

REPLINGER & ASSOCIATES LLC
TRANSPORTATION ENGINEERING

May 14, 2020

Ms. Diliana Vassileva
City of Oregon City
PO Box 3040
Oregon City, OR 97045

SUBJECT: REVIEW OF TRANSPORTATION IMPACT STUDY – OREGON CITY CHRISTIAN CHURCH EXPANSION – GLUA20-12

Dear Ms. Vassileva:

In response to your request, I have reviewed the materials submitted in support of the proposed expansion of the Oregon City Christian Church on South End Road. The relevant materials included the site plan and the Transportation Impact Study (TIS). The TIS is dated September 20, 2018 and was prepared under the direction of Christopher Brehmer, PE of Kittelson & Associates.

The church complex is located on the east side of South End Road between Glacier Court and S Gentry Way. The proposed development consists of a 14,800-square foot recreation building consisting of a gymnasium, community meeting rooms and church youth group spaces.

According to the applicant's project narrative, the current proposal approximates the first two phases analyzed in the September 2018 TIS submitted in support of the application.

The TIS examined the following four phases:

- Phase 1 is expected to occur in 2020 and include a new 8,168 square-foot recreation center, new parking facilities, and a new driveway along the southern boundary of the site;
- Phase 2 is expected to occur in 2022 and include a new 3,602 square-foot student ministry center;
- Phase 3 is expected to occur in 2025 and include a new 4,077 square-foot administrative building; and
- Phase 4 is expected to occur in 2030 and include renovation of the existing worship center and construction of the new worship center and café. The building sizes of the final phase have not been determined but are planned to serve 600 parishioners.

The current proposal is somewhat larger than the first two phases examined in the TIS, but with certain adjustments, the TIS does provide a basis upon which the development proposal can be evaluated for transportation impacts. These adjustments are discussed at relevant points below.

Comments

1. Study Area. The study addresses the appropriate intersections. The engineer examined traffic patterns and traffic volumes and evaluated six locations. The key locations were:

- South End Road at Deerbrook Drive/Barker Avenue
- South End Road at Warner Parrott Road/Lawton Road
- South End Road at Lafayette Avenue/S Partlow Road
- Warner Parrott Road at Canemah Road
- Two site accesses on South End Road

The study area is appropriate.

2. Traffic Counts. The traffic counts were conducted in August 2018 at the intersections identified in #1, above. Traffic counts were conducted during the PM weekday and Sunday mornings. The base year traffic volumes appear reasonable.

3. Trip Generation. The TIS presents information on trip generation using the trip rates developed for the existing church facility during 2018. Trip generation rates were developed on the building square footage and applied to each individual phase of the applicant's project. For Phase 1, the engineer calculated the new building would generate 6 PM peak hour trips and 72 peak hour trips on Sunday mornings. For Phase 2, the engineer calculated the new building would generate 2 PM peak hour trips and 32 peak hour trips on Sunday mornings. Because of the difference in building size, the actual trips are about one-quarter higher than previously calculated for Phases 1 and 2 combined.

Based on the new building size and the trip rates developed by the engineer, I calculated the new building would generate 116 weekday trips; 15 weekday PM peak hour trips; 404 Sunday trips; and 131 peak hour trips on Sunday mornings. These values, rather than the ones in the TIS, should be used for calculating Systems Development Charge fees.

4. Trip Distribution. The engineer's trip distribution was based on an analysis of existing traffic patterns and likely origins and destinations throughout the city. The distribution shows 27 percent of traffic going to and from the east on Warner Parrott Road; 8 percent to and from the north on Canemah Road; 22 percent to and from the north on South End Road; 10 percent to and from the southeast on Partlow Road; 25 percent to and from the south on South End Road; smaller percentages are distributed to various other streets. The distribution of trips to the street network appears reasonable.

5. Traffic Growth. To account for background traffic growth, the traffic counts were adjusted by 1.9 percent annually. The base year for Phase 1 was 2020 and 2022 for Phase 2. The traffic growth assumptions and methodology appear reasonable.

- 6. Analysis.** Traffic volumes were calculated for the intersections described in #1, above. At each location, the level of service (LOS) and delay calculations and the volume-to-capacity (v/c) ratios were provided to assess traffic operations relative to the city's operational standards. The analysis was undertaken for the PM peak hour for mid-mornings on Sundays. All intersections described in #1 were analyzed for Sundays. For weekdays, only the South End Road at Warner Parrott Road/Lawton Road intersection and the site access were analyzed. The volumes at the other intersections did not reach the threshold level requiring analysis during the weekday PM peak hour. Since the current proposal approximates a combination of Phase 1 and Phase 2, my analysis focused on assessing operations for 2022.

For Sunday morning conditions, the site access points and all of the study area intersections were predicted to easily meet city operational standards in 2022 with or without the proposed church expansion. The increase in trips from the new proposal do not alter the conclusions about the adequacy of the transportation system in 2022 with the 14,800-square foot church expansion.

Under current conditions, the intersection of South End Road at Warner Parrott Road/Lawton Road is currently operating at LOS D with a v/c ratio of 0.79 during the PM peak hour. In 2022, with regional growth and the church expansion, the weekday PM peak hour conditions are calculated to degrade to LOS E and a v/c ratio of 0.89. This meets the city's operational standard for unsignalized intersections. Most of degradation in intersection performance can be attributed to regional growth.

Site driveways are also predicted to operate acceptably with plenty of space for on-site queues, which are predicted to be minimal.

According to the TIS, the intersection of South End Road at Warner Parrott Road/Lawton Road will likely meet traffic signal warrants within a few years after 2022 with additional regional growth. Transportation System Plan Project D32, the planned upgrade of this intersection with additional turn lanes and signalization, will provide long-term operational improvement. The intersection improvement is not planned or funded. The TIS serves as a reminder that the need for it is approaching.

The engineer does not recommend mitigation for the church expansion for Phase 1 or 2. Since the current proposal is mostly consistent with that level of traffic, I concur with the conclusion that traffic from the proposal does not cause city operational standards to be exceeded.

- 7. Turn Lanes at Site Entrance(s).** Traffic volumes are low enough on South End Road and turning into the site that a left-turn lane for access to the site is not warranted.

- 8. Crash Information.** The TIS provides crash information for the most recent five-year period for the study area intersections. During the five-year period, eight crashes were reported at the intersection of South End Road at Warner Parrott Road/Lawton Road; four were reported at the intersection of Warner Parrott Road/Canemah Road; and three were reported at the intersection of South End Road/Partlow Road/Lafayette Avenue. None were reported at the intersection of South End Road/Barker Avenue/ Deerbrook Drive. The crash rate at each location was modest. The engineer concluded that no safety-related mitigation was recommended. I concur.
- 9. Pedestrian and Bicycle Facilities.** The TIS describes pedestrian and bicycle facilities in the area.
- 10. Site Plan and Access.** As noted above, the church plans a second access to South End Road to the south of the existing site access. The new access provides access to the expanded parking lot proposed between the buildings and the street. A gated emergency access is provided in the southeast corner of the campus that connects to Paulsen Drive. Use of this access is subject to monitoring as a condition of a prior land use action. No use of this access was assumed for this analysis.
- 11. Intersection Spacing.** No new intersections would be created by this development proposal. A second driveway intersecting South End Road is proposed between the existing driveway and Gentry Way.
- 12. Sight Distance.** The engineer measured recommends that sight distance be provided at both access points on South End Road. Landscaping, signage, and above-ground utilities along the site frontage and near the site driveway should be located and maintained to provide adequate sight distance.
- 13. Consistency with the Transportation System Plan (TSP).** The site frontage appears to meet applicable standards or will be improved in connection with the project.
- The TIS indicates that the intersection of South End Road at Warner Parrott Road/Lawton Road will meet city operational standards with the proposed expansion though it is calculated to operate at near maximum. As indicated in #7, above, the analysis indicates deteriorating performance of the intersection of South End Road at Warner Parrott Road/Lawton Road due to regional growth. TSP Project D32, an upgrade and signalization of the intersection, provides for improved operations of the intersection. The project is not currently programmed or funded.
- 14. Conclusions and Recommendations.** The engineer concludes that traffic operations would be adequate at all locations during Sunday peak periods. During the weekday PM peak period, the performance of the intersection of South End Road at Warner Parrott Road/Lawton Road is expected to deteriorate but will meet the city's operational standards.

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Separation between the site driveway and the nearest intersection is adequate. The engineer concludes no safety mitigation is necessary and does not recommend mitigation for traffic impacts from the proposal. I concur with the engineer's conclusions and recommendations.

Conclusion and Recommendations

I find that the TIS provides an adequate basis upon which to assess the impacts of the proposed development.

It is evident from the analysis that regional traffic growth will cause deterioration in the performance of the intersection of South End Road at Warner Parrott Road/Lawton Road and that traffic signal warrants will be met in the not-to-distant future. TSP Project D32 provides a means for satisfying the city's operational standards for the intersection. Based on the TIS, it appears the need for this project is approaching.

I do not recommend any off-site actions to mitigate for safety or traffic impacts of the proposed development.

If you have any questions or need any further information concerning this review, please contact me at replinger-associates@comcast.net.

Sincerely,

A handwritten signature in black ink that reads "John Replinger". The signature is written in a cursive, flowing style.

John Replinger, PE
Principal