

1.0 PROJECT DESCRIPTION AND PURPOSE AND NEED:

a. Project Information:

Project Name: **McCulloch Road Roadway Conceptual Analysis Study**

Project Limits: **North Orion / Lockwood Boulevard to North Tanner Road**

County: **Orange and Seminole Counties**

b. Project Description

Orange County is conducting a Roadway Conceptual Analysis (RCA) for McCulloch Road from North Orion / Lockwood Boulevard to North Tanner Road. The roadway corridor is located in northeast Orange County (Figure 1.1) and is 1.1 miles in length. Existing McCulloch Road is a two-lane, minor arterial roadway located in a suburban area of northeast Orange County Commission District Five. The roadway alignment is straight, and the corridor is surrounded by a mix of housing developments, wetlands, conservation areas, and some commercial development near both ends of the project.

Figure 1.1: Project Location Map



McCulloch Road is a two-lane urban collector that runs east-west with an existing speed of 45 MPH. Within the study area, a continuous 5-foot sidewalk is provided along the south side of McCulloch Road. On the north side of McCulloch Road, a 5-foot sidewalk is provided, generally set back further from the roadway at the northern ROW line except from east of Lockwood Boulevard to west of Keats Way, approximately 1,200 feet. The existing drainage system collects roadway stormwater runoff in curb and gutter and conveys the roadway stormwater runoff to treatment ponds via closed drainage system.

Preferred Alternative

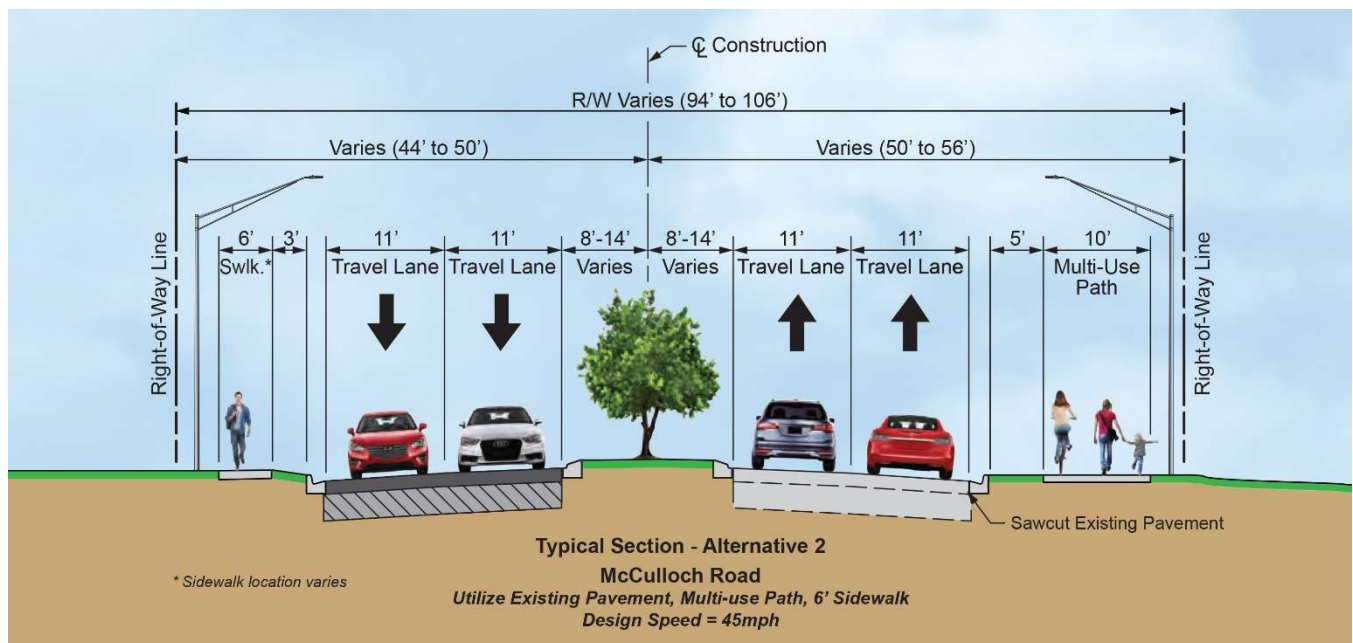
The proposed improvements include widening McCulloch Road from two to four lanes, constructing intersection improvements, providing drainage treatment and providing pedestrian facilities with a shared use path on the south side and sidewalk on the north side of the roadway.

Typical Section

The Preferred Alternative has a design speed of 45 mph and consists of utilizing the existing pavement for the new eastbound lanes and constructing a new roadway for the westbound lanes, shown on Figure 1.2. Curb inlets will be provided for drainage conveyance. Stormwater attenuation and floodplain compensation will be provided. The roadway design elements incorporated into the preferred alternative include the following:

- Four 11-foot travel lanes
- A six-foot sidewalk located on one north side of the roadway and 10-foot multi-use path the south side
- A variable width raised median with Type E curb and gutter to include street trees
- Type F curb and gutter along the outside lanes with five-foot utility strips between the back of curb and the sidewalk or path
- A grass strip between the path or sidewalk with the right-of-way line of varying width
- A proposed right-of-way width of 94 to 106 feet

Figure 1.2: Preferred Typical Section



Intersection Improvements

The Preferred Alternative will also implement intersection improvements for the existing signalized intersections at North Orion Boulevard/Lockwood Boulevard, Keats Way/Worchester Drive (West) and Old Lockwood Road/Tanner Road. No other intersections met the necessary signal warrants.

Drainage

The preferred stormwater management facilities and floodplain compensation ponds were derived based on a number of factors including avoidance of wetlands and conservation areas, hydrologic considerations, and available right-of-way. The preferred pond sites are the existing ponds for Basin 1-6 and Pond 7A for Basin 7. FPC-1 (Pond 7K), is the preferred flood compensation for area FIA-1. Floodplain compensation for FIA-2 will be provided during the final design phase via flood modeling of the isolated floodplain area.

Right-of-way

McCulloch has an existing right-of-way of 90 to 120 feet which accommodates most of the roadway typical section for the Preferred Alternative. Approximately 6.3 acres of right-of-way acquisition is required for the roadway and stormwater improvements. The Preferred Alternative will impact a total of thirteen parcels.

c. Purpose and Need:

The purpose and need for the project are based on three key factors: 1) provide traffic capacity to meet social/economic demands, 2) be consistent with transportation plans, and 3) enhance safety. This segment of McCulloch Road is currently operating at an acceptable level of service (LOS), but by the design year 2048, McCulloch Road within the project limits will operate at an unacceptable LOS F. Roadway improvement are needed to provide an acceptable LOS.

The widening of McCulloch Road is included in the Orange County Capital Improvement Program (CIP), the Orange County 2030 Long-Range Transportation Plan (LRTP), and the Orange County Ten-Year Roadway Plan.

Crash reports for the three-year period between December 2016 and November 2021 were obtained and reviewed. A total of 166 crashes occurred within the study corridor. Forty-one (41) crashes occurred at the N. Orion Blvd./Lockwood Blvd intersection over the three-year period, and fifty (50) crashes occurred along the segment from N. Orion Blvd./Lockwood Blvd. to Worchester Dr. Capacity and intersection improvements will enhance safety along the corridor.

d. Planning Consistency:

The project is within the jurisdiction of MetroPlan Orlando. The MetroPlan Orlando 2045 Cost Feasible Plan (CFP) (see attached page) includes widening of McCulloch Road in Orange County. The McCulloch improvements are funded for design in the Orange County 5-year Capital Improvement Plan and MetroPlan Orlando 2026-2030 Transportation Improvement Program (TIP) (see attached pages).

Currently Adopted LRTP-CFP	Comments			
Yes				
PHASE	Currently Approved	\$	FY	Comments
PE (Final Design)				
TIP	Y	\$2,275,000	2026	
STIP	N			
R/W				
TIP	Y	\$1,846,060	2027	
STIP	N			
Construction				
TIP	Y	\$8,000,186	2028	
STIP	N			

**Include pages from current TIP/STIP/LRTP*

2.0 ENVIRONMENTAL ANALYSIS

2.1 SOCIAL and ECONOMIC

Issues/Resources		*Substantial Impacts?			
		Yes	No	Enhance	No Inv
1.	Social		X		
2.	Economic		X		
3.	Land Use Changes		X		
4.	Mobility			X	
5.	Aesthetic Effects		X		
6.	Relocation Potential				X
7.	Farmland Resources				X

2.2 CULTURAL RESOURCES

Issues/Resources		*Substantial Impacts?			
		Yes	No	Enhance	No Inv
1.	Section 106 of the National Historic Preservation Act				X
2.	Section 4(f) of the USDOT Act of 1966, as amended		X		
3.	Section 6(f) of the Land and Water Conservation Fund				X
4.	Recreational Areas and Protected Lands		X		

2.3 NATURAL RESOURCES

Issues/Resources		*Substantial Impacts?			
		Yes	No	Enhance	No Inv
1.	Protected Species and Habitat		X		
2.	Wetlands and other Surface Waters		X		
3.	Essential Fish Habitat				X
4.	Floodplains		X		
5.	Sole Source Aquifer				X
6.	Water Resources		X		
7.	Aquatic Preserves				X
8.	Outstanding FL Waters				X
9.	Wild and Scenic Rivers				X
10.	Coastal Barrier Resources				X

2.4. PHYSICAL RESOURCES

Issues/Resources		*Substantial Impacts?			
		Yes	No	Enhance	No Inv
1.	Highway Traffic Noise		X		
2.	Air Quality		X		
3.	Contamination		X		
4.	Utilities and Railroad		X		
5.	Construction		X		

USCG Permit

X	A USCG Permit IS NOT required.
	A USCG Permit IS required.

* Impact Determination: Yes = Substantial Impact; No = No Substantial Impact; Enhance = Enhancement; No Inv = Issue absent, no involvement. Basis of decision is documented in the following sections.

2.1 Social and Economic

The project will not have significant social and economic impacts. Below is a summary of the evaluation performed.

2.1.1 Social

The US Census 5-year American Community Survey (2019-2023 Estimated) was evaluated to determine potential social impacts. The median household income in the project area is \$126,560. The median household income in Orange County was \$77,011 and in Seminole County was \$83,030. Approximately 9.5% of the population in the project area is considered low-income because their annual income is below the poverty level. This is less than Orange County (12.4%) and similar to Seminole County (9.2%).

The study area contains Limited English Proficiency populations with 4.0% of the population in the project area speaks English not well or not at all. The most recent available data show that the project area in 2010 was 30% percent minority, which is less than Orange County (62%) and Seminole County (44%). There were no special cases identified on this project such as handicapped or disabled displacements that warrant special assistance. The project is not expected to contribute to social isolation of any special populations of elderly, handicapped, minority or transit-dependent groups. No relocations are proposed under the Preferred Alternative. Due to the limited area of additional right-of-way and no residential relocations, no significant impacts are anticipated to community cohesion, community characteristics, special community designation, safety/emergency response, demographics, and community goals and quality of life.

Based on the analysis of census data and the results of field inspections and public involvement efforts, it was determined that the Preferred Alternative would not cause disproportionately high and adverse effects on any minority or low-income populations and is in accordance with the provisions of Executive Order 12898 and Federal Highway Administration (FHWA) Order 6640.23a. Based on public engagement activities, no controversy is anticipated for the project. For all the reasons outlined above, it was determined that the project will have no substantial impact on social resources.

2.1.2 Economic

A review of potential impacts to commerce and the tax base was conducted. The study determined that there would be no relocations or displacements under the Preferred Alternative, so no significant

negative economic impacts are anticipated. The project may enhance the local economy by improving the transportation system and enhancing connectivity to/from major employment centers.

2.1.3 Land Use Changes

Land use cover descriptions provided for both uplands and wetlands are classified utilizing the Florida Land Use Cover and Forms Classifications System (FLUCCS) designations. In addition to existing right-of-way, the roadway impacts under the Preferred Alternative would impact 0.45 acre of Residential, Medium Density (FLUCCS 1200), 0.30 acre of Residential, High Density (FLUCCS 1300), 0.60 acre of Pine Flatwoods (FLUCCS 4110), 0.11 acre of Mixed Wetland Hardwoods (FLUCCS 6170) and 0.14 acre of Cypress (FLUCCS 6210). Pond impacts under the Preferred Alternative would total 2.7 acres and would occur to areas mapped as Pine Flatwoods (FLUCCS 4110).

The project is compatible and consistent with the planned land uses documented in the Orange County and Seminole County Comprehensive Plans. No secondary development or similar changes in land use are anticipated as a result of the proposed project. For these reasons, no significant impacts on land use are anticipated.

2.1.4 Mobility

The project is anticipated to enhance mobility through additional roadway capacity and connectivity with sidewalks and multi-use paths. The sidewalks and shared use paths will provide mobility options besides vehicles and will be available to elderly, young, disabled and low-income individuals.

2.1.5 Aesthetic Effects

A review of the potential viewshed, and compatibility issues was conducted. The Preferred Alternative follows an existing roadway corridor and would not introduce any unnatural or unusual elements into the surrounding viewshed. Because of the urban nature of the area and the location along a transportation corridor with similar infrastructure, these impacts will not change the character of the viewshed and are compatible with the intended use of these transportation corridors.

2.1.6 Relocation Potential

The preferred alternative has no residential or business displacements for the project.

2.1.7 Farmland Resources

Lands within the project vicinity do not meet the definition of farmland as defined in 7 CFR Part 658 and the provisions of the Farmland Protection Policy Act of 1981 do not apply because the entire project area is located in the urbanized area of Orlando with no designated farmlands adjacent to the project corridor.

2.2 Cultural Resources

The project will not have significant impacts to cultural resources. Below is a summary of the evaluation performed.

2.2.1 Section 106 of the National Historic Preservation Act

A Cultural Resource Assessment Survey (CRAS), conducted in accordance with 36 CFR Part 800, was performed for the project, and the resources listed below were identified within the project Area of Potential Effect (APE). These resources do not meet the eligibility criteria for inclusion in the National Register of Historic Places (NRHP). Therefore, in consultation with SHPO, Orange County has determined that the proposed project will result in No Historic Properties Affected.

The defined archaeological APE includes the existing right-of-way where improvements are proposed. The architectural history APE included the existing right-of-way and was extended to the back or side

property lines of parcels adjacent to the right-of-way or no more than 100 meters (328 feet) from the right-of-way line. Where ponds are proposed, the APE was defined to include the proposed pond footprints in addition to a 30.5-meter (100-foot) buffer of each pond. Archaeological survey was conducted within the Archaeological APE and architectural survey was conducted within the Architectural History APE. The "APE" refers to the combined archaeological APE and architectural history APE.

The archaeological survey included the excavation of shovel tests and "no-dig" points; due to heavy modern development and buried utilities within the archaeological APE, most of the corridor was limited to pedestrian survey and surface inspection. No artifacts were recovered, and no archaeological sites or occurrences were identified within the APE.

No historic properties were identified within the APE. No further work is required. For these reasons, no significant impacts to historic resources are anticipated.

2.2.2 Section 4(f) of the USDOT Act of 1966, as amended

The Econ Wilderness Area is within the project area near the McCulloch Road and Tanner Road intersection. There are no impacts to this property which are protected pursuant to Section 4(f) of the USDOT Act of 1966.

2.2.3 Section 6(f) of the Land and Water Conservation Fund

There are no properties in the project area that are protected pursuant to Section 6(f) of the Land and Water Conservation Fund of 1965.

2.2.4 Recreational Areas Historic Sites/Districts

The Econ Wilderness Area is within the project area near the McCulloch Road and Tanner Road intersection. There are no impacts to this property.

2.3 Natural Resources

The project will not have significant impacts to natural resources. Below is a summary of the evaluation performed:

2.3.1 Protected Species and Habitat

The potential impact on federal and/or state-listed wildlife species was evaluated based upon the occurrence determinations for Orange County, Florida. Further analysis will be required during final design to specifically address quantities of impact, current status of wildlife species, and other design and/or construction measures which can be incorporated to reduce or eliminate potential impacts.

2.3.2 Wetlands and other Surface Waters

The following evaluation was conducted pursuant to Presidential Executive Order 11990 of 1977 as amended, Protection of Wetlands and the USDOT Order 5660.1A, Preservation of the Nation's Wetlands.

The USFWS National Wetlands Inventory (NWI) map included mapped wetland areas within the footprint of the Preferred Alternative. Based on field surveys, the Preferred Alternative impacts approximately 0.3 acres of wetlands. Thus, mitigation is anticipated for these wetland impacts. Impacts would occur to manmade stormwater features such as existing ponds and swales that are considered Other Surface Waters. These other surface water impacts would not occur to natural surface waters and would not require mitigation. The Orange County standard specifications will be implemented to avoid and minimize impacts during construction. Coordination regarding drainage and surface water impacts occurred with the SJWMD during a meeting held on April 19, 2022. For the above reasons, no

substantial impacts to wetlands are anticipated.

2.3.3 Essential Fish Habitat

There is no Essential Fish Habitat (EFH) in the project area.

2.3.4 Floodplains

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM's) dated September 28, 2007, portions of the study area are located within Zone A and X of the FEMA flood zone hazard areas. There will be floodplain impacts within the project right-of-way that be affected by the proposed improvements which will be mitigated by providing compensatory volume in proposed floodplain compensation ponds.

There are no floodways within the project limits.

FPC areas were determined in this study in the locations of pond alternatives. FPC-1 (Pond 7K), is the preferred flood compensation area FIA-1. Floodplain compensation for FIA-2 will be provided during the final design phase via flood modeling of the isolated floodplain area. It should be noted that a location directly adjacent to a floodplain is preferred for compensation to meet the County's cup-for-cup compensation requirement.

2.3.5 Sole Source Aquifer

There is no Sole Source Aquifer in the project area.

2.3.6 Water Resources

A Water Quality Impact Evaluation, and a Pond Siting Report were completed for the proposed project and are included in the project file. The project spans parts of Orange and Seminole Counties and their associated MS4 systems and ultimately discharges into Little Econlockhatchee River. FDOT Standard Best Management Practices for Road and Bridge Construction will be implemented to avoid and minimize downstream impacts, particularly from sedimentation and erosion. Minimal impacts to wetlands or natural surface waters are anticipated.

A SJRWMD Environmental Resource Permit is anticipated for modifications to an existing drainage system and for increases in permeable cover. A Florida Department of Environmental Protection (FDEP) National Pollution Discharge Elimination System Permit will also be required. A Stormwater Runoff Control Concept will be developed during the design phase. No changes are proposed to the pre-development outfall locations.

Wet detention ponds will provide the required water quality treatment and attenuation for the project improvements. There are seven basins in the existing and proposed condition, and Basins 1-6 drain to existing stormwater systems in the existing condition. Below is a summary of the preferred pond alternatives:

Basin	Preferred Pond Alternative	Pond Right-of-Way Area Including Access (ac)
Basin 1	1	0.00
Basin 2	2	0.00
Basin 3	3	0.00
Basin 4	4	0.00
Basin 5	5	0.00
Basin 6	6	0.00
Basin 7	7A	4.08

2.3.7 Aquatic Preserves

There are no aquatic preserves in the project area.

2.3.8 Outstanding FL Waters

There are no Outstanding Florida Waters (OFW) in the project area.

2.3.9 Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers or other protected rivers in the project area.

2.3.10 Coastal Barrier Resources

It has been determined that this project is neither in the vicinity of, nor leads directly to a designated coastal barrier resource unit pursuant to the Coastal Barrier Resources Act of 1982 (CBRA) and the Coastal Barrier Improvement Act of 1990 (CBIA).

2.4 Physical Resource

The project will not have significant impacts to physical resources. Below is a summary of the evaluation performed for these resources.

2.4.1 Highway Traffic Noise

A noise study was completed for the project limits. Six common noise environments and two special land use areas were identified along the project corridor. Noise levels were predicted at 58 Noise Abatement Criteria (NAC) B receptors representing 342 residences and two NAC C SLU receptors representing two areas of outdoor use. Noise levels are not predicted to approach or exceed the NAC of 67 (FHWA) or 66 (FDOT) under the 2048 Build condition at any noise sensitive sites within the project limits, and therefore noise abatement was not considered for any of the communities along McCulloch Road.

2.4.2 Air Quality

This project is not expected to create adverse impacts on air quality because the project area is in attainment for all National Ambient Air Quality Standards (NAAQS) and because the project is expected to improve the Level of Service (LOS) and reduce delays and congestion on all facilities within the study area.

Construction activities may cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to applicable state regulations and to applicable FDOT Standard Specifications for Road and Bridge Construction.

2.4.3 Contamination

No facilities were identified as Medium or High risk. The major concern would be dewatering during construction near known or potentially contaminated sites and the possible migration of contamination during dewatering. It is recommended that an updated CSER be prepared during the final design phase to identify any changed conditions during the time period from the completion of this CSER.

2.4.4 Utilities and Railroad

No railroads are present and no involvement with railroads is anticipated.

A preliminary evaluation of potential impacts to utilities and is located in the project file. Details regarding the utility owners, contact names and locations may be found in the Roadway Conceptual Analysis Report. Additional conflicts may be identified during the Design phase due to proposed drainage, lighting, signals, foundations, or any other future design changes that are not included in the Preferred Alternative. Subsurface Utility Engineering for vertical and horizontal information will provide the necessary data to make decisions regarding relocations for potential utility conflicts.

For all the reasons outlined above, it was determined that the project will have no significant impact on utilities or railroads.

2.4.5 Construction

During the construction phase, the project will comply with the Orange County Standard Specifications to Road and Bridge Construction to avoid and minimize impacts. This may include measures such as silt fences or silt stops to avoid erosion and sedimentation. Construction phase impacts are anticipated to be short-term in duration and localized around the site of construction. A National Pollution Discharge Elimination System Permit will be required for construction.

Based on the existing land use within the limits of this project, the construction of the proposed roadway improvements will have temporary noise and vibration impacts. Construction noise sensitive sites include all sites detailed in the NSR. Vibration-sensitive sites on the project include residences. During the construction phase of the Preferred Alternative, short-term noise and vibration may be generated by stationary and mobile construction equipment. The construction noise and vibration will be temporary at any location and controlled by adherence to the most recent edition of the Orange County Standard Specifications for Road and Bridge Construction.

The project will have no significant impacts from construction.

3.0 ANTICIPATED PERMITS

The following environmental permits are anticipated for this project:

Permit	Status
DEP or WMD Environmental Resource Permit (ERP)	To be acquired
DEP National Pollutant Discharge Elimination System Permit	To be acquired

4.0 ENGINEERING ANALYSIS

The engineering analysis supporting this environmental document is contained within the Roadway Conceptual Analysis Report.

5.0 COMMITMENTS

The objective of the McCulloch Road RCA is to develop and evaluate alternatives for improvements to McCulloch Road from North Orion / Lockwood Boulevard to North Tanner Road / Old Lockwood Road in order to address the current and future transportation needs along the corridor. The preferred

improvements identified in this report will serve as the basis for the subsequent design of the roadway improvements.

The development of the proposed improvements incorporated the insights from planning, engineering, and the public to refine the alternatives and to ultimately advance a preferred alternative. It is recommended that the preferred alternative detailed in Section 7 of this report be advanced to the design phase.

Commitments:

1. A Public Involvement Plan will be continued through the remaining phases of the project.
2. Reevaluate the intersection configuration at the following two locations:
 - a. Worchester Drive/Amour de Flame Way and McCulloch Road be monitored for a signal based on traffic demand at that time.
 - b. Tanner Road/Old Lockwood Boulevard and McCulloch Road if eastbound dual right turn lanes can be replaced with a single right turn lane.

6.0 PUBLIC INVOLVEMENT

The following is a summary of public involvement activities conducted for this project:

Summary of Activities Other than the Public Hearing

Public involvement activities were integrated into the study process providing the opportunity for property owners, residents, businesses, government entities and agencies to share their concerns and ideas with Orange County. A Public Involvement Plan (PIP) was developed and was carried out as an integral part of the project and provides an overview of the outreach approach for the study. The purpose of the PIP was to guide the public outreach process in establishing and maintaining communication with the public throughout the study and incorporating public input during the alternative evaluation.

Public involvement activities began when the project started in October 2021 and continued throughout the study process. All input received served as valuable information that was taken into consideration for the refinement of the alternatives and the development of the Preferred Alternative. A key aspect of the PIP for this project included meetings with interested parties other than the Federal and State environmental, permit and review agencies.

A community public meeting was held on February 23, 2026. The meeting format consisted of an open house that allows informal discussions between the project team and the public, followed by a presentation and an open question and answer forum. The meeting was held at University Carillon United Methodist Church, 1395 Campus View Court, Oviedo, FL 32765. The open house began at 5:30 pm, followed by a formal presentation and a question-and-answer forum at 6:00 pm. Meeting attendees include Orange County Commissioner Semrad, Seminole County Commissioner Bob Dallari, 69 citizens from both Orange and Seminole County, Orange and Seminole County staff, and project team members. The comments received included concerns about wildlife crossings, flooding in the area, safety especially turning from the side streets, right of way acquisition and future extension of McCulloch Road further east over the Little Econlockhatchee River.

Date of Public Hearing: June 2, 2026

Summary of Public Hearing

This section will be updated after the Public Hearing.

7.0 TECHNICAL MATERIALS

The following technical materials have been prepared to support this Environmental Document and are included in the Project File.

Cultural Resources Assessment Survey (CRAS)
Pond Siting Report (PSR)
Natural Resources Evaluation Technical Memorandum
Water Quality Impact Evaluation (WQIE)
Contamination Screening Evaluation Report (CSER)
Noise Study Report (NSR)
Roadway Conceptual Analysis Report
Project Traffic Analysis Report
Public Involvement Plan