

August 19, 2015

Mr. Brian Craig, P.E.
Planning and Development Review Department
City of Austin
505 Barton Springs Road
Austin, Texas 78704

Re: TIA Comments
Austin Oaks
Austin, Travis County, Texas

Dear Mr. Craig:

This is our response to comments received from your office on July 27, 2015. We have reviewed these comments and respond in the following manner:

1. Proposed Development: The text of the report indicates that the proposed development will consist of General Office, High Turnover (Sit Down) Restaurants and Apartments. However, the site plan included in Exhibit 3 does not show restaurants, but instead indicates retail. In addition, the report indicates 69,844 SF of restaurant is proposed, however the plan shows 66,644 SF of Retail being proposed. We recommend that the Applicant clarify these inconsistencies.

Per our meeting on August 6, 2015, the TIA has analyzed the worst case scenario (highest trip generation) land plan. This will not match the land plan since the land plan is conceptual at best and is utilized as a general tool for the PUD. Overall trip generation for any development on this property shall be dictated by the TIA.

2. The TIA reduces the area trips by removing the existing office development traffic. However, the traffic is estimated using ITE LUC 710 (General Office Building) rather than actual traffic counts of the existing facility. We recommend that the trip reduction be based on actual count data versus ITE Trip Generation

Per our meeting on August 6, 2015, for this project ITE is allowed to be utilized for trip generation on the existing land use. The existing trip generation volumes shown in Table 2 (Adjusted Trip Generation) shall match that of what is show in the Unadjusted Trip Generation since the existing land use of office building does not have trip reductions.

3. Trip Generation: The trip generation calculations are based on ITE land use code (LUC) 710 (General Office Building), LUC 932 (High Turnover Restaurant), and LUC 220 (apartment). The number of trips presented is based on the fitted equations for LUC 710 and LUC 220 and the average rate for LUC 932. However, for LUC 710 and LUC 220 the average rate estimates a higher number of trips. We recommend that the Applicant use the more conservative method in determining the trip generation for the proposed development.

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Per our meeting on August 6, 2015, we explained that the utilization of rates versus of equations is based on the information provided by within the ITE Trip Generation Manuals. ITE provides a specific procedure on how to determine when a rate is used versus when an equation is used. Bury, Inc. (Bury) follows this methodology when deciding when to use rates versus trips.

4. Trip Distribution: The TIA provides trip distribution percentages. The TIA indicates that the trip distribution was based on the existing traffic counts as well as where major attractors and residential areas are located relative to the proposed development. However, no calculations were provided showing how the percentages were developed. In addition, given the significant office component and the large residential component of the development, we question why US census bureau Journey to Work data was not used to develop the trip distribution for these components. We recommend that the Applicant provide calculations and backup to support the percentages presented. In addition, we recommend that the trip distribution for the residential and office land components of the development be based on the latest (2011) US census bureau Journey to Work data.

Per our meeting on August 6, 2015, Bury presented staff with Journey to Work Data for this development as well as backup information on how the trip distribution utilized in the analysis was obtained. Staff accepted the trip distribution utilized in the analysis. No changes required.

5. Trip Distribution: Site trips were assigned to the various site driveways as part of the analysis. However, no explanation or discussion of how the trips were assigned to each driveway is provided in the TIA. We recommend that the Applicant provide this information in the TIA.

A detailed write up has been provided in the updated TIA Report providing an explanation on how trips were assigned to the various site driveways. Please refer to the report.

6. LOS Analysis: The traffic signal analysis results are presented using the "Lanes, Volumes, Timings" output from Synchro rather than the 2010 HCM results. We recommend that the Applicant report the results of the analysis using the 2010 HCM methodology.

We have attempted to provide Synchro reports utilizing the 2010 HCM results as opposed to the "Lanes, Volumes, and Timing" however Synchro is not able to provide that information. As an attachment to this Comment Response Letter, included is the Synchro Error reports as well as correspondence from Trafficware noting this issue.

7. LOS Analysis: The Synchro printouts presented in Exhibit 9 for unsignalized intersections do not provide LOS analysis results. We recommend that the printouts include the HCM results showing the LOS calculations and analysis.

This error has been corrected. Please review the updated TIA Appendix for the correct Synchro Reports.

8. LOS Analysis: Tables 10 and 11 do not include delay, v/c or LOS by approach only Overall Delay and LOS for the overall intersection. We recommend that the summary tables include delay, v/c and LOS by analyzed approach (using the 2010 HCM methodology) in addition to overall intersection delay and LOS (when available).

New tables have been added to the body of the report and provide the requesting information by Approach.

9. LOS Analysis: The analysis presented does not include a determination of Queue length. We recommend that the Applicant include this analysis in the TIA.

This has been included in the updated TIA Report.

10. Intersection of Far West Boulevard & Hart Lane: The intersection operation at Far West Boulevard / Hart Lane has been shown to improve in 2018 with improvements in Table 4 & Table 11. However the Findings & Recommendations section doesn't document what improvement(s) will improve the intersection operation in 2018. We recommend that the Applicant provide a detailed description of the improvements planned at this location.

The Findings and Recommendations have been updated to reflect the improvements proposed for 2018.

Year 2023: Southbound approach – left, thru, shared-thru right and northbound approach – thru-left and right lane would not work geometrically. We recommend that the Applicant revise the analysis with southbound approach – left, thru, shared- thru right and northbound approach – left and shared thru-right lane. In addition, it is unclear if ROW will be required at this location to accommodate the proposed improvements. We recommend that the Applicant indicate if ROW is required.

The proposed improvements have been modified to reflect the recommendation provided above. Additionally, Intersection Exhibits have been provided in the Appendix of this Report as part of Exhibit 4 to show the available ROW and the proposed improvements. Please note these are color exhibits and are intended to be printed in color. The information is not properly portrayed when printed in black and white.

Year 2028: Eastbound and Westbound approaches (Far West Blvd) are shown to fail in 2028. No recommendations were provided to address this expected congestion scenario. We recommend that the Applicant provide recommendations to address this congestion scenario or reduce intensity of the proposed development.

We have evaluated all available options and no other improvements are available at this time to increase vehicular capacity to this intersection. Other improvements such as improvements to the pedestrian facilities of this intersection have been recommended such as ramp improvements and adding APS on separate poles.

11. Intersection of Far West Boulevard & Wood Hollow Drive: Year 2028: In the northbound approach – a left, thru, right, and a second right turn lane were recommended in 2028. It is unclear if additional ROW is available to accommodate the second right turn lane. In addition, it is unclear if there is sufficient width on Wood Hollow Drive, northbound, to receive the traffic from dual right turn lanes. We recommend that the Applicant include discussion of these items as well as how far the two northbound lanes would be needed on Wood Hollow Drive north of Far West Boulevard.

Intersection Exhibits have been provided in the Appendix of this Report as part of Exhibit 4 to show the available ROW and the proposed improvements. Please note these are color exhibits and are intended to be printed in color. The information is not properly portrayed when printed in black and white. Turning Templates have also been included in the exhibit for this intersection to show that dual northbound rights can be achieved.

12. Intersection of Far West Boulevard & Mopac: Three left turn lanes (eastbound Far West Blvd to NB Mopac) were recommended by restriping Far East Boulevard to convert the westbound left turn into an eastbound through lane. However, there are only two receiving lanes on NB Mopac. It is unclear if the proposed improvements include widening Mopac NB to accommodate the needed third receiving lane. We recommend that the Applicant clarify if the intended improvements include the needed widening and regarding to accommodate this third receiving lane.

In addition, the recommendations indicate that the triple left turns would only be in place during the peak hour and would change during off-peak hours thru the use of dynamic lane signs and message boards. We recommend that the Applicant include a description of how these signs will be installed on the bridge over the Mopac Expressway.

Per our meeting on August 6, 2015, the Triple Left Improvements has been removed from the analysis at the Northbound Frontage Road intersection. We have included widening the Northbound Frontage Road north of the intersection to remain as a 2-lane roadway until the gore of the entrance ramp where it would then taper down to one (1) lane. This is approximately 640 feet of widening.

For the Southbound Intersection with Far West, Intersection Exhibits have been provided in the Appendix of this Report as part of Exhibit 4 to show the available ROW and the proposed improvements. Please note these are color exhibits and are intended to be printed in color. The information is not properly portrayed when printed in black and white.

13. Intersection of Spicewood Springs Road & Mopac: In the TIA report, it was recommended restripe the northernmost lane along Spicewood Springs Road west of Mopac to create a travel lane. This proposed restriping would eliminate the existing bicycle lane westbound along Spicewood Springs Road. We recommend that the Applicant review how the bicycle lane can remain with the added lane.

Per a meeting with Nathan Wilkes on August 10, 2015, bicycle lane removal or adjustment is not an option. The restriping of the northern most lane has been removed as a mitigation measure. Please see the updated mitigation and the Intersection Exhibits referenced in previous responses above.

Furthermore, per our meeting on August 6, 2015, Brian Craig requested evaluated this Diamond Intersection as a Diverging Diamond Intersection (DDI). We evaluated the best we could and have included that information as an attachment to this Comment Response Letter, but it has not been included within the Report or the official analysis of the TIA. This is due to the fact that this improvement does not provide significant benefits at the high cost associated with implementing it. The Synchro Models have been included in the CD accompanied with the submittal.

14. Intersection of Spicewood Springs Road & Wood Hollow Drive /Private Driveway: In the TIA report, it was recommended to revise the northbound lane configuration to provide left, left-thru-right, and right-turn lanes. It is unclear if sufficient ROW is available to accommodate this revision. We recommend that the Applicant consider providing ROW to the City for this future improvement.

Intersection Exhibits have been provided in the Appendix of this Report as part of Exhibit 4 to show the available ROW and the proposed improvements. Please note these are color exhibits and are intended to be printed in color. The information is not properly portrayed when printed in black and white. Also, this improvement has been modified to save the bicycle lanes and not eliminate them.

15. Intersection of Greystone Drive & Hart Lane: In the TIA report, it was recommended to revise the lane configuration on all approaches to provide left-thru and thru-right lanes. However, none of these approaches have two receiving lanes. In addition, it is unclear if sufficient ROW is available to accommodate this revision. Since this intersection is currently unsignalized, we recommend that the Applicant perform signal warrant analysis to determine if this intersection could benefit from signalization.

Per our meeting on August 6, 2015, this intersection has been modeled as a roundabout in lieu of the restriping previously recommended, and that a signal warrant analysis would not be required. The roundabout would be a 1-lane roundabout modeled after the existing roundabout located at the intersection of 18th Street and Nueces Street. Please refer to the Intersection Exhibits in Exhibit 4 for general information on the intersection and allowable space. Please note that the Exhibit's purpose is to show that the roundabout will fit and that there is adequate space to provide the appropriate bicycle and pedestrian facilities to accompany the roundabout. It's not meant to be a design or even a schematic of any sorts. The detailed geometry of the roundabout will be handled when the development moves forward.

16. Intersection of Greystone Drive & Wood Hollow Drive: In the TIA report, it was recommended to revise the lane configuration on all approaches to provide left-thru and thru-right lanes. However, none of these approaches have two receiving lanes. In addition, it is unclear if sufficient ROW is available to accommodate this revision. Since this intersection is currently unsignalized, we recommend that the Applicant perform signal warrant analysis to determine if this intersection could benefit from signalization.

Per our meeting on August 6, 2015, this intersection has been modeled as a roundabout in lieu of the restriping previously recommended, and that a signal warrant analysis would not be required. The roundabout would be a 1-lane roundabout modeled after the existing roundabout located at the intersection of 18th Street and Nueces Street. Please refer to the Intersection Exhibits in Exhibit 4 for general information on the intersection and allowable space. Please note that the Exhibit's purpose is to show that the roundabout will fit and that there is adequate space to provide the appropriate bicycle and pedestrian facilities to accompany the roundabout. It's not meant to be a design or even a schematic of any sorts. The detailed geometry of the roundabout will be handled when the development moves forward.

17. Intersection of Executive Center Drive & Wood Hollow Drive: In the TIA report, it was recommended to revise the intersection configuration to that of a single lane roundabout with right turn by-passes for all approaches. However, it is unclear if sufficient ROW is available to accommodate this revision. In addition, the TIA also indicates that this improvement will begin to fail in 2028 and no other improvements are proposed. Since this intersection is currently unsignalized, we recommend that the Applicant perform signal warrant analysis to determine if this intersection could benefit from signalization in place of the proposed roundabout as a more long term solution.

Per our meeting on August 6, 2015, this intersection has been modeled as a roundabout and that a signal warrant analysis would not be required for this intersection. The roundabout would be a 1-lane roundabout modeled after the existing roundabout located at the intersection of 18th Street and Nueces Street. Please refer to the Intersection Exhibits in Exhibit 4 for general information on the intersection and allowable space. Please note that the Exhibit's purpose is to show that the roundabout will fit and that there is adequate space to provide the appropriate bicycle and pedestrian facilities to accompany the roundabout. It's not meant to be a design or even a schematic of any sorts. The detailed geometry of the roundabout will be handled when the development moves forward.

18. Intersection of Executive Center Drive & Hart Lane: In the TIA report, it was recommended to revise the intersection configuration to provide separated movements for all approaches. However, it appears that this improvement will eliminate the existing bike lanes on these roadways. We recommend that the Applicant review the elimination of these facilities with the Mobility Department.

Per our meeting with Nathan Wilkes on August 10, 2015, the revised improvements and restriping along Hart Lane will not eliminate the bicycle lanes. The lane configurations recommended was discussed during the meeting.

19. Intersection of Spicewood Springs & Hart Lane: In the TIA report a new traffic signal is recommended at this intersection due to a LOS F at this location. However, the TIA does not include signal warrant analysis for this new signal installation. We recommend that the Applicant include signal warrant analysis for all unsignalized intersections within the study area.

A signal warrant analysis has been conducted for this intersection and has been provided in the updated TIA Report.

20. Overall Comments: Many intersections/interchanges within the study area e.g. Far West Boulevard/Hart Lane, Far West Boulevard/Mopac, Spicewood Springs Road/Mopac, Steck Avenue/Mopac etc. will experience extensive additional delay due to Austin Oaks development. This may gridlock the entire adjacent roadway network. However, no mitigation measures were recommended in the TIA report to address these issues. We Recommend that the Applicant propose applicable TDM measures or consider reducing intensity of the proposed development to keep the traffic delays to an acceptable limit in the roadway network.

All options have been evaluated at this time to mitigate for existing and future traffic congestion. Our goal with this development is to provide a mixed use development which will hopefully eliminate the need for unneeded trips. Through various pedestrian mitigation efforts, residents of the adjacent neighborhood will be able to walk to this development and enjoy the park, shopping, and restaurant amenities. The mix of office and residential uses aims to have people live, work, and play in this development eliminating many trips from the roadway network. While there will still be a high volume of trips associated with this development, more focus should be placed on trip length as opposed to purely trip volume. This type of development will provide basic amenities to adjacent neighborhoods which will eliminate the need to drive east of Mopac Expressway which will eliminate traffic from the intersection of Mopac Expressway and along Anderson Lane.

In addition, the Neighborhood Traffic Study indicates traffic volumes along the studied corridors exceed the City's maximum desirable volumes. The Neighborhood Traffic Study also indicates several improvements to intersections to provide additional thru lanes which would require additional receiving lanes. However, the Neighborhood Traffic Study does not discuss if these additional lanes would be recommended for the entire length of the roadway in question. We recommend that the Applicant discuss how these additional lanes will affect the roadway network as a whole.

Additional pedestrian and bicycle related mitigation measures have been proposed along the neighborhood roadways.

21. Pro-Rata Share: TIA does not provide a discussion of the Applicants share for proposed improvements. We recommend that the Applicant provide this discussion, with supporting calculations, for review.

Pro-Rata calculations have been included within the updated TIA report.

Please contact our office should you have any questions or if we can be of further assistance.

Sincerely,



Bobak Tehrany, P.E.
PROJECT MANAGER

cc: André H. Betit, Jr., P.E. – City of Austin
Upal Barua – City of Austin

Mr. Brian Craig, P.E.
August 19, 2015

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HCM 2010 analysis expects standard NEMA quad ring-barrier structure. Does not support multiple barriers.

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HCM 2010 methodology does not support clustered intersections.

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Pedestrian Green has to be less than Phase Max Green.

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