Planning Commission Research Topic No. 1 (1995)

Research Question: How might various types of residential developments affect enrollment for neighborhood schools?

Purpose

Staff was directed to research this question by the Planning Commission to see if there is validity to concerns raised by neighborhood residents at rezoning public hearings. Residents often voice their fear that if a higher-density residential development proposal is approved, neighborhood schools will be adversely affected by significant increases in enrollment.

Background

Over a five-year period (1990-94), the City of Overland Park experienced substantial residential growth. Much of this growth occurred in the Blue Valley School District, which is south of I-435. Of the 6,441 residential units constructed, nearly 90 percent (5,731 units) were single-family homes. In the two years prior to this research, however, the Planning Commission reviewed several rezoning requests for apartments and R-1A, small-lot single-family subdivisions. This prompted the concern of adjacent neighborhood residents.

To keep pace with growth, the Blue Valley School District had to construct a number of new schools, several of which are located within Overland Park. The lag time between site acquisition, construction and occupancy of a new school was not always able to keep up with the burgeoning enrollment, particularly in the areas at the fringe of development. The District had, in a few cases, found it necessary to construct temporary facilities to handle the growth in enrollment while a new school was under construction.

This perceived overcrowding in a few schools raised the concern of some area residents about approving new developments, particularly apartment complexes that may propose 300 or more units in a relatively small area, which would be built and occupied in a short period of time.

The concern of some residents was that the influx of students coming from these higher-density residential developments (including R-1A and higher) would overwhelm the, already perceived as crowded, schools. But residents were less likely to object to the development of a residential proposal if it was developed at a comparable density and value of home as found in their own development.

Methodology Used

To evaluate the issue raised by the Planning Commission, staff contacted the Blue Valley School District office to obtain enrollment information by individual residential developments. The enrollment information obtained from the school district was for a four-year period of time. Yet, not all residential developments listed had occupied units for the full four years. This information was then tabulated by staff into general groups by type of residential development and by type of student (elementary, middle or high school).

For example, standard single-family developments (built under the R-1, Single-Family District) were grouped together as were the small-lot single-family developments (built under the RP-1, Planned Single-Family District, R-1A, Small-Lot Single-Family District and RP-4, Planned Cluster Dwelling District). Duplex developments (R-2, Two-Family Residential District and RP-2, Planned Two-Family Residential District) have a separate category. The other categories (townhomes and apartments) were also divided by type of unit, but reflect a mixture of zoning districts (R-3, Garden Apartment District, RP-3, Planned Garden Apartment District, and RP-5, Planned Apartment House District). All categories had several developments in each.

Note that the school district included all homes in any one subdivision, whether they are zoned R-1 or R-1A, under the zoning district that has the largest number of homes. This grouping should have very limited effect on the student ratios in that few subdivisions are marketed with a mixture of R-1 and R-1A homes.

Table Description

The table on pages 1-5 and 1-6 identifies, from the experience of the Blue Valley School District, the number of students that might be generated by each residential unit. The table further breaks down the numbers by type of student (elementary, middle or high school), and provides the average (mean), median (middle value) and range (highest and lowest values) for each type of student and the total of all

students. The ratios are so small for most categories that it may be easier to relate to the number of students that might be expected from each 100 units in a residential development.

Using an example, under the Single-Family Category, the median number of elementary students, which might be expected per 100 units, is 37.9 (0.37874 x 100 units = 37.9 elementary students). The total number of students of all three student groups (elementary, middle and high school) is 77.1 students per 100 units. The highest and lowest values are also important particularly for anticipated elementary school enrollment because of the smaller school size.

Just one subdivision with unusually high student generation values may increase enrollment substantially above what might have been expected, however. The highest student generation value for elementary schools is 167 students per 100 units, which is 4.4 times the median ratio. Keep in mind, though, that this is an extreme example, and should be considered a very unlikely occurrence to repeat itself.

Differences by Residential Category

The findings of our research point out that, using the median values for elementary schools' ratios, a typical single-family development of 170 homes generates more than any other residential category for the same number of units, and significantly more than from the Townhome and Apartment Categories as shown on Example 1-1.

Summary

The findings of this report are that significant differences do exist by types of residential development. By far the largest generator of students is single-family development, followed by small-lot single-family development.

Duplex, townhome, and apartment developments generate far fewer students per unit than do single-family developments. Even if you assume that a typical new apartment complex might have 680 units on a 56.7-acre site (56.7 acres x 12 units per acre = 680 units) as shown on Example 1-2, the number of elementary students generated (10.8 students) is only 16.8 percent of the number of elementary students generated by a typical 170-home single-family subdivision (64.4 students). Although the single-family subdivision is one-quarter of the apartment complex's

size in units, (170 units vs. 680 units) as shown on Example 1-2, it covers the same amount of acreage (56.7 acres x 3 units per acre = 170 homes).

Planning Commission Action

The Planning Commission approved Planning Commission Research Topic No. 1 for use as a reference tool on Monday, May 8, 1995.

Blue Valley School District
Number of Students Per Household

Single-Family (R-1)

	Elementary School Ratio	Middle School Ratio	High School Ratio	Totals
Average	0.42391	0.19428	0.20225	0.82044
Median	0.37874	0.18000	0.18335	0.77148
Range				
Low	0.02822	0.05556	0.00714	0.09153
High	1.67500	0.90000	0.95000	2.67500

Single Family (Small Lot)

	Elementary School Ratio		Middle School Ratio	High School Ratio	Totals
Average	0.23015		0.15210	0.17381	0.55605
Median	0.27166		0.15344	0.20026	0.62535
Range					
Low	0.10019		0.02330	0.03046	0.17088
High	0.27166	*	0.45000	0.36000	1.03131

Duplexes

	Elementary School Ratio	Middle School Ratio	High School Ratio	Totals
Average	0.11243	0.05883	0.07739	0.24865
Median	0.07841	0.03983	0.07510	0.15252
Range				
Low	0.00383	0.00000	0.01106	0.02246
High	0.29188	0.16888	0.20938	0.63576

Townhomes

	Elementary School Ratio	Middle School Ratio	High School Ratio	Totals
Average	0.06070	0.03713	0.05070	0.14853
Median	0.03023	0.02209	0.03158	0.15526
Range				
Low	0.01873	0.00843	0.01341	0.04432
High	0.14095	0.09152	0.12196	0.28259

Apartments

	Elementary School Ratio	Middle School Ratio	High School Ratio	Totals
Average	0.04586	0.02207	0.02163	0.08956
Median	0.01597	0.01106	0.01910	0.04787
Range				
Low	0.00714	0.00143	0.00378	0.01429
High	0.16761	0.06667	0.06667	0.25966

* Several subdivisions with no history have been assigned this ratio by the school district, which explains why the median and high are identical.

Source: Blue Valley School District and
City of Overland Park

Example 1-1
170–Unit Development
Elementary Student
Enrollment Ratio

- **Single-Family Category - .37874 X 170 units = 64.4 elementary students**

- **Small-Lot Single-Family Category - .27166 X 170 units = 46.2 elementary students**

- **Duplex Category - .07841 X 170 units = 13.3 elementary students**

- **Townhome Category - .03023 X 170 units = 5.1 elementary students**

- **Apartment Category - 0.1597 X 170 units = 2.7 elementary students**

Sources: Blue Valley School District and City

Example 1-2
56-Acre Site
Elementary Student
Enrollment Ratio

170–Lot Single-Family Development

- **56.7 acres X 3 units per acre = 170 homes**
- **64.4 Elementary Students for a 170-lot single-family subdivision**

680–Unit Apartment Complex

- **56.7 acres X 12 units per acre = 680 units**
- **10.8 Elementary Students for a 680–unit apartment complex**

Sources: Blue Valley School District and City