

Planning Commission Research Topic No. 4 (1998)

Research Question: Should the Comprehensive Plan designation of Switzer Road south of 135th Street be changed from Thoroughfare to Collector?

Purpose

Staff was directed to study the advisability of changing the designation of Switzer Road from a thoroughfare to a collector street in the area south of 135th Street.

Background

Switzer Road between 135th Street and 143rd Street has been designated as a thoroughfare street by the Comprehensive Plan since 1971. The section of Switzer Road south of 143rd Street was included as a thoroughfare after the City annexed that area in 1985.

Recent single-family residential development plan approvals in the area east of Switzer and south of 143rd have resulted in the need to relocate Switzer Road to eliminate an existing offset in that street at 143rd Street. When the subdivision preliminary plans were reviewed, nearby residents realized that the ultimate design of Switzer Road potentially would be a four-lane divided roadway, if future volumes caused a need for the improvement. A group of residents in the area south of 135th Street have submitted a petition to the City requesting that the street designation of Switzer Road be changed from a thoroughfare to a collector south of 135th Street. Presumably, the reason for the change is to retain the rural character of the area by not widening Switzer Road beyond a two-lane width.

Methodology

Staff used various sources to evaluate the requested street classification change. The primary basis for determining future traffic volumes was the Overland Park Traffic Model (OPTM). The OPTM was developed in 1992 to provide a way to analyze the future traffic conditions on the City's streets in the area south of 103rd Street. Inputs of projected land use and the expected street network are used with sophisticated calculations of travel behavior to arrive at projected traffic volumes on the street network. The OPTM's primary use is to evaluate the impacts of proposed changes in land use. In that role, a traffic consultant uses the model to determine "background" traffic and adds trips from a proposed development and other nearby land uses to arrive at traffic volumes for a particular future year. For this analysis staff has used the output of the model to arrive at estimates of future traffic volumes for the year 2014, based upon the land use projections currently used by the City. It is important to note that a major update of the model is underway and when completed (sometime within the next six weeks) a 2020 horizon year will be used.

Other resources used for this study were the City's Future Development Plan and the Official Street Map.

Analysis

After reviewing the existing and proposed street network and land uses in the vicinity of Switzer Road, analyzing the traffic projections produced by the OPTM, and evaluating the access needs of the area; the staff recommends that Switzer Road maintain its current designation as a thoroughfare. The following explanations detail the reasons for the staff recommendation.

Mobility and System Continuity

An important element of Overland Park's street network is the one-mile spacing of thoroughfare streets, generally running along the boundaries of each one-mile section of the City. Typically, those streets carry greater volumes of traffic, at higher speeds, than collector and local streets. That

design provides for greater mobility for those drivers using the thoroughfare street system.

Switzer Road north of 135th Street is scheduled to be widened to a four lane divided facility in 2003. 135th Street currently is a four-lane divided street, and 151st Street will be widened to four lanes at some time in the future to handle the increased traffic. A special study commissioned by the City to determine the future design of 143rd Street from Pflumm Road to Metcalf Avenue recommended that 143rd Street be constructed as a four-lane divided roadway when it is improved in the future. Consequently, all of the east-west thoroughfares abutting or bisecting the section of Switzer Road under study either currently are or are planned to be constructed as four-lane roadways; and the direct extension of Switzer Road to the north will be a four-lane divided roadway. Anyone driving south on Switzer Road from areas north of 135th Street will expect that the same type of roadway will be available in the area south of 135th Street.

Capacity Needs and Adequate Gaps

Existing traffic volumes on Switzer Road range from 8,000 vehicles per day on the section just south of 135th Street to 1,300 vehicles on the portion near 151st Street. The traffic volume near 135th Street is approaching the 10,000 vehicles per day threshold that the City uses to determine the need for widening to a four-lane roadway. The current version of the OPTM (with a horizon year of 2014) shows that Switzer Road is expected to carry approximately 15,000 vehicles per day in that area. Even though the existing volumes south of 143rd Street are not very high, the OPTM projects that from 10,000 to 12,000 vehicles per day will travel on Switzer Road in the area between 143rd Street and 151st Street (Refer to Figure 4-1 for details on the existing and projected traffic volumes). Those increases in traffic will be caused by the development of vacant land near Switzer Road, along 135th Street, and areas farther to the south of this section of Switzer Road.

For several years the City has used an Average Daily Traffic (ADT) figure of 10,000 vehicles per day as the threshold volume for widening a street from two to four lanes. It has been observed that volumes higher than that on a two-lane roadway lead to undesirable delays and very few gaps in the traffic

stream during peak traffic times for vehicles attempting to enter from side streets and driveways. Considering the number of properties with access only onto Switzer Road, the issue of adequate gaps will, in the opinion of staff, become a major concern as traffic volumes increase in the future.

Impacts on Parallel Routes

If Switzer were to be designated as a collector street (which would involve lowering the speed limit to 30 miles per hour), a portion of the traffic that otherwise would use Switzer Road would be diverted to the north-south thoroughfares to the east and west – Quivira Road and Antioch Road. The impacts of that diversion are not known at this time, although recent traffic studies for proposed development projects on 135th Street have projected that both the 135th Street and Antioch Road intersection and the intersection of 135th Street with Quivira Road will be operating over or at capacity under 2014 projections even without any diversion of traffic from Switzer Road. Even independent of the effect on capacity, one might question why residents along Switzer Road should benefit from reduced traffic volumes along their properties at the expense of property owners on Antioch Road and Quivira Road, who would see higher traffic volumes along their frontages.

Safety

Generally as traffic volumes on a roadway increase to a point near the capacity of the roadway design, accidents will increase. That increase is due to the increased opportunities for conflicts with other vehicles when more vehicles are on the street system and the pressure for turning vehicles to select shorter gaps in traffic when making turning movements. When a roadway is widened from two to four lanes, the lines of traffic are shortened (because the same amount of traffic is spread onto additional lanes) resulting in larger gaps between groups of vehicles. Those larger gaps provide more leeway for errors in driver's judgment that otherwise would result in accidents if they occurred on a two lane road with the same traffic volume.

Another safety consideration is the need for good access into and out of the proposed fire station on the east side of Switzer Road south of 137th Street. Current traffic volumes will not impact the functionality of that new fire station, but the expected increases in traffic volumes over the next few years could lead to backups on Switzer Road that would affect the mobility of the fire trucks using Switzer Road.

Future Growth Beyond 2014

The imminent update of the OPTM mentioned earlier will result in traffic projections for the year 2020. Considering that the land use assumptions for that scenario will include a greater extent of development of currently undeveloped land, as compared to the present 2014 model year, more traffic will be generated in the developing southern portion of the City. That additional traffic will be distributed to each of the main streets, including Switzer Road. Under that situation, the need for widening Switzer Road will be even greater. Even beyond the 2020 scenario, additional growth will occur in southern Overland Park. While staff cannot place a date on when the land in the City will be fully developed (sometimes known as “ultimate development”) that situation will not occur until well after 2020. Presumably at that time traffic volumes will stabilize on the City’s street system.

Miscellaneous Considerations

It should be pointed out that the City is in the process of beginning work on developing preliminary plans for the improvement of Switzer Road to a four-lane roadway between 135th Street and 143rd Street. While no schedule has been set for the construction on Switzer Road, the preparation of preliminary plans is the first step in the process of improving a roadway.

Staff does not profess that the projection of traffic fifteen and twenty years into the future is an exact science. It is recognized that projections, even at their best, may be ten percent too high or low. In that case, even though a projected traffic volume is borderline in terms of justifying the need for a street improvement, the uncertainty of the projection leaves open the

potential that the future volumes very well could be higher than the projection. Under that situation, the prudent approach is to provide for the potential of a future widening, keeping in mind the actual decision to widen or not widen the street will be made several years in the future when traffic volumes have reached levels warranting improvement or have stabilized at lower levels. If sufficient right-of-way is not reserved and the traffic volumes increase to the point of justifying an improvement, the City will be forced into a decision of either living with an unsafe and poorly functioning street or directing substantial resources to the task of acquiring additional right-of-way (which in the worst case may require the purchase and demolition of homes) to allow the street improvement to take place.

Summary

Considering all of the factors detailed above, staff recommends that the Future Development Plan and the Official Street Map continue to show Switzer Road as a thoroughfare street, with the potential for widening to a four-lane section in the future if actual traffic volumes warrant that improvement.

Comprehensive Plan Committee Recommendation

The Comprehensive Plan Committee agreed with the staff recommendation for no change to the Future Development Plan and Official Street Map designation of Switzer Road.

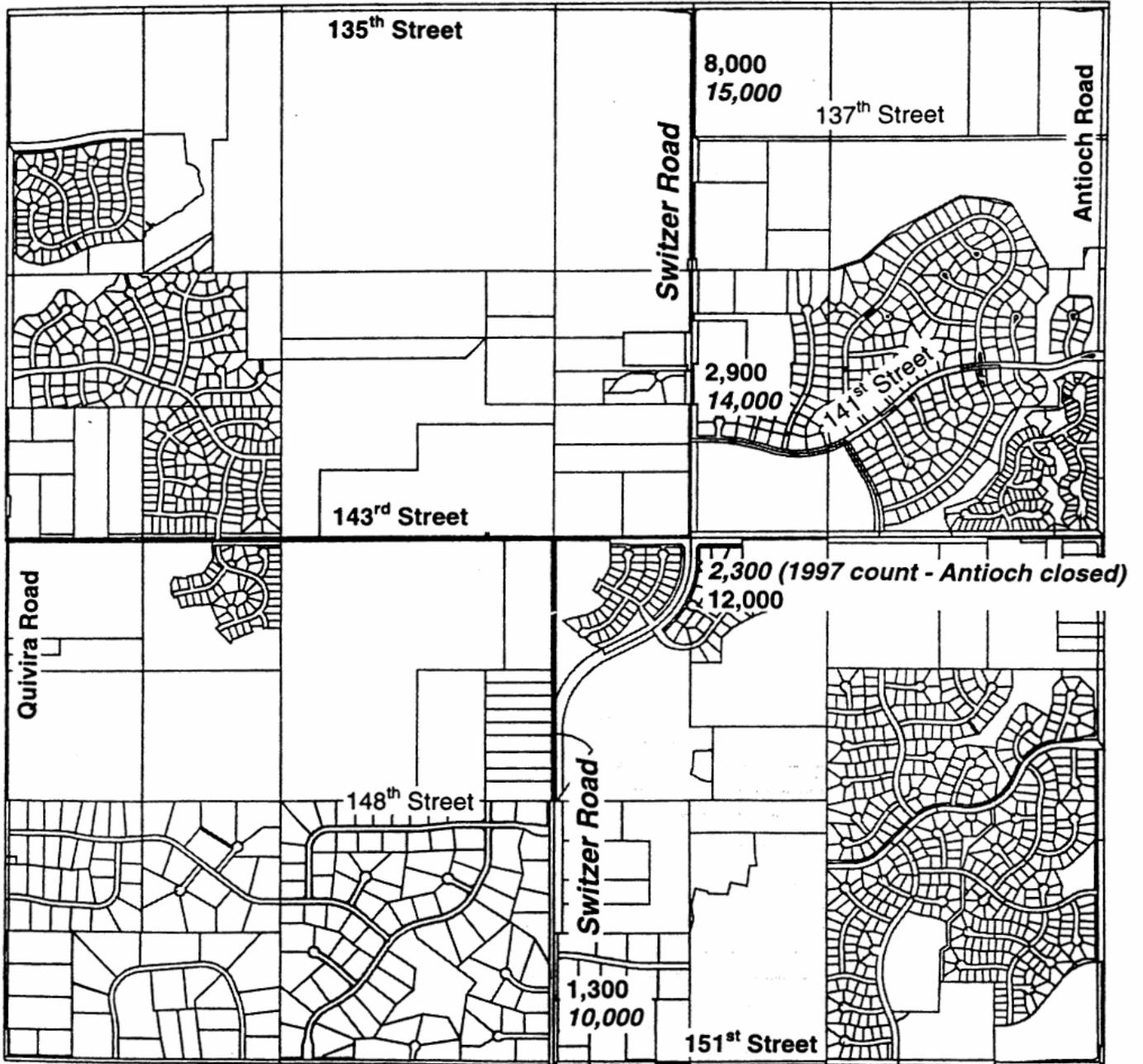
Planning Commission Action

On Monday, July 27, 1998, the Planning Commission agreed with the Comprehensive Plan Committee's recommendation that the Future Development Plan and the Official Street Map continue to show Switzer Road as a thoroughfare street and approved Planning Commission Resolution No. 80, adopting the amendments to the 1998 Comprehensive Plan.

Governing Body Action

On Monday, August 17, 1998, the Governing Body voted to adopt City Council Ordinance No. OPMP-2131, "An Ordinance Adopting the Overland Park, Kansas, 1998 Comprehensive Plan and Repealing City of Overland Park Ordinance No. OPMP-2072, while expressing the intent to revisit the issues relating to Planning Commission Research Topic No. 4 upon completion of the 135th Street Corridor Traffic Study.

Figure 4-1



Legend: Existing 24 Hour Volume* 000
 2014 Projected 24 Hour Volume 000
 * 1998 count, unless noted