



Engineering & Planning, Inc.

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June 19, 2024

Stephanie Shealey, PE, PTP, PTOE
Kittelson & Associates, Inc.

Re: Sunrise Residential – Traffic Impact Analysis Technical Review

Comments

We offer the following responses to comments on June 19, 2024 regarding the review of the Traffic Impact Analysis (TIA) (December, 2023).

1. **Study Area:** Significance of I-95 should be included and further attenuation of the 30% shown on I-95 should be provided to the additional cross streets such as St. Lucie Blvd and Crosstown Parkway. Please include a copy of the model output in the Appendix.

Response: Acknowledged. Please see assignment in the methodology from PDF Page 516 to Page 520.

2. **Table 1.: Trip Generation**

- a. The Single Family Detached Land-Use should be 25% inbound, 75% outbound in the AM peak period. Please update the directional volumes.
- b. Per the Trip Generation Handbook, 3rd Edition, please use the average rate for daily and PM peak period as for Land Use 821, as there are less than 20 data points and the R2 value is less than 0.75.
- c. Verify that Pass-by does not exceed 10% of the adjacent street traffic.

Response: Acknowledged. Please see the revised trip generation in Table 1.

3. **Table 3: Project Impacts (Significance):** Please include St Lucie West Blvd within the significance table and include them in the roadway analysis if project trips are significant on any segment.

Response: Acknowledged. See the updated significance table, Table 2.

4. The TIA states that there are four proposed access points, however, only two are listed (DW1 and DW2) with one of those being for emergency access. Please clarify. There is a concern having all trips from 1,500 residential units and 100,000 sf of commercial coming into and out of a single point of entry. If cross-access to adjacent parcels is assumed, the study should include a phased analysis showing the amount of development that can be constructed with a single access without triggering additional impacts.

Response: Acknowledged. The project consumes less than 5% of the road's capacity and therefore the impacts are not significant.

5. **Figure 4: Driveway Volumes:** Pass-by trips should be assigned to the site access driveway as a percentage of the background trip distribution, separately from the external trips. As a pass-by trip, the number of vehicles turning into the site can be subtracted from the adjacent through movement.

Response: Acknowledged. Please see the revised Figures 4A- 4C.

6. Please include figure(s) within the report showing the background turning movement volume, the vested project trip volume, and the project trip volume at the four study intersections for both the AM and PM peak periods.

Response: Acknowledged. Please see the Exhibit 7.

7. Please include the signal timing sheets used for the intersection analysis so that the timings, splits, and cycle length can be verified. The coordination of the I-95 ramp signals should be verified as well.

Response: Acknowledged. Please see the signal timing sheets in Appendix M.

8. Intersection analyses should be conducted using the HCM methodologies from within Synchro. Please provide printouts using HCM methodologies, including the 95th percentile queue lengths. Please note that it is preferred to utilize the HCM 7th Edition methodologies which was published in December 2022.

Response: Acknowledged. The intersection analyses are updated using HCM 7th Edition within Synchro 12.

9. Within the body of the report, please summarize the intersection analysis results for the existing, future background, and build conditions, to include average approach delay, level of service, highest v/c ratio on approach, and longest 95th percentile queue length on approach.

Response: Acknowledged. Please see the Tables 8A – 11B.

10. Please provide the Synchro outputs using HCM methodologies in addition to the Lanes, Volume, and Timing sheets there were included in the study. Additionally, please check the signal splits at multiple locations show green times not extending the full split phase.

Response: Acknowledged. The details of Synchro outputs are attached in Exhibits 2. The signal timings of the existing and background intersection analysis are based on the existing signal timing of St. Lucie County. The green times don't extend the full split phase in multiple locations.

If you have any questions, please do not hesitate to contact Shaun Mackenzie at shaun@mackenzieengineeringinc.com or (772) 834-8909.

Sincerely,



Shaun G. MacKenzie, P.E.

Transportation Engineer

Florida Registration Number 61751

Engineering Business Number 29013



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June 19, 2024

St Lucie County Planning and Development Services

Re: Sunrise Residential – Traffic Impact Analysis Review

Comments

We offer the following responses to comments on June 19, 2024 regarding the review of the Traffic Impact Analysis (TIA) (December, 2023).

1. Please verify the vested developments used for the analysis. Please verify the amount of Oak Ridge Ranches that will be constructed by 2028 (buildout year). Additionally, please confirm that the Willow Lakes development has been approved by St. Lucie County staff.
MEP Response: As agreed with the St. Lucie County reviewer, 25% of the Committed traffic from Oak Ridge Ranches and Willow Lakes is used in the analysis.
2. Please limit the amount of pass-by traffic to 10% of the forecasted background traffic volumes adjacent to the project driveway.
MEP Response: Acknowledged. Please see the revised trip generation.
3. Please provide justification for the 20% residential and 25% retail reductions applied to vested traffic. More specifically, the methodology of selecting reduction percentages for each use.
MEP Response: The reduction to account for committed traffic capture is eliminated.
4. Please add Glades Cut Off Road west of Commerce Center Drive to the Project Impact table.
MEP Response: Acknowledged. Please see the updated significance analysis, Table 2.
5. Please verify the volumes utilized for the roadway segment analysis are correct.
MEP Response: Acknowledged.
6. Please confirm only committed improvements with construction funding in the next five years are utilized for the analysis.
MEP Response: Acknowledged.
7. Please verify the project trip distribution percentages used for the roadway segment analysis and intersection analysis.
MEP Response: Acknowledged.
8. Please clarify why an additional table is provided for the 2028 Pre-Development Peak Hour Roadway Analysis.
MEP Response: The additional table, Table 4, provides the background improvement information.

9. Please verify the peak season factors, project trip distribution, and vested distributions utilized for the intersection analysis.
MEP Response: Acknowledged.
10. Please verify the control for the Midway Road at Glades Cut Off Road westbound right movement.
MEP Response: Acknowledged.
11. Please verify the background geometry used for the Midway Road at Wylder Parkway/project driveway intersection.
MEP Response: Acknowledged.
12. Please perform a signal warrant analysis for the project driveway/Wylder Parkway at Midway Road. Additionally, please document if signalization is warranted as a result of background or buildout traffic.
MEP Response: Acknowledged. Please see Exhibit 5.
13. Please provide signal timings for existing signalized intersections evaluated. Please utilize the FDOT Traffic Engineering Manual for signal timings at previously unsignalized intersections.
MEP Response: Acknowledged. The existing signal timings are attached in Appendix M
14. Please utilize the peak hour factors from the turning movement counts for the intersection analyses.
MEP Response: Acknowledged.

If you have any questions, please do not hesitate to contact Shaun Mackenzie at shaun@mackenzieengineeringinc.com or (772) 834-8909.

Sincerely,



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Transportation Engineer

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June 19, 2024

St. Lucie County TPO

Re: Sunrise Residential – Traffic Impact Analysis Review

Comments

We offer the following responses to comments on June 19, 2024 regarding the review of the Traffic Impact Analysis (TIA) (December, 2023).

1. Traffic Data: The Traffic Impact Analysis (TIA) utilizes traffic counts from 2022 which are outdated. The TIA should be updated with the latest traffic counts.
MEP Response: Update to 2023 and 2024 where feasible.
2. Historical Growth Rate: The growth rate table in the Traffic Study is incomplete and, therefore, should not be used to calculate the historical growth rate. The table should be completed to calculate the historical growth rate. Alternatively, the St. Lucie TPO historical growth rate of 2.55 percent should be utilized.
MEP Response: The growth rate is updated to 2.55% plus committed traffic in order to provide a conservative analysis.
3. Commitment of Roadway Improvements: The TIA identifies the commitment by Wylder for needed roadway improvements. However, this commitment would be through a local government other than the City of Fort Pierce. Documentation should be provided which confirms the commitment by Wylder to the other local government for the identified roadway improvements.
MEP Response: Pages from the Wylder (LTC Ranch DRI) Development Order are included in the appendix.
4. Inconsistent Information: The proposed sizes of the square footage of commercial space identified in the TIA (100,000 square feet) are inconsistent with the sizes identified on the Development Review Application (80,000 square feet). The TIA should be revised to be consistent with the submitted application.
MEP Response: The correct number is 100,000 SF. The Master Plan is updated to reflect 100,000 SF.
5. Build Out Year Justification: The TIA identifies a Build Out Year of 2028. The status of the application in the review process and local experience would appear to impact the estimate completion of the development by 2028. Therefore, justification should be provided for the use of a 2028 Build Out Year.
MEP Response: In order to provide a conservative analysis, the buildout year is updated to 2030.

6. Smart Moves 2045 Long Range Transportation Plan (LRTP): The proposed 1,500 housing units is inconsistent with the growth allocations included in the Traffic Analysis Zones (TAZs) where the development will be located and, therefore, the development is inconsistent with the 2045 SmartMoves LRTP. Consequently, an amendment to the LRTP is needed which includes an analysis of the changes to the growth allocations in the TAZs.
MEP Response: Acknowledged. This does not affect the traffic study, but it is recommended that the next regular update of the TCRPM include the development of this project to more accurately reflect conditions in 2045. TPO staff acknowledged that they would work with the City of Fort Pierce to identify the changes needed to the 2045 TCRPM.

7. Local Government Coordination: Because of the location of the proposed development, it appears that the transportation impacts will extend to the St. Lucie County and City of Port St. Lucie transportation networks. Therefore, coordination with the County and the City is necessary to fully analyze the potential impacts to their networks and develop the appropriate improvements to mitigate the impacts.
MEP Response: The study was sent to Port St. Lucie, St. Lucie County and FDOT for review.

8. Internal Roadway Network and Connections: Details of the internal roadway network of the development are unclear such as right-of-way widths, number of lanes, and ownership/maintenance responsibilities. In addition, the connections of the internal roadway network, such as "Arterial A", to the external roadway network are unclear. The details of the internal roadway and its connections to the external roadway network should be clearly identified.
MEP Response: Acknowledged. See updated plan.

If you have any questions, please do not hesitate to contact Shaun Mackenzie at shaun@mackenzieengineeringinc.com or (772) 834-8909.

Sincerely,



Shaun G. MacKenzie, P.E.
Transportation Engineer
Florida Registration Number 61751
Engineering Business Number 29013

Shaun G. MacKenzie, P.E.

From: Shaun G. MacKenzie, P.E.
Sent: Thursday, May 2, 2024 1:40 PM
To: Hymowitz, Larry
Cc: Walia, Kent; Wong, Chon; Harari, Laurie
Subject: RE: Sunrise Residential Traffic Methodology Comments
Attachments: Sunrise Residential Traffic Methodology Comments .docx

Good afternoon Larry,

Here is how we addressed the FDOT's comments in our December methodology and study.

Best Regards,

Shaun G. MacKenzie, PE
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From: Hymowitz, Larry <Larry.Hymowitz@dot.state.fl.us>
Sent: Wednesday, November 29, 2023 3:07 PM
To: Shaun G. MacKenzie, P.E. <Shaun@mackenzieengineeringinc.com>
Cc: Walia, Kent <Kent.Walia@dot.state.fl.us>; Wong, Chon <Chon.Wong@dot.state.fl.us>; Harari, Laurie <Laurie.Harari@dot.state.fl.us>
Subject: Sunrise Residential Traffic Methodology Comments

Greetings Shaun. Please see the attached comments in response to your request for traffic methodology review. Our comments are tailored towards the production of land use plan amendment type traffic analysis as opposed to a concurrency analysis. We are most interested in the future conditions with the amendment and not necessarily focused on assignment of responsibility. That determination will be done by local government at the zoning/site development/development order phases.

Please let me know if you have any questions.



Larry Hymowitz

Planning Specialist, Policy and Mobility Planning Section
Planning & Environmental Management - FDOT District Four
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Together our actions have the power to save lives!



December 4, 2023

Response to 11/29/2024 FDOT Comments related to Sunrise Residential Development

Page 1 of 2

Sunrise Residential

City of Ft. Pierce

~~Future Land Use Amendment~~

FDOT Traffic Methodology Comments

Analysis Scenarios

Please conduct analyses for the following three (3) scenarios:

- (1) Existing - **Agreed**
- (2) Short-Term (Build-out Year) - **Agreed**
- (3) Long-Term (2045) – **Do not agree – not a future land use amendment**

Trip Generation

Per submitted methodology ITE's Trip Generation Manual, 11th Edition will be utilized. - **Agreed**

Please conduct trip generation for two scenarios:

- (1) Maximum allowable densities for current land use – **No Change in land use**
- (2) Maximum allowable densities for proposed land use – **No Change in land use**
 - a. Note that land use designation may allow for additional density beyond what is proposed in the City traffic study. Therefore, either conduct analysis for maximum allowable density or proffer a limit on the allowable density to match the buildout totals in the City traffic study.

The increase in trip generation is the difference between the proposed and current land uses. – **No Change in land use**

Traffic Distribution / Assignment Technique and Approach

Per the submitted methodology TCRPM was utilized. Please update the text to state TCRPM 5. Note separate trip distributions may be required for Short-Term and Long-Term depending on edits to the roadway network. Please confirm roadway network is consistent with relevant work programs, capital improvements plans, transportation improvement plans, etc. – **Agreed – engineer will confirm use of TCRPM 5.**

Roadway Segment Analysis

December 4, 2023

Response to 11/29/2024 FDOT Comments related to Sunrise Residential Development

Page 2 of 2

Per submitted methodology one-way peak hour roadway segment analyses will be conducted with a 5 percent (5%) significance level. Additionally, St. Lucie TPO capacities will be utilized or FDOT 2023 Capacities (from the 2023 Quality/Level of Service Handbook). Please perform roadway segment analyses at a minimum on the following additional roadways:

- (1) SR-70/Okeechobee Road- **Agreed**
- (2) SR-9/I-95- **Agreed**
- (3) SR-91/Florida's Turnpike- **Agreed**
- (4) SR-713/King's Highway- **Agreed**

Note: FDOT's Level of Service Targets are defined in FDOT Policy Topic No. 000-525-006. Additionally, the City of Ft. Pierce LOS Standards, including State roads, are found in Section 2.2.2 of the Transportation Element. - **Agreed**

Growth Rate

Per submitted methodology the study will use a 2.1 percent growth rate. Committed developments are also provided. Please confirm if committed developments are in addition to the 2.1 percent growth rate. Also please provide back up documentation for the 2.1 percent growth rate (i.e. TCRPM plots, historical counts, etc.) Note that Short-Term and Long-Term growth rates may be different.

Short-Term Growth = 2.1% plus committed trips

Shaun G. MacKenzie, P.E.

From: Shaun G. MacKenzie, P.E.
Sent: Tuesday, July 16, 2024 10:51 AM
To: Grant M. Chambers; torress@stlucieco.org
Cc: Planning Department; Vennis Gilmore; Mark Satterlee; 'Wesley Mills'; Derrick Phillips; Steve Garrett (sgarrett@lucidodesign.com)
Subject: FW: Sunrise Residential TIA/TIR
Attachments: Comments Response Letter TPO 6-19-2024.pdf; Comments Response Letter SLC 6-19-2024.pdf; Comments Response Letter - PSL 6-19-2024.pdf

Good afternoon Grant and Kori,

We are looking to set up a meeting with the County to finalize conditions related to Sunrise PD (in the City of Fort Pierce).

If you don't have a copy of the submittal, it can be downloaded at the link below.

<https://acrobat.adobe.com/id/urn:aaid:sc:US:f8643d2d-2b13-43a6-863d-3b64d1be3942>

Please let me know when the SLC Team is available.

Best Regards,

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