uses could be one of the following: (1) a mixed use project, including various types of housing, office and

small scale retail (serving the immediate area); or (2) an economic development project such as an office or business park. Because the area is included in the rural area of the Growth Policy Plan, an amendment to that plan may be needed to allow a mixed use project.

Recommended zoning: A planned zone should be used in its development (appropriate zoning in regard to these concepts: EC, PC, or TC).

E Co-5: Asheville Highway Mixed Use Agricultural, Residential and Office Districts

Recommended uses: agricultural, low density, medium density or office uses.

Recommended zoning: Agricultural (A), new agricultural zoning allowing clusters of housing and conservation subdivisions, Planned Residential (PR in the county; RP-1 in the city). Traditional Neighborhood Development (TND-1 in the city). Office Park District (OA in the county; O-3 in the city). A new residential/office transitional zoning district (if created to allow residential or residential-like office buildings as a transition to low density uses).



Mixed use development on underutilized properties is proposed as part of this mixed use area.

E Co-6: Asheville Highway Mixed Use Agricultural, Commercial, Office and Residential Districts

Recommended uses: commercial, office, low density or medium density residential uses. Agricultural uses and conservation subdivisions to foster clustered housing would also be appropriate.

Recommended zoning: Agricultural (A), new agricultural zoning allowing clusters of housing and conservation subdivisions, Planned Commercial (SC-1 or PC-1 in the city; PC in the county). Planned Residential (PR in the county; RP-1 and 2 in the city). Traditional Neighborhood Development (TND-1 in the city). Office Park District (OA in the county; O-3 in the city). A new residential/office transitional zoning district (if created to allow residential or residential-like office buildings as a transition to low density uses). In the existing commercial zones, a commercial corridor overlay district is appropriate (see Highway Corridor Overlay District proposal).



An example of a mixed use town center

Scenic and Highway Corridor Overlay Districts

Two types of road and highway corridors are proposed to protect scenic places, provide safe access and improve visual character.

Highway Corridor Overlay Districts: Portions of Asheville Highway, Andrew Johnson Highway, Governor John Sevier Highway, Strawberry Plains Pike and Midway Road are indentified.

These proposals can include designations to address urban design and environmental concerns along commercial or industrial corridors. Overlays for aesthetic reasons and transportation safety are recommended.

Potential elements of a scenic road corridor overlay: Various cities and counties have adopted overlays and standards to guide development and scenic resource conservation. As noted in the background section (see the concepts on the following pages), John Sevier Highway is designated as a Tennessee Scenic Parkway; however, the prohibition of state law on junkyards, billboards and building height



Much of the land use in the E Co-5 area is agricultural, one of several uses that are proposed in this district.

do not apply to jurisdictions that have zoning, like Knox County. Consequently, in response to citizen concerns during the course of creating this plan, new local standards are needed to protect and enhance these corridors.

Goals

1. Conserve scenic qualities of the corridors, particularly John Sevier Highway, north of Strawberry Plains Pike, and various rural segments of Asheville Highway.
2. Accommodate modes of transportation other than the automobile, such as bicycle and pedestrian connections, through improved highway design and circulation patterns.
3. Encourage substantial tree and shrub planting that will blend with the natural landscape and adopt standards to improve the aesthetics of these highways.
4. Develop a program for lighting and signage that avoids the chaos of typical strip commercial development.



Underutilized and vacant properties are often seen in the E Co-6 area; a greater number of potential uses with future property development could be an asset to the corridor.

5. Develop a highway corridor zoning overlay to provide design and conservation standards and guide future site design.

Scenic Road Overlay Corridors: Thorngrove Pike, Kodak Road, Strawberry Plains Pike, Huckleberry Springs Road and Midway Road.

These corridors are primarily in the Rural Area or in areas that do not have extensive commercial development. This proposal can include designations to address design and environmental concerns along rural roads. Overlays for aesthetic reasons and transportation safety are recommended.



An example of landscaping, a sign alternative, and pathway that could be achieved over time.



Some John Sevier Highway businesses have used monument signs.

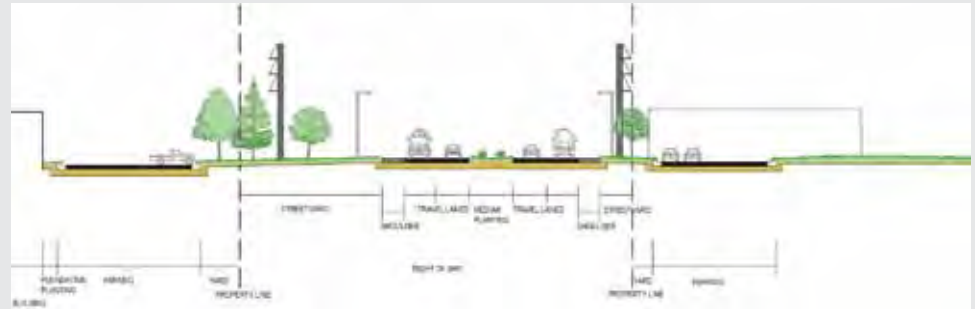
PROPOSED PROGRAM

Working with citizens, as well as city, county and state officials, create a new zoning overlay code that will guide new development while conserving scenic resources. Further, establish guidelines that could cover new building location, architectural design, sign regulations, parking requirements, screening and related elements that would enhance these highways over time. The guidelines should address the contributions that government can provide within the right-of-way and parameters for new development. A typical program for these corridors, could include:

- Planting within rights-of-way: Create a more natural appearance by planting trees in random patterns found in the countryside.
- Median landscaping: Plant low growing evergreen shrubs and a variety of native flowering trees.
- Yard and parking areas: Improve practices to capture, reduce and cleanse runoff, and plant more trees and other landscaping.
- Signage: consistency in materials, lighting and height.
- Screening: standards for vegetation and fencing that disguises unattractive uses.
- Architectural character: using a consistent set of materials, setbacks and architectural massing that is not overwhelming on the landscape.



A prototype for a future landscaping plan



A prototype for landscaping along Asheville Highway



Asheville Highway as it currently exists



Artist's rendering of potential overlay outcome in the future



Examples of potential lighting, sign and screening standards that could be used in the overlay district

Goals

1. Conserve the scenic qualities of the corridors, particularly the natural landscape and setting of historic buildings
2. Foster development along Midway Road and Huckleberry Springs Road that conserves the rural landscape, particularly farm and forested areas, and serves to maintain an aesthetically-pleasing gateways to the French Broad Corridor.
3. Maintain very low intensity land uses and adopt standards for rural development that fosters an aesthetically pleasing rural setting (in keeping with traditional architectural), and includes a program for lighting and signage.



While there are very few commercial properties along the corridor, residents and business owners may wish to consider guidelines for buildings and signs that in keeping with traditional architecture of the region.

PROPOSED PROGRAM

Working with citizens, as well as city, county and state officials, create a new zoning overlay code that will guide new development while conserving scenic resources. Further, establish guidelines that could cover new building location, architectural design, sign regulations, parking requirements, screening and related elements that would protect the scenic or rural setting. The guidelines should address the contributions that government can provide within the right-of-way and parameters for new development. A typical program for these corridors, could include:

- Commercial property yard and parking areas: Improve practices to capture reduce and cleanse runoff; and plant more trees and other landscaping.
- Signage and lighting : create consistency in materials and height of signs, and lighting fixtures that complement the rural landscape..
- Architectural character: establish guidelines for a consistent set of materials, setbacks and architectural massing (building size) that is not overwhelming on the landscape.



A simple but effective means to reduce parking lot runoff



One potential model for signs in rural scenic corridors



Office, retail and other facilities (Big South Folk) that are an example of designing with traditional materials and at an appropriate scale for larger rural commercial development

French Broad Conservation Corridor

The rural landscape, which is characterized by farmland, wooded ridges, historic sites and the French Broad River is worthy of conservation. In order to realize conserve the French Broad Conservation Corridor new land development tools are needed. The proposed tools that could be developed include, a conservation overlay district, a new large lot agricultural zone, a new small lot rural residential zone, the establishment of a transfer of development rights program, adoption of conservation subdivision standards, the adoption of codes and plans concerning hillside and ridge top protection, and utilization of other agricultural and conservation programs. The following narrative gives more detail about possible conservation tools that could be utilized within the French Broad Conservation Corridor.

The considerations in mapping the proposed conservation corridor (see map on page 41) were prime and locally important agricultural land, historic buildings, archaeological resources, creek

and river habitat, and forested ridges (the scenic backdrop in defining the corridor).

The proposed conservation program is as follows:

Conservation Overlay District

A conservation overlay district could be created that would guide new development while conserving historic and environmental resources. The establishment of such guidelines could cover historic preservation, new building location, architectural design, sign regulations, parking requirements, fencing, landscaping, and other elements that make development appear more rural in character (see the goals and proposed program of the Scenic Road Overlay Corridor, pages 38 and 40).

Along the river there could be measures that could specifically prohibit development that would potentially harm endangered species, conserve trees and ground cover along the river and reestablish native vegetation along this riparian edge, and discourage sewer treatment plants in the corridor.



Scenic overlays could be used to protect the rural setting.

New Agricultural Zone Districts

The current agricultural (A) zone, which allows one dwelling unit per acre, on any A-zoned property should be reconsidered because that density is a formula for sprawl at very low densities and does not protect farm land and other resources. Also, much of the hillside forested areas in Knox County are zoned Agriculture (A) and generally cannot be used for conventional farm purposes, like row crop production and pasturing. As alternatives to the current practice, the following are the new zoning districts that are recommended.

Large Lot Agricultural Zone

The county has one agricultural zoning classification that permits both residential and farm uses. Some community's separate out these two uses into two distinct zones to accommodate the unique differences between residential uses and farm uses. By increasing the minimum lot size for agricultural uses we could preserve farmland within the conservation corridor.



This pastoral landscape is typical of much of the proposed French Broad Conservation Area, which contains more than 5,000 acres.

Map 11: French Broad Conservation Corridor



Small Lot and Cluster Rural Residential Zone

A new zone should be created that encourages rural residential uses, while still conserving such assets as hillsides and farms within the corridor. Housing in new subdivisions could be clustered to conserve land within the conservation corridor.

Transfer of Development Rights (TDR) Program

A TDR program would allow the community to accommodate growth while preserving open space and farmland in a manner that is fair and equitable for all landowners.

TDR allows a community to transfer the development potential in an environmentally sensitive area where growth is restricted to a separate receiving area where roads, utilities and other infrastructure already exist making it appropriate for growth. Farmland and open space is preserved and growth is targeted to areas where it makes sense.

Through the program, developers purchase development rights to build in a "receiving area"—or area that is targeted for growth, and those funds are used to permanently preserve land in the "sending area" (for example, farm land).

In October 2009, a Transfer of Development Rights Task Force, which was created by the County Commission, recommended that a county-wide program not be pursued at this time. During the course of their work, several members felt that the French Broad conservation corridor would

be a good candidate for such a program. Should conditions change in the future, such as with reconsideration of the Growth Policy Plan, this corridor may be a good candidate for a pilot TDR program.

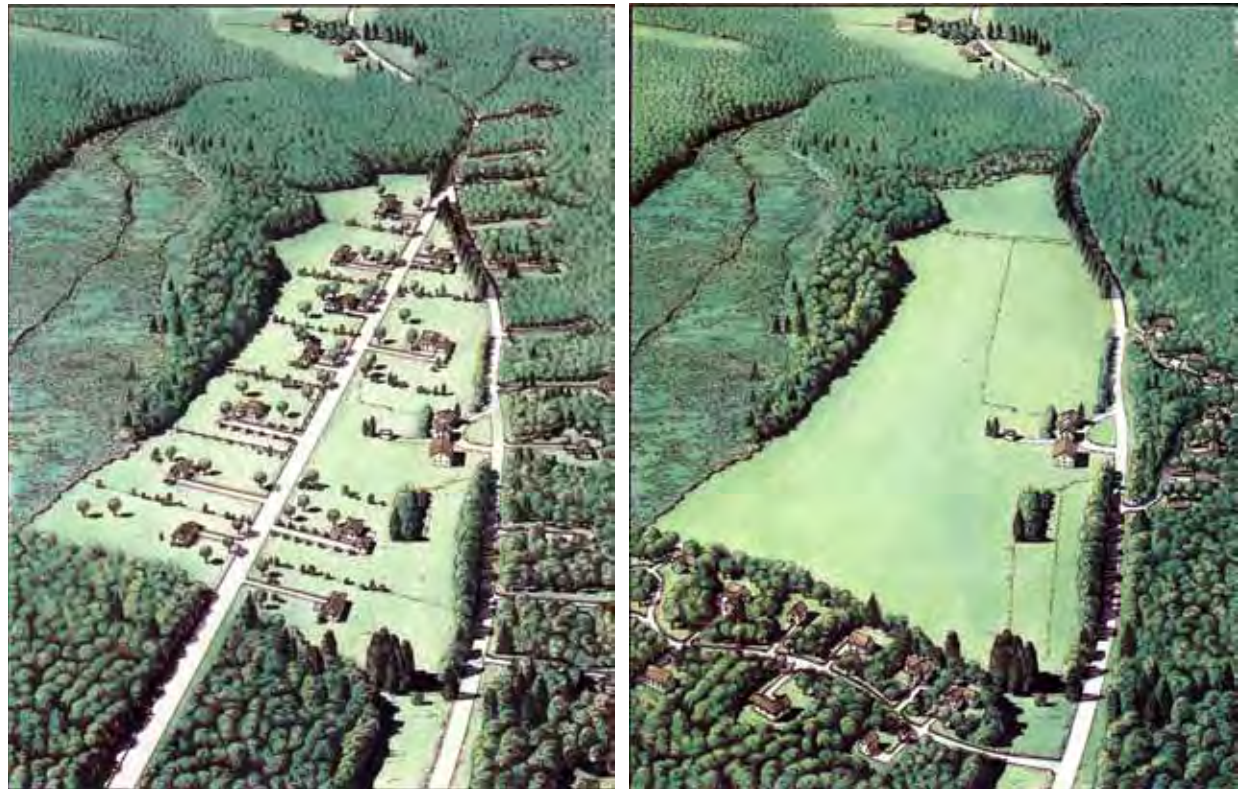
Conservation Subdivision

Conservation subdivisions are characterized by common open space and clustered compact lots. The purpose of a conservation subdivision is to protect farmland and/or natural resources while allowing for the maximum number of residences

under current community zoning and subdivision regulations. A greater density (density bonus) may be offered in the local ordinance to encourage this approach to residential development planning.

Private, Federal and State Agricultural and Conservation Programs

Continue to work with land trusts and agricultural officials, to apply for programs to conserve land within the corridor. Some of these programs may include purchase of development rights and conservation easements.



Examples of a conventional subdivision (left) and a conservation subdivision (right)

Historical and Archaeological Preservation

There are approximately 40 historical buildings along both sides of the river. Most of them are set on the landscape, surrounded by farms, as they were in the nineteenth century. Archaeologists from the Tennessee Valley Authority and University of Tennessee, have documented dozens of Native American sites, particularly in the vicinity of the rich soils that were deposited by the river. These resources provide an understanding of pre-history and the settlement of the valley (the background section describes these resources).

The proposed program includes: continued work with Knox Heritage and the University of Tennessee to identify and historical resources, not yet identified (for example, those on the Seven Islands Refuge), and work with the community to consider historic and archaeological resources on the National Register of Historic Places.

Also recommended is a county-funded façade improvement matching fund program that supplements private owners for improvements of commercial properties, particularly historic buildings like the Riverdale Store.

Tourism and Economic Development Strategy

In the course of developing this plan, the Ochs Center for Metropolitan Studies, working with the French Broad Preservation Association, identified an economic development strategy to create a visitor's center, recreation and entertainment spaces, lodging and a historical/archaeological education center. The basic provisions of the Ochs Center strategy includes the following proposals:

- Expand recreational opportunities by creating a welcome center with a museum, trails, restaurant, and a recreation center offering kayak, canoe and bike rentals.

- Provide a small-scale performance center that takes advantage of the musical history of the region and meshes with the other uses of the Corridor.
- Develop low-density land uses compatible with the character of the Corridor such as small-scale lodging and entertainment venue, conference/retreat center, or historical/archaeological education center.

These concepts merit further consideration, particularly in the French Broad Conservation Corridor and especially in places close to the river. Such locations could include land adjacent to Seven Islands Wildlife Refuge, Frazier Bend or Riverdale. Reuse of a historic property, such as Riverdale Store, for one or more of the proposed purposes could be appropriate.



The Riverdale Store



The landscape and its historic resources, like the Riverdale Methodist Church, are the foundations of the conservation program.

COMMUNITY FACILITY PLAN

This portion of the plan is directed to future parks, school improvements and other public facilities that are needed for community growth and provided in a prudent manner in relation to the conservation of scenic, historical environmental assets.

Parks, Greenways and Recreation Facilities

The greatest need in East Knox County is to begin a neighborhood park acquisition program so that future residents will be within walking distance of recreation space as neighborhoods develop. Presently, East Knox County does not have any neighborhood parks.

Recommendations: Park Acquisition

Neighborhood parks—Acquire space for new neighborhood parks (five to 10 acres each) in the general vicinity indicated on the plan map: Ruggles



An example of a neighborhood park—the kind of improvement that is needed with future growth

Ferry Park, Sunnyview Park, Hammer Road Park, Swan Pond Creek Park, Flint Gap Park, Perry Road Park, Pine Grove Park, Sinking Creek Park, Lyons Creek Park and Corum Road Park. At Flint Gap Park consider partnering with existing church to provide a park. At Sunnyview, acquire about five acres for a public park and school activities.

Community parks—set aside 10-20 acres for a community park in Midway's Northwest quadrant.

Create a community park in the vicinity of Drinnen Spring in Riverdale, providing 10 to 20 acres for both active and passive recreation opportunities.

Recommendations: Greenways and Greenway Connectors

French Broad Conservation Area Greenway—Preserve an open space system along the River. Provide a trail system, using a combination of land near the



The French Broad is recognized as a blueway.

river and space along Thorngrove Road and Kodak Road. Consider a horse trail as part of this system.

Greenway Connectors—Asheville Highway, Brakebill Road, John Sevier Highway and Ruggles Ferry Road (all within the city and county growth areas) are the most significant roads that should be improved to safely accommodate both pedestrians and bicyclists.

Mule Hollow Greenway—Develop a trail and open space corridor along the ridge that continues along the river or John Sevier Highway.

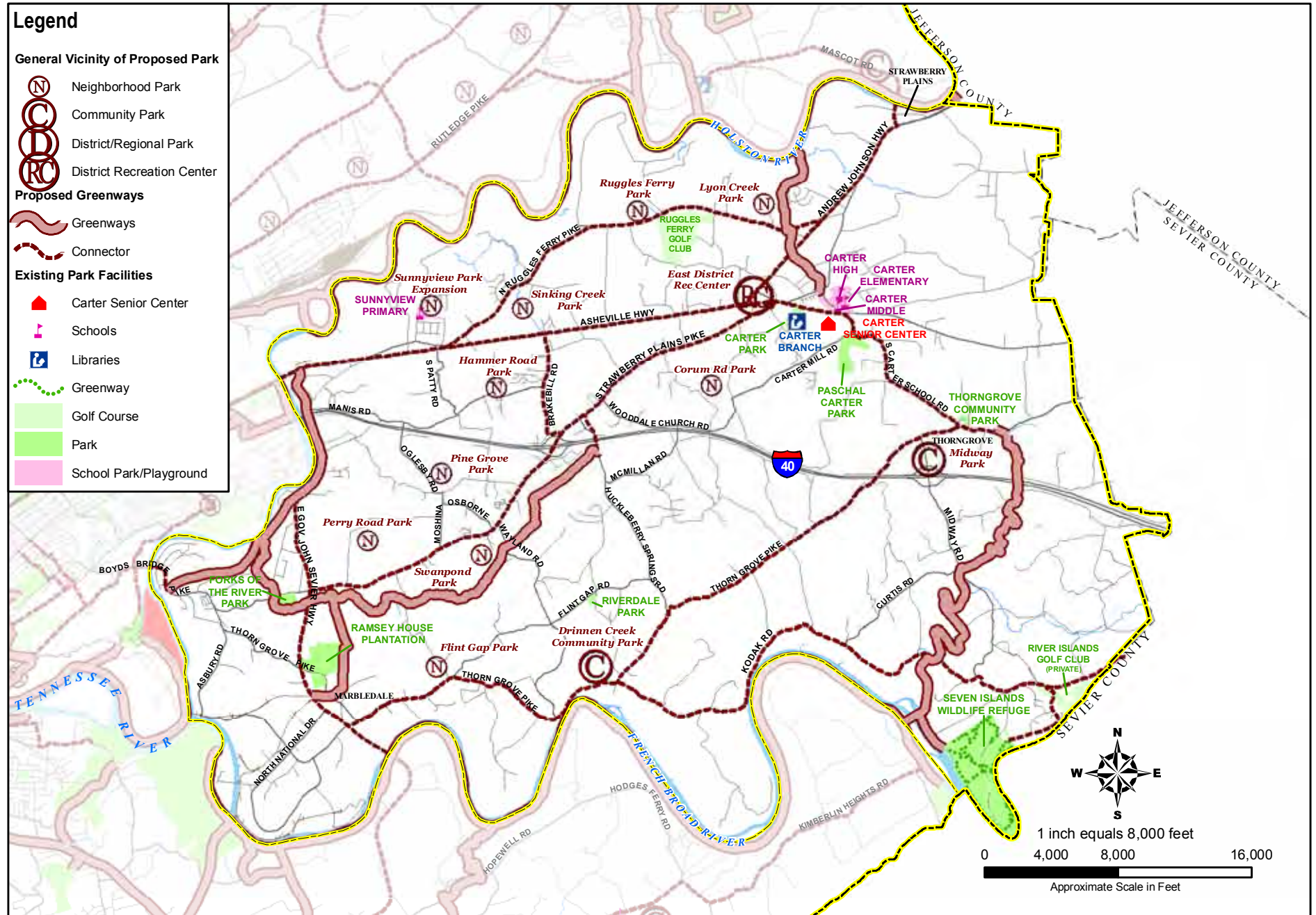
Swan Pond Creek and Ramsey Greenways—Create a trail along this creek, providing a connection from current and future neighborhoods to the Forks of the River Park and to the Ramsey House.

Tuckahoe Creek Greenway—Create an open space system along this state scenic river resource,



Side paths, such as this one, are a type of greenway connector.

Map 12: Community Facility Plan



protecting the stream corridor and floodplain. Create a natural surface path, connecting the Thorngrove Community Park with Seven Island Wildlife Refuge.

Lyon Creek Greenway—Provide a trail from the Holston River to Carter High, Middle and Elementary Schools as well as the library and senior center at Carter Park.

Recommendations: Recreation Centers

East District Recreation Center—Provide a recreation center and park space that will provide amenities for all ages and user types including both indoor and outdoor recreation. This center should be located along a major arterial such as Asheville Highway and should be geared toward serving a population of 20,000.

Equestrian Center concept—Horseback riding is one of the pastimes of area residents as well as others beyond the sector. With its large extent of



An equestrian center and trails could solve such dangerous horseback riding conditions along rural roads.

Rural Area, the sector could be a logical place for an equestrian center, where lessons, dressage and other riding activities could transpire. The French Broad Conservation Corridor could be a logical location for such a facility.

Recommendations: Improvements to Existing Parks

Riverdale Park—Provide an entrance sign for this park to draw attention to the existing facility.

Thorngrove Community Park—Resurface basketball courts and provide new goals, maintain baseball infield, resurface parking lot and designated accessible spots, repair or replace the existing restrooms and concession building and provide new slides for playground. Consider expanding park uses across Thorngrove School Road in association with the reuse of Thorngrove Elementary School as a community center.

Ramsey House Historic Site—Work with the Association for the Preservation of Tennessee Antiquities to create a passive park and connection to Swan Pond Greenway.

Schools

School age population has declined, in contrast to other portions of Knox County. Between 1990 and 2000, the number of school age children fell from 2,273 to 2,183 children. In view of residential development (2000 to 2008), approximately 420 additional school age children are estimated to reside in the sector since 2000. The projected

increases for the schools in the sector (based on the school zone boundaries remaining constant) are depicted below. This is a modest growth rate that alone would not indicate the need for a new school. However, there are other considerations.

The condition of the Carter Elementary School (the first section of which was constructed in 1938) has been a particular concern. In a report by the Public Building Authority, the school was found to be in need of physical improvements (see Appendix B). In addition to the physical problems, the site is largely filled by buildings, including expansions and temporary classrooms. Finally, children must cross a road to reach the major playground space.

This suggests the need for an improvement program for Carter Elementary: extensive renovation or new construction. A new school on a new site in the Carter Town Center should be considered as it would be a catalyst for development of that center. Policy development and decisions relative to school



The oldest portion of Carter Elementary School

improvements fall under the responsibility of the Knox County government, particularly the School Board. A decision to renovate or construct a new school would be up to Knox County.

Law Enforcement and Fire Protection

Over the course of the 15-year plan horizon, the city will annex land in its Urban Growth Boundary. At some point there will need to be an evaluation of the need for additional fire protection services for both commercial and residential properties, including consideration of a new fire station in or close to the sector. Adjustments to police patrols can be anticipated as well. The county Sheriff's Department and Rural Metro will continue to provide their law enforcement and fire protection services in the unincorporated area.

Utilities and Utility Policy

Utility corporations (KUB and TVA) are not under the jurisdiction of MPC and local governments. Each are chartered by the state and federal governments, which provide the corporations the means to meet their public utility obligations as long as they are in compliance with such provisions as environmental laws (like those of the U.S. Environmental Protection Agency). Cooperative agreements would be needed to develop policies for utility facility locations, such as a wastewater plant.

Water utilities: The Knoxville Utilities Board provides water within most parts of the sector. Still, many residents rely on well water. Extensions and upgrades to the water lines to serve fire protection and potable water purposes are needed, particularly

with development in the Urban Growth Boundary and Planned Growth Area.

Wastewater utilities: public sewer provisions are made through KUB. The Love's Creek and East Bridge Treatment Plants serve the western and northern portions of the sector respectively. In consideration of French Broad preservation interests, the location of a sewage treatment plant in the French Broad Conservation Corridor is not recommended. At the September 2009 Roundtable, KUB went on record that they would not pursue a treatment plant there.

Electrical utilities: KUB provides local service while TVA provides regional service (power generation and distribution services to the local utilities). Because of growth in the region, particularly Sevier and Blount counties, TVA will be upgrading its electrical grid (the network of power

lines that are tied to substations) with the future development of a switching near the Midway interchange. At the Roundtable (September 2009), TVA noted that they abandoned the potential site in the southwest quadrant of the interchange because of geologic limitations, and were pursuing a location in the northwest quadrant.

Solid Waste Services

The County's Solid Waste Office provides convenience centers at Carter and near Forks of the River within the unincorporated area.

Improvements are needed to the Carter facility. However, because it is a leased site, consideration is being given to acquiring a new site where landscaping and fencing, access control and separation points for bulk items, and recycling can be better accommodated. In view of the Town Center proposal, relocation of the existing facility would be logical.



The French Broad Conservation Corridor should remain a rural area and a sewage treatment plant should not be located in the area.

TRANSPORTATION PLAN

The Transportation Plan shown on the following page provides an overview of the projects that are recommended including projects in the Knoxville Regional Transportation Planning Organization (TPO) Long Range Mobility Plan (LRMP), and those that have been identified during the process of updating this sector plan.

Prior to implementation of some of these projects, there should be opportunities for additional public input to address issues of impacts related to adjacent land use, neighborhood protection, and environmental and cultural resource protection. These are principles that are important in developing a sustainable transportation system. It is vital to develop and maintain a transportation network that is accessible, provides mobility to all residents, and does not adversely impact the environment. To meet these goals this plan recommends several implementation tools such as conservation corridors, complete streets, and

greenway connectors. The following two principles should guide all future roadway projects including designing road cross-sections and intersections of transportation projects.

Context Sensitive Design

Road design in relation to the natural and cultural setting is often referred to as context sensitive design. This is a process that addresses the physical setting of a potential project and preserves scenic, aesthetic, historic, environmental and other resources, while maintaining mobility and safety. This facility planning should revolve around a collaborative, interdisciplinary approach that incorporates the desires and concerns of a community in order to achieve solutions.

The basic objective of context sensitive design is to respect or enhance the landscape and surrounding communities when designing a road system. This can mean sign standards, tree planting and conservation, and creating sidewalks that are

comfortably separated from fast moving traffic. Related to these principles are Tennessee State scenic road designations (see background section of this plan). An additional tool that would be appropriate in the East County Sector are Scenic Road Corridor designations. These designations should be used in conjunction with a zoning overlay, whereby natural beauty can be conserved and new development/redevelopment is created in relation to design standards. Such standards should include provisions for landscaping, sign size, lighting and buffering of storage yards. Two roadways that should be considered for this designation are Asheville Highway and E. Governor John Sevier Highway.

Complete Streets

Any road project, public or private, should adhere to the principle of creating complete streets. Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and

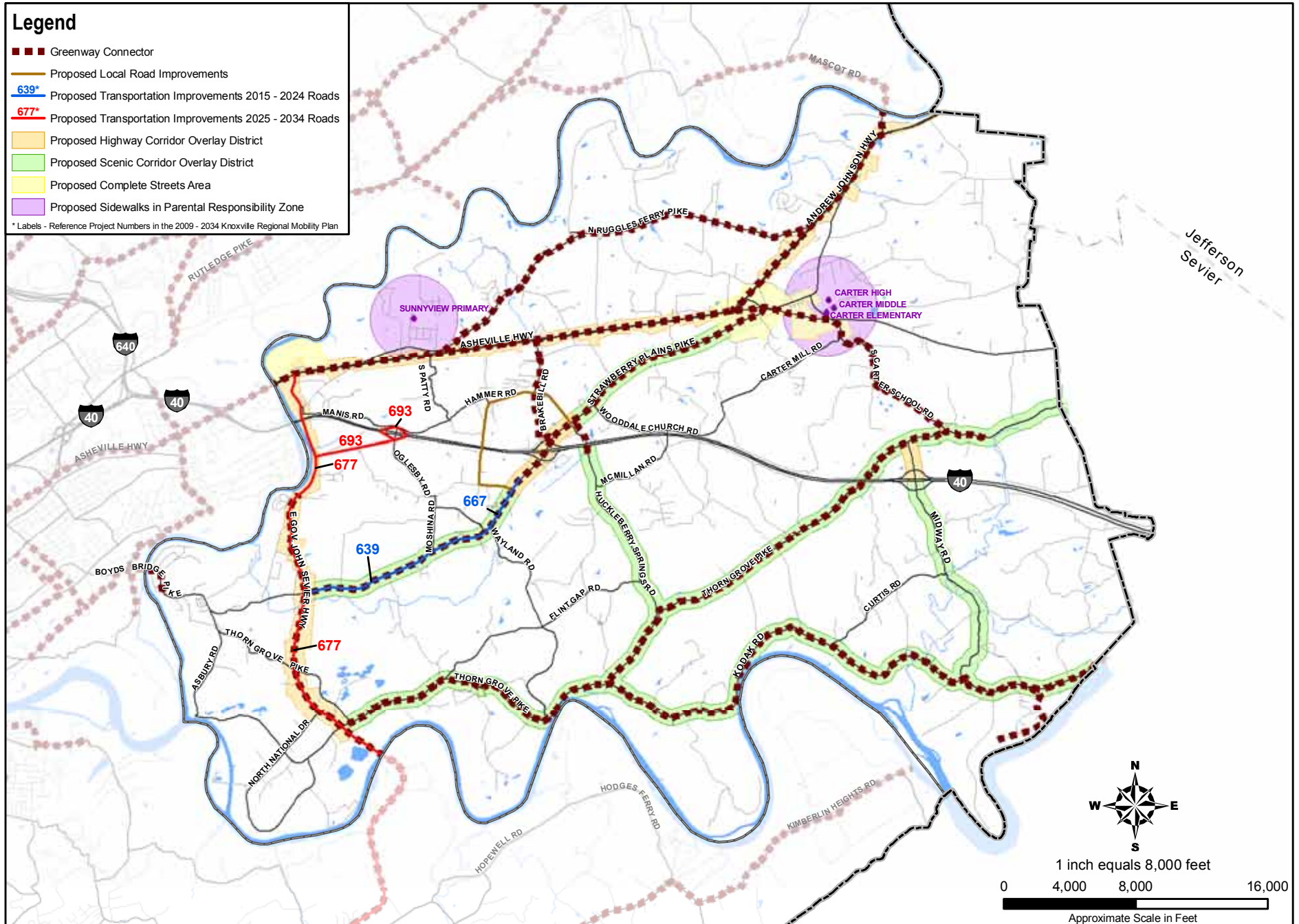


A scenic portion of John Sevier Highway, which should be conserved through context sensitive design



An example of a complete street

Map 13: Transportation Improvement Plan



abilities are able to safely move along and across a complete street. The pedestrian and bicycle facilities that are depicted in Map 13 should be considered a priority in establishing complete streets within East County.

Some considerations for more detailed road designs include:

1. John Sevier Highway (see the John Sevier Highway Corridor Proposal of the land use plan section)
2. Strawberry Plains Pike
3. Brakebill Road 3. Asheville Highway/Andrew Johnson Highway (see Asheville Highway Corridor Proposal in the Land Use Plan section)
4. Thorngrove Pike/Kodak Road

Several intersections are slightly congested at peak evening hours, including John Sevier/Asheville Highway intersection, the John Sevier/National Drive intersection and Huckleberry Springs Road. Although, currently unfunded, adopted transportation plans already contain proposals to add turn lanes and similar improvements to reduce congestion.

Roads systems, where development is warranted, should enable safe access while allowing through traffic to move efficiently. Until recent years, much of the development in the region has been directly adjacent to the existing roads. New local connecting roads, as opposed to cul-de-sacs, offer alternative means for people to reach a destination and can

provide internal access to future parks and other community facilities. For example, if the area around Brakebill Road Mixed Use area (ECO2) develops, potential local road improvements should include the new roads depicted on the Transportation Plan map. The proposals include connections to the ECO2 mixed use area from Union School Road to Brakebill Road and from Brakebill Road to Huckleberry Springs Road.

Summary of Recommended Projects

The Long Range Mobility Plan (LRMP) is a 25-year plan that makes recommendations for state and federally funded road projects. MPC and the community recognize the importance of ongoing community involvement in future planning of the Sector. All future roadway and alternative transportation improvements should be made with the participation of community stakeholders. Only four projects for the district have been included in the LRMP for the East County Sector:

- Project 639—expansion of Strawberry Plains Pike to four-lanes from Moshina Road to John Sevier Highway;
- Project 677—widening a 9.2 mile section of Governor John Sevier Highway from 2 lanes to 4 lanes;
- Project 693—a new interchange at Governor John Sevier Highway, Hammer Road and Oglesby Road; and
- Project 667—widening Strawberry Plains Pike from 2-lanes to 4-lanes from Moshina Road to south of I-40.

Funding for these projects has not been programmed.

Additional recommendations include:

- As development of new town centers occurs in the Holston River Mixed Use area (ECO1) and Carter Town Center (ECO3) greenway connectors such as, bicycle and pedestrian connections should be made between commercial, residential and institutional uses within the centers and to existing areas.
- Any future development within Parental Responsibility Zones should include greenway connectors from Sunnyview Elementary to nearby uses and between Carter High School, Carter Middle School and Carter Elementary School to existing and proposed uses. The Greenway Connectors could include side paths, bike lanes or sidewalks.

FIVE YEAR PLAN

This component of the plan is an outline of the short term programs, projects and recommended capital improvements that are needed to carry out elements of the plan.

LAND USE AND HISTORIC PRESERVATION PROGRAMS

French Broad Corridor Implementation

- Draft a Rural Landscape National Register District (Responsibility: MPC and Knox Heritage)
- Continue conservation easement programs, including those associated with the USDA (Responsibility: farm owners, USDA and such trusts as Legacy Parks and Land Trust for Tennessee)
- Submit a Conservation Subdivision Ordinance for adoption (Responsibility: MPC in conjunction with City and County departments)
- Consider a new large lot agricultural zone (Responsibility: MPC) along with a transfer of development rights (TDR) program in the French Broad Corridor
- Draft a scenic area zoning overlay district to address conservation and development in the French Broad Conservation Corridor and other scenic areas in Knox County (Responsibility: MPC)

- Develop the guidelines and standards that can be used specifically in the French Broad Conservation Corridor (Responsibility: an architectural/landscape design consultant as funded through Knox County in conjunction with the French Broad Preservation Association)
- Develop a matching grant for façade improvements of commercial properties, particularly historic buildings (Knox County neighborhood and community development offices)
- Analyze potential locations for a French Broad visitor's center and outline a development program to foster the eco-tourism strategy identified through the Ochs Center Report (Responsibility: Knox County economic and community development interests in conjunction with a consultant)

Highway Corridor and Scenic Road Overlays

- Draft new City and County overlay zoning districts, enabling individual corridor districts to be established (Responsibility: MPC)
- Work with property and business owners to consider guidelines and development standards for the potential overlays (Responsibility: MPC)

Hillside and Ridge Top Protection

- Draft and adopt clearing standards and land disturbance permitting related to hillside

development (Responsibility: MPC, City and County))

- Adopt conservation subdivision ordinance (Responsibility: MPC, City and County)
- Draft and adopt best management practice standards for reforestation (Responsibility: MPC, City and County)
- Draft amendments to the agricultural zoning district to address site development review on slopes over 25 percent (Responsibility: MPC)

Carter Town Center

- Draft vision plan and development framework (Responsibility: Consultant provided through County funding and MPC)
- Create a form based code (Responsibility: a consultant working in a conjunction with MPC and Knox County)

General Rezonings

Several areas have existing zones that are not in keeping with the land use plan and scenic corridor proposals. Zoning overlays were previously proposed (see the preceding). Additional recommendations include:

- Consider changes to the industrial and general residential zoning (a zone which allows apartments) north of Ruggles Ferry Pike. The area, which has been and continues to be identified as Low Density Residential in

the Land Use Plan, is characterized by steep slopes and poor access that severely limits development. If annexed, an appropriate zone would be Planned Residential (RP-1) zoning.

- Consider changes to the Highway Commercial (C-4) zoning to Planned Commercial zoning in the Midway area to protect the forested hillsides and foster the realization of this interchange as a gateway to the French Broad Conservation Area.

PARKS

Sunnyview Elementary School

Acquire five to 10 adjacent acres to create a school-park

Midway Park

Set aside 20 to 30 acres for a community park and open space system

Neighborhood Parks

Acquire five to 10 acres for at least three new neighborhood parks between Strawberry Plains Pike and the Holston River

Ramsey House Historic Site

Work with the Association for the Preservation of Tennessee Antiquities to create a passive park that connects to Swan Pond Greenway.

Riverdale Park

Provide an entrance sign for this park to draw attention to the existing facility.

Thorngrove Community Park

Resurface basketball courts and provide new goals, maintain baseball infield, resurface parking lot and designated accessible spots, repair or replace the existing restrooms and concession building and provide new slides for playground, consider expanding park uses across Thorngrove School Road in association with the reuse of Thorngrove Elementary School as the Thorngrove Community Center.

SCHOOLS

Carter Elementary School

Determine the improvement or new construction program for Carter Elementary School (Responsibility: Knox County and the Knox County School Board)

SOLID WASTE FACILITIES

Carter Convenience Center

Acquire a new site for the Carter Convenience Center and with the landscaping, buffering and waste separation standards that are now in use in other parts of the county (Responsibility: Knox County Office of Solid Waste)

TRANSPORTATION

Road improvements

Huckleberry Springs Road-Brakebill Road connector (Responsibility: County and/or City, depending on annexation)

Small area street and circulation plans

Carter Town Center: establish the recommended street, sidewalk and bicycle circulation plan as the framework for the town center development (Responsibility: Consultant working in conjunction with MPC, County Engineering and Stakeholders)

John Sevier Highway and Asheville Highway Overlay Corridors

- Adopt ordinance to create such districts (Responsibility: MPC and TPO staff)
- Create overlays for these two highways and develop standards for landscape design and access (Responsibility: an architectural/landscape design consultant in conjunction with MPC and the TPO)

Scenic Road Overlay Corridors

(Thorngrove Pike, Kodak Road, Strawberry Plains Pike, Huckleberry Springs Road and Midway Road)

- Adopt ordinance to create such districts (Responsibility: MPC and TPO staff)
- Create overlays for these roads develop standards for landscape design and access (Responsibility: an architectural/landscape design consultant in conjunction with MPC and the TPO)
- Develop a matching grant for façade improvements of commercial properties, particularly historic buildings (Knox County neighborhood and community development offices)

APPENDICES

Appendix A:

LAND USE CLASSIFICATIONS

The purposes of the following land use classifications are to:

1. Establish the location criteria for land uses in the city and county.
2. Create a consistent set of land use classes that are to be used in sector plans and the city's One Year Plan.
3. Provide a list of zoning districts that are to be considered in implementing the land use plans.

AGRICULTURAL and RURAL RESIDENTIAL LAND USE CLASSIFICATIONS		
Agricultural (AG) and Agricultural Conservation (AGC) This includes farmland in the county's Rural Area as designated in the Growth Policy Plan. Undeveloped tracts with the best soils for agriculture are considered as the primary areas for agricultural conservation (AGC). Agricultural land uses are not generally recommended in the City of Knoxville, nor in the County's Planned Growth Area.		
Location Criteria: <ul style="list-style-type: none"> • Farmland in the Rural Area as designated in the Growth Policy Plan • Land where soils are designated as prime or locally important by the U.S. Department of Agriculture are considered for agricultural conservation (AGC) 	Recommended Zoning and Programs: County's Rural Area: A new zone AC (Agricultural Conservation) is proposed for Agricultural Conservation (AGC) areas, allowing agriculture and one dwelling unit per 30 acres, minimum. (Note: This density will require a change to the zoning ordinance.) Additionally, conservation easement and related programs should be considered to preserve prime farmland.	Other Zoning to Consider: A or PR @ densities of one dwelling unit per acre where dwellings are clustered in one portion of a subdivision.
Rural Residential (RR) Very low density residential and conservation/cluster housing subdivisions are typical land uses.		
Location Criteria: <ul style="list-style-type: none"> • Rural areas characterized as forested (tree covered), especially on moderate and steep slopes • Sites adjacent to agricultural areas (AG or AGC) where conservation/cluster housing subdivisions may be appropriate 	Recommended Zoning and Programs: County's Rural Area: OS, E, RR (Rural Residential, a new zone with densities of one dwelling unit per acre or less), or PR @ densities of one dwelling unit per acre where dwellings may be clustered in one portion of a subdivision	Other Zoning to Consider: A in the Growth Plan's Rural Area
RESIDENTIAL LAND USE CLASSIFICATIONS		
Traditional Neighborhood Residential (TDR) This land use is primarily residential and is characterized by neighborhoods where a mix of detached and attached houses, sidewalks, smaller lots and alleys have typically been or are to be created. Densities in the range of 4 to 8 dwelling units per acre are typical.		
Location Criteria: <ul style="list-style-type: none"> • Neighborhoods like those in the 'Heart of Knoxville' where lots are typically less than 50 feet wide, and usually have sidewalks and alleys. This area is essentially the 19th and early 20th century grid street neighborhoods, mostly located within the I-640 beltway. • City's Urban Growth Area or county's Planned Growth Areas where neighborhood or community mixed use development is identified (see Mixed Use and Special Districts section) 	Recommended Zoning and Programs: City: R-1A or RP-1 [with an Infill Housing (IH-1), Neighborhood Conservation (NC-1) or Historic (H-1) Overlay]; TND-1; and new residential zone(s), based on lot sizes less than 7,500 square feet County's Planned Growth Area: PR and new TND zoning.	Other Zoning to Consider: City: R-1, R-1A and RP-1 (without overlays), R-2 County's Planned Growth Area: RA, RB and PR (with conditions for sidewalks, common open spaces and alleys)

RESIDENTIAL LAND USE CLASSIFICATIONS . . . continued

Low Density Residential (LDR)

This type of land use is primarily residential in character at densities of less than 6 dwelling units per acre (dus/ac). Conventional post-1950 residential development (i.e. large-lot, low-density subdivisions) and attached condominiums are typical.

Location Criteria:

- Land served by water and sewer utilities and collector roads
- Slopes less than 25 percent

Recommended Zoning and Programs:

City: R-1, R-1E and RP-1 at less than 6 dus/ac and new residential zones based on lot sizes greater than 7,500 square feet and 75 feet or greater frontage.
County's Planned Growth Area: RA, RAE and PR at less than 6 dus/ac.

Other Zoning to Consider:

City: R-1A and A-1
County: A and RB

Medium Density Residential (MDR)

Such land uses are primarily residential at densities from 6 to 24 dwelling units per acre (city) and 6 to 12 (county). Attached houses, including townhouses and apartments are typical. Mobile home parks are another form of this land use.

Location Criteria:

- As transitional areas between commercial development and low density residential neighborhoods
- On land with less than 15 percent slopes
- Along corridors that are served by or proposed to be served by transit, with densities proposed to be above 12 dwelling units per acre and to be served by sidewalks

Recommended Zoning and Programs:

City: R-2, R-3 and R-4 (within the 'Heart of Knoxville' area such zoning should be accompanied by an IH-1, NC-1 or H-1 overlay); otherwise, R-1A, RP-1, RP-2 or RP-3. Densities above 12 dus/ac should be within ¼ mile of transit service with sidewalk connections to transit service.
County's Planned Growth Area: PR, densities above 12 dus/ac should be within ¼ mile of transit service with sidewalk connections to transit service; RB at 6 or more dus/ac may be considered with use on review. (Note: This proposed 6 dus/ac threshold for use on review will require a zoning ordinance change.)

Other Zoning to Consider:

City's Urban Growth Boundary: R-2, R-3 and R-4

High Density Residential (HDR)

This land use is primarily characterized by apartment development at densities greater than 24 dwelling units per acre.

Location Criteria:

- On major collector and arterial streets, adjacent to regional shopping and major office districts (office sites allowing four or more stories); these sites must be identified in sector or small area plans
- Within the CBD or its adjacent areas, such as portions of the Morningside community
- On relatively flat sites (slopes less than 10 percent)
- Along corridors with transit and sidewalks

Recommended Zoning and Programs:

City:
C-2, RP-2 and RP-3, and new form-based codes (e.g. South Waterfront). R-3 and R-4 (with an IH-1, NC-1 or H-1 overlay in the 'Heart of Knoxville' area)

Other Zoning to Consider:

TC-1 and TC (where higher density residential is part or a mixed-use project)

RESIDENTIAL LAND USE CLASSIFICATIONS . . . continued

Medium Density Residential/Office (MDR/O)

Office and medium residential uses typically have similar development characteristics: scale of buildings, areas devoted to parking, yard spaces and location requirements (on thoroughfares). In areas designated MU-MDR/O, either use can be created. These uses provide a buffer to low density residential areas, particularly when located adjacent to a thoroughfare or as a transition between commercial uses and a neighborhood.

Location Criteria:	Recommended Zoning and Programs:	Other Zoning to Consider:
<ul style="list-style-type: none"> See Medium Density Residential (MDR) criteria 	City: RP-1, RP-2, RP-3 County: PR	City: O-1, O-2 County: OB

OFFICE and BUSINESS/TECHNOLOGY LAND USE CLASSIFICATIONS

Office (O)

This land use includes business and professional offices and office parks.

Location Criteria:	Recommended Zoning and Programs:	Other Zoning to Consider:
<ul style="list-style-type: none"> Low intensity business and professional offices (less than three stories) may be transitional uses from commercial or industrial uses to neighborhoods Generally level sites (slopes less than 15 percent) Access to major collector or arterial streets, particularly within one-quarter mile of such thoroughfares Highest intensity office uses (development that is four or more stories), should be located in close proximity to arterial/freeway interchanges or be served by transit 	City: O-1, O-2, O-3, or a new office zone that requires site plan review County's Planned Growth Area: OA, OC, PC (with covenants) or a new office park zone that requires site plan review	In areas that are identified in sector plans exclusively as office land uses, OB.

Technology Park (TP)

This land use primarily includes offices and research and development facilities. The target area for such development has been the Pellissippi Technology Corridor. Additional districts could be created in other areas of the city or county. The development standards that are adopted by the Tennessee Technology Corridor Development Authority should be used for such districts.

Location Criteria:	Recommended Zoning and Programs:	Other Zoning to Consider:
<ul style="list-style-type: none"> Within the Technology Corridor or subsequent areas designated for Technology Park development Sites near freeway interchanges or along major arterials Water, sewer and natural gas utilities available 	City: BP-1 County's Planned Growth Area: BP and PC (with covenants limiting uses to research/development)	EC (with limitations to require office and research/development uses)

RETAIL and RELATED SERVICES LAND USE CLASSIFICATIONS

Rural Commercial (RC)

This classification includes retail and service-oriented commercial uses intended to provide rural communities with goods and services that meet day-to-day and agricultural-related needs.

Location Criteria:	Recommended Zoning and Programs:	Other Zoning to Consider:
<ul style="list-style-type: none"> At the intersection of two thoroughfares (arterial or collector roads) Rural commercial nodes should generally not exceed more than 300 feet in depth and lots and not extend more than 300 feet away from the intersection 	County's Rural Area: CR PC as provided in Growth Policy Plan	CN

RETAIL and RELATED SERVICES LAND USE CLASSIFICATIONS . . . continued

Neighborhood Commercial (NC)

This classification includes retail and service-oriented commercial uses intended to provide goods and services that serve the day-to-day needs of households, within a walking or short driving distance. Neighborhood commercial uses may also be accommodated within neighborhood centers (see Mixed Use and Special Districts).

Location Criteria:

- Generally located at intersections of collectors or arterial streets at the edge of or central to a neighborhood
- New NC should not be zoned for or developed within ½ mile of existing commercial that features sales of day-to-day goods and services
- Automobile-oriented uses (e.g. gas stations or convenience stores) should be located on arterial street at the edge of neighborhood
- Should not exceed the depth of the nearby residential lots and not extend more than a block (typically no more than 300 feet) away from the intersection

Recommended Zoning and Programs:

City: C-1
County's Planned Growth Area: CN

Other Zoning to Consider:

SC-1

Community Commercial (CC)

This land use includes retail and service-oriented development, including shops, restaurants, and what has come to be known as "big box" retail stores; typical service area includes 20,000 to 30,000 residents. Community commercial uses may also be considered within community centers (see Mixed Use and Special Districts).

Location Criteria:

- Locate at intersection of arterial streets
- Sites should be relatively flat (under 10 percent slope) and with enough depth to support shopping center and ancillary development.
- Vehicular and pedestrian connections should be accommodated between different components of the district (e.g. between stores, parking areas and out-parcel development)
- Infrastructure should include adequate water and sewer services, and major arterial highway access
- Community commercial centers should be distributed across the city and county in accordance with recommended standards of the Urban Land Institute

Recommended Zoning and Programs:

Because of traffic and lighting impacts (potential glare) and buffering needs of surrounding interests, 'planned zones' should be used.

City: SC-2, PC-1 and PC-2.

County's Planned Growth Boundary: PC or SC

Other Zoning to Consider:

As infill development within areas already zoned C-3, C-4, C-5 and C-6 (City), and CA, CB and T (County)

RETAIL and RELATED SERVICES LAND USE CLASSIFICATIONS . . . continued

Regional Commercial (RS)

This land use includes retail and service-oriented development that meets the needs of residents across Knox County and surrounding areas. Development typically exceeds 400,000 square feet; malls have been a typical form and 'life-style centers' (e.g. Turkey Creek) are examples of regional-oriented commercial uses. Regional commercial uses may also be considered in Regional Centers (see Mixed Use and Special Districts).

Location Criteria: <ul style="list-style-type: none"> • Flat sites (under 10 percent slope) • Locate near interstate interchanges with major arterial highway access • Water, sewer, gas and stormwater systems should be capable of handling the development • Vehicular and pedestrian connections should be accommodated between components of the development 	Recommended Zoning and Programs: Because of the magnitude of the traffic and environmental impacts, planned zones should be used. City: SC-3, PC-1 and PC-2 County's Planned Growth Boundary: PC	Other Zoning to Consider: As infill development within areas already zoned C-3, C-4, C-5 in the City CA, CB and SC in the County
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General Commercial (GC)

This category includes previously developed strip commercial corridors providing a wide range of retail and service-oriented uses. Such land use classification and related zoning should not be extended because of the adverse effects on traffic-carrying capacity, safety and environmental impacts. Redevelopment of commercial corridors, including mixed use development, should be accommodated under planned or design-oriented zones.

Location Criteria: <ul style="list-style-type: none"> • Existing commercial areas 	Recommended Zoning and Programs: City: C-6 and PC-1 County's Planned Growth Area: PC New corridor design overlays when designated as special districts (see Mixed Use and Special Districts)	C-3, C-4, C-5, SC-1, SC, CA and CB for infill commercial development in areas previously zoned for commercial uses
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MIXED USE and SPECIAL DISTRICTS

There are several types of mixed-use areas: neighborhood, community and regionally-scaled districts and urban corridors. Mixed Use areas can be developed with higher intensity uses because of infrastructure and ability to sustain alternative modes of transportation. Development plan review is crucial. These areas should typically be created with sidewalks. Shared parking may be considered. Automobile and truck-dependent uses, such as heavy industrial, distribution and highway-oriented commercial uses should not be located in neighborhood, community and regional mixed-use centers. There are likely to be several distinctions between types of mixed use designations. Each Sector Plan and the One Year Plan will have a separate section which outlines the intent of each mixed use district and the development criteria for the district.

1. Neighborhood Mixed Use Center (MU-NC)

These are the least intense of the proposed mixed use districts. Residential densities of 5 to 12 dus/ac are appropriate within the area. Locations at the intersection of a local street and thoroughfare are generally most appropriate. The surrounding land uses should primarily be planned for low or medium density residential. The buildings of these centers should be designed with a residential character and scale to serve as a complement to the surrounding neighborhoods.

Location Criteria: <ul style="list-style-type: none"> • Flat terrain (slopes generally less than 10 percent) • Currently served by or planned to be served by sidewalks • The location does not include auto and truck-oriented uses such as industrial, strip commercial and warehouse/distribution uses unless the proposal calls for a redevelopment of such areas • At the intersection of a local street and throughfare • Next to low or medium density residential 	Recommended Zoning and Programs: TND-1	Other Zoning to Consider: Other form- or design-based codes
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MIXED USE and SPECIAL DISTRICTS . . . continued**2. Community Mixed Use Center (MU-CC)**

These centers are envisioned to be developed at a moderate intensity with a variety of housing types (8 to 24 dus/ac). The core of the district, with its predominant commercial and office uses, should be within ¼ mile of the higher intensity residential uses (such as townhouses and apartments). The district should be located within a ¼-mile radius of an intersection of the thoroughfare system (a collector/arterial or arterial/arterial intersection). In addition to sidewalks, the district should be served by transit. Redevelopment of vacant or largely vacant shopping centers are considerations for these centers.

Location Criteria:

- Flat terrain (slopes generally less than 10 percent)
- Areas currently served by or planned to be served by sidewalks
- The location does not include auto and truck-oriented uses such as industrial, strip commercial and warehouse/distribution uses unless the proposal calls for a redevelopment of such areas
- Within a ¼-mile radius of an intersection of the thoroughfare system (a collector/arterial or arterial/arterial intersection)
- Commercial/office core should be within ¼ mile of the higher intensity residential uses (e.g. townhouses and apartments)
- Areas currently served by or planned to be served by sidewalks and transit services

Recommended Zoning and Programs:

TC-1, TC

Other Zoning to Consider:

Other form- or design-based codes

3. Regional Mixed Use Center (MU-RC)

These are envisioned to be highest intensity mixed use centers. These districts should be served by sidewalk and transit systems and be located on a major arterial, adjacent to an Interstate highway or adjacent to downtown. Housing densities in the core of such districts can be 24 or more dus/ac. Downtown Knoxville's Central Business District is a regional mixed use center.

Location Criteria:

- Flat terrain (slopes generally less than 10 percent)
- Currently served by or planned to be served by sidewalks
- The location does not include auto and truck-oriented uses such as industrial, strip commercial and warehouse/distribution uses unless the proposal calls for a redevelopment of such areas
- On a major arterial, adjacent to an interstate highway or adjacent to downtown

Recommended Zoning and Programs:

C-2 in the Central Business District (Downtown); an adaptation of C-2 for the 'Downtown North' area (Central City Sector); TC-1, TC or new form-based codes (and regulating plans) for other community and regional centers

Other Zoning to Consider:

Other form- or design-based codes

4. Urban Corridor Mixed Use (MU-UC)

Several street corridors within the city have potential for redevelopment with a mix of retail, restaurants, office and residential uses. Commercial cores should be created at points (nodes) along these corridors, allowing a vertical mix of uses (for example, shops at ground level and apartments above); such nodes should not be more than four blocks long.

Location Criteria:

- Corridors should have sidewalks, transit services, street trees and related beautification
- Capable of sustaining on-street parking along corridor or along side streets

Recommended Zoning and Programs:

City: form-based or design-based codes (e.g. South Waterfront)

MIXED USE and SPECIAL DISTRICTS . . . continued

5. Special Mixed Use District (MU with reference number)

These can include designations to address urban design, pedestrian and transit-oriented development and vertical mixed use in designated areas. The areas may include older portions of the city or county where redevelopment and/or preservation programs are needed for revitalization purposes.

Location Criteria: <ul style="list-style-type: none"> • Case-by-case analysis is recommended 	Recommended Zoning and Programs: TND-1, TC-1, TC, especially in greenfield areas, or form-based or designed-based codes as noted in the Sector Plan and One Year Plan for each of these districts.
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6. Special Corridors (CD with reference number)

These can include designations to address urban design and environmental concerns along commercial or industrial corridors (where overlays for aesthetic reasons or sidewalks may be recommended, like the Chapman Highway corridor). Other potential corridor designation could include rural/farmland conservation areas.

Location Criteria: <ul style="list-style-type: none"> • Case-by-case analysis is recommended 	Recommended Zoning and Programs: Should be noted in the Sector Plan and One Year Plan for each of these districts.
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INDUSTRIAL AND WAREHOUSE/DISTRIBUTION LAND USE CLASSIFICATIONS

Light and Heavy Industrial (LI and HI) and Mining (HIM)

These classifications are typically used to identify older industrial areas, which were intended for manufacturing, assembling, warehousing and distribution of goods. Light industrial uses include such manufacturing as assembly of electronic goods and packaging of beverage or food products. Heavy industrial uses include such processes used in the production of steel, automobiles, chemicals, cement, and animal by-products and are viewed as clearly not compatible with areas designated for residential, institutional, office and retail uses. Quarry operations and asphalt plants are a particular form of heavy industrial, generally located in rural areas.

Location Criteria: <ul style="list-style-type: none"> • Existing industrial areas • Within one mile of an interstate interchange with access via standard major collector or arterial streets 	Recommended Zoning and Programs: City: I-1, I-2, I-3 and I-4 (infill development, using those zones, may be appropriate); C-6, PC-2 and a new planned, industrial zone, that requires site plan review, may be warranted to address environmental and transportation issues and surrounding community concerns. County's Planned Growth Boundary: LI; EC zone should be used in future development	Other Zoning to Consider: County: I (Industrial) zoning should be used in cases involving rezonings to accommodate mining activities and should be accompanied by buffering and other conditions to protect adjacent property owner. PC, LI, I and CB may be considered for infill industrial development.
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Business Park (BP) Type 1

Primary uses are light manufacturing, office and regionally-oriented warehouse/distribution services in which tractor-trailer transportation is to be a substantial portion of the operations. A zoning category which requires site plan review is expected in the development or redevelopment of such areas. Site plans shall address landscaping, lighting, signs, drainage, and other concerns that are raised in the rezoning process. Substantial landscaped buffers are expected between uses of lesser intensity, particularly residential, office and agricultural uses.

Location Criteria: <ul style="list-style-type: none"> • Relatively flat sites (predominant slopes less than 6 percent) out of floodplains • Relatively large sites (generally over 100 acres) • Away from low and medium density areas or where truck traffic would have to go through such areas • Areas with freeway and arterial highway access (generally within two miles of an interchange) • Rail access is a consideration • Can be served with sanitary sewer, water and natural gas 	Recommended Zoning and Programs: City: I-1, C-6, PC-2 or a new Planned Industrial Park zone County's Planned Growth and Rural Areas: EC	Other Zoning to Consider: PC
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INDUSTRIAL AND WAREHOUSE/DISTRIBUTION LAND USE CLASSIFICATIONS . . . continued

Business Park (BP) Type 2:

Primary uses are light manufacturing, offices, and locally-oriented warehouse/distribution services. Retail and restaurant services, which are developed primarily to serve tenants and visitors to the business park can be considered. A zoning category which requires site plan review is expected in the development or redevelopment of such areas. Site plans must include provisions for landscaping, lighting and signs. Substantial landscaped buffers are necessary between uses of lesser intensity, particularly residential, office and agricultural uses.

Location Criteria: <ul style="list-style-type: none"> • Relatively flat sites (predominant slopes less than 6 percent) out of floodplains • Relatively large sites (generally over 100 acres) • Away from low and medium density areas or where truck traffic would have to go through such areas • Freeway and arterial highway access (generally within two miles of an interchange) • Rail access is a consideration • Sites that can be served with sanitary sewer, water and natural gas 	Recommended Zoning and Programs: City: I-1, C-6, PC-2 or a new Planned Industrial Park zone County's Planned Growth and Rural Areas: EC	Other Zoning to Consider: PC
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PARK, PUBLIC INSTITUTIONAL, OTHER OPEN SPACE & ENVIRONMENTAL PROTECTION LAND USE CLASSIFICATIONS

Public Parks and Refuges (PP)

This land use classification contains existing parks, wildlife refuges or similar public or quasi-public parks, open spaces and greenways. It also contains quasi-public spaces, which are owned by civic or related organizations. Location criteria is not needed relative to large components of the park system, like community, district and regional parks and refuges; these areas are generally established through capital expenditures or land transfers from state or federal governments.

Location Criteria: <ul style="list-style-type: none"> • Neighborhood parks, squares and commons should be within ¼ mile of residents in the traditional residential areas (particularly the 'Heart of Knoxville') and within ½ mile of residents within the balance of the city and county's Planned Growth area. • Greenways should be located along or within the flood plains of streams and rivers/reservoirs. Other potential locations include ridges and utility corridors. 	Recommended Zoning and Programs: City: OS-1 County's Planned Growth and Rural Area: OS, E and OC A new zone should be created to designate parks, schools and similar institutional lands for both city and county jurisdictions.	Other Zoning to Consider: Other zones that allow parks and open space as permitted uses.
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Civic/Institutional (CI)

Land used for major public and quasi-public institutions, including schools, colleges, the university, churches, correctional facilities, hospitals, utilities and similar uses.

Location Criteria: <ul style="list-style-type: none"> • Existing public uses, other than parks and greenways • Quasi-public uses of two acres or more 	Recommended Zoning and Programs: City and County: New zoning categories for such uses or continue to use conventional zones (e.g. O-1, O-2 and OB)	Other Zoning to Consider: Other zones that allow civic/institutional as permitted uses.
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Other Open Space (OS)

Land uses include cemeteries, private golf courses, and similar uses.

Location Criteria: <ul style="list-style-type: none"> • Existing cemeteries, private golf courses and private open spaces 	Recommended Zoning and Programs: City: OS-1 and a new zone created to designate parks, schools and similar institutional lands County's Planned Growth and Rural Area: OS, E and OC	Other Zoning to Consider: A-1, and A
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PARK, PUBLIC INSTITUTIONAL, OTHER OPEN SPACE & ENVIRONMENTAL PROTECTION LAND USE CLASSIFICATIONS . . . continued
Hillside/Ridge Top Protection Areas (HP)

This classification is used to identify hillsides, ridges and similar features that have a slope of 15 percent or more. Open space, recreation land or very low density housing (one dwelling unit per two acres) is recommended for slopes exceeding 25 percent. For slopes of 15 to 25 percent, housing densities should not exceed 2 dus/ac). Office uses may also be considered. Building height should not exceed 35 feet.

Location Criteria: <ul style="list-style-type: none"> Hillsides greater than 15 percent slope 	Recommended Zoning and Programs: City: RP-1, OS-1 and a new hillside protection zoning overlay, that has standards for various residential and office land uses and the amount of land disturbance that can take place relative to the degree of slope. County's Planned Growth and Rural Areas: OS, E, A (on slopes less than 15 percent) and PR; a new hillside protection zoning overlay, that has standards for various residential and office land uses and the amount of land disturbance that can take place relative to the degree of slope.	Other Zoning to Consider: Other zones that require use-on-review
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Stream Protection Areas (SP)

Typically these are areas which are subject to flooding. Such areas include both the floodway, which carries the significant portion of stormwater, and the 500-year flood fringe, which the city and county govern with various stormwater regulations.

Location Criteria: <ul style="list-style-type: none"> Floodways and flood fringes 	Recommended Zoning and Programs: City: F-1 and 'planned zones' (such as RP-1 and PC-1), which entail site plan review. County's Planned Growth Area: F and 'planned zones' (such as PR and PC), that require site plan review to address flooding and stream protection issues
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Water (W)

Typically includes the French Broad River, Holston River, Fort Loudoun Lake/Tennessee River, and Melton Hill Lake/Clinch River.

Location Criteria: <ul style="list-style-type: none"> Rivers, TVA reservoirs 	Recommended Zoning and Programs: City: F-1 County: F
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Major Rights of Way (ROW)

Generally, the rights-of-way of interstates and very wide parkways and arterial highways are depicted on the future land use map.

APPENDIX B: EAST COUNTY SCHOOLS PHYSICAL ASSESSMENT



KNOX COUNTY SCHOOLS PHYSICAL ASSESSMENT



SCHOOL: CARTER ELEMENTARY

Address: 9304 College Lane

Phone: 933-4172

Year Constructed: 1938

Renovations/Additions: 1948,55,60,83

Total GSF: 34,968

Site Acreage: 6.0



ASSESSMENT SUMMARY (Composite Severity By Assessment Category)

Assessment Date: 7/27/2006

Architectural 3.75

Electrical 4.00

Mechanical 4.00

Site 4.00

Structural 1.00

Overall Rating 3.30

Ratings:

5 Critical

3 - 4 Significant

0 - 2 Fair to Good

**Overall Rating is a weighted average
of the five category scores:**

Architectural: 40%

Electrical: 10%

Mechanical: 20%

Site: 10%

Structural: 20%

Review Team:

Arch: M. Halcomb

Struct: M. Halcomb

Mech: M. Gregg

Elec: D. Reagan

KNOXVILLE • KNOX COUNTY

M P C

METROPOLITAN
P L A N N I N G
C O M M I S S I O N

T E N N E S S E E

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