Life Sciences Center Transportation Plan Problems

Despite some excessively favorable assumptions, traffic modeling for the Life Sciences Center under the draft master plan shows severe deterioration of already poor road level of service. This memo will document the congestion problem and the favorable assumptions. Some 90% of LSC workers and residents will be in cars and subject to the congestion. These high congestion levels will surely dismay and deter future technology employers and workers just as they dismay current residents.

The Congestion Problem

The model results show how far the Life Sciences Center is from a transit-oriented Smart Growth place. *The Policy Area Review tables in the Transportation Appendix, Fig. 22, 23, show how congestion increases and driving speed decreases as vehicle miles traveled (VMT) increases* despite the transit-not-driving rhetoric. Daily AM peak hour VMT rises within the policy area from 47,322 in 2005 to 80,750 in 2030. Average speed goes from 16.6 mph to 9 mph. In 2030, the LSC barely meets the minimum standard for auto mobility. Its Transit Mobility score -63 - is the second lowest in the County; only Damascus scores lower, even assuming the CCT is built to Clarksburg.

Fig. 25, the Intersection Analysis tells an equally grim story. Despite the low Transit Accessibility score, the Critical Lane Volume (CLV) standard is raised from the current suburban 1450 to a quite urban 1600. That is the same as greater Bethesda and Silver Spring which have much higher transit mobility scores of 84. Sixteen hundred is defined as 100% of the capacity of a lane, and the beginning of Level of Service F for failing.

Despite the high standard for permitted congestion, seven intersections would exceed it in 2030. Three exceed that standard today – they are all assumed to become interchanges and are not among to seven. Another 14 intersections will almost reach 1600. The average V/C ratio is 79% in 2005; 93% in 2030.

Consider the model forecast for number and mode of work trips from the high scenario. A spreadsheet sent by transportation planners shows that, assuming the CCT is built, 2030 transit trips would increase by about 7,000 if the high scenario replaced the currently planned land use. But car trips would rise by about 30,000. Judging from the origin of work trips, the high scenario appears to add more trips to I-270 than to the CCT.

The increased car commuting alone will add about 540,000 VMT per day in 2030 (assuming an average of 9 miles per trip, or 18 per round trip). The price of oil is forecast to continue to increase in real terms to about $130 per barrel in 2030. Of course, nominal price will be higher depending on the rate of inflation. The high price of commuting and work related travel will increase the cost of doing business in the LSC.

The Problems with Analysis and Assumptions

1. The 2030 analyses contain unreasonable (and sometimes unclear) assumptions about transit service. The worst: assuming a 30% non-driver mode share as model *input*. This is justified partly by Johns Hopkins requesting it, and partly by a claim that the current non-driver mode share is about 16%. Model output actually shows 14% but that is still too high, since it is swelled by a claim of 9% of work trips by carpool passengers. This implies about 18% total carpoolers *now*. The high scenario generates 12% carpool passengers or about 24% total in carpools in 2030. This far exceeds census survey data showing 2-4% carpool passengers and 5-7% total in carpools. If the rate of carpooling is comparable to the rest of Montgomery County, the current non-driver mode share is 7-8%.

2. The congestion level may get worse than the 2030 forecasts due to the foibles of the staging scheme in the draft plan. Staging is supposed to tie development to construction of transportation facilities. In this master plan, however, only about 2/3 of commercial development is subject to staging. The rest of the development including all housing can go forward at any time. Since 12 of the 15 million square feet of staged commercial development, 75%, can proceed in stage 2, that means about 90% of total development can proceed in stage 2. Stage 2 requires only programming (and presumably constructing) the CCT to the Belward station, and requires no interchanges. Thus traffic congestion could be worse than the Appendix Tables show during later part of stage 2. The model needs to be run to show congestion levels at the end of stage 2, with 80-90% of total development, the CCT only to Belward, and no or minimal new interchanges.

3. The Transportation Appendix p. 49 states that the model assumed car trip generation per employee or household was the same as in the County's Metro station areas. Given the relative transit mobility here compared to the Metro station areas, that clearly assumes too few car trips. Using higher per capita trip generation will of course produce more congestion.

4. The table showing usage of commercial space may produce too few employees for a given square footage of development. The table assumes 1/3 of the building area is offices, a third industrial/R&D and a third education. Industry and education facilities have fewer employees per 1000 square feet than do offices. Yet we have no assurance (or reason to believe) offices will comprise such a low percentage of space.