

FLORIDA'S TURNPIKE ENTERPRISE
INTELLIGENT TRANSPORTATION SYSTEM (ITS)
REPAIR AND PRESERVATION

Effective Date: April 6, 2012

This document establishes the requirements for the repair and preservation of the existing Florida's Turnpike Enterprise (FTE) Intelligent Transportation System (ITS) within the designated project limits throughout the project duration. The ITS System is defined to include FTE tolls communications, fiber optic communications networks, wireless communication networks, underground conduit, pullboxes, vaults, underground fiber optic cable, ITS field devices (i.e., cameras, vehicle detection, travel time, dynamic message signs, highway advisory radio), ITS field network devices, ITS device cabinets, power circuitry/systems, aboveground route markers and associated temporary or permanent ITS related infrastructure.

Whenever actions of the Contractor cause the ITS or related components to fail or disrupt normal operations, as determined by the Engineer, repair/restore the ITS and related components to their previous condition and normal operation within the allowable repair time in Table 1 at no expense to the Department. Table 1 and 2 represent the maximum allowable repair and response times; however, downtime should always be minimized whenever possible.

In the case of failure on the part of the Contractor to respond to damage, provide a repair plan or repair the ITS to normal operations, the Engineer may proceed to repair and enforce the provisions of FDOT Specifications 7-11. Lack of manpower or parts will not be considered as items beyond the Contractor's control. Repairs and responses must be performed by FDOT prequalified contractors in work class Intelligent Transportation Systems.

ITS failures and disruption of normal operation are defined to include, but are not limited to the following:

Telecommunications - This item entails the failure, partial failure, or cutting of any telecommunications including but not limited to fiber optic cable, composite cable, wireless links, data lines, or leased telephone data lines that brings down the system in whole or any part of the system or its functions that include communication between the Master Hubs. Telecommunications failure also includes causing a system to fail over to a redundant path or the removal of a redundant path without written permission from the Engineer.

Camera System – This item includes the loss of Video or Pan, Tilt or Zoom from a specific camera site. This also includes any change in the height, angle, or location of the support structure of the camera caused by the contractor.

Vehicle Detection System / Travel Time System – This item includes the loss of correct data flow from the field device to the Department's Software system located at FTE's Traffic Management Centers (Turkey Lake and Pompano). This includes data for all lanes of travel. If a

temporary detection system is used it shall maintain all standards that the existing system is currently using.

Dynamic Message System (DMS) - This item entails the failure or partial failure for a mainline (within limited/access FTE right of way) or arterial DMS. This is to include the inability to send or receive data to a DMS and or the inability for the Operator at the TMC to display, blank, change, or verify a message sent to the sign.

Highway Advisory Radio System (HAR) – This item entails the failure of a transmitter to produce radio waves or interruption of beacon signs associated with the HAR transmitter. This is to include the inability to send or receive data to a HAR and or the inability for the Operator at the TMC to have normal functionality maintained.

Power Systems – This item includes the complete or partial failure of power to all systems including but not limited to cameras, vehicle detection or travel time systems, DMS, and HAR systems.

Table 1
Allowable Repair Time

<u>Item</u>	<u>Allowable Repair Time</u>
Telecommunications	24 hours
Camera System	48 hours
Vehicle Detection / Travel Time System	48 hours
Dynamic Message System	48 hours
Highway Advisory Radio System	48 hours
Power Systems	24 hours

If damage to the system or disruption to normal operations occurs, notify the Engineer immediately for inspection. Respond to the site of damage with qualified personnel who have experience in repairing ITS within the allowable response times in Table 2 at no expense to the Department. For damaged telecommunication sites, respond to the site with a certified fiber optic technician that is trained and certified by a reputable organization (Corning Cable Systems, Lucent, The Light Brigade, or equal). At a minimum, the technician’s hands-on training must include fiber splicing, fiber termination, fiber testing, splice closures and patch panel terminations. For damaged power systems, respond to the site with an Electrical Journeyman. For damaged ITS field components, respond to the site with a Certified Electronics Technician.

Table 2
Allowable Response Time & Required Response Personnel

<u>Item</u>	<u>Allowable Response Time</u>	<u>Required Response Personnel</u>
Telecommunications	4 hours	Certified Fiber Optic Technician
Camera System	4 hours	Certified Electronics Technician
Vehicle Detection / Travel Time System	4 hours	Certified Electronics Technician
Dynamic Message System	4 hours	Certified Electronics Technician
Highway Advisory Radio System	4 hours	Certified Electronics Technician
Power Systems	4 hours	Electrical Journeyman

Temporary fusion splices may be used to temporarily reconnect any broken fibers. Mechanical splices are not permitted. After any temporary splices are added to the system and prior to final acceptance of the project in accordance with FDOT Specifications Article 5-11 permanent repair to ITS fiber optic cable shall be completed. Permanent repair for fiber optic cable shall include replacement of the entire cable from the nearest existing termination point (butt end splice) to the next existing termination point (butt end splice) removing all temporary splices, unless otherwise directed by the Engineer. The butt end splice is defined as a color to color splice of all fibers of the cable. All temporary and permanent splicing shall be performed in accordance with the provisions of FDOT Specifications 783-1.

Submit an ITS repair plan to the Engineer at the pre-construction conference. The plan shall outline the procedures, resources and points of contact for a step-by-step guideline in the event the Contractor damages or disrupts normal operation.

Provide detailed plans to the Engineer which show how damage to any ITS facility will be remedied. These details will become part of the as-built plans package. Remediation plans must follow the same guidelines for development and presentation of the as-built plans. They must be approved by the Engineer before any remediation work proceeds.