Florida Department Of Transportation

2010 UAM

Utility Accommodation Manual

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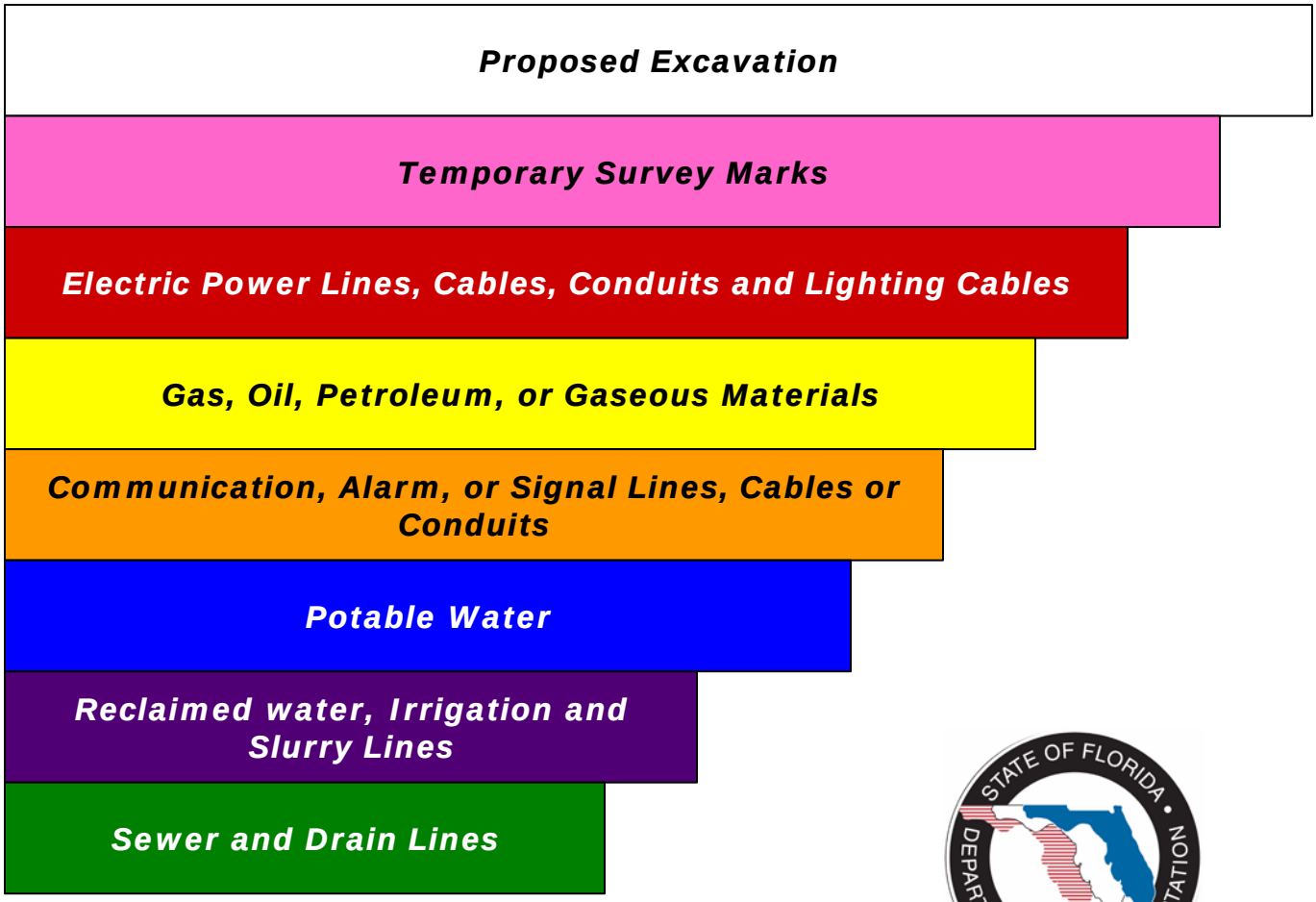

Topic No: 710-020-001-g

Chapter 556, F.S. incorporate locates as described in the 1999 UAM. These are no longer described in the 2010 UAM, but are provided on this cover for quick reference.

1999 UAM Section 11.3 Locates

The following identifies the level of utility locates in ascending order:

Level “D” - Existing Records
Level “C” - Surface Visible Feature Survey
Level “B” - Designating
Level “A” – Locating

Level “D” locates are information obtained solely from a review of utility records. The comprehensiveness and accuracy of such information is highly limited. Even when existing information for a utility in a particular area is accurate, there are often other underground systems that are not shown on any records. Level “D” may be appropriate for use early in the development of a project to determine the presence of utilities.

Level “C” locates are information obtained to augment Level “D” information. This involves topographic surveying of visible, above ground utility features such as poles, hydrants, valve boxes, circuit breakers, etc. Level “C” may be appropriately used early in the development of a project and will provide better data than Level “D” information alone. Designers can not be sure their design is appropriate nor can construction proceed without caution when using information for underground utilities that is based only on Level “D” and “C” locates.

Level “B” locates are information obtained through the use of designating technologies (e.g. geophysical prospecting technologies). This is an application using scanning technologies, most of which have very specific capabilities and limitations that vary with site conditions. Applying a variety of techniques is essential to the process of preparing a comprehensive horizontal map of utilities and other underground structures on the site. Designating technologies are capable of providing reasonable horizontal information but provide limited vertical information.

Level “A” locates provide the highest level of accuracy of utility locations in three dimensions. This level may apply manual, mechanical or nondestructive (e.g., vacuum excavation) methods to physically expose utilities for measurement and data recording. Levels “B”, “C”, and “D” locates are incorporated in Level “A” locates. The designer should obtain Level “A” locates at highway/utility conflict points where verified information is necessary.

FLORIDA DEPARTMENT OF TRANSPORTATION

2010 UAM
Utility Accommodation Manual

Topic 710-020-001-g

August 2010

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1 INTRODUCTION

1.1 PURPOSE

The purpose of the Utility Accommodation Manual (***UAM***) is to establish requirements for accommodation of new and existing utilities along, across, on, or under transportation facilities within Florida Department of Transportation's (FDOT) right of way (R/W).

1.2 AUTHORITY

Section 337.401 through ***337.405, F.S.***

Rule Chapter 14-46, F.A.C.

1.3 SCOPE

FDOT Construction, Maintenance and Design Offices use the ***UAM*** for compliance reviews, issuing utility permits, requesting relocation schedules and allowing utility maintenance work. UAOs use the ***UAM*** to determine FDOT's requirements for installing, relocating, maintaining, and locating their utilities while on FDOT's R/W.

1.4 GENERAL

References to sections internal to this manual are indicated in bold italics starting with "UAM". For example, these instructions are in ***UAM Section 1.4***. References to external documents are indicated by the generally used term for the document highlighted in bold italic text, For example, the "Design Standards for Design, Construction, Maintenance and Utility Operations On the State Highways System English Units -2010" is referenced as the ***FDOT Design Standards***. The published title and date for these external references are listed in ***UAM Chapter 6***. When a ***UAM Section*** is referenced, it is intended that all subsections and all other references contained within the referenced section are included.

Any authority or responsibility specifically attributed in this ***UAM*** to any FDOT employee implicitly extends to anyone that employee has authority to delegate it to. In addition, the State Chief Engineer has authority to exercise any authority or responsibility attributed in the ***UAM*** to any FDOT employee.

1.5 APPLICATION OF STANDARD DRAWINGS AND SPECIFICATIONS

When an agreement exists between the UAO and FDOT, the UAO's work shall conform to the requirements of the agreement. Otherwise, while on the FDOT R/W or within FDOT projects, the UAO's work shall comply with the requirements of the ***UAM*** and the standard drawings and specifications listed in ***UAM Sections 1.5.1*** and ***UAM Sections 1.5.2***, or the UAO may elect to use the most current version of these standard drawings and specifications.

1.5.1 FDOT Design Standard Drawings

The UAO shall use any standard drawings necessary to restore the FDOT R/W to the condition existing prior to the utility work. While working within the FDOT R/W, the UAO shall maintain their worksite in compliance with the ***FDOT Design Standards*** listed below:

Index	Title
102	Temporary Erosion and Sediment Control
103	Turbidity Barriers
600	General Information for Traffic Control Through Work Zones

Additionally, the below indexes 601 through 660 are typical applications that apply to most traffic control situations. When conditions in the field are such that these indexes are sufficient to control traffic, the UAO shall either use these or comply with ***UAM Section 4.4***.

Index	Title
601	Two-Lane, Two-Way, Work Outside Shoulder
602	Two-Lane, Two-Way, Work On Shoulder
603	Two-Lane, Two-Way, Work Within the Travel Lane
604	Two-Lane, Two-Way, Work In Intersection
605	Two-Lane, Two-Way, Work Near Intersection
611	Multilane, Work Outside Shoulder
612	Multilane, Work On Shoulder
613	Multilane, Work Within the Travel Lane - Median or Outside Lane
615	Multilane, Work In Intersections
616	Multilane, Work Near Intersection - Median or Outside Lane
625	Temporary Road Closure 5 Minutes or Less
635	Work In Vicinity of Rail Crossings
660	Pedestrian Control for Closure of Sidewalk

When constructing conflict structures the UAO shall comply with ***FDOT Design Standard*** - Index 307.

1.5.2 FDOT Standard Specifications

The UAO's work shall comply with the sections of the ***FDOT Standard Specifications*** as listed below:

When working on FDOT projects the UAO and FDOT contractor shall coordinate their activities in accordance with all of the following sections:
4-3.8
7-11.6

When constructing and maintaining detours, the UAO shall provide pavement markings in accordance with the following sections:
102-1
102-2.1
102-7
102-8
102-9.1 (Paragraphs 1, 2, & 5 only)
102-9.2

For other various types of work, the UAO shall comply with the following sections:
121-1 through 121-6
125-6 through 125-8
160-1 through 160-6
522-1 through 522-8
555-1
555-5 through 555-6
556-1 through 556-2
556-3.2 through 556-3.3
556-3.4.1
556-4 through 556-6
557-1
557-2.1
557-2.2.1
557-3 through 557-4
700-2.5
700-3.8
994-1.1
994-3.3

1.6 OTHER AGENCY RULES

If another agency's rule is applicable, the UAO is responsible for complying with those rules. When a FDOT rule is more stringent than those of other agencies, the UAO shall comply with the FDOT rule.

1.7 PERMIT REQUIREMENTS

Unless otherwise specified in ***UAM Section 3.2*** or ***UAM Section 3.3***, the UAO shall obtain a permit before working within FDOT R/W.

1.7.1 Acquiring Existing Utilities

When a UAO acquires an existing utility that is within FDOT R/W, the UAO shall provide FDOT with an affidavit that (1) states the ownership transfer, (2) describes the boundaries and (3) acknowledges that the new UAO shall comply with the conditions and requirements of the original permit. A copy of the operative conveyance document shall be attached to the affidavit.

1.7.2 Overweight and Over-Dimensional Vehicle Permits

The UAO shall obtain permits for overweight and over-dimensional vehicles in accordance with ***Rule Chapter 14-26, F.A.C***.

1.7.3 Storm Water and Drainage Permits

For the installation of drainage pipes or structures that convey storm water along, across or under the FDOT R/W and do not discharge any storm water onto the FDOT R/W or into an FDOT storm water system, the UAO shall obtain a utility permit in lieu of a drainage connection permit (see ***UAM Chapter 3***).

For the installation of drainage pipes or structures that do discharge storm water onto the FDOT R/W or into an FDOT storm water system, the drainage facility owner shall obtain a drainage connection permit in lieu of a utility permit (See ***Rule Chapter 14-86, F.A.C***.).

Obtaining an FDOT drainage connection permit or utility permit does not relieve the owner of their responsibility to comply with the Florida Department of Environmental Protection's (DEP) National Pollutant Discharge Elimination System (NPDES) permitting requirements (see ***Chapter 373, F.S. Part IV*** and ***Rule Chapter 62-25, F.A.C***) or any other authority's permitting requirements.

1.8 UAM DISPUTE RESOLUTION

If the UAO desires to resolve a dispute with an FDOT district or the Turnpike Enterprise, the UAO shall request a review by the FDOT State Utilities Engineer.

1.9 ONE CALL NOTIFICATION

The UAO shall notify the Sunshine State One-Call System (811) prior to any excavation or demolition activities in accordance with ***Chapter 556, F.S***. This shall not relieve the UAO from their obligation to notify FDOT as required by the permit or by the ***UAM***. FDOT contact information is provided on the utility permit.

1.10 UTILITY LIAISON

The State Utilities Engineer develops revisions and additions to the ***UAM*** in accordance with ***Chapter 120, F.S***. and through periodic ***UAM*** reviews with the utility industry and others. The State Utilities Engineer is the chief liaison on utility accommodation. UAM users may submit to the State Utilities Engineer written suggestions to the address or URL below:

State Utilities Engineer
Florida Department of Transportation
605 Suwannee Street
Mail Station 32
Tallahassee, FL 32399-0450

The State Utilities Engineer publishes information about issues of interest to the utility industry at: *http://www.dot.state.fl.us/rddesign/utilities/*

1.11 DISTRIBUTION

FDOT provides the ***UAM*** at no cost from the following web site at:

http://www.dot.state.fl.us/rddesign/utilities/

Hardcopies of the ***UAM*** may be purchased from:

The Florida Department of Transportation
Maps and Publications Sales
605 Suwannee Street, Mail Station 12
Tallahassee, Florida 32399-0450
Phone: (850) 414-4050 Fax: (850) 487-4099

1.12 TRAINING

No special training is required to use the ***UAM***. Some functions addressed in the ***UAM*** do require persons to be skilled or certified in a particular area of expertise. Examples include Traffic Control setups or designs addressed in ***UAM Section 4.4***, or herbicide applications addressed in ***UAM Section 4.6***.

2 TERMS AND ACRONYMS

The following definitions of terms and acronyms apply only as used in the ***UAM***:

Aboveground Fixed Utilities (AFU): Are utility objects more than four (4) inches above the grade and are not accepted by FDOT as crash worthy (such as strain poles, down guys, telephone load pedestals, temporary supports, etc).

Agreement: Any legally binding instrument between the UAO and FDOT.

Auxiliary Lane: The designated widths of roadway pavement marked to separate speed change, turning, passing and climbing maneuvers from through traffic. They occasionally provide short capacity segments.

AFU: Aboveground fixed utilities.

CFR: Code of Federal Regulations.

Casing: A pipe surrounding a carrier pipe and designed to resist potential impacts and carry imposed loads.

Conduit: An enclosure for protecting a utility (e.g., wires and cables).

Contractor: A legal entity (1) properly licensed in the State of Florida by the state, county or city, and (2) contracting with FDOT or a UAO to work or furnish materials.

District: One of the 7 geographical areas or the Turnpike Enterprise. District Map and Turnpike information are available at: *http://www.dot.state.fl.us/rddesign/utilities/*

F.A.C.: Florida Administrative Code

FDOT: The Florida Department of Transportation:

FDOT Resurfacing Project: An FDOT resurfacing project is any project whose purpose is to resurface existing lanes without adding additional travel lanes.

FHWA: The Federal Highway Administration.

FIHS: Florida's Intrastate Highway System: An interconnected statewide system of limited access facilities and controlled access facilities developed and managed by FDOT to meet standards and criteria established for high-speed and high-volume traffic movements.

F.S.: Florida Statutes.

Highway: A right of way corridor which contains or is to contain a roadway. Generally the highway is R/W line to R/W line.

LA R/W: Limited Access Right of Way.

Local Maintenance Engineer: The engineer in charge of the local maintenance or operation centers throughout the State.

Locates: The practice of identifying the position of an existing utility.

Maintenance Of Traffic: Traffic Control

Manhole: An opening in an underground system, providing access for installations, inspections, repairs, connections and tests.

Median: The portion of a divided highway or street that separates the traveled-ways for traffic moving in opposite directions.

MOT: Maintenance of Traffic or Traffic Control.

Pull Box: An opening in an underground system, providing access for installations, inspections, repairs, connections and tests.

R/W: Right of way

Roadway: The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.

TCP: Plans showing Traffic Control.

Service lines: Lines used by the UAO to carry services from a main line to individual recipients.

Traffic Control: Methods of controlling and maintaining a safe flow of traffic through construction or maintenance work areas. Also referred to as Maintenance of Traffic.

Traveled-Way: Also called traffic lane, is the designated widths of roadway pavement (exclusive of shoulders and marked bicycle lanes) marked to separate opposing traffic or vehicles traveling in the same direction. These lanes include through travel lanes, auxiliary lanes, turn lanes, weaving lanes, passing lanes and climbing lanes. They provide space for licensed motor vehicles and, in some cases, bicycles.

Travel Lane: The designated widths of roadway pavement marked to carry through traffic and to separate it from opposing traffic or traffic occupying other traffic lanes. Generally, traveled-ways or traffic lanes equate to the basic number of lanes for a facility.

UAO: Utility Agency/Owner. The entity that owns the utility.

UAM: This Utility Accommodation Manual

U.S.C.: United States Code.

Utility: All lines such as pipes, wires, pole lines, and appurtenances used to transport or transmit, electricity, steam, gas, water, waste, voice or data communication, radio signals, or storm water not discharged onto the FDOT R/W.

Utility Appurtenances: Features or parts that are part of a utility, whether primary or secondary to its function.

3 UTILITY PERMITS

3.1 GENERAL

When applying for a permit, the UAO shall submit an application using the ***FDOT Utility Permit Form***. Others may prepare and process permit applications for the UAO, however the UAO shall be the permittee and shall comply with the provisions of the ***UAM***. The UAO shall not deviate from an approved permit without approval by the Local Maintenance Engineer. The UAO shall have a copy of the approved permit and the permit application package available at the job site when crews are present. ***FDOT Utility Permit Forms*** are available at the Local Maintenance Office, District Maintenance Office, District Utility Office, or at: *http://www.dot.state.fl.us/rddesign/utilities/*

To expedite construction of FDOT projects, FDOT may determine an approved ***FDOT Utility Work Schedule***, and a relocation agreement are equivalent to a utility permit.

3.2 PERMIT APPLICATIONS FOR EMERGENCY WORK

Advance permit application approvals or notifications are not required for repairs performed in accordance with ***UAM Section 4.1.1***. If the type of work would normally require a permit, the UAO shall submit a completed ***FDOT Utility Permit Form*** and as-built plans within five (5) business days after the repairs are completed; however, a TCP does not need to be submitted.

3.3 WORK NOT REQUIRING NEW PERMITS

3.3.1 Work Types

The UAO shall not perform the work on previously permitted utilities without obtaining a new permit unless the type of work is listed below and limited to the UAO's own facilities and the work constraints in ***UAM Section 3.3.2***:

1) Placement of mid-span poles, replacement of existing poles, removal of existing poles or placement of service poles in compliance with ***UAM Section 4.2.2***.
2) Placement of underground service lines in compliance with ***UAM Section 4.3.8*** provided trenching is perpendicular to the roadway.
3) Temporary utility work approved by the FDOT Resident/Project Engineer during FDOT construction projects.
4) Maintenance, replacement, alterations or additions of aerial components on existing pole lines.
5) Maintenance, but not the replacement, of existing underground facilities.
6) Placing additional lines or ducts within existing conduits, provided no additional conduit, pull-boxes or other utility appurtenances are installed.
7) Installation of antennae for remote communication or switching devices to operate the permitted utility provided no excavation is performed.
8) Tree trimming as described in ***UAM Section 4.6.2***.
9) Routine maintenance of vegetation as described in ***UAM Section 4.6.3***.
10) Potholing for physical exposure of buried utilities in accordance with ***UAM Section 4.9***.

The UAO shall be responsible under the original permit for any added lines or other utility modifications for which a new permit was not required. The UAO shall not add third party facilities or use on FDOT R/W without a utility permit.

3.3.2 Work Constraints

To perform the work in ***UAM Section 3.3.1***, the UAO shall comply with all of the following conditions; otherwise, a new permit is required:

1) All work requires notification to the appropriate maintenance engineer of the location, general scope and timeframe of the work. Work anticipated to take two (2) hours or less to complete may commence immediately after notification. Work anticipated to take more than (2) hours to complete shall not commence sooner than forty-eight (48) hour after notification.

2) The work does not involve cutting any roadway pavement.
3) The work does not cut or otherwise damage more than ten (10) linear feet of sidewalk.
4) Vehicular and pedestrian traffic shall be maintained using the standards and typical applications listed in ***UAM Section 1.5.1***.
5) The work does not conflict with any FDOT construction project, scheduled c*ommunity events,* other scheduled permitted activities, or district lane closure restrictions.
6) Excavation does not exceed eighty (80) cubic feet.
7) The utility is not on FDOT limited access R/W or a FDOT rail corridor.
8) The FDOT R/W will be restored to the condition prior to the work within 72 hours of completion of the work done on the UAO's facilities.

3.4 PERMIT APPLICATION PACKAGE

3.4.1 General Documentation

In addition to the information required on the ***FDOT Utility Permit Form***, the UAO shall provide the following with the utility permit application:

1) A key map showing the proposed installation's location and the approximate distance and direction from the proposed work area to the nearest town, major road intersection, bridges, or railroad crossings.
2) Plan view drawings (preferably to scale) showing all of the following:
   a) The R/W Lines, limited access lines or easement lines.
   b) The proposed utility and proposed utility appurtenances (except for utility appurtenances mounted at least fifteen (15) feet above the ground and less than eight (8) cubic feet).
   c) The horizontal distance from the proposed utility to a well defined feature of the transportation facility (such as the edge of travel lane).
   d) A tie to roadway/railroad mileposts, or stationing (when available).
   e) The limits of the work area (including staging, access points, or other areas to be used).
   f) For trenchless installations, the proposed method of installation, materials, function, type, size of proposed installation and largest reamer when used.
   g) Maximum allowable operating pressures of proposed gas mains and the locations of proposed shut-off valves.
   h) Aboveground features such as existing utility poles within the work area.
   i) Underground facilities such as utilities, drainage pipes, or ITS lines within the proposed work area as can reasonably be obtained by a review of existing records and a topographical survey of above ground features.
   j) Significant physical features such as vegetation, wetlands or bodies of water.
3) When installing underground utilities by open trench or trenchless methods or will disturb existing drainage features or grades, the UAO shall provide profile view drawings showing all of the following:
   a) The horizontal and vertical location of the proposed utility and proposed appurtenances larger than eight (8) cubic feet.
   b) Benchmark information (assumed datum or ***North American Vertical Datum of 1988***).
   c) Horizontal and vertical location of existing underground facilities such as utilities, drainage pipes, or ITS lines within the proposed work area as can reasonably be obtained by a review of existing records and a topographical survey of above ground features.
   d) The proposed utility's minimum vertical clearance below the top of the pavement or existing unpaved ground.
   e) Top of water table or confining layer when required per ***UAM Section 4.3.11.1***.
4) Cross-sectional view showing one or more typical cross sections to adequately reflect the proposed installation's location.
5) A traffic control plan (TCP). When using the ***FDOT Design Standards*** as its TCP, the UAO shall include on the permit application specific reference to the appropriate indexes used.

6) Manufacturer's certifications of proposed underground appurtenance manufactured offsite such as manholes, splice boxes or vaults that are greater than eighty (80) cubic feet in accordance with ***UAM Section 4.3.4.1***.
7) Signed and sealed plans and specifications for proposed attachments to structures suitable for inclusion in the Florida Bridge Management Inventory System (BMIS) file including a bridge load rating analysis where attachments affects the bridge's carrying capacity.
8) Not more than six photographs documenting work area conditions prior to the utility work as requested by the Local Maintenance Engineer. The Local Maintenance Engineer shall waive the requirement for photographs when unnecessary.
9) Justification and drawings showing proper replacement of the roadway for any open trenching, pavement cuts, or water supply line conflicts
10) For aboveground crossings of an operational LA R/W between interchanges, a list of any other anticipated crossings.
11) A completed standard railroad application package when within on FDOT rail corridors.

3.4.2 Returning a Utility to Service

When returning an existing utility to service the UAO shall provide the following with the utility permit application in lieu of the requirements in ***UAM Section 3.4.1*** in addition to the information required on the ***FDOT Utility Permit Form***.

1) A key map showing the proposed installation's location and the approximate distance and direction from the proposed location to the nearest town, major road intersection, bridges, or railroad crossings.
2) Plan view drawings (preferably to scale) showing all of the following:
   a) Type and size of the utility.
   b) The horizontal distance from the utility to a well defined feature of the transportation facility (such as the edge of travel lane).
   c) Limits of reactivation of the utility tied to roadway/railroad mileposts, or stationing (when available).

3.5 UTILITY PLANS REQUIRING SIGNING AND SEALING

The UAO shall submit plans signed and sealed by a qualified, licensed, Florida professional engineer for traffic control when required by ***UAM Section 4.4*** and modifications to any FDOT structure. When plans are exempt from the signing and sealing requirements per ***Chapter 471, F.S***., the UAO shall submit these on sheets with their company's title block.

3.6 PERMIT APPLICATION APPROVAL PROCESS

FDOT shall process all permit applications in accordance with ***Section 120.60, F.S***. and the requirements of the ***UAM***. When FDOT anticipates processing could exceed thirty (30) days, FDOT shall notify the UAO. FDOT shall review the proposed work for all of the following:

1) Compliance with the ***UAM***,
2) Impacts to all of the following:
   a) Public safety
   b) The ***FDOT Five-Year Work Program***
   c) Safety improvement projects
   d) FDOT maintenance activities
   e) Scenic enhancement projects
   f) Landscape projects
   g) Local events and activities
   h) Easements
   i) Placement of future utilities.
   j) Over-dimensional vehicle permits

FDOT shall indicate in the permit special instructions only the following as appropriate;

1) Instructions to address site specific or transaction specific conditions not addressed in the ***UAM*** or on the ***FDOT Utility Permit Form***.
2) Any FDOT representatives required to be present during the UAO's permitted underground operations.
3) Any drawings not listed in ***UAM Section 1.5.1*** deemed necessary for restoration of the FDOT R/W to the condition prior to the UAO's work.
4) Any specifications not listed in ***UAM Section 1.5.2*** deemed necessary for restoration of the FDOT R/W to the condition prior to the UAO's work.

3.7 PERMIT APPLICATION OBJECTIONS

When notified of a permit application by a utility permit applicant, any affected UAO shall, within ten (10) days of the notification letter, forward to the permit applicant and to the applicable Local Maintenance Engineer any specific written objections to the issuance of the permit.

4 UTILITY ACCOMMODATION

4.1 GENERAL REQUIREMENTS

This chapter contains requirement for accommodating utilities within limited access and non-limited access FDOT R/W. ***UAM Section 4.8*** contains additional requirements particular to limited access R/W.

4.1.1 Emergency Work

For situations of a serious nature, developing suddenly and unexpectedly, and demanding immediate action that will affect public safety, disruption of utility service, or damage to the FDOT R/W the UAO shall proceed immediately with all necessary actions. The UAO shall be responsible for safe and efficient traffic control and shall notify the Local Maintenance Engineer of all necessary actions being taken as soon as practical, but no later than the next scheduled FDOT working day. If the type of work would normally require a permit, the UAO shall submit a permit application in accordance with ***UAM Section 3.2***. The UAO shall bear the expense of restoring the R/W to the condition prior to the emergency. When making emergency repairs to attachments to structures, the UAO shall obtain verbal approval from the District Maintenance Engineer prior to making the repairs.

4.1.2 Discovery of Archaeological or Historical Remains

If work operations encounter remains of an archaeological or historic nature, the UAO shall (1) temporarily discontinue all earth disturbing activity in the remains' immediate vicinity and (2) notify the Local Maintenance Engineer. FDOT shall determine the remains' disposition. The UAO shall not resume affected work until authorized by the Local Maintenance Engineer.

4.1.3 Utilities in Historic Sites and Other Scenic Areas

Scenic areas include scenic strips, overlooks, rest areas, recreation areas and FDOT R/W within the limits of public parks and historic sites. In such areas, the UAO shall not install utilities that do either of the following:

1) Require extensive removal or alteration of trees or other natural features visible to the transportation facility user.
2) Impair the visual quality of the lands being traversed.

4.1.4 Pedestrian Pathway Clearances

For short distances of twenty-four (24) inches or less, the UAO shall provide a minimum clear pathway width of thirty two (32) inches. For all other pathways the UAO shall provide minimum clear pathway widths of thirty-six (36) inches. The UAO shall provide minimum vertical clearance of seven (7) feet over all pathways.

4.1.5 Erosion & Sediment Controls

The UAO shall install any required erosion and sediment controls in compliance with local, state and federal requirements before beginning any utility work. See ***Section 337.402, F.S***. regarding restoration.

4.1.6 Relocation of FDOT Signs or Reflectors

To prevent signs and reflectors from conflicting with the UAO's work, the UAO shall be responsible for relocating or replacing all conflicting signs and reflectors as directed by FDOT.

4.1.7 Preservation of Sight Windows

The UAO shall not install new or replacement utilities that significantly reduce the field of vision within the limits of clear sight as described in ***FDOT Design Standard*** - Index 546.

4.1.8 Open Cutting

4.1.8.1 Open Cutting Roadway Pavement

Unless FDOT determines it is impractical, the UAO shall not cut pavement less than five (5) years old.

4.1.8.2 Open Cutting Driveways

When open cutting driveways, the UAO shall do all of the following:

1) Notify users seven (7) days in advance using door-hanger type notices or on-site signs as appropriate and approved by FDOT.
2) Maintain users' access to the property.
3) Restore the driveways to at least an equivalent condition and types of material to what existed prior to cutting.

4.1.9 Fuel Tanks

The UAO shall not install any new utility structure or cabinet containing any liquid petroleum fuel within the FDOT R/W.

4.1.10 Longitudinal Placement of Utilities

When underground and aerial utilities occupy the same roadside, the aerial utility should be placed outside the underground utility and in accordance with ***UAM Section 4.2***. The underground utility should not be placed within three (3) feet of the R/W line to allow space for future aerial utilities.

4.1.11 Utilities Near Airports

When placing utilities on FDOT R/W and near airports, the UAO shall not create a hazard as defined by ***Section 333.01(3), F.S***.

4.2 ABOVEGROUND OR AERIAL ACCOMMODATIONS

4.2.1 Pole Lines per Roadside and Joint Use

The UAO should make pole lines available for joint use. FDOT shall not permit more than one pole line per side of the road unless the second pole line is required for highway lighting.

4.2.2 Aboveground Fixed Utilities (AFUs) Installation and Relocation Requirements

The UAO shall, where practical, install AFUs behind existing barriers (such as guardrail, or concrete barriers). The UAO shall not place AFUs within the barrier's deflection area. The UAO shall not place AFUs in the median.

UAO shall relocate to as close to the R/W line as practical existing AFUs unreasonably interfering with the construction of FDOT projects.

The UAO shall install all new AFUs as close to the R/W line as practical, and outside the offset as described in ***UAM Section 4.2.3***. The UAO shall obtain a utility exception in accordance with ***UAM Chapter 5*** when proposing to place AFUs within the offsets described in ***UAM Section 4.2.3***. However, these requirements do not apply to: mid-span poles, poles within FDOT resurfacing projects, or AFUs in projects not correcting or otherwise addressing all other roadside hazards.

When installing, relocating, or replacing mid-span poles within and as part of existing pole lines, the UAO shall install these within the existing alignment and where practical shall be installed outside the lateral offset in ***UAM Section 4.2.3***. The UAO shall also remove all out-of-service poles.

When within FDOT resurfacing projects, the UAO shall relocate as close to the R/W line as practical existing AFUs which are within the lateral offset in ***UAM Section 4.2.3*** of added auxiliary lanes or have three (3) or more crashes within most recent five (5) year period. However, when the only practical location is less than four (4) lateral feet from the existing location or the FDOT project does not include mitigating all roadside hazards the UAO shall not be required to relocate. The UAO shall

obtain a utility exception in accordance with ***UAM Chapter 5*** when proposing to leave AFUs in place which do not meet these requirements.

When determining whether any AFU is as close to the R/W line as practical, FDOT shall consider factors such as:

1) Aboveground encroachments onto private property.
2) National Electrical Safety Code (***NESC***), ***UAM Section 4.1.4***, or other State or Federal applicable codes/regulations.
3) Conflicts with other existing overhead or underground facilities.
4) Trees on adjacent private property (where adequate future trimming would require encroachment on private property).
5) Down guying requirements.
6) Alignment of existing pole line.

4.2.3 AFU Offsets

AFU offsets are dependent upon the roadside being restricted or non-restricted. Restricted roadsides are roadsides along predominantly curbed urban roadways with design speeds of 45 mph or less and narrower than the offsets in ***UAM Table 4.2.3***. Non-Restricted Roadsides are all other roadsides. The AFU offset for restricted roadsides is four (4) feet from the face of curb. Where sections of curbs are missing, it is five and one-half (5.5) feet from the edge of the lane. The AFU offset within non-restricted roadsides is the distance obtained from the ***UAM Table 4.2.3***. This offset is measured, perpendicular to the edge of lane, away from the roadway, and along slopes no steeper than 1v:4h.

To determine the appropriate AFU offset, select the distance from the table below based lane type, traffic volume, and design speed. When FDOT cannot provide, the design speed or traffic volume, the posted speed or a traffic volume > 1500 AADT shall be used respectively. When applying these distances in the field, slopes steeper than 1v:4h are sometimes present within a portion of the AFU offset. In those cases, the remaining portion of the AFU offset, or ten (10) feet whichever is greater, is extended beyond the toe of the steeper than 1v:4h slopes. In no case does the AFU offset extend beyond the R/W line.

Table 4.2.3 AFU Offsets for Non-Restricted Roadsides (feet)

	Design Speed(mph)				
	<45	*45*	*50*	*55*	*>55*
Travel Lanes or Multiple-Lane Ramps with Traffic Volumes ≥ 1500 AADT	18	24	24	30	36
Travel Lanes or Multiple-Lane Ramps with Traffic Volumes < 1500 AADT	16	20	20	24	30
Auxiliary Lanes or Single Lane Ramps with Traffic Volumes ≥ 1500 AADT	10	14	14	18	24
Auxiliary Lanes or Single Lane Ramps with Traffic Volumes < 1500 AADT	10	14	14	14	18

4.2.4 Vertical Clearances

The UAO shall maintain sixteen (16) feet minimum vertical clearance. However, when the utility is above any roadway, the UAO shall maintain eighteen (18) feet minimum vertical clearance. Where provided by law, other governmental agencies, rail facilities and state, local and federal codes may require a greater clearance. The greater clearance required prevails as the rule. For vertical clearances for limited access R/W see ***UAM Section 4.8.2***. The UAO shall install and relocate all utilities in compliance with this section unless a utility exception to these requirements is approved in accordance with ***UAM Chapter 5***.

4.3 UNDERGROUND UTILITIES

4.3.1 FDOT Oversight

The UAO shall not begin underground operations until the FDOT representative indicated on the permit is on site or other satisfactory arrangements have been made. The UAO may begin underground operations after the required notification when the permit does not indicate an FDOT representative is required.

4.3.2 Excavation Near Pavement

Unless FDOT determines it is impractical, the UAO shall not excavate closer than eight (8) feet from the edge of pavement.

4.3.3 Electronic Detection of Underground Utilities

The UAO shall make all new or replaced underground utilities within the R/W electronically detectable using techniques available to the industry unless otherwise specified in ***FDOT Standard Specification*** - 555-4.2, 556-4.4 or 557-3.3.

4.3.4 Design Requirements

The UAO shall only install underground utilities and at-ground appurtenances that meet or exceed all of the following:

1) The industry standard requirement for the intended use.
2) Static and dynamic loads during proposed construction within the ***FDOT Five-Year Work Program***.
3) The post construction loads in ***UAM 4.3.4.1***.

4.3.4.1 Post Construction Loads

When within thirty (30) feet of the edge of pavement of a flush shoulder roadway or within the curbs of a curbed roadway, new and relocated utilities shall support the greater of the following conditions for a design truck in accordance with the ***AASHTO LRFD Specifications***:

1) One wheel load of sixteen-thousand (16,000) pounds.
2) One axle load of thirty-two-thousand (32,000) pounds.
3) Two axle loads of twenty-four-thousand (24,000) pounds each, spaced four (4) feet apart.

New and relocated utilities outside the above areas shall support FDOT maintenance equipment. FDOT does not guarantee the UAO's utilities will not be subject to greater loads.

4.3.5 Min. Depth Requirements for Open Trench or Trenchless Methods

The UAO shall install underground utilities (whether longitudinal or crossing) with at least the following minimum vertical clearances, as measured to the top of the utility:

1) Below the top of the pavement: thirty-six (36) inches minimum.
2) Below existing unpaved ground: thirty (30) inches minimum (including designed ditch grade which as verified from existing pipe inverts).

Directional drilling requirements in ***UAM Section 4.3.11.1*** may require greater clearance.

4.3.6 Longitudinal Placement

When installing utilities longitudinally, the UAO should maintain a clearance, from any existing vitrified clay sanitary pipe line or existing gas lines, of at least three and one half (3.5) times the existing pipe's diameter. The UAO shall place their utilities to not interfere with the operation and maintenance of the existing highway or any expansion of the highway within the ***FDOT Five-Year Work Program***.

4.3.7 Casing Requirements

The UAO shall provide casing for carrier pipes (whether longitudinal or crossing) within toes of the front slopes when any the following conditions exist:

1) The carrier pipe does not meet the requirements in ***UAM Section 4.3.4*** or ***UAM Section 4.3.5***.
2) The carrier pipe contains flammable gases or fluids and does not meet the requirements of ***49 CFR, Part 192***, or ***49 CFR, Part 195***.

When venting is necessary, the UAO shall vent the casing at or outside the R/W

4.3.8 Service Connection Points

To accommodate FDOT work, or provide new services, the UAO shall place service connection points at or beyond the R/W line to prevent the UAO's customers from having to enter FDOT R/W to make a connection. The UAO may provide service connection points to other facilities within the FDOT R/W owned by permitted service providers, FDOT, or other governmental agencies.

4.3.9 Underground Lift Pumps or Power Generating Stations

The UAO shall not install any new utility lift pumps, or power generating stations in excess of eighty (80) cubic feet within FDOT R/W.

4.3.10 Utility Access

When pulling multiple conduits to construct new duct systems, the UAO shall only place access points, such as manholes or pull boxes, over the duct and shall minimize obstruction of the R/W use by others. The UAO shall install its multiple access points on a duct system at least fifty (50) feet apart to minimize overall R/W infrastructure impact. FDOT shall not require sharing of manholes between power and non-power users.

The UAO shall place manholes, splice boxes and valve boxes outside the travel way and bike lanes, to the greatest extent practical. The manhole ring, cover and pad shall support the traffic for the area and shall be set flush with the finished grade

When installing manholes, pull boxes, splice boxes, valve boxes, or vaults that are greater than eighty (80) cubic feet, the UAO shall supply a manufacturer's certification that they meet or exceed the design loads specified in the ***UAM Section 4.3.4.1***.

4.3.11 Methods of Installation

The UAO shall use jack-and-bore or directional boring where feasible. The UAO is responsible for the appropriateness and success of the method used.

4.3.11.1 Directional Bore Installations Under Roadway Pavement with Reamer Sizes of Eight Inches (8") or More.

When using directional boring methods to install utilities under roadway pavement with reamer sizes of eight inches (8") or more without establishing the depth of the water table or confining layer, the UAO shall maintain a depth equal to ten (10) times the reamer diameter measured from the top of pavement to the top of the reamer. However, the UAO may obtain soils data to establish the depth of the water table (anticipated at time of installation) or the confining layer (the confining layer being a two (2) feet thick layer of earth that resists thirty (30) blows per foot of a ***Standard Penetration Test***). If either the depth of the water table or the confining layer is established, the minimum depth should be either two (2) feet below the top of the confining layer to the top of the reamer, or two (2) feet below the water table to the top of the reamer.

4.3.11.2 Other Installations Methods.

When using methods to install utilities that are not addressed in ***UAM Section 4.3.11.1***, the UAO shall maintain the required depths in ***UAM Section 4.3.5***, When using open trench methods or other methods the UAO should minimize adverse effects on pavement, base, other permitted transportation facilities, or other permitted utilities.

4.3.12 Out-of-Service and Deactivated Utilities

4.3.12.1 Placing Utilities Out-of-Service

The UAO shall not leave an out-of-service or deactivated underground utilities in place that does any of the following:

1) Compromise safety for any transportation facility user during construction or maintenance operations.
2) Prevent other utilities from being placed in the area when alternatives are unavailable.
3) Create a maintenance condition that would be disruptive to the transportation facility.
4) Add cost to FDOT improvements which are not paid for by the UAO.
5) For underground gas line deactivation, see ***49 CFR, Part 192.727*** and the rules of the Public Service Commission.

4.3.12.2 Leaving Utilities Out-Of-Service

FDOT expects all out-of-service utilities to remain out-of-service and may require the utility to be removed at any time in the future. When leaving an out-of-service or deactivated utility in place, the UAO shall do all the following:

1) Maintain survey records of the utility's location and type of material.
2) Furnish such records to FDOT upon request.
3) Show such utilities on all utility work/relocation plans required by FDOT.
4) Show out-of service underground gas line limits on the utility plans.
5) State the limits to remain on the ***FDOT Utility Work Schedule***.

When FDOT suspects the utility is not sufficient to support the requirements in ***UAM Section 4.3.4***. the UAO shall fill the utility with excavatable flowable fill as defined in ***FDOT Standard Specifications*** -Section 121 or (at the UAO's discretion) provide FDOT as-built plans showing all of the following:

1) The utility's location vertical and horizontal.
2) The UAO's certification, prepared by a qualified, licensed Florida professional engineer, that a) the utility is structurally sound, and b) leaving it in place will not damage the roadway for the design life of the FDOT facility. The District Design Engineer's Office shall provide the design life of the FDOT facility.

4.3.12.3 Returning Utilities to Service

The UAO shall obtain a new permit to return an out-of-service utility to active service. This requirement does not apply if the service is temporarily restored for an emergency or an FDOT construction need.

4.4 TRAFFIC CONTROL

The State of Florida recognizes the ***MUTCD*** - Part 6 as the minimum standards for use on highways other than those on FDOT R/W. However, FDOT has set higher standards for use on FDOT R/W or on FDOT Projects.

While working on FDOT/R/W or FDOT projects, the UAO shall follow a traffic control plan (TCP) appropriate for the actual field conditions. The UAO shall use as their TCP any of the following as appropriate:

1) The traffic control standards and typical applications in ***UAM Section 1.5.1*** or their current edition.

2) Drawings from its own manuals and procedures conforming to the conditions and criteria in the ***FDOT Design Standards***. Such drawings and procedures shall include a statement such as "in accordance with FDOT Design Standard Index(es)". These drawings that fully conform to the FDOT Design Standard Indexes' requirements do not require signing and sealing.

FDOT Design Standard - Index 600, sheets 1 through 13, provide FDOT traffic control standards. Changes are only to be made through FDOT approved procedures. Any changes to standards contained in Index 600, sheets 1 through 13 as part of a TCP require FDOT approval and may require the signature of a qualified licensed Florida Professional Engineer.

FDOT Design Standard - Indexes 601 through 670 are typical applications. Modifications can be made to these indexes as long as the changes comply with the ***MUTCD*** and ***FDOT Design Standard*** -Index 600. Modifications to, and combinations of, these typical applications in compliance with the ***MUTCD*** and ***FDOT Design Standard*** -Index 600 do not require signing and sealing.

The UAO shall submit to FDOT for approval a TCP signed and sealed by a qualified, licensed Florida professional engineer when site specific conditions significantly compromises the above ***FDOT Design Standard*** - Index 600, or cannot be accommodated through the typical applications in the above ***FDOT Design Standard*** - Indexes 601 through 670.

If changing site conditions warrant changes to an approved TCP, the UAO shall notify the local Maintenance Engineer and adjust the TCP to reflect actual conditions.

4.4.1 Temporary Closing of an FDOT Roadway

Except for emergencies, the UAO shall comply with ***Section 335.15, F.S***. for temporary closing of any road on the State Highway System. The UAO shall notify the Local Maintenance Engineer at least forty-eight (48) hours before the closure. When work requires closing one or more traveled lanes for more than two (2) hours, the UAO shall also notify the local law enforcement agency with jurisdiction over the area prior to commencing work.

4.4.2 Traffic Control (MOT) Training

The UAO shall ensure individuals responsible for utility work zone traffic control planning, design, implementation, inspection, and/or for supervising the selection, placement, or maintenance of traffic control schemes and devices in work zones on the FDOT R/W have proper training as prescribed in the ***FDOT MOT Training Procedure***.

The UAO shall choose to either self certify training or use an approved training provider in accordance with the ***FDOT MOT Training Procedure***. If the UAO elects to self certify, the UAO shall submit a written certification every two (2) years that all its employees responsible for these utility work zone activities have been trained as prescribed in the ***FDOT MOT Training Procedure***.

4.4.3 Temporary Accommodation of Over-Dimensional Vehicles in Worksites

When needed, the UAO shall expeditiously and temporarily relocate barriers or other devices to allow passage of FDOT permitted over-dimensional vehicles. When work site conditions will prevent temporary passage of over-dimensional vehicles, the UAO shall notify the Local Maintenance Engineer seven (7) days prior to setup.

4.4.4 Rail Flagging

When doing permitted utility work on an operating FDOT rail corridor, the UAO shall comply with the operating railroad's flagging requirements.

4.4.5 Requirements for Flashing Lights

The UAO shall equip construction and maintenance vehicles used on FDOT R/W with at least one (1) unobstructed class 2 amber, or white, warning light that meets ***SAE J845*** or **SAE J1318**. If anything might obstruct the light, the UAO shall equip construction and maintenance vehicles with more than one warning light.

The UAO shall operate vehicle warning lights when any of the following conditions exist:

1) The vehicle is used in a utility work area.
2) A potential hazard exists.
3) The vehicle travels at less than the facility's average speed while doing maintenance activities.
4) The vehicle makes frequent stops.

4.4.6 Traffic Control Deficiencies

Upon notification of deficiencies in the TCP or other matters involving traffic safety, the UAO shall immediately make corrections. When notified that FDOT deems conditions pose an imminent danger, the UAO shall cease all work immediately. The UAO shall correct the conditions prior to resuming work.

4.5 RESTORATION

4.5.1 Restoration of Pavement

When restoring pavement, the UAO shall do all of the following:

1) Maintain temporary patches providing a smooth, all weather surfaces at all times until all other installation work is complete.
2) Notify the Local Maintenance Engineer at least forty-eight (48) hours prior to application of the permanent patches.
3) Install permanent patches as soon as all other installation work is completed.
4) Maintain the permanent patches for a period of two (2) years from the date of installation.

To reduce the time traffic is taken off of an existing facility, FDOT may approve the use of flowable fill.

4.5.2 Restoration of Landscape

Except for trees or shrubs removed in accordance with the permit for purposes of complying with horizontal clearances, the UAO shall replace all planted or naturally occurring trees and shrubbery irreparably damaged or destroyed by the UAO during utility work on the R/W. Such replacements shall be like-sized. The UAO shall determine replacement plant sizes as follows:

1) If existing trees or shrubs have a clear trunk up to the diameter at breast height (DBH) measured four and one-half (4.5) feet above the ground, the UAO shall calculate the total DBH of affected trees and/or shrubbery.
2) If the trunk has vegetation and does not have a clear area below the DBH, the UAO shall calculate the total average height of affected trees and/or shrubs.

The UAO shall do all of the following:

1) Measure trees and shrubs before cutting to determine DBH.
2) Measure replacement material in the nursery industry standard of caliper inches (measured six (6) inches above grade of nursery stock). FDOT shall direct which replacement method is appropriate for trees or shrubs cut down before measurement.

On FDOT approved landscape projects, the UAO shall notify the maintainer of the landscape (typically the local government) and the Local Maintenance Engineer, of the scope of work to be done.

4.5.3 Restoration of Turf

Immediately after the utility work is completed, the UAO shall begin sodding, or seeding and mulching operations on the front or back slopes. The UAO shall begin sodding,or seeding and mulching on all other areas within one (1) week after the utility work is completed. The UAO shall restore the R/W to the condition existing prior to the utility work. The UAO shall maintain that portion of the R/W affected by the utility work until vegetation is established.

4.6 VEGETATION CONTROL

4.6.1 General

Vegetation control includes any method intended to alter or regulate normal plant growth. To the greatest extent practical, the UAO shall use vegetation maintenance that does not detract from the natural beauty of the roadside or cause an abrupt change in roadside vegetation conditions.

Except for work described in ***UAM Section 4.6.2*** and ***UAM Section 4.6.3***, the UAO shall not remove, cut, or destroy vegetation unless authorized by the Local Maintenance Engineer.

4.6.2 Tree Trimming

The UAO shall trim trees to ensure and maintain the safe operation of utilities. Such trimming shall employ recognized and approved methods of modern vegetation control, with emphasis on tree health. When trimming does irreparable damage or causes trees or shrubs to die, the UAO shall replace this vegetation as described in the ***UAM Section 4.5***. The UAO may use mechanical tree trimming machines for routine maintenance. The UAO shall remove all waste and debris associated with the trimming from R/W unless FDOT specifies otherwise in writing.

4.6.3 Routine Maintenance of Vegetation

The UAO may cut vegetation manually or mechanically on a routine or periodic basis provided the work does not exceed limits necessary for the proper facility maintenance.

Where the UAO mows or cuts grass, the UAO shall mow or cut the grass (a) to a height of not less than five (5) inches and (b) in such a manner as to promote low growing ground cover species. The UAO shall equip and operate mowing equipment in a manner to preclude throwing debris that would create a safety hazard.

In areas where brush dominates and when vegetation interferes with the safe utility maintenance and operation in areas, the UAO shall do all the following:

1) Remove or cut flush with the ground those trees less than four (4) inches in diameter. The District Maintenance Engineer's approval is required to cut larger trees.
2) Remove brush cuttings or debris discharged into routinely maintained area.
3) Stockpile debris outside the mowing limits and clear zone for later disposal.
4) Obtain the Local Maintenance Engineer's approval before distributing chips at a uniform thickness a) outside the mowing limits and clear zone, or b) beneath existing trees.
5) Leave in place all undergrowth.

4.6.4 Chemical Control of Vegetation

When using chemical vegetation control, the UAO shall comply with all of the following:

1) Obtain written authorization from the Local Maintenance Engineer before applying vegetation control chemicals.
2) Give the Local Maintenance Engineer at least forty-eight (48) hours advance notice.

To obtain written authorization, the UAO shall submit a written proposal for chemical control of vegetation which includes all of the following:

1) The extent of the intended work.
2) The type of herbicides or plant (tree) growth regulators to be used (and shall include labels and material safety data sheets for the intended use).
3) The intended timing and techniques of application.
4) Documentation that the UAO's herbicide applicator (whether a utility employee or contractor) is certified to apply herbicides.
5) Identify each plant type to be chemically controlled.

The UAO shall apply chemical control of vegetation either a) in the first growing season after mowing, or b) before it has reached a height of six (6) feet. The UAO shall not apply chemical control on vegetation greater than six (6) feet in height if such application will either a) create an

undesirable appearance, or b) cause undesired browning or color change. The UAO may request special consideration when manmade obstructions preclude or prevent reducing vegetation to the six (6) feet height. The Local Maintenance Engineer may authorize applications at a height greater than six (6) feet either in areas with rapid plant growth or in the control of invasive exotic vegetation. If FDOT grants such permission, the UAO shall remove, chip or mulch dead plant material following successful performance of the herbicides. The UAO shall not use any herbicide containing the active ingredient sulfonyl urea, or containing any chemical of the sulfonyl urea family, or labeled as restricted use. The UAO shall not apply any non-selective or residual herbicides to roadside turf grasses. The UAO shall not apply any chemical of any type or rate that causes permanent injury to desirable vegetation or could result in bare ground. To control properly invasive vegetation, the District Maintenance Engineer may suspend these restrictions. The UAO may use individual stem and solid stream treatments that result in spot or narrow band control. The UAO shall protect specific selected and preserved plants from damage by herbicides. The UAO shall comply with all environmental considerations and associated regulations when applying herbicides. The UAO shall maintain and provide upon request complete records detailing the dates, location, materials, rates, weather, and other data relevant to herbicide application, as required by federal and state law. FDOT may deny any UAO future permission to use chemicals for vegetation control because of misuse, unsatisfactory performance results, or failure to comply with these provisions. The UAO shall allow only persons with all the following qualifications to apply chemicals:

1) Training, experience and competence in their work.
2) Licenses according to applicable federal and state law.
3) Understanding of herbicide application and the technical complexities in this field of expertise.

4.7 ATTACHMENTS TO STRUCTURES

4.7.1 General

The UAO shall not attach to FDOT structures any utility that does any of the following:

1) Creates a hazard to the public.
2) Affects the structure’s integrity.
3) Unreasonably hinders inspection and maintenance operations of the structure.
4) Adversely affects the aesthetics of structures placed in aesthetically sensitive environments.
5) Damages any reinforcement or stressing ducts or strands.
6) Attaches to bridge girders.
7) Resides inside a box girder.
8) Lowers the vertical clearance.
9) Restricts the structures ability to expand and contract.

The UAO shall be responsible for the design, safety, inspection, and maintenance of utilities and supporting hardware it attaches to FDOT structures. The UAO's engineer shall be responsible for performing the analysis for determining if the structure will support the utility in addition to other loads in a safe manner while not significantly reducing the structure's live load capacity. The UAO shall use materials and methods for utility conduit, pipe coatings and concrete repairs that are a) approved by FDOT’s State Materials Office, and b) are in accordance with the District Structures Design Engineer‘s site specific requirements.

When attaching utilities to bridge structures, the UAO shall comply with all of the following:

1) Utilities shall be placed under the cantilever portion of the deck overhang.
2) Utility cables or conductors shall be encased in conduit.
3) All electrical cables two (2) kilovolts and above shall be shielded cable with a concentric neutral grounded at both ends of the bridge.
4) All pressure lines shall have shut-off systems so that pipe segments at bridges can be isolated.

When FDOT determines that a bridge is in an extremely aggressive environment, the UAO shall incorporate the following in the design:

1) 316 stainless steel for all attachment hardware such as hangers and bolts, or equivalent material as determined by the State Corrosion Engineer.
2) Conduits fabricated from non-metallic materials or equivalent material as determined by the State Corrosion Engineer.

The UAO shall make metallic pipes and conduits a) electrically insulated from the structure by redundant insulators, and b) supported by insulating pipe rollers constructed from dielectric material. If loads would permanently strain the roller material beyond the elastic limit, the UAO shall use elastomeric bearings or specifically designed sliding supports. The UAO shall isolate and insulate all utilities from the structure to ensure that corrosion cells do not develop because of the attachment of the utility. The UAO shall use only welded or flange joint steel pipe conforming to ***API Standard 1104*** for carrying hazardous material (flammable, toxic or corrosive). The UAO shall design all pipes carrying hazardous material for class four locations in compliance with ***49 CFR, Part 192*** and ***49 CFR, Part 195***.

4.7.2 Mechanically Stabilized Earth (MSE) Walls

The UAO shall not disturb the area within or directly below the portion of the MSE wall's earth fill in which the wall's soil reinforcement is placed. The UAO shall comply with this section unless a utility exception to these requirements is approved in accordance with ***UAM Chapter 5***.

4.8 UTILITIES ON FDOT LIMITED ACCESS RIGHT OF WAY

When placing utilities on Limited Access Right of Way (LA R/W), the UAO shall comply with this section in addition to all other sections of the ***UAM***.

4.8.1 Longitudinal Utilities

The UAO shall not install any longitudinal utilities on LA R/W unless a utility exception is approved in accordance with ***UAM Chapter 5***.

4.8.2 Vertical Clearance

The UAO shall provide at least twenty-four (24) feet vertical clearance for aerial facilities above any limited access roadway. The UAO shall comply with this section unless a utility exception to these requirements is approved in accordance with ***UAM Chapter 5***.

4.8.3 Crossings

4.8.3.1 New Crossings

In expanding areas adjacent to LA R/W, the UAO shall design and install utilities to minimize the need for crossing LA R/W. The UAO shall not cross LA R/W when other options are available within reasonable distances.

4.8.3.2 Existing Utilities and Limited Access Construction

When relocating or adjusting existing utilities in conjunction with construction of a LA R/W, the UAO shall a) provide for known and planned expansion of the utility, and b) plan future installations or new lines to not impede traffic.

4.8.3.3 Underground Crossings

The UAO shall provide at least forty-eight (48) inches vertical clearance below the pavement surface to the top of the facility. The UAO shall not open cut pavement. The UAO shall not place high-pressure gas or volatile fuel lines near or under FDOT bridges or MSE walls.

The UAO shall where practical perform all construction and maintenance outside the LA R/W fence line. The UAO shall place temporary fencing to enclose work areas within the LA R/W. The UAO shall not extend this fencing closer to the roadway than to the toe of the back slope.

The UAO shall not place utilities at interchanges that cannot be serviced or patrolled in accordance with ***UAM Section 4.8.7***.

4.8.4 Wireless Utilities on Limited Access R/W

For information about telecommunications utilities on LA R/W, see ***FDOT Telecommunication Policy***.

4.8.5 FDOT Railroad Corridors

All rail corridors are to be treated as LA R/W for utility accommodation purposes. When placing utilities on non-operating railroad corridors, the UAO shall comply with the ***UAM*** and the applicable corridor management plan.

When placing utilities on operating railroad corridors, the UAO shall also comply with all requirements in the standard railroad application package for the railroad(s) operating in the corridor.

The UAO may obtain the standard railroad application package from the District Rail Coordinator or the District Corridor Rail Manager, where one exists. The UAO shall adhere to minimum horizontal offset or highest vertical clearance dimensions found in the following:

1) ***UAM*** for all LA R/W
2) ***Rule Chapter 14-57, F.A.C***. for rail corridors.
3) ***FDOT South Florida Rail Policy*** for the South Florida Rail Corridors.

4.8.6 Utilities in R/W being Re-designated as LA R/W

The UAO may leave existing permitted utilities within R/W being re-designated as LA R/W; however, the UAO shall only leave utilities that do not unreasonably interfere with the safety, design, construction, operation, maintenance, or stability of the proposed LA R/W. The UAO shall service, maintain, and operate the utility without interfering with traffic on through lanes or ramps.

4.8.7 Access for Servicing or Patrolling Utilities

Where practicable, the UAO shall access utilities only from nearby frontage roads, public roads, or trails leading outside of the LA R/W. For utilities placed along non-limited access overpasses or underpasses the UAO shall, where practicable, service these utilities from the non-limited access R/W and not impact traffic on the LA R/W.

4.8.8 Aboveground Fixed Utilities and Attachments to Structures

The UAO, shall not place any non-frangible aboveground fixed objects (AFOs) within LA R/W or attach utilities to bridge structures unless a utility exception to these requirements is approved in accordance with ***UAM Chapter 5***.

4.9 FDOT PROJECT COORDINATION

Project coordination is a cooperative effort between FDOT and the UAOs. FDOT shall do all of the following:

1) Coordinate advance planning of highway projects with affected UAOs no later than its being placed in ***FDOT Five-Year Work Program***.
2) Accommodate all new and existing utilities in the project in accordance with the ***UAM***.
3) Identify to the UAO all utilities FDOT has determined to be in conflict.
4) Provide additional lead-time for utility relocation or special design of MSE walls.
5) Provide the UAO with two (2) business days prior notification when requesting the UAO to locate their facility.
6) Physically expose utilities in cases where it is suspected of being within three feet (3') of proposed construction operations which would threaten the utility. FDOT shall allow the UAO to perform this work at their expense.

For all utilities, the UAO shall do all the following:

1) Provide project work schedules using the ***FDOT Utility Work Schedule*** to resolve all conflicts between the FDOT project and the UAO's utilities.
2) Obtain permits for work in compliance with all applicable laws and ***UAM Chapter 3***.
3) Provide the Structures Engineer of Record design loads and details for utility attachments to new bridges suitable for incorporation into bridge designs and plans.
4) Handle all correspondence with FDOT regarding construction procedures (not the UAO's consultants, contractors, or subcontractors).
5) Identify to FDOT all utilities the UAO has determined to be in conflict that FDOT did not identify.
6) Locate horizontally and vertically as can reasonably be obtained by a review of existing records, a topographic survey and detection devices without physically exposing the utility. This shall tie to the project's survey reference points.
7) Markup FDOT construction plans in accordance with ***UAM Section 4.9.1*** and ***UAM Section 4.9.2***.

4.9.1 Existing Major Utilities

In addition to the coordination requirements for all utilities, existing major utilities require additional coordination. Existing major utilities are those underground and aboveground utilities that if required to relocate would either:

1) Cause high construction costs to the UAO, other utilities, or FDOT.
2) Conflict with FDOT construction activities or schedules.

The UAO shall identify the utility locations on FDOT construction plans and provide the location of all its existing major utilities within the FDOT R/W.

The UAO shall identify the existing major utilities locations on FDOT construction plans and provide the location of gravity service lines and laterals where identified design conflicts exist.

The UAO shall consult with the FDOT Design Engineer (with assistance from the District Utility Engineer/Administrator and construction personnel) to determine the information needed about the utility and its location.

The UAO shall provide any additional locates required by FDOT to facilitate construction. Through ongoing coordination, the UAO shall provide FDOT the most current information.

The UAO shall coordinate with FDOT to determine if FDOT will perform for the UAO any of the utility locating during design or construction of FDOT projects. If FDOT elects to perform utility locating for the UAO, this shall not relieve the UAO of their obligation to perform locates required by ***Chapter 556, F.S***.

FDOT shall notify the UAO whether utilities will be allowed to remain within three (3) feet of new construction operations.

The UAO shall provide FDOT a plot of the location of its utilities on FDOT supplied roadway plans using the FDOT color code for location and disposition of utilities. The UAO shall also delineate the limits of utilities it will remove, relocate, adjust or place out-of-service (deactivate) either:

1) By station for work associated with an FDOT construction project.
2) By distance from a well established point (e.g. the center of an intersection, center of a RR, etc.) for all other permitted work.

The UAO shall furnish appropriately color coded computer aided drafting and design (CADD) markups when the UAO already has and uses compatible software, and when FDOT furnishes the base CADD document.

4.9.2 FDOT Color Code

The FDOT color code for identifying utilities is as follows:

Red: Existing utilities either (a) to be removed or relocated horizontally or (b) to be placed out-of-service (deactivated) but left in place

Green: Existing utilities to remain in place with no adjustment.
Brown: Either (a) existing utilities to be adjusted vertically but to remain in the same horizontal alignment, or (b) completely new utilities to be installed.

4.9.3 As-Built Plans for Utility Work on FDOT Projects

When the UAO relocates utilities on an FDOT project, the UAO shall submit as-built plans as required by their permit or relocation agreement. When the highway contractor relocates utilities under Utility Work by Highway Contractor Agreements, FDOT or the highway contractor shall provide the as-built plans.

5 UTILITY EXCEPTIONS

5.1 PURPOSE

A UAO may be relieved of the obligation to comply with requirements of the below listed sections of this ***UAM*** by obtaining a written utility exception from the FDOT. The sections for which a utility exception may be granted are limited to the following:

UAM Section 4.2.2 Aboveground Fixed Utilities (AFU) Installation and Relocation Requirements
UAM Section 4.2.4 Vertical Clearance
UAM Section 4.7.2 Mechanically Stabilized Earth (MSE) / Proprietary Earth Walls
UAM Section 4.8.1 Longitudinal Utilities
UAM Section 4.8.2 Vertical Clearance (on LA R/W)
UAM Section 4.8.8 Aboveground Fixed Utilities and Attachments to Structures

5.2 SUBMITTAL

To obtain a utility exception, the UAO shall submit a signed ***Utility Exception Request Form*** to the District Design Engineer, indicating the section for which the utility exception is being requested and all the reasons that the UAO believes a utility exception should be granted.

5.3 EVALUATION

FDOT shall evaluate the request for the utility exception and advise the UAO in writing that the utility exception is granted or denied within ninety (90) days of receipt of the request. If additional information is needed to evaluate the request, the UAO shall be advised in writing of the additional information needed within thirty (30) days of receipt of the request and the utility exception shall be granted or denied within ninety (90) days of receipt of the additional information.

FDOT shall grant the requested utility exception when the information supplied by the UAO clearly shows that compliance with the listed section of this ***UAM*** is impracticable or would create an unreasonable hardship for the UAO, and the requested utility exception does not interfere with the operation or future improvement of the transportation facility. The fact that the UAO's other alternatives are not as cost effective as the requested utility exception will not necessarily be determinative of whether the UAO would suffer an unreasonable hardship without the utility exception.

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6 REFERENCES

6.1 INCORPORATED REFERENCES

The following references are incorporated into this manual by reference and are requirements of this manual, but are limited to the scope of application specifically referenced on the ***UAM*** sections listed and are available at: http://www.dot.state.fl.us/rddesign/utilities/

AASHTO LRFD Specifications - UAM Section 4.3.4.1
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 4TH EDITION WITH 2008 U.S. EDITION INTERIM as incorporated in Rule 14-15 F.A.C.
Published by the American Association of State Highway Officials

API Standard 1104 - UAM Section 4.7.1
API STD 1104 (API 1104) - Welding of Pipelines and Related Facilities
20th edition, October 2005. Published by the American Petroleum Institute

FDOT Design Standards - UAM Sections 1.5.1, 3.4.1, 4.1.7, 4.4
DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM 2010, ENGLISH UNITS

FDOT MOT Training Procedure - UAM Section 4.4.2
MAINTENANCE OF TRAFFIC TRAINING
Procedure No. 625-010-010, Effective date 12/6/2007 (revised 04/08/08)

FDOT South Florida Rail Policy - UAM Section 4.8.5
SOUTH FLORIDA RAIL CORRIDOR CLEARANCE
Policy No. 000-725-003, Effective date 9/20/2007

FDOT Standard Specifications - UAM Sections 1.5.2, 4.3.3, 4.3.12.2
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2010

FDOT Telecommunication Policy - UAM Section 4.8.4
TELECOMMUNICATIONS FACILITIES ON LIMITED ACCESS RIGHTS OF WAY
Policy No. 000-625-025, Effective date 9/24/2008

FDOT Utility Exception Request Form - UAM Section 5.2
Form No. 710-010-61 UTILITY EXCEPTION, dated OGC 08/10

FDOT Utility Permit Form - UAM Sections 3.1, 3.2, 3.4.1, 3.4.2, 3.6
Form No. 710-010-85 UTILITY PERMIT (Incorporated in Chapter 14-46), dated OGC 08/10

FDOT Utility Work Schedule - UAM Sections 3.1, 4.3.12.2, 4.9
Form No. 710-010-05 UTILITY WORK SCHEDULE, Revision date 12/2009

SAE J1318 - UAM Section 4.4.5
(R) GASEOUS DISCHARGE WARNING LAMP FOR AUTHORIZED EMERGENCY, MAINTENANCE, AND SERVICE VEHICLES ,May 1998, as published by the Society of Automotive Engineers

SAE J845 - UAM Section 4.4.5
(R) OPTICAL WARNING DEVICES FOR AUTHORIZED EMERGENCY, MAINTENANCE, AND SERVICE VEHICLES, May 1997, as published by the Society of Automotive Engineers

Standard Penetration Test - UAM Section 4.3.11.1
ASTM D1586 - 08 Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils, published by the American Society for Testing and Materials (ASTM), February 1, 2008.

6.2 INFORMATIONAL REFERENCES

This manual contains references to Florida Statues, Federal Codes, national codes and other documents. These are to assist the user with additional information pertinent to the topic being discussed in the body of this manual. These references are not requirements of this manual. However, the UAO may be bound by the requirements in these references through other means.

Chapter 120, F.S. - UAM Section 1.10
Florida Statute - 120, ADMINISTRATIVE PROCEDURE ACT

Section 120.60, F.S. - UAM Section 3.6
Florida Statute - 120.60 Licensing.

Rule Chapter 14-26, F.A.C.- UAM Section 1.7.2
Florida Administrative Code, Chapter 14-26, SAFETY REGULATIONS AND PERMIT FEES FOR OVERWEIGHT AND OVERDIMENSIONAL VEHICLES

Rule Chapter 14-46, F.A.C. - UAM Sections 1.2, 4.8.1
Florida Administrative Code, Chapter 14-46, UTILITIES INSTALLATION OR ADJUSTMENT

Rule Chapter 14-57, F.A.C.- UAM Section 4.8.5
Florida Administrative Code, Chapter 14-57, RAILROAD SAFETY AND CLEARANCE STANDARDS, AND PUBLIC RAILROAD-HIGHWAY GRADE CROSSINGS

Rule Chapter 14-86, F.A.C. - UAM Section 1.7.3
Florida Administrative Code, Chapter 14-86, DRAINAGE CONNECTIONS

Section 333.01(3), F.S. - UAM Section 4.1.11
Florida Statute - 333.01(3) Airport hazards and uses of land in airport vicinities contrary to public interest.

Section 335.15, F.S. - UAM Section 4.4.1
Florida Statute - 335.15 Detour roads

Section 337.401, F.S. through ***337.405, F.S***. - UAM Sections 1.2, 4.1.5, 4.8.1
Florida Statute - 337.401 Use of right-of-way for utilities subject to regulation; permit; fees
Florida Statute - 337.402 Damage to public road caused by utility
Florida Statute - 337.403 Relocation of utility; expenses
Florida Statute - 337.404 Removal or relocation of utility facilities; notice and order; court review.
Florida Statute - 337.405 Trees or other vegetation within rights-of-way of State Highway System or publicly owned rail corridors; removal or damage; penalty.

Chapter 373, F.S. Part IV - UAM Section 1.7.3
Florida Statute - 373 MANAGEMENT AND STORAGE OF SURFACE WATERS

Chapter 471, F.S. - UAM Section 3.5
Florida Statute - 471 - Qualifications for practice; exemptions.

49 CFR, Part 192 - UAM Sections 4.3.7, 4.3.12.1, 4.7.1
Code of Federal Regulation, Title 49: Transportation part 192, TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS, Revised October 1, 2007

49 CFR, Part 195 - UAM Sections 4.3.7, 4.7.1
Code of Federal Regulation, Title 49--Transportation, part 195, TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE, Revised October 1, 2007

Chapter 556, F.S. - UAM Sections 1.9, 4.9.1
Florida Statute - 556, UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY

Rule Chapter 62-25, F.A.C. - UAM Section 1.7.3
Florida Administrative Code, REGULATIONS OF STORMWATER DISCHARGE

FDOT Five-Year Work Program - UAM Sections 3.6, 4.3.4, 4.3.6, 4.9
FDOT Five-Year Work Program, Pursuant to Section 339.135(5), Florida Statues

MUTCD - UAM Section 4.4
The Manual on Uniform Traffic Control Devices, 2003 Edition
The MUTCD is published by the Federal Highway Administration (FHWA) under 23 Code of Federal Regulations (CFR), Part 655, Sub part F.
Incorporated by Rule Chapter 14-15.012 F.A.C.

NESC - UAM Section 4.2.2
National Electrical Safety Code

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FDOT TELEPHONE CONTACTS

•For statewide issues, contact the State Utilities Engineer at (850) 414-4379.

•For FDOT projects information, contact the District Utility Engineer/Administrator at:

District One	(863) 519-2300 or (800) 292-3368
District Two	(386) 758-3700 or (800) 749-2967
District Three	(850) 638-0250 or (888) 638-0250
District Four	(954) 486-1400 or (866) 336-8435
District Five	(386) 943-5000 or (800) 780-7102
District Six	(305) 470-5197 or (800) 435-2368
District Seven	(813) 975-6000 or (800) 226-7220
Turnpike Enterprise	(407) 532-3999 or (800) 749-7453

•For permitting contact the local operations center serving the counties below:

Operations Center, Telephone No. / Counties Served

Gainesville Maintenance, (352) 381-4300 / Alachua, Bradford
Lake City Maintenance, (386) 961-7180 / Baker, Columbia, Hamilton, Suwannee, Union
Panama City Operations, (850) 767-4990 / Bay, Calhoun, Gulf
Brevard Operations, (321) 690-3250 / Brevard
Ft. Lauderdale Operations, (954) 776-4300 / Broward
Fort Myers Operations, (239) 656-7800 / Charlotte, Collier, Lee
Brooksville Maintenance, (352) 797-5700 / Citrus, Hernando, Pasco
Jacksonville Maintenance, (904) 360-5200 / Clay, Duval, Nassau
Miami District Office, 305/470-5367 / Dade, Monroe
Sarasota Operations, (941) 359-7300 / DeSoto, Hardee, Manatee, Sarasota
Chiefland Maintenance, (352) 493-6075 / Dixie, Gilchrist, Levy
Milton Operations, (850) 981-3000 / Escambia, Okaloosa, Santa Rosa
DeLand Operations, (386) 740-3400 / Flagler, Volusia
Midway Operations, (850) 922-7900 / Franklin, Gadsden, Jefferson, Leon, Liberty, Wakulla
Labelle Operations, (863) 674-4027 / Glades, Hendry
Bartow Operations, (863) 519-4300 / Highlands, Polk, Okeechobee
Tampa Maintenance, (813) 744-603 / Hillsborough
Ponce de Leon Operations, (850) 836-5700 / Holmes, Walton
Ft. Pierce Operations, (772) 465-7396 / Indian River, Martin, St. Lucie
Marianna Maintenance, (850) 482-9546 / Jackson, Washington
Perry Maintenance, (850) 838-5800 / Lafayette, Madison, Taylor
Leesburg Operation, (352) 315-3100 / Lake, Sumter
Ocala Operations, (352) 732-1338 / Marion
Orlando Maintenance, (407) 858-5900 / Orange, Osceola
West Palm Beach Operations, (561) 432-4966 / Palm Beach
Pinellas Maintenance, (727) 570-5101 / Pinellas
St. Augustine Maintenance, (904) 825-5036 / Putnam, St. Johns
Oviedo Maintenance, (407) 977-6530 / Seminole
Turnpike Enterprise Maintenance, (954) 975-4855 / Florida's Turnpike, Beeline Expressway, Polk Parkway, Veteran's Expressway

www.dot.state.fl.us/rddesign/utilities