FINAL REPORT

City of Orlando Wetlands and Open Space Study

Orlando, FL

PREPARED FOR

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December 2023

Table of Contents

1.1 Introduction 1
1.1.1 Project Background 1
1.1.2 Wetlands Overview 2
1.1.3 Project Summary 4
1.2 Quality Assurance Project Plan (QAPP) 7
1.2.1 What is a QA Project Plan? 7
1.2.2 Wetland Assessment 7
1.3 Wetlands Assessment Form 9
1.3.1 City of Orlando Wetland Assessment Form 9
1.3.1 Orlando Wetlands Dashboard 2
1.4 Policy Recommendations 4
1.4.1 Future Land Use and Zoning 5
1.4.2 Wetland Assessment Procedures 5
1.4.3 Mitigation and Impacts 5
1.5 Next Steps 6

Appendices .....

List of Figures

Figure No.	Description	Page
Figure 1	Protection of City Wetlands by Level of Government	3
Figure 2	Overall Wetland Study – February 2023 to December 2023	4
Figure 3	Map of Wetland Locations	5
Figure 4	Orlando Wetland Acreage by Wetland Type	5
Figure 5	Wetlands Dashboard Home	2
Figure 6	Wetlands Dashboard Zoomed	3
Figure 7	Wetlands Dashboard Selection	3
Figure 8	Wetlands Protection Policy Strategy	4

Executive Summary

This executive summary provides an overview of the tasks undertaken in pursuit of the Orlando Wetlands and Open Space Study from February to December, 2023. Complete documents for each task can be found in the appendix.

1.1 Introduction

The overall purpose of the City of Orlando's Wetlands and Open Space Study is to identify the extent of wetlands within the city and to review, update and refine the current policies, procedures, and tools for wetland reviews. Recommendations are intended to clarify the wetland review process for development applications and make it easier for staff to process applications while ensuring the protection of wetlands, consistent with State and Federal requirements.

1.1.1 Project Background

In 1992, the City of Orlando completed their first and only comprehensive wetland study. Since that time, the municipal footprint has increased by about 30,000 acres due to annexation of adjacent areas of Orange County, and much of the annexed area includes wetlands. Since the completion of the 1992 wetland study, the city has elevated sustainability as a priority by creating the Green Works program in 2007 and vowing to transform Orlando into "one of the most environmentally friendly, economically and socially vibrant communities in the nation."

The city requires that the Land Development Code and Growth Management Plan follow current best management practices and are consistent with federal, state, and local laws in scope and approach. To that end, this project provided an overview of the extent and status of the city's wetlands, guidance for the modernization of planning and development policies, an updated wetlands assessment process including a new wetland scoring rubric, recommendations for a wetland monitoring and assessment program, and stakeholder and community outreach.

The City of Orlando is a 111.2 square mile area (71,140 acres). The study area includes everything within the City of Orlando jurisdictional boundaries, and with an understanding that environmental systems will naturally extend beyond the legal limits of the city, the study area includes wetland systems within 300 feet of the City's existing boundaries.

1.1.2 Wetlands Overview

1.1.2.1 What is a Wetland?

Wetlands are transitional zones between chronically flooded deepwater settings and well-drained uplands, where the water table is generally at or near the surface or the land is covered by shallow water. Wetlands are among the most valuable ecosystems on Earth containing hydric soils and aquatic vegetation. There are several varieties of wetlands, each defined by its hydrology, water chemistry, soils, and plant species. Wetlands can be classified as those that are dominated by trees, shrubs, or herbaceous plants. They can be supplied by precipitation, runoff, or groundwater, and their water chemistry can range from extremely acidic to extremely alkaline.

Wetlands are home to hundreds of aquatic and terrestrial plant and animal species. Wetlands are important for flood protection, improving water quality, preventing coastal erosion, producing natural goods, providing leisure, and carbon sequestration.

Wetlands are among the most productive environments on the planet, providing refuge and nursery regions for economically and recreationally significant creatures such as fish and shellfish, as well as wintering grounds for migrating birds. Coastal marshes are especially essential for reducing loss of life and property by mitigating severe floods and buffering the land from storms; they also serve as natural reservoirs and aid in the maintenance of optimal water quality. The State of Florida currently has about 11 million acres of wetlands.

1.1.2.2 Why do we Protect Wetlands?

Wetlands are an important piece of the built and natural environment. They provide a multitude of valuable resources for communities. The protection of wetlands is important for several reasons, such as:

- Biodiversity - Wetlands are home to a diverse range of plant and animal species, many of which are vulnerable or endangered. Wetland conservation aids in the preservation of biodiversity.
- Water Filtration - Wetlands operate as natural water filters, eliminating pollutants before they reach rivers, lakes, and seas. This contributes to the cleanliness and safety of our water supply.
- Flood Control - Wetlands absorb and store surplus water, lowering flood danger and severity.
- Carbon Storage - Wetlands are good at storing carbon, which aids in climate change mitigation.
- Cultural Importance - Many wetlands have cultural or historical significance and conserving them contributes to the preservation of these qualities.
- Education and Research - Wetlands are important venues for scientific research and teaching because they allow researchers to investigate ecosystems, species, and environmental processes.
- Recreation and Tourism - Wetlands are popular for birding, fishing, hunting, and other recreational activities. Wetlands also draw tourists, which helps local economies.

1.1.2.3 How do we Protect Wetlands?

Wetlands are regulated at each level of government, from the federal, state, county, and local levels. The city's wetland ordinance is just one part of the equation for protecting wetlands. In addition, wetlands are also protected through the following methods:

- Legislation - Many nations have wetlands protection legislation in place. In the United States, for example, the Clean Water Act governs the discharge of contaminants into bodies of water, including wetlands.
- Land Use Planning - Governments may safeguard wetlands through land use planning. This might include declaring wetlands as protected areas, limiting development in and around wetlands, or mandating developers to establish new wetlands to replace those destroyed.
- Conservation projects - Many non-profit groups offer wetlands conservation projects. These might include buying wetlands to conserve them, rehabilitating damaged wetlands, or collaborating with landowners to manage wetlands in a sustainable manner.
- Education and knowledge - Another important part of wetland conservation is raising knowledge about the value of wetlands and teaching people about how to conserve them.
- Research - Scientific research can assist us in better understanding wetlands and developing more effective strategies to conserve them.
- Community Involvement - Local communities may play an important role in wetlands protection. This might range from taking part in clean-up initiatives to pushing for wetland conservation regulations.

Figure 1 Protection of City Wetlands by Level of Government

1.1.3 Project Summary

The Wetlands and Open Space Study comprised a total of 7 tasks spanning the course of a 11-month period. The Quality Assurance Project Plan (QAPP) formalized the methods and data used to analyze the status of wetlands within the study area. Data collection and policy reviews followed and were used to inform the creation of the Wetland Dashboard, Wetland Assessment, and policy recommendations. Stakeholder outreach took place from May to October with the purpose of soliciting feedback on the proposed tools and policy recommendations. Final recommendations were drafted through the month of October and a project update was provided to the City's Municipal Planning Board on November 14th.

Figure 2 Overall Wetland Study – February 2023 to December 2023

1.1.3.1 Understanding Orlando Wetlands

The Florida Administrative Code defines wetlands as "those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils" (Sec. 32-640(19) F.A.C.). At the State level, wetlands are protected through the Environmental Resource Permit Program (ERP) which is administered by the Florida Department of Environmental Protection (FDEP) and five water management districts.

The City of Orlando has approximately 11,200 acres of wetlands in various states of protection. Some details about the extent of Orlando's wetlands are found in **Figures 3 and 4**.

Figure 3 Map of Wetland Locations

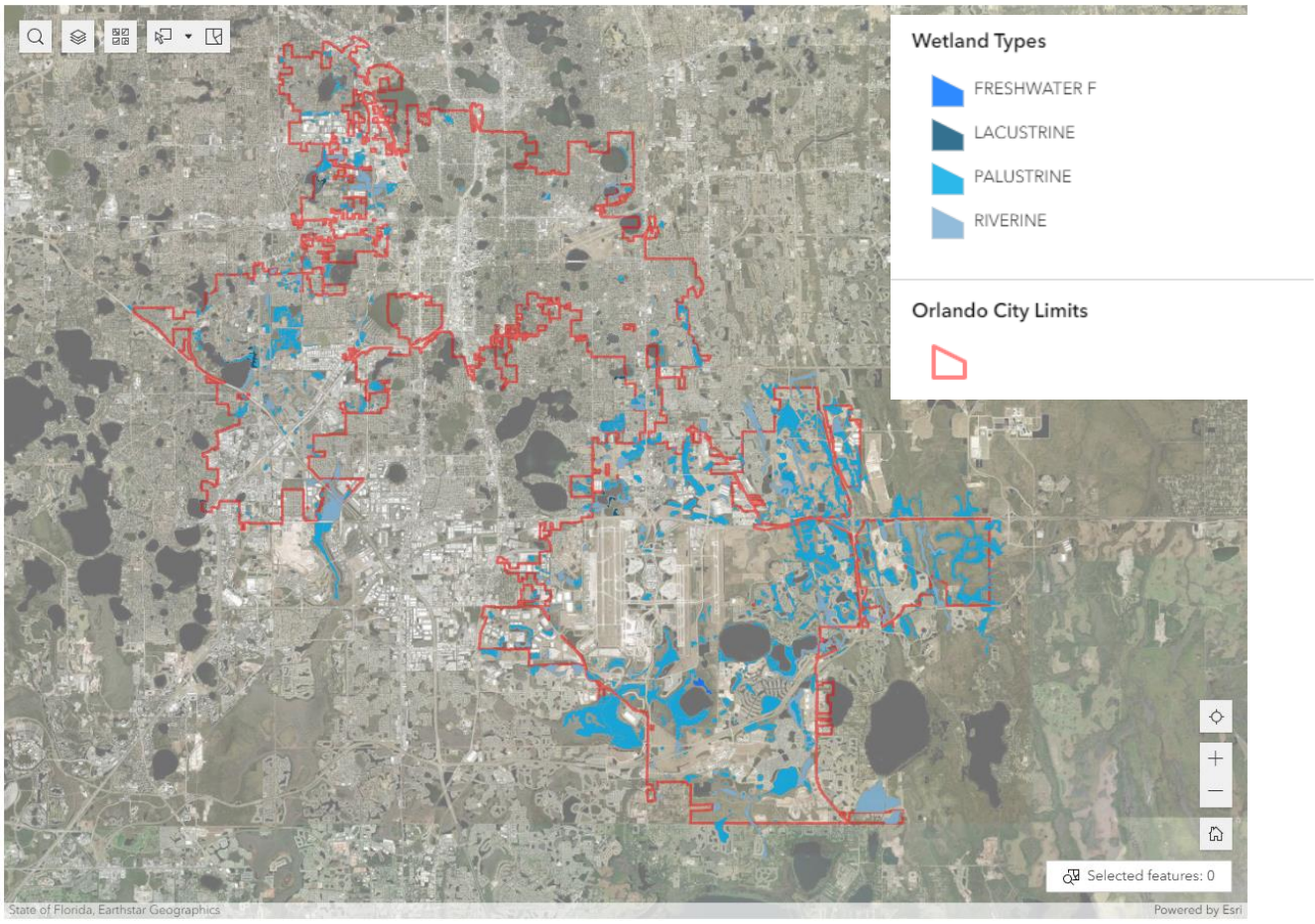
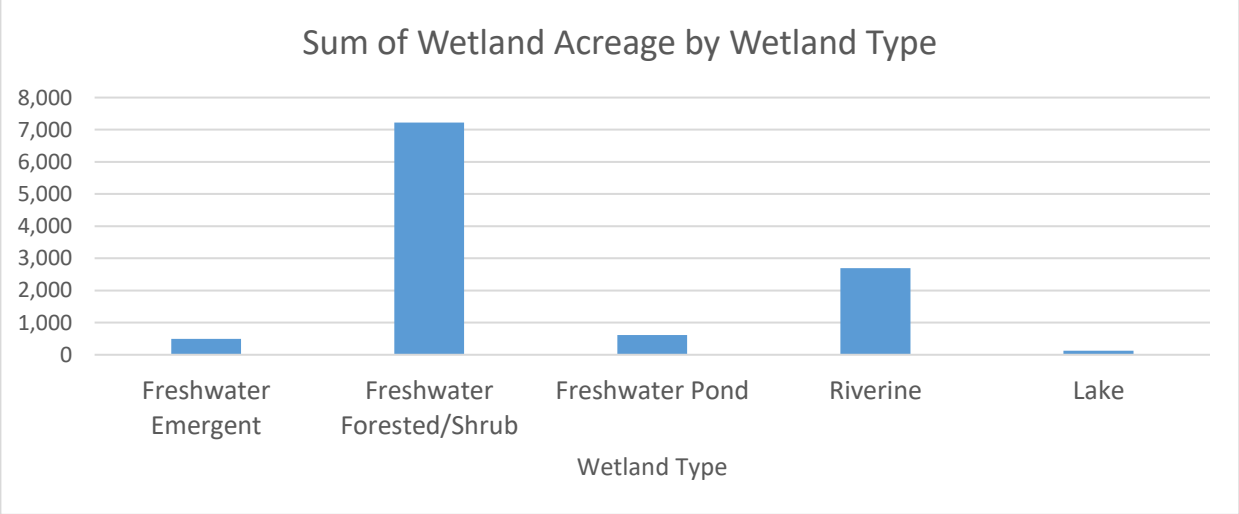


Figure 4 Orlando Wetland Acreage by Wetland Type



1.1.3.2 Stakeholder and Community Outreach Key Takeaways

Nine (9) stakeholder meetings were held from May to October including six (6) stakeholder workshops and three (3) public community meetings. The purpose of these meetings was to get feedback from the public on the draft wetland assessment form as well as to educate the public on the various benefits and mechanisms of wetland protection.

The following feedback was received:

- Improve readability of wetland assessment form and tools.
- Cross coordination between various city departments is important.
- Include wetland assessment early in the site development process to avoid excessive cost to the applicant.
- Final process should be straightforward and easy to follow.
- Evaluation of wetlands should encompass a range of benefits including indirect benefits such as flood protection and community health and well-being.
- Policy changes should increase protection of wetlands and include restoration of wetlands that have suffered a loss in quality over time.

Community Wetland Assessment at Eagle's Next Park

1.2 Quality Assurance Project Plan (QAPP)

1.2.1 What is a QA Project Plan?

A QA Project Plan describes the activities of an environmental data operations project involved with the acquisition of environmental information whether generated from direct measurement activities, collected from other sources, or compiled from computerized databases and information systems. A copy of the QA Project Plan is provided in Appendix A.

1.2.1.1 What is the purpose of the QA Project Plan?

The QA Project Plan documents the results of a project's technical planning process, providing in one place a clear, concise, and complete plan for the environmental data operation and its quality objectives and identifying key project personnel.

1.2.1.2 What are the benefits of a QA Project Plan?

The benefits of a QA Project Plan are to communicate to all parties the specifications for implementation of the project design and to ensure that the quality objectives are achieved for the project. It does not guarantee success every time, but the prospects are much higher with a QA Project Plan than without one.

1.2.2 Wetland Assessment

This task summarized the extent, condition, and function of the wetlands inside the City limits, or within 300 feet of the City limits, based upon existing mapping and data sources. In addition, protected species presence, critical habitat, and potential habitat were mapped.

The wetland assessment used current data from non-direct sources, including publicly available Geographic Information Systems (GIS) files that were obtained from the Florida Geographic Data Library (FGDL); the St. Johns River Water Management District (SJRWMD); South Florida Water Management District (SFWMD); National Wetland Inventory (NWI); City of Orlando, Florida; Orange County, Florida; US Geological Survey (USGS); National Oceanic and Atmospheric Administration (NOAA); Esri Open Data Aerials; and NearMap Aerials. Aerial Photography Interpretation (API) is the methodology used to extrapolate details of ecological communities and structures from aerial photography. With this approach experienced scientists distinguish and interpret ground features, ecological communities, site history, topography, and hydrology of the study area based on previously identified trends and methods.

This project utilized limited field sampling to refine the wetland assessment from the indirect sources discussed above. Field verification was used to confirm the presence or absence of wetlands that were either incorrectly identified by the GIS data or had been removed or altered. Field verification also included a sample of areas where wetlands had not confirmed, but aerial photography and other remote sensing techniques indicated the potential for wetland occurrence. Field sampling was used to document the presence, size, habitat type, and condition of wetlands on the site. The current condition, wetland characteristics, and nearby development were documented, and photos of the observed wetland conditions were taken. Wetland

boundaries were determined and documented using the following mobile technology and mapping applications; ESRI's Field Maps application and a Trimble R1 Global Navigation Satellite System (GNSS).

1.2.2.1 Wetland Assessment Objectives

The objectives of the wetland assessment were:

- To develop a quantitative inventory of wetlands that lie within or border the study area and qualitatively describe wetland condition, characteristics, and function.
- To document the changes since the 1992 wetlands study.

The results from the Wetland Assessment resulted in the creation of the Wetlands Dashboard and Wetland Assessment Scorecard, explained further in the next section.

1.3 Wetlands Assessment Form

1.3.1 City of Orlando Wetland Assessment Form

The Q-WET scorecard, which was developed in 1990's, is referenced in the city code. It includes three levels of review. Nonetheless, it possesses several shortcomings that hinder its overall effectiveness. First and foremost, it lacks alignment with the UMAM methodology utilized by the State. Secondly, the issue of inconsistencies arises due to potential disparities in evaluation from varying reviewers. Lastly, it's antiquated design conspicuously neglects the inclusion of certain factors that the city currently deems crucial.

VHB prepared a new version to replace the Q-WET scorecard. The City of Orlando Wetland Assessment Form assigns a score to wetland areas based on a qualitative analysis of several factors. The Assessment Form is used to understand and track the quality of wetlands and help the City evaluate potential impacts and mitigation requirements. The Wetland Assessment Form is divided into four sections with five attributes under each that are assessed. An additional document is provided to guide users and reviewers through the scoring process. Each attribute must have a minimum score of 1 and maximum score of 5, but if a score falls between a 3 and 5, then a score of 4 may be given. These scores must be provided for every question to accurately assess the wetland. Each wetland must be assessed individually, and the Wetland Assessment Form(s) must be provided to the City in support of the Planning and Zoning Applications. The total score for each wetland is provided as a total out of 100. This scorecard is intended to be used in conjunction with a digital inventory system, as seen in **Figure 5** to allow for quick review and ongoing monitoring of local wetland systems.

In order to test the practical application of the wetland assessment tool, field assessments of 130 wetlands were conducted by VHB environmental scientists, resulting in the following scores:

- Mean: 58.2
- Median: 58.5
- Mode: 60

These scores were then used as a baseline for wetlands scores in the city and help to inform the tiering process which is described later in this report under the recommended policy revisions.

1.3.1 Orlando Wetlands Dashboard

The Wetlands Dashboard is intended to be an online repository to track wetland inventory and quality. It allows city staff to quickly assess whether a development application will require environmental review and tracks completed Wetland Assessments. This dashboard is constructed with a geolocation search function to assist in the location of proposed developments, and wetland systems are delineated so that it is readily apparent exactly how many wetland assessments are required, in the event of multiple wetlands on site.

Figure 5 shows the completed wetlands dashboard which provides an aerial extent of the city boundary with identified wetland and open water resources plainly indicated in light green and blue, respectively. Along the top ribbon of the dashboard the user can filter the displayed content by NWI wetland type, WMD description, and land use type. A search button is provided that allows users to zoom to specific properties or street intersections, and a home button brings users back to the full extent of the city. As a user zooms in and out the wetland acreage in the bottom left corner of the window will adjust with the visible extent, as seen in figure 6. In figure 7 a selected wetland is called out in neon blue, which displays a popup window with relevant wetland information for the user such as recorded acreage, the WMD description, NWI attributes, and the applicable regulatory basin. Lastly, this popup allows the user to check recorded wetlands surveys.

Figure 5 Wetlands Dashboard Home

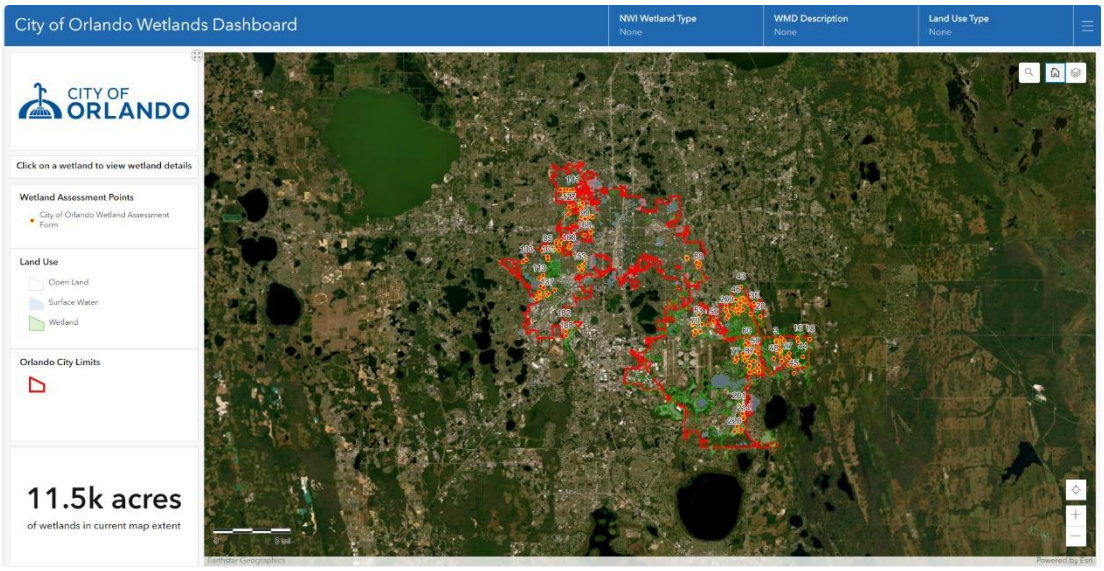


Figure 6 Wetlands Dashboard Zoomed

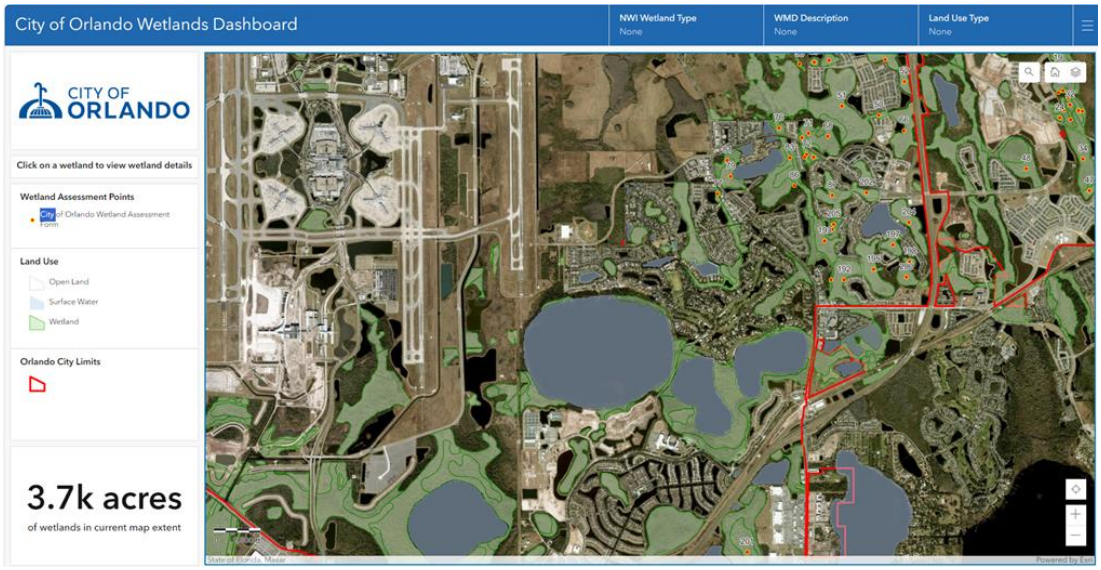
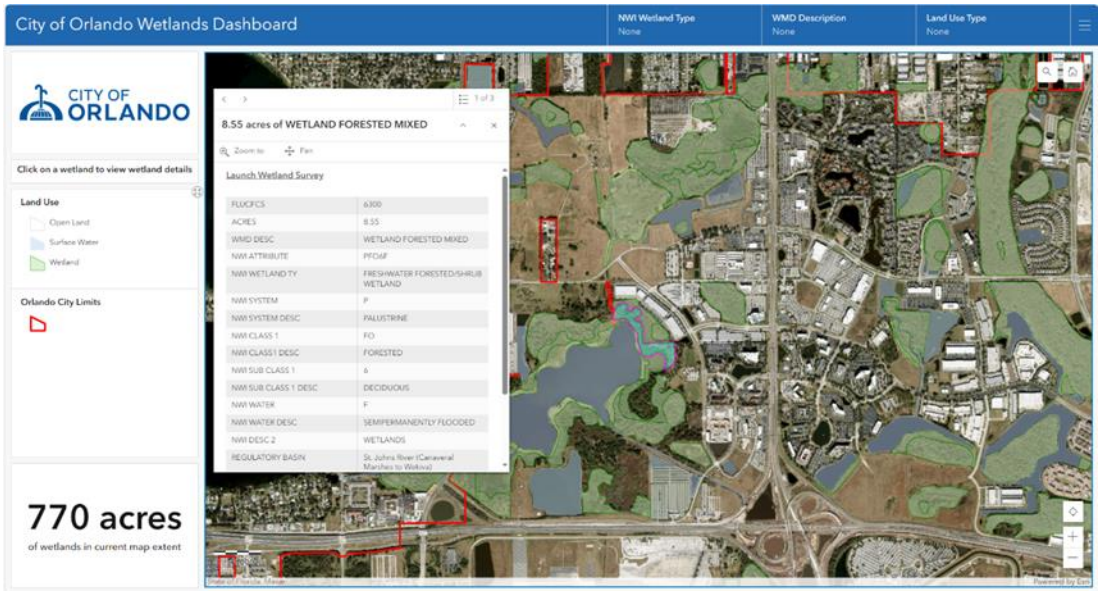


Figure 7 Wetlands Dashboard Selection



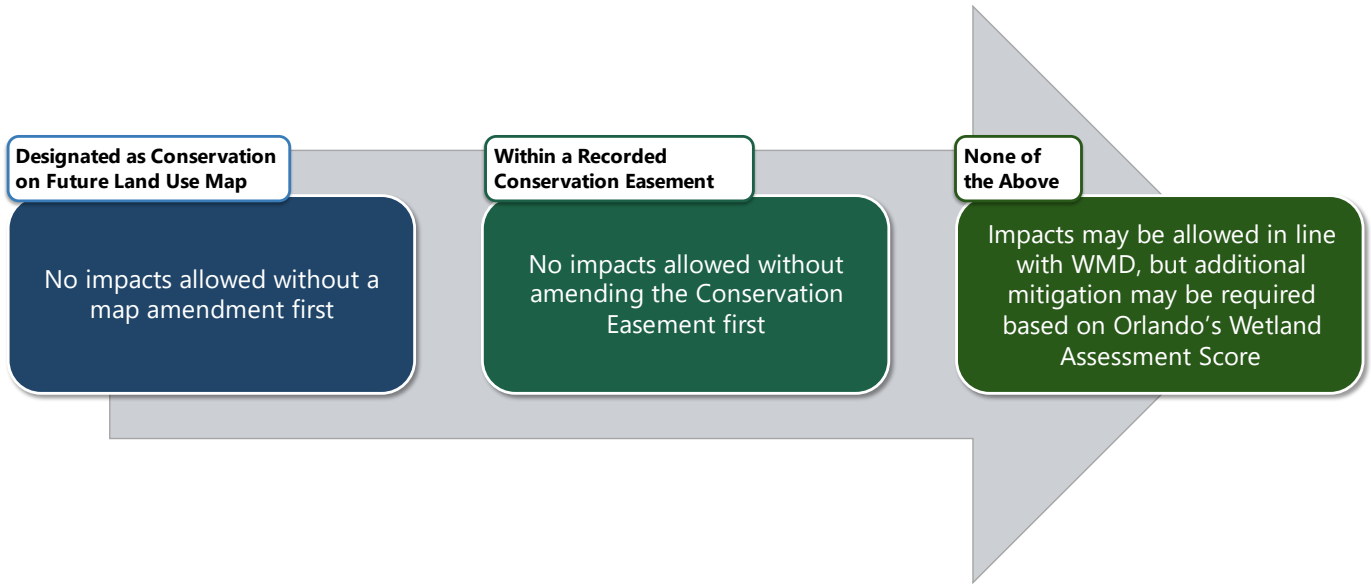
1.4 Policy Recommendations

The primary means of wetland protection for the city is through the Conservation Element of the Growth Management Plan. Wetlands are evaluated as part of the environmental assessment process and then classified in a three-tiered system. The first tier is whether a wetland is identified on the Protected Wetlands Map, and second and third tiers are determined by the size of the wetland. The city relies on the WMD permitting process to establish protection standards for Tier 2 and Tier 3 wetlands. The Land Development Code contains minimum standards for wetland retention and buffer areas.

The existing policies are based wholly on the 1992 wetlands study and have not been updated as accepted best practices have changed. The current tiered system reduces the city's ability to protect valuable wetlands when they are smaller than 0.5 acres. Lastly, the current policies have minimal guidance for how to develop, protect, restore, or monitor wetland areas, which leads to prolonged and uncertain review processes for areas with identified wetlands.

As depicted in Figure 8, a three-prong strategy was utilized to address wetlands protection with city policy. The proposed strategy quickly determines the existing level of protection for a given wetland as well as provides guidance for staff on how to classify wetlands moving forward. An overview of the policy recommendations is provided in this section along with the desired outcome from each recommendation. Detailed text recommendations are provided in **Appendix B**.

Figure 8 Wetlands Protection Policy Strategy



1.4.1 Future Land Use and Zoning

1.4.1.1 Recommended Policy Revisions

- Use the updated mapping inventory of wetlands and ongoing processes to track changes in wetland areas over time.
- The highest level of protection will be for wetlands with the Conservation future land use.
- Rezone the city's retained wetlands to Resource Protection Overlay (RP). The zoning will serve as a marker for existing wetlands that are not designated as Conservation on the Future Land Use Maps. Allowable impacts to wetlands should be based on a wetland assessment.

1.4.1.2 Outcomes

- Future Land Use & Zoning of high-quality wetlands is more consistent allowing for better tracking and protection.
- More sites will go through the Environmental Assessment process as more RP zonings are issued.

1.4.2 Wetland Assessment Procedures

1.4.2.1 Recommended Policy Revisions

- Simplify the environmental review process to two levels, rather than three levels. The highest level of review will apply to all sites containing wetlands.
- Codify the wetland scoring process to consider a wider range of characteristics for wetland protection.
- Remove the third tier of wetland classification. Tier 1 will be used for protected wetlands and Tier 2 will be used for all non-protected wetlands.

1.4.2.2 Outcomes

- More sites will require the highest level of environmental review.
- A greater number of wetlands will be subject to city oversight, including small acreage sites.
- A simplified tier-system allows for consistency with mitigation policies and external permitting requirements.

1.4.3 Mitigation and Impacts

1.4.3.1 Recommended Policy Revisions

- Create policies for potential local mitigation strategies such as onsite mitigation or payment into an environmental protection trust fund. For individual projects, local mitigation strategies are based upon state or federal mitigation requirements and the results of submitted wetland assessment forms.
- Require conservation easements for high-quality retained wetlands, including conservation easements dedicated to the city for the highest quality wetlands.

- Codify local protection strategies by providing increased buffer requirements for higher quality wetlands, requiring plantings and restoration of retained wetlands, removal of exotic or nuisance species, and establishing wetland management plans.

1.4.3.2 Outcomes

- Results in clear development requirements for city wetlands.
- Provides a means of maintaining high-quality wetlands and restoring lower quality wetlands over time via management plans and monitoring.
- Protects wetlands from surrounding development impact.

1.5 Next Steps

Following this report there are a number of additional actions the City of Orlando will need to undertake:

- Amend the Comprehensive Plan and Land Development Code per recommendations in this document.
- Monitor and update wetlands dashboard as necessary.
- Evaluate staffing needs for in-house or consultant review of wetland scorecards as well as requests to impact or eliminate wetlands.

Appendices

Appendix A – Wetland Assessment

Quality Assurance Project Plan

EPA # 02D16722

Quality Assurance Project Plan for the Wetlands and Open Space Study

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April 24, 2023

Quality Assurance Project Plan
Wetlands and Open Space Study
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Table of Contents

Title and Approval Sheet 1

Group A: Project Management 4

A.1 Title and Approval Page (EPA QA/R-5 A1) 4
A.2 Table of Contents (EPA QA/R-5 A2) 4
A.3 Distribution List (EPA QA/R-5 A3) 4
A.4 Project Organization (EPA QA/R-5 A4) 6
A.5 Problem Definition/Background (EPA QA/R-5 A5) 9
A.5.1 Project Background 9
A.5.2 Problem Definition 9
A.5.3 Study Area 9
A.6 Project/Task Description and Schedule (EPA QA/R-5 A6) 9
A.6.1 Wetland Assessment 10
A.6.6 Project Timeline 11
A.7 Quality Objectives and Criteria for Measurement Data (EPA QA/R-5 A7) 12
A.8 Special Training Requirements/Certification (EPA QA/R-5 A8) 13
A.9 Documents and Records (EPA QA/R-5 A9) 13
A.9.1 QA Project Plan Distribution 13
A.9.2 Field Documentation and Records 13
A.9.3 Laboratory Documentation and Records 13
A.9.4 Final Report 13
A.9.5 Project Records 14

Group B: Data Generation and Acquisition 15

B.1 Sampling Process Design (Experimental Design) (EPA QA/R-5 B1) 15
B.2 Sampling Methods (EPA QA/R-5 B2) 16
B.3 Sample Handling and Custody Requirements (EPA QA/R-5 B3) 16
B.4 Analytical Methods Requirements (EPA QA/R-5 B4) 16
B.5 Quality Control Requirements (EPA QA/R-5 B5) 16
B.6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements (EPA QA/R-5 B6) 17
B.7 Instrument Calibration and Frequency (EPA QA/R-5 B7) 17
B.8 Inspection/Acceptance Requirements for Supplies and Consumables (EPA QA/R-5 B8) 17
B.9 Data Acquisition for Non-Direct Measurements (EPA QA/R-5 B9) 17
B.10 Data Management (EPA QA/R-5 B10) 18

Group C: Assessment and Oversight 19

C.1 Assessments and Response Actions (EPA QA/R-5 C1) 19
C.2 Reports to Management (EPA QA/R-5 C2) 20

Group D: Data Review and Usability 21

D.1 Data Review, Verification, and Validation Requirements (EPA QA/R-5 D1) 21
D.2 Verification and Validation Methods (EPA QA/R-5 D2) 21
D.3 Reconciliation with User Requirements (EPA QA/R-5 D3) 21

References 22

List of Figures

Figure No.	Description	Page
Figure 1	Study Area	10

A

Group A: Project Management

A.1 Title and Approval Page (EPA QA/R-5 A1)

See page 1.

A.2 Table of Contents (EPA QA/R-5 A2)

See pages 2 - 4.

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A.4.2. VHB
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Roberta Fennessy, Project Manager
Chuck Smith, Deputy Project Manager
Steve Osiecki, GIS Manager
Michael Wielenga, Environmental Scientist
Hannah Rowe, Project Scientist
Katie Shannon, Senior Community Planner
James Hartsfield, Community Planner
Oscar Bermudez, Water Resources Senior Project Manager
Responsible for project management, maintaining approved QA Project Plan, GIS data management and analysis, field verifications and data collection, public policy review and recommendations, wetland scoring rubric development, future monitoring program design, community outreach, and report preparation.

A.4.3. EPIC Engineering and Consulting Group, LLC
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Suresh Sanka, MS, PMP, Director of Technology
Jared Allen, Senior GIS Programmer/Analyst
Sindhura Pandrangi, Website Developer/GIS Specialist
Responsible for QA/QC, GIS data management and analysis, wetland assessment, and future monitoring program design.

A.4.4. US Environmental Protection Agency
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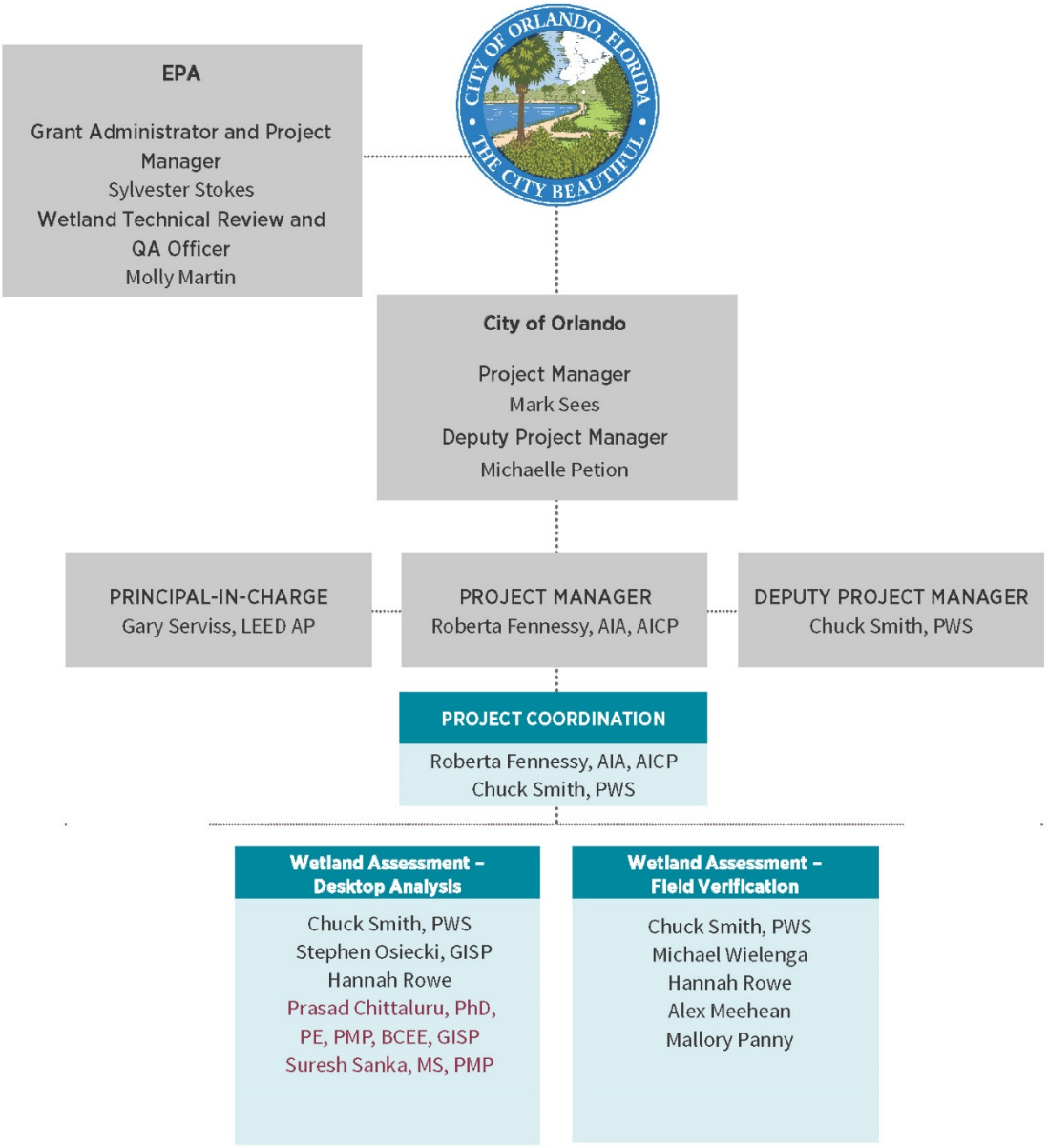
Molly Martin, Technical Officer
Responsible for grant administration, technical guidance, and review of final documents.

Organizational Chart



SUBCONSULTANT FIRMS

EPIC ENGINEERING & CONSULTING GROUP, LLC (MBE)

A.5 Problem Definition/Background (EPA QA/R-5 A5)

A.5.1 Project Background

In 1992, the City of Orlando completed their first and only comprehensive wetland study. Since that time, the municipal footprint has increased by about 30,000 acres due to annexation of adjacent areas of Orange County, and much of the annexed area includes wetlands. Since the completion of the 1992 wetland study, the City has elevated sustainability as a priority by creating the Green Works program in 2007 and vowing to transform Orlando into "one of the most environmentally-friendly, economically and socially vibrant communities in the nation."

A.5.2 Problem Definition

The City requires that the Land Development Code and Growth Management Plan follow current best management practices and are consistent with federal, state, and local laws in scope and approach. To this end, this project will provide: an overview of the extent and status of the City's wetlands, guidance for the modernization of planning and development policies, an updated wetland assessment, wetland scoring rubric, recommendations for a wetland monitoring and assessment program, and stakeholder and community outreach.

A.5.3 Study Area

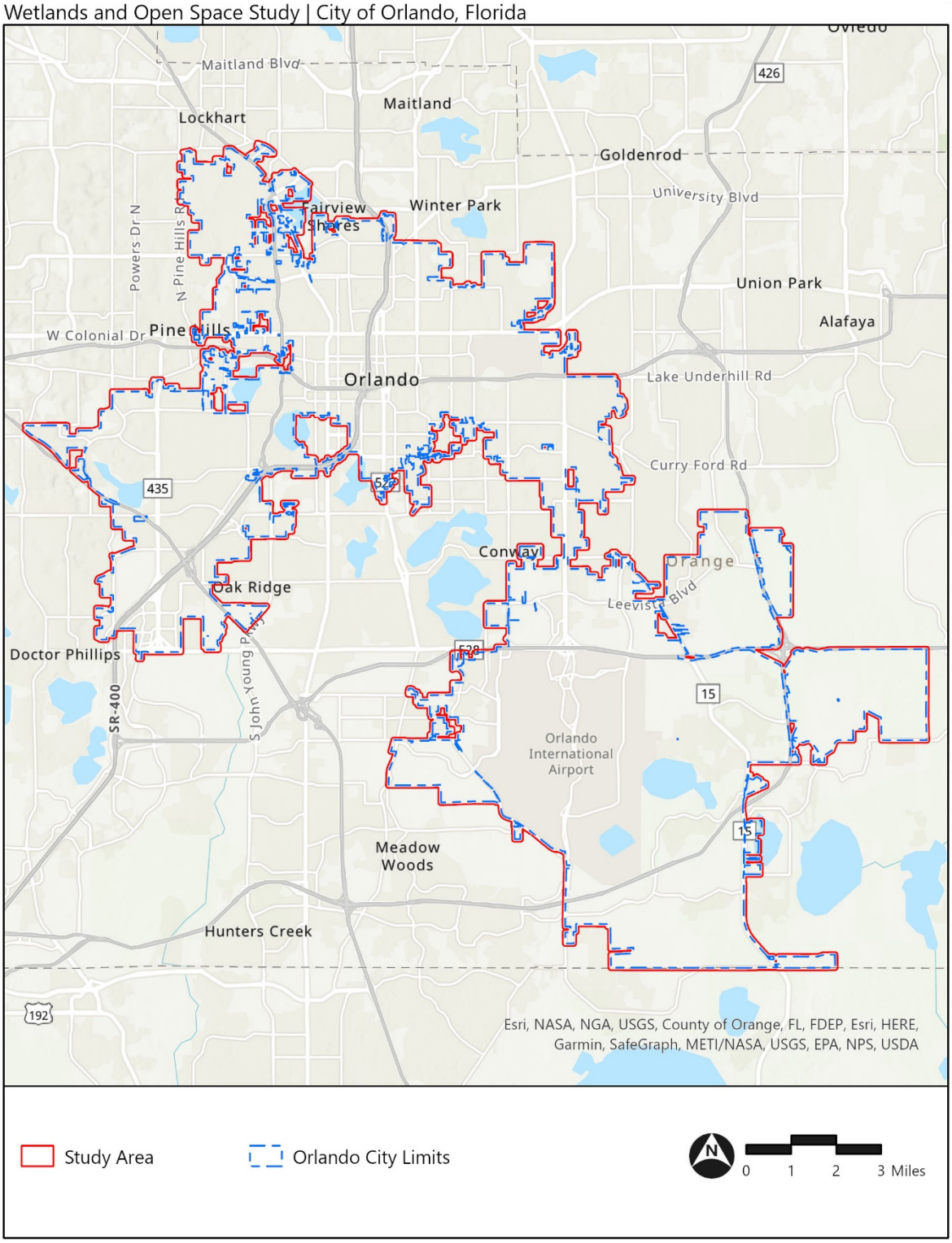
The City of Orlando is a 111.2 square mile area (71,140 acres) (**Figure 1**). The study area includes everything within the City of Orlando jurisdictional boundaries, and with an understanding that environmental systems will naturally extend beyond the legal limits of the City, the study area will include wetland systems within 300 feet of the City's existing boundaries.

A.6 Project/Task Description and Schedule (EPA QA/R-5 A6)

The methods and data that will be used to analyze the current status of wetlands within the study area and develop recommendations and guidelines for future planning decisions are described in this section. The data discussed within this section consist of non-direct and direct source data. This data will be used to compare current conditions with historical data records on wetlands within the study area.

Figure 1 Study Area

Wetlands and Open Space Study | City of Orlando, Florida



A.6.1 Wetland Assessment

This task will summarize the extent, condition, and function of the wetlands inside the City limits, or within 300 feet of the City limits based upon existing mapping and data sources. In addition, protected species presence, critical habitat, and potential habitat will also be mapped.

Desktop Effort

The project will use current data from non-direct sources, including publicly available Geographic Information Systems (GIS) files that will be obtained from the Florida Geographic Data Library (FGDL); the St. Johns River Water Management District (SJRWMD); South Florida Water Management District (SFWMD); National Wetland Inventory (NWI); City of Orlando, Florida; Orange County, Florida; US Geological Survey (USGS); and National Oceanic and Atmospheric Administration (NOAA); Esri Open Data Aerials; NearMap Aerials. Aerial Photography Interpretation (API) is the methodology that will be used to extrapolate details of ecological communities and structures from aerial photography. With this approach experienced scientists distinguish and interpret ground features, ecological communities, site history, topography, and hydrology of the study area based on previously identified trends and methods.

Wetland Field Verification

This project proposes limited field sampling to refine the wetland assessment from the non-direct sources discussed above. Field verification will focus on the presence or absence of questionable wetland areas, which will include wetlands erroneously identified by the GIS data or wetlands that have been removed or modified. Field verification will also include a subsample of areas where wetlands have not been positively identified but aerial photography and lidar indicate the potential for wetland occurrence.

Field sampling will document the presence, extent, habitat type, and condition of wetlands located onsite. Wetland boundaries will be geolocated using VHB's mobile technology platform using ESRI's Field Maps application, with access to the project's ArcGIS online mapping portal, and a Trimble R1 Global Navigation Satellite System (GNSS) sub-meter receiver. The present condition, wetland characteristics, and nearby development will be documented, and photos of the observed wetland conditions will be obtained.

A.6.2 Project Timeline

Task	Timeframe
Overall Wetland Assessment:	**January 2023 – May 2023**
QAPP Draft	February 2023
QAPP Final	March 2023
Data collection and review	May 2023 – September 2023
GIS processing and analysis	March 2023 – May 2023
Draft Wetlands and Open Space Study Report	October 2023

A.7 Quality Objectives and Criteria for Measurement Data (EPA QA/R-5 A7)

The objectives of the wetland assessment are:

- To develop a quantitative inventory of wetlands that lie within or border the study area and qualitative describe wetland condition, characteristics, and function.
- To document the changes since the 1992 wetlands study.

Before QA methods are developed, the quality standards must be defined. Terminology and examples of the QA/QC efforts that will be utilized to assure those standards are provided below:

1. **Precision** is a measure of agreement between individual measurements of the same variable, in this case collected GPS data. GPS equipment will be tested prior to field sampling and maintained per the manufacturer's recommendations. This will ensure that the equipment will achieve our data precision standards.
2. **Accuracy** is the degree to which a measurement reflects the true or accepted value of the measured parameter. Accuracy depends on the technique used to measure a parameter and the care with which it is executed. Trimble R1 external GPS receivers will be used in conjunction with tablets or cellular phones to collect GPS data. This platform allows the user to continually monitor the accuracy of the receiver and make adjustments to maintain submeter accuracy during data collection.
3. **Completeness** is a measure of the amount of valid data obtained compared to the amount expected to be collected under normal conditions. Our goal for the wetland assessment is to field verify 10% of the sites for which data is incomplete or missing from existing non-direct data sources. Data may be incomplete due to incomplete data collection or lost data. To limit deficiencies in the data collected during field verification, field data will be reviewed by senior environmental staff members for completeness.
4. **Representativeness** is the degree to which data accurately and precisely represent a measured characteristic. Representativeness is established by senior staff review of collected data and comparison with data from existing non-direct sources and aerial photography.
5. **Comparability** is a measure of the certainty with which one set of data will correlate to another. Collection of data by different investigators is the primary cause of variability in the data. We will use standardized data collection methods, continuous monitoring of data collection quality, and QA of collected data by senior staff and EPIC (the appointed independent QA manager), to limit variability in the captured field data.

A.8 Special Training Requirements/Certification (EPA QA/R-5 A8)

Collected field data will be reviewed by senior environmental staff with a minimum 10 years of experience and extensive training and knowledge in the use of field data collection platform. The GIS data collected in the field will be review for data integrity by a Geographic Information System Professional (GISP) with a minimum of 5 years' experience evaluating GPS data. Final review of all GIS data will be completed by EPIC, the independent QA team for all GIS data.

A.9 Documents and Records (EPA QA/R-5 A9)

VHB will develop and maintain a project specific site on Sharepoint that will be available to all collaborators. Sharepoint allows the project manager or other designated individual to grant or limit access to project data and documents as needed by the requirements of the project. The approved QAPP will be stored at this location, and VHB will place project documents, resources, assignments, timelines, meeting notes, etc. on this site. All project participants, internal and external to VHB, will be able to access this space for collaboration.

A.9.1 QA Project Plan Distribution

The QA Project Plan will be distributed by email, the project Sharepoint site, postal mail, or in person to the appropriate team members, as needed.

A.9.2 Field Documentation and Records

Mobile and desktop applications using Esri solutions (FieldMaps) will be created and maintained on the ArcGIS Online Organization by VHB, and a project specific Group will be created within that organization to allow access to project participants, within and external to VHB, as determined by the project manager, deputy project manager, or designated project GIS manager. ArcGIS Online is a web-based platform that allows maps and GIS data to be accessed and edited in real time by staff in both the office and the field. It also provides a secure location for data storage that allows the designated manager to fully control access.

A.9.3 Laboratory Documentation and Records

Not applicable.

A.9.4 Final Report

The final Wetlands and Open Space Study Report (Report) will be a comprehensive document that will provide an executive summary of the project's results and conclusions, introduction including a description of the study area, data analysis, recommended policy

updates and changes including the wetland scoring rubric, future monitoring program scenarios, and the results of the community outreach. The Report will document the findings of the project and provide graphics to support the conclusions and recommendations. City staff will review and make suggestions on the content of the document, and the Report will be finalized based on revisions and comments provided by City staff.

The final Report will include the following items:

1. A description of the extent, condition, and function of the wetlands within the study area, consistent with the findings of the Wetland Assessment task.
2. Exhibits and maps supporting the results and conclusions of the Wetland Assessment.
3. A summary of the policy recommendations resulting from the regulatory review completed under the Policy Review and Recommendations task.
4. A set of recommendations for a scoring rubric and a monitoring/assessment strategy.
5. Summary of outreach meetings.

The final Report will be stored on the project Sharepoint site with the other project documents.

A.9.5 Project Records

The complete Report and final records including GIS data mined from other sources, field data, meeting minutes and agendas, invoices, and all the data will be available for review and will be maintained by VHB for record retention. In addition, project documentation will be retained by the City of Orlando for a minimum of five years and located at Orlando City Hall.

B

Group B: Data Generation and Acquisition

B.1 Sampling Process Design (Experimental Design) (EPA QA/R-5 B1)

This project will require field sampling to complete the wetland assessment task. All of the wetlands identified with existing GIS data will be verified with available aerial photography and supporting GIS data (water management district wetlands and NWI), and a subset of these wetlands will be field verified in terms of wetland extent and condition. In addition, aerial photography will be used to identify potential wetland areas, not identified in the GIS data. The target will be to field refine 10% of the questionable wetland boundaries identified with the existing GIS data and aerial photography. The presence of these wetlands will be confirmed in the field, and an approximate wetland line will be collected by GPS and an assessment will be conducted to record vegetative species dominance, hydrological indicators, and evidence of disturbance. This data will be used to document the change in wetlands since the 1992 wetland study.

Field verification will occur for a subset of the wetlands with questionable or missing data in the existing GIS data. This subset will focus on wetlands for which the GIS appears to be out of date or inconsistent with the current aerial photography. The location and availability of publicly accessible vantage points such as roads, public lands, or utility rights-of-way (ROWs) will be used to select the specific sites for which field verification will occur. Accessibility to targets will be determined using spatial information such as proximity to public roads or public lands. One visit to each selected wetland site will occur to confirm wetland presence, extent, and condition.

B.2 Sampling Methods (EPA QA/R-5 B2)

Field refinement will be conducted to determine the accuracy of wetland identification, extent, classification, and to document changes since the 1992 wetland study. For each field verification, wetland boundaries will be geolocated using mobile technology platform using ESRI's Field Maps application, with access to the project's ArcGIS online mapping portal, and a Trimble R1 Global Navigation Satellite System (GNSS) sub-meter receiver. We will also gather information on the present condition and wetland characteristics, and nearby development. We will also collect photographs to document of the observed wetland conditions. All data, including imagery, must be compliant with the Federal Geographic Data Committee (FGDC) standards.

Field teams will consist of at least one ecologist who is an experienced wetland scientist with extensive knowledge of wetland functions and values with a minimum of five (5) years' experience or is a Professional Wetland Scientist (PWS) recognized by Society of Wetland Scientists. This scientist will be responsible for determining the specific data to be collected at the site and deciding when and what corrective action may be required, if any.

B.3 Sample Handling and Custody Requirements (EPA QA/R-5 B3)

A web map application will be created and maintained on the ArcGIS Online Organization by VHB. ArcGIS Online is a web-based platform that allows maps and GIS data to be edited in real time by staff in both the office and the field, and data is preserved in a central cloud location. For security purposes, access can be limited to the appropriate staff as determined by the project manager and deputy project manager.

B.4 Analytical Methods Requirements (EPA QA/R-5 B4)

Not applicable

B.5 Quality Control Requirements (EPA QA/R-5 B5)

Even though the spatial accuracy of the data within the system may vary because multiple geodatasets are being used for this project, the accuracy will be exceedingly high and meet the threshold set out by the FGDC standards for wetland mapping. For the wetland assessment task, wetlands will be identified and delineated from available GIS data and aerial photography at relatively high scales (1:1,000 or so). For field data collection, a GPS receiver with submeter accuracy will be used, and the Field Maps application allows for continuous

monitoring of GPS accuracy allowing for instantaneous adjustments to be made to maintain data integrity.

B.6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements (EPA QA/R-5 B6)

GPS equipment will be tested prior to field sampling and maintained per the manufacturer's recommendations. Multiple units are available for field use if one unit does not function properly.

B.7 Instrument Calibration and Frequency (EPA QA/R-5 B7)

GPS equipment with real-time data correction will be captured per the manufacturer's recommendations and timeframes. Correction data will be maintained for period of five years by the user collecting the GPS data.

B.8 Inspection/Acceptance Requirements for Supplies and Consumables (EPA QA/R-5 B8)

Not applicable.

B.9 Data Acquisition for Non-Direct Measurements (EPA QA/R-5 B9)

GIS data, aerial photography, and lidar data will be acquired as part of the wetland assessment. This will consist of data from sources external to VHB including, but not limited to, the FGDL, SJRWMD, SFWMD, City of Orlando, Florida; Orange County, Florida; USGS, and NOAA. Spatial data collected and used as part of this project will meet the standards of the FGDC, as well as any data created by VHB or its collaborators. EPIC is the independent consultant in charge of GIS data review, and their QA process will ensure the GIS data collated from non-direct sources meets data quality standards.

Use of this data will be limited to mapping the locations of known wetlands and protected species habitat and developing a protocol for field verification. The data will not be used for purposes of project design, permitting wetland impacts, determining mitigation for impacts, or restoration/mitigation design.

The data will be used to develop the following:

1. GIS data and maps depicting the boundaries of existing wetlands, type of wetland habitat, and changes in acreage since 1992.
2. GIS data and maps showing known locations of threatened and endangered species, and critical wildlife and habitat areas as defined by relevant agencies.
3. GIS data files will cite all sources, as applicable, and meet or be below FGDC standards.

B.10 Data Management (EPA QA/R-5 B10)

A data management program will be designed to allow the project team and the client to view all data that was collected and utilized for this project. A GIS will be housed in a central location on VHB servers and in an Esri ArcGIS online project and group specifically created for this project, with access limited to staff from VHB and their collaborators with project manager approval. Project data required for and collected during site visits will be synchronized to the GIS data in ArcGIS online at regular intervals during field work.

The data generated for this project will be derived from other existing spatial information as identified in Section A.6.1. We will ensure that all data used as base or reference information is FGDC compliant, and any spatial data created as part of this project will also meet FGDC data requirements.

The applications used to compile, analyze, and collect data will be products from the Esri line of software and products. Esri ArcGIS Pro will be used for the desktop analysis, and field data will be collected using the ArcGIS Field Maps mobile application paired with a R1 GPS receiver with GNSS functionality managed by the Trimble Mobile Manager application. These applications are used across mobile data platform to insure consistency and repeatability between multiple users.

C

Group C: Assessment and Oversight

C.1 Assessments and Response Actions (EPA QA/R-5 C1)

The project team will use quality control and assurance throughout all stages of the project, rather than only applying quality checks to the end products. This will allow the project team to remain dynamic and flexible and avoid mistakes throughout the project. The QA/QC program will incorporate the technical approach and delivery, qualitative methods, and human checks into a quality system designed to capture problems at the earliest occurrence.

Before each phase of completion, the Project Manager and the QC Manager will conduct a Quality Assurance review of the documents and data products to assure that the package is complete and that all aspects of the QC Policy have been followed.

An essential element of the overall QC approach will be documentation. The following items are integral to the documentation process:

- Utilization of the tracking stamp to document the review process.
- Completion of Submittal Sufficiency checklists to eliminate oversights and omissions.
- Retention and maintenance of all QC review materials as required.

Assuring quality will be an ongoing process, requiring regular updates as project processes move forward. Accordingly, after completion and submission of a project deliverables (GIS data, reports, etc), an internal "QC Debriefing" will be held between members of the QC review and design teams. The purposes of these meetings will be to:

1. determine how reviewers' concerns can be applied to future products and deliverables; and
2. allow the QC review process to run more effectively in the future.

Any modifications or revisions to the QC Plan will be adopted and revised as project deliverables are completed. The project deliverable include ArcGIS online link, QAPP, Scoring Rubric, Policy Review, Future Monitoring, and Wetlands and Open Space Study Report.

C.2 Reports to Management (EPA QA/R-5 C2)

Roberta Fennessy (Project Manager), Chuck Smith (Deputy Project Manager), and Gary Serviss (Principal-in-Charge) will maintain regular contact with project personnel to ensure project assignments are proceeding on schedule and that all tasks are completed. Reporting to project management will be performed as tasks and project deliverables are completed. Bi-weekly internal team progress meetings have been established for the duration of the project. Additionally, monthly progress meetings have been established with City and VHB for the duration of the project.

D

Group D: Data Review and Usability

D.1 Data Review, Verification, and Validation Requirements (EPA QA/R-5 D1)

GIS data collected as part of this project will be reviewed for completeness and accuracy by the VHB GIS manager and, to maintain data integrity, EPIC will provide an independent GIS QA consultant. The nature of the information collected does not require or warrant sub-sampling or methods typical of other types of quantitative field data collection.

D.2 Verification and Validation Methods (EPA QA/R-5 D2)

Not applicable.

D.3 Reconciliation with User Requirements (EPA QA/R-5 D3)

Not applicable.

References

Federal Geographic Data Committee (FGDC). 2009. Wetlands Mapping Standard. FGDC-STD-015-2009. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC. Available online: https://www.fws.gov/wetlands/documents/fgdc-wetlands-mapping-standard.pdf. Accessed: January 27, 2023.

FGDC. 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC. Available online: https://www.fgdc.gov/standards/projects/wetlands/nwcs-2013. Accessed: January 27, 2023.

US Environmental Protection Agency (EPA). 2001. EPA Requirements for Quality Assurance Project Plans. EPA, Office of Environmental Information. Washington, DC. Available Online: https://www.epa.gov/sites/default/files/2016-06/documents/r5-final_0.pdf. Accessed: January 20, 2023.

EPA. 2002. Guidance for Quality Assurance Project Plans. EPA, Office of Environmental Information. Washington, DC. Available Online: https://www.epa.gov/sites/default/files/2015-06/documents/g5-final.pdf. Accessed: January 20, 2023.

Appendix B – Policy Review and Recommendations

Policy Recommendations and Crosswalk

	Existing Policies in Current Location		Updated Language w/ New Locations	
	Reference No.	**Text Summary**	**Reference No.**	**Text Summary (FLU)**
No Change	P 1.1.6	Requirement for wetlands map in official map series.	P 1.1.6	Requirement for wetlands map in official map series.
New Policy	P 1.1.7	Requirement for uncertain FLUM boundaries along wetlands to follow the more restrictive permit between USACE and WMD.	P 1.1.7	Requirement for uncertain FLUM boundaries along wetlands to follow the more restrictive permit between USACE and WMD.
Text Change	P 2.3.3	Authorizes the Planning Official to determine the precise boundaries of Conservation Use areas, Resource Protection areas, and Transitional Wildlife Habitat Overlay areas shown on the Future Land Use Map based on appropriate environmental studies without amending this Growth Management Plan	P 2.3.3	Authorizes the Planning Official to determine the precise boundaries of Conservation Use areas, Resource Protection areas, and Transitional Wildlife Habitat Overlay areas shown on the Future Land Use Map based on appropriate environmental studies without amending this Growth Management Plan
	P 2.3.4	Requires Resource Protection Overlay Land Use Designation for environmentally sensitive areas, also subjects jurisdictional wetlands within that Land Use to FDEP, WMDs, and USACE. Non-jurisdictional wetlands are subject to Con Element 1.4.1 & 1.7.8.	P 2.3.4	Requires Resource Protection Overlay Land Use Designation for environmentally sensitive areas, also subjects jurisdictional wetlands within that Land Use to FDEP, WMDs, and USACE. Non-jurisdictional wetlands are subject to Con Element 1.4.1 & 1.7.8.
	P 2.3.5	Requires Transitional Wildlife Habitat Overlay Land Use Designation to identify where protected wetlands & upland strands provide habitat to wetland dependent species.	P 2.3.5	Requires Transitional Wildlife Habitat Overlay Land Use Designation to identify where protected wetlands & upland strands provide habitat to wetland dependent species.
	P 2.4.3	Allows wetland acreage to be considered for park land dedication if supports valuable or unique habitats.	P 2.4.3	Allows wetland acreage to be considered for park land dedication if supports valuable or unique habitats.
	P 2.4.7	Requires protected or retained wetland areas within Mixed-Use/Neighborhood areas to be designated with Conservation FLU Designation and protected according to the FLUE and Con Element.	P 2.4.7	Requires protected or retained wetland areas within Mixed-Use/Neighborhood areas to be designated with Conservation FLU Designation and protected according to the FLUE and Con Element.
	OBJ 2.5	Objective to protect wetlands within Conservation FLU designations and to have standards to change from Conservation to other designations. Additionally, to maintain 20% open space city-wide.	OBJ 2.5	Objective to protect wetlands within Conservation FLU designations and to have standards to change from Conservation to other designations. Additionally, to maintain 20% open space city-wide.
	P 2.5.1	Requirements to change from Con to other FLU: Environmental Assessment per Con Policy 1.4.1, UMAM scoring report, tree survey, Permit approvals from WMD & USACE. City may hire environmental consultant to review application.	P 2.5.1	Requirements to change from Con to other FLU: Environmental Assessment per Con Policy 1.4.1, UMAM scoring report, tree survey, Permit approvals from WMD & USACE. City may hire environmental consultant to review application.
	P 2.5.2	Review criteria for proposed amendments described in 2.5.1.	P 2.5.2	Review criteria for proposed amendments described in 2.5.1.
	S 3.5	protection area buffer requirements for undeveloped area of Subarea 3.	S 3.5	protection area buffer requirements for undeveloped area of Subarea 3.
	S 24.6	Includes wetland buffer requirements within Subarea 24 (25' or USACE/WMD, whichever is greatest).	S 24.6	Includes wetland buffer requirements within Subarea 24 (25' or USACE/WMD, whichever is greatest).
	S 35.5	Subarea 35: PD requirements regarding natural features to be treated as amenities, large wetlands and open spaces to form corridors, and preservation of natural buffers. Roads that cross wetland systems shall incorporate bridges/appropriate features to maintain wildlife corridors.	S 35.5	Subarea 35: PD requirements regarding natural features to be treated as amenities, large wetlands and open spaces to form corridors, and preservation of natural buffers. Roads that cross wetland systems shall incorporate bridges/appropriate features to maintain wildlife corridors.
	S 35.6(a)	Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.	S 35.6(a)	Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.
	S 38.1	Subarea 38: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors. Also sets aside open space.	S 38.1	Subarea 38: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors. Also sets aside open space.
	S 38.2	Subarea 38: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.	S 38.2	Subarea 38: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.
	S 39.3	Subarea 39: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.	S 39.3	Subarea 39: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.
	S 39.5	Reiterates the requirement to maintain wildlife corridors.	S 39.5	Reiterates the requirement to maintain wildlife corridors.
	S 40.1	Subarea 40: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.	S 40.1	Subarea 40: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.
	S 40.8	Subarea 40: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.	S 40.8	Subarea 40: Natural features shall be treated as amenities. Roads that cross major wetland systems shall incorporate bridges or oversized culverts to maintain wildlife corridors.
	4.1.9	Southeast Plan, Conservation Use/Resource Protection: Identifies Primary Conservation Network and requires adherence to all policies of the Conservation Element. Additionally, requires wildlife corridors, prevention of nuisance species. Requirement for mitigation to impacts.	4.1.9	Southeast Plan, Conservation Use/Resource Protection: Identifies Primary Conservation Network and requires adherence to all policies of the Conservation Element. Additionally, requires wildlife corridors, prevention of nuisance species. Requirement for mitigation to impacts.
	4.1.11	Allows for removal of the Con FLU on OIA property, if consistent with Con Element P 1.4.4.	4.1.11	Allows for removal of the Con FLU on OIA property, if consistent with Con Element P 1.4.4.

Existing Policies in Current Location		Updated Language w/ New Locations	
Reference No.	**Summary**	**Reference No.**	**Summary (CON)**
P 1.1.7	Implements best practices identified by Central Florida Water Initiative Regional Water Supply Facilities Plan (2017)	P 1.1.7	Implements best practices identified by Central Florida Water Initiative Regional Water Supply Facilities Plan (2017)
Obj 1.4	Defines "Environmentally Sensitive Lands" as including wetlands. As well as requiring the implementation of GMP policies into the LDC	Obj 1.4	Defines "Environmentally Sensitive Lands" as including wetlands. As well as requiring the implementation of GMP policies into the LDC
P 1.4.1	Protects ESL through the use of various FLU designations and Zoning districts. Requires environmental assessment for all projects requiring MPB and City Council Review, as well as areas within designated RP or Con districts. Establishes three levels of environmental assessment with levels B and C requiring identification of wetlands. Defers regulatory oversight of wetlands as part of for formerly used defense sites to State and Federal regulators. Staff may make the following recommendations following the completion of the environmental assessment: • Protection of ESL consistent with agency standards • Minimized impact through site design	P 1.4.1	Protects ESL through the use of various FLU designations and Zoning districts. Requires environmental assessment for all projects requiring MPB and City Council Review, as well as areas within designated RP or Con districts. Establishes two levels of environmental assessment with level 2 requiring identification of wetlands. Staff may make the following recommendations following the completion of the environmental assessment: • Protection of ESL consistent with agency standards • Minimized impact through site design

	• Buffers and conservation easements • Request other permitting agencies to protect valuable wetlands • Contribution to the Environmental trust fund		• Buffers, conservation easements, and additional mitigation strategies • Request other permitting agencies to protect valuable wetlands • Contribution to the Environmental trust fund
P 1.4.2	Allows for penalties for the degradation or destruction of identified wetlands.	P 1.4.2	Allows for penalties for the degradation or destruction of identified wetlands.
P 1.4.3	Coordination with USACE, WMDs for wetland regulations.	P 1.4.3	Coordination with USACE, WMDs for wetland regulations.
P 1.4.4	Tiered approach to wetlands regulation. Makes note of 1992 wetland analysis. • Tier 1: Protected wetlands. Removal and alteration only allowed to accommodate low density/intensity uses (conservation, Parks, or 1du/5ac residential). Allows for expansion of OIA with required DEP/SFWMD permits. Alterations to these areas is only allowed where no practical alternative exists. Requires additional mitigation outlined in Ch 63 LDC. • Tier 2: Wetland areas greater than 0.5ac (not protected). Protection consistent with permitting agencies, City reserves the right to provide comments to agency, no city-issued permits without authorization from regulators • Tier 3: Areas smaller than 0.5ac. Requires city consideration whether area is ESL, if so notification of WMD may be required. These tiers only apply to lands assessed as part of the 1992 study. Environmental assessments are required for annexed lands. Also calls for wetlands map to be amended following any "protected" classifications.	P 1.4.4	Tiered approach to wetlands regulation. Makes note of 1992 wetland analysis. • Tier 1: Wetlands with CON FLUM. Removal and alteration only allowed to accommodate low density/intensity uses (conservation, Parks, or 1du/5ac residential). Alterations to these areas is only allowed where no practical alternative exists. Requires additional mitigation outlined in Ch 63 LDC. • Tier 2: Other Wetlands. Protection consistent with permitting agencies and new CON Policies, City reserves the right to provide comments to agency, no city-issued permits without authorization from regulators Environmental assessments are required for annexed lands, Tier 1 wetlands shall be placed in CON FLUM.
P 1.4.5	Requirements for buffer areas	P 1.4.5	Requirements for buffer areas, generally. Additional requirements shall be found in Ch. 63 LDC.
P 1.4.6	Allows for wetland areas to be included for net density calculations, not to exceed 40%.	New	Defers regulatory oversight of wetlands as part of for formerly used defense sites to State and Federal regulators.
P 1.4.7	Prohibition of waste disposal sites, septic tanks, junk yards, and tank farms in wetland areas.	New	Allows for expansion of OIA with required DEP/SFWMD permits.
P 1.4.8	Prohibition of new lots or subdivisions within protected or preserved wetlands	New	LDC shall have requirements for Wetland Management Plan.
P 1.4.9	Describes the placement of Transitional Wildlife Habitat Overlay FLU designation. 50-200ft from extent of protected wetlands. Limits density within the overlay to 5.7 du/ac or 0.25 FAR. Allows for density transfer, clustering at higher than max density/intensity, and non-clustering at 1/2 du/ac.	P 1.4.6	Allows for wetland areas to be included for net density calculations, not to exceed 40%.
Obj 1.5	Empowers Land Development Code to minimize environmental harms	P 1.4.7	Prohibition of waste disposal sites, septic tanks, junk yards, and tank farms in wetland areas.
P 1.5.3	Prevents the removal of wetland vegetation without protection strategies.	P 1.4.8	Prohibition of new lots or subdivisions within protected or preserved wetlands
P 1.5.4	Restates a need to protect vegetation	P 1.4.9	Describes the placement of Transitional Wildlife Habitat Overlay FLU designation. 50-200ft from extent of protected wetlands. Limits density within the overlay to 5.7 du/ac or 0.25 FAR. Allows for density transfer, clustering at higher than max density/intensity, and non-clustering at 1/2 du/ac.
P 1.7.4	Parks and Rec shall protect and maintain Orlando Wetlands Park, OUC Wilderness Park, Mayor Langford Park, Harry P. Leu Gardens, Greenwood Urban Wetland, Turkey Lake Park, Dickson Azalea Park, Constitution Green and the Herndon Nature Park.	Obj 1.5	Empowers Land Development Code to minimize environmental harms
P 1.7.5	Reiteration of the various FLU designations and Zoning districts to protect environmentally sensitive lands	P 1.5.3	Prevents the removal of wetland vegetation without protection strategies.
P 1.7.6	Statement of cooperation with OC regarding wetland protection, consistent regulations.	P 1.5.4	Restates a need to protect vegetation
P 1.7.9	Wekiva Overlay FLU designation details	P 1.7.4	Parks and Rec shall protect and maintain Orlando Wetlands Park, OUC Wilderness Park, Mayor Langford Park, Harry P. Leu Gardens, Greenwood Urban Wetland, Turkey Lake Park, Dickson Azalea Park, Constitution Green and the Herndon Nature Park.
P 1.7.10	Does not allow for density/intensity bonuses in RP areas within Wekiva Overlay	P 1.7.5	Reiteration of the various FLU designations and Zoning districts to protect environmentally sensitive lands
		P 1.7.6	Statement of cooperation with OC regarding wetland protection, consistent regulations.
		P 1.7.9	Wekiva Overlay FLU designation details
		P 1.7.10	Does not allow for density/intensity bonuses in RP areas within Wekiva Overlay

Existing Policies in Current Location		Updated Language w/ New Locations	
Reference No.	**Summary (LDC)**	**Reference No.**	**Summary (LDC)**
58.1	Footnote: building setback from retained wetland is 50 ft.	58.1	Footnote: building setback from retained wetland is 50 ft.
2L	**Conservation District**	**2L**	**Conservation District**
58.31	Relationship to GMP, provide standards for land use categories located outside of activity centers and mixed-use corridors.	58.31	Relationship to GMP, provide standards for land use categories located outside of activity centers and mixed-use corridors.
58.312	Zoning district is for the purpose of conserving or protecting natural resources or environmental quality	58.312	Zoning district is for the purpose of conserving or protecting natural resources or environmental quality
58.313	Requires conservation areas, wetlands, and buffers to be depicted on MPs, DOs, DAs, Plats. Requires conservation easements. Requires consistency with County, State, Federal Permits	58.313	Requires conservation areas, wetlands, and buffers to be depicted on MPs, DOs, DAs, Plats. Requires conservation easements. Requires consistency with County, State, Federal Permits
2W	**Resource Protection Overlay**	**2W**	**Resource Protection Overlay**
58.42	Relationship to GMP	58.42	Relationship to GMP
58.421	Intent of the RP Overlay District is to provide information by identifying the approximate locations of major environmental features	58.421	Intent of the RP Overlay District is to provide information by identifying the approximate locations of major environmental features
58.422	Boundaries of the RP Overlay District may be altered administratively upon a rezoning ordinance or submission by the property owner of an approved WMD, DER, and/or ACOE permit.	58.422	Boundaries of the RP Overlay District may be altered administratively upon a rezoning ordinance or submission by the property owner of an approved WMD, DER, and/or ACOE permit.
2AH	**Wekiva Overlay**	**2AH**	**Wekiva Overlay**
58.499.8	Implements GMP Conservation Element including those within the Wekiva Study Area	58.499.8	Implements GMP Conservation Element including those within the Wekiva Study Area
58.499.9	Intent	58.499.9	Intent
58.499.10	The boundaries of the W Overlay District shall be consistent with the W Overlay FLU	58.499.10	The boundaries of the W Overlay District shall be consistent with the W Overlay FLU

58.499.11	District Standards	58.499.11	District Standards
58.499.12	Additional district requirements: Environmental Assessment; Soils, recharge areas, Flora & fauna, wetland and sensitive natural habitats	58.499.12	Additional district requirements: Environmental Assessment (Wetland Assessment); Soils, recharge areas, Flora & fauna, wetland and sensitive natural habitats
60 Part 1	**Subdivision and Landscaping**	**60 Part 1**	**Subdivision and Landscaping**
60.226	Development sites abutting natural surface waters which do not have existing, viable littoral zones, shall be planted with appropriate native aquatic plants as shown in the Approved Plant List; All requirements of Chapter 63 also apply	60.226	Development sites abutting natural surface waters which do not have existing, viable littoral zones, shall be planted with appropriate native aquatic plants as shown in the Approved Plant List; All requirements of Chapter 63 also apply
63 Part 1	**Environmental Protection**	**63 Part 1**	**Environmental Protection**
63.1	Relationship with GMP.	63.1	Relationship with GMP.
63.101	Protect the health, safety, and welfare of the residents of the City of Orlando as well as to protect natural areas, by regulating potential nuisance features of certain land uses and regulating development activity in areas identified as natural hazards or natural resources.	63.101	Protect the health, safety, and welfare of the residents of the City of Orlando as well as to protect natural areas, by regulating potential nuisance features of certain land uses and regulating development activity in areas identified as natural hazards or natural resources.
63.102	All uses in all districts shall conform to the requirements of this Chapter.	63.102	All uses in all districts shall conform to the requirements of this Chapter.
2C	**Floodplains**	**2C**	**Floodplains**
63.22	Floodplains, generally	63.22	Floodplains, generally
63.221	Applicability	63.221	Applicability
63.222	Permits; Other permits required: 1.The St. Johns River or South Florida Water Management Districts; section 373.036, Florida Statutes.2.Florida Department of Health for onsite sewage treatment and disposal systems; section 381.0065, Florida Statutes and Chapter 64E-6, Florida Administrative Code.3.Florida Department of Environmental Protection for activities subject to the Joint Coastal Permit; section 161.055, F.S.4.Florida Department of Environmental Protection for activities that affect wetlands and alter surface water flows, in conjunction with the U.S. Army Corps of Engineers; Section 404 of the Clean Water Act.5. Federal permits and approvals.	63.222	Permits; Other permits required: 1.The St. Johns River or South Florida Water Management Districts; section 373.036, Florida Statutes.2.Florida Department of Health for onsite sewage treatment and disposal systems; section 381.0065, Florida Statutes and Chapter 64E-6, Florida Administrative Code.3.Florida Department of Environmental Protection for activities subject to the Joint Coastal Permit; section 161.055, F.S.4.Florida Department of Environmental Protection for activities that affect wetlands and alter surface water flows, in conjunction with the U.S. Army Corps of Engineers; Section 404 of the Clean Water Act.5. Federal permits and approvals.
2I	**Surface Water Bodies and Wetlands**	**2I**	**Surface Water Bodies and Wetlands**
63.280	Boundary determination standards apply when requirements of this chapter say so.C89	63.280	Boundary determination standards apply when requirements of this chapter say so.C89
63.281	Planning official is reviewing authority for NHWE of wetlands, review should include botanical, physical, geomorphological indicators, water level records, and controlled lake elevations	63.281	Planning official is reviewing authority for NHWE of wetlands, review should include botanical, physical, geomorphological indicators, water level records, and controlled lake elevations
63.282	Existing determinations of MHWL does not preclude new determinations	63.282	Existing determinations of MHWL does not preclude new determinations
63.283	An applicant for a building permit, zoning approval, variance or other approval may apply to change previously determined elevation or boundary	63.283	An applicant for a building permit, zoning approval, variance or other approval may apply to change previously determined elevation or boundary
2J	**Wetlands**	**2J**	**Wetlands**
63.29	Wetlands requirements apply to all areas determined to be wetlands upon an inspection and review of appropriate data as part of development applications	63.29	Wetlands requirements apply to all areas determined to be wetlands upon an inspection and review of appropriate data as part of development applications
63.291	Wetlands determined to be waters of state are subject to state regulations	63.291	Wetlands determined to be waters of state are subject to state regulations
63.292	Wetlands in the City of Orlando are classified as either Protected Wetlands, Transitional Wetlands or Altered Wetlands as determined by planning manager on case-by-case basis as part of a development order.	New	Wetland Assessment: what's required, when required, how long assessment is valid for.
63.293	Portion of area to be retained in each classification: (Protected: 100%, Transitional 60%, Altered 0%) prohibits alteration of retained wetlands, allows for open space and transfer of development rights. Requires environmental specialist to report optimum levels and maintenance for retained wetlands.	63.292	Wetlands in the City of Orlando are classified as either Protected Wetlands, Transitional Wetlands or Altered Wetlands as determined by planning official on case-by-case basis based on completed Wetland Assessment.
63.294	Buffer requirements for retained wetlands: (protected: 100 ft, others: 50 ft)	63.293	Portion of area to be retained in each classification: (Protected: 100%, Transitional 60%, Altered 0%) and requires onsite mitigation or ETF payment for impacts. prohibits alteration of retained wetlands, allows for open space and transfer of development rights. Requires CON FLU for density transfers. Requires environmental specialist to report optimum levels and maintenance for retained wetlands. Requires land management consistent with any outside agency permits and requires city to be party to such agreements.
		New	Required onsite mitigation: Additional mitigation requirements for non-CON wetlands, based on wetlands scorecard.
		New	Application of Mitigation Scores for less than 30: Payment for impacts Scores 30-59: Payment for impacts, rehabilatation for preserved wetlands. *Scores 60-75: 75 ft average buffer, rehabilatation for preserved wetlands, maintenance of onsite flows *Scores of 75+ : 150 ft average buffer, rehabilatation for preserved wetlands, maintenance of onsite flows, CE requirement, and submit a wetland management plan. *: if this is annexed land wetland must be placed into CON FLUM.
		New	Payment for Impacts.
		63.294	Buffer requirements for retained wetlands: minimum buffer requirements in Sec 63.xxx. Minimum building setback requirements. Requirement for native plant communities in buffer areas.
		New	Onsite Enhancement Requirements
		New	Onsite Restoration Requirements
		New	Onsite Creation Requirements

New	Conservation Easements Requirements
New	Management Plan Requirements
Sec 66	**Definitions**
	Definitions for Protected, Retained, Transitional wetlands

Appendix C – Wetlands Scoring Rubric

Wetlands Assessment Rubric

Wetland Assessment Guidance Document

CITY OF ORLANDO

City of Orlando Wetland Assessment Form

Project Name:			Application Number:		
Wetland (Site) ID:	FLUCFCS and Description:	NWI Classification:	Special Flood Hazardous Area (Zone):	SHWE* (if known):	Impact Type (Dredge/Fill/Other):
			Base Flood Elevation (if known):	SHGWE** (if known):	
Regulatory Basin:	Impaired/TMDL Basin:		Regulatory Buffer (Wekiva/Econ Rivers):	Incorporated (Yes/No):	Acres:
Wetland Description (include vegetation, hydrology connections, geographic location):					
Significant or Unique Features Nearby (Lakes, Rivers, Parks, etc.):			Previous Applications/Conservation Easements (if known):		

	All boxes must contain a minimum score of 1 or maximum score of 5.	**Point Value (1 to 5)**
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
1	Does the wetland have an upland buffer with an average width of 25 feet?	
2	Do the adjacent uplands provide wildlife habitat?	
3	Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?	
4	Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?	
5	What is percent of the wetland's regulatory basin is covered by impervious surfaces?	
	Subtotal	0
B. Hydrology & Water Quality		
6	Is the wetland hydrologically connected to other wetlands or wetland habitats?	
7	Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?	
8	Is the wetland free of ditching, hydrologic impediments, and flow restrictions?	
9	Does wetland provide benefits to downstream habitats?	
10	Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?	
	Subtotal	0
C. Wetland Vegetation Community and Structure		
11	The wetland size in acres.	
12	Is the wetland well vegetated? If forested, does the wetland exhibit full canopy closure? If herbaceous or shrub, does the wetland exhibit full ground or shrub cover?	
13	Does the wetland contain nuisance and/or exotic species?	
14	Is the wetland community appropriate?	
15	Is the wetland vegetive community healthy?	
	Subtotal	0
D. Other Wetland Functions and Values		
16	Is the wetland unique or rare for the region?	
17	Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?	
18	Does the wetland have recreational value?	
19	Is the wetland utilized by protected species?	
20	Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?	
	Subtotal	0
	Total Score out 100	0

Assess by:	Signature:	Date of Assessment(s):

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Table 1 provides the scoring guidance for the City of Orlando Wetland Assessment Form. The Wetland Assessment Form must have a minimum score of 1 and maximum score of 5. For example, if a score falls between a 3 and 5, then the score maybe a 4. These scores must be provided for every question to accurately assess the wetland. Each wetland must be assessed individually, and the Wetland Assessment Form(s) must be provided to the City in support of the Planning and Zoning Applications.

Table 1: Scoring Guidance for the Wetland Assessment Form		
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
1	**Does the wetland have an upland buffer with an average width of 25 feet?**	**Point Value (1 to 5)**
The wetland buffer is intact, equal to or greater than 25 feet, not disturbed by agriculture, developed or other man-made activities, with less than 5% coverage of exotic species.		**5**
Wetland buffer is less than 25 feet but greater than 15 feet with minimal disturbance by agriculture, developed or other man-made activities, and less than 5% coverage of exotics.		**3**
Wetland has no buffer.		**1**
2	**Do the adjacent uplands provide wildlife habitat?**	
Adjacent uplands are conservation areas, park lands, or other lands protected from development, which show signs of wildlife utilization. (nests, trees cavities, burrows, tracks, scat, etc.).		**5**
Adjacent uplands are open land, agricultural lands, natural occurring lands (pine flatwoods, upland forested, etc.), or other disturbed lands but have evidence of wildlife utilization (nests, trees cavities, burrows, tracks, scat, etc.).		**3**
Adjacent uplands developed or disturb lands with minimal evidence of wildlife usage.		**1**
3	**Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?**	
The wetland is directly connected to a designated wildlife corridor and/or other known wildlife movement corridors.		**5**
The wetland shows signs of wildlife movement (trails and tracks) but is indirectly connected to designated wildlife corridor or other known wildlife movement areas.		**3**
The wetland is isolated with limited or no wildlife movement along a corridor to or from other natural systems.		**1**
4	**Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?**	
The adjacent land provides a natural watercourse or overland flow in and/or out of the wetland with minimal restriction or disturbance.		**5**
The wetland watercourse/overland flow has been altered but flow in and/or out of the wetland is somewhat maintained. Alteration may include culverting, ditching, and channelization, etc.		**3**
The adjacent land is impounded or dewatering the wetland.		**1**

Table 1: Scoring Guidance for the Wetland Assessment Form

5	**What is percent of the wetland's regulatory basin is covered by impervious surfaces?**	
The wetland is located within a regulatory basin with less than 10% of the basin is covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)		**5**
The wetland is located within a regulatory basin with great than 10% but less 25% covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)*		**3**
The wetland is located within a regulatory basin with greater than 25% of the basin is covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)*		**1**
B. Hydrology & Water Quality		
6	**Is the wetland hydrologically connected to other wetlands or wetland habitats?**	
The wetland is directly connected or abutting wetlands that are under a conservation easement, a park, or on other lands protected from development. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) that is directly connected to or abutting lands that are under a conservation easement, in a park, or on other lands protected from development.		**5**
The wetland is indirectly connected to other wetland via surface waters, canals, or ditches that are under a conservation easement, in a park, or on other lands protected from development. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) that is indirectly connected to lands that are under a conservation easement, in a park, or on other lands protected from development.		**3**
The wetland has been isolated from other wetlands systems and hydrology has been altered by development or other man-made disturbances. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and the hydrology has been altered (either by dewatering or increase water into the system) by development or other man-made disturbance.		**1**
7	**Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?**	
The wetland is directly connected to WOTUS/State waters through riparian wetlands along a named river(s) or stream(s) with minimal hydrological disturbance. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is within 100 feet of WOTUS or State Waters.		**5**
The wetland is indirectly connected to WOTUS/State through surface waters, canals, or ditches. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is greater than 100 feet but less than 500 feet from WOTUS or State Waters.		**3**
The wetland is not connected to WOTUS/State through surface waters, canals, or ditches and has significant hydrological disturbance. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is greater than 500 feet of WOTUS or State waters with evidence of significant hydrological disturbance.		**1**

Table 1: Scoring Guidance for the Wetland Assessment Form

8	**Is the wetland free of ditching, hydrologic impediments, and flow restrictions?**	
The wetland relatively free of ditching, flow restriction or impediments, and the hydrological function/hydroperiod is appropriate.		**5**
The wetland has some of ditching and/or, flow restriction or impediments, but the hydrological function/hydroperiod is somewhat maintained.		**3**
The wetland shows evidence of hydrological/hydroperiod disturbance that has altered the hydrology causing a shift in the vegetative community.		**1**
9	**Does wetland provide benefits to downstream habitats?**	
The wetland provides significant benefit to downstream habitats through nutrient transport and water quality.		**5**
The wetland provides some benefit to downstream habitats through nutrient transport and water quality.		**3**
The wetland provides minimal benefit to downstream habitats through nutrient transport and water quality.		**1**
10	**Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?**	
The wetland is not receiving untreated stormwater from adjacent land uses. No evidence of erosion and/or sedimentation. The water in the wetland shows no evidence of unusual turbidity algal blooms, sheen, or other observational indicators of water quality.		**5**
The wetland receives minimal amounts of untreated stormwater from areas adjacent land uses and/or there is some evidence of erosion and/or sedimentation, and/or the water in the wetland is slightly turbid, moderate evidence of algal blooms, moderate sheen, or other observational indicators of water quality.		**3**
The wetland is receiving significant amounts of the untreated stormwater runoff, and/or shows erosion and sedimentation, and/or the water is turbid, significant evidence of algal blooms, or other observational indicators of water quality.		**1**
C. Wetland Vegetation Community and Structure		
11	**The wetland size in acres.**	
The wetland is greater than five acres.		**5**
The wetland is less than five acres, but more than one acre.		**3**
The wetland is less than one acre.		**1**
12	**Is the wetland well vegetated?**	
Forested:		
The wetland exhibits canopy closure greater than 75% during the growing season.		**5**
The canopy is partially closed with less than 75% but more than 50% closure during the growing season.		**3**
The canopy is open with less than 50% canopy closure during the growing season.		**1**
Herbaceous/Shrub:		

Table 1: Scoring Guidance for the Wetland Assessment Form	
The wetland exhibits ground or shrub cover greater than 75% during the growing season.	**5**
The wetland exhibits partial ground or shrub cover less than 75% but more than 50% during the growing season.	**3**
The wetland is open with less than 50% ground cover during the growing season.	**1**
13 **Does the wetland contain nuisance and/or exotic species?**	
The wetland contains less than 5% coverage of nuisance and/or exotic species in any strata (herbaceous, shrub, and canopy).	**5**
The wetland contains more than 5% but less the 15% of nuisance and/or exotic species in any stratum (herbaceous, shrub, and canopy).	**3**
The wetland contained more than 15% nuisance and/or exotic species in any stratum (herbaceous, shrub, and canopy).	**1**
14 **Is the wetland community appropriate?**	
The wetland's vegetative community has not been impacted by development, earthmoving, agricultural activities, or impounded by water and the vegetative community is intact.	**5**
The wetland's vegetative community has evidence of disturbance from development, earthmoving, agricultural activities, and/or impounded by water but the community structure is generally intact.	**3**
The wetland's community has been altered by disturbance from development, earthmoving, agricultural activities, and/ impounded by water that is causing a shift in vegetative community structure.	**1**
15 **Is the wetland vegetive community healthy?**	
The vegetative community appears healthy with signs of regeneration and recruitment, and appropriate size and normal distribution.	**5**
The vegetative community appears generally healthy with signs of regeneration and recruitment, appropriate size and distribution, with less than 10% of the native species appearing stressed.	**3**
The vegetative community appears stressed with limited signs of regeneration and recruitment, and/or inappropriate size and distribution, and/or more than 10% native species observed appeared stressed.	**1**
D. Other Wetland Functions and Values	
16 **Is the wetland unique or rare for the region?**	
The wetland contains unique vegetation, such as submerged aquatic vegetation (eel grass, southern naiad, etc.), or is part of the aquifer recharge areas, sink hole/karst features, or other unique geographic formations.	**5**
The wetland contains unique vegetation, such as submerged aquatic vegetation (eel grass, southern naiad, etc.), but also contains some (less than 10%) exotic species (hydrilla, elodea) or is not located aquifer recharge areas, sink hole/karst features, or other unique geographic formations, but also contains some (less than 10%) exotic species (hydrilla, elodea).	**3**

Table 1: Scoring Guidance for the Wetland Assessment Form		
The wetland does not contain unique vegetation, nor is it located aquifer recharge areas, sink hole/karst features, or other unique geographic formations but also contains some (more than 10%) exotic species.		**1**
17	**Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?**	
The wetland abuts or directly connects to historically or culturally significant wetlands.		**5**
The wetland is indirectly connected to historically or culturally significant lands but is more than one mile from the lands.		**3**
The wetland is not directly or indirectly connected, nor within one mile of historically or culturally significant lands.		**1**
18	**Does the wetland have recreational value?**	
The wetland abuts or directly connects to publicly accessible recreational waterways (i.e. public boats and kayak launches).		**5**
The wetland is indirectly connected to publicly accessible recreational waterways.		**3**
The wetland is not directly or indirectly connected to publicly accessible recreational waterways.		**1**
19	**Is the wetland utilized by protected species?****	
Protected species have been documented and/or observed within the wetland and it contains suitable habitat.		**5**
Suitable habitats for protected species is located within the wetland but no documented occurrence or observations within 500 feet from the wetland.		**3**
No protected species habitat is within or adjacent to the wetland. No documented occurrences or observations of protected species within 1,000 feet of the wetland.		**1**
20	**Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?**	
The wetland contains hummocks, channels, refugia and/or other natural topographic features found in wetlands.		**5**
The wetland contains hummocks, channels, refugia and/or other natural topographic features found in wetlands and may include some features that are man-made (such as berms and ditching) if the features do not cause adverse impacts.		**3**
The wetland lacks natural occurring hummocks, channels, refugia and/or other natural topographic feature, and/or is highly disturbed by man-made features (such as ditching and berms).		**1**

Note(s):

*Impervious estimates are based on EPA's 8 Tools of Watershed Protection in Developing Areas. https://cfpub.epa.gov/watertrain/moduleframe.cfm?parent_object_id=1280#:~:text=Impervious%20cover%20is%20defined%20as,rainfall%20into%20underlying%20soils%2Fgroundwater.

**Protected Species are defined as those species (including plants) listed by USFWS FWC, and FDACS as Threatened or Endangered. Protected species also includes species listed by Florida Administrative Code (FAC) including Bald Eagle, Florida Black Bear, Bats.

Appendix D – Future Monitoring Assessment

Wetlands Dashboard

The wetlands Dashboard is a digital asset that has been transferred and hosted by the City of Orlando GIS department.

Appendix E – Community Outreach

Stakeholder Focus Group Meeting Minutes

Meetings 1-3 City Staff Consolidated Minutes

Meeting 4 Development Community Meeting Minutes

Meeting 5 State and County Agencies Meeting Minutes

Meeting 6 Community Organizations Meeting Minutes

Community Meeting Minutes

Eagle's Nest Park Field Meeting Minutes

Town Hall Meetings – Consolidated Minutes

Meeting Notes

Place: Microsoft Teams
Date: May to June 2023
Project #: 64334.00

Notes Taken by: E. Porter
Re: City of Orlando Wetland and Open Space Study – City Staff Stakeholder Focus Groups 1-3

PROJECT TEAM

Consultant (VHB)

Roberta Fennessy	Chuck Smith	James Hartsfield
Emily Porter	Stephen Osiecki	Hayden Germanis

City of Orlando

Michaelle Petion	Mark Sees

SUMMARY

Three virtual stakeholder focus groups were held with representatives from various city departments to present and gather feedback on the draft Wetlands Assessment tools as part of the overall Wetland and Open Space Study. Overall, feedback from these meetings was supportive of the draft assessment tools providing some minor text and formatting changes to improve usability for city staff. Additionally, participants emphasized the importance of including technical departments (i.e. Public Works) in the permit review process, ensuring wetland assessment is addressed as early as possible for development projects, and coordinating the scoring process and code changes with Zoning code.

Meeting Dates / Participants

*A complete list of participants is included as **Appendix A.***

- Meeting 1 was held on May 3 and included the Project Team for the Wetlands Study.
- Meeting 2 was held on May 11 and included various city staff departments.
- Meeting 3 was held on May 17 and included various city staff departments.

Agenda

The following agenda was used for each meeting:

1. Intro Presentation & Group Poll
2. Wetlands Dashboard Demo
3. Rubric Presentation
4. Breakout Activity – Development Application Simulation
5. Report Out / Open Discussion & Next Steps

225 E. Robinson Street, Suite 300
Landmark Center Two
Orlando, FL 32801-4326
P 407.839.4006

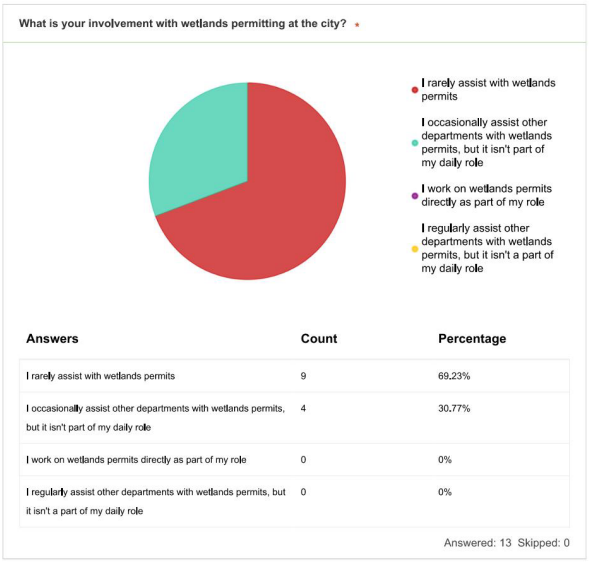
Meeting Notes

MINUTES

Introduction & Group Poll

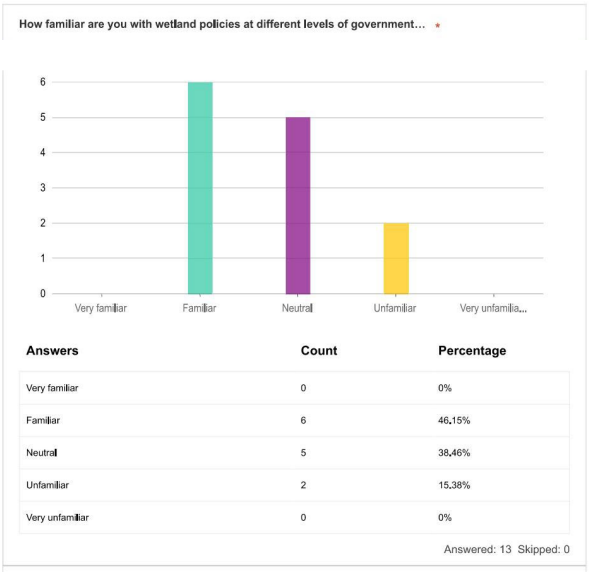
Emily Porter provided a brief introduction on the Wetlands and Open Space Study Project, wetlands protection, and the purpose of the focus groups.

A group poll was conducted to gather feedback on participants involvement with wetlands permitting and general knowledge of wetlands protection.



Answers	Count	Percentage
I rarely assist with wetlands permits	9	69.23%
I occasionally assist other departments with wetlands permits, but it isn't part of my daily role	4	30.77%
I work on wetlands permits directly as part of my role	0	0%
I regularly assist other departments with wetlands permits, but it isn't a part of my daily role	0	0%

Answered: 13 Skipped: 0



Answers	Count	Percentage
Very familiar	0	0%
Familiar	6	46.15%
Neutral	5	38.46%
Unfamiliar	2	15.38%
Very unfamiliar	0	0%

Answered: 13 Skipped: 0

Figure 1: Group Poll Results, Meetings 1-3

Wetlands Dashboard Demo

Stephen Osiecki presented a demonstration of the Wetlands Dashboard in GIS followed by a brief Q&A.

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Meeting Notes

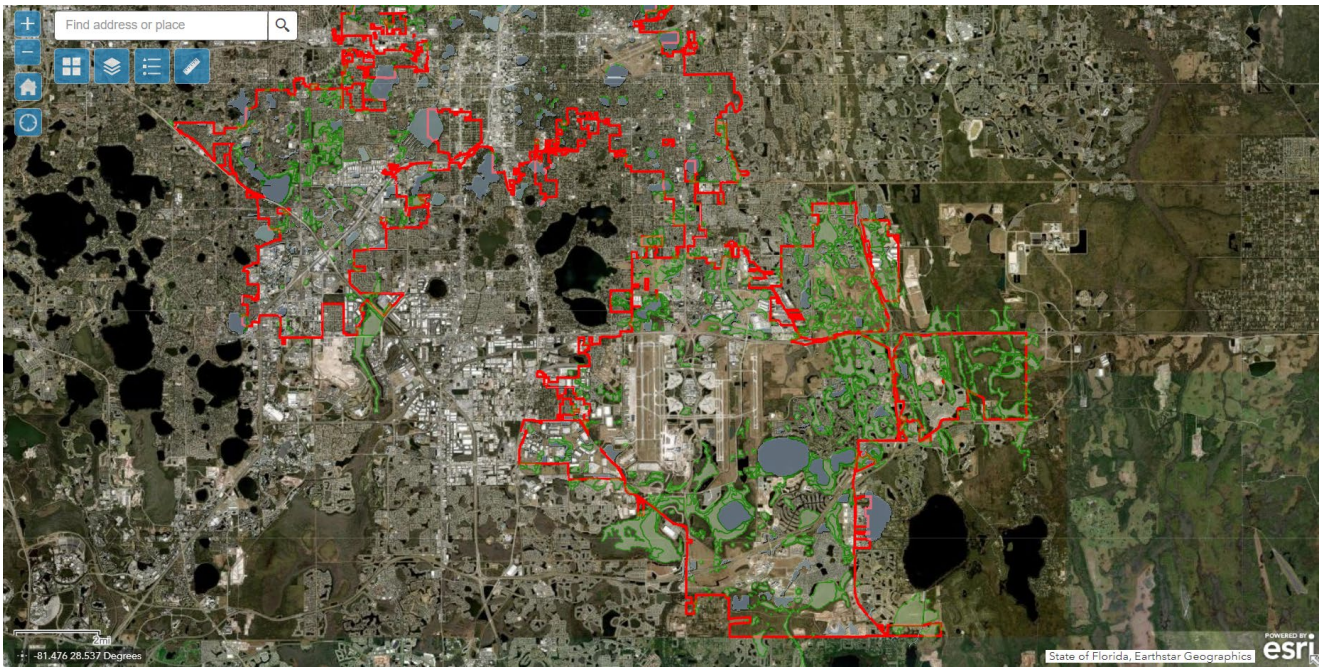

Figure 2: Wetlands Dashboard

Rubric Presentation

Chuck Smith presented the scoring rubric followed by a brief Q&A.

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Meeting Notes

CITY OF ORLANDO

City of Orlando Wetland Assessment Form

Project Name:			Application Number:		
Wetland (Site) ID:	FLUCFCS and Description:	NWI Classification:	Special Flood Hazardous Area (Zone):	SHWE* (if known):	Impact Type (Dredge/Fill/Other):
			Base Flood Elevation (if known):	SHGWE** (if known):	
Regulatory Basin:	Impaired/TMDL Basin:		Regulatory Buffer (Wekiva/Econ Rivers):	Incorporated (Yes/No):	Acres:
Wetland Description (include vegetation, hydrology connections, geographic location):					
Significant or Unique Features Nearby (Lakes, Rivers, Parks, etc.):			Previous Applications/Conservation Easements (if known):		

All boxes must contain a minimum score of 1 or maximum score of 5.		**Point Value (1 to 5)**
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
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2	Do the adjacent uplands provide wildlife habitat?	
3	Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?	
4	Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?	
5	What is percent of the wetland's regulatory basin is covered by impervious surfaces?	
	Subtotal	0
B. Hydrology & Water Quality		
6	Is the wetland hydrologically connected to other wetlands or wetland habitats?	
7	Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?	
8	Is the wetland free of ditching, hydrologic impediments, and flow restrictions?	
9	Does wetland provide benefits to downstream habitats?	
10	Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?	
	Subtotal	0
C. Wetland Vegetation Community and Structure		
11	The wetland size in acres.	
12	Is the wetland well vegetated?	
	If forested, does the wetland exhibit full canopy closure?	
	If herbaceous or shrub, does the wetland exhibit full ground or shrub cover?	
13	Does the wetland contain nuisance and/or exotic species?	
14	Is the wetland community appropriate?	
15	Is the wetland vegetive community healthy?	
	Subtotal	0
D. Other Wetland Functions and Values		
16	Is the wetland unique or rare for the region?	
17	Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?	
18	Does the wetland have recreational value?	
19	Is the wetland utilized by protected species?	
20	Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?	
	Subtotal	0
	Total Score out 100	0

Assess by:	Signature:	Date of Assessment(s):

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Figure 3: Scoring Rubric

Breakout Activity

James provided an overview of the breakout activity. Participants were divided into 2-3 groups and tasked with reviewing and scoring a mock development application using the Wetlands Dashboard and Rubric Guidance

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Meeting Notes

Document. Each group briefly discussed their experience with the assessment tools and areas for improvement before returning to the large group.

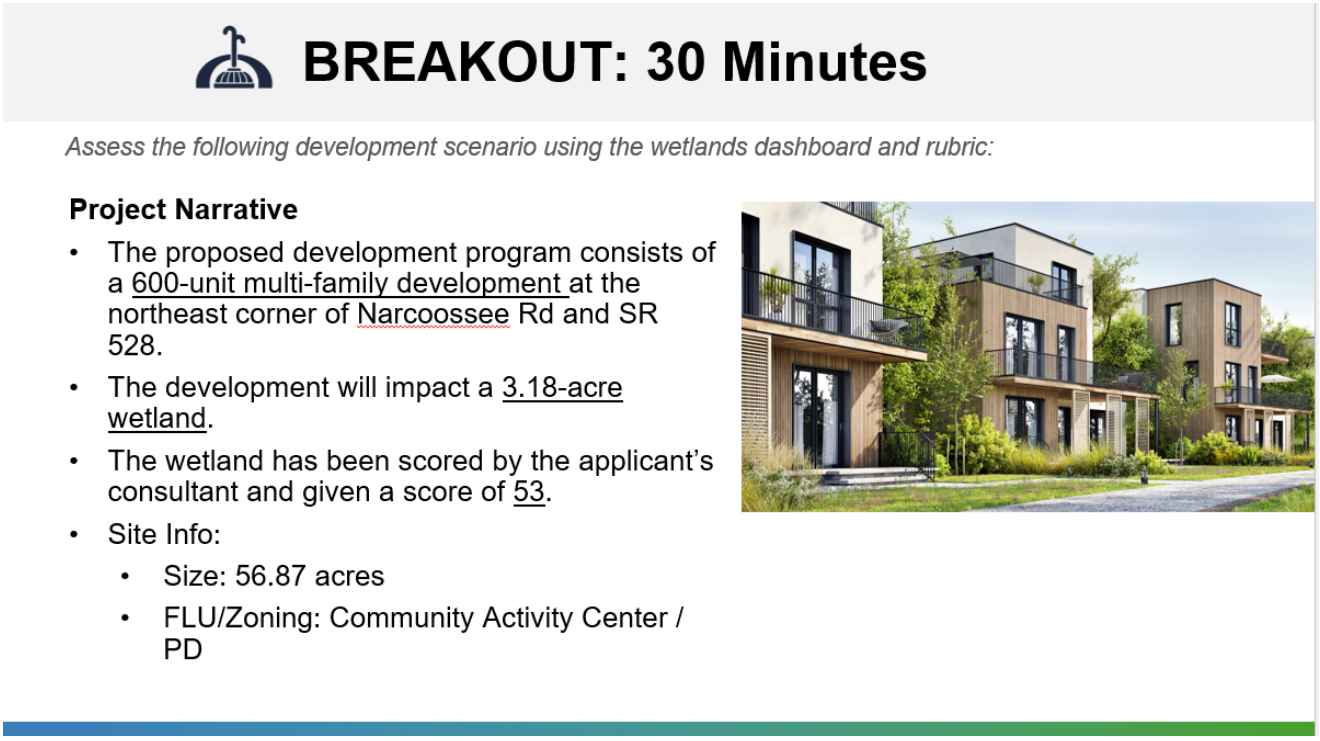

Figure 4: Breakout Activity Introduction

Report Out / Open Discussion

After returning to the large group, representatives from each group provided a summary of their group discussion, followed by an open discussion and Q&A.

Meeting 1

- Overall satisfied with Dashboard and Scoring Rubric
- Modifications were minor and included improving readability of both tools
- Emphasized importance of including all relevant departments in the permitting process, especially Public Works

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Meeting Notes

› Pictures and narrative should be included with scorecards to illustrate points

Meeting 2

Group 1

- Should these scores come with specific recommendations for mitigation based on certain attribute scores?
- How early in the process should this assessment happen? Pre-application?
- Acronyms need to be explained somewhere
- Maybe include a guide on the guidance document about where to find information

Group 2

- Group felt the tool was generally easy to follow, and in theory allows both staff and applicants to get a similar score
- There was some confusion over Question 13 in the Rubric. Suggested making it more clear in the guidance document that scorers will need to choose one of the habitat types.
- The group also suggested making sure the attributes in the dashboard are easy for non-technical staff to understand and should directly correspond with terminology used in the scoring rubric to avoid any confusion.
- Questioned whether applicants should provide a description with their scorecard for how each score was determined.
    - Chuck commented that this should be included as part of the application (currently is part of the process with the Q-wet form).

Open Large Group Discussion

- The large group had a discussion of the basin impervious surface score.

› Score requires a GIS exercise. Have to keep in mind that impervious surface for basins as a whole is changing frequently.

› Chuck commented that this is useful information for the city to have. Not required by UMAM but helpful for tracking loss of wetlands in the city overtime.

- The large group discussed how this score connects to overall decision making for impacts to wetlands? When assessing health of wetland, should staff require improvements to wetland (for example a boardwalk?)

› Chuck – goes into tiering system, that tells us what we do with our score at different decision making points

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Meeting Notes

- Megan – is that always the way to do it? If the wetland is low quality is the process to get rid of it? Under the current system, there's little protection for tier 3.
- Chuck – this is a better process for assessing quality than before. Identifies more situations where wetlands will not be impacted. For example, flood zone. Could be low quality but offering another benefit like flood storage.
- Megan – yes that's exactly what we need so appreciate chance to "get some teeth on it"
- James added, scorecard created with existing system in mind. Addressing question of what does a protected wetland actually look like? Offers a more complete picture, not just technical
  - Laura Carroll asked the group at which point does Public Works get involved with the permitting process? Important to get technical staff involved in decision making process.
- Megan – Public Works isn't typically involved. Mark will be brought in for larger projects / at consultant's request. Maybe Nat?
  - Mark discussed that the city's position has been to default to the state's recommendation. This process moves the city closer to looking at development issues. More in city's best interest to have protection in the city than allowing developers to impact the wetland then mitigate outside of the city
- Laura Carroll commented – you're going to want to bring in technical side – public works. If you're going to make it more restrictive want to address in front end – before money spent
- Keith agreed needs to be addressed upfront before development progresses and money is spent
- Chuck discussed ultimately the goal is for this to be codified, to bring this process to the forefront, and establish this as the process moving forward
- Mark reminded the group that we are in the beginning of the process. The next phase will be making policy recommendations including addressing the development process and timing
- Megan – commented on the importance of making sure policies "have teeth". If there's no connection to an ordinance, going to get push back
  - Group discussed the wetlands dashboard:
- Megan – attributes should use laymen's language – make it easier to connect to rubric language
- Megan – how updatable is dashboard on city's end?
- Chuck – most reliable would be requiring applicant to submit CAD data, delineated wetlands, living system that will be updated periodically. Another part of this project is future monitoring and assessment, web based gis tools where you can internally "upload cad file" or shapefile – we'll address later how will city be managing this data

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Meeting Notes

Meeting 3

Group 1

- Nat – overall good, goal of planning folks not sure, we QC consultant work. Scoring list – health of wetland, based on aerial? Pictures? Actual site visit? Only one mitigation bank available for site that was shown
- Yolanda – few questions that seem objective, overall will be really good tool especially for annexations, looking forward to that
- Keith – good part will be to bring Nat and his team in the process from the beginning, 80% of land at this point has wetlands and flood plain. Gets to differential of 10%, what takes precedent city or consultant. Outside influence, limit development in wetlands – better off for us and them in the future
- Discussed county process and proposed updates
- Discussed why scorecard does not allow for a score of 0. UMAM does not have a 0, lowest score you're going to get is a 4 for WMD
- Keith – address issue with going with city vs applicant/consultant. Understand OC is a little ahead of us. Maybe Michaelle/your team can join some of their engagement groups so we can be consistent.
- Michaelle – we are one of their stakeholders, have been keeping eye on what they're doing
- Keith – interesting the site we're looking at since it's actually being developed, wish we had these tools earlier
- Chuck – we actually assessed this site using old system and came out higher using new system

Group 2

- James/Group 2 - Difference between 3, 5 and how to get middle score – Chuck provides description
- Colandra – 52/53, what is next how do you assess in final analysis, do we recommend approval? What is the range for what we do with score? What does middle range mean?
    - Chuck – actively working with planning, how does score match up with existing tiers

Open Large Group Discussion

- (James)- If City and Applicant both go provide scores who takes precedence? City should. Maintaining records for future applications. State records are only good for 5 years
- Michaelle – james brought up if development doesn't occur will have that info for future development
- Chuck – future monitoring using developer submitted info
- Keith – what has been trend, change in ecological system?

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Meeting Notes

- Chuck – according to state, delineation is only good for 5 years (only if delineation has been approved / or formal). Wetland could be smaller or bigger. This wetland is actually
- Colandra – whole new assessment by applicant in 5 years? Chuck – yes
- Chuck – Core of Engineers strict, 8 years had to redelineate

APPENDIX A – LIST OF ATTENDEES

Meeting 1

Facilitators:
Emily Porter and Stephen Osiecki, VHB (Group 1)
James Hartsfield and Chuck Smith, VHB (Group 2)
Mark Sees (City of Orlando)
Michaelle Petion (City of Orlando)
Participants:
Elisabeth J Dang
Nat Prapinpongsanone
Susan V Ussach
Richard Allen
Brittany Sellers
Jacob Ballard
Maxwell Spann

Meeting 2

Group 1

Facilitators:
Emily Porter and Chuck Smith (VHB)
Michaelle Petion (City of Orlando)

Participants:
Timothy McClendon
Megan Barrow
Avery Boger
Paul S Lewis
Jim Burnett
Jody L Buyas
Keith S Grayson

Group 2

Facilitators:
James Hartsfield and Stephen Osiecki (VHB)
Mark Sees (City of Orlando)

Participants:
Laura Carroll
Thea M Walker
Corey Knight
Denise J Riccio
Douglas A Metzger
Vincent Gramaglia
Condredge Mallory

Meeting Notes

Brittany Sellers
Nicki Wesson
Marjorie Briones

Meeting 3

Group 1

Facilitators:
Emily Porter, Chuck Smith, and Hayden Germanis (VHB)

Participants:
Keith S Grayson
Jonathan Beltran Torres
Yolanda Ortiz
Lucy Phillip
Nat Prapinpongsanone

Group 2

Facilitators:
James Hartsfield and Stephen Osiecki (VHB)
Michaelle Petion (City of Orlando)

Participants:
Lisa A Lotti
Karl M Wielecki
Colandra D Jones
Michael Hess

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Meeting Notes

Place: Microsoft Teams
Date: May 25, 2023
Project #: 64334.00

Notes Taken by: E. Porter
Re: City of Orlando Wetland and Open Space Study – Development Community Stakeholder Focus Group

PROJECT TEAM

Consultant (VHB)

Roberta Fennessy	Chuck Smith	James Hartsfield
Emily Porter	Stephen Osiecki	Hayden Germanis

City of Orlando

Mark Sees	Timothy McClendon

SUMMARY

A virtual stakeholder focus group was held with various representatives from the development community to present and gather feedback on the draft Wetlands Assessment tools as part of the overall Wetland and Open Space Study. A complete list of participants is included as **Appendix A.**

Agenda

1. Intro Presentation & Group Poll
2. Rubric Presentation
3. Breakout Activity – Development Application Simulation
4. Report Out / Open Discussion & Next Steps

MINUTES

Introduction & Group Poll

Emily Porter provided a brief introduction on the Wetlands and Open Space Study Project, wetlands protection, and the purpose of the focus groups. A group poll was conducted to gather feedback on participants involvement with wetlands permitting and general knowledge of wetlands protection.

Rubric Presentation

Chuck Smith presented the scoring rubric followed by a brief Q&A.

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Meeting Notes

CITY OF ORLANDO

City of Orlando Wetland Assessment Form

Project Name:			Application Number:		
Wetland (Site) ID:	FLUCFCS and Description:	NWI Classification:	Special Flood Hazardous Area (Zone):	SHWE* (if known):	Impact Type (Dredge/Fill/Other):
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Wetland Description (include vegetation, hydrology connections, geographic location):					
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	Subtotal	0
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6	Is the wetland hydrologically connected to other wetlands or wetland habitats?	
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11	The wetland size in acres.	
12	Is the wetland well vegetated?	
	If forested, does the wetland exhibit full canopy closure?	
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20	Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?	
	Subtotal	0
	Total Score out 100	0

Assess by:	Signature:	Date of Assessment(s):

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Figure 1: Scoring Rubric

Breakout Activity

James provided an overview of the breakout activity. Participants were divided into 2-3 groups and tasked with reviewing and scoring a mock development application using the Wetlands Dashboard and Rubric Guidance

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Meeting Notes

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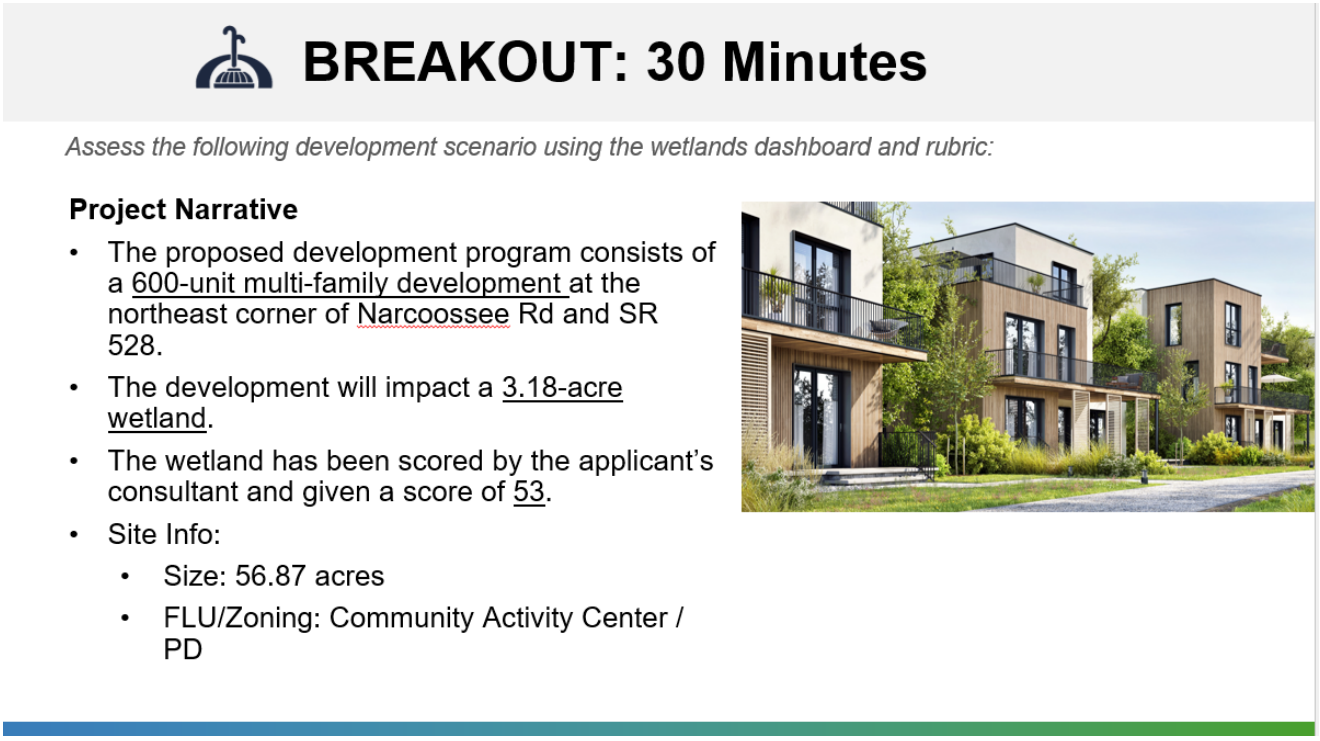

Figure 2: Breakout Activity Introduction

Report Out / Open Discussion

After returning to the large group, representatives from each group provided a summary of their group discussion, followed by an open discussion and Q&A.

Group 1

- Tyler – our group was also more development than actual consultant – form is relatively easy to use. Most of questions we discussed. More about intent of process – what will this mean for developers into city. Any additional requirements for us? Another concern is subjectivity and how this plays in. For example a due diligence, looking at budget. What is subjectivity, predictability for developers. Impact to schedule and budget.
- Aimee Shield – number font size is too hard to read. Like how it adds it up for you.

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Meeting Notes

- Tyler – what does score mean? What if City disagrees and that becomes a 51?
    - Chuck – our team did both sets of forms. If there's a major discrepancy that's when we'd have an issue – the city would need to evaluate themselves. If it's close City will use applicant's score – then will fall into tiers.
- Tyler – can we have this information at early stage?
    - Chuck – any info you provide in this form will be helpful. Trying to expedite process with development community.
- Tyler – this is just in the application process? No additional process or permit? Just swap out?
    - Chuck – more streamlined. Allow them to easily assess property – make decision making quicker.
- Tyler – impervious area for regulatory basin. How do you get that data?
    - Chuck – GIS analysis using WMD land use

<u>Group 2</u>

- [James] General consensus seemed to be that it was an understandable tool and a step in the right direction for the city and for city clients.
- [Arnulfo Castillo] What would you say the intent of the rubric is? Is it to approach the city with more information? Make the process easier?
- [James] This assessment would replace the existing QWet. Issue is that it doesn't provide much qualitative criteria, so applicants have to do more to get an application in. Additionally, the city doesn't have a good grasp on what these application assessments mean, so the city has had to hire people to go out and check the information.
- [Mark Sees] New assessment mirrors UMAM – which is already being done, making it an easier application process.
- [James Parker] Has not used QWet, but the new form seems fairly easy to work out from both the desktop and a boots down assessment.
- [Mark Sees] Does have experience with assessing wetlands, and was often confused by QWet. New assessment form seems a lot less confusing.
- [Margery Johnson] Very insightful, would like to show clients this when first discussing their wetlands. Very straightforward. Asked if the new assessment form would be published on the city website.
- [Mark Sees] Going to be further work to make this official. VHB & city are working in concert with Orange County and with state regulation. Hopefully this means that for the developer, there is better understanding of what you can and can't do in the City of Orlando.
- [Mark Sees] Have there been things you've run into with the city that might've been problematic, things you want to see changed?

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Meeting Notes

- [Jason Parker] Doesn't get involved until after development is permitted, as Geotechs.
- [Margery Johnson] Usually clients have a professional consultant to study the wetland. Before they get to the permitting process, they make sure they can get to the finish line. If we can get the client to understand what kind of issues that a developer could expect to encounter, we could make more informed decisions.
- [Margery Jonson] Are there opportunities to develop a low quality wetland with isolated development?
- [Mark Sees] If we can get developers to help restore wetlands that they encroach upon, then that would be a smarter solution for development.

Group 3

- Some items are more subjective
- Greg – one or two questions, once paraphrased could have been phrased easily. Some could be more yes or no. Question A4 most difficulty for group could rephrase as is this isolated? Treat as individual wetland
    - Also level of exotics for wetlands
    - Diversity standpoint, how prevalent is any given species, could come as not many exotics vs. may have large diversity of exotic species. Looking at percent of coverage not.
- UMAM doesn't take into account kind of species vs. coverage. Takes into account coverage not diversity (coverage is coverage)
- Scott G – flow and connectivity – 1 wetland and 3 different sections and into overall. When it comes to stormwater, for new criteria we're overstoring water. Is it better to mimic existing system,
    - Chuck – evaluating existing condition
- Scott G – SWFWMD allows reincorporation into wetlands, don't want to shift community turns into herbaceous (Chuck). Historically concern is put too much water into it, maybe down the road going to starve of flows.
    - Chuck – overland flows or stream connections, outflows naturally, overland flow.
-

Open Large Group Discussion

- Roberta – having access early on is important
- Tyler – subjectivity = risk
- Chuck – more in tune with state, but also trying to minimize duplicating efforts. Information will be captured and in form – more you add, more. Help the city with decision making and expedite where possible.
- Scott G – helpful as a civil – interesting stepping through that.
- Peter – what is the overall purpose of this exercise?

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Meeting Notes

  - Roberta – desktop review but also on ground analysis
- Gregory Territo – is purpose aerial desktop analysis? Did you actually do a site analysis?
  - Chuck – his score was 53, 2 out of 3 groups were well in that range. Subjectivity on aerial

APPENDIX A – LIST OF ATTENDEES

Group 1

Facilitators:
Emily Porter and Chuck Smith (VHB)

Participants:
Kiersten Cavender
Phillip Martinez
Aimee Shields
Jeffrey J. Newton
Joshua Edmondson
Bobby Collins
Peter Sechler
Denny, Michael (Parks and Resorts)
Johnson, Tyler

Group 2

Facilitators:
James Hartsfield and Hayden Germanis (VHB)
Mark Sees (City of Orlando)

Participants:
Scott@LPC
Parker, Jason
Chris Wrenn (North Florida)
Margery Johnson/USA
Castillo, Arnulfo
Sam Sebaali

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Meeting Notes

Group 3

Facilitators:
Roberta Fennessy and Stephen Osiecki (VHB)
Timothy McClendon (City of Orlando)

Participants:
Gregory Territo
Scott M. Gentry
Quang Lam

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Meeting Notes

Place: Microsoft Teams
Date: July 11, 2023
Project #: 64334.00

Notes Taken by: E. Porter
Re: City of Orlando Wetland and Open Space Study – State and County Stakeholder Focus Group

PROJECT TEAM

Consultant (VHB)

Chuck Smith	James Hartsfield	Emily Porter

City of Orlando

Mark Sees	Michaelle Petion

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Meeting Notes

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16	Is the wetland unique or rare for the region?	
17	Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?	
18	Does the wetland have recreational value?	
19	Is the wetland utilized by protected species?	
20	Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?	
	Subtotal	0
	Total Score out 100	0

Assess by:	Signature:	Date of Assessment(s):

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Figure 1: Scoring Rubric

Open Discussion

An open discussion was held for participants to provide feedback on the draft documents and ask questions of the consultant team.

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Meeting Notes

- Tim – how will form be incorporated into current process? Currently part of development application (not separate process). Will it now have a separate process?
    - Chuck – not permitting wetlands as separate process. Allows for constant monitoring, updating of wetland health/status and score. Streamline city's process and know which wetlands to protect when a development application comes in.
- Liz Johnson (OC) – How are isolated wetlands treated? Example on how you would score.
    - Chuck – if surrounded by development – lower. If in east of town, intact upland buffer, the fact that it's isolated would actually bring up the score. Other factors, game trails going into the system, cow pasture, etc.
- Tim – will new city ordinance be more restrictive? The same?
    - Chuck – More in tune to what they're doing. Probably more restrictive just because we have a greater awareness of the quality wetlands. Case by case basis now. Considering scoring wetlands in highest pressure zoning areas to ensure protection. Part of grant is future monitoring. So either city gis will keep it updated, city will have ongoing ledger of wetlands in their system.
- Lisa SF – does SF typically issue a permit before the city? Or what's the timing?
    - Chuck – both. Either applicant comes in before to see what will be allowed per zoning. But will still have
- Lisa – will district authorize an impact that the City will not allow.
    - Michaelle – encourage people to have permit first
- Lisa – would help at pre-app to know wetland scoring – so people don't get mad at going through process and then can't do their project once they go to the city.
- Tim – what's the timeline for this?
    - Michaelle – MPB in August/Sep – adopted before end of year ideally depending on language changes that are still in process
- Liz – why not just use umam?
    - Chuck – wanted it to be usable without technical background
- Liz – how would you answer impervious surface question?
- Liz – A1 post development condition? Will the wetland have an average buffer.
    - Chuck – No this is pre-development
- Liz – C11 size – lower acreage, lower score? Historic learning lesson from county. With current process at OC – smaller wetlands written off automatically which is contrary to the current philosophy of umam. Other things are also examined like vegetative structure and water quality. Wouldn't you to make same mistake as county.

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Meeting Notes

- Liz – how are you doing with surface waters? Presented argument that code doesn't address surface waters (by development community). In definitions maybe define wetlands to include surface water? Not just one type of surface water, ditches ponds lakes bayous etc
    - Chuck – tricky because have to address if it was a permitted surface water
- Liz – we have a process to deal with this (62-340.700). ponds not built in wetlands. Love fact that helpful guidance is given. Like descriptors.
    - Chuck – a small wetland could still get a higher score based on its quality. Isolated and smaller systems in city could have 1 ac wetland in housing development, water doesn't outfall to anything, flood zone on top of everything else.
- Liz – annexations – city and county may have different natural resource compositions – soil settings.
    - James – we are trying to make better alignment between county and city for annexations. When we have a draft of ordinance changes we can meet with Tim to review. Basically, accepting any delineations, making it an automatic requirement.
- Liz – don't build it for what city is today. Build for any large scale annexations. Don't box yourself in based on what you have now.
- Tim – lakes with TMDLs (chuck – part of form, be aware of buffer zones along rivers etc. – city is making sure they're meeting these action plans and basins). But does this impact score if the project is proposing impacts?
    - Chuck – no because difficult to asses – have to meet the wmd requirements for treatment anyway. Whatever tmdl have to design stormwater pond based on this. Similar to umam based on observable, not water quality impacts, etc. On form more as just an fyi for the applicant to keep that in mind.
    - Chuck – will send rubric and guidance doc to all participants.
- Tim – OFW adjacencies – t&e species nesting in wetlands. County planning to include these. Also, hydrology, is wetland receiving sw runoff and how much. If you're regulating surface waters – might want to think through more. Older development don't have treatment (lake Conway). Might not want to discount a lake that does receive that.
    - Chuck – in that situation – public access would score higher in a different category – basically checks and balances built in. Recreation, conservation, parks etc. even if receiving runoff would still score higher.
- Tim – annexation case study – would new ordinance have a different outcome. Park bark and fly – 20 to 30 acres of wetland impacts, rv parking boats etc. Clear from county that approval not likely. Went to Orlando (not sure outcome). With new approach – with this kind of impact less likely to encourage someone to annex.

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Meeting Notes

    - Michaelle – will be looking at which parts of project we would like to preserve. We'll now have more data to know what to preserve versus not. Hopeful
- Tim – preserving onsite – is this layered on what is currently required by state? City doesn't require anything additional when onsite is required by state.
    - Chuck – currently could require additional. Tier 1 impact, have mitigation worked out. Mitigation process isn't really changing, but which wetlands will be mitigated and require higher level will (because of scoring).
- Tim – has the city ever been informally challenged with requiring onsite if applicant wants just credits (statute conflicts with this).
    - Michaelle – will determine how to address designated conservation vs. not – how to address credits vs banks and in city vs out...
- Tim – Meridian park (if applicant gets state requirement – local government required to honor state mitigation plan)

APPENDIX A – LIST OF ATTENDEES

Facilitators:
Emily Porter, Chuck Smith, James Hartsfield (VHB)
Michaelle Petion (City of Orlando)

Participants:
Jones, David - Envir. Protection
Tara McCue
Prather, Lisa
Garrett-Kraus, Karen L
Gary Huttmann
Tim Hull
Johnson, Liz
Tara McCue

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Meeting Notes

APPENDIX B – TEAMS CHAT

[9:24 AM] Tim (Guest)
That happens with Orange Cnty.
[9:26 AM] Johnson, Liz

I still think that isolated wetlands appear to be discounted.

[9:27 AM] Johnson, Liz

consider the small isolated ephemeral wetlands that provide critical habitat to gopher frogs, SHC, etc.

[9:27 AM] Prather, Lisa

I agree with Liz

[9:30 AM] Tim (Guest)
Where/how can we make comments on the draft ordinance when it's ready?
[9:31 AM] Michaelle E Petion

We can circulate that with stakeholders once we have a draft Tim

[9:31 AM] Tim (Guest)
Will this form be on a website or in a handbook? We may want to provide comments on the form if you're open to it.
[9:32 AM] Michaelle E Petion

We can ask VHB to email and you can return with any comments

[9:34 AM] Tim (Guest)
For Tier 1 impacts, is setting aside onsite something that will be required in addition to the ERP mitigation plan?
[9:34 AM] Tim (Guest)
Thank you Michaelle.

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Meeting Notes

Place: Microsoft Teams
Date: July 13, 2023
Project #: 64334.00

Notes Taken by: E. Porter
Re: City of Orlando Wetland and Open Space Study – Community Organizations Stakeholder Focus Group

ATTENDANCE

Consultant (VHB)

Chuck Smith	James Hartsfield	Emily Porter

City of Orlando

Mark Sees	Michaelle Petion

Participants

Christianah Oyenuga - The Nature Conservancy	Alexa Stone - Eco Preserve

SUMMARY

A virtual stakeholder focus group was held with various representatives from Community Organizations to present and gather feedback on the draft Wetlands Assessment tools as part of the overall Wetland and Open Space Study.

Agenda

1. Intro Presentation & Group Poll
2. Rubric Presentation
3. Open Discussion & Next Steps

MINUTES

Introduction & Group Poll
Emily Porter provided a brief introduction on the Wetlands and Open Space Study Project, wetlands protection, and the purpose of the focus groups. A group poll was conducted to gather feedback on participants involvement with wetlands permitting and general knowledge of wetlands protection.

Rubric Presentation
Chuck Smith presented the scoring rubric.

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Meeting Notes

CITY OF ORLANDO

City of Orlando Wetland Assessment Form

Project Name:			Application Number:		
Wetland (Site) ID:	FLUCFCS and Description:	NWI Classification:	Special Flood Hazardous Area (Zone):	SHWE* (if known):	Impact Type (Dredge/Fill/Other):
			Base Flood Elevation (if known):	SHGWE** (if known):	
Regulatory Basin:	Impaired/TMDL Basin:		Regulatory Buffer (Wekiva/Econ Rivers):	Incorporated (Yes/No):	Acres:
Wetland Description (include vegetation, hydrology connections, geographic location):					
Significant or Unique Features Nearby (Lakes, Rivers, Parks, etc.):			Previous Applications/Conservation Easements (if known):		

All boxes must contain a minimum score of 1 or maximum score of 5.		**Point Value (1 to 5)**
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
1	Does the wetland have an upland buffer with an average width of 25 feet?	
2	Do the adjacent uplands provide wildlife habitat?	
3	Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?	
4	Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?	
5	What is percent of the wetland's regulatory basin is covered by impervious surfaces?	
	Subtotal	0
B. Hydrology & Water Quality		
6	Is the wetland hydrologically connected to other wetlands or wetland habitats?	
7	Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?	
8	Is the wetland free of ditching, hydrologic impediments, and flow restrictions?	
9	Does wetland provide benefits to downstream habitats?	
10	Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?	
	Subtotal	0
C. Wetland Vegetation Community and Structure		
11	The wetland size in acres.	
12	Is the wetland well vegetated? If forested, does the wetland exhibit full canopy closure? If herbaceous or shrub, does the wetland exhibit full ground or shrub cover?	
13	Does the wetland contain nuisance and/or exotic species?	
14	Is the wetland community appropriate?	
15	Is the wetland vegetive community healthy?	
	Subtotal	0
D. Other Wetland Functions and Values		
16	Is the wetland unique or rare for the region?	
17	Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?	
18	Does the wetland have recreational value?	
19	Is the wetland utilized by protected species?	
20	Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?	
	Subtotal	0
	Total Score out 100	0

Assess by:	Signature:	Date of Assessment(s):

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Figure 1: Scoring Rubric

Open Discussion

An open discussion was held for participants to provide feedback on the draft documents and ask questions of the consultant team.

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Meeting Notes

- Alexa: Does this form have all the data available (PPE, Land Uses, Etc) to determine the value of preservation?
    - Chuck: No this form is only designed to determine the functioning of wetlands.
- Alexa: Are there any payments for ecosystem services programs available in Orlando?
- Alexa: Is Orlando like Osceola with just a few major land owners/ranchers? Who may want to sell to developers?
- Christianah: Is the city keeping the tiered system?
    - Michaelle: We have not written the ordinance at this time, so we're unsure exactly how we're going to proceed at this time.
- Alexa: How are the wetland boundaries determined?
    - Chuck: Professionals/scientists physically mark the boundaries and survey the wetlands, then the relevant agency has to check and approve of the boundary.
- Alexa: is mitigation credits a state requirement?
    - Chuck: local mitigation is preferred, but mitigation banks are also used.
- Alexa: Is climate resilience a separate item or is it part of the overall score?
- Michealle: Can we talk some more about the issues with the tiered system?
    - Christianah: The inconsistencies, issues with secondary impacts. Once a system drops a tier it doesn't go back up. We want to make sure important wetlands are actually protected.
    - Michealle: This is the feedback we're looking for
    - James: Changes to the ordinance are in process but this form also addresses these concerns
- Alexa: SFWMD wrap program, will this work in tandem with that?
    - Chuck: WRAP is no longer used, it has been discarded in favor of UMAM. It was very subjective.
- How is the City looking to incentivize mitigation within city boundaries?
    - Michaelle: Carrot and Stick

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Meeting Notes

Date:	9/06/2023	Notes Taken By:	Emily Porter
Place:	Eagle's Nest Park	Re:	Orlando Wetlands Community Field Visit
Project No.:	64334.01		

ATTENDEES:

City Project Team
Mark Sees – Wetlands Manager
Michaelle Petion – Planning

Participants (city staff)
Elisabeth Dang – Planning
Tim McClendon – Planning
Jacob Ballard – Planning
Chase Brown
Robert Duarte
Bryan Rodriguez
Michele Gibbs
Megan Barrow
Madison Szathmory – Keep Orlando Beautiful
Sean Elordi
Courtney McCoy
Shannan Stegman
Yolanda Ortiz

Consultant Team
Chuck Smith – VHB
Emily Porter – VHB
James Hartsfield – VHB

(public)
Michelle Morrison – ECFRPC
Gabrielle Milch – St. Johns Riverkeeper

Agenda

9:00 to 9:15 am **(15 min)**	Welcome & Brief Intro – Mark will provide welcome and brief intro on Eagles Nest wetlands (5 min). Chuck will provide overview of the rubric (10 min).
9:15 to 9:25 am **(10 min)**	Activity Overview – Emily will provide an overview of the activity (5 min). Participants will break into 2 groups and walk to the assessment area.
9:25 to 10:10 am **(45 min)**	Wetlands Scoring Activity – Guided scoring of wetlands. Each group will walk along paved trail to observe and score their wetland **(35 min)**. Then groups will switch sides and quickly score/observe differences for the other wetland **(10 min)**. (Mark – 3A / Chuck – Lake Fran)
10:10 to 10:30 am **(20 min)**	Report Out / Q&A – Reconvene at pavilion, have groups present findings, open Q&A. Closing and next steps.

Welcome & Intro Presentation

Mark provided an overview of the project and the history of Eagle's Nest Park wetlands. Chuck gave a brief demonstration of the scoring rubric and Emily introduced the scoring activity.

Wetland Scoring Activity

The participants broke up into two groups and went through a guided scoring of the wetlands at Eagle's Nest Park. Mark led Group 1 through scoring of Wetland 3A and Chuck led Group 2 through the scoring of the Lake Fran wetland (see **Figure 1**). After scoring their assigned wetland, groups then conducted an abbreviated scoring of the other wetland focusing on the main differentiating features of the two sites. After scoring each wetland, the groups discussed their individual scores and compared the results to score provided by the consultant team based on a previous site assessment.

Figure 1: Wetland Assessment Map

Group 1 Wetland 3A – Mark Sees, Michaelle Petion, James Hartsfield

Group 1 scored Wetland 3A located west of the paved trail. The wetland is 28.75 acres in size and is classified as 6460: freshwater forested/shrub wetland. Vegetation consists of bald cypress (Taxodium distichum), willow (Salix caroliniana), Brazilian pepper (Schnius terebinthifolia), and beggarticks (Bidens alba). This area is hydrologically connected to Lake Fran and ultimately drains to Shingle Creek. **Figure 2** shows an example scorecard.

CITY OF ORLANDO

City of Orlando Wetland Assessment Form

Project Name: Eagle Nest Park			Application Number:		
Wetland (Site) ID: 3A	FLUCFCS and Description: 6460: Freshwater forested/shrub wetland	NWI Classification: PFO1Cd	Special Flood Hazardous Area (Zone): Zone AE	SHWE* (if known):	Impact Type (Dredge/Fill/Other):
			Base Flood Elevation (if known):	SHGWE** (if known):	
Regulatory Basin: Shingle Creek	Impaired/TMDL Basin:		Regulatory Buffer (Wekiva/Econ Rivers):	Incorporated (Yes/No): Yes	Acres: 28.75
Wetland Description (include vegetation, hydrology connections, geographic location): Located within Eagle Nest Park and found north of Metrowest Boulevard, south of Lescot Lane, East of Lake Fran Bike Trail, and west of Messina Avenue. This wetland is adjacent to a reservoir which connects to Clear Lake through streams and waterways. Vegetation consists of bald cypress, willow (Salix caroliniana), cattail (Typha latifolia), pickerelweed (Pontederia cordata), waterlily (Nymphaea odorata), beggarticks (Bidens alba).					
Significant or Unique Features Nearby (Lakes, Rivers, Parks, etc.): Eagle Nest Park, Poppy Park			Previous Applications/Conservation Easements (if known):		

All boxes must contain a minimum score of 1 or maximum score of 5.		Point Value (1 to 5)
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
1	Does the wetland have an upland buffer with an average width of 25 feet?	4
2	Do the adjacent uplands provide wildlife habitat?	3
3	Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?	2
4	Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?	1
5	What is percent of the wetland's regulatory basin is covered by impervious surfaces?	2
	Subtotal	12
B. Hydrology & Water Quality		
6	Is the wetland hydrologically connected to other wetlands or wetland habitats?	2
7	Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?	4
8	Is the wetland free of ditching, hydrologic impediments, and flow restrictions?	1
9	Does wetland provide benefits to downstream habitats?	3
10	Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?	3
	Subtotal	13
C. Wetland Vegetation Community and Structure		
11	The wetland size in acres.	5
12	Is the wetland well vegetated? If forested, does the wetland exhibit full canopy closure? If herbaceous or shrub, does the wetland exhibit full ground or shrub cover?	5
13	Does the wetland contain nuisance and/or exotic species?	3
14	Is the wetland community appropriate?	3
15	Is the wetland vegetive community healthy?	3
	Subtotal	19
D. Other Wetland Functions and Values		
16	Is the wetland unique or rare for the region?	1
17	Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?	5
18	Does the wetland have recreational value?	3
19	Is the wetland utilized by protected species?	5
20	Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?	5
	Subtotal	19
	Total Score out 100	63

Assess by: Mr. Sees & Chuck Smith	Signature:	Date of Assessment(s): 07/28/2023

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Figure 2: Group 1 – Wetland 3A Example Scorecard

Group 2 Lake Fran Wetland – Chuck Smith, Emily Porter

Group 2 scored the Lake Fran wetland located east of the paved trail. The wetland is 50.14 acres in size and is classified as 6170: freshwater forested/shrub. The wetland is adjacent to a reservoir which connects to Clear Lake through streams and

waterways. Vegetation within the wetland includes bald cypress (Taxodium distichum), red maple (Acer rubrum), wax myrtle (morella cerifera), alligator flag (Thalia geniculata), cattail (Typha latifolia), pickerelweed (Pontederia cordata), maidencane (Panicum hemitomon), fragrant water lily (Nyphaea odorate) torpedo grass (Panicum repens). This area is hydrologically connected to Lake Fran and ultimately drains to Shingle Creek. Figure 3 shows an example scorecard.

CITY OF ORLANDO

City of Orlando Wetland Assessment Form

Project Name: Eagle Nest Park			Application Number:		
Wetland (Site) ID: Lake Fran	FLUCFCS and Description: 6170: Freshwater forested/shrub	NWI Classification: PFO1Cd	Special Flood Hazardous Area (Zone): Zone AE	SHWE* (if known):	Impact Type (Dredge/Fill/Other):
			Base Flood Elevation (if known):	SHGWE** (if known):	
Regulatory Basin: Shingle Creek	Impaired/TMDL Basin:		Regulatory Buffer (Wekiva/Econ Rivers):	Incorporated (Yes/No): Yes	Acres: 51.85

Wetland Description (include vegetation, hydrology connections, geographic location):
Located within Eagle Nest Park and found north of Metrowest Boulevard, west of Lake Fran Bike Trail, and south of Lescot Lane. Vegetation within the wetland includes bald cypress (Taxodium distichum), Brazilian pepper (Schinus terebinthifolia), red maple (Acer rubrum), elderberry (Sambucus canadensis), wax myrtle (morella cerifera), candle bush (Senna alata), dogfennel (Eupatorium capillifolium), sweetbay magnolia (Magnolia virginiana), beggarticks (Bidens alba), and grapevine (Vitis rotundifolia).

Significant or Unique Features Nearby (Lakes, Rivers, Parks, etc.):	Previous Applications/Conservation Easements (if known):
Eagle Nest Park, Poppy Park	

All boxes must contain a minimum score of 1 or maximum score of 5.		Point Value (1 to 5)
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
1	Does the wetland have an upland buffer with an average width of 25 feet?	4
2	Do the adjacent uplands provide wildlife habitat?	5
3	Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?	2
4	Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?	4
5	What is percent of the wetland's regulatory basin is covered by impervious surfaces?	2
	Subtotal	17
B. Hydrology & Water Quality		
6	Is the wetland hydrologically connected to other wetlands or wetland habitats?	5
7	Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?	5
8	Is the wetland free of ditching, hydrologic impediments, and flow restrictions?	5
9	Does wetland provide benefits to downstream habitats?	4
10	Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?	5
	Subtotal	24
C. Wetland Vegetation Community and Structure		
11	The wetland size in acres.	5
12	Is the wetland well vegetated? If forested, does the wetland exhibit full canopy closure? If herbaceous or shrub, does the wetland exhibit full ground or shrub cover?	3
13	Does the wetland contain nuisance and/or exotic species?	4
14	Is the wetland community appropriate?	4
15	Is the wetland vegetive community healthy?	5
	Subtotal	21
D. Other Wetland Functions and Values		
16	Is the wetland unique or rare for the region?	1
17	Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?	5
18	Does the wetland have recreational value?	5
19	Is the wetland utilized by protected species?	5
20	Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?	5
	Subtotal	21
	Total Score out 100	83

Assess by: Mr. Sees & Chuck Smith	Signature:	Date of Assessment(s): 07/28/2023

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Figure 3: Group 2 – Lake Fran Wetland Example Scorecard

Open Discussion Q&A

› Question 10 – note the type of site conditions we should be looking for that might contribute such as roadside swales

- Questions 17 & 18 – is there a way to capture other benefits even if a site doesn't have public access – such as air quality and mental/physical health from living in proximity to the park/wetlands (like residents adj. to Eagle's Nest)?
  - Chuck – would be helpful to use "named park" in the guidance document to clarify what is meant by these questions
- General – Could other benefits be included as part of the score – such as providing relief from storm flooding. From a permitting perspective, wetland impacts will have an impact externally and not just at the site.
- General – would be helpful to have visual aids/graphics for some of these questions in the guidance document to make it easier for the layperson to know what to look for
- Participant asked if there's a way to protect wetlands that need more attention? And generally is this contributing to less or more impacts allowed?
- Participant asked if there's a different review process for wetlands in the floodplain? Is there a way to include that in the scoring process?
- Gabrielle – does time of year matter? For example, does a score during rainy season give a different score?
  - Chuck – There are indicators year round with wetland delineation. Soils are the biggest driver
- Jacob – For scores 12-17, a lot of our wetlands have these. Is there a way to include opportunity for restoration/cleaning up as a consideration for the score? Should asking about exotic/nuisance species even be part of the scoring process if there's an opportunity to remove these later on?
  - Chuck/James – third party beneficiaries can be given control of maintenance/monitoring of retained wetlands – city could be named beneficiary and handle the monitoring process.
  - Mark - This language is currently in the conservation easements but over time the monitoring just doesn't happen. Comes down to a staffing issue with Public Works.
  - James – There should also be owner annual reporting requirements
  - Elisabeth – We do need to include exotics. This was intentionally balanced out with other factors like the recreational value question. Best option is to take a realistic look at what's there.
- Madison – expressed concern over whether the scorecard will do enough to protect wetlands. Does it include enough impediments to wetland impacts including the lower quality wetlands?
  - Elisabeth emphasized the improvement in the protection measures as compared to the current process
- Environmental scientist team expressed desire to be included in assessment process – Elisabeth agreed

EXHIBITS

APPENDIX A - HANDOUTS

City of Orlando Wetlands Study Community Field Workshop at Eagle's Nest Park

Agenda

9:00 to 9:15 am **(15 min)**	Welcome & Brief Intro
9:15 to 9:25 am **(10 min)**	Activity Overview
9:25 to 10:10 am **(45 min)**	Wetlands Scoring Activity Part A – Score Wetland 3A (35 min) Part B – Compare Score to Lake Fran Wetland (10 min)
10:10 to 10:30 am **(20 min)**	Report Out / Q&A

Wetlands Study Overview

The city is updating the Wetlands Assessment Policy and Scoring Rubric and wants you to be part of the process. The project consists of three phases shown below.

Why are we here?

Packet Contents

1. Overview Sheet
2. Eagle's Nest Park Site Map
3. Scorecard 1 – Wetland 3A
4. Scorecard 2 – Lake Fran Wetland
5. Scoring Guidance Document

Next Steps

Town Hall Meeting 1 – Engelwood Center

September 12, 2023, from 6:30 to 8:30 p.m.
6123 La Costa Dr #2931, Orlando, FL 32807

Town Hall Meeting 2 – Dr. James R. Smith Center

October 4, 2023, from 6:30 - 8:30 p.m.
1723 Bruton Blvd, Orlando, FL 32805

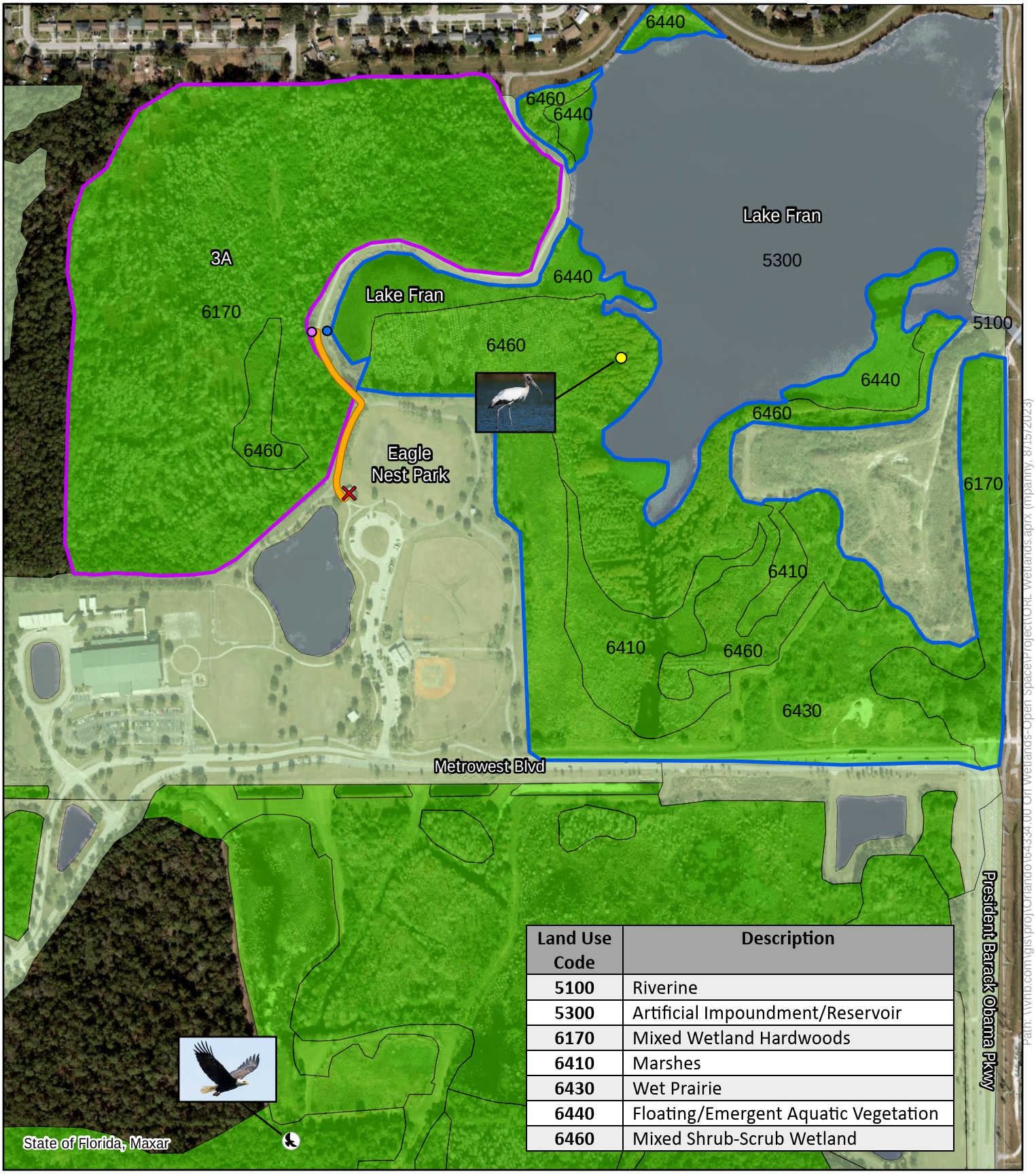
Project Contacts

Roberta Fennessy, VHB, 407.459.4058
Michaelle Petion, City of Orlando, 407.246.3837

Exhibit 1: Eagle Nest Park Wetland Assessment Map

Orlando Wetlands and Open Space Study | Orlando, FL

CITY OF ORLANDO



Land Use Code	Description
5100	Riverine
5300	Artificial Impoundment/Reservoir
6170	Mixed Wetland Hardwoods
6410	Marshes
6430	Wet Prairie
6440	Floating/Emergent Aquatic Vegetation
6460	Mixed Shrub-Scrub Wetland

Open Land
Surface Water
Wetland
Lake Fran Focus Area
3A Focus Area
3A Assessment Area
Lake Fran Assessment Area
Pavilion
Path to Assessment Areas
Eagle Nest
Wood Stork Nest

N

0 250 500 Feet

CITY OF ORLANDO

City of Orlando Wetland Assessment Form

Project Name:	Application Number:
Eagle Nest Park	

Wetland (Site) ID:	FLUCFCS and Description:	NWI Classification:	Special Flood Hazardous Area (Zone):	SHWE* (if known):	Impact Type (Dredge/Fill/Other):
3A	6460: Freshwater forested/shrub wetland	PFO1Cd	Zone AE		
			Base Flood Elevation (if known):	SHGWE** (if known):	

Regulatory Basin:	Impaired/TMDL Basin:	Regulatory Buffer (Wekiva/Econ Rivers):	Incorporated (Yes/No):	Acres:
Shingle Creek			Yes	28.75

Wetland Description (include vegetation, hydrology connections, geographic location):

Located within Eagle Nest Park and found north of Metrowest Boulevard, south of Lescot Lane, and west of Lake Fran Bike Trail. Vegetation consists of bald cypress (Taxodium distichum), willow (Salix caroliniana), Brazilian pepper (Schnius terebinthifolia), and beggarticks (Bidens alba). This area is hydrological connected to Lake Fran and ultimately drains to Shingle Creek.

Significant or Unique Features Nearby (Lakes, Rivers, Parks, etc.):	Previous Applications/Conservation Easements (if known):
Eagle Nest Park, Poppy Park, Shingle Creek	

All boxes must contain a minimum score of 1 or maximum score of 5.		**Point Value (1 to 5)**
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
1	Does the wetland have an upland buffer with an average width of 25 feet?	
2	Do the adjacent uplands provide wildlife habitat?	
3	Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?	
4	Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?	
5	What is percent of the wetland's regulatory basin is covered by impervious surfaces?	
	Subtotal	0
B. Hydrology & Water Quality		
6	Is the wetland hydrologically connected to other wetlands or wetland habitats?	
7	Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?	
8	Is the wetland free of ditching, hydrologic impediments, and flow restrictions?	
9	Does wetland provide benefits to downstream habitats?	
10	Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?	
	Subtotal	0
C. Wetland Vegetation Community and Structure		
11	The wetland size in acres.	
12	Is the wetland well vegetated? If forested, does the wetland exhibit full canopy closure? If herbaceous or shrub, does the wetland exhibit full ground or shrub cover?	
13	Does the wetland contain nuisance and/or exotic species?	
14	Is the wetland community appropriate?	
15	Is the wetland vegetive community healthy?	
	Subtotal	0
D. Other Wetland Functions and Values		
16	Is the wetland unique or rare for the region?	
17	Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?	
18	Does the wetland have recreational value?	
19	Is the wetland utilized by protected species?	
20	Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?	
	Subtotal	0
	Total Score out 100	0

Assess by:	Signature:	Date of Assessment(s):
Mr. Sees & Chuck Smith		07/28/2023

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

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Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Table 1 provides the scoring guidance for the City of Orlando Wetland Assessment Form. The Wetland Assessment Form must have a minimum score of 1 and maximum score of 5. For example, if a score falls between a 3 and 5, then the score maybe a 4. These scores must be provided for every question to accurately assess the wetland. Each wetland must be assessed individually, and the Wetland Assessment Form(s) must be provided to the City in support of the Planning and Zoning Applications.

Table 1: Scoring Guidance for the Wetland Assessment Form		
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
1	**Does the wetland have an upland buffer with an average width of 25 feet?**	**Point Value (1 to 5)**
The wetland buffer is intact, equal to or greater than 25 feet, not disturbed by agriculture, developed or other man-made activities, with less than 5% coverage of exotic species.		**5**
Wetland buffer is less than 25 feet but greater than 15 feet with minimal disturbance by agriculture, developed or other man-made activities, and less than 5% coverage of exotics.		**3**
Wetland has no buffer.		**1**
2	**Do the adjacent uplands provide wildlife habitat?**	
Adjacent uplands are conservation areas, park lands, or other lands protected from development, which show signs of wildlife utilization. (nests, trees cavities, burrows, tracks, scat, etc.).		**5**
Adjacent uplands are open land, agricultural lands, natural occurring lands (pine flatwoods, upland forested, etc.), or other disturbed lands but have evidence of wildlife utilization (nests, trees cavities, burrows, tracks, scat, etc.).		**3**
Adjacent uplands developed or disturb lands with minimal evidence of wildlife usage.		**1**
3	**Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?**	
The wetland is directly connected to a designated wildlife corridor and/or other known wildlife movement corridors.		**5**
The wetland shows signs of wildlife movement (trails and tracks) but is indirectly connected to designated wildlife corridor or other known wildlife movement areas.		**3**
The wetland is isolated with limited or no wildlife movement along a corridor to or from other natural systems.		**1**
4	**Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?**	
The adjacent land provides a natural watercourse or overland flow in and/or out of the wetland with minimal restriction or disturbance.		**5**
The wetland watercourse/overland flow has been altered but flow in and/or out of the wetland is somewhat maintained. Alteration may include culverting, ditching, and channelization, etc.		**3**
The adjacent land is impounded or dewatering the wetland.		**1**

Table 1: Scoring Guidance for the Wetland Assessment Form

5	**What is percent of the wetland's regulatory basin is covered by impervious surfaces?**	
The wetland is located within a regulatory basin with less than 10% of the basin is covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)		**5**
The wetland is located within a regulatory basin with great than 10% but less 25% covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)*		**3**
The wetland is located within a regulatory basin with greater than 25% of the basin is covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)*		**1**
B. Hydrology & Water Quality		
6	**Is the wetland hydrologically connected to other wetlands or wetland habitats?**	
The wetland is directly connected or abutting wetlands that are under a conservation easement, a park, or on other lands protected from development. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) that is directly connected to or abutting lands that are under a conservation easement, in a park, or on other lands protected from development.		**5**
The wetland is indirectly connected to other wetland via surface waters, canals, or ditches that are under a conservation easement, in a park, or on other lands protected from development. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) that is indirectly connected to lands that are under a conservation easement, in a park, or on other lands protected from development.		**3**
The wetland has been isolated from other wetlands systems and hydrology has been altered by development or other man-made disturbances. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and the hydrology has been altered (either by dewatering or increase water into the system) by development or other man-made disturbance.		**1**
7	**Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?**	
The wetland is directly connected to WOTUS/State waters through riparian wetlands along a named river(s) or stream(s) with minimal hydrological disturbance. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is within 100 feet of WOTUS or State Waters.		**5**
The wetland is indirectly connected to WOTUS/State through surface waters, canals, or ditches. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is greater than 100 feet but less than 500 feet from WOTUS or State Waters.		**3**
The wetland is not connected to WOTUS/State through surface waters, canals, or ditches and has significant hydrological disturbance. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is greater than 500 feet of WOTUS or State waters with evidence of significant hydrological disturbance.		**1**

Table 1: Scoring Guidance for the Wetland Assessment Form

8	**Is the wetland free of ditching, hydrologic impediments, and flow restrictions?**	
The wetland relatively free of ditching, flow restriction or impediments, and the hydrological function/hydroperiod is appropriate.		**5**
The wetland has some of ditching and/or, flow restriction or impediments, but the hydrological function/hydroperiod is somewhat maintained.		**3**
The wetland shows evidence of hydrological/hydroperiod disturbance that has altered the hydrology causing a shift in the vegetative community.		**1**
9	**Does wetland provide benefits to downstream habitats?**	
The wetland provides significant benefit to downstream habitats through nutrient transport and water quality.		**5**
The wetland provides some benefit to downstream habitats through nutrient transport and water quality.		**3**
The wetland provides minimal benefit to downstream habitats through nutrient transport and water quality.		**1**
10	**Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?**	
The wetland is not receiving untreated stormwater from adjacent land uses. No evidence of erosion and/or sedimentation. The water in the wetland shows no evidence of unusual turbidity algal blooms, sheen, or other observational indicators of water quality.		**5**
The wetland receives minimal amounts of untreated stormwater from areas adjacent land uses and/or there is some evidence of erosion and/or sedimentation, and/or the water in the wetland is slightly turbid, moderate evidence of algal blooms, moderate sheen, or other observational indicators of water quality.		**3**
The wetland is receiving significant amounts of the untreated stormwater runoff, and/or shows erosion and sedimentation, and/or the water is turbid, significant evidence of algal blooms, or other observational indicators of water quality.		**1**
C. Wetland Vegetation Community and Structure		
11	**The wetland size in acres.**	
The wetland is greater than five acres.		**5**
The wetland is less than five acres, but more than one acre.		**3**
The wetland is less than one acre.		**1**
12	**Is the wetland well vegetated?**	
Forested:		
The wetland exhibits canopy closure greater than 75% during the growing season.		**5**
The canopy is partially closed with less than 75% but more than 50% closure during the growing season.		**3**
The canopy is open with less than 50% canopy closure during the growing season.		**1**
Herbaceous/Shrub:		

Table 1: Scoring Guidance for the Wetland Assessment Form	
The wetland exhibits ground or shrub cover greater than 75% during the growing season.	**5**
The wetland exhibits partial ground or shrub cover less than 75% but more than 50% during the growing season.	**3**
The wetland is open with less than 50% ground cover during the growing season.	**1**
13 **Does the wetland contain nuisance and/or exotic species?**	
The wetland contains less than 5% coverage of nuisance and/or exotic species in any strata (herbaceous, shrub, and canopy).	**5**
The wetland contains more than 5% but less the 15% of nuisance and/or exotic species in any stratum (herbaceous, shrub, and canopy).	**3**
The wetland contained more than 15% nuisance and/or exotic species in any stratum (herbaceous, shrub, and canopy).	**1**
14 **Is the wetland community appropriate?**	
The wetland's vegetative community has not been impacted by development, earthmoving, agricultural activities, or impounded by water and the vegetative community is intact.	**5**
The wetland's vegetative community has evidence of disturbance from development, earthmoving, agricultural activities, and/or impounded by water but the community structure is generally intact.	**3**
The wetland's community has been altered by disturbance from development, earthmoving, agricultural activities, and/ impounded by water that is causing a shift in vegetative community structure.	**1**
15 **Is the wetland vegetive community healthy?**	
The vegetative community appears healthy with signs of regeneration and recruitment, and appropriate size and normal distribution.	**5**
The vegetative community appears generally healthy with signs of regeneration and recruitment, appropriate size and distribution, with less than 10% of the native species appearing stressed.	**3**
The vegetative community appears stressed with limited signs of regeneration and recruitment, and/or inappropriate size and distribution, and/or more than 10% native species observed appeared stressed.	**1**
D. Other Wetland Functions and Values	
16 **Is the wetland unique or rare for the region?**	
The wetland contains unique vegetation, such as submerged aquatic vegetation (eel grass, southern naiad, etc.), or is part of the aquifer recharge areas, sink hole/karst features, or other unique geographic formations.	**5**
The wetland contains unique vegetation, such as submerged aquatic vegetation (eel grass, southern naiad, etc.), but also contains some (less than 10%) exotic species (hydrilla, elodea) or is not located aquifer recharge areas, sink hole/karst features, or other unique geographic formations, but also contains some (less than 10%) exotic species (hydrilla, elodea).	**3**

Table 1: Scoring Guidance for the Wetland Assessment Form		
The wetland does not contain unique vegetation, nor is it located aquifer recharge areas, sink hole/karst features, or other unique geographic formations but also contains some (more than 10%) exotic species.		**1**
17	**Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?**	
The wetland abuts or directly connects to historically or culturally significant wetlands.		**5**
The wetland is indirectly connected to historically or culturally significant lands but is more than one mile from the lands.		**3**
The wetland is not directly or indirectly connected, nor within one mile of historically or culturally significant lands.		**1**
18	**Does the wetland have recreational value?**	
The wetland abuts or directly connects to publicly accessible recreational waterways (i.e. public boats and kayak launches).		**5**
The wetland is indirectly connected to publicly accessible recreational waterways.		**3**
The wetland is not directly or indirectly connected to publicly accessible recreational waterways.		**1**
19	**Is the wetland utilized by protected species?****	
Protected species have been documented and/or observed within the wetland and it contains suitable habitat.		**5**
Suitable habitats for protected species is located within the wetland but no documented occurrence or observations within 500 feet from the wetland.		**3**
No protected species habitat is within or adjacent to the wetland. No documented occurrences or observations of protected species within 1,000 feet of the wetland.		**1**
20	**Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?**	
The wetland contains hummocks, channels, refugia and/or other natural topographic features found in wetlands.		**5**
The wetland contains hummocks, channels, refugia and/or other natural topographic features found in wetlands and may include some features that are man-made (such as berms and ditching) if the features do not cause adverse impacts.		**3**
The wetland lacks natural occurring hummocks, channels, refugia and/or other natural topographic feature, and/or is highly disturbed by man-made features (such as ditching and berms).		**1**

Note(s):

*Impervious estimates are based on EPA's 8 Tools of Watershed Protection in Developing Areas. https://cfpub.epa.gov/watertrain/moduleframe.cfm?parent_object_id=1280#:~:text=Impervious%20cover%20is%20defined%20as,rainfall%20into%20underlying%20soils%2Fgroundwater.

**Protected Species are defined as those species (including plants) listed by USFWS FWC, and FDACS as Threatened or Endangered. Protected species also includes species listed by Florida Administrative Code (FAC) including Bald Eagle, Florida Black Bear, Bats.

City of Orlando Wetlands Study Community Field Workshop at Eagle's Nest Park

Agenda

9:00 to 9:15 am **(15 min)**	Welcome & Brief Intro
9:15 to 9:25 am **(10 min)**	Activity Overview
9:25 to 10:10 am **(45 min)**	Wetlands Scoring Activity Part A – Score Lake Fran Wetland (35 min) Part B – Compare Score to Wetland 3A (10 min)
10:10 to 10:30 am **(20 min)**	Report Out / Q&A

Wetlands Study Overview

The city is updating the Wetlands Assessment Policy and Scoring Rubric and wants you to be part of the process. The project consists of three phases shown below.

Why are we here?

Packet Contents

1. Overview Sheet
2. Eagle's Nest Park Site Map
3. Scorecard 1 – Wetland 3A
4. Scorecard 2 – Lake Fran Wetland
5. Scoring Guidance Document

Next Steps

Town Hall Meeting 1 – Engelwood Center

September 12, 2023, from 6:30 to 8:30 p.m.
6123 La Costa Dr #2931, Orlando, FL 32807

Town Hall Meeting 2 – Dr. James R. Smith Center

October 4, 2023, from 6:30 - 8:30 p.m.
1723 Bruton Blvd, Orlando, FL 32805

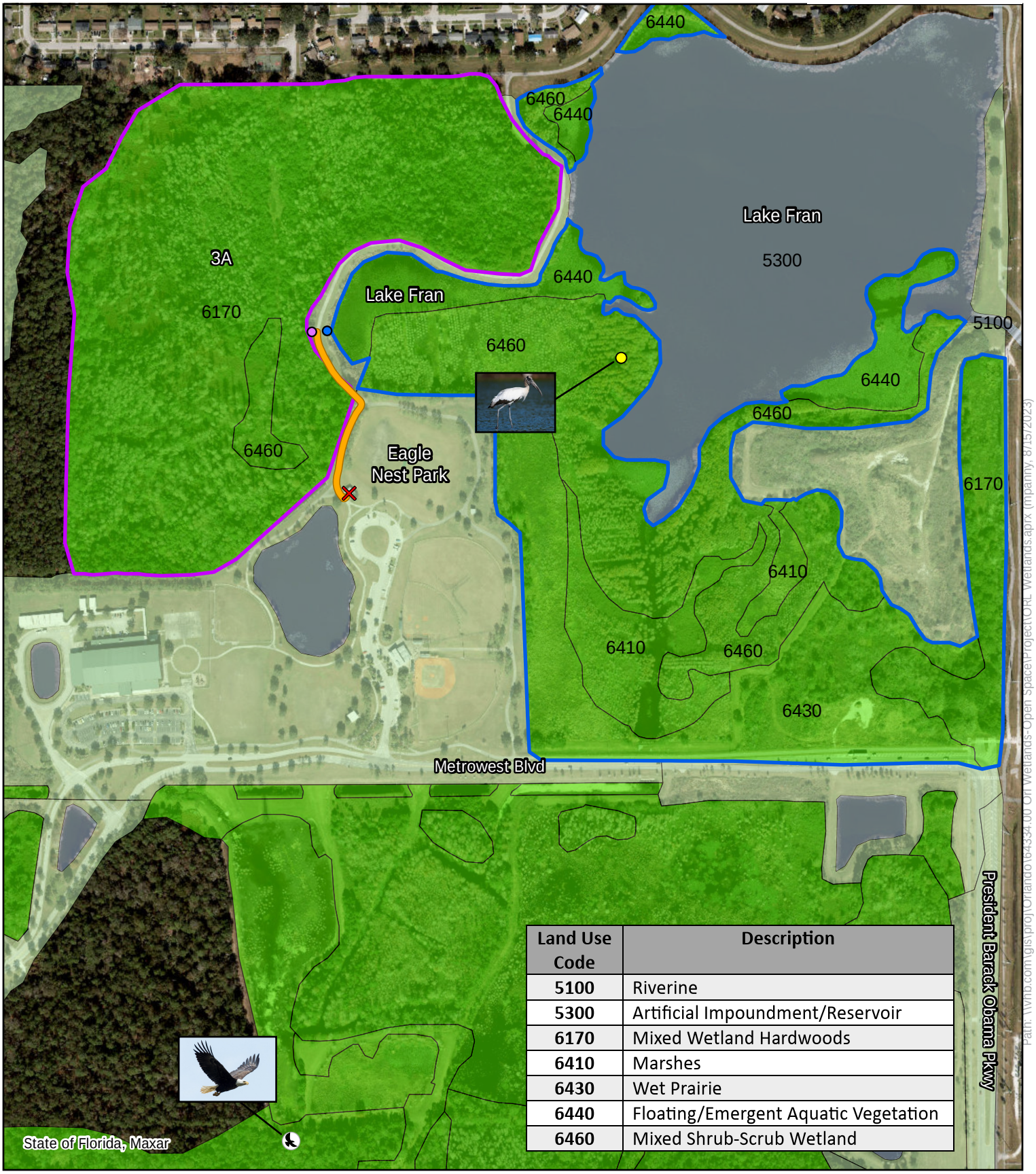
Project Contacts

Roberta Fennessy, VHB, 407.459.4058
Michaelle Petion, City of Orlando, 407.246.3837

Exhibit 1: Eagle Nest Park Wetland Assessment Map

Orlando Wetlands and Open Space Study | Orlando, FL

CITY OF ORLANDO



Land Use Code	Description
5100	Riverine
5300	Artificial Impoundment/Reservoir
6170	Mixed Wetland Hardwoods
6410	Marshes
6430	Wet Prairie
6440	Floating/Emergent Aquatic Vegetation
6460	Mixed Shrub-Scrub Wetland

Open Land
Surface Water
Wetland
Lake Fran Focus Area
3A Focus Area
3A Assessment Area
Lake Fran Assessment Area
Pavilion
Path to Assessment Areas
Eagle Nest
Wood Stork Nest

N

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	Subtotal	0
	Total Score out 100	0

Assess by:	Signature:	Date of Assessment(s):
Mr. Sees & Chuck Smith		07/28/2023

Note:*Seasonal High Water Elevation (SHWE) (NGVD 29) **Seasonal High Groundwater Elevation (NGVD 29)

Table 1 provides the scoring guidance for the City of Orlando Wetland Assessment Form. The Wetland Assessment Form must have a minimum score of 1 and maximum score of 5. For example, if a score falls between a 3 and 5, then the score maybe a 4. These scores must be provided for every question to accurately assess the wetland. Each wetland must be assessed individually, and the Wetland Assessment Form(s) must be provided to the City in support of the Planning and Zoning Applications.

Table 1: Scoring Guidance for the Wetland Assessment Form		
A. Adjacent Lands (Upland Buffer, Open Land, and Wildlife Utilization and Support)		
1	**Does the wetland have an upland buffer with an average width of 25 feet?**	**Point Value (1 to 5)**
The wetland buffer is intact, equal to or greater than 25 feet, not disturbed by agriculture, developed or other man-made activities, with less than 5% coverage of exotic species.		**5**
Wetland buffer is less than 25 feet but greater than 15 feet with minimal disturbance by agriculture, developed or other man-made activities, and less than 5% coverage of exotics.		**3**
Wetland has no buffer.		**1**
2	**Do the adjacent uplands provide wildlife habitat?**	
Adjacent uplands are conservation areas, park lands, or other lands protected from development, which show signs of wildlife utilization. (nests, trees cavities, burrows, tracks, scat, etc.).		**5**
Adjacent uplands are open land, agricultural lands, natural occurring lands (pine flatwoods, upland forested, etc.), or other disturbed lands but have evidence of wildlife utilization (nests, trees cavities, burrows, tracks, scat, etc.).		**3**
Adjacent uplands developed or disturb lands with minimal evidence of wildlife usage.		**1**
3	**Does wildlife have access to the wetland by way of a wildlife corridor(s) that connects the wetland to other natural habitats?**	
The wetland is directly connected to a designated wildlife corridor and/or other known wildlife movement corridors.		**5**
The wetland shows signs of wildlife movement (trails and tracks) but is indirectly connected to designated wildlife corridor or other known wildlife movement areas.		**3**
The wetland is isolated with limited or no wildlife movement along a corridor to or from other natural systems.		**1**
4	**Do the adjacent lands have natural watercourses (stream connections, over land flow, etc.) that discharges water into or out of the wetland?**	
The adjacent land provides a natural watercourse or overland flow in and/or out of the wetland with minimal restriction or disturbance.		**5**
The wetland watercourse/overland flow has been altered but flow in and/or out of the wetland is somewhat maintained. Alteration may include culverting, ditching, and channelization, etc.		**3**
The adjacent land is impounded or dewatering the wetland.		**1**

Table 1: Scoring Guidance for the Wetland Assessment Form

5	**What is percent of the wetland's regulatory basin is covered by impervious surfaces?**	
The wetland is located within a regulatory basin with less than 10% of the basin is covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)		**5**
The wetland is located within a regulatory basin with great than 10% but less 25% covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)*		**3**
The wetland is located within a regulatory basin with greater than 25% of the basin is covered by impervious surfaces. (Use current SFWMD and SJRWMD FLUCFCS data for this calculation.)*		**1**
B. Hydrology & Water Quality		
6	**Is the wetland hydrologically connected to other wetlands or wetland habitats?**	
The wetland is directly connected or abutting wetlands that are under a conservation easement, a park, or on other lands protected from development. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) that is directly connected to or abutting lands that are under a conservation easement, in a park, or on other lands protected from development.		**5**
The wetland is indirectly connected to other wetland via surface waters, canals, or ditches that are under a conservation easement, in a park, or on other lands protected from development. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) that is indirectly connected to lands that are under a conservation easement, in a park, or on other lands protected from development.		**3**
The wetland has been isolated from other wetlands systems and hydrology has been altered by development or other man-made disturbances. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and the hydrology has been altered (either by dewatering or increase water into the system) by development or other man-made disturbance.		**1**
7	**Is the wetland hydrologically connected to Waters of the US (WOTUS) or State waters?**	
The wetland is directly connected to WOTUS/State waters through riparian wetlands along a named river(s) or stream(s) with minimal hydrological disturbance. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is within 100 feet of WOTUS or State Waters.		**5**
The wetland is indirectly connected to WOTUS/State through surface waters, canals, or ditches. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is greater than 100 feet but less than 500 feet from WOTUS or State Waters.		**3**
The wetland is not connected to WOTUS/State through surface waters, canals, or ditches and has significant hydrological disturbance. The wetland is a naturally occurring isolated system (cypress dome, bay/gum swamps, isolated marshes, etc.) and is greater than 500 feet of WOTUS or State waters with evidence of significant hydrological disturbance.		**1**

Table 1: Scoring Guidance for the Wetland Assessment Form

8	**Is the wetland free of ditching, hydrologic impediments, and flow restrictions?**	
The wetland relatively free of ditching, flow restriction or impediments, and the hydrological function/hydroperiod is appropriate.		**5**
The wetland has some of ditching and/or, flow restriction or impediments, but the hydrological function/hydroperiod is somewhat maintained.		**3**
The wetland shows evidence of hydrological/hydroperiod disturbance that has altered the hydrology causing a shift in the vegetative community.		**1**
9	**Does wetland provide benefits to downstream habitats?**	
The wetland provides significant benefit to downstream habitats through nutrient transport and water quality.		**5**
The wetland provides some benefit to downstream habitats through nutrient transport and water quality.		**3**
The wetland provides minimal benefit to downstream habitats through nutrient transport and water quality.		**1**
10	**Is the wetland free of visible water quality impacts e.g., algal blooms, turbidity plumes, or erosion?**	
The wetland is not receiving untreated stormwater from adjacent land uses. No evidence of erosion and/or sedimentation. The water in the wetland shows no evidence of unusual turbidity algal blooms, sheen, or other observational indicators of water quality.		**5**
The wetland receives minimal amounts of untreated stormwater from areas adjacent land uses and/or there is some evidence of erosion and/or sedimentation, and/or the water in the wetland is slightly turbid, moderate evidence of algal blooms, moderate sheen, or other observational indicators of water quality.		**3**
The wetland is receiving significant amounts of the untreated stormwater runoff, and/or shows erosion and sedimentation, and/or the water is turbid, significant evidence of algal blooms, or other observational indicators of water quality.		**1**
C. Wetland Vegetation Community and Structure		
11	**The wetland size in acres.**	
The wetland is greater than five acres.		**5**
The wetland is less than five acres, but more than one acre.		**3**
The wetland is less than one acre.		**1**
12	**Is the wetland well vegetated?**	
Forested:		
The wetland exhibits canopy closure greater than 75% during the growing season.		**5**
The canopy is partially closed with less than 75% but more than 50% closure during the growing season.		**3**
The canopy is open with less than 50% canopy closure during the growing season.		**1**
Herbaceous/Shrub:		

Table 1: Scoring Guidance for the Wetland Assessment Form	
The wetland exhibits ground or shrub cover greater than 75% during the growing season.	**5**
The wetland exhibits partial ground or shrub cover less than 75% but more than 50% during the growing season.	**3**
The wetland is open with less than 50% ground cover during the growing season.	**1**
13 **Does the wetland contain nuisance and/or exotic species?**	
The wetland contains less than 5% coverage of nuisance and/or exotic species in any strata (herbaceous, shrub, and canopy).	**5**
The wetland contains more than 5% but less the 15% of nuisance and/or exotic species in any stratum (herbaceous, shrub, and canopy).	**3**
The wetland contained more than 15% nuisance and/or exotic species in any stratum (herbaceous, shrub, and canopy).	**1**
14 **Is the wetland community appropriate?**	
The wetland's vegetative community has not been impacted by development, earthmoving, agricultural activities, or impounded by water and the vegetative community is intact.	**5**
The wetland's vegetative community has evidence of disturbance from development, earthmoving, agricultural activities, and/or impounded by water but the community structure is generally intact.	**3**
The wetland's community has been altered by disturbance from development, earthmoving, agricultural activities, and/ impounded by water that is causing a shift in vegetative community structure.	**1**
15 **Is the wetland vegetive community healthy?**	
The vegetative community appears healthy with signs of regeneration and recruitment, and appropriate size and normal distribution.	**5**
The vegetative community appears generally healthy with signs of regeneration and recruitment, appropriate size and distribution, with less than 10% of the native species appearing stressed.	**3**
The vegetative community appears stressed with limited signs of regeneration and recruitment, and/or inappropriate size and distribution, and/or more than 10% native species observed appeared stressed.	**1**
D. Other Wetland Functions and Values	
16 **Is the wetland unique or rare for the region?**	
The wetland contains unique vegetation, such as submerged aquatic vegetation (eel grass, southern naiad, etc.), or is part of the aquifer recharge areas, sink hole/karst features, or other unique geographic formations.	**5**
The wetland contains unique vegetation, such as submerged aquatic vegetation (eel grass, southern naiad, etc.), but also contains some (less than 10%) exotic species (hydrilla, elodea) or is not located aquifer recharge areas, sink hole/karst features, or other unique geographic formations, but also contains some (less than 10%) exotic species (hydrilla, elodea).	**3**

Table 1: Scoring Guidance for the Wetland Assessment Form		
The wetland does not contain unique vegetation, nor is it located aquifer recharge areas, sink hole/karst features, or other unique geographic formations but also contains some (more than 10%) exotic species.		**1**
17	**Is the wetland historically or culturally significant or connected to these systems (i.e. Orlando Wetlands Park or other parks)?**	
The wetland abuts or directly connects to historically or culturally significant wetlands.		**5**
The wetland is indirectly connected to historically or culturally significant lands but is more than one mile from the lands.		**3**
The wetland is not directly or indirectly connected, nor within one mile of historically or culturally significant lands.		**1**
18	**Does the wetland have recreational value?**	
The wetland abuts or directly connects to publicly accessible recreational waterways (i.e. public boats and kayak launches).		**5**
The wetland is indirectly connected to publicly accessible recreational waterways.		**3**
The wetland is not directly or indirectly connected to publicly accessible recreational waterways.		**1**
19	**Is the wetland utilized by protected species?****	
Protected species have been documented and/or observed within the wetland and it contains suitable habitat.		**5**
Suitable habitats for protected species is located within the wetland but no documented occurrence or observations within 500 feet from the wetland.		**3**
No protected species habitat is within or adjacent to the wetland. No documented occurrences or observations of protected species within 1,000 feet of the wetland.		**1**
20	**Does the wetland contain natural topographic features (hummocks, channels, refugia, etc.)?**	
The wetland contains hummocks, channels, refugia and/or other natural topographic features found in wetlands.		**5**
The wetland contains hummocks, channels, refugia and/or other natural topographic features found in wetlands and may include some features that are man-made (such as berms and ditching) if the features do not cause adverse impacts.		**3**
The wetland lacks natural occurring hummocks, channels, refugia and/or other natural topographic feature, and/or is highly disturbed by man-made features (such as ditching and berms).		**1**

Note(s):

*Impervious estimates are based on EPA's 8 Tools of Watershed Protection in Developing Areas. https://cfpub.epa.gov/watertrain/moduleframe.cfm?parent_object_id=1280#:~:text=Impervious%20cover%20is%20defined%20as,rainfall%20into%20underlying%20soils%2Fgroundwater.

**Protected Species are defined as those species (including plants) listed by USFWS FWC, and FDACS as Threatened or Endangered. Protected species also includes species listed by Florida Administrative Code (FAC) including Bald Eagle, Florida Black Bear, Bats.

Meeting Notes

Date:	September-October 2023	Notes Taken By:	Emily Porter
Project No.:	64334.01	Re:	Orlando Wetlands Community Town Hall Meetings

Two town hall style Community Meetings were held to educate the public on the benefits of wetland protection and to present draft wetland assessment and policy documents.

- Meeting 1, September 12, 2023, at 6:30 pm – Engelwood Neighborhood Center
- Meeting 2, October 4, 2023, at 6:30 pm – Dr. James R. Smith Center

VHB Intro Presentation

VHB provided background on wetlands (benefits and how they're protected) and an overview of the project including the project goals and tasks. Participants were then dismissed to the project stations.

Project Stations

Wetland Benefits Board

The wetland benefits board provided background information on the benefits of wetlands and how they are protected at each level of government.

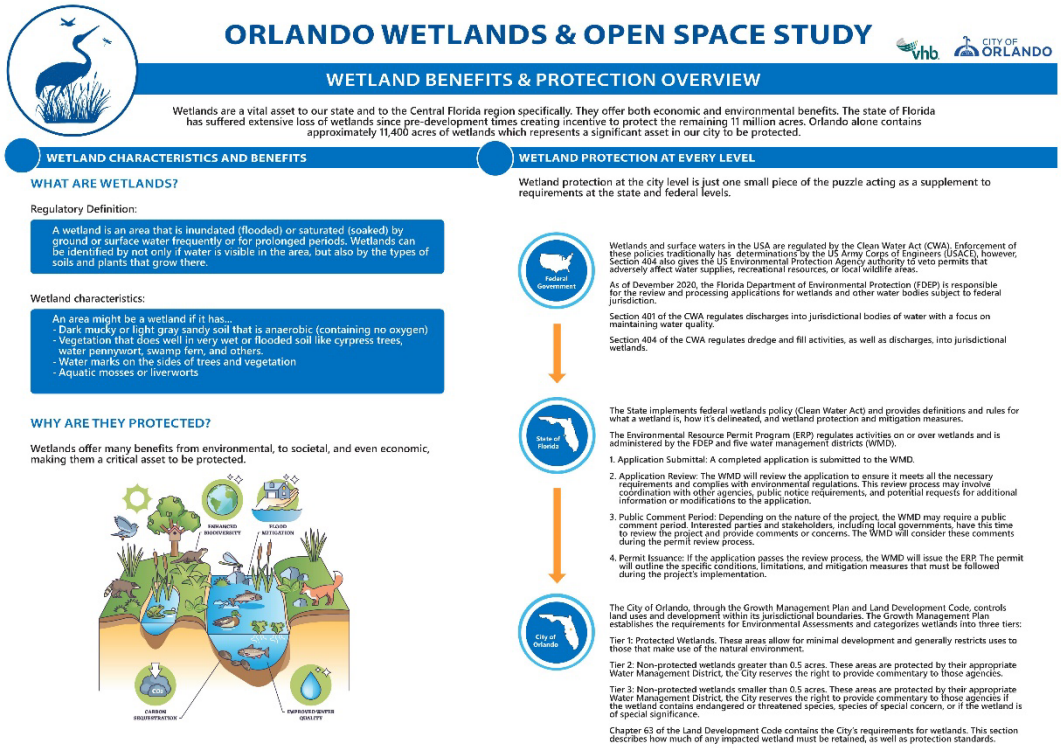

Figure 1: Wetland Benefits Board

Wetlands Mapping Board

The wetlands mapping board reflected the mapping work completed to date including the new wetlands inventory and sites within the Conservation future land use. This was compared against the previous 1992 wetlands map.

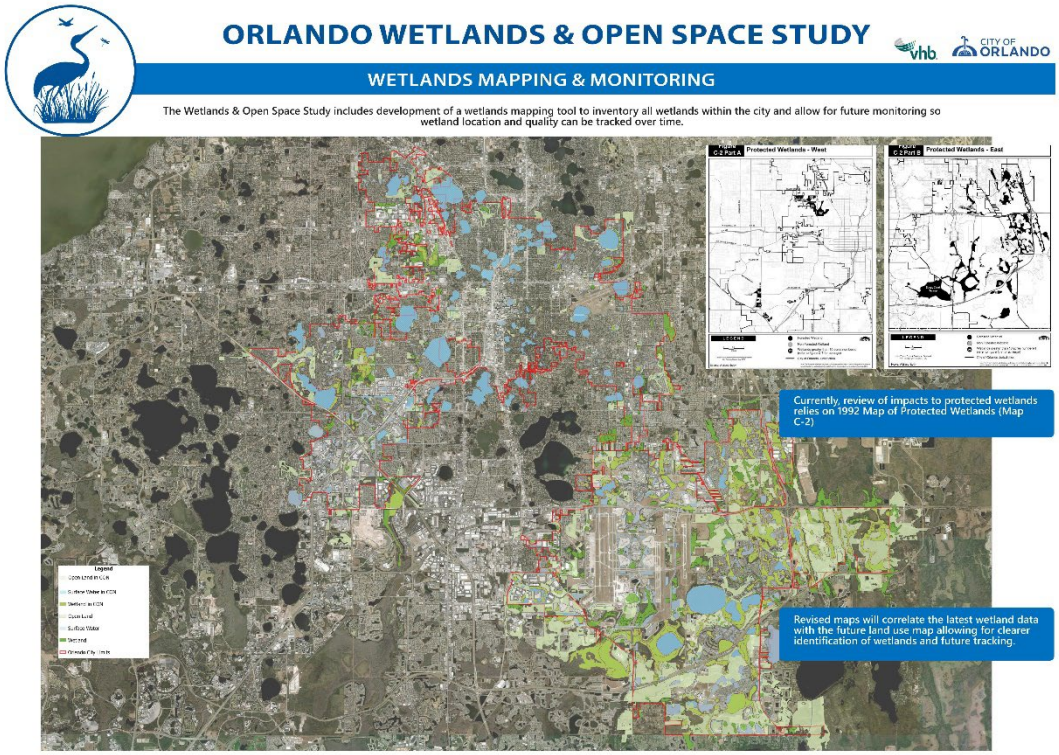

Figure 2: Wetlands Mapping Board

Discussion

- Participants asked for clarification on the different wetland identifications on the wetlands map board, including the difference between a site designated as a wetland and a site with a conservation designation.
- Participants indicated concern over recent flooding in the Engelwood area and the importance of considering drainage impacts resulting from development activity
- Participants asked about changes in Tier 1 Protected Wetlands from the 1990s map to the current version. How many of these would now be considered Tier 3? Expressed the importance of making sure the proposed updates will increase protection of wetlands and not abandon the wetlands that have suffered a loss in quality since the last update.
- Participants pointed out that some areas on the map designated as "open space" that are undevelopable (parks) and some that are developed areas.

Policy Recommendations Board

The policy recommendations board summarized the proposed policy revisions including the current policy, proposed changes, and overall objectives or outcomes to be achieved.

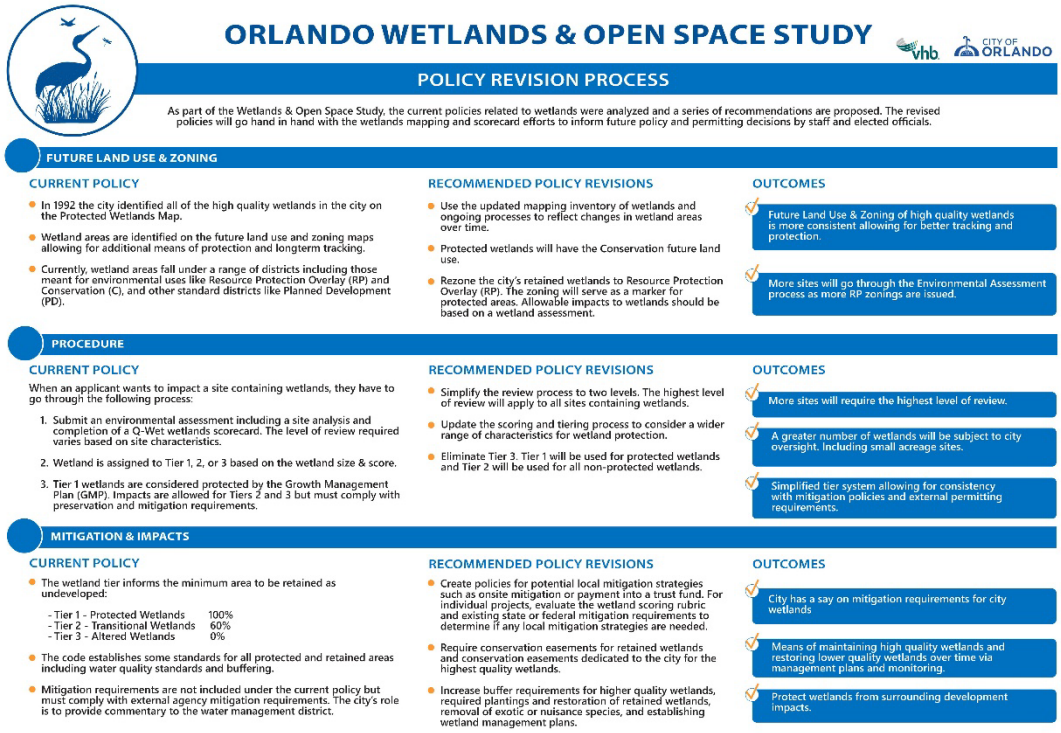

Figure 3: Policy Recommendations Board

Discussion

- The majority of the discussion was focused on how the current policies work and whether or not proposed changes would add or remove wetland area in the City.
- Who would be assessing the site, and is there any oversight? The applicant would have the primary responsibility, but we would want a prevision that the City could also do so, in the event the applicant was unable to or was suspected of providing false information. This also led to a discussion about when an assessment would be required and the value of the assessments as a monitoring tool throughout the city.
- Is there a minimum acreage size? Discussed how the current GMP policies divide the city's wetlands into three tiers, with the tier 2 and 3 being separated by size requirements – which is proposed for removal. This allows the city to provide mitigation requirements for all wetlands in the city regardless of size.
- Discussed the strategy around mitigation was focused on avoidance or mitigation within the city, because WMD permits allow for mitigation in the basin area, but that would not necessarily benefit the city.
- Discussed general issues with the city's existing policies not prescribing standards beyond buffer areas for retained wetlands.
- There was a question on whether the changes would affect currently approved PDs, which they would not, with the exception of requiring Assessments for any onsite wetlands if a change is requested, but that was to build and maintain the monitoring system.

- Briefly discussed about the environmental trust fund, how it was already existing policy that was not implemented but could be used to provide inspections and maintenance. However, due to the policy language being relatively early-stages there's some other city departments that will need to be involved to sort that out.
- Participant asked about using language of "development" vs. "impact"
- Asked about oversight for applicant assessment of the site.

Wetland Scoring Board

The wetland scoring board provided an overview of the proposed scorecard detailing a previous example wetland scoring from the Eagle's Nest site visit.

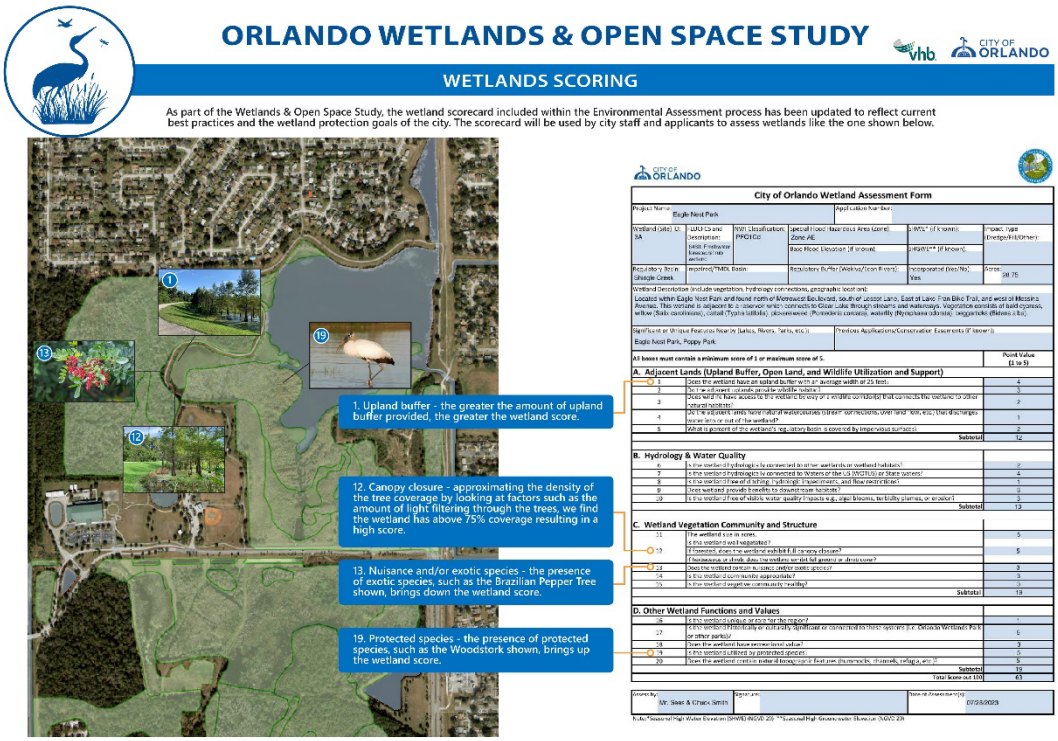

Figure 4: Wetlands Scoring Board

Discussion

- Participants discussed the details of the assessment form included nuisance vegetation coverages, and the scoring.
- The consultant team walked participants through the guidance document for additional detail on how wetlands are scored.
- A participant asked how invasives are calculated.
- What about protected species use?

ATTENDANCE

Meeting 1

City Project Team
Mark Sees – Wetlands Manager
Michaelle Petion – Planning
Elisabeth Dang – Planning
Jacob Ballard – Planning
Neighborhood Relations

Consultant Team
Chuck Smith – VHB
Emily Porter – VHB
James Hartsfield – VHB
Roberta Fennessy – VHB

Public Participants
Kelly Delaney – Engelwood Park Neighborhood Association
Stephanie Salvilla – BioTech
Sara Isaac – self
Keith Rivera – Greater Orlando Aviation Authority

Meeting 2

City Project Team
Michaelle Petion – Planning
Elisabeth Dang – Planning
Jacob Ballard – Planning
Courtney McCoy – Orlando Wetlands
Brittany Sellers – GreenWorks

Consultant Team
Chuck Smith – VHB
Emily Porter – VHB
James Hartsfield – VHB

Public Participants
Cynthia Gosiewski – N/A
Christianah Oyenuga – The Nature Conservancy
Amanda Glaze – N/A
Julie Salvo – Tavistock
Juliette Harrell – Families on the Go