

**To:** Diana Spriggs, P.E., Regulatory Division Director, City of Port St. Lucie  
**From:** Myra E. Patino, P.E., PMP, Marlin Engineering, Inc.  
**Cc:** Walter Keller, P.E., AICP, Marlin Engineering, Inc.  
Ashok Sampath, M.S., Marlin Engineering, Inc.  
**Date:** May 10, 2023  
**Subject:** Wilson Groves – Map H Amendment Traffic Analysis (6<sup>th</sup> Review Comments)

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MARLIN Engineering, Inc. has conducted a peer review of the new Wilson Grove DRI Traffic Analysis prepared by O'Rourke Engineering & Planning, originally dated September 2021, with subsequent revisions on June 8, 2022, August 26, 2022, January 11, 2023 and April 17, 2023. Wilson Groves DRI is located near Becker Road east of Rangeline Road in the City of Port St. Lucie, Florida. The following comments were made for the 6<sup>th</sup> round of review for the latest report revised April 18, 2023:

**1) Approved Land Use Table 1a:**

- a. Please advise on the 40 additional acres of Regional Park since this is not provided in WATS 3.0.

***Applicant's Response:*** *The original WATS study did not include the 40 acres of Regional Park as required in Resolution 11-R01 in error. It was an oversight and has been corrected in the revised Traffic Study. The traffic analysis provided herein references the 40-acre regional park and references 50 additional acres as part of the approved DO for Wilson Groves.*

**City's Response:** Please include Resolution 11-R01 in the report appendix.

***OREP's Response (4/17):*** *11-R01 is included in Appendix A with original page numbering pages.*

**City's Response:** Agreed.

**2) Roadway Phasing:**

- a. The study needs to identify the phasing of the entire Wilson Grove.

***Applicant's Response:*** *The phasing plan is not applicable to this revision. The applicant is changing the location of land use. The ultimate buildout analysis is the appropriate and agreed upon approach for evaluating this change.*

**City's Response:** The phasing plan is required to track the improvements since Map H has been amended and the land uses were moved in between TAZs.

***OREP's Response (4/17):*** *Phase 1 through 3 are now included as Appendix D of the report.*

**City's Response:** The phasing plan has been reviewed and the trips were distributed reasonably to the segments based on the planned developments.

**3) Link Analysis:**

- a. Discovery way was included in the previous analyses. Please provide details on the removal of Discovery way from the current traffic study analysis.

***Applicant's Response:*** *Only the roadways that are the responsibility of the applicant were included in the analysis.*

**City's Response:** Community Blvd. is included in the analysis, which is outside the Wilson Grove boundaries and trips were assigned to it. Please explain why Discovery way is treated differently.

***OREP's Response (4/17):*** *Discovery Way has been added to the analyses.*

**City's Response:** Approved.

- b. The trip assignment assumptions are not applicable based on the WATS 3.0. The trip assignment to each roadway in the study was taken from the WATS 3.0 which was created using the approved conceptual master plan, however, the proposed master plan has changed the parcel labels/locations. For Example, On Range line Road from Marshall Pkwy to Paar Road, WATS 3.0 recommends to use 8.6% for Parcel A because the location of Parcel A is adjacent to the Range line Road when the WATS 3.0 was developed. The Parcel A has been proposed to be relocated in between N/S A and N/S B (closer to Becker Road) but the majority of the trips

(12.7%) was assigned to Range line road in this study. The study should revisit the trips assignments throughout the network.

**Applicant's Response:** *The assignments were revised based on the individual pod's access and relationship to the roadway. Attachment 4.b provides the assignments for each parcel.*

**City's Response:** The trip assignments were not updated in Table 4 from the previous submittal; however, some of the trips were revised for Parcels E and F. The updated trips are not balanced with AADTs provided in the table.

**OREP's Response (4/17):** *All trips have been verified for each parcel and entered into the appropriate link tables.*

**City's Response:** The trips have been distributed reasonably throughout the network.

- c. A significant adjustment to the intensity of land uses is being proposed in Traffic Zone 648 (aka, Parcel D): Approved trip generation 15,836 (Table 1b) versus the Proposed trip generation of 36,116 (Table 2b). Table 4 Link Analysis for a 4-lane Becker Road indicates 52,694 trips on Becker Road east of N/S "A" with a peak hour volume of 2,317. Becker Road total trips of 52,694 may require 6 lanes and the peak hour volume of 2,317 is only 4.5% of the daily traffic loading. Additionally, the discounting of pass-by trips may not be appropriate in this regional traffic analysis. Please provide additional information to support the acceptability of Becker Road at 4 lanes and the 4.5% peak hour volume.

**Applicant's Response:** *The tables are set up in a manner that the AADT (two directions) is entered twice since the formulas are set up to apply the K and D factors to arrive at the peak hour directional values. This approach is consistent with other DRIs. So, the two AADTs do not get added together. The Total AADT is half of what the reviewer has indicated. So, the peak hour factor is 9%. We apologize if the formatting has led to confusion.*

**City's Response:** The Applicant has increased the land use intensity for Parcel D, further increasing the trip generation by approximately 10,243 daily trips per

Table 2a, page B-26. The Applicant's response regarding the lower daily traffic volumes is accepted. Please add a clarifying note to Table 4 indicating the daily traffic volume is equal to one direction only.

The reduction in the daily traffic volumes on the roadway segments are within the capacity thresholds. Please correct Parcel D traffic zone number to 648 in Table 2a and add the percent assignment percentage to the external links surrounding the Wilson Grove DRI on the figure on page C-2.

**OREP's Response (4/17):** *The figures and tables have been updated accordingly.*

**City's Response:** **Approved.**

- d. The 4-lane segment of Marshall Parkway between N/S "B" and Community Boulevard has a daily volume of 59,878 and a peak hour volume of 2,695. Table 4 indicates the 4-lane segment meets capacity requirements? Please provide additional information to support the acceptability of Marshall Parkway at 4 lanes and the 4.5% peak hour volume.

**Applicant's Response:** *The tables are set up in a manner that the AADT (two directions) is entered twice since the formulas are set up to apply the K and D factors to arrive at the peak hour directional values. This approach is consistent with other DRIs. So, the two AADTs do not get added together. The Total AADT is half of what the reviewer has indicated. So, the peak hour factor is 9%. We apologize if the formatting has led to confusion.*

**City's Response:** This comment has been addressed. See City Comment for 4c.

**OREP's Response (4/17):** **Agreed.**

**City's Response:** **Comment Closed.**

- e. Please provide a map for the trip assignment for each Parcel and also for the entire Wilson Grove DRI.

***Applicant's Response:*** See response 4b above and attachment 4.b.

**City's Response:** The trip assignment in Table 4 does not match the trip assignments on the map. For Example: in Appendix C, Figure 6.2 – A (Parcel A assignments), trip assignment for E-W 4/Paar Dr. = 42.4% which is distributed as 30.4% for N-S B from Paar to E-W 3/Marshall Pkwy, while the remaining 12% were not assigned to the Wilson Grove network; instead, these trips were completely omitted from Table 4 in the main report. If the omitted trips were assigned to the adjacent roadway, please include them in Table 4; otherwise, please re-assign the trips within the Wilson Grove DRI.

***OREP's Response (4/17):*** The assignments have been verified and modified if appropriate.

**City's Response:** Comment Closed.

#### 4) Conclusion:

- a. Although the roadway link analysis did not indicate a worsening of LOS or trigger certain improvements before needed, intersection analyses will be required for review in order to determine how changes to the Land Use mix and location impact intersections within the DRI, as subdivisions for the developments are submitted for approval through the platting process.

***Applicant's Response:*** We believe when the reviewer understands the tables' formatting, the concerns regarding the LOS will be allayed.

**City's Response:** Yes, the tables regarding the link analysis do have a relation with certain improvements; however, an intersection LOS analysis will still be required for each development when it goes to platting.

***OREP's Response (4/17):*** No Response.

**ADDITIONAL TRAFFIC COMMENTS:**

- 1) They need to provide supporting documentation if they are not going to revise their trip assignment any further in order to accept the proposed laneage on the roads.

***Applicant's Response:*** *The traffic report and associated tables show the reallocation of land uses does not affect the proposed laneage of roads.*

**City's Response:** Please refer to 4b and 4e.

***OREP's Response (4/17): No Response.***

- 2) Pass-by trips are not recommended for a regional study such as this.

***Applicant's Response:*** *The pass by rates is appropriate for this traffic study as they are only used for retail and have been used for all studies by each DRI (Southern Grove, Riverland).*

**This comment has been deferred to City staff.**

***OREP's Response (4/17): No Response.***

- 3) The Applicant's traffic analysis 6<sup>th</sup> version indicates additional traffic volume is added to Becker Road. While these impacts can be accommodated within LOS requirements inside the Wilson Groves DRI, it is unclear what the design lane requirement for Becker Road east of N/S "B" should be. For example, Table 4 Phase 4 Buildout on page 9 projects 29,000 (rounded) vehicles on Becker Road between N/S "A" and N/S "B". The Phase 3 distribution and assignment figure on D-29 projects 96% of the Becker Road assignment between N/S "A" and N/S "B" occurs on Becker Road east of N/S "B" (27,800 rounded).

## FINAL RECOMMENDATIONS

- 1) The Marlin Engineering West Annexation Area DRI Traffic Study projected traffic conditions for 2031 considering the 3 DRIs. The 2031 projected traffic volumes for Becker Road between N/S "A" and N/S "B" were 10,100 vehicles and between N/S "B" and SW Community Boulevard they were 14,600 vehicles. Subtracting the 10,100 vehicles from 29,000 vehicles and taking 96% of the total would equal 18,100 vehicles from Wilson Grove on Becker Road between N/S "B" and SW Community Boulevard. Adding the adjusted volume to the Marlin Engineering 2031 project volume of 14,600 vehicles would total 32,700 vehicles on Becker Road between N/S "B" and SW Community Boulevard.

The maximum LOS "D" volume for a Class 1 non-state roadway with a 40 MPH posted speed for a 4-lane divided roadway is 35,800 vehicles per day. The volume to capacity ratio for the projected traffic volume considering the traffic from Wilson Grove versus the maximum LOS "D" capacity is 0.91. The GL Homes/Riverland DRI development phasing included in the Marlin Engineering DRI Traffic Study was not at buildout. Residential phasing was approximately 43% of buildout, with 6,700 dwelling units outstanding. Non-residential development phasing was only 15% of buildout with over 3.37 million square feet remaining.

The above discussion suggests Becker Road will have to be widened to 6 lanes in order to meet City LOS requirements.

- 2) Becker Road traffic volumes could be reduced to alleviate over capacity conditions. Two roadway connections would assist in diverting traffic from Becker Road: N/S "A" and Marshall Parkway. Extending N/S "A" beyond Discovery Way and Tradition Parkway connecting to the Crosstown Parkway would provide a more direct way and lower drive time than using a congested Becker Road. Marshall Parkway would have a more significant diversion impact with an interchange at I-95. However, it takes a significant number of studies and time to approve and fund an interstate interchange. Since phasing projections for GL Homes/Riverland DRI and the Wilson Grove DRI reach into the 2040's,

the interchange justification would cause important reductions in the traffic loadings on the Becker Road and Tradition Parkway Interchanges.

- 3) It is also recommended the City pursue a future independent 3 DRI traffic study to ascertain the traffic impacts of the continued development in the Western Annexation Area of the 3 DRIs. The study should be based on consistent phasing of all 3 DRIs with updates to the land development uses both existing and projected, the expected roadway network and existing traffic counts on constructed roadways. This study will facilitate reviews of individual traffic studies submitted on various site plans.