CENTRAL FLORIDA EXPRESSWAY AUTHORITY

CFX Contract Number: 001844
CFX Project Number: 408-174

LEVEL 1 PROJECT ENVIRONMENTAL IMPACT REPORT (PEIR)

SR 408 CAPACITY IMPROVEMENTS FROM KIRKMAN ROAD TO CHURCH STREET

PROJECT DEVELOPMENT & ENVIRONMENT STUDY

Prepared by:

Kimley»Horn

December 22, 2023

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1.0 - Project Description and Purpose and Need

1.A – PROJECT INFORMATION

Project Name:	SR 408 Capacity Improvements from Kirkman Road to Church Street PD&E Study
Projects Limits:	SR 408 from SR 435 (Kirkman Road) to Church Street (**Figure 1**)
County:	Orange
Proposed Activity:	Analyze and evaluate the addition of one lane in each direction along SR 408 from SR 435 (Kirkman Road) to Church Street
Responsible Agency:	Central Florida Expressway Authority (CFX)
Planning Organization:	CFX
Phase:	Project Development & Environment (PD&E) Study

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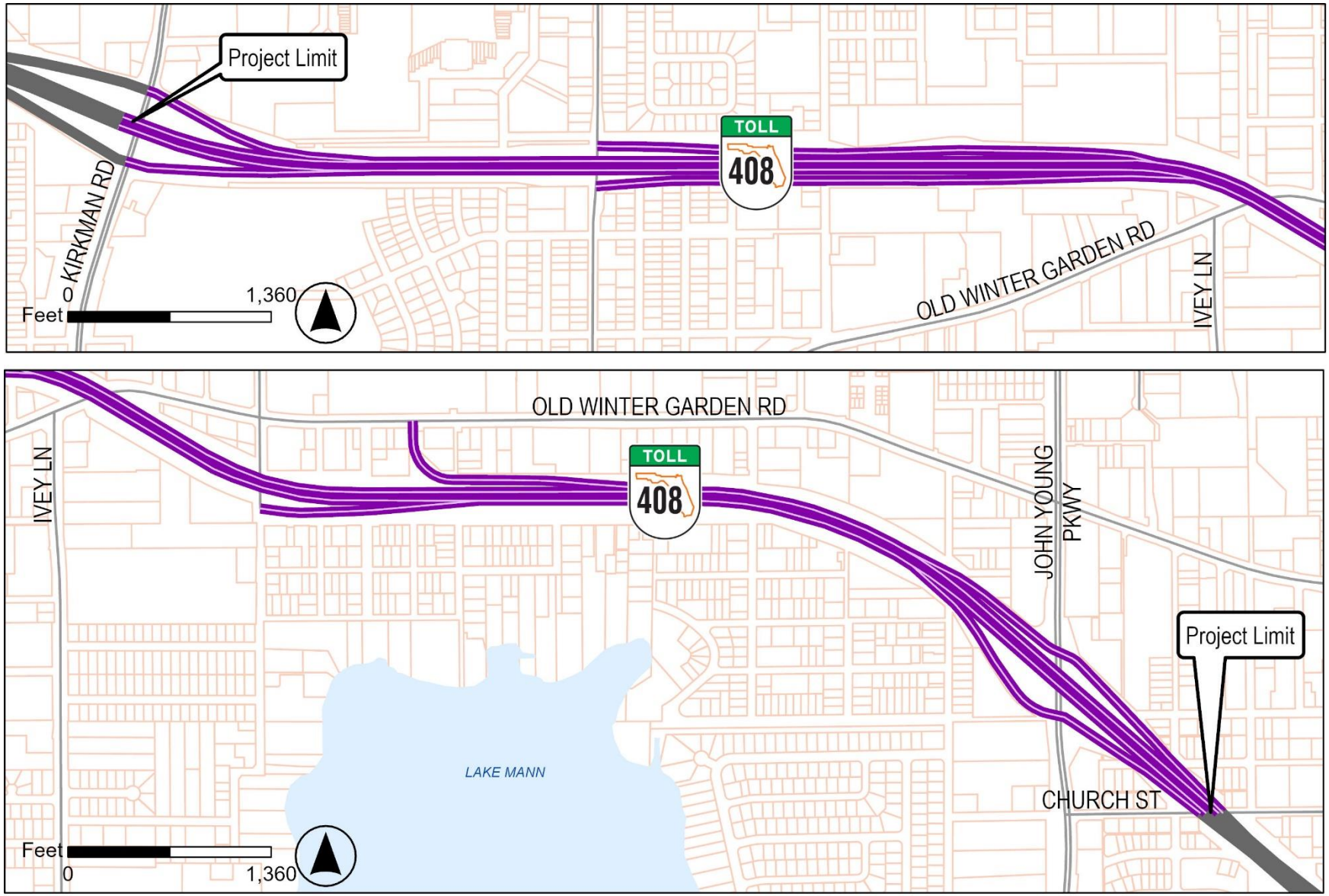
Figure 1: Project Location Map



1.B – PROPOSED IMPROVEMENTS

Proposed improvements include adding a 12-ft wide travel lane in each direction along SR 408 by widening to the outside, adding an additional lane on the westbound Kirkman Road off-ramp, and adding an additional lane on the eastbound John Young Parkway off-ramp. The proposed work involves widening of the overpass bridges, reconstructing or adding new noise walls, modification to the existing mainline toll plaza (includes partial demolition and reconstruction), reconstruction of existing toll gantries (westbound exit to Old Winter Garden vineland and eastbound on-ramps from Ortman Drive and John Young Parkway), and removal and replacement of existing landscape walls.

1.C – PURPOSE AND NEED

The purpose and need provide the basis for developing, considering, evaluating, and eliminating alternatives.

Purpose

The purpose of the study is to address increasing traffic congestion and improve mobility along a three-mile stretch of SR 408 between Kirkman Road and Church Street. With over 164,000 vehicles traveling daily in the area, the traffic volume has been steadily rising and is expected to continue growing. The project aims to widen SR 408 by adding an additional travel lane in each direction. The goal is to improve traffic flow, accommodate growing demands, reduce congestion and delay, and enhance safety.

Need

The need for adding capacity on SR 408 is based on several factors:

1) **Improve traffic flow:** Segments of SR 408 within the project limits currently operate at an acceptable Level of Service (LOS) D or better during both the AM and PM peak hours, except for the eastbound segment between Old Winter Garden Road and John Young Parkway which operates at an unacceptable LOS E in the AM. As travel demands continue to increase, the LOS is expected to deteriorate if nothing is done. By 2045, travel demands on SR 408 are expected increase by approximately 40%.
2) **Reduce congestion and delay:** If nothing is done, increasing travel demands will result in more congestion and delays. This will affect the reliability of SR 408 for those who rely on it for their daily commute.
3) **Enhance safety:** A review of existing crash data indicates that rear end collisions account for 46% of all crash types. This is indicative of increasing congestion and vehicles having to abruptly stop or slow down within a limited distance. If nothing is done, it is expected that crashes would increase.
4) **Support regional connectivity:** SR 408 is a vital transportation corridor connecting commuters to downtown Orlando and Interstate 4 (I-4). By enhancing the capacity and efficiency of SR 408, the improvements will contribute to regional connectivity and support economic growth and development.
5) **Provide consistency with local plans and policies:** Improvements to SR 408 are aligned with local plans and policies related to transportation infrastructure and land use. The surrounding areas of SR 408 exhibit a mix of commercial and residential land use, with downtown Orlando located nearby. By providing a more efficient roadway, the

project will ensure consistency with the existing land use patterns and support the area's planned growth and development.

6) **Support economic benefits:** Successful implementation of the study recommendations will bring economic benefits to the region. Reducing congestion and improving traffic flow will enhance logistics and other business transportation routes for goods and services. Commuters will also experience shorter travel times, leading to increased productivity and quality of life.

2.0 – Environmental Analysis

Issue/Resource	Substantial Impacts*								
	Yes		No		Enhance		No Inv		Supporting Information**
A. Social and Economic									
1. Social			X						Attachment 1.A.1
2. Economic					X				Attachment 1.A.2
3. Land Use Changes			X						Attachment 1.A.3
4. Mobility					X				Attachment 1.A.4
5. Aesthetic Effects			X						Attachment 1.A.5
6. Relocation Potential			X						Attachment 1.A.6
B. Cultural									
1. Historic Sites/Districts			X						Attachment 1.B.1
2. Archaeological Sites			X						Attachment 1.B.1
3. Recreational Areas and Protected Lands							X		Attachment 1.B.2
C. Natural									
1. Wetlands and Other Surface Waters			X						Attachment 1.C.1
2. Aquatic Preserves and Outstanding FL Waters							X		Attachment 1.C.2
3. Water Resources							X		Attachment 1.C.3
4. Wild and Scenic Rivers							X		Attachment 1.C.4
5. Floodplains			X						Attachment 1.C.5
6. Coastal Barrier Resources							X		Attachment 1.C.6
7. Protected Species and Habitat			X						Attachment 1.C.7
8. Essential Fish Habitat							X		Attachment 1.C.8
D. Physical									
1. Air Quality			X						Attachment 1.D.1
2. Water Quality			X						Attachment 1.D.2
3. Contamination			X						Attachment 1.D.3
4. Highway Traffic Noise			X						Attachment 1.D.4
5. Construction			X						Attachment 1.D.5
6. Bicycles and Pedestrians					X				Attachment 1.D.6
7. Navigation							X		Attachment 1.D.7

Yes: Substantial Impact
No: No Substantial Impact
Enhance: Enhancement
No Inv: Issue absent; no involvement
*** Supporting information is documented in the referenced attachment(s).*

3.0 – Anticipated Permits

The following permits are anticipated:

___ Section 404 Clean Water Act Dredge and Fill Permit - (USACE or FDEP 404)

___ Nationwide/General Permit- (USACE or FDEP 404)

_X_ Environmental Resource Permit (FDEP or SFWMD/SJRWMD)

_X_ National Pollutant Discharge Elimination System (FDEP)

_X_ Listed Species Coordination (USFWS and FWC)

___ Gopher Tortoise Conservation Permit (FWC)

4.0 – Engineering Analysis

An engineering analysis of alternatives began with a review of existing conditions. SR 408, from Kirkman Road to Church Street, currently provides three, 12-foot wide travel lanes in each direction plus one auxiliary lane within 300 feet of right of way. The design and posted speed limit is 60 MPH. There are five interchanges consisting of the following on and off ramps:

- Kirkman Road Eastbound and Westbound On and Off-Ramps
- N Pine Hills Road On and Off-Ramps
- N Ortman Drive Eastbound On-Ramp
- Old Winter Garden Westbound Off-Ramp
- John Young Parkway Eastbound and Westbound On and Off-Ramps

Other features of the project corridor include the following:

- A mainline toll gantry, located east of Kirkman Road, consisting of All Electronic Tolling (AET) for the mainline lanes and adjacent gantries for cash payments
- Ramp toll gantries at Old Winter Garden westbound off-ramp, Ortman Drive eastbound on-ramp, and John Young Parkway eastbound on-ramp and westbound off-ramp
- Noise walls
- Terraced landscaping at the overpass bridges

Two Alternatives were considered as part of the study – a No-Build Alternative and one Build Alternative.

4.A – NO-BUILD ALTERNATIVE

Under the No-Build Alternative, no improvements are made to SR 408 from Kirkman Road to Church Street except for standard planned maintenance. The No-Build Alternative forms a basis of comparison with the Build Alternative.

A traffic analysis was conducted for this project and indicates that, under the No-Build Alternative, most segments will be operating at a LOS F by 2045. A summary of the traffic analysis is provided in the **Project Traffic Analysis Memorandum** provided under separate cover.

The advantages of the No-Build Alternative include the following:

- No impact to adjacent social, cultural, natural, or physical environments
- No utility impacts
- No expenditure of funds for right of way acquisition, design, or construction

The disadvantages of the No-Build Alternative include the following:

- Does not improve traffic flow
- Does not address increasing congestion and travel delays
- Does not address safety as accidents would be expected to increase
- Does not support regional connectivity
- Does not support local plans and policies
- Does not support economic benefits

4.B – BUILD ALTERNATIVE

The Build Alternative (**Attachment 2**) includes adding a 12-foot wide lane in each direction along SR 408 by widening to the outside. Accommodating the additional lanes involves widening of the overpass bridges and modification or reconstruction of the mainline toll plaza (east of Kirkman Road) and the ramp toll gantries (westbound exit to Old Winter Garden Vineland and eastbound on-ramps from Ortman Drive and John Young Parkway). Other improvements include an additional lane on the westbound Kirkman Road off-ramp and eastbound John Young Parkway off-ramp.

The traffic analysis conducted for this study indicates that SR 408 will require four lanes and an auxiliary lane in each direction in order to serve projected traffic demands through 2045. A summary of the traffic analysis is provided in the **Project Traffic Analysis Memorandum** provided under separate cover.

Additional details of the Build Alternative are provided below:

Typical Sections

The proposed typical section for SR 408 includes a 12-foot wide outside shoulder (10-foot paved), four 12-foot wide travel lanes, and a 10-foot wide inside shoulder along both directions of travel. The existing barrier wall would remain separating the east and west directions of travel. A 12-foot wide auxiliary lane is also proposed throughout most of the project limits. A summary and description of the proposed typical section is provided in the **Typical Section Package** provided under separate cover.

Bridges and Structures

There are 13 existing bridges that will need to be widened to the outside. All bridges can be widened utilizing Florida-I Beam girders. A summary and description of bridge widening needs is provided in the **Preliminary Engineering Report** provided under separate cover.

Right of Way and Relocations

No additional right of way is anticipated for improvements associated with the mainline. However, additional right of way is anticipated for potential pond sites. Additional information is provided in the **Pond Siting Report** available under separate cover. A final determination on the size and location of ponds will be made during the design phase.

Horizontal and Vertical Geometry

The horizontal and vertical profile of SR 408 will not change from existing conditions.

Tolling Sites

There are five tolling sites in total within the study area. A toll plaza is located on the mainline between Pine Hills Road and the Old Winter Garden Road bridge. The plaza spans the entire facility and includes three all electronic only lanes along the mainline in each direction and separate gantries on the outside that include three cash lanes and one transponder lane. Modification to the existing mainline toll plaza will be required to accommodate the proposed widening. This includes eliminating one lane from the outside gantries including cutting back the overhead roof.

There is a toll gantry on the Ortman Drive eastbound on-ramp with two lanes—one for exact change and one transponder reader only. There is a toll gantry on the Old Winter Garden Road westbound off-ramp featuring two lanes—one for exact change and one transponder reader only. There is a similar configuration at John Young Parkway, with a two-lane toll gantry located on the eastbound on-ramp. Reconstruction of these ramp toll gantries is needed to accommodate the widening.

No reconstruction or modification is needed for the toll gantry at the John Young Parkway westbound off-ramp.

Bicycle and Pedestrian Accommodations

No changes to bicycle and pedestrian accommodations are proposed as part of this project.

Multimodal Accommodations

No changes to multimodal accommodations are proposed as part of this project.

Access Management

No change in access is proposed as part of this project.

Intersection and Interchange Concepts

Proposed changes to the interchange ramps include the following:

Kirkman Road

- Eastbound On-Ramp: One lane existing; no change proposed
- Westbound Off-Ramp: One lane existing; proposed widening to two lanes

Pine Hills Road

- Eastbound On-Ramp: One lane existing; no change proposed
- Westbound Off-Ramp: One lane existing; no change proposed

Old Winter Garden Road

- Westbound Off-Ramp: One lane existing; no change proposed

Ortman Drive

- Eastbound On-Ramp: One lane existing; no change proposed

John Young Parkway

- Eastbound On-Ramp: One lane existing; proposed widening to two lanes
- Westbound Off-Ramp: One lane existing; no change proposed

Intelligent Transportation System (ITS)

To increase the safety of the traveling public, SR 408 proposed ITS infrastructure will include equipment consistent with CFX's overall ITS vision for the future. The safety aspect of ITS equipment consists of its ability to monitor traffic and provide incident management and travel information to travelers on SR 408. The Build Alternative may result in impacts to some of the existing ITS System along SR 408. ITS Improvements will be further evaluated during the design phase.

Utilities

There are 19 utility agency owners with various facilities throughout the project limits. Utilities generally consist of buried and overhead electric, buried fiber optic cables, buried telephone, water, sewer, and gas. A list of all utilities is provided in the **Preliminary Engineering Report** available under separate cover. Cost, scheduling, and any UAO dispositions and agreements pertaining to the potential relocation of any facilities will be further investigated as part of the design phase for this project.

Drainage and Stormwater Facilities

The design of stormwater facilities will comply with the standards set forth by CFX, St. Johns River Water Management District (SJRWMD), South Florida Water Management District (SFWMD), Orange County, and FDOT. Since the Florida Department of Environmental Protection (FDEP) performed the original permit review, an Environmental Resource Permit is anticipated from FDEP in lieu of separate permits from SJRWMD and SFWMD. This should be confirmed during the design phase. There are 16 total basins within the project limits of which eight will require additional treatment through offsite ponds for a total of approximately 5.5 acres. To address the needs of the overall project, four preferred pond sites were identified (**Attachment 3)**. Additional information is provided in the **Pond Siting Report** available under separate cover.

Floodplain Analysis

The floodplain impact volume includes the storage lost due to the proposed roadway widening between the existing ground elevation and the 100-year base flood elevation. Impacts to floodplains will be minimal, and it is anticipated that these impacts can be mitigated within the right of way with use of walls as needed to remove fill encroachment.

Noise Walls

Modification to existing walls and new noise walls are proposed in several locations as summarized in the **Traffic Noise Study Report** available under separate cover.

Noise walls are proposed on the eastbound side, approximately from where the on-ramp merges into the mainline to approximately where walls currently exist along the Pine Hills Road eastbound on-ramp. Additionally, the walls along this on-ramp will be extended to the west.

New noise walls are proposed on the westbound side, on the Pine Hills Road bridge, extending east to near start of the off-ramp. There is existing wall along the off-ramp.

Along the Ortman Drive westbound on-ramp, new noise walls are proposed along the ramp and on the mainline in the same area. Additional new noise walls are proposed on the westbound side, from where the existing wall ends to the John Young Parkway off-ramp and across the John Young Parkway bridge.

Lighting

Upon review of the corridor, many existing light poles are currently installed behind guardrail or behind a wall section. Assuming that future conditions will have similar accommodations, the clear zone requirement along the corridor could be significantly reduced. A lighting analysis determined that light poles are needed every 175’ - 200’ on each side of the roadway. Additional details are provided in the **Preliminary Engineering Report** available under separate cover.

Special Features

Terraced landscaping walls are located at all bridge crossings. Modification or replacement is proposed within the project limits. Exact wall locations, lengths, and heights will be determined during the design phase.

Design Variations and Exceptions

No design variations or exceptions are needed for this project.

Cost Estimates

The total estimated construction cost for the Build Alternative is $109,533,836.

Additional details of the engineering analysis are provided in the **Preliminary Engineering Report** available under separate cover.

5.0 – Commitments

The following commitments have been made for this project:

- CFX commits to re-evaluate the Traffic Noise Study during the Design Phase of the project.
- CFX commits to re-evaluate the need for a Phase I Cultural Resource Assessment Survey (CRAS) during the Design Phase of the project.
- Best Management Practices to control erosion and sedimentation in accordance with Standard Specifications for Road and Bridge Construction will be implemented.
- Wetland impacts which may result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344.

- Any species-specific surveys will first be coordinated with the United States Fish and Wildlife Service (USFWS) and Florida Fish and Wildlife Conservation Commission (FFWCC), then conducted as agreed to with USFWS and FFWCC during the permitting phase.
- A preconstruction gopher tortoise burrow survey and any resultant permitting will be conducted in accordance with FWC protocols.
- The project will implement the USFWS-approved Standard Protection Measures for the Eastern Indigo Snake (updated August 1, 2017) during the proposed roadway improvements.
- Avoidance and minimization of wetland and listed species impacts will continue to be evaluated and all possible and practicable measures to avoid or minimize these impacts will be incorporated.
- CFX commits to conducting an additional public meeting during the Design Phase of the project.

6.0 – Preferred Alternative

The Build Alternative is selected as the Preferred Alternative. The Build Alternative improves traffic flow, reduces congestion and delay, improves safety, and is consistent with local plans and policies to provide regional connectivity and support sustained economic growth. The Build Alternative includes adding a lane in each direction along SR 408 by widening to the outside. Accommodating the additional lanes involves widening of the overpass bridges and modification or reconstruction of the mainline toll plaza (east of Kirkman Road) and the ramp toll gantries (westbound exit to Old Winter Garden Vineland and eastbound on-ramps from Ortman Drive and John Young Parkway). Other improvements include an additional lane on the westbound Kirkman Road off-ramp and eastbound John Young Parkway off-ramp. No additional right of way is anticipated for improvements associated with the mainline. However, additional right of way is anticipated for potential pond sites. A final determination on the size and location of ponds will be made during the design phase.

7.0 – Public Involvement

1. ___ A public meeting is not required.

2. ___ A public meeting will be held on (insert date). This draft document is publicly available and comments can be submitted to (insert entity) until (insert date).
   Contact Information:
   Name:
   Title:
   Central Florida Expressway Authority
   4974 ORL Tower Road
   Orlando, Florida 32807
   Phone: (xxx) xxx-xxxx
   Email address:

3. _X_ A public meeting was held on **February 28, 2023** and a meeting summary is available.

4. ___ An opportunity for a public meeting was afforded and was documented on (insert date).

5. ___ Other public engagement opportunity(ies) provided:

8.0 – Approval of Final Document

This project has been developed without regard to race, color, national origin, age, sex, religion, disability, or family status.

The final Level 1 PEIR reflects consideration of the Project Development and Environment Study and Public Involvement.

Date: 12/22/2023

Michael Garau, PE
Project Manager
Kimley-Horn & Associates

Date: Jan 18, 2024

David Falk, PE
Project Manager
Central Florida Expressway Authority

Date: Jan 21, 2024

Glenn Pressimone, PE
Chief of Infrastructure
Central Florida Expressway Authority

Attachment 1 – Environmental Analysis

Attachment 1

A: Social & Economic Environment Analysis

A.1: Social

Demographics

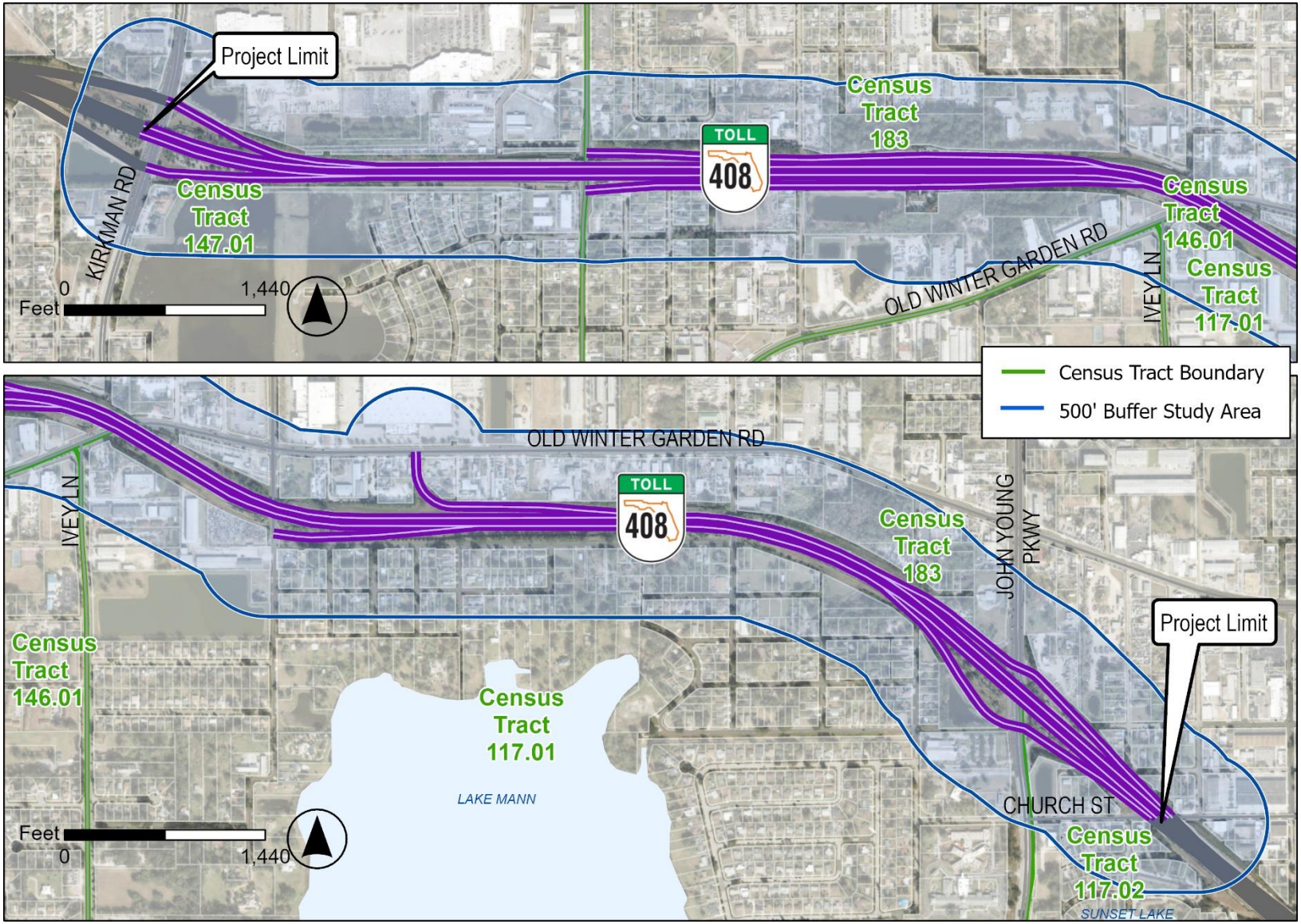
The study area was reviewed to identify minority and/or low-income populations as well as underrepresented population groups protected under *Title VI of the Civil Rights Act of 1964* and related nondiscrimination statutes and regulations. **Table 1** provides study area demographics based on the US Census Tracts in which the project is located. See **Figure 1** for the location of the tracts. Construction of the Preferred Alternative, including proposed offsite pond alternatives, is not anticipated to cause adverse or disproportional impacts to the demographics of the study area.

Table 1: Study Area Demographics by Census Tract (Kirkman Rd to Church St)

Census Tract	Total Population	Percent Minority Population	Percent Population Below Poverty Level	Percent Population Aged 65 and Over
117.01	4,229	94.51%	30.27%	19.60%
117.02	4,365	95.83%	27.05%	20.10%
146.01	8,419	94.60%	30.05%	7.70%
147.01	5,613	78.23%	39.50%	13.90%
183	3,149	78.28%	36.76%	16.40%
Orange County	1,340,469	56.0%	19.06%	12.0%

Source: 2020 U.S. Census (Total Population, Minority Population); 2021 ACS 5-Year Estimates (Poverty, 65 and Over)

Figure 1: Study Area Census Tracts



Community Features

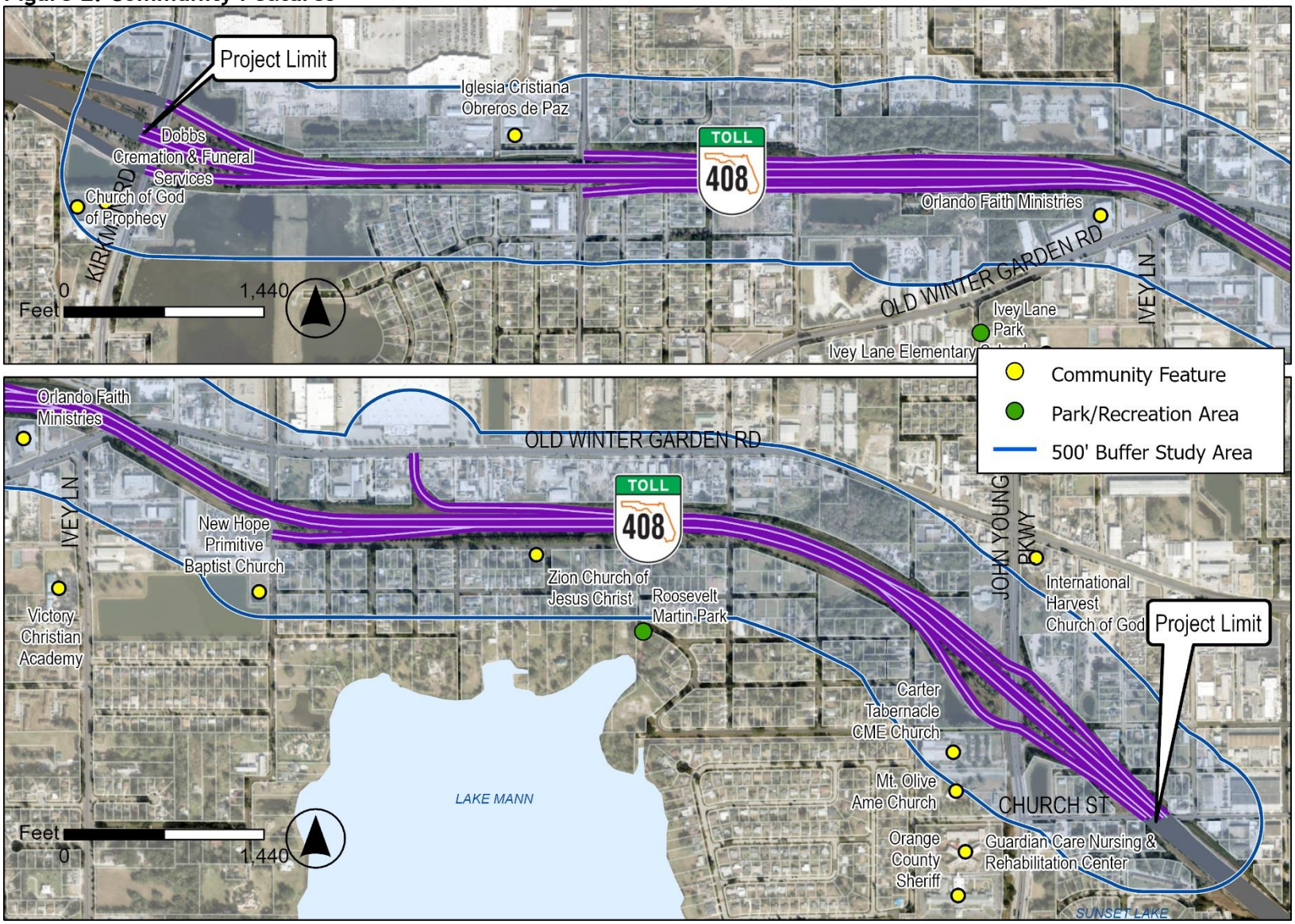
A desktop review of the study area indicates that there are several community features within the study area: Dobbs Cremation & Funeral Services, Iglesia Cristiana Obreros de Paz, Orlando Faith Ministries, New Hope Primitive Baptist Church, Zion Church of Jesus Christ, Mt. Olive AME Church, Carter Tabernacle CME Church, and International Harvest Church of God. Several other features are located within close proximity to the study area, including Church of God Prophecy, Ivey Lane Park, Ivey Lane Elementary School, Victory Christian Academy, Roosevelt Martin Park, Orange County Sheriff Facilities, and Guardian Care Nursing & Rehabilitation Center. The location of these features relative to the study area are included in **Table 2**. **Figure 2** presents the community facility locations.

Additionally, the area within and surrounding the project is mostly developed, with much of the land dedicated to residential and industrial uses. Construction of the Preferred Alternative, including proposed offsite pond alternatives, is not anticipated to cause adverse impacts to Community Features.

Table 2: Community Features

Name	Type of Facility	Relative Location
Church of God Prophecy	Place of Worship	±45 feet southwest of study area
Dobbs Cremation & Funeral Services	Funeral Home	Partially within study area
Iglesia Cristiana Obreros de Paz	Place of Worship	Partially within study area
Orlando Faith Ministries	Place of Worship	Partially within study area
Ivey Lane Park	Recreation/Park	±375 feet south of study area
Ivey Lane Elementary School	School	±670 feet south of study area
Victory Christian Academy	School	±515 feet south of study area
New Hope Primitive Baptist Church	Place of Worship	Partially within study area
Zion Church of Jesus Christ	Place of Worship	Partially within study area
Roosevelt Martin Park	Cemetery	±320 feet south of study area
Orange County Sheriff Facility	Institutional	±630 feet south of study area
Guardian Care	Medical	±290 feet south of study area
Mt. Olive AME Church	Place of Worship	Partially within study area
Carter Tabernacle CME Church	Place of Worship	Partially within study area
International Harvest Church of God	Place of Worship	Partially within study area

Figure 2: Community Features



A.2: Economic

The proposed improvements will provide improved safety, enhanced capacity, and reduced congestion and travel time. As this stretch of SR 408 includes several connections to surface roads in developed areas located just west of downtown Orlando, it is a critical connection to one of Central Florida's major economic centers of downtown Orlando and surrounding neighborhoods. Construction of the Preferred Alternative is anticipated to enhance economic development in the area.

A.3: Land Use Changes

Adjacent land includes parcels within Orlando city limits and within unincorporated Orange County. Future Land Use (FLU) designations are summarized in **Table 3** and shown on **Figure 3**. Land adjacent to the study area generally consists of developed properties, the majority of which are residential. There are park features and commercial areas within 250 feet of the project.

Table 3: Future Land Uses Within Project Area

FLU Code	Jurisdiction	Future Land Use (FLU) Designation
CONSERV	City of Orlando	Conservation
INDUST		Industrial
MUC-MED		Mixed Use Corridor Medium Intensity
OFFICE-LOW		Office Low Intensity
PUB-REC-INST		Public/Recreational & Institutional
RES-LOW		Residential Low Intensity
RES-LOW/RES-PRO		Residential Low Intensity/Resource Protection Overlay
UR-AC		Urban Reserve
C	Orange County	Commercial
LD		Low-Density Residential
LM		Low/Medium-Density Residential
O		Office
WB		Water Body

In addition to the Orange County and City of Orlando Future Land Use classifications, the Florida Department of Environmental Protection (FDEP) Florida Land Use Cover Classification System (FLUCCS) was used to classify various land uses and land covers within the study area. Construction of the Preferred Alternative is not anticipated to cause significant changes to the land use of the Study Area. **Table 4** summarizes the land uses and the locations are depicted on **Figure 4**.

Figure 3: Project Area Future Land Use Designations

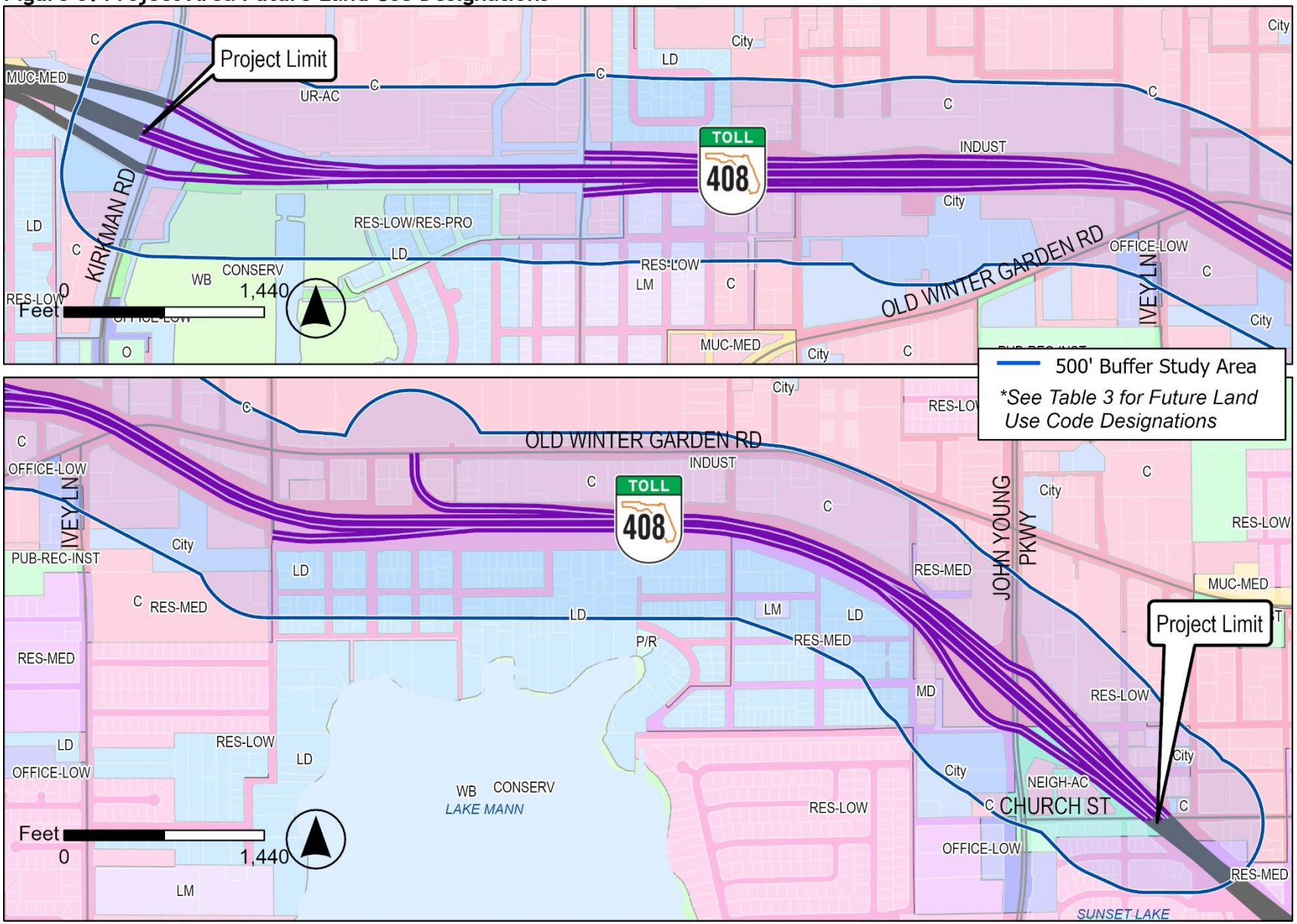
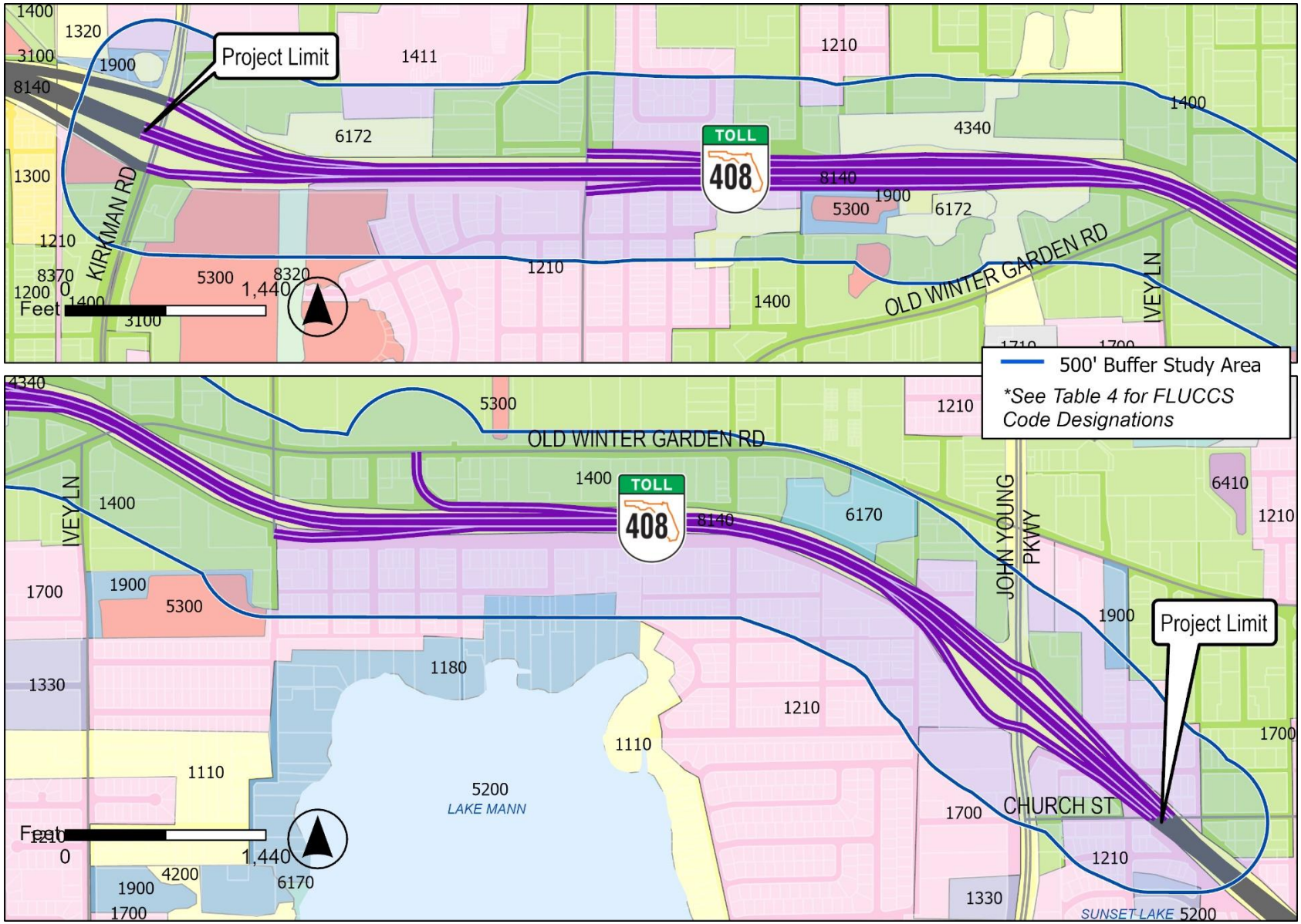


Table 4: FLUCCS Codes Within Project Area

FLUCCS Code	Description
1110	Fixed Single Family Units (Low Density)
1180	Rural Residential
1200	Medium Density Residential
1210	Fixed Single Family Units (Medium Density)
1300	Residential High Density
1320	Mobile Home Units
1330	Multiple Dwelling Units, Low Rise
1400	Commercial and Services
1411	Shopping Centers
1700	Institutional
1710	Educational Facilities
1900	Open Land
3100	Herbaceous (Dry Prairie)
4200	Upland Hardwood Forests
4340	Upland Mixed Coniferous/Hardwood
5200	Lakes
5300	Reservoirs
6170	Mixed Wetland Hardwoods
6172	Mixed Shrubs
6410	Freshwater Marshes
8140	Roads and Highways
8320	Electrical Power Transmission Lines
8370	Surface Water Collection Features

Figure 4: FLUCCS Within Project Area



A.4: Mobility

There are no existing transit routes that travel on SR 408 within the project area. Lynx Link 48, Link 49, and Link 105 each travel parallel to SR 408 on SR 50 (W Colonia Dr). Link 54 travels parallel to the study corridor on Old Winter Garden Rd. Several other routes cross the SR 408 route on Kirkman Rd (Link 301), Ivy Ln/Mercy Dr (Link 20, Link 302), John Young Pkwy (Link 303), Dollins Ave (Link 21), and Church St (Link 20).

There is sidewalk present along Old Winter Garden Rd and W Colonial Dr parallel to the study area. There is also sidewalk present on the streets with an interchange at SR 408 (Kirkman Rd, Pine Hills Rd, Old Winter Garden Rd, Ortman Dr, Ferguson Dr, John Young Pkwy, and Church St). There are marked bike lanes present on Kirkman Rd.

This project's proposed improvements will provide more efficient connections via SR 408, potentially taking additional automobiles off surface roads to minimize potential conflicts with transit, pedestrians, and bicyclists. Construction of the Preferred Alternative will positively impact the project area and surrounding area.

A.5: Aesthetic Effects

There are existing noise walls present along parts of the corridor. There are no areas of landscaping within the median, but there is landscaping located between the guardrail and noise wall in some areas. The interchanges and bridge overpasses generally consist of terraced landscaping. Existing areas of landscaping may need to be reduced but are not anticipated to be eliminated. Opportunities for preserving as much as possible of the existing landscaping will be finalized during the design phase.

A.6: Relocation Potential

No additional right of way is anticipated for improvements associated with the mainline. However, approximately 5.5 acres may be needed for offsite ponds (**Attachment 3**). No residential or business relocations are anticipated. A final determination will be made during the design phase.

To minimize the unavoidable effects of right of way acquisition and business impacts, CFX will carry out a Right of Way and Relocation Assistance Program in accordance with Florida Statute 421.55, Relocation of displaced persons. Although right of way acquisition will be required, no substantial impacts are anticipated because of the proposed project.

B: Cultural Environment Analysis

B.1: Historic and Archaeological Sites

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

On January 4, 2023, SEARCH reviewed mainline concept plans for the widening of SR 408 from Kirkman Road to Church Street. The purpose of this review was to identify any previously recorded cultural resources within the project area. The study area was defined as the parcels where the proposed widening will occur (the potential construction area) in addition to a 152-meter (500-foot) buffer to address any potential viewshed effects to historic resources (see **Figure 5**: Previously Recorded Historic Resources in Study Area). The present document is for information purposes only and does not satisfy any requirements under the National Environmental Policy Act or Section 106 of the National Historic Preservation Act.

Review of the Florida Master Site File (FMSF) database indicates that eight historic buildings are within the study area (**Table 5**; see **Figure 5**). These resources were recommended ineligible for the National Register of Historic Places (NRHP) by the original surveyor, but they have not yet been evaluated for the NRHP by the State Historic Preservation Officer. None of the historic buildings identified in **Table 5** and **Figure 5** would be impacted by the offsite pond alternatives shown in **Attachment 3**.

Table 5: Previously Recorded Historic Resources in the Study Area

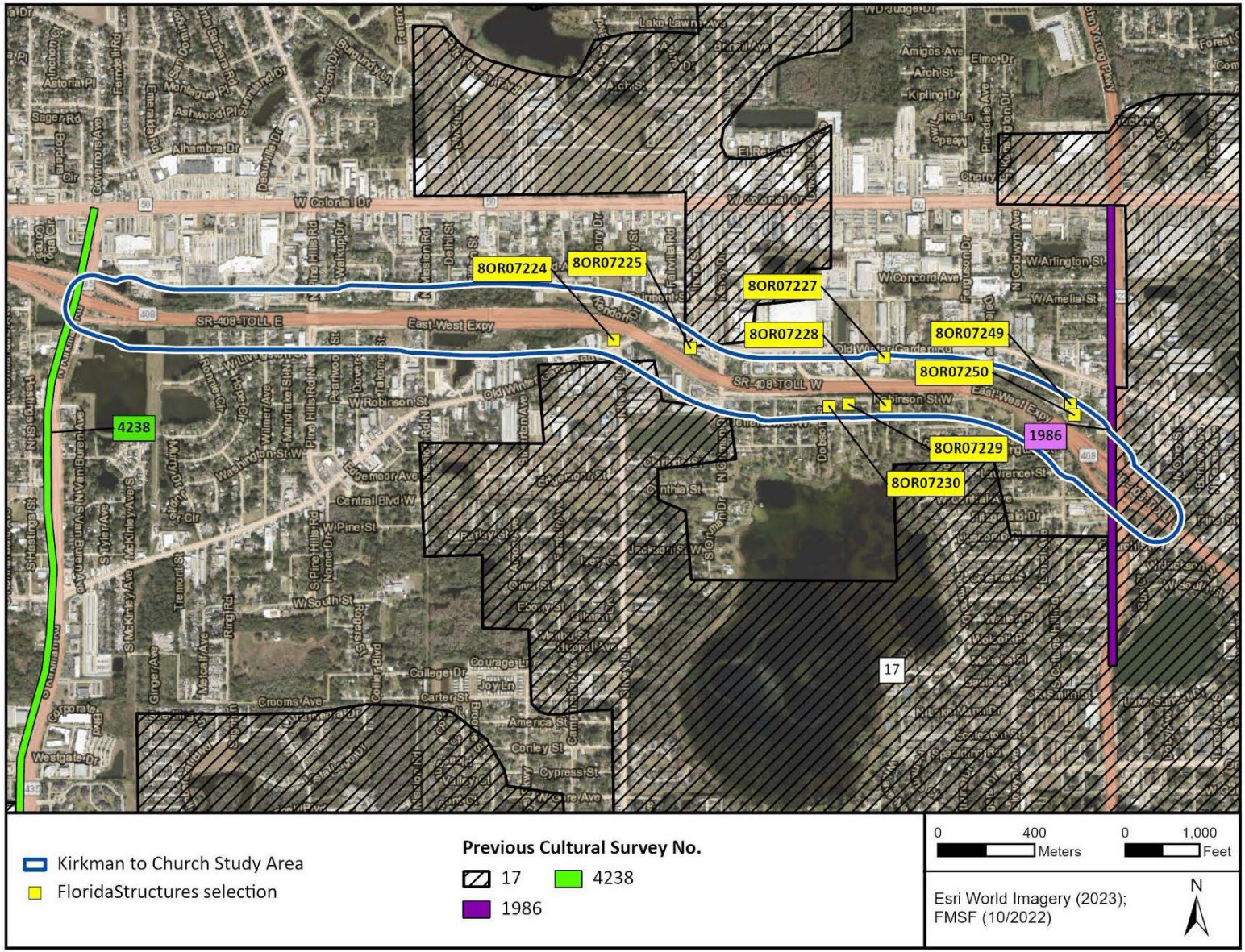
FMSF No.	Address	Year Built	Surveyor Recommendation	NRHP Eligibility Status
8OR07224	4415 W Old Winter Garden Rd	ca. 1920	Ineligible for NRHP	Not evaluated
8OR07225	4160 W Old Winter Garden Rd	ca. 1925	Ineligible for NRHP	Not evaluated
8OR07227	3604 W Old Winter Garden Rd	ca. 1935	Ineligible for NRHP	Not evaluated
8OR07228	3530 W Robinson St	ca. 1931	Ineligible for NRHP	Not evaluated
8OR07229	3712 W Robinson St	ca. 1935	Ineligible for NRHP	Not evaluated
8OR07230	3730 W Robinson St	ca. 1927	Ineligible for NRHP	Not evaluated
8OR07249	235 N Cottage Hill Rd	ca. 1923	Ineligible for NRHP	Not evaluated
8OR07250	231 N Cottage Hill Rd	ca. 1923	Ineligible for NRHP	Not evaluated

Review of the FMSF database indicates that the current study area has been partially surveyed by prior studies that meet the current Module Three standards for cultural resource surveys (**Table 6**). Typically, portions of the study area that have been subjected previously to Module Three-compliant survey will not need additional archaeological survey, but they may need an updated architectural history survey. Given the lack of significant cultural resource survey within the study area and the presence of unevaluated resources, the need for a Phase I Cultural Resource Assessment Survey (CRAS) will be re-evaluated as part of the design phase for this project.

Table 6: Cultural Resource Surveys Conducted in the Study Area

FMSF No.	Address	Year	Consultant
17	Historical, Architectural, and Archaeological Survey of Orlando, Florida	1978	Carr, Robert S., and Phillip A. Werndli
1986	Proposed Multi-Laning of SR 423/John Young Parkway from Church Street to Technology Drive in Orange County, Florida	1989	Wiedenfeld, Melissa G.
4238	A Cultural Resource Assessment Survey of S.R. 435 from Conroy-Windemere Road to S.R. 50, Orange County, Florida	1995	Ashley, Keith H.

Figure 5: Previously Recorded Historic Resources in Study Area

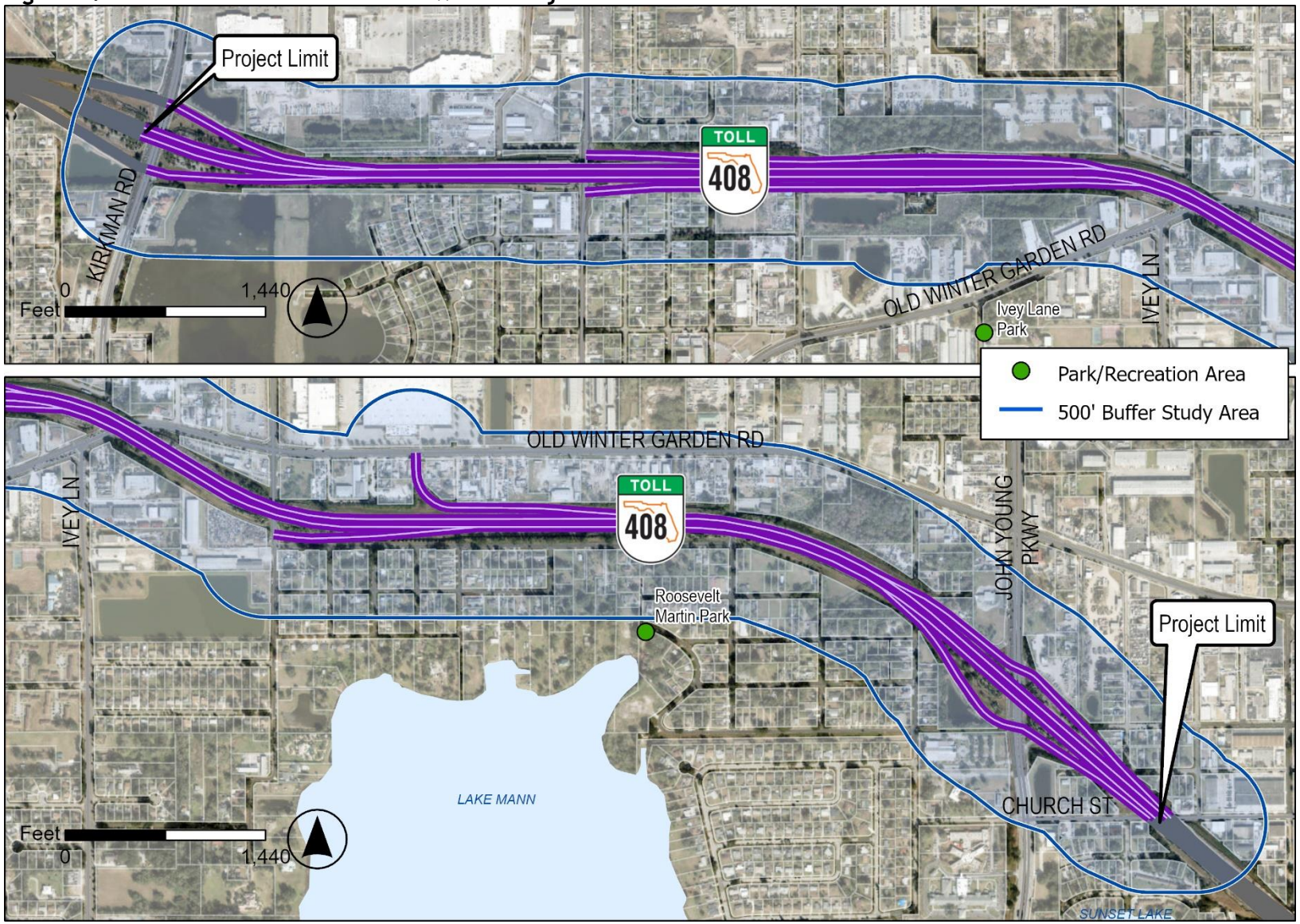


B.2: Recreational Areas and Protected Lands

There are no recreational areas or protected lands located within the project area. There are other recreational and public areas located nearby the project area, including Ivey Lane Park and Roosevelt Martin Park (**Figure 6**).

No direct impacts, as a result of the mainline or pond alternatives, are anticipated to any recreational areas or protected lands.

Figure 6: Recreational Areas and Parks Within Project Area



C: Natural Environment Analysis

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

C.1: Wetlands and Other Surface Waters

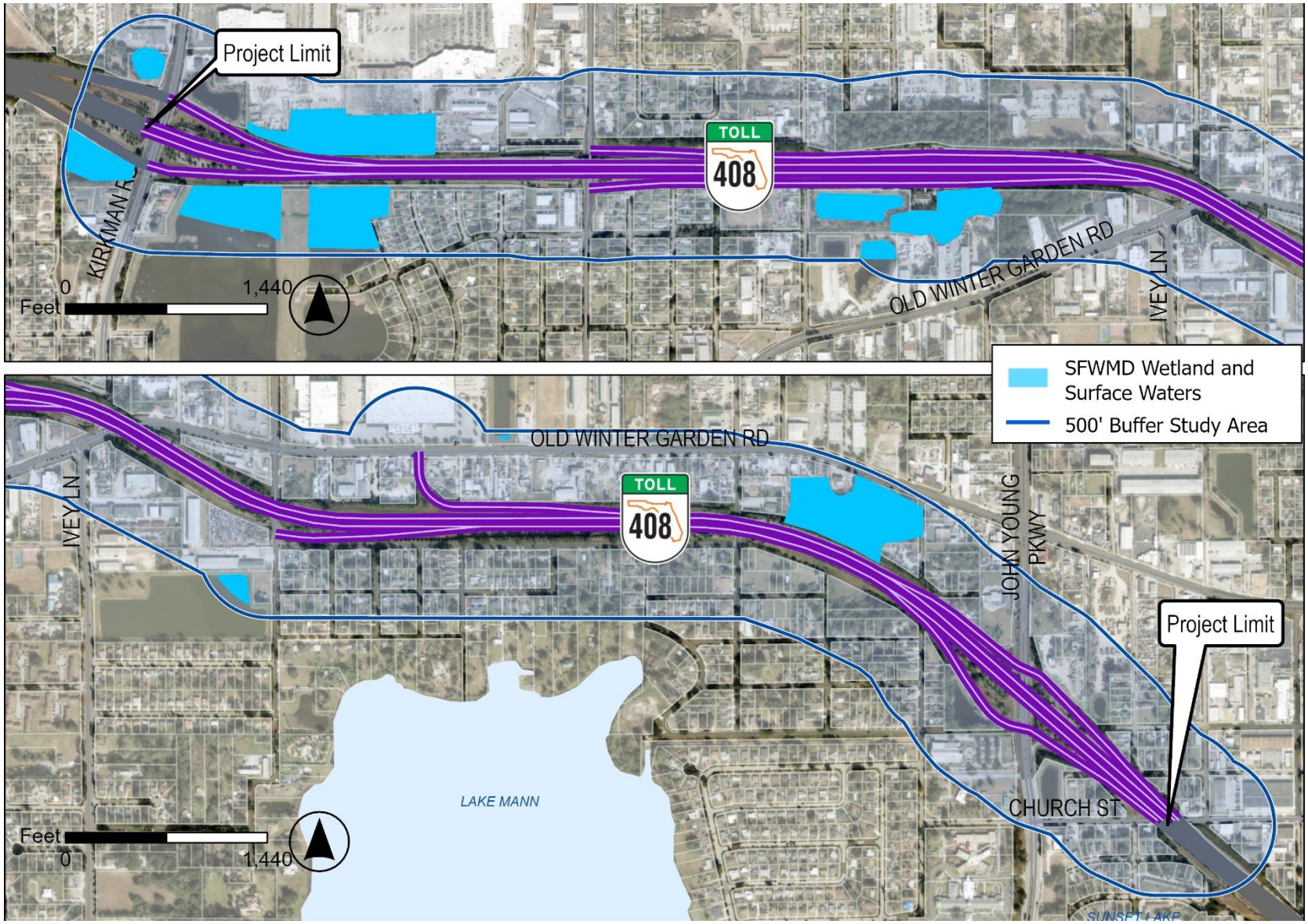
An assessment of wetlands and surface waters was conducted within the project study area utilizing the 2016 SFWMD Florida Land Use, Cover and Forms Classification System (FLUCFCS) and the National Wetland Inventory (NWI) GIS datasets. Based on these databases, the project study area contains three (3) wetlands and 12 surface waters. Due to the hydrologic connection of the wetlands and surface waters, they will likely fall under the jurisdiction of the SFWMD and FDEP.

Using the 2016 SFWMD Land Use Land Cover data, the wetlands within the proposed limits of disturbance were used to calculate proposed impacts to wetlands. As of the current design, there are no proposed direct wetland or surface waters impacts (**Figure 7**) associated with mainline improvements. With regard to offsite pond alternatives (**Attachment 3**), pond alternatives N3 and N4 may impact existing wetlands.

C.2: Aquatic Preserves and Outstanding FL Waters

There are no aquatic preserves or Outstanding Florida Waters in the project area; therefore, there is no involvement with this resource.

Figure 7: Wetlands and Surface Waters Impacts Map



C.3: Water Resources

There are no Aquatic Preserves or Outstanding Florida Waters (OFWs) within the project study area; therefore, there is no involvement with this resource.

C.4: Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers or other protected rivers in the project area; therefore, there is no involvement with this resource.

C.5: Floodplains

Approximately 12.8 of the ±521.2-acre study area (2%) is classified as being within the Federal Emergency Management Agency (FEMA) Flood Zone A, within the Special Flood Hazard Areas, where an established Base Flood Elevation has been determined. Approximately 59.6 acres of the ±521.2-acre study area (11%) is classified as being within the FEMA Flood Zone AE, within the Special Flood Hazard Areas, where an established Base Flood Elevation has been determined. The remaining approximately 448.8 acres of the study area is classified as being within FEMA Flood Zone X, areas of minimal flood hazard. There is no FEMA Regulatory Floodway within the project study area.

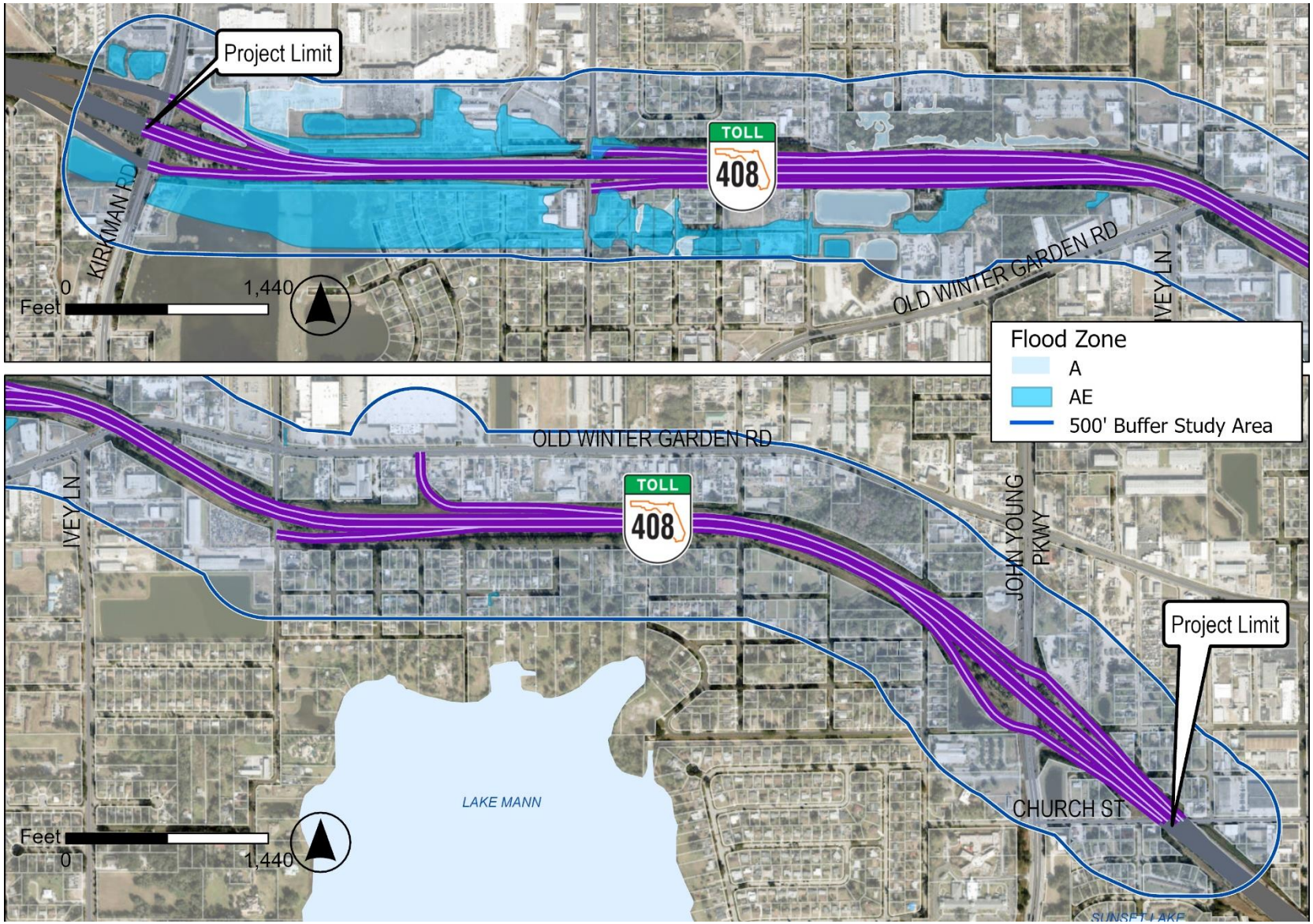
A review of floodplain impacts due to the proposed roadway widening between the existing ground elevation and the 100-year base flood elevation indicates that impacts will be minimal. It is anticipated that these impacts can be mitigated within the right of way with use of walls as needed to remove fill encroachment. None of the offsite pond alternatives (**Attachment 3**) are located within a floodplain.

The FEMA Flood maps are depicted on **Figure 8**.

C.6: Coastal Barrier Resources

There are no Coastal Barrier Resources in the project area; therefore, there is no involvement with this resource.

Figure 8: FEMA Flood Map



C.7: Protected Species and Habitat

A database review of potential species occurring within the project study area and immediate vicinity was conducted. Results of the database review is summarized below. For more information on protected species and habitat, refer to the **Environmental Assessment Technical Memorandum**, available under separate cover.

Based on a review of the USFWS Critical Habitat Mapper, there is no USFWS designated Critical Habitat within the project study area. Areas identified by FWC as Strategic Habitat Conservation Areas (SHCA) are located within the project study area. SHCAs are undeveloped natural areas identified by FWC as areas that could provide potential habitat to native plant and wildlife species and, therefore, may be considered for acquisition as conservation lands. However, these areas have no regulatory implications and have not been and may never be acquired for conservation.

Based on FNAI and USFWS IPaC data, the wood stork (*Mycteria americana*) is listed as likely to occur within one (1) mile of the study area. The study area lies within the Core Foraging Area (CFA) of three (3) active wood stork colonies. The study area also lies within the USFWS Consultation Area for the Everglade snail kite (*Rostrhamus sociabilis plumbeus*), Florida scrub-jay (*Aphelocoma coerulescens*), and Lake Wales Ridge plants. Additional federally listed species with the potential to occur include the Audubon's crested caracara (*Caracara cheriway*), bluetail mole skink (*Eumeces egregius lividus*), sand skink (*Neoseps reynoldsi*), eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), eastern indigo snake (*Drymarchon couperi*), and red-cockaded woodpecker (*Dryobates borealis*). State listed species with the potential to occur include the Florida burrowing owl (*Athene cunicularia floridana*), Florida sandhill crane (*Antigone canadensis pratensis*), Florida black bear (*Ursus americanus floridanus*), and gopher tortoise (*Gopherus polyphemus*). There are no known wading bird rookeries within the project study area or within one (1) mile of the study area. There are four (4) bald eagle nests within one (1) mile of the study area.

Based on database reviews, a listing of the state and federally listed species potentially occurring within the immediate vicinity of the study area has been compiled. **Table 7** lists species that may occur and their likelihood of occurrence. Likelihood of occurrence is based on actual observation of the species, signs of the species (burrows, tracks, scat, etc.), observance of suitable habitat, or documented occurrences of the species within various databases. A Low ranking indicates that preferred habitat is not likely within the study area and the species has not been documented within one (1) mile of the study area. A Moderate ranking indicates that suitable habitat likely exists within the study area, but the species has not been documented within one (1) mile of the study area. A High ranking indicates that suitable habitat likely exists within the study area, and the species has been documented within one (1) mile of the study area.

Any species with a Moderate or higher Likelihood of Occurrence designation within the project area will be evaluated with the Florida Fish & Wildlife Service early in the design phase, where permitting and construction techniques will be identified.

Table 7: Listed Species Potentially Within Project Area

Common Name	Scientific Name	Status	Documented (<1 mile)	Habitat Present	Likelihood of Occurrence
Avian					
Audubon's crested caracara	*Caracara cheriway*	FT	No	No	Low
Eastern black rail	*Laterallus jamaicensis jamaicensis*	FT	No	No	Low
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	FE	No	No	Low
Florida scrub-jay	*Aphelocoma coerulescens*	FT	No	No	Low
Red-cockaded woodpecker	*Picoides borealis*	FE	No	No	Low
Wood stork	*Mycteria americana*	FT	No	No	Low
Florida burrowing owl	*Athene cunicularia*	ST	No	No	Low
Florida sandhill crane	*Grus canadensis pratensis*	ST	No	No	Low
Reptilian					
Eastern indigo snake	*Drymarchon corais couperi*	FT	No	Yes	Moderate
Sand skink	*Neoseps reynoldsi*	FT	No	No	Low
Bluetail mole skink	*Eumeces egregius lividus*	FT	No	No	Low
Gopher tortoise	*Gopherus polyphemus*	ST	No	Yes	Moderate
Short-tailed snake	*Lampropeltis extenuate*	ST	No	No	Low

Legend:
FE - Federally Endangered; FT - Federally Threatened; FT(S/A) – Threatened due to Similarity of Appearance; C - Candidate for Listing
SE - State Endangered; ST - State Threatened
Note: Coordination is not required with FWC for federally listed species

C.8: Essential Fish Habitat

There is no Essential Fish Habitat in the project area; therefore, there is no involvement with this resource.

D: Physical Environment Analysis

D.1: Air Quality

As part of this study, an air quality evaluation has been performed consistent with the FDOT PD&E Manual, Part 2, Chapter 19. Based on this initial evaluation, a detailed Air Quality analysis is not needed because the project does not meet the two qualifying criteria per Section 19.2.2.1, Part 2, Chapter 19 of the PD&E Manual. It does not require an Environmental Impact Statement, and it is not expected to have community controversy regarding 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 not change delay and congestion on all facilities within the study area. Additional details are included in the **Air Quality Technical Memorandum**, available under separate cover.

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. Construction of the Preferred Alternative is not anticipated to cause adverse impact to air quality.

D.2: Water Quality

There are no aquatic preserves or Outstanding Florida Waters (OFWs) within the project study area. A review of EPA Sole Source Aquifer Protection Program maps of sole source aquifers in the southeastern United States indicated that the project study area is located within the Biscayne Sole Source Aquifer and Recharge Zone. The project will meet all applicable SFWMD criteria related to water quality. The project is currently a non-federal action receiving no federal monies; therefore, concurrence from the EPA is not required according to the Safe Drinking Water Act. Best Management Practices (BMPs) to control erosion, sediment release, and storm water runoff to minimize adverse impacts on surface water resources will be implemented during design, permitting and construction. Determination has been made that there are no USACE retained waters.

A **Water Quality Impact Evaluation (WQIE)** was conducted for the project to comply with the Clean Water Act and is available under separate cover. The results of the WQIE indicate that the project will not result in significant impacts to water quality.

D.3: Contamination Screening

A Contamination Screening Evaluation was prepared per the project scope as a part of the Evaluation of Physical Resources.

Based on the results of the contamination screening activities, 75 potential contamination sites were identified in the Study Area. This includes 52 low risk, 22 medium risk, and one high risk potential sites. It is anticipated that no sites will be impacted as a result of improvements along the mainline. With regard to offsite pond alternatives (**Attachment 3**), pond M1 is located on a parcel identified as high risk and pond Q1 is located on a parcel identified as medium risk. All other parcels identified as a potential offsite pond are located adjacent to low or medium risk sites. For this reason, Level II contamination testing during the design phase is recommended for all of the alternative offsite pond locations.

Additional details are included in the **Contamination Screening Evaluation Technical**

Memorandum, available under separate cover, which includes a site figure indicating the location of potential contamination sites and brief summaries of the most recent assessment information available through Map Direct and any recommendations on necessity for additional evaluation.

D.4: Highway Traffic Noise

A traffic noise analysis was performed in accordance with the FDOT PD&E Manual. A Traffic Noise Model was used to evaluate existing conditions, the No-Build Alternative and the Build Alternative for the Noise Sensitive Areas (NSAs) potentially impacted by traffic noise within 400 feet of the project corridor.

Per these analyses, 191 residential sites were analyzed for project-related impacts. Currently 18 sites are affected by traffic noise. The noise levels associated with the 2045 No-Build Alternative are predicted to meet or exceed the 66.0 dB(a) FDOT NAC at 19 sites.

The analysis concluded that once the project is built, which requires the removal of a majority of the existing walls, the overall traffic noise levels will increase by an average of 4.0 dB(A), with the average project-related noise level predicted to be 66.9 dB(A). The 2045 Build Alternative's noise levels are predicted to meet or exceed the applicable NAC at 95 sites. The greatest noise level increase is predicted to be 10.3 dB(A) in NSA 1. None of the increases are considered substantial (i.e., 15 dB(A) or more over existing levels).

As required, noise abatement consideration was given to all impacted sites. Five noise barrier systems were evaluated to abate the project-related impacts. Barrier systems WB-A1 and EB-A1 are not deemed feasible and reasonable for impacted receptors 8-5, 10-6, 10-8 through 10-12, and 9-1 through 9-3. Receptor 4-18 is considered isolated; therefore, a barrier at this location cannot achieve the minimum noise reduction requirement. Consequently, a barrier was not analyzed for this location.

As described in **Table 8**, noise barriers EB1, WB1, and EB2 are the CFX preferred options recommended for further consideration during the final design process. For areas where barriers are not feasible and reasonable, but barriers currently exist, CFX will evaluate other options for providing visual buffers between the residences and the expressway during the final design process.

Table 8: Noise Barrier Recommendations

Noise Study Area	Barrier ID	Barrier Height (ft)*2	Barrier Length (ft)	Barrier Location	Estimated Barrier Cost*1	Recommended for further evaluation?
1 and 3	EB1	8 & 14	456 [8'] 2,993 [14']	m/l shoulder; on bridge; ramp shoulder	$1,366,500	Yes
4	WB1	8 & 14	178 [8'] 1,017 [14']	m/l shoulder; on bridge	$469,860	Yes
5 and 7	EB2	8, 14, & 16	3,351 [8'] 1,287 [14'] 603 [16']	m/l shoulder; ramp shoulder ROW post/panel	$1,634,220	Yes
8 and 10	WB-A1	8 & 14	1,431 [8'] 2,809 [14']	m/l shoulder; ramp shoulder	$1,523,220	No
10	EB-A1	8 & 14	626 [8'] 657 [14']	m/l shoulder; ramp shoulder	$426,180	No

*1 Based on FDOT Statewide average of $30 per square foot.
*2 8-ft max on MSE/Bridge; 14-ft max on shoulder; 22-ft max at ROW or offset from shoulder.

Construction of the Preferred Alternative is not anticipated to cause adverse impact. Additional information is available in the **Traffic Noise Study Report** available under separate cover.

D.5: Construction

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.

Based on the existing land use within the limits of this project, construction of the proposed roadway improvements will not have any noise or vibration impact. If noise-sensitive land uses develop adjacent to the roadway prior to construction, additional impacts could result. It is anticipated that the application of the FDOT Standard Specifications for Road and Bridge Construction will minimize or eliminate most of the potential construction noise and vibration impacts. However, should unanticipated noise or vibration issues arise during the construction process, CFX and the Contractor will investigate additional methods of controlling these impacts.

Because no federally listed species are likely to be present in the action area and no critical habitat was identified, the construction of this project is not anticipated to impact any proposed threatened or endangered species, any threatened or endangered species, or affect or modify any critical habitat.

Further, construction will likely temporarily impact existing traffic patterns, but as with all construction impacts, will be temporary in nature and efforts will be made to minimize negative impacts by adhering to applicable state regulations and to applicable FDOT Standard Specifications for Road and Bridge Construction.

Construction of the Preferred Alternative is not anticipated to cause adverse impact.

D.6: Bicycles & Pedestrians

As stated earlier in this memo, there is sidewalk present along Old Winter Garden Rd and W Colonial Dr parallel to the study area. There is also sidewalk present on the streets that

interchange with an interchange at SR 408 (Kirkman Rd, Pine Hills Rd, Old Winter Garden Rd, Ortman Dr, Ferguson Dr, John Young Pkwy, and Church St). There are marked bike lanes present on Kirkman Rd.

This project's proposed improvements will provide more efficient connections via SR 408, potentially taking additional automobiles off surface roads to minimize potential conflicts with transit, pedestrians, and bicyclists.

The MetroPlan Orlando Metropolitan Transportation Plan (MTP) identifies Shingle Creek Trail Phase 4 as a Cost Feasible Pedestrian/Bicycle project within the study area. This project includes pedestrian and bicycle infrastructure located adjacent to the south of the SR 408 eastbound ramp at Kirkman Rd. The trail continues north along Kirkman Rd, traveling under SR 408. Additionally, there are safety improvements identified as Cost Feasible projects on SR 50 to the north of the project area and along Church Street from John Young Pkwy, traveling under SR 408 to the Orlando Central Business District.

Other Unfunded Needs identified in the MTP that are located near the SR 408 improvements include the following as listed in **Table 9.**

Table 9: MetroPlan 2045 MTP Unfunded Needs Near Project

Project	Limits	Type
W Colonial Rd/SR 50	Kirkman Rd Intersection	Safety Improvements
Pine Hills Rd	Old Winter Garden Rd to Silver Star Rd	Operational/Safety
President Barack Obama Pkwy	Old Winter Garden Rd to SR 50/Colonial Dr	New 4 Lane Roadway
Old Winter Garden Rd	Kirkman Rd to Ivey Ln	Operational
John Young Pkwy	33rd St to SR 408	Operational/Safety/Freight
John Young Pkwy	LB McLeod to Church St	Complete Streets

The Shingle Creek Trail is also identified in the Orange County Comprehensive Plan and the Orange County Trails Master Plan

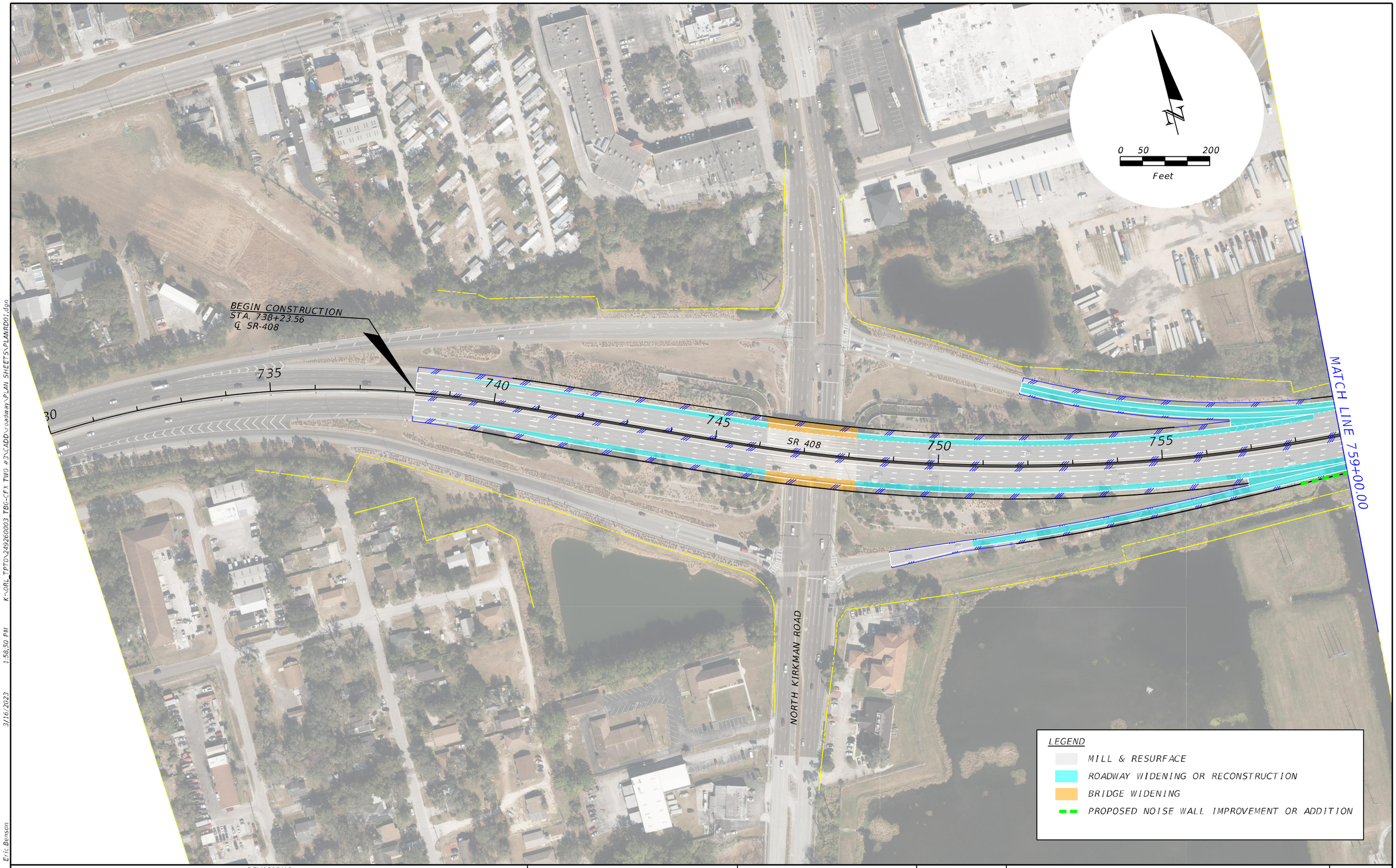
The City of Orlando Bicycle Plan Update 2020 includes in its Visionary Bikeway Network proposed bicycle improvements on Kirkman Rd, Shingle Creek Trail, Pine Hills Rd, Ivey Ln, Orton Dr/Mercy Dr, Cottage Hill Rd, John Young Pkwy, and Church St.

This project's proposed improvements will provide more efficient connections via SR 408, potentially taking additional automobiles off surface roads to minimize potential conflicts with transit, pedestrians, and bicyclists.

D.7: Navigation

There are no navigable waterways in the project area; therefore, there is no involvement with this resource.

Attachment 2 – Concept Plans



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PREPARED BY

KIMLEY-HORN AND ASSOCIATES INC.
189 SOUTH ORANGE AVENUE, SUITE 1000
ORLANDO, FLORIDA, 32801

SR 408 WIDENING FROM
KIRKMAN ROAD TO CHURCH STREET

ROAD NO.	PROJECT NO.
SR-408	408-174

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

CONCEPT PLANS

SHEET NO.
1

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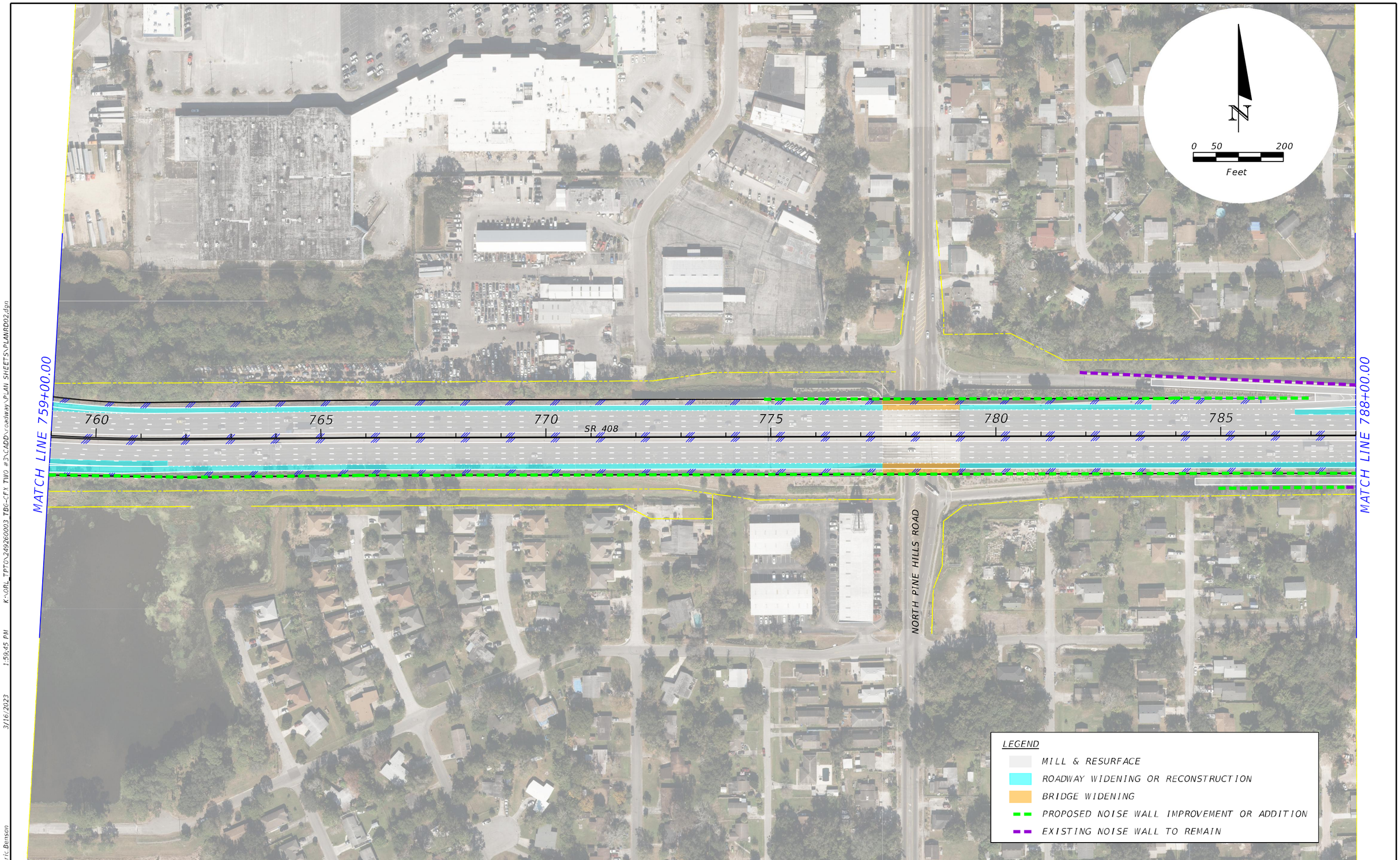

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CONCEPT PLANS

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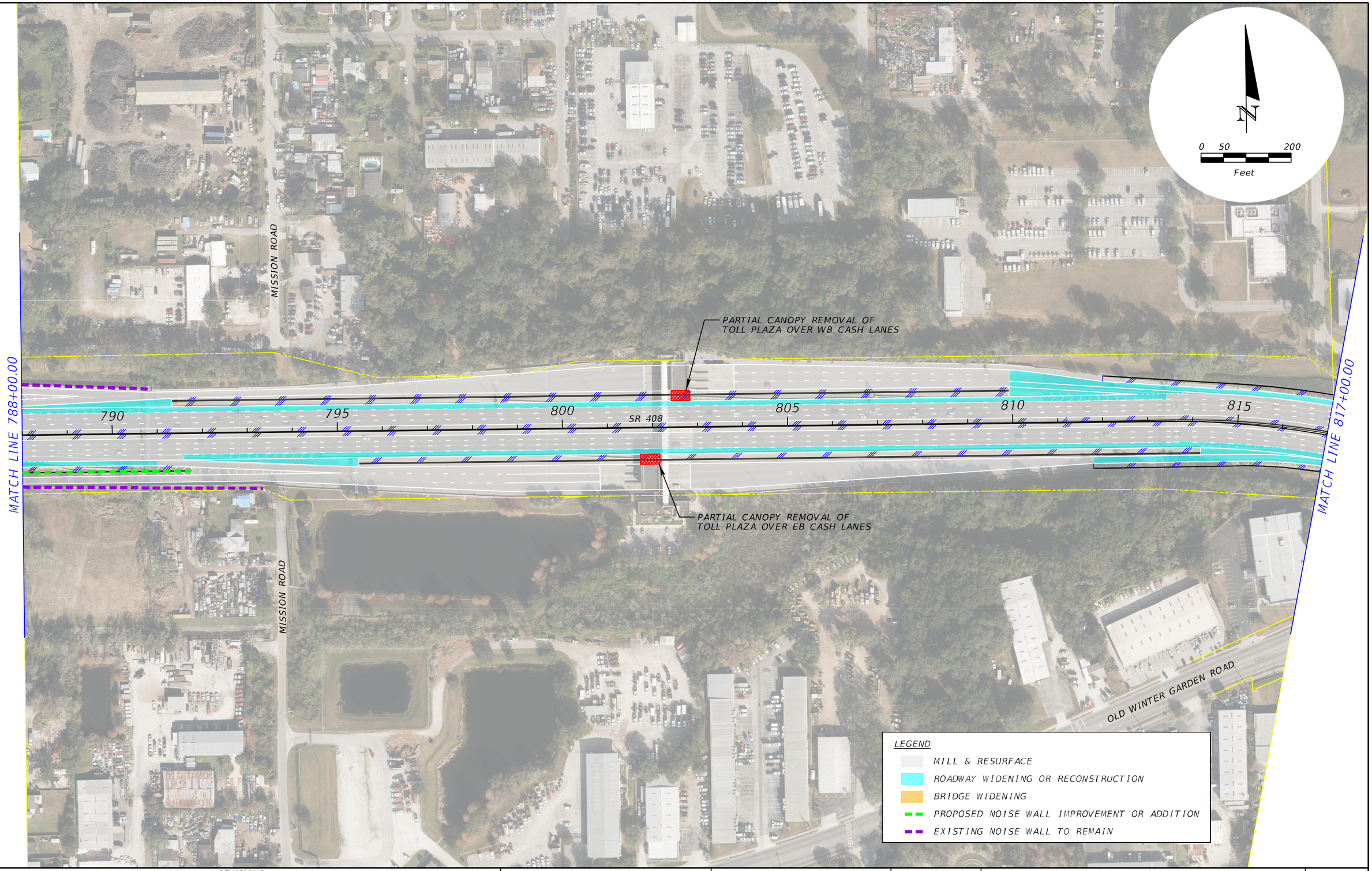

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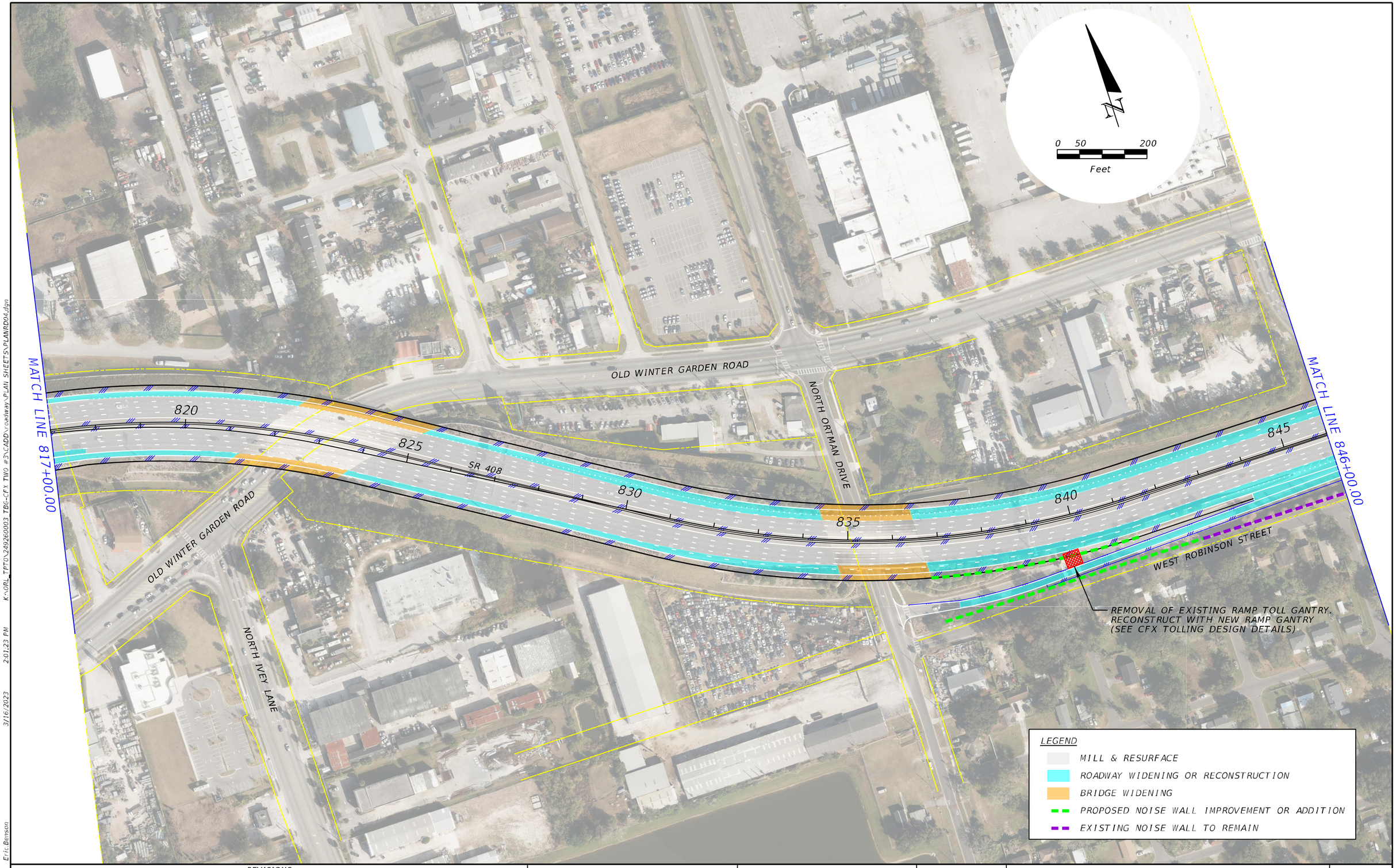

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CONCEPT PLANS

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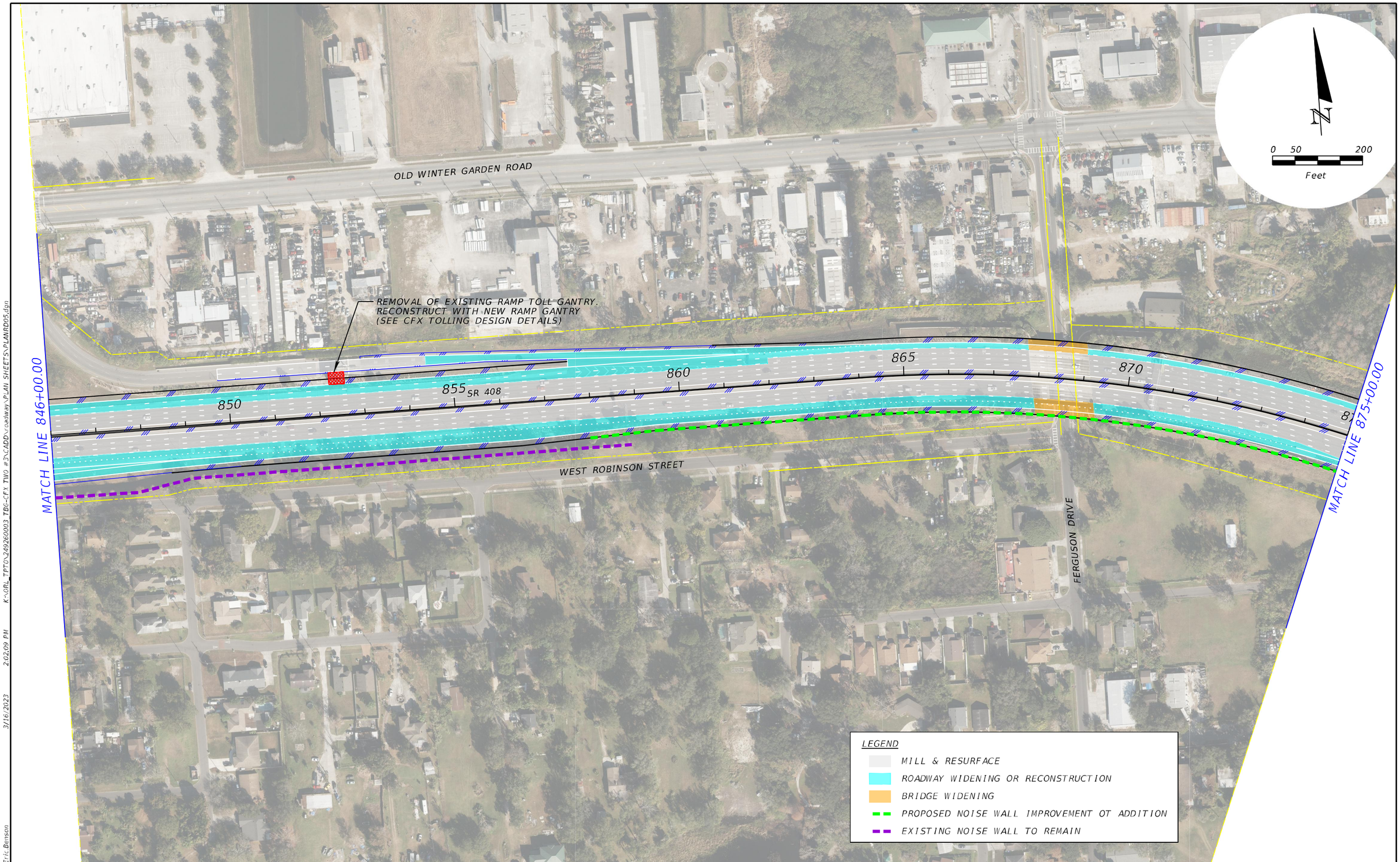

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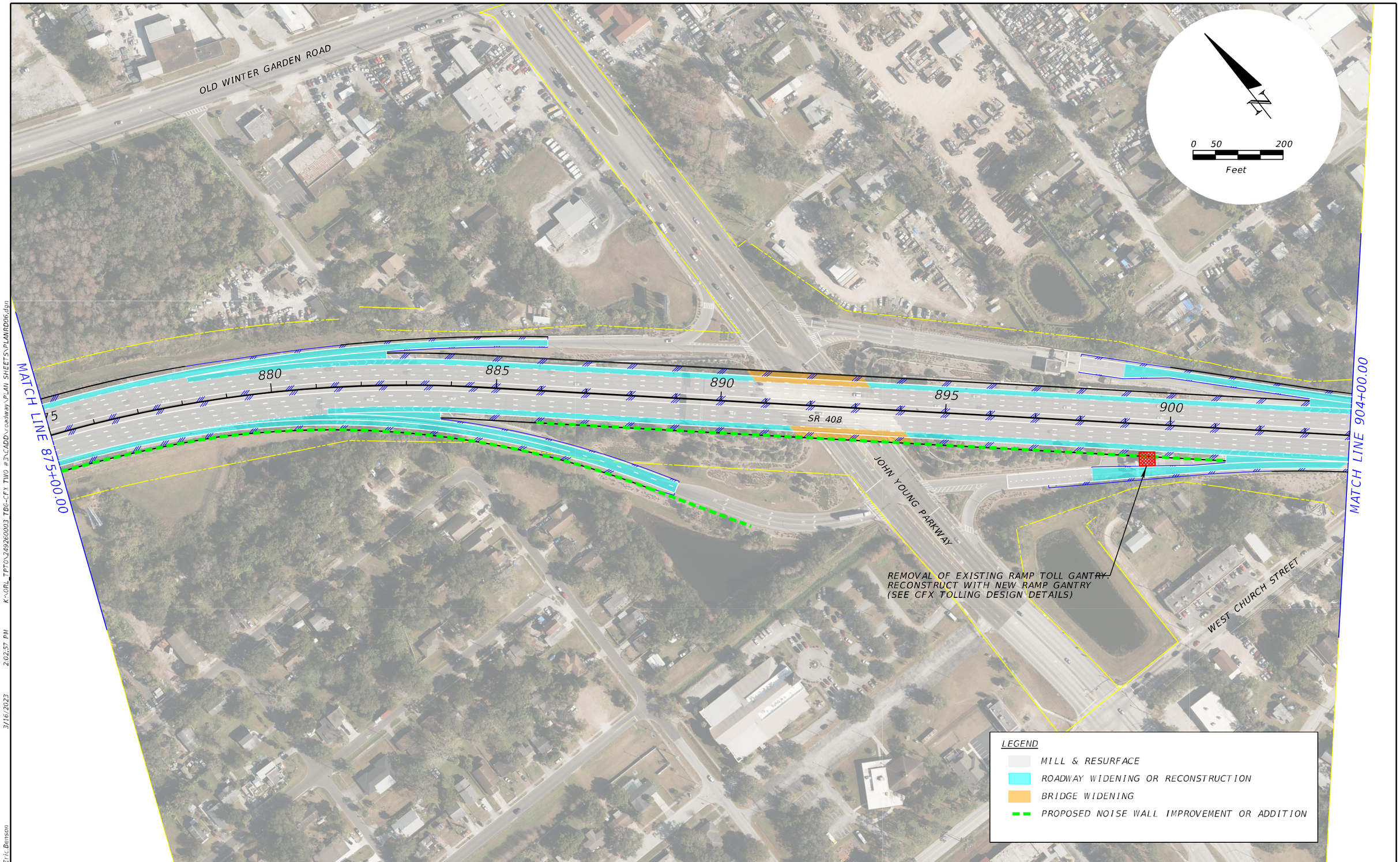
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

CONCEPT PLANS

SHEET NO.
5



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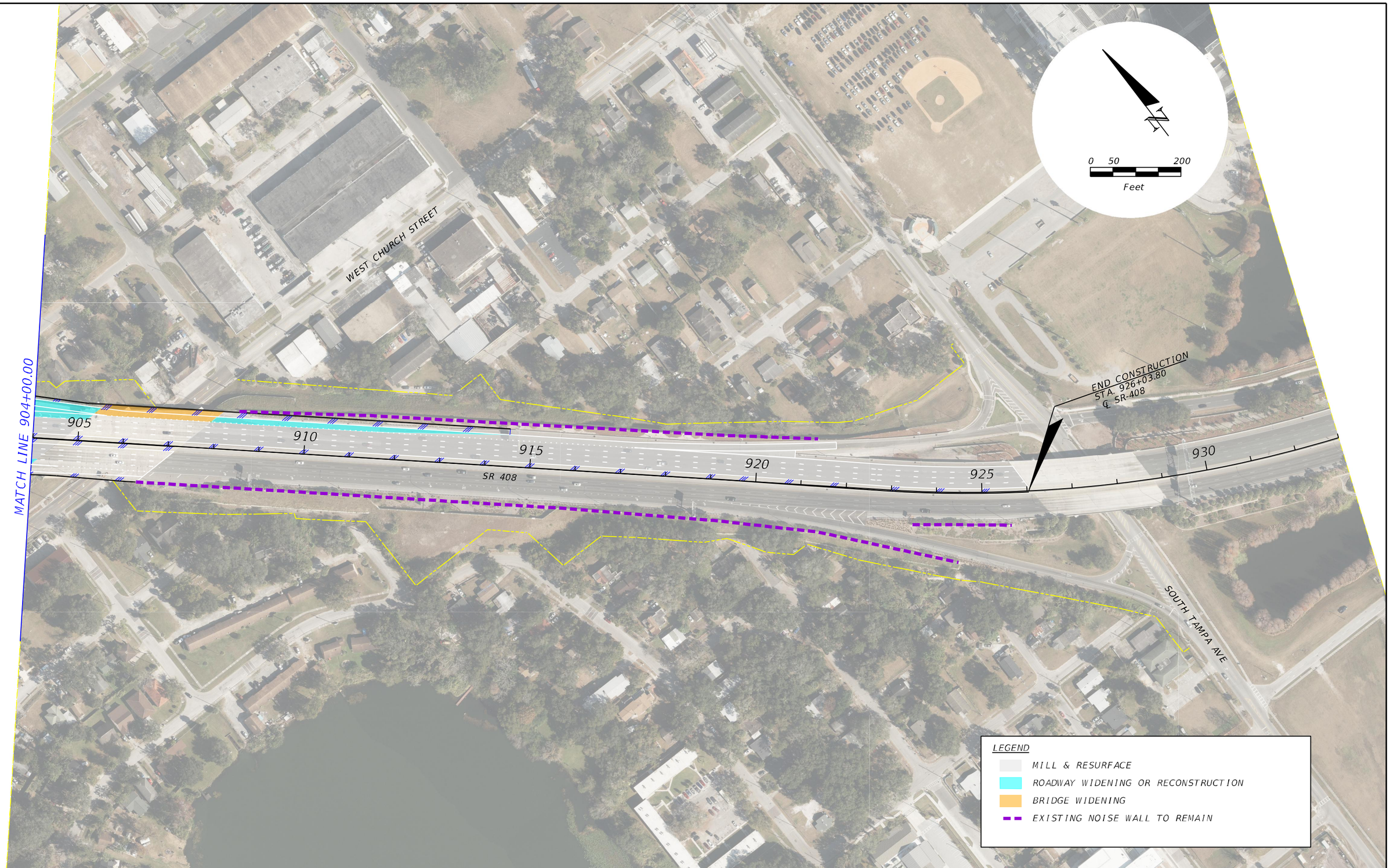
SHEET NO.

6



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PREPARED BY

KIMLEY-HORN AND ASSOCIATES INC.
189 SOUTH ORANGE AVENUE, SUITE 1000
ORLANDO, FLORIDA, 32801

SR 408 WIDENING FROM
KIRKMAN ROAD TO CHURCH STREET

ROAD NO.	PROJECT NO.
SR-408	408-174

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

CONCEPT PLANS

SHEET NO.
7

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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Attachment 3 – Preferred Pond Sites

Legend

- Existing Culverts
- Proposed Ponds
- Existing Ponds
- Basins
- Widening
- Open Space
- Orange County Parcels
- State Owned Land

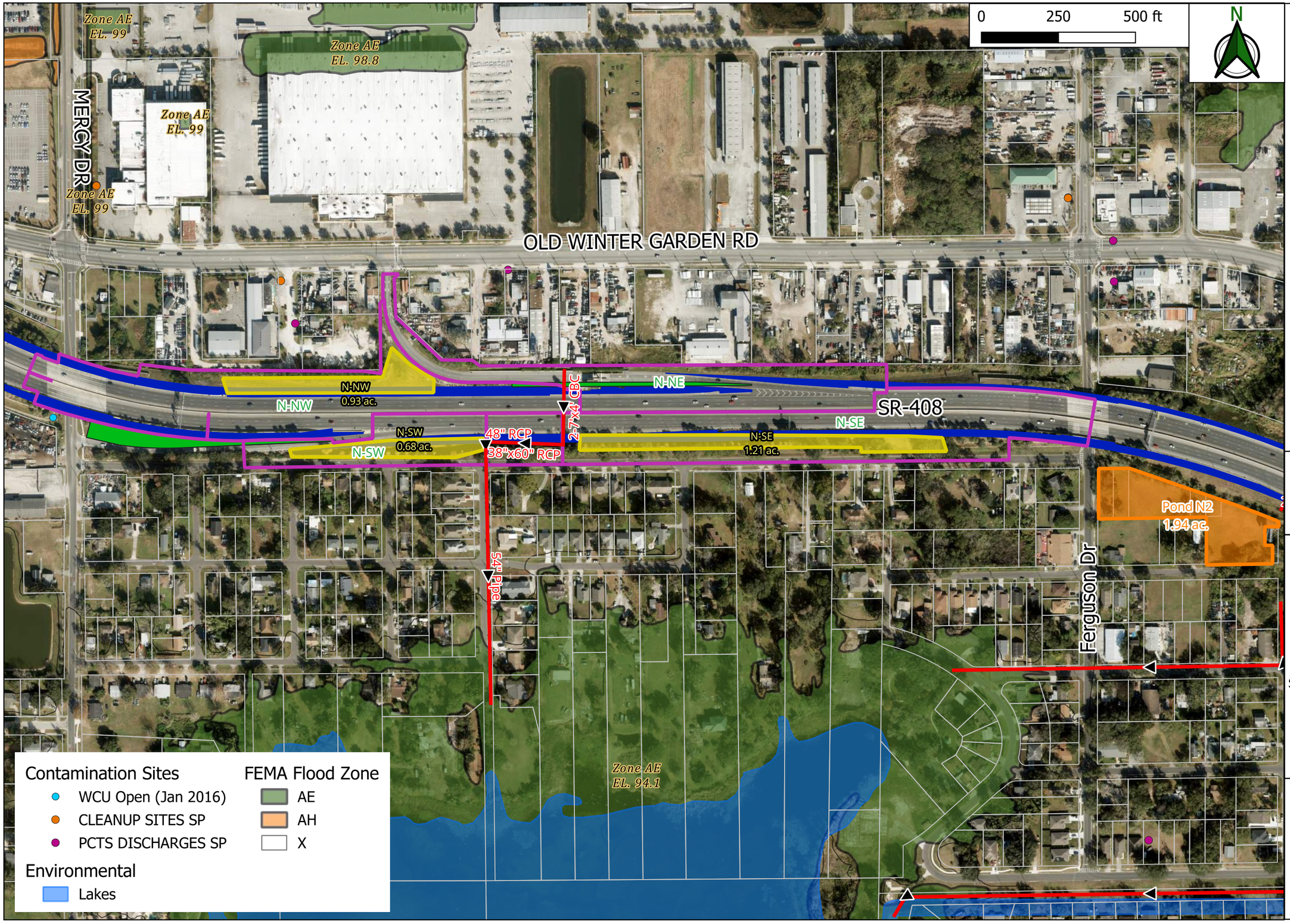
FIGURE 9D3

Pond Alternative M3
(Basin M)

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

PD&E Study
SR 408 Widening from Kirkman Road to Church Street
CFX Project No. 408-174
Orange County, FL

The Balmoral Group
165 Lincoln Avenue
Winter Park, FL 32789
Phone: (407) 629-2185
www.balmoralgroup.us



Legend

- Existing Culverts
- Proposed Ponds
- Existing Ponds
- Basins
- Open Space
- Widening
- Orange County Parcels
- State Owned Land

FIGURE 9E2

Pond Alternative N2
(Basin N)

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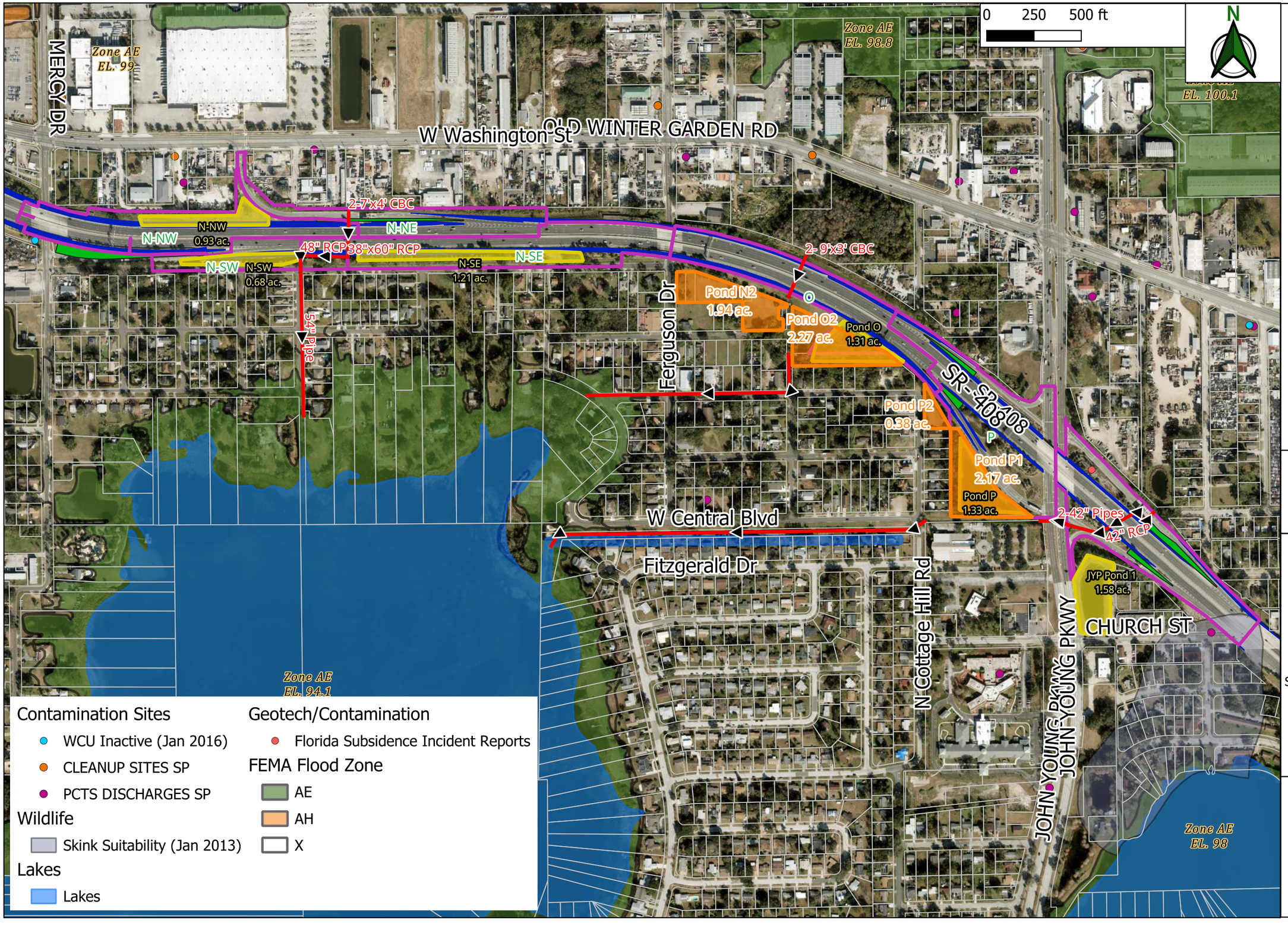

Legend

- Existing Culverts
- Proposed Ponds
- Existing Ponds
- Basins
- Open Space
- Widening
- Orange Couty Parcels

FIGURE 9H2

Pond Alternative Q2
(Basin N, O, P & Q)

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

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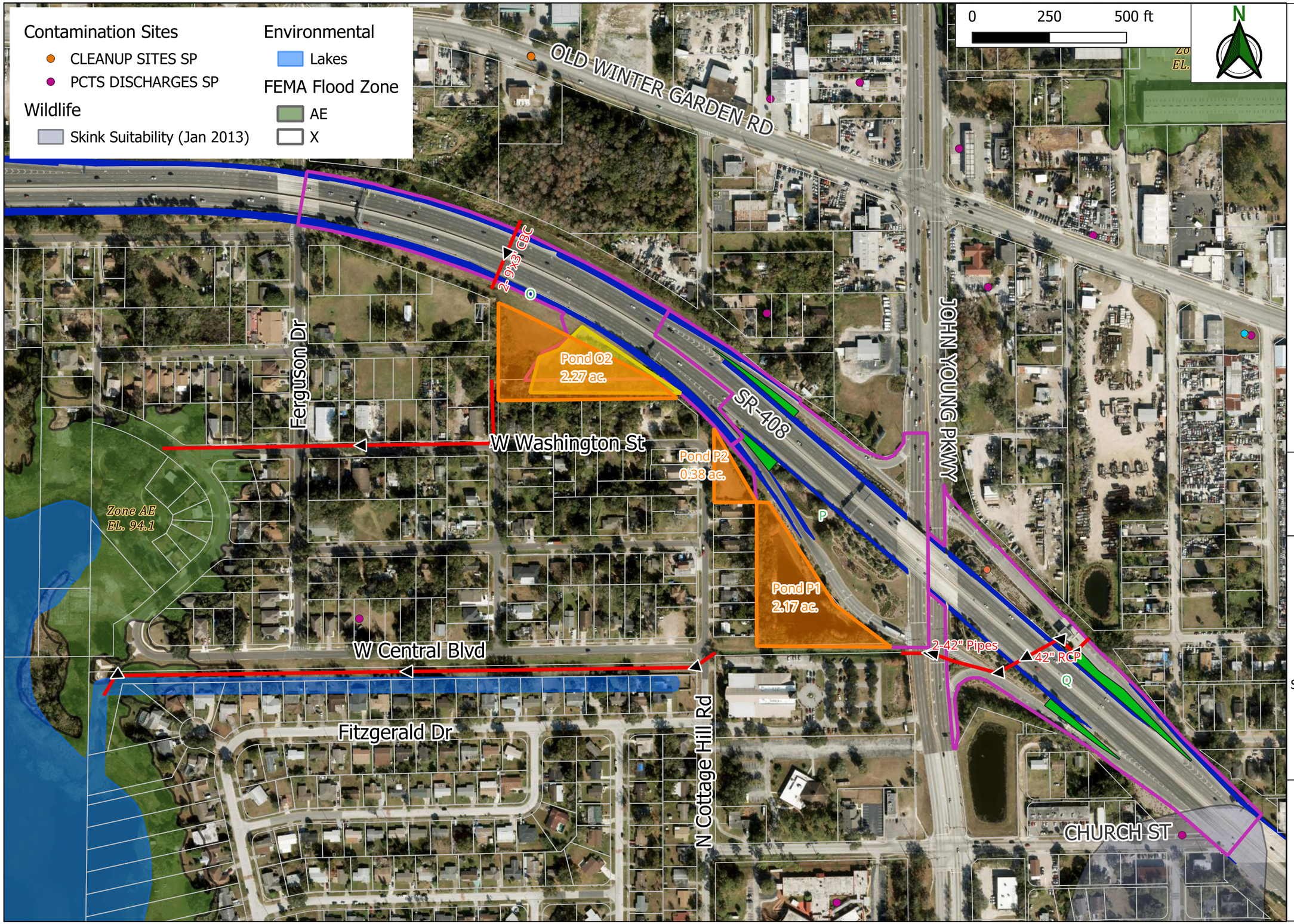

Legend

- Existing Culverts
- Proposed Ponds
- Existing Ponds
- Basins
- Open Space
- Widening
- Orange County Parcels

FIGURE 9F2

Alternative Pond O2
(Basins O & P)

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