Schedule 15B
Operating Standards (Volume II)
(See attached.)

GOVERNMENT OF PUERTO RICO
PUERTO RICO PUBLIC PRIVATE PARTNERSHIPS AUTHORITY

TOLL ROAD CONCESSION AGREEMENT
PR-20, PR-52, PR-53 & PR66

HIGHWAY AND TRANSPORTATION AUTHORITY

VOLUME II OF III
OPERATIONS AND PROCEDURES MANUAL

Execution Version

MASTER TABLE OF CONTENTS

VOLUME I - MAINTENANCE MANUAL

VOLUME II – OPERATIONS & PROCEDURES MANUAL

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VOLUME III – ENVIRONMENTAL MANAGEMENT MANUAL

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A. ORGANIZATION AND GENERAL INFORMATION

A.1. Purpose of Manual

The Operating Standards are comprised of three (3) separate and unique Volumes, as follows:

- Volume I – Maintenance Manual
- Volume II – Operations & Procedures Manual
- Volume III – Environmental Management Manual

In general, the Operating Standards provide guidelines and criteria to the Concessionaire regarding the standards, specifications, policies, procedures, permits, and processes that apply to the operation, maintenance, rehabilitation, toll collection of, and improvements to the Toll Roads.

The purpose of this Manual (Volume II of the 3 Volume set of Operating Standards), is to provide guidelines and criteria to the Concessionaire on the basic development and submission of the operational plans discussed in the respective Chapters. The Concessionaire must create each Plan to maintain constant operation of the Toll Roads of the highest quality, consistent with best practices and the terms and conditions of the Toll Road Concession Agreement (as defined in Volume I).

A.2. Staffing Identification

The Concessionaire is solely responsible for each employee, Vendor, Contractor, agent or Affiliate of the Concessionaire and each such Person's actions while on or within the Toll Roads or performing work by or on behalf of the Concessionaire with respect to the Toll Roads or pursuant to the Toll Road Concession Agreement. The number of employees required shall be determined by the needs of the Concessionaire to fulfill its maintenance, operation, and contractual obligations consistent with the terms and conditions of the Toll Road Concession Agreement

The Toll Roads are a 24 hour-a-day, 365 days-per-year operation. For this reason, the Concessionaire must recognize the need to have variable work shifts, employees, supervisors and personnel so as to maintain constant and consistent operations of the highest management practices and terms and conditions of the Concession Agreement.

A.2.1. Essential Staff

The Concessionaire must identify which staff is essential to the operation of the Toll Roads. These persons may alternate based upon seasonal variations, operation requirements, weather conditions, etc. The essential staff personnel must be "response-ready" and contactable by the Commonwealth, if and when an event warrants.

A.2.2. Non-Essential Staff

The Concessionaire must employ persons who perform job duties as needed, but may not be responsible for responding to an event or situation. These employees, while important to the continual functionality of the Toll Roads, may be deemed as non- essential staff.

A.2.3. Shift Organization

The Concessionaire must create work shifts that preserve the continual and consistent operation of the Toll Roads. Staff requirements must be based upon both the actual and anticipated needs of the Toll Roads.

A.2.4. Essential Staff Personnel Matrix

The Concessionaire must create, maintain, submit to PRHTA, and update as appropriate, a personnel matrix of the Concessionaire's essential staff that includes, but is not limited to, the following:

- Employee Name
- Title
- Position/Job Classification
- Basic Job Responsibilities
- Contact Information

- Cell Phone; Mobile Phone; or Pager Number
- E-Mail (if applicable)
- Home Phone Number

A.3. Interagency Coordination

The Concessionaire shall be aware that the operation of the Toll Roads requires coordination with multiple agencies, including but not limited to, systems, departments, municipalities, commissions, and organizations (collectively for purposes of this Chapter, "Agencies"). The Concessionaire must establish, maintain, and provide coordination with all Agencies that pass under, over, are adjacent to, or are impacted by the Toll Roads.

It is the Concessionaire's sole responsibility to coordinate with the Agencies so that the continual operation of the Toll Roads is not disrupted in any manner, and that the Concessionaire's operation of the Toll Roads does not unduly impact the Agencies. The Concessionaire must be aware of, and must incorporate accordingly into plans, the following Agencies at minimum:

A.3.1. Commonwealth Municipalities & Other Agencies

The Concessionaire shall be aware that the Toll Roads reside within the limits of many Commonwealth municipalities. As a result, the Toll Roads pass over; beneath; run adjacent to; and collect and distribute traffic to and from various Commonwealth and local routes within the numerous Commonwealth municipalities.

Any improvement within the Toll Roads that adds travel lanes; widens the traveled way; modifies or reconfigures interchanges; creates a new interchange; etc., shall be coordinated and plans shared with all local metropolitan planning organizations, regional planning commissions, or other similar named or acting Agencies.

A.3.2. Puerto Rico Highways and Transportation Authority (PRHTA)

The Concessionaire shall be aware that the Toll Roads have many interchanges, overpasses and underpasses with other Commonwealth routes that are maintained and operated by PRHTA.

The Concessionaire must coordinate and gain approval of its work efforts at all of those locations in accordance with all existing agreements and guidelines required by PRHTA and in accordance with the Concession Agreement. The Concessionaire must be aware that it is responsible in filing and obtaining all required "Highway Occupancy Permits" or similarly named or functional permits when the Concessionaire's work is within the Toll Roads' Right-Of-Way.

Any improvement within the Toll Roads that adds travel lanes; widens the traveled way; modifies or reconfigures interchanges; creates a new interchange; etc., shall be coordinated and approved by the Commonwealth and PRHTA. In addition, all such improvements must be formally submitted so that applicable Projects are

included in the Commonwealth's Transportation Improvement Plan.

A.3.3. Army Corps of Engineers & U.S. Coast Guard

The Concessionaire shall be aware that the Toll Roads span over and have supports in numerous water bodies across the Commonwealth, over which the Army Corps of Engineers and/or the U.S. Coast Guard retain jurisdictional rights as a navigable waterway. As such, the Concessionaire must coordinate its work efforts in those water bodies with the appropriate Army Corps of Engineers and U.S. Coast Guard Office.

A.3.4. Railroads

The Concessionaire shall be aware that the Toll Roads span over and beneath Rights- of-Way owned and operated by Railroad Companies, in which those railroads retain certain rights. In addition, the Concessionaire must also be aware that the Puerto Rico Department of Transportation and Public Works (DTPW) retains jurisdictional rights over all rail-highway crossings. The Concessionaire must coordinate its work efforts in those locations with PRHTA and DTPW, as well as each Railroad Company. If the Concessionaire's work requires entry onto land owned or operated by a Railroad Company, the Concessionaire must obtain the appropriate permission, right-of-entry, insurance certificates, or other matters as necessary and required.

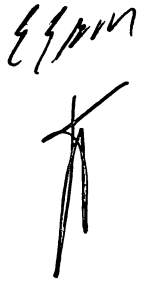
A.4. Vehicle Permits

PRHTA maintains the right to approve and permit the passage of oversized and overweight vehicles along the Toll Roads. However, the Concessionaire will be solely responsible to justify, review, and verify and communicate work with PRHTA when approval of such passage is required. Upon receipt of such requests, the Concessionaire must first conduct all engineering verifications for safe passage, then as required by PRHTA, work with and communicate with the appropriate PRHTA and DTPW departments so that the permit application can be issued if all criteria are adequately met. The Concessionaire is responsible for verifying that all vehicles that request or attempt passage through the Toll Roads are withheld from passage until an approved and current permit is produced.

The Concessionaire must inform PRHTA if structures within the Toll Roads become deficient or restricted for such purposes, as well as the timetable for conformance, which timetable must be consistent with the Operating Standards. The Concessionaire must also coordinate and communicate with PRHTA and DTPW once the permitted vehicle has passed through the Toll Roads, so as to close the permit process.

A.5. Submission and Approval of Plans

Chapters B through L of this Volume require the submission of annual plans and reports by the Concessionaire to the Commonwealth and for Approval of such plans and reports by PRHTA. The Concessionaire must submit the initial versions of all such plans and reports to PRHTA for Approval no later than 120 days after the Closing Date, unless otherwise agreed to by the PRHTA and the Concessionaire. The Concessionaire must thereafter submit all such plans and reports annually for Approval, as required by Chapters B through L of this Volume. PRHTA shall Approve or deny annually each such plan or report within 120 days after submission by the Concessionaire. If PRHTA denies a submitted plan or report, the Concessionaire shall submit a revised plan or report to PRHTA no later than 30 days' notice of such denial.



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B. PROGRAM MANAGEMENT SYSTEM PLAN

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B.1. Definitions

American Society for Quality (ASQ): The U. S. National organization for standards that promotes quality in process, methods, and the environment.

Best-practice: A level of performance that is equal-to-or-better-than the performance commonly attributed to top-tier highway systems.

Continuous Improvement: The recurring activity employed to increase the ability to fulfill requirements of the asset and the Operating Standards.

International Organization for Standardization (ISO): The International organization for standards that promotes quality in process, methods and the environment. Complying organizations prepare written procedures according to an established model.

Level of service (LOS): As defined by the "Highway Capacity Manual" and "AASHTO - Geometric Design of Highways and Streets", which lists the following levels of service: A = Free flow, B = Reasonably free flow, C = Stable flow, D = Approaching unstable flow, E = Unstable flow, and F = Forced or breakdown flow.

Program: The Concessionaire's entire operation of the Toll Roads.

Project: An isolated chain of events that have a beginning and an end. The result is a material improvement to PR-20 or PR-52 or PR-53 or PR-66 or PR-9 or all of them.

Stakeholder: Those entities or individuals, public or private, who care, directly or indirectly, about the quality of the operation of the Toll Roads.

Value Engineering (VE): A structured, guided team exercise aimed at developing the best solution for a problem. A certified Value Engineer usually lead the team.

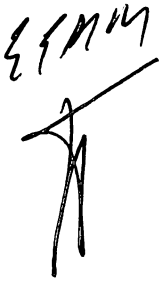
Zero Defects: The attitude that operating defects are entirely preventable through training, procedures, planning, self-monitoring, and peer observations.

Zero Injuries: The attitude that injuries are entirely preventable through training, procedures, planning, self-monitoring, and peer observations.

B.2. References

All stated references must be the most current version, or the document known to have succeeded or replaced the original stated herein:

- ANSI/ISO/ASQ Q9000-2005 "Quality Management Systems – Fundamentals and Vocabulary", ASQ.
- ANSI/ISO/ASQ Q9001-2000 "American National Standard: Quality Management Systems – Requirements", ASQ.
- ANSI/ISO/ASQ E14001-2004 "American National Standard: Environmental Management Systems – Requirements with Guidance for Use", ASQ.
- ANSI/ISO/ASQ E14004-2004 "American National Standard: Environmental Management Systems – General Guidelines on Principles, Systems and Support Techniques", ASQ.
- "A Policy on Geometric Design of Highways and Streets", AASHTO.
- "Highway Capacity Manual", TRB.
- "Traffic Engineering Handbook", ITE.



B.3. Policy for Program Management System Plan

B.3.1. Objective

The Program Management System Plan establishes the Concessionaire's management approach used in its operations and maintenance of the Toll Roads. The objective of the Program Management Plan is to describe the overall program structure: deliverables; related management plans and procedures and the methods utilized by the Concessionaire to plan, monitor, control and improve the Toll Roads. The Program Management Plan must be a "living" and dynamic document that is to be updated and submitted to PRHTA for Approval on an annual basis, or more frequently if necessary or if required by PRHTA, and must reflect all organizational changes, lessons learned, and advances in the methodologies that occur on the Toll Roads throughout the life of the Concession Agreement.

The Program Management System Plan is the formal guide that articulates the manner and specifics of how the Toll Roads will be operated and managed. The Program Management System Plan must:

- Establish the comprehensive operating expectations that the Commonwealth has of the Concessionaire.
- Create a realistic plan to meet the administrative, technical and coordination requirements of operating and maintaining top-tier toll roads.
- Establish a rigorous and orderly framework in accordance with sound business and management practices.
- Promote teamwork among the participants in the operations of the Toll Roads.
- Act as a reference for the Concessionaire's senior managers.
- Guide the actions of the Concessionaire's staff, supervisors, and managers.
- Provide the Commonwealth with a clear statement of the authority and responsibility of each member of the Concessionaire's staff.
- Present the methodology by which the Concessionaire will conduct non-normal operations.
- List the types of formal communications required between the Concessionaire and the Commonwealth.
- Establish the criteria for strategic and capital planning.
- Develop a mechanism to inform PRHTA, in a timely manner, of significant problems that affect the users of the Toll Roads.

The Concessionaire must conduct all its work so that the Toll Roads are operated, maintained and managed as a safe, reliable, cost effective and valued toll road system at all times. The Concessionaire must consider, operate and manage the Toll Roads as one of the premier transportation systems in the world This can only be accomplished if the Toll Roads remain as safe, non-stop, free-flowing roads

that offer reliable and enjoyable travel and services. These characteristics are further defined as follows:

- Safe: All the features of the Toll Roads place safety of its users and employees as a paramount concern at all times.
- Non-stop: The user travels freely through the Toll Roads without stoppages for construction or maintenance work necessary and that temporary obstructions are thoughtfully planned.
- Free flowing: The Toll Roads are operated in a continual condition that allows for unencumbered travel, within the posted speed limit, with reasonable ability for safe lane changes.
- Cost effective: The user perceives that the value of the trip on the Toll Roads is worth the expense. The Concessionaire must understand that the user makes the multi-dimensional value judgment based on ease of access, time saved over alternate routes, fuel saved over alternate routes, customer amenities, reduced driving decisions over alternate routes, demeanor of employee-customer contacts, safety, and visual interest throughout the corridor.
- Reliable travel and services: The user of the Toll Roads must always expect that the services provided by the Concessionaire are consistent and safe.

B.3.2. Responsibility of the Concessionaire

It shall be the Concessionaire's responsibility to develop, write and implement the Program Management System Plan in accordance with the objectives outlined in this Chapter. This Chapter and its contents have been provided as a preparation guideline that addresses the *expected minimum* required criteria and is not intended to be all inclusive. The Plan must be updated and submitted annually and must receive Approval from PRHTA and, as appropriate, from all other governing authorities.

The Concessionaire must be aware in the creation, implementation, and management of the Program Management System Plan that the following *goals* are to be met:

- All phases of operations shall demonstrate active programs that promote "Zero Injuries", "Zero Defects" and "Continuous Improvement".
- The quality of all Toll Road user amenities shall be best practice.
- Toll Road safety considerations must be best practice.
- Toll Road user communication techniques must be best practice.
- Toll Road technology systems and equipment must be best practice.
- Construction traffic adjustments must be safe, logical, able to be clearly understood and implemented in the manner least disruptive to the travel experience.

B.3.3. Performance Periods

The following table establishes the minimum frequency that the Program Management System Plan is to be written and updated by the Concessionaire, submitted to PRHTA for Approval.

Plan	Minimum Frequency of Occurrence
Program Management System Plan	Yearly

B.3.4. Acceptance Criteria

The Program Management System Plan will be considered acceptable for a particular year when the Program Management System Plan has been written and updated by the Concessionaire in accordance with this Chapter, submitted to PRHTA and Approved by PRHTA .

B.4. Program Management System Plan Preparation Requirements

The following is a general outline of the Concessionaire's responsibilities that must be included and addressed when creating or updating the Program Management System Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that should be included and addressed in the Program Management System Plan.

The Program Management System Plan must include provisions for annual and periodic updates, training and supervision of staff and adherence to all policies and procedures.

B.4.1. Introduction

This section is to contain an introduction to the Program Management System Plan that includes a general description of the intent, vision and goals of the Program Management System Plan implemented and utilized by the Concessionaire.

At a minimum, this section is to contain the following sub-sections:

- Program Information
- Program Overview
- Key Program Events
- Objectives and Goals
- Vision Statement

B.4.2. Management Organizational Structure

This section of the Program Management System Plan must describe the management and organizational structure of the Program. The organization includes Concessionaire personnel, contractors, subcontractors, Toll Road users, PRHTA and the Commonwealth. The description of each must include the role, involvement, and interface of each entity into and within the Program.

This section must also describe the roles and responsibilities of the Program personnel, including, but not limited to:

- Program Manager
- Contracts and Procurement Manager
- Engineering Manager
- Maintenance Manager
- Operations Manager
- Toll Collections and Operations Manager
- Finance Manager

- Planning Structure
- Traffic Control Operations Manager
- Quality Assurance Manager

This Section of the Program Management System Plan must also establish and define:

- How the Program and Program Management System Plan will be managed.
- What the organizational structure will be.
- What the distribution of authority and responsibility will be.

The Program Management System Plan must also contain sections addressing, but not limited to, the following:

- Management Approach: Definition of the basic management principles that will be used. Application of the principles of "Zero Injuries", "Zero Defects", and "Continuous Improvement" must be presented.
- Organizational Chart: Present an organization chart with enough detail to illustrate all staff levels and lines of communication.
- Function: Explain the functional responsibility for all major groups in the organization. Explain the responsibilities of key individuals by title.
- Audits: Explain the types of audits the Concessionaire will perform and receive.
- Training: Explain the role of staff training in the Concessionaire's operation. Explain the level of the required training and how it will occur.

B.4.3. Management Plans

This Section of the Program Management System Plan must address a variety of management plans that address specific functions that the Concessionaire will conduct in its operation of the Toll Roads. The subsections include, but are not limited to, the following:

B.4.3.1. Communication

The intent of this section is to show the critical role communication, in its many dimensions, plays in a successful endeavor, and define the type of normal communication with the Commonwealth, PRHTA, stakeholders, and Toll Road users. This section must also describe how other plans required in the Operating Standards will be implemented in cases of emergencies.

B.4.3.2. Quality

The intent of this section is to show the importance of Quality Assurance (QA) and Quality Control (QC) in the overall operation of the Toll Roads and to indicate the Program Management System Plan will interface with the Quality Management System Plan that is required by Chapter C of this Volume II.

This section must also explain how the Program will seek International Organization for Standardization (ISO) certification or registration.

B.4.3.3. Strategic and Capital Planning

The intent of this section is to show the importance of planning in the operation and continuous improvement of the Toll Roads. This section must explain the processes, philosophies and criteria that will be employed in authoring the Annual Capital Improvement Program Report that is required by Chapter L of this Volume II.

The Program Management System Plan must also address and explain long-range goals in several categories, such as: roadway, facilities, toll collection, structures, maintenance, customer contact features, and technology, etc.

B.4.3.4. Program Management Controls

The intent of this section is to outline the Concessionaire's approach to the management of cost, scheduling, document control, and reporting. The primary purpose of program management controls is to establish clear cost and schedule criteria for the Program, to monitor status, to propose corrective action when required, and to ensure that pertinent information is communicated. The system may use web-based technologies. Where applicable, references should be made to the Quality Management System Plan that is required by Chapter C of this Volume II.

Individual subsections must be included that describe the following:

- Work Breakdown Structure (WBS): Description of how various levels of information for the Program and Projects will be managed and reported.
- Schedule Control: Description of how the Concessionaire schedules Projects. Special attention should be given construction schedules.
- Team Communication and Information Management: Description of how Project teams will communicate. Also, strategies and processes the Concessionaire will employ such as: project status reports; requests for information; team directories; meeting minutes; design information; project documentation, etc.
- Document Control: Description of how the Concessionaire will manage and administer Program and Project documents.

B.4.3.5. Procurement

The intent of this section is to describe how the Concessionaire will administer the procurement of materials, equipment, services, and consultants. The controlling regulations of the Commonwealth must be followed and must also be cited. This section must reference the applicable sections of the Quality Management System Plan required by Chapter C of this Volume II and the requirements described in Chapter K of this Volume II, "Design and Construction Requirements".

Individual subsections must be included that describe the following:

- Procurement Cycle: Description of how the Concessionaire will offer aprocurement cycle and discuss the functionality and responsible parties in the cycle.
- Change Orders: Description of how the Concessionaire will address change orders, and who handles which part of the process.
- Dispute Management: Description of how the Concessionaire will manage project work in order in minimize the potential for disputes. If a dispute arises, the Concessionaire will need to address how the dispute will comply with all applicable parts of the Concession Agreement and the Quality Management System Plan.

B.4.3.6. Design Management

The intent of this section is to describe the organization, responsibilities, criteria and functionality with the requirements of Chapter K of this Volume II, "Design and Construction Requirements".

Individual subsections must be included that describe the following:

- Organization: Description of how the Concessionaire will address the design process from concept to construction documents, to construction. Describe the functional titles within a design group and list the responsibilities of each title. State who establishes the design criteria and the budget. Describe how design is managed in general and, specifically, how designs are managed to a budget. Explain how peer reviews or constructability reviews will be performed.
- Design guidelines: Description of how the Concessionaire will develop and use design guidelines and standard specifications.
- Value Engineering (VE): Description of how the Concessionaire will employ value engineering into the Program.

B.4.3.7. Construction Management

The intent of this section is to describe the organization and responsibilities of the construction management function within the requirements of Chapter K of this Volume II, "Design and Construction Requirements".

Individual subsections must be included that describe the following:

- Organization: Description of how the Concessionaire will address the construction management process from pre-construction to final acceptance. Describe the functional titles within a construction management group and list the responsibilities of each title.
- Construction Management Elements: List and briefly describe files, documentation, procurement, change order control, communications and correspondence, coordination, cost control, schedule control, disputes, alternates/substitutions, shop drawings, progress documentation, payouts, reporting, inspections, commissioning, acceptance, turnover, close-out, warranties, bonuses, and liquidated damages.

B.4.3.8. Technology Plan

The intent of this section is to: (1) describe how the Concessionaire will apply existing technologies and methods to the initial structure of the Concessionaire's organization, and (2) present a plan on how to evaluate and apply future technologies and methods.

This section must be organized along the following technology groups: administrative; normal communication; emergency communication; revenue; traffic management, user experience, highway, bridge and related structures maintenance; building maintenance; design; construction; and customer contact.

B.4.3.9. Risk Management

The intent of this section is to have the Concessionaire explain how a risk profile is created, evaluated, and mitigated for each Project. Each risk profile should include, but not be limited to, the following risks assessments: customer safety after construction, construction safety, construction cost, customer acceptance, obsolescence, and environmental.

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C. QUALITY MANAGEMENT SYSTEM PLAN

Section Page

C.1. Definitions

American Society for Quality (ASQ): The U. S. National organization for standards that promotes quality in process, methods, and the environment.

Best-practice: A level of performance that is equal-to-or-better-than the performance commonly attributed to top-tier highway systems.

Client-Support Control: The methods necessary to provide technical and product support by helping customers with set-up, and recording of events, complaints, comments and requests.

Continuous Improvement: The recurring activity employed to increase the ability to fulfill requirements of the asset and the Operating Standards.

Customer Satisfaction: The customer's (the Toll Road user) perception of the degree to which the customer's requirements have been fulfilled.

International Organization for Standardization (ISO): The international organization for standards that promotes quality in process, methods, and the environment. Complying organizations prepare written procedures according to an established model.

Program: The Concessionaire's entire operation of the Toll Roads.

Project: An isolated chain of events that have a beginning and an end. The result is a material improvement to the Toll Roads.

Quality: The degree to which a set of inherent characteristics fulfills the requirements of the Operating Standards and the needs of the Toll Roads.

Quality Assurance: The portion of the Quality Management System that focuses on increasing the ability to fulfill quality requirements.

Quality Control: The portion of the Quality Management System that focuses on fulfilling the quality requirements.

Quality Management System or QMS: The process employed by the Concessionaire to direct and control its work organization with regard to quality.

Quality Objective: Something sought, or aimed for, related to quality.

Quality Planning: The portion of the Quality Management System focused on setting quality objectives at the highest level.

Quality Policy: The overall intentions and direction of the Concessionaire related to quality as formally expressed by Top Management.

Requirement: The need or expectation that is stated, generally implied or obligatory.

Stakeholder: Those entities or individuals, public or private, who care, directly or indirectly, about the quality of operation of the Toll Roads.

Top Management: The Concessionaire's person or group of people that directs and controls the organization at the highest level.

Value Engineering (VE): A structured, guided team exercise aimed at developing the best solution for a problem. A certified Value Engineer usually lead the team.

Zero Defects: The attitude that operating defects are entirely preventable through training, procedures, planning, self-monitoring, and peer observations.

Zero Injuries: The attitude that injuries are entirely preventable through training, procedures, planning, self-monitoring and peer observations.

C.2. References

All stated references must be the most current version, or the document known to have succeeded or replaced the original stated herein:

- "Standard Specifications for Road and Bridge Construction", PRHTA
- ANSI/ISO/ASQ Q9000-2005 "Quality Management Systems – Fundamentals and Vocabulary", ASQ.
- ANSI/ISO/ASQ Q9001-2000 "American National Standard: Quality Management Systems – Requirements", ASQ.
- ANSI/ISO/ASQ Q9004-2005 "American National Standard: Quality Management Systems – Guidelines for Performance Improvements", ASQ.

C.3. Policy for Quality Management System Plan

C.3.1. Objective

The objective of the Quality Management System (QMS) is to create, maintain, implement, follow and update a set of policies, processes and procedures required for planning and execution in the core business area of organization on an annual basis. The Quality Management System Plan must integrate the various internal processes within the Concessionaire's organization and provide a process approach for project execution. The Quality Management System Plan further enables the Concessionaire to identify, measure, control and improve upon the various core business processes that will ultimately lead to improved business performance and provide the Commonwealth a means to measure the effectiveness of those processes, policies, and procedures.

The Concessionaire must understand that another main objective of the Quality Management System Plan is to establish "customer-related" processes in the form of policies and must implement processes and procedures for the following:

- Determination of requirements related to the products and services.
- Review of the requirements related to the product and services.
- Customer communication.

The Concessionaire must also make the objective of its Top Management commitment to the following:

- The Quality Policy is appropriate to the purpose of the Concessionaire's organization.
- A commitment to comply with requirements and continually improve the effectiveness of the Quality Management System.
- Provide a framework for establishing and reviewing Quality Objectives.
- The Quality Management System Plan is communicated and understood within the Concessionaire's organization.
- The Quality Management System Plan is reviewed for continuing suitability.

The Quality Management System Plan must establish a system to assure compliance with established performance requirements including, but not limited to:

- Supplies and services that will be controlled for conformance.
- Methods for the prevention and detection of discrepancies and the subsequent corrective action provided.
- Standardize and control processes for document generation, storage, retrieval and distribution.
- Unification of all employees as members of the quality team.

- Promotion of innovation utilizing the idea of "Continuous Improvement".
- Reduction of errors in all phases of the Concessionaire's operation by promoting the idea of "Zero Defects" and "Zero Injuries".

An ISO compliant QMS includes the following:

- Level 1 Documents - The commitment of Top Management to the principles of ISO by establishing policies in the areas required by the standard in five (5) components:
  - Quality Management System
  - Management responsibility
  - Resource management
  - Product and service delivery
  - Measurement, analysis, and improvement
- Level 2 Documents – Specific documented procedures in written procedures and/or process maps to implement all items included in Level 1 policies.
- Level 3 Documents – Specific work instructions for performing the tasks involved to performing the Level 2 procedures.
- Level 4 Documents - Specific forms, worksheets, checklists, etc. to record information and data providing "objective evidence" that the procedures and/or work instruction in the Level 2 and 3 documents were followed.

The Quality Management System Plan developed by the Concessionaire must include, at a minimum, all the points and requirements presented in this Chapter.

- Quality Management System Policy Manual (QMSPM): The purpose of this section of the plan is to establish the Level 1 Policy documents that provides Top Management's requirements for management of quality.
- Quality Procedures Manual: The purpose of this section of the plan is to implement polices in the QMSPM through documented procedures in the form of written procedures and/or process maps that include "key points of control", which is the Level 2 documents.
- Training: The purpose of this section of the plan is to present the specific and relevant training that everyone on the Concessionaire's staff and selected contractors will undergo regarding Quality Management.
- Compliance Testing: The purpose of this section of the plan is to present the management cadre to be initiated and implemented by the Concessionaire in the Quality Management System Plan. While the Concessionaire's Top Management team is the first-line compliance assessors ("auditors"), the Concessionaire may elect to contract with independent outside auditors.

The Concessionaire must be ISO certified in 9004 or updated versions, before the third anniversary of the Closing Date and must maintain such certification on a current basis throughout the Term.

C.3.2. Responsibility of the Concessionaire

The Concessionaire's Top Management must review the Quality Management System Plan, at planned intervals, to ensure its continuing suitability, adequacy, and effectiveness. This review shall include assessing opportunities of improvement and the need for changes to the Quality Management System, including the quality policy and quality objectives.

It is the Concessionaire's responsibility to develop, write and implement the Quality Management System Plan and its components as denoted in Table C.3.3.a and Table C.3.3.b. The contents of this Chapter have been provided as a preparation guideline. This guidance addresses the *expected minimum* required criteria and is not intended to be all-inclusive. The Quality Management System Plan must be updated and submitted annually to PRHTA for Approval.

C.3.3. Performance Time Limits

The following table establishes the minimum frequency that the Quality Management System Plan is to be written and updated by the Concessionaire, submitted to the Commonwealth and Approved by the Commonwealth.

Table C.3.3.a

Plan	Minimum Frequency of Occurrence
Quality Management System Plan	Yearly

In addition to the Quality Management System Plan, the following table establishes the minimum frequency that audits to such plan must be performed by the denoted party, and as appropriate submitted to PRHTA for Approval.

Table C.3.3.b

Audit Plan	**Minimum Frequency of Occurrence**
External Conformance Audit by the Commonwealth (2nd Party) or Independent Auditor (3rd Party)	Every Third Year
Internal Audit performed by the Concessionaire	Annually, 6 months after External Conformance or External Surveillance
External Surveillance Audit by the Commonwealth (2nd party) or Independent Auditor (3rd Party)	The 1st and 2nd Year after External Conformance Audit

C.3.4. Acceptance Criteria

The Quality Management System Plan will be considered acceptable for a particular year when the plan has been written and updated by the Concessionaire, and such plan and the audits described in Table C.3.3.b have been submitted to PRHTA and Approved by PRHTA.

C.4. Quality Management System Plan Preparation Requirements

The following is a general outline of the Concessionaire's responsibilities that must be included and addressed when creating the Quality Management System Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that should be included and addressed in the Quality Management System Plan.

The Quality Management System Plan must include provisions for annual and periodic updates, external audits, training and supervision of staff and adherence to all policies and procedures.

C.4.1. Quality Management Systems Policy Manual

The basic format of the manual should follow the below outline:

1.0 Scope

This Section should contain the following elements, as a minimum:

- General Scope and outline of the plan, including the purpose and year of the plan.

2.0 Introduction

This Section should contain the following elements, as a minimum:

- A statement that the Quality Assurance Manual is the top-tier document in the Quality Management.
- A brief statement of the overall functional intent of the manual.

3.0 Terms and Definitions

This Section should contain the following elements, at a minimum:

- Terms, definitions, abbreviations, and acronyms found within the plan.

4.0 Quality Management System

This Section should contain the following elements, at a minimum:

- This element must include controls of the Quality Assurance Manual with respect to issuance, revision control, and distribution.
- This element must include the Quality System that identifies, defines, and documents policies, procedures, and controls employed by the Concessionaire to ensure that the plan conforms to specified requirements and standards.

- This element must define the Quality System that will be utilized for the control of all documents. This shall include format, approval, issuance, revision, updates, and record retention.

  - This element must outline the Quality System that will be utilized for data collection and analysis, including record retention; identify which records should be kept; establishment of responsibility for production and collection; and establishment of responsibility for indexing, filing, storage, maintenance and disposition of quality records.

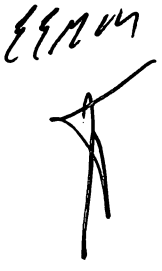
5.0 Management Responsibility

This Section should contain the following elements, at a minimum:

- A statement of who on the Concessionaire's staff has the authority to prepare the Quality Assurance Manual.
- This element must include the Concessionaire's management responsibility and commitment as it relates to developing, maintaining, and monitoring the effectiveness of the Quality Management System.

6.0 Resource Management

This Section should contain the following elements, at a minimum:



- This element must define how the Quality System establishes the training and indoctrination of personnel, particularly those in the direct performance of activities affecting quality.

7.0 Product and Service Delivery

This Section should contain the following elements, at a minimum:

- This element must include the outline of the Quality System that will be utilized for soliciting proposals, managing submittals thereof, and reviewing contracts.
- This element must describe the Quality Management System that will be utilized to assure that designs, design documents, and other work products fulfill regulatory requirements and contractual requirements. In addition, this section must also describe in preparing, reviewing, approving, issuing, and revising project documents.
- This element must outline and describe the Quality System that will be utilized for approving suppliers, reviewing contract documents, verifying purchased products or deliverables, and handling claims. This element must define the purpose of the Client-Support Control that will be employed to confirm and maintain the usefulness of products and data supplied by the Commonwealth, as applicable.

- This element must outline the procedures that will be employed in the identification and traceability of construction products and materials.
- This element must define the controls and standards that will be employed for inspection and testing equipment.
- This element must define how the Quality System establishes handling, storing, preserving, and delivering materials.
- This element must define how the Quality System establishes a program to manage the operational procedures of a contract.
- This element must define how the Quality System will develop plans for handling emergency situations. The element must include communications, traffic adjustments, media relations, customer relations, mitigation, materials, equipment, and repairs; and be develop by the class of emergency.
- This element must define how the Quality System establishes the need for maintenance, defines the scope of the maintenance, and manages the maintenance process.
- This element must define how the Quality System establishes the standards for all customer contact situations, informs customers of changes to expected patterns, elicits customer feedback, and maintains a customer service function in various media.
- This element must outline the Quality System will be established for setting the methods of customer payments, collecting customer payments in its various forms, banking, accounting, transfers, and audits.

8.0 Measurement, Analysis and Improvement

This Section should contain the following elements, at a minimum:

- This element must outline the process control activities that affect the quality of maintenance activities or construction.
- This element must outline the Quality System that will be utilized for ensuring all relevant maintenance and construction materials and products receive requisite inspection, testing, and reporting.
- This element must define the controls and reporting status that will be utilized during inspections.
- This element must outline the Quality System that will be utilized to control nonconforming materials or products.
- This element must define how the Quality System establishes corrective and preventive action mechanisms for correcting nonconforming situations as they pertain to products, materials, and services.

- This element must define how the Quality System will establish performing internal quality audits.
- This element must define how statistical methods will be developed to assess the development, progress, and effectiveness of the Quality Management System Plan.

C.4.2. Quality Procedures Manual (QPM)

The Quality Procedures Manual Section is the collection of finite, separate outlines of how to perform a task. The procedures mentioned in the Quality Management Systems Policy Manual, above, are top-level perspectives on the work. The procedures in the Quality Procedures Manual Section are the details of how to perform a task and its alternates; and are highly structured. The definition for each sub-section of the Quality Procedures Manual Section body should be in accordance with the following:

1.0 Summary: Briefing statement of what is covered in the procedure. This section lists and hazards of the task and any person protective equipment required.

2.0 References: Citations for academic, administrative or regulatory precedent.

3.0 Equipment: Provide a detailed list.

4.0 Procedures: Broken down phases or alternates which include detailed step by step instructions and the utilization of process maps.

5.0 Documentation: Description of what must be recorded as a result of accomplishing or attempting to accomplish the task, including a list of task participants that may be part of the required documentation.

6.0 Attachments: List of the relevant project-specific attachments.

C.4.3. Training

Training is a major component of a Quality Management System Plan. While most of this Section has specific details as described in the Quality Assurance Manual, this Section must present an overview and provide specific details on how the Concessionaire will evaluate the needs, conduct and annually re-train the staff on the Quality Management System Plan.

Training is an integral part of the Quality Management System and should not be treated as a stand-alone item by the Concessionaire or its Top Management. It is important that all personnel performing work affecting the quality of the Toll Roads are competent based on appropriate training, skills and experience. In particular, the procedures must address, at a minimum, competence, awareness, and training in the following areas:

- Determine the necessary competence for personnel performing work affecting the Toll Roads.
- Provide training or take other actions to satisfy these needs.
- Evaluate the effectiveness of action taken.
- Ensure that personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives.
- Maintain appropriate records of education, training, skill and experience.

C.4.4. Compliance Testing

Compliance testing is also a major component of a Quality Management System Plan. While most of this Section has specific details as described in the Quality Assurance Manual, this Section must present an overview, and provide specific details on how the Concessionaire will conduct auditing in compliance with the Quality Management System Plan.

Compliance testing must be included and covered in the Level 2 documents with specific procedures under the specific paragraphs of Section 7.0 and Section 8.0 of the Quality Management System Policy Manual. The Concessionaire must pay particular attention to the audit requirements stated in Table C.3.3.b.

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D. SAFETY PLAN

Section Page

D.1. Definitions

Dynamic Message Signs (DMS): Signs which can display a visual message by means of light bulbs, plastic tabs, etc. Also known as Variable Message Signs (VMS) and Changeable Message Signs (CMS).

Emergency: An unforeseen occurrence or combination of circumstances which calls for immediate action or remedy.

Flashpoint: That lowest temperature at which a material gives off enough flammable vapor to ignite in the presence of a flame or spark.

Incident: An occurrence or event, natural or manufactured, requiring a response to protect life or property.

Life Safety Systems: Devices and systems that are specifically designed and implemented to assist in the safety and preservation of human life. Examples include breathing apparatus, showers, first-aid kits, emergency call buttons, resuscitation/defibrillation equipment, etc.

Maintenance of Traffic (MOT): A plan for handling traffic through a work zone. The MOT may range in scope depending on the complexity of a project and resulting traffic interference.

Traffic Control: methodologies used for directing vehicular and pedestrian traffic around construction zones, accidents, or any other road disruption, thus ensuring the safety of emergency response teams, workers, and the general public.

Warning Sign: A sign that gives notice to road users of a potentially hazardous situation that might not be readily apparent. Examples include STOP AHEAD and LOW CLEARANCE signs.

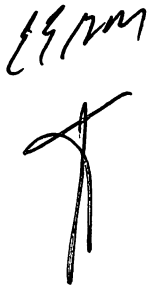
Work Zone: The area of the Toll Roads in which maintenance or construction operations are taking place which may impinge on the number of lanes available to moving traffic or affect the operational characteristics of traffic flowing through the area.

Work Zone Sign: A sign that gives notice to road users of construction or maintenance activities and revised traffic conditions due to these activities. Work zone signs are required in advance of the site and must be erected through the work zone. Work zone signs include regulatory signs such as CONSTRUCTION SPEED LIMIT signs; warning signs such as FLAGGER or CONSTRUCTION ZONE AHEAD signs; and directional sign such as DETOUR or LANE CLOSURE signs.

D.2. References

All stated references must be the most current version, or the document known to have succeeded or replaced the original stated herein:

- Occupational Health and Safety Act (OSHA) Guidelines
- OSHA Publications List via Catalog or Website, OSHA
  (Website: http//:www.osha.gov/pls/publications/pubindex.list).
- "Guidelines for Public Sector Hazardous Materials Training", U.S. Department of Transportation and Federal Emergency Management Agency.
- "NIOSH Pocket Guide to Chemical Hazards", NIOSH.
- "Manual on Uniform Traffic Control Devices (MUTCD)", FHWA.
- "A Policy on Geometric Design of Highways and Streets", AASHTO.
- "Traffic Engineering Handbook", ITE.



D.3. Policy for Safety Plan

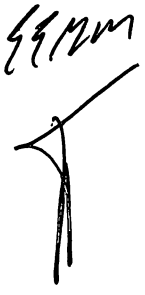
D.3.1. Objective

The objective of the Safety Plan is to ensure that the Concessionaire has considered, trained, addressed, and planned for situations that could be deemed as creating an unsafe situation to the workers and public within or adjacent to the Toll Roads.

It is the Concessionaire's focus, policy and purpose to conduct all work in the safest possible manner so as to protect its workers and the public at all times, under all conditions and in full conformance and consistent with all applicable laws, rules, codes and policies.

D.3.2. Responsibility of Concessionaire

It is the Concessionaire's responsibility to establish, write and carry out a comprehensive Safety Plan that addresses the protection of its workers and the public and to insure that its procedures are being implemented and enforced. This Chapter and its contents have been provided as a preparation guideline that addresses the minimum required criteria, and is not intended to be all inclusive. The plan is to be updated and submitted annually and must receive Approval from PRHTA and, as appropriate, from all other governing authorities.



The most important part of the Safety Plan is to protect the workers from traffic, and vice versa. This can be accomplished by including the following principles in the Safety Plan:

- Keeping motorists informed. This can be accomplished with signs, flags, barricades, cones, flashing amber lights, dynamic message signs and flashing arrow signs or similar notification methods.
- Avoidance of the errant driver by workers. Face traffic, stay aware with your own eyes and ears or those of a look-out who will warn you. Establish an escape route.
- Utilization of protective equipment. Protective vehicles, truck mounted crash headrests, seat belts/shoulder harnesses, hard hats, safety vests, etc.
- Planning work such that it reduces and/or protects employees' exposure to traffic. This can be accomplished with the use of well-conceived, developed, reviewed, and approved Traffic Control and Work Zone plans and procedures.

The Concessionaire must be sure that the Safety Plan includes that all employees are aware of, and as applicable, trained in the requirements and standards of the Occupational Safety and Health Administration (OSHA) so that the proper levels of protection are fulfilled for the potential exposure.

This Chapter includes a general outline of the proposed plan. This outline is intended only to provide guidance in the preparation of the Concessionaire's plan and must be modified, revised or changed, as appropriate, to address specific issues, needs or concerns related to the Toll Roads that develop over time.

D.3.3. Performance Time Frames

The following table establishes the minimum frequency that the Safety Plan is to be written and updated by the Concessionaire, submitted to the Commonwealth, and Approved by the Commonwealth.

Plan	Minimum Frequency of Occurrence
Safety Plan	Yearly

D.3.4. Acceptance Criteria

The Safety Plan will be considered acceptable for a particular year when the Plan has been written and updated by the Concessionaire, submitted to the Commonwealth and Approved by the PRHTA.

D.4. Safety Plan Preparation Requirements

The following is a general outline of the Concessionaire's responsibilities that should be included and addressed when creating the Safety Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that must be included and addressed in the Safety Plan.

The Safety Plan must include provisions for annual and periodic updates, training and supervision of staff and adherence to all policies and procedures.

D.4.1. Introduction

This section is to contain a brief introduction to the Safety Plan that includes: a description of the persons or agencies involved in the preparation and review of the Safety Plan; the designated individual(s) who are charged with the implementation and maintenance of the Safety Plan; and the overall goals and objectives of the Safety Plan. At a minimum, this section is to contain the following sub-sections:

- Purpose.
- Scope and applicability.
- The methodology used to develop and implement the Safety Plan.
-

D.4.2. System Location & Emergency Contact Protocol

This section is to provide an overview and system position location of the Toll Roads; a background of the anticipated work activities and hazards; and the protocol and procedures that must be followed during an event that results in an injury. At a minimum, this section is to contain the following:

- Location plan map of the Toll Roads and all designated Emergency Care Facilities.
- General description of the location of the Toll Roads including its entrance and exit features.
- Emergency/Contingency protocol and procedures.
- Emergency/Contingency Care Facility Information.
- Injury/Illness/Incident Reporting and Notification.

D.4.3. First-Aid and Medical Treatment

The Concessionaire is responsible for maintaining a safe environment that may include the need for emergency medical attention. The Safety Plan should include sections that describe the provisions for first aid and emergency medical treatment, at a minimum, as follows:

- Training for first aid and emergency medical treatment.
- Emergency First Aid.
- Emergency Medical Treatment.

D.4.4. Safety Roles and Responsibilities

This section must identify the personnel and responsible staff which will implement, maintain, and enforce the Safety Plan rules and policies.

The Plan must include provisions to ensure that all employees are able to understand their specific assignment and any associated tasks with regards to the Safety Plan. Duties and responsibilities must be clearly defined for personnel within the Toll Roads, including the following positions:

- Health and Safety Manager
- Project Manager / Site Safety Manager
- Project Personnel
- Construction Foreman
- Contractor's Safety Representative

D.4.5. Training

This section must identify and include comprehensive provisions for the training of all persons working within the Toll Roads, and must include the following at a minimum:

- The development of safety related training programs to ensure all employees receive regular direction.
    - General training to cover hazards basic to all places of employment.
    - Specific training to cover hazards that are unique to each employee's job assignment including, but not limited to, execution of work, materials application, and equipment operations.
    - New employee health and safety orientation and training.
    - New or updated process training for new or previously unrecognized hazards or when a new or previously unrecognized hazard is identified.

- Procedures to ensure that each employee understands and adheres to safe and healthy work practices and procedures.
- Recurring training programs to ensure that all employees remain abreast of safety and health regulations affecting the operations they are involved with or supervise.
- Policies that ensure each employee is provided with the equipment necessary to complete assigned tasks safely.
- Policies and procedures that address the counseling and training of employees to minimize the human factors that can contribute to injury or illness.

D.4.6. Job Hazard & Safe Work Standards

This section must identify, define the practices and procedures, and detail all hazards and their prevention which may be encountered while performing work within the Toll Roads. Included in this section must be all anticipated activities (including maintenance, construction, and operations), and all unanticipated activities (including Emergency Events and Hazardous Material/Incident or Spills Events). At a minimum, the standards are to address the following hazards:

- Anticipated Routine Physical Hazards
  - Abrasive Blasting
  - Aerial Lifts
  - Asbestos Operations
  - Back Injury Prevention
  - Cold Stress Recognition and Control
  - Corrosive and Reactive Materials
  - Confined Space Entry
  - Demolition Operations
  - Dust Control
  - Drilling Safety Guidelines
  - Electrical Safety
  - Environmental Material Compliance (MSDS & VOC)
  - Excavation & Trench Safety
  - Fall Protection
  - Fire Prevention
  - General Site Rules and Requirements
  - Flammable and Combustible Liquids and Gases
  - Hand and Portable Equipment

- Heat Stress Recognition and Control
- Heavy Equipment Operations
- Housekeeping
- Lead in Construction
- Marine Safety and Boat Operation
- Material Storage & Handling
- Noise and Hearing Conservation
- Nuclear Density Gauge Safety
- Office Ergonomics
- Portable Ladders
- Railroad On-Track Safety
- Respiratory Protection
- Rigging
- Scaffolding
- Subcontractor Health and Safety Requirements
- Utility Clearances and Isolation
- Vehicle Safety program
- Work over Water

- Unanticipated Physical Hazards
  - Biological Hazards & Exposure
  - Chemical Hazards & Exposure
  - Environmental Waste Operations & Exposure
  - Explosive Atmospheres
  - Hazardous Materials/Dangerous Goods Shipping
  - Hazardous Material/Incident or Spills: The special procedures for notification, handling and removal of hazardous materials caused by incidents shall reference the specific portions of the Emergency Management and Operation Plans addressed in Volume II, Chapter J, "Emergency Management & Operations Plan".
  - Radioactive Exposure
  - Testing and Sampling Practices

D.4.7. Personal Safety

This section must address the personal safety procedures that must be adhered to along with personal safety devices that must be provided to complete assigned tasks. Items considered for personal safety include personal protective equipment and include but are not limited to: reflective vests: hard hats; protective clothing; protective footwear; hearing protection; vision protection; respiratory protection; and any other necessary equipment as specified in the Safety Plan to protect the well-being of the worker within the Toll Roads. The Safety Plan must address the following for each article of personal safety:

- Situations that require the personal protective equipment.
- Limitations of the protective equipment.

D.4.8. Decontamination Procedures

This section must, in the event of a Hazardous Material/Incident or Spill, include directives for decontamination procedures. This section must incorporate the applicable and appropriate sections of Volume III – Environmental Management Manual and must conform to and work in conjunction with the Environmental Management Plan. Items must include, but are not limited to, the following tasks:

- Sanitation
- Decontamination – Medical Emergencies
- Decontamination of Tools & Equipment

D.4.9. Work Zone & Site Safety

This section must identify the tasks, procedures and policies required for when Work Zones for construction and/or maintenance activities are present whether in the field or in a Facility. The Safety Plan is to contain, at a minimum, sub-sections addressing the following issues:

- General Work Zone activities and requirements
  - Signs and Bulletin Boards
- Safety Regulations – Vehicles and Drivers
  - Drivers and Operators
    - ➢ Parking Vehicles
    - ➢ Backing Vehicles
    - ➢ Hand Signals
    - ➢ Vehicles or Equipment Breakdowns
    - ➢ Training
    - ➢ Licenses & Certifications
  - Construction Equipment and Vehicles
    - ➢ Protective Vehicles (shadow, barrier, and advance warning)

- ➢ Field Equipment
- ➢ Equipment Lights, Warning Signs and Flags
- ➢ Towing and Safety Chains
- ➢ Safety Equipment in Vehicles

- Transporting Equipment & Materials
- Managing Explosive and Flammable Materials
- Access to Median Work Zones
- Night Work
- Shop Equipment
  - o Welding Equipment
  - o Shop Tools
- Worker Exposure Reduction
  - o Planning Work
  - o Working Near Moving Traffic
  - o Facing Traffic
  - o Crowding of Workers
  - o Work in Tunnels
  - o Crews Working Across From Each Other
  - o Warning Systems - Signs
  - o Warning Systems – Flashing Arrow Signs
  - o Warning Systems – Flashing Amber Lights
  - o Warning Systems - Lookouts
- Vehicle Intrusion Alarms

D.4.10. Work Zone Traffic Control

One of the most important items that must be addressed in the Safety Plan is the requirements, procedures, and policies for Traffic Control when work is proposed to occur on, adjacent to or near areas where traffic is present. The Safety Plan must either solely address Traffic Control; or make specific reference to the applicable and appropriate sections of Volume II, Chapter H, "Traffic & Travel Management Plan". The Safety Plan must include the requirement that each operation be reviewed and approved to determine the appropriate Traffic Control Plan prior to the start of work.

The following subsections address many of the parameters that should be included in the Safety Plan when discussing the requirements for work in or near traffic, but are not intended to be either representative or all inclusive:

- Traffic Control Plan documentation requirements
- Warning Signs
- Lanes Closures

- Exceptions to Lane Closure Procedures
  - Limited Work on the Traveled Way, Without Lane Closures
  - Pavement Marking and Re-lamping Operations.
  - Moving Shoulder Operations
- Shoulder Closures
- Moving Lane Closures
- Delay of Vehicles
- Obscured Visibility

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E. EQUIPMENT PLAN

E.1. Definitions

Amber Flashing Light: Device used to warn the vehicle operators and pedestrians of a danger area, a construction active area or a warning for change in traffic patterns.

Equipment Manager: person in charge of equipment used by the Concessionaire. The duties include purchasing, maintenance, repair, inventory control, storage, cleaning, and liquidation.

Flashing Arrow Board: An electronic device containing multiple lamps which are used to direct traffic in a selected direction and must be capable of indicating change in direction, and varying intensity of the arrow when required.

Retro-reflective Tape: A material attached to vehicles and equipment to increase visibility of objects during both nighttime and low light conditions. Retro-reflection occurs when a surface returns a portion of directed light back to its source.

E.2. References

All stated references must be the most current version, or the document known to have succeeded or replaced the original stated herein:

- Occupational Health and Safety Act (OSHA) Guidelines.
- OSHA Publications List via Catalog or Website, OSHA (Website: http//:www.osha.gov/pls/publications/pubindex.list).
- "Manual on Uniform Traffic Control Devices (MUTCD)", FHWA.
- "Puerto Rico Vehicle and Traffic Law (2000)", Commonwealth of Puerto Rico.

E.3. Policy for Equipment Plan

E.3.1. Objective

The objective of the Equipment Plan is to ensure that the Concessionaire has addressed the responsibilities for identifying, planning, scheduling, supervising, maintaining, operating and controlling of all equipment utilized within the Toll Roads via a written and Approved Plan.

E.3.2. Responsibility of Concessionaire

The Equipment Plan is a document to be developed, written and carried out by the Concessionaire, and must indicate that the Concessionaire is solely responsible for the management, operation and maintenance of all equipment that is required for work within both the Toll Roads. Further, the Concessionaire's responsibilities include, but are not limited to, the following:

- Equipment Policy Development
- Equipment Status and Inventory
- Warranty Claims
- Operator and Mechanic Training
- Licensing of Vehicles & Equipment
- Equipment, Vehicular and Operator Insurance
- Subcontractor Equipment Conformance

The Concessionaire is responsible for ensuring that all equipment is operated and maintained in accordance with the manufacturer requirements, and with well-established policies and procedures.

The Concessionaire and its subcontractors must obey all traffic laws including the posted speed limits when utilizing vehicles or other equipment.

This Chapter includes a general outline of the proposed Equipment Plan. This outline is intended only to provide guidance in the preparation of the Concessionaire's plan and must be modified, revised or changed, as appropriate, to address specific issues, needs or concerns related to the Toll Roads that develop over time.

E.3.3. Performance Time Frames

The following table establishes the minimum frequency that the Equipment Plan is to be written and updated by the Concessionaire, submitted to the PRHTA, and Approved by PRHTA.

Plan	Minimum Frequency of Occurrence
Equipment Plan	Yearly

E.3.4. Acceptance Criteria

The Equipment Plan will be considered acceptable for a particular year when the Plan has been written and updated by the Concessionaire, submitted to the PRHTA and Approved by PRHTA.

E.4. Equipment Plan Requirements

The following is a general outline of the Concessionaire's responsibilities that should be included and addressed when creating the Equipment Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that must be included and addressed in the Equipment Plan.

The Equipment Plan must include provisions for annual and periodic updates, training and supervision of staff and adherence to all policies and procedures.

E.4.1. Introduction

This section is to contain a brief introduction to the Equipment Plan that includes a description of the equipment needs of the Toll Roads and must address all of the related maintenance and operational needs of the Toll Roads. In addition, this section should briefly state the overall goals and objectives of the Equipment Plan and discuss the duties and responsibilities of the Concessionaire related to equipment, the Equipment Manager and the implementation and maintenance of the Equipment Plan.

E.4.2. Leased and Rented Equipment

The Concessionaire is permitted to rent, lease, or outsource equipment and services, all of which must be defined and described in this section of the Equipment Plan. This section must also include the Concessionaire's provisions and requirements for rented, leased, or outsourced equipment, including that the equipment conforms to all of the requirements stated in the Equipment Plan including demarcation, licensing, registration and warning systems.

E.4.3. Operators Registration & Licensing

This section of the Equipment Plan must clearly indicate that equipment operators meet all current Commonwealth registration and licensing requirements and that all operators possess valid operator's and driver's license with all special endorsements required for the specific type and classification of vehicle or equipment operated.

E.4.4. Equipment Licensing and Registration

This section of the Equipment Plan must clearly indicate that the licensing and registration for all vehicles and equipment (either owned by the Concessionaire or by its Contractors) meets all current Commonwealth requirements stated in the Puerto Rico Vehicle Code for registration and licensing.

E.4.5. Vehicle Safety Equipment

The Equipment Plan must indicate the type, kinds and amounts of vehicle safety equipment for all vehicles used within the Toll Roads. Vehicle safety equipment to be considered may include, but is not limited to, the following: fire extinguishers, pry bars, flares, special mirrors, fuel system protection, safety triangles or markers, slow moving vehicle/warning triangle emblems, and first-aid kits.

E.4.6. Equipment Demarcation

This section of the Equipment Plan must include a demarcation description for all equipment, either owned by the Concessionaire or its Contractors, that is utilized within the Toll Roads. The Concessionaire must include demarcation information that addresses the following at a minimum:

- Vehicle color(s).
- Equipment numbering.
- Vehicle class and category.
- Operator decal placement and design.
- Retro-reflective application locations, sizes, etc.

All equipment used for the management, operation or maintenance within the Toll Roads must be identified with an equipment number.

This section must include the demarcation present on all equipment types expected in the operation and maintenance of the Toll Roads, including but not limited to the following: Passenger vehicles, light-duty utility vehicles, heavy-duty truck vehicles, street sweepers, construction equipment, and other road equipment including trailers.

Miscellaneous small equipment such as mowers, trimmers, etc. that are utilized within the Toll Roads are exempt from the demarcation requirements but must always present a clean and professional appearance.

E.4.7. Equipment Warning Systems

E.4.7.1. Amber Warning Lights and Flashing Arrow Boards

This section must include the number, size, location, and type of all warning lights and flashing arrow boards attached to the equipment. The information must address all maintenance and management vehicles, and construction equipment. All vehicles which operate within the Toll Roads must be equipped with at least one amber warning light visible to traffic. The Equipment Plan must include the information for all other requirements for additional amber warning lights as applicable to federal, Commonwealth and Local requirements.

E.4.7.2. Red, Green & Blue Warning Lights

This section of the Equipment Plan should include the restriction of the use of red, green and/or blue colored warning lights, which are prohibited.

E.4.7.3. Back-Up Alarms

This section of the Equipment Plan must include information for the Back-up alarms, which are required on all of the Concessionaire's vehicles that operate within the Toll Roads. These vehicles include, but are not limited to, pick-ups, vans, SUV's, trucks, construction equipment, etc.

E.4.8. Training

This section of the Equipment Plan must include the training requirements and certifications for all personnel (whether they are personnel of the Concessionaire or its Contractors) whose duties include operation or supervision of equipment. In addition, this section must indicate that the personnel have completed the most current training, possess the proper and current license, and possess the current certification and qualifications to operate the equipment.

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F. TOLL COLLECTION AND OPERATIONS PLAN

F.1. Definitions

AutoExpreso System: The trade name of the Electronic Toll Collection System employed by PRHTA as of the Effective Date of the Concession Agreement.

Commercial Back Office (CBO): The commercial system that processes the information received from the TBO and generates and transmits the reports to the banking system.

Electronic Toll Collection (ETC): A toll collection system that is reliant upon transponder technology in vehicles, and receivers mounted at the Toll Plazas, that electronically indicates, registers, and electronically reconciles the appropriate deduction for the proper toll fee incurred by the class of vehicle.

Transactional Back-Office (TBO): A central system that gathers all transactions received from the Toll Points, processes all information received, sends acknowledge and configuration tables, and supervises the correct run of the system at every Toll Point.

Toll Collections and Operations: All activities related to revenue collection from vehicles utilizing the Toll Roads, and the recording, auditing, and processing of that revenue, including lane operations.

Toll Collection System (TCS): The electrical and electronic equipment, information management, and system to record and verify the revenue and vehicle classification, including both ETC and ORT systems.

Toll Point (TP): It means the physical gantry and the RSS with all its elements to receive the information required to process the toll transaction.

Toll Zone (TZ): The Toll Zone is the section of the highway to be tolled and it could be composed by one or more Toll Points and all the technical infrastructure needed to communicate with the TBO.

Open Road Tolling Systems (ORT): It is composed by the Toll Zones of the Toll Roads and the TBO.

Uninterruptible Power Supply (UPS): Power supplies that operate in parallel with the electric utility sources and supply their load without interruption when and if the utility source fails. Such power supplies must be utilized to meet the operating needs of the computers and critical elements of the TCS.

F.2. References

All stated references must be the most current version, or the document known to have succeeded or replaced the original stated herein:

- Original Equipment Manufacturers (OEM) specifications, maintenance manuals, handbooks, procedures, guides, etc. as applicable for all installed equipment, systems and components.

F.3. Policy for Toll Collection and Operations Plan

F.3.1. Objective

The objective of the Toll Collection and Operations Plan is to ensure that the Concessionaire has considered, trained, addressed and planned for all toll operation activities and has established protocols, procedures, responsibilities and guidelines to maintain and operate the TCS for the Toll Roads in accordance with a written and Approved plan.

F.3.2. Responsibility of Concessionaire

The Toll Collection and Operations Plan is to be developed, written, and carried out by the Concessionaire and must be consistent with all applicable local, Commonwealth and federal laws, codes and requirements governing the collection of tolls and tollway systems. The Toll Collection and Operations Plan is to be updated and submitted annually and must be Approved by PRHTA.

The Toll Collection and Operations Plan must indicate that the Concessionaire always provides administrative and operational services, year-round. In addition, technical support personnel must be available at all times to provide software maintenance and administration, hardware maintenance and/or component replacement and data and system back-up maintenance.

All TCS operational and technical support services provided must be in accordance with, and in strict adherence to, the approved TCS user manuals, equipment manufacturer's recommendations and standard operating procedures for computer and network support services, as stated in the Reference Documents.

The TCS system and its data storage and archival capabilities must be operationally checked on a daily basis and made fully available to PRHTA. The system components must be maintained and tested as required to ensure the TCS continually remains fully operational. Redundant or replacement parts must be available on-site to facilitate immediate replacement of mal-functioning components.

The TCS relies on computer hardware, peripheral equipment and operating system software which are continuously being advanced in technology. Accordingly, technical support services must include operational planning and upgrade installation of equipment components and operating systems software. The upgrade planning and installation shall include the transfer/recovery of

archived data to new storage media, replacement of computer hardware and components systems and the component part inventory upgrade.

As of the date of the Toll Road Concession Agreement, the ETC system used on the Toll Roads is named AutoExpresso and consists of two types of collection systems, an ETC system and an ORT system. The Toll Road users can recharge their balances through the In-Lane Replenishment lanes (ILR) installed at the toll booths and the toll transaction is processed and allocated to that user when the Toll Road users passes through the ETC channelized toll lanes at the toll plaza. In some toll plazas, an Open Road Tolling system with gantries has already substituted the channelized lanes and, after the substantial completion of the RSS Improvement Project, only the ILR lanes will be in use at the toll plaza and the toll transaction will be assigned when the Toll Road users pass through the toll gantry at the Toll Point.

This Chapter includes a general outline of the proposed Toll Collection and Operations Plan. This outline is intended only to provide guidance in the preparation of the Concessionaire's Plan and must be modified, revised or changed, as appropriate, to address specific issues, changes in systems, and needs or concerns related to the Toll Roads that develop over time, including ETC and ORT systems.

The Concessionaire must include, among others, the following TCS operations in the Toll Collection and Operations Plan:

- Toll Lane and Toll Point Traffic Counting and Vehicle Classification Recognition Data.
- Video-based facility surveillance system.
- Video image recording and retention.
- Toll Plaza Lane Control and Monitoring from the Toll Plaza Control Center.
- Toll Plaza Data Center host, storage and back-up data systems.
- Toll Point Control and Monitoring.
- Transactional Back-Office operation and monitoring.
- Interfaces operation and monitoring between Toll Points and TBO.
- Interfaces operation and monitoring between TBO and CBO.
- Uninterruptible power supplies (UPS).
- Security System.
- Remote data access, system reporting and back-up.
- Communication system.
- Touch Screen Toll Revenue Collection Data by Toll Lane, as applicable.

F.3.3. Performance Time Frames

The following table establishes the minimum frequency that the Toll Collection and Operations Plan is to be drafted and updated by the Concessionaire and submitted to the PRHTA for review and Approval.

Plan	Minimum Frequency of Occurrence
Toll Collection and Operations Plan	Yearly

F.3.4. Acceptance Criteria

The Toll Collection and Operations Plan will be considered acceptable for a particular year when the Toll Collection and Operations Plan has been drafted and updated by the Concessionaire and reviewed and Approved by the PRHTA.

F.4. Toll Collection and Operations Plan Requirements

The following is a general outline of the Concessionaire's responsibilities that should be included and addressed when creating the Toll Collection and Operations Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that must be included and addressed in the Toll Collection and Operations Plan.

The Toll Collection and Operations Plan must include provisions for annual and periodic updates, interface and auditing with PRHTA, training and supervision of staff and adherence to all policies and procedures.

F.4.1. Introduction

This section should briefly introduce the purpose of the Toll Collection and Operations Plan and set out the overall goals and objectives of the Toll Collection and Operations Plan. The introduction should discuss the title, functions, roles, duties and responsibilities of each person that the Concessionaire identifies as being involved with toll collection and operations.

F.4.2. ETC Toll Operations

ETC Toll Operations consist of a two-tier system, with one on a local functional basis, and the other on a system-wide functional basis. The local Toll Operations Control Center is generally located at each of the 18 toll plaza facilities. The local system then inputs its data in the AutoExpresso system-wide toll operation.

This section of the Toll Collection and Operations Plan must include a description of the function, equipment, personnel and interface of data with PRHTA, as well as the role each performs in ETC toll collections and operations. The Toll Collection and Operations Plan must also include subsections on the following items, at a minimum:

- Video-Displays of Facility Surveillance.
- CCTV Video Camera Monitor Station.
- Toll Lane Control Monitors.
- Toll Collection System Computer Terminal.
- Toll Lane Open/Close Indicator Controls.
- Intercom Communications with each Toll Booth.
- Emergency Response System Monitor and Communications.

F.4.3. ORT Toll Operations

ORT Toll Operations consist of a two-tier system, with one on the different Toll Points, and the other on an unique TBO. The TBO, then inputs its data in the AutoExpresso CBO.

This section of the Toll Collection and Operations Plan must include a description of the function, equipment, personnel and interface of data with PRHTA, as well as the role each performs in ORT toll collections and operations. The Toll Collection and Operations Plan must also include subsections on the following items, at a minimum:

- RSS operations, capturing all the vehicles, LPN and Tags passing through the RSS
- TBOS, data validation and automated Transaction record administration, processing, and packaging
- Interfaces to the CBOS for Transactions data exchange (including images), list management, and
- Toll rate management
- Facilities maintenance of the gantries and technical shelters (cabinets)
- Electrical and mechanical maintenance at the gantries
- Maintenance of access control systems, fire detection and suppression systems at the TBOS
- Primary and Secondary site
- Ventilation and cooling (HVAC) system maintenance at the TBOS Primary and Secondary site
- Diesel generator and fuel deposit at the TBOS Primary and Secondary site

- Contractor Equipment and Services located at the RSS gantries
- Gantries and Cabinets
- Toll operations center (TBOS Primary Site)
- TBOS Secondary DR Site
- Network Communications
- Power wiring and cable ducting, from the RSS gantries to the existing main electrical panel at the existing Toll Plaza, connectivity of the servers to the main electrical panel, automatic transfer switch, connectivity to the existing diesel generator, portable / mobile generators

F.4.4. Local Toll Operations Data Center and Toll Zone Operations

The local Toll Operations Data Center is located in each of the Toll Plazas that employ the AutoExpreso ETC System. The data center houses the TCS and UPS and provides the electronic storage; information; verification; power supply source; and computation tools to assist the Concessionaire's management and monitoring of ETC toll collections and lane operations on a continuous basis; in a secure, humidity and climate-controlled setting.

The majority of the equipment for the ORT Systems are located in the Toll Zones closer to the gantries, but the local Toll Operations Data Center also provides some services to the ORT Systems like UPS, electronic storage, communications, and others.

This section of the Toll Collection and Operations Plan must also include subsections on the following items, at a minimum:

F.4.4.1 General Description and Layout

This section of the Plan must include a description of the function, equipment, personnel and physical layout of the local data control center and the Toll Zones and the role each performs in toll collections and operations.

F.4.4.2 Hardware

This section of the Toll Collection and Operations Plan must include a description and inventory of the computer hardware in the local data center and the Toll Zones and the upgrade and maintenance procedures. The hardware descriptions consist of the network system, data and processing capabilities, and the failsafe backup and redundant systems. This section must also include procedures for data storage and the capabilities for secure remote access.

F.4.4.3 Software

This section of the Toll Collection and Operations Plan must include the current version information of all software utilized by the TCS, and all implemented and planned upgrades and maintenance procedures for such software.

This section must include the network operating system, server software, and the data collection processes used to produce traffic and financial reports. Currently, the TCS applications are designed to produce the following reports: Audit, Traffic, Administrative, System and Maintenance.

This section must include the procedures and protocol for technical support, which must be provided on a continuous on-call basis.

F.4.4.4 UPS and Backup Storage Devices

This section of the Toll Collection and Operations Plan must include the description, frequency and protocol utilized for the uninterruptible power source (UPS), and the archival functions of the data collected. The section must include information and provide details on how the system functions when the permanent archive capabilities are employed. Additionally, the section must include the maintenance and operation procedures utilized to provide the UPS with continual operation, including during power failures.

F.4.5. PRHTA System-Wide Toll Operations Central Control Center

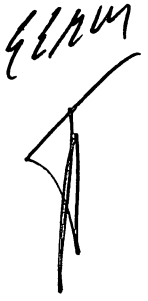
This section of the Toll Collection and Operations Plan must include how the Concessionaire will interface and communicate the electronic data with the PRHTA. This section of the Toll Collection and Operations Plan must also include the procedures and frequency of audits by the PRHTA of the toll collection data. Also, this section must describe the "open accounting" nature of the Toll Collection System with PRHTA.

F.4.6. ILR Lanes, ETC Lanes and ORT Operations

This section of the Toll Collection and Operations Plan must include the procedures employed and followed with regard to the operation of the toll lanes (ILR, ETC or ORT lanes). The Toll Collection and Operations Plan must address, without limitation, the following procedures, at a minimum:

- Supervision of the shifts, lanes, and plazas.
- General items of responsibility during operating and non-operating toll lanes.
- General toll booth operations and appearance.
- Operation of manual terminal lanes.
- Operation of automatic vehicle identification lanes (if and when implemented).

- Lane Opening and Closing Procedures.
- Traffic queue supervision and management.
- Treadles, light curtain and detector loop operation.
- Classification of vehicles.
- Transaction receipts/receipt printer operation.
- User toll display operation for each Toll Road.
- Traffic control gate operation.
- Lane status gate.
- TBO operations.
- TBO image review and manual consolidation.
- Overhead lane status message sign.
- Disable vehicles/lane accident.
- Overweight/Oversized vehicles.
- Exceptional vehicles.
- Emergency procedures.
- Operation in degraded modes.
- Reporting.



F.4.7. Attendant Operations

This section of the Toll Collection and Operations Plan must include the procedures employed and followed regarding the work operations of the toll attendants. The Toll Collection and Operations Plan must address, without limitation, the following procedures, at a minimum:

- General items of responsibility.
- Attendant appearance.
- Shift management and supervision.
- Traffic queue supervision and management.
- General toll booth operations and appearance.
- Attendant safety.
- Attendant training.
- Customer service.
- Overweight/Oversized vehicles.
- Booth exits and entrance procedures.

- Lane replenishment deposit preparation.
- User display operation for each Toll Road.
- Transaction receipts/receipt printer operation.
- Replenishment verification.
- Cash handling.
- Change requests and receipting procedures.
- Counterfeit money detection.
- Toll Road users requiring/requesting the need for assistance.
- Unusual occurrences.
- Disable vehicles/lane accident reporting.
- Lane run-through/violation procedures.
- Robbery/Hold-up reporting.
- Emergency procedures.

F.4.8. Toll Collection Administration

This section of the Toll Collection and Operations Plan must include the procedures employed and followed with regard to the collection of tolls; the facility protocol during armored car service; and all other administrative duties associated with tolls. The Toll Collection and Operations Plan must address, without limitation, the following procedures, at a minimum:

- General items of responsibility.
- Non-revenue vehicles.
- Vehicle verification.
- Insufficient fund collection and balanced due.
- Violation reporting.
- Cash handling monitoring.
- Depository procedures.
- Facility lock-down procedure for armored car transfers.
- Drawer reconciliation.
- Electronic toll collection.
- TCS System training and operation.
- Customer service reconciliation.
- Security.

F.4.9. Toll Accounting

This section of the Toll Collection and Operations Plan must include the procedures employed and followed with the accounting and reconciliation of the tolls, as well as the ability for PRHTA to access and audit the Toll Collection System. The Toll Collection and Operations Plan must address, without limitation, the following procedures, at a minimum:

- Vehicle verification.
- Traffic volume, type and time reconciliation and reports.
- Non-revenue vehicle account.
- Vehicle verification.
- Banking errors.
- Audits.
- Funds reconciliation.
- Cost accounting.
- Deposit preparations and verification.
- TCS System operations and report generation.

F.4.10. Toll Incident Events

This section of the Toll Collection Plan must include procedures for addressing events and incidents associated with toll collections. The Toll Collection and Operations Plan must address, without limitation, the following procedures, at a minimum:

- Unusual occurrences.
- Disable vehicles.
- Lane accidents.
- Vehicle collisions.
- Lane run-through/violation procedures.
- Robbery/Hold-ups.
- Drunk drivers.
- Road rage.
- Emergency procedures.

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G. FACILITIES OPERATIONS PLAN

G.1. Definitions

Electrical Systems: Systems, elements and components that are contained in Facilities, and which supply, distribute and function by the use of electricity. These systems include, but are not limited to: substations, meters, wiring, service panels, individual circuits, generators, transformers, lighting, motor control units, back-up generators and systems, emergency lighting, etc.

Facility: Within the Toll Roads; the buildings, houses, and garages that contain administrative, support and logistical services; and the equipment, components, elements and systems that are housed within each such location.

Fire Protection Systems: Systems, elements and components that are intended to assist in the prevention and suppression of fire. These systems include, but are not limited to: fire extinguishers, exit signage, fire alarms, sprinkler systems, heat sensors, smoke detectors, etc.

Life Safety Systems: Systems, elements and components that are contained in Facilities that promote health, safety, and life preservation. These systems include, but are not limited to: communication systems; security systems; fire suppression and prevention systems; and medical attention stations; etc.

Mechanical Systems: Systems, elements and components that are contained in Facilities that supply and distribute ventilation and climate control. These systems include, but are not limited to: HVAC systems and components, thermostats, boilers, combustion chambers, dampers, heat exchangers, furnaces, air handling units, fresh air intakes, ductwork, return fans, zone dampers, exhaust fans, chillers/condensers, pumps, etc.

Plumbing Systems: Systems, elements and components that are contained in Facilities, and which supply, distribute and provide potable water, or dispose of wastewater. These systems include, but are not limited to: valves, piping, water heaters, water storage tanks, faucets, toilets, sinks, showers, booster pumps, ejector pumps, sanitary piping, hot/cold water piping, etc.

Public Service Area: The portion of the Facility that is open to the public. This area contains restrooms, information, and may also include food and drink concession machines.

Security Systems: Systems, elements and components that promote safety and security of the people and facilities from outside parties. These systems include, but are not limited to alarms, cameras, monitor stations, intercoms and radios, access control, etc.

Treatment Plants: The facilities that contain the equipment, components, elements and systems to treat the water and wastewater for other Facilities.

G.2. References

All stated references must be the most current version, or the document known to have succeeded or replaced the original stated herein:

- International Building Code, IBC.
- "National Fire Codes", NFPA.
- "National Electrical Code", NFPA.
- "National Plumbing Code, ANSI.
- "Uniform Plumbing Code", WPOA.
- "Uniform Heating and Cooling Code", WPOA.
- "Boiler and Unfired Pressure Vessel Code, ASME.
- "Chimneys, Fireplaces and Vents Code", NFPA.
- "International Mechanical Code".
- Americans with Disabilities Act", U.S. Department of Justice.
- Occupational Health and Safety Act (OSHA) Guidelines
- OSHA Publications List via Catalog or Website, OSHA (Website: http//:www.osha.gov/pls/publications/pubindex.list).
- National Standards, Specifications and Regulations as applicable, from the following organizations:
    - National Electrical Manufacturers Association (NEMA).
    - American Waterworks Association (AWWA).
    - American National Standards Institute (ANSI).
    - American Society for Testing and Materials (ASTM).
    - Federal Communications Commission (FCC).
    - Underwriters Laboratory (UL).
- Original Equipment Manufacturers (OEM) specifications, Maintenance Manuals, Handbooks, Procedures Guides, etc. as applicable for all installed equipment, systems and components.

G.3. Policy for Facilities Operations Plan

G.3.1. Objective

The objective of the Facility Operations Plan is to ensure that the Concessionaire has established and is implementing predetermined processes and procedures in order to sustain the planned, organized and continuous operation of the Facilities within the Toll Roads. The operation of the Facilities includes the tasks aimed at supervising and organizing, as well as the short-term and long-term tactical and strategic needs of each Facility and its components. Meeting and performing these objectives, expressed through a written Plan, will ensure that the Facilities remain safe, habitable, efficient and productive in their function of supporting the operation of the Toll Roads.

G.3.2. Responsibility of Concessionaire

The Facilities Operations Plan is a document to be written, developed and carried out by the Concessionaire, and must be consistent with all applicable Local, Commonwealth and Federal laws, codes and requirements governing the operations of Facilities and their components and systems. The Facilities Operations Plan must incorporate the applicable and appropriate sections of Volume III – Environmental Management Manual and must conform to and work in conjunction with the Environmental Management Plan. The Plan is to be updated and submitted annually and must receive Approval by the Commonwealth.

The Facilities Operations Plan must address the operation of the following Facilities (See Table G3.2), their components and elements, and all future Facilities, in their support of the Toll Roads. This includes the Toll Plaza Facilities, Public Service Area and nearby Maintenance Facilities, including all associated buildings, sheds, yards, material handling areas, out-buildings, etc.

Table G3.2

Toll Plaza, Public Service Area & Maintenance Facility Name	Kilometer Location
Guaynabo	PR-20, Km 7.3 Guaynabo
Ceiba	PR-53, Km 4.3 Ceiba
Humacao Norte	PR-53, Km58.3 Humacao
Humacao Sur	PR-53, Km 28.4 Humacao
Guayama	PR-53, Km 82.1 Guayama
Húcar Salinas	PR-53, Km 91.3 Salinas
Plaza Carolina	PR-66, Km 6.3 Carolina
Rampa Carolina Norte	PR-66, km 6.1 Carolina
Rampa Carolina Sur	PR-66, Km 6.1 Carolina
Rio Grande	PR-66, Km 16.8 Rio Grande
Montehiedra	PR-52, Km. 3.8 San Juan

Toll Plaza, Public Service Area & Maintenance Facility Name	Kilometer Location
Caguas Norte	PR-52, Km 14.2 Caguas
Caguas Sur	PR-52, Km 23.5 Caguas
Rampa Salinas, Salida 65	PR-52, Km 66.2 Salinas
Juana Diaz Este (Cotto Laurel)	PR-52 Km. 93.8 Juana Diaz
Juana Diaz Oeste (Rio Cañas)	PR-52, Km 85.6, Juana Díaz
Salinas	PR-52 Km. 57.9 Salinas
Ponce	PR-52 Km. 105.4 Ponce

Even though the weight stations of Salinas and Juana Diaz are under the concession limits because the highway and its ancillary systems is considered as one, the operations and maintenance of the weight stations will be HTA responsibility.

The Plan must address how the Concessionaire will operate the following systems, and how the continual operation impacts the function of the Toll Roads:

- Operation of Facilities used for toll collection work.
- Operation of Facilities used for administration, security, and public access.
- Operation of all systems dedicated to supporting the Facilities themselves including Life Safety, Mechanical, Utility, Plumbing, Electrical, ITS, Communication, Emergency, Fire, etc.

Given that the Toll Roads are operational 24 hours-a-day, every day of the year, the continual and efficient operation of the Facilities and the systems that support the Toll Roads cannot be compromised. The primary goals in preparing the Facilities Operations Plan must be the management of Facilities operations in a manner that minimizes deterioration and unforeseen breakdowns, and that ensures compliance with all applicable Local, Commonwealth and Federal Laws, rules and requirements. The Plan is intended to address the Concessionaire's efforts to manage its Facilities operations, and must reflect the need for maintenance; advance planning for upgrading or replacement of systems within the Toll Roads; positioning and maintaining backup or auxiliary equipment; performing timely replacements of unreliable equipment; and anticipating staffing needs to support Facilities operations in order that the Facilities will continually support all vital operations within the Toll Roads.

The Facilities Operation Plan must include those services that the Concessionaire have to provide to the facilities of police stations (located in Ceiba, Salinas, Carolina and Caguas Norte Toll Plazas) and medical emergency corps (located in Carolina and Caguas Norte Toll Plazas) in accordance with the existing agreements between PRHTA and Police Department of Puerto Rico; and between PRHTA and Puerto Rico Medical Emergency Corps on the Closing Date.

This Chapter includes a general outline of the proposed Facilities Operation Plan. This outline is intended only to provide guidance in the preparation of the Concessionaire's Facilities Operations Plan and must be modified, revised or changed, as appropriate, to address specific issues, needs or concerns related to the Toll Roads that develop over time.

G.3.3. Performance Time Frames

The following table establishes the minimum frequency that the Facilities Operations Plan is to be written and updated by the Concessionaire, submitted to the PRHTA and Approved by PRHTA..

Plan	**Minimum Frequency of Occurrence**
Facilities Operations Plan	Yearly

G.3.4. Acceptance Criteria

The Facilities Operations Plan will be considered acceptable for a particular year when the Plan has been written and updated by the Concessionaire, submitted to Commonwealth and Approved by the Commonwealth.

G.4. Facilities Operations Plan Preparation Requirements

The following is a general outline of the Concessionaire's responsibilities that must be included and addressed when creating the Facilities Operations Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that should be included and addressed in the Facilities Operations Plan.

The Facilities Operations Plan must include provisions for annual and periodic updates, training and supervision of staff and adherence to all policies and procedures.

G.4.1. Introduction

This section should briefly introduce the purpose of the Facilities Operations Plan and set out the overall goals and objectives of the Facilities Operations Plan. The introduction should discuss the titles, functions, roles, duties and responsibilities of the each person that the Concessionaire identifies as being involved with the operation of systems within the Facilities of the Toll Roads.

G.4.2. Operational Integrity – Life Safety Systems

The continual operation and integrity of the Life Safety Systems within each Facility is essential to both the staff of the Concessionaire and Toll Road users. These systems provide the safety, communication and life preserving components that must be operated for the Toll Roads to function as intended.

This section of the Facilities Operations Plan must address the operational procedures and polices employed by the Concessionaire to ensure that these systems constantly remain functional; are tested on an established schedule; are evaluated for functionality and operation; and perform as designed and intended. This section of the Facilities Operations Plan must include the following subsections, at a minimum:

- Communication Systems
  - Intercoms
  - Telephones
  - Radios
  - Mobile Communications
- Security Systems
  - Access Control
  - Video Surveillance
  - Stations and Personnel
  - Alarms
  - Coordination with the Puerto Rico Police
  - Security Sweeps

- Fire Suppression and Precaution Systems
  - Fire Alarms
  - Sprinkler Systems
  - Heat Sensors
  - Smoke Detectors
  - Carbon Monoxide Detectors
- Medical Attention Stations
  - First Aid Stations
  - Emergency Call Buttons

G.4.3. Operational Integrity – Energy Distribution

In order for the Facilities along the Toll Roads to continually operate at their peak efficiency, the distribution of energy both to and from components must be provided. The function, integrity, continual supply, and efficient distribution of energy to and from various systems and targets directly impacts their operation as individual units, as well as to the Toll Roads as a whole.

This section of the Facilities Operations Plan must address the procedures and polices employed by the Concessionaire to ensure that the energy distribution systems remain fully operational at all times. The Facilities Operations Plan must also address the Concessionaire's plan for enhancing reliability, providing redundancy in depth, arranging for backup equipment, staff, power, etc., and any other action required in order to safeguard continuous operations.

This section of the Facilities Operations Plan must include the following subsections, at a minimum:

- Electrical Supply
  - Substation Level
  - Panel Level
  - Circuit Level
  - Back-up Systems
  - Lighting
  - Emergency Lighting
  - Motor Control Units
- Mechanical Systems
  - Ventilation, and Air Condition (HVAC) Systems
  - Plumbing Systems
  - Pumping Systems
- Life Safety Systems

- Computer Systems
  - Toll Collection System (TCS)
  - Uninterruptible Power Supply (UPS)
  - Servers
  - Redundancy in depth Measures
- Shops & Shop Equipment
- Coordination and Agreements with Utility Companies/Agencies
  - Electrical
  - Phone
  - Natural Gas
  - Water
  - Sanitary

G.4.4. System Operational Management

The Facilities along the Toll Roads contain numerous and unique systems that either support the Facility in which they are located or provide resources to other portions or sections of the Toll Roads. These systems, their continual function, and the management of these systems are essential to the daily and critical operations of the Toll Roads.

This section of the Facilities Operations Plan must address, describe and outline the methods and procedures that the Concessionaire will employ in the operation and management of the Facility systems. This section of the Facilities Operations Plan must include, the following subsections concerning the various systems within the Facilities at a minimum:

- Electrical Systems
  - Substations
  - UPS
  - Back-up Systems
- Mechanical Systems
  - HVAC
  - Plumbing
  - Pumping Systems
- Life Safety Systems
- Computer Systems
  - Toll Collection System (TCS)
  - Servers
- Shop Equipment
- Communications

G.4.5. Occupancy Management

This section of the Facilities Operations Plan must address the procedures employed by the Concessionaire in managing and operating the physical occupants within each Facility. This section will need to discuss at a minimum, space programming; health, safety, and environment standards; emergency evacuation; and the function of each defined role of those responsible in the operation of the Facilities.

G.4.6. Vendor Management

This section of the Facilities Operations Plan must briefly list the names of vendors, their roles, and their responsibilities if they perform work with or operate systems in the Facilities.

G.4.7. Licenses, Fees, and Permits

This section of the Facilities Operations Plan must briefly explain the process by which all required licenses, fees and permits will be obtained by the Concessionaire for the operation of all systems and equipment in the Facilities of the Toll Roads; "operator certifications" for water and wastewater systems personnel; and must certify that all such permits and licenses are current.

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H. TRAFFIC AND TRAVEL MANAGEMENT PLAN

H.1. Definitions

Average Annual Daily Traffic (AADT): The total volume of traffic passing a point on a highway, in both directions, for one year, divided by the number of days in the year.

Average Daily Traffic (ADT): The average 24-hour volume of traffic that being the total volume of traffic during a stated period divided by the number of days in that period.

Capacity: The maximum number of vehicles that can pass over a given section of roadway in one or both directions during a given period of time under prevailing roadway and traffic conditions.

Closed-Circuit Television (CCTV): The video camera system used to provide surveillance of the roadway system.

Dynamic Message Signs (DMS): Signs that use electronics or mechanics to vary a visual word, number or symbolic display as traffic conditions warrant. Also known as Variable Message Signs (VMS) and Changeable Message Signs (CMS).

Dynamic Toll Lane (DTL): Ensures traffic flow using a dynamic toll adjusting rates according to traffic conditions, using video technology to identify crashes and communicates with drivers through electronic signs.

Highway Advisory Radio (HAR): A low-powered radio (generally AM) station devoted to presenting travel-related information to the public.

Inductive Loop Detector: A coil of cable embedded in the pavement surface that creates a magnetic field. The vehicle is detected when the magnetic field is disturbed.

Intelligent Transportation Systems (ITS): Necessary for monitoring the Toll Road's traffic flow and performance, detecting traffic and traffic operational conditions throughout the Toll Roads and clearly communicate relevant and useful travel information to user drivers.

Maintenance and Protection of Traffic (MPT): A plan for handling traffic through a work zone. The MPT plan may range in scope depending on the complexity of a project and resulting traffic interference.

Movable Barrier System: A traffic control barrier that separates and channels traffic so as to provide safe passage and increased directional capacity. The system consists of a barrier system that can be moved by one or two travel lanes via a specialty articulated vehicle.

Peak Hour: That hour during which the maximum amount of travel occurs.

Peak Period: The period during which traffic levels rise from their normal background levels to maximum levels.

Traffic Management Center (TMC): Monitors and controls traffic and the road network. It communicates with ITS equipment and, in the future, Connected Vehicle Roadside Equipment (RSE) to monitor and manage traffic flow and monitor the condition of the roadway, surrounding environmental conditions, and field equipment status. It manages traffic and transportation resources in responding to, and recovering from, incidents ranging from minor traffic incidents through major disasters.

Queue: A line of waiting vehicles.

Volume: The number of vehicles passing a given point over a period of time.

Work Zone: An area of a highway in which maintenance and/or construction operations are taking place that may impinge on the number of lanes available to moving traffic or affect the operational characteristics of traffic flowing through the area.

H.2. References

All stated references must be the most current version, or the document known to have succeeded or replaced the original stated herein:

- Design Directives, PRHTA
- Guidelines for the Selection and Installation of Orientation Signs, PRHTA
- Highway Design Manual, PRHTA
- Signage Guide, PRHTA
- Standard Drawings, PRHTA
- Standard Specifications for Road and Bridge Construction, PRHTA
- Traffic Sign Manual, PRHTA
- "A Policy on Geometric Design of Highways and Streets", AASHTO.
- "Manual on Uniform Traffic Control Devices (MUTCD)", FHWA
- "Portable Changeable Message Sign Handbook (PCMS)", FHWA
- "Highway Capacity Manual", TRB.
- "Traffic Engineering Handbook", ITE.
- "Real Time System Management Information Program", 23 CFR Part 511
- "Intelligent Transportation Systems Architecture and Standards", 23 CFR Part 940
- Regulations mandated by US Federal Government Agencies related to Transportation Systems Management and Operations (TSM&O), Intelligent Transportation Systems (ITS), Traffic Incident Management (TIM), Performance Measurement and/or any other regulations related to the management and operations of the transportation network.
- San Juan Metropolitan Area Intelligent Transportation Systems Regional Architecture.

H.3. Policy for Traffic and Travel Management Plan

H.3.1. Objective

The objective of the Traffic and Travel Management Plan is to ensure that the Concessionaire has considered and created processes, procedures and standards to manage traffic and travel throughout the Toll Roads in order to alleviate congestion and its damaging effects, including driver delay, inconvenience and frustration, reduced safety, and deteriorated air quality.

Another critical objective of the Traffic and Travel Management Plan must be to create protocols and procedures that need to be taken to quickly identify where congestion is likely to occur and to devise a series of operational plans to prevent delays from occurring, whether such delays are caused by normal day-to-day operations, maintenance operations, construction operations, and/or emergency operations.

H.3.2. Responsibility of Concessionaire

The Traffic and Travel Management Plan is a document to be developed, written and carried out by the Concessionaire, and must be consistent with all applicable Municipal, Commonwealth and Federal laws, codes and requirements governing traffic management practices and traffic control policies. The Traffic and Travel Management Plan is to be updated and submitted annually and must receive Approval from the Commonwealth, and all other governing authorities, as appropriate.

The Traffic and Travel Management Plan must address how the Concessionaire will incorporate the following concepts in order to operate the Toll Roads at peak efficiency:

- Active management and monitoring of the decision-support systems.
- Active management operations and functions.
- Actions taken beyond the capabilities of the automated actions of the computer systems, such as communication with field personnel, emergency responders, and other/adjacent operating Agencies.

The Concessionaire must understand that the Traffic and Travel Management Plan must not only address the effective technologies and deployment of systems, but also address the needs of the available staff trained to monitor and control the systems. In addition, the Traffic and Travel Management Plan must illustrate how the management systems function, and how such systems can be adjusted so that the Toll Roads can continually operate at peak efficiency.

This Chapter includes a general outline of the proposed Traffic and Travel Management Plan. This outline is intended only to provide guidance in the preparation of the Concessionaire's Plan and must be modified, revised or changed, as appropriate, to address specific issues, needs or concerns related to the Toll Roads that develop over time.

H.3.3. Performance Time Frames

The following table establishes the minimum frequency that the Traffic and Travel Management Plan is to be written and updated by the Concessionaire and submitted to the PRHTA and Approved by the PRHTA.

Plan	Minimum Frequency of Occurrence
Traffic and Travel Management Plan	Yearly

H.3.4. Acceptance Criteria

The Traffic and Travel Management Plan will be considered acceptable for a particular year when the Traffic and Travel Management Plan has been written and updated by the Concessionaire and submitted to the PTHTA and Approved by PRHTA.

H.4. Traffic and Travel Management Plan Preparation Requirements

The following is a general outline of the Concessionaire's responsibilities that must be included and addressed when creating the Traffic and Travel Management Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that should be included and addressed in the Traffic and Travel Management Plan.

The Traffic and Travel Management Plan must include provisions for annual and periodic updates, training and supervision of staff and adherence to all policies and procedures.

H.4.1. Introduction

This section should briefly introduce the purpose of the Traffic and Travel Management Plan and set out the overall goals and objectives of the Traffic and Travel Management Plan. The introduction should discuss the title, functions, roles, duties and responsibilities of each person that the Concessionaire identifies as being involved with traffic and travel control and management.

H.4.2. Functional Management

This section of the Traffic and Travel Management Plan must address the strategies, activities, responsibilities, requirements and procedures that the Concessionaire will implement for traffic control and travel management operational functions.

Traffic control and travel management functions for the Toll Roads will be comprised of several subsystems, procedures, responsibilities and protocols that will need to interface with each other to accomplish the objectives stated above. The Traffic and Travel Management Plan must address each of these components and discuss how they will interface with one another, and how their functional characteristics enhance the safe and efficient movement of traffic through the Toll Roads.

This section of the Traffic and Travel Management Plan must include the following subsections, at a minimum:

H.4.2.1. Staffing

This section of the Traffic and Travel Management Plan must include descriptions, titles, responsibilities and roles each person involved with traffic control and travel management will play. The Concessionaire must identify essential personnel, the call-up protocol, and the measures employed to keep the Toll Roads performing at its peak efficiency.

H.4.2.2. Training

This section of the Traffic and Travel Management Plan must include the specific programs that the Concessionaire has implemented to train, re-train and advance the staff assigned to traffic control and travel management.

H.4.2.3. Monitoring Procedures

This section of the Traffic and Travel Management Plan must include the procedures implemented by the Concessionaire to monitor the decision- support and surveillance systems; to monitor the information obtained from multi-agency operations; and to monitor the information obtained from users, or other tools, communications and means.

H.4.2.4. Traffic Management Center

An existing traffic management center (TMC) is located at the PR-52 Caguas Norte Toll Plaza. The PRHTA will transfer to the Concessionaire all the furniture, systems and electronic equipment housed within the facility to manage the existing DTL and ITS systems in the Toll Roads at the Closing Date, except Sunguide software and equipment that will be transferred to the Concessionaire upon the Substantial Completion of the TMC Sun Guide Segregation Project (Retained Capital Improvement Project). For avoidance of doubt, the Concessionaire will be responsible for the operation of the Sunguide system from the Closing Date, but the Concessionaire will not be responsible for the maintenance of the Sunguide system until the Substantial Completion of the TMC Sun Guide Segregation Project.

The Concessionaire must expand and update the TMC systems and facilities, using the current TMC or other facility proposed to and Approved by the PRHTA, in order to provide all the functionalities and services described in the Traffic and Travel Management Plan.

The PRHTA will continue to perform operations at the TMC until a new PRHTA TMC is built by the PRHTA and the PRHTA current operations out of the Toll Roads can be transferred to the new PRHTA TMC. During and after the transition, the Concessionaire must pay for the utilities and the facility maintenance and upkeep.

The TMC houses Puerto Rico Police Bureau and Medical Emergencies Corps Bureau operations. The Concessionaire must continue to provide space at the TMC so that both agencies to continue their current operations. The Concessionaire must provide maintenance and upkeep to the areas designated to both agencies.

The Concessionaire will provide a dedicated area for one person of the

PRHTA at the TMC that could be used at PRHTA's convenience during the whole Term.

This section of the Traffic and Travel Management Plan must address the operational requirements and functions of the TMC for the Toll Roads, including how it will interface with the new PRHTA TMC. All traffic control and travel management should be coordinated through the efforts and communications via the TMC functions, its tools, and its management.

The Traffic and Travel Management Plan must include the TMC operational procedures for the Toll Roads to address items essential to the operations of the Toll Roads, including but not limited to: lane scheduling; traffic congestion management; traffic monitoring; toll collection activities; DTL activities; traffic incident management; construction and maintenance travel management, etc. The TMC must be operated at all times, 24 hours per day, 7 days per week.

H.4.2.5. Traffic Control Supervision

This section of the Traffic and Travel Management Plan must include procedures and responsibilities that the Concessionaire will establish for the supervision and decision making associated with traffic control and travel management along the Toll Roads. The Traffic and Travel Management Plan must address the authority that the Traffic Control Supervisor will possess and the procedures that have been established.

The Traffic and Travel Management Plan must include the following items when addressing traffic control supervision, at a minimum:

- Contacts and communication with local and state law enforcement, fire and emergency service agencies.
- Field checking locations and placements of signs and traffic control devices before any work begins, and as it progresses.
- Providing sufficient surveillance of signs, barricades and other traffic control devices and systems, and establishing procedures to ensure that these elements are inspected and properly functioning every calendar day.
- Directing revisions to work zone traffic control plans to meet field and weather conditions for traffic control to operate as intended.
- Directing and monitoring all project flaggers.

H.4.2.6. Data Management and Performance Measures

This section of the Traffic and Travel Management Plan must include processes and procedures for obtaining accurate data for the Toll Roads via the Toll Collection System (TCS), Intelligent Transport System (ITS), Dynamic Toll Lane (DTL), the Radio Communication System, or by other means. The data and performance measures should include, at a minimum,

1. a record of traffic by direction of travel, type of vehicle as classified by number of axles, and time of day for all vehicles traveling through toll plazas.
2. traffic incident management performance measures, including but not limited to incident clearance times, roadway clearance times, secondary crashes, responder arrival/departure, and lane closures and openings.
3. traffic management performance measures, including but not limited to speed, volume, occupancy, travel time, and travel time reliability.
4. DTL performance measures, including but not limited to toll transactions, volumes, toll prices, price calculation model, travel times, travel time reliability and traffic incident data.

The data collected related to this performance measures must be stored within Toll Roads systems and the Concessionaire must provide continuous access to this data to the PRHTA and integration with the PRHTA TMC systems.

The Concessionaire must develop and implement a performance measurement reporting program in coordination with the PRHTA that considers daily, monthly, quarterly, and annual performance measures reporting. The performance measurement reporting program must provide comparisons of the data based on the different reporting periods.

The Concessionaire must establish targets for each performance measure being reported and develop an action plan to reach the targets established consistently. The performance measure and action plan must be developed in coordination with the PRHTA.

The Concessionaire must comply with all US Federal Government mandate performance measurement regulations and submit the required reports as mandated by the federal regulations including but not limited to the type of data, data accuracy, and collecting and reporting periods.

This section of the Traffic and Travel Management Plan must also include procedures and frequencies for the collection of traffic data at entrance and exit ramps within the Toll Roads.

H.4.2.7. Traffic Analysis

This section of the Traffic and Travel Management Plan must include procedures and frequencies for performing traffic analyses for all sections and portions of the Toll Roads. Traffic data should be analyzed

to determine if operational improvements are required to accommodate changes in traffic volumes or patterns. Particular attention must be paid to toll and ramp queue lengths to determine the maximum length and the duration of such queues, and if the mainline traffic flow is impacted.

H.4.2.8. Traffic Alleviation Plans and Procedures

This section of the Traffic and Travel Management Plan must address the development and content of the standards, details, communication tree, responsibilities and functions required when implementing each specific traffic alleviation procedure.

The Concessionaire must always keep in mind that the goals and objective of managing the Toll Roads including the following:

- The reduction of congestion impacts and occurrences.
- To maximize operational safety for users and the public.
- Ensure the efficient and pleasant passage of traffic through the Toll Roads.
- To provide users accurate and necessary information to aid in making effective and pleasurable use of traveling within the Toll Roads.

H.4.2.9. Highway Safety Patrol Program

This section of the Traffic and Travel Management Plan must address the development and content of the Highway Safety Patrol (HSP) Program to perform traffic incident management activities to respond to traffic incidents (crashes, disabled vehicles, roadway debris removal, etc.) on the Toll Roads.

The HSP program must consist of a minimum of 27 highway safety patrols that provide concurrent and continuous coverage along the designated toll roads.

The service schedule must be divided in two categories:

- Category 1: Monday – Friday from 5:00 am to 9:00 pm, excluding holidays.
- Category 2: Monday – Friday from 9:01 pm to 4:59 am, Saturday, Sunday, and holidays

The Concessionaire must provide service concurrently with the number of highway safety patrols indicated in the following table:

Number of Highway Safety Patrols

- Category 1: 27 patrols
- Category 2: 14 patrols

The development of the service plan must be data dependent and consider traffic volume, traffic incidents, crashes, travel time, patrol beat, and any other factor that could affect the level of service of the HSP program.

The highway safety patrols must be pick-up type vehicles (Ford F-250, Dodge Ram 2500, or similar) and all vehicles must be equipped with the following tools/devices as a minimum:

- Air compressor with air operated impact wrench
- Heavy duty jack
- LED warning/strobe light bar
- GPS location units
- Vehicle-mounted Dynamic Message Sign
- Forward/Backward CCTV cameras with real time streaming capabilities
- Two-way radio or similar capability communication devices
- In-vehicle device capable compatible with Smartphone Application for Road Rangers (SPARR) from SunGuide
- All highway safety patrols must use SPARR for traffic incident management data collection.
- Traffic control devices – cones (25 minimum per vehicles)
- Electronic flares (Pi-Lit or similar)
- Portable Traffic Incident Management sign
- In-cabin operated debris removal system (LaneBlade or similar) (minimum of 1 vehicle equipped per toll road)
- Other tools/devices that enhance traffic incident management capabilities.

The highway safety patrols operators must be provided with safety

equipment to comply with local and federal regulations (Class III safety vest, etc.) and must be trained to perform their duties (including but not limited to National Traffic Incident Management Responder Training Course, and Traffic Control Technician Training).

The Concessionaire must develop Standard Operating Procedures (SOP) for the HSP program that addresses the typical traffic incident management activities (safety, communications, scene management, hazardous materials, towing, etc.) and provide copy to the PRHTA. The SOP must be update continuously to reflect lessons learned during the implementation of the HSP program. The updated SOP must be provided to the PRHTA.

The Concessionaire must collect and store all the relevant data related with the Highway Safety Patrol program in SunGuide and prepare reports (daily, weekly, monthly, quarterly, and annually) for the performance measures related to traffic incident management.

The Concessionaire must comply with any local and federal requirements related to labor laws, licenses, permits, and insurance needed for the operation of the HSP Program.

H.4.2.10. Traffic Information Dissemination

This section of the Traffic and Travel Management Plan must include descriptions and procedures for the accurate dissemination of necessary, essential and real-time information concerning traffic to users, the public, the community, and to Municipal, Commonwealth and Federal agencies. The Traffic Information Dissemination section must include efforts to be performed to disseminate information through the ITS infrastructure, website, social media, Waze, and other available dissemination efforts. The section must take into consideration the requirements imposed by federal regulation 23 CFR 511.

H.4.2.11. Cooperation with the Puerto Rico Police Department

This section of the Traffic and Travel Management Plan must include the practices that are being employed to coordinate enforcement of traffic safety issues with the Puerto Rico Police Department.

H.4.3. Decision-Support Systems

Decision-support systems are tools that function by obtaining, analyzing, organizing and presenting information obtained from a variety of sources in order to assist the Concessionaire in making effective and sound traffic control and travel management decisions.

This section of the Traffic and Travel Management Plan must address the functions, operations, and procedures utilized by the Concessionaire when employing these types of systems with traffic control and travel management information. The Traffic and Travel Management Plan must also address how these systems will be coordinated, the control strategies of each system, the operational strategies of each system, and the identification techniques utilized.

This section of the Traffic and Travel Management Plan must include the following subsections, at a minimum:

H.4.3.1. Toll Collection System (TCS)

The Toll Collections System, including ETC and ORT systems, has the ability to store traffic data by time, toll lane, vehicle class, etc. since it is used as a verification system in conjunction with the toll payment process. This system is an extremely valuable tool that can be utilized to analyze the peak hour, peak period traffic, AADT, ADT, etc. The Traffic and Travel Management Plan must address how this information and its support functions and algorithms are utilized by the Concessionaire in traffic control and travel management.

This section of the Traffic and Travel Management Plan must also include the procedures and process the TCS will utilize in developing historical traffic count databases, and how databases, along with real-time counts can be applied in the Concessionaire's traffic control and travel management functional decision-making processes.

H.4.3.2. Communication Systems

Radio Communication systems are another effective tool that can assist the Concessionaire in the decision-making process for traffic control and travel management. Communication systems include voice and data information, which includes, but is not limited to, Highway Advisory Radios, agency data reports, travel time listings, interagency radio monitoring, and computer related systems.

This section of the Traffic and Travel Management Plan must include the procedures and process that the Concessionaire will follow when utilizing these systems and how the Concessionaire will release the information from its communication systems to others, as applicable.

H.4.3.3. Surveillance & Detection Systems (ITS)

Surveillance and detection systems, portions of a comprehensive Intelligent Transportation System (ITS), is essential for managing traffic and travel within the Toll Roads. The elements and systems will be able to collect data on traffic flows and performances through sensor technology and will permit the Concessionaire to monitor conditions.

This section of the Traffic and Travel Management Plan must include the technologies, systems, products, procedures, and process that the Concessionaire employ when using the surveillance and detection technologies, as well as an ITS overall, and how their functions and algorithms are employed to assist in traffic control and travel management.

H.4.3.4. Dynamic Toll Lane (DTL)

At the Closing Date, the toll for the PR-52 DTL shall be determined by reference to a table of toll rates, which table will set out the toll rate applicable to users of the PR-52 DTL for each fifteen (15) minute increment of a twenty-four (24) four period and for each day of the week for the five entry points of the PR-52 DTL.

During the Term, the Concessionaire will be able to propose to the PRHTA a DTL toll price based on real-time data collected by the ITS devices installed along the DTL, and the Concessionaire will implement it once submitted to the PRHTA and Approved by PRHTA.

DTL systems are essential for managing traffic and travel within the specific Dynamic Toll Lanes included on the Toll Roads. The elements and systems are able to collect data on traffic flows and performances through sensor technology, permits the Concessionaire to monitor conditions and permits the management of the traffic flow applying different toll rates decided in real time according to specific algorithms.

This section of the Traffic and Travel Management Plan must include the procedures and process that the Concessionaire employs using the DTL systems and how their functions and algorithms are employed to assist in traffic control and travel management. Specific detail of information about toll rate algorithm must be included.

H.4.3.5. Roadway Weather Information Systems (RWIS)

RWIS have been traditionally employed to assist in making weather related control decisions. As technology continues to advance, these systems will also advance so that they are able to provide more accurate locations and durations of weather events. The Concessionaire may choose to utilize these systems and the advantages they provide in traffic control and travel management.

This section of the Traffic and Travel Management Plan must include the procedures and process that the Concessionaire will employ with the use of these types of systems, as applicable.

H.4.3.6. Other Systems

To the extent any other systems are employed or implemented by the Concessionaire on the Toll Roads, or if the Concessionaire plans to implement any other such systems, the Concessionaire must address such systems in this section of the Traffic and Travel Management Plan.

H.4.4. Multi-Agency Operations and Arrangements

An effective technique of ascertaining assistance in the management of traffic and travel within the Toll Roads is by developing agreements and participation with other agencies. These techniques include the coordination and communication with people, systems and resources available on other highway networks through the sharing of information. These arrangements are typically contained in a written plan that addresses use, limits, confidentiality and other terms and conditions related to such information. Such agreements may include sharing data; voice communication; emergency responders; real-time traffic movements and counts; and CCTV and other surveillance systems.

This section of the Traffic and Travel Management Plan must address the systems, technologies, products, protocols, types, terms, relationships and procedures that exist between PRHTA, other agencies and the Concessionaire, including the following subsections, at a minimum:

H.4.4.1. Integrated Systems

Integrated systems allow multiple agencies to share a single management center, and to utilize the systems to share data and communications in a network to assist in an overall decision-making policy.

This section of the Traffic and Travel Management Plan must address information on how the Concessionaire and the Toll Roads are integrated, cooperate, and function with PRHTA as well as all other Agency systems and Emergency & Traffic Management Centers; the manner in which it participates in these organizations and systems; and

describe how those agreements and systems will be upheld.

H.4.4.2. Regional Initiatives

These types of initiatives foster communication, coordination and cooperation between agencies over a particular area or region to ease congestion and disseminate information.

This section of the Traffic and Travel Management Plan must address information on how the Concessionaire, PRHTA and the Toll Roads share and participate in these initiatives and describe how these initiatives will continue.

H.4.4.3. Resource Sharing

These types of relationships center on the sharing of informational resources, including such devices as CCTV systems, surveillance systems, real-time traffic counts, ITS, dynamic message signs, electronic toll tag readers, communication equipment and traffic management centers.

This section of the Traffic and Travel Management Plan must address how the Concessionaire and PRHTA will share resources specific to the Toll Roads, the terms and limits of sharing and the parties that participate in the sharing agreements.

H.4.4.4. Federal Regulations and Programs

The Concessionaire must cooperate with the PRHTA to address any request from the US Federal Government agencies related to demonstrating compliance with federal regulations and must implement all measures related to the compliance of federal regulations.

The Concessionaire must collaborate with the PRHTA in implementing innovative solutions to address transportation issues promoted by the Federal Highway Administration (FHWA) programs, such as the Everyday Counts Program.

The Concessionaire must participate in any peer-exchange coordinated by the PRHTA and or FHWA related to traffic management activities.

This section of the Traffic and Travel Management Plan must address information on how the Concessionaire will cooperate, participate and implement the previous topics related with Federal Regulations and Programs.

H.4.5. Standards and Protocols - Work Zone Traffic Control

Maintaining safety for users, the public at large, the community and workers must be always of paramount importance to the Concessionaire. At the same time the Toll Roads must be kept open to travel in each direction at all times, and only restricted during emergencies, traffic safety hazards, severe weather conditions, maintenance and construction activities, and other permitted times.

This section of the Traffic and Travel Management Plan must address the requirements for Work Zone Traffic Control, and the development of a series of stand-alone traffic control standards and drawings to be used for Work Zone Traffic Control along the Toll Roads. The intent of these standards and drawings is to have a series of protocols prepared in anticipation of imminent work; ensure full compliance with the Reference Documents listed in Section H.2 of this Chapter; ensure full compliance with all applicable Local, Commonwealth and Federal laws. Such standards and drawings must be prepared by a Professional Engineer Licensed in the Commonwealth of Puerto Rico.

This section of the Traffic and Travel Management Plan must also address the policies, procedures and approval requirements developed by the Concessionaire for work conducted by Contractors within the Toll Roads. The intent of these processes is to ensure that a written plan has been developed and approved by a responsible Professional Engineer in the Commonwealth of Puerto Rico prior to the start of work. Additionally, the Traffic and Travel Management Plan must consider the requirements placed on others for work on facilities adjacent to or crossing over or under the Toll Roads.

The development of all sections, standards, and procedures of the Traffic and Travel Management Plan must consider any proposed work, maintenance, or emergency lane closure or traffic pattern change within the Toll Roads. The plans must be thoroughly developed to minimize impacts to traffic within the Toll Roads and minimize dangers to workers present on the project work site. All situations that require temporarily closing one or more lanes must carefully consider the effect that such an operation will have on traffic.

In addition to the above stated requirements, this section of the Traffic and Travel Management Plan must address, at a minimum the following:

H.4.5.1. Material and Equipment Storage and Parking

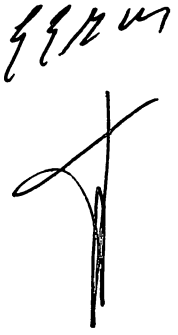
This section of the Traffic and Travel Management Plan must include procedures and standards that take into consideration, at a minimum, the following: material supply and storage within a work zone site; equipment transport to and within the Work Zone; equipment storage while on site; and the parking of personal vehicles and other equipment.

H.4.5.2. Protection of Hazards

This section of the Traffic and Travel Management Plan must include procedures and drawings, in a manner similar to Chapter 6 of the MUTCD and the Reference Documents listed in Section H.2 of this Chapter, for protecting traffic from all potential hazards that may exist during construction or maintenance work, or hazards that may be created or exposed as part of the work.

H.4.5.3. Temporary Lane Closures

This section of the Traffic and Travel Management Plan must include procedures, standards and drawings for providing temporary lane closures when a portion of the traveled way is needed for construction or maintenance activities. The Traffic and Travel Management Plan must address the policy utilized for lane closures such as traffic analysis methods, and must also include the allowable times, locations and other pertinent information. Lane closures must be kept to a minimum and should occur during off-peak times, unless conditions require otherwise.



H.4.5.4. Temporary Road Closures

This section of the Traffic and Travel Management Plan must address the procedures and protocols to accommodate any temporary road closure as a result of an emergency situation.

H.4.5.5. Flagging in Work Zones

This section of the Traffic and Travel Management Plan must include procedures and requirements for when flagging activities are required within work zones. Work zone flaggers should be qualified, trained and certified to perform their required duties.

H.4.6. Standards and Protocols - Work Zone Traffic Control Devices

This section of the Traffic and Travel Management Plan must address the requirements for Work Zone Traffic Control Devices which are necessary and required to inform and safely guide and direct traffic within and through the designated Work Zones within the Toll Roads. Traffic Control Devices that must be considered and specified in the Traffic and Travel Management Plan include, but are not limited to: warning signs, Dynamic Message Signs, barriers, barricades, delineators, and pavement markings to clearly and safely route traffic through any construction or maintenance work zone.

The Traffic and Travel Management Plan must also address the maintenance and operation that the Concessionaire will employ to provide continuous and expeditious repair or replacement of all damaged or ineffective traffic control devices. All devices used within the Toll Roads must remain in good condition and provide the level of functionality required by the most stringent criteria of either PRHTA or the MUTCD. The Concessionaire must include in the Traffic and Travel Management Plan the maintenance activities for replacement of traffic control devices, which are damaged (torn, crushed, discolored), displaced by traffic or other means, or deteriorated beyond effectiveness.

Work zones must be delineated with advance warning signs; protective barriers or other appropriate safety devices; and end of work zone signing. The maintenance work zones must meet traffic and worker safety standards and procedures established by the Commonwealth as supplemented by standards presented in the Reference Documents.

H.4.7. Standards and Protocol - Emergency Events

This section of the Traffic and Travel Management Plan must address the procedures and protocols that the Concessionaire will apply during emergency events that occur within the Toll Roads. This section of the Traffic and Travel Management Plan must include, at a minimum, the following subsections:

H.4.7.1. Event Management

This section of the Traffic and Travel Management Plan must include the general responsibilities and management procedures that the Concessionaire and its staff will employ during emergency events.

H.4.7.2. Notification of Lane/Highway Closures

This section of the Traffic and Travel Management Plan must include procedures to be followed to inform users and the Commonwealth of emergency lane or road closure. The Traffic and Travel Management Plan must use efficient and rapid response procedures to restore normal travel conditions after an incident has occurred. This section must also include the protocols for information dissemination.

H.4.7.3. Emergency Detouring of Traffic

This section of the Traffic and Travel Management Plan must include procedures and practices for the emergency detouring of traffic on the Toll Roads in the event of an emergency situation. The Concessionaire must address the protocols that will exist between other agencies so that traffic will flow effectively and safely through the detour route.

H.4.7.4. Disabled and Abandoned Vehicles

This section of the Traffic and Travel Management Plan must include the traffic control procedures for the safe and efficient removal of disabled or abandoned vehicles within the Toll Roads. The Concessionaire must address the protocols that will be established with the Puerto Rico Police when these situations arise.

H.4.8. DTL Reversible Lane Operations

The Concessionaire must perform the daily operations related to the Dynamic Toll Lane (DTL) which includes but is not limited to the reversible lane barrier transfer machines, opening/closing of the DTL access gates, and inspection of the DTL before opening or changing directions.

The Concessionaire must be responsible for providing the trained personnel required to perform the machine operation.

This section of the Traffic and Travel Management Plan should address the procedures and protocols that will be followed by the Concessionaire for the operation of the DTL when the Moveable Barrier System is to be employed.

This section of the Traffic and Travel Management Plan must also include: typical anticipated hours of use; directional layout(s) and configuration(s) of the movable barrier system; emergency procedures if incidents occur that disable the system; traffic control procedures for when the barrier is being moved; and storage location and procedures of the barrier moving machine.

H.4.9. Standards and Protocol – Unusual Events

This section of the Traffic and Travel Management Plan should address the procedures and protocols that have been established to address unusual and special events that may occur within or affect the Toll Roads. This section of the Traffic and Travel Management Plan must include the following subsections, at a minimum:

H.4.9.1. Overweight/Oversized Vehicles

This section of the Traffic and Travel Management Plan must include the procedures established by the Concessionaire for managing Overweight and Oversized vehicles which pass through the traveled way of the Toll Roads. The Traffic and Travel Management Plan must address communication with PRHTA concerning the permitting of these types of vehicles, and must address the times and policies that will be

employed to handle these situations. In addition, this section of the Traffic and Travel Management Plan must include procedures and protocols to maintain traffic safety in the vicinity of Overweight/Oversized vehicles.

H.4.9.2. Security Convoys

This section of the Traffic and Travel Management Plan must address the situations that may occur when security, military, or other types of motorcades or special convoys are required to pass through the traveled way of the Toll Roads.

H.4.9.3. Vehicle Peak Capacity Events

This section of the Traffic and Travel Management Plan must address the protocols and procedures, including manpower shifts, employee call-outs, etc. that will be employed when unusual events which occur that increase traffic and the number of vehicles passing through the traveled way along the Toll Roads are well beyond that which is considered peak or maximum.

H.4.10. Operations Outside Limits of the Toll Roads

The Concessionaire must perform the daily operations related to the Dynamic Toll Lane (DTL) which includes but is not limited to the reversible lane barrier transfer. The Concessionaire must operate and maintain ITS and DTL assets on PR-18 and PR-22 that fall outside of the limits of the Toll Roads and needed for the Dynamic Toll Lane (DTL) operation. These assets include CCTV cameras, vehicle detectors, dynamic message signs, and fiber optic communications infrastructure (cables, conduits, pull boxes, etc.). These assets are in PR-18 from kilometer 0.0 up to the concession agreement limits, in the northbound ramp from PR-18 towards PR-22, and in PR-22 km 2.4.

The Concessionaire must operate and maintain the DTL access gates and auxiliary components (controllers, communication devices, etc.) located at PR-1, and PR-21 that fall outside of the limits of the Toll Roads and needed for the Dynamic Toll Lane operation. These assets are at the PR-1 and PR-21 DTL entrance/exit ramps.

The Concessionaire must operate and maintain the reversible lane barrier transfer machine and modules located at PR-18 that fall outside of the limits of the Toll Roads and needed for the DTL Lane operation. The operation of the reversible lane barrier transfer machine is needed to perform the opening of the DTL towards the southbound direction during the PM hours. The reversible lane barrier transfer machine operation must be performed in PR-18 from km 0.1 up to the Dynamic Toll Lane fixed median barriers located near Américo Miranda Avenue.

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I. CUSTOMER SERVICE PLAN

I.1. Definitions

Agencies: Including, but not be limited to, municipal, county and/or agencies and departments of the Commonwealth of Puerto Rico, or other such public stakeholders.

Best-practice: A level of performance that is equal-to-or-better-than the performance commonly attributed to top-tier highway systems.

Customer: Any person or organization outside of the Concessionaire organization that has contact with the Toll Roads, including but not limited to users, people who make inquiries or complaints to the Concessionaire, the Commonwealth, PRHTA and other similar situated persons.

Stakeholder: Those entities or individuals, public or private, who care about or are responsible to or for, directly or indirectly, the quality of function or operation of the Toll Roads.

Staff: Any employee of the Concessionaire, its agents, or its contractors.

I.2. Policy for Customer Service Plan

I.2.1. Objective

The objective of the Customer Service Plan is to ensure that the Concessionaire establishes guidelines for creating and maintaining a uniform, efficient system that documents customer concerns and inquiries, ensures an adequate response, and provides a recoverable record of the concern and the corrective action taken, addressed in a written and Approved Plan.

I.2.2. Responsibility of Concessionaire

The Customer Service Plan is to be developed, written, and implemented by the Concessionaire, and must be consistent with all applicable Local, Commonwealth and Federal laws, codes and requirements. The Customer Service Plan is to be updated and submitted annually and must receive Approval from the PRHTA.

This Chapter includes a general outline of the proposed Customer Service Plan. This outline is intended only to provide guidance in the preparation of the Concessionaire's Customer Service Plan and must be modified, revised or changed, as appropriate, to address specific issues, needs or concerns related to the Toll Roads that develop over time.

I.2.3. Performance Time Frames

The following table establishes the minimum frequency that the Customer Service Plan is to be written and updated by the Concessionaire, submitted to the Commonwealth and Approved by the Commonwealth.

Plan	Minimum Frequency of Occurrence
Customer Service Plan	Once Yearly

I.2.4. Acceptance Criteria

The Customer Service Plan will be considered acceptable for a particular year when the Customer Service Plan has been written and updated by the Concessionaire, submitted to the PRHTA and Approved by the PRHTA.

I.3. Customer Service Plan Preparation Requirements

The following is a general outline of the Concessionaire's responsibilities that must be included and addressed when creating the Customer Service Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that should be included and addressed in the Customer Service Plan.

The Customer Service Plan must include provisions for annual and periodic updates, training and supervision of staff and adherence to all policies and procedures. It is expected that the Customer Service Plan represents best-practice in the field of Customer Service.

I.3.1. Introduction

This section is to contain a short introduction to the Customer Service Plan that includes a description of the persons or agencies involved in the preparation of the Customer Service Plan, the title of the individual who is charged with the implementation and maintenance of the Customer Service Plan and the overall goals and objectives of the Customer Service Plan. At a minimum, this section is to contain the following sub- sections:

- Purpose.
- Scope and applicability.
- The methodology used to develop the Plan.

I.3.2. Customer Service

The Customer Service Plan must include the requirements that the Concessionaire's staff will be required to follow when communicating with customers. The Customer Service Plan must include provisions to ensure proper handling of complaints to improve customer satisfaction and responsiveness.

I.3.2.1. Procedure for Handling Customer Complaints and Inquiries

The Concessionaire must develop this section of the Customer Service Plan to include a Customer Service Log used when receiving comments and concerns about the Toll Roads. The Customer Service Log must be maintained in accordance with standards and requirements established in the Customer Service Plan. Provisions must be made in the Customer Service Plan to receive, record, and log customer comments received by either a Toll Road Operator or by any other Concessionaire staff member whether in person, in writing, by telephone, mail, email, web page or any other manner. At a minimum, the record must include the name and address of the person presenting the complaint or comment, the date and time of

the complaint or comment, the Toll Road operations staff receiving the complaint or comment, and a complete description of the complaint or comment.

The Customer Service Plan must, at a minimum, address the following:

- Requirements and standards for the Customer Service Log.
- Procedures and standards for receiving inquiries or concerns.
- Recording of customer inquiries and concerns.
- Reviewer protocol of customer service inquiries or concerns.
- Exceptions to recording customer service inquiries and concerns.

I.3.2.2. Complaint Prioritization Procedures

This section of the Customer Service Plan must address a system and procedure to develop criteria for responding to concerns based on priority, degree of deficiency, and schedule to correct.

I.3.2.3. Complaint Reconciliation Procedures

This section of the Customer Service Plan must establish guidelines and procedures to ensure an adequate response to any complaints or comments received in the Customer Service Log.

The Customer Service Plan must delineate follow-up procedures and actions documented by the Concessionaire. The Customer Service Plan must include provisions for acknowledging communication from the Concessionaire to the individual filing the complainant or commenter that the complaint or comment was received, and appropriate corrective actions were initiated.

The Customer Service Plan should include, at a minimum, the following considerations:

- Customer Service database requirements and procedures.
- Follow-up procedures and actions.
- Requirements for formal plan of long-term improvements.

I.3.2.4. Dissemination of Comments and Concerns

This section of the Customer Service Plan must state the policies and procedures developed to ensure all comments or complaints from agencies outside the Concessionaire are obtained, recorded and reconciled. Additionally, directives should be created to ensure the appropriate distribution of comments or complaints to agencies outside the Concessionaire, if requested. Agencies may include, but not be limited to, governmental organizations, Commonwealth agencies and departments, and the Puerto Rico Police.

I.3.2.5. Analysis of Database

This section of the Customer Service Plan must indicate that all Customer Service Logs and corrective actions should be recorded in a database providing, at a minimum, a summary of the complaint, date of complaint, date underlying occurrence (if known), date action was taken, summary of action taken and date of notification to the individual filing the complaint or comment.

The database and Customer Service Logs must be reviewed monthly to reconcile complaints received with actions taken. All outstanding complaints, refund requests, and responses must be reconciled and processed through closure each month.

To improve customer satisfaction and performance, the database statistics must be reviewed quarterly to compare performance of the current quarter versus the prior period and the current year versus the prior year.

I.3.2.6. Improvement Plan

This section of the Customer Service Plan must indicate the formal plan and process for improvement when there is a significant increase in the number of complaints received, a significant increase in the number of toll refund requests and/or a significant increase in the number of days taken to initiate an action. The definition and delineation of "Significant Increase" must be defined in the Customer Service Plan. The improvement plan should be prepared by the Concessionaire, and implemented and monitored monthly until improvements are documented. The Customer Service Plan should include:

- Identification of recurring deficiencies and policies to develop plans for improvements.
- Identification of patterns of problems and concerns, and development of plans to analyze, detect, and rectify deficiencies.
- A mechanism to ensure that services and concerns are addressed adequately.

I.3.3. Information Services

I.3.3.1. General Requirements and Goals of Information Services.

This section of the Customer Service Plan must include efforts of the Concessionaire in assisting Toll Road users with general information. This task should include providing information services to users in an effort to achieve a positive overall standard of Customer Service.

I.3.3.2. Information Requirements

This section of the Customer Service Plan must include the contents that will be included in every Toll Booth so that they are equipped with a current Information Packet to address requests for information from users. This packet must contain a base set of information tools for use, in addition to information addressing common requests gathered by Toll Booth attendants. At a minimum the Information Packets should contain the following:

- Updated current highway map of the Commonwealth, the Metropolitan Area, and other local municipalities.
- A quick list of dates, locations and general directions for major events in communities along the Toll Roads.
- A quick list and directions to various venues (stadiums, museums, concerts, arenas, airports theaters, etc.) for communities along the Toll Roads.

I.3.3.3. Communication Requirements

This section of the Customer Service Plan must include policies and procedures that will be utilized for communications protocols with users.

I.3.3.4. Information Updates

The Customer Service Plan should develop requirements for updating standard information available as an Information Service to users. Updates may be required due to construction activities and road closures, updated street maps, or unique events.

I.3.4. Lost and Found

The Concessionaire must establish a Lost and Found location and the procedures of its function as part of the Customer Service Plan. The Concessionaire must assume custody of all found property, and place such property in a secure and designated location. This section of the Customer Service Plan must, at a minimum, address the following:

- Protocols for Found Property:
  - Logbook.
    - Date of find.
    - Description and condition of property.
    - Who found and submitted the property.
    - Contents of property.
    - Location where property was found.
  - Tagging and identification of property.
  - Contact of property owner if identification is present.
  - Placement, storage and security of property.
  - Contact with the Local Community and Puerto Rico Police Departments.

- Protocols for Returning Property:
  - Customer Lost property report.
  - Claim Form.
  - Inventory check procedures against claims and reports.

- Disposing of Unclaimed Property
  - Property holds length (90 Day Minimum).
  - Disposal of property.
  - Coordination with the Local Community and Puerto Rico Police Departments.

I.3.5. PR-20, PR- 52, PR-53 and, PR- 66 Travel Information Dissemination

This section of the Customer Service Plan must address, at a minimum, the following topics:

- The Concessionaire must develop, implement, maintain, and update a traveler information website to distribute traffic information to road users. The traveler information website must show a map displaying the highway network and show georeferenced location of real time events, including but not limited to traffic incidents (crashes, disabled vehicles, debris, etc.), highway construction and maintenance zones, color coded traffic map, CCTV cameras with real time video, links with other agencies and pertinent websites (local traffic, weather), etc.
- The Concessionaire must develop, implement, maintain and update a social media traveler information dissemination plan that includes all major social media platforms.
- The Concessionaire must develop and implement a performance measurement plan in compliance with the requirements of 23 CFR Part 511.

This section of the Customer Service Plan must also briefly describe the computer hardware and software utilized, and the Internet Service Provider. The Concessionaire must also provide a planned website update schedule.

I.3.6. Training

The Concessionaire must include in the Customer Service Plan the philosophy that every employee of the Concessionaire or its hired contractor of the Concessionaire is a customer service representative and represents a perception of the Commonwealth of Puerto Rico. The Customer Service Plan must also define the yearly and special situational training that will be required for those persons who will have the greatest contact with customers.

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J. EMERGENCY MANAGEMENT AND OPERATION PLAN

J.1. Definitions

Agency: A division of government with a specific function offering a particular kind of assistance.

Disaster: A dangerous event that causes significant human and/or economic loss and demands a crisis response beyond the scope of any single agency or service. Disasters are distinguished from emergencies by the greater and more complex level of response and recovery required.

"Emergency" as proclaimed by the Governor of the Commonwealth of Puerto Rico: Whenever, in the opinion of the Governor of the Commonwealth of Puerto Rico, the safety of the Commonwealth, or portions thereof, its citizens, and/or its assets requires the exercise of extreme measures due to an impending or actual disaster, he (or she) may declare an emergency to exist in the Commonwealth or any portion thereof, in order to prioritize the deployment of the Commonwealth to assist in the resolution of the disaster.

Emergency Operations Center (EOC): A centralized facility utilized by the Commonwealth for the direction, control and coordination of the disaster or emergency.

Emergency Operations Plan (EOP): An EOP is a document that:

- Assigns responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that exceeds the capability or routine responsibility of any one agency.
- Sets forth lines of authority and organizational relationships, and demonstrates how all actions will be coordinated.
- Describes how people and property will be protected in emergencies and disasters.
- Identifies personnel, equipment, facilities, supplies and other resources available for use during response and recovery operations.
- Identifies steps to address mitigation concerns during response and recovery activities.

Emergency Support Foundation (ESF): "ESF" a functional approach to group the types of federal and local assistance available during emergencies. The National Response Plan identifies twelve ESF's. Each ESF is headed by a primary agency that has been selected based on its authorities, resources and capabilities in the particular area.

First Responder: Local police, fire, public works and emergency medical personnel who first arrive on the scene of an incident and take action to save lives, protect property and meet basic human needs.

Incident: An occurrence or event, natural or man-made that requires an emergency response to protect life or property.

Mass Care: Care provided to individuals dislocated during the emergency period. These services are normally provided by volunteer organizations. Services provided normally include lodging, feeding, registration, first aid and other social services.

Major Disaster: Any natural or fabricated catastrophe, act of terrorism or other disaster that causes damage of sufficient severity and magnitude as to exceed the efforts and available resources of the Commonwealth of Puerto Rico sufficiently to warrant disaster assistance under the provisions of the Stafford Act, Public Law 93-288, as amended.

Mitigation: Those activities designed to alleviate the effects of a Major Disaster or Emergency or long-term activities to minimize the potentially adverse effects of future Disaster in affected areas.

National Incident Management System (NIMS): A comprehensive national approach and standardized organizational structure to incident management, applicable at all jurisdictional levels and cross functional disciplines that are intended to further the effectiveness of emergency response providers.

Preparedness: The range of deliberate, critical tasks and activities necessary to build, sustain and improve the operational capability to prevent, protect against, respond to and recover from domestic incidents. It is operationally focused on establishing guidelines, protocols and standards for planning, training and exercises, personnel qualification and certification, equipment certification and publication management.

Recovery: Recovery involves actions needed to assist individuals and communities to return to normal following an incident. Recovery programs are designed to assist victims and their families, restore institutions to sustain economic growth and confidence, rebuild destroyed property and reconstitute government operations and services. Recovery actions often extend long after the incident itself. Recovery programs include mitigation components designed to avoid damage from future incidents.

Response: Response includes activities to address immediate and short-term actions to preserve life, property, environment, and the social, economic and political structure of the community.

Stafford Act: Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended. This federal enabling legislation was enacted to support State and Local government and their citizens when disasters overwhelm them. The law establishes a process for requesting and obtaining a Presidential disaster declaration, defines the type and scope of assistance available from the federal government and sets the conditions for obtaining that assistance. The Federal Emergency Management Agency (FEMA), a part of the Emergency Preparedness and Response Directorate of the Department of Homeland Security, is tasked with coordinating the response.

Terrorism: Terrorism is the unlawful use of force or violence or threatened use of force or violence against persons and places for the purpose of intimidating and/or coercing a government, its citizens, or any segment thereof for political or social goals.

J.2. References

All stated references must be the most current version, or the document known to have succeeded or replaced the original stated herein:

- The White House, Office of the Press Secretary, "Homeland Security Presidential Directive 5", February 28, 2003.
- U.S. Department of Homeland Security, Office of Homeland Security, "National Strategy for Homeland Security", July 2002.
- U.S. Department of Homeland Security, Office for Domestic Preparedness, "Homeland Security Exercise and Evaluation Program", Volume I, March 2003.
- U.S. Department of Homeland Security, Office of the Secretary, "National Incident Management System", March 1, 2004.
- U.S. Department of Homeland Security, Office of the Secretary, "National Response Plan", first draft, February 25, 2004.
- Public Entity Risk Institute (PERI), "Characteristics of Effective Emergency Management Organizational Structures".
- Federal Emergency Management Agency, "Objectives for Local Emergency Management", July 1984.
- U.S. Department of Transportation and Federal Emergency Management Agency, "Guidelines for Public Sector Hazardous Materials Training", March 1998.
- Federal Emergency Management Agency, Publications Catalog, #20.

J.3. Policy for Emergency Management and Operation Plan

J.3.1. Objective

The objective of the Emergency Management and Operation Plan is to ensure that the Concessionaire has considered, trained, addressed, and planned for all likely potential natural and man-made disasters, and established protocols, procedures, responsibilities and guidelines to mitigate the potential impacts and respond to and recover from the occurrence of a disaster event, in accordance with a written and Approved Plan.

J.3.2. Responsibility of Concessionaire

The Emergency Management and Operation Plan (EMOP) consists of both the Emergency Management Manual (EMM) and Emergency Operation Plan (EOP) which are documents to be developed, written, and carried out by the Concessionaire that must be consistent with all applicable Local, Commonwealth and Federal Laws, codes and requirements governing emergency planning, response and recovery. The EMOP is to be updated and submitted annually and must receive approval from the Commonwealth and, as appropriate, all other governing authorities.

It is understood that whenever the Homeland Security Advisory System (HSAS) is raised to "orange" or "red", the Concessionaire is to have management personnel with decision- making authority assigned to be personally present at the Emergency Management and Disaster Administration State Agency (EMDA) on a 24 hour per day, seven day per week basis until such threat level is reduced to "yellow" or the EMDA determines that such staffing level is no longer required.

It is further understood that the EMOP developed by the Concessionaire will be incorporated into the Commonwealth of Puerto Rico Emergency Operations Plan and accordingly will be required to be consistent with the published Commonwealth criteria to the extent possible, notwithstanding the unique characteristics and needs of this asset.

All damages to the Toll Roads caused by emergency situations, as addressed herein, are highly undesirable, and it is necessary to identify and prepare for damages when they render critical components of the Toll Roads inoperable, weakened, or unsafe.

This Chapter includes a general outline of the proposed EMOP. This outline is intended only to provide guidance in the preparation of the Concessionaire's EMOP and must be modified, revised or changed, as appropriate, to address specific issues, needs or concerns related to the Toll Roads that develop over time.

J.3.3. Performance Time Frames

The following table establishes the minimum frequency the Emergency Management and Operation Plan (EMOP) is to be written and updated by the Concessionaire, submitted to the PRHTA and Approved by the PRHTA.

Plan	**Minimum Frequency of Occurrence**
Emergency Management and Operation Plan (EMOP): Consisting of: Emergency Management Manual (EMM) & Emergency Operations Plan (EOP)	Yearly

J.3.4. Acceptance Criteria

The Emergency Management and Operation Plan (EMOP) will be considered acceptable for a particular year when the EMOP has been written and updated by the Concessionaire, submitted to the PRHtA and Approved by the PRHTA.

J.4. Emergency Management and Operations Plan Preparation Requirements

The following is a general outline of the Concessionaire's responsibilities that must be included and addressed when creating the Emergency Management and Operation Plan. The outline is not intended to be all-inclusive, but rather, contains the *expected minimum* items that should be included and addressed in the Emergency Management and Operation Plan.

The Emergency Management and Operation Plan must include provisions for annual and periodic updates, training and supervision of staff and adherence to all policies and procedures.

J.4.1. Introduction

This section is to contain a short introduction to the EMOP that includes a description of the persons or agencies involved in the preparation, the agency or individual who is charged with the implementation and maintenance of the EMOP and the overall goals and objectives of the Emergency Operations Plan (EOP). At a minimum, this section is to contain the following sub-sections:

- Purpose.
- Scope and applicability.
- The methodology used to develop and implement the EOP.
- Updates to the methodology.

J.4.2. Situation

This section of the EMOP is to provide an overview of the Toll Roads, the hazards to which they are exposed, the planning assumptions upon which the EMOP is based and the critical facilities required to carry out the EMOP. At a minimum, this section is to contain the following sub-sections:

J.4.2.1. Toll Road Information

Facts and statistics of the Toll Roads including:

- A plan view map of the entire Toll Roads.
- A general description of the location of the Toll Roads.
- A description of the geology and geography of the area.
- A description of the meteorology of the area.
- A description of the Toll Road Concession Agreement.

J.4.2.2. Hazard Analysis

A detailed hazard analysis of the Toll Roads: This section is to include a detailed investigation and analysis of the natural and man-made hazards to which the Toll Roads are exposed. It must also contain a detailed listing of any major incidents that have historically impacted the Toll Roads that required either a complete shutdown of the Toll Roads or resulted in an interruption of the revenue stream. The list must address, at a minimum, the last ten (10) years of operations for the Toll Roads (or from the time the Toll Road has been in service). It must also include a detailed hazard analysis table that summarizes the hazard exposures.

J.4.2.3. Vulnerability Analysis

A detailed all-hazards vulnerability analysis of the Toll Road: This section must identify the specific hazards that are possible or likely to impact the Toll Roads, the level of visibility of the hazard, how critical the site is to the Commonwealth, the financial impact to the Toll Roads, the impact to nearby agencies, residential areas, commercial and industrial facilities, the accessibility of the Toll Roads and the potential for mass casualties and the site population capacity.

J.4.2.4. Planning Assumptions

A statement indicating the basic planning assumptions upon which the EMOP is based. It must include lead times, effects of emergencies, when and how an emergency is to be declared, what outside assistance is available and the conditions under which an evacuation may be required.

J.4.2.5. Response Capabilities

A statement describing the current response and recovery capabilities of the Concessionaire: This statement must summarize the basic capabilities both in- house and from outside sources to deal with response and recovery issues. It must contain a general description of how resources are currently managed and deployed. It must also identify shortfalls in response capabilities and strategies to resolve these shortfalls.

J.4.2.6. Critical Facilities

Identification of critical facilities of the Concessionaire, providing the system name, address, contact person, property classification, primary emergency function, the secondary emergency function, the primary or normal use, the priority for power restoration and the emergency power requirements. A location map indicating the location of all critical facilities is to be included in this section. A detailed map and description of all critical facilities is to be included in the Appendices.

J.4.3. System Management Policies

This section is to address the current highway management policies and practices regarding the major factors that can have an impact on the operation of the Toll Roads. Copies of all written policies and procedures are to be included in the Appendices. It is to contain, at a minimum, a discussion of the following issues:

- Surveillance and Incident Detection
- Safety Patrols
- Facility Security
- Lane Use Control
- Ramp Control
- Information Dissemination
- Traffic Incident Management Procedures
- Control Center Operations
- Detours and existing alternative traffic routes for each ramp location
- Business Impact and Interruption
- The application of organization design standards for emergency management purposes.
- The development of a Concept of Operations Plan (COOP) for recovery following a major incident.

J.4.4. Toll Roads' Resources

This section is to contain a description of the resources that the Toll Roads and the Concessionaire have available on a day-to-day basis and a listing of the outside resources that are available on an on-call or contract basis. At a minimum, it must contain the following information:

J.4.4.1. Employee Lists

A complete employee listing that includes names, addresses, telephone contact information, job titles and bargaining units (if applicable). An organization chart must also be included.

J.4.4.2. Equipment Lists

A listing of all vehicles and equipment owned or leased by the Concessionaire that includes at a minimum, the make, model and year, vehicle identification number, a general description of the vehicle, the American Trucking Association or American Public Works Association description code, the approximate mileage and use under normal operating conditions.

J.4.4.3. Available Outside Resources

A listing of all outside equipment that is available on-call that includes all of the information listed in the previous paragraph, a 24-hour name and phone number for a principal and two backup contacts, and the approximate response time. An identical list is to be prepared for all firms and equipment currently under contract to the Concessionaire. Copies of all current support contracts are to be included in the Appendices.

J.4.5. Day-To-Day Functions and Responsibilities

This section is to identify and discuss the day-to-day functions and responsibilities of the Concessionaire. It should discuss, in detail, why, when and how the various responsibilities of the Concessionaire are organized and managed. At a minimum, it should address the following:

- Routine facility surveillance and inspections
- Motorist Safety Patrols
- Facility security for all facilities and structures
- Emergency notification systems
- Traffic incidents/Traffic management
- Delivery of goods and services
- Documentation and recordkeeping.

J.4.6. Basic Operations Plan Content

The Basic Operations Plan provides an overview of the Concessionaire's approach to emergency operations. It is intended to detail and describe the response organization and assign specific tasks to the agencies and organizations that may be involved in an incident. It is used to guide and direct the development of functional and hazard specific annexes that provide specific direction and responsibilities for various types and magnitudes of incident.

J.4.6.1. Forward

The EOP must have a forward that contains introductory materials that enhances accountability and ease of use and includes:

- A document that is updated annually, signed and dated by the principal executive of the Concessionaire approving the Plan.
- A register for recording changes and entering change dates.
- A signature page providing signatory evidence that the highest ranking officials of all governmental departments and private sector organizations with assigned responsibilities, as appropriate, concur with the portions of the Plan applicable to the Concessionaire or entity they represent.

- A distribution list of the Plan recipients, indicating whether full copies orspecific portions of the Plan were distributed.
- A table of contents listing all sections of the Plan
- Cataloging of copies of the EOP that have been provided to other agencies and date of distribution.

J.4.6.2. Overview

The EOP is to have a Basic Plan Overview, detailing the Concessionaire's approach to emergency management that contains, at a minimum, a general- purpose statement of the EOP that also references information provided in other parts of the overall Plan.

J.4.6.3. Concept of Operations

The EOP is to have a Concept of Operations section that describes the day-to- day operational issues of the Concessionaire. It is also intended to explain the Concessionaire's overall approach to an emergency situation (i.e. what should happen, when and at whose direction). The EOP shall be written to be in compliance and consistent with the Incident Command System (ICS) and the National Incident Management System (NIMS).

J.4.6.4. Organization and Assignments

The EOP is to have an Organization and Assignment of Responsibilities section that includes all individuals, departments, agencies and political subdivisions that may be involved in an emergency incident. It must include, at a minimum:

- An Incident/Unified Command basic structure that graphically illustrates the command structure that is typically used for "routine" and "major" emergencies. It should identify by position and/or job title those persons normally assigned to fill the various roles and have specific responsibilities under various emergency situations. This is not intended to be an absolute or inflexible document, but rather provide general guidance and information on how various incidents will typically be managed.
- A general sequence of actions, before, during and after an emergency situation.
- An explanation of who requests aid and under what conditions. Also, anexplanation of who has the authority to request and/or send aid to other Commonwealth or Local agencies.
- An explanation of the relationships (for purposes of emergency management) between the Concessionaire and the Commonwealth, and the other governmental agencies and entities as appropriate.

- An introduction to other issues and concerns that may be dealt with more fully in the annexes.
- An explanation of the organization, staffing, location and responsibilities of the Emergency Operations Center (EOC), and the conditions under which it is to be activated.

J.4.6.5. Administration and Logistics

The EOP is to have an Administration and Logistics section that covers the general support requirements and the availability and support for all types of emergencies, as well as general policies for managing resources. This section should address, at a minimum:

- A reference to and listing of all current mutual aid agreements. Full copies are to be included in the Appendices.
- All general policies for managing resources.
- Policies on:
  - Augmenting staff, if necessary
  - Reassignment of employees, if necessary
  - Financial record keeping
  - Reporting and tracking resource needs
  - Use of available resources
  - Acquiring ownership of resources
  - Compensating owners of private property, when used by the Concessionaire.

J.4.7. Functional Annex Requirements

Annexes are the parts of the EOP that begin to provide specific information and direction and must focus on operations. These annexes must emphasize responsibilities, tasks and operational actions that pertain to the specific functions. They should also clearly define and describe the policies, processes, roles and responsibilities inherent in the various functions before, during and after any emergency situation.

At a minimum, the EOP shall include a functional annex that addresses how the agency will perform each of the functions described below:

Each functional annex will be structured to be consistent with the Emergency Support Functions included in the Federal Response Plan and will individually address:

- The purpose of the function.
- A description of the situations that trigger implementation of the function.