



Memorandum

To: Francis Franco, GISP, Lake-Sumter MPO

Date: October 5, 2016

From: Melody Butler, P.E.
Transportation Engineer

Project #: 62438.00

CC: Fabricio Ponce, P.E.

Re: Windmill 27 Proposed Traffic Study Methodology
Comment Responses

On September 27, 2016, we received comments from Francis Franco, Lake~Sumter MPO regarding the Methodology Letter prepared in support of the traffic impact study to accompany the Windmill 27 proposed comprehensive plan amendment. This letter provides responses to the MPO's comments.

Comment #1 - Please confirm the development stage that the traffic study is being prepared for.

Response: The traffic study is being prepared in support of a Future Land Use Map amendment. Reference to the comprehensive plan amendment is now provided in the methodology letter.

Comment #2 - The methodology states that the development program is 250 single-family dwelling units; however, the concept plan shows 49 single-family dwelling units. Please confirm.

Response: The traffic study is being prepared in support of a Future Land Use Map amendment; therefore, the maximum development potential of the site is used in the analysis to determine the worst case scenario impacts to the roadway network.

Comment #3 - Site access is proposed via an existing full median opening on US 27. Site access and any required improvements are to be reviewed and approved by FDOT.

Response: Comment acknowledged.

Comment #4 - The Lake County TIS Guidelines require the study area to include roadway segments within a 4.55 mile radius for the single-family residential use. The following additional roadway segments are located within the study area radius:

- US 27/SR 25, from CR 25A to CR 33
- US 27, from Florida Turnpike to SR 19
- CR 470, from Florida's Turnpike to Bay Avenue
- CR 470, from Bay Avenue to CR 33
- CR 48, from Clearwater Lake Rd to CR 33
- CR 33, from CR 48 to Bridges Road
- CR 33, from US 27 to CR 48
- Bridges Road, from CR 33 to US 27

Response: All roadway segments within a 4.55 mile radius are now included in the area of influence.

Comment #5 - The intersections proposed for study appear reasonable.

Response: Comment acknowledged.

Comment #6 - This project proposes to use BLR Windmill as a background project. BLR Windmill proposes to use Windmill 27 as a background project. One project should include the other, but they should not both include the other.

Response: Comment acknowledged. Windmill 27 will be included as a background project in the Windmill Road analysis. Windmill Road will not be included as a background project in the Windmill 27 analysis.

Comment #7 - Per the Lake County TIS Guidelines, only those transportation improvements that are funded for construction in the first three years of the work program shall be considered as capacity "in place".

Response: Comment acknowledged. There are no capacity improvements funded for construction within the next three years. The methodology letter now states that the improvements identified in the TIP and LRTP will not be included in the travel demand model forecast.

Comment #8 - The trip distribution should be provided for review prior to conducting the future conditions analysis, as stated in the methodology.

Response: The trip distribution is now provided in the methodology letter as Exhibit A.

Please let me know if you have any further question or require any additional clarification.

Sincerely,

Melody Butler, P.E.
Transportation Engineer
mbutler@vhb.com



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Re: Windmill 27 Proposed Traffic Study Methodology

The purpose of this memorandum is to provide the City of Leesburg and Lake-Sumter MPO (LSMPO) with the methodology to evaluate the transportation impacts of the proposed comprehensive plan amendment associated with the Windmill 27 residential development. Per the *Lake-Sumter MPO TIS Guidelines*, this project is considered a Tier 3 project and will follow the requirements for the associated level of study and analysis.

Project Description

The applicant is requesting a Future Land Use Map amendment for the Windmill 27 PUD located in unincorporated Lake County. The proposed amendment changes the future land use designation from Lake County Rural Transition and Rural to City of Leesburg Estate Residential. The maximum density allowed in the Estate Residential land use designation is four (4) dwelling units per gross acre. The subject property is approximately 62.6 acres, resulting in a maximum development program of 250 single-family dwelling units.

Site Location & Site Plan

The site is located on the east side of US 27, north of SR 91, and south of CR 470. The project location is illustrated on *Figure 1*. The site is approximately 62.6 acres and is currently undeveloped. Access to the development is proposed at the existing intersection of US 27 and El Presidente Boulevard. There is currently a full median opening at this intersection.

The location of this driveway can be observed in *Figure 2* – Preliminary Site Plan.

Area of Influence / Study Area Intersections

We propose the following intersections will be analyzed in the traffic study:

1. US 27 @ SR 91 Northbound On-ramp
2. US 27 @ Bridges Road
3. US 27 @ Plantation Boulevard
4. US 27 @ El Presidente Boulevard
5. US 27 @ CR 48/CR 470

The study area will be expanded to include one roadway segment beyond project significance (5%), but will at a minimum, include:

- Austin Merritt Road – Youth Camp Road to CR 33
- Bridges Road – CR 33 to US 27
- CR 33 – Smith Road to US 27

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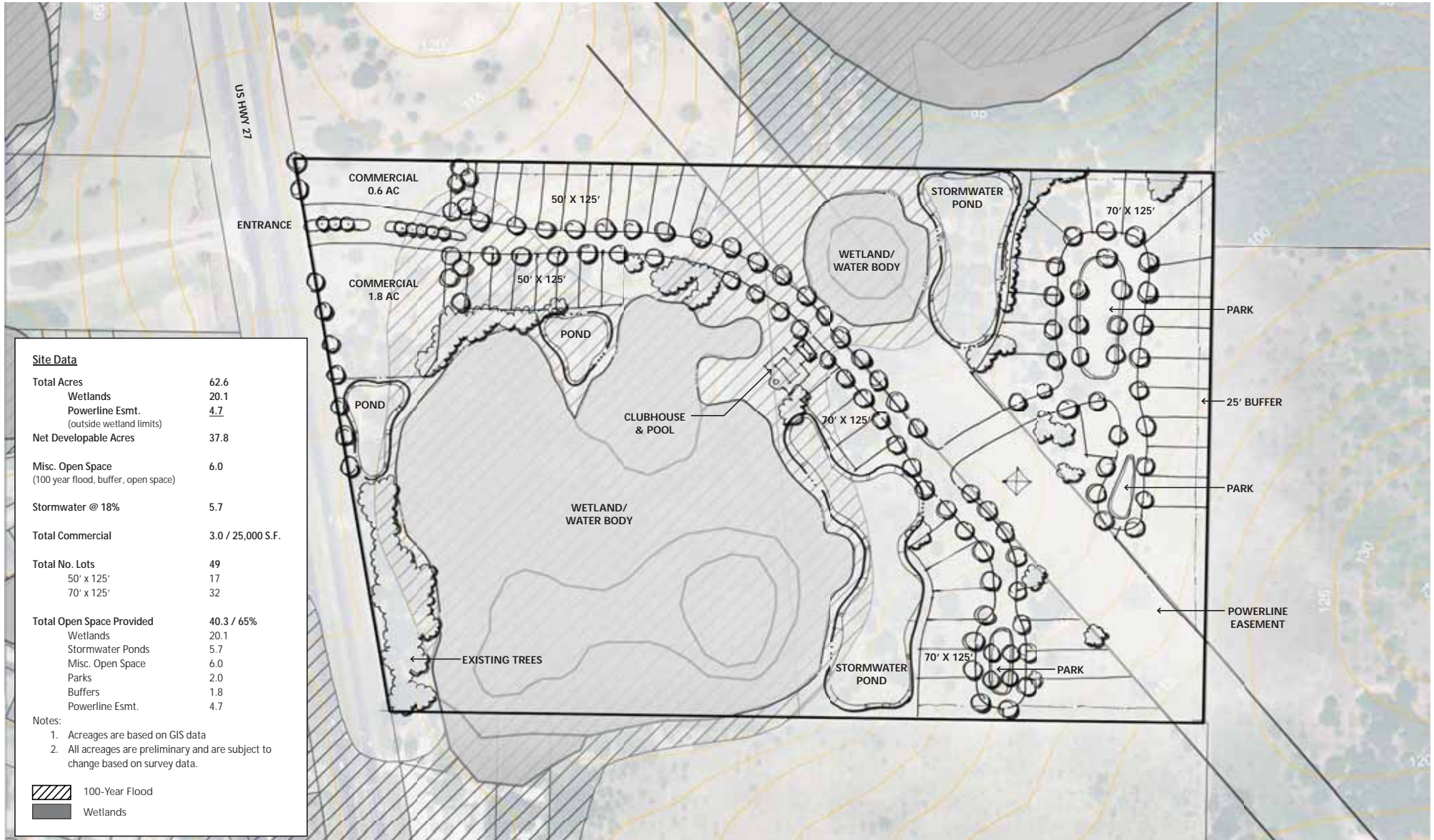
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- CR 470 – Florida Turnpike to CR 33
- CR 48 – Sumter County Line to SR 19
- CR 545 – US 27 to Kjellstrom Lane
- US 27/SR 25 – SR 19 to CR 25A



WINDMILL 27
Traffic Impact Study

FIGURE
1



Site Data

Total Acres	62.6
Wetlands	20.1
Powerline Esmt. (outside wetland limits)	4.7
Net Developable Acres	37.8
Misc. Open Space (100 year flood, buffer, open space)	6.0
Stormwater @ 18%	5.7
Total Commercial	3.0 / 25,000 S.F.
Total No. Lots	49
50' x 125'	17
70' x 125'	32
Total Open Space Provided	40.3 / 65%
Wetlands	20.1
Stormwater Ponds	5.7
Misc. Open Space	6.0
Parks	2.0
Buffers	1.8
Powerline Esmt.	4.7

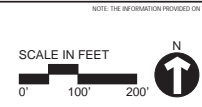
Notes:

1. Acreages are based on GIS data
2. All acreages are preliminary and are subject to change based on survey data.

Legend:

- 100-Year Flood
- Wetlands

CONCEPT PLAN
WINDMILL 27
 LEESBURG • FLORIDA





Planned and Programmed Improvements

According to the LSMPO Transportation Improvement Program (TIP), the segment of CR 470 from CR 527 to the Florida Turnpike is planned to be widened from two to four lanes. Preliminary engineering is scheduled for 2019/2020. The LSMPO Long Range Transportation Plan (LRTP) identifies the following planned improvements nearby the project location:

- CR 470 from Florida Turnpike to CR 33: widen from two to four lanes
- SR 44 from Orange Avenue to US 441: widen from two to four lanes
- US 441 from Perkins Street to SR 44: widen from four to six lanes

Because these roadways are not funded for construction within the next three years, these widening projects will not be included in the travel demand model forecast that will be considered in the project distribution and/or analysis.

Committed Development

We will coordinate with LSMPO to include any additional vested trips from other projects in the area.

Trip Generation

To estimate the trip-generating characteristics for the proposed development, traffic projections were derived from trip generation regression equations published by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. ITE Land Use Code (LUC) 210 for single-family residential was used. A summary of the trip generation is included in *Table 1*. No reduction was taken for internal capture, pass-by or mode split.

Table 1: Trip Generation Summary

Land Use	ITE Code	Intensity	Daily Trip Ends	AM Peak Period					PM Peak Period				
				In		Out		Total	In		Out		Total
				%	Trips	%	Trips		%	Trips	%	Trips	
Single Family	210	250 DU	2,440	25%	47	75%	138	185	63%	151	37%	89	240
Total			2,440	25%	47	75%	138	185	63%	151	37%	89	240

Source: ITE Trip Generation Manual, 9th Edition

Trip Distribution and Assignment

The project traffic distribution pattern was developed using the Central Florida Regional Planning Model (CFRPM v6.1), which was modified to add the land use data associated with the proposed development. The project distribution is attached as Exhibit A. The future traffic volumes will be discussed in the report and represented graphically. Model files will be submitted on CD with the study.

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Traffic Impact Assessment

To assess the traffic impacts associated with the proposed development, traffic counts will be required. Where available, existing traffic volumes collected as part of other traffic efforts conducted in the immediate vicinity will be utilized. VHB will collect peak hour turning movement counts on a typical weekday morning and evening at the five (5) study area intersections identified earlier. Appropriate PSCF will be applied to the raw counts. Future background volumes will be derived from vested trips and historic growth rates, utilizing the last 5 years of available AADT, with a minimum of 1% per year. As part of this study, VHB will provide analysis for the following conditions:

- Existing 2016 conditions
- Future 2021 conditions, without project (roadway segments and intersections during AM and PM peak hour periods)
- Future 2021 conditions, with project (roadway segments and intersections during AM and PM peak hour periods)
- Turn lanes assessment at the site access driveway for future conditions

The traffic assessment will be conducted utilizing methodologies from the 2010 Highway Capacity Manual. For roadway segments analysis, VHB will compare the peak hour directional volumes along study area roadway segments against the latest FDOT Generalized Service Volumes Tables or applicable Lake County roadway network capacities to identify if excess capacity is available. For intersection analysis, VHB will use Synchro 8 for all intersection analyses, providing results using the HCS 2010 methodologies.

Traffic Report

VHB will prepare a Traffic Report summarizing the study methodology, existing and future conditions for the maximum development program, project impacts, and potential mitigation requirements.

If you have any questions, please do not hesitate to contact us.

Sincerely,

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EXHIBIT A

Year 2020 CF CFRPM61_DAILY - Project Distribution

