



Public Works Department  
155 N. Wilson Avenue, Cocoa, FL 32922  
Phone: (321) 433-8770 | Fax: (321) 504-0922

Mr. Edward Jones  
125 Grace Avenue  
Cocoa, FL 32922

RE: 1685 Adamson Rd Property

Dear Mr. Jones,

This correspondence is in response to your concerns regarding flooding impacts to your 1685 Adamson Road property expressed at the Planning and Zoning meeting on June 5, 2019. The Engineer on Record for the Adamson Creek Planned Unit Development has performed an additional analysis at the City's request. Attached please find the signed and sealed copy of the results indicating that your property will not be adversely impacted by stormwater runoff. If you have any questions, feel free to contact this office or the Engineer on Record.

Sincerely,

Ed Wegerif, P.E.

Public Works Director

cc: Dorothy (Dodie) Selig, AICP (with Report)  
Matthew Fuhrer, Assistant City Manager

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Consulting ~ Engineering ~ Land Surveying

Scott M. Glaubitz, P.E., P.L.S.  
President

Hassan Kamal, P.E.  
Vice President

***Memorandum:***

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**DATE:** July 9, 2019  
**TO:** Everett J. Wegerif, P.E., Public Works Director, City of Cocoa  
**FROM:** Kenneth Ludwa, P.E.  
**Re:** *Adamson Creek Phase 1B*  
*Rear Lot Fill Slopes – Drainage Analysis*  
*BSE #11453*

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This memorandum is provided to address the following condition in the June 2019 Preliminary and Final Subdivision Approval for Adamson Creek Phase 1B:

- (5) Developer will provide a solution that is approved by the City Engineer which can demonstrate that the drainage would not impact the adjoining property (Mr. Ed Jones), prior to recording of the Final Subdivision Plat

The June 2005 PUD approval for Adamson Creek included a similar condition.

Mr. Jones' property (Parcel 263) is bordered on the east, west, and south sides by the Adamson Creek subdivision (lots and a stormwater retention area). Parcel 256, north of Parcel 263, is owned by OPM-USA, Inc. (telecommunications facility and wetlands).

The lots adjacent to Parcel 263 are Type A lots (rear-to-front drainage), meaning that all runoff is contained and handled within the subdivision's drainage system, except for the rear  $\pm 20$  feet of each lot, per the construction plans and as-built survey. This "rear lot fill slope" is necessary to transition from existing grade at the property line up to the final (filled) grade at the back of the lots. There will be no impervious area on the fill slopes.

The Public Works Director has directed the applicant to provide an analysis to demonstrate one of the following:

- If rear lot slopes are allowed to flow onto the outparcel, prove that there was flow previously into the outparcel and demonstrate that the natural passage of water has not been altered in a way that could negatively impact the land, or
- Intercept the flow and direct it to an outfall lower in elevation than the outparcel, with easements dedicated to address drainage.

This analysis is intended to address the first option above.

### **Pre-Development Drainage**

Based on available topographic information,  $\pm 1.83$  acres of the Adamson Creek property originally drained to Parcel 263, which then drains northward to an existing wetland spanning Parcel 263 and Parcel 256. The wetland then flows westward back through the Adamson Creek property, in turn flowing to a swale, and finally reaching the ditch on Adamson Road. Refer to attached topographic surveys and Pre-Development Basin Map showing elevations on Adamson Creek property surrounding the outparcel (el.  $\pm 22.0 - 22.5$ ) and in the wetland (el.  $\pm 21.0$ ). Also refer to attached Construction Plans for the Telecommunications Facility at 1695 Adamson Road showing elevations in the wetland (el.  $\pm 21.0 - 21.5$ ).

A dirt roadway is situated on the west side of Parcel 263 and Parcel 256. Wetlands are located on both sides of the road. Based on historical aerial photographs, the roadway was constructed in 2005. Although the roadway resulted in fill impacts in the wetland, the SJRWMD website shows no permits were issued. A field investigation on June 28, 2019 identified a 12" culvert under the road near the northwest corner of Parcel 263. An additional 12" culvert is located under the road  $\pm 240$  feet north on Parcel 256. This provides at least two flow paths from Parcel 263 through the wetland continuing west under the road.

The pre-development peak flow from the 25-year, 24-hour storm is **5.58 cfs** based on the following parameters:

- Area = 1.83 acres
- Land Use = Brush/Poor
- Soil Type = D
- Curve Number = 83
- Time of Concentration = 36 minutes (refer to attached TR-55 TC calculations).

These parameters are consistent with the original approved drainage report.

Refer to attached ICPR input/output summary pages for flow calculations.

### **Post-Development Drainage**

Under developed conditions,  $\pm 0.78$  acres of rear lot fill slopes drain to the outparcel. Runoff will be evenly distributed and unconcentrated. The post-development peak flow from the mean annual storm is **4.65 cfs** based on the following parameters:

- Area = 0.78 acres
- Land Use = Open Space/Grass

- Soil Type = D
- Curve Number = 80
- Time of Concentration = 1.14 minutes. This is the TC calculated by TR-55, based on slope and vegetation; see attached TR-55 TC calculations. For flow calculations, TR-55 uses a minimum TC of 6 minutes. For reference, FDOT specifies a minimum TC of 10 minutes. The attached ICPR4 calculations use the program's allowable minimum TC of 2 minutes.

These parameters are consistent with the original approved drainage report. Note that the curve number is conservative, as onsite soils have dual soil type B/D and would be expected to retain more runoff with improved drainage under post-development conditions.

Construction of the Adamson Creek subdivision will have no impact on the existing drainage path from the outparcel through the wetland to Adamson Road.

### Summary

This analysis demonstrates the following:

- The post-development area of lot backslopes draining to the outparcel will be less than the pre-development area originally draining onto the outparcel.
- The post-development flow onto the outparcels will be unconcentrated and less than the pre-development flow.
- The existing drainage path will be maintained downstream of the outparcel, through the wetland flowing through the Adamson Creek subdivision to Adamson Road.

A circular stamp, likely a professional seal, is partially visible. Overlaid on it is a handwritten signature in blue ink, which appears to be 'KAL'. Below the signature, the date '7/15/19' is handwritten in blue ink.