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To: Mr. Paul Kraucunas
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Land Development Section

Via: E-Mail

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Subject: Comments on the FCDOT Chapter 870 submission for the proposed Comprehensive Plan Amendment for the Seven Corners area and associated Seven Corners Transportation Study Phase II Final Report.

This document, submitted on behalf of the Holmes Run Valley Citizen's Association, summarizes community concerns regarding subject Phase II Final Report. It concludes that a more detailed traffic study is required prior to approving subject plan amendment in order to assure that the intense redevelopment proposed would not overwhelm the study area roads and adjacent neighborhoods with traffic.

The community is focused on three principal concerns:

- Degraded performance of the roads in the study area that we use to travel to our neighborhoods and our homes
- Excessive cut-through traffic in our neighborhoods induced by degraded levels of service on the study area roads
- Failure to implement road improvements prior to or in parallel with the construction of high-rise (6-12 story) apartment and office buildings.

1. Performance of Concept B. There is a concern that Concept B would not adequately service the traffic generated by the Seven Corners Land Use Plan. Some of the assumptions used in the Phase II traffic analysis appear to be inconsistent, and the network performance estimated by the analysis is unacceptable at some critical intersections. In particular:

    1.1 The traffic demand associated with the Seven Corners Land Use Plan appears to be inconsistent the 2040 Comprehensive Plan scenario.

Table 3 in the Phase II report shows the 2040 Comprehensive Plan Land Use and the Seven Corners Land Use Plan as follows:

Development Type	2040 Comprehensive Plan	Seven Corners Land Use Plan
Residential (units)	589	5,563
Retail (square feet)	1,009,552	1,121,200
Office (square feet)	124,266	1,105,450

Tables 4 and 6 in the report then show estimated AM peak hour traffic volumes increasing from 12,700 for the 2040 Comprehensive Plan scenario to 13,200 trips for the Seven Corners Land Use Plan, an increase of only 500 trips. At 1,000 sq ft per residential unit, the floor area in the

study area would increase by 350 % from 1,723,000 sq ft to 7,789,000 sq ft, but the traffic would increase only 4%. The PM peak hour traffic is estimated to increase by only 7%.

National Apartment Association data for the Washington metro area shows that the average number of residents per apartment is 1.9 (2013). On that basis, the additional 4,974 apartments in the Seven Corners Land Use Plan would provide housing for 9,750 new residents. At 140 sq ft per office worker, the additional 981,184 sq ft of office space would accommodate 6,870 new workers. New residents plus new workers would total approximately 16,600 additional people living and/or working at Seven Corners on a daily basis. It seems unreasonable to expect that they would generate only 500 additional vehicle trips during the morning peak hour.

I asked Mr. Kris Morley-Nikfar at FCDOT via e-mail about the apparent inconsistency. He replied that the lower than expected traffic increase is accounted for by two factors: (1) peak traffic hours for residential, retail, and office uses are assumed to not overlap and so are not cumulative, and (2) the county assumes that the 2040 Seven Corners environment would "have much higher transit mode splits" and "produce far fewer vehicle trips" than a typical auto-oriented environment. These assumptions are not substantiated or quantified by evidence in the report or by material provided by FCDOT. Details aside, and viewed from a distance, it appears as though FCDOT effectively assumed that the high-rise development would not generate significant additional traffic and conducted the traffic analysis on that basis.

1.2 Castle Road, the ring road link between Sleepy Hollow Road and Rt 7, is misrepresented in Figure 15 and the traffic analysis.

In Figure 15, Castle Road is shown as a road without intersections. However, the link shown as Castle Road is actually Castle Place. Castle Road intersects Castle Place at its elbow just a few car lengths west of Rt 7 and extends south for one-half mile. It intersects with Nicholson St and carries traffic originating in neighborhoods up to 1.5 miles south of Seven Corners to Rt 7. The traffic on Castle Road can be significant during peak hours. The performance of the intersection of Castle Place and Castle Road is critical to the effectiveness of the ring road and the road network. Including the intersection in the traffic analysis would provide a more accurate understanding of network performance.

1.3 The traffic-direction restrictions on N. Roosevelt St. were inconsistently modeled and three nodes on the west side of the ring road may be moved to accommodate concerns raised by the City of Falls Church.

Figure 40 indicates that N. Roosevelt St. was modeled as carrying two-way traffic morning and evening. The street lies within the City of Falls Church and is restricted to west bound traffic in the morning and east bound traffic in the afternoon. The street does not carry two-way traffic during peak hours. Subsequent to the publication of the Phase II report, N. Roosevelt St apparently has been dropped from the road network altogether with unknown consequences for network performance. The question was referred to Kittelson & Associates in August 2014, and they produce a letter on the subject dated September 4. The letter offers no opinion regarding the

effect of dropping N. Roosevelt St but notes that, in the Phase II traffic analysis, the street did not carry a heavy volume during peak hours (less than 200 vehicles).

The City of Falls Church has raised concerns about network Nodes 32, 48, and 49 and the intersection of Hillwood Ave and Rt 7 (see Figure 40 in the Phase II report). The three nodes may be moved to the east and the link between Nodes 20 and 32 may be dropped. Apparently an agreement was reached to redesign these elements of the network and conduct follow-on traffic analyses to determine the impact on performance.

1.4 The Phase II traffic analysis included no internally-generated traffic demand. The results therefore do not describe the performance expected of Concept B subject to the traffic that the Seven Corners Land Use Plan would impose.

The origin-destination route traffic volumes used for the Phase II traffic analysis included only traffic entering the network at the eight external stations (see, for example, the tables in Appendix C). The analysis includes no internally generated traffic notwithstanding the 5563 apartments, one million square feet each of retail and office space, and more than 16,600 people in the study area. When I asked Mr. Kris Morley-Nikfar about the absence of internally generated traffic in the analysis, he told me that it was not necessary to model that traffic given the objective of the analysis. The analysis objective was only to demonstrate that Concept B would handle the Seven Corners Land Use Plan traffic at least as well as the No-Build network would carry the 2040 Comprehensive Plan traffic. The traffic sample used to quantify performance in both cases was the externally generated traffic.

The network traffic data generated by the Phase II analysis therefore does not represent the expected performance of Concept B subject to the total traffic demand of the Seven Corners Land Use Plan. The addition of internally generated traffic would be expected to degrade intersection performance to levels of service below those described in the Phase II report.

1.5 Some critical intersections are heavily congested and operate with unacceptable levels of service under Concept B.

As pointed out in the VDOT comments on subject submission, several major intersections operate at less than LOS E during peak hours, including:

- Rt 50 and Patrick Henry Dr (all movements)
- Rt 7 and Patrick Henry Dr (all movements)
- Roosevelt Blvd and Wilson Blvd (all movements except east bound).

In its response to the VDOT comment, FCDOT stated that it would be unrealistic to expect all intersections to operate at LOS E or better in the 2040 time frame. In particular, Rt 50 would operate over capacity. The Appendix G SimTraffic Performance Report for the intersection of Rt 50 and Patrick Henry Dr (Intersection 300 on pdf pg 281) shows average delays of more than 11 minutes for traffic west bound on Rt 50 turning left onto Patrick Henry Dr. Concept B cannot be judged successful if delays at critical intersections are unacceptable.

In summary, the traffic analysis does not demonstrate that Concept B would adequately service the traffic generated by the Seven Corners Land Use Plan. In particular:

- The assumed increase in traffic demand relative to the 2040 Comprehensive Plan scenario seems far too small, and the traffic analysis did not include internally generated traffic.
- The intersection of Castle Place and Castle Road is not included in the network model, and network changes have been or will be made relative to N. Roosevelt St and ring road nodes west of the Interchange. The potential performance impacts of these changes have not been modeled and remain unknown.
- Even with the reduced demand, the network is heavily congested in some areas, and the level of service is unacceptable at some critical intersections.
- There is a concern that Concept B would not effectively service the Seven Corners Land Use Plan traffic.

2. Cut-Through Traffic. There is a concern that congestion and degraded levels of service on the roads in the study area would produce heavy cut-through traffic in neighborhoods west, south, and east of the Interchange. In particular:

    2.1 Neighborhoods west, south, and east of the Interchange are particularly susceptible to cut-though traffic because they provide routes to the Beltway and Columbia Pike (as examples) that avoid heavy traffic on Rt 50 and Rt 7 outside the study area.

The graphic at https://holmesrun.files.wordpress.com/2014/12/cut_thru.pdf shows a map of the roads in the relevant neighborhoods. (Cut and paste the link into your browser. The size of the graphic is too large for e-mail.) Seven Corners is inside the red circle at the top, the intersection of Rt 50 and the Beltway is inside the smaller red circle to the west, and two intersections with Columbia Pike are inside the green circles. The dotted red routes running south from Seven Corners along Juniper Lane and Patrick Henry Dr provide easy access to the Beltway via intersections with Sleepy Hollow Rd, Annandale Rd, and finally Rt 50 just east of the Beltway. Two-lane Rt 50 West between the Interchange and the Beltway has six traffic lights. In rush hour traffic with a few heavy trucks on the road, progress is slow and painful. The dotted cut-through route has only two lights, one at Annandale Rd and one at Rt 50; there are no heavy trucks to maneuver around; and it's a pleasant drive. The convenient path from Seven Corners to the Beltway at rush hour is through the neighborhoods along the dotted red line.

Similarly, Rt 7 east of the Interchange has a number of traffic lights and trucks are plentiful. The easier and faster route from Seven Corners to Columbia Pike, east or west, is through the neighborhoods, first on the dotted red routes in the graphic, then on the green.

The cut-through roads are almost entirely local roads. In the mornings there are any number of children walking to school (Bailey's Lower and Beech Tree) or waiting on curbs for school buses. Cut-through traffic often moves too fast, well over the speed limit of 25 mph. It is a significant problem today and one that some neighborhoods have worked with VDOT to mitigate. If traffic conditions on major roads deteriorate as a consequence of high-rise development and poor performance of the study area road network, the cut-through traffic problem could mushroom.

2.2 The Phase II traffic analysis does not address the cut-through traffic problem.

There is no mention or consideration of the cut-through traffic issue in the Phase II report. Yet many of the design decisions for the study area network affect cut-through traffic. For example, if the intersection of Patrick Henry Dr with Rt 7 chronically is heavily congested as seems likely from the traffic analysis results, drivers south of Rt 7 would travel east on Beechway , then north through Culmore on Glen Carlyn to reach Rt 7. In the morning, Glen Carlyn is crowded with school children waiting for the bus to Bailey's Upper Elementary School. Heavy cut-though traffic would not be welcome.

The Phase II traffic analysis should be extended to include estimates of the cut-through traffic that would be produced by Concept B servicing the Seven Corners Land Use Plan traffic. The analysis might be as straightforward as listing likely paths and estimating trip times for cut-through traffic maneuvering around intersections expected to operate at low levels of service. Such an analysis would identify neighborhood streets that might receive exceptionally high levels of cut-through traffic.

2.3 Traffic calming techniques are not a solution for cut-through traffic.

There is a temptation to ignore the cut-through traffic problem, take it as it comes, and then implement traffic calming techniques to mitigate it. While speed humps and roundabouts can slow down and discourage cut-through traffic, they mainly serve only to shift the traffic to other neighborhood roads, and they inconvenience all users, not just the drivers cutting through. Additionally, physical impediments in the road slow responses of emergency vehicles. They are not useful in neighborhoods where a resident has a medical condition that could require immediate attention.

The preferred solution for cut-through traffic is to maintain the level of service on arterials so that drivers prefer to use them instead of driving through neighborhoods. Anything that degrades traffic conditions on the main roads encourages cut-through traffic.

2.4 Accepting LOS E encourages cut-through traffic.

Apparently Fairfax County accepts LOS E as the target level of service in some redeveloped areas instead of the more generally accepted LOS D. As applied to Concept B by FCDOT in the Phase II report, LOS D applies to delays at signalized intersections ranging between 35 and 55 seconds as an average over all vehicles using the intersection. For LOS E, the average ranges between 55 and 80 seconds. As explained by FCDOT in their response to VDOT comments on subject submission, county policy accepts that LOS D may not be attainable in the dense, urban, pedestrian friendly environments envisioned for Tysons Corner, Seven Corners, Bailey's Crossroads, and Annandale among others. FCDOT does not address the degree to which a reduction to LOS E inevitably would increase cut-through traffic in the Seven Corners area.

2.5 Broad boulevards both expedite and impede traffic in a pedestrian rich environment. It is important to model pedestrian crossings accurately.

There may be some question about the manner in which the Phase II traffic analysis modeled pedestrian crossings on Transit Boulevards and Major Avenues of the Seven Corners Land Use Concept. Figure 33 in the Proposed Draft Comprehensive Plan Text submitted as Attachment 3 to subject Chapter 870 submission shows the functional classification of the roads in Concept B. Route 7 and the east side of the ring road are designated Transit Boulevards, and Wilson Blvd and the west side of the ring road are Major Avenues. As illustrated in Figures 35-37 of the plan text, Transit Boulevards have dedicated cycle tracks and transit lanes in additional to sidewalks and driving lanes. Major Avenues have the same, less transit plus parking lanes. A Transit Boulevard with three travel lanes in each direction (Rt 7 today) would be 136 ft wide, curb to curb. At the target rate of 3.5 ft per sec, a pedestrian would require 39 seconds to walk across. These broad boulevards may advance the transit as well as the pedestrian and cycle friendly objectives of the county's redevelopment concept. The disadvantage is that it takes substantial time for pedestrians to walk across. Where there is a lot of pedestrian traffic, vehicle traffic frequently would experience extended wait times at traffic signals waiting for pedestrians to clear the roadway.

It is important to assure that road widths in the Phase II traffic analysis are modeled in accordance with their Figure 33 functional classifications and the roadway layouts of Figures 35-37. Otherwise, the effects of mixing heavy roadway traffic with pedestrian crossings on broad boulevards would not be represented accurately in the analysis results.

In summary, cut-through traffic is a principal concern within the community.

- The community is particularly susceptible to cut-through traffic as a consequence of the extended residential areas west, south, and east of the Interchange that parallel and provide easy access to Rt 50 and Rt 7 outside the study area. Cut-through traffic is a major community problem today and easily could be exacerbated by degraded performance of the roads in the study area.
- Accepting LOS E instead of limiting traffic volumes to levels that would provide LOS D at intersections may advance the county's objective to produce a high density urban complex at Seven Corners. It surely would increase cut-through traffic in adjacent neighborhoods.
- Road widths in the study area must be modeled accurately in accordance with their descriptions in the Proposed Draft Comprehensive Plan Text. Otherwise the trade off between intersection level of service and pedestrian roadway crossings would not be described accurately in the traffic analysis results.
- It is recommended that the Phase II traffic analysis be extended to estimate the cut-through traffic that Concept B would produce. Any notion that the issue can be ignored for the present and addressed with traffic calming techniques later would not be accepted in this community.

3. Phasing of Road Improvements. There is a concern that the Concept B road network would not be constructed ahead of or in parallel with the redevelopment described by the Seven Corners Land Use Plan. If high-rise redevelopment is allowed to proceed without commensurate roadway improvements, traffic congestion in the study area would deprive the

community of expedient access to our neighborhoods and our homes, and it would immerse us in cut-through traffic.

The ring road is a particular concern. Without N. Roosevelt St, the ring road consists of five segments extending from Rt 50 west of the Interchange south and east to Wilson Blvd. (Node 20 to Node 140). All five segments lie on private property not planned for redevelopment. Four of the five segments are new alignments not covered by existing roads. The Castle Place segment currently is a two-lane street with curb-side parking. Expansion of the road to a Major Avenue as described in the proposed plan amendment likely would require acquisition of private property bordering the current street.

The assumption in the county's concept for Seven Corners redevelopment is that these properties would become available to the state as necessary to build ring road segments. If land is not available to construct needed segments, new development possibly would not be allowed. Alternatively, the development might be allowed to proceed by rationalizing that the resulting traffic congestion would be tolerable. The community concern is the second case, not building the roadway network ahead of or in parallel with high-rise redevelopment.

The ring road link between Rt 50 and Wilson Blvd would require demolition of The Corner shopping center on Wilson Blvd opposite the Eden Center as well as some or all of the 244 units of affordable housing at the Villages at Falls Church. The Corner is a thriving shopping center that has been completely renovated within the last 15 months. On what basis can the community be confident that the owners would agree to sell the property to the state at an acceptable price so that the ring road could be constructed in a timely manner to facilitate high-rise redevelopment on adjacent properties?

It would be helpful to include a section in the Phase II transportation report describing the process that would assure that the ring road and the other roadway improvements of Concept B would be constructed ahead of or in parallel with high-rise redevelopment.

It is interesting to notice that Concept B could be implemented without redeveloping Seven Corners. Virtually all of the Concept B roadway improvements would be constructed on land outside the redevelopment areas. The single exception is the "spine road" linking Nodes 71 and 122, and the Phase II traffic analysis indicates that the spine road traffic volumes would be small relative to the volumes on the ring road.

Conclusion

A more detailed traffic study is required prior to approving subject plan amendment in order to assure that the intense redevelopment proposed would not overwhelm the study area roads and adjacent neighborhoods with traffic.

The FCDOT objective for the Phase II traffic analysis was to show that Concept B would be able to handle the Seven Corners Land Use Plan traffic better than the No Build network would manage the 2040 Comprehensive Plan traffic scenario. However, justification of the proposed redevelopment of the study area requires something different. It requires a demonstration that

the associated traffic could be managed effectively on the study area roads and that adjacent neighborhoods would not experience a flood of cut-through traffic. The Phase II report does not provide the required demonstration.

It is recommended that the more detailed traffic analysis would address the following outstanding concerns:

- Review of the Seven Corners Land Use Plan traffic demand to assure that it fully accounts for the large increase in the number of people who would live and work in the study area (Section 1.1)
- The addition of internally generated traffic to the demand model so that the analysis includes the total traffic demand implied by the proposed redevelopment (Section 1.4)
- An updated Concept B network configuration taking into account the deletion of the N. Roosevelt St segment of the ring road, the realignment of nodes on the west side of the ring road, and the Castle Place/Castle Rd intersection (Sections 1.2 and 1.3)
- Accurate modeling of roadway widths to assure that interactions between traffic and pedestrian crossings are accurately modeled (Section 2.5)
- Resolution of performance issues at intersections where LOS is unacceptable for critical movements, including enumeration of all movements where performance is less than LOS E (Section 1.5)
- Analysis of cut-through traffic (Section 2.2)
- Description of the process that would ensure construction of roadway improvements ahead of or in parallel with high-rise development (Section 3)

Hopefully, it is easy to understand that the community cannot accept the Comprehensive Plan amendment without reasonable assurance that the associated traffic could be managed. The amendment opens up the study area to very intense redevelopment. By some measures, Seven Corners would become the most intensely developed land area in Fairfax County. The FCDOT proposal to address the outstanding critical issues listed above AFTER the amendment is approved is not acceptable. Demonstration that traffic could be managed effectively is required BEFORE the amendment is approved.