

I-4 Corridor

Environmental Assessment

May 25, 2021

Prepared for:

Hillsborough County Board of County Commissioners

Prepared by:

Stantec Consulting Services Inc.

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SUMMARY OF CONDITIONS

This environmental assessment has been prepared to characterize existing environmental baseline conditions along the I-4 corridor by scoring the relative sensitivity of environmental characteristics. For the context of this assessment, we used the term Sensitivity to reflect the relative degree to which an area might be altered from a natural baseline condition or the relative degree to which development might affect the subject or surrounding properties. We selected eight (8) public-source datasets with compete coverage of the study area and that reflected existing environmental characteristics with a nexus to the design or permitting of the concepts considered by previous studies for this assessment.

- FWC Commission Cooperative Land Cover
- Hillsborough County Upland Significant Wildlife Habitat
- FEMA Flood Zones
- Hillsborough County Peak Sensitive Basins
- Hillsborough County Volume Sensitive Basins
- Florida Department of Environmental Protection Impaired Waterways
- Hillsborough County Historic Waste Disposal Sites
- Hillsborough County Wellhead Resource Protection Areas

The study area for this analysis was some 32,894 acres. Areas scored as Less or Least Sensitive comprised 26,341 acres (80% of the study area) and were generally upland areas with developed or agricultural land uses and located in Flood Zone X. Of this acreage, 10,686 acres (33% of the study area) were located outside of areas mapped as previously developed. These undeveloped areas of lesser sensitivity are generally in the northwestern corner of the study area and within a mosaic of agricultural and developed lands within the eastern half of the study area.

Areas scored as Somewhat or More Sensitive were generally in areas where Natural Wetland Communities, FEMA Flood Zones, and Peak or Volume Sensitive Areas overlapped. These areas comprised a combined 5,336 acres (16%) of the study area, with all but 4 acres of these lands outside of existing developed areas.

Areas scored as having potential Disqualifying Sensitivity were associated with FEMA Floodways and Historic Waste Disposal Sites. These areas comprised 1,217 acres (4%) of the study area, with 956 acres (3% of the study area) outside of existing developed areas. A total of 772.9 acres (2.3% of the study area) was in the Floodway. Historic Waste Disposal Sites total approximately 444.9 acres (1%) of the study area.

Detailed summaries of the extent of each environmental characteristic are provided in Section 3.0 of this report.



INTRODUCTION

1.0 INTRODUCTION

The Interstate 4 (I-4) corridor in eastern Hillsborough County has long been the subject of analysis and debate regarding its economic development potential. To date, lands along I-4 outside of the Urban Service Area (USA) have not experienced the level of development seen in other areas of the county. In 2009, the Hillsborough County Planning and Growth Management Department and Hillsborough County City/County Planning Commission prepared an *I-4 Economic Corridor Study* to study economic development opportunities within the corridor. More recently, the BOCC commissioned the Urban Land Institute to assess and provide recommendations regarding *Strategies for Sustainable Land Use and Development* (2017) for the corridor. In its report, the ULI panel made the following recommendation.

The panel's major recommendation is to hold the line throughout the county and take a phased approach to accommodate this new growth with density....However, the (USA) boundary will need to be revisited and reevaluated on a regular basis to decide how it might need to move to accommodate future growth. But this revision must be done in a planned way, which is described in greater detail throughout this report.

The 2045 Long Range Transportation Plan's hybrid growth scenario also identified this area as potential growth area. Hillsborough County (2009) and ULI (2017) identified the need for consideration of existing land uses and environmental conditions as part of the process to consider and recommend economic development alternatives. However, the scopes of those exercises allowed only cursory consideration of and presented only very general information on these factors. The intent of this effort is to provide more details relating to the sensitivity of environmental systems in the area.

The ULI report and the 2045 Long Range Transportation Plan's hybrid growth scenario identified lands within the I-4 corridor as potential growth areas. Any planning exercise or policy debate regarding future development within the corridor will necessarily be multidisciplinary and have to consider a variety of site conditions, e.g., environmental characteristics and sensitivity, regional drainage systems, availability of supporting infrastructure, and economic and market factors, both within and competing with the study area. This environmental assessment has been prepared to characterize existing environmental baseline conditions by identifying and scoring a suite of environmental conditions or characteristics with a nexus to land planning and development processes.

The analysis and results presented here are intended to illustrate individually and collectively the relative potential sensitivity to development from the suite of environmental conditions or characteristics examined. For the context of this analysis, we used the term sensitive or sensitivity to reflect the relative degree to which development might alter an area's natural or existing baseline condition. For example, an undisturbed natural wetland would be more sensitive to development than a previously cleared upland parcel. Additionally, we used the term sensitive or sensitivity to reflect the relative degree to which development might affect to surrounding properties, for example as by flooding, if appropriate design or regulatory solutions were not available to avoid or ameliorate the potential effect.



INTRODUCTION

The analysis was conducted using geospatial datasets obtained from a number of public sources and is not intended to preclude site-specific investigation before decisions are made regarding a particular area or parcel. We also considered but did not include some datasets, e.g., propensity for sinkhole development and the need for wildlife passage structures under major roadways, that may be relevant in some planning contexts but were not deemed appropriate for the current analysis. Because a number of policy, regulatory and design solutions may be available to address and offset potential environmental effects of proposed development, it was not appropriate for this study to identify a particular area or parcel as suitable or preferred for development. It is anticipated that the results of this assessment will be considered with the results of parallel analyses of other planning considerations to further guide discussions and decisions regarding future development within the I-4 corridor.



2.0 METHODS

2.1 DATA SELECTION

For this analysis, Stantec obtained data from a number of agencies and public sources. We prioritized acquisition of public-source datasets that had complete coverage of the study area and that reflected existing environmental conditions and/or sensitivity with a nexus to the design or permitting of concepts previously studied by Hillsborough County (2009) and ULI (2017). Sources of datasets for use in the analysis, included but were not limited to, the Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Environmental Protection (FDEP), Federal Emergency Management Agency (FEMA), Southwest Florida Water Management District (SWFWMD), and Hillsborough County. Our team did not edit or geoprocess any of the datasets prior to analysis.

Following dataset acquisition, we used a geographic information system (GIS) for review and analysis. Stantec technical leads and geospatial analysts reviewed suites of datasets for overlap or redundancy and selected datasets best suited for analysis.

As an example, several datasets considered provide information regarding existing native habitats and land cover conditions. These included the FWC Cooperative Land Cover (CLC), SWFWMD Florida Land Use Cover and Classification System (FLUCCS) (FDOT 1999), Natural Resources Conservation Service (NRCS) Soils, and U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) datasets. We rejected NRCS Soils because mapped soil units allow inference of upland or wetland status but do not provide actual native habitat or land cover information. We rejected USFWS NWI because the dataset does not provide information on upland areas and because wetland features mapped by NWI are also included in both the CLC and FLUCCS. We selected the CLC for analysis over FLUCCS because the CLC is increasingly used by state agencies for environmental mapping and modeling efforts.

Of some 48 datasets considered, we selected the following datasets to best characterize the existing conditions and sensitivity to development within the study area.

- FWC Commission Cooperative Land Cover
- Hillsborough County Upland Significant Wildlife Habitat
- FEMA Flood Zones
- Hillsborough County Peak Sensitive Basins
- Hillsborough County Volume Sensitive Basins
- Florida Department of Environmental Protection Impaired Waterways
- Hillsborough County Historic Waste Disposal Sites
- Hillsborough County Wellhead Resource Protection Areas

We discuss the rationale for selection, scoring and weighting of each dataset in Section 3 of this report.



2.2 GEOSPATIAL ANALYSIS

2.2.1 Analysis Overview

We used a weighted overlay analysis to score and map each evaluation criterion and then to combine mathematically the weighted scores for all criteria into a weighted overlay analysis score. In the following sections, we outline the workflow used to assign the contents of each dataset scores used in the analysis and to prepare the datasets for spatial analysis.

2.2.2 Preliminary Scoring

Prior to preliminary scoring, we first clipped each dataset to the study area boundary to reduce files sizes and eliminate anything outside of the project study area. For this assessment, we selected a study area boundary that we felt would capture regional characteristics and conditions that might extend beyond the areas evaluated by Hillsborough County (2009) and ULI (2017). We selected study area boundaries comprised by the Tampa Bypass Canal on the west, an east to west line generally aligned with West Sam Allen and Thonotasassa Roads on the north, Highway 39 on the east, and Highway 574 on the south. **Appendix B Map 1** illustrates the boundary of the study area.

We assigned a preliminary score to each polygon of each dataset to indicate a relative level of potential sensitivity to development. We used a range from 1 to 5 to score each dataset and ordered the scoring so that an increase in the score's value indicated an increase in sensitivity to development. As suggested by our earlier examples, scores indicating a greater relative sensitivity were intended to reflect areas that could be expected to experience more negative effects from development or more restrictive regulatory permitting requirements when compared to areas of lesser sensitivity. Scores indicating a potentially disqualifying sensitivity were intended to identify areas that might be prohibitive for development, for example, areas within designated FEMA floodways. This approach created analysis output in which a higher score indicated higher sensitivity to development.

Table 2-1 summarizes the scoring scheme. For datasets indicating that a given area met or did not meet the evaluation criterion, e.g., in or out of the A or AE flood zone, we scored areas not meeting the criterion as 1 and those meeting the criterion as 5. For datasets, such as CLC which reflect a continuum of sensitivity, we used the full range of scores from 1 to 5.



Score	Description	
1	Least Sensitive to Development	
2	Less Sensitive to Development	
3	Somewhat Sensitive to Development	
4	More Sensitive to Development	
5	Most Sensitive to Development	
DQ	Disqualifying Sensitivity to Development	

Table 2-1Preliminary Scoring Scheme

After definition and initial scoring of each dataset, we used a sequence of geoprocessing tools to prepare the data for the weighted overlay analysis.

We first used the union geoprocessing tool to create complete data coverage for any dataset that mapped only portions of the study area. This occurred in a number of datasets that mapped only areas meeting a particular criterion but not the remainder of the study area. For example, **Figure 2-1** illustrates a dataset indicating Peak Sensitive Areas and where Union Geoprocessing was used to define areas that were conversely not within Peak Sensitive Areas. After use of the union geoprocessing tool, existing polygons within the mapped characteristic were scored as a 5, and the new polygons created outside of these areas were ranked as a 1.



METHODS

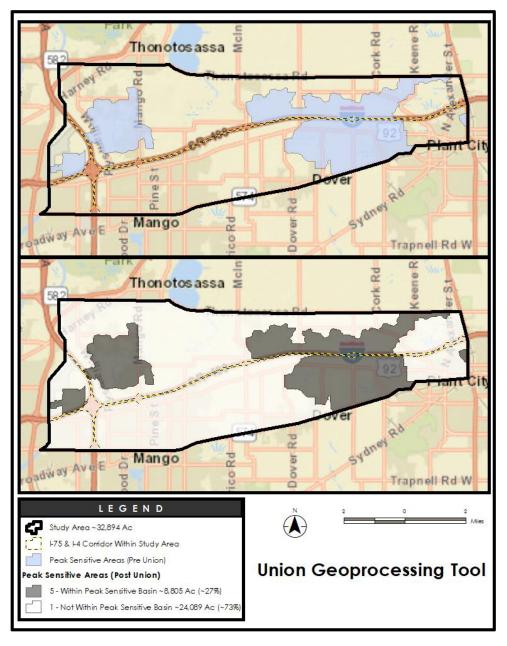


Figure 2-1 Union Geoprocessing Results for Peak Sensitive Areas

The top image illustrates the Peak Sensitive Areas prior to the union process. The union tool was used to create polygons outside of the Peak Sensitive Areas, reflected in the bottom image by the grey shading



We used the output from the union process for each dataset as the foundation for creating the rasters needed to perform the weighted overlay analysis. We ran a series of analysis tools to convert the vector polygon features into rasters with a consistent cell size and extent. We then converted the rasters to an integer format, as required by the overlay analysis toolset.

Our workflow resulted in a properly formatted raster for each of our selected features with a consistent cell size of 5 feet. Each resulting cell contained the value of our environmental sensitivity scoring, which was then used by the weighted overlay tool during its calculations.

2.2.3 Weighting

After the individual polygons were ranked based on their sensitivity to development, we assigned a percentage weight to each dataset. The datasets selected for our analysis were placed into three groups and assigned percentage weights based on the nature of the sensitivity and the potential affect from development. The rationales for assigned percentage weights are discussed in Section 3.

- Group 1
 - o 35% Cooperative Land Cover
 - o 10% Upland Significant Wildlife Habitat
- Group 2
 - 15% Flood Zones
 - o 15% Peak Sensitive Basins
 - o 15% Volume Sensitive Basins
- Group 3
 - o 3% Impaired Waterways
 - o 5% Historic Waste Disposal Sites
 - o 2% Wellhead Resource Protection Areas

2.2.4 Weighted Overlay Analysis

We used a weighted overlay analysis to calculate a weighted overlay analysis score for the study area which reflected the combined the scores from the eight datasets analyzed into a single score.

The weighted overlay analysis tool used the individual raster sensitivity scores and dataset percentage weights to perform a series of calculations on the individual rasters within each dataset. During the overlay analysis, the sensitivity scores for the individual rasters were multiplied by the dataset's percentage weight. The weighted score values from the rasters of the analyzed datasets were then added together if they overlap and rounded to the nearest whole number to arrive at a final weighted overlay analysis result score. The final output from the weighted overlay analysis was a single raster whose value represents the final weighted score value. If a single raster had a Disqualifying Sensitivity score of DQ, the final ranked value for that raster received the disqualifying score in the weighted overlay analysis' output raster. **Table 2-2** and **Table 2-3** are examples of the math used to arrive at a final weighted



overlay analysis score for individual raster. Section 3 details the scoring and percentage weighting rational for each analyzed dataset.

Table 2-2 Weighted Overlay Analysis Example 1

Individual Raster (Ranked 0-5)					
Analysis Layers	Base Rank	Multiply by Weight	Final Ranked Value		
х	2	0.4	0.8		
Y	4	0.3	1.2		
Z	3	0.3	0.9		
Weighted Overlay	3				

Table 2-3 Weighted Overlay Analysis Example 2

Individual Rasters (Ranked 0-5)				
Analysis Layers	Base Rank	Multiply by Weight	Final Ranked Value	
х	DQ	DQ	DQ	
Υ	4	0.3	1.2	
Z	3	0.3	0.9	
Weighted Overlay	DQ			



3.0 DATASET RATIONALE, SCORING, AND RESULTS

3.1 COOPERATIVE LAND COVER

3.1.1 Rationale

We selected the Florida Cooperative Land Cover (CLC) as the land cover dataset for this analysis. The CLC is a statewide ecologically based land cover map created in partnership between the FWC and the Florida Natural Areas Inventory (FNAI). We selected the CLC over similar datasets, such as the SWFWMD FLUCCS dataset, because the CLC is increasingly used by state agencies for ecological modeling efforts and was recommended by Hillsborough County Jan K. Platt Environmental Lands Acquisition and Protection Program (ELAPP) staff.

Existing land cover characteristics are a primary indicator of an area's potential sensitivity to development. Unaltered natural upland or wetland communities have a higher likelihood of providing a number of environmental functions and values when compared to areas no longer in a natural condition. Natural communities are more likely to provide potential habitat for rare or listed wildlife regulated by the FWC or U.S. Fish and Wildlife Service. Areas mapped as wetlands or waters may fall within the purviews of local, state, and/or federal wetland regulatory agencies. In contrast, lands previously converted for intensive agricultural or other uses may no longer have the sensitivity to development.

3.1.2 Scoring

For scoring, we combined 64 land cover types occurring within the study area into five groups based on native habitat characteristics and the extent of alteration or human disturbance. The resulting groups and their scores are summarized in **Table 3-1**. Scoring reflects a continuum from existing Developed Lands and Intensive Agriculture that are Least Sensitive to Natural Wetland Communities that are Most Sensitive. The range of scores is intended to reflect that fact that the potential sensitivity of heavily altered land cover types has likely already been eliminated or greatly reduced relative to land cover types with intermediate or high sensitivity scores.

We assigned CLC a weight of 35% in recognition of the fact that existing habitat / land cover conditions are indicative of potential environmental functions and value provided by the area. These include biodiversity, wildlife habitat values, passive flood protection, and aesthetic values.



DATASET RATIONALE, SCORING, AND RESULTS

Table 3-1 Cooperative Land Cover Scoring

Cooperative Land Cover		
Weight (%)	35%	
Developed Lands & Intensive Agriculture	1	
Low Intensity Agriculture	2	
Altered Natural Habitats	3	
Natural Upland Communities	4	
Natural Wetland Communities	5	

3.1.3 Results

Appendix A contains the full list of the land cover types within the study area and the group to which each was assigned. **Table 3-2** summarizes the acreages and percentage of the study area for each Land Cover Type group. The increase in sensitivity among the land cover groups in **Table 3-2** reflects relative differences in the extent to which each might support natural ecosystem functions and values. The Developed Lands and Intensive Agriculture group was comprised of 28 land cover types totaling 19,728 acres. Residential, transportation, irrigated cropland, commercial and services, and orchards/groves were the predominant land cover types of this group. The Low Intensity Agriculture group included 11 land cover types totaling 6,158 acres and was dominated by areas mapped as Improved Pasture and a mixture of open rural and urban land cover types. The Altered Natural Habitats group contained 10 land cover types totaling 881 acres and that were predominantly anthropogenic waterbodies. The Natural Upland Community group totaled 1,797 acres and was comprised of predominantly areas mapped as Mixed Hardwood – Coniferous. The Natural Wetlands Communities group was comprised of 11 wetland cover types totaling 4,331 acres. **Appendix B Map 2** illustrates the distribution of the CLC sensitivity scores within the study area.

Land Cover Type		Acres (%)
Developed Lands & Intensive Agriculture	Least Sensitive	19,728 (60%)
Low Intensity Agriculture	Less Sensitive	6,158 (19%)
Altered Natural Habitats	Somewhat Sensitive	881 (3%)
Natural Upland Communities	More Sensitive	1,797 (5%)
Natural Wetland Communities	Most Sensitive	4,331 (13%)



3.2 UPLAND SIGNIFICANT WILDLIFE HABITAT

3.2.1 Rationale

Article IV Natural Resources and Adequate Public Facilities Section 4.01.09 Environmentally Sensitive Areas – Upland Significant Wildlife Habitat of the Hillsborough County Land Development Code (LDC) identifies certain xeric and mesic habitat types which potentially constitute significant wildlife habitat. Per the LDC, protection of these areas is necessary to retain habitat diversity and wildlife corridors and to maintain healthy and diverse populations of wildlife. Section 4.01.09 establishes protection requirements for significant wildlife habitat including preservation requirements, maintenance of wildlife corridors, minimization and avoidance by road rights-of-way and utility corridors.

3.2.2 Scoring

Hillsborough County provided shape files of areas mapped as Upland Significant Wildlife Habitat. Areas not mapped as Significant Wildlife Habitat were scored as Least Sensitive. Areas mapped as Upland Significant Wildlife Habitat were scored as Most Sensitive to reflect their importance to listed wildlife and Hillsborough County LDC regulatory protections. **Table 3-3** summarizes the scoring. Upland Significant Wildlife Habitat was assigned a weight of 10% to reflect these habitats' importance to listed wildlife and the maintenance of natural community functions and values. The weight assigned also reflects increased regulatory and design considerations that Hillsborough County has deemed warranted for areas mapped as Upland Significant Wildlife Habitat.

Table 3-3 Upland Significant Wildlife Habitat Scoring

Upland Significant Wildlife Habitat	
Weight (%)	10%
No	1
Yes	5

3.2.3 Results

Table 3-4 summarizes the areas mapped as Upland Significant Wildlife Habitat totaling some 805 acres that occur within the study area. **Appendix B Map 3** illustrates the distribution of Upland Significant Wildlife Habitat within the study area.

Table 3-4	Upland Significant Wildlife Habitat Acreage
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Upland Significant Wildlife Habitat	Acreage (%)
No	32,090 (98%)
Yes	805 (2%)



3.3 FEMA FLOOD ZONES

3.3.1 Rationale

Article III Special Districts Part 3.06 Flood Damage Control Regulations of the Hillsborough County Land Development Code (LDC) adopts by reference areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study (FIS) for unincorporated Hillsborough County with an effective date of June 18, 1980, including subsequent updates thereto, with the accompanying maps and other supporting data. Per the LDC, the purposes of the flood damage control regulations are to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas. Chapter 3 of the Hillsborough County Construction Code establishes requirements for structures in new developments or substantially improved developments within the Special Flood or Coastal High Hazard Areas. Additionally, Section 3.06.02 of the LDC establishes further restrictions for encroachment into the designated floodways.

3.3.2 Scoring

We downloaded shape files of the mapped areas of special flood hazard from the FEMA Flood Map Service Center website. Areas mapped as Zone X, which is outside of special flood hazard areas, were scored as Least Sensitive. Areas mapped as Zone A or AE outside of a floodway were scored as Most Sensitive to reflect potential effects that development within the 100-year flood zone could have on surrounding properties if not designed and constructed to avoid or offset floodplain encroachments. Areas mapped as floodway were scored as having Disqualifying Sensitivity in recognition that development is typically not permitted in designated floodways. **Table 3-5** summarizes the scoring. FEMA Flood Zones was assigned a weight of 15% to reflect that consideration of FEMA Flood Zones is a significant driver of the regulation and resulting design of development projects.

Table 3-5 FEMA Flood Zone Scoring

Flood Zones		
Weight (%)	15%	
Zone X	1	
Zone A or AE outside of Floodway	5	
Zone A or AE in Floodway	DQ	

3.3.3 Results

Table 3-6 summarizes the acreages of areas mapped by FEMA as Zone X, Zone A or AE, or within a Floodway. A total of 26,059.9 acres (79.2% of the study area) was mapped as Zone X. A total of 6,061.6 acres (18.4%) of the study area was mapped as Zone A or AE. A total of 772.9 acres (2.3% of the study area) was in the Floodway. **Appendix B Map 4** illustrates the distribution of FEMA Flood Zones and Floodways within the study area.



Table 3-6 FEMA Flood Zone Acreage

Flood Zones	Acreages (%)
Zone X	26,059.9 (79.2%)
Zone A or AE outside of Floodway	6,061.6 (18.4%)
Zone A or AE in Floodway	772.9 (2.3%)

3.4 PEAK SENSITIVE BASINS

3.4.1 Rationale

Section 6.1.3 Large Site Design Criteria / Project Outfall Design Criteria of the Hillsborough County Stormwater Management Technical Manual (SMTM) notes that the County identifies certain peak sensitive basins. Per the SMTM, these receiving waters generally have histories of flooding problems related to resistance and restrictions within the channel and/or inadequate conveyance structures, and thus have inadequate flow capacities. Section 6.1.3.3 establishes stormwater outfall design requirements for developments discharging into this type of receiving waters, such that downstream flooding is not worsened.

3.4.2 Scoring

Hillsborough County provided a geodatabase with polygon features representing areas mapped as Peak Sensitive Basins. Areas not mapped as Peak Sensitive Basins were scored as Least Sensitive. Areas mapped as Peak Sensitive Basins were scored as Most Sensitive. **Table 3-7** summarizes the scoring. The Peak Sensitive Basins were assigned a weight of 15% in consideration of Hillsborough County design and regulatory criteria applicable to proposed development within Peak Sensitive Basins and the potential effects that development within these basins may have on the subject and surrounding properties.

Table 3-7 Peak Sensitive Basins Scoring

Peak Sensitive Basins	
Weight (%)	15%
No	1
Yes	5

3.4.3 Results

Table 3-8 summarizes the acreages of areas mapped as Peak Sensitive Basins. A total of 8,805 acres (27%) of the study area is within a Peak Sensitive Basin. **Appendix B Map 5** illustrates the distribution of Peak Sensitive Basins within the study area.



DATASET RATIONALE, SCORING, AND RESULTS

Table 3-8 Peak Sensitive Basins Acreage

Peak Sensitive Basins	Acreage (%)
No	24,089 (73%)
Yes	8,805 (27%)

3.5 VOLUME SENSITIVE BASINS

3.5.1 Rationale

Section 5.1.3.2(b)(3)

Section 5.1.3 Small Site Design Criteria / Commercial Standards / Discharge Requirements, and Section 6.1.3 Large Site Design Criteria / Project Outfall Design Criteria of the Hillsborough County SMTM note that the County identifies certain volume sensitive basins. Per the SMTM, these receiving waters, also referred to as "blinds", do not have positive outfall for storm events less than or equal to the 25-year, 24-hour event. In addition, sites which do not directly discharge into a well-defined conveyance system (i.e. ditch, storm sewer, etc.) are considered to have volume sensitive capacity since they do not have a positive outfall design requirements for developments discharging into this type of receiving waters is established in either Section 5.1.3.2(b)(3) of the SMTM for small sites or Section 6.1.3.4 for large sites, generally requiring that the difference between the predevelopment and post-development runoff volumes, due to the 100-year, 24-hour rainfall event, be retained on-site.

3.5.2 Scoring

Hillsborough County provided a geodatabase with polygon features representing areas mapped as Volume Sensitive Basins. Areas not mapped as Volume Sensitive Basins were scored as Least Sensitive. Areas mapped as Volume Sensitive Basins were scored as Most Sensitive. **Table 3-9** summarizes the scoring. The Volume Sensitive Basins were assigned a weight of 15% in consideration of Hillsborough County design and regulatory criteria applicable to proposed development within Volume Sensitive Basins and the potential effects that development within these basins may have on the subject and surrounding properties.

itive Basins Scoring
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Volume Sensitive Basins	
Weight (%)	15%
No	1
Yes	5



3.5.3 Results

Table 3-10 summarizes the acreages of areas mapped as Volume Sensitive Basins. A total of 7,406 acres (22%) of the study area is within a Volume Sensitive Basin. **Appendix B Map 6** illustrates the distribution of Peak Sensitive Basins within the study area.

Table 3-10 Volume Sensitive Basins Acreages

Volume Sensitive Basins	Acreage (%)
No	25,527 (78%)
Yes	7,406 (22%)

3.6 IMPAIRED WATERWAYS

3.6.1 Rationale

The Florida Department of Environmental Protection and the U.S. Environmental Protection Agency have identified certain water bodies or parts of water bodies that are impaired in that they are not meeting state water quality standards. Section 13.1.3 of the Hillsborough County SMTM states that new construction that discharges to these impaired water bodies must make every effort to reduce the expected increases in pollutant loading. The Southwest Florida Water Management District (SWFWMD) also addresses these concerns in its Environmental Resource Permitting requirements (Rule 62-303, Florida Administrative Code), where it requires stormwater management systems that discharge directly or indirectly into impaired waters to provide net improvement for the pollutants that contribute to the water body's impairment. Section 13.1.4.1(a) of the SMTM states that the submittal to the County Development Services Department of a copy of the appropriate SWFWMD permit for a site is sufficient to demonstrate that reasonable stormwater treatment provisions will be provided to address the impaired waterways.

3.6.2 Scoring

Hillsborough County provided a geodatabase with polygon features representing areas mapped as Impaired Waterways. Areas outside of Impaired Basins were scored as Least Sensitive. Basins identified as Impaired Waterways were scored as Most Sensitive. **Table 3-11** summarizes the scoring. The Impaired Waterway Basins were assigned a weight of 3% in consideration of the fact that impairment is typically the result of pre-existing condition or land use within the basin. Additionally, while projects discharging to an impaired waterway are required to provide net improvement for the subject pollutants this additional regulatory requirement can often be met through design solutions that are not unduly onerous for the project.



DATASET RATIONALE, SCORING, AND RESULTS

Table 3-11 Impaired Waterway Basins Scoring

Impaired Waterways	
Weight (%)	3%
Not Impaired	1
Impaired	5

3.6.3 Results

Table 3-12 summarizes the acreages of areas mapped as Impaired Basins. These areas total approximately 11,322 acres (34%) of the study area. **Appendix B Map 7** illustrates the distribution of parts or all of six (6) drainage basins within the study area identified as Impaired. Three basins on the western edge of the study area (Sixmile Creek/Tampa Bypass Canal, Sixmile Creek, and Hillsborough River) are impaired for the nutrients nitrogen and phosphorous and for biological oxygen demand. A fourth basin on the western side of the study area (Tampa Bypass Canal Tributary) is impaired for nitrogen and phosphorous. Two basins, one discharging to Lake Thonotosassa (Baker Creek) and the second located generally between Dover and Plant City (Spartman Branch), are impaired for only nitrogen.

Table 3-12 Impaired Waterways Acreages

Impaired Waterways	Acreage (%)
Not Impaired	21,572.1 (66%)
Impaired	11,322.3 (34%)

3.7 HISTORIC WASTE DISPOSAL SITES

3.7.1 Rationale

The intent of Chapter 1-7 Waste Management of the Rules of the Environmental Protection Commission of Hillsborough County is to protect the public health, safety and welfare from activities involving solid waste that can result in or contribute to the pollution of water, soil and air. Section 1-7.203 Construction on Areas Impacted by Solid Waste Disposal or Excavation of Solid Waste details information required in support of an application seeking approval to excavate solid waste, modify or develop a solid waste filled area or construct improvements on or through areas filled with solid waste or areas otherwise impacted by solid waste disposal.

3.7.2 Scoring

Hillsborough County provided a geodatabase with polygon features representing areas mapped as Historic Waste Disposal Sites. Areas not mapped as Historic Waste Disposal Sites were scored as Least



DATASET RATIONALE, SCORING, AND RESULTS

Sensitive. Areas mapped as Historic Waste Disposal Sites were scored as having Disqualifying (DQ) Sensitivity to reflect the increased regulation of such sites pursuant to *Chapter 1-7*. **Table 3-13** summarizes the scoring. Historic Waste Disposal Sites were assigned a weight of 5% to reflect the relative rarity of such sites within the study area and because the scoring scheme of this dataset overrides a low weight .

Table 3-13 Former Waste Disposal Sites Scoring

Former Waste Disposal Sites	
Weight (%)	5%
No	1
Yes	DQ

3.7.3 Results

Table 3-14 summarizes the acreages of areas mapped as Historic Waste Disposal Sites. These areas total approximately 444.9 acres (1%) of the study area. **Appendix B Map 8** illustrates the distribution of sites within the study area. Larger sites include the Eureka Springs (East), Eureka Springs (West), and Lewis and Fertic Dump located near I-75 and the Hillsborough Heights, Taylor Road, and 10.6 A Borrow Pit located north of I-4. A number of smaller sites also occur within the study area.

Table 3-14 Former Waste Disposal Sites Acreage

Former Waste Disposal Sites	Acreage
No	32,449.5 (99%)
Yes	444.9 (1%)

3.8 WELLHEAD RESOURCE PROTECTION AREAS

3.8.1 Rationale

Article III Special Districts Part 3.05.00 Wellhead and Surface Water Resource Protection of the Hillsborough County Land Development Code (LDC) establishes two types of Wellhead Resource Protection Areas around public potable water supply wells and, in which, certain industrial and intensive agricultural land uses and associated activities are regulated or prohibited to ensure protection of public water supply wells.

3.8.2 Scoring

Hillsborough County provided a geodatabase with polygon features representing areas mapped as Wellhead Resource Protection Areas. Only Zone 2 Public Potable Water Supply Wellhead Resource



DATASET RATIONALE, SCORING, AND RESULTS

Protection Areas were located within the study area. Areas not mapped as Wellhead Resource Protection Areas were scored as Least Sensitive. Areas mapped as Wellhead Resource Protection Areas were scored as Most Sensitive. **Table 3-15** summarizes the scoring. The Wellhead Resource Protection Areas were assigned a weight of 2% to reflect the relative rarity of such sites within the study area and because Wellhead Resource Protection Areas were predominantly located within areas that are already developed.

Table 3-15 Wellhead Resource Protection Area Scoring

Wellhead Resource Protection Areas		
Weight (%)	2%	
No	1	
Yes	5	

3.8.3 Results

Table 3-14 summarizes the acreages of areas mapped as Wellhead Resource Protection Areas. **Appendix B Map 9** illustrates the distribution of parts or all of five (5) Wellhead Resource Protection Areas totaling approximately 1,604 acres that occur within the study area. Four of the areas occur south of I-4 and along the southern periphery of the study area. The fifth is located north of I-4 and west of Highway 39.

Table 3-16 Wellhead Resource Protection Area Acreage

Wellhead Resource Protection Areas	Acreage (%)
No	31,290.7 (95%)
Yes	1,603.7 (5%)



WEIGHTED OVERLAY ANALYSIS RESULTS

4.0 WEIGHTED OVERLAY ANALYSIS RESULTS

Table 4-1 summarizes the acreages of scores resulting from the Weighted Overlay Analysis for theoverall study area and outside of areas mapped as existing developed areas by CLC. Appendix B Map10 illustrates the distribution of the results of the Weighted Overlay Analysis. Appendix B Map 11illustrates the distribution of the results of the Weighted Overlay Analysis outside of areas mapped asexisting developed lands by CLC.

Areas scored as Less or Least Sensitive were generally in upland areas with developed or agricultural land uses. These areas comprised 26,341 acres (80%) of the study area. Of this acreage, 10,686 acres (33% of the study area) are located outside of areas mapped as existing developed lands. These undeveloped areas of lesser sensitivity are generally in the northwestern corner of the study area and within a mosaic of agricultural and developed lands within the eastern half of the study area.

Areas scored as Somewhat or More Sensitive were generally in areas where Natural Wetland Communities, FEMA Flood Zones, and Peak or Volume Sensitive Areas overlapped. These areas comprised a combined 5,336 acres (16%) of the study area, with all but 4 acres of these lands outside of existing developed areas.

Areas scored as having potential Disqualifying Sensitivity were associated with FEMA Floodways and Historic Waste Disposal Sites. These areas comprised 1,217 acres (4%) of the study area, with 956 acres (3% of the study area) outside of existing developed areas.

Score	Description	Overall Acres (%)	Acres Outside of Existing Developed Areas (% of Study Area)
1	Least Sensitive	10,966 (33%)	3,605 (11%)
2	Less Sensitive	15,375 (47%)	7,081 (22%)
3	Somewhat Sensitive	3,885 (12%)	3,882 (12%)
4	More Sensitive	1,451 (4%)	1,450 (4%)
5	Most Sensitive	0 (0%)	0 (0%)
DQ	Disqualifying Sensitivity	1,217 (4%)	956 (3%)

Table 4-1 Weighted Overlay Analysis Acreage



REFERENCES

5.0 **REFERENCES**

Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System.



APPENDICES

APPENDIX A CLC LAND COVER TYPE GROUPS AND ACREAGES

Appendix A CLC LAND COVER TYPE GROUPS AND ACREAGES

Land Cover Type	Acres
Natural Wetland Communities	4331
Bay Swamp	16
Cypress	127
Floating/Emergent Aquatic Vegetation	98
Marshes	779
Mixed Hardwood Coniferous Swamps	1010
Mixed Scrub-Shrub Wetland	141
Mixed Wetland Hardwoods	1658
Natural Lakes and Ponds	208
Natural Rivers and Streams	1
Other Coniferous Wetlands	34
Wet Prairie	261
Natural Upland Communities	1797
Canal	10
Grazed Wetlands	135
Mixed Hardwood-Coniferous	1640
Upland Hardwood Forest	12
Altered Natural Habitats	881
Artificial Impoundment/Reservoir	315
Artificial/Farm Pond	14
Cultural - Lacustrine	18
Cultural - Palustrine	50
Cultural - Riverine	145
Ditch/Artificial Intermittent Stream	18
Shrub and Brushland	46
Stormwater Treatment Areas	235
Successional Hardwood Forest	11
Upland Coniferous	28
Low Intensity Agriculture	6158
Aquacultural Ponds	25
Coniferous Plantations	134
Fallow Cropland	12

APPENDIX A CLC LAND COVER TYPE GROUPS AND ACREAGES

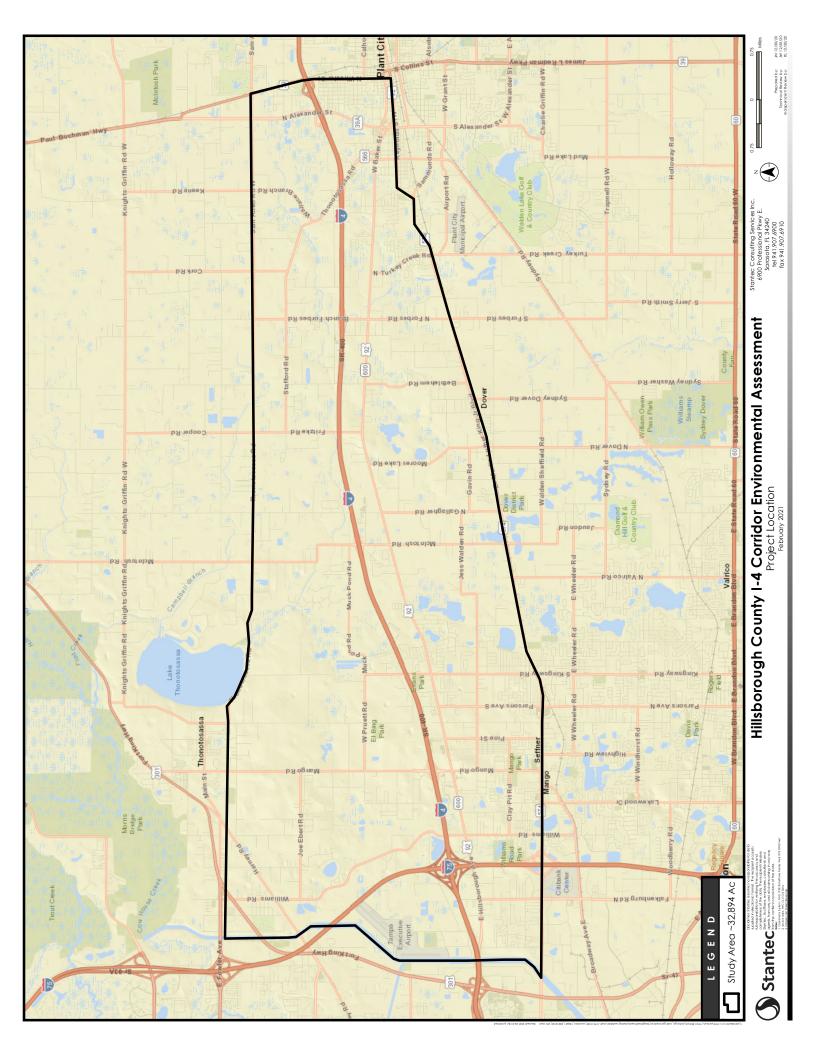
Grass	103
Improved Pasture	3734
Reclaimed Lands	119
Rural Open	549
Rural Open Forested	216
Unimproved/Woodland Pasture	348
Urban Open Forested	65
Urban Open Land	852
Developed Lands & Intensive Agriculture	19728
Ballfields	17
Cemeteries	51
Citrus	2
Commercial and Services	1317
Communication	23
Exotic Plants	1
Extractive	59
Feeding Operations	34
Field Crops	99
Highway Rights of Way	5
Industrial	181
Institutional	390
Irrigated Cropland	1620
Low Intensity Urban	115
Mowed Grass	151
Orchards/Groves	1055
Residential, High Density > 5 Dwelling Units/AC	1164
Residential, Low Density	6735
Residential, Med. Density - 2-5 Dwelling Units/AC	2207
Row Crops	68
Rural Structures	19
Specialty Farms	55
Spoil Area	37
Transportation	3566
Tree Nurseries	24
Utilities	331
Vegetative Berm	19
Vineyard and Nurseries	382
Grand Total	32894

APPENDIX B MAPS

Appendix B MAPS

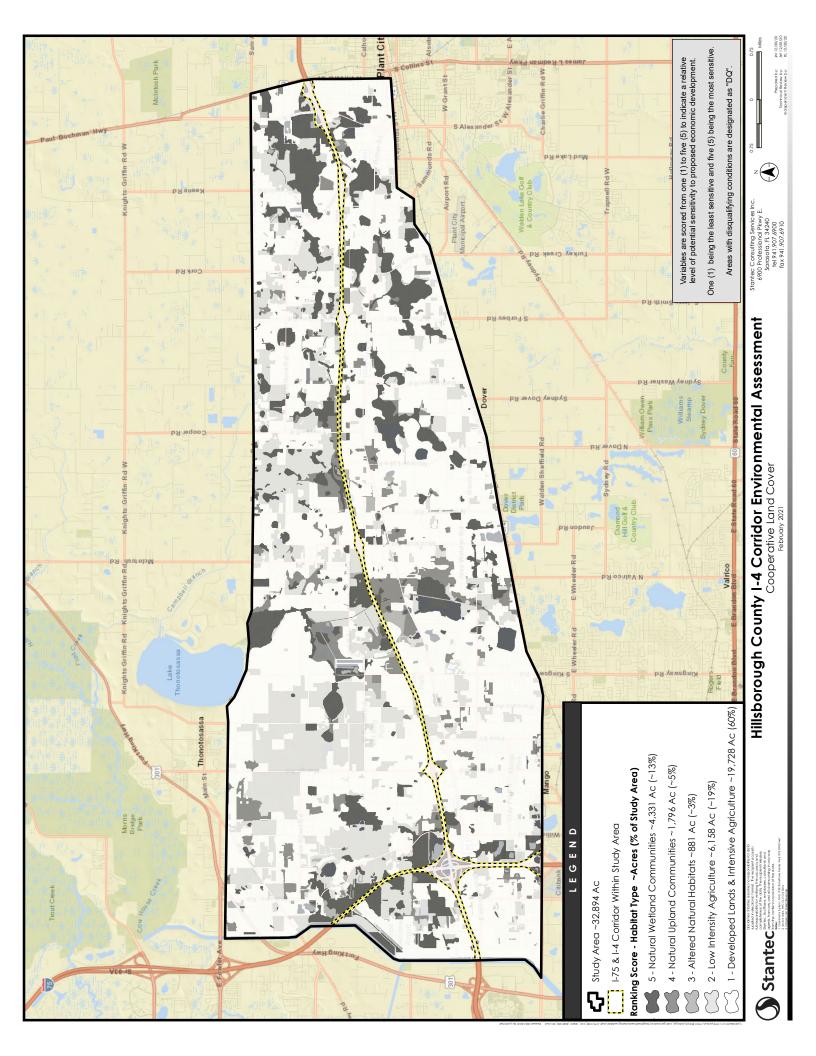
APPENDIX B MAPS

B.1 STUDY AREA BOUNDARY



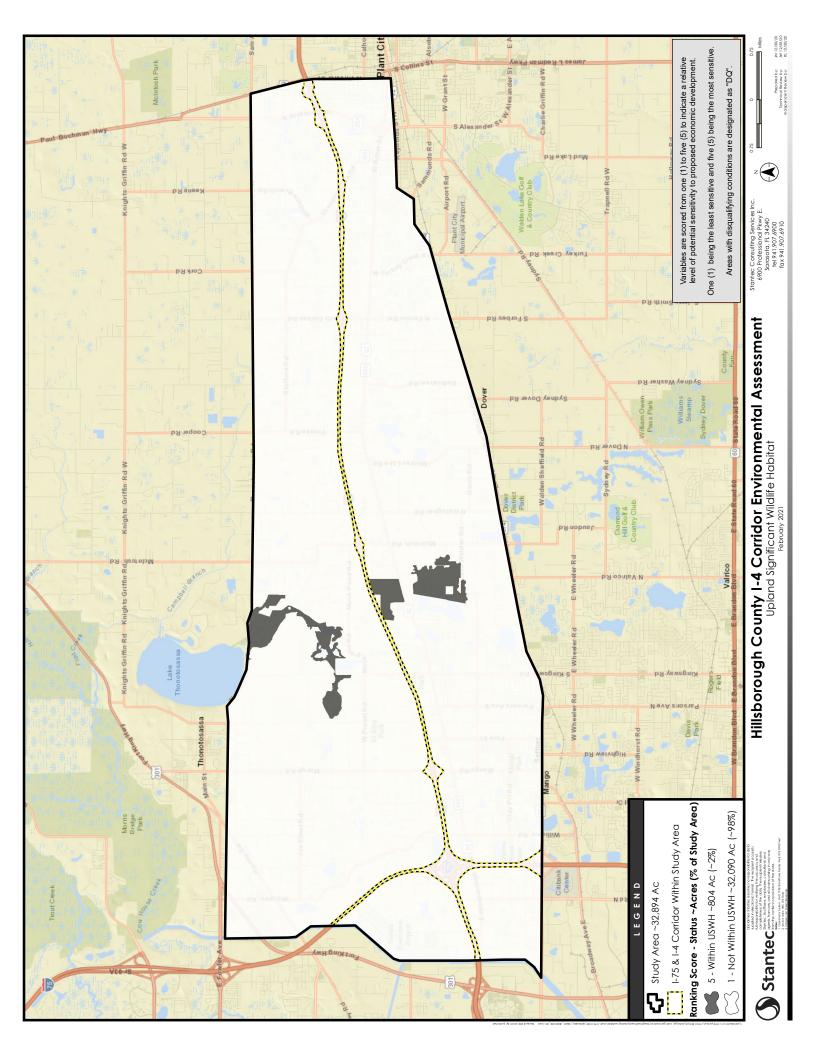
APPENDIX B MAPS

B.2 COOPERATIVE LAND COVER



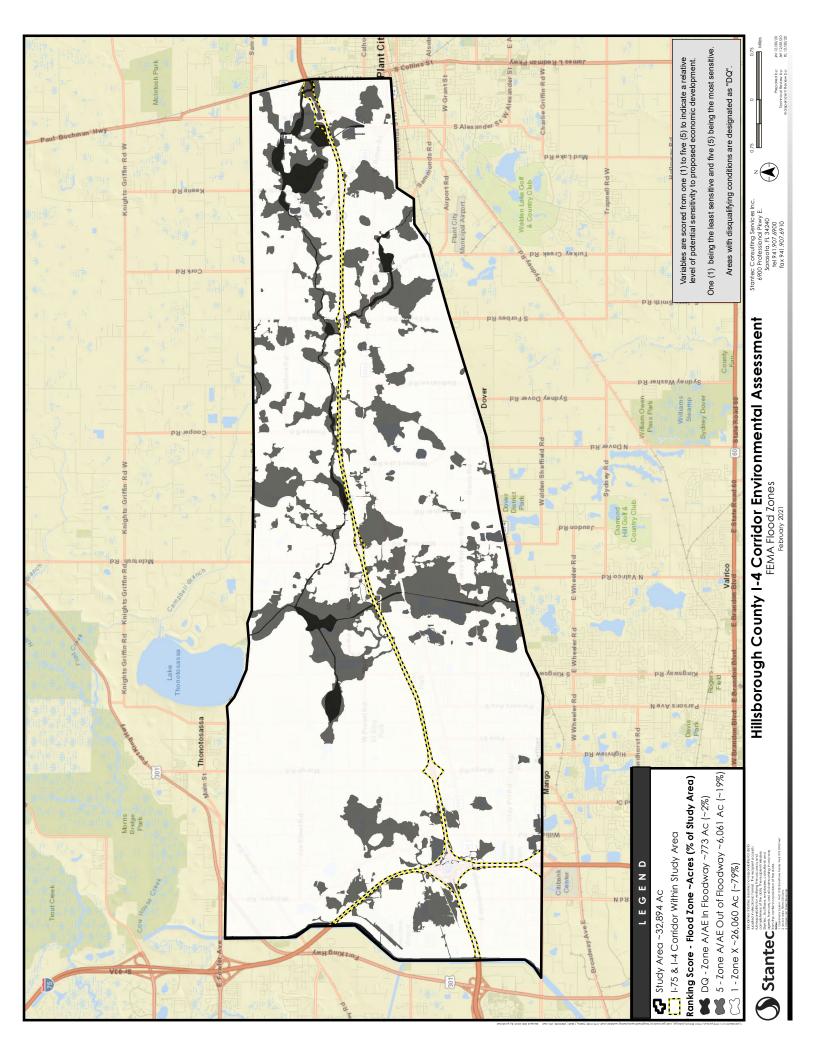
APPENDIX B MAPS

B.3 UPLAND SIGNIFICANT WILDLIFE HABITAT



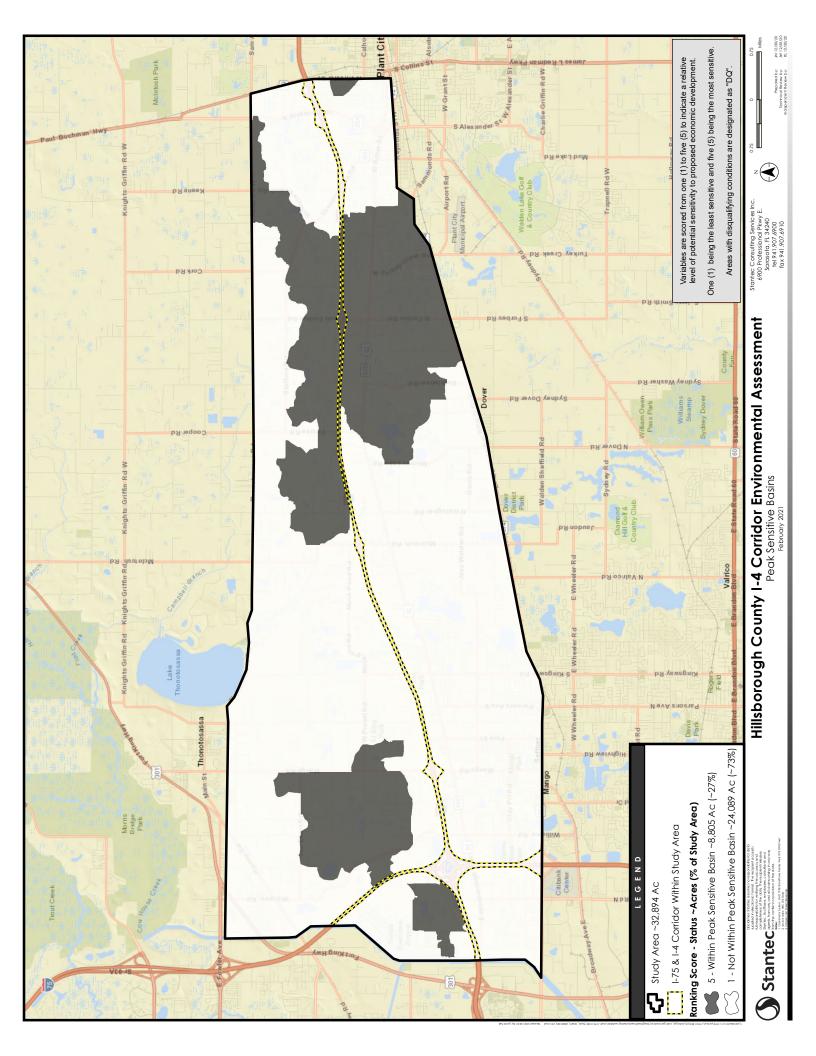
APPENDIX B MAPS

B.4 FEMA FLOOD ZONES



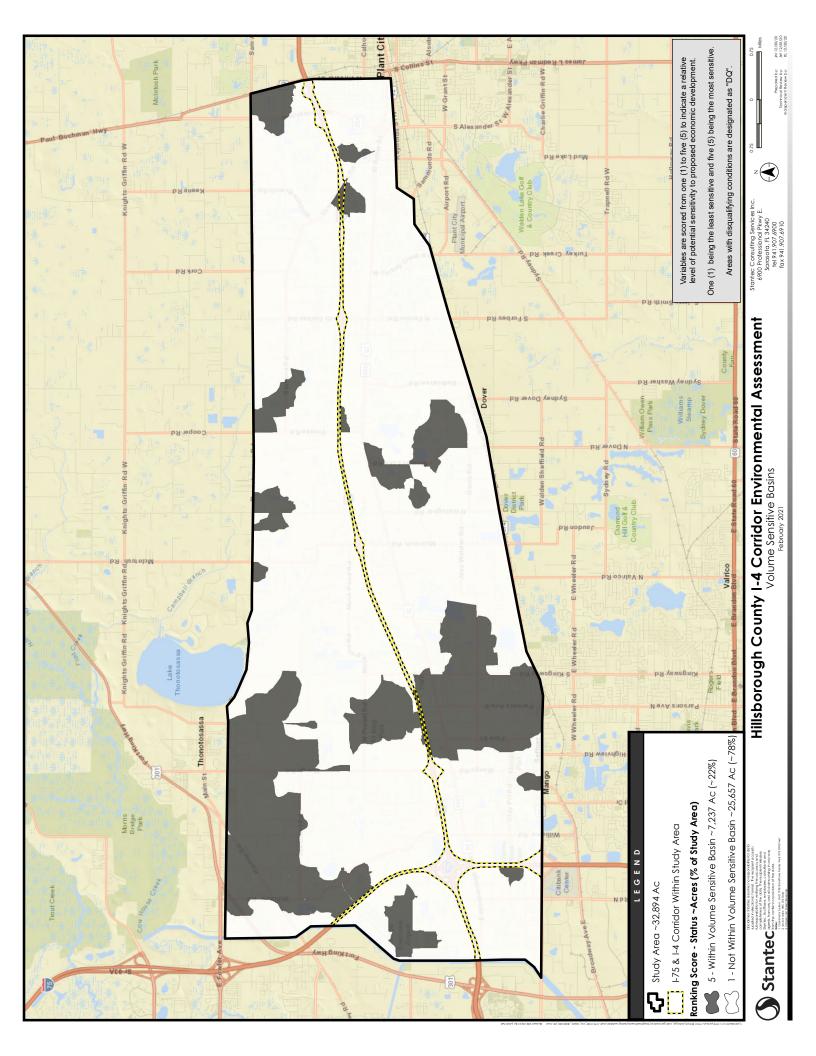
APPENDIX B MAPS

B.5 PEAK SENSITIVE BASINS



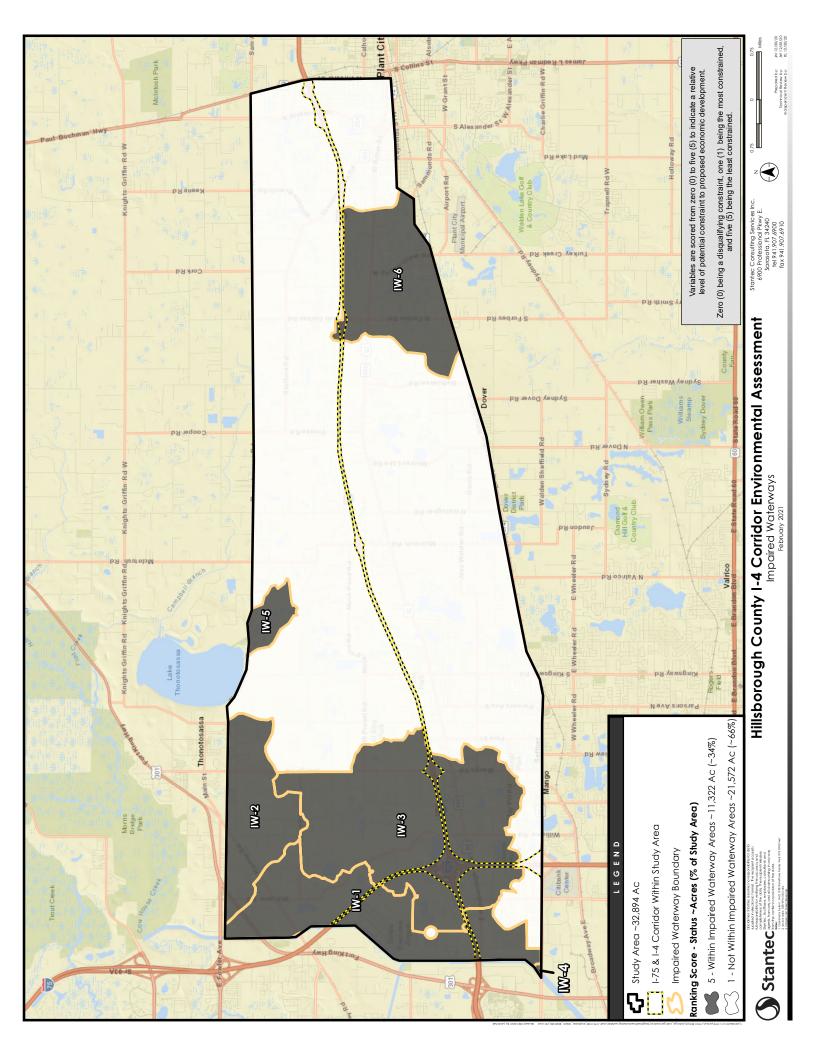
APPENDIX B MAPS

B.6 VOLUME SENSITIVE BASINS



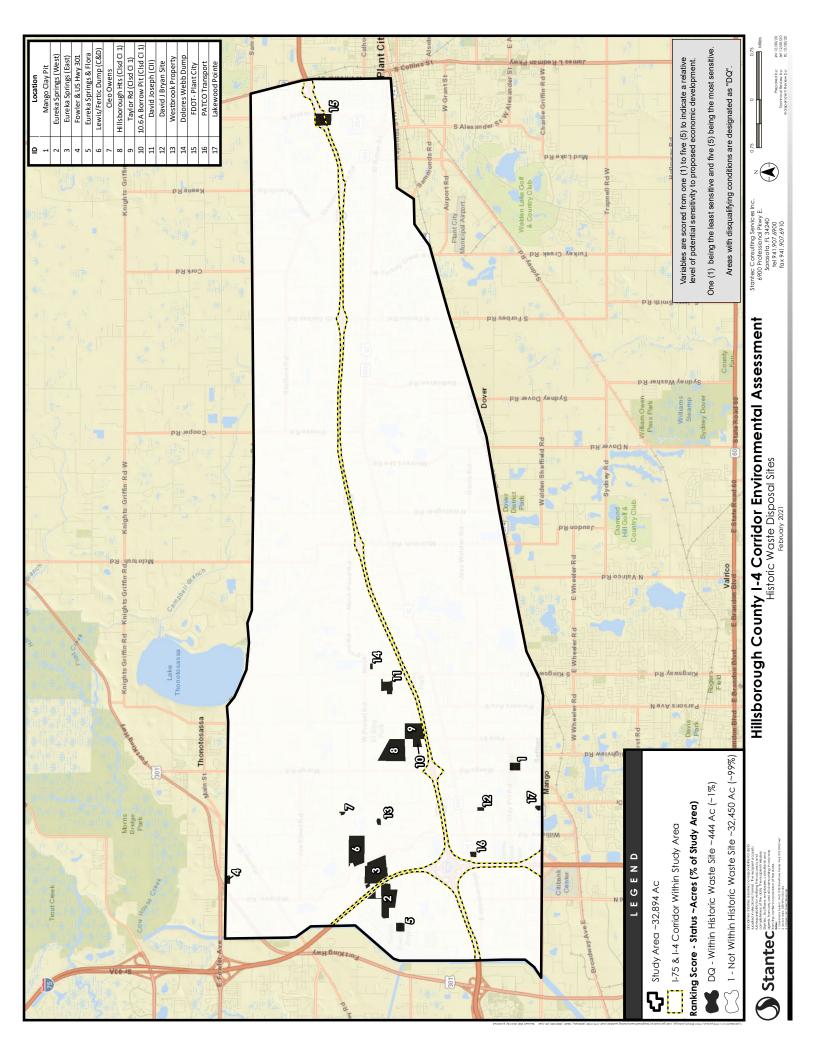
APPENDIX B MAPS

B.7 IMPAIRED WATERWAYS



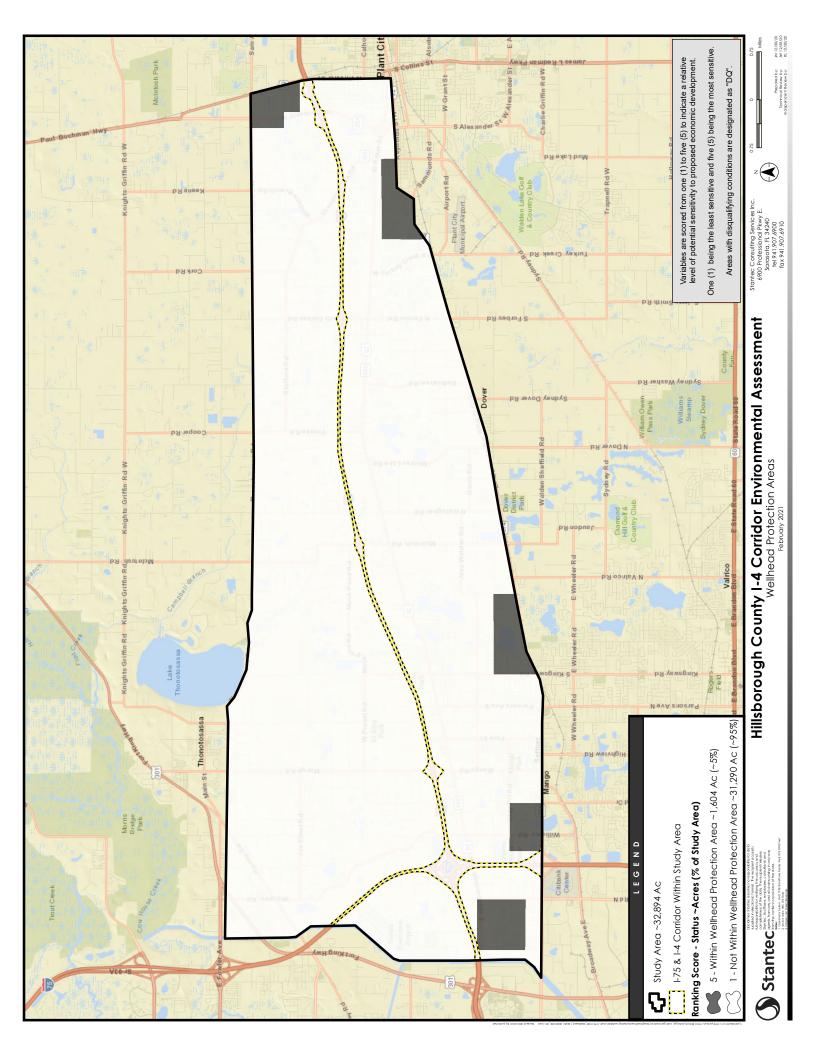
APPENDIX B MAPS

B.8 HISTORIC WASTE DISPOSAL SITES



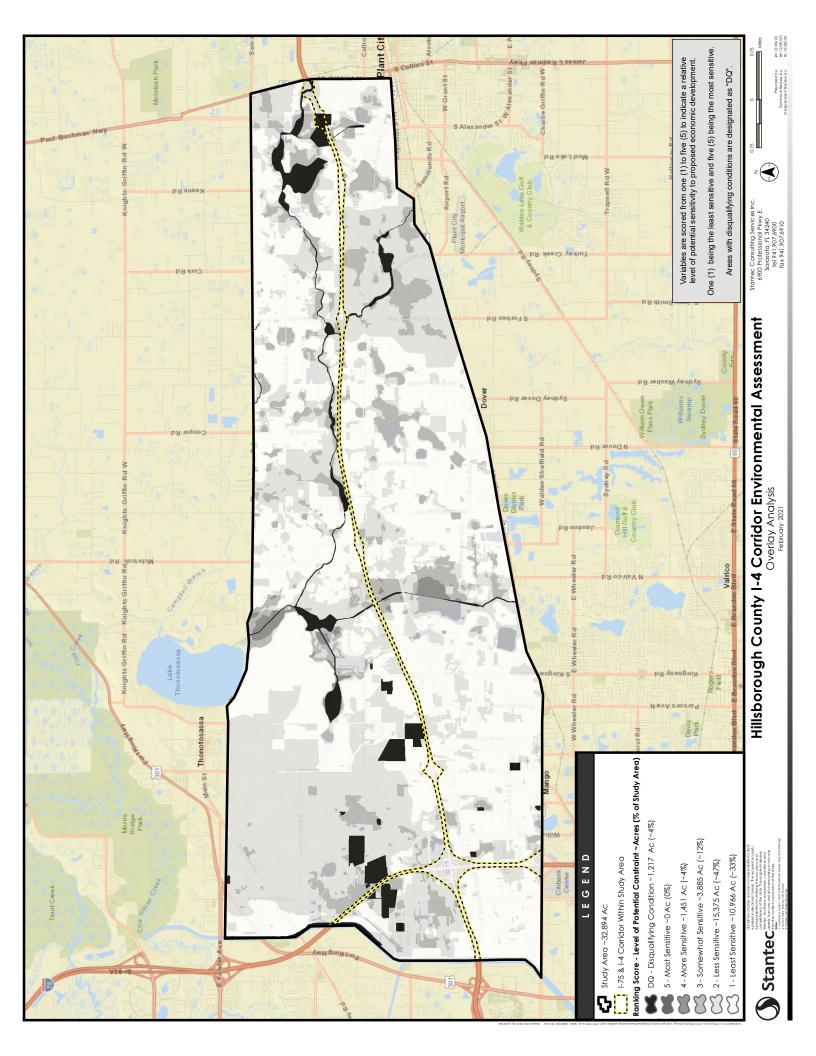
APPENDIX B MAPS

B.9 WELLHEAD RESOURCE PROTECTION AREAS



APPENDIX B MAPS

B.10 WEIGHTED OVERLAY ANALYSIS OUTPUT



APPENDIX B MAPS

B.11 WEIGHTED OVERLAY ANALYSIS OUTPUT AND EXISTING DEVELOPMENT

