



Environmental Assessment

**Orlo Vista Neighborhood Drainage Improvements
Orange County, Florida**

**FEMA-DR-4337-FL
November 2021**



FEMA

**U.S. Department of Homeland Security
Federal Emergency Management Agency Region IV
Atlanta, GA**



**Florida Division of Emergency Management
Tallahassee, FL**

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LIST OF ACRONYMS

APE	Area of Potential Effects
BFE	Base Flood Elevation
BMP	Best Management Practices
CBRS	Coastal Barrier Resources Act
CCCL	Coastal Construction Control Line
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Resource Permit
ESA	Endangered Species Act
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDEM	Florida Division of Emergency Management
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FWC	Florida Fish and Wildlife Conservation Commission
GHG	Greenhouse Gas
HDPE	High-Density Polyethylene
HMGP	Hazard Mitigation Grant Program
IPaC	Information for Planning and Consultation
LF	Linear Feet

Orange County, Orlo Vista Neighborhood, Drainage Environmental Assessment

MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System (NPDES)
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OEHP	Office of Environmental Planning & Historic Preservation
RCP	Reinforced Concrete Pipe
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Office
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
USC	United States Code
USFWS	United States Fish and Wildlife Service
USACE	United States Army Corps of Engineers

1.0 INTRODUCTION

The eye of Hurricane Irma passed west of Orange County, Florida on September 11, 2017. As the storm passed, the neighborhood of Orlo Vista in Orange County, Florida 32811 received nearly 10 inches of rain in one day. The excess rainwater surface flows overwhelmed drainage pumps and caused three ponds to overflow and flood into the neighborhood. Approximately 500 homes were flooded and over 200 people were rescued due to the flooding event.

The Orlo Vista neighborhood is located within western Orange County bound by West Colonial Drive (State Road 50), Pine Hills Road, Old Winter Garden Road (County Road 526), Carter Street, and Hiawassee Road. The neighborhood encompasses roughly 1.9 square miles and includes a population of 6,047 people and 2,314 households.

The county, through the Florida Division of Emergency Management (FDEM), applied for Hazard Mitigation Grant Program (HMGP) funds from the Federal Emergency Management Agency (FEMA) under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 United States Code (USC) 5170(c), to deepen and regrade three existing ponds, decommission the existing pump station, install a new pump station with backup power, and install new force main connections within the Orlo Vista neighborhood (4337-0023). In accordance with the Stafford Act, regulations promulgated pursuant thereto and codified in 44 Code of Federal Regulations (CFR) Part 206 (44 CFR 206), and FDEM Mitigation Bureau Non-Federal Representative Memorandum of Agreement (MOA), dated November 14, 2017, FEMA and FDEM are required to analyze the potential environmental impacts of the Proposed Action prior to making an informed decision regarding project funding. The proposed action presented by Orange County does not qualify for use of Department of Homeland Security (DHS) Categorical Exclusion N9 for federal assistance for flood hazard reduction actions because the project activities affect an area greater than 25 acres. Therefore, this Environmental Assessment (EA) has been prepared by FDEM and FEMA in accordance with the National Environmental Policy Act (NEPA) (Public Law 91-190, as amended) and its implementing regulations at 40 CFR Parts 1500—1508) promulgated by the President’s Council on Environmental Quality (CEQ).

Recent changes to the CEQ regulations (40 CFR Part 1500–1508) became effective on September 14, 2020; 85 Fed. R. 43304-76 (July 16, 2020). As stated in 40 CFR Part 1506.13, the new regulations apply to any NEPA process begun after September 14, 2020. The scoping of the proposed action and NEPA process substantively commenced prior to that date; therefore, this EA conforms to the CEQ NEPA implementing regulations that were in place prior to September 14, 2020, and policies issued by the Department of Homeland Security Directive 023-01, Rev 01, and FEMA Directive 108-1.

2.0 PURPOSE AND NEED

The purpose of the proposed action is to provide the county the means to adequately provide flood mitigation measures to reduce future flooding risk in the Orlo Vista neighborhood, protecting lives and improved property from future damages. The need for the proposed action, resulting from the impacts from Hurricane Irma in 2017, is to improve drainage capacity to the community. The previous disaster event significantly flooded the surrounding residential structures in the area and required over 200 people to be rescued from the neighborhood. The proposed action would reduce the risk of flood loss in the area.

The proposed action is consistent with the requirements of HMGP as authorized by Section 404 of the Stafford Act, 42 USC 5170(c). When authorized by the President as a result of a major disaster declaration, the HMGP program makes funding available in designated areas to provide opportunities to take critical mitigation measures to reduce the risk of loss of life and property from future disasters.

3.0 ALTERNATIVES

The alternatives that were considered in addressing the purpose and need, are the No Action Alternative and the Preferred Action Alternative, which is to increase the storage capacity for three existing ponds and the creation of a new pump station in the Orlo Vista Neighborhood. Per the utilization of streamlined procedures for environmental assessments associated with Hurricanes Harvey, Irma, Maria, and Nate (Federal Register Notice FEMA-2017-0035), these alternatives are the only alternatives requiring consideration in this EA. The alternatives that were considered but dismissed included the proposed acquisition and demolition of 100 low-lying properties and structures, the removal of roads, and the horizontal expansion of existing ponds into the acquired parcels, increasing the pump station discharge capacity, and constructing an impoundment berm around the pond. These alternatives were dismissed because they would have removed residents from their community, may have disproportionately impacted low income or minority residents, and would not provide adequate storage volume for water to prevent flood loss.

3.1 Alternative 1: No Action Alternative

Under the No Action Alternative, the drainage improvement project would not be constructed. Under this alternative, the capacity of the drainage system would remain the same and the area would not be further protected from future storm events. The Orlo Vista neighborhood would remain at a higher risk of flood loss and the county would continue to maintain the existing current drainage facilities.

3.2 Alternative 2: Increase Storage Capacity for Three Existing Ponds and Create a New Pump Station (Preferred Alternative)

Under the Preferred Alternative, the proposed drainage improvement project would be implemented within the Orlo Vista Neighborhood. The county proposes to provide drainage improvements through the excavation of three existing ponds to increase depth and capacity, demolishing the existing pump station, and construct a new pump station and force mains (Appendix B). The project would provide flood mitigation measures to reduce future flooding risk for the area and protect the residential buildings surrounding the project area. The Preferred Alternative would provide protection against a 100-year storm event.

The proposed pond excavation would occur within three ponds adjacent to each other and west of the Orlo Vista community: west pond (GPS coordinates: 28.546001, -81.455712), north pond (GPS coordinates: 28.547016, -81.453103), and south pond, also known as Lake Venus (GPS coordinates: 28.545055, -81.452897). West pond has an area of 27.15 acres, north pond is 7.44 acres, and south pond is 5.93 acres. All three ponds would be graded and armored with geo-web and filled with crushed coarse aggregate when necessary. West pond would have a designed depth of at least 60 feet, north pond would have a design depth of 62 feet, and south pond would have a design depth of 60 feet. The ponds will not be expanded horizontally.

The proposed project would also include the installation of three 48-inch reinforced concrete pipe (RCP) culverts providing necessary connectivity between the ponds and contributing drainage area. 333 linear feet (LF) of 48-inch RCP would be installed between GPS coordinates (28.545291, -81.453608) and (28.545287, -81.456515) to connect south pond and west pond. 349 LF of 48-inch RCP would be installed to connect north pond and west pond from GPS coordinates (28.546604, -81.454648) to (28.546608, -81.453555), and 31 LF of 48-inch RCP would be installed to connect the contributing drainage area to the west pond.

A new pump station would be constructed at the southern slope of west pond (GPS coordinates: 28.544284, -81.454419) and would include three submerged axial/mixed flow pumps each with a capacity of approximately 13,333 gallons per minute. The total flow rate for all three pumps would be approximately 40,000 gallons per minute. A permanent backup generator would also be installed at the new pump station. The proposed concrete structure would include three 24-inch vertical pipes inside three exterior walls, and a bar screen located on the pond-facing side of the structure. A catwalk would be situated atop the structure for maintenance access. The structure would be mostly submerged, while the electrical equipment and generator would be situated near the pump station.

The existing pumps for the pump station would be removed and a 48-inch high-density polyethylene (HDPE) pipe force main, located at (GPS coordinates: 28.544264, -81.454365) would be connected to the existing force main at (GPS coordinates: 28.541354, -81.4541833). This

new configuration would convey water approximately 1,167.56 LF from the new pump station to the existing pump station which currently conveys water to Shingle Creek.

3.3 Impact Evaluation

The Council on Environmental Quality (CEQ) notes: “Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial” (40 CFR 1508.8).

When possible, quantitative information is provided to establish potential impacts; otherwise, the potential qualitative impacts are evaluated based on the criteria listed in Table 3.0.1:

Table 3.0.1: Impact Significance and Context Evaluation Criteria for Potential Impacts

Impact Scale	Criteria
None/Negligible	The resource area would not be affected and there would be no impact, OR changes or benefits would either be non-detectable or, if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, but the changes would be small and localized. Impacts or benefits would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.
Moderate	Changes to the resource would be measurable and have either localized or regional scale impacts/benefits. Impacts would be within or below regulatory standards, but historical conditions would be altered on a short-term basis. Mitigation measures would be necessary, and the measures would reduce any potential adverse effects.
Major	Changes to the resource would be readily measurable and would have substantial consequences/benefits on a local or regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

The Scoping Checklist (Appendix A) evaluates the potential environmental direct and indirect impacts to Physical, Water, Coastal, Biological, Cultural, and Socioeconomic Resources for the

No Action and proposed action alternative. If the potential impact to the resource was determined to be “None/Negligible” or “Minor”, the impacts to those resources are only included within the Scoping Checklist. The impacts anticipated to be “Moderate” are further discussed below. No resources are anticipated to have “Major” impacts. A summary of the potential impacts of the No Action and proposed action alternatives is discussed in the table below:

Table 3.0.2: Summary of Affected Environment and Potential Impacts from Section 4 of this EA for the No Action Alternative and the Preferred Action Alternative

Area of Evaluation	Alternative 1: No Action	Alternative 2: Proposed Action
Physical Resources	<p>None/Negligible:</p> <p>No impacts to existing geology and soils, air quality, visual quality and aesthetics, or climate change.</p>	<p>Minor:</p> <p>The existing topography will be altered through regrading and excavating in the pond areas. Minor short-term impacts to air quality and climate change may occur due to exhaust emissions from construction equipment.</p>
Water Resources	<p>None/Negligible:</p> <p>No impacts to the water quality, floodplain, or wetland. The surrounding area would remain at risk to future flooding events.</p>	<p>Minor:</p> <p>The proposed action would occur within the floodplain and reduce the flood risk to the nearby residential area. No adverse effects to Shingle Creek water quality is anticipated. The proposed action occurs within a wetland. Short-term impacts to wetlands may occur due to dewatering and excavation. Long-term changes to wetlands include a change in depth and slope incline for each pond. The proposed action would increase residence time (the amount of water in the pond divided by the rate of addition of water to the pond) and lower phosphorus and nitrogen loading rates, improving the overall water quality. Impacts to Shingle Creek water quality are anticipated to be negligible.</p>

Area of Evaluation	Alternative 1: No Action	Alternative 2: Proposed Action
Coastal Resources	<p>None/Negligible:</p> <p>No impacts to the coastal zones or coastal barrier resources. The proposed project area occurs within a land-locked (inland) county.</p>	<p>None/Negligible:</p> <p>No impacts to the coastal zones or coastal barrier resources. The proposed project area occurs within a land-locked (inland) county.</p>
Biological Resources	<p>None/Negligible:</p> <p>No impacts to wildlife and fish, vegetation, invasive species, threatened and endangered species, migratory birds, essential fish habitat, or bald and golden eagles as no work would occur within the area.</p>	<p>Moderate:</p> <p>Dewatering and construction activities would likely cause short-term impacts to species within the project area. These actions may affect bald eagles within the area during construction. Once construction is completed, species typically found within the area are expected to return.</p>
Cultural Resources	<p>None/Negligible:</p> <p>No impacts to cultural resources are anticipated as no work would be conducted.</p>	<p>None/Negligible:</p> <p>The proposed action received concurrence from SHPO, the Seminole Nation of Oklahoma, and the Muscogee (Creek) Nation with the determination of no historic properties affected.</p>
Socioeconomic Resources	<p>None/Negligible:</p> <p>No disproportionate or adverse impacts on minority or low-income populations would be anticipated.</p>	<p>None/Negligible:</p> <p>No disproportionate or adverse impacts to minority or low-income populations would be anticipated. The proposed action would provide reduced flood risk to the population within the project area.</p>

4.0 AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

The Orlo Vista neighborhood is located within Orange County, Florida and is bounded by West Colonial Drive (State Road 50), Pine Hills Road, Old Winter Garden Road (County Road 526),

Cater Street, and Hiawasse Road. The neighborhood mainly consists of single family residential homes with most businesses located along Old Winter Garden Road and West Colonial Drive.

4.1 WATER RESOURCES

4.1.1 Floodplains

Executive Order (EO) 11988 Floodplain Management, as implemented in 44 CFR Part 9, requires federal agencies to “avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.” The 100-year floodplain is the area covered by water in the event of a 100-year flood, which is a flood that has a 1 percent chance of being equaled or exceeded in magnitude in any given year. The 500-year floodplain is the area covered by water in the event of a 500-year flood, which is a flood that has a 0.2 percent chance of being equaled or exceeded in magnitude in any given year. The VE zone is the coastal area subject to a velocity hazard (wave action) where Base Flood Elevations (BFEs) are provided. The VE zones as well as the 100- and 500-year floodplains are mapped on FEMA Flood Insurance Rate Maps (FIRM). FEMA uses the eight-step decision-making process (Appendix C) to evaluate potential effects on and mitigate impacts to floodplains and wetlands in compliance with EO 11988 and EO 11990 Wetlands Management.

4.1.1.1 Existing Conditions

The project area is located within the AE zone per FIRM panel number 12095C0240F, dated September 25, 2009, and Letter of Map Revision 19-04-2940P, effective March 11, 2020 (Appendix D). The Orlo Vista neighborhood experienced severe flooding during Hurricane Irma in 2017. During this flooding event, approximately 500 homes in the community were flooded and over 200 people were rescued. The existing ponds have a permanent pool volume of 160.98 acre-foot. The two existing pumps have an approximate peak discharge rate of 40,000 gallons per minute, however, they are not currently capable of reaching the peak rate due to the reduced size of the interior force main diameter.

4.1.1.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action Alternative would not involve any construction activities or stormwater improvements in the area; therefore, the area would continue to experience flooding during storm events. Due to no action being taken, the No Action Alternative would have no effect on floodplains and the improved property and infrastructure in the area would continue to be at risk from flood loss.

Alternative 2: Increase Storage Capacity for Three Existing Ponds and Create a New Pump Station (Preferred Alternative)

Under Alternative 2, the deepening of the ponds and the installation of a new pump station would serve to reduce the flood risk to the surrounding Orlo Vista neighborhood. The proposed ponds would increase the permanent pool volume from 160.98 acre-foot to 437.36 acre-foot. The ponds would be designed so that the water levels may be lowered before a storm event to reduce the flood risk and may benefit downstream areas by reducing post-event discharges to Shingle Creek to recover from flooding. The three proposed pumps would have a combined total flow rate of approximately 40,000 gallons per minute. These pumps and new force main would restore the design capacity to that of the original design capacity of the pump station. This will allow the ponds to be drawn down before a storm event. The models conducted in the Drainage Design Report by Geosyntec Consultants, Inc., dated May 4, 2020 (Appendix E), show that the discharge from the ponds do not appear to cause or contribute to a downstream flooding problem along Single Creek. Due to the increase in stormwater capacity and the ability to drawdown the ponds prior to a major storm, Alternative 2 is anticipated to have a minor beneficial impact to the floodplain.

4.2 BIOLOGICAL RESOURCES

4.2.1 Threatened and Endangered Species

The Endangered Species Act (ESA) of 1973 provides for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead Federal agencies for implementing ESA are the United States Fish and Wildlife Service (USFWS) and the U.S. National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). The law requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a “take” of any listed threatened or endangered species.

4.2.1.1 Existing Conditions

In accordance with Section 7 of the ESA, the project was evaluated for the potential impact to federally listed threatened and endangered species that may be present in the project area identified by accessing the USFWS Information for Planning and Consultation (IPaC) database on August 03, 2020 (Appendix F). The threatened and endangered species with the potential to occur in or near the project area are for the federally threatened Eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), Everglades snail kite (*Rostrhamus sociabilis plumbeus*), the federally threatened Florida scrub-jay (*Aphelocoma coerulescens*), the federally threatened wood stork (*Mycteria americana*), the federally threatened eastern indigo snake (*Drymarchon corais couperi*), the

federal candidate species gopher tortoise (*Gopherus polyphemus*), the federally endangered beautiful pawpaw (*Deeringothamnus pulchellus*), the federally endangered Britton's beargrass (*Nolina brittoniana*), papery whitlow-wort (*Paronychia chartacea*), the federally threatened pidgeon wings (*Clitoria fragrans*), the federally endangered sandlace (*Polygonella myriophylla*), the federally threatened scrub buckwheat (*Eriogonum longifolium* var. *gnaphalifolium*), the federally endangered scrub lupine (*Lupinus aridorum*), the federally endangered scrub plum (*Prunus geniculate*), and the federally endangered wide-leaf warea (*Warea amplexifolia*). However, the project is likely to have no effect on these species as the project area is highly developed and likely not preferred habitat for any of these species. If species occur within the project area, they are expected to exhibit avoidance behavior by moving away from physical disturbances.

4.2.1.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action Alternative would not involve any construction activities; therefore, there would be no impact to any listed threatened or endangered species. The threatened and endangered bird species have the potential to use the existing ponds as foraging habitat but are likely to avoid the area due to it being heavily developed and in close proximity to a busy highway.

Alternative 2: Increase Storage Capacity for Three Existing Ponds and Create a New Pump Station (Preferred Alternative)

Under Alternative 2, there is anticipated to be no effect to threatened and endangered species. Threatened and endangered species with the potential to occur within the area are unlikely to occur due to poor habitat quality. The area is heavily developed and adjacent to a highway with a high volume of traffic. The wood stork (*Mycteria americana*) has the potential to occur within the project area, despite the urban setting. Per the Florida Department of Environmental Protection (FDEP) MapDirect Wood Stork Active Nesting Colonies Mapper, accessed August 2020, the project area, as well as a 2,500-foot buffer zone around the project area, has no documented nests. Wood storks are a highly colonial species, usually nesting in large rookeries; therefore, nesting within the project vicinity is unlikely to occur. If an adult wood stork does occur within the project area, it is likely to move away from the project area during construction activities and could return after construction activities have ceased. Due to the availability of other wood stork foraging habitat in the area, Alternative 2 is anticipated to have no effect to wood storks.

4.2.2 Migratory Birds

The Migratory Bird Treaty Act (MBTA) of 1918 provides a program for the conservation of migratory birds that fly through lands of the United States. The lead Federal agency for implementing the MBTA is the USFWS. The law makes it illegal for anyone to "take" (meaning

to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect), attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or eggs.

4.2.2.1 Existing Conditions

The entire state of Florida is considered a flyway zone for migratory birds. According to the USFWS IPaC database accessed on August 03, 2020 (Appendix F), 11 migratory bird species were identified as being potentially present within the project area, and ten of the species have a designated breeding season which could occur within the project vicinity.

4.2.2.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action Alternative would not involve any construction activities; therefore, there would be no potential for effect and a “take” would not occur since there would be no modification of the surrounding area.

Alternative 2: Increase Storage Capacity for Three Existing Ponds and Create a New Pump Station (Preferred Alternative)

Alternative 2 has the potential to impact species that may be found along the retention ponds due to the proposed construction activities. If construction occurs during breeding season, these actions may adversely affect nesting birds and their young. The impacts are anticipated to be temporary and limited to the duration of the construction activities. USFWS National Standard Conservation Measures (Appendix G) shall be followed to minimize impacts to migratory birds.

4.2.3 Bald and Golden Eagles

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald and golden eagles, including their parts, nests, or eggs. Like the MBTA, the law makes it illegal for anyone to “take,” possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or their parts, feathers, nests, or eggs. “Take” is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

4.2.3.1 Existing Conditions

According to the Florida Fish and Wildlife Conservation Commission (FWC) Historical Bald Eagle Nesting Areas mapper and the Audubon Florida EagleWatch Nest App, two documented bald eagle nests are located within the project area. Nest OR082a is located at GPS coordinates 28.544310, -81.453210 and OR082 is located at GPS coordinates 28.544649, -81.453974. The 660-foot buffer around the OR082a nest includes the full extent of the existing south pond and a portion of the existing west pond. The 330-foot buffer around the OR082a nest includes a portion of the existing south pond. The 660-foot buffer around the OR082 nest includes the majority of the existing south pond and a portion of both north and west pond. The 330-foot buffer around the OR082 nest includes a portion of south and west pond. The general nesting season for bald eagles in the southeast is from about October 1 to May 15.

Golden eagles inhabit tundra, grasslands, forested habitat and woodland-brushlands, south to arid deserts and avoid nesting in urban habitat. Due to the species habitat being inconsistent with the habitat of the project location, the presence of a golden eagle is unlikely to occur within the project area and no impacts are expected.

4.2.3.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action Alternative would not involve any construction activities; therefore, there would be no potential for effect and a “take” would not occur since there would be no modification of the surrounding area.

Alternative 2: Increase Storage Capacity for Three Existing Ponds and Create a New Pump Station (Preferred Alternative)

Alternative 2 has the potential to impact bald eagles that are found within the project area during construction activities. Increased construction traffic and noise may have an adverse impact to nesting bald eagles and their young. Impacts are anticipated to be temporary and limited to the duration of construction activities. A USFWS Short-Term Eagle Incidental Take Permit (number MB89957D) has been obtained for the proposed project activities (Appendix O). The county shall comply with all terms and conditions prescribed by the permit.

4.3 CULTURAL RESOURCES

As a Federal agency, FEMA must consider the potential effects of its actions upon cultural resources prior to engaging in any undertaking. This obligation is defined in Section 106 of the National Historic Preservation Act (NHPA), as amended and implemented by 36 CFR Part 800. The NHPA of 1966 defines a historic property as “any prehistoric or historic district, site, building,

structure, or object included in, or eligible for inclusion on the National Register.” Eligibility criteria for listing a property on the National Register of Historic Places (NRHP) are found at 36 C.F.R. Part 60.

The Florida Division of Historic Resources maintains a database of Florida’s historic properties, which is regularly updated, in part on the basis of reports prepared by cultural resources professionals in advance of construction projects that are subject to State Historic Preservation Officer (SHPO) and federal agency review as well as by FEMA’s Office of Environmental Planning & Historic Preservation (OEHP). Requirements for review include the identification of significant cultural resources that may be impacted by the undertaking. Cultural resources are defined as prehistoric and historic sites, structures, districts, buildings, objects, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons.

Only those cultural resources determined to be potentially significant under NHPA are subject to protection from adverse impacts resulting from an undertaking. To be considered significant, a cultural resource must meet one or more of the criteria established by the National Park Service that would make that resource eligible for inclusion in the NRHP. The term “eligible for inclusion in the NRHP” includes all properties that meet the NRHP listing criteria, which are specified in the Department of Interior regulations Title 36, Part 60.4 and NRHP Bulletin 15. Sites that have not been evaluated at the time of the undertaking may be considered potentially eligible for inclusion in the NRHP and, as such, are afforded the same regulatory consideration as nominated properties.

Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the undertaking may directly or indirectly affect cultural resources. Within the APE, impacts to cultural resources are evaluated prior to the undertaking for both Standing Structures (above ground resources) and Archaeology (below ground resources). FEMA has determined that the APE is limited to the areas within which all construction and ground disturbing activities would be confined and the viewshed of the proposed project.

A review of existing information by an individual meeting the Secretary of Interior’s Professional Qualification Standards (6 CFR Part 61) revealed that no properties listed in or nominated for listing in the NRHP, no National Historic Landmarks, and no archaeological sites determined eligible for inclusion in the National Register are listed within the proposed project’s APE.

4.3.1 Historic (Standing) Structures

4.3.1.1 Existing Conditions – Historic Standing Structures

114 above ground resources were identified within one mile of the APE. None of these resources are located within the APE or within the viewshed of the APE. Historical aerial photos indicate that development within the area occurred between the mid-1950s to 1980.

4.3.1.2 Potential Impacts and Proposed Mitigation to Standing Historic Structures

Alternative 1: No Action

The No Action Alternative would not involve any construction activities; therefore, there would be no federal undertaking and no impact to standing historic structures.

Alternative 2: Increase Storage Capacity for Three Existing Ponds and Create a New Pump Station (Preferred Alternative)

In a letter dated September 17, 2020, FEMA consulted with the Florida SHPO on its determination of effect for the proposed activities under Alternative 2. In this letter, FEMA concluded that no properties listed or considered eligible for listing in the NRHP are within the project's APE, resulting in a determination of "No Historic Properties Affected." On October 13, 2020, FEMA received concurrence with a finding of No Historic Properties Affected from the Florida SHPO.

4.3.2 Archaeological Resources

4.3.2.1 Existing Conditions

15 cultural resource investigations have been identified within a one mile radius of the APE. Two of these investigations included the proposed project's APE, however, neither survey engaged in any subsurface examination of the proposed project's area. Historical aerial imagery shows the ponds have been previously modified and expanded between 1954 and 1980. Additional pond expansions occurred in 1984. Historical aerial imagery also indicates the area has been significantly altered and developed since the mid-1950s and that potential for unknown resources to be identified is unlikely to occur during the construction period.

4.3.2.2 Potential Impacts and Proposed Mitigation, Archaeological Resources

Alternative 1: No Action

The No Action Alternative would not involve any construction activities; therefore, there would be no impact to archaeological resources.

Alternative 2: Increase Storage Capacity for Three Existing Ponds and Create a New Pump Station (Preferred Alternative)

FEMA consulted with the Florida SHPO, Alabama-Quassarte Tribal Town, Miccosukee Tribe of Indians of Florida, Muscogee (Creek) Nation, Poarch Band of Creek Indians, and the Seminole Tribe of Florida via electric mail sent on September 17, 2020. A consultation letter was sent via conventional mail to the Seminole Nation of Oklahoma on September 17, 2020. Responses were received from the Seminole Nation of Oklahoma, Muscogee (Creek) Nation, Seminole Tribe of Florida, and the Florida SHPO with no objections to the proposed project. The Muscogee (Creek) Nation, Seminole Tribe of Florida, and Seminole Nation of Oklahoma has requested that in the event of inadvertent discoveries of human remains and related Native American Graves Protection and Repatriation Act items, that all work cease and their offices, as well as other appropriate agencies, be notified immediately.

To minimize impact to archaeological resources, FEMA specified the following conditions for treatment of fortuitous finds or unexpected discoveries during ground disturbing activities within the project area:

- If human remains or intact archaeological deposits are uncovered, work in the vicinity of the discovery will stop immediately and all reasonable measures to avoid or minimize harm to the finds will be taken. The applicant will ensure that archaeological discoveries are secured in place, that access to the sensitive area is restricted, and that all reasonable measures are taken to avoid further disturbance of the discoveries. The applicant's contractor will provide immediate notice of such discoveries to the applicant. The applicant shall contact the Florida Division of Historic Resources and FEMA within 24 hours of the discovery. Work in the vicinity of the discovery may not resume until FEMA has completed consultation with SHPO, Tribes, and other consulting parties as necessary. In the event that unmarked human remains are encountered during permitted activities; all work shall stop immediately, and the proper authorities notified in accordance with Florida Statutes, Section 872.05.
- Any changes to the approved scope of work will require submission to, and evaluation and approval by, the State and FEMA, prior to initiation of any work, for compliance with Section 106.
- Offsite fill will come from either a commercial source or privately owned borrow pit where the fill is not obtained by the horizontal expansion of the pre-existing pit.

5.0 CUMULATIVE IMPACTS

Per the CEQ regulations, cumulative impacts refer to the impact on the environment that “results from the incremental impact of the action when added to other past, present, and reasonably

foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). In accordance with NEPA, this EA considered the combined effect of the preferred alternative and other actions occurring or proposed in the vicinity of the proposed project site.

In September 2017, excess rainfall from Hurricane Irma overloaded the existing drainage pumps and caused the three existing ponds to overflow into the nearby homes. This resulted in approximately 500 homes being flooded and over 200 people requiring rescue. This portion of the Orlo Vista neighborhood is located within flood zone AE and may be susceptible to flood damage from future tropical storms and hurricanes, which may result in Presidentially declared disasters. The proposed project is expected to increase the level of flood protection to the Orlo Vista neighborhood by increasing the capacity of the three ponds and by installing a new pump station that will allow the drawdown of the ponds prior to a storm event. This increased protection would reduce flooding risk in the area, preventing future property loss from flooding, reduce emergency rescues, and reduce loss of access to the area.

The Orlo Vista neighborhood is largely developed with single family residences with commercial business being focused along Old Winter Garden Road and West Colonial Drive. The proposed project is not anticipated to affect development in the area or increase population size due to the area already being a densely developed urban residential and commercial area.

It is anticipated that the proposed action will have short-term impacts related to noise, air quality, wetlands, fish and wildlife, vegetation, threatened and endangered species, migratory birds, bald and golden eagles, and transportation due to the proposed construction activities. However, it is expected the proposed project will have no long-term negative impacts to either the residential areas or to the environment in the project area, as the Proposed Project is intended to protect existing infrastructure and properties within the area with no changes to current land use. In consideration of the overall impact of the proposed project in relation to impacts from past, present, and reasonably foreseeable future activities, the proposed action is not expected to have significant adverse cumulative impacts on any resource.

6.0 PERMITS AND PROJECT CONDITIONS

- Orange County will maintain the FDEP Generic Permit for Discharge of Ground Water from Dewatering Operations Permit (Number FLG072449) issued on June 20, 2019 and comply with all of the conditions of the permit. This permit is issued under the provisions of Section 403.0885, Florida Statutes (F.S), and applicable rules of the Florida Administrative Code (F.A.C.). Coverage under this permit constitutes authorization to

discharge to waters of the State pursuant to the Department's federally approved National Pollutant Discharge Elimination System (NPDES) program. See Appendix H.

- Orange County will maintain South Florida Water Management District (SFWMD) Individual Environmental Resource Permit (Number 48-103547-P) issued on November 18, 2020 and comply with all of the conditions of the permit. This permit is issued under the provisions of Chapter 373, Part IV, of the F.S. and the rules in Chapter 62-330 of the F.A.C., and constitutes certification of compliance with state water quality standards under section 401 of the Clean Water Act, 33 U.S.C. 1341, and a finding of consistency with the Florida Coastal Management Program. See Appendix I.
- Orange County will maintain USFWS Short-Term Eagle Incidental Take Permit (Number MB89957D) issued on June 8, 2021 and comply with all of the conditions of the permit. See Appendix O.
- Orange County will follow the applicable USFWS Nationwide Standard Conservation Measures as listed in Appendix G.
- Orange County will follow the conditions set forth by the State Historic Preservation Officer (SHPO):
 - If human remains or intact archaeological deposits are uncovered, work in the vicinity of the discovery will stop immediately and all reasonable measures to avoid or minimize harm to the finds will be taken. The applicant will ensure that archaeological discoveries are secured in place, that access to the sensitive area is restricted, and that all reasonable measures are taken to avoid further disturbance of the discoveries. The applicant's contractor will provide immediate notice of such discoveries to the applicant. The applicant shall contact the Florida Division of Historic Resources and FEMA within 24 hours of the discovery. Work in the vicinity of the discovery may not resume until FEMA has completed consultation with SHPO, Tribes, and other consulting parties as necessary. In the event that unmarked human remains are encountered during permitted activities; all work shall stop immediately, and the proper authorities notified in accordance with Florida Statutes, Section 872.05.
 - Any changes to the approved scope of work will require submission to, and evaluation and approval by, the State and FEMA, prior to initiation of any work, for compliance with Section 106.
 - Offsite fill will come from either a commercial source or privately owned borrow pit where the fill is not obtained by the horizontal expansion of the pre-existing pit

7.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

The following agencies were contacted during the preparation of this EA:

- Alabama-Quassarte Tribal Town
- Florida Division of Historic Resources (SHPO)
- Florida State Clearinghouse
- Miccosukee Tribe of Indians of Florida
- Muscogee (Creek) Nation
- Poarch Band of Creek Indians
- Seminole Tribe of Florida
- Seminole Tribe of Oklahoma
- U.S. Army Corps of Engineers, Jacksonville District

FEMA issued a disaster-wide initial public notice for Hurricane Irma on October 6, 2017 to notify the public of projects under the Public Assistance, Individual Assistance, and Hazard Mitigation Grant programs that may affect historic properties or that may be occurring within floodplains or wetlands.

Orange County mailed two separate letters, one on August 12, 2019 and a follow-up in July 2020, to approximately 750 residents in the Orlo Vista area to inform them about the proposed project in the area (Appendix J). The first letter informed the residents that Phase I planning was being conducted in the area for the Preferred Action and provided project details. The second letter invited residents to join an online meeting hosted by Orange County in order to give an update on the status of the project and answer questions the residents might have regarding the proposed project.

Orange County also previously hosted two community meetings to discuss the Preferred Action. The first meeting was held on August 20, 2019. During this meeting the county did a presentation describing the flooding issues that occurred in the area during Hurricane Irma in 2017, provided a description of the proposed Preferred Alternative, informed the public of the HMGP grant award for Phase I, and notified the residents that a Letter of Map Revision had been submitted that would change the area's flood zone (Appendix K). The second meeting was hosted via online platform on July 23, 2020, in which the county provided status updates on the project and additional details on the proposed project designs (Appendix L).

The public has been notified of the availability of this EA for review and comment by posting of the public notice on FEMA's website, in the Orlando Sentinel newspaper on October 24, 2021, and the project location, and a hard copy of the EA was available at 4200 South John Young Parkway, Orlando, FL 32839 during normal business hours, as well as both websites. The public

comment period ended on November 11, 2021 after 15 days from date of initial posting (October 27, 2021) with no comments received.

8.0 LIST OF PREPARERS

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**Appendices are available for review upon request to
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