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Dr. Lindsay Holliday  
Forest Hill Road Mediation Group  
VIA EMAIL ONLY: teeth@mindspring.com

April 5, 2008

Re: Forest Hill Road (FHR)

Dear Lindsay:

I would like to offer your group some thoughts and additional analysis regarding FHR traffic and geometry.

I am concerned that the County's latest response demonstrates that they apparently misunderstood the latest proposal for what I have termed "upper" FHR. I note this because they continue to include the same cross section I drew when I was in Macon, and not the most recent sketch we forwarded. If you look in the lower left of the latest attachment of "Residents Drawing No. 1", you will see it was created on March 04, and is the identical attachment to the first reply.

## Traffic Volumes And Projections

I have revisited this thorny matter in two ways: 2000 to 2007; and, 1992 to 2007. Only lower FHR South of Wimbish shows an upward trendline for both analysis scenarios.<sup>1</sup>

I have attached only the "FHR Traffic.pdf" file, because it does show some growth in traffic volumes for the 15 years and 16 data points from 1992 to 2007. Again, if one analyzes only the seven years and eight data points from 2000 to 2007, upper Wimbish shows no growth as a trend- this is important to remember when I revisit the potential realignment matter below.

Using the longer time period projects future traffic volume increases of approximately 14% for the highest and lowest volume portions of FHR (these being counters 445 and 447), and 12% for the area around counter 449.

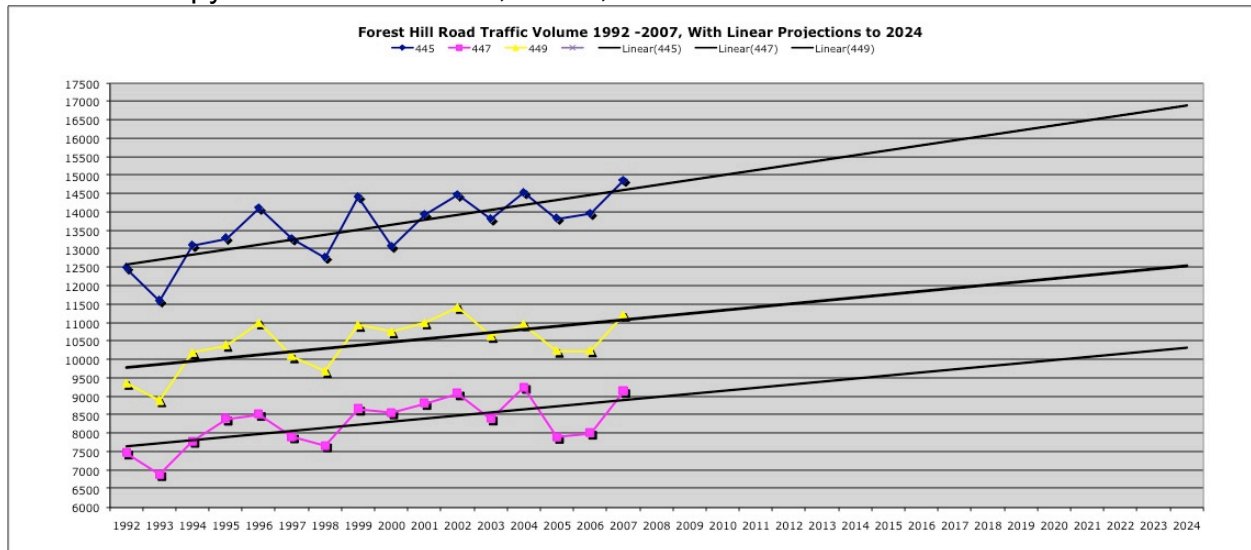
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<sup>1</sup> So that my methodology may be understood, all of my analysis of the traffic counts has been accomplished in Microsoft's Excel program. When a chart is created in excel, the software can calculate and place a trendline in the chart, this is not subject to discretion or interpretation, and hence is less likely to introduce error.

The data shows 2024 projections to be 16,900 for lower FHR with additional future 2024 projections of 12,600 and 10,400 for the other sections. These compare with GaDOT projections of: 22,000 to 25,000; 21,300 and 15,650, respectively.

Stated differently and plainly: if a fair projection of the data from 1992 to 2007 is done, the results show the GaDOT projections to overstate the probable future results by 39% for lower FHR and 55% for upper FHR. These are **huge** differences and plainly show the need to revisit the fundamental assumptions about how FHR should be configured.

A reduced copy of the chart is here, below, the trend lines are black:



## Cross Section Details

At the Macon Mediation, I proposed, and your group accepted, a proposal for upper FHR that was for two eleven-foot travel lanes with five-foot shoulders with an urban curb (pavement flush to face of curb on both sides of the street); a 32' curb-to-curb proposal (I am going to limit my comments here to the curb-to-curb issue only, as their appears to be agreement beyond the face of curb).

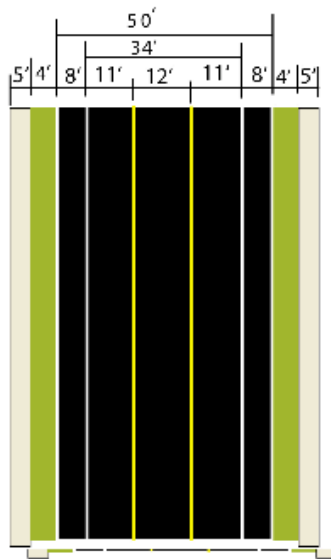
In the first reply, the County's representative(s) offered to reduce their proposed 38' plus 2' gutter pans, or 42' curb-to-curb (hereafter, c-c) dimension to a 36' c-c with the urban curb.

The County's most recent proposal- still in response to the Macon mediation day sketch, **not** the latest offer by your group, is a 32' +2'+2' gutter pan rural section with a 36' c-c. Both of the County's proposals have included a center two-way left turn lane and no shoulders.

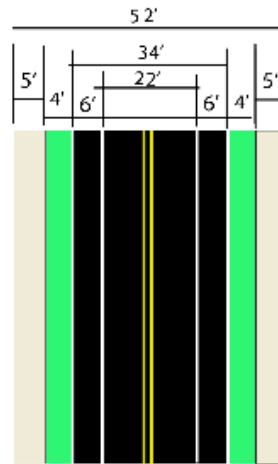
So that it is clear and in one letter, here are the two most recent proposals offered to the County:

### Forest Hill Road

Below Wimbish



Above Wimbish



11' lanes beside 6' shoulders will definitely afford a slow deceleration area for right-turning cars, and enough room for cars to pass left-turning cars at slower and more appropriate speeds for a residential neighborhood (also see additional AASHTO support, below).

I recognize that this proposal goes “outside” the agreed area by including lower FHR, but for me the **significant** errors in the future traffic volume projections, coupled with the possible realignment of FHR and Wimbish compel the additional diagram.

I take strong exception with any and all statements that any of the proposals that I have put forth have been “unsafe”, as an professional engineer licensed by the State of Georgia, I very much have public safety uppermost in mind with all of my proposals. I would also like to note that the proposals I have drawn are **identical** to what I would have proposed if the County had hired me.

We can debate whether a high-speed road in a residential area is safer or not, and a center turn lane road certainly will afford higher speeds than either of the proposals I have offered.

However, the County's drawings: provide no shoulder or a tiny gutter pan buffer between moving cars and the curb; provide no space for bicyclists except within the flow of traffic (which, at 45 mph and above will not feel comfortable for even class A bicyclists); and provide no space for a broken down vehicle- except in a high speed roadway.

I am disappointed and perplexed that the latest reply notes that a reduction in the design speed "from 45 mph to 35 mph **is not reasonable at this late date** (emphasis added)".

As I pointed out in my brief presentation in Macon, when pedestrians are considered, below 35 mph is a less than lethal speed for vehicles traveling through a residential area. Vehicles traveling at 45 mph and above will assure fatalities in the event there is a collision with a pedestrian.

I think the proposed three-lane section, with the addition of shoulders, is more appropriate for lower FHR, while the two-lane section, again with shoulders, will function more appropriately for upper FHR.

I have also attached a brief Appendix discussing the optional realignment of FHR, Wimbish and Northminster. I believe such a change would make the proposed cross sections work even better.

## **AASHTO Guidance**

The American Association of State Highway and Transportation Officials (AASHTO) publishes the most widely-accepted design guide for highways and streets with its [A Policy on Geometric Design of Highways and Streets](#), popularly known as the "Green Book", and most recently published in 2004.

In my experience, the County's proposed three-lane section with its two-way left turn lane for upper FHR is **very** unusual for that context<sup>1</sup> and, in my opinion, would not be as appropriate as the proposal diagrammed above with shoulders. On this topic, AASHTO states: "**[i]n general, two-way left turn lanes should only be used in an urban setting where operating speeds are relatively low**".<sup>2</sup>

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<sup>1</sup> This sort of design is more often seen in mostly commercial settings.

<sup>2</sup> AASHTO, [A Policy on Geometric Design of Highways and Streets](#), Washington, DC, 2004 pg. 713.

With respect to shoulders, AASHTO lists too many benefits for me to quote, so I have inserted a scanned listing (from page 314 of the Green Book):

Well-designed and properly maintained shoulders are needed on rural highways with an appreciable volume of traffic, on freeways, and on some types of urban highways. Their advantages include:

- Space is provided away from the traveled way for vehicles to stop because of mechanical difficulties, flat tires, or other emergencies.
- Space is provided for motorists to stop occasionally to consult road maps or for other reasons.
- Space is provided for evasive maneuvers to avoid potential crashes or reduce their severity.
- The sense of openness created by shoulders of adequate width contributes to driving ease and reduced stress.
- Sight distance is improved in cut sections, thereby potentially improving safety.
- Some types of shoulders enhance highway aesthetics.
- Highway capacity is improved because uniform speed is encouraged.
- Space is provided for maintenance operations such as snow removal and storage.
- Lateral clearance is provided for signs and guardrails.
- Storm water can be discharged farther from the traveled way, and seepage adjacent to the traveled way can be minimized. This may directly reduce pavement breakup.
- Structural support is given to the pavement.
- Space is provided for pedestrian and bicycle use, for bus stops, for occasional encroachment of vehicles, for mail delivery vehicles, and for the detouring of traffic during construction.

It is my hope that these additional quotes from the Green Book will give MAAI pause to reconsider both design speed and cross section details.

There is yet the chance to get all of this right, and I strongly urge the County's representatives to reconsider these important matters once again.

Respectfully submitted,  
**TND Engineering**



Chester "Rick" Chellman, P.E.,  
Principal