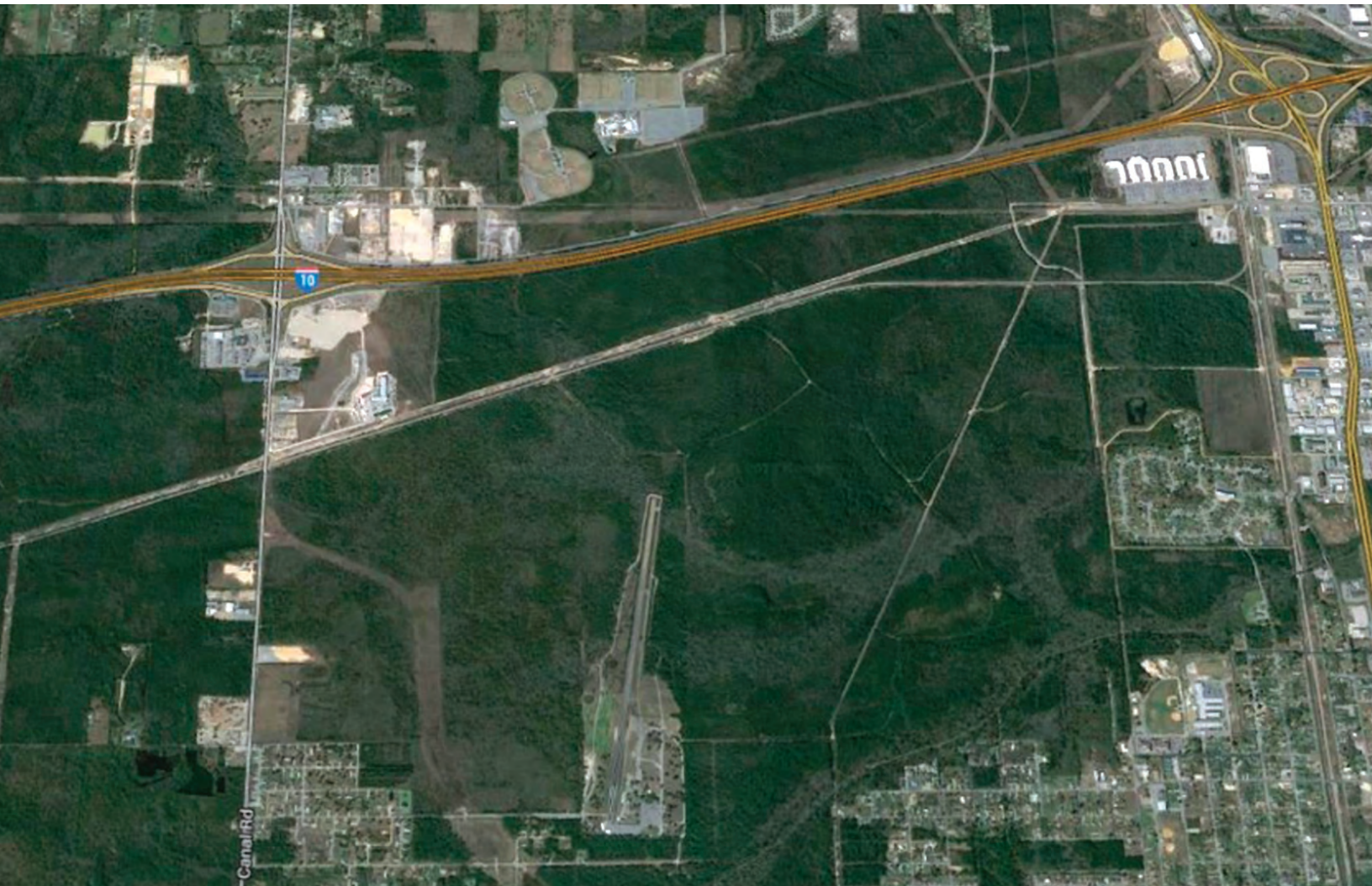
Joint Application and Notification | May 2015

Submitted to
U.S. Army Corps of Engineers (Mobile District Office)
Mississippi Department of Marine Resources, and the
Mississippi Department of Environmental Quality/Office of Pollution Control

Joint Application and Notification

for the Ward-Gulfport Development Project



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1 Executive Summary

Executive Summary

Ward Investments is proposing to develop 524-acres of its 1,300-acre parcel in Gulfport, Harrison County, Mississippi into a premium, campus style, mixed-use destination (Ward-Gulfport Development).

The property is currently mostly forested wetlands bordered by Interstate 10 (I-10) on the north; Canal Road on the west; undeveloped land, the Prime Outlets, and a residential neighborhood on the east; and primarily undeveloped land bordering Turkey Creek and the Gulfport Dragway to the south. The Biloxi-Gulfport Regional Airport is located proximal to the southeast of the site. The Kansas City Southern Railway Company (KCS) right-of-way extends east-west through the property (and north-south on the east side of the property), providing connections to the Port of Gulfport (the Port), which is approximately 4.5 miles south/southeast of the site (see Figure A-1 in Attachment A).

The **purpose** of the proposed project is:

- To develop a state-of-the-art, campus-style, mixed-use destination that is economically viable, sustainable, and promotes the long-term economic, transportation, and recreational needs of the City, and can be implemented using a phased master plan approach. The project purpose will be achieved through a public/private partnership between the City of Gulfport and Ward Investments.

The **proposed project** will include:

- A total of 355 acres of mixed-use commercial/retail, business park, industrial, residential, and recreation, including a mixed-use town center, publically accessible trails and a park.
- Excavation to construct nine stormwater management facilities (totaling 100 acres) that will improve drainage and runoff storage capacity and provide fill for development areas.
- Extension of Creosote Road, as a public/private partnership between the City of Gulfport and Ward Investments. In order to accommodate the road, a 150-foot wide right-of-way, totally 44 acres of the Ward Investments property will be donated to the City and designed as a parkway, serving the traffic needs of the area as well as providing a landscaped place for pedestrians and bicyclists. The road will also support improved connectivity between the neighborhoods along U.S. Route 49 and those west of Canal Road, and provide an alternative route to I-10 in the event of an emergency and/or evacuation.
- 25 acres of land donated by Ward Investments to the City for development into a recreational facility.

A variety of sustainability elements have also been incorporated for consistency with local and regional plans.[1]

Each of these project components have been incorporated to address the **three primary project needs** (see Section 3 of Attachment A):

- **Mixed-Use Development.** Address economic growth forecasted for Harrison County and the City and the needs of the anticipated Port of Gulfport expansion.

▼

1 The following local planning documents were reviewed and goals/objectives incorporated into the design process, as appropriate: Watershed Implementation Plan: Turkey Creek; 2030 Harrison County Comprehensive Plan; Gulfport 2030 Comprehensive Plan; The Community's Plan for the Turkey Creek and North Gulfport Neighborhoods.

- **Extension of Creosote Road.** Improve the resiliency of the regional transportation network, enhance connectivity between surrounding communities, and provide safe and efficient access to the proposed development.
- **City Recreational Facility.** Support community demands for both passive and active recreation and expand opportunities for sports tourism in the City.

Alternatives Development

Ward Investments has considered a number of options for use and development of the property and has coordinated and solicited input from a variety of Federal and state agencies, public officials, economic development representatives, representative of the Port of Gulfport, railroad representatives, local residents and community groups, and other stakeholders who have an interest in this project and/or development in the region. Based on input provided during these discussions and internal conversations among the project team, a series of guiding principles was generated and alternatives were developed (see Section 2 of Attachment C).

Each of the development alternatives considered would include the primary components identified in the previous section.

As detailed in Section 2 of Attachment C, the No Action Alternative, Use of Other Sites, and Development Alternatives 1 and 2 do not meet the project purpose and need. Both Development Alternatives 3 and 4 are economically viable, but, of these options, Alternative 4 is the least environmentally damaging practicable alternative because it:

- Is the most financially feasible and beneficial
- Minimizes impacts on medium and high quality wetlands

Each alternative is summarized below.

- **No Action Alternative.** Lack of development on the Ward Investments property would prohibit the site from serving as a premium, campus-style destination. Forecasted economic growth would have to be accommodated elsewhere in the City or the County. Without active management and/or development, the function and value of the onsite wetlands would continue to degrade, along with the associated wildlife habitat.
- **Use of Other Sites.** Offsite parcels considered for development included 2 adjacent undeveloped properties, vacant land in Harrison County (outside the City limits), and undeveloped land on Seaway Road. Use of offsite parcels for proposed development would be economically and/or environmentally prohibitive.
- **Development Alternative 1.** 331 acres developed – 204 acres of traditional industrial and commercial development, 41 acres for the extension of Creosote Road, 61 acres for the excavation of stormwater management facilities, and 25 acres for the City recreational facility. 276 acres of development would occur in wetlands (mostly low quality; 78%). This alternative would have the fewest environmental impacts, but is too small to be economically feasible, therefore does not meet the project purpose and need.
- **Development Alternative 2.** 498 acres developed – 320 acres of mixed-use development, 58 acres for the extension of Creosote Road, 95 acres for the excavation of stormwater management facilities, and 25 acres for the City recreational facility. 410 acres of development would occur in wetlands (mostly low quality; 92%). This alternative is not economically viable because the overall development program would take 20 or more years to fully build-out and the upfront cost results in low rates of return on investment, therefore, does not meet the project purpose and need.
- **Alternative 3.** 722 acres developed – 499 acres of mixed-use development, 58 acres for the extension of Creosote Road, 140 acres for the excavation of stormwater management/ borrow facilities, and 25 acres for the City's recreational facility. 614 acres of the development would occur in primarily low (451 acres) and medium (156 acres) quality wetlands, with minimal impact on high quality (7 acres) wetlands. This alternative does provide enough development to support

the project's purpose and need, but has the largest development footprint, therefore, would disturb the largest acreage of wetlands and associated wildlife habitat.

- **Alternative 4.** 524 acres developed – 355 acres of mixed use development, 44 acres for the extension of Creosote Road, 25 acres for the City's recreational facility, and 100 acres for the excavation of stormwater management/borrow facilities. 432 acres of the total development footprint will occur within wetlands: 360 acres in low-quality wetlands (83% of the total wetland disturbance), with minimal impact to medium (68 acres; 16%) and high (4 acres; <1%) quality wetlands. Alternative 4 was designed to reflect the refined market and economic study, is the most financially feasible and beneficial, and minimizes impacts on medium and high quality wetlands.

Affected Resources

As detailed in Section 4 of both Attachment A (Existing Conditions) and Attachment C (Impacts Analysis), the Ward-Gulfport Development has the potential to affect a variety of resources. In order to establish baseline conditions, various studies were conducted for the project including geotechnical evaluation, Hydrogeomorphic Methodology (HGM) surveys, stormwater modeling and surveys, threatened and endangered species research and surveys, market and economic analysis, Phase I archaeological survey, and property background and historic research. A summary of results of these surveys/studies, impacts that could result from the proposed project, and avoidance, minimization, and mitigation measures are summarized below, by topic.

Wetlands

In order to achieve the project's purpose and need, development of the Ward Investments property is required. It is not feasible to develop the property to avoid all impact to wetlands. The design of the proposed project minimizes wetland impacts by clustering the development to the north because this portion of the site:

- Has the most of the upland areas;
- Is the most heavily impacted by ditches, roads, and off-road vehicle use;
- Has the greatest proportion of low quality wetlands, thereby minimizing potential impacts to medium and high quality wetlands; and This area
- Is the most affected by the secondary impacts (noise, human use, lights) from railroad, off-road vehicles, and I-10 and Route 49 traffic.

Approximately 1,067 acres of wetlands occur on the project site. Using the HGM, a total of 585 acres of wetlands were determined to be low quality, 402 acres were considered medium quality, and 80 acres are high quality. The quality of a wetland is assessed by how natural its defining attributes (vegetation, soils and hydrology) are and how well it is performing its various functions. The project site has been substantially impacted from past road and railroad construction, silviculture activity, and fire exclusion. Unless the vegetative maintenance of particular habitats is initiated, the quality of the wetlands will continue to decline.

The proposed project will result in disturbance of 432 acres of wetlands. The majority of impacts to wetlands (83%; 360 acres) will occur in low quality wetlands. Impacts to medium quality wetlands total 68 acres and high quality wetland impacts total 4 acres. Of this total, 341 acres of wetland disturbance result from fill to accommodate the proposed development and the other 91 acres will result from excavation of stormwater management facilities.

A number of mitigation measures will be incorporated into the proposed project to reduce the intensity of potential impacts. Key mitigation components include:

- A varied program of restoration, enhancement and preservation to compensate for wetland impacts.
- Goal of restoring as much of the historic hydrology as possible to allow the wetlands to provide their natural flood storage function.
- Wetland restoration will be conducted in wetlands with the greatest amount of previous impact.
- Vegetative restoration and enhancement activities will vary by location and habitat type.
- Approximately 248 acres of wetlands are available in the southern portion of the project site for mitigation
- A total of up to 827 acres are available for mitigation on adjacent parcels.
- Based on the results of HGM survey and analysis, onsite and adjacent offsite parcels available for mitigation provide more than double the acreage and quality needed to compensate for project-related wetland disturbances.
- Mitigation banks are available for use and could be considered for use.

It is not likely that the proposed project, either independently or in conjunction with other past, present, and reasonably foreseeable future actions will have a significant impact on wetlands for the following reasons:

- Wetland impacts associated with the proposed project will be avoided, minimized, and mitigated to the extent that there is no net impact.
- Logging activities can create impacts to wetlands in the short term (due to removal of wetland vegetation, presence of equipment, etc.), however, it can also serve to clear the wet pine savannahs and partially restore some of the wetland values that have declined from lack of fire.
- Wetland restoration by the Land Trust for the Mississippi Coastal Plain (LTMCP) will have a long term beneficial impact on wetlands and associated habitats. However, the restorations will only include a small portion of the basins acreage, therefore, when considered in the larger context of the study area, are unlikely to have an appreciable beneficial effect on wetland communities.

Wildlife Habitat

It is not likely that the proposed project, either independently or in conjunction with other past, present, and reasonably foreseeable future actions will have a significant impact on wildlife habit and/or threatened and endangered species for the following reasons:

- No protected species have been documented on the subject property (the project will not impact protected species).
- Other development projects within the Turkey Creek Watershed will likely occur in similarly poor habitat with limited wildlife value.
- Logging could have a short-term adverse impact that is balanced by the value of clearing the site with simulated fire.
- The LTMCP wetland restoration will have a long-term beneficial effect on protected species; however, the scale and extent of these impacts will be limited and will not be noticeable when considered in the context of the cumulative impact study area.

Stormwater/Flooding

The Ward Investments property is within the Turkey Creek Watershed, an approximately 17,527-acre area that ultimately terminates into Bayou Bernard. The Ward Investments parcel occupies 7% of the watershed's land area, while the project area (development footprint) will account for 3% of the total land area. The southern portion of the property is within the

100-year flood plain. The majority of the offsite runoff that flows across the site begins north of I-10 and is routed south into three existing channels just north of I-10. The stormwater is then is directed, through culverts, under I-10 and into two predominant existing channels that convey the flow through a series of cross drains under the existing railroad. The two existing channels, both located east of the drag strip, convey the runoff into the wetlands in the south part of the property. Stormwater then stages and is discharged in the southeast portion of the property to Turkey Creek.

The proposed project will not have a significant impact on stormwater and/or flooding on the subject property or within the Turkey Creek Watershed as a whole because:

- The proposed project will reduce runoff from the site by detaining the 100-year 24-hour storm
- The proposed project will not impact the flood conditions in Turkey Creek.
- Runoff will be held in the stormwater management facilities and slowly released, reducing flow during storm events.
- The proposed project will occupy only a small portion of the associated drainage basin (19%), and an even smaller portion of the overall Turkey Creek Basin (3%), therefore, substantial flood reduction in Turkey Creek or the Forest Heights neighborhood is not anticipated.
- The proposed development is located well north of the 100-year floodplain, therefore, will not impede water from the northern Turkey Creek drainage basins.

In order to further reduce the potential for impacts on stormwater and flooding, the following mitigation measures will be implemented:

- A stormwater management plan, including use of best management practices (BMPs) will be designed to provide water quality, attenuation, and flood protection for the proposed project. BMPs will include the construction of stormwater management facilities to treat runoff from the developed areas.
- Low impact development (LID) design will be implemented, particularly in the Creosote Roadway corridor including vegetative roadside swales and landscaped pervious center medians which allow stormwater to percolate into the ground.
- Onsite and adjacent offsite wetland restoration will restore hydrology, improve wetland functionality, and attenuate stormwater flows naturally. This will also result in reducing the flows of stormwater to Turkey Creek during storm events.

The proposed project in conjunction with other past, present, and reasonably foreseeable future actions will not have a significant impact on stormwater and/or flooding for the following reasons:

- The proposed project does not include development within the 100-year floodplain.
- The runoff from the proposed development will be attenuated by onsite stormwater management facilities, which will discharge treated stormwater at flow rates slightly lower than predevelopment conditions.
- Runoff from parcels north of I-10 will continue to flow across the subject property to Turkey Creek and the associated wetlands in a manner similar to current conditions.
- The proposed project only accounts for approximately 3% of the total land area of the Turkey Creek watershed. Stormwater benefits created by the stormwater management system, while beneficial for treatment and attenuation of runoff from the developed areas, are anticipated to have a very small positive impact on the existing drainage and flooding within the watershed.

Cultural Resources

Based on the results of research and a Phase I archaeological survey, no archaeological or historic resources are known to occur on the subject property. Therefore, the proposed project will have no effect, either independently or cumulatively, on archaeological or historic resources.

Community

The Ward-Gulfport Development project has been designed to serve as an asset not only to the City but also to the community by providing economic, environmental, and social benefits and will minimize potential for disproportionate distribution of adverse impacts to low-income and/or minority communities. The applicant understands that many of the communities near the proposed project include high percentages of low-income and/or minority populations. In order to ensure community concerns are adequately addressed, the applicant:

- Has reached out to a number of community members and organizations and considered their input in project design;
- Will continue to ensure opportunities for meaningful involvement by potentially affected communities, including the low-income and minority populations in the project area; and
- Has reviewed and incorporated (as feasible) elements to address the goals and objectives identified in community planning documents such as the Watershed Implementation Plan: Turkey Creek, The Community's Plan for the Turkey Creek and North Gulfport Neighborhoods, 2030 Harrison County Comprehensive Plan, and Gulfport 2030 Comprehensive Plan.

The footprint of the proposed project will be contained within the Ward Investments property, therefore, will have no physical impact on surrounding communities. As described above, measures have been incorporated to avoid, minimize, and mitigate potential impacts on natural resources, which could otherwise affect the communities. The project will include a number of elements that have the potential to benefit communities near the site including:

- Recreational trails, community park, and public access to Turkey Creek
- Improved connectivity between the neighborhoods along U.S. Route 49 and those west of Canal Road, and provide an alternative route to I-10 in the event of an emergency and/or evacuation
- Extension of Creosote Road as a City-owned pedestrian-friendly parkway
- Opportunities for both active and passive outdoor recreation
- A new, sustainable, campus-style employment center that will support 3,300 to 6,600 high quality jobs;
- Create a comprehensive, native landscaping plan;
- Restore native habitat and remove invasive species; and
- Create a live, work, play town center that supports local housing opportunities.

Impacts of the proposed project will be localized and there is limited opportunity for cumulative impacts on social resources. The community park, recreational trails, and access to Turkey Creek, for example, will benefit the surrounding communities by providing additional options for outdoor recreation. However, it is unlikely that the presence of these facilities will affect other outdoor recreational options within the City of Gulfport, such as the Sportsplex, beaches, campgrounds, and a number of parks. By creating additional opportunities for recreation within the City limits there will be an incremental benefit for City residents, especially those located in close proximity to the Ward Investments property, who will be most likely to recreate there. However, the benefit is likely to be modest when considered in conjunction with other recreational opportunities in the City and there will be no significant impact on social resources.

2 Joint Application and Notification Form

JOINT APPLICATION AND NOTIFICATION

U.S. ARMY CORPS OF ENGINEERS
MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY/OFFICE OF P0LLUTION CONTROL

This form is to be used for proposed activities in waters of the United States in Mississippi and for the erection of structures on suitable sites for water dependent industry. Note that some items, as indicated, apply only to projects located in the coastal area of Hancock, Harrison and Jackson Counties.

1. Date
04 30 2015
month day year

2. Applicant name, mailing address, phone number and email address:

Mr. T. Jerard Ward
Ward Investments
13155 Highway 57, Suite D
Biloxi, MS 39532
Ph: (228) 261-2917
tjwj@wardinvestment.com

Kris Riemann
City of Gulfport
P.O.Box 1780
Gulfport, MS 38502
Ph: (228) 868-5740
kriemann@gulfport-ms.gov

Agent name, mailing address, phone number and email address:

Ms. Kimberly Threlfall
VHB
225 E. Robinson St., Suite 300
Orlando, FL 32801
Phone: (413) 241-5869
Email: kthrelfall@vhb.com

3. Official use only
COE _____
DMR _____
DEQ _____
A95 _____
DATE RECEIVED _____

4. Project location
Street Address Creosote Rd Terminus City/Community Gulfport
Name of Waterway Turkey Creek Latitude 30.42073 N Longitude (if known) -89.120603 W
Geographic location: Section 17, 19, 20, 29, 30 Township 7 S Range 11 W County Harrison

5. **Project description**

New work ☑ **Maintenance work** ☐

Dredging

☐	Channel	length		width		existing depth	proposed depth
☐	Canal	length		width		existing depth	proposed depth
☐	Boat Slip	length		width		existing depth	proposed depth
☐	Marina	length		width		existing depth	proposed depth
☐	Other-Mooring Basin	length		width		existing depth	proposed depth

Cubic yards of material to be removed _____ Type of material _____
Location of spoil disposal area _____
Dimensions of spoil area _____ Method of excavation _____
How will excavated material be contained? _____

Construction of structures

☐	Bulkhead	Total length		Height above water			
☐	Pier	length		width		height	
☐	Boat Ramp	length		width		slope	
☐	Boat House	length		width		height	

☐ Structures on designed sites for water dependent industry (Coastal area only). Explain in item 11 or include as attachment.
☑ Other (explain) Excavation of 91 acres within wetlands, to create stormwater management facilities (treatment and attenuation)

Filling
Dimensions of fill area irregularly-shaped area totaling approximately 341 acres of wetland fill (fill will be 3 feet deep)
Cubic yards of fill 1,650,438 in wetlands Type of fill On-site source material; to be excavated to construct stormwater ponds

Other regulated activities (i.e. Seismic exploration, burning or clearing of marsh) Explain.
Not applicable

6. **Additional information relating to the proposed activity**

Does project area contain any marsh vegetation? Yes ☐ No ☑

(If yes, explain)

Is any portion of the activity for which authorization is sought now complete? Yes ☐ No ☑

(If yes, explain) N/A

Month and year activity took place N/A

If project is for maintenance work on existing structures or existing channels, describe legal authorization for the existing work. Provide permit number, dates or other form(s) of authorization. N/A

Has any agency denied approval for the activity described herein or for any activity that is directly related to the activity described herein?

Yes ☐ No ☑ (If yes, explain)

7. **Project schedule**

Proposed start date 2017 Proposed completion date Three 5-year phases w/ full build out in 2032

Expected completion date (or development timetable) for any projects dependent on the activity described herein.

8. **Estimated cost of the project** $300,000,000 - $350,000,000

9. **Describe the purpose of this project. Describe the relationship between this project and any secondary or future development the project is designed to support.** The purpose of the project is to develop the Ward investments property into a state-of-the-art, campus-style mixed-use destination that is economically viable, sustainable, and promotes the long-term economic, transportation, and recreational needs of the City, and can be implemented using a phased master plan approach. The purpose and need are detailed in Attachment A: Project Description and Drawings

Intended use: Private ☑ Commercial ☑ Public ☑ Other (Explain)

10. **Describe the public benefits of the proposed activity and of the projects dependent on the proposed activity. Also describe the extent of public use of the proposed project.**

Public benefits and public use of the project are described in Section 5 of Attachment A and summarized in Section 3 of Attachment C

11. **Narrative Project Description:**

See Attachment A: Project Description and Drawings

12. Provide the names and addresses of the adjacent property owners. Also identify the property owners on the plan view of the drawing described in Attachment "A". (Attach additional sheets if necessary.)

1. An adjacent property owners list is appended as Attachment D and property locations are depicted on Figure A-3 in Attachment A.

2.

13. List all approvals or certifications received or applied for from Federal, State and Local agencies for any structures, construction, discharges, deposits or other activities described in this application. Note that the signature in Item 14 certifies that application has been made to or that permits are not required from the following agencies. If permits are not required, place N/A in the space for Type Approval.

Agency	***Type Approval***	***Application Date***	***Approval Date***
Dept. of Environmental Quality	WQC; NPDES Permit MSR10	May 1, 2015; TBD	
Dept. of Marine Resources	Coastal Zone Consistency Determination	May 1, 2015	
Army Corps of Engineers	404 Permit	May 1, 2015	
City/County Building permit & approvals			
Other			

14. Certification and signatures

Application is hereby made for authorization to conduct the activities described herein. I agree to provide any additional information/data that may be necessary to provide reasonable assurance or evidence to show that the proposed project will comply with the applicable state water quality standards or other environmental protection standards both during construction and after the project is completed. I also agree to provide entry to the project site for inspectors from the environmental protection agencies for the purpose of making preliminary analyses of the site and monitoring permitted works. I certify that I am familiar with and responsible for the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I am the owner of the property where the proposed project is located or that I have a legal interest in the property and that I have full legal authority to seek this permit.

U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willingly falsifies, conceals, or covers up by any trick, scheme or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

Mississippi Coastal Program (Coastal area only)

I certify that the proposed project for which authorization is sought complies with the approved Mississippi Coastal Program and will be conducted in a manner consistent with the program.

_____ _____

Signature of Applicant or Agent Date

15. Fees

Payable to MS Dept. of Marine Resources
$50.00 Single-family residential application fee
$500.00 Commercial application fee
Public notice fee may be required

Please include appropriate fees for all projects proposed in coastal areas of Hancock, Harrison and Jackson Counties.

16. If project is in Hancock, Harrison or Jackson Counties, send one completed copy of this application form and appropriate fees listed in Item 15 to:

Department of Marine Resources
Bureau of Wetlands Permitting
1141 Bayview Avenue
Biloxi, MS 39530
(228) 374-5000

If project <u>IS NOT</u> in Hancock, Harrison or Jackson Counties, send one completed copy of this application form to each agency listed below:

District Engineer
Mobile District
Attn: CESAM-RD
P.O. Box 2288
Mobile, AL 36628-0001

District Engineer
Vicksburg District
Regulatory Branch
Attn: CEMVK-OD-F
4155 Clay Street
Vicksburg, MS 39183-3435

Director
Mississippi Dept. of Environmental Quality
Office of Pollution Control
P.O. Box 10385
Jackson, MS 39289

17. In addition to the completed application form, the following attachments are required:

Attachment "A" Drawings

Provide a vicinity map showing the location of the proposed site along with a written description of how to reach the site from major highways or landmarks. Provide accurate drawings of the project site with proposed activities shown in detail. All drawings must be to scale or with dimensions noted on drawings and must show a plan view and cross section or elevation. Use 8 1/2 x 11" white paper or drawing sheet attached.

Attachment "B" Authorized Agent

If applicant desires to have an agent or consultant act in his behalf for permit coordination, a signed authorization designating said agent must be provided with the application forms. The authorized agent named may sign the application forms and the consistency statement.

Attachment "C" Environmental Assessment *(Coastal Area Only)*

Provide an appropriate report or statement assessing environmental impacts of the proposed activity and the final project dependent on it. The project's effects on the wetlands and the effects on the life dependent on them should be addressed. Also provide a complete description of any measures to be taken to reduce detrimental offsite effects to the coastal wetlands during and after the proposed activity. Alternative analysis, minimization and mitigation information may be required to complete project evaluation.

Attachment "D" Variance or Revisions to Mississippi Coastal Program *(Coastal area only)*

If the applicant is requesting a variance to the guidelines in Section 2, Part III or a revision to the Coastal Wetlands Use Plan in Section 2, Part IV of the Rules, Regulations, Guidelines and Procedures of the Mississippi Coastal Program, a request and justification must be provided.

3 Attachment A
Project Description and Drawings

Attachment A
Project Description and Drawings

1. Introduction

Attachment A provides additional project-related information in support of the *Joint Application and Notification Form* for construction of a mixed-use development on the Ward Investments property in Gulfport, Mississippi (Ward-Gulfport Development). This attachment identifies the project location and accessibility, describes the purpose and need for the proposed project, summarizes existing property conditions, and details the components of the proposed project. Where applicable, the following sections reference *Attachment C: Environmental Assessment and Mitigation Plans* which details the alternatives development; project-related impacts; and avoidance, minimization, and mitigation measures.

2. Project Location and Accessibility

Ward Investments is proposing to construct a mixed-use development on a portion of its approximately 1,300-acre property in the City of Gulfport, Mississippi (the City). The proposed project is located within Sections 17, 19, 20, 29, 30; Township 7S; and Range 11W; within Harrison County, Mississippi. The property currently comprises mostly forested wetlands and is bordered by Interstate 10 (I-10) on the north; Canal Road on the west; undeveloped land, the Prime Outlets, and residential neighborhoods on the east; and primarily undeveloped land bordering Turkey Creek and the Gulfport Dragway to the south (Figures A-1 and A-2). Adjacent property owners are depicted on Figure A-3 and listed in Attachment D. The Gulfport Regional Airport is located proximal to the southeast of the site, separated by U.S. Route 49. In addition, the Kansas City Southern Railway Company (KCS) right-of-way extends east-west through the property (and north-south on the east side of the property), providing connections to the Port of Gulfport (the Port), which is approximately 4.5 miles south/southeast of the site.

The following major roads are located in the vicinity of the project site.

- **Interstate 10 (I-10)** is a major six-lane (three lanes in each direction) east-west route for commerce and tourism that extends from Jacksonville, Florida to Los Angeles, California. I-10 is approximately five miles north of U.S. Route 90 and Downtown Gulfport and serves as a major link in the Gulf Coast's network of hurricane evacuation routes. It is the major evacuation route in Gulfport, with

interchanges east and west of the site; at U.S. Route 49 and at Canal Road. I-10 currently operates at a level of service (LOS) A/B along the Canal Road/U.S. Route 49 segment.

- **U.S. Route 49** serves as the only north-south evacuation route in Gulfport. This existing north-south highway divides Harrison County roughly in half and has historically served as the primary route between coastal Mississippi and northern portions of the state. U.S. Route 49 (Route 49), also called 25th Avenue in portions of the City, provides important access to the Biloxi-Gulfport International Airport, the Port of Gulfport, Downtown Gulfport, and coastal business and recreation centers. Given its interchange with I-10, this four to six lane highway serves as an important gateway to the City. Throughout much of its length, Route 49 experiences substantial capacity issues and currently operates at a LOS E/F along the segment between Route 90 and I-10.
- **Canal Road** is a minor north-south collector roadway, with 2-lanes from 28th Street to the south forming an interchange with I-10 to the north. There is a railroad crossing just south of the I-10 interchange. Canal Road runs parallel to U.S. Route 49 along the western limits of the City, and provides access from 28th Street and the Seabee Base north through unincorporated portions of the County.
- **U.S. Route 90** runs east-west along the Mississippi coast, between Pascagoula, Mississippi and New Orleans, Louisiana. After Hurricane Katrina, U.S. Route 90 was reconstructed with state of the art traffic signals, roadway lighting, replacement of curbs and sidewalks, and milling and overlaying of the road surface. U.S. Route 90 (Beach Boulevard) is a divided four-lane arterial, with two lanes in each direction. This road serves as the second east-west evacuation route in Gulfport, serving communities and businesses along the Gulf Coast. U.S. Route 90 currently operates at a LOS D/E along the segments east and west of US 49.
- **Pass Road**, located southeast of the site, on the east side of U.S. Route 49, provides east-west access from the Seabee Base and U.S. Route 49 in Gulfport to Keesler Air Force Base in Biloxi, Mississippi. Vehicular capacity and pedestrian and bicycle mobility are concerns along Pass Road. Existing right-of-way and development limit the potential for expansion or addition of vehicular lanes, bike facilities, medians, turn lanes, or pedestrian amenities. Pass Road ends at the Seabee Base, and does not provide direct connection to the west of the City. Pass Road currently operates at a LOS D/E.

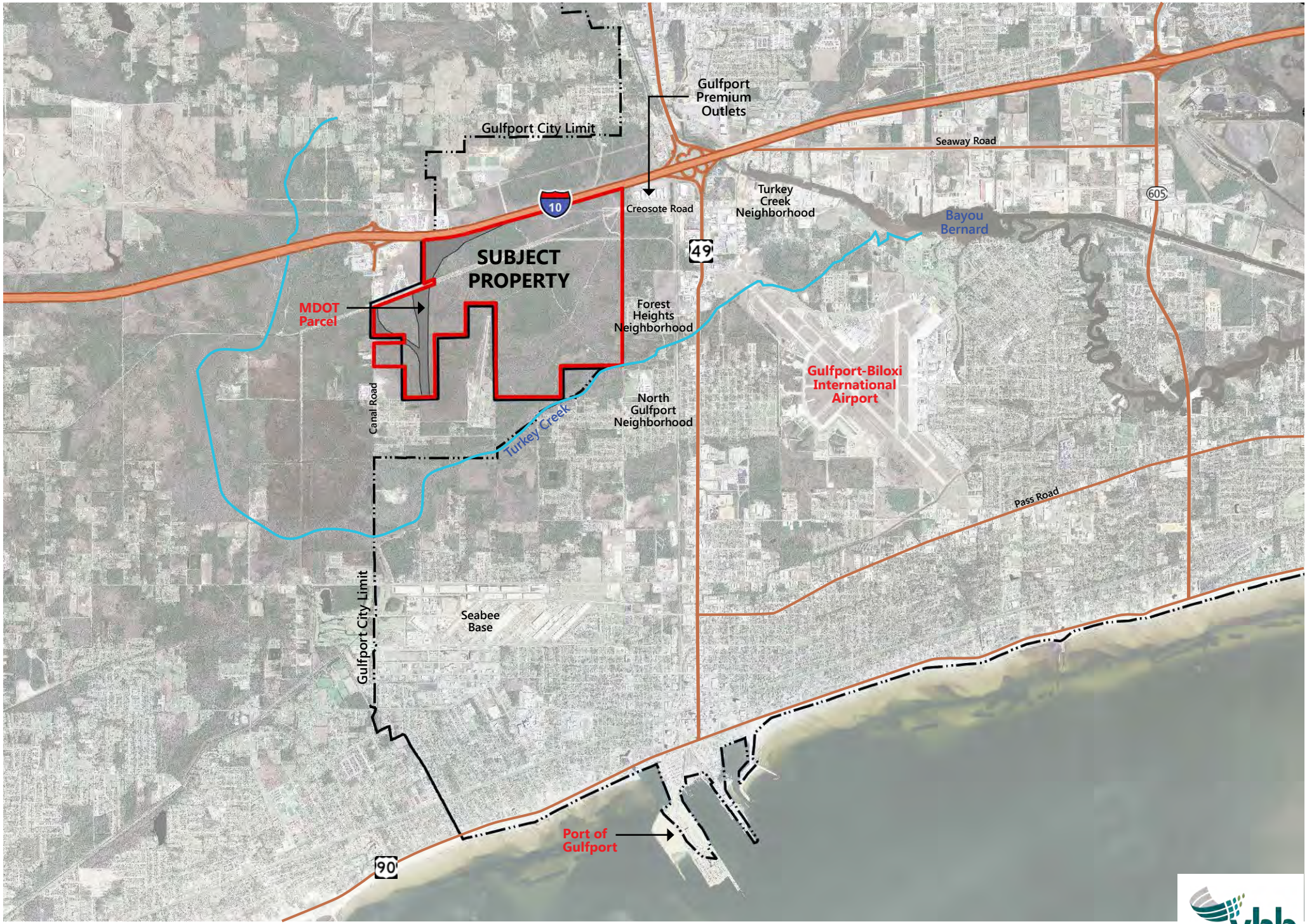

FIGURE A-1: LOCATION MAP

WARD-GULFPORT PROPERTY

SCALE IN FEET

0' 3000' 6000'

N

DATE: April 8, 2015

PROJECT NUMBER: 61867.00

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Tel: 407.839.4006 | Fax: 407.839.4008 | www.VHB.com

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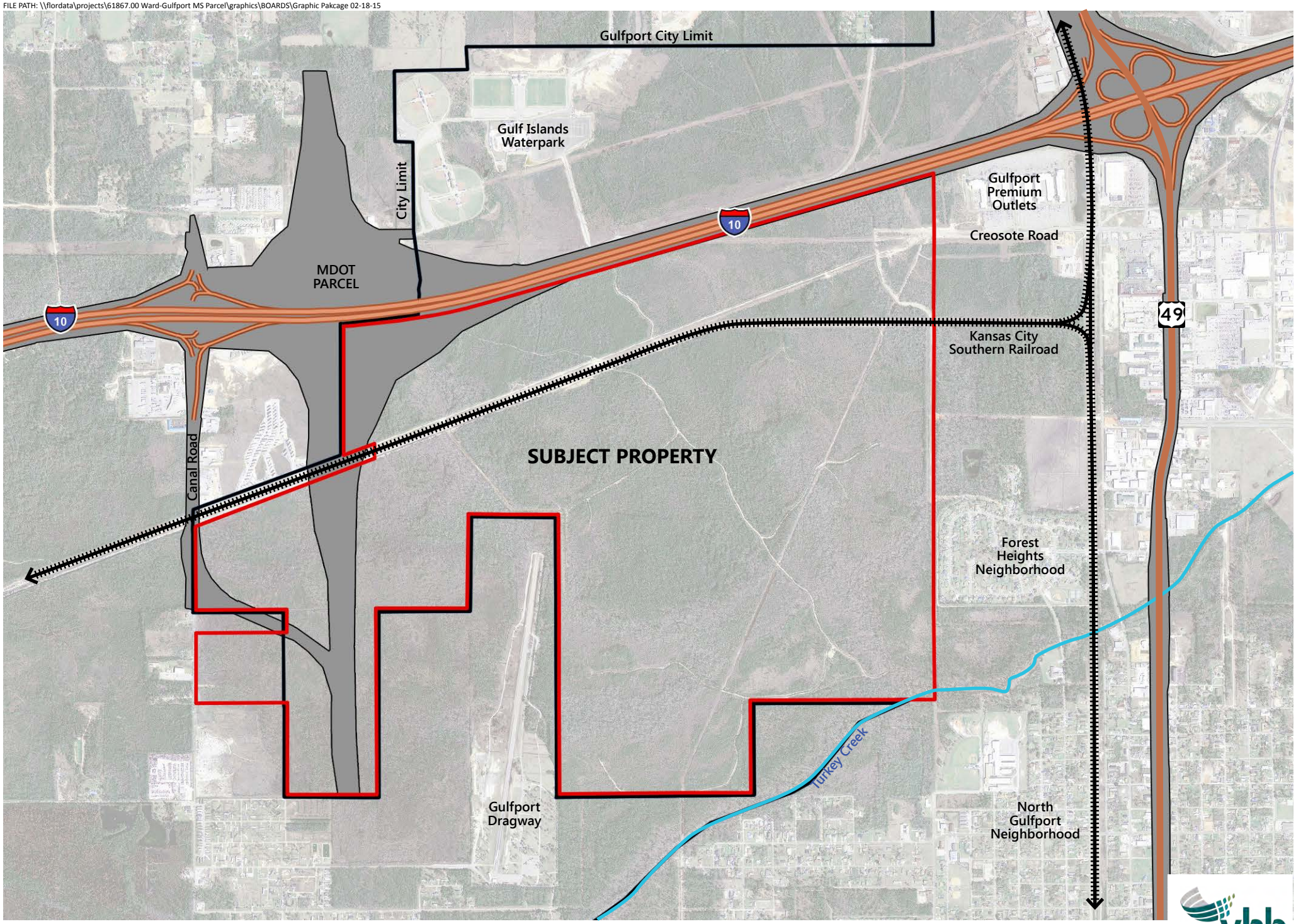

FIGURE A-2: SITE MAP

WARD-GULFPORT PROPERTY

SCALE IN FEET

0’ 1000’ 2000’

N

DATE: April 30, 2015

PROJECT NUMBER: 61867.00

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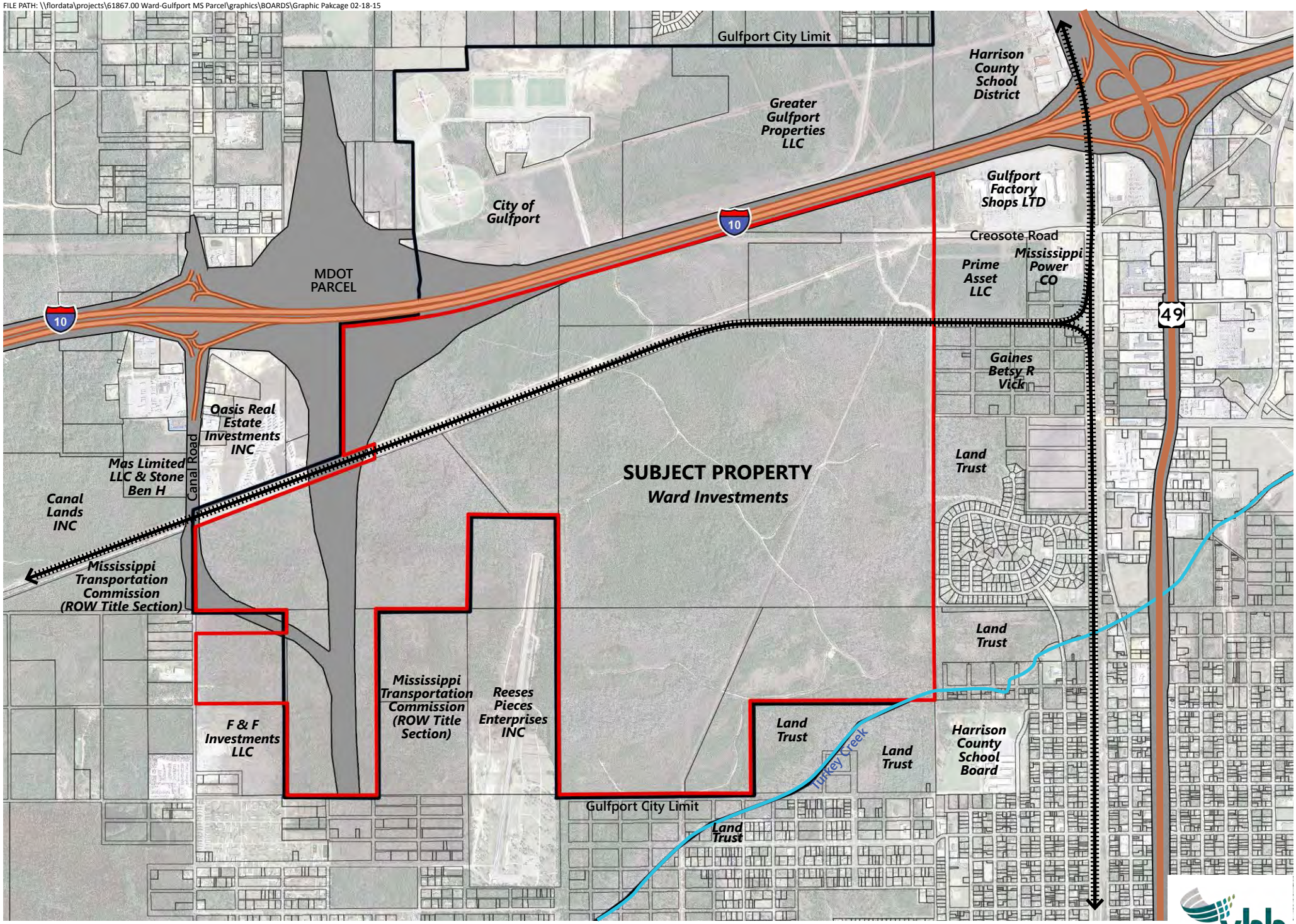

FIGURE A-3: ADJACENT LANDOWNERS MAP

WARD-GULFPORT PROPERTY

SCALE IN FEET

0’ 1000’ 2000’

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3. Purpose and Need for the Project

3.1 Project Purpose

The purpose of the proposed project is to develop the Ward Investments property into a state-of-the-art, campus-style, mixed-use destination that is economically viable, sustainable, and promotes the long-term economic, transportation, and recreational needs of the City, and can be implemented using a phased master plan approach. The project purpose will be achieved through a public/private partnership between the City of Gulfport and Ward Investments.

3.2 Project Need

The proposed project has been designed to address three primary needs:

- **Mixed-Use Development.** Address economic growth forecasted for Harrison County and the City and the needs of the anticipated Port of Gulfport expansion.
- **Extension of Creosote Road.** Improve the resiliency of the regional transportation network, enhance connectivity between surrounding communities, and provide safe and efficient access to the proposed development.
- **City Recreational Facility.** Support community demands for both passive and active recreation and expand opportunities for sports tourism in the City.

In order to achieve the purpose and need, and in consideration of the market and economic analysis, the following key principles/objectives were developed to guide design of the proposed project:

- Ensure the development footprint is large enough to support economic viability;
- Develop the site with uses that offer the flexibility to adapt as market conditions evolve;
- Support a campus-style destination;
- Create a balanced approach to developing the site (weigh uses and intensity against environmental impacts);
- To the extent feasible, avoid and minimize impacts to wetlands, especially medium and high-quality wetlands;
- Avoid development within the 100-year floodplain;
- To the extent feasible, meet or exceed community goals and objectives by incorporating sustainability elements into the project design;
- Establish housing and employment on the site that will support retail uses in the town center and create a modern live/work/play environment in the town center that promotes innovation and sustainability;

- Develop the site to provide vehicular and trail connections, amenities, and other features to support surrounding neighborhoods, including potential external environmental education opportunities; and
- Support opportunities to expand sports tourism in the City.

3.3 Mixed-Use Development

As shown on Figures A-4 and A-5, forecasts prepared by the Gulf Regional Planning Commission indicate that population growth in the Gulf Coast Region of Mississippi[1] will increase by 25,000-35,000 households and that the economy will generate more than 50,000 new jobs by 2035.[2] The majority of this job growth (approximately 80 percent) is expected to occur in Harrison County.[3] Over the next 10 years alone the projected job growth in Harrison County is expected to require 30-46 acres of new construction, mostly for office-type buildings but also for commercial and industrial type buildings.

It is expected that more than 50 percent of the new jobs created in the City by 2035 will be primarily service-related jobs (business and professional services, leisure and hospitality, private education),[4] most of which will be office-using jobs. The job growth will require 7.5-10 million square feet of office space (existing and new).[5] Currently, both the City and Harrison County lack campus-style office parks that offer high quality space along with the kinds of retail, services, housing, and other amenities nearby that companies desire to attract qualified employees. Further, existing office building space in the City is generally older, functionally obsolete, and/or poorly located relative to transportation and housing, making it more cost-effective to construct new office space, instead of renovating or redeveloping existing, vacant, office space.

In addition to these regional growth forecasts, the Port is planning an expansion of its existing operations, capacity, and ancillary services. It is anticipated that the proposed Port of Gulfport Expansion Project will create new jobs as well as demand for businesses needed to support Port operations; in turn, this will drive additional demand for new high-quality building space. It is anticipated that every direct job at the Port will generate or support more jobs elsewhere, many of which can be captured locally provided there is land for new development to occur. Much of the auxiliary demand will be for goods and services to support Port operations requiring office space, research and development facilities, or assembly and distribution space.

▼

1 Defined as Harrison, Hancock, and Jackson Counties
2 Mississippi Gulf Coast Area Transportation Study: 2035 Long-Range Transportation Plan. Prepared for the Gulf Regional Planning Commission and Mississippi Department of Transportation by Neel-Schaffer. March 2011.
3 Mississippi Gulf Coast Area Transportation Study: 2035 Long-Range Transportation Plan. Prepared for the Gulf Regional Planning Commission and Mississippi Department of Transportation by Neel-Schaffer. March 2011.
4 Mississippi Gulf Coast Area Transportation Study: 2035 Long-Range Transportation Plan. Prepared for the Gulf Regional Planning Commission and Mississippi Department of Transportation by Neel-Schaffer. March 2011.
5 Mississippi Gulf Coast Area Transportation Study: 2035 Long-Range Transportation Plan. Prepared for the Gulf Regional Planning Commission and Mississippi Department of Transportation by Neel-Schaffer. March 2011.

Figure A-4. Gulf Coast Region-Population Projections

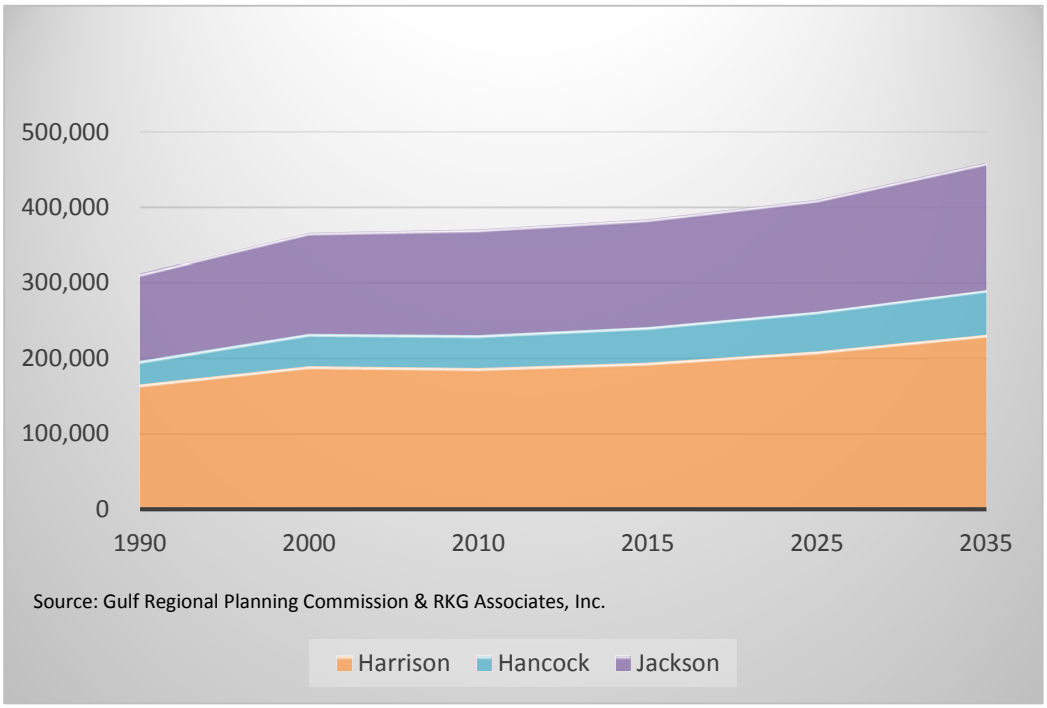
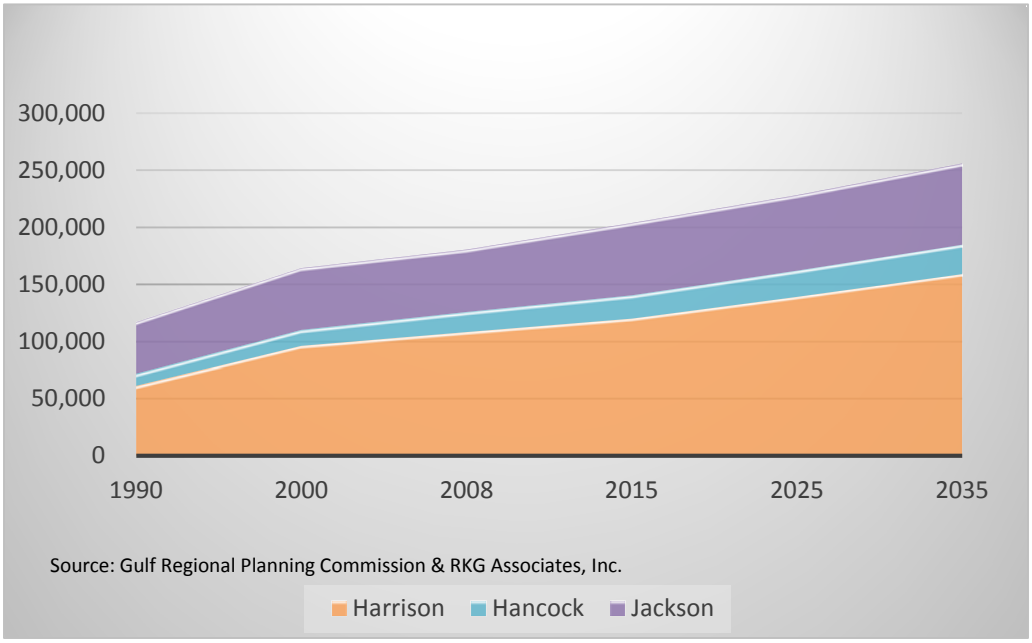


Figure A-5. Gulf Coast Region-Employment Projections



As stated in the *Gulfport 2030 Comprehensive Plan*, "The region's overall quality of life will be tied directly to the health of the City's economy." To address the need for new development, the City plans to focus on "long-term transformation of suburban centers along I-10 into regional mixed use centers" and on creating "a livable, sustainable, and economical vital City." Similarly, Harrison County's development goals are focused on sustainable growth. Most of the greenfield sites in the City are north of I-10, and developing these properties exacerbates the region's urban sprawl. The subject property is located south of I-10 (180 acres of the subject property have frontage on I-10), is in close proximity to the Port within the heart of the city, and represents 12% of all developable land in the City. The large quantity of contiguous developable land offered by the project site provides an opportunity to create an attractive, location for high quality campus-style development that will support a broad range of industries, accommodate the needs of the changing market, and address community needs.

3.4 Creosote Road

Despite the proximity of this site to the Port, I-10, and Route 49, it lacks direct access from any frontage road. There is no road access south of the KCS right-of-way. For the property to be a viable development that meets the region's economic growth requirements, a new road is needed. Creosote Road currently provides access to the Prime Outlets, adjacent to the northeast of the site, from Old Highway 49. The extension of Creosote Road, as a City-owned parkway, west to Canal Road will provide the City with a much-needed, practical east-west transportation alternative to I-10 that could be used in the event of heavy traffic or an emergency (such as if an evacuation is required).

As noted in Section 2, *Project Location and Accessibility*, Route 49 is constrained and over capacity, and Route 90 is currently at capacity. I-10 is the only evacuation route in the City of Gulfport with excess capacity available. One way to alleviate traffic along Route 49 and Route 90 is to add an additional east-west facility. The proposed Creosote Road extension (see Section 5.1, *Project Components*) will intersect with Canal Road, which provides direct access to I-10 from the western portion of the City.

The need for this east-west road has been documented by the Gulfport Regional Planning Commission (GRPC) and the City of Gulfport. The Creosote Road extension has been identified as a priority in the GRPC 2035 Long Range-Transportation Plan (LRTP) and in the Gulfport 2030 Comprehensive Plan as a future corridor to improve I-10 access and connectivity for the area, as well as provide an alternate cross-city connection.

In addition, there is currently little to no activity in and around the Ward Investments property, as most of this land is vacant. Site development, as proposed in Section 5, *Project Description*, is expected to add approximately 60,000[6] daily trips (at build-out) to the surrounding transportation network, further impacting the already constrained evacuation network. The Creosote Road extension would provide access/egress options for the Ward-Gulfport Development to the west, as well as potentially relieve the existing traffic congestion along Route 49, especially at the I-10 interchange.

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6 Trip Generation calculations are based on ITE Trip Generation Manual 9th Edition, and are subject to refinement as the development concept is further refined.

3.5 City Recreational Facility

In recent years, the City of Gulfport Department of Leisure Services has seen a steady increase in "Sports Tourism." To date, this has been driven primarily by baseball and softball at the existing Gulfport Sportsplex; however, there is a strong local interest in expanding opportunities for large soccer and other field-based sporting events. While Gulfport has historically hosted a few large soccer tournaments annually, the soccer community, including local soccer associations,[7] have stated that existing facilities are not sufficient for hosting larger and more frequent events. The large soccer events to be targeted by the City could result in participation by 70 to over 150 teams each, for a total of more than 930 teams annually. Events are typically conducted over 2 days and require the use a facility with multiple soccer fields to accommodate all levels of play. Based on previous experience and their evaluation of sports tourism opportunities, the City's Department of Leisure Services and the local soccer clubs believe the existing facilities are not sufficient for accommodating these large-scale tournaments. This is described further in Attachment C, Section 2.4.

In 2014, Gulfport hosted a total of nine soccer tournaments, including three high school and six youth events. Combined, more than 400 teams participated in these 2-day tournaments generating $1.4 million.[8] In comparison, baseball and softball tournaments in the City generated approximately $9.3 million in 2014.[9] To date, sports tourism, has been driven primarily by baseball and softball; therefore, the City is currently moving forward with plans to expand baseball and softfall facilities at the Sportsplex. Providing a more attractive recreational facility in Gulfport could more than double the economic benefits of soccer and other non-baseball/softball tournaments.

At any given time, a total of 1,800-2,000 players participate in local soccer through one of the two existing soccer clubs: the South Mississippi Soccer Club and the Gulf Coast United Soccer Club. Soccer teams that use the Gulfport fields on a regular basis include players ages 6-18 at both the recreational and select levels. The recreational players participate seasonally (fall and/or spring) while the select players play nine to ten months out of the year (typically late August through late June). For the reasons discussed below and described in Section 2.4 of Attachment C, existing facilities are not sufficient for providing year-round opportunities for the development of the recreational players and the ability to improve the select players to prepare for post high school opportunities. The existing facilities include:

- Sportsplex (4 practice fields)
- County Farm Soccer Complex (11 fields)
- Espy Avenue Soccer Complex (3 fields)
- VA Practice Fields (2 practice fields)

The existing soccer clubs currently host league play at the County Farm Soccer Complex on County Road, approximately 8 -10 minutes from the Sportsplex via I-10. The County Farm fields are also serve as

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7 South Mississippi Soccer Club and Gulf Coast United Soccer Club
8 City of Gulfport Department of Leisure Services
9 City of Gulfport Department of Leisure Services

overflow for the Sportsplex, when needed, during tournaments. These fields are not capable of accommodating the existing load, and are not sufficient for replacing the four fields at the Sportplex that will be converted to baseball and softball fields. The County Farm soccer fields are not sufficient and do not meet the City's needs because the condition of the fields are not adequate for tournament play, the location (outside of the City limits) displaces some of the economic impact that would be supported by a new recreational facility within the City, and the lack of lighting prevents evening and nighttime play which is critical to high-volume, 2-day tournaments.

Further, the City's proposed expansion of baseball and softfall facilities at the Sportsplex prevents opportunities to expand that facility for uses other than to meet baseball and softball neds. A centralized recreational facility is needed proximal to I-10 not only to accommodate the necessary services for local players, but also provide opportunities for sports tourism.

4. Existing Conditions

The Ward-Gulfport Development has the potential to affect a number of natural and cultural resources. In order to establish baseline conditions, various studies were conducted for the project including geotechnical evaluation, Hydrogeomorphic Methodology (HGM) surveys, stormwater modeling and surveys, threatened and endangered species research and surveys, market and economic analysis, Phase I archaeological survey, and property background and historic research. Potential impacts are described in Section 4, *Impact Assessment* of Attachment C: Environmental Assessment. The existing conditions of wetlands, soils, topography and elevation, wildlife habitat and threatened and endangered species, stormwater and flooding, and cultural resources are discussed in the following sections.

4.1 Wetlands

Wetlands are defined as those areas that are inundated or saturated by surface or ground water (hydrology) at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions (hydric soils). To be classified as a wetland, the native habitat needs to meet certain criteria for hydrology, soils, and plant species cover. Water needs to be present on the surface or saturated to the surface for a minimum of five percent of the growing season to meet the wetland hydrology requirement. This hydrology creates unique soil conditions, such as the accumulation of organics, iron concretions, or oxidized rhizospheres, which indicate the lack of oxygen in the soil horizon. Wetland plants are those that have adaptations to tolerate and thrive in these hydrologic and soil conditions, as listed in the National List of Plant Species that Occur in Wetlands.[10]

Wetlands provide a number of important functions. They provide natural storage of storm and flood waters, as well as water quality treatment. As such, wetlands can serve an important role in the recharge of groundwater systems and drinking water supplies. Many species of wildlife depend on wetlands for

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10 Reed, Jr., Porter B., "National List of Plant Species That Occur in Wetlands: 1988, Nevada" (1988). All U.S. Government Documents (Utah Regional Depository). Paper 508.

parts of or all of their life stages, including feeding, breeding, egg laying, larval and adult stages. A wetland's health or quality, and the functions it performs, can be adversely affected by natural or man-made changes to its hydrology, soil, and vegetation.

The quality of a wetland is assessed by how natural its defining attributes (vegetation, soils and hydrology) are and how well it is performing its various functions. When wetlands are disturbed by natural or man-made impacts, their ability to perform these functions is diminished. Many methods have been developed to assess the function/quality of a wetland. The Wetland Rapid Assessment Procedure (WRAP) or Modified WRAP are the most commonly used assessment methods, but the Hydrogeomorphic Methodology (HGM) is also used for more quantitative assessments. These assessment methods evaluate the relative amount of function provided by a wetland based on that provided by a natural undisturbed system. Wetlands with minimal disturbance that still perform most of their functions are considered high quality. When impacts have reduced one function strongly, but others remain intact, or when most functions have declined a fair amount, then these systems are be considered of medium quality. Low quality wetlands are those that have received a greater degree of impact and one or more functions is usually severely impacted.

A total of approximately 1,067 acres of wetlands occur on the project site, which is located within the regionally important Turkey Creek Watershed. The wetlands at the site consist primarily of wet pine savannahs (931acres) and bottomland hardwoods 120 acres), as well as a lone cypress system (16 acres). The boundaries of the wetlands were delineated in late 2010 by D.R. Sanders and Associates, Inc.[11] Figure A-6 depicts the approximate wetland boundaries and habitat types as delineated by DRSA. The wetland delineations were performed using procedures described in the 1987 Corps of Engineers Wetlands Delineation Manual,[12] as modified and clarified by the 1991 and 1992 memoranda from the Office, Chief of Engineers and the Region 2 Supplement [U.S. Army Corps of Engineers (2010)] to the Corps of Engineers 1987 Wetlands Delineation Manual. Data were recorded for 42 sampling locations (Figure A-7) on the standard data form for Region 2. In addition to wetlands, several drainage ditches totaling approximately 13 acres, typically adjacent to logging roads and the KCS right-of-way, meet the definition for "Waters of the United States." The vast majority of these ditches serve to drain the property and adjacent wetlands.

4.1.1 Wetland Quality Assessments

The project site has been disturbed through previous road and railroad construction, silviculture activity, particularly the access roads and ditches. Further, wetland quality has been reduced in many portions of the site due to the exclusion of fire. At the request of the U.S. Army Corps of Engineers (ACOE), Ward Investments assessed the quality of the onsite wetlands using the Hydrogeomorphic Method (HGM). HGM is a quantitative assessment methodology that provides a greater amount of detail relative to the

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11 Wetlands Identification/Delineation Report for Ward Property in Gulfport (Harrison County), Mississippi. D. R. Sanders and Associates, Inc. February 14, 2011.

12 Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Environmental Laboratory. January 1987.

health of the assessed wetland system in terms of hydrology, vegetation, landscape/wildlife support, and biogeochemistry, specifically tied to the particularly system type.

Figure A-6. Sanders' 2010 Wetland Delineation and Habitat Map

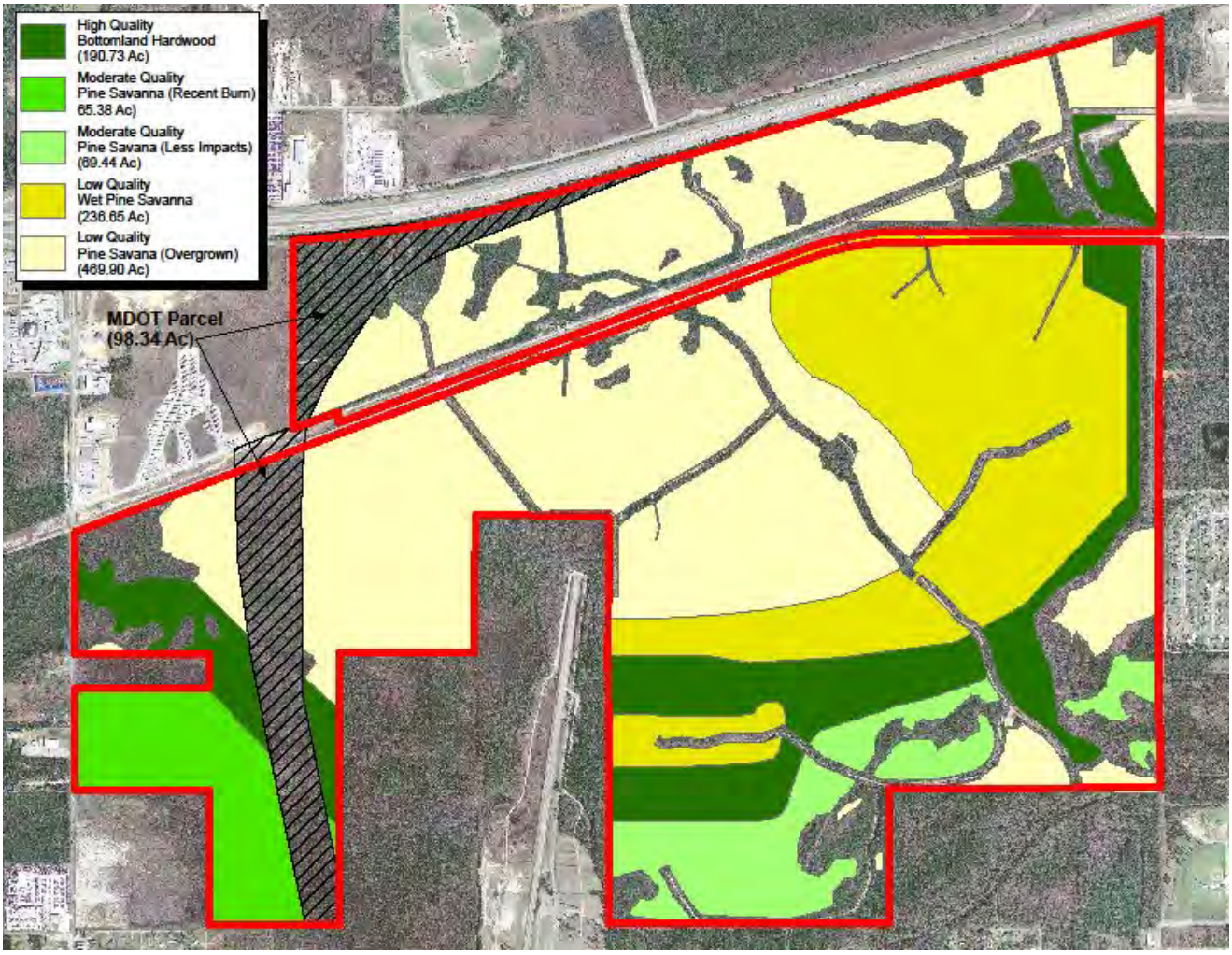
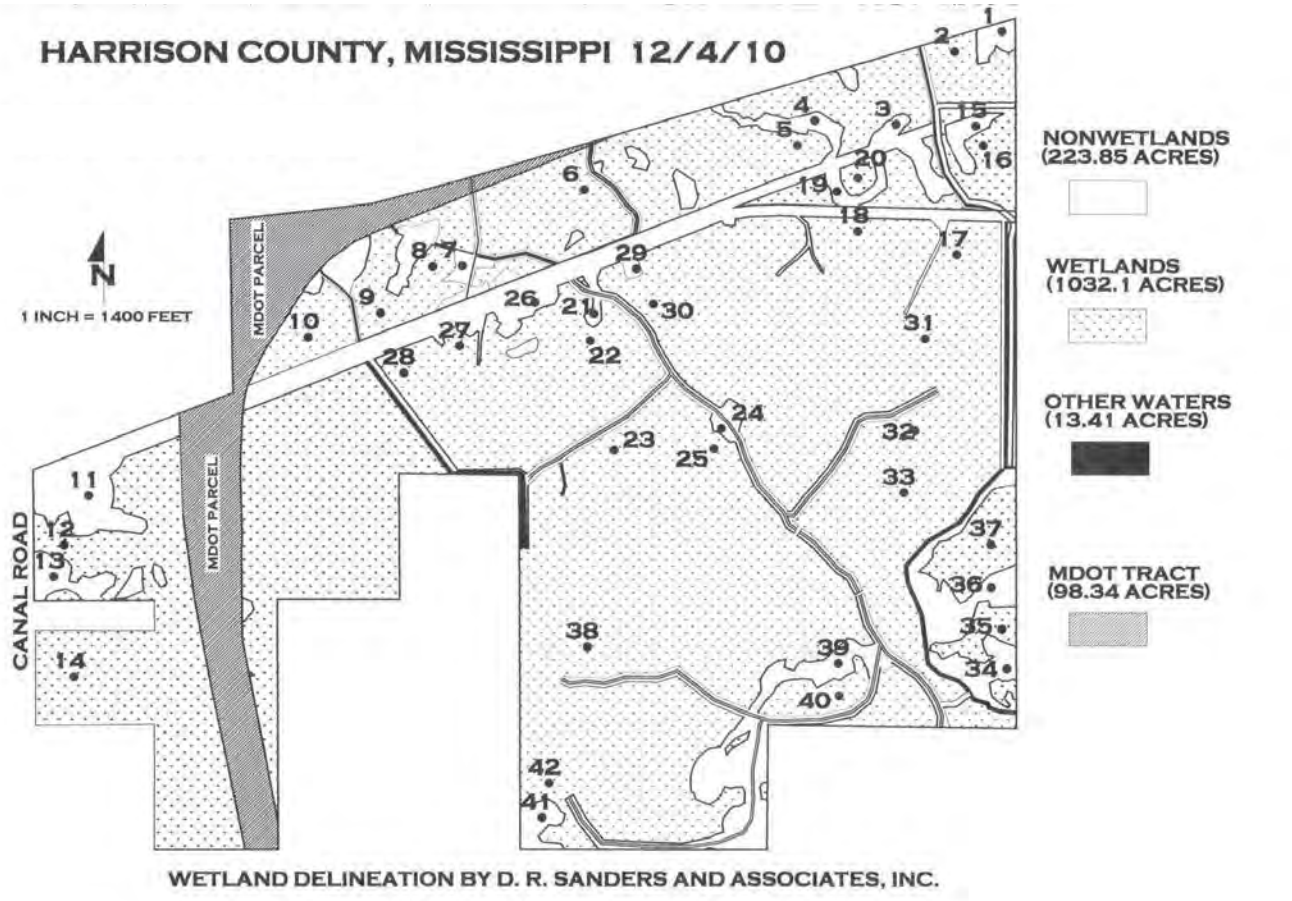


Figure A-7. Sanders' 2010 Sampling Locations



Wetlands scientists from VHB prepared a draft HGM assessment methodology and submitted it to the ACOE for review and approval on November 6, 2014. The methodology proposed to use the Regional Guidebooks developed by the ACOE for Wet Pine Flats on mineral soils,[13] and for forested wetlands in alluvial valleys of the coastal plain.[14] The ACOE concurred that the proposed methodology was appropriate and field surveys to collect the HGM data were conducted during November and December of 2014, and March of 2015. As prescribed by each HGM methodology, the site was divided into wetland assessment areas (WAA) based on habitat type and subtype, ditches and roads, geographic separation, and differences in vegetation. A total of 38 WAAs were defined, including 28 wet pine savannahs

13 Rheinhardt, R. D., Rheinhardt, M. C., and Brinson, M. M. (2002). "A Regional Guidebook for Applying the Hydrogeomorphic Approach to Assessing Wetland Functions of Wet Pine Flats on Mineral Soils in the Atlantic and Gulf Coastal Plains," ERDC/EL TR-02-9 <http://el.erdc.usace.army.mil/elpubs/pdf/trel02-9.pdf> , U.S. Army Engineer Research and Development Center, Vicksburg, MS. (FCI Calculator <http://el.erdc.usace.army.mil/wetlands/calc/WetPineFlats(xl).xls>)

14 Wilder, T. C., Rheinhardt, R. D. and Noble, C. V. (2013). "A Regional Guidebook for applying the Hydrogeomorphic Approach to assessing wetland functions of forested wetlands in alluvial valleys of the coastal Plain of the southeastern United States," ERDC/EL TR-13-1 <http://el.erdc.usace.army.mil/elpubs/pdf/trel13-1.pdf> , U.S. Army Engineer Research and Development Center, Vicksburg, MS. (FCI Calculator <http://el.erdc.usace.army.mil/wetlands/calc/Alluvial_valley_FCI.xlsx>)

(18 cypress/pine subtype and 10 bunchgrass/pine subtype) WAAs, 9 bottomland hardwoods WAAs, and 1 cypress WAA. A total of 205 plots were analyzed, with at least three plots in every WAA. Plots were specifically included within and outside of drainage ditch draw down areas within the wet pine savannah WAAs. The cypress wetland was analyzed using the wet pine flats methodology for cypress/pine areas since no regional guidebook has been developed for these systems.

Figure A-8 depicts the wetland quality for all wetlands on the subject property based on the HGM data analyses. Note that some of the previous habitat type designations have also changed based on this detailed work. The wetland areas within the draw down influence of drainage ditches are all of low quality. Additionally, low quality wetlands are generally concentrated in the northern half of the property where the drainage ditches are more common, off road vehicle impacts are most intense, and fire and tree harvesting has been absent the longest. Conversely, medium quality wetlands are more common in the southern portion of the Ward Investments property: to the east where timbering occurred more recently and ditches are few, and to the west where ditches are absent and in an area that burned more recently.

Provided below in Table A-1 is a summary of the wetland quality results by habitat type. A total of 585 acres of wetlands were determined to be low quality, 402 acres were considered medium quality, and 80 acres are high quality. The low quality wetlands are primarily wet pine savannahs, the cypress system, and ditch influenced bottomland hardwood. The remaining wet pine savannahs, and a few acres of bottomland hardwood were determined to be medium quality. The only high quality wetlands on site are bottomland hardwood habitat (Figure A-8). Since the wet pine savannahs are a fire maintained habitat, the quality of this habitat will most likely continue to decline in the absence of vegetation maintenance. As expected, data from some of the HGM plots revealed a complete absence of desirable herbaceous species and received a vegetation score of 0. The remaining wet pine savannahs will also progress to this condition as the shrub and canopy strata continue to increase in cover and the shading becomes even more pronounced.

Table A-1. Wetland habitat and subtype quality and acreage on the project site.

Wetland Type	Subtype	Quality	Total
Wet Pine Savannah	Bunchgrass/pine	Low	98
Wet Pine Savannah	Bunchgrass/pine	Medium	92
Wet Pine Savannah	Cypress/Pine	Low	452
Wet Pine Savannah	Cypress/Pine	Medium	290
Bottomland Hardwood		Low	35
		Med	4
		High	80
Cypress Strand		Medium	16
Total			1067

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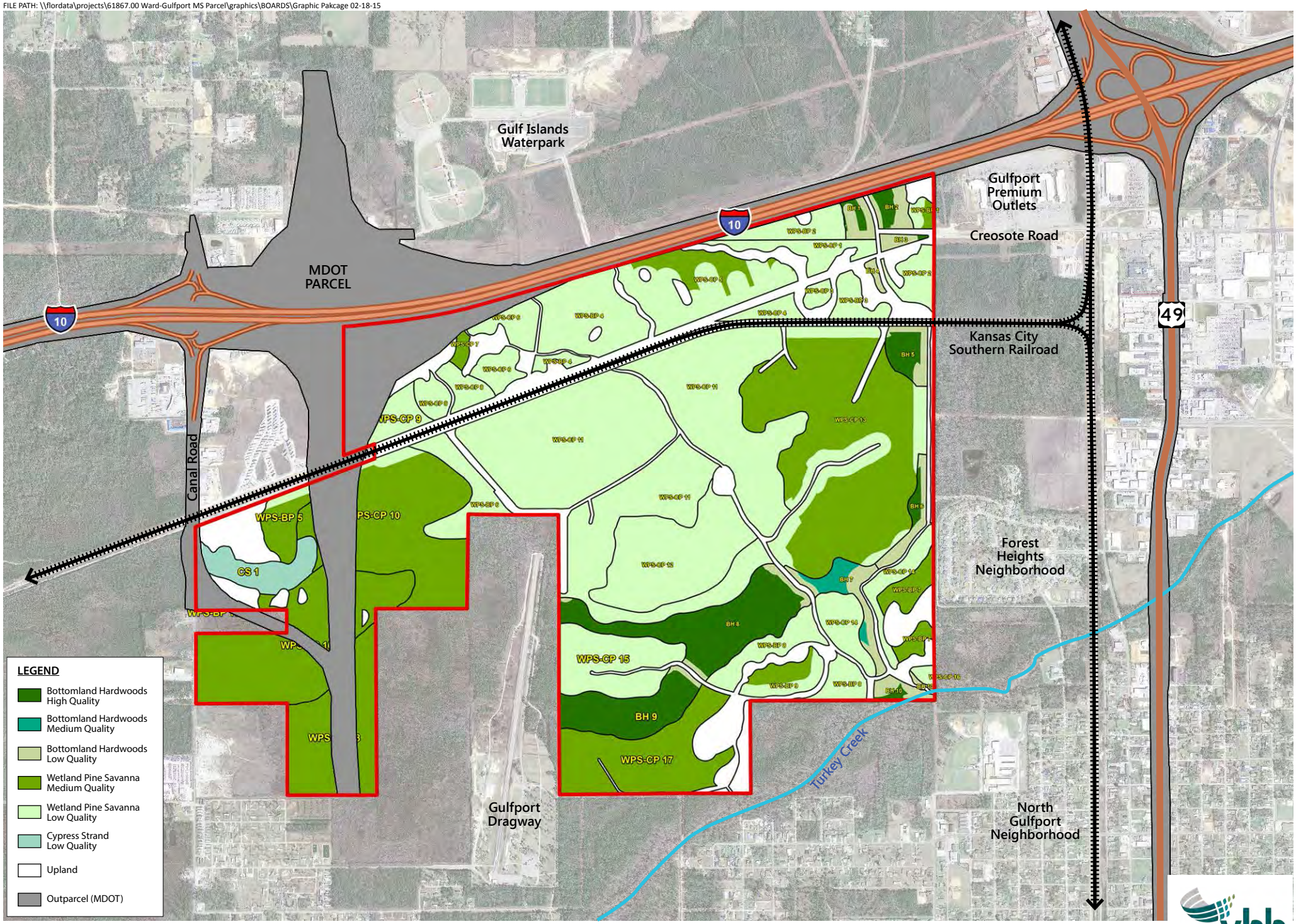

FIGURE A-8: UPDATED (2015) WETLANDS QUALITY MAP

WARD-GULFPORT PROPERTY

SCALE IN FEET
0' 1000' 2000'

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vhb
DATE: April 30, 2015
PROJECT NUMBER: 61867.00
225 E. Robinson St, Suite 300 | Orlando, Florida 32801
Tel: 407.839.4006 | Fax: 407.839.4008 | www.VHB.com

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4.1.2 Wetland Habitat Types

Three basic wetland habitat types are located within the project area: wet pine savannah, bottomland hardwoods, and cypress.

Wet Pine Savannah. Wet pine savannahs are considered one of the primary habitat types within the Wet Pine Flats category. Wet Pine Flats are characterized by an open savanna of shade-intolerant forbs and graminoids with widely scattered pines. The unique nature of wet pine flats as an open savannah is their history of development associated with frequent fire (every 1 – 3 years). Both the plant and wildlife of wet pine savannahs ecosystems evolved not only to tolerate frequent fire, but to require fire to complete critical phases of their life cycles. This is one of the important functions of this habitat that meets critical life stages not provided by other wetland systems. Fire also prevents fire-intolerant species from outcompeting these fire-evolved species. However, as man has moved into the landscape, the potential and frequency of these needed fires has been reduced. In the absence of regular fire, shrubs and woody species increase in cover and shade out the desirable herbs and forbs of the groundcover. As the vegetative community changes so does its value to the wildlife that depend on it.

Wet pine savannah habitats on the subject property can be divided into two categories (subtypes) based on hydrology and associated vegetation species. Cypress/pine savannah comprises 742 acres within the project area and is characterized by a somewhat wetter hydrology (at least historically) and the presence of pond cypress (*Taxodium ascendens*) and/or bald-cypress (*Taxodium distichum*). Bunchgrass/pine savannah comprises 190 acres of the project area. This habitat typically lacks cypress trees and has historically exhibited groundcover dominated by bunchgrass species such as wiregrass (*Aristida stricta*), dropseed (*Sporobolus* spp.), and little bluestem (*Schizachyrium scoparium*).

Most pine savannah on the subject property have experienced some level of disturbance from historic logging activities including hydrologic alterations from road construction and ditch excavation. Disturbed areas typically exhibit an understory of dense saplings and shrubs which has heavily impacted the groundcover, completely eliminating the herbaceous component of the community in many areas. The medium quality wet pine savannah habitats have experienced less disturbance other than fire exclusion. The fire suppression has resulted in a more developed understory than is typical for wet pine savannah; however, the groundcover community is more intact than in the low quality areas.

The canopy community within the cypress/pine savannah areas is dominated by slash pine (*Pinus elliotii*), and bald/pond cypress is the subdominant species. Associated tree species included swamp tupelo (*Nyssa sylvatica* var. biflora), red maple (*Acer rubrum*), sweetbay (*Magnolia virginiana*), and red bay (*Persea borbonia*). The shrub stratum is dominated by large gallberry (*Ilex coriacea*) and wax myrtle (*Myrica cerifera*). Other species included shiny lyonia (*Lyonia lucida*), titi (*Cyrilla racemosa*), black titi (*Cliftonia monophylla*), and gallberry (*Ilex glabra*). Laurel greenbriar (*Smilax laurifolia*) is prevalent throughout this habitat type. Groundcover species varied depending on subcanopy and shrub cover, but is typically dominated by grassy beaksedges (*Rhynchospora* spp.), bogbuttons (*Lachnocaulon* spp.), bushy bluestem (*Andropogon glomeratus*), panic grasses (*Panicum* spp.), and marsh pennywort (*Hydrocoytl*e sp.). Other species associated with this

habitat include peelbark St. John's-wort (*Hypercium fasciculatum*), clubmoss (*Lycopodiella appressa*), star rush (*Rhynchospora colorata*), yelloweyed grass (*Xyris* spp.), yellow pitcher plant (*Sarracenia flava*) and pipewort (*Eriocaulon* spp.).

Within the bunchgrass pine savannah habitat the dominant species is slash pine. The subdominant species is loblolly pine (*Pinus taeda*). Other canopy tree species include sweetbay, red maple, swamp tupelo, and red bay. Shrubs are dominated by gallberry, large gallberry, and titi. The shrub strata also includes wax myrtle, black titi, red chokeberry (*Photinia pyrifolia*), and yaupon holly (*Ilex vomitoria*). Laurel greenbriar provide dense vine cover within the disturbed areas and dense stands of black berry (*Rubus* spp.) are present throughout. Groundcover is severely impacted by shrub and vine cover in most areas. Dominant species include grassy beaksedges, bushy bluestem, clubmoss, and panicgrasses. Associated groundcover species includes yelloweyed grass, savannah meadow beauty (*Rhexia alifanus*), Virginia chain fern (*Woodwardia virginica*), pitcher plant, wiregrass, savannah hairgrass (*Muhlenbergia expansa*), and little bluestem.

Cypress. The cypress habitat on the project site is comprised of one cypress strand or slough totaling 16 acres. This habitat type is slightly deeper than the wet pine savannahs and tends to reduce the frequency of pine trees and have a greater density of cypress trees. This habitat burns less frequently than wet pine savannahs and has a less dense groundcover and shrub component. The deeper water associated with this habitat has a longer hydroperiod and, as such, provides an opportunity for breeding and larval life stages of amphibians with longer larval stages. Suppression of natural fire has provided opportunity for understory species to form dense communities throughout these areas. Bald-cypress is the dominant canopy species within these areas. Associated canopy species included swamp tupelo, sweetbay, and slash pine). The sapling/shrub community consists primarily of titi, large gallberry, shiny lyonia), and wax myrtle. Laurel greenbriar provide moderate cover within the cypress areas. The groundcover stratum is sparse due to the thick canopy and dense understory present within this habitat. Typical herbaceous species include cinnamon fern (*Osmunda cinnamomea*), netted chain fern (*Woodwardia areolata*), maiden fern (*Thelypteris* spp.), yelloweyed grass (*Xyris* spp.), lizard's-tail (*Saururus cernuus*), and marsh pennywort (*Hydrocotyle* spp.).

Bottomland Hardwoods. Bottomland hardwood areas cover approximately 120 acres of the Ward Investments property and are primarily associated with areas of lower elevation where creeks or sloughs may have historically existed. The bottomland hardwoods onsite are considered headwater systems as they are found at the head of small streams, including areas up-gradient of distinct channel formation down to 3rd order streams, transitioning to mid-gradient riverine systems as overbank flow increases. Headwater Slope wetlands are characterized by water tables at or near the surface that respond rapidly to precipitation (direct and/or return flow) and evapotranspiration. They attenuate surface flow to the stream channels down-gradient, dampening the hydrograph during high precipitation events and extending base flow of streams as the groundwater is released. Channels associated with Headwater Slope wetlands are generally poorly developed in the upper reaches, becoming more distinct with progression down-gradient. Fire, although less frequent, can also affect this community.

The onsite bottomland hardwoods habitats have experienced some fragmentation due to adjacent development, including the KCS Railroad, I-10, and logging road construction. The primary effect of the

fragmentation was the alteration of the natural flow regime by ditch excavation, which channelized water flow from north to south, disrupting the natural northwest to southeast flow pattern within these areas.

The bottomland hardwoods habitat on the subject property consists of a closed canopy of hardwood species including swamp tupelo, red maple, sweetbay, bald-cypress, and slash pine. The shrub strata was sparse in most areas of this habitat type; however, shrub densities increase dramatically within or adjacent to areas disturbed by ditch excavation, hydrology alterations, and potentially historic storm damage. In most areas, the shrub community consists of common buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), swamp azalea (*Rhododendron viscosum*), titi, wax myrtle, shiny lyonia, and American snowbell (*Styrax americana*). Disturbed areas exhibited a more dense shrub community dominated by titi, large gallberry, gallberry, and black titi. Laurel greenbriar is also present in moderate densities within and adjacent to disturbed areas. Groundcover is generally sparse, consisting of marsh pennywort, cinnamon fern, maiden fern, netted chain fern, panicgrass, and lizard's tail.

A small section of Turkey Creek flows through the property's in the southeastern corner. The creek includes an open channel that contains water year round and an adjacent area of bottomland hardwoods habitat. The bottomland hardwoods habitat is inundated during higher flow periods for Turkey Creek.

4.1.3 Wetland Hydrology

The primary hydrologic source for the pine savanna wetlands is direct rainfall. During the non-growing season when evapotranspiration rates are low, direct rainfall is sufficient to saturate the soil column to, or within a few inches of, the soil surface. In most situations, the water percolates downward in the profile slowly, and the recurrent rainfall replenishes water lost through downward percolation. Due to the very low evapotranspiration rates during the non-growing season, only small volumes of water are lost from the soil when evapotranspiration rates rise. Therefore, the soils typically remain saturated until well into the next growing season.

The hydrology of the bottomland hardwood wetlands is influenced both by direct rainfall and surface runoff. As the water in the upslope watershed begins to move across the landscape, it accumulates in drainages and flows toward Turkey Creek. The drainage area for the bottomland hardwood wetlands is much larger than the subject property. Surface water enters the property from north of I-10 by a large drainage ditch on both the east and west side of the property. Additional drainage flows on to the site

from an area west of Canal Road. Water is added to the flow from onsite sources as the flow continues south and southeast and then eventually reaches the bottomland hardwood wetlands.

The hydrology of the site has been altered by the construction of a network of ditches and logging roads, the KCS Railroad, or while the site was used for silvicultural purposes. Typically, ditches occur on both sides of most logging roads on the property. Some of the material excavated from the ditches was used to construct the bed of the logging roads. Excess material was occasionally deposited on the outer edge of the ditches, which limited surface runoff from the wetlands into the ditches in those areas. There also have been other roads constructed on the property, especially an east-west road paralleling the north side of a railroad track across the property. These roads tend to constrict water flows, resulting in increased velocity of the water downstream from the railroad embankment.

4.2 Soils

A total of eight soil series and one soil association occur on the Ward Investments property (Figure A-9).[15] The four most abundant soil series are: (1) Smithton (31%); (2) Harleston A (0 to 2 % slopes) (24%); (3) Ponzer and Smithton Association (17%); and (4) Ocilla (8%). The other soil series occurring on the site are: Atmore, Harleston B (2 to 5% slope), Nahunta, Plummer, Poarch A (0 to 2% slope) and Poarch B (2 to 5% slope). Of the eight soil series identified, four are considered to be hydric (the Smitherton, Ponzer, Atmore, and Plummer soil series). As shown on Figure A-9, these four series of hydric soils cover the majority of the project site. The Poarch series is nonhydric soils. The Harleston, Nahunta, and Ocilla series are considered to be nonhydric soils with hydric inclusions.

4.3 Topography and Elevations

In June 2014, Light Detection and Ranging (LiDAR) technology was used to provide detailed topographic contours for the project site. The LiDAR survey confirmed that the topography of the site generally slopes to the south and east toward Turkey Creek. Near I-10 the elevations reach 30 feet above mean sea level (AMSL), then the site slopes toward the southeast where the lowest elevations of 9 feet AMSL were observed. Large areas of the central and southern portions of the site are flat or have concave slopes of less than 1-foot relief.

15 NRCS On-line Soil Data (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)

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SOIL	SOIL NAME	ACRES	PERCENT
At	Atmore Silt Loam, 0 to 2% Slopes	81.5	6.1%
HlA	Harleston Fine Sandy Loam, 0 to 2% Slopes	314.1	23.6%
HlB	Harleston Fine Sandy Loam, 2 to 5% Slopes	26.5	2.0%
Nh	Nahunta Silt Loam	81.5	6.1%
Oc	Ocilla Loamy Sand	108.7	8.2%
Pm	Plummer Loamy Sand	39.8	3.0%
PoA	Poarch Fine Sandy Loam, 0 to 2% Slopes	13.8	1.0%
PoB	Poarch Fine Sandy Loam, 2 to 5% Slopes	26.7	2.0%
Ps	Ponzer and Smithton Soils	229.8	17.3%
St	Smithton Fine Sandy Loam	406.1	30.6%

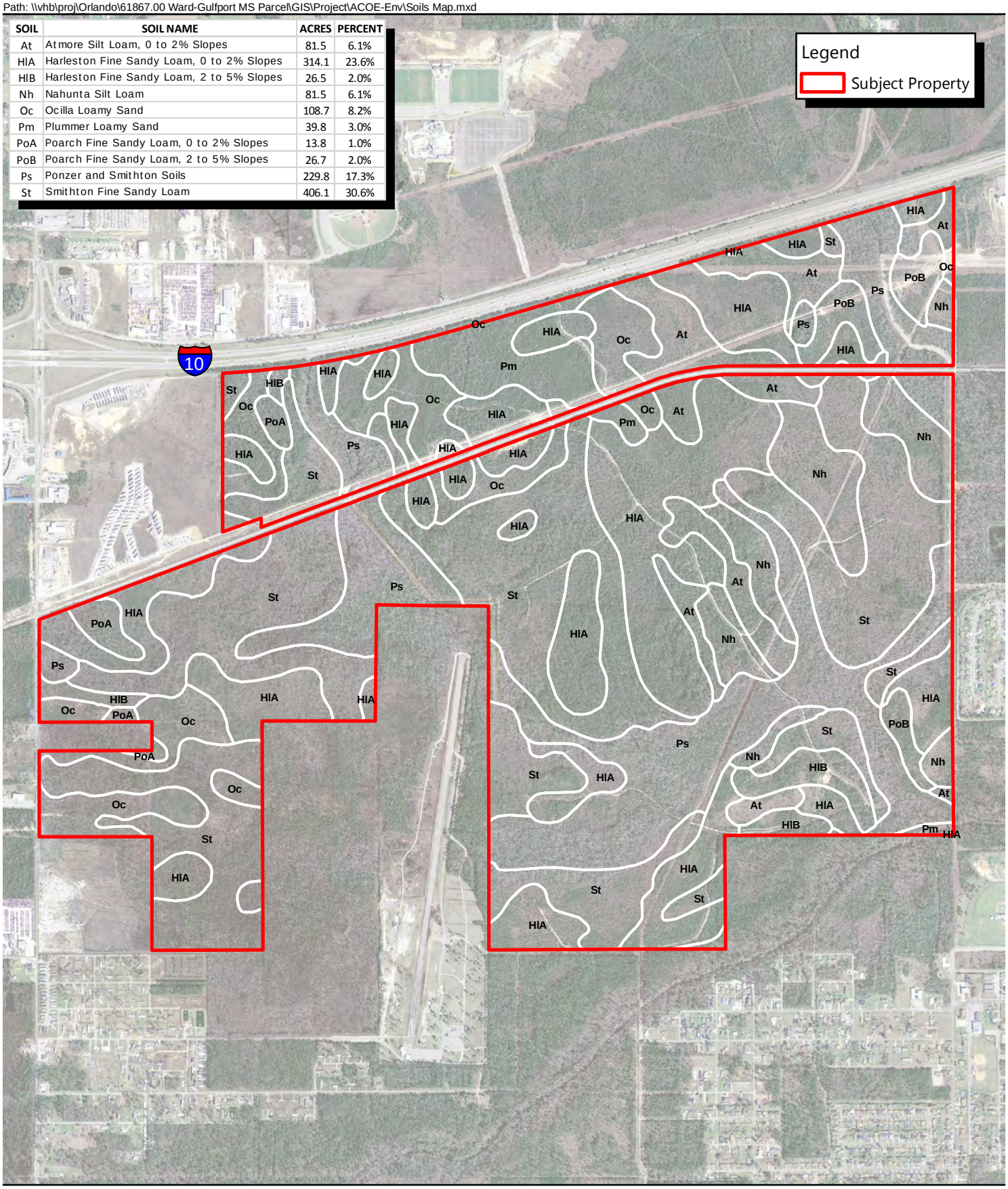

Figure A-9

Ward-Gulfport Property

Soils Map

April 2015

0 750 1,500 Feet

N

4.4 Wildlife Habitat/Threatened and Endangered Species

Several technical documents and resources were reviewed to determine if protected wildlife and plant species of concern may be present on the project site. Many of these resources were available on-line and were supplemented by reports, correspondence, and surveys. There are a number of Federally protected species that have been documented in Harrison County. The US Fish and Wildlife Service (FWS) identified 15 species within Harrison County that are endangered, threatened or candidate species. Several of these species are exclusively located in coastal habitats and, therefore, suitable habitat is not present on the project site (sea turtles, Gulf sturgeon, West Indian manatee, and shore birds). Those species not exclusively located in coastal habitat are listed in Table A-2. The Mississippi Department of Wildlife, Fisheries and Parks, Museum of Natural Science (MDWFP) list these same wildlife species as well as two others that have the potential to be present on the project site (bald eagle and ironcolor shiner). There are no plant species protected as endangered by MDWFP.

Protected species surveys were conducted in 1999-2000, but no protected species were identified on the parcel. The Mississippi Department of Transportation (MDOT) had endangered and threatened species surveys conducted in 2002 for their area of taking through the project site and "did not find any evidence that these species were present in the area."[16] In addition, numerous field days have been spent onsite in 2014 and 2015 by scientists evaluating wetlands, but protected species have not been observed to date.

In a letter dated January 18, 2013, the FWS noted that several threatened and endangered species may occur in the vicinity of the subject property and requested surveys on the project site to determine the presence/absence of gopher tortoise, black pinesnake, Louisiana quillwort, and bald eagle. In response to this request, Ward Investments engaged Barry A. Vittor and Associates, Inc. (BVA) to conduct the requested surveys. The survey was completed in April 2014,[17] a period of time when Louisiana quillwort is most readily identified. No state or Federally listed protected species were documented during the BVA surveys.

The site has been substantially impacted from past drainage and silviculture practices, as well as from fire exclusion. As such, the native wetland and upland habitats have been disturbed and are of reduced value as wildlife habitat. Unless vegetative maintenance of the wet pine savannah habitats is initiated, the quality of these wetlands and their habitat value will continue to decline.

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16 ACOE Environmental Assessment, 404(B)(1) Analysis, Statement of Findings, and Decision Document. Application SAM-2007-1082-MFM, December 23, 2008.

17 Threatened and Endangered Species Survey of a Proposed Retail/Commercial Development in Harrison County, Mississippi. Prepared for Ward Investments by Barry A. Vittor & Associates, Inc. May 2014.

Table A-2. Listed Species Known to Occur within the Project Area

Species	FWS Status
Alabama red-bellied turtle (*Pseudemys alabamensis*)	Endangered
Black pinesnake (*Pituophis melanoleucus lodingi*)	Candidate
Dusky gopher frog (*Rana sevosa*)	Endangered
Gopher tortoise (*Gopherus Polyphemus*)	Threatened
Louisiana black bear (*Ursus americanus*)	Threatened
Louisiana quillwort (*Isoetes louisianesis*)	Endangered
Red-cockaded woodpecker (*Picoides borealis*)	Endangered
Bald Eagle (*Haliaeetus leucocephalis*)	Delisted (FWS)

4.5 Stormwater/Flooding

The Ward Investments property is within the Turkey Creek Watershed (Figure A-10), which is considered an important and sensitive watershed in the region. Previous studies indicate that improvements are needed to address drainage, flow, and associated flooding issues that have been created by human alteration and lack of maintenance and improvements to the existing drainage systems. The Ward Investments property is in the northwest portion of the City (Figures A-10 and A-11) and accounts for approximately 7 percent of the land area of the 17,472-acre Turkey Creek Watershed.[18] The proposed development will occupy approximately 524 acres of the 1,300 acre property which accounts for approximately 3 percent of the Turkey Creek Watershed in land area.

According to the ACOE July 2005 study titled *Section 205 Turkey Creek Flood Damage Reduction Study Project Information Report Gulfport, Mississippi*, Turkey Creek is approximately 13.7 miles long, drains into Bayou Bernard, and has a history of overflowing its banks and creating flooding problems for properties both within and near the Turkey Creek Watershed. The report also indicates that during high flow conditions, runoff from the northern basins causes water to over top the creek's banks and flow over 28th Street. Further, flooding in the lower basins results from both inflows from the basins near the lower six mile section of the creek and from storm surges from the Mississippi Sound. The July 2005 ACOE report analyzed 25 alternatives to reduce flooding in the Turkey Creek Basin. Twenty four of the alternatives were eliminated due to factors such as opposition from local interest groups, adverse environmental impacts, caused further flooding problems, and/or because they were cost effective. The recommended solution, which has not been implemented, includes the construction of levees around two existing developments (Floral Estates and Forest Heights), selective clearing and snagging of 5.2 miles of Turkey Creek, relocation of three residences, and mitigation for the proposed improvements.

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18 Section 205 Turkey Creek Flood Damage Reduction Study Project Information Report Gulfport, Mississippi. U.S. Army Corps of Engineers, Mobile District. July 2005.

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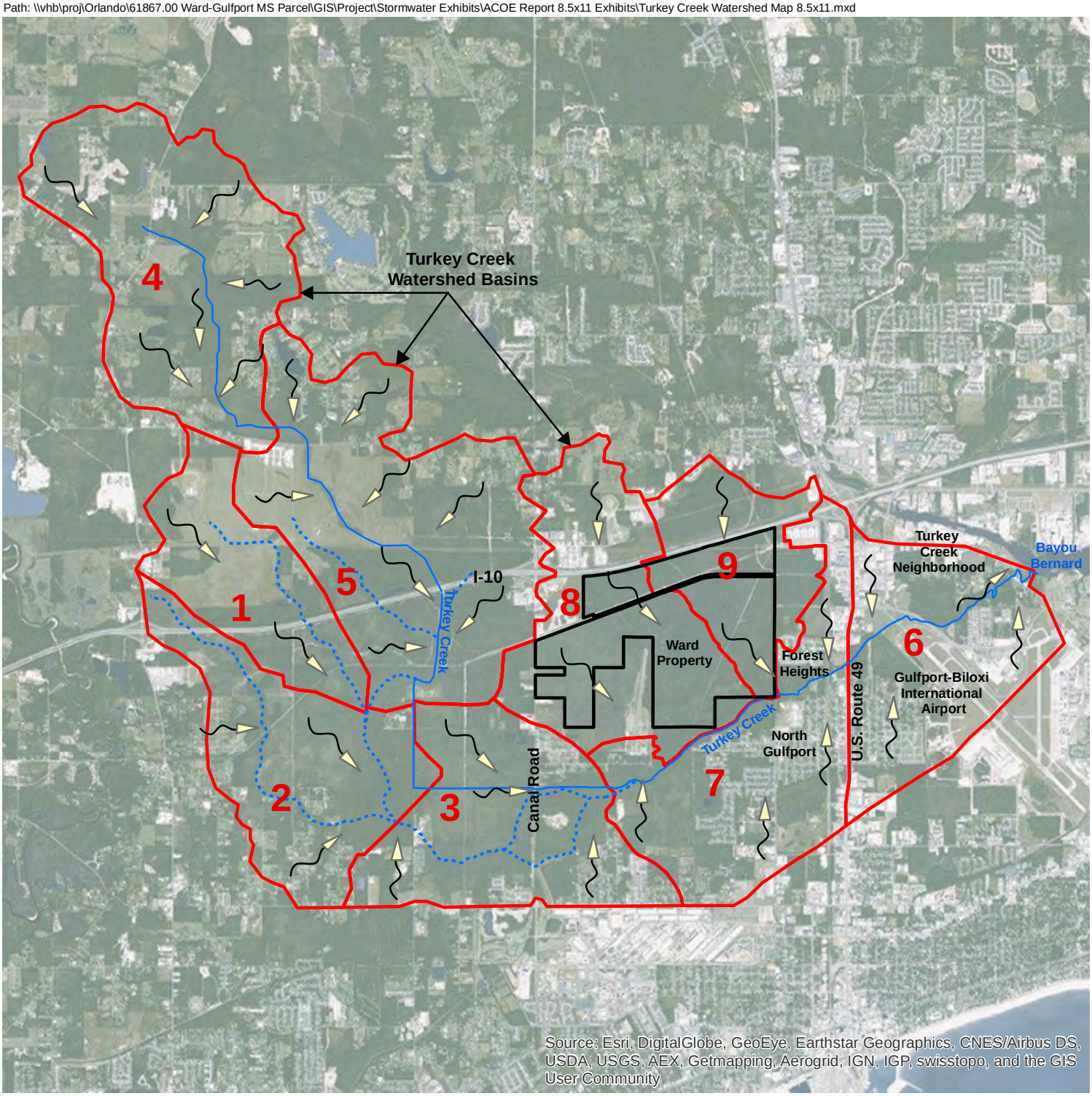

Note: Turkey Creek main stem alignment obtained from Army Corps of Engineers Mobile District "Section 205 TurkeyCreek Flood Damage Reduction Study Project Information Report Gulfport, Mississippi", July 2005.

vhb
225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Ward Investments
Turkey Creek Watershed
April 2015

A-10

0 0.5 1 2 Miles

N

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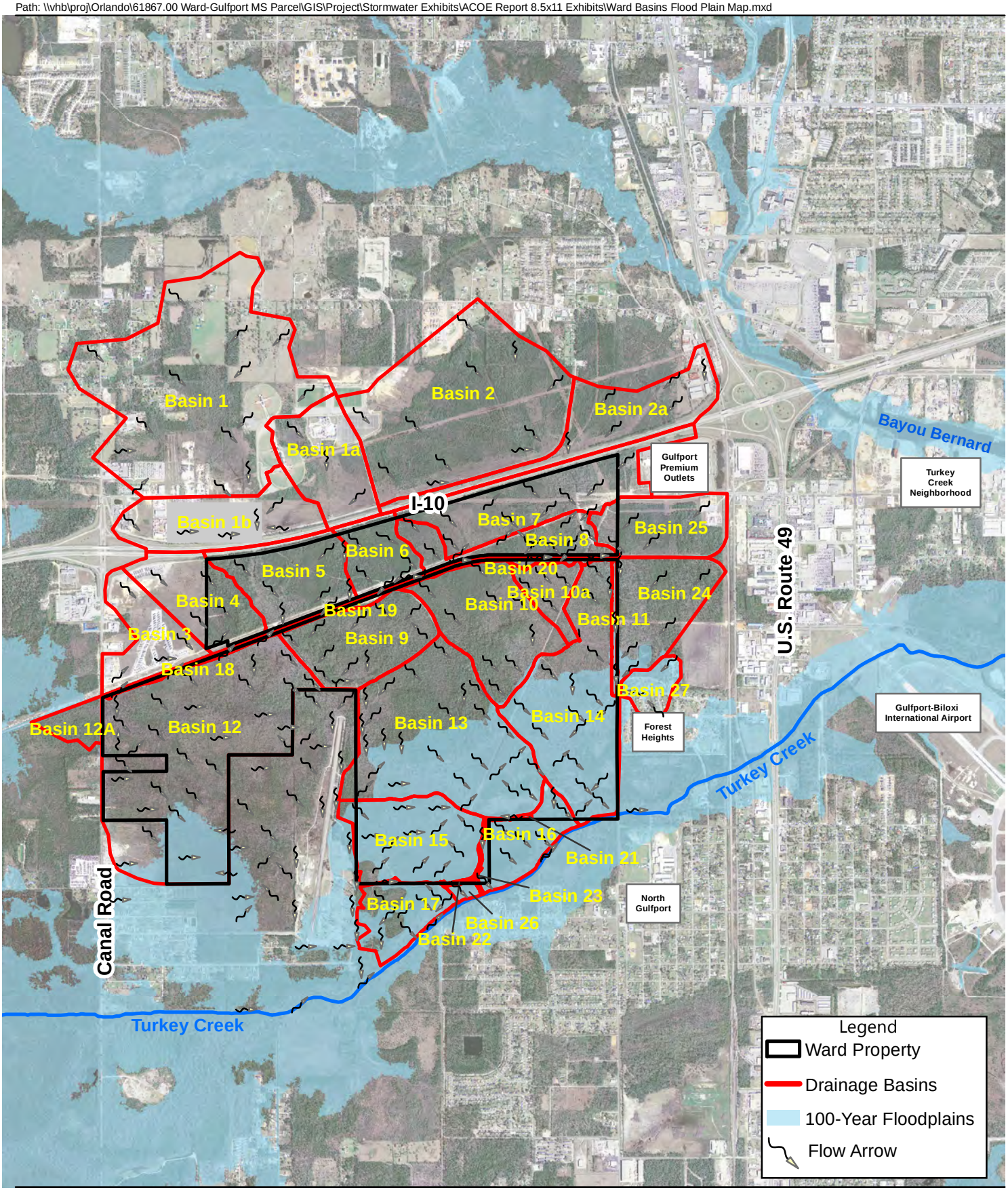

225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Ward Investments
Existing Conditions Drainage Basins
April 2015

A-11

N

0 0.25 0.5 1 Miles

In order to assess current conditions on the subject property, at the request of ACOE, the existing conditions model used in the 2005 ACOE study was updated to account for development within the Turkey Creek Watershed between 2005 and 2013. The July 2005 ACOE study included a Hydrologic Engineering Centers-Hydrologic Modeling System (HEC-HMS) model of the Turkey Creek Basin, supplemented by a HEC-River Analysis System (HEC-RAS) model of Turkey Creek. As part of the model updates, new developments in the nine Turkey Creek basins were identified and categorized by land use and a revised runoff curve number (CN) value was developed for each basin. The CN value represents runoff potential from rainfall events and is based on the soil type, land cover, treatment of runoff, and hydrologic conditions. Higher CN values indicate a greater potential for runoff. The boundary lines for basins 5, 7, 8, and 9 were also revised to better reflect the drainage basin boundaries near the subject property. Revised CN values, basin areas and lag times were input into the HEC-HMS model for the above-referenced basins. No other inputs in the model from July 2005 were altered, although the model was updated to Version 4.0, the newest version of the model, at the time of analysis. Output hydrographs from the updated model for each basin were then inserted into the HEC-RAS model.

Using outputs from the HEC-HMS model, the HEC-RAS model was used to perform a one-dimensional unsteady flow analysis on the main branch of Turkey Creek. The analysis considered the creek channel geometry and structure crossings at various stations. Flow values at various stations along Turkey Creek were extracted from the HEC-RAS model and inserted into the HEC-HMS model to simulate storage vs. discharge in the creek reaches. The tailwater in the July 2005 ACOE HEC-HMS model was set to a value of 2 feet, and this boundary condition was maintained in the updated model. Cross-sections of Turkey Creek were surveyed at five points on the southern side of the project site and included in the updated existing conditions HEC-RAS model.

The Ward Investments property is primarily in basins 8 and 9 of the Turkey Creek Watershed. The basins have been further subdivided into smaller sub-basins to more accurately analyze the existing stormwater characteristics of the project site (Figure A-11). Data for the existing conditions model was obtained from field reconnaissance, survey of ditches and culverts, 2014 Light Detection and Ranging (LiDAR) topography, as well was ArcGIS information available from local, state and Federal levels. The stormwater runoff generally has two flow patterns as it moves through the site, and ultimately to Turkey Creek. The majority of the runoff from the project site's contributing basin begins north of I-10 and flows to the south. The runoff is then concentrated into three channels just north of I-10 and culverts move the water under I-10. After the stormwater crosses I-10, two predominant channels convey the flow through a series of cross drains under the existing railroad. At this point the two channels, both located east of the drag strip, convey the runoff into the wetlands in the south part of the property. Stormwater then stages and is discharged in the southeast portion of the property to Turkey Creek. The runoff west of the Gulfport Dragway generally flows from the northwest to the southeast. Since the dragway acts as a drainage divide south of the railroad, much of the runoff in the western basins is intercepted by swales and ditches parallel to the strip and conveyed to the south, and then into Turkey Creek via a series of canals.

In addition to using HEC-HMS and HEC-RAS modelling to evaluate existing conditions, an Advanced Interconnected Channel and Pond Routing, Version 3.1 (AdICPR) model was used to analyze the existing stormwater characteristics on the subject property. AdICPR modelling was conducted to evaluate existing condition for the subject property's contributing drainage basin. A large amount of flooding has impacted the

southern area of the Turkey Creek drainage basin. AdICPR was used to estimate peak stages and discharges for the 100-year 24-hour storms. Hydrographs were computed using the Soil Conservation Service Unit Hydrograph Method with a peaking factor of 323. Time of concentration and CN values were computed. Rainfall frequency estimates were obtained from the National Oceanographic Atmospheric Administration's (NOAA) Atlas 14, Point Precipitation Frequency Estimates near the project site. The tailwater for the model was developed using the HEC-RAS time vs. stage output in Turkey Creek near the discharge point of the subject property into the creek. By comparing the stages in the creek to the discharge from the property, a better analysis of the extent of flooding can be identified in the existing condition. The AdICPR model results are consistent with the July 2005 ACOE report finding that higher stages do occur near the creek and on the southern portion of the project site for the 100-year 24-hours storm, and seems to suggest that these high water stages are likely to create flooding problems for the developments near the southern portion of creek including the Forest Heights Neighborhood.

The Forest Heights Neighborhood is surrounded by a levee system which was intended to protect the area from high water levels in Turkey Creek from entering the neighborhood during large storm events; however, to still allow stormwater to flow out of the neighborhood during small storm events. A set of valves in the levee has been replaced by the City of Gulfport. Currently, the City is attempting to reduce the flooding impacts to the community through operation of the valves and the use of pumps as the water elevation raises in the creek from large storm events.

The southern portion of the Ward Investments property is within the 100-year flood plain, as designated on the Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) Panels 28047C0261G, 28047C0242G, 28047C0244G and 28047C0263G, dated June 16, 2009. The 100-year floodplain is identified as Zone AE, which is defined as areas of 100-year flood where the based flood elevations have been determined.

4.6 Cultural Resources

Background historic research and a Phase I Archaeological Survey were completed on the Ward Investments property and findings were documented by New South Associates.[19] Based on historic research and documentation by New South Associates, most development in Gulfport during the 20th Century was confined to approximately 2 miles inland from the Gulf Coast. The project area is approximately 4 miles north of the Gulf Coast and has been mostly vacant since at least 1953. Historic uses have been limited to logging operations and use by the KCS (constructed between the late 1970s and the mid-1980s). Further, in the 1950s the existing transmission lines were installed across the property. I-10, to the north of the site, was constructed in 1970; the Forest Heights neighborhood, west of the site, was constructed in 1965; and the Gulfport Dragway was constructed south of the site in 1972.[20]

The Phase I Archaeological Survey was completed for the site in January and February of 2015. The approach for the archaeological survey was developed in coordination with and approved by the Mobile District of the

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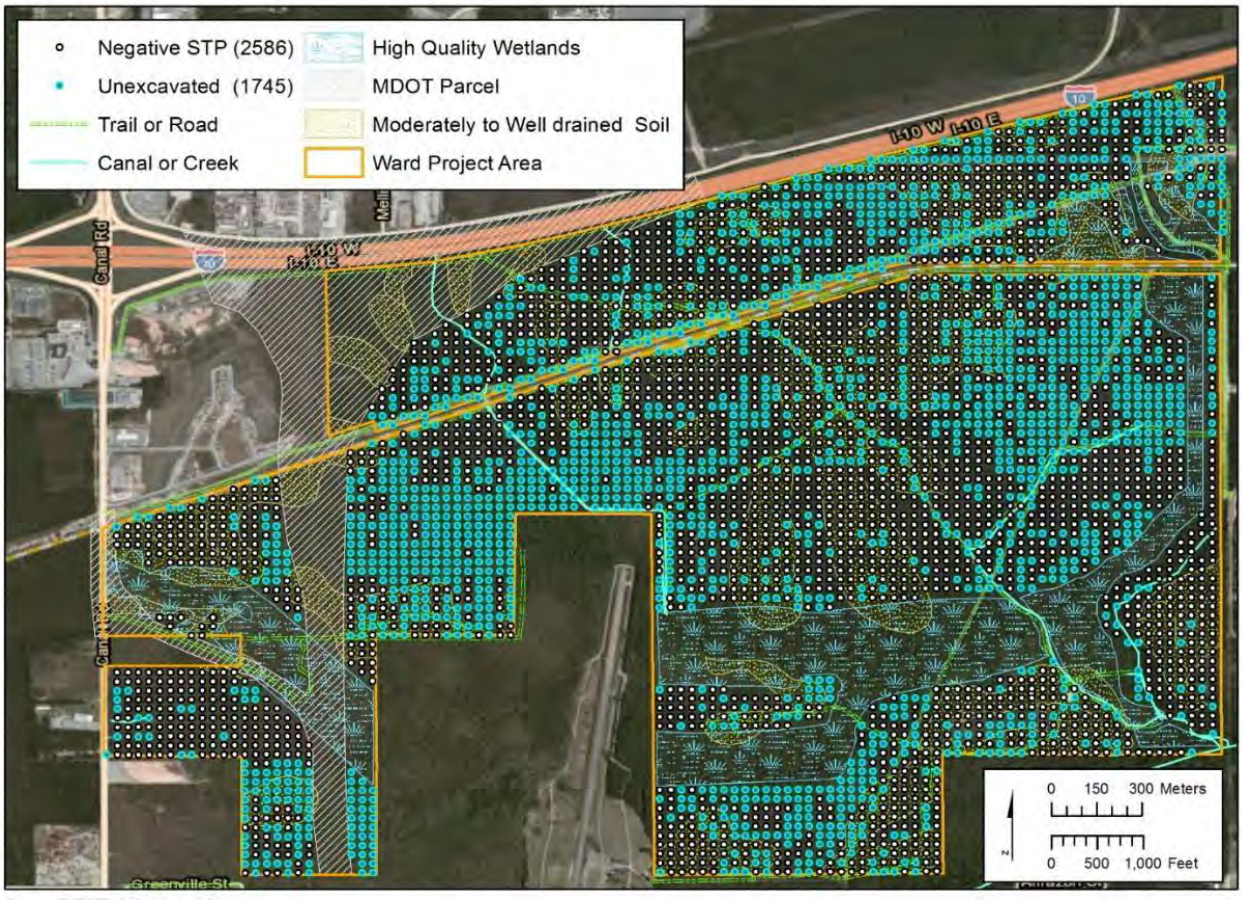
19 Management Summary of the Phase I Survey of the Ward Project, Gulfport, Mississippi, New South Associates, February 24, 2015.

20 www.gulfportdragway.com

ACOE and Mississippi Department of Archives and History. The intensive survey involved the inspection of 4,331 shovel test pit sample locations and systematic visual inspection of ground surfaces and shovel test pit excavation. Shovel test pit excavation took place in all areas that were not inundated or had not been compromised by disturbance such as excavated canals, spoil piles, or filled and graded causeways, as these areas had no potential for intact cultural resources (Figure A-12).[21]

Figure A-12 – Archaeological Survey Shovel Test Pit Location[22]



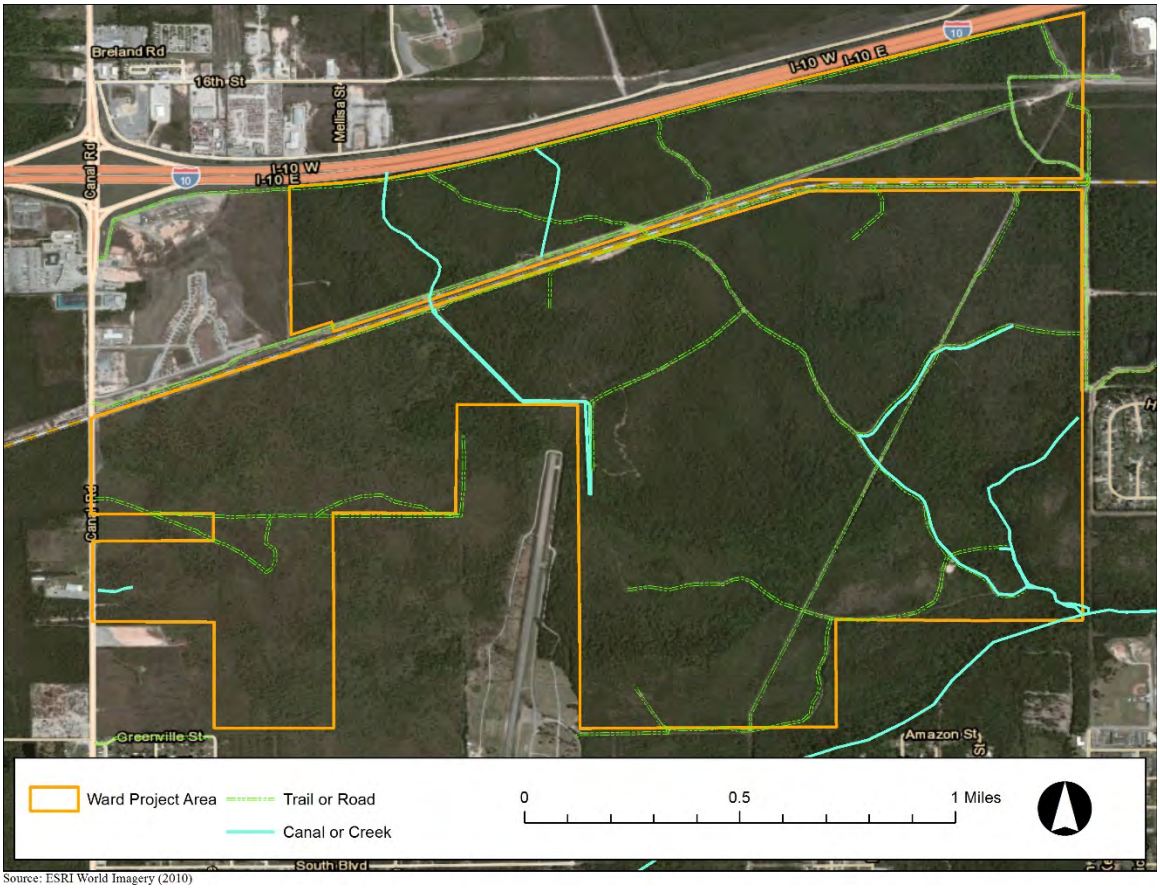
In support of the Phase I Archaeological Survey, New South reviewed recent LiDAR topographic imagery, historic U.S. Geological Survey (USGS) maps, and previous archaeological data for the area. Topographic features in the project area included canals, spoil piles, and graded causeways, as well as the railroad and power line corridors. A total of approximately 14 miles of trails and elevated road grades and associated

21 The MDOT parcel and areas containing high-quality wetlands were not surveyed by New South. The MDOT parcel, if developed as a connector road to the Port, would occur as part of a separate undertaking. The proposed project will be designed to avoid impacts to high quality wetlands.

22 Management Summary of the Phase I Survey of the Ward Project, Gulfport, Mississippi, New South Associates, February 24, 2015.

canals were observed in the project area (Figure A-13). Some roads comprised imported gravel fill and mechanically excavated canals, complete with systematically placed culverts to facilitate drainage. It is unlikely that the canals, spoil piles, and graded causeways are over 50 years in age.

Figure A-13 – Trails, Roads, and Waterways within the Project Area[23]



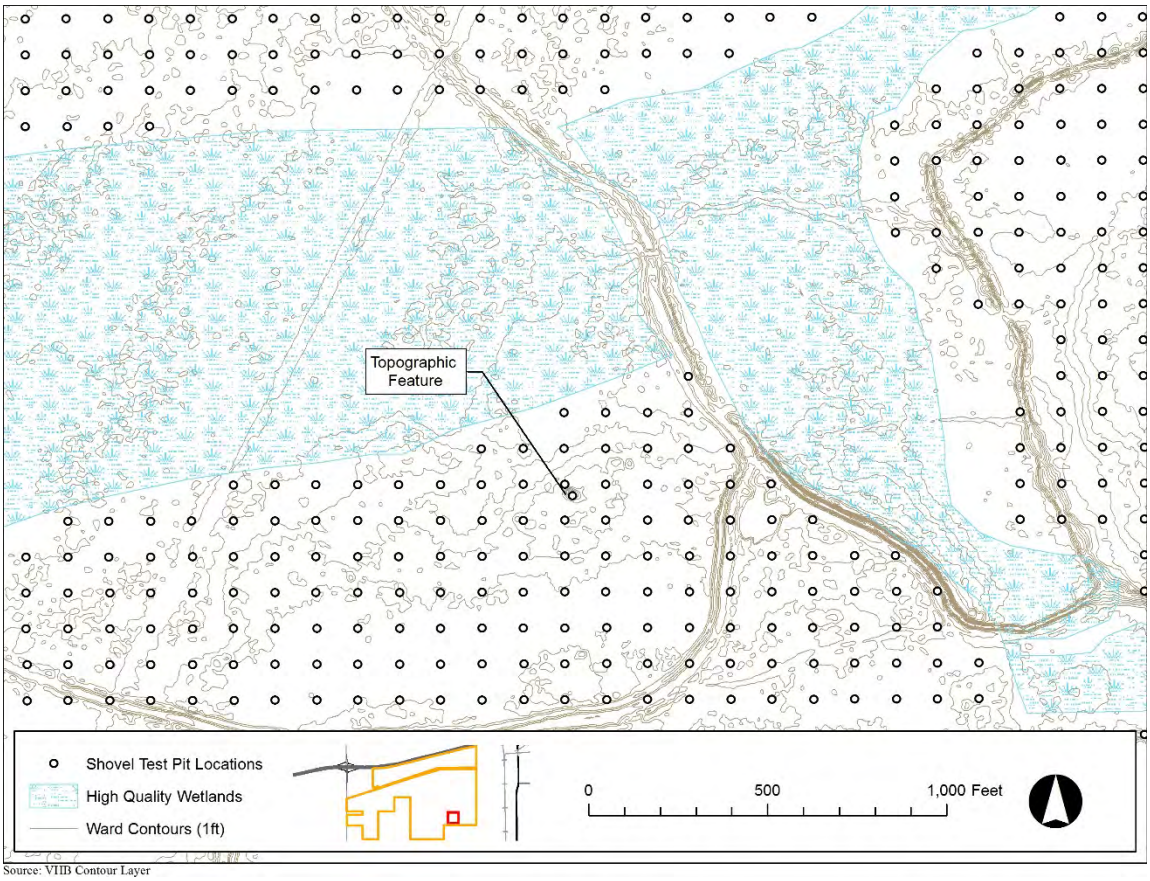
Source: ESRI World Imagery (2010)

A small, circular area of elevation was noted in the southwestern quadrant of the project area (Figure A-14), measuring approximately 40 feet wide and 4 feet tall. Shovel test pit excavation in and around this area produced no artifacts and no cultural features were identified, though surface survey in this area provided challenging due to dense vegetation.

Beyond the historic features identified at the beginning of this section, no cultural features, settlements, or buildings were identified on the subject property.

23 Management Summary of the Phase I Survey of the Ward Project, Gulfport, Mississippi, New South Associates, February 24, 2015.

Figure A-14 – Identified Topographic Feature and Surrounding Contour Data[24]



Source: VIIB Contour Layer

The intensive Phase I survey of the Ward Investments property resulted in no artifact finds or archaeological sites. Previous archaeological research (by others) identified only 1 known archaeological site within 1 mile of the project site. Based on this information, no additional archaeological investigation of the property was recommended by New South. It is anticipated that the proposed project will have no effect on archaeological or historic resources. Prior to final design and development of the proposed project, the applicant will consult the Mississippi Department of Archives and History, pursuant to Section 106 of the National Historic Presentation Act (NHPA), and ensure their concurrence on project design.

24 Management Summary of the Phase I Survey of the Ward Project, Gulfport, Mississippi, New South Associates, February 24, 2015.

5. Project Description

5.1 Project Components

In consideration of the purpose and need and key principles/objectives described in Section 3, *Purpose and Need for the Project*, the applicant is proposing a development on the subject property with three components: mixed-use development, including stormwater management facilities; extension of Creosote Road and donation of the right-of-way to the City; and donation of land to develop a City recreational facility. The proposed project was designed to avoid and minimize impacts to wetlands, to the extent practicable, especially high and medium quality wetlands (see Section 5, *Avoidance and Minimization*, of Attachment C); restore, enhance, and preserve onsite conditions to maintain a mosaic of wetland and upload habitats; incorporate stormwater management measures that will eliminate the project's potential adverse impacts to the Turkey Creek Watershed (see Section 6.2, *Mitigation: Stormwater/Flooding*, of Attachment C); and maximize opportunities for sustainability and the associated environmental and community benefits (see Section 5.4, *Sustainability and Compatibility with Local Plans*). As detailed in Section 2.8, *Alternatives Development: Development Alternative 4*, of Attachment C, the proposed project was also selected because it provides:

- A critical mass of mixed-use development to make the project financially feasible;
- A 'branded' identity under singular professional management that becomes a destination for new, high quality employment opportunities across a broad spectrum of technology, information and professional services industries;
- Higher profile/value developments concentrated along I-10 and near Route 49 to maximize visibility; and
- A core mixed-use town center that provides maximum visibility and accessibility in order to maximize land value and reduce the tie needed for full project absorption and build out.

The proposed development will include 355 acres of commercial/retail, business park, industrial, residential, and recreational land uses, including a mixed-use town center, publically accessible trails and a park. In addition, 44 acres will be donated to the City for extension of Creosote Road, and 25 acres will be donated to the City for development as a recreational facility (Figures A-15 and A-16). Another approximately 100 total acres will be excavated to create stormwater management facilities which will improve drainage and runoff storage capacity, and provide fill for development areas. Cross-sections of the proposed project, including all pertinent features are provided as Figures A-17 through A-27.

Approximately 360 acres of the total development footprint will occur in low-quality wetlands, equating to 83% of the total wetland impact area (see Section 4.1, *Existing Conditions: Wetlands*). Minimal impact will occur to medium (68 acres, 16% of the wetland impact area) and high quality (4 acres, <1% of the wetland impact area) wetlands.

Mixed-use development will be focused mostly in the northern and western portions of the site and includes:

- 120 acres of industrial development in the central portion of the site;
- 57 acres of commercial and retail development on the western side of the site, adjacent to Canal Road;
- 17 acres of commercial and retail development in the northeast corner of the site;
- 106 acres of business-technology park north of the KCS right-of-way;
- 48 acres of mixed use development (residential, professional services and retail) designed as an integrated town center in the northeast corner of the site; and
- 7 acres of community park land in the southeast portion of the site proximal to the Forest Heights neighborhood. The park and trail network will enhance opportunities for community recreation and provide convenient public access to Turkey Creek.

The proposed project is expected to support approximately 3,300 to 6,600 high-paying permanent jobs and approximately 150 to 350 residential units within the town center. Most development will be organized along the Creosote Road extension, providing maximum accessibility. Higher profile developments such as the town center, commercial and retail facilities, and high-end business-technology centers will be concentrated along I-10 and U.S. Route 49 to maximize visibility and accessibility from major roadways. The commercial and retail development proposed for the northeast portion of the site will be designed to minimize impacts to high quality wetlands.

Excavated material from the construction of onsite stormwater management facilities will be reused as fill for other onsite development activities. A total of nine stormwater management facilities will be constructed throughout the property to provide stormwater treatment and attenuation. The excavation of these stormwater management facilities will provide approximately 1,931,000 cubic yards of fill (1,650,438 cubic yards within wetlands); enough to raise the elevation of the development footprint approximately 3 feet. In total the surface area of the stormwater management facilities comprises approximately 20% of the project site's surface area.

A preliminary geotechnical investigation was performed on the subject property to explore subsurface conditions. The investigation provided geotechnical design evaluations for future construction development based on 24 test borings throughout the project site. In the location of the borings, the tests revealed that the site has predominantly sandy clay and silty sand soils. Based on the results of the geotechnical report, it is anticipated the soils are suitable to support the fill and subsequent construction onsite.

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Site Data 4

Parcel No.	Land Use	Acres
Parcel 1	Commerical/Retail	14
Parcel 2	Commerical/Retail	14
Parcel 3	Commerical/Retail	29
Parcel 4	Business Park	40
Parcel 5	Industrial	19
Parcel 6	Industrial	53
Parcel 7	Industrial	48
Parcel 8	Business Park	17
Parcel 9	Business Park	37
Parcel 10	Business Park/Transition	12
Parcel 11	Commercial/Retail	17
Parcel 12	Town Center	48
Parcel 13	Park	7
		355
City Recreational Facility		25
Creosote Road R.O.W.		44
Stormwater/Borrow Facilities		100
Total Development Area		524

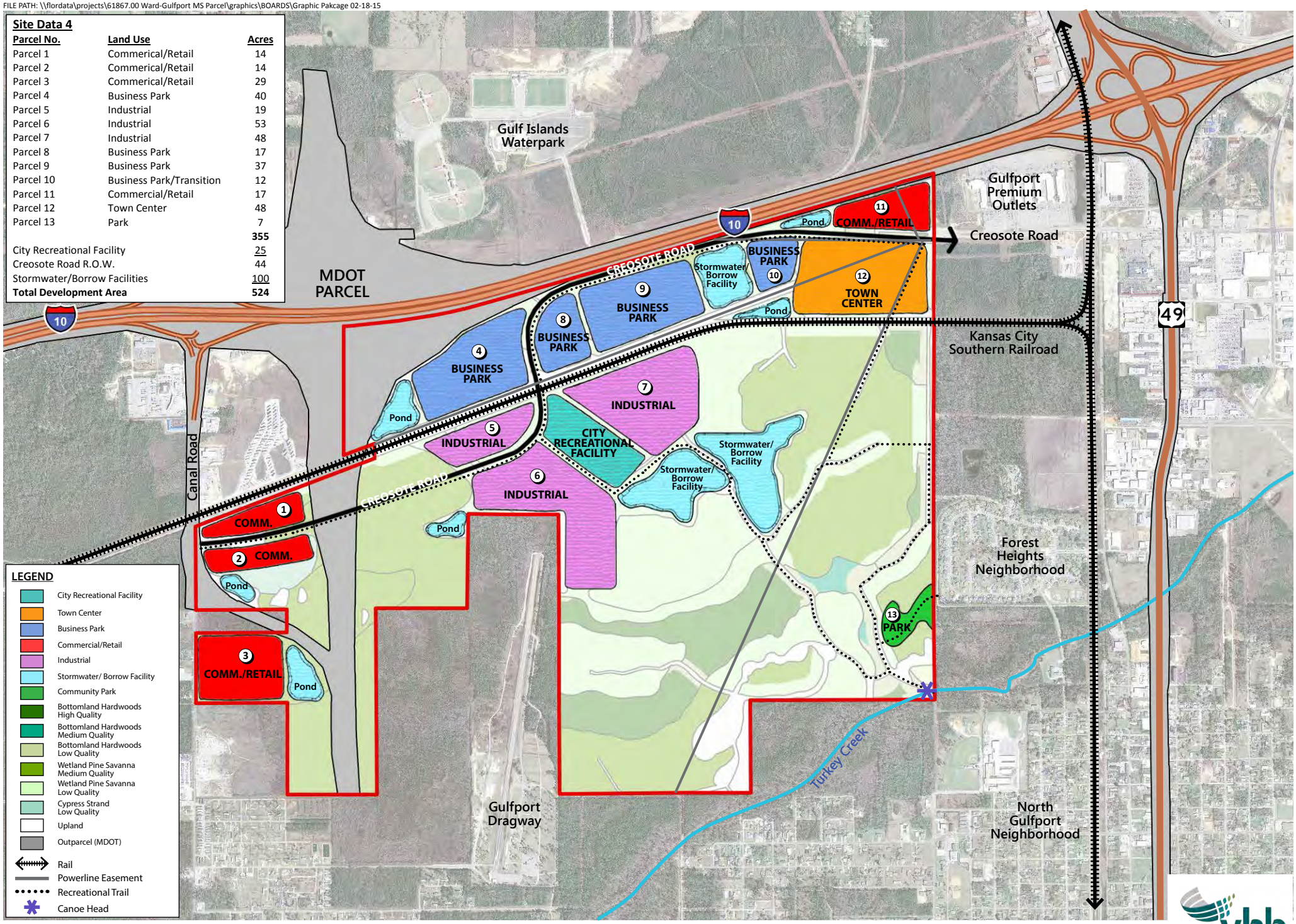

FIGURE A-15: PROPOSED PROJECT CONCEPT PLAN

WARD-GULFPORT PROPERTY

SCALE IN FEET
0' 1000' 2000'

N

DATE: April 30, 2015
PROJECT NUMBER: 61867.00

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Gulf Islands Waterpark

MDOT PARCEL

Gulfport Premium Outlets

Creosote Road

Kansas City Southern Railroad

Canal Road

CREOSOTE ROAD

OLD ROAD

10

11 Pond COMM./RETAIL

BUSINESS PARK 10

Stormwater/ Borrow Facility

TOWN CENTER

CENTER

Pond

9 BUSINESS PARK

8 PARK

BUSINESS PARK

4 BUSINESS PARK

7 INDUSTRIAL

Pond

5 INDUSTRIAL

CIT RECREATION FACILITY

Stormwater/ Borrow Facility

Stormwater/ Borrow Facility

6 INDUSTRIAL

Pond

1 COMM.

2 COMM.

COMMERCIAL/ RETAIL

3 COMM./RETAIL

Pond

Forest Heights Neighborhood

13 PARK

Turkey Creek

Gulfport Dragway

North Gulfport Neighborhood

FIGURE A-16: PROPOSED CONCEPT PLAN WITH PHOTO RENDERINGS

WARD-GULFPORT PROPERTY

SCALE IN FEET

0’ 1000’ 2000’

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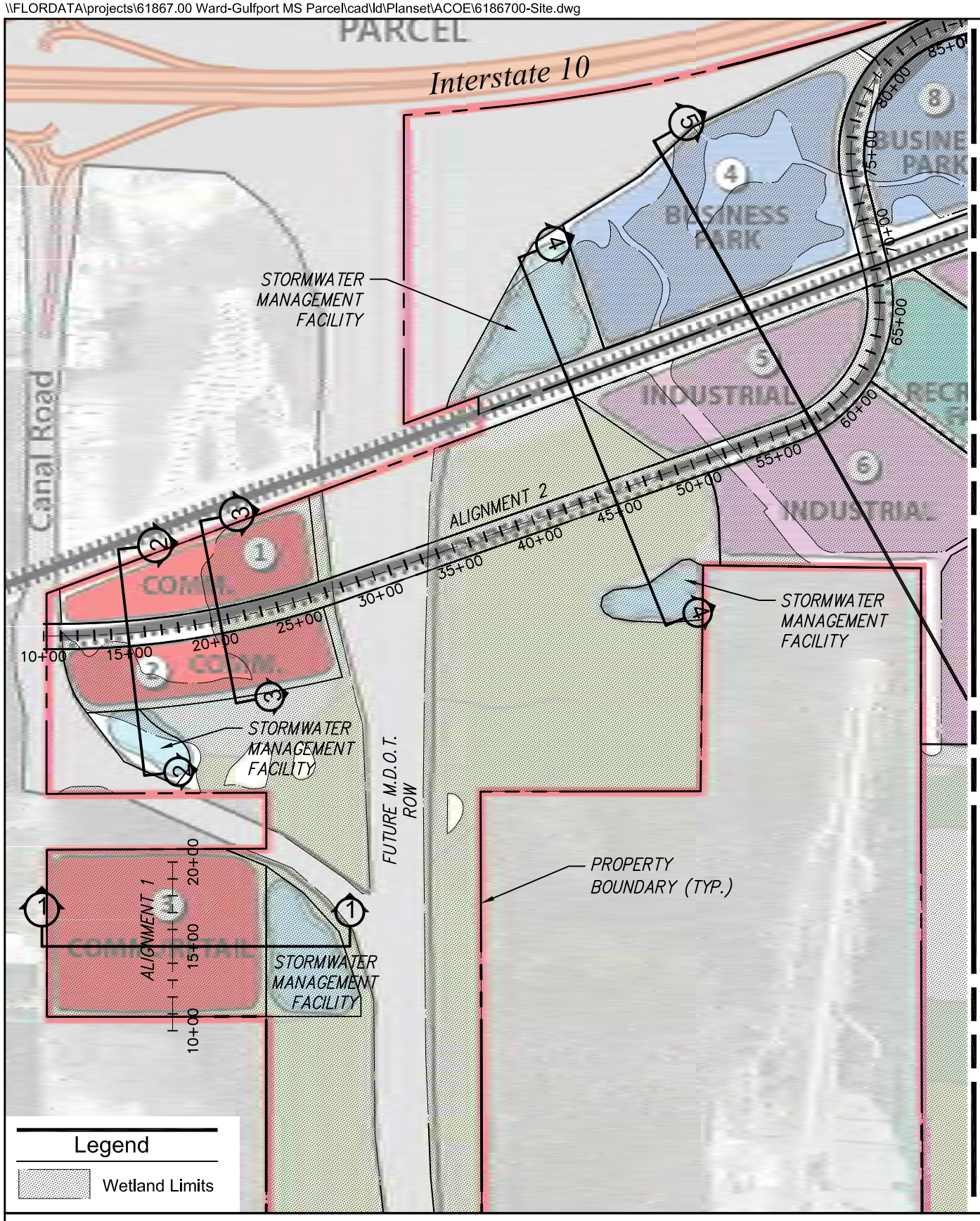

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Ward-Gulfport Development Figure A-17

Site Plan

May 2015

0 400' 800' 1,600'

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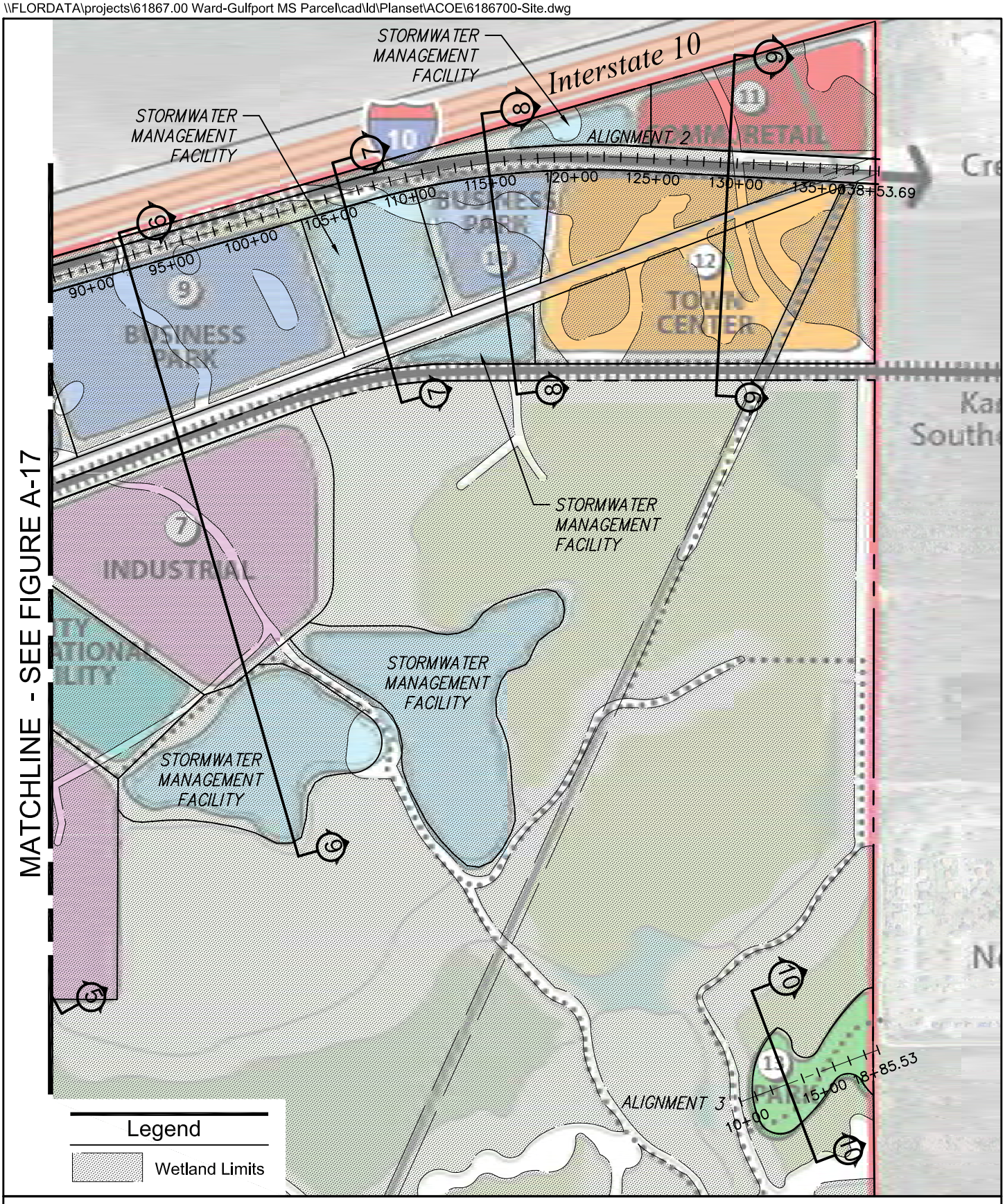

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Ward-Gulfport Development Figure A-18

Site Plan

May 2015

0 400' 800' 1,600'

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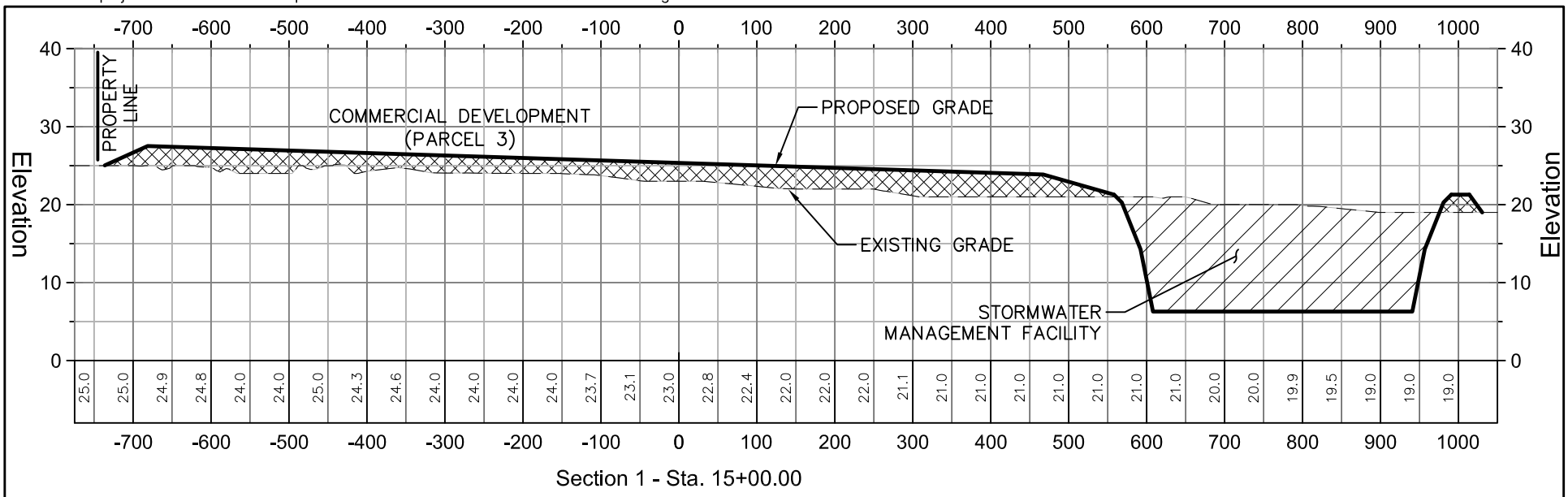

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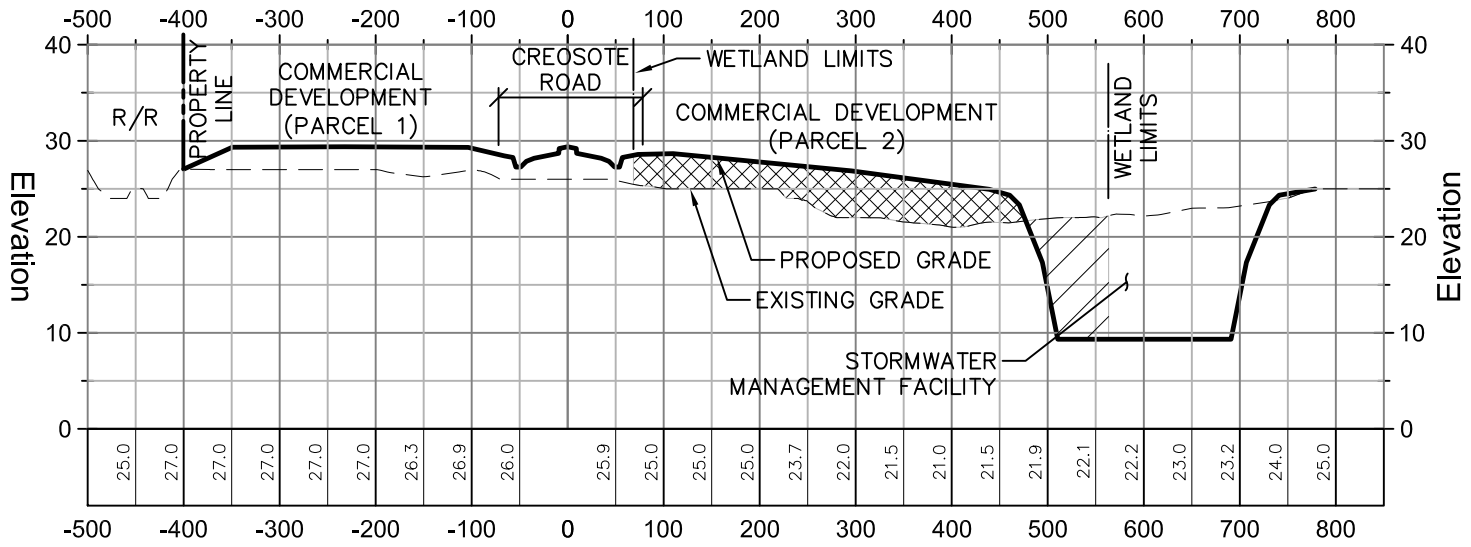

Section 2 - Sta. 15+00.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-19

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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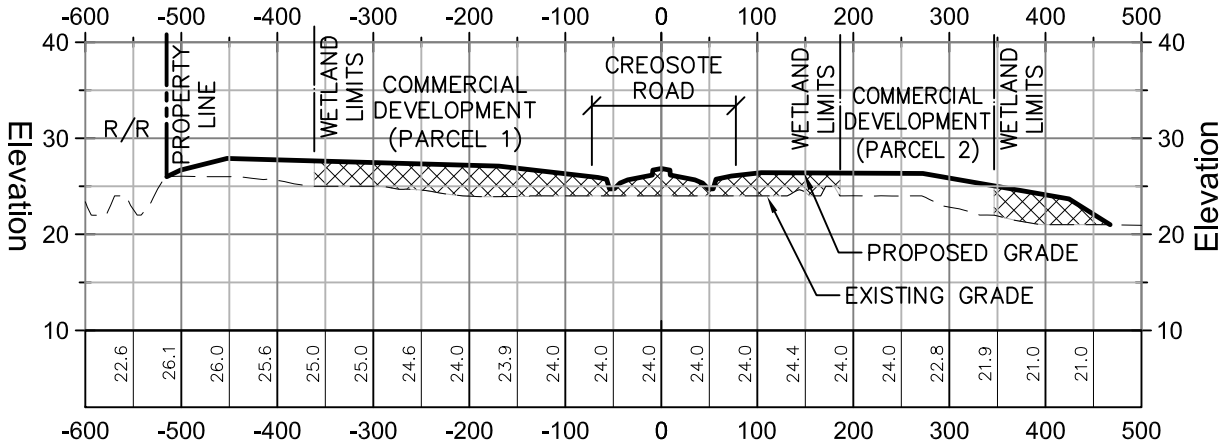

Section 3 - Sta. 20+50.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-20

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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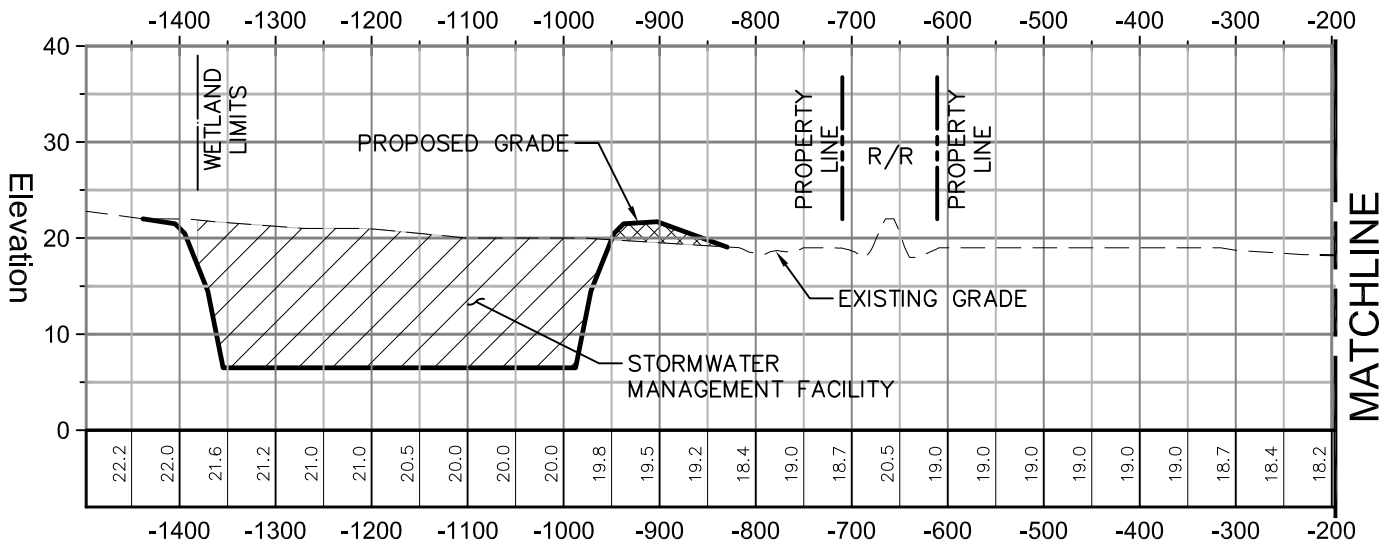

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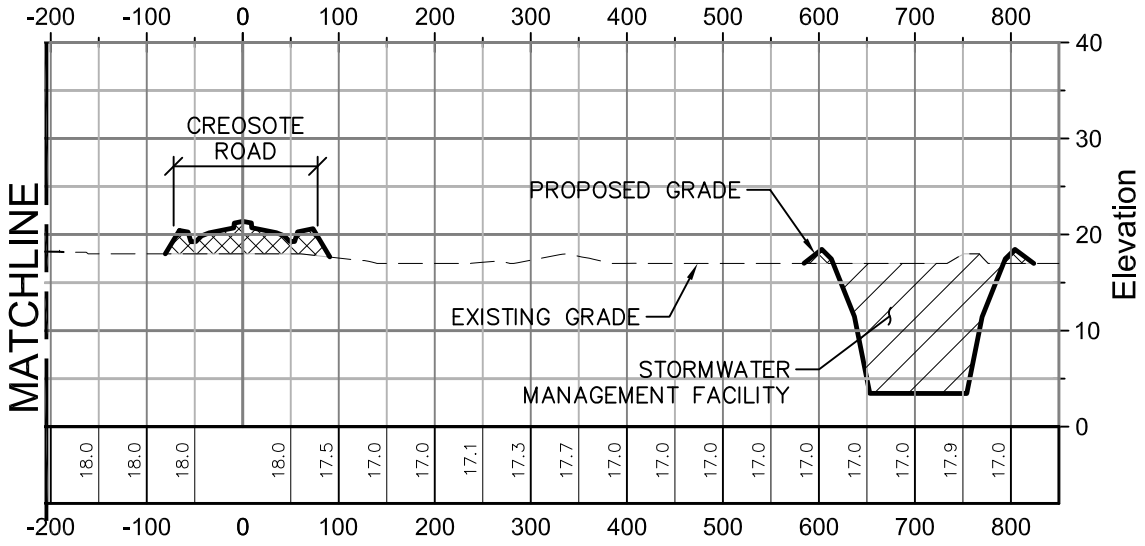

Section 4 - Sta. 45+00.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-21

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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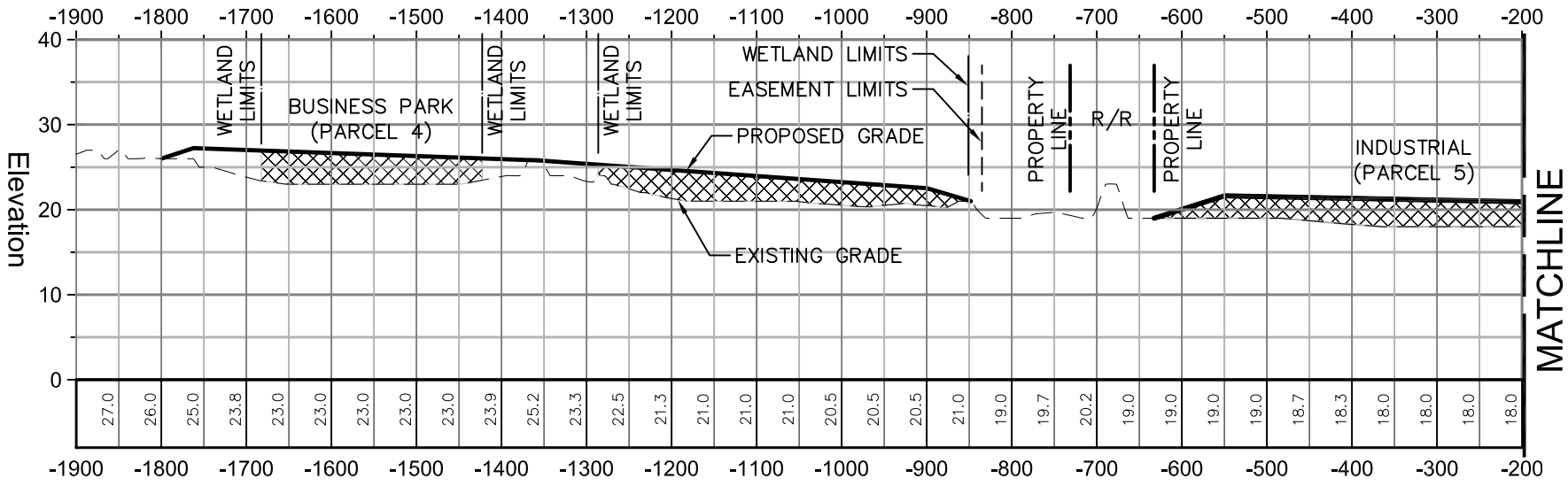
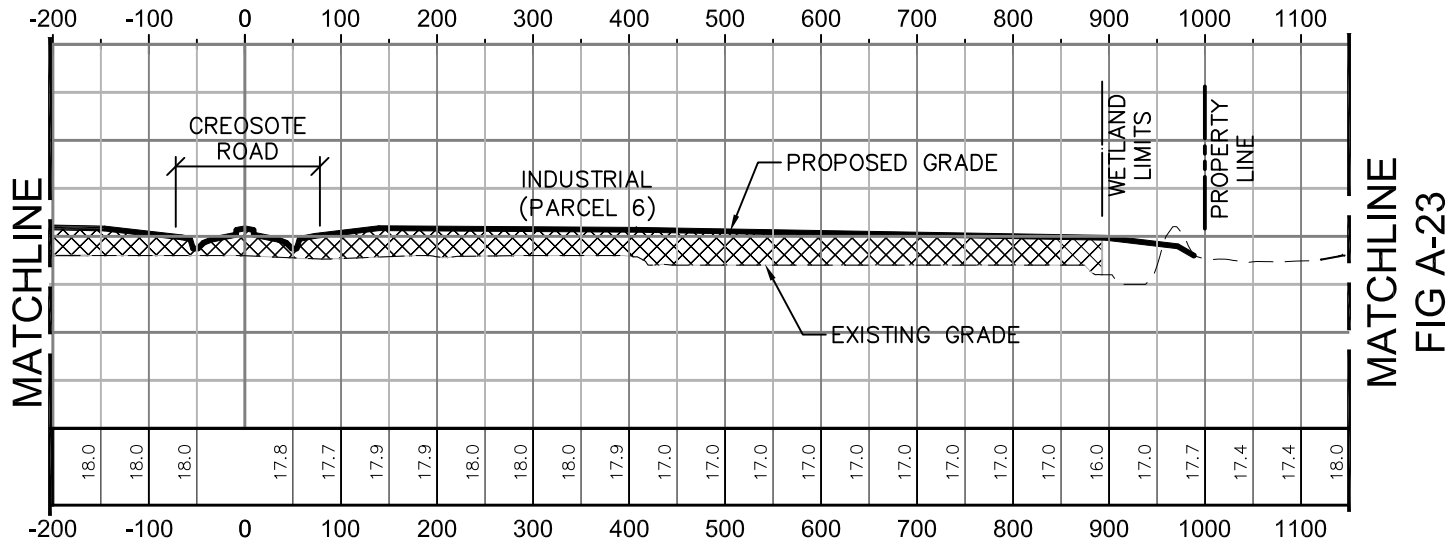


Section 5 - Sta. 57+50.00



Section 5 - Sta. 57+50.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-22

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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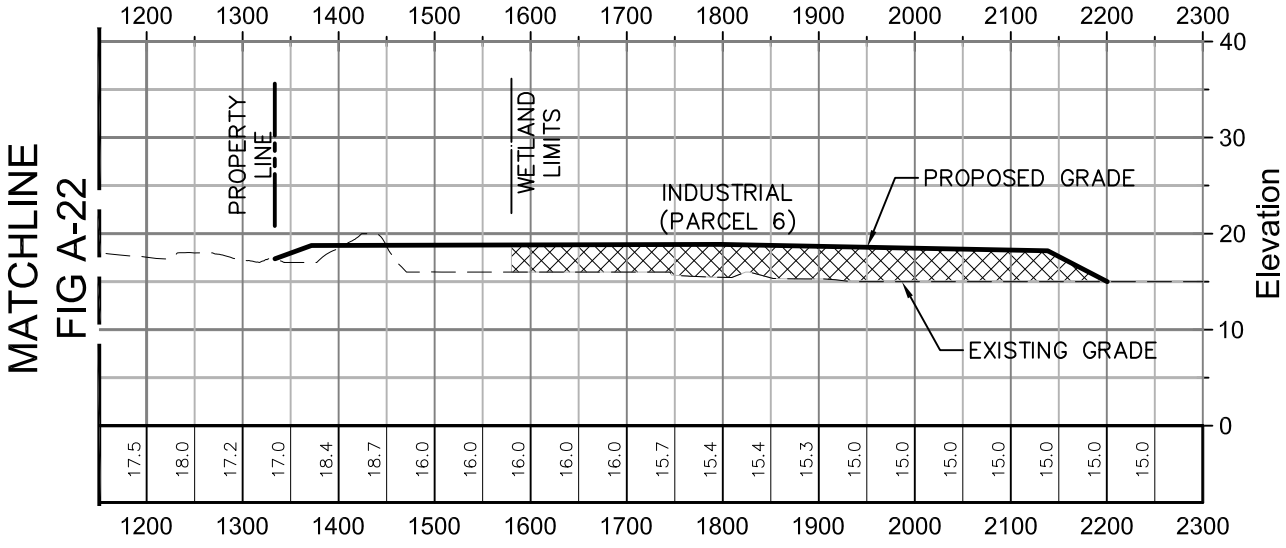

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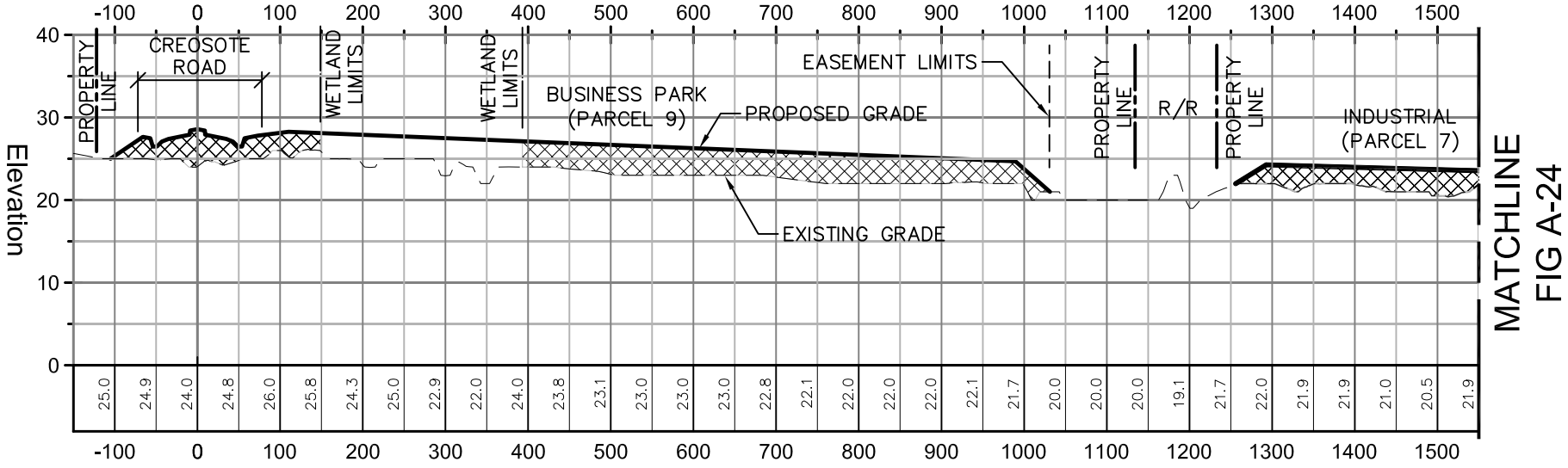

Section 6 - Sta. 92+50.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-23

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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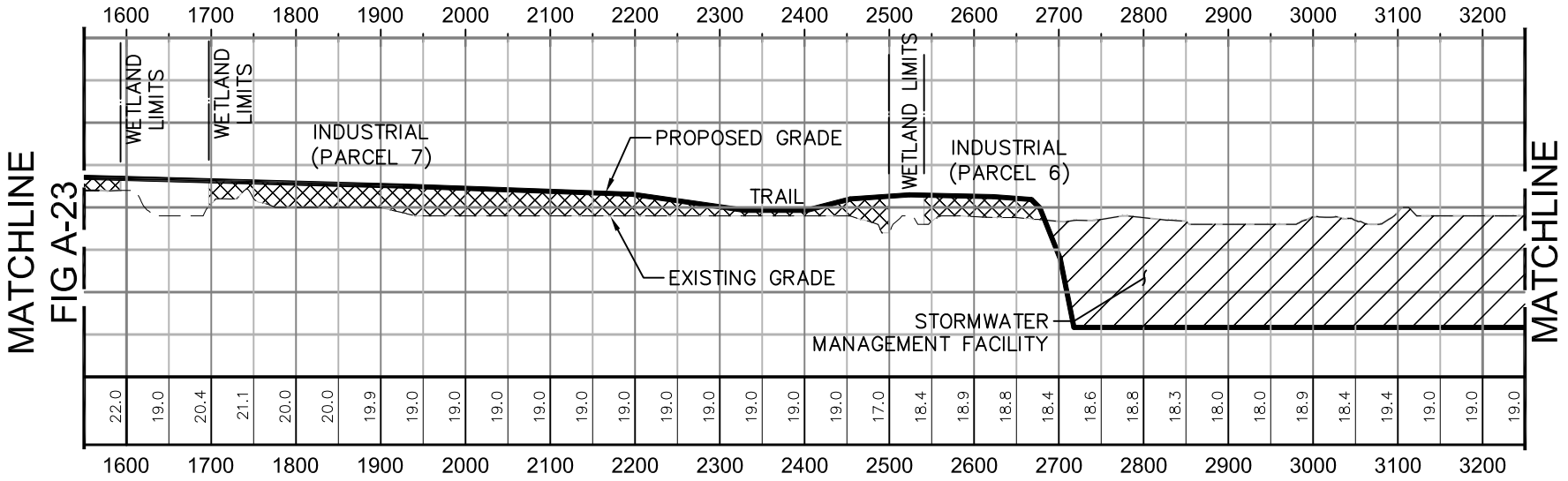

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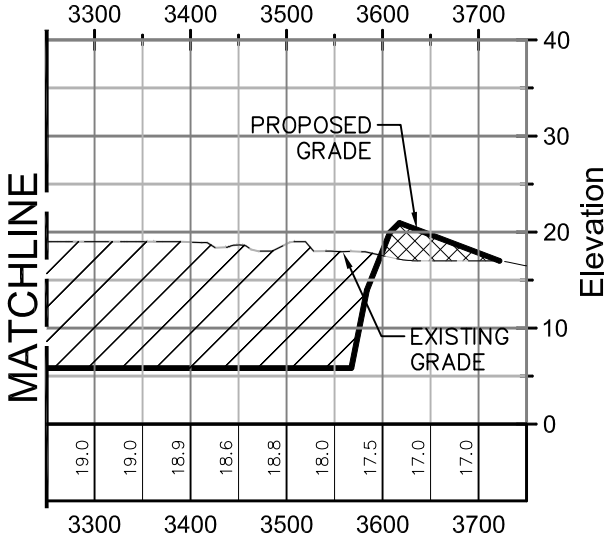

Section 6 - Sta. 92+50.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-24

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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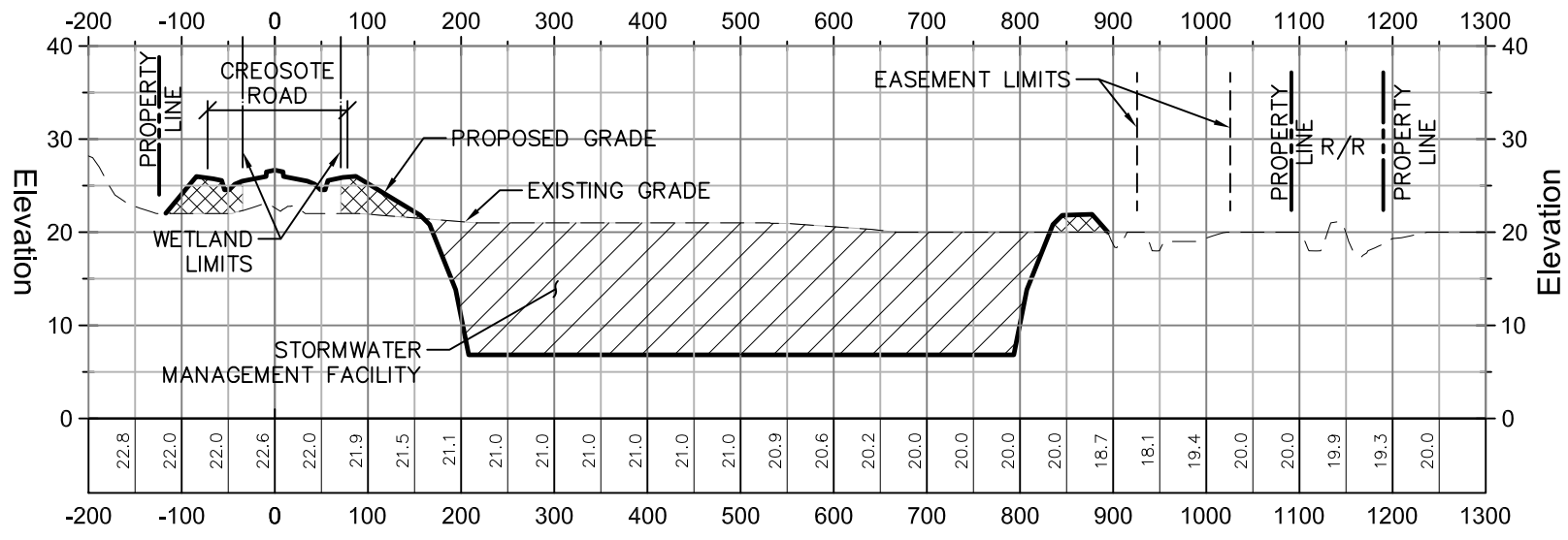

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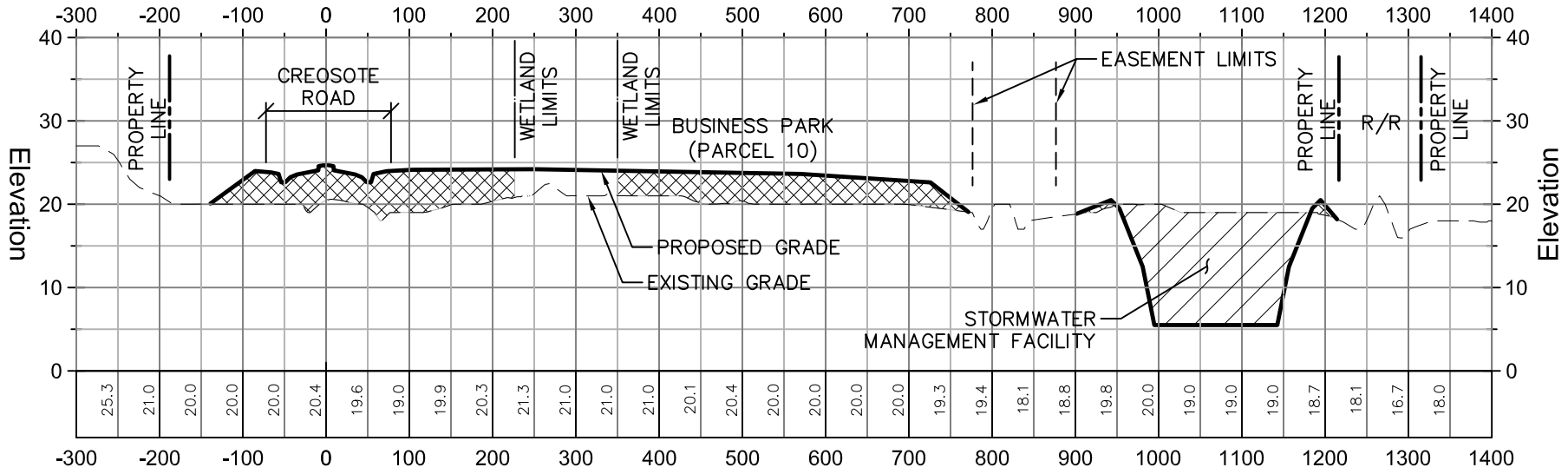

Section 8 - Sta. 115+00.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-25

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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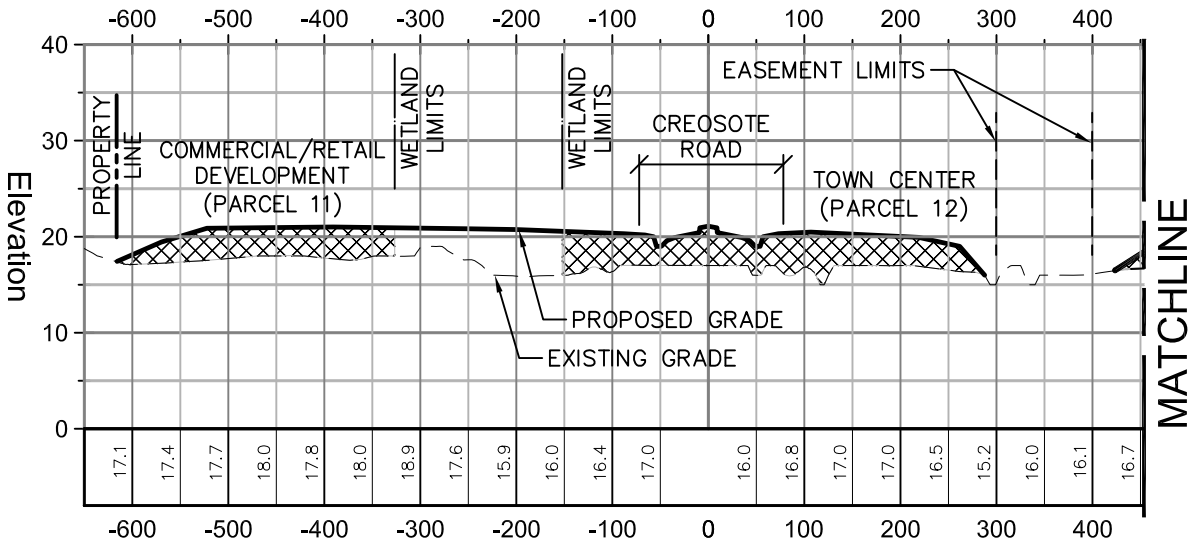
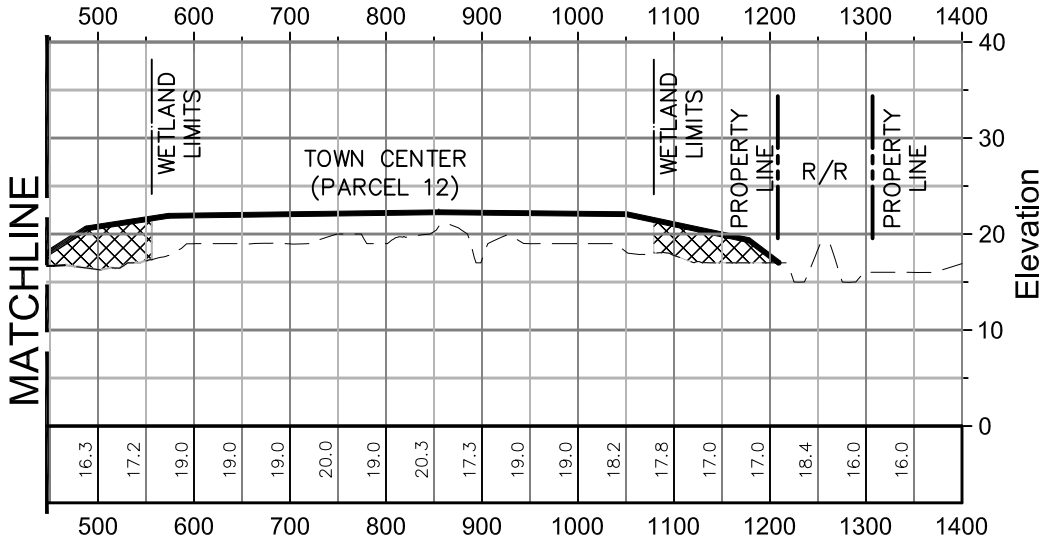


Section 9 - Sta. 129+50.00



Section 9 - Sta. 129+50.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-26

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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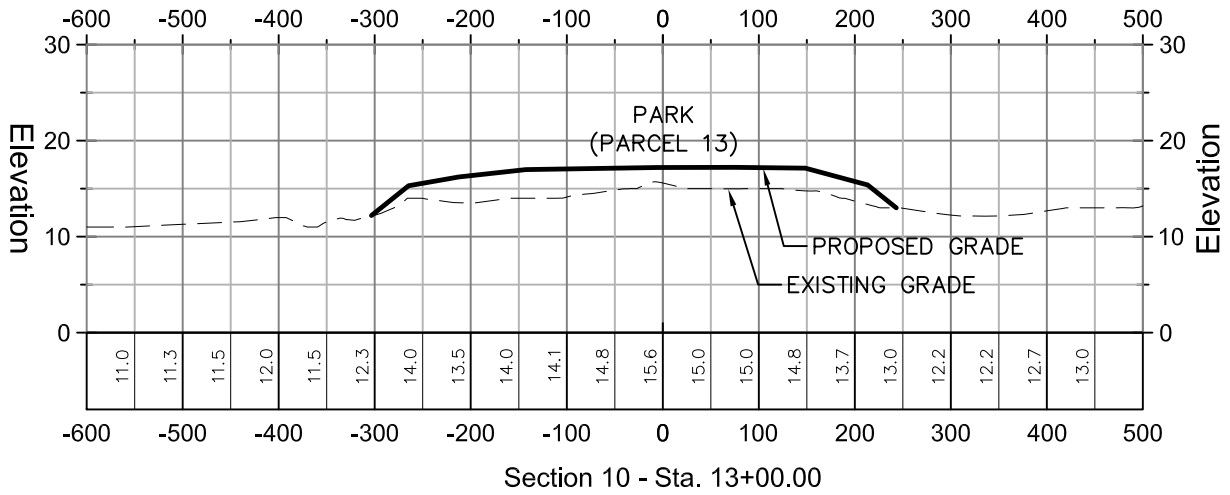

Section 10 - Sta. 13+00.00

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Ward-Gulfport Development

Section Views

May 2015

Legend

WETLAND FILL

WETLAND CUT

Figure A-27

Scale: 1" = 200' Horiz.
1" = 20' Vert.

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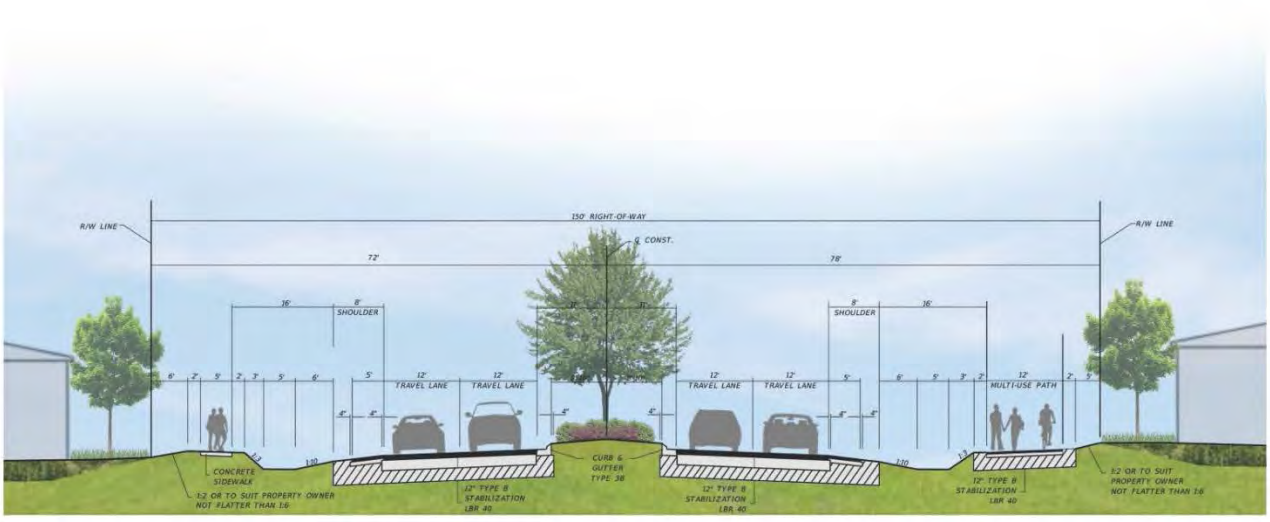
The extension of Creosote Road (Figure A-28) will be developed as a public/private partnership between the City of Gulfport and Ward Investments and the road right-of-way will be donated to the City. Creosote Road will generally parallel I-10 and will cross the KCS right-of-way near the center of the site. In addition to site access, in consideration of local planning efforts (see Section 5.4, *Sustainability and Compatibility with Local Plans*) the extension will support improved connectivity between the neighborhoods along U.S. Route 49 and those west of Canal Road, and provide an alternative route to I-10 in the event of an emergency and/or evacuation.

Figure A-28. Creosote Road Parkway Cross-Section



The Creosote Road extension will occupy a 150-foot wide right-of-way comprising approximately 44 acres and will provide up to 4 travel lanes (2 lanes in each direction with 8-foot shoulders), flanked by a concrete sidewalk on one side of the road and an approximately 12-foot wide multi-use path on the other. The road will function as a parkway, serving the traffic needs of the area as well as providing a landscaped place for pedestrians and bicyclists. The parkway design was chosen because it provides a high level-of-service for vehicular traffic a wider right-of-way to accommodate other linear uses and broader landscaped areas. With the use of low-impact development (LID) elements, signage, and site lighting, the parkway will make a statement that the Ward-Gulfport Development is a state-of-the-art business park that is capable of capturing technologically advanced businesses moving into the region. All components will be designed and constructed to meet or exceed applicable standards by providing roadside swales to encourage infiltration and minimize stormwater runoff. The road will be City-owned and provide vehicular and pedestrian access to the site and connect the existing Creosote Road on the east to Canal Road on the west.

Efforts to avoid, minimize, and mitigate wetland impacts are described in Sections 5 and 6 of Attachment C. Many of the onsite wetlands not impacted by the development footprint will be enhanced, restored, or preserved, as feasible. Using a combination of these approaches, the proposed project will maintain a mosaic of wetland and upland habitat on site. Approximately 248 acres of wetlands will be preserved, restored, or enhanced (either through deed restrictions or donation) in the southern portion of the site, including high quality wetlands proximal to Turkey Creek (Figures A-8 and C-5 in Attachment C). As described in Attachment C, Section 6.1, wetland restoration efforts will focus on restoring hydrology to drained wetlands by recontouring the existing logging roads and drainage ditches and vegetation management to mimic prescribed fire.

Lastly, a 25-acre portion of the Ward Investments property, in the immediate vicinity of the proposed mixed-use development, will be donated to the City of Gulfport for the purposes of constructing a recreational facility. This facility will be constructed in low quality wetlands, immediately adjacent to Creosote Road, in the central portion of the site (south of the KCS Railroad Track and adjacent to proposed industrial development). The exact configuration will be determined during final design. The recreational facility, which will also be accessible via the proposed recreational trail network, will be used primarily for soccer and other field-based sports, however, it could be used for other events such as community festivals or concerts. Supporting facilities to be constructed by the City will include concessions, restrooms, a parking area, and lighting, with both sideline and bleacher spectator viewing areas. The fields will each be equipped with a lighting system (likely a six-pole system with adjacent fields using a common pole, resulting in nine poles for two fields). It is anticipated that the lighting system will be installed and maintained by Mississippi Power, under a lease agreement with the City. This will be arranged by the City in coordination with Ward Investments. To the fullest extent possible, fill for the facility will be provide by excavation of the nine onsite stormwater management facilities described earlier in this section. The City will provide any additional fill material for the recreational facility that cannot be accommodated through the excavation of the nine stormwater management facilities.

In consideration of flooding potential, the City will construct drainage features, such as ditches/catch basins, on the southern side of the fields (based on anticipated stormwater flow). This will not only reduce potential for flooding, but also help maintain the quality of the fields. The City and Ward Investments will collaborate throughout development to ensure stormwater management facilities constructed by the City, in support of the recreational facility, in conjunction with those to be constructed by Ward Investments will provide ample area for the management of stormwater for the project as a whole.

5.2 Project Phasing

The economic analysis conducted for this project estimates that the proposed project will be absorbed by the market over a 15-year period. During this 15-year period, the development footprint will be filled, infrastructure will be constructed, and land parcels will be transferred to development interests (end users or sub-developers). Full build-out of individual parcels is likely to vary based on future market and

economic conditions but is anticipated to occur within 12 to 20 years from project start. Land absorption has been forecast to occur in three, 5-year phases.

5.2.1 Phase 1 (Construction Years 1-5)

As a first step, before vertical development can begin, excavation will be required to provide fill for the development footprint and create the initial stormwater management facilities. It is anticipated that as soils are excavated, the equivalent acreage will be filled in support of the development (approximately 3 feet of fill across the development footprint (a total of up to 1,931,000 cubic yards of material). In total, approximately 100 acres will be excavated for the stormwater management/borrow facilities, though only 50 acres will be excavated, and subsequently filled in Phase 1. This indicates that approximately half of the horizontal development footprint will be filled in Phase 1. Approximately 25 acres each will be excavated at the onset of construction (year 0) and in year 4.

In addition to excavation and fill activities, as detailed following, Phase 1 will include the following components:

- Construction of Creosote Road
- Construction of the City's Recreational Facility
- 84 acres of vertical development

The extension of Creosote Road through the site as a landscaped parkway (with spine utility infrastructure) will be constructed by the City to support the land absorption and vertical construction on the anticipated schedule. It is anticipated that the Creosote Road extension will be constructed during the first 2 years of development. While the parkway is constructed, it is expected that the initial vertical development will begin at the 'gateways' to the project (eastern and western ends of the Creosote Road extension). This initial development will consist of retail and commercial buildings (Parcels 1, 2, and 11 on Figure A-15), requiring use of an average of approximately 9 acres per year over the first 5 years. In approximately the third year of construction (post road construction), some of the industrial parcels (Parcels 5 and 6 on Figure A-15) will begin to be developed for light-industrial, research and development, and other uses. Because of the competitive regional market for industrial property, these parcels are estimated to absorb more slowly over the remainder of the 15 years, at an average rate of approximately 6 acres per year. Also during this first five year period, it is anticipated that the initial development of the business and technology park (Parcel 9 on Figure A-15) will be developed, averaging approximately 7 acres per year over 5 years. In total, the forecast calls for approximately 84 acres of development to occur in the first 5 years (Figure A-29). In addition to this total, the 44-acre Creosote Road extension right of way will be constructed within the first 2-3 years of the 15-year development plan and the City's recreational facility will be constructed.

5.2.2 Phase 2 (Construction Years 6-10)

During the second five-year construction period, the following activities will occur:

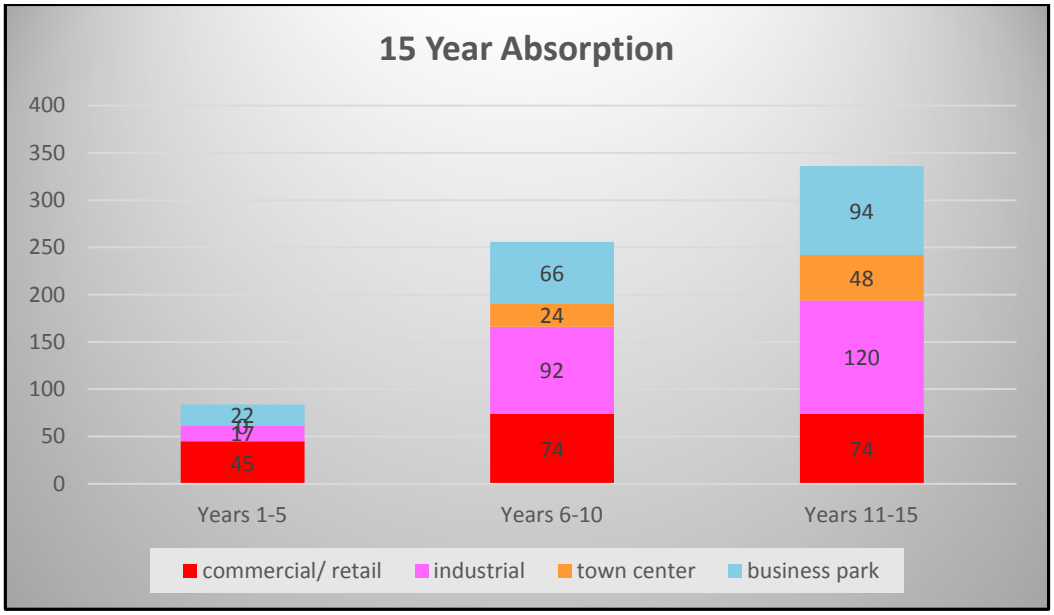
- Excavation of remaining stormwater management/borrow facilities
- Fill of remaining horizontal development
- 178 acres of vertical development

This will include the remaining retail/commercial parcel (Parcel 3), to be developed at a rate of approximately 6 acres per year throughout Phase 2. Most construction in Phase 2 will be related to the business and industrial parks, which will require an average of approximately 30 acres per year. Of this total, Parcel 7 will be developed entirely in Phase 2 at a rate of approximately 10 acres per year. Parcels 5 and 6 will continue to be developed at an average combined rate of 6 acres per year. In addition to the retail/commercial, business park, and industrial development, construction of the town center will begin in Phase 2 and continue through Phase 3. The town center will be developed at an average rate of approximately 5 acres per year. In total, an additional approximately 178 acres will be developed in Phase 2. In addition to this total, it is anticipated that the 7-acre community park (Parcel 13; Figure A-15) will be constructed in year 7, and the remaining 50 acres of excavation will occur to develop the stormwater facilities (25 acres each in years 7 and 10).

5.2.3 Phase 3 (Construction Years 11-15)

During the third phase of construction, a total of approximately 86 acres of vertical development will occur on the site. All horizontal development will be completed in Phase 2. Specifically, the remaining portions of Parcels 4, 5, 6, 8, 10, and 12 will be developed. Consistent with Phase 2, the town center will be developed at a rate of approximately 5 acres per year while the industrial and business park parcels will be developed at a rate of approximately 14 acres per year.

Figure A-29. Phasing of Vertical Development[25]



5.3 Environmental Justice Considerations

The applicant understands that many of the communities near the proposed project include high percentages of low-income and/or minority populations. The proposed project has been designed to avoid disproportionate adverse impacts to these communities and to provide opportunities for beneficial impacts on the local economy, the environment, and recreation. As discussed later in this section, the applicant has reached out to a number of community members and organizations and considered their input in project design. Impacts, including benefits of the proposed project, are described in Attachment C of this permit application. The location of the low-income and minority population, relative to the Ward Investments property, is presented in this section, while section 5.4, *Sustainability and Compatibility with Local Plans* of this attachment discusses how the proposed project has been designed in consideration of the needs of and may benefit these communities.

Executive Order 12898, *General Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, states "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low-income populations." The Environmental Protection Agency defines Environmental Justice as "The fair treatment

[25] Although the total horizontal footprint of mixed use (industrial, commercial/retail, town center, and business park) totals 355 acres, vertical development would not occur on the entire acreage. Parking lots, driveways, and landscaping, for example are not factored into the total into the vertical development footprint. Vertical development will only occur on approximately 336 acres of the total 355 acres of horizontal development.

and meaningful involvement of all people, regardless of race, color, national origin or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies."

Council on Environmental Quality guidance states that environmental justice populations should be identified where either:

- The environmental justice population of the affected area exceeds 50 percent, or
- The environmental justice population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

In order to identify low-income and minority populations near the project site that meet the criteria for environmental justice, GIS and U.S. Census Bureau data[26,27] were reviewed and documented within an approximately 5-mile radius around the Ward Investments property. In consideration of potential impacts to the natural, cultural, and human environment, the environmental justice-specific project area encompasses a 2-mile radius around the property. It is anticipated that impacts associated with the project will be confined to the project site and immediate surroundings, but a 2-mile radius was used as a conservative approach. The footprint of site development and Creosote Road, as proposed, will be contained within the Ward Investments property. Therefore, these components will have no physical impact on the communities within the study area. As described in Section 5.4, *Sustainability and Compatibility with Local* Plans, project development will include a number of elements that have the potential to benefit communities near the site, including recreational trails and a community park. Further, the Creosote Road extension will be designed as a pedestrian-friendly parkway and the City's proposed recreational facility will provide communities with additional opportunities for outdoor recreation and benefit the economy. As this project progresses, the applicant will continue to use the EPA's EJView Tool in conjunction with U.S. Census Bureau data to lay the framework for determining the baseline for the environmental justice analysis.

Communities were identified as environmental justice populations if:

- More than 50% of the population is minority (identified at the census block level)[28] or
- More than 50% of the households had an income below the 2013 median household income for the City of Gulfport ($37,610; identified at the block group level).[29] The median income for the City of Gulfport was used as a conservative approach as it is lower than the median household incomes for Harrison County ($43,124) and the State of Mississippi ($39,031).

▼

26 Environmental Protection Agency EJView Tool (http://epamap14.epa.gov/ejmap/entry.html)
27 U.S. Census Bureau. TIGER/Line Precensus Files, 2010: 2010 Data for Harrison County, Mississippi. Washington, D.C.
28 American Fact Finder for the City of Gulfport. 2010 U.S. Census Data.
29 American Fact Finder for the City of Gulfport, Harrison County, and the State of Mississippi. Selected Economic Characteristics, 2009-2013 American Community Survey 5-Year Estimates. Available online at: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

As shown on Figures A-30 and A-31, a number of communities within the 2-mile project area meet the criteria for environmental justice populations from both a low-income and minority perspective, including the Forest Heights, North Gulfport, and Turkey Creek neighborhoods. Both low-income and minority populations are most heavily concentrated south and east of the project site. The applicant will ensure opportunities for meaningful involvement by potentially affected communities, including the low-income and minority populations in the project area. Meaningful input means that:

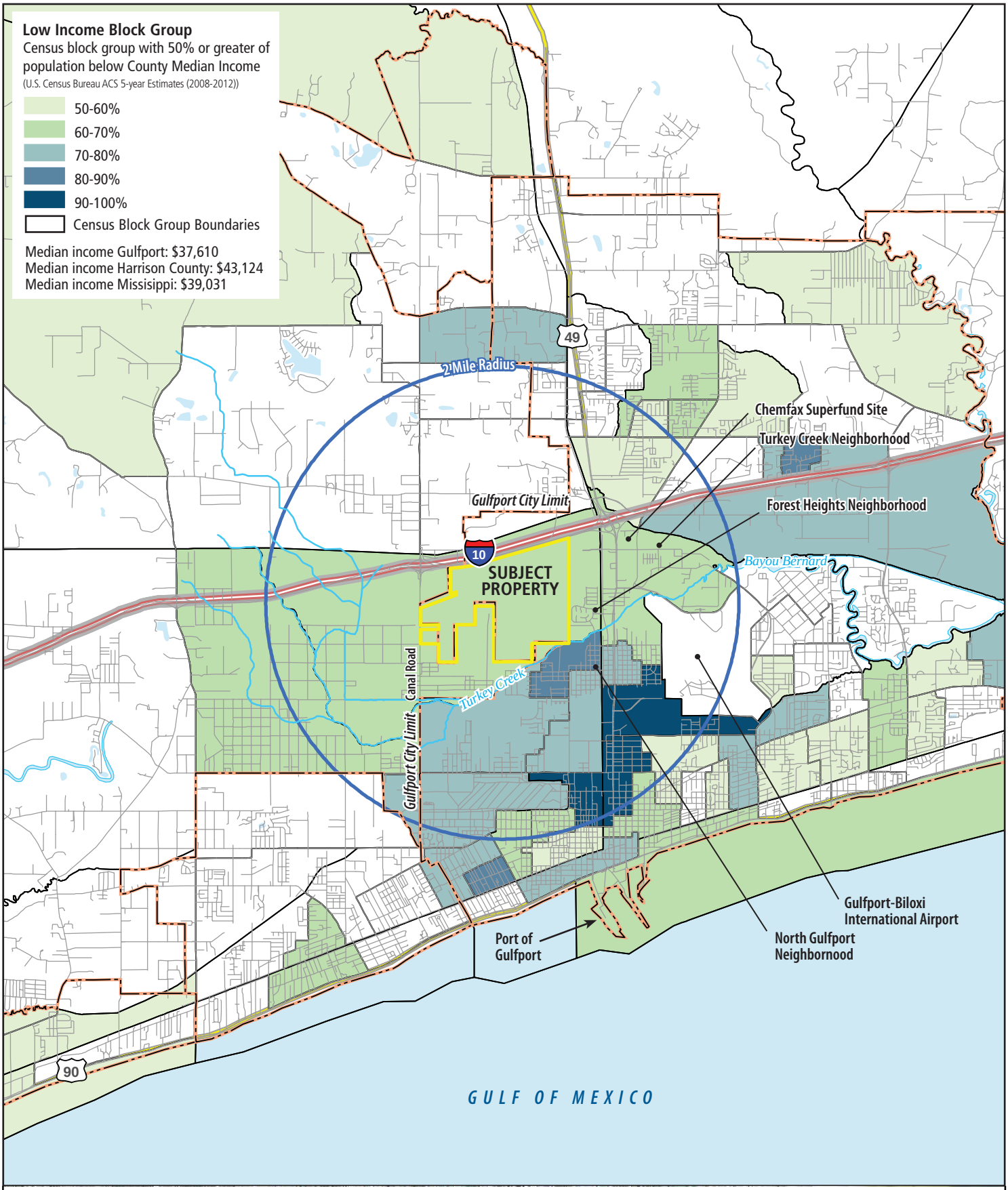
- People have the opportunity to participate in decisions about activities that may affect their environment and/or health;
- The public's contribution can influence the regulatory agency's decision;
- Community concerns will be considered in the decision-making process; and
- The decision-makers will seek out and facilitate the involvement of those potentially affected.

The applicant has and will continue to reach out to the communities within the project area and provided opportunities for meaningful involvement. The applicant has contacted a number of individual community members; environmental and other interest group representatives; and relevant federal, state and local agencies regarding the project to get their input about the project. For example, Ward Investments has met multiple times between September 2014 and April 2015 with representatives from the Gulfport Chapter of the National Association for the Advancement of Colored People (NAACP), the Land Trust of the Mississippi Coastal Plain, the Harrison County Economic Development Commission, the Harrison County Chamber of Commerce, and interested members of the North Gulfport, Turkey Creek, and Forest Heights communities.

As part of these efforts, two pre-application interagency meetings were conducted for the project. These meetings were attended by representatives from:

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency, Gulf of Mexico Program
- U.S. Fish & Wildlife Service
- Mississippi Department of Environmental Quality
- Mississippi Department of Marine Resources
- City of Gulfport

The public will also have the opportunity to comment on this permit application (and therefore the project) as part of the ACOE Public Notification process. Public comments received during the various outreach efforts will be considered in project planning, design, and development. Further, as described in Section 5.4, below, local planning efforts have been incorporated into the project design, to the extent practical. Incorporating previously identified goals and objectives is a first step in ensuring community concerns are concerned in the planning and decision-making process.



vhb
225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Ward-Gulfport Property

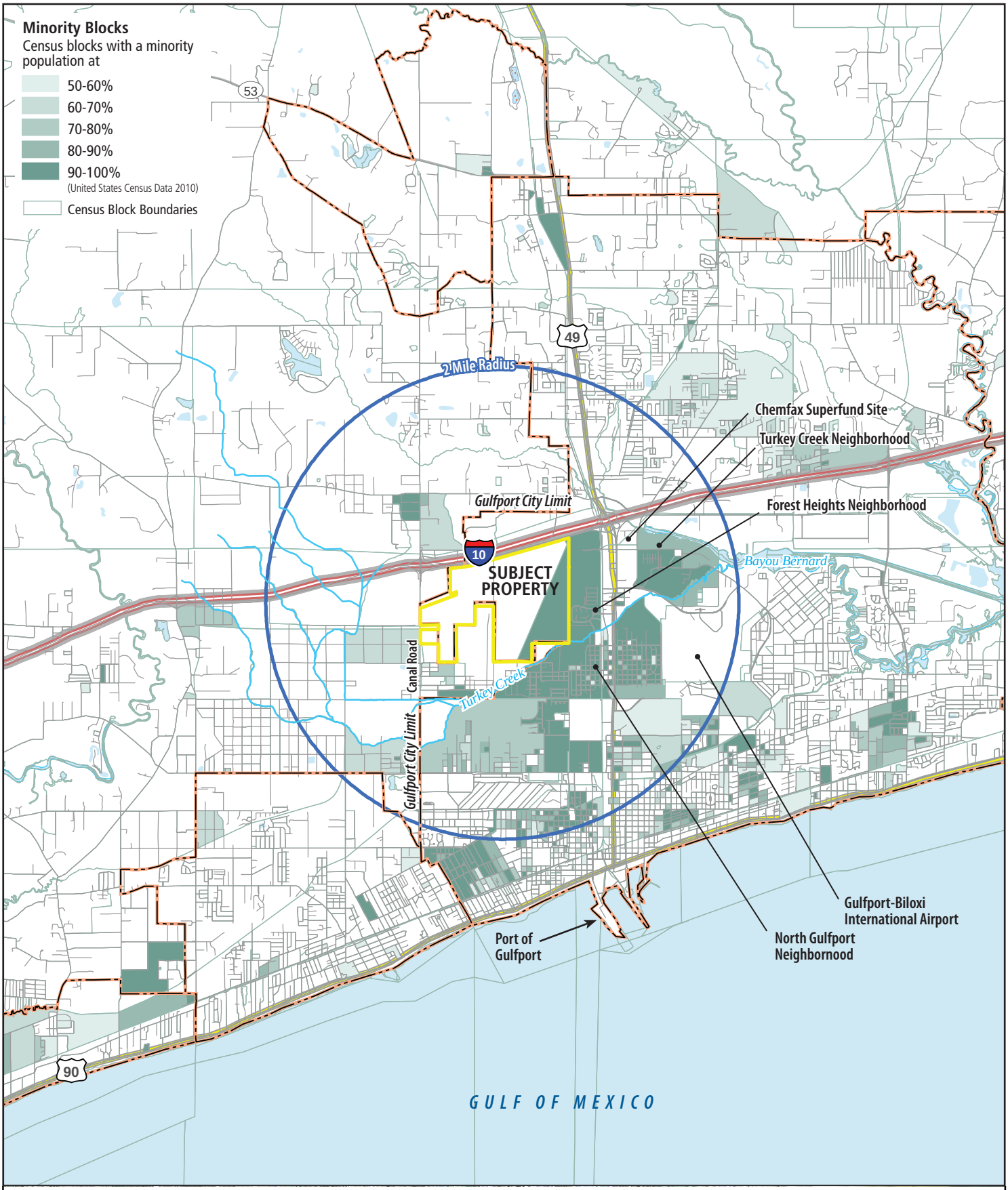
Figure A-30

Low Income Populations within Gulfport, Harrison County, Mississippi

April 2015

0 1.75 Miles

NORTH



vhb
225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Ward-Gulfport Property

Minority Populations within Gulfport, Harrison County, Mississippi

April 2015

Figure A-31

0 1.75 Miles

NORTH

5.4 Sustainability and Compatibility with Local Plans

The Ward-Gulfport Development presents a unique opportunity for an important project that is economically, environmentally, and socially profitable. Local and regional plans provide valuable insight that can serve as a resource for developing project concepts. Local planning efforts considered include:

- Watershed Implementation Plan: Turkey Creek (October 2006)
- 2030 Harrison County Comprehensive Plan (July 2008)
- Gulfport 2030 Comprehensive Plan (February 2010)
- The Community's Plan for the Turkey Creek and North Gulfport Neighborhoods (August 2011)

Relevant objectives identified in these documents have been incorporated into the project design, to the extent appropriate and feasible, to support the surrounding communities and City in achieving their stated goals. The proposed project presents an opportunity to take a holistic, sustainable approach to development that meets community needs. A table summarizing project consistency with the local planning efforts is included at the end of this section (Table A-3).

As part of the design process, a project-specific sustainability framework has been assembled that outlines themes and actions that could be incorporated into the proposed project. Proposed actions are consistent with local and regional plans and categorized into the following themes:

- Circulation and Connectivity
- Economic Development
- Distinctive Community Design
- Environmental Health
- Recreation
- Public Health/Safety
- Housing

Designing the project using a sustainability framework and directly addressing the goals put forth in local plans demonstrates that this project will be an asset to the community with economic, environmental, and social benefits and minimizes potential for disproportionate distribution of adverse impacts to low-income and/or minority communities.

As described previously in this attachment, Ward Investments is proposing to construct a campus-style business and technology park and mixed use development to support forecasted employment needs of the area and to enhance economic opportunities in the region.

The following sustainability themes include actions that address the needs of the community and promote sustainability within the region. To the extent feasible, these actions are depicted on Figures A-32 through A-35.

5.4.1 Circulation and Connectivity

Create Creosote Road using Complete Streets principles. Complete Streets are designed to be used by everyone. They provide safe access for all users including bicyclists, pedestrians, and motorists, thus reducing dependence on vehicle transportation alone, enhancing air quality and public health, an improving local mobility (see Figure A-32). Complete Streets include walkable, cyclist-friendly roads; frequent and safe street crossings; pedestrian walkways that are connected; slower speed limits; and tree-lined streets that manage stormwater effectively. The Creosote Road extension will be designed as a parkway and incorporate many elements of a Complete Street.

Construct off-street pedestrian and bicycle trails to connect the built environment to Turkey Creek. The proposed project will create multi-use trails that connect the town center to the natural, undeveloped parts of the site, especially along Turkey Creek (see Figure A-33 and A-35). This will provide opportunities for recreation and environmental education on site and could include signage that directs people to these paths, encourages the responsible use of these trails, and respect for the Turkey Creek watershed (see Section 5.4.5, *Recreation*).

5.4.2 Economic Development

Develop a local hiring policy for the site. A local hiring program will prioritize local workers to occupy jobs to construct and operate the site. As it pertains to sustainability, this means providing jobs for historically disadvantaged and marginalized populations in order to address poverty and unemployment in the community and also ensures new dollars generated from this development remain in the community. Initially, the policy may focus on construction of the site. For construction jobs, the policy could include a provision for contractors to hire a certain percentage of locally sourced labor. Local hiring should also leverage partnerships with local community-based organizations for direct outreach, engagement, and workforce training.

Enhance local economic growth. Inherently, this project will support local economic growth, an important element of community sustainability. Some of the specific economic benefits identified include:

- Project will capture 3,300-6,600 new jobs with an average annual salary of more than $40,000, resulting in $130-$270 million in annual wages
- Expansion of the Port of Gulfport is likely to require substantial “back office” support space that could be accommodated by this project

- Regional plans forecast growth across a broad mix of industry sectors and employment types, specifically office-using technology, professional services, and support services, all of which could be accommodated by the proposed project
- The proposed project provides desired high quality, environmentally sustainable, flexible mixed-use facilities currently lacking in the region
- Create opportunities for existing Gulf Coast workforce
- Encourage in-migration of new skill sets

Create and promote a public space that can support special events. People need an accessible place to congregate that can used by anyone. The facilities within the town center will be designed with flexibility in mind allow the space to be functional at all times, while promoting creativity and supporting cultural activities. This flexibility could include space(s) on the project site that are multi-use/purpose, such as a parking lot that is occupied on weekdays and used as a farmer's market on the weekend.

5.4.3 Distinctive Community Design

Use sustainable design techniques for land use and development. The project will provide a mix of land uses that are compatible including residential, small-scale neighborhood office, and commercial uses. The design will ensure that development respects the natural landscape and maximizes the use of the buildable area of the land without unnecessarily encroaching on sensitive natural systems. Sustainable design will also incorporate the principles of Complete Streets (see Section 5.4.1, *Circulation and Connectivity*) and New Urbanism in the town center to include designing the built environment at a human scale, including buildings that take advantage of street frontage and have windows and treatments that appeal to a pedestrian, bicyclist, and a driver.

Design the site to reflect historic community character. To the extent feasible, the project will incorporate materials, forms and colors that reflect the history and character of the community (Figure A-33). This could include using local stone and brick, restricting the height of the buildings where and when appropriate (while still maximizing the use of the land), and retaining/replanting native trees and other vegetation during the site development process.

Create a comprehensive, native landscaping plan. The applicant will create and implement a comprehensive landscaping plan that includes plant types, viewsheds, screening (see Section 5.4.6, *Public Health and Safety*), and accommodates growth of the materials (Figure A-34). This plan will incorporate native species that accounts for plants that need to be purchased, as well as species on site that should be preserved. This plan will also incorporate plants that contribute to stormwater management. A stormwater management strategy will be part of the comprehensive plan and incorporated into the building leases and/or deeds as appropriate. Vegetative screening and other landscaping will be used to minimize noise and visual impacts from the adjacent rail right-of-way, as well as major streets.

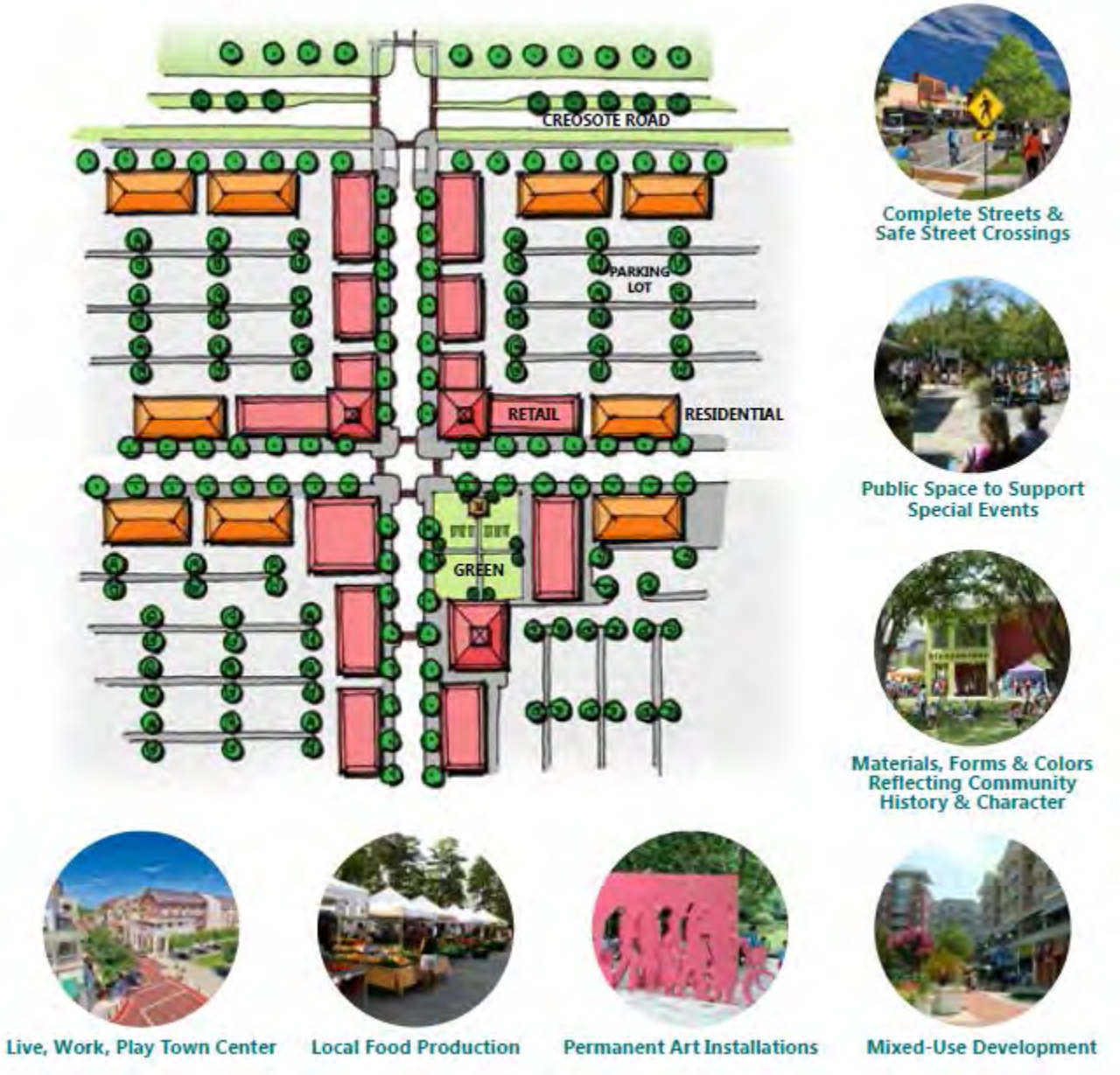
Create a comprehensive lighting plan. A lighting plan will be created and implemented that will reduce light pollution through appropriate lighting infrastructure, use energy efficiently, and enhance the

character of the site, while also ensuring the safety of pedestrians, bicyclists, and drivers (Figure A-32). Coordinate with the community on the desirable lighting fixtures that are consistent with the Dark Skies Initiative.

Incorporate permanent art into the design of buildings and infrastructure. Buildings and spaces could be designed to accommodate permanent art installations and/or integrate art from local artists or groups (like schools). This includes external and internal art displays where possible (Figure A-33).

Figure A-32. Creosote Road Parkway Cross-Section

Figure A-33. Town Center



5.4.4 Environmental Health

Restore native habitat and remove invasive species. In order to enhance and maintain the Turkey Creek Watershed, the project will include a habitat restoration plan. Avoidance will be the primary goal, to the extent feasible, and native habitats will be restored if they were disrupted during site development. The applicant will collaborate with the Land Trust for the Mississippi Coastal Plain (LTMCP) to ensure restoration efforts re consistent with restoration being conducted by LTMCP on other parcels adjacent to

and in the immediate vicinity of the project. The restoration plan will include removal of invasive species which impact the health of native habitats. Additional benefits include stormwater detention and treatment. A conceptual mitigation plan, including the preservation, enhancement, and restoration of wetlands, is included in the mitigation section of Attachment C (Section 6.1).

Create an in-kind program for wetlands mitigation and preservation. In addition to onsite mitigation measures (described in Attachment C, Section 6.1), the applicant will purchase, restore and preserve offsite wetlands for conservation through donation or deed restrictions. The applicant will consider offsite parcel(s) immediately adjacent to Turkey Creek that have been impacted by ditching, drainage alterations, and lack of regular fire, and represent some of the last remaining undeveloped parcels adjacent to Turkey Creek. The applicant will purchase, preserve and restore these parcel(s) to reduce the potential for further habitat fragmentation in the watershed and restrict development to more suitable locations adjacent to roadways and urbanized areas near the Ward Investments property. The applicant will coordinate with the LTMCP for the transfer and maintenance of the donated or deed restricted wetlands. A conceptual mitigation plan, including a proposed in-kind wetland mitigation and preservation program, as feasible, is included in the mitigation section of Attachment C (Section 6.1).

Use permeable paving on site. To the greatest extent feasible, the applicant will use paving materials to allow water to be infiltrated instead of running off the surface. This contributes to a sustainable stormwater management program (see next action) by reducing non-point source pollution to the local watershed (carried through stormwater runoff) and also promoting groundwater recharge. Permeable paving materials also typically have the added benefit of reducing urban heat island effects that often occur where there is excessive (non-reflective) hardscape.

Develop and implement a stormwater management program. A stormwater management program will be developed for the proposed project and will include a variety of low impact development techniques, such as permeable paving (see previous action) and more green spaces that allow for water to infiltrate into the ground on the spot. The proposed project will reduce the amount of runoff from the site by collecting runoff from the 100-year 24-hour storm in the stormwater management facilities (Figure A-34). The stormwater management system will provide treatment and attenuation to at or below the pre-development (existing) conditions. This system as a whole, including the vegetative swales, aquatic plants and treatment and attenuation ponds, will assist in mitigating undesired contaminants in the runoff before it can enter another water body such as Turkey Creek. The Stormwater Management Plan for this project is described further in Attachment C, Section 6.2.

Incorporate sustainable building design standards. A key component of the project purpose and objectives is to incorporate sustainability elements into the project design in a manner that is beneficial to the City and meets the stated goals of surrounding communities. As part of these efforts, the project will integrate sustainable design standards during the planning and construction of new buildings. Possible building standards include: Leadership in Energy and Environmental Design for Neighborhood Development (LEED–ND), ENERGY STAR, Sustainable Sites Initiative (SITES), or other state or regional

equivalent. The design will take into account building location and orientation, energy use, renewable energy, water consumption, air quality, and waste.

Designate space for local food production. Space for local food production, such as a community garden or raised garden beds will be incorporated into project design. This space could be for residents or to support programs with local schools or organizations. This could be located in the town center or public park (referenced in *Recreation* element).

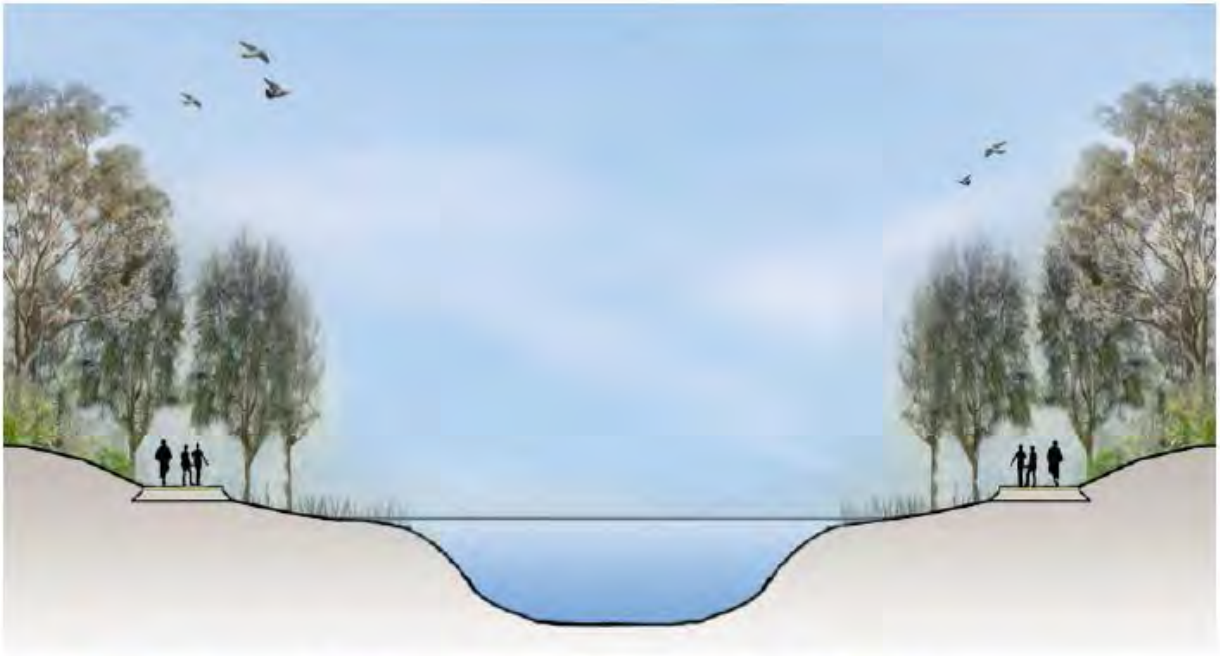
5.4.5 Recreation

Provide green space for publically accessible active and passive recreation onsite. Outdoor green spaces offer a variety of mental, physical and social benefits ranging from stress reduction and quicker healing, to decreasing crime and air pollution. This project will incorporate a variety of publically accessible green spaces, including native landscaped plazas in the town center (Figure A-33) where people can congregate at lunch and large and grassy areas (the community park in the southeastern portion of the site and the sports fields included in the City's recreational facility) for both active and passive recreation activities such as Frisbee, dog-walking, and/or organized sports (Figure A-35). The City's recreational facility will support active recreation and could also provide opportunities for community events, such as festivals or outdoor concerts, when not being used by local organized sports organizations. The recreational facility will likely be accessible to pedestrian access using the proposed trail network.

Offer enhanced public access around Turkey Creek. Turkey Creek is an important natural and recreational asset on the site. To embrace this importance, the site will incorporate bicycling, walking and hiking trails adjacent to and near Turkey Creek that respect the ecological values of the watershed. Access points will be provided using the proposed recreational trail network to allow for fishing and boating. The trails will be accessible from the west side of the Forest Heights neighborhood and will connect the town center with Turkey Creek (Figure A-35). To ensure the responsible use of this area, informational signs could be installed for all users of the area, including educational signage.

The LTMCP has been responsible for the development and promotion of several recreational trails along the Gulf Coast region. Of particular note is the work they have been doing on "Blueway" trails. A blueway is a water body that is developed with launch points and points of interest for canoeists, paddle boarders and kayakers. The applicant will work with LTMCP to promote a blueway along Turkey Creek, including the incorporation of a canoe/kayak launch on the project site.

Figure A-34. Stormwater Management



Preservation, Enhancement & Restoration of Wetlands

Recreational Trail

Low Impact Development (LID) Stormwater Techniques

Habitat Restoration Plan

Native Plantings

PROPOSED NATIVE PLANT PALETTE

Southern Live Oak

Red Maple

Slash Pine

Dahoon Holly

Buttonbush

Arrowwood Viburnum

Southern Magnolia

Bald Cypress

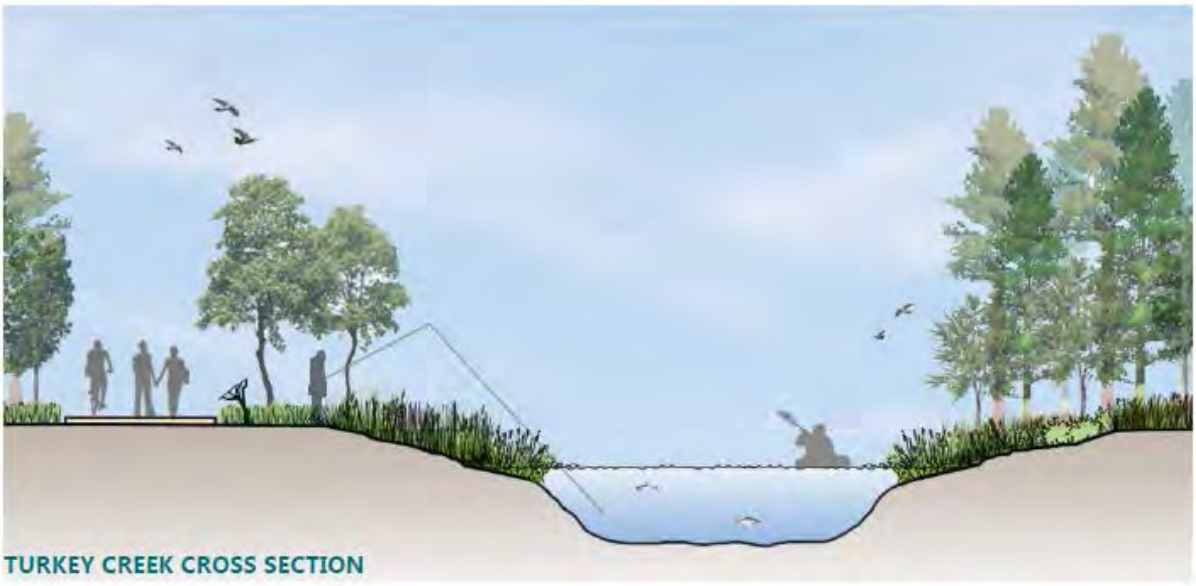
Sabal Palm

Native Azalea

Black Eyed Susan

Muhly Grass

Figure A-35. Recreation Opportunities




Public Greenspace & Park


Informational & Educational Signs


Recreational Trail for Walking, Hiking & Biking

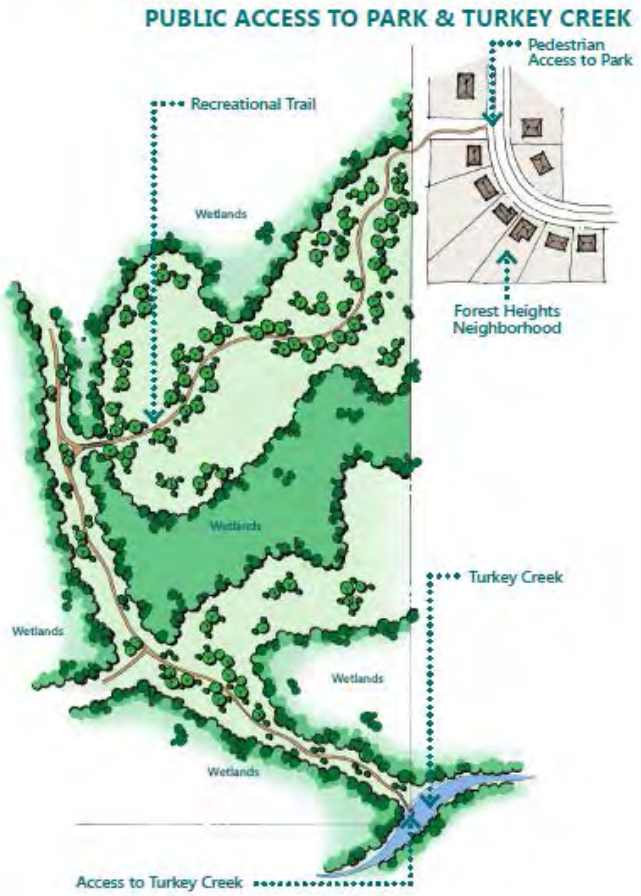

Preservation of Existing Wetlands


Access to Boating


Preservation of Natural Eco-System


Access to Fishing


Native Plantings



5.4.6 Public Health and Safety

Incorporate appropriate insulation into buildings to mitigate noises. Sound-proofing improves the quality of the residential and commercial buildings on site, which contributes to a healthy work and living environment. To mitigate noise from the adjacent rail lines, additional sound-proofing insulation could be installed in buildings on the site. This can be achieved using sustainable materials including environmentally friendly acoustic ceiling tiles, wall panels and baffles.

Action for safe rail crossings. In order to construct a new pedestrian/bicycle grade crossing over the active KCS freight line, Ward Investments will work closely with the City and KCS. To ensure pedestrian safety and adherence to applicable regulations, Ward Investments will obtain design approval from KCS and engage a Diagnostic Team in accordance with Federal Highway Administration (FHWA) procedures. The Team would consist of railroad experts, the governing state agency on crossings, and local officials including emergency responders. The Team would evaluate the proposed crossing location including operations and topography to establish a set of recommendations for safety improvements for the new active crossing. The improvements could include gates, flashers, fencing, crossing surface material, sight-distance improvements, lighting, signage, and pavement markings. The grade crossing improvements would be constructed based on recommendations from the Diagnostic Team.

Implement principles of Crime Prevention through Environmental Design. The site will be designed to ensure public safety using the Crime Prevention through Environmental Design (CPTED) principles. CPTED incorporates design features into the built environment that are intended to deter criminal activity through four key principles, which include:

- Natural surveillance (see and be seen)
- Natural access control (strategic use of fences, walkways, signage)
- Territorial reinforcement (clear delineation of public vs private areas)
- Maintenance (proper maintenance enhances property value and deters criminal activity)
- Design elements may include strategically placed shrubbery and lighting, building orientation and access, street layout, and traffic circulation.

5.47 Housing

Develop and support local housing opportunities. Housing units in the town center will be available to be occupied by those who either live or work in the area. This will help to meet local housing needs and priorities. This strategy also contributes to local infrastructure such as education and provision of services.

Provide a mix of housing unit types and sizes. The town center will incorporate a range of housing types that appeal to a variety of residents including: rental and owner-occupied units; studios, one-, two and three-bedrooms; and units available in a variety of layouts.

Create a Live, Work, Play Town Center. Using the concepts mentioned in other sustainability elements (i.e., Complete Streets, New Urbanism, public and green spaces, mix of housing types), a town center will be created where people can walk from their home to their office, or access recreational, and multi-use trails to walk or bicycle through the Turkey Creek Watershed. In addition to contributing to the quality of life of the residents, this will contribute to a safer neighborhood and reduce greenhouse gas emissions related to vehicle trips off the site.

5.4.8 Consistency with Local Planning

In order to maximize public benefits from the proposed project, many of the sustainability elements described above were selected because they align with local planning goals and objectives. Table A-3 identifies specific goals and/or objectives in the 2030 Harrison County Comprehensive Plan, Gulfport 2030 Comprehensive Plan, Turkey Creek Watershed Implementation Plan, and/or The Community's Plan for the Turkey Creek and North Gulfport Neighborhoods that will be incorporated, at least in part, into the proposed project. The table is categorized by planning document and identifies the applicable goal/objective and page number for reference.

Table A-3. Consistency with Local Planning

Primary Themes	Possible Action	Page Reference (from local planning document)
2030 Harrison County Comprehensive Plan		
Distinctive Community Design	Ensure that Community Plans and ordinances incorporate the principles of New Urbanism	17
Economic Development	Develop a Town Center with mixed uses	17
Environmental Health	Establish measures to restore the functions of the wetlands, bayous, floodplains, and forests to mitigate future flood and wind damage in the community	17
Gulfport 2030 Comprehensive Plan		
Circulation and Connectivity	Promote the creation of an interconnected network of walkable, cyclist-friendly roads with slow design speeds, block-and-street layouts, and quality streetscapes.	7
Circulation and Connectivity, Public Health/Safety, Housing	In areas designated for development or redevelopment as Town and Neighborhood Centers and where appropriate by context, transform existing thoroughfares into "great streets" that are tree-lined, accommodate moderate vehicle speeds, and encourage walking, bicycling, and transit use.	7
Circulation and Connectivity	Ensure effective coordination between MSPA Plans for the Port of Gulfport restoration and local and regional economic development, transportation, land use, and utilities plans.	8

Table A-3. Consistency with Local Planning (Continued)

Primary Themes	Possible Action	Page Reference (from local planning document)
Environmental Health	Establish property protection programs and measures in special flood hazard areas and floodplains.	8
Turkey Creek Watershed Implementation Plan		
Circulation and Connectivity	Increase Non-vehicular Connectivity between schools, parks, community centers, homes, businesses, and neighborhoods	4
Economic Development	Coordinate funding so that public projects are well leveraged to maximize public benefit	4
Environmental Health	Increase riparian buffer zones and reduce storm water runoff to meet or exceed TMDL for pH.	19
The Community's Plan (for Turkey Creek and North Gulfport Neighborhoods)		
Circulation and Connectivity	Bicycle infrastructure - designated bicycle paths with bicycle racks, bicycle lockers, appropriate lighting, and shelter.	A1; A7; A10
Circulation and Connectivity	Pedestrian-friendly streets	A2; C6
Economic Development	Local hiring and work-force programs	B9
Economic Development	Provide public spaces to support weekend markets or special sales events.	B11
Distinctive Community Design	Encourage use of materials forms and colors on buildings that reflect neighborhood culture and history	C2
Distinctive Community Design	Use native species for landscape and trees	C5; E1; E8
Environmental Health	Restore native habitat, remove invasive species	E1; E8
Environmental Health	Use permeable paving where appropriate	E5; E8
Environmental Health	Stormwater Management Program	E10
Recreation	Develop recreational opportunities along Turkey Creek	G1
Recreation	Ensure both passive and active recreational opportunities are available for all age groups	G2
Public Health/Safety	Use noise mitigation techniques directed toward reducing noise impacts through vegetation and landscaping, sound insulated buildings, and environmental design.	E6
Public Health/Safety	Ensure the safety and access of pedestrians and cyclists near the KCS railway by providing safe grade-crossings, gates, flashers, fending, sight-distance improvement, lighting, and signage.	Page 64-65
Public Health/Safety	Provide appropriate lighting at pedestrian and vehicular scale	Page 68

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4 Attachment B
Authorized Agent Statement

Agent Authorization

I authorize the person(s) and/or company listed below to act as our agent regarding the proposed project as described in the Joint Application and Notification at the location listed below:

Kimberly Threlfall/VHB	**Ward-Gulfport Development**
(Name of Agent)	(Project Name)
225 E. Robinson Street, Suite 300 Landmark Center Two Orlando, FL 32801	**Section 17, 19, 20, 29, 30, T7 South, Range 11 West Gulfport, Mississippi**
(Agent City, State & Zip)	(Project Location)
(407) 839-4006	
(Agent Telephone Number)	
Ward Investments	**13155 Highway 67, Suite D Biloxi, MS 39532**
(Applicant Name)	(Applicant Address)
T. Jerard Ward	**(228) 261-2917**
(Applicant Point of Contact)	(Applicant Telephone Number)
(Date of Signature)	(Applicant Signature)

Do you want the permit mailed to the agent?

	X
Yes	No

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5 Attachment C
Environmental Assessment and Mitigation Plans

Attachment C
Environmental Assessment and Mitigation Plans

1. Introduction

Attachment C has been prepared to support the *Joint Application and Notification* Form, in compliance with the Mississippi Department of Marine Resources (DMR) requirements, and also provides pertinent information to support the U.S. Army Corps of Engineers (ACOE) and Mississippi Department of Environmental Quality (DEQ) review of this application form. This attachment details the alternatives development process (Section 2), summarizes anticipated public benefits of the project (Section 3), assesses the potential impacts of the Ward-Gulfport Development project on natural and cultural resources (Section 4), and details avoidance and minimization measures (Section 5) and conceptual mitigation plans (Section 6). As demonstrated throughout this attachment, the Ward-Gulfport Development project will not result in a significant impact on the natural or human environment.

As detailed in Section 5, *Project Description*, of Attachment A, Ward Investments is proposing to construct a premium, campus-style, mixed-use development on a portion of an approximately 1,300-acre parcel in the City of Gulfport (the City), Harrison County, Mississippi. The development includes three components: mixed-use development, including stormwater management facilties; extension of Creosote Road and donation of the right-of-way to the City; and donation of land to develop a City recreational facility. The proposed project was designed to ensure financial feasibility (see Section 2.8, *Development Alternative 4 (Proposed Project)*); avoid and minimize impacts to wetlands, to the extent practicable, especially high and medium quality wetlands (see Section 5, *Avoidance and Minimization*); restore, enhance, and preserve onsite conditions to maintain a mosaic of wetland and upload habitats (see Section 6.1, *Mitigation: Wetlands*); incorporate stormwater management measures that will eliminate the project's potential adverse impacts to the Turkey Creek Watershed (see Section 6.2, *Mitigation: Stormwater/Flooding*); maximize opportunities for sustainability and the associated environmental and community benefits (see Section 5.4 of Attachment A).

The property is composed mostly of forested wetlands and is bordered by Interstate 10 (I-10) on the north; Canal Road on the west; undeveloped land, the Prime Outlets, and a residential neighborhood on the east; and primarily undeveloped land bordering Turkey Creek and the Gulfport Dragway to the south (see Figures A-1 and A-2, Attachment A). The Biloxi-Gulfport Regional Airport is located proximal to the southeast of the site, separated by U.S. Route 49. The Kansas City Southern Railway Company (KCS) right-of-way extends east-west through the property (and north-south on the east side of the property),

providing connections to the Port of Gulfport (the Port), which is approximately 4.5 miles south/southeast of the site.

The proposed development will include approximately 355 acres for commercial/retail, business park, industrial, residential, and recreational land uses, including a mixed-use town center, publically accessible trails and a park; 44 acres will be donated to the City for extension of Creosote Road; 25 acres will be donated to the City for development as a recreational facility (Figures A-15 and A-16); and approximately 100 total acres will be excavated to create stormwater management facilities that will improve drainage and runoff storage capacity and provide fill for development areas. Cross-sections of the proposed project, including all pertinent features are provided in Attachment A as Figures A-17 through A-27. Approximately 360 acres are low quality wetlands, equating to 83% of the total wetland impact area (see Section 4.1, *Wetlands*). Minimal impact will occur to medium (68 acres, 16% of the wetland impact area) and high (4 acres, < 1% of the wetland impact area) quality wetlands. Mixed-use development will be focused mostly in the northern and western portions of the site and includes:

- 120 acres of industrial development in the central portion of the site;
- 57 acres of commercial and retail development on the western side of the site, adjacent to Canal Road;
- 17 acres of commercial and retail development in the northeast corner of the site;
- 106 acres of business-technology park north of the KCS right-of-way;
- 48 acres of mixed use development (residential, professional services and retail) designed as an integrated town center in the northeast corner of the site; and
- 7 acres of community park land in the southeast portion of the site proximal to the Forest Heights neighborhood. The park and trail network will enhance opportunities for community recreation and provide convenient public access to Turkey Creek.

2. Alternatives Development

The lengthy alternatives development process for this project began with the creation of development concepts that have been refined into more specific alternatives to address the project purpose and need. As detailed in Section 3 of Attachment A, the purpose of the proposed project is to develop the Ward Investments property into a state-of-the-art, campus-style, mixed-use destination that is economically viable, sustainable, and promotes the long-term economic, transportation, and recreational needs of the City, and can be implemented using a phased master plan approach. Development on the Ward Investments property is needed to address economic growth forecasted for Harrison County and the City, as well as the needs of anticipated port development. The extension of Creosote Road into a City-owned parkway is needed to improve the resiliency of the regional transportation network, enhance connectivity between surrounding communities, and provide safe and efficient access to the proposed development. The City recreational facility is needed to support community demands for both passive and active recreation and expand opportunities for sports tourism in the City.

Ward Investments has considered a number of options for use and development of the property. In recent years, Ward Investments has identified more specific opportunities linked to several initiatives in the Gulfport

area and region as a whole, including those related to environmental protection, neighborhood and community development, expansion of the Port of Gulfport, and economic development associated with the Port of Gulfport.

As part of the alternatives development process, Ward Investments has coordinated and solicited input from a variety of Federal and state agencies, public officials, economic development representatives, representative of the Port of Gulfport, railroad representatives, local residents and community groups, and other stakeholders who have an interest in this project and/or development in the region. Based on input provided during these discussions and internal conversations among the project team, a series of guiding principles were generated for development of the subject property.

As described in Section 3 of Attachment A, the following objectives were established to help guide the design of the proposed development:

- Ensure the development footprint is large enough to support economic viability;
- Develop the site with a mix of viable uses that offer the flexibility to adapt as market conditions evolve;
- Support a campus-style destination;
- Create a balanced approach to developing the site (weigh uses and intensity against environmental impacts);
- Provide opportunities for transportation resiliency;
- To the extent feasible, avoid and minimize impacts to medium and high quality wetlands;
- Avoid development within the 100-year floodplain;
- To the extent feasible, meet or exceed community goals and objectives by incorporating sustainability elements into the project design;
- Establish housing and employment on the site that will support retail uses in the town center and create a modern live/work/play environment in the town center that promotes innovation and sustainability;
- Develop the site to provide vehicular and trail connections, amenities, and other features to support surrounding neighborhoods, including potential external environmental education opportunities; and
- Support opportunities to expand sport tourism in the City.

Using these principles and the knowledge gained during the preliminary planning process, a series of alternative concepts were developed by the project team. Several elements were carried through all alternatives, including:

- Mixed-use development including industrial, commercial, retail, and residential (Figure A-15 and A-16);
- Donation of land to the City to extend Creosote Road across the site (Figures A-15, A-27, A-28, and A-32);
- Donation of land for development by the City as a recreational facility (Figure A-15);

- A trail network linking the adjacent neighborhoods with the Ward Investments property and providing opportunities for environmental education (Figure A-15 and A-35); and
- Minimizing development in medium and high quality wetlands to preserve these resources.

Elements considered during preliminary planning but not carried through to the alternatives include:

- A development footprint occupying nearly the entire property, which was dismissed due to the extent of adverse impact to natural resources;
- A formal Environmental Education Center, which was dismissed due to the lack of revenue generating opportunity and requirement for a partner to provide a significant investment in the facility; and
- Large scale rail-oriented industrial development, which was dismissed due to the large potential supply of similar uses in the Gulf Coast Region and the impact on the future economic and social needs of the City and region.

2.1 No Action Alternative

2.1.1 Description

Under the No Action Alternative, there would be no man-made changes to the Ward Investments property. There would be no new development onsite, no donation of land to the City, and the Creosote Road extension would not be constructed. The existing roads and drainage ditches would continue to alter onsite hydrology, with the potential to have noticeable impacts on other, offsite portions of Turkey Creek Watershed. The site would continue to be primarily occupied by wet pine savannah, bottomland hardwoods, and cypress strand wetlands.

Without active management and/or development, however, the function and value of the wet pine savannah and cypress wetlands would continue to degrade, along with the associated wildlife habitat. Specifically, wet pine savannahs, and to a lesser extent the cypress wetland, are a fire maintained habitat; therefore, the quality of this habitat will continue to decline in the absence of vegetation maintenance. Even now, some of the Hydrogeomorphic method (HGM) plots revealed a complete absence of desirable herbaceous species and received a vegetation score of 0.00. The remaining wet pine savannahs will also progress to this condition as the shrub and canopy strata continue to increase in cover and the shading becomes even more pronounced. The No Action Alternative would eventually result in the loss of 860 Functional Capacity Units (FCUs), which is an approximately 285 FCUs greater impact than the proposed project. The absence of vegetative maintenance there is also the increased risk of a catastrophic wild fire which would greatly impact the onsite habitats and threaten adjacent natural and human elements. Further, as the condition of the property continues to deteriorate and become overgrown, it could come to be an eyesore for the surrounding neighborhoods and City.

2.1.2 Feasibility

In addition to the continued deterioration of wetlands described above, the No Action Alternative would not meet the project purpose and need. The lack of development on the Ward Investments property would prohibit the site from serving as a premium, campus-style destination in the City. Forecasted

economic growth would have to be accommodated elsewhere in the City or the County, and likely further from major transportation centers (KCS, Gulfport-Biloxi Regional Airport, and the Port of Gulfport). Since there are no other large parcels to handle the development in a compact cluster, these uses would result in more sprawl and additional habitat fragmentation. Further, without the proposed development, it is unlikely that the Creosote Road extension would be constructed in the foreseeable future; therefore, there would be no improvements to the resiliency of the regional transportation network, enhanced connectivity between communities, nor the ability to address many aspects of the various community plans.

2.2 Use of Other Sites

As part of the alternatives analysis process, the applicant identified offsite alternatives that could potentially meet the purpose and objectives of the proposed project. In total, the Gulf Coast region has over 9,000 acres of undeveloped, available land. The largest single tract available for commercial development is the Ward Investments parcel in Gulfport. The offsite alternatives evaluation was limited to Harrison County in consideration of the development need to address economic growth forecasted for Harrison County and the City. Development of the proposed project outside of Harrison County would not address this important need. The applicant completed the alternatives screening process using the project purpose and key principles/objectives as the evaluation criteria listed above.

Each of the criteria was evaluated for each potential site. Parcels in Harrison County that might be suitable were evaluated including: the Ward Investments property, two properties immediately west of the proposed project site, a variety of sites in Harrison County, and available, vacant land on Seaway Road. For each of the criteria, the Ward Investments parcel generally ranked equal to or higher than the other potential sites. The exception is that some offsite options avoid impacts to wetlands; however, these options do not meet the project's purpose and need and are not feasible for development. The most notable benefit of the proposed project is that the applicant owns the property, making this site the most economically viable. The proposed project site is also strategically located between I-10 and Route 49, has the most direct access to the Port of Gulfport, minimizes impacts to existing natural resources, and presents the greatest opportunity for community benefits and transportation resiliency.

2.2.1 Harrison County

Harrison County has two major industrial parks with a total of nearly 740 acres available, as well as five others industrial parks with a total of 870 acres available. Harrison County does not have a single 500-acre contiguous parcel available for high-valued commercial/industrial development within the confines of the City of Gulfport. The largest undeveloped tract of 320 acres is within the Global Axis Industrial Park in the northern part of the county, more than 12 miles from I-10. The next largest tract is in Pass Christian where 240 acres are available. These parcels are not viable alternatives for the following reasons:

- They would have to be purchased by Ward Investments.

- Although development of these parcels would likely result in minimal impacts to natural resources (wetlands, stormwater, flooding, protected species), from an economic feasibility standpoint, the small development footprint of these parcels would not be sufficient to support infrastructure costs.
- The parcels are not within the City of Gulfport, therefore, would only support economic benefits for the County.
- The parcels are within existing industrial parks, therefore, are not visible from major roadways, reducing viability for a campus-style destination. For the same reason, it is unlikely that the applicant would have the opportunity to create a town center with a live/work/play environment at these locations.
- The sites provide limited opportunities for community benefits and would not enhance transportation resiliency.
- The sites are removed from the infrastructure and labor force within the City of Gulfport.
- Since the parcels are within existing industrial parks, they are zoned for heavy industry use, which is reflected in their relatively low-value development and slow absorption.

2.2.2 Seaway Road

During preliminary community outreach, some members of the public requested consideration of sites on Seaway Road for development. In order to address these comments, the applicant evaluated the feasibility of developing vacant land on Seaway Road to meet the project purpose, need, and objectives. The largest vacant parcel on Seaway Road totals approximately 70 acres, with an adjacent, undeveloped parcel of approximately 25 acres. This location does provide frontage along I-10 and is easily accessible and visible. However, similar to the industrial parcels described in Section 2.2.1, it is not feasible to develop the proposed project on Seaway Road because:

- The parcels would have to be purchased by Ward Investments.
- Although development of the parcels would likely result in minimal impacts to natural resources (wetlands, stormwater, flooding, protected species), from an economic feasibility standpoint, the small development footprint of these parcels would not be sufficient to support infrastructure costs.
- The proximity of the vacant parcels to existing commercial and industrial development along Seaway Road substantially reduces potential to develop a campus-style destination. For the same reason, it is unlikely that the applicant would have the opportunity to create a town center with a live/work/play environment at these locations.
- Given the location in a highly congested commercial and industrial area, these sites provide limited opportunity for community benefits and would not support enhancements to transportation resiliency.

2.2.3 Adjacent parcel #1

A vacant parcel proximal to the southwest of the Ward Investments property comprises approximately 575 acres, sufficient land for developing the proposed project. However, for the following reasons, this parcel is not considered a viable alternative.

- Ward investments would have to purchase this property, incurring costs before even developing the site.
- The parcel is not within the City of Gulfport, therefore, would only support economic benefits for the County.
- Due to the following anticipated impacts on natural resources, this option would not create a balanced approach to developing the site:
    - Nearly 100% of the property is wetlands, 68 acres high quality and 248 acres of which is medium quality. Based on this information, development of this property would impact much of the existing medium quality and some high quality wetlands.
    - Approximately 1.5 miles of Turkey Creek and associated tributaries (an approximately 5-acres area) traverse the property, increasing potential for impact to the creek from development.
    - Approximately 80% of the property is within 100-year floodplain (459 acres). In order to avoid impacts to the 100-year floodplain, only 121 acres would be available for development, which is not sufficient for economic viability of the project.
    - Because nearly the entire site would have to be developed to ensure economic viability, fragmentation of habitat could occur, especially given the extent of Turkey Creek frontage.
    - More opportunity to provide access to Turkey Creek, but development would be much closer to the creek, providing less opportunities for stormwater buffer.
- Location is not adjacent to I-10 or Route 49, so the site would less visible than the Ward Investments parcel, reducing the viability of creating a campus-style destination.
- Lack of I-10 frontage would prohibit site from enhancing transportation resiliency to meet the City and county needs.
- Less opportunity to provide community benefits such as recreational trails and parks because most acreage would be developed for commercial/retail, industrial, and/or business park use. This property is also further from the communities so there is less opportunity to directly connect to the communities.

2.2.4 Adjacent parcel #2

A vacant parcel proximal to the west of the Ward Investments property comprises approximately 252 acres. This site would not be economically feasible because the small development footprint would not support infrastructure costs. Further, this parcel is not considered a viable alternative because:

- Ward investments would have to purchase this property, incurring costs before even developing the site.

- The parcel is not within the City of Gulfport, therefore, would only support economic benefits for the County.
- Due to the following anticipated impacts on natural resources, this option would not create a balanced approach to developing the site:
    - Approximately 64% of the property is within 100-year floodplain (162 acres). In order to avoid impacts to the 100-year floodplain, this property would only provide 90 acres of developable land.
    - Nearly 100% of the site is wetlands, and there is a much higher proportion of high and medium quality wetlands on this site (42 acres high quality, 32 acres medium quality). The entire site would have to be developed, therefore all existing high and medium quality wetlands would be filled.
    - Because the entire site would be developed, fragmentation of habitat could occur, especially given the proximity to Turkey Creek.
    - More opportunity to provide access to Turkey Creek, but development would be much closer to the creek, providing less opportunities for stormwater buffer.
- Despite I-10 frontage, there would be limited opportunity for enhanced transportation resiliency due to smaller parcel size and accessibility.
- No opportunity to provide community benefits such as recreational trails and parks because all acreage would be developed into commercial/retal, business park, and industrial uses. This property is also further from the communities so there are fewer opportunities to directly connect to the communities.

For the reasons described above, the development of the two adjacent properties, other parcels in Harrison County, and along Seaway Road were determined to be infeasible for achieving the purpose and need for the proposed project. The key factors in making this determination is economic feasibility, in large part because Ward Investments does not own the land, and because, with the exception of the southwestern adjacent parcel, the properties do not provide enough contiguous, developable acreage to support the proposed project. Specifically, the cost to purchase the property and develop the necessary infrastructure would be too high to make the project economically viable, when considered in relation to the economic benefits of operation. Further, development of either of the adjacent sites would have notably more adverse impacts on the environment than development of the proposed project.

2.3 Creosote Road Parkway Extension

As described in Section 5.1, *Project Components* of Attachment A (Figures A-15, A-27, A-28, and A-32), a key component of the proposed development is the donation of a 44-acre corridor to the City for extension of Creosote Road. The approximately 150-foot wide right-of-way will include up to 4 travel lanes (2 lanes in each direction), a concrete sidewalk on one side of the road and an approximately 12-foot wide multi-use path on the other, and approximately 8-foot shoulders on either side of the road. The road will function as a parkway, serving the traffic needs of the area as well as providing a well-landscaped place for pedestrians and bicyclists. A parkway design was chosen because it can provide a

high level-of-service for vehicular traffic and typically has a wider right-of-way which can accommodate other linear uses and broader landscaped areas. With the use of low impact development (LID) elements for signage, striping, and site lighting, the parkway will make a statement that the Ward-Gulfport Development is a state-of-the-art business park that will be able to capture the technologically advanced businesses coming to the region. All components will be designed and constructed to meet or exceed applicable standards to minimize stormwater runoff. This portion of Creosote Road will be developed as a public/private partnership between the City of Gulfport and Ward Investments, and has been designed in collaboration with the City. The road will be owned by the City, provide vehicular and pedestrian access to the site, and connect the existing Creosote Road on the east to Canal Road on the west.

The Creosote Road extension would be constructed under all alternatives. Although the alignment would vary slightly across the alternatives, Creosote Road will generally parallel I-10 and will cross the rail line near the center of the site (see Figures C-1 through C-4). In addition to site access, the extension will also support improved connectivity between the neighborhoods along US Route 49 and those west of Canal Road, and provide an alternative route to I-10 in the event of an emergency and/or evacuation.

2.4 City Recreational Facility

As described in Section 5.1, *Project Components*, of Attachment A, as part of the proposed project, a 25-acre parcel will be donated to the City of Gulfport for the purposes of developing a recreational facility (Figures C-1 through C-4). When identifying the ideal location for construction of the 25-acre recreational facility, the City considered a number of locations, including use of the subject property, the existing Sportsplex north of I-10, the existing County Farm fields, City land at the intersection of 34th Street and 8th Avenue (34th Avenue), or VA property on East Railroad Street (VA property). The feasibility of developing the needed recreational facility (see Section 3.2 of Attachment A) in these locations is summarized below.[1]

Sportsplex. Based on current participation levels, the Gulfport Sportsplex is better served by expansion of baseball/softball at the current time. Eighty-seven (87%) of current generated economic impact for the Sportsplex is created by these two activities. The existing (non-baseball and softball) fields at the Sportsplex are currently used primarily as soccer practice fields, rather than tournament/game fields. The Sportsplex does not provide opportunities to expand for uses other than to meet baseball and softball neds. For these reasons, the Sportsplex property was dismissed as a potential site for the City's recreational facility.

County Farm Soccer Complex. The South Mississippi and Gulf Coast United Soccer Clubs currently host league play at the existing fields located on County Road, approximately 8 -10 minutes from the Sportsplex and proximal to I-10. To date, the fields have also served in conjunction with the Sportsplex as overflow for tournament soccer. With the number of league teams and select players, the County Farm fields cannot handle the existing load, and cannot be expanded. This facility also only offers a limited number of lighted fields and insufficient playing conditions for higher level competition. Further, these fields are outside the City of Gulfport limits so have limited economic benefits for the City. Due to accessibility and close proximity (approximately 10 minutes), it is feasible that the County Farm fields could serve as overflow to support larger

1 City of Gulfport Department of Leisure Services.

tournaments hosted at the Ward Investments parcel location, but for the reason outlined above, it is not feasible that this facility could accommodate the City's need as a stand-alone recreational facility.

34th Street. This site is located at the intersection of 34th Street and 8th Avenue, in the old Bayou View West subdivision of Gulfport. This area was purchased by the City several years ago due to flooding, and still has the potentail for flooding. The potential for flooding will likely affect the City's ability to maintain high quality playing fields and reduce their viability for tournament play. In addition, the flooding at the fields could, at certain times of the year, result in cancellation of scheduled tournaments, thereby further negatively impacting the viability of the fields as a tournament destination.

In addition to potential for flooding, there has been strong opposition from the soccer assocations, which prefer to maintain a facility near the I-10 corridor for accessibility purposes. The 34th Street option could be accessed using I-10, Route 49, or Route 90, but would then require the use of a number of local roads before arriving at the fields. Further, there has been some concern about the crime rate in the area surrouding this location, given that the facility will primarily support youth sports.

VA Property. Located on railroad street, this property is immediately north of the existing VA Property that was deeded to the City of Gulfport following Hurrican Katrina. In recent years, a couple of soccer fields were created at this location for practice purposes. When the expansion of the Sportsplex was discussed, which would displace the existing four soccer fields in that location, the Gulfport Department of Leisure Services vetted this area as a possible expansion location. After the site plan was developed, it was determined that, due to the size and configuration of the property, this property could not accommodate the City's needs of creating fields that will draw large-scale tournaments. A spring-fed pond is located in the middle of the property, making design and access to the fields more difficult. Lastly, the VA property and surrounding land have the potential for long-term commerical development. As such, it is likely that, if constructed here, the recreational facility would have to be relocated in the future, as commercial development encroaches. For these reasons, the VA property was dismissed as a potential site for the City's recreational facility.

Ward Investments Property. The construction of the City's recreational facility on the Ward Investments parcel was determined most feasible because this location has sufficient size to accommodate the needed sports fields and associated facilities (described below). The Ward Investments parcel is also easily accessible from both I-10 and Route 49. In the event that the new facility cannot accommodate a larger tournament, the Ward Investments property also provides the most convenient access to the County Farm fields which could support some games, if needed.

The City will be responsible for design and construction of the recreational facility on the Ward Investments property, but will coordinate closely with Ward Investments during this process. This recreational facility will be constructed in low quality wetlands, immediately adjacent to Creosote Road, in the central portion of the site (south of the KCS Railroad Track and adjacent to proposed industrial development). The exact configuration will be determined during final design. The recreational facility, which will also be accessible via the proposed recreational trail network, will be used primarily for soccer and other field-based sports, however, it could be used for other events such community festivals or concerts. Supporting facilities to be constructed by the City will include concessions, restrooms, a parking area, and lighting, with both sideline and bleacher spectator viewing areas. The fields will each be equipped with a lighting system (likely a six-pole

system with adjacent fields using a common pole, resulting in nine poles for two fields). It is anticipated that the lighting system will be installed and maintained by Mississippi Power, under a lease agreement with the City. This will be arranged by the City in coordination with Ward Investments. To the fullest extent possible, fill for the facility will be provide by excavation of the nine onsite stormwater management facilities described earlier in this section. The City will provide any additional fill material for the recreational facility that cannot be accommodated through the excavation of the nine stormwater management facilities.

In consideration of flooding potential, the City will construct drainage features, such as ditches/catch basins, on the southern side of the fields (based on anticipated stormwater flow). This will not only reduce potential for flooding, but also help maintain the quality of the fields. The City and Ward Investments will collaborate throughout development to ensure stormwater management facilities constructed by the City, in support of the recreational facility, in conjunction with those to be constructed by Ward Investments will be sufficient for managing stormwater for the project as a whole.

2.5 Development Alternative 1

2.5.1 Description

Alternative 1 (Figure C-1), the first concept plan prepared to address the purpose and need, would result in the development of approximately 204 acres of the Ward Investments parcel for traditional industrial and commercial uses, 41 acres for the Creosote Road right-of-way, 61 acres for the excavation of stormwater management/borrow facilities (described below), and 25 acres for the City recreational facility. Of this total, approximately 276 acres would occur in wetlands (primarily low quality). There would be minimal impacts on medium (57 acres) and high (5 acres) quality wetlands. Alternative 1 (Figure C-1) would be developed primarily for use as a traditional industrial park and most development would occur north of the KCS railroad tracks.

Approximately 167 acres of the development proposed under Alternative 1, would be developed for use as a traditional industrial park. In addition, an approximately 14-acre commercial development would be constructed south of the railroad tracks, adjacent to Canal Road, and a 23-acre commercial development would be constructed in the northeast corner of the site. The land uses for Alternative 1 would be focused on supporting office, light industrial, and port-related uses. Based on an estimate of typical densities for these types of uses, it is anticipated that Alternative 1 would support approximately 1,000 to 3,000 permanent jobs at full build out.

In order to enable the development of the areas north of the tracks and help improve drainage and storm water capacity across the entire site, Alternative 1 would include construction of two stormwater management/borrow facilities south of the railroad tracks and the Creosote Road extension. The stormwater management facilities would be used to provide fill for the mixed-use development and would be sited to maximize development along Creosote Road, while still maintaining close proximity to the mixed-use parcels to ensure cost effective transport of the fill. The total surface area of the stormwater management/borrow facilities would be at least 20% of the developed parcel area. It is anticipated that the total volume of soil provided from excavating the stormwater management/borrow facilities will produce an average height of approximately 3 feet of fill from existing grade to develop the property.

2.5.2 Feasibility

Alternative 1 does not meet the purpose and need for the project. In consideration of the market and economic analysis, Alternative 1 is not economically feasible because the market has an oversupply of traditional industrial properties, resulting in an extended absorption period. Alternative 1 does not provide a mix of uses that could adapt as market conditions evolve. Further, the small development footprint would not support the required infrastructure costs. The industrial nature of Alternative 1 also would not support the need for high quality jobs and development of a campus-style destination. There would be limited opportunity to incorporate elements to meet community goals and objectives.

2.6 Development Alternative 2

2.6.1 Description

Due to the infeasibility of Alternative 1, additional alternatives (Alternatives 2 and 3) were developed for consideration and evaluation. Alternative 2 (Figure C-2) would include approximately 320 acres of mixed-use development, 58 acres for the extension of Creosote Road, 95 acres for the excavation of stormwater management/borrow facilities (described below), and 25 acres for the City recreational facility. Approximately 410 acres of this development would occur in wetlands (mostly low quality, with minimal impacts to medium (27 acres) and high (5 acres) quality wetlands).

Development associated with Alternative 2 would occur primarily on the northern half of the site, but would be evenly distributed on the north and south sides of the KCS railroad tracks. This alternative would include a variety of uses to address the full range of needs identified in the market study conducted as part of the planning process for this project. These uses would include industrial (95 acres in the northeast corner of the site), commercial/retail (14 acres on the western side of the site, adjacent to Canal Road), business parks (72 acres in the northwestern portion of the site), residential (106 acres in the central portion of the site), and a mixed-use town center (33 acres in the central portion of the site). The land uses proposed in Alternative 2 would support approximately 2,100 to 4,400 permanent jobs and approximately 400 to 1,000 dwelling units at full build out.

Similar to Alternative 1, the plan would include construction of two stormwater management/borrow facilities south of the railroad tracks and the Creosote Road extension. The stormwater management facilities would be sited to allow for maximum development opportunities along Creosote Road while maintaining close proximity to the mixed-use development to ensure cost effective transport of the fill. The stormwater management/borrow facilities surface area would be at least 20% of the development footprint (for mixed-use and Creosote Road) and would provide the fill needed to raise the footprint 3 feet above existing grade.

Unlike Alternative 1, Alternative 2 would provide a number of community benefits, including a mixed use town center and public trails in the southern portion of the site to support outdoor recreation and environmental education opportunities.

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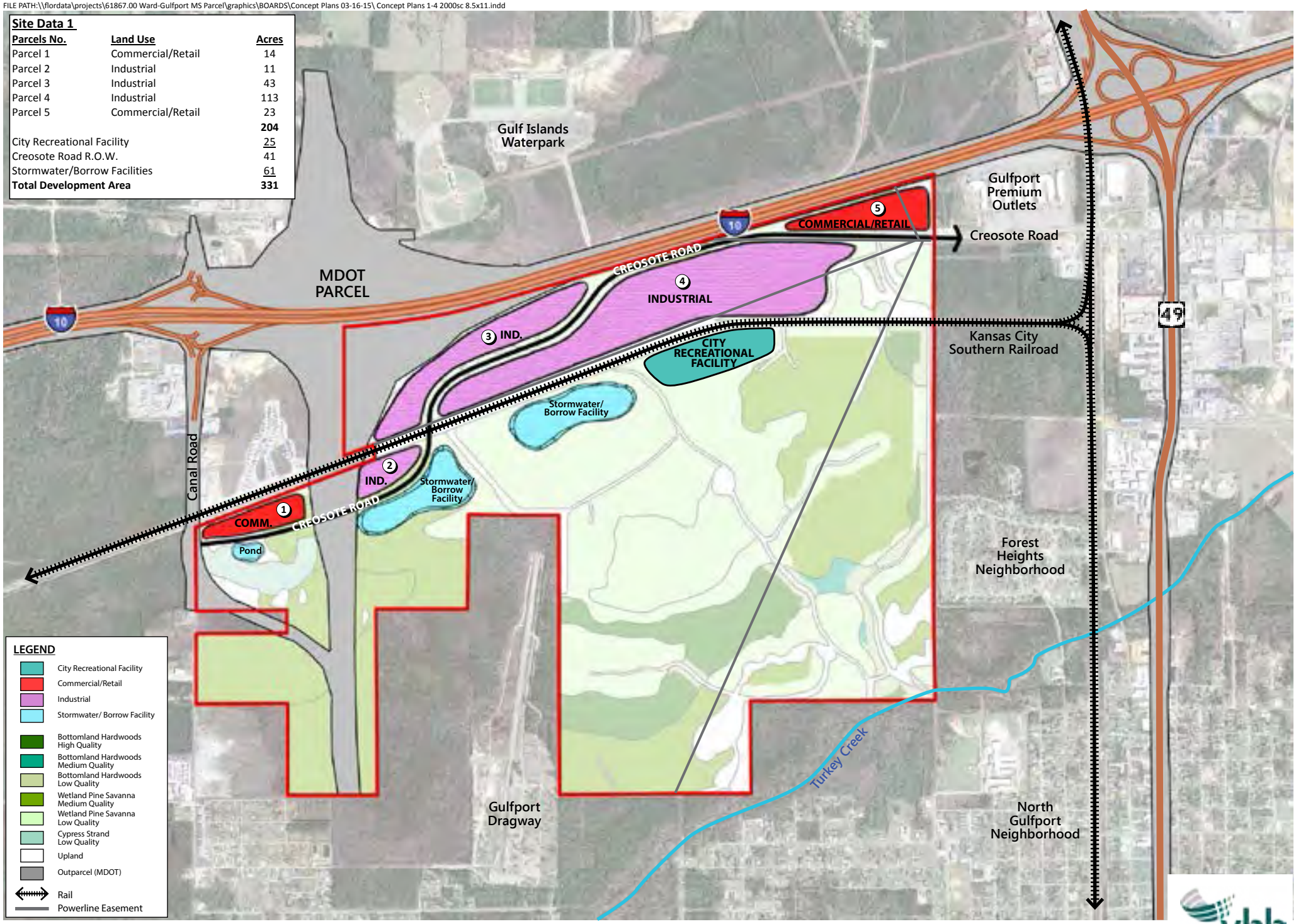
Site Data 1

Parcels No.	Land Use	Acres
Parcel 1	Commercial/Retail	14
Parcel 2	Industrial	11
Parcel 3	Industrial	43
Parcel 4	Industrial	113
Parcel 5	Commercial/Retail	23
		204
City Recreational Facility		25
Creosote Road R.O.W.		41
Stormwater/Borrow Facilities		61
Total Development Area		**331**



LEGEND

- City Recreational Facility
- Commercial/Retail
- Industrial
- Stormwater/ Borrow Facility
- Bottomland Hardwoods High Quality
- Bottomland Hardwoods Medium Quality
- Bottomland Hardwoods Low Quality
- Wetland Pine Savanna Medium Quality
- Wetland Pine Savanna Low Quality
- Cypress Strand Low Quality
- Upland
- Outparcel (MDOT)
- Rail
- Powerline Easement

FIGURE C-1: DEVELOPMENT ALTERNATIVE 1

WARD-GULFPORT PROPERTY

SCALE IN FEET
0' 1000' 2000'

N

DATE: April 30, 2015
PROJECT NUMBER: 61867.00

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Site Data 2

Parcels No.	Land Use	Acres
Parcel 1	Commercial/Retail	14
Parcel 2	Business Park	28
Parcel 3	Business Park	44
Parcel 4	Town Center	18
Parcel 5	Town Center	15
Parcel 6	Industrial	72
Parcel 7	Industrial	23
Parcel 8	Residential	106
		320
City Recreational Facility		25
Creosote Road R.O.W.		43
Secondary Road R.O.W.		15
Stormwater/Borrow Facilities		95
Total Development Area		**498**

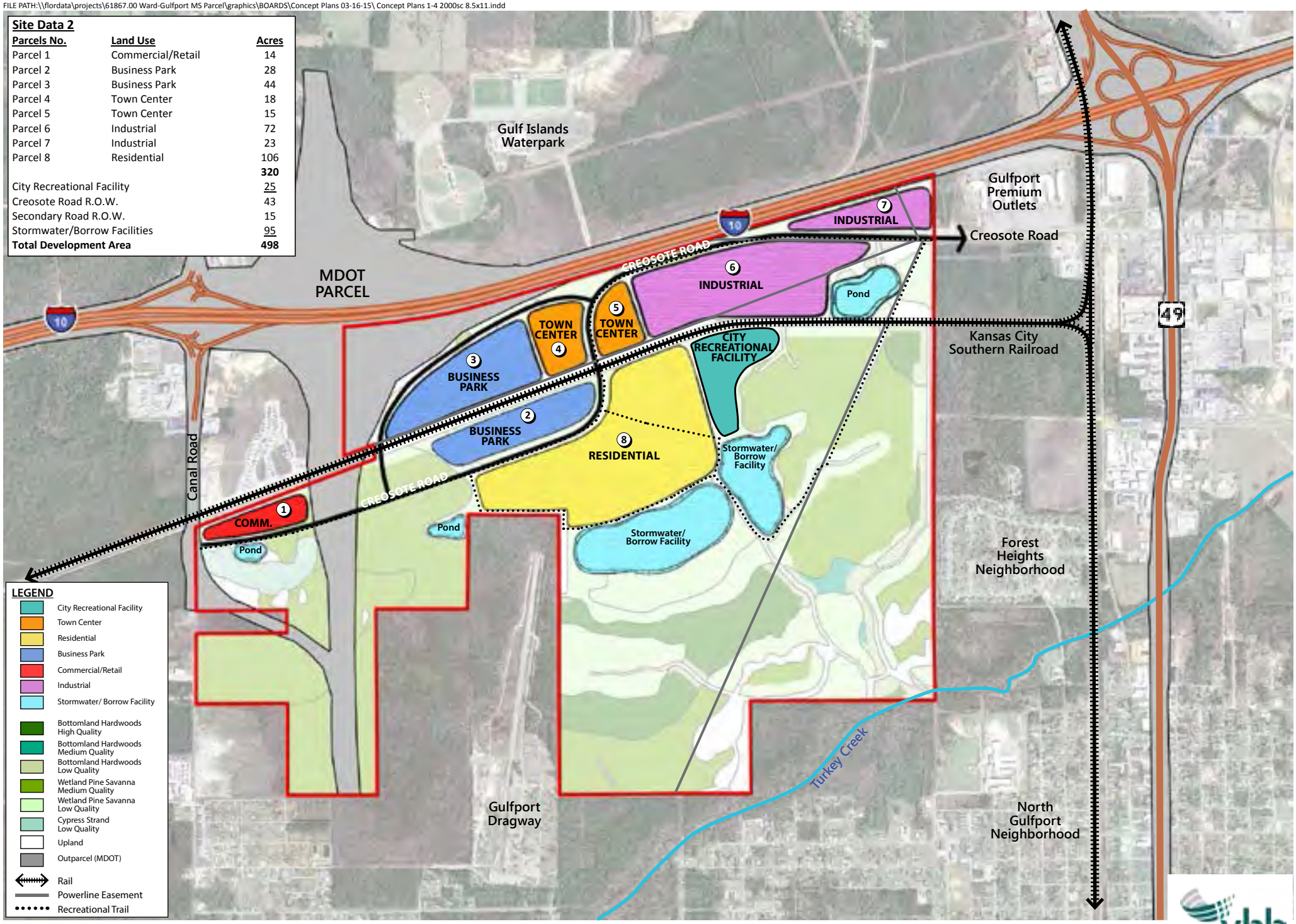

FIGURE C-2: DEVELOPMENT ALTERNATIVE 2

WARD-GULFPORT PROPERTY

SCALE IN FEET
0' 1000' 2000'

N

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2.6.2 Feasibility

Despite the improvements over Alternative 1, based on the current financial analysis, this alternative is not economically viable and therefore, does not meet the project purpose and need. Alternative 2 is not financially feasible for the following reasons:

- The overall development program as shown would take 20 or more years to fully build-out, which combined with the upfront cost for most of the infrastructure, results in rates of return on investment (ROI) below typically acceptable industry standards.
- The location of uses within the site would be harder to develop given forecast market absorption rates.
- The town center sited in the middle of the office park and industrial development would be less accessible and visible, resulting in later stage development and associated value capture.
- The market for the lower density residential communities (mid- and high density single family, duplex, townhouse units) has not been proven in the Gulfport market and may not be financially viable at this time.

2.7 Development Alternative 3

2.7.1 Description

Alternative 3 (Figure C-3) was developed to overcome the financial issues associated with Alternative 2 by increasing the overall size and density of the project in order to meet the purpose and need. This alternative would result in approximately 499 acres of mixed-use development, 58 acres for the extension of Creosote Road, 140 acres for the excavation of stormwater management/ borrow facilities, and 25 acres for the City's recreational facility. Approximately 614 acres of the development would occur in primarily low (451 acres) and medium (156 acres) quality wetlands, with minimal impact on high quality (7 acres) wetlands. Development associated with Alternative 3 would be concentrated in the northern half of the Ward Investments parcel, but would be more widespread than the other alternatives. Similar to Alternative 2, this alternative would include a variety of uses to address the full range of needs identified in the market study.

Alternative 3 would include 95 acres of industrial development in the northeast corner of the site and 14 acres of commercial/retail development on the western side of the site, adjacent to Canal Road. The business park (93 acres in the northwest portion of the site), residential (248 acres in the central portion of the site), and mixed-use town center (42 acres in the central portion of the site) land uses proposed in Alternative 3 would be in the same general location as proposed under Alternative 2, but the development footprint would be larger. The land uses associated with Alternative 3 would support approximately 2,700 to 5,400 permanent jobs and approximately 1,000 to 2,000 dwelling units at full build out.

Similar to the other alternatives, to enable the development of the land north of the railroad tracks and improve drainage and storm water capacity across the entire site, the plan would include construction of four stormwater management/borrow facilities totaling 140 acres in area. The excavation of these borrow facilities would provide approximately 3 feet of fill to raise the entire footprint for the mixed-use development.

Alternative 3 would include more community benefits than the previously described alternatives. Specifically, Alternative 3 would include a larger town center to support onsite commercial uses, a longer recreational trail network, and an approximately 8-acre community park in the southeast corner of the site, proximal to and accessible from the North Gulfport neighborhood; and a longer recreational trail network. This park would support recreation and environmental education opportunities for the adjacent neighborhoods.

2.7.2 Feasibility

Similar to Alternative 2, in Alternative 3 the town center would be sited in the middle of the office park and industrial development, therefore, would be less accessible. More notably, Alternative 3 has the largest footprint of the development alternatives, therefore would have the most environmental impacts (see Section 4, *Impact Analysis*). The market for lower density, residential communities also has not been proven in the Gulfport market and may not be reasonably financeable. For these reasons, Alternative 3 is not the least environmentally damaging practicable alternative for the Ward-Gulfport Development.

2.8 Development Alternative 4 (Proposed Project)

2.8.1 Description

After Alternatives 1, 2, and 3 were developed, additional market and economic analysis was conducted by RKG Associates (RKG) to confirm financial and environmental feasibility of these alternatives. Based on this additional evaluation and consultation with Federal and state agencies and other stakeholders, Alternative 4 (Figure C-4) was developed. This alternative, which is detailed in Section 5, *Project Description* of Attachment A, best meets the project purpose and need due to refinements made to respond to market and environmental conditions of the site and surrounding area.

RKG's refined market and economic analysis led to four primary conclusions.

- In order to capture a variety of employers and end users within a reasonable time frame so that the project is financially feasible, it must include a mix of uses and become a destination location. This requires visibility along I-10, sufficient density, and flexible design, planning and zoning.
- The market for lower density residential communities (mid- and high density single family, duplex, townhouse units) has not been proven in Gulfport market, may not be financially viable at this time, and there are other parcels with likely less wetland impact that can accommodate this need.
- The type of industrial uses envisioned for the site would not necessarily compete with existing industrially zoned land and buildings in the Gulfport area, rather this site would be focused on users requiring a mix of high-quality office, laboratory, fabrication and research space within a campus-like environment.
- The analysis led to the vision of a business-technology park anchored by a town center that includes serving retail, services, and multi-family housing within a walkable, environmentally sustainable area. The project will have a *branded identity*, common design elements and professional management to capture new employers and employees to meet the changing industry needs of Gulfport and the Gulf Coast region.

Site Data 3

Parcels No.	Land Use	Acres
Parcel 1	Commercial/Retail	14
Parcel 2	Business Park	26
Parcel 3	Business Park	23
Parcel 4	Business Park	44
Parcel 5	Town Center	9
Parcel 6	Town Center	18
Parcel 7	Town Center	15
Parcel 8	Industrial	72
Parcel 9	Industrial	23
Parcel 10	Residential	146
Parcel 11	Residential	102
Parcel 12	Park	7
		499
City Recreational Facility		25
Creosote Road R.O.W.		43
Secondary Road R.O.W.		15
Stormwater/Borrow Facilities		140
Total Development Area		**722**

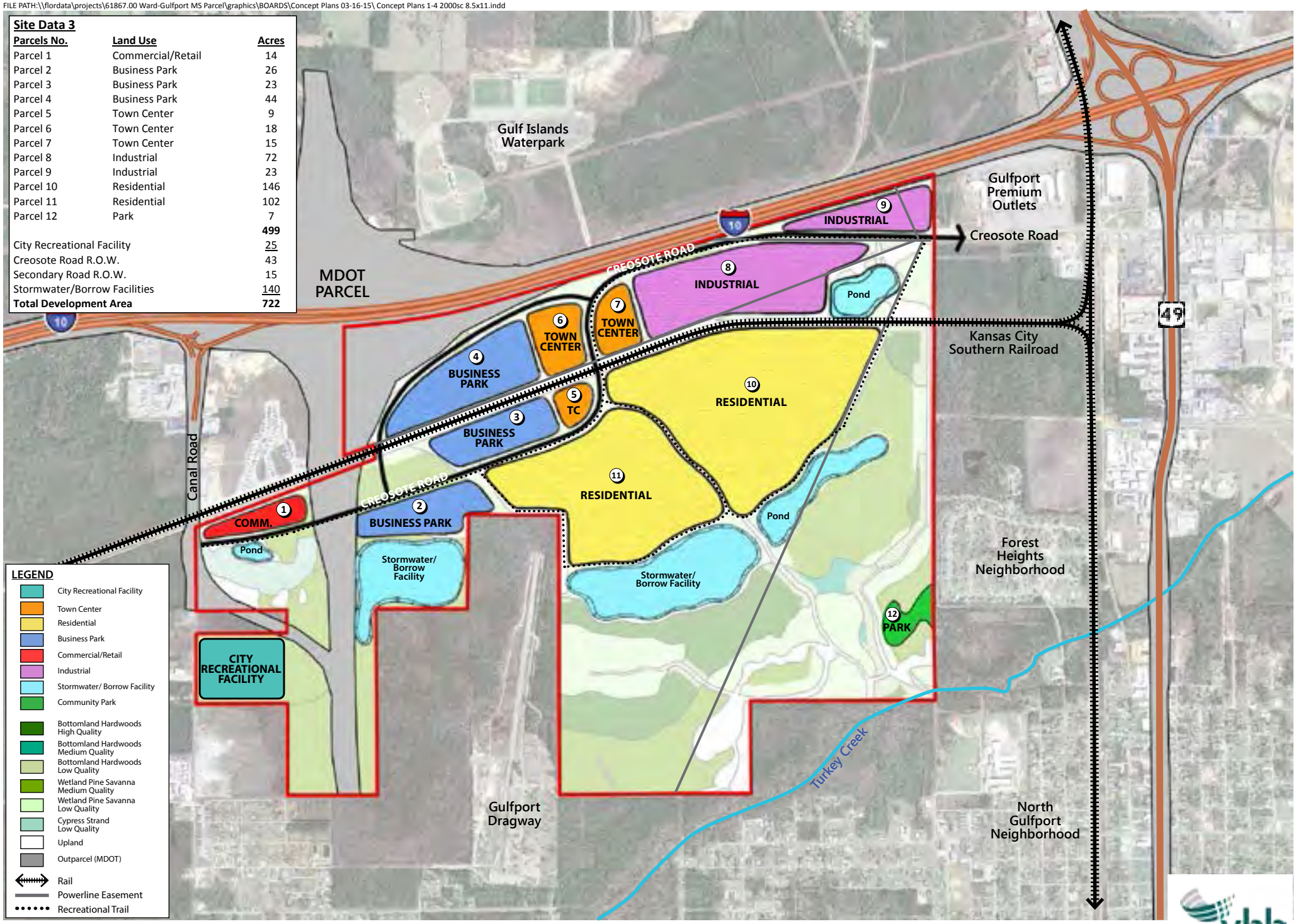

FIGURE C-3: DEVELOPMENT ALTERNATIVE 3

WARD-GULFPORT PROPERTY

SCALE IN FEET
0' 1000' 2000'

N

vhb
DATE: April 30, 2015
PROJECT NUMBER: 61867.00
225 E. Robinson St, Suite 300 | Orlando, Florida 32801
Tel: 407.839.4006 | Fax: 407.839.4008 | www.VHB.com

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Site Data 4

Parcel No.	Land Use	Acres
Parcel 1	Commerical/Retail	14
Parcel 2	Commerical/Retail	14
Parcel 3	Commerical/Retail	29
Parcel 4	Business Park	40
Parcel 5	Industrial	19
Parcel 6	Industrial	53
Parcel 7	Industrial	48
Parcel 8	Business Park	17
Parcel 9	Business Park	37
Parcel 10	Business Park/Transition	12
Parcel 11	Commercial/Retail	17
Parcel 12	Town Center	48
Parcel 13	Park	7
		355
City Recreational Facility		25
Creosote Road R.O.W.		44
Stormwater/Borrow Facilities		100
Total Development Area		**524**

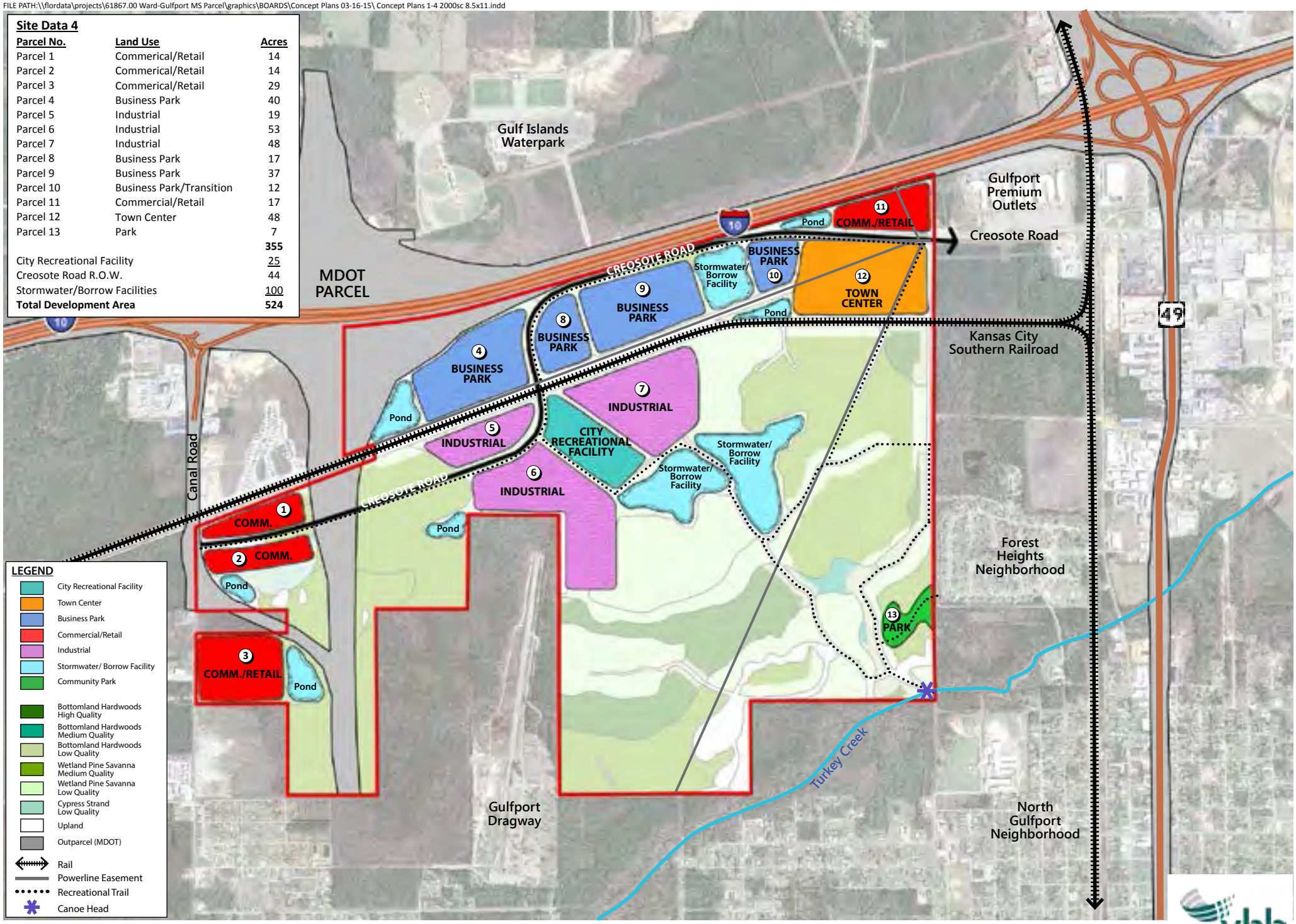

FIGURE C-4: DEVELOPMENT ALTERNATIVE 4

WARD-GULFPORT PROPERTY

SCALE IN FEET
0' 1000' 2000'

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PROJECT NUMBER: 61867.00

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As described in Section 5 of Attachment A, the proposed project will result in approximately 355 acres of mixed use development, 44 acres for the extension of Creosote Road, 25 acres for the City's recreational facility, and 100 acres for the excavation of stormwater management/borrow facilities. Similar to the other alternatives, the proposed project will incorporate a variety of uses to accommodate the full range of needs identified in the market study. Approximately 432 acres of the total 524-acre development footprint (82%) will occur within wetlands. Of this total, 360 acres of low-quality wetlands will be disturbed (83% of the total wetland disturbance), with minimal impact to medium (68 acres; 16%) and high (4 acres; <1%) quality wetlands. In addition to reflecting the refined market and economic study, Alternative 4 was designed to minimize impacts to medium quality wetlands. In particular, proposed industrial development that would have been constructed over recently identified medium quality wetlands under Alternative 3, was moved east, to be constructed over low quality wetlands. The design of the proposed project serves to minimize wetland impacts by clustering the development to the north, where most of the upland areas and previous impacts occur. This portion of the site is the most heavily impacted by ditches, roads, and off-road vehicle use. This area is also the most affected by the secondary impacts (noise, human use, lights) associated with the railroad, off-road vehicles, and I-10 traffic.

As shown on Figures C-4, the proposed project will include 120 acres of industrial development, 74 acres of commercial/retail development, 106 acres of business-technology park, 48 acres of mixed use development (primarily residential, professional services and retail uses) designed as an integrated town center, and 7 acres of community park land. This park will offer recreational and environmental educational opportunities to the adjacent neighborhood. An additional 25 acres of low quality wetlands will be donated to the City for development as a recreational facility. The proposed project is projected to support approximately 3,300 to 6,600 high-paying permanent jobs and 150 to 350 residential units within the town center.

Similar to the other alternatives, the proposed project will include construction of nine stormwater management/borrow facilities totaling 100 acres in area. The excavation of these borrow facilities will provide stormwater retention capacity and the necessary fill to raise the ground level in the development footprint 3 feet above existing grade (up to 1,931,000 cubic yards of fill; 1,655,280 cubic yards in wetlands). Individually, these stormwater management facilities/borrow pits will be much smaller in area than those proposed in the other alternatives but, in total, will equate to approximately 20% of the development surface area.

Efforts to avoid, minimize, and mitigate wetland impacts are described in Section 5, *Avoidance and Minimization*, and Section 6.1, *Mitigation: Wetlands*. Many of the onsite wetlands not impacted by the development footprint will be enhanced, restored, or preserved, as feasible. Using a combination of these approaches, the proposed project will maintain a mosaic of wetland and upland habitat onsite. Approximately 248 acres of wetlands will be preserved in the southern portion of the site, including high quality wetlands proximal to Turkey Creek (Figures C-4 and C-5). As described in Section 6.1, *Wetlands*, wetland restoration efforts will focus on restoring hydrology to drained wetlands by recontouring the logging roads and drainage ditches, and vegetation management to mimic prescribed fire.

2.8.2 Feasibility

Alternative 4 is the most feasible alternative for development because it includes

- A critical mass of mixed-use development to make the project financially feasible;
- A 'branded' identity under singular professional management that can become a destination for the new, high quality employment opportunities across a broad spectrum of technology, information and professional services industries that are expected for the region;
- Higher profile/value developments concentrated along I-10 and near Route 49 to maximize visibility; and
- A core mixed-use town center that provides maximum visibility and accessibility in order to maximize land value and reduce the tie needed for full project absorption and build out.

3. Public Benefits of the Proposed Activity

Ward Investments is proposing to construct a campus-style business and technology park and mixed use development to support forecasted employment needs of the area and to enhance economic opportunities in the Gulf Coast region. In general terms, the benefits of the proposed project include:

- Create a new, sustainable, campus-style employment center that will support 3,300 to 6,600 high quality jobs;
- Developing a mixed-use (residential and commercial) town center, to be constructed in the northeast corner of the site, proximal to Route 49 to maximize access and visibility;
- Implementing stormwater management measures that will eliminate the project's potential adverse impacts to the Turkey Creek Watershed (see Section 6.2, *Stormwater/Flooding* for more detail);
- Restoring, enhancing, and preserving onsite conditions to maintain a mosaic of wetland and upland habitats (see Section 6.1, *Wetlands* for more detail);
- Acquiring, restoring, enhancing, preserving up to a total of 827 acres offsite, in the Turkey Creek Watershed, including portions of Turkey Creek and areas immediately adjacent to Turkey Creek (see Section 6.1, *Wetlands* for more detail);
- Supporting sports tourism to enhance economic opportunities for the City of Gulfport;
- Incorporating sustainability elements to maximize public/community and regional benefits such as a public park in the southeast portion of the site, accessible from adjacent neighborhoods and public pedestrian access to Turkey Creek (see Section 5.4 of Attachment A for details); and
- Providing the most extensive recreational trail network, compared to the other alternatives (see Figure C-4 and Section 5.4, Figure A-35, in Attachment A).

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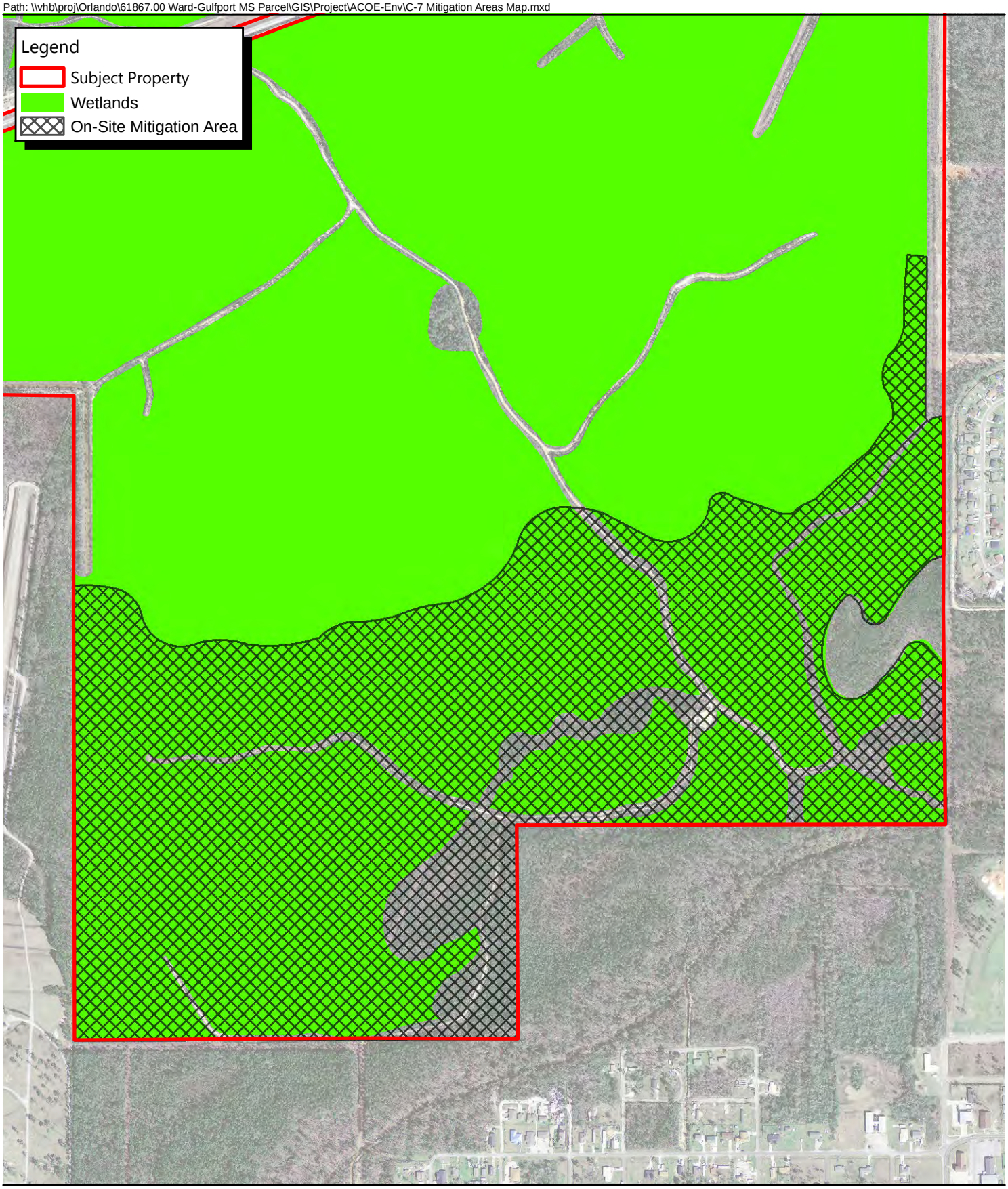

Figure C-5

Ward-Gulfport Property

Onsite Mitigation Area Map

March 2015

0 400 800 Feet

N

Wetlands. The wetlands on the project site consist of approximately 931 acres of wet pine savannah, 120 acres of bottomland hardwoods, and 16 acres of cypress strand. As discussed in greater detail in Section 4.1 of Attachment A, most of the wetlands have been impacted by previous timbering, off-road vehicles, drainage ditches and/or through the lack of regular fire. These impacts and changes have reduced the quality of the wetlands to various degrees.

As detailed in Section 6.1, *Mitigation: Wetlands*, the Ward-Gulfport Development project includes a broad program to restore, enhance, preserve and maintain a mosaic of wetland and upland habitat both on the project site and on an offsite parcel(s). The activities proposed onsite will be conducted to restore and protect the wetlands in closest proximity to Turkey Creek (Figure C-5). Restoration efforts will focus on restoring the hydrology to drained wetlands by recontouring the logging roads and drainage ditches. The wet pine savannah wetlands, and to a lesser extent the cypress system, are in various stages of succession representative of the lack of fire or other efforts to maintain the herbaceous stratum. The activities in these areas will serve to simulate the effects of fire – removal of the shrub and subcanopy layer, thinning of dense trees and hardwood trees – which will let light reach the ground cover. The area will then be mowed to reduce aggressive vines and weedy species. Finally, a light burn is proposed. Selective replanting of pond cypress will occur in the cypress/pine areas as needed to restore a more natural cypress density.

In addition, Ward Investments may acquire, restore, enhance, preserve and maintain up to a total of 827 acres of Turkey Creek and wetlands immediately adjacent to Turkey Creek (Figures C-8 and C-9). Similar to the project site, these offsite parcel(s) have been impacted by ditching, drainage alterations, and lack of regular fire. A similar habitat restoration program will be undertaken on these offsite parcels. These offsite parcels are somewhat unique in that they represent some of the last remaining undeveloped parcels immediately adjacent to Turkey Creek. By preserving and restoring these parcels, development is kept away from the creek, protecting its riparian buffer. Importantly, this offsite preservation will reduce the potential for further habitat fragmentation in the watershed by eliminated development on these parcels and clustering it in poor quality habitat areas adjacent to major roadways and railroads on the Ward property.

In addition to the onsite and offsite wetland mitigation opportunities, the applicant may also purchase wetland mitigation credits form a nearby approved mitigation bank.

Stormwater/Flooding. As detailed in Section 6.2, *Mitigation: Stormwater/Flooding*, the proposed project will reduce the amount of runoff from the development by detaining the 100-year 24-hour storm in stormwater management facilities to be located throughout the site. Runoff flow during storm events will be released at a much slower rate than under current conditions as a result of the stormwater management facilities, improved wetland function to be generated through restoration efforts in the southern portion of the site, and due to other mitigation techniques to be implemented onsite for the specific purpose of attenuating stormwater flow to Turkey Creek (see Section 6, *Mitigation Measures*). However, because the proposed development will occupy only a portion of the property (approximately 40%) and an even smaller portion of the overall Turkey Creek Basin (approximately 3%), substantial flood reduction in Turkey Creek or the Forest Heights neighborhood is not anticipated as a result of the proposed onsite stormwater management system. Further, since the proposed development is located in

the northern portion of the property, and outside of the 100-year floodplain, it is anticipated that the project will not impede water from the northern Turkey Creek drainage basins.

Community. As detailed in Section 5.4 of Attachment A (Figures A-32 through A-35), the proposed project has been designed to align with documented local and regional planning goals and objectives and would have a number of benefits from an economic, environmental, and social perspective. Using the goals and objectives outlined in local planning documents as a guide, a number of sustainability themes were identified for this project, and specific actions established for implementation. For example, the town center will provide a live/work/play environment and the parkway design of the Creosote Road extension is a "complete street" that includes walkable, cyclist-friendly roads, frequent and safe street crossings, pedestrian walkways that are connected, slower speed limits, and tree-lined streets that manage stormwater effectively. Further, the park, trail network, and public access to Turkey Creek will provide expanded outdoor recreation options for the communities and support external opportunities for environmental education onsite.

This project will also contribute to local economic growth, an important element of community sustainability. Some of the specific economic benefits identified include:

- Project will support jobs with an average annual salary of more than $40,000, resulting in $130-$270 million in annual wages;
- The anticipated port expansion in the Gulf region will require substantial "back office" support space that could be accommodated by this project;
- Regional plans forecast growth across a broad mix of industry sectors and employment types, specifically office-using technology, professional services, and support services, all of which could be accommodated by the proposed project;
- The proposed project provides desired high quality, environmentally sustainable, flexible mixed-use facilities currently lacking in the region;
- The project will create opportunities for the existing Gulf Coast workforce and populations;
- Encouraging in-migration of new skill sets; and
- Encouraging continued educational opportunities for workers at all levels to acquire and enhance the skill sets necessary to engage in tomorrow's high tech, information-driven industries.

4. Impact Analysis

4.1 Wetlands

To determine the acreage of wetland impact, the wetland boundaries as delineated by D.R. Sanders and Associates, Inc. were used to create a GIS layer. The wetland habitat types and subtypes were also created as layers. The Wetland Assessment Area boundaries generated by VHB using the HGM (as described in Section 4.1 of Attachment A) were also generated as a GIS layer so that the HGM wetland quality results could be evaluated. Finally, the development plan for the proposed project was prepared in CAD and converted to a GIS layer.

Using the GIS layer for project related impacts, a total of approximately 432 acres of wetlands will be impacted during the 15-year construction period for the project. The impacts to the wet pine savannahs are 409 acres, the bottomland hardwoods impacts total 15 acres, and the cypress impact is 9 acres. The wet pine savannah impacts occur within the bunchgrass/pine (113 acres) and cypress/pine (295 acres) subtypes.

The majority of the wetland impacts are associated with fill placement (341 acres), with the remaining 91 acres of impacts resulting from the construction of stormwater management facilities. The fill impacts are related to the development and construction of the Creosote Road extension (34 acres) and various land uses including industrial (110 acres), business-technology park (83 acres), commercial/retail (61 acres), the town center (28 acres), and the City's recreational facility complex (25 acres).

Figure C-6 depicts the project related impacts over the wetland habitat and quality map, as determined using HGM. The majority of impacts to wetlands (83%) will occur in low quality wetlands (360 acres). Impacts to medium quality wetlands total 69 (16% of the total wetland impacts) acres and high quality wetland impacts total 4 acres (<1% of the total wetland impacts). Table C-1 summarizes these impacts by habitat type and subtype, along with their quality designation.

Table C-1. Wetland Habitat and Subtype Impact

Wetland Type	Subtype	Quality	Impact Acreage
Wet Pine Savannah	Bunchgrass/pine	Low	66
Wet Pine Savannah	Bunchgrass/pine	Medium	47
Wet Pine Savannah	Cypress/Pine	Low	274
Wet Pine Savannah	Cypress/Pine	Medium	21
Bottomland Hardwood		Low	11
Bottomland Hardwood		Medium	0
Bottomland Hardwood		High	4
Cypress Strand		Low	9
Total			432

The HGM methodology collects data that are entered into formulas which calculate a Functional Capacity Index (FCI) for four wetland functions for each wetland assessment area (WAA). For the Wet Pine Savannahs and Cypress habitats, the FCI categories include Water Level Regime, Plant Community, Animal Community, and Biogeochemical Processes. The Bottomland Hardwoods habitat categories are similar and include Hydrology, Elemental Transformation and Cycling, Plant Community, and Wildlife Habitat.

To determine the functional impact, the WAA FCI in each category is multiplied by the impact acreage for each WAA to determine the Functional Capacity Units (FCUs). The FCUs for each category by wetland type are then summarized to calculate the total FCUs of the project impacts.

Using the ACOE HGM approach as summarized above, at total of approximately 575 FCUs are impacted by the proposed project. This total includes 536 FCUs of wet pine savannah, 21 FCUs of bottomland hardwoods, and 18 FCUs of cypress.

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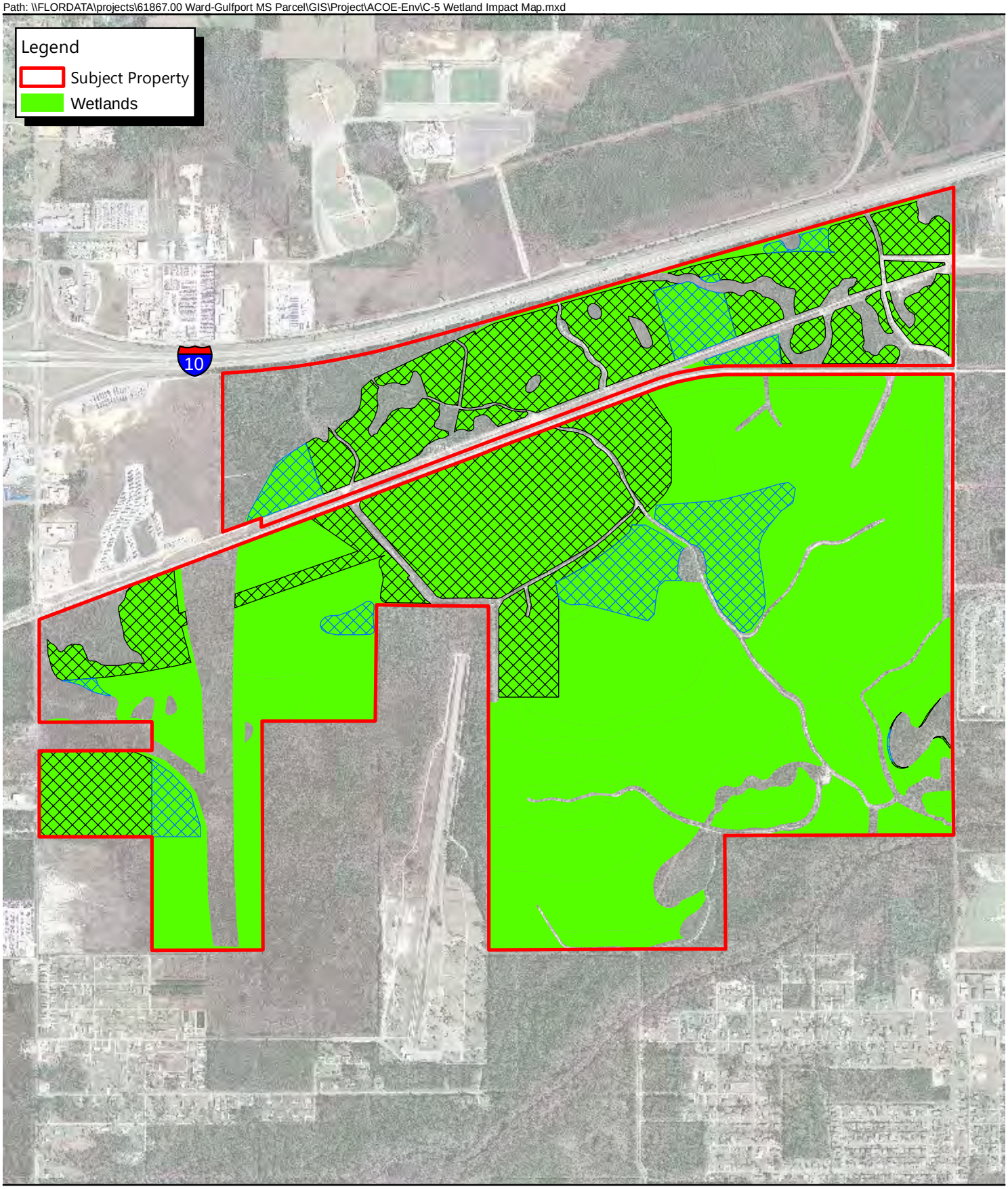

Figure C-6

Ward-Gulfport Property

Wetland Impact Map

April 2015

0 750 1,500 Feet

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It is important to note that these FCU totals are based on their current function. In the absence of the project, the wet pine savannah and cypress habitats would continue to deteriorate through the lack of fire. The medium quality wet pine savannahs would be reduced to low quality and the low quality wetlands would also continue to lose FCUs. Under the No Action Alternative, a total of 860 FCUs would be impacted within the wet pine savannah and cypress habitat areas. For this and other reasons outline in this application, the project will not have a significant impact on wetland resources.

4.2 Wildlife Habitat/Threatened and Endangered Species

As discussed in Section 4.4 of Attachment A, no protected species have been documented on the project site and, as such, no impacts to protected species are expected from project development. The project area is generally in poor condition as evidenced by the low HGM quality scores, and most of the area will continue to deteriorate. The existing railroad, previous silviculture roadway and ditching impacts, off-road vehicle impacts, habitat fragmentation by I-10 and the railroad, along with the lack of regular burning have greatly decreased the quality of these upland and wetland habitats.

4.3 Stormwater/Flooding

The proposed project will be constructed within two drainage basins in the Turkey Creek Watershed (Basins 8 and 9) that total approximately 2,770 acres in area. Of this total, 524 acres (19% of the total drainage basin area for Basins 8 and 9) will be disturbed to construct the proposed mixed-use development, Creosote Road extension, City recreational facility, and stormwater management facilities. Since the majority of the project's watershed will not be affected by the proposed development, the existing runoff flow path will generally be maintained (see Section 4.5 of Attachment A and Figure A-11). In development areas, stormwater runoff will be collected by a stormwater conveyance system and distributed to the onsite stormwater management facilities for treatment and attenuation. Consistent with existing conditions, stormwater runoff from the drainage basins north of I-10 (Basins 1, 1a, 1b, 2 and 2a) will continue to be conveyed in a set of three existing channels and culverts from the north side of I-10 to the south (see Figure C-7). Figure C-7 depicts the drainage basins in the post-development condition. Runoff will concentrate at two points north of the KCS railroad tracks and culverts will deliver runoff into two existing channels, which will flow into the wetlands to the south of the property, then ultimately into Turkey Creek. Stormwater runoff from Basins 1, 1a, 1b, 2, and 2a will not comingle with stormwater runoff from the developed portion of the project. The proposed stormwater management facilities will be designed to detain the 100-year 24-hour storm event for the proposed project and discharge the treated runoff into the neighboring wetlands at flow rates less than pre-development conditions. It should be noted that stormwater and flooding control provisions associated with the recreational facility will be addressed and implemented by the City. However, coordination between the City and Ward Investments will be maintained through final design to ensure the stormwater management measures are consistent with those described for the project as a whole, and offer similar benefits (i.e., mitigate for runoff to Turkey Creek).

As shown on Figure C-7, and noted in Section 4.5 of Attachment A, the southern portion of the Ward Investments property is within the 100-year floodplain, as designated on the Federal Emergency

Management Agency Flood Insurance Rate Map (FIRM) Panels 28047C0261G, 28047C0242G, 28047C0244G and 28047C0263G, dated June 16, 2009. The 100-year floodplain is identified as Zone AE, which is defined as areas of 100-year flood where the based flood elevations have been determined. No impacts are proposed within the 100-year floodplain for this project.

An Interconnected Pond Routing (ICPR) model was created for the proposed project to simulate associated runoff and identify impacts. The model was developed from the existing conditions ICPR model and updated to include the mixed-use development, stormwater management facilities, Creosote Road, and other proposed stormwater conveyance features. Curve Number (CN) values, as described in Section 4.5 of Attachment A, were updated to account for the new impervious areas as a result of the development. The time of concentration values were updated for the routing calculations for each basin that contained the proposed development. Discharge structures were tied to respective drainage basins to account for the flowrate leaving each stormwater management facility.

The Hydrologic Engineering Centers-Hydrologic Modeling System (HEC-HMS) model of the Turkey Creek Basin, and HEC-River Analysis System (HEC-RAS) model of Turkey Creek, from the ACOE's July 2005 *Section 205 Turkey Creek Flood Damage Reduction Study Project Information Report Gulfport, Mississippi* were not only updated to reflect existing conditions (as described in Section 4.5 of Attachment A) but were also updated to reflect changes in Turkey Creek and its watershed from development of the proposed project.

Turkey Creek has a history of overtopping its banks and causing flooding problems for adjacent properties in downstream basins. As a result of the 2005 ACOE study, it was determined that improvements to the downstream basins and clearing and snagging of Turkey Creek would be the best option to remedy some of the flooding problems. Some communities near the project area have experienced flooding (mainly the Forest Heights neighborhood). The Forest Heights subdivision has levees with two outfall structures fitted with valves. If there is a flooding event in Turkey Creek, the levee valves are closed to prevent flood waters from Turkey Creek from entering the subdivision. However, with the valves closed, the subdivision may experience flooding from continued rainfall within the subdivision. When the valve is opened, only a portion of the neighborhood drains into the project site through an existing cross drain, which is located on the west side of the neighborhood.

The proposed project will reduce the amount of runoff from the site by detaining the 100-year 24-hour storm in the stormwater management facilities and will not impact the flood conditions in Turkey Creek or adjacent properties. Runoff flow during storm events will be released at a much slower rate than under current conditions as a result of the stormwater management facilities, improved wetland function to be generated through restoration efforts in the southern portion of the site, and due to other mitigation techniques to be implemented onsite for the specific purpose of attenuating stormwater flow to Turkey Creek (see Section 6, *Mitigation Measures*). However, because the proposed development will occupy only a small portion of the project drainage basins (approximately 19% contribution) and an even smaller portion of the overall Turkey Creek Basin (approximately 3% contribution), substantial flood reduction in Turkey Creek or the Forest Heights neighborhood is not anticipated as a result of the proposed onsite stormwater management system.

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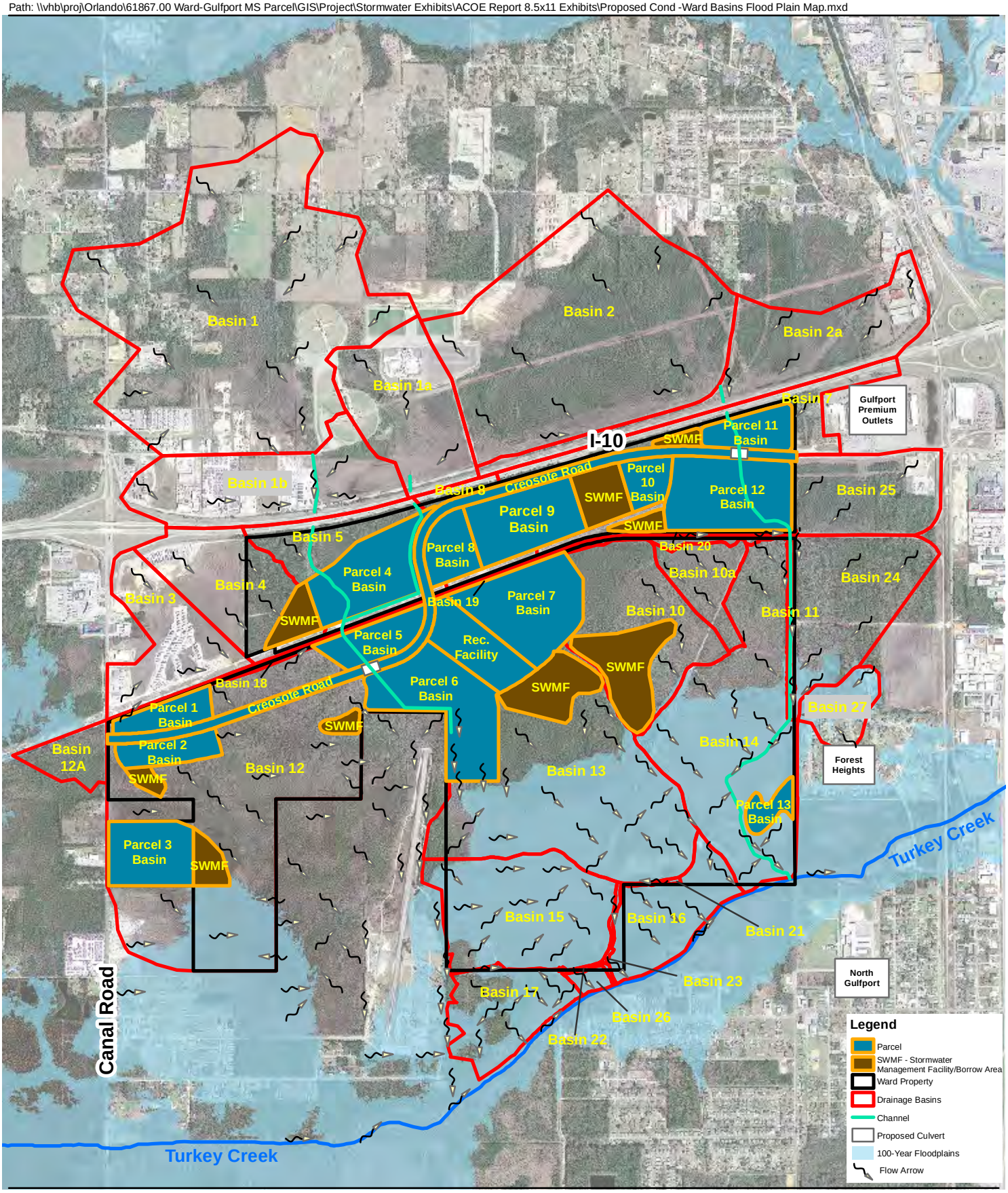

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225 East Robinson Street, Suite 300
Orlando, Florida 32801 | 407.839.4006

Ward Investments

Proposed Conditions Drainage Basins

April 2015

C-7

N

0 0.25 0.5 1 Miles

Further, since the proposed development is located in the northern portion of the property, and outside of the 100-year floodplain, is it anticipated that the project will not impede water from the northern Turkey Creek drainage basins. For these reasons, the project will not have a significant impact on stormwater or flooding in the Turkey Creek watershed.

4.4 Cultural Resources

Based on the results of the Phase I Archaeological Survey and research conducted for the project, as described in Section 4.6 of Attachment A, no artifact finds or archaeological sites were identified on the subject property. Previous archaeological research (by others) identified only one known archaeological site within 1 mile of the project site. Further, no historic features of concern, cultural features, settlements, or buildings were identified in the project area. Therefore, it is anticipated that the proposed project will have no effect on archaeological or historic resources. Prior to final design and development of the proposed project, Ward Investments will consult the Mississippi Department of Archives and History, pursuant to Section 106 of the National Historic Presentation Act (NHPA), and ensure their concurrence on project design.

4.5 Cumulative Impacts

As described throughout this permit application, the proposed project may result in direct and indirect effects (beneficial and/or adverse) on the natural and human environment. The applicant has considered these impacts as well as the potential cumulative effects on affected resources to determine the overall impact of the proposed project. The CEQ regulations define a cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7)." As documented in this section, the project is not anticipated to result in impacts that would be individually or cumulatively significant (either adverse or beneficial).

The cumulative impacts evaluation focuses on the following resources, which could also be affected by the proposed project.

- Natural Environment
    - Wetlands
    - Protected Species
    - Stormwater/Flooding
    - Water Quality
    - Air Quality and Noise

- Human Environment
    - Social
    - Economic

The cumulative impacts analysis was conducted within certain temporal and spatial boundaries. The temporal boundary for the entire cumulative impacts analysis extends approximately 15-20 years into the future (through 2035). This is because, based on the results of the market and economic study completed for this project, development within the region projected beyond 15 years is considered too speculative for inclusion in this analysis. The spatial boundaries for the cumulative impacts evaluation are resource-specific and are described for each resource below.

4.5.1 Natural Environment

As described above, the time frame considered for identifying past, present, and reasonably foreseeable future actions that have the potential to cumulatively affect the natural environment is approximately 15-20 years. Spatially, the Turkey Creek Watershed basins that contain the Ward Investments property serve as the cumulative impact analysis boundary. As shown on Figure A-10 in Attachment A, the Ward Investments parcel is within basins 8 and 9 of the overall Turkey Creek Watershed. These two basins total approximately 2,770 acres and the 524 acres to be developed on the Ward Investments property represents approximately 19% of this total.

Excluding the Ward Investments property, approximately 30% of the cumulative impact study area (i.e., within the spatial boundaries for analysis) has already been developed, including the Gulfport Dragway, American Truck Group, Bay Berry RV Park, ball fields and Gulf Islands Waterpark as the primary activities. The majority of the undeveloped property within the cumulative impacts study area consists of wetland habitat, with some upland areas located to the southwest and northeast. The wetland habitats appear to be of similar quality to the project site, with a large amount of overgrown wet pine savannah areas. By and large, the upland areas consist of pasture, cleared land and upland pine savannahs. I-10 bisects the northern third of the area and, along with the railroad tracks, serves to fragment the native habitat.

Wetlands. The wetland impacts associated with the proposed project are described in Section 4.1 of this attachment, while avoidance, minimization, and mitigation proposed to offset these impacts are detailed in Sections 5 and 6. A summary of past, present, and reasonably foreseeable future actions within basins 8 and 9 that could have a cumulative impact (in conjunction with the proposed project) on wetlands, are summarized below.

- **The Land Trust for the Mississippi Coastal Plain (LTMCP)** owns three parcels immediately adjacent to the Ward Investments property: two to the east and one to the south. Wetland restoration activities associated with an in-lieu fee wetland mitigation bank has recently been initiated on two of these parcels. The third parcel will also likely be restored in the near future. It is also possible that the LTMCP will acquire additional parcels within the assessment area and restore the wetlands on those properties.

- **Logging** has been a historic land activity on the Ward Investments and adjacent properties. Since some of the remaining undeveloped parcels in the immediate vicinity of the subject property have fairly dense tree canopies, it is reasonable to assume that some of these areas may continue to be logged within the temporal timeframe considered. While this activity can create impacts to these wetlands in the short term, it can also serve to clear the wet pine savannahs and partially restore some of the wetland values that have declined from lack of fire.
- **Development projects**, particularly the single family residential not included in this project, could also occur for those parcels adjacent to roadways, such as along Canal Road, Creosote Road and Landon Road. It is expected that the regulatory permitting constraints will result in most of these small in-fill projects occurring within the upland areas.

The work of the LTMCP is likely to benefit the wetlands through the anticipated restoration activities. The resulting increases in wetland function will be permanent as these areas are regulated as wetland mitigation banks. Logging activities could essentially be considered a neutral activity in the temporal scale, as the short-term impacts are balanced by the long-term benefits of canopy and shrub layer removal. Upland development projects would not affect the wetlands and it is assumed that all wetland impacts will be properly mitigated as part of the approval process, so future development in the vicinity of the subject property should have an overall neutral impact.

It is unlikely that the proposed project, in conjunction with other past, present, and reasonably foreseeable future actions will have a significant impact on wetlands. As demonstrated in Sections 4.1, 5, and 6.1 of this attachment, wetland impacts associated with the proposed project will be avoided, minimized, and mitigated to the extent that there is no net impact. Similarly, other development projects within the watershed basins are also expected to be mitigated and similarly neutral. Logging could have a short-term impact that is balanced by the value of clearing the site which simulated fire. Finally, the LTMCP efforts to restore wetlands within the basins will have a long term beneficial impact on wetlands and associated habitats. However, the restorations will only include a small portion of the basins acreage (2.5% overall and 3.5% of the total undeveloped acreage),[2] therefore, when considered in the larger context of the study area, are unlikely to have an appreciable beneficial effect on wetland communities.

Wildlife Habitat/Threatened and Endangered Species. As noted above, the wetland habitats within the spatial boundaries of the cumulative impacts study area appear to be of similar quality to the project site, with a large amount of overgrown wet pine savannah areas. I-10 bisects the northern third of the area and, along with the railroad tracks, serves to fragment the native habitat. As described in Section 4.4 of Attachment A of this application, the wildlife habitat on the subject property is in relatively poor condition and no protected species were observed. No protected species were observed or are likely to occur on the project site; therefore, there is unlikely to be any cumulative impact on threatened and/or endangered species. However, the mitigation measures proposed for the project could enhance the

[2] Two additional parcels in sub-basin 7, are also proposed for restoration by LTMCP. These parcel total approximately 75 acres. These parcels are not included in the discussion above because, based on available data, the applicant does not anticipate the wetland systems in basin 7 will affect the functions and values of the wetlands on the subject property. However, even if these restoration efforts are considered in the cumulative effect calculation, due to proximity, LTMCP wetland restoration efforts would only equate to 5% of the cumulative impact study area.

available wildlife habitat. The past, present, and reasonably foreseeable future actions within basins 8 and 9 that could have a cumulative impact (in conjunction with the proposed project) on wildlife habitat, are the same as those identified in the wetlands section above and are summarized below.

- **The LTMCP restoration,** which represents approximately 2.5% of the land area of basins 8 and 9 (3.5% of the undeveloped land area) would be expected to result in a net improvement on wildlife habitat.
- **Logging** effects would be similar to those described for wetlands, with the short-term impacts during logging balanced by the longer term benefit of the associated tree clearing.
- **Development projects** in native habitats would have an adverse impacts, except as mitigated during the permitting process. Since the condition of the existing wildlife habitat is extremely poor, the adverse impacts would be limited.

The LTMCP restoration efforts, in conjunction with the applicant's proposed mitigation measures will have a beneficial, permanent effect wildlife habitat. Logging activities could essentially be considered a neutral activity in the temporal scale, as the short-term impacts of habitat loss are balanced by the long-term benefits of canopy and shrub layer removal (and subsequent habitat regeneration). Upland development projects could have an adverse effect on protected species, but the existing habitat conditions are poor so impacts would be limited. It is assumed that wetland impacts associated with other development project will be properly mitigated as part of the approval/permitting process, so there should be an overall neutral impact.

Based on this information, it is unlikely that the proposed project, in conjunction with other past, present, and reasonably foreseeable future actions will have a significant impact on wildlife habit and/or threatened and endangered species. As demonstrated in the application, no protected species are known to occur on the project site. As described in Section 4.4, and 6 of this attachment, the proposed project will likely have a net positive impact on wildlife habitat, as a result of the proposed mitigation efforts. Other development projects within the watershed basins will likely occur in similarly poor habitat with limited wildlife value, which will limit the extent of their negative impact. Logging could have a short-term impact that is balanced by the value of clearing the site with simulated fire. The LTMCP wetland restoration areas within the basins will have a long-term beneficial effect on protected species. Overall, past, present, and reasonably foreseeable future actions, when combined with the proposed project, will result in beneficial impacts on wildlife habitat; however, the scale and extent of these impacts will be limited and likely not noticeable when considered in the context of the cumulative impact study area.

Stormwater/Flooding. There will be no proposed development in the 100-year floodplain as a result of the proposed project. Therefore, there will be no cumulative impacts on floodplains. Further, the runoff from the proposed development will be attenuated by onsite stormwater management facilities, which will discharge treated stormwater at flow rates slightly lower than predevelopment conditions. Therefore, no cumulative impact are anticipated for the runoff discharging into Turkey Creek.

Currently, stormwater runoff from the Turkey Creek Watershed drainage basins north of the subject property flows to three points on the north side of I-10. This runoff is then conveyed through culverts under I-10 and onto the Ward Investments property. Runoff from the proposed development will be collected and treated by the proposed onsite stormwater management facilities. Since this project will

not include development offsite, in the basins north of I-10, the runoff from these basins will, in large part, continue to be conveyed through the Ward Investments property to the existing discharge points in the wetlands on the south side of the property. It should be noted the stormwater management facilities included in the proposed project have been designed to manage runoff associated with the proposed project only. The applicant cannot control the quantity or quality of stormwater runoff from offsite parcels and cannot feasibly design and implement stormwater management facilities that meet the needs of the entire watershed. Therefore, it is assumed that runoff from existing development north of I-10 will continue to flow across the subject property to Turkey Creek and the associated wetlands in a manner similar to current conditions.

As described in Section 4.5 of Attachment A, as part of the existing conditions analysis, the applicant identified changes in development in the Turkey Creek watershed between 2005 and 2013. Based on this analysis, new development in the Turkey Creek Watershed has been somewhat limited since 2005, equating to approximately 3% of the land area that was undeveloped prior to 2005. The larger new developments are primarily residential. A few smaller commercial developments have also been constructed near I-10, 28th Street and the Biloxi-Gulfport Regional Airport.

Due to regulatory requirements and the size and nature of other currently undeveloped parcels within the basins 8 and 9, future developments, logging, or similar activities are unlikely to result in significant adverse or beneficial impacts on stormwater or flooding within the Turkey Creek Watershed. The proposed project's contribution to these future development would be small and beneficial. The proposed project accounts for approximately 3% of the total land area of the Turkey Creek Watershed (approximately 17,472 acres), and, as stated previously approximately 19% of the land area of basins 8 and 9. Stormwater benefits created by the stormwater management system, while beneficial for treatment and attenuation of runoff from the developed areas, are anticipated to have a limited positive impact on the existing drainage and flooding in basins 8 and 9, as well as the Turkey Creek Watershed, as a whole. In addition, as stated above, although there is runoff that drains to the Ward Investments property from areas north of I-10, there will be no increase in stormwater runoff to Turkey Creek as a result of the proposed project. Based on this information, the proposed project, in conjunction with other past, present, and reasonably foreseeable future actions will not result in a significant impact on stormwater or flooding, either independently or cumulatively.

Water Quality. As detailed in the wetlands and stormwater/flooding sections of this application as well as Section 5.4, *Sustainability and Compatibility with Local Plans*, of Attachment A, the proposed project will improve the quality of water entering Turkey Creek from the subject property. The project design will include water quality control measures as described in Attachment C, Section 6.2, *Mitigation: Stormwater/Flooding*. Best Management Practices (BMPs) such as stormwater management facilities and LID options (for example, grassed swales) will remove some contaminants before the runoff is further treated in the stormwater management facility. The stormwater management facilities will allow pollutants and sediment to settle out before the water is discharged through control structures. Aquatic plants will be installed or allowed to recruit naturally around the stormwater management facilities to further enhance water quality treatment. The plants will provide a perimeter filter to capture sediment and contaminants before they enter the facility. The stormwater management facilities will discharge into existing onsite wetlands after the runoff is treated. These wetlands will not only provide for

attenuation during large storm events by slowing down the runoff before it enters a water body like Turkey Creek, but also help to filter out sediments and nutrients that may not have been captured by the onsite management facilities. Because the wetlands will be enhanced as part of the proposed project, runoff filtration will be improved over current conditions. As part of the comprehensive landscaping plan, native plants will be identified and that would be most beneficial to stormwater management. The stormwater management system will provide treatment and attenuation that will result in conditions at or below the pre-development (existing) conditions. The system as a whole, including the vegetative swales, aquatic plants and ponds, will assist in mitigating undesired contaminants in the runoff before it can enter another water body such as Turkey Creek.

Past, present, and reasonably foreseeable future actions that could contribute to a cumulative impact on water quality, include existing and future development within the Turkey Creek Watershed. However, the proposed project area comprises 3% of the total land area of the watershed and would result in only minimal improvements to water quality onsite. Further, the velocity of offsite runoff (from north of I-10) that currently flows through the site will be attenuated through more natural sheetflow across restored and enhanced wetlands that are part of the mitigation plan for the proposed project. This attenuation of stormwater velocity and its passage through restored and enhanced wetlands will allow for increased filtration of pollutants and improvement in the quality of the runoff. However, when these benefit are considered in the larger context of the overall Turkey Creek Watershed, the proposed project will have only a minor beneficial effect on cumulative water quality impacts.

Air Quality and Noise. The proposed project is not anticipated to impact air quality or noise near the subject property. This is because:

- The proposed project will be phased over 15 years, therefore, lessening short-term noise and air quality impacts associated with construction, compared to construction that occurs in a more concentrated time period.
- The site's proximity to I-10 and Route 49 will minimize use of local roads to access the development.
- Development will be concentrated in the northern portion of the site, near I-10, the KCS Railroad, Route 49, and other area developments. Development will not occur proximal to the Forest Heights and North Gulfport neighborhoods, which abut the site, with the exception of recreational trails and a community park which will be accessible from Forest Heights.
- The "industrial" development associated with the proposed project will not be traditional industrial development but rather light-industrial warehouses and research facilities.

Based on this information, the proposed project will have no noticeable impact on air quality or noise and, therefore, will not contribute to a cumulative impact.

4.5.2 Human Environment

Consistent with the natural environment, the temporal boundary considered for identifying past, present, and reasonably foreseeable future actions that have the potential to cumulatively affect the human environment is approximately 15-20 years. Spatially, the City of Gulfport was identified as the

cumulative impact analysis boundary since social and economic components of the project are aimed at promoting the "long-term economic, transportation, and recreational needs of the City" (see Section 3 of Attachment A). While the proposed project is anticipated to absorb the needs of job growth and development projected for Harrison County and the Gulf Region as a whole, these benefits will most likely be limited, and will be most notable for the City of Gulfport.

Social Resources. Development of the proposed project will be limited to the Ward Investments property, therefore, impacts will be localized and there is limited opportunity for cumulative impacts on social resources. The community park, recreational trails, and access to Turkey Creek, for example would benefit the surrounding communities by providing additional options for outdoor recreation. However, it is unlikely that the presence of these facilities would affect other outdoor recreational options within the City of Gulfport, such as the Sportsplex, beaches, campgrounds, and a number of parks. By creating additional opportunities for recreation within the City limits there will be an incremental benefit for City residents, especially those located in close proximity to the Ward Investments property, who would be most likely to recreate there. However, the benefit is likely to be minimal when considered in conjunction with other recreational opportunities in the City and there would be no significant impact on social resources.

Economic Resources. The proposed project is a response to the population and employment growth forecasts developed and adopted by the City of Gulfport and the Gulf Region Commission as part of their comprehensive long-range planning efforts. The project will capture a small portion of this economic activity by providing an attractive, sustainable "smart growth" environment that does not exist in the City or region today. All development for the proposed project will be within the boundaries of the Ward Investments property. Once constructed, the Ward-Gulfport Development is unlikely to have direct impacts on other facilities in the City or region. The proposed project may draw employers from outside the region who otherwise might not choose to operate in Gulfport. As a result, the project may induce incremental growth in population and employment. Likewise, employers who might otherwise choose to locate in a less desirable location in the local market, might instead choose to locate on the project, thus incrementally reducing the potential for success of other office parks, industrial areas, and greenfield development in Gulfport. This would result in a potentially adverse impact on individual land owners and/or other developers in the City. These impacts, however, are anticipated to be small and dispersed over a relatively long time frame, therefore, would not result in a significant cumulative impact on economic resources within the City of Gulfport.

The proposed project is also anticipated to benefit long-term growth in the area, including the expansion of the Port of Gulfport. The proposed project could benefit the Port expansion by providing an attractive nearby location for some of the support activities ("back office") needed to make the Port more competitive in the relevant regional and national markets. The proposed project will, therefore, have beneficial social and economic impacts on the Port's ability to grow and handle additional activities. This incremental growth of the Port might result in increased adverse impacts over a long period of time; however, since the Port of Gulfport expansion is still in the planning phase of development, and impacts beyond the 15-20-year future timeframe are considered speculative, these potential long-term impacts are not included in this cumulative impacts analysis. Regardless, the proposed project could only support a small fraction of the job and economic growth associated with the Port expansion, therefore, any

adverse impacts associated with the Port, would have only a small adverse effect on the proposed project. For these reasons, it is anticipated that there would be no significant cumulative impact on economic resources within the City of Gulfport.

4.5.3 Conclusion

There are a number of past, present, and reasonably foreseeable future actions within the spatial and temporal boundaries of the cumulative impacts evaluation that could impact the same natural and human resources affected by the proposed action. However, for the reasons presented above, it is anticipated that the cumulative effect of these projects, in conjunction with the proposed project, will not result in significant adverse or beneficial impacts on affected resources.

5. Avoidance & Minimization

As required by 40 CFR 230.10 (404) (b)(1) Guidelines), no discharge shall be permitted if there is a practicable alternative that would have less adverse impact on the aquatic ecosystem. In order to achieve the project's purpose and need, development of the Ward Investments property is required. It is not feasible to develop the subject property in a manner that would avoid all impact to wetlands. As described in Section 2, *Alternatives*, although the proposed project would have more adverse impacts on aquatic resources than some of the other alternatives considered, it was determined to be the most practicable for a variety of reasons. In order for an alternative to be practicable, it must fulfill the overall project purpose of developing the property using a phased, sustainable, master plan that is economically viable and is beneficial to the needs of the City and the region. *Practicable* means capable of being accomplished within existing constraints, depending on the situation and including consideration of many factors, such as the existing environment, cost, technology, and implementation time. In designing the proposed project, potential impacts to natural, cultural, and human resources have been evaluated and avoided or minimized to the extent practicable.

The design of the proposed project serves to minimize wetland impacts by clustering the development pods to the north, where most of the upland areas and previous impacts occur. This portion of the site is the most heavily impacted by ditches, roads, and off-road vehicle use. This area is also the most affected by the secondary impacts (noise, human use, lights) associated with the railroad, off-road vehicles, and I-10 traffic.

The northern portion of the project site also contains the greatest proportion of low quality wetlands as identified by the HGM assessment. As described in Section 2, *Alternatives,* the most recent minimization effort included shifting the industrial acreage to the east, completely out of the medium quality wetlands (see Figures C-3 and C-4). These wetlands were originally assumed to be low quality based on the previous Modified Wetland Rapid Assessment Procedure (MWRAP) analysis, but increased to medium quality following HGM analysis. Impacts to the bottomland hardwood wetlands have been minimized as this habitat was generally in the best condition, and should continue to remain in good condition even in the absence of vegetative maintenance.

From a wildlife standpoint, the clustering of the development in one area, proximal to other development and infrastructure will have the least impact. The northern portion of the project site has

already been fragmented by I-10 and the railroad, and will likely be further fragmented by construction of the Port Connector Road. The development has also been sited on the subject property as far from Turkey Creek as possible, providing a large native habitat buffer for this important system. As evidenced in Section 3 of Attachment A, if not for this project, similar development will be needed in the Gulf Coast Region, and Harrison County in particular, to support forecasted economic growth. Accommodating some of the anticipated need in a single clustered development will reduce the need to impact other parcels and further fragment wetland habitats.

The diversity and sustainability of wildlife is improved when the size of the habitat block is larger and has limited edge effects. By protecting a large mosaic of wetland and upland habitat to the south (through donation or deed restriction), the wildlife will benefit. In addition, some of the adjacent small parcels to the south and east are being protected and restored by others. These offsite parcels will further be improved by the presence of our adjacent contiguous habitat.

In addition to minimizing impacts on the natural environment, the sustainability elements detailed in Section 5.4 of Attachment A will minimize adverse impacts on surrounding communities from the Ward-Gulfport Development.

6. Mitigation

A number of mitigation measures will be incorporated into the proposed project to reduce the intensity of potential impacts on the natural environment. In particular the following mitigation measures have been developed to address potential impacts on wetlands, stormwater, and flooding.

6.1 Wetlands

As noted in the impact analysis, a total of 575 FCUs are needed to mitigate for project impacts. This includes 536 FCUs of wet pine savannah, 21 FCUs of bottomland hardwoods, and 18 FCUs of cypress. The mitigation plan will be phased in association with the development phases to provide the equivalent FCUs at the time of wetland impact. The intent of the conceptual mitigation plan is to restore and enhance wetlands to generate a “lift” in FCUs at least comparable to those FCUs impacted by the project (and/or to purchase credits from a nearby wetland mitigation bank). The “lift” FCUs will be calculated for each wetland type for the purpose of demonstrating the complete replacement of lost FCUs.

The FCU “lift” will be primarily associated with the enhancement and restoration activities. Preservation is proposed for those bottomland hardwoods habitat areas that are not being restored or enhanced. These areas are considered high quality and are not impacted by hydrologic changes. The mitigation value for those high quality bottomland hardwoods habitats that are preserved shall be calculated on a ratio basis using the ACOE Ratio Method. This qualitative approach is used to establish the credits available for mitigation banks and would be appropriate for determining the mitigation value for the preservation of this habitat type. This ratio varies from 1:7 for low quality, to 12:1 for medium quality, and to 23:1 for high quality wetland impacts.

The applicant proposes a varied program of restoration, enhancement and preservation. These activities are proposed for approximately 248 acres of wetland in the southern portion of the site (Figure C-5) and

at up to two offsite parcels totaling approximately 827 acres. Wetland restoration will be conducted in those wetlands with the greatest amount of previous impact.

These wetlands are primarily impacted from hydrologic alterations associated with ditching. However, restored wetlands also include those wet pine savannahs that have become so overgrown they have lost their characteristic groundcover. Enhancement will be considered for those pine savannah wetlands that are medium quality and still have much of their groundcover intact. The preservation designation will apply to high quality bottomland hardwoods.

Hydrologic restoration will be accomplished through the recontouring of the ditches that dewater the wetlands. The ability to restore the historic hydrology will be determined through modeling the drainage basin. Some of the adjacent residential communities are subject to flooding, so the project will be designed to not increase the flood risk to these neighborhoods. The goals will be to restore as much of the historic hydrology as possible and to allow the wetlands to provide their natural flood storage function. These restored ditches can also be re-vegetated into wetland habitat.

Vegetative restoration and enhancement activities will vary by location and habitat type. The most extensive efforts will be in association with the wet pine savannah areas. As described in Section 4.1 of Attachment A, the absence of fire or other clearing activities has caused the wetlands to develop a moderate to dense coverage of shrubs and trees. The initial mitigation actions associated with this project will be the removal of most of the shrub layer by use of a bush hog or similar device that cuts the shrubs low to the ground with minimal soil disturbance. Pine trees and hardwoods will also be selectively removed in an effort to reduce the canopy cover to 10 – 20%. The size and structure of the remaining canopy will be variable depending on the trees in the present condition.

Based on observed density of the trees, vines, and shrubs to be removed, this effort will likely generate a substantial amount of debris. The debris can be handled in a number of ways, from removal, to mulching, to brush piles for burning. Since the goal of this effort is to allow sunlight to reach the ground, the focus of the effort will be to avoid burying this stratum under the debris or mulch.

Mowing of the area will be accomplished following debris removal. This will serve to further reduce the young shrubs and encourage herbaceous species growth. The final step will be to conduct a light burn. The burn would serve many purposes, including consumption of excess debris, removal of the dense pine straw mats, killing of the woody species that may be regenerating after bush hogging/mowing, killing non fire-adapted plants, recycling nutrients, promoting plant fruiting and flowering, and to stimulate the groundcover germination and growth. Burning would need to be conducted after careful consideration of wind speed and direction, antecedent moisture conditions, and the surrounding land uses.

The HGM results indicate that some of the cypress/pine wet pine savannahs have less than optimal densities of cypress. These areas would benefit from the planting of pond cypress (*Taxodium ascendens*) in desired locations. Another possibility to mitigate project impacts is the establishment of the protected Louisiana quillwort (*Isoetes louisianesis*) in suitable areas. Following the restoration and enhancement activities, the site will be reviewed to determine if areas of suitable hydrology exists that will support a self-sustaining population. This effort will be coordinated with the US Fish and Wildlife Service.

The wetland areas designated for restoration, enhancement and preservation of the project site include 44 acres of bunchgrass pine – wet pine savannah, 102 acres of cypress/pine – wet pine savannah, and 102 acres of bottomland hardwoods. The remaining 33 acres consist of recontoured roads/ditches, upland pine habitat, ditches that could not be recontoured, the park, and nature trails (Figure C-5).

Two adjacent parcels (575 acres, Figure C-8; and 252 acres, Figure C-9) are the potential offsite properties that could be used for mitigation. The 575-acre parcel was analyzed in 2010 by Wildlife Technical Services, Inc. to identify wetlands on the site. This report determined that the entire site was wetland habitat, except for approximately 10 acres of uplands associated with spoil piles from four drainage ditches which total about 7 acres. The wetlands on the 575-acre parcel are the same three types found on the project site, and represent a range of low, medium and high quality systems. Similarly, the adjacent 252-acre parcel is shown as entirely wetland on the National Wetland Inventory database. Again, the same three habitat types (wet pine savannahs, bottomland hardwoods and cypress) occur on this site. The 252-acre site is much more overgrown than the 575-acre site, with limited recent signs of fire, and has off-road vehicle impacts.

An important feature of both of these offsite parcels is the presence of a substantial reach of Turkey Creek and its associated bottomland hardwoods habitat. Approximately 8,500 linear feet (1.6 miles) of the main branch of Turkey Creek is located on these parcels. Restoration and protection of these parcels, through donation and/or deed restriction, would serve to protect Turkey Creek because any development on these parcels would be in a closer proximity to the creek than the project site. It would also serve to prevent further fragmentation of the available habitat.

These offsite properties would be restored, enhanced and preserved as discussed for the project site. Due to its distance from I-10 and the airport, the 575-acre parcel appears to be a more reasonable candidate for the use of controlled burns.

Path: \\vhb\proj\Orlando\61867.00 Ward-Gulfport MS Parcel\GIS\Project\ACOE-Env\C-8 Bailey Property Map.mxd

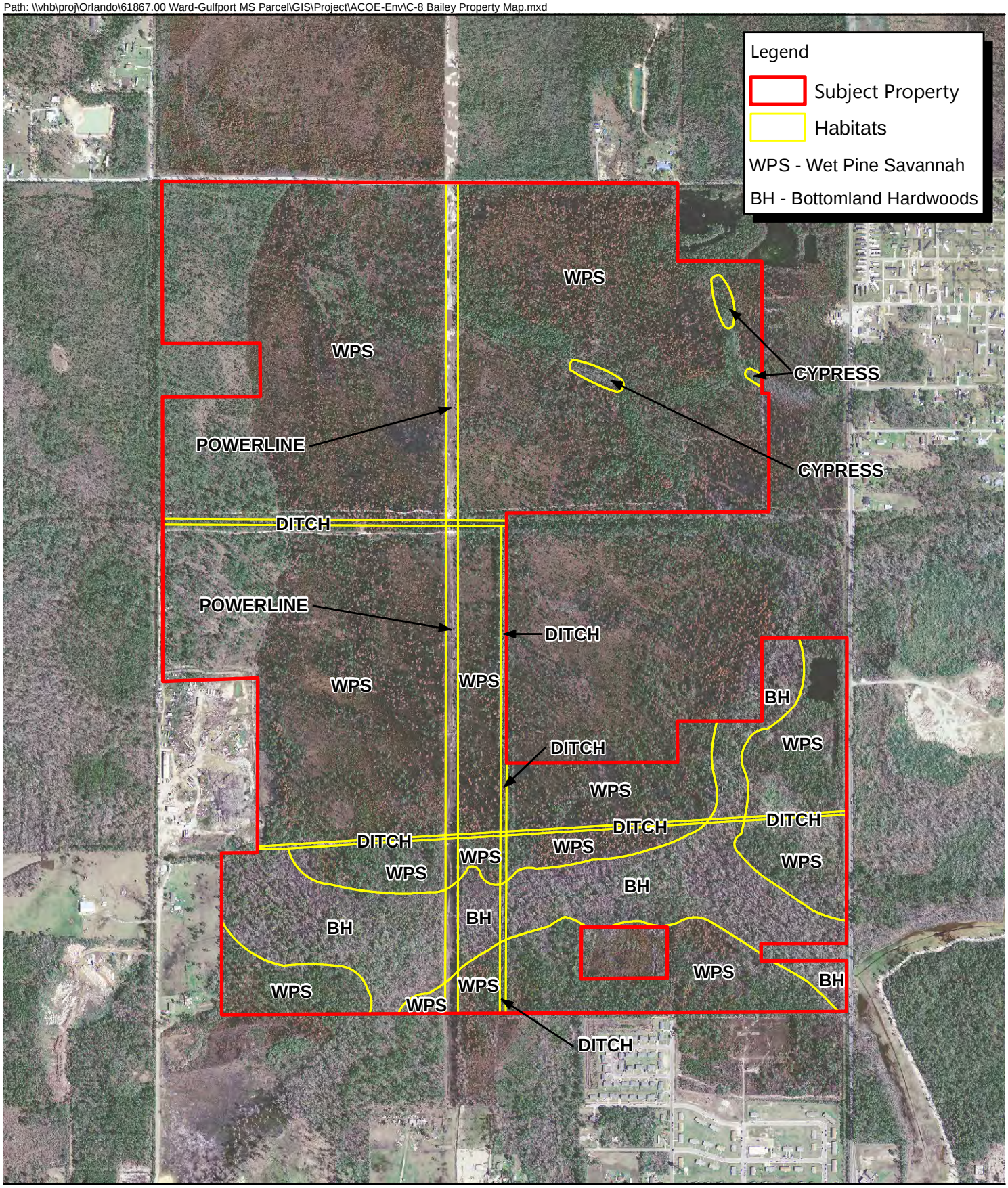

Figure C-8

Ward-Gulfport Property

Off-site Property 1 Habitat Map

April 2015

0 600 1,200 Feet

N

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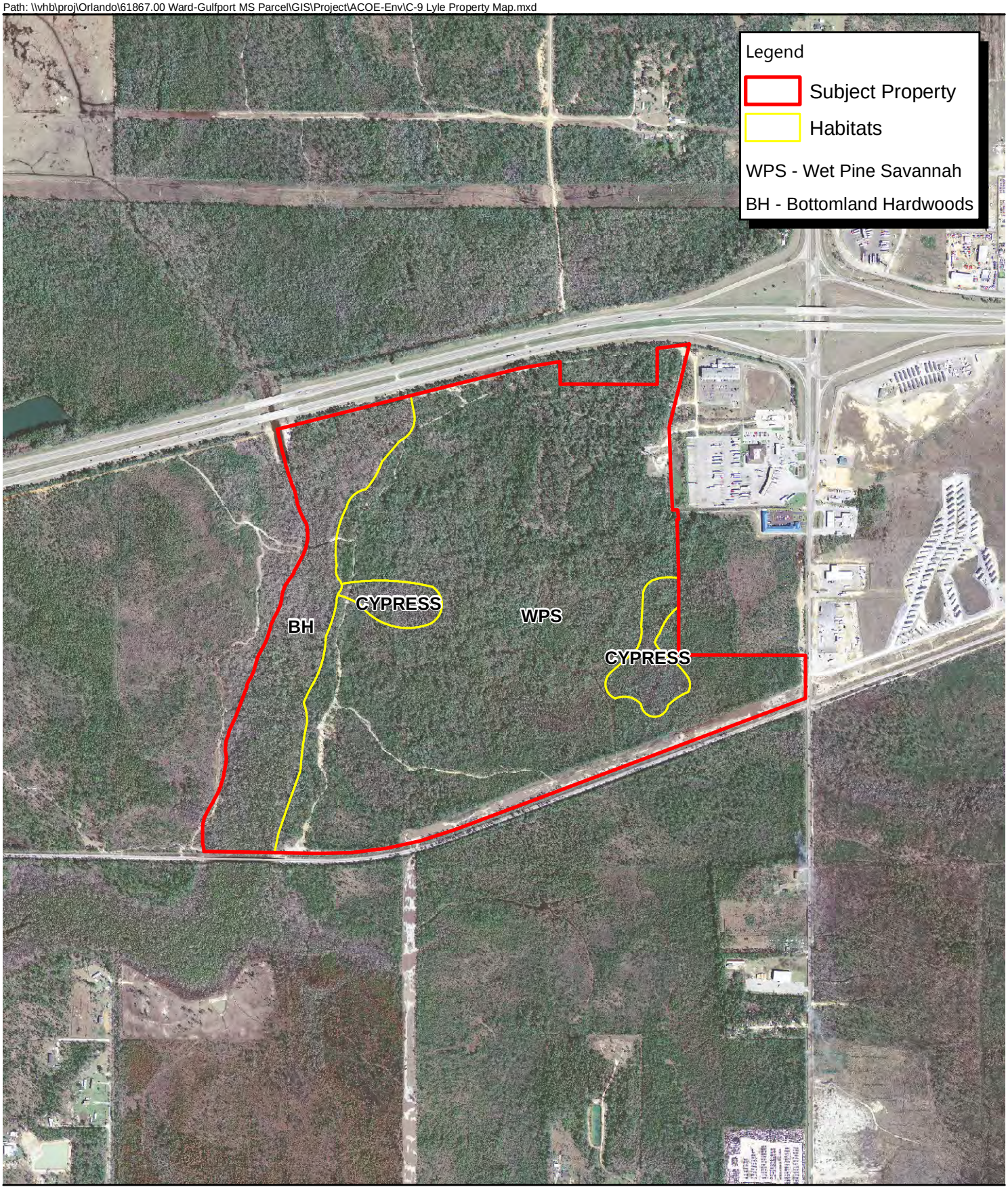

Figure C-9

Ward-Gulfport Property

Off-site Property 2 Habitat Map

April 2015

0 600 1,200 Feet

N

Table C-2 below shows the estimated FCUs that could be generated for the onsite mitigation area by habitat type, as well as the "credits" associated with bottomland hardwoods preservation. Table C-3 depicts the estimated ratios that will be derived from the adjacent offsite mitigation parcels, using the ACOE Ratio Method. For consistency, the applicant would utilize HGM to accurately determine the current FCI and FCUs for these offsite properties and to calculate the final lift. However, based on our familiarity with HGM and the similarities in the habitats between the two offsite parcels and the project site, the total estimated FCUs available from each offsite parcel are also provided in Table C-3.

Table C-2. Potential Onsite Functional Capacity Units (FCUs in acres) or Preservation Credits Associated with the Conceptual Mitigation Plan

Wetland Type	Subtype	Total FCUs	Preservation (Acres)
Wet Pine Savannah	Bunchgrass/pine	59	
Wet Pine Savannah	Cypress/Pine	189	
Bottomland Hardwood		2	4
Total		250	

Table C-3. Estimated Mitigation Ratios and Acreage for the Offsite Mitigation Areas

	Impacted Wetland Quality			Estimated FCUs	Preservation (Acres)
Wetland Quality	Low	Medium	High		
Offsite Property 1	1:3	1:5	1:9	738	3
Offsite Property 2	1:3	1:4.5	1:8	316	2
Total Mitigation (Acres)	273	169	94	1,006	5

As shown in Tables C-2 and C-3, using a combination of on- and offsite mitigation parcels can provide an estimated 1,256 FCUs of lift. This is more than sufficient to compensate for the 575 total FCUs impacted by the proposed project. In addition, no FCU lift was assumed for the high quality bottomland hardwoods habitat, yet these areas provide a total of approximately 9 acres for preservation, in excess of the 4 acres of high quality bottomland hardwoods that will be impacted by the proposed project. Although the combined use of onsite and offsite parcels for mitigation provides more than double the needed compensation, mitigation banks are also available for use and could be considered for use as part of the mitigation plan. This bold mitigation plan, when implemented, will improve the quality of the native habitats associated with Turkey Creek, and ensure the proposed action does not result in a significant (adverse or beneficial) impact on wetlands.

6.2 Stormwater/Flooding

The proposed project will also include mitigation measures to address potential impacts of the proposed development on stormwater and/or flooding within the Turkey Creek Watershed. A stormwater management plan, including use of BMPs will be designed to provide water quality, attenuation, and flood protection for the proposed project.

The implementation of appropriate BMPs will maintain water quality conditions within Turkey Creek and treat of runoff resulting from development of the project. These BMPs will include construction of stormwater management facilities, which will treat runoff carried from the areas of development via a stormwater conveyance system. The stormwater conveyance system will be designed to accommodate 10-year 24-hour storm event in parking areas, roadways and pedestrian trails. The stormwater management facilities will absorb many of the contaminants in the runoff from the proposed development areas. The Pollutants and sediment will be allowed to settle out before the water is discharged through control structures. Aquatic plants will be installed or allowed to recruit naturally around the stormwater management facilities to enhance water quality treatment. The plants will provide a perimeter filter to capture sediment and contaminants before they enter the facility, and will provide wetland and wildlife habitat. The stormwater management facilities will discharge into existing onsite wetlands after the runoff is treated. These wetlands will not only provide for attenuation during large storm events by slowing down the runoff before it enters a water body like Turkey Creek, but also help to filter out sediments and nutrients that may not have been captured by the onsite management facilities. The stormwater management system will provide treatment and attenuation that will result in conditions at or below the pre-development (existing) conditions. The system as a whole, including the vegetative swales, aquatic plants and ponds, will assist in mitigating undesired contaminants in the runoff before it can enter another water body such as Turkey Creek.

It is anticipated that runoff along the Creosote Road extension (see Figures A-27, A-28, and A-32 in Attachment A) will be captured by shallow vegetative roadside swales. These swales will provide treatment and attenuation of contaminants from the roadway corridor before the contaminants are captured by the stormwater conveyance system and delivered to the onsite stormwater management facilities for further treatment. The roadside swales will be grass lined to offer additional contaminant removal. A center median with a pervious surface will allow for the addition of vegetation and other aesthetic landscaping features while still allowing stormwater to percolate into the ground. The implementation of LID BMPs will provide a stormwater management system for the roadway that will limit flows to pre-development levels and provide treatment for additional water quality. These measures, combined with the treatment and attenuation described above, will restore hydrology on the site and improve the quality and quantity of water delivered to Turkey Creek during flooding and stormwater events.

No impacts are anticipated to the 100-year floodplain or water surface elevations along Turkey Creek. In addition, no impacts are anticipated to adjacent properties from the proposed development, including the Forest Heights neighborhood located on the east side of the project site. As mentioned in Attachment A, Section 4.5 the City of Gulfport has replaced valves for the levee system around the neighborhood, and with the combination of operating the valves and use of pumps, is attempting to alleviate flooding issues in the neighborhood during large storm events which cause high water levels in Turkey Creek. Further analysis of the neighborhood's existing stormwater system will be needed to design mitigation measures to resolve the existing flooding issues in the Forest Heights neighborhood. It should be noted that the proposed project will not impact the neighborhood's drainage system and will not impact the neighborhoods existing flood conditions.

Based on this information, it is not anticipated that the proposed project will result in significant adverse or beneficial impacts on stormwater or flooding.

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6 Attachment D
Adjacent Property Owners

Adjacent Property Owners
See Figure A-3 of Attachment A for property locations

1. Gulfport Factory Shops, Ltd.
   10100 Factory Shops Boulevard
   Nashville, TN 37217
2. Prime Asset LLC
   2230 Beach Drive #1005
   Gulfport, MS 39507
3. Betsy R. Vick Gaines
   c/o Nancy Vick
   10805 Portobello Dr
   San Diego, CA 92124
4. Reese's Pieces Enterprises, Inc.
   202 St. Augustine Drive
   Long Beach, MS 39560
5. Canal Lands, Inc.
   723 Howard Avenue
   Biloxi, MS 39530
6. Oasis Real Estate Developments, LLC
   239 Cowan Road
   Gulfport, MS 39507
7. F & F Investments LLC et al
   413 Caribe Place
   Gulfport, MS 39507
8. Greater Gulfport Properties, LLC
   P. O. Box 1176
   Gulfport, MS 39502
9. MAS Limited LLC and Ben H. Stone
   P. O. Box 265
   Biloxi, MS 39533
10. Land Trust of the Mississippi Coastal Plain
    c/o Judy Steckler
    955-A Howard Avenue
    P. O. Box 245
    Biloxi, MS 39533
11. Mississippi Power Company
    P. O. Box 4079
    Gulfport, MS 39533
12. Harrison County School Board
    11072 Highway 49
    Gulfport, MS 39503
13. City of Gulfport
    P. O. Box 53
    Gulfport, MS 39502

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