

Date: December 9, 2008

To: Luke Vinciguerra

From: Bill Cashman

Subject: **Transportation Analysis: Build Out based on Development According to Current Zoning**

As requested, we have developed an analysis of the roadway transportation impacts based on development according to current zoning. The development potential of each Transportation Analysis Zone (TAZ) was developed using the County's GIS data files with development amounts produced by a collaborative effort of County and URS staff.

The process used the Hampton Roads regional travel demand model, with the forecasted growth in James City County modified to reflect development according to zoning.

### **Review**

First, I want to highlight some of the point made at the workshop on October 14, 2008. The travel demand model analysis uses a 4-step process:

- **GENERATION - DRIVEN BY SOCIOECONOMIC DATA**
- **DISTRIBUTION - BASED ON GRAVITY MODEL APPLICATION**
- **MODE SPLIT – CONSIDERS TRANSIT**
- **ASSIGNMENT - BALANCE OF TRAVEL TIME BASED ON CAPACITY**

#### What models do well:

- **Macro-analytical Tool**
  - **Land use and transportation policy analysis**
  - **Major facilities alternatives analysis**
  - **Air quality conformity analysis**
  - **Modal Analysis**

#### What models do not do well:

- **Not a Micro-analytical Tool**
  - **Detailed corridor movement analysis**
  - **Turning movements at intersections**
  - **Interchange analysis**
  - **Sub-TAZ analysis**
  - **Operational analysis**

The model volumes and service levels you will see on the attached table represent an average for the entire roadway segment. Volumes at specific locations along each segment may vary.

**BUILD OUT ANALYSIS**

For the Build out analysis, URS made changes to the socioeconomic data for the TAZ’s within James City County. While the totals vary among the TAZ, the overall changes when compared with the data in the 2000 Census and the regional 2030 forecasts are:

<b><u>DATA ITEM</u></b>	<b><u>2000 CENSUS</u></b>	<b><u>2030 REGIONAL</u></b>	<b><u>BUILD OUT</u></b>
Population	48,102	95,300	101,003
Total Employment	26,517	47,400	64,134
Retail Employment	4,757	7,600	33,999

As the comparison above shows, this analysis included over four times as many retail employees as used in the development of the regional model. While this is not a rational forecast, it does indicate that according to current zoning, the County has an abundance of undeveloped land zoned for retail commercial development. Since it is highly unlikely that a sufficient amount of retail development will occur in the next few decades resulting in approximately 34,000 retail employees, it is, however, difficult to predict where within the undeveloped land zoned for retail use development may actually occur. Consequently, it will be difficult to accurately predict where the traffic impacts from retail development will be generated.

The County has been aware of this issue for some time, and has managed it with the use of the Special Use Permit process. While we understand that this approach works for management through the development review process, the County may want to consider additional steps in the update of the Comprehensive Plan to provide enhanced management of retail commercial development at the planning level.

**FINDINGS**

The results of the assignment forecast process are summarized on the attached table. It shows where roadways are forecast to exhibit deficient service levels based on full development consistent with current zoning.

The year 2030 volumes shown in the table are higher than those forecasted using the regional socioeconomic forecasts. This is due to the higher number of retail employees. You will note that several roadways located in rural areas exhibiting low current daily volumes (such as Forge Road) are forecast to carry a substantial volume under this analysis alternative. These volumes are a direct result of the added retail employment forecast to develop in adjoining TAZ’s.

With development according to current zoning and improving all roadways exhibiting a forecast service level worse than D, the cost of widening is estimate (in 2008 dollars) at approximately \$305 million.

**NEXT STEP**

The next step is to conduct an analysis of forecast development using the current Comprehensive Plan policies carried to full build out. At our session on December 15, 2008, we will present the findings of this analysis and compare them with the findings presented with this memo.