Response to Questions on the FY 2006 Advertised Budget Plan

Request By: Supervisor Kauffman

Question: How much would it cost to implement a computer aided transportation modeling system to update the County's Transportation Plan, as recommended in the EQAC report?

Response: EQAC recommended (Land Use and Transportation #1c, attached below) that *"the BOS and the county's Department of Planning and Zoning continue to consider land use AND transportation together when revising the Comprehensive Plan. To start this process the county should develop and collect data that allows analysis of the macro effects of land use and transportation decisions."*

EQAC also recommended (Land Use and Transportation #3b, attached below) *"that direction be given to model transit improvements as well as dynamic attributes such as HOT lanes."*

As noted in the staff response to the EQAC recommendations, the evaluations of proposed Plan amendments do consider land use and transportation impacts; however, the evaluation of effects is generally on a micro level, rather than the macro level suggested in the EQAQ recommendation. Currently, the County's Department of Transportation is conducting a comprehensive review of the County's Transportation Plan, which will evaluate future land use and transportation facilities on a macro level. A key aspect of this review process will be to refine and make operational a County-wide transportation model; the model will be utilized in analyzing the planned transportation system including transit improvements. While the model is more detailed for the County than the regional model, it still addresses transit improvements at the same level of detail as the regional model, in what could be referred to as a "sketch planning level." The County's consultant and staff will evaluate model output and formulate recommended changes to the Transportation Plan. The model also will be available for future County-wide and sub-area transportation analyses as well as evaluating transportation impacts associated with significant proposed Plan amendments.

Modeling High Occupancy Toll (HOT) lanes is an even more sophisticated endeavor than modeling transit improvements and would be much more expensive and resource-intensive. Staff continues to recommend that MWCOG/TPB be encouraged to include HOT lane analysis as part of their regular model enhancement program rather than at the County model level due to its complexity and cost. While the Transportation Plan Update will include HOV lanes in the transportation networks evaluated, and this will give an indication of the viability of HOT lanes, the technical aspects of HOT lane transportation modeling are far more complex and are not being addressed as part of the Transportation Plan Update. An example of the resource requirements and complexity is that the Fluor Company is spending approximately $1 million to model HOT lanes on the Beltway in Northern Virginia for the proposed Beltway Public-Private Transportation Initiative.

Detailed transit modeling on a corridor or sub-area basis as suggested by EQAC is a very complex effort and requires considerably more resources than have been allocated to this

Transportation Plan Update to date. Resources currently allocated to the County-level model being developed as part of the County's Transportation Plan Update (without this higher level of transit modeling capability or any corridor or sub-area analyses) consist of one experienced staff person and $350,000. To sustain the model beyond FY 2005, the only resource currently available is one staff person and no funding for continued outside assistance beyond FY 2005. Conducting 2-3 sub-area or corridor level analyses each year and developing a more sophisticated model, one capable of detailed transit modeling as recommended by EQAC, would require several experienced staff members as well as significant additional outside assistance. It is estimated that $1,000,000 to $1,600,000, consisting of a combination of additional County staff and consultant assistance, would be needed annually for this increased level of analysis effort. (This estimate includes no additional resources for modeling HOT lanes.) For example, in FY 2005 in addition to the Transportation Plan Update, two such sub-area studies were funded and initiated (the Tysons Corner Transportation and Urban Design Study and the Laurel Hill Transportation Analysis) at an approximate cost of $400,000 each.

Response to 2004 EQAC Recommendation

Recommendation: Land Use and Transportation #1c

(Page 28 of the Annual Report on the Environment)

EQAC Recommendation:

EQAC recommends that the BOS and the county's Department of Planning and Zoning continue to consider land use AND transportation together when revising the Comprehensive Plan. To start this process the county should develop and collect data that allows analysis of the macro effects of land use and transportation decisions.

These data should support models that integrate congestion, air quality, commuting patterns, and health effects for use in future decisions.

Lead agencies for this response: DPZ (Planning Division)

Coordinating agency(ies) for this response: DOT

Please identify a lead agency contact person: Sterling Wheeler

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

The evaluations of proposed Plan amendments do consider land use and transportation impacts; however, the evaluation is on a micro, not a macro level.

Currently, the County's Department of Transportation is beginning a comprehensive review of the County's Transportation Plan, which will evaluate future land use and transportation facilities on the macro level. A key aspect of this review process will be to refine and make operational the County-wide transportation model; the model will be utilized in analyzing the planned transportation system. The County's consultant and staff will evaluate model output and formulate recommended changes to the Transportation Plan. The model also will be available for future County-wide and sub-area transportation analyses as well as evaluating transportation impacts associated with significant proposed Plan amendments. However, additional funding or staffing resources may be required to complete such analyses.

The air quality component of the EQAC recommendation can be considered at a number of levels. As EQAC is aware, air quality planning at the regional level is conducted by the Metropolitan Washington Air Quality Committee, with the technical staff support and evaluations provided by the Metropolitan Washington Council of Governments (COG). However, this effort is geared toward demonstrating attainment of Federal air quality requirements and not to evaluating land use and transportation concepts as they relate to air quality. Another effort being undertaken at COG is an evaluation of various regional growth

scenarios for their transportation and air quality implications. County staff is participating in this study and tracking it closely for implications to land use planning in Fairfax County.

At the local level, the idea of incorporating air quality modeling analyses into land use decisions would not, in our view, be appropriate for site-specific development or Plan amendment proposals but may have merit for countywide, regional, or subregional planning and transportation studies involving significant alternative scenarios. We feel that air quality considerations of land use decisions (except for those involving significant point sources) need to be considered in a regional context and that an exercise through which emissions of pollutants are estimated for a particular development proposal would be meaningless outside of this context. However, we do feel that it is appropriate to evaluate such proposals from the standpoint of measures that can be taken by developers to reduce vehicle trips and recommend that this be a continuing consideration in the zoning and Plan amendment processes. For countywide, regional, or subregional planning exercises, there may be merit to evaluating the regional emissions levels associated with various development scenarios. We would note that such an analysis was performed in 1989 when several countywide development scenarios were being considered during the Policy Plan development process.

As an example of encouraging smart growth during the past year; staff working with a citizen group and developer formulated recommendations for transit-oriented design and densities adjacent to the Vienna Metro station in the Fairlee area. In this effort, extensive consideration and commitment occurred with regard to Metro access, pedestrian mobility, mixed use development, transportation demand management, and technological enhancements intended to reduce reliance on the automobile and encourage pedestrian activity and Metro use.

If this recommendation has not been (or is not being) addressed, do you concur with the recommendation? Why or why not?

We do concur with the major emphasis of the recommendation, which is to improve the evaluation of transportation impacts during the Plan amendment process by having the capability to understand implications at both the micro and macro levels. This aspect of the recommendation is currently being implemented as indicated above.

With respect to air quality analyses, we recommend that the idea of modeling emissions be considered if and when countywide, regional, or subregional planning studies are initiated. We were not (in the time frame provided for this response) able to conduct research on available models for such an effort, but would envision that efforts similar to that performed in 1989 (using the Mobile4 [now Mobile6] model to estimate mobile source emissions and using population-specific emissions factors to estimate area sources) could be applied given a robust transportation modeling effort. We are not aware of how specific health effects can be modeled in this manner given the regional nature of ozone pollution.

What, if any, actions should be taken pursuant to EQAC's recommendation?

Continue the processes that are underway: 1) the evaluation and updating of the County's Transportation Plan, and 2) continue to work with COG on addressing air quality issues. We

also recommend that the COG effort to evaluate air quality implications of various land use scenarios continue to be tracked.

Do the actions recommended above have any budget implications for FY 2006? If so, please explain.

As noted above, funding was provided for transportation modeling to update the County's Transportation Plan. This effort will extend into FY 2006. Refining and using the transportation model to conduct more detailed sub-area studies that are identified through the Transportation Plan review would have budget implications for FY 2006. While the transportation model will be a useful tool for County planners, no funds for conducting additional studies using the model have been budgeted for FY 2006 or subsequent years. However, two such sub-area studies were funded and initiated in FY2005, to be conducted concurrently with the Transportation Plan Update (the Tysons Corner Transportation & Urban Design Study and the Laurel Hill Transportation Analysis and Preliminary Engineering Study). The cost of each study is approximately $400,000.

Do the actions recommended above have any longer-range fiscal implications? If so, please explain.

In order to obtain full benefits from the transportation model for analyses and conducting sub-area studies, additional resources of funding or staff are needed. Such ongoing efforts could cost $200,000 to $400,000 per year in consultant fees or would require several additional technical staff proficient in transportation modeling.

If the Mobile6 air quality model is acquired (even at no cost), conducting air quality analyses during future large area studies will require additional resources.

Response to 2004 EQAC Recommendation

Recommendation: Land Use and Transportation #3b

(Page 29 of the Annual Report on the Environment)

EQAC Recommendation:

EQAC is looking forward to the results of the 2004 Transportation Update to the Master Plan. We recommend that direction be given to model transit improvements as well as dynamic attributes such as HOT lanes.

Lead agencies for this response: DOT

Coordinating agency(ies) for this response: None

Please identify a lead agency contact person: David Kline

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

The County's Department of Transportation is currently conducting a comprehensive review of the Transportation Plan which will evaluate future land use alternatives and transportation networks on the macro level. A key aspect of this review process will be to refine and make operational a County-wide transportation model. The model will be utilized in analyzing future transportation networks including transit improvements. However, it should be noted that detailed transit modeling on a corridor or sub-area basis, which may be the intent of this recommendation, is a very sophisticated effort and requires considerably more resources than have been allocated to this Transportation Plan Update to date.

Modeling HOT lanes is an even more sophisticated endeavor than modeling transit improvements. While the Transportation Plan Update will include HOV lanes in the transportation networks evaluated, and this will give an indication of the viability of HOT lanes, the technical aspects of HOT lane transportation modeling are not being addressed as part of the Transportation Plan Update.

If this recommendation has not been (or is not being) addressed, do you concur with the recommendation? Why or why not?

We concur that in the long term it would be desirable for the County to develop the capability to model transit improvements at a detailed (or subzone) level. However, for the purposes of this year's Transportation Plan Update, modeling at the macro level is adequate. Modeling transit improvements at a more detailed level can be done in subsequent processes such as corridor or sub-area studies. We believe that HOT lane modeling is such a new technical enterprise that it should be done by others for the time being.

What, if any, actions should be taken pursuant to EQAC's recommendation?

FCDOT should investigate the options and opportunities to pursue more transit modeling in-house. This endeavor would require more resources.

The County should encourage the MWCOG/TPB to include HOT Lane issues as part of their regular model enhancement program.

Do the actions recommended above have any budget implications for FY 2006? If so, please explain.

If more detailed transit modeling is required or desired to be added to the scope of the existing consusltant contract for the Transportation Plan Update, additional funding would be needed in FY 2006**.**

Do the actions recommended above have any longer-range fiscal implications? If so, please explain.

At present there is no future funding for consultant assistance to conduct the more detailed and intensive transportation modeling that is required to analyze specific transit improvements or HOT Lanes.