

## Appendix E

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References

## REFERENCES

- City of Dade City Master Plan Report for Storm Drainage Facilities (Michaels Engineering Co., September 1965)
- City of Dade City Agenda Memo, Re: 14741 10<sup>th</sup> Avenue Hazardous Mitigation Grant Program (January 19, 2006)
- City of Dade City Stormwater Drainage GIS Coverage (January 2011)
- City of Dade City National Pollutant Discharge Elimination System MS4 Permit (FDEP, December 1, 2011)
- City of Dade City Ordinance 2008-0989 Stormwater Design Criteria for Drainage Basins of Special Concern (October 2000)
- City of Dade City Land Development Code, Section 8.06 Stormwater Management (2011)
- City of Dade City Comprehensive Plan – Infrastructure Element Stormwater Drainage Sub element (May 8, 2001)
- City of Dade City Rails to Trails Construction Drawings
- Duck Lake Stormwater Management Master Plan (Water and Air Research, Inc., December 1987)
- Environmental Resource Permit Stormwater Quality Applicant's Handbook (March 2010 Draft) (FDEP & Water Management Districts)
- Evaluation of Current Stormwater Design Criteria within the State of Florida (Environmental Research & Design, Inc., June 2007)
- FDOT Project 1413-101 Drainage Maps (1954)
- FDOT Project As-Builts, Project 403727 (2007)
- FEMA Flood Insurance Rate Map, #120231 Panels 5, 10, 15 (August, 1981) and Panels 280, 285 for #120230 (March, 1984)
- Florida League of Cities, Inc., Public Risk Services, Re: Property Loss Notice, 37204 Oak Court (August 8, 2010)
- Specific Purpose Survey, Downtown Area, Simmons & Beall, Inc., (February-August, 2011)
- SWFWMD GIS Files (April 2007)
- Total Maximum Daily Load (TMDL) for Nutrients, Biochemical Oxygen Demand and Dissolved Oxygen in the Dade City Canal (WBID1399) (USEPA, March 2007)
- Water Segment Assessment Dade City Canal (WBID 1399), Withlacoochee River Basin (Group 4) Upper Withlacoochee Planning Unit, Pasco County, Florida (July 2011)
- Alternatives Analysis, City of Dade City, Tuskegee/Ferguson Retention Pond, URS Corporation, Tampa, Florida (March 2011)

## Appendix F

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Dade City 14<sup>th</sup> Street Wetland Evaluation

## Inter-Office Memorandum

To: Tim Kelly  
From: Karen Warner  
Date: October 10, 2011  
Re: Dade City 14<sup>th</sup> Street Wetland Evaluation

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A Site evaluation was recently performed on the Dade City property located east of 14<sup>th</sup> Street, and north of the public school property at Martin Luther King Blvd. The site evaluation was conducted on September 13, 2011, and was limited to the northern forested portion of the property separated from public school grounds by chain-link fence. The evaluation area consists of forested wetlands and upland communities, with two lateral east-west ditches influencing drainage. One of the ditches is situated at the far northern extent of the property and the other crosses at the southern third of the site mostly within an existing cleared and maintained utility easement (**Figure 1**).

### Background

Review of historic aerials from the 1940s indicates a large deep marsh previously occupied a portion of the project site and beyond (**Figure 2**). The marsh appears to have possibly been historically isolated, though ditching observed in these early photographs renders this difficult to confirm with certainty. The historic marsh was fragmented by 14<sup>th</sup> Street, and later further drained by the construction of drainage conveyances (ditches) maintained over time as observed on-site. Though severely altered and drained, wetlands remain at the northwest portion of the site within the former extent of historic marsh and within the corresponding topographic contours of the historic wetland (**Figure 3**). Other jurisdictional wetland communities exist on-site extending outward from this area (toward the east and south), though the extent of these wetlands is likely reduced due to lack of sufficient hydrology.

The purpose of the site evaluation was to assess the potential for self-mitigating hydrologic enhancement of wetlands by increasing water stage and storage capacity on-site. An assessment of wetland functions was performed for wetland communities on-site in accordance with the Florida Uniform Mitigation Assessment Methodology (UMAM). Each of these wetland communities are described below:

### Wetland Community W1

This wetland community is greatly dominated in the canopy by sweetgum (*Liquidambar styraciflua*), a canopy species with a wetland indicator status of facultative wet. However, the subcanopy and shrub layers have begun to colonize with mesic and upland species. There are no hydrologic indicators above the ground surface in these wetland communities, though the dominating upper stratum combined with dark surface hydric soils define wetland jurisdiction for these areas.

## **Wetland Community W2**

This wetland community comprises the lowest topographic elevations at the northwest portion of the site, coincident with the historic herbaceous marsh shown in historic aerials. The historic wetland was drained in this portion of the site and likely began to colonize with hydrophytic early successional shrub species such as Carolina willow (*Salix caroliniana*). Over time and with further prolonged drainage, mesic facultative-wet canopy species have colonized and matured in this area. These species have been successful in outcompeting hydrophytic species such as Carolina willow due to shading, severely reduced hydroperiod, and exposed roots resulting from soil oxidation.

## **Recommendations and Constraints**

Existing conditions UMAM evaluation scoring sheets are attached to this memorandum for the wetland communities described above. Post-construction scenario comparisons can be performed once project design for wetland impacts and enhancement are known. Wetland community 2 likely has the greatest potential for hydrologic enhancement with increased stage and storage of surface waters. However, untreated urban runoff currently drains into this wetland system, and may require some pre-treatment to gain sufficient mitigation value to offset the partial canopy losses that would result from increased water levels. Though canopy habitat losses (impacts) would be expected, over time, this would still result in enhanced and partially restored wetland functions. Time lag necessary to realize these functional gains may substantially reduce the mitigation value realized though. A pre-application meeting with the regulatory agencies exercising jurisdiction over these issues to confirm efficacy for mitigation is recommended prior to commencing extensive design work.

Potential for stormwater retention areas also exist in other upland portions of the project, though at higher site elevations that would require substantial excavation and regrading. Stormwater retention combined with created wetlands aligned along existing stormwater conveyances would provide storage and mitigation potential as well as additional treatment opportunities of urban runoff. Though all these options would likely be considered by State regulatory authorities, the US Army Corps of Engineers has undergone a regulatory shift encouraging mitigation bank credit purchase over on-site mitigation to offset wetland impacts, which may pose difficulties for the project unless it can be agreed upon as restoration in lieu of stormwater retrofit. It is also recommended that local tree ordinances be consulted (if they exist) in consideration of any plans to clear or regrade the property to understand associated limitations and potential project costs.

## **Survey Request for Hydrologic Indicators**

Wetland indicators above the ground surface were geographically limited to wetland community 2 described above. Hydrologic indicators were not obvious in this wetland due to lack of regular and seasonally prolonged inundation. Regular stain lines were discernably absent, as were other repeatably observed indicators such as clear breaks in lichen lines or adventitious roots. Two (2) nails were set indicating the height of the lowest lichen observed on two trees near the northern edge of wetland community 2. Survey of nail elevations is requested for flagged field locations at each of these two nails. Both locations are on flagged trees just inside the northern wetland

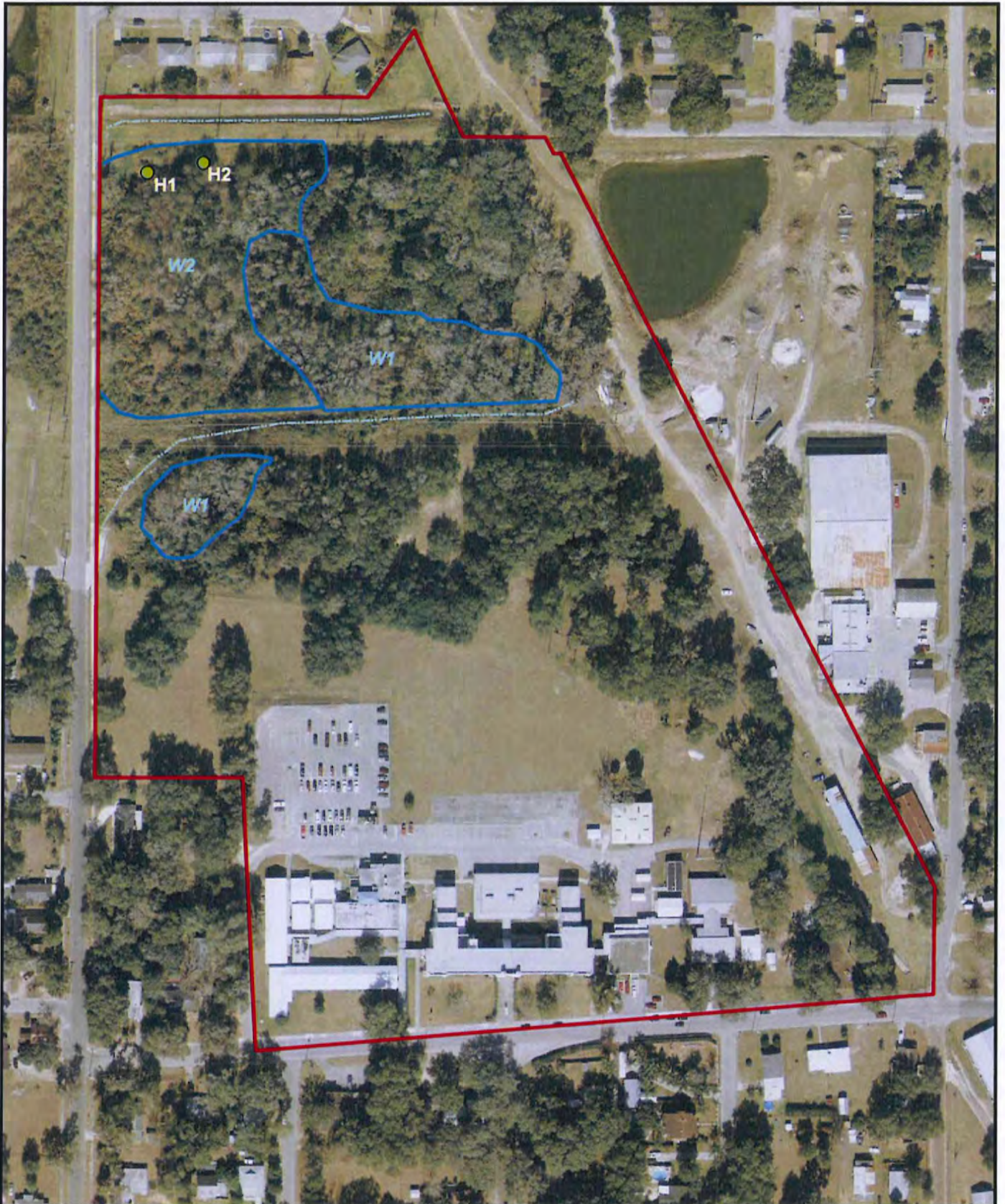
tree line south of and between the first two power poles closet to 14<sup>th</sup> Street (approximated on **Figure 1**). The first of these poles is concrete and the second is wooden. Care should be taken in use of these elevations as the design wetland seasonal high elevation, particularly due to the lack of trend observation and reliability with the indicators. At this early conceptual stage, it may be advantageous to install a water level recorder for a more accurate understanding of the wetland hydroperiod. Such a well can be installed by in-house staff, with automatic datalogger and barallogger deployed to record water levels.

Hydro-nail Descriptions

H1 – lowest lichen on laurel oak (*Quercus laurifolia*);

H2 – lowest lichen on red maple (*Acer rubrum*).

enclosure



#### Notes:

- 1- Project No.: 19545
- 2- Data Source -  
2010 DOQQ Aerial Imagery
- 3- This map is intended to be  
used for planning purposes  
only. It is not a survey.

#### Explanation of Features



Project Area



Preliminary Wetland

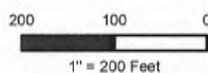
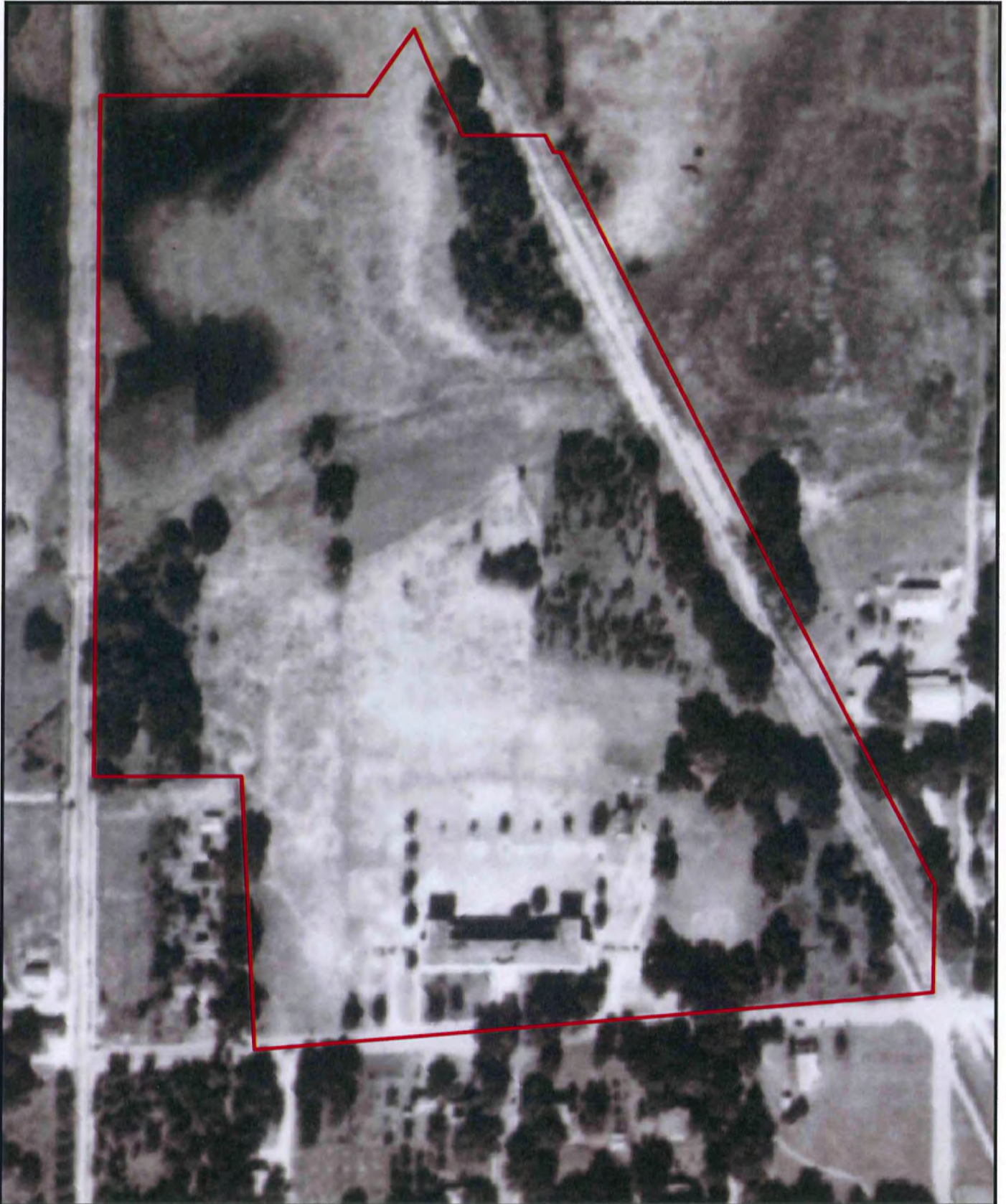


Figure 1  
Dade City  
14th Street Parcel  
Preliminary Wetlands Evaluation



AMEC - 2000 E. Edgewood Drive Ste #215 - Lakeland, FL 33803 - EB-0007867 - (863) 667-2346



**Notes:**

- 1- Project No.: 19545
- 2- Data Source -  
Aerial flown 1941
- 3- This map is intended to be  
used for planning purposes  
only. It is not a survey.

**Explanation of Features**



Project Area

200 100 0

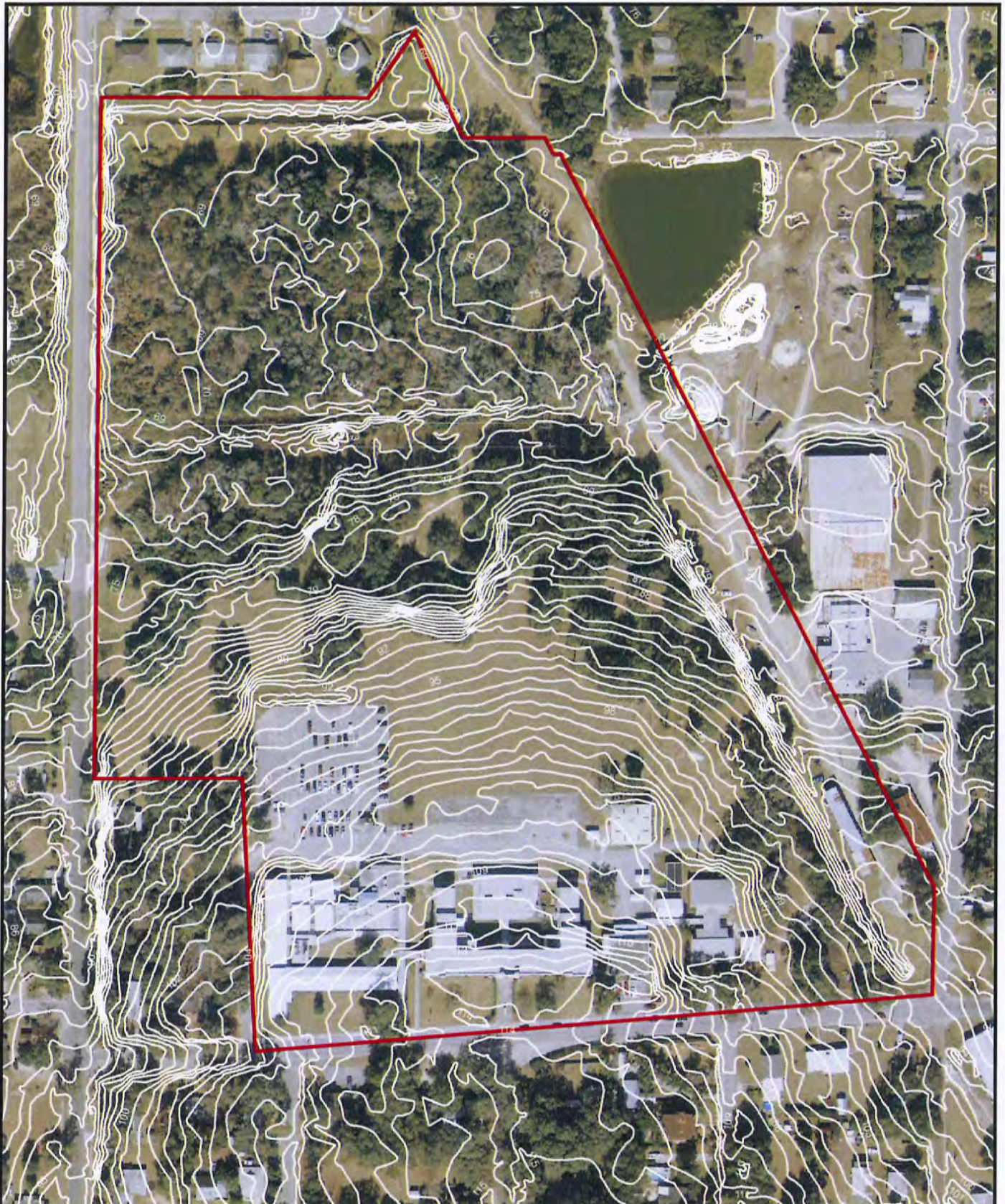


1" = 200 Feet

Figure 2  
Dade City  
14th Street Parcel  
Historic Aerial



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#### Notes:

- 1- Project No.: 19545
- 2- Data Source -  
2010 DOQQ Aerial Imagery  
2R Topographic Contours
- 3- This map is intended to be  
used for planning purposes  
only. It is not a survey.

#### Explanation of Features



Project Area

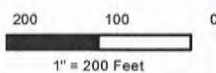


Figure 3  
Dade City  
14th Street Parcel  
Topography



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**PART II – Quantification of Assessment Area (impact or mitigation)**  
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name <i>Dade City 14th St</i>	Application Number	Assessment Area Name or Number <i>W-1 (SPECTUM)</i>
Impact or Mitigation	Assessment conducted by: <i>FL/KW</i>	Assessment date: <i>9/13/11</i>

**Scoring Guidance**  
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

<p>.500(6)(a) Location and Landscape Support</p> <p>w/o pres or current <input type="checkbox"/> <b>4</b> <input type="checkbox"/> with</p>	<p>Surrounded by roads and urban land uses. Moderate cover strawberry guava and potatoe vines severe coverage adjacent areas. Downstream large ditch limits fish migration but wildlife has access. AA isolated by land use and clearing. Connectivity altered due to ditching, pumping &amp; other control structures. Discharges provide little to no downstream benefits.</p>
<p>.500(6)(b) Water Environment (n/a for uplands)</p> <p>w/o pres or current <input type="checkbox"/> <b>7</b> <input type="checkbox"/> with</p>	<p>Wetland has adapted to local alterations and hydrology has been lowered slightly as a result. Indications are consistent with wetland type and as such are likely at or below surface. Soils drier than expected during wet season. Fire frequency suppressed by urbanization although not expected in wetland. Cherry laurel checking monoculture in both shrub &amp; canopy layers. Heavy competition and recruitment due to lowered hydrology is showing in vegetative community. Animal presence &amp; evidence of such is appropriate. Unchecked urban runoff &amp; trash &amp; sedimentation affects water quality, obvious filling, ditching, and alteration prove no land management.</p>
<p>.500(6)(c) Community structure</p> <p>1. Vegetation and/or 2. Benthic Community</p> <p>w/o pres or current <input type="checkbox"/> <b>5</b> <input type="checkbox"/> with</p>	<p>Sp. community largely comprised of inappropriate veg in all stratum. Invasive exotic community present and posing nuisance. Sources surround AA. Little evidence of appropriate regeneration. Age distribution inappropriate - large mature &amp; over competing nuisance. Slightly increased biomass. Condition of vegetation acceptable. Snags dense &amp; cavities slightly less than expected. Filling &amp; ditching changed surround immediate topo.</p>

Score = sum of above scores/30 (if uplands, divide by 20)

current ☐ **16** ☐ or w/o pres with

If preservation as mitigation,

Preservation adjustment factor =

Adjusted mitigation delta =

For impact assessment areas

FL = delta x acres =

Delta = [with-current]

If mitigation

Time lag (t-factor) =

Risk factor =

For mitigation assessment areas

RFG = delta/(t-factor x risk) =

**PART II – Quantification of Assessment Area (impact or mitigation)**  
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name <i>Dade City 14th St</i>	Application Number	Assessment Area Name or Number <i>WZ - mixed <sup>drained</sup> hardwood wetland</i>
Impact or Mitigation	Assessment conducted by: <i>KW/JL</i>	Assessment date: <i>9/13/11</i>

**Scoring Guidance**  
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

<p><b>.500(6)(a) Location and Landscape Support</b></p> <p>w/o pres or current <input type="checkbox"/> with <input type="checkbox"/></p> <p><i>4</i></p>	<p>Surrounded by roads &amp; urban uses, some climbing fern on edges, severe to moderate vine coverage in adjacent uplands. Downstream movement precluded, bankstream-benefits reduced due to drainage. Lack of retention time, outside landscape contributes trash, controlled substances, hydro connectivity altered due to ditching, pumping, other structures, little to no downstream dependency.</p>
<p><b>.500(6)(b) Water Environment (n/a for uplands)</b></p> <p>w/o pres or current <input type="checkbox"/> with <input type="checkbox"/></p> <p><i>5</i></p>	<p>Water levels lower than appropriate, obvious subsidence. Minimal indicators of hydrology. Water level indicators faint, not distinct indicating not regularly &amp; sufficiently inundated to appropriate levels. Not inundated during wet season. <sup>Abandoned</sup></p> <p>Urban suppression of fire, though not typically expected in wetland, most strata veg appropriate though understory absent &amp; somewhat. Substantial hydrologic stress shown in exposed roots, fallen dead cordia willow. Less than expected hydrophytic wildlife utilization. Species tolerant of degradation. Water quality urban untreated runoff, trash, etc.</p>
<p><b>.500(6)(c) Community structure</b></p> <p>1. Vegetation and/or 2. Benthic Community</p> <p>w/o pres or current <input type="checkbox"/> with <input type="checkbox"/></p> <p><i>6</i></p>	<p>Appropriate species, though understory absent. Very little invasives, though present in adjacent community, minimal appropriate distributed. Dying cordia willow &amp; stressed trees due to reduced hydrology. Some ditching &amp; drainage. Some hummocks, subsiding, reduced topographic variability, should be more hummocks.</p>

Score = sum of above scores/30 (if uplands, divide by 20)

current ☐ or w/o pres ☐ with ☐

*15*

If preservation as mitigation,

Preservation adjustment factor =

Adjusted mitigation delta =

For impact assessment areas

FL = delta x acres =

Delta = [with-current]

If mitigation

Time lag (t-factor) =

Risk factor =

For mitigation assessment areas

RFG = delta/(t-factor x risk) =

**Corporate Office**  
2000 East Edgewood Drive  
Suite 215  
Lakeland, Florida 33803  
1.877.550.4224

