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July 20, 2015

Nicole Johnson
Director of Governmental Relations
Conservancy of Southwest Florida
1495 Smith Preserve Way
Naples, FL 34102

RE: WildBlue Proposed Development

Per your request, A.D.A. Engineering, Inc. (ADA) conducted a review of recently submitted documents to SFWMD e-permitting that support the WildBlue proposed development north of Corkscrew Road and east of I-75.

The key issues that were considered during our review are listed below:

- PEG claims there will be no impact to groundwater resources. Is this an accurate claim? How will irrigation water from lakes impact overall groundwater levels?
- Will restoration increase groundwater levels?
- With homes connected to central water/sewer, will this be a net positive impact versus well and septic (even though the well and septic scenario would be fewer houses than the water/sewer scenario)?
- With restored flowways, will there be an increased risk of flooding for the downstream neighborhoods?

REVIEWED DOCUMENTS

1. Wildblue Development Hydrogeologic Setting Report by Water Science Associates
2. Lake Maintenance Plan by Water Science Associates
3. Indigenous Preserve Management Plan – Including Enhancement of Non-Indigenous Areas BS Wetland Restoration & Flow-way enhancement. Prepared by Passarella & Associates, Inc.
4. Stormwater Planning Report by Banks Engineering

EVALUATION OF REVIEWED DOCUMENTS AND FINDINGS

Impact to Groundwater Resources and Assessment of Irrigation Impacts

Key information presented in permit application documents is summarized below:

SFWMD agricultural permit was initially for 417 MG/yr. Currently, the agricultural WUP is for 248 acres of small vegetables allows 242 MG/yr and 47.4 MG/mo. Overall utilization shall not exceed 634 MG/yr and 82.16 MG/mo.

Lee County DO DOS2004-0334 is an existing permit that allows for residential development with 192 single family residential with planned expansion to 332 residential lots. Wastewater and public water supply for the existing permit would be provided by on-site septic and individual wells. DOS2006-00163 approved lake excavation, lake interconnects, and an 18-golf golf course. Also zoned was a 27-hole golf course.



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The proposed development is for 1,100 residential units, recreational amenities, and 40,000 SF of accessory commercial. Key information on developable acreage, shown in **Table 1**, was provided by WildBlue in the Application for Comprehensive Plan Amendment to Lee County, dated 3/24/2014.

Table 1 – WildBlue Regional Benefits Summary Presented to Lee County

WildBlue Regional Benefits: Executive Summary			
Project Benefit	Permitted Development	WildBlue	Comments
Development Acreage	3,552 Acres	2,960 Acres	16.7% reduction
Development Footprint	1,403 Acres	754 Acres	46.3% reduction

Source: sheet 80 of 506, 981586114v0.pdf

We can compare the impact of developing 332 residential units with the proposed WildBlue development by estimating the total potential irrigated area.

The Permitted development is for 332 units in 1,403 acres, which is 4.22 acres/house. The following assumptions can be made:

- Assume each house has a footprint of 3,600 SF and a 2,400 SF driveway, for a total of 6,000 SF of impervious surfaces per lot (0.14 acres). Therefore, Permitted has about 4 acres of pervious land surface per lot.
- If we then assume that half the Permitted lot is irrigated, the Permitted Development irrigated area = 332 units x 2 acres/lot = **664 acres**

The proposed WildBlue development is 1,100 units plus 30,000 SF of commercial land on 754 acres.

- If we assume the commercial property will use a total of 2 acres (87,000 SF), then the residential units will be 1,100 units on 752 acres, or 0.68 acres/unit.
- Considering the previous assumption that each house has approximately 0.14 acres of impervious surfaces, Wildblue residential units would have 0.54 acres of pervious land surface per lot.
- If we assume that all of the pervious land on a Wildblue lot is irrigated, WildBlue irrigated area = 1,110 lots x 0.54 ac pervious land/lot = **594 acres**.

If these assumptions are generally reasonable, then the irrigation demand from WildBlue will be less than the Permitted Development.

Information presented in the WSA Hydrogeologic Setting Report summarized the irrigation allocations for the prior permitted development and the current proposed development. **Table 2** below is the summary (found on page 9 of the report). This summary is consistent with the independent analysis conducted by ADA.

Table 1. Summary of Maximum Monthly and Annual Irrigation Allocations.

Land Use Type	Currently Permitted	Proposed Allocation	Net Reduction	% Reduction
Residential Landscaping	72 MGM / 538 MGY	60 MGM / 450 MGY	-12 MGM / -88 MGY	17% / 16%
Golf Course / Tree Farm	13 MGM / 96 MGY	13 MGM / 96 MGY	0 MGM / 0 MGY	0% / 0%
Total	85 MGM / 634 MGY	73 MGM / 546 MGY	-12 MGM / -88 MGY	14% / 14%

Another important factor to consider is irrigation demand by individual landowners. ADA simulations of the City of Cape Coral suggest that measured landowner irrigation can be twice the simulated irrigation



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needs of lawn turf. However, WildBlue states that individual landowners will not be able to over-ride the system and irrigate more than crop requirement demands. In addition, documents submitted by Wildblue indicate that fertilizer and pesticide applications will be tightly managed with WildBlue.

Graphs of well data were presented by Water Science Associates that concluded that prior water use did not have a negative impact on groundwater levels in the vicinity of the proposed development. However, the data presented in the WSA document ended in 2010, accordingly ADA added additional available data to confirm if the conclusions of WSA were still valid. **Figure 1** indicates that water levels have not decreased and are similar to the water levels prior to 2010, therefore it is our conclusion that the WSA findings are still reasonably valid.

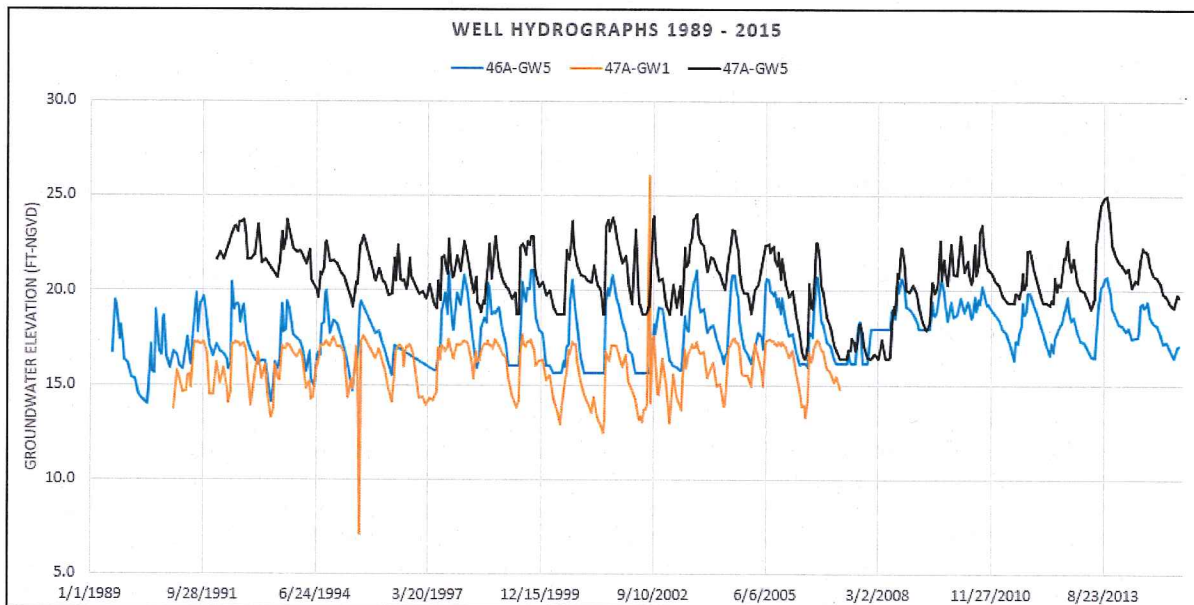


Figure 1 – Measured Water Level in Wells in the Vicinity of Proposed WildBlue Development

Conclusion: ADA agrees with Water Science Associates (WSA) that the groundwater impacts (both quantity and quality) will be less for the WildBlue development than for the Permitted Development (if the Homeowner Association complies with the development restrictions).

Central Water and Sewer vs Septic Systems

Septic systems will be supplied by on-site wells for the Permitted Development, which means that the water used within the homes in the Permitted Development will recharge the groundwater. The proposed WildBlue development will have centralized water and sewer, which means that water used within the homes is supplied from an external source and the wastewater is then conveyed off-site. Accordingly, the homes associated with the proposed WildBlue development will not affect groundwater levels within the development site. This means that there is no difference on groundwater levels between the Permitted Development and WildBlue development. Because the Permitted Development would rely on septic systems, one could argue that the nutrient input to lakes within the site would be greater for the Permitted Development. However, the septic systems on the 332 lots of the Permitted Development will be widely scattered, and properly designed and maintained septic systems are highly efficient in retaining nutrients.

Conclusion: Accordingly, the nutrient impacts are expected to be similar for the Permitted Development and WildBlue.



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Restoration Impact on Groundwater Levels

Existing: 536 ac indigenous wetlands and uplands

Planned restoration:

- 135 acres of uplands that will be enhanced and maintained adjacent to wetlands
- 623 acres of wetland and uplands w/ >50% exotics
- 11 acres on northeast side south of Alico Road culverts will be cleared of exotics
- 59 ac of farm fields and mining land will be restored to native upland habitat
- 94 acres adjacent to Stewart Cypress Slough will be converted to wetlands
- 6 acres of mining haul roads and berms will be removed
- 11 acres of flow-way enhancement (exotics removal, re-grading, planting)

The existing SFWMD permit established average wet season water levels in existing on-site lakes. Passarella and Associates recently identified existing vegetative indicators of season high water levels. The existing vegetation indicates water levels are higher than the SFWMD permitted control elevations for the existing on-site lakes. Control elevations and discharge points for the new water management lakes will be set at an elevation higher than the existing vegetative indicators to help hydrate the slough system and maintain desired water levels.

The stormwater management system will enhance existing flow-ways within the site, which will allow for additional inflow from the north. ADA staff have personally visited the area during peak wet season conditions and have observed flows heading west on the north side of Alico Road (see **Figure 2**), which essentially diverts water from the Estero River basin into the Ten Mile Canal Basin. Stewart Cypress Slough south of Alico Road is heavily infested with exotics, and WildBlue has stated that this area will be restored so that the flow-way can function as it did historically. Restoration has the potential to reduce the amount of the flow diversion to the Ten Mile Canal Basin. ADA staff have had discussions with Lee County ecologists who indicate that wetlands in the vicinity of FGCU (Florida Gulf Coast University, located south of the WildBlue site) have shortened hydroperiods. Accordingly, the improvements that are proposed by WildBlue should improve wetland conditions in the vicinity of FGCU. The Stormwater Planning Report also states that runoff from the proposed development areas will be directed to linear stormwater ponds. The Report also states that the lakes may be used as part of the water management system. Based on prior reviews by ADA of numerous other stormwater designs for residential developments, ADA would expect that water **quality** storage will be provided by these proposed linear ponds with water **quantity** treatment provided by the existing lakes. This will lead to recharge of the surficial aquifer, which will maintain groundwater levels in the on-site wetland conservation areas.

Conclusion: ADA expects that peak flows from this proposed project will not increase and that wetland hydroperiods will be enhanced. Furthermore, the restoration of wetlands south of Alico Road and the removal of mining haul roads will enhance wetland hydroperiods in wetlands south of WildBlue that are in the vicinity of FGCU. ADA recommends that WildBlue work out an arrangement with Lee County to block the roadside ditch flow on the north side of Alico Road from Stewart Cypress Slough to Ten Mile Canal.

Risk of Flooding south of WildBlue

As mentioned above, the stormwater associated with proposed development areas within the WildBlue development will be retained in existing on-site lakes. The storage volume in the existing on-site lakes is significantly greater than the runoff volume associated with the proposed development.

Conclusion: WildBlue has appropriate stormwater storage capacity and poses very little risk of flooding south of the proposed development.



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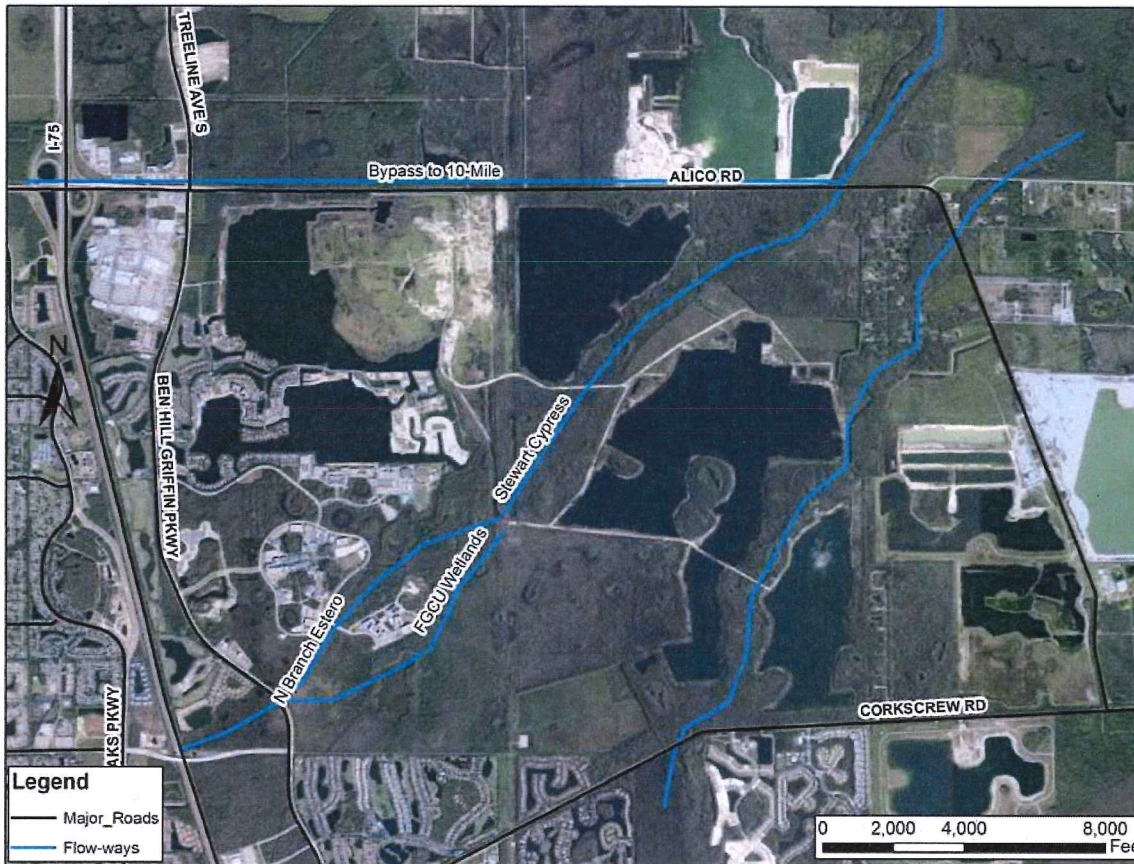


Figure 2 – Flow-ways in Vicinity of WildBlue Development

Overall Conclusion: The stormwater management plan, water use plan, restoration plans included in this proposed project represents an improvement in water resources management for the site. The site currently is not allowing sufficient conveyance to the North Branch of the Estero River that is impacting wetlands in the vicinity of FGCU. The wetland restoration plan will improve the conveyance, and the stormwater management plan for the site will effectively control peak runoff from the proposed development. Finally, the water use plan for the site will result in lower irrigation needs than the current Permitted Development. The proposed public water supply and treatment system should not result in increased groundwater demands and is believed to result in similar if not less impact than the current Permitted Development.

Please feel free to contact us should you have any questions regarding our review.

Sincerely,

Roger Copp
Associate Vice President