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April 6, 2009

Mr. Matt Loeffler, P.E.
Butler County Engineer's Office
1921 Fairgrove Avenue
Hamilton, Ohio 45011



**Re: Traffic Impact Study Addendum for Voice of America Park
Tylersville Road & Butler Warren County Line Road, West Chester Township, Butler County, Ohio**

Dear Mr. Loeffler:

Bayer Becker previously submitted a traffic impact study (TIS) for the proposed Voice of America Park development, to be located at the intersection of Tylersville Road and Butler Warren County Line Road, in West Chester Township, Butler County, Ohio, on February 20, 2009. Subsequently, Bayer Becker received your review comments dated March 17, 2009.

The purpose of this addendum is to address your comments and to receive final approval of the study, including this addendum. A summary of your comments and Bayer Becker's (BB) responses are provided as follows:

1. A future traffic signal at the intersection of Tylersville Road and Pepper Pike is warranted per warrant #6 – coordinated signal systems. However, it is understood that the new traffic signal will not be installed until the Voice of America (VOA) Park Proposed Access Drive # is constructed. As such, BB has reevaluated the intersection of Tylersville Road and Pepper Pike for 2018 background conditions and 2030 background conditions assuming the current traffic control devices remain in place (i.e. Tylersville Road is a free-flowing movement and Pepper Pike is stop controlled).

The revised capacity analysis for 2018 background conditions and 2030 background conditions shows that the level of service (LOS) for the westbound left turning movement on Tylersville Road at Pepper Pike varies from B to C. The LOS for the northbound combined left turning and the right turning movement on Pepper Pike at Tylersville Road is an F. While the northbound movements on Pepper Pike are not at acceptable levels, analysis completed in the original TIS shows that with VOA Proposed Access Drive #1, the traffic signal at the intersection, and the recommended improvements on Pepper Pike, the LOS are improved for 2018 total conditions and 2030 total conditions.

The revised capacity analysis is provided by attachment and a summary LOS table is also provided by attachment. The LOS table has been updated for the revised 2018 background conditions and the revised 2030 background conditions.

2. It is understood that the northbound right turn lane on Butler Warren County Line Road at Tyler Court will not be constructed by the Warren County Engineer's Office as recommended in the TIS for 2009 existing conditions. Based on this information, BB has reevaluated the intersection of Butler Warren County Line Road and Tyler Court, excluding the proposed northbound right turn lane.

The revised capacity analysis shows that the LOS at the intersection of Butler Warren County Line Road and Tyler Court remain unchanged with or without the northbound right turn lane. The revised capacity analysis is provided by attachment. The summary LOS table identified above has also been updated for the revised 2018 background conditions, 2018 total conditions, 2030 background conditions, and 2030 total conditions.

3. Approximately 18% of the peak hour site traffic was assumed to utilize the existing park entrance on Cox Road. According to BCEO comments, this percentage seems high and should more likely be 10% with the remaining 8% to be reallocated to Tylersville Road.

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The original TIS assumed that the I-75 interchange at Hamilton Mason Road would be operational for 2018 and 2030 conditions and therefore, 18% would seem reasonable. However, if an additional 8% of the peak hour site traffic was reallocated to Tylersville Road, the results would remain similar. Approximately 27 entering trips and approximately 12 exiting trips would be added to the intersection of Tylersville Road and VOA Proposed Access Drive #1 during the weekday PM peak hour and approximately 30 entering trips and approximately 33 exiting trips added to the intersection during the Saturday noon peak hour. Incorporating the additional site trips into the capacity analysis results in similar levels of service and delay times, as compared to the results of the original TIS.

4. Internal queuing analysis was previously completed for VOA Proposed Access Drive #1, assuming a length of 20' per vehicle. Assuming a length of 25' per vehicle, as used by the Highway Capacity Software and as required by BCEO, the necessary southbound stacking length on VOA Proposed Access Drive #1 is 100' for four vehicles, for 2018 and 2030 total conditions, during the weekday PM peak hour, 225' for nine vehicles, for 2018 total conditions, during the Saturday noon peak hour, and 250' for ten vehicles, for 2030 total conditions, during the Saturday noon peak hour. Therefore, the proposed location of the internal access road (a minimum of 300' north of Tylersville Road), as previously identified in the original TIS, will not interfere with site traffic traveling southbound on VOA Proposed Access Drive #1.

The location of the VOA park entrance/exit gate and booth on VOA Proposed Access Drive #1 was also considered in the original TIS. The proposed gate/booth is to be located approximately 400' north of Tylersville Road and two lanes for site traffic entering the proposed VOA development is to be provided. Assuming a length of 25' per vehicle, storage for approximately 32 vehicles (approximately 800') will be available between Tylersville Road and the proposed park gate/booth.

From the original TIS, approximately 209 vehicles will be entering VOA Proposed Access Drive #1 during the weekday PM peak hour and approximately 230 vehicles during the Saturday noon peak hour. However, considering the additional 8% of site traffic identified in item 3, approximately 236 vehicles will be entering VOA Proposed Access Drive #1 during the weekday PM peak hour and approximately 260 vehicles during the Saturday noon peak hour. Considering the higher number of vehicles only (260) yields the same results, or approximately 2 vehicles per minute per lane entering the VOA park through VOA Proposed Access Drive #1. Also as identified in the original TIS, in order to avoid stacking traffic from the proposed park gate/booth to Tylersville Road, each vehicle would need to pass through the proposed gate/booth in their respective lane in approximately 30 seconds. Based on the typical operations expected of a park gate/booth, a 30 second passage rate is reasonable. Furthermore, a 30 second passage time would result in no stacking and as previously stated, storage for approximately 32 vehicles (approximately 800') will be available between Tylersville Road and the proposed park gate/booth.

The location of the VOA park entrance/exit gate and booth on VOA Proposed Access Drive #2 was also considered in the original TIS. The proposed gate/booth is to be located approximately 350' west of Butler Warren County Line Road and one lane for site traffic entering the proposed VOA development is to be provided. Assuming a length of 25' per vehicle, storage for approximately 14 vehicles (approximately 350') will be available between Butler Warren County Line Road and the proposed park gate/booth.

From the original TIS, approximately 71 vehicles will be entering VOA Proposed Access Drive #2 during the weekday PM peak hour and approximately 80 vehicles during the Saturday noon peak hour. Considering the higher number of vehicles only (80) results in approximately 2 vehicles per minute per lane entering the VOA park through VOA Proposed Access Drive #2. In order to avoid stacking traffic from the proposed park gate/booth to Butler Warren County Line Road, each vehicle would need to pass through the proposed gate/booth in approximately 30 seconds. As previously stated, based on the typical operations expected of a park gate/booth, a 30 second passage rate is reasonable and a 30 second passage time would result in no stacking. Stacking for approximately 14 vehicles (approximately 350') will be available between Butler Warren County Line Road and the proposed park gate/booth.

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Based on the above information, assuming a length of 25' per vehicle, site traffic entering via VOA Proposed Access Drive #1 should not impede with through traffic on Tylersville Road and site traffic entering via VOA Proposed Access Drive #2 should not impede with through traffic on Butler Warren County Line Road.

5. The original TIS assumes that two park gates/booths will be provided on VOA Proposed Access Drive #1 and that the two gates/booths will be open to accept entering site traffic. It is Bayer Becker's understanding that during a significant event, a minimum of two gates/booths will be open and additional attendants will be provided as necessary. Therefore, analysis assuming one gate only was not completed.

The trip generation calculations included in the TIS were completed for a significant event, not for a typical weekday or Saturday. For a typical event, it is expected that not all fields would be utilized at the VOA park at one particular time. As such, much lower traffic volumes would be entering and exiting the park and those volumes entering and exiting would be occurring at various times throughout the typical weekday or Saturday. Based on the typical weekday and Saturday criteria, it is anticipated that one gate/booth would provide acceptable flow for entering and exiting site traffic.

6. Two lanes for site entering traffic will be provided on VOA Proposed Access Drive #1, with the two lanes originating from Tylersville Road. Therefore, as described by BCEO, a four-lane cross-section of VOA Proposed Access Drive #1 will be located opposite the proposed three-lane cross section of Pepper Pike. Careful consideration will be necessary with respect to the alignment of opposing left turn lanes on VOA Proposed Access Drive #1 and Pepper Pike.
7. A boulevard on VOA Proposed Access Drive #1 at Tylersville Road is no longer planned for construction. Therefore, VOA Proposed Access Drive #1 will properly align with Pepper Pike.
8. Sidewalks are currently planned along the northern portion of VOA Proposed Access Drive #1, interior to the VOA park. The sidewalks will be extended to the south so that pedestrian access will be provided from Tylersville Road along VOA Proposed Access Drive #1.

Based on this addendum to the original traffic impact study, the recommendations from the original study are accurate and remain unchanged. Based upon engineering judgment and the analysis contained within the original TIS and the addendum, the proposed VOA park development, with the improvements identified in the original TIS, will not significantly impact operations on the adjacent road network.

Please review the traffic impact study, this addendum, and the associated attachments. Should you have any questions or additional comments, please contact me at (513) 336-6600.

Sincerely,



Kathryn M. Dillenburger, P.E.

Attachments

cc: Dave Mick – Warren County Engineer's Office
Jon Granville – Butler County MetroParks

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