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**DATE:** June 29, 2015

**TO:** Mr. Michael Schenk, P.E., City Engineer, City of Plant City

**FROM:** Derek L. Doughty, P.E., Engineering Manager / Vice President, Applied Sciences

**SUBJECT:** Visions Golf Application Review Support Services – Final Technical Memo
ASCI Project No. 91504.00

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The City of Plant City (City) retained the services of Applied Sciences (Reviewer) to assist the City with the review of stormwater elements submitted in conjunction with the rezoning application of Visions Golf LLC within the Villages of Walden Lake (PB 2014-06).

## 1. Information provided by the City:

### 1.1. Plats

- Eagle Greens Condominium
- Fairway Estates Unit II
- Fairway Villas
- Fairway Villas Unit II
- Laurel Lake Condominium
- Unit 11-A
- Unit 13-A
- Unit 14
- Unit 15-A
- Unit 15-B
- Unit 17
- Unit 17 Phase 2
- Unit 18
- Unit 19
- Unit 20
- Unit 23 Plat
- Unit 24A Plat
- Unit 25-B Plat
- Unit 26
- Unit 27, Phase 1
- Unit 27, Phase 2, Section B
- Unit 28
- Unit 28, Phase 2
- Unit 29, Phase One
- Unit 29, Phase Two
- Unit 30 Plat Map
- Unit 30, Phase 1, Section A
- Unit 30, Phase 1, Section B
- Unit 30, Phase 1, Section C
- Unit 30, Phase 1, Section D
- Unit 30, Phase II, Section A
- Unit 30, Phase II, Section B
- Unit 30, Phase II, Section C
- Unit 30, Phase III, Section A
- Unit 30, Phase III, Section B
- Unit 33-1, Phase A

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- Unit 33-1, Phase B
- Unit 33-1, Phase C
- Unit 33-2, Phase B
- Unit 33-3
- Unit 33-4
- Unit 33-5
- Unit 33-6
- Unit 34/35
- Unit 36
- Unit 37, Phase Two
- Unit 41
- Unit 42

**1.2. Construction Plans/As-Builts**

- Fairway Villas Unit III, Phase I Construction Plan
- Unit 8 Construction Plan
- Unit 8 Construction Plan
- Unit 10 As-Built
- Unit 3A-3B (11A-11B) As-Built
- Unit 12 As-Built
- Unit 13 As-Built
- Unit 14 Construction Plan
- Unit 15-B As-Built
- Unit 15-B Construction Plan
- Unit 17, Phase 2 Construction Plan
- Units 18 & 19 Sanitary Sewer Profiles As-Built
- Unit 19 Water & Sewer Plan
- Unit 19 As-Built
- Units 19, 27 – Phase 3, 28 Construction Plan
- Unit 22 As-Built
- Unit 22 Site Plan
- Unit 22 As-Built
- Unit 23 Construction Plan (incomplete)
- Unit 23 Construction Plan
- Unit 24 As-Built
- Unit 25-B As-Built
- Unit 25-B Construction Plan
- Unit 25-B Stormwater Treatment Pond Improvements
- Unit 26 As-Built
- Unit 27 As-Built
- Unit 28 – Phase 2 Construction Plan
- Unit 29 Phase II As-Built
- Unit 29 Construction Plan
- Unit 30 Phase I As-Built
- Unit 30 Phase II As-Built
- Unit 30 Phase III As-Built
- Unit 33 Section 2A Construction Plan
- Unit 33 Section 2B Construction Plan
- Unit 33-1 Grading & Sidewalk Plan
- Unit 33-1 Phase I As-Built
- Unit 33-1 Phase II Construction Plan
- Unit 33-1 Phase II As-Built
- Unit 33-1 Phase III As-Built
- Unit 33-3 Construction Plan
- Unit 33-4 Construction Plan
- Unit 33-5 Construction Plan
- Unit 33-6 Construction Plan
- Unit 34/35 As-Built
- Unit 36 Construction Plan

- Unit 36 As-Built
- Unit 37 Grading Plan
- Unit 37 As-Built
- Unit 42a Building B 6-05 Construction Plan
- Unit 42 Sanitary Sewer Extension Construction Plan
- Unit 42E Construction Plan
- Unit 42 A Site Plan
- Unit 42 A Construction Plan
- Unit 42 Tract "B" Site Plan
- Unit 42 Tract B Construction Plan
- Unit 44 Sanitary Sewer Plan
- Woodfield Village Unit 3 Construction Plan
- Woodfield Village Unit II Construction Plan
- Woodfield Village Unit II As-Built
- Timberland Drive Street & Drainage & Water Plan
- Tract 55 Industrial Park Phase 2 Construction Plan
- Unit 55 Water & Sewer

### 1.3. Rezoning Application Data (PB 2014-06)

- Rezoning application
- Boundary Survey
- Wetland Survey
- Conceptual Modification
- Sketch of Proposed Zoning
- Ecological Assessment
- Environmental Statement
- Aerial/Survey Overlay
- Conceptual Site Plans
- Community Expansion Drainage Report
- Electronic AdICPR Models (Existing and Proposed
- Response, dated 5/7/15, to Questions from the City of Plant City

## 2. Information Collected by Reviewer

### 2.1. Hillsborough County Modeling

- Hillsborough County Pemberton Baker Area (PBA) Creek SWMM model (Dated 5/18/10)

## 3. Observations by Reviewer:

All stormwater information provided with the application pertaining to the planned development is conceptual/preliminary in nature. Best practices appear to have been followed. The design of the development, once complete, well ascertain the intent of no adverse impacts to adjoining properties.

The following provides observations on items with the potential to impact the adjoining properties if not properly addressed during the design and permitting process:

### 3.1. Maintenance of Offsite Drainage Patterns

(Note: For the purposes of this memo, "adjacent properties" mean properties that are adjacent to the Visions Golf LLC property but under separate ownership. "Subject property" means the property owned by Visions Golf LLC that is the subject of this rezoning.)

Portions of the adjacent properties are currently graded and drained in a manner that directs stormwater runoff towards specific locations within the subject property, such as a stormwater pipe, or to a wetland conservation area which is shared between the adjacent and subject properties. It could not be determined from the data provided if any of the rear yards of adjacent properties discharge directly to the subject property. Regardless, the drainage of the adjacent properties may be adversely impacted by alterations to portions of the subject property.

The conceptual layouts suggest that existing easements, pipes, shared wetland conservation areas, and the existing natural conveyance within the subject property are not proposed to be preserved. Several questions were posed to the applicant regarding this item and responses were provided which generally acknowledge the concerns and indicate that no adverse impacts to adjacent properties are allowable. Sufficient information must be provided, during the design process, to identify and preserve or provide alternate conveyance facilities for the offsite contributing areas and to demonstrate no adverse impact to any adjacent properties.

### 3.2. Hydrologic and Hydraulic Modeling

During the design phase, the existing and proposed conditions modeling should be detailed enough to effectively identify specific elevations at, or near, the property boundaries to be utilized for adverse impact determinations to adjacent/offsite properties. Model connectivity, storm sewer systems, natural conveyances and storage volumes should all be adequately depicted within any design calculations for those determinations to be made.

#### 3.2.1. Model Connectivity/Conveyance/Storage

During the design phase, detailed survey should be obtained to determine the current system connectivity between the adjacent properties and the on-site wetland/receiving waters, as well as the connectivity of the on-site wetland/receiving waters. Sub-basin delineations for these current conditions should be more refined to provide for the needed resolution at the lot level not currently provided using the County's watershed model. Detail pertaining to the eight (8) wetland areas on-site are an example of the additional detail which should be included. Wetland A, for example, though it has a

contiguous boundary, appears to be a flow through wetland system that may have several, varied, flood stages from east to west across the subject property.

Several questions were posed to the applicant regarding this item and responses were provided which generally acknowledged the concerns. Additional topographical data and detailed survey for more detailed modeling was stated will occur.

Accurate simulation of existing and future flood stages within the wetlands will be necessary. The flood stages within the wetlands should include the actual historic storage and be calculated appropriately for the existing condition. The proposed conditions should accurately simulate and account for the loss of historic storage associated with the loss of wetlands/other surface water storage and the changes in conveyance impacted by the development.

Proposed conditions modeling should simulate the proposed system connectivity and identify if current offsite properties drainage is to be routed around the proposed development, or into the development's proposed treatment and attenuation facilities. It should be noted that the discharge from adjacent properties should not be impeded/impacted in an adverse manner.

### 3.2.2. Ownership and Control

The model results provided depict projected stage increases within Wetland A, by 3.5" to 4.5", and within Walden Lake, by 1" to 1.5", for the design storms simulated. In addition to the need to demonstrate no adverse impacts to the adjacent properties, ownership and/or control of the entire area being proposed for any increased flood stage, must be demonstrated.

Several questions were posed to the applicant regarding this item and responses were received which generally acknowledge the concerns and indicate that the structures that are owned can be modified, others may require permission to modify, and in all cases, no adverse impacts to adjacent properties are allowable.

Ownership and control over any existing structures proposed for modification must be demonstrated. Should any structure, not expressly owned and controlled by the applicant, be proposed for modification (example: the control structure at Golfview Drive), approval from the appropriate ownership entity will be required as a condition of the design approval. Should any increases in flood stage propagate beyond the controlled property (Example: Increase in stages within Wetland A would, based upon the wetland survey, appear to propagate north along W. Timberlane Drive and west into Walden Lake Unit 27, Phase 2, Section A and Walden Lake Unit 28), then control of all areas proposed for any increased stage and acceptance of the increased flood risks

associated with those increases in flood stages must also be provided as a condition of design approval.

### 3.3. Wetland and/or Surface Water Impacts

Wetlands and surface waters impacted by the proposed development will need to follow the Hillsborough County Environmental Protection Commission (EPC), Southwest Florida Water Management District (SWFWMD), and the US Army Corps of Engineers (ACOE) regulatory guidelines, as well as those associated with any other regulatory agency having jurisdiction, with respect to avoidance, elimination, reduction of and mitigation for wetland and surface water impacts.

Several questions were posed to the applicant regarding wetland impacts. Responses were provided which generally acknowledge the concern and speak to the need for compliance with the current rules and regulations of the applicable agencies. On-site wetland creation or purchase of credits from an approved mitigation bank were noted as potential avenues.

### 3.4. Water Quality

Adequate treatment volumes must be provided within the subject property to provide treatment for the entire project area and all contributing off-site flows. The designer should be aware that additional treatment may be required for offsite contributing drainage should those waters be routed through the proposed facilities. In addition, SWFWMD requires net environmental improvement must be shown as the receiving waters are identified as being impaired.