

# IMPACTS OF RESIDENTIAL PROPERTY DEVELOPMENT ON KNOX COUNTY SCHOOLS

November 27, 2006

A recently proposed school zone boundary for the new Hardin Valley High School was based in part on enrollment projections generated by the Metropolitan Planning Commission (MPC). In the course of considering the boundary option, members of MPC staff were asked if the enrollment projections accounted for recently platted subdivisions and any subdivisions that will develop in coming years. MPC also was asked if the size of subdivisions was considered in the projections, given the impact on school enrollments that large-scale projects might cause. To address these questions, an overview of property development and school impacts is offered.

## 1. ENROLLMENT PROJECTIONS FOR KNOX COUNTY'S PUBLIC SCHOOLS

MPC has prepared public school enrollment projections at the request of Knox County Schools (KCS) staff several times in the past 15 years. Earlier models (1990 and 1994 versions) generated five-year enrollment projections. Comparisons of those projections to actual enrollments showed MPC successfully forecasted within +/- five percent of systemwide school population in its five-year models. In 2004, KCS asked MPC to generate enrollment projections for a 10-year period. The first two years of those forecasts were within +/- 0.3 percent of systemwide totals. This year, as part of a special research effort initiated by the Knox County Mayor and supported by KCS and the Public Building Authority, MPC updated its 10-year enrollment projections:

- Generated for entire system and for each elementary, middle, and high school.
- Prepared for each school year, beginning 2007/08 and continuing through 2016/17.
- Based on cohort-survival technique, with model inputs including past and current enrollment, births, migration, development activity, and private/home-school enrollment trends.

Platted subdivisions and those forthcoming are included in the enrollment projections:

- Model that drives projections is market-based tool that includes impacts of new development on existing and future school enrollments.
- Portion of projection model is based on historical trends in local development activity.
- Dozens of subdivisions, large and small, with varying home types and values, developed in Knox County in past several years at rates that are generally consistent and predictable from year to year.
- Future development expected to be consistent with past development.

Findings from most recent series of local public school enrollment projections:

- Under the moderate growth model, the Knox County public school system can expect enrollments to steadily grow over the next 10 years, adding an average 313 students annually for a 5.9 percent increase systemwide.
- Much of the growth will occur in the elementary school ranks, accounting for 80 percent of the 10-year climb. Continued housing construction and projected moderate increases in local births will drive gains in future elementary enrollments.
- Middle schools will see enrollment growth also, adding 814 new students to annual totals by 2016/17.
- Systemwide high school enrollment is expected to drop slightly, with 2016/17 numbers totaling 16,125, down 1.1 percent from current figures. This finding is consistent with observed decreases in late-1990s/early-2000s elementary enrollments. The smaller cohorts currently in the elementary schools will move through the high school system during the 10-year forecast period. Despite anticipated increase in high school population resulting from in-migration, recent elementary population declines will outweigh migration gains and result in slight net decrease in high school enrollments.

## 2. NEW RESIDENTIAL SUBDIVISIONS

Anyone who has ever attended a local planning commission meeting has heard the argument that new residential development will result in the addition of many children to a neighborhood, potentially straining public school resources. Sometimes that argument has merit, other times it may be overstated. While the construction of homes will attract new people, both from within and outside the community, the number of children will vary from case to case.

It is easy to over-generalize and assume a new subdivision will generate busloads of new school children. It is necessary, however, to look at the characteristics of a new development proposal, because each will have a different impact on schools:

**Units In Structure:**

- Four primary housing types: detached homes, attached units (townhouses and condominiums), multidwelling structures (apartments), and mobile homes.
- Detached houses and mobile homes are favorite options among households with children, sharply leading all other types in the number of residents under 18 years of age per unit.
- Detached units attract an average of 0.620 children per household, while mobile homes report 0.695 per unit.
- Detached housing has a much greater impact on the residential landscape, however, representing more than two-thirds of all occupied units in Knox County. Mobile homes comprise only five percent of the county's housing stock.
- Condominiums and townhouses attract the fewest households with children.

**Table 1: Children In Housing Units By Units In Structure  
Knox County, 2000**

<b>Units in Structure</b>	<b>Occupied Housing Units</b>	<b>Persons Under 18</b>	<b>Persons Under 18 Per Housing Unit</b>
Detached	106,535	66,029	0.620
Attached	6,640	1,375	0.207
Multidwelling, other	36,172	11,176	0.309
Mobile home	8,525	5,922	0.695
Total	157,872	84,502	0.535

Source: U.S. Census Bureau, Census 2000 Sample Data File.

**Bedrooms In Structure:**

- The more children per household, the greater the number of bedrooms in the home.
- Values range from a low of 0.072 children in efficiency units, to a high of 1.193 in homes with five or more bedrooms.
- Housing units with three bedrooms are the most commonly found configuration in Knox County, representing about 40 percent of the areawide inventory.
- Two-bedroom houses are second-most popular, holding a 29 percent share.

**Table 2: Children In Housing Units By Number Of Bedrooms  
Knox County, 2000**

<b>Bedrooms</b>	<b>Occupied Housing Units</b>	<b>Persons Under 18</b>	<b>Persons Under 18 Per Housing Unit</b>
No bedrooms	2,488	178	0.072
1 bedroom	17,168	2,242	0.131
2 bedrooms	45,194	14,285	0.316
3 bedrooms	63,913	39,284	0.615
4 bedrooms	23,949	22,358	0.934
5 or more bedrooms	5,160	6,155	1.193
Total	157,872	84,502	0.535

Source: U.S. Census Bureau, Census 2000 Sample Data File.

### Value Of Structure:

- People living in more expensive housing have more children on average.
- Household size steadily increases with home value, from a low of 0.450 children per household in units priced below \$50,000, to a high of 0.971 children per household in residences ranging from \$500,000 to \$999,999.
- An exception occurs among the most costly homes, those above the \$1,000,000 mark, where only 0.438 children per unit are found.
- Although the highest rate of children per unit is found among homes in the \$500,000 to \$999,999 range, that segment of the residential real estate market comprises only 1.1 percent of all owner-occupied homes in Knox County. The county's median home value was \$98,500 in 2000, and, accordingly, the largest shares of local housing inventory fall in the \$50,000 to \$99,999 and \$100,000 to \$149,000 ranges.
- A study recently completed by the Center for Urban Policy Research at Rutgers University concluded that trends in student yields are reversing nationwide. Indicators show that as the value of homes increases, the number of children living in them decreases.

**Table 3: Children In Housing Units By Housing Unit Value  
Knox County, 2000**

Value	Occupied Housing Units	Persons Under 18	Persons Under 18 Per Housing Unit
Less than \$50,000	13,642	6,135	0.450
\$50,000 to \$99,999	42,888	21,647	0.505
\$100,000 to \$149,999	25,164	14,658	0.582
\$150,000 to \$199,999	11,213	7,992	0.713
\$200,000 to \$299,999	7,965	6,234	0.783
\$300,000 to \$499,999	3,419	2,949	0.863
\$500,000 to \$999,999	1,109	1,077	0.971
\$1,000,000 or more	194	85	0.438
Rented	52,278	23,725	0.454
Total	157,872	84,502	0.535

Source: U.S. Census Bureau, Census 2000 Sample Data File.

### Target Markets

The housing characteristics above comprise choices made by the local development community. Builders make decisions on the type of residential subdivision they will develop based on the consumer market they wish to tap:

- Some builders target households with children.
- Others build to accommodate the empty-nester segment.
- Still others seek young professionals.
- There are many different types of homebuyers in the local market and many variations on lifestyle characteristics.
- In particular, some households bring school-aged children to the community, while others do not.
- Many developers are learning that subdivisions with a variety of housing styles, marketed to multiple target groups, have faster absorption rates.

To illustrate the notion of target marketing, approximately 850 residential properties have been developed in downtown Knoxville and on the south riverfront in the past five years. Looking at those raw numbers, one might wonder if school officials should start thinking about adding a facility downtown. Upon closer examination, however, the properties are condominiums and loft spaces marketed to singles and couples with lifestyle preferences for center-city living, not raising children. Only three school-age children live downtown, and they are readily accommodated at Sequoyah Elementary.

### 3. ESTIMATES OF SCHOOL CHILDREN IN NEW DEVELOPMENTS

#### Example A

To demonstrate the use of the average number of children per household, thereby generating a rough estimate of impact on local schools, consider a sample proposal: a land developer has presented a new residential subdivision comprised of 100 detached homes. Based on Knox County's average of 0.620 children per detached unit, about 62 children (100 units X 0.620 children per unit) can be expected among the households that move into the new subdivision.

Figure 1

**Table 2. CHILDREN IN HOUSING UNITS  
BY UNITS IN STRUCTURE BY HOUSING UNIT VALUE  
KNOX COUNTY • 2000**

Units in Structure	Value	Occupied Housing Units	Persons Under 18	Persons Per Housing Unit Under 18
<b>Single-family detached</b>	Less than \$50,000	8,760	3,209	0.366
	\$50,000 to \$99,999	37,116	19,501	0.525
	\$100,000 to \$149,999	23,041	14,254	0.619
	\$150,000 to \$199,999	10,663	7,890	0.740
	\$200,000 to \$299,999	7,611	6,190	0.813
	\$300,000 to \$499,999	3,289	2,879	0.875
	\$500,000 to \$999,999	1,068	1,073	1.005
	\$1,000,000 or more	188	85	0.452
	Rented	14,799	10,948	0.740
	<b>TOTAL</b>	<b>106,535</b>	<b>66,029</b>	<b>0.620</b>

#### Example B

A closer estimate of children added by a new subdivision can be made as more information about the project is known. If the same detached unit proposal will be comprised of homes marketed around \$175,000, expect an average of 0.740 children per unit, or about 74 new children (100 units X 0.740 children per unit) over the course of the build-out period.

Figure 2

**Table 2. CHILDREN IN HOUSING UNITS  
BY UNITS IN STRUCTURE BY HOUSING UNIT VALUE  
KNOX COUNTY • 2000**

Units in Structure	Value	Occupied Housing Units	Persons Under 18	Persons Per Housing Unit Under 18
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	\$100,000 to \$149,999	23,041	14,254	0.619
	<b>\$150,000 to \$199,999</b>	<b>10,663</b>	<b>7,890</b>	<b>0.740</b>
	\$200,000 to \$299,999	7,611	6,190	0.813
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	\$1,000,000 or more	188	85	0.452
	Rented	14,799	10,948	0.740
	<b>TOTAL</b>	<b>106,535</b>	<b>66,029</b>	<b>0.620</b>

### Adjustments To The Estimates:

- Per household child population rates are areawide averages. Actual development projects can result in fewer or more children.
- Population generation rates include all children under 18 years of age. However, children aged 0 to 4 years do not yet attend local public schools. It can be argued to include them in an analysis of development impacts on schools because the younger children will likely enter the school system in the next few years. As they age and later enroll, however, the older children currently in the system, aged 14 to 17 years, will graduate.
- Not all children go to public school. Locally, about 13 percent of school age children attend private school or are home-schooled each year.
- Larger subdivisions can take many years to build out, so the addition of children will be incremental over the course of the construction phases. Examples of build-out rates for large subdivisions developed in Knox County in the past 10 years or so are shown in Table 4:

**Table 4: Samples Of Major Residential Subdivisions In Knox County:  
Build Times**

Subdivision <sup>1</sup>	Planning Sector	Initial Concept Plan Approval	Initial Final Plat Approval	Platted Parcels	Completed Units	Percent Built	Time Since Plat Approval (Years)	Sample Home Price (\$1,000)
BRICKYARD HILL	North	6/2001	10/2001	147	106	72.1	5.0	120-130
WYNGATE	North	12/1996	5/1997	149	144	96.6	Complete-2 yrs	130-150
THREE POINT LANDING	Northeast	3/2001	4/2001	108	79	73.1	5.5	90-100
WASHINGTON POINTE	Northeast	8/1997	n/a	74	63	85.1	Approx. 8.0	140-175
WILLOW SPRINGS	Northeast	8/2000	11/2000	115	112	97.4	Complete-3 yrs	100-130
BRIGHTON FARMS	Northwest	11/1992	1/1994	111	110	99.1	Complete-9 yrs	160-240
CONNERS CREEK	Northwest	3/1994	8/1994	114	112	98.2	Complete-9 yrs	150-170
LANCASTER RIDGE	Northwest	12/2003	7/2004	90	33	36.7	2.3	250-350
LEXI LANDING	Northwest	6/2003	9/2003	165	76	46.1	3.1	85-115
TWIN CREEK	South	11/1992	9/1994	78	40	51.3	12.1	150-250
AMBERWOOD	Southwest	8/2001	11/2001	80	57	71.3	5.0	225-275
MADISON RIDGE	Southwest	11/2001	6/2002	57	33	57.9	4.5	175-225
MONTGOMERY COVE	Southwest	6/1995	1/1996	174	149	85.6	10.9	450-550
WOODS - WEST VALLEY	Southwest	10/2002	11/2003	118	51	43.2	3.0	350-500
WHITTINGTON CREEK	Southwest	4/1994	7/1995	487	397	81.5	11.3	450-850

<sup>1</sup>Criteria for selection: Detached residential units. Large-scale project. Recent substantial activity (past five years), regardless of initial concept plan approval date.

### Actual Student Generation Rates In Local Subdivisions

Examples of actual public school populations in new subdivisions are shown in Table 5 (the same subdivisions examined in the build-out analysis are used to demonstrate actual student generation rates):

- As expected, student yields vary from place to place as the age and value of selected homes differ.
- Highest yields were found in Amberwood in southwest Knox County.
- Lowest generation rates occurred at Lexi Landing in northwest Knox.
- Yields of high school children also varied across the county, with highest levels in Southwest Sector subdivisions, ranging from 0.137 to 0.195 per housing unit.

**Table 5: Samples Of Major Residential Subdivisions In Knox County:  
Public School Enrollment Generation**

Subdivision	Planning Sector	Platted Parcels	Completed Units	Elem. Students	Middle Students	High Students	Total Students	High School Students Per Hhold.	Total Students Per Hhold.
BRICKYARD HILL	North	147	106	48	19	10	77	0.094	0.726
WYNGATE	North	149	144	45	8	14	67	0.097	0.465
THREE POINT LANDING	Northeast	108	79	21	3	3	27	0.038	0.342
WASHINGTON POINTE	Northeast	74	63	11	5	5	21	0.079	0.333
WILLOW SPRINGS	Northeast	115	112	14	7	2	23	0.018	0.205
BRIGHTON FARMS	Northwest	111	110	32	12	16	60	0.145	0.545
CONNERS CREEK	Northwest	114	112	22	9	3	34	0.027	0.304
LANCASTER RIDGE	Northwest	90	33	14	6	3	23	0.091	0.697
LEXI LANDING	Northwest	165	76	8	6	1	15	0.013	0.197
TWIN CREEK	South	78	40	16	4	8	28	0.200	0.700
AMBERWOOD	Southwest	80	57	22	12	9	43	0.158	0.754
MADISON RIDGE	Southwest	57	33	13	7	5	25	0.152	0.758
MONTGOMERY COVE	Southwest	174	149	34	21	29	84	0.195	0.564
WOODS - WEST VALLEY	Southwest	118	51	13	8	7	28	0.137	0.549
WHITTINGTON CREEK	Southwest	487	397	106	74	72	252	0.181	0.635

#### 4. FORTHCOMING LARGE-SCALE SUBDIVISIONS

Recently, three subdivisions were approved for development, receiving considerable attention because of their size (Table 6):

- Beacon Park: Southwest Knox County, southwest side of Chandler Lane, southwest of Northshore Drive.
- Northshore Town Center: Southwest Knox County, north side of Northshore Drive, west of Pellissippi Parkway.
- Covered Bridge: Northwest Knox County, northeast side of East Gallaher Ferry Road, north of Hardin Valley Road.

**Table 6: Forthcoming Large-Scale Subdivisions**

Subdivision	Total Units	Detached Units	Attached Units	Apartment Units	Share (%) Detached	Estimated Unit Asking Price <sup>1</sup>
Beacon Park	820	385	435	0	47.0	\$500,000
Northshore Town Center	795	120	275	400	15.1	\$400,000
Covered Bridge <sup>2</sup>	325	325	0	0	100.0	\$300,000
Total	1,940	830	710	400	42.8	

Notes:

<sup>1</sup>Estimates based on preliminary listing prices and information provided by developers.

<sup>2</sup>Concept plans for Covered Bridge have been revised and submitted in phases. Total unit count is an estimate based on most recent plans.

Using average student generation rates for Knox County, estimates of potential new public school enrollments from Beacon Park, Northshore Town Center, and Covered Bridge subdivisions are offered:

**Table 7: Estimated Public School Student Yields from Forthcoming Large-Scale Subdivisions**

<b>Student Yield Calculations</b>	<b>Beacon Park</b>	<b>Northshore Town Center</b>	<b>Covered Bridge</b>	<b>Total</b>
Total Housing Units	820	795	325	1,940
Detached	385	120	325	830
Attached	435	275	0	710
Apartments	0	400	0	400
Estimated Value (\$)	500,000	400,000	300,000	
Student Yield Rates (Children Per Unit) <sup>1</sup>				
Detached	1.005	0.875	0.875	
Attached <sup>2</sup>	0.138	0.138	0.138	
Apartments <sup>3</sup>	0.000	0.158	0.000	
Unadjusted Student Yields				
Detached	387	105	284	776
Attached	60	38	0	98
Apartments	0	63	0	63
Total	447	206	284	937
0-4 Year Adjustment (-20%) <sup>4</sup>	-89	-41	-57	-187
Preliminary Net Student Yields	358	165	227	750
Private/Home-School Adjustment (-13%) <sup>5</sup>	-47	-22	-29	-98
Net Student Yields	311	143	198	652
Net Student Yields Per Unit	0.379	0.180	0.609	0.336

Notes:

<sup>1</sup>Student yield rates calculated from U.S. Census Bureau, 2000 Census of Population and Housing.

<sup>2</sup>No data for attached units in \$300,000-\$400,000 price range. Used rate for \$500,000 units.

<sup>3</sup>Values of apartment units not reported for Northshore Town Center. It is assumed they will be priced comparable to townhomes, however, Census data show that apartments valued greater than \$300,000 generate no school age children. For this exercise, the apartments are estimated in the \$200,000-\$299,999 range, which results in an average student yield of 0.158 children per unit.

<sup>4</sup>Children aged 0 to 4 years represent about 25 percent of the population under 18 years old. Some 4-year old children attend kindergarten, therefore, the adjustment rate was lowered to an estimated 20 percent.

<sup>5</sup>Countywide, about 13 percent of school children attend private schools or are homeschooled.

### Findings:

- The estimates for Northshore Town Center might seem low, given the total number of units in the project, however, the bulk of the new residential properties are townhomes and apartments, which will generate very few school children.
- A similar situation exists with Beacon Park. There are several detached units in the development, but there are also many attached units proposed. As a result, the overall yield is lower than might be expected if one simply looks at the total number of units in the development.
- The student yield from Covered Bridge is comparable to Lancaster Ridge and other subdivisions in the Northwest County and Southwest County Sectors.
- While more than 650 new public school students are expected from the three forthcoming subdivisions, they will not enter the system at one time. They will be added incrementally as homes are completed, which may take three years, five years, or longer, depending on the market forces that drive investment in new homes.

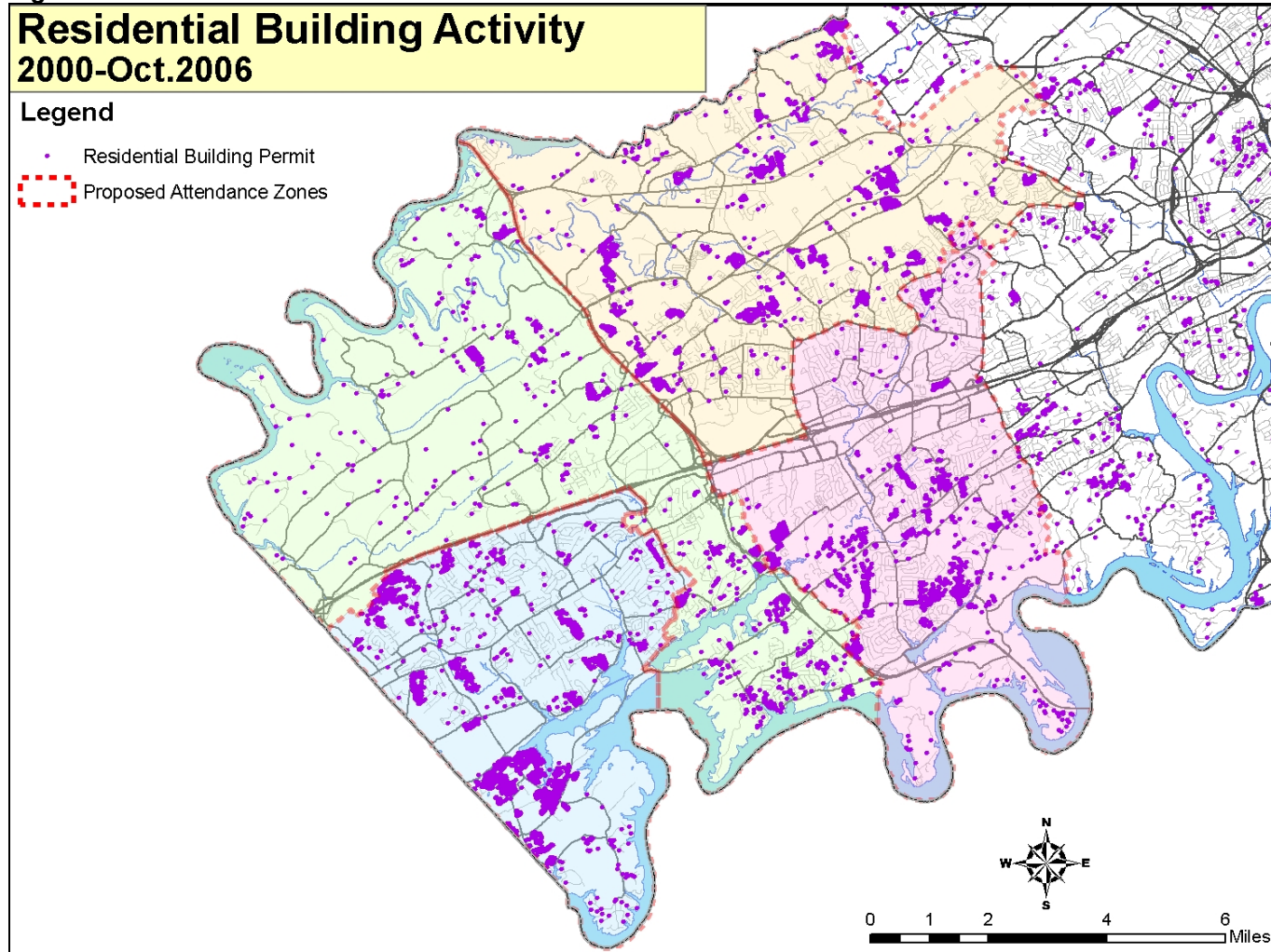
## 5. HOW MUCH GROWTH IS NEEDED TO FILL HARDIN VALLEY HIGH SCHOOL?

Presented at the November 20, 2006 work session of the Knox County School Board was a preliminary attendance zone for Hardin Valley High School (HVHS). Based on zone boundaries and MPC enrollment projections, it was estimated that HVHS would open in Fall 2008 with about 930 students, and the school would see enrollments remain steady over the next eight years, bringing 2014/15 totals to 966.

As explained at the work session, MPC projections show a moderate decline in systemwide high school enrollments over the next 10 years:

- The forecast is based on findings, as stated earlier, that observed decreases in late-1990s/early-2000s elementary enrollments will move through the high school system during the projection period.
- Modest increases in high school population may result from in-migration, but the recent elementary population declines will outweigh migration gains and result in net decrease in high school enrollments.
- Among individual schools, several will see moderate declines. Central, Halls, and Gibbs will remain stable. Only Farragut and Karns can expect enrollment gains.
- Areas of rapid residential growth in recent years are currently part of the Farragut and Karns High School zones, so the forecast for continued growth in those areas is not surprising.
- The portion of the new HVHS zone north of Interstate 40/75 and west of Pellissippi Parkway saw residential development in the past few years, but not at the pace experienced in Farragut and Karns. As a result, enrollment projections show only slight increase in high school student numbers.
- Much of the growth that occurred in areas that comprise the new high school zone was recorded in the lower portion, that area south of Interstate 40/75, west of Pellissippi Parkway, and east of Farragut/Concord (Figure 3).

**Figure 3**





During the November 20, 2006 school board work session, several people speculated that MPC's growth projections were too low (showing unchanging enrollments in the Hardin Valley High School attendance zone rather than increasing numbers) and that new development in Hardin Valley would accelerate in the near future because of the area's sizeable inventory of vacant property. Some believed growth might result in the addition of 500 new students, above the 900 students estimated in the eight-year projection period. Others speculated enrollments would double the MPC forecast and bring the facility to its target capacity of 1,800 students.

Summarized in Table 8 are current growth trends in the area comprising the proposed HVHS attendance zone. Also shown are estimated student yield rates from the past seven years of development in that area and in the traditionally fast growing Northwest County Sector as a whole. Recent growth is then compared to the amount of development necessary to generate 500 and 900 students above MPC's projected enrollment numbers.

### Findings

In the past seven years, almost 2,000 new residential units were added to the areas of northwest and southwest Knox County comprising the proposed HVHS attendance zone:

- 288 units per year average.
- Approximately 65 percent of those units, nearly 1,300 homes, were detached dwellings, consistent with the countywide average share.
- The remainder were apartments (24.3 percent), condominiums and townhomes (7.3 percent), and mobile homes (3.6 percent).

By comparison, construction totals showed that more than 25,000 new dwelling units were added countywide over the same period, an average of 3,715 units per year. Development in the HVHS zone captured about 7.8 percent of total countywide residential growth.

#### *Scenario 1: Total HVHS enrollment at 1,400 by 2014/15*

- Recent development in the proposed HVHS zone attracted nearly 800 new public school children.
- About 240 of those children were estimated to be high school age.
- The average household yield of high school children was 0.123, which translates to one high school student for every 8.1 housing units built.
- At that generation rate, it would take an added 4,000 new homes over the MPC projection in the HVHS zone in the next eight years to gain 500 high school students more than the MPC estimate of 900.
- That amount of development would require growth in the Hardin Valley area to nearly triple its share of total countywide annual investment to 21.4 percent per year, sustained for eight years.

#### *Scenario 2: Total HVHS enrollment at 1,800 by 2014/15*

- If the growth scenario calling for 900 students above MPC's projected enrollment of 966 is to occur, Hardin Valley will need to add 1,203 new housing units per year for the next eight years.
- That means quadrupling its annual average share of countywide development.

Nearly threefold growth rates in Hardin Valley are overly ambitious, and quadrupling is improbable. Growth will occur, that is certain. However, its pace will be market-driven and should be estimated using realistic indicators based on actual local growth, such as those presented here.

**Table 8: Existing And Perceived Growth Events In The Hardin Valley High School Zone**

<b>Proposed Hardin Valley High School Zone (HVHS)<sup>1</sup></b>	
2000-2006 (YTD) New Housing Units	1,969
Detached	1,276
Attached (condominiums/townhomes)	143
Apartments	479
Mobile homes	71
2000-2006 Estimated Total New Children Under 18 Years of Age <sup>2</sup>	1,130
Estimated Total New Public School Children <sup>3</sup>	787
Elementary	363
Middle	182
High	242
Estimated Student Yield Per Housing Unit	0.400
Estimated High School Student Yield Per Housing Unit	0.123
Estimated Housing Units Per High School Student <sup>4</sup>	8.1
<b>Comparison to Countywide Development</b>	
2000-2006 (YTD) New Housing Units Countywide	25,388
HVHS Zone Share of Countywide Housing Units (%)	7.8
Average Annual Housing Units Countywide	3,715
Average Annual Housing Units HVHS Zone	288
Average Annual HVHS Zone Share (%)	7.8
<b>Perceived Growth Beyond MPC Projections</b>	
<b>Scenario 1: Total HVHS enrollment 1,400 by 2014/15</b>	
Additional Students Above Projections After 8 Years <sup>5</sup>	500
Total Additional Housing Units Above Projections	4,067
Additional Housing Units Per Year Above Projections	508
Total Housing Units Per Year	796
Share of Countywide Housing Units Per Year (%)	21.4
<b>Scenario 2: Total HVHS enrollment 1,800 by 2014/15</b>	
Additional Students Above Projections After 8 Years	900
Total Additional Housing Units Above Projections	7,320
Additional Housing Units Per Year Above Projections	915
Total Housing Units Per Year	1,203
Share of Countywide Housing Units Per Year (%)	32.4

<sup>1</sup>Attendance zone proposed by Knox County Schools superintendent on November 20, 2006.

<sup>2</sup>Based on Northwest County Sector average child yield rates for selected housing structure types:

Detached: 0.708; Attached: 0.248; Apartment: 0.309; Mobile home: 0.613.

<sup>3</sup>Not all children under 18 years of age attend public schools. Approximately 80 percent are school age (5-17 years old), and 13 percent of that number attend private schools or homeschools.

<sup>4</sup>Value rounded to 8.1 for presentation in table. Value of 8.1364 used in calculation of Total Additional Housing Units Above Projections.

<sup>5</sup>Projection years: 2007/08 through 2014/15.

Note: Some of the material in this report was excerpted from MPC's technical report, *Child Population In Local Housing Units: The Relationship Between Housing Characteristics And Rates Of Child Population Growth*, October, 2005. See [www.knoxmpc.org](http://www.knoxmpc.org) for full text.