

EXHIBIT H
**OPERATIONS AND MAINTENANCE STANDARDS
AND
PERFORMANCE REQUIREMENTS€**

I. GENERAL.....	2
A. Operator Responsibilities.....	2
B. Plan Preparation and Submission Requirements	2
C. Manuals, Standards and Procedures	3
D. Permits	5
E. Management and Administration.....	5
F. Quarterly and Annual Reporting.....	6
G. O&M Manual.....	8
II. Maintenance	8
A. Maintenance Plans	8
B. Inspection	9
C. Toll Facilities and Systems Upgrades.....	10
III. Operations	12
A. Operations Plans	12
B. Incident Response	14
C. Police Services and Snow and Ice Removal	15
D. Safety Management and Traffic Control	15
E. Interagency Coordination.....	16
F. Road Closures	16
G. Customer Service	16
IV. Transfer Requirements	17
A. Pre-Transfer Assessment	17
A. Minimum Quality of Road at Transfer	18
V. Performance Standards.....	18
A. Operations and Maintenance.....	18
B. Quality Assurance and Quality Control.....	18

I. GENERAL

This Exhibit further details the Operator's traffic management, ordinary maintenance and repair responsibilities and its Extraordinary Maintenance and Repair Work responsibilities.

A. Operator Responsibilities

Reference is made to the following provisions of the Comprehensive Agreement:

1. Exhibit B: Project Description;
2. Article 3: Establishment of Public-Private Transaction; and
3. Section 8.02: Operator Obligation to Manage and Operate.

Exhibit B lists the assets ("Assets") included in the Project that shall be included in the Operator's operations and maintenance work.

Article 3 identifies and establishes the basic roles and responsibilities of the Department and the Operator.

Section 8.02 lists the general operations and maintenance responsibilities of the Operator.

B. Plan Preparation and Submission Requirements

The Operator must prepare a number of Plans and Reports, which are subject to the Department's review, comment and approval in accordance with the terms of this Exhibit H.

The Plans include:

- Permit Processing Plan
- Management Plan
- Maintenance Plan
- Inspection Plan
- Incident Response Plan
- Traffic Control Plan
- Customer Service/Response Plan
- Public Information Plan
- Environmental Protection Plan
- Quality Assurance and Quality Control Plan
- Detour Plan
- O&M Manual

The Reports include:

- Quarterly Reports
- Annual Reports
- Pre-Transfer Assessment Report

The Operator shall submit each of the Plans and Reports to the Department by the relevant deadline specified in this Exhibit. Once it is received, the Department shall review and comment on each such document. The Operator shall modify all Plans and Reports submitted for approval based on the Department's comments and shall promptly submit revised Plans and Reports to the Department for its approval, which shall not be unreasonably withheld.

C. Manuals, Standards and Procedures

The Operator shall perform all of its responsibilities with respect to the Assets in accordance with the documents listed below, as they may be revised, amended or supplemented from time to time ("Manuals, Standards and Procedures"):

- Road and Bridge Specifications (2002), and Special Provisions and Copied Notes (As issued)
- VDOT Tree Trimming Policy
- Drainage Manual (2002)
- Road Design Manual, Volumes I and II (2005)
- Road and Bridge Standards - Volumes I and II (2001)
- Maintenance Policy Manual (January 1994)
- Virginia Operational Information System (VOIS) Procedure Manual (November 2005)
- Maintenance Rating Program Manual (MRP-2004)
- Land Use Permit Manual (Current edition)
- AASHTO Standard Specifications for Highway Bridges (1992) (with annual revisions)
- Virginia Modifications to the AASHTO Standard Specifications for Highway Bridges
- AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaries and Traffic Signals
- Virginia Work Area Protection Manual (2003)
- Manual on Uniform Traffic Control Devices (November 2003)

The Operator shall manage all Assets within the Project Right of Way and perform its work such that it produces results that at least equal those achieved pursuant to the Manuals, Standards and Procedures. The Operator, however, is not required to comply with any prescriptive requirements in the Manuals, Standards and Procedures that are inconsistent with the Outcomes and

Performance Targets,¹ applicable Laws and Regulatory Approvals and the Project Agreements.

In addition to the Manuals, Standards and Procedures, the Operator should also review the following documents for informational purposes so that it will better understand what the Department considers to be Good Industry Practice² within the State:

- Construction Manual (January 2002)
- DBE Directory (Published monthly)
- SWAM (Small, Women Owned and Minority Vendors) Directory
- Roadside Design Guide (AASHTO-January 1996)
- Environmental Permit Manual (May 1996)
- Environmental Document Handbook (January 1994)
- Instructional and Informational Memoranda (Revised as needed)
- Public Involvement Policy and Procedures Manual (2005):
- VDOT Erosion and Sediment Control and Stormwater Management Program Manual (Revised as needed)
- Culvert Repair Practices Manual, Volumes I and II (FHWA-May 1995)
- Bridge Maintenance Training Manual (FHWA-May 1994)
- Asset Management “Best Practices” (October 2004)
- AASHTO Maintenance Manual (1999)
- Memorandum of Agreement (MOU) with the Department of Motor Vehicles (DMV)
- Hurricane Evacuation Plan (Hampton Roads and Richmond District)
- Asset Management System Data Dictionary (Current version)
- VDOT Enterprise Data Management Policy (DPM 1-22)
- Data Modeling Guidelines
- Geo-Spatial Data Standard (TIMSC Policy 01-02)
- VDOT Data Object Naming Standards
- VDOT Geospatial Data Technical Standard
- VDOT Standard Organizational Codes
- Global Positioning Systems (GPS) (COV Guide 94-3)
- Information Technology Security Guideline (COV ITRM Guideline SEC2001-01.1)
- Information Technology Security (COV Policy 90-1)
- Information Technology Security Standard (COV ITRM Standard SEC2001-01.1)
- Model Virginia Map Accuracy Standards (COV Guide 92-1)
- Spatial Data Transfer Standard (SDTS) (COV Std 94-1)

¹ “Outcomes and Performance Targets” is defined in the ARCA and means the outcomes, performance targets, tolerances and criteria listed in Attachment A to Exhibit H.

² “Good Industry Practice” is defined in the ARCA and means the exercise of the degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator or contractor seeking in good faith to comply with its contractual obligations, complying with all applicable Laws and Regulatory Approvals and engaged in the same type of undertaking under similar circumstances and conditions.

- Material Manual of Instructions (February 2005)
- Right of Way Manual of Instructions - Volumes I and II (July 1999)
- 1994 Metric Road and Bridge Standards (Volumes I and II) (1994)
- Condition Evaluation of Bridges (1995)
- Structure and Bridge Instructional and Information Memos (Revised as needed)
- Pavement Markings Study Guide (1995)
- Traffic Engineering Division Memoranda (Revised as needed)

D. Permits

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 3.02: Parties to Transaction; Roles and Responsibilities; and
2. Section 7.06: Operator Obligation to Obtain Regulatory Approvals.

The Operator shall prepare and the Department shall review all permit applications in accordance with the Land Use Permit Manual (Current edition) and any other relevant Manuals, Standards and Procedures.

The Operator shall prepare and process all permits so that they may be timely submitted to the Department for its approval or denial. The Department shall approve or deny permits submitted by the Operator within 60 days of the date on which the Department receives a complete permit application. As part of its submission for each permit application, the Operator shall include an analysis and its reasoning for why that particular permit is required.

The Operator shall enter all permit-related data into a permit tracking system.

Permit Processing Plan

Delivery: No later than 60 days before the Transitional Period³ is scheduled to end.

The Operator shall submit a Permit Processing Plan for Department review and approval that includes:

1. Details concerning the permitting process; and
2. Overview of how the Operator intends to comply with the various permitting requirements.

E. Management and Administration

³ The period not to exceed six months following the Closing during which the Operator will temporarily delegate operations and maintenance responsibilities to the Department.

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 3.02: Parties to Transaction; Roles and Responsibilities;
2. Section 8.02 Operator Obligation to Manage and Operate;
3. Section 8.03 Temporary Delegation of Operations and Maintenance to the Department; Department Charges;
4. Section 8.04 The Operator;
5. Section 8.06: Department Access and Inspection;
6. Section 8.13: Police Services; Snow Removal;
7. Section 9.02: Project Enhancements by the Department;
8. Section 10.01: Right to Oversee Work;
9. Section 10.02: Compensation for Oversight of Project Enhancements;
and
10. Exhibit A: Definitions.

At all times the Operator shall have designated and appropriate staff available to operate and maintain the Project. The staff shall have the authority and responsibilities set forth in the Comprehensive Agreement. In designating or replacing the Operator's onsite project manager, the Operator shall afford the Department an opportunity to meet with, and shall obtain the Department's approval of, the Persons it is considering for appointment to this position. If the Department determines, in its sole discretion, that the onsite project manager or any other Person employed by the Operator or the O&M Contractor is not performing the services properly and skillfully, or who is otherwise incompatible with a good working environment and the success of the Project, then the Department shall so inform the Operator of the reasons for its conclusion and the Operator shall use its best efforts, consistent with applicable Laws and Regulatory Approvals, to replace such Person.

Management Plan

Delivery: No later than 60 days before the Transitional Period is scheduled to end.

The Operator shall submit a Draft Management Plan for the Department's review that includes:

1. Staffing levels; and
2. An organizational chart depicting individual responsibilities and reporting assignments.

F. Quarterly and Annual Reporting

Reference is made to the following provisions of the Comprehensive Agreement:

1. Article 18: Records, Reports, Work Product And Intellectual Property;
2. Section 8.07: Extraordinary Maintenance and Repair Reserve; and

3. Section 8.08: Procedures Relating to Extraordinary Maintenance and Repair Work.

Quarterly Report

Not later than 15 days after the end of the relevant calendar quarter (*i.e.*, by April 15, July 15, October 15 and January 15), the Operator shall deliver to the Department a quarterly report ("Quarterly Report"). The report shall provide advice to the Department on any asset, operation or customer service event that requires:

1. A variation in budget expenditure for the quarter by an amount of more than ten percent;
2. The bringing forward of works and / or expenditure for works by more than a quarter; and
3. Departure from standard operating arrangements.

The report shall also provide:

4. Quarterly traffic records on the Project volumes by month;
5. Incident and emergency response logs;
6. Confirmation of completed work, and status of work scheduled to be completed in the quarter but not yet completed; and
7. Summary of any asset or operation that varies from the Outcomes and Performance Targets.

Annual Report

No later than the 30 days after the end of a calendar year, the Operator shall deliver to the Department an annual report ("Annual Report"). The form and substance of the Annual Report (which is in addition to the Annual Budget) shall be satisfactory to the Department, and shall cover the Operator's maintenance and operations activities and accomplishments during the prior year with respect to the Assets.

In addition to the information required for a Quarterly Report, the Annual Report shall include, at a minimum, the following information:

1. Data on new, delayed, pending, and completed Tasks⁴, whether or not they appear on the Extraordinary Maintenance and Repair Work Schedule;
2. The current status of the Extraordinary Maintenance and Repair Reserve Fund; and

⁴ "Task" is defined in the ARCA and means a component, item or discrete project related to Extraordinary Maintenance and Repair Work.

3. An expenditures report for Extraordinary Maintenance and Repair Work against each asset type.

The Department shall attach to the Annual Report the calculated Maintenance Rating Program (MRP) ratings for that year.

G. O&M Manual

Delivery: No later than 60 days before the Transitional Period is scheduled to end.

The Operator shall prepare and deliver to the Department for its review an operation, maintenance and repair manual ("O&M Manual"), which shall include:

1. A general overview and philosophy for how the Project should be operated and the Assets maintained and describing how the Operator will achieve the Outcomes and Performance Targets;
2. Manufacturer's specifications and existing maintenance procedures including provisions for Hazardous Substances handling;
3. The Life Cycle Maintenance Model;
4. All Plans identified in this Exhibit;
5. Any additional information deemed relevant by the Operator for the effective maintenance and operation of the Project.

II. Maintenance

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 8.02: Operator Obligation to Manage and Operate;
2. Section 8.07: Extraordinary Maintenance and Repair Reserve; and
3. Section 8.08: Procedures Relating to Extraordinary Maintenance and Repair Work.

The Operator is responsible for the installation and maintenance of regulatory, warning, informational and facility (airport, railroad, commuter parking, rest area, welcome center) signs. See the Manual on Uniform Traffic Control Devices (November 2003) for further details.

A. Maintenance Plans

The Operator shall submit, for Department review and approval, maintenance-related Plans according to the deadlines stated in the below description.

All Plans shall be incorporated into the O&M Manual.

Maintenance Plan

Delivery: No later than 30 days before the Transitional Period is scheduled to end officers of the Department, the Operator, an independent engineer selected by the Operator and approved by the Department and the O&M Contractor shall undertake a joint 'walk through' of the project to assess the current condition of the project taking into account recent reports, the requirements relating to relevant permits. Based on the observed conditions, the Operator shall prepare a Maintenance Plan.

The Maintenance Plan shall include, as a minimum, the following:

1. Outstanding works to be completed by the Department prior to the end of the Transition Period;
2. Actions required to enable the Operator to complete the preparation of the ongoing Maintenance Plan (e.g., supply of spare parts and manuals);
3. The Operator's expected program for routine maintenance activities separated by each asset; and
4. The Operator's preventive maintenance and minor repairs program for each asset (including repair times for each asset); and
5. The Operator's Life Cycle Maintenance Model and Extraordinary Maintenance and Repair Work Schedule for each asset.

Inspection Plan

Delivery: No later than 60 days before the Transitional Period is scheduled to end.

The Inspection Plan shall include, as a minimum, the following:

1. For each asset, the Operator's expected program for routine inspections to be performed by Operator staff; and
2. For each asset, the Operator's expected program for yearly Extraordinary Maintenance and Repair Work inspections to be performed by Operator staff.

The Operator shall at least annually inspect each Asset.

B. Inspection

1. Operator Inspections

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 8.02: Operator Obligation to Manage and Operate;

2. Section 8.08: Procedures Relating to Extraordinary Maintenance and Repair Work; and
3. Exhibit K: Life Cycle Maintenance Model.

The Operator shall be responsible for establishing, scheduling and performing routine maintenance inspections for all Assets. The purpose of these inspections is to identify and note defects, monitor known problems, and monitor the performance of new construction and recent repairs.

These routine maintenance activities shall be performed at a frequency that ensures uniform and consistent compliance with the Maintenance Rating Program (“MRP”) criteria, the required maintenance rating level, Attachment A to this Exhibit and any other requirements of the Department.

The Operator shall biennially inspect all Project bridges and provide to the Department the information necessary to comply with the FHWA’s National Bridge Inventory reporting requirements.

2. Department’s Right to Inspect

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 3.02: Parties to Transaction; Roles and Responsibilities;
2. Section 8.06: Department Access and Inspection;
3. Section 10.01: Right to Oversee Work;
4. Section 10.02: Compensation for Oversight of Project Enhancements; and
5. Section 18.05: Reporting Requirements and Inspection and Audit Rights.

C. Toll Facilities and Systems Upgrades

The Operator shall upgrade, as required, the Toll Facilities and Systems equipment and subsystems at intervals within the Term in order to ensure:

- Customers are not charged more than the toll permitted under Exhibit F; and
- Outcomes and Performance Targets for the toll systems are met or exceeded, allowing for non-routine events, incidents and maintenance activities.

The Operator shall be responsible for the operation of the Toll Facilities and systems equipment including subsystems to ensure:

- That the reliability of the systems is always maintained at a high level; and
- That the risk of an extended systems failure that would have a significant impact on roadway operations is minimized.

Upgrade intervals are unique to each subsystem and shall be based on the industry standard life-cycle/life-span for each subsystem.

By performing system upgrades or in some cases complete system restorations within the Term it ensures that following the end of the Term, the Department shall take over systems that shall adhere to all the above mentioned criteria.

At the end of the Term the Operator shall replace all equipment or subsystems that do not meet the performance requirements. It is therefore the Operator's responsibility to provide the Department with equipment that is in good condition for delivery to the Department.

Upon the end of the Term, the Operator shall provide systems technology equal to or better than those installed in similar projects throughout the United States.

The Operator shall provide these technology upgrades and restorations to ensure that:

1. The building and toll systems equipment and subsystems to be delivered to the Department shall be in a working condition that provides for the achievement of the Outcomes and Performance Targets.

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 12.03: Traffic Management Activities; and
2. Section 12.04: ITS Activities.

The Operator shall adhere to the Department's ITS standards for any planned ITS initiatives.

The Operator shall be responsible for the installation, operation and maintenance of any ITS-related equipment installed based on its own initiatives.

III. Operations

A. Operations Plans

The Operator shall submit, for Department review and approval, operations-related Plans according to the delivery deadlines set forth below.

All such Plans shall be incorporated with and into the O&M Manual.

Incident Response Plan

Delivery: No later than 60 days before the Transitional Period is scheduled to end.

The Incident Response Plan shall include, as a minimum, the following:

1. Details on public/agency notifications;
2. Incident management procedures;
3. How the safety of motorists will be insured;
4. How information will be communicated to motorists during an incident;
5. How Hazardous Substances will be handled;
6. General procedures for coordination with the Department, the Smart Traffic Center, the State police and other emergency personnel with respect to emergency incidents and occurrences, including vehicle accidents, Hazardous Substance spills or releases, and adverse weather conditions such as rain, snow, ice, flooding, fog and hurricanes;
7. Incidents related to traffic control procedures;
8. Contents and recipients of incident reports;
9. Procedures for the establishment and maintenance of detour routes when needed for closure of the interstate and primary roads;
10. Procedures for emergency repairs and the removal of debris;
11. Procedures for a response to any force majeure event;
12. Procedures related to evacuation activities;
13. Procedures related to homeland security issues; and
14. a Detour Plan.

Traffic Control Plan

Delivery: No later than 60 days before any activity requiring road closure, diversions or restriction of traffic is scheduled.

Prior to commencing any activity, the appropriate undertaking of which will require restriction or diversion of traffic, including lane closures, road closures and detours, the Operator shall prepare, and furnish to the Department for its review and approval a Traffic Control Plan for all affected portions of the Project.

Customer Service/Response Plan

Delivery: No later than 60 days before the Transitional Period is scheduled to end. The Operator shall provide to the Department an updated copy before July 1st of each year during the Term.

This Plan shall include a discussion of how the Operator intends to inform the public about its customer service center, methods the public may use to contact the Operator, and the procedures to be used for resolving any customer complaints.

Public Information Plan

Delivery: No later than 60 days before the Transitional Period is scheduled to end.

The Department and the Operator shall jointly develop a Public Information Plan. The Operator shall coordinate in advance its media contacts with the Department to the extent reasonably practicable.

Environmental Protection Plan

Delivery: No later than 60 days before the Transitional Period is scheduled to end.

The Environmental Protection Plan shall include, at a minimum, the Operator's procedures for handling the following:

1. Protection of Natural Resources – Alternative evaluation must be performed if work will affect certain sensitive sites;
2. Noise Control – Operator should consult with the local public and mitigate noise impacts;
3. Water Quality – No decrease in surrounding water quality is allowed;
4. Air Quality; [REDACTED]
5. Dust Control – Dust must be controlled using best practices; and
6. Threatened and Endangered Species – An assessment must be made on the effects to these species during the Term. Plans should minimize the possibility of jeopardizing these species.

Quality Assurance and Quality Control Plan

Delivery: No later than 60 days before the Transitional Period is scheduled to end.

The Quality Assurance and Quality Control Plan shall include the Operator's approach to quality assurance and quality control, which includes the monitoring of its own performance and how it will demonstrate compliance with the Outcomes and Performance Targets during the Term.

B. Incident Response

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 8.13: Police Services; Snow Removal.

The Operator shall have incident response procedures in place to ensure proper response timeliness and ensure proper coordination of the handling of Hazardous Substances encountered within the Project Right of Way.

The Operator shall comply with all Laws, Regulatory Approvals, Project Agreements, and Department policy dealing with incidents, evacuation and the handling and disposal of Hazardous Substances.

The Operator shall immediately notify the Department's Smart Traffic Center (STC), Department Project Manager of all roadway closures and re-openings, or major incidents upon their occurrence.

The Operator shall enter the event into the Virginia Operational Information System ("VOIS") in accordance with the relevant procedures, unless otherwise instructed by the Department.

The Operator shall respond and deploy resources immediately upon notification, 24 hours per day, 7 days per week, including holidays, to any emergency occurring on the Project Right of Way.

The Operator shall arrive on-site, prepared to take necessary action with necessary manpower and typical emergency response equipment, within a maximum time of 20 minutes during work hours and 60 minutes after work hours from initial notification of the incident.

The Operator shall be responsible for all aspects of traffic control related to an incident, including, but not limited to, the coordination and assistance with responsible parties for the entire detour route off the Project Right of Way and onto other state or non-state roads.

Detour Plan

The Operator shall work with the Department to develop a Detour Plan and shall present this Plan no later than 60 days prior to the end of the Transitional Period.

The Operator shall immediately notify the Department's Smart Traffic Center (STC), Department Project Manager of all roadway closures and re-openings, or major incidents upon their occurrence.

The Operator shall enter the event into the Virginia Operational Information System ("VOIS") in accordance with the relevant procedures, unless otherwise instructed by the Department.

The Operator shall cooperate with the Department and may be required to furnish its forces (to include subcontractors) to supplement the Department in force majeure preparedness, evacuation plans and implementation of such plans, for the duration of the event.

C. Police Services and Snow and Ice Removal

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 8.13: Police Services; Snow Removal.

Snow removal performance measures are listed under the Inclement Weather section of Attachment A.

D. Safety Management and Traffic Control

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 12.03: Traffic Management Activities.

The Operator shall perform all work in accordance with the current Virginia Work Area Protection Manual and shall comply with the Department's lane closure restrictions/requirements. If possible, lane closures for planned work shall be performed at night.

Prior to commencing any activity, the appropriate undertaking of which will require restriction or diversion of traffic, including lane closures and detours, the Operator shall prepare, and furnish to the Department for its review and approval a Traffic Control Plan for all affected portions of the Project.

The Operator shall be responsible for the safety of motorists and the public during the performance of all work under the direct or indirect control of the Operator, its agents or employees or subcontractors.

Whenever the Operator's operations require it, the Operator shall cause to be furnished, erected and maintained such fences, temporary railing, barricades, lights, signs and other devices and take such other protective measures as are

necessary to prevent accidents, damage or injury to the public, and as required by the Traffic Control Plan and the Manuals, Standards and Procedures.

The Operator shall perform its operations in a manner that keeps the Project fully open to the public 24 hours per day, every day, subject only to closures permitted by the Traffic Control Plan, emergency closures and detours due to an incident or declared emergency. The Operator shall also comply with the Department's holiday and event travel restrictions.

E. Interagency Coordination

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 8.13: Police Services; Snow Removal;
2. Section 12.02: Coordination Regarding Certain Transportation Facilities; and
3. Section 12.03: Traffic Management Activities.

The Operator shall make every attempt to establish, maintain and provide coordination with agencies that are adjacent to the Project and provide assistance in on-going operations.

It shall be the Operator's sole responsibility to coordinate with such agencies so that the continual operation of the Project is not disrupted in any manner.

F. Road Closures

The Operator shall be entitled to close any part of the Project for the purpose of safety, scheduled or emergency maintenance and cleaning.

The Department may at any time demand that all or any part of the Project be closed or remain closed for the purpose of public safety or in the event of a local, state, or national emergency or if required by national security interests.

The Operator shall make certain that planned road closures for maintenance and construction result in minimal disruption to normal Project activity and that motorist safety is ensured.

The Operator shall make certain that road closures for an emergency event is immediately communicated to motorists, the Richmond Smart Traffic Center, and the Department's Project Manager.

G. Customer Service

The Operator shall maintain a customer service log, which shall detail any complaints or requests it may receive, and the disposition of the items contained in that log.

The Operator shall make the customer service log available to the Department for its review upon request.

The Operator shall contact the customer within 48 hours and resolve any customer service request within 2 weeks.

In some cases, the Department may direct the Operator to respond immediately due to the urgency or as otherwise may be in the best interests of the Department.

IV. Transfer Requirements

Reference is made to the following provisions of the Comprehensive Agreement:

1. Section 8.07: Extraordinary Maintenance and Repair Reserve;
2. Section 8.08: Procedures Relating to Extraordinary Maintenance and Repair Work;
3. Section 8.10: Obligation to Turn Over Project at End of Term;
4. Section 8.11: Transition Plan;
5. Section 8.12: Ethical Standards;
6. Section 16.03: Operator Actions Upon Termination; and
7. Section 16.04: Liability After Termination.

A. Pre-Transfer Assessment

The Operator shall arrange for an assessment to be completed by a qualified Person of all Project assets 15 years before the end of the Term (the "Pre-Transfer Assessment Report"). A "qualified Person" for purposes of this assessment means a Person with experience evaluating assets similar to the Assets and a reputation for accurately assessing their condition.

Within 60 days after the qualified Person complete this final asset assessment, the Operator shall submit for the Department's review and approval the Pre-Transfer Assessment Report, which should discuss the following topics:

1. The residual life of each Project asset;
2. The needed Extraordinary Maintenance and Repair Work for each Asset;
3. The status of the Extraordinary Maintenance and Repair Reserve Fund; and
4. Any remaining warranties applicable to each Asset.

A. Minimum Quality of Road at Transfer

The Operator shall ensure, at a minimum, that at the end of the Term all Project assets are in a condition that meets the applicable Outcomes and Performance Targets, and that all work scheduled to be performed in the final year of the Term under the then Five Year Assessment, as modified as provided below, is performed and completed.

One year before the end of the Term, or at such other time as the Department and Operator agree upon, they shall conduct a thorough inspection of the Project assets to determine their condition and work necessary to meet applicable Outcomes and Performance Targets at the end of the Term, and to verify the accuracy of the then Five-Year Assessment. Department and Operator shall prepare a list of the work identified as so necessary, and shall modify the Five-Year Assessment as indicated by the inspection findings.

Thirty days before the end of the Term, or at such other time as the Department and Operator agree upon, they shall conduct a final inspection of the Project assets to re-determine their condition and remaining work necessary, if any, to meet applicable Outcomes and Performance Targets at the end of the Term and to verify completion of the work scheduled in the final year of the Term under the then Five Year Assessment. If any Outcomes and Performance Target is not satisfied, or if any final year Five Year Assessment work is not completed, Operator shall perform or cause to be performed the work necessary to meet the Outcomes and Performance Targets and complete the final year Five Year Assessment Work before the end of the Term or as soon as possible after the end of the Term.

V. Performance Standards

A. Operations and Maintenance

The Operator, as a minimum, must achieve and maintain the Outcomes and Performance Targets.

The Department or its authorized representative and the Operator shall assess performance using the Department's MRP handbook as updated.

B. Quality Assurance and Quality Control

The Operator is required to implement a complete quality assurance and quality control program, which includes monitoring of its own performance and which demonstrates the Operator's compliance with the Outcomes and Performance Targets throughout the Term.

It shall be the Operator's responsibility to ensure all subcontractors and sub-consultants comply with the requirements of the quality assurance and quality control program.

ATTACHMENT A – PERFORMANCE MEASURES

Revised: December 15, 2005

DEFINITIONS.....	3
ROADWAY.....	6
Cross Pipes & Culverts.....	6
Ditches.....	8
Drainage and Subdrain Systems.....	8
Curb & Gutter.....	9
Sidewalks.....	9
Handicap / Sidewalk.....	10
Ramps.....	10
Grass and Legumes.....	10
Debris & Road Kill.....	10
Litter.....	10
Landscaping/ Wildflower/ Plant Bed/ Weeds.....	10
Bike Lane/ Bridal Path.....	12
Brush, Shrubs & Trees.....	12
Concrete Barriers/ Temporary Concrete Barriers.....	12
Sound Barriers.....	12
Slopes.....	12
Graffiti Removal.....	13
Fence.....	13
Signals.....	13
Guardrail.....	13
Impact Attenuators.....	13

Regulatory and Non-Regulatory Signs, and Overhead Signs.....	13
Roadway and Sign Lighting	14
Object Markers & Delineators	14
Glare Foils	14
Pavement Markings & Messages	14
Pavement Markers	14
Asphalt Paved Lanes	14
Concrete Paved Lanes	15
Paved Shoulders	16
Unpaved Shoulders.....	16
INCLEMENT WEATHER.....	17
BRIDGE.....	18
Pipes and Culverts	19
Retaining Walls	19
Channel and Slope Protection	19
Graffiti Removal.....	20
TOLL FACILITIES AND SYSTEMS.....	21

DEFINITIONS

	Definition
Asphalt Paved Lane	An asphalt pavement consists of a mixture of heated asphalt cement and aggregate, commonly referred to as "hot mix". This hot mix is placed on a prepared base using a mechanical spreader or grader and compacted. These surfaces are commonly known as flexible pavements.
Bridge Deck	Bridge Deck includes and not limited to the bridge roadway surface, approach slabs, curbs, sidewalks, parapets, railing system, drainage system, lighting, expansion joints
Bridge Substructure	Bridge Substructure includes and not limited to abutments, backwalls, seats, piers, columns, wingwalls, weep holes
Bridge Superstructure	Bridge Superstructure includes and not limited to beams, girders, diaphragms, bracings, truss members, bearing devices
Brush Control	Brush control is the eradication or control of undesirable, naturalized woody vegetation using integrated vegetation management techniques.
Concrete Barrier	Concrete barriers are a type of traffic barrier. Traffic barriers are devices installed to improve the safety of vehicular traffic by redirecting errant vehicles or enabling the vehicle to come to rest or slow sufficiently to allow the driver to regain control. A concrete barrier is a concrete wall or modular retaining system. It is usually placed between lanes of opposing traffic.
Concrete Paved Lane	A concrete pavement surface is a road surface made of a mixture of Portland cement, aggregates and water and is commonly referred to as "rigid pavement".
Culvert	A culvert is a drainage structure designed to allow the passage of surface water under a Roadway, railway or roadside entrance.
Curb and Gutter	A curb and gutter is a concrete or asphalt drainage system constructed for the purpose of carrying surface water. Curbs and gutters are maintained to accommodate efficient drainage of pavement surface water accumulations and to protect side slopes from erosion resulting from unconstrained water spilling over shoulders and embankments.
Debris and Roadkill	Debris control involves the collection and removal of debris from the highway. Debris consists of, but is not limited to, items such as, rubbish, dead animals, batteries, tires, unlabelled containers and rocks.
Ditch	A ditch is an open drainage facility constructed to carry water to an outlet.

	Definition
Drainage Systems	Drainage systems refers to catchbasins, drainage maintenance access points, ditch inlets and outfalls that are maintained to provide efficient underground drainage of pavement surface water and subdrain accumulations. Drainage systems protect side slopes by carrying water in urban areas or on narrow roads.
Fence	Fences are barriers constructed to control access to and from facilities.
Graffiti Removal	The removal of the illegal or unauthorized defacing of a building, wall or other edifice or object by painting or otherwise marking it with words, pictures or symbols.
Guardrail	A protective railing designed to prevent people or vehicles from falling into an open space.
Litter	Litter means any garbage, rubbish, trash, refuse, can, bottle, container, wrapper, paper, paper product, tire, appliance, mechanical equipment or part, building or construction material, tool, machinery, wood, motor vehicle or motor vehicle part, dead animal or identifiable abandoned material.
Overhead Signs	Overhead sign are those that extend partially or completely above traffic (i.e.: structure-mounted, cantilever, mono-tube and aluminum or steel truss).
Pavement Markers	Pavement markers are various types of recessed or surface-mounted reflective markers.
Pavement Markings	Pavement markings are symbols and lane lines applied to the roadway, which warn and guide motorists and enhance the movement of traffic.
Paved Shoulders	Shoulders give lateral support to the traveled portion of the roadway, allow run-off of surface water and provide an area for traffic to pull off the traveled portion. A paved shoulder consists of concrete, asphalt or surface treatment.
Regulatory and Non-regulatory Signs	Signs are devices that inform the motoring public of traffic regulations, roadway characteristics, roadway hazards and provide directional information.
Retaining Walls	A wall built to keep a bank of earth in place.
Roadway and Sign Lighting	Roadway and sign lighting includes conventional roadway lighting, mast lighting and sign lighting.
Sidewalk	That portion of a highway, road or street specifically constructed for the use of pedestrians on the outside edge of the vehicular travel way.

Asset	Definition
	Sidewalks are typically, but not always, curb-separated from the roadway and made of concrete, brick, asphalt or another hard surface materials.
Slopes	An elevated geological formation.
Sound Barrier	A solid masonry wall built between the freeway and adjacent businesses or residences designed to reduce noise impacts.
Subdrain Systems	Subdrain systems refers to perforated pipes placed in the sub-grade adjacent to or underneath the pavement edge to intercept and collect subgrade water. This water is then discharged into side ditches or other drainage structures.
Tree and Shrub Maintenance	Tree and shrub maintenance consists of various activities required to keep planted trees and shrubs healthy.
Unpaved Shoulders	Shoulders give lateral support to the traveled portion of the roadway, accommodate run-off of surface water, and provide an area for traffic to pull off the traveled portion. An unpaved, gravel shoulder is constructed with compacted granular material.

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
<p><u>Cross Pipes & Culverts</u></p>	<p>Open Drains No Erosion</p>	<p>95</p>	<p style="text-align: center;"><u>ROADWAY</u></p> <p>Debris and/or other material which is restricting water flow in a culvert shall be removed <u>within 120 days</u>.</p> <p>All maintenance and repair work shall be done <u>within 30 days</u> unless otherwise noted.</p> <p>The Contractor shall provide maintenance for the different types of culverts as follows:</p> <ol style="list-style-type: none"> 1. Concrete Culverts <ol style="list-style-type: none"> a) The loss or displacement of hand-laid and grouted rip-rap shall be repaired; b) Scouring around the footings or any undermining of concrete aprons or cut-offs shall be repaired; c) The condition where the stream bed at a box-culvert (open-footing construction) is found to be lower than the bottom of the culvert (footing) shall be repaired; d) Washouts or erosion of culvert backfill, which may damage the culvert causing settlement or cracking, shall be repaired; e) Exposed reinforcing steel shall be repaired; f) Visible cracks and other evidence of deterioration of the concrete shall be repaired; g) Broken or damaged bars or grids, which have been installed to prevent entry by unauthorized personnel, shall be replaced. Culvert inlets with bars and grids installed shall be inspected monthly and after severe storms to ensure that debris does not accumulate and cause blockage; and h) Scouring at inlets or outlets shall be repaired. 	<p>EA</p>

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
ROADWAY				
			<p>2. Metal Culverts/Corrugated Steel Pipe</p> <ul style="list-style-type: none"> a) Deformed ends preventing the free flow of drainage shall be repaired; b) The loss or displacement of hand-laid and grouted rip-rap shall be repaired; c) Headwall movement away from the culvert shall be repaired; d) Erosion under or around metal culverts and any change in the shape of culverts over 27 inches in diameter shall be repaired; e) Scouring at inlets, outlets or around footings shall be repaired; f) Signs of pipe uplift at inlet or outlet ends shall be repaired; and g) Culvert corrosion shall be repaired. <p>3. Plastic Culverts</p> <ul style="list-style-type: none"> a) The loss or displacement of hand-laid or grouted rip-rap shall be repaired; b) Erosion of culvert backfill, which may damage the culvert and cause settlement, shall be repaired; c) Signs of pipe ends that are uplifting shall be repaired; and d) Deformed ends preventing the free flow of drainage shall be repaired. 	

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
<u>ROADWAY</u>				
<u>Ditches</u>	Clean	90	<p>The Contractor shall comply with the following:</p> <ol style="list-style-type: none"> 1. Obstructions: All non-planned obstructions that are stopping, rerouting or reducing the free flow of water and may cause flooding shall be repaired within 30 days. 2. Ditch Erosion: <ol style="list-style-type: none"> a) Damage to ditch lining shall be repaired <u>within 60 days</u>. b) Eroded or damaged ditch side-slopes, back-slopes and slope protection shall be repaired <u>within 60 days</u>. 	LFT
<u>Drainage and Subdrain Systems</u>	Functional	90	<p>All maintenance and repair work shall be done <u>within 60 days</u> unless otherwise noted.</p> <p>The Contractor shall provide the following:</p> <ol style="list-style-type: none"> 1. Cleaning and Obstructions <p>All debris shall be removed from the maintenance access points, catchbasins, ditch inlets and outfalls such that the sump shall never be filled to capacity with debris and/or other material. If the water flow appears to be obstructed, the connecting pipes shall be inspected and impediments removed.</p> 2. Structure <ol style="list-style-type: none"> a) All defects in concrete work, all ladder rungs that are broken, missing or badly rusted, and bricking that is crumbling or broken shall be repaired; b) Pipe ends that have been crushed shall be repaired; and c) All missing frames or grates shall be <u>replaced within 24 hours</u>. All damaged frames and grates shall be <u>replaced within 30 days</u>. 3. Settlement <ol style="list-style-type: none"> a) Depressions and heaving around catchbasins and maintenance access 	EA

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
ROADWAY				
			<p>points shall be repaired; and</p> <p>b) Depressions along the subdrain alignment, which may indicate a failure of the pipe, shall be repaired.</p> <p>4. Erosion</p> <p>a) Undermining of the sewer outfall structure or bank erosion of the outfall channel shall be repaired; and</p> <p>b) Ditch or stream outfall discharge erosion shall be repaired. Erosion repairs and obstruction removal at the stream outfall and ditch, that are reducing the flow capacity, shall be addressed and repaired.</p>	
<u>Curb & Gutter</u>	In-line	95	<p>All maintenance and repair work shall be done <u>within 60 days</u> unless otherwise noted.</p> <p>The Contractor shall ensure the following:</p> <ol style="list-style-type: none"> 1. Curb and Gutter: Gaps of two inches or wider between curb and gutter and pavement surface shall be repaired. Obstructions, which could impede proper drainage, shall be removed as detected. 2. Erosion: Shoulder and embankment areas behind the curb and gutter shall be inspected for erosion and restored to their original profiles. 3. Settlement: Settlement around maintenance access points, catchbasins and structure approaches shall be repaired. 4. Vegetation or Debris: Vegetation or Debris impeding drainage shall be removed as detected. 	LFT
<u>Sidewalks</u>	Structurally safe/sound	90	<p>The Contractor shall maintain clean and safe functional sidewalks with minimal obstruction at all times. Sidewalks shall have less than two inches undermining with no unsealed cracks greater than 0.5 inch and no misalignment greater than 0.5 inch.</p>	LFT

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
<u>ROADWAY</u>				
<u>Handicap / Sidewalk</u> <u>Ramps</u>	Structurally safe/sound	90	Maintenance and repair work shall be done within 60 days. The Contractor shall maintain clean and safe functional handicap/sidewalk ramps with minimal obstruction at all times. There shall be less than two inches undermining with no unsealed cracks greater than 0.5 inch, and no misalignment greater than 0.5 inch. Maintenance and repair work shall be done within 30 days.	EA
<u>Grass and Legumes</u>	Healthy growing Neat appearance Acceptable coverage and erosion control.	90	The Department approves the following grasses and legumes: Fescue, Bermuda, Crown Vetch and Lespedeza. The Contractor shall ensure that the height does not exceed 12 inches. The mow height shall not be less than two to six inches. All grass shall be neatly trimmed around fixed objects. There shall be less than 10% bare ground. Grass impeding drainage or contributing to erosion by destroying desirable groundcovers shall be trimmed accordingly.	ACRE
<u>Debris & Road Kill</u>	Roadway free of obstruction.	100	The Contractor shall respond immediately upon detection. Road kill and debris shall be removed promptly from the right-of-way and properly disposed. The Contractor shall ensure that: Items within the road that may have an impact on public health and safety shall be addressed immediately upon notification.	EA
<u>Litter</u>	Neat Attractive	90	The Contractor shall ensure that the roadside appears neat and clean. The Contractor shall ensure that there is no more than 10 pieces of litter per 0.1-mile section and no more than six cubic feet per acre of total litter accumulation. Illegal dumping shall be reported immediately. Litter shall be legally disposed of in accordance with federal, state, and city waste disposal laws and ordinances. Areas of excessive litter, which exceed the above numbers shall be removed within 48 hours.	ACRE
<u>Landscaping/ Wildflower/ Plant Bed/ Weeds</u>	Neat Attractive	90	The Contractor shall maintain a neat overall landscape appearance. Ornamentals and shrubs shall be pruned for optimum aesthetics and plant health. Plant beds shall be regularly mulched and weed free, at all times. Wildflowers shall be planted and managed to meet or exceed the Department's usual practice. Weeds shall be controlled before they obscure regulatory signs. Noxious weeds identified posing a negative economic impact to the horticultural or agricultural use of adjacent lands shall be controlled within 14 days. Weeds impeding	ACRE

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
			<p align="center">ROADWAY</p> <p>drainage or contributing to erosion by destroying desirable groundcovers shall be removed within 30 days.</p>	

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
<u>ROADWAY</u>				
<u>Bike Lane/ Bridal Path</u>	Neat Attractive	90	The Contractor shall maintain a neat bike lane/bridal path at all times.	LFT
<u>Brush, Shrubs & Trees</u>	Unobstructed sight distance & vertical clearance.	95	The Contractor shall ensure that brush and trees do not obstruct signs and sight distance. There shall be a vertical clearance of 20 feet over roadway and shoulder, and seven feet over sidewalks. There shall be no dead trees/shrubs, or leaning trees that present a hazard, or weed/invasive trees (e.g. Ailanthus, Mimosa, etc.). Brush impeding drainage or contributing to erosion by destroying desirable groundcovers shall be removed within 30 days.	ACRE
<u>Concrete Barriers/ Temporary Concrete Barriers</u>	Structurally safe/sound	95	The Contractor shall ensure that all concrete barriers are clean and free of vegetation at all times Concrete defects such as cracks and missing concrete, that affect the integrity of the barrier wall shall be addressed within 24 hours of detection and permanent repairs shall be scheduled within 7 days. Other concrete defects that do not affect integrity such as spalling, scaling and cracking shall be repaired within 120 days or as weather permits.	EA
<u>Sound Barriers</u>	Functional	95	The Contractor shall ensure that all sound barriers are free of damaging vegetation at all times. Any damage to the structural integrity or stability shall be addressed within 24 hours and scheduled for repairs within 7 days. All non-structural damage shall be repaired within 45 days or as weather permits.	LFT
<u>Slopes</u>	Stable No erosion	95	The Contractor shall maintain the slopes in general conformance to the original graded cross-sections. There shall be no erosion showing a pattern that will endanger the stability of the slope. For slide areas, which develop and infringe upon the roadway, shoulder area and/or ditch area, the Contractor shall provide temporary traffic control and maintain ditch drainage. Slide areas shall be rectified within 120 days or as weather permits.	LFT

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
<u>ROADWAY</u>				
<u>Graffiti Removal</u>	None present	95	The Contractor shall remove graffiti <u>within 7 days</u> of detection from all roadway surfaces, included but not limited to concrete barriers, temporary concrete barriers and sound barriers.	LFT
<u>Fence</u>	Limited access present. Structurally sound.	90	The Contractor shall maintain all existing fence intact and functional as designed and ensure that no greater than 10% is damaged as to allow access. There shall be no present or leaning vegetation on the fence. Where sections of farm or security fence are damaged and pedestrians, livestock and unauthorized vehicles may access the right of way, temporary repairs shall be made immediately. Where the fence is privately owned, the owner shall be responsible for the cost of the repairs. The Contractor shall repair or replace signal items within one hour of detection.	LFT
<u>Signals</u>	Operational Unobstructed Present	100		EA
<u>Guardrail</u>	Strong Undamaged Repairs, per current NCHRP Standards	100	The Contractor shall respond immediately upon notification to all failures due to incidents, accidents, etc., which includes site mitigation and repairs. There shall be no dents that decrease structural integrity. Badly damaged guardrail shall be repaired/replaced <u>within two days</u> following detection. Damaged but functional guardrail shall be repaired/replaced <u>within seven days</u> following detection. The Contractor shall ensure that all guardrail shall be generally maintained and functional.	LFT
<u>Impact Attenuators</u>	Present Operational with Only Non-Functional Damage Properly Aligned	100	The Contractor shall ensure properly maintained impact attenuators that are undamaged with no missing parts. The Contractor shall respond immediately to all failures due to incidents, accidents, etc., which includes site mitigation/other repairs. The Contractor shall repair deficiencies in impact attenuators and/or replace damaged impact attenuators <u>within 7 days</u> of detection. Any time impact attenuators are replaced, they shall be replaced with devices meeting the current highway standards.	EACH
<u>Regulatory and Non-Regulatory Signs, and Overhead Signs</u>	Present Functional Sound Clear & Clean Good Reflectivity Visible (conveys message and function as intended by day and night)	90	The Contractor shall respond immediately to all failures due to incidents, accidents, etc., which includes site mitigation/other repairs. Badly damaged regulatory and safety signs shall be repaired/replaced <u>within one day</u> following detection. All other damaged but functional signs shall be repaired/replaced <u>within five days</u> following detection. The Contractor shall replace broken/damaged posts and posts that lean more than one inch per foot within 5 days.	EACH

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
<u>ROADWAY</u>				
<u>Roadway and Sign Lighting</u>	Fully Operational	90	The Contractor shall ensure that 90% of all lighting is working at all times. There shall be no more than two consecutive lights out for conventional roadway lighting; no more than two bulbs per structure not working for high mast lighting; no more than one luminaire per sign not working for sign lighting. All access panels shall be in place at all times. The Contractor shall be responsible for lighting systems originating at service entrances. Replacements and/or repairs to roadway and sign lighting, including burnt-out bulbs, shall be made <u>within 7 days, safety issues will be mitigated immediately.</u>	EACH
<u>Object Markers & Delineators</u>	Present Reflective Functional Visible	90	The Contractor shall ensure proper mounting and correct positioning. There shall be no sight distance/ sign obstructions. There shall be less than 10% of all object markers and delineators damaged. Deficiencies in markers and delineators indicating hazards (e.g. bridge rail) shall be repaired <u>within 7 days</u> of detection. Any other deficiencies shall be repaired <u>within 30 days</u> of detection.	EA
<u>Glare Foils</u>	Present Reflective Functional	90	There shall be no sight distance or sign obstructions. There shall be less than 10% of all glare foils damaged. Maintenance and repair work shall be done <u>within 30 days.</u>	EA
<u>Pavement Markings & Messages</u>	Present Reflective Visible	90	The Contractor shall ensure clear and legible pavement markings at 120 feet. The Contractor shall repair or replace markings when they have deteriorated to the point of being illegible or when any part of the message cannot be easily read. Deficiencies in pavement markings shall be repaired <u>within 45 days</u> of detection.	LFT
<u>Pavement Markers</u>	Present Reflective Visible	90	The Contractor shall repair or replace deficient pavement markers <u>within 30 days</u> of detection.	EA
<u>Asphalt Paved Lanes</u>	Safe Durable Smooth Comfort	95	The Contractor shall respond immediately to all incidental pavement failures (potholes, cracks, raveling, shoving, edge drop-offs, rutting, etc.) that are cause for safety concern, which includes permanent patch repairs and/or site mitigation. Potholes: Potholes shall not be greater than 0.5 square feet x one inch deep and shall be repaired <u>within 30 days.</u>	SFT

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
ROADWAY				
			<p>All other pavement failures, including but not limited to the following, shall be repaired within 120 days:</p> <p>Cracks: Unsealed cracks shall not be greater than 0.25 inches.</p> <p>Raveling: There shall be no continuous section of edge raveling four inches or wider exceeding 25 feet in length.</p> <p>Shoving: The shoved area shall not exceed a cumulative 25 feet.</p> <p>Edge Drop-offs: Edge drop-offs shall not be greater than two inches and less than four inches and more than 50 feet in length. Or edge drop-offs shall not be greater than four inches.</p> <p>Rutting: Rutted areas shall not be greater than one inch deep.</p>	
Concrete Paved Lanes	Safe Durable Smooth Comfort	95	<p>The Contractor shall respond immediately to all incidental concrete pavement failures (potholes, cracks, joint failures, etc.) that are cause for safety concern, which includes permanent patch repairs and/or site mitigation</p> <p>Potholes: Potholes shall not be greater than 0.5 square feet x one inch deep and shall be repaired within 30 days.</p> <p>All other pavement failures, including but not limited to the following, shall be repaired within 120 days:</p> <p>Cracks: Unsealed cracks shall not be larger than 0.25 inches.</p> <p>Joints:</p>	SFT

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
ROADWAY				
			<p>Joints shall not exceed a differential of two inches vertically. Joints shall be cleaned as part of routine maintenance operations.</p>	
<u>Paved Shoulders</u>	Safe Smooth	90	<p>The Contractor shall respond immediately to all incidental pavement failures (potholes, cracks, etc.) that are cause for safety concern, permanent patch repairs or site mitigation shall be done within 60 days.</p> <p>Asphalt Paved Shoulders Pothole: Potholes shall not be greater than 0.5 square feet x 1.5 inch deep. Cracks: No unsealed cracks larger than 0.25 inches. Rutting: Rutted areas shall not be greater than one inch deep. Raveling: No continuous section of edge raveling four inches or wider exceeds 50 feet in length.</p> <p>Concrete Paved Shoulders Pothole: Potholes shall not be greater than 0.5 square feet x 1.5 inch deep. Cracks: Unsealed cracks shall not be greater than 0.25 inches. Joints: Joints shall not be wider than 0.25 inches.</p>	SFT
<u>Unpaved Shoulders</u>	Safe Smooth	90	<p>The Contractor shall ensure that unpaved shoulders have less than 10% with an edge drop off greater than 1.5 inch (linear measure); less than 10% with a separation greater than 0.5 inch (linear measure); less than 10% of shoulder causes water to drain back into the pavement.</p> <p>Rocks greater than four inches in diameter on the surface of gravel shoulders shall be removed as detected. Repairs to remove ruts deeper than four inches shall be carried out <u>within 14 days</u>.</p>	LFT

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
INCLEMENT WEATHER				
<u>Frozen Inclement Weather Pavement Management</u>	Open Free of frozen precipitation Safe	100	All pavement travel lanes, turn lanes, crossovers, and intersections shall be kept open and free of frozen precipitation so that traffic can proceed in a safe and orderly manner throughout the inclement weather occurrence. 1) Frozen precipitation removal activities shall continue in full force <u>from the onset of a snow event</u> until such time as all pavement travel lanes are 100% free of frozen precipitation and any other frozen accumulations by no later than (6) six hours after the end of a winter weather event. 2) All shoulders shall be plowed (pushed back) within twelve (12) hours of the cessation of falling precipitation.	EA

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
BRIDGE				
<u>Bridge Deck</u> ¹	Safe Clean Functional Joints intact Minimal Spalls or Breakouts Drains Open Deck in Good Repair	90	<p>The Contractor shall maintain a safe and functional bridge deck at all times.</p> <p>The Contractor shall perform all maintenance including but not limited to patching, joint cleaning and repair, sweeping, washing and cleaning.</p> <p>The Contractor shall clean and flush drainage system (drains, scuppers, trough, etc.) and ensure railings are intact, and bolts are tight.</p>	SFT
<u>Bridge Superstructure</u> ²	Safe Clean Functional	90	<p>The Contractor shall maintain a safe and functional bridge superstructure at all times.</p> <p>The Contractor shall perform all maintenance including but not limited to washing, clearing of all obstructions, painting of metal surfaces, patching and repairing, where required. Bridge components shall be free of damaging vegetation. The Contractor shall clean and lubricate bearing assemblies, and clean and wash the end five feet of beams and girders.</p> <p>The Contractor shall perform additional inspection if required under the following conditions:</p> <ul style="list-style-type: none"> a) accident or vehicle collision with structure; b) unusual/severe weather conditions or natural disasters; c) where a structural integrity or safety issue is suspected; and/or d) flooding/ice jams. 	SFT

¹ Bridge Deck includes and not limited to the bridge roadway surface, approach slabs, curbs, sidewalks, parapets, railing system, drainage system, lighting, expansion joints

² Bridge Superstructure includes and not limited to beams, girders, diaphragms, bracings, truss members, bearing devices

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
BRIDGE				
<u>Bridge Substructure</u> ³	Safe Clean Functional	90	<p>The Contractor shall maintain a safe and functional bridge substructure at all times.</p> <p>The Contractor shall perform all maintenance including but not limited to washing, clearing of all obstructions, painting of metal surfaces, patching and repairing, where required. Bridge components shall be free of damaging vegetation. The Contractor shall clean and wash horizontal surfaces to include bridge seats and bearing areas, and maintain proper function of weep holes.</p>	SFT
<u>Pipes and Culverts</u>	Safe Clean Functional Stable	90	<p>Debris and/or other material which is restricting water flow in a culvert shall be removed <u>within 120 days</u>.</p> <p>All maintenance and repair work shall be done <u>within 30 days</u> unless otherwise noted.</p> <p>. The Contractor shall stabilize any erosion and scour at inlet and outlet ends; and shall ensure end walls/wing-walls are clear of vegetation and debris.</p>	EA
<u>Retaining Walls</u>	Safe Clean Functional Stable	90	<p>The Contractor shall ensure that all retaining walls are clean and free of vegetation at all times.</p> <p>The Contractor shall perform all maintenance including but not limited to patching, sealing cracks, cleaning and painting of metal components, maintaining proper function of weep holes, and removal of de-icing chemicals and winter abrasives.</p> <p>Any damage to the structural integrity or stability shall be addressed <u>within 24 hours</u> and scheduled for repairs within 7 days. All non-structural damage shall be repaired <u>within 120 days</u> or as weather permits.</p>	LFT
<u>Channel and Slope Protection</u>	Safe Clean Functional Stable	90	<p>The Contractor shall perform maintenance including but not limited to removal of channel drift, stabilization, erosion control, cutting, removing and disposing of vegetation, and brush and trees that are on, adjacent to, or under bridges. The Contractor shall maintain</p>	LFT

³ Bridge Substructure includes and not limited to abutments, backwalls, seats, piers, columns, wingwalls, weep holes

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
BRIDGE				
			bridge slope protection as designed. All channel and slope protection repair work shall be done within 120 days or as weather permits.	
<u>Graffiti Removal</u>	None present	95	The Contractor shall remove graffiti <u>within 7 days</u> of detection from all bridge surfaces.	LFT

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
TOLL FACILITIES AND SYSTEMS				
<u>Buildings</u>	Safe Clean Functional	100	<p>Buildings shall include:</p> <ol style="list-style-type: none"> 1. Toll plaza building exteriors and interiors and appurtenances; 2. Any storage facilities; 3. Equipment rooms; and 4. Toll plaza canopies. <p>The Contractor shall perform building maintenance operations to extend the life and investment of the toll facilities.</p> <p>A qualified person shall do a detailed inspection <u>within two days</u> if:</p> <ol style="list-style-type: none"> 1. A deficiency is found due to unusual/severe weather conditions or natural disasters; 2. A deficiency is found due to an accident or vehicle collision with structure; or 3. A structural integrity or safety issue is suspected. <p>A qualified person is defined as a person with valid credentials relating to the structure or component.</p> <p>Repairs shall follow based on the recommendations of the qualified person.</p> <p>No deficiency shall remain for longer than two weeks.</p>	EA
<u>Building Systems</u>	Inspected and Functional	100	<p>The Contractor shall maintain and keep in constant operation all building systems / arrangements / apparatuses / installations including, but not limited to, the following:</p> <ol style="list-style-type: none"> 1. HVAC system; 2. Plumbing; 3. Electrical systems; 4. Communications systems; 5. Fire suppression and precaution; 6. Medical prevention and attention; 7. Security systems; and 8. Emergency power supply systems. <p>Any interruption of operation of the fixed functional equipment, for maintenance purposes, shall be properly scheduled.</p>	EA

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
TOLL FACILITIES AND SYSTEMS				
			Any sudden interruption in the operation of the fixed functional equipment, due to damage, breakdown or malfunction, shall be restored within the period specified in the Operation and Maintenance Manual.	
<u>Toll Collection Systems</u>	Inspected and Functional	100	<p>The Contractor, subject to maintenance or sudden interruptions (see below) shall maintain and keep in constant operation all toll collection related systems / arrangements / apparatuses / installations including, but not limited to, the following:</p> <ol style="list-style-type: none"> 1. Toll collection equipment; 2. Toll booth and plaza lighting; 3. Toll plaza electronic signage; and 4. Toll violation and enforcement system. <p>Any interruption of operation of the fixed functional equipment, for maintenance purposes, shall be properly scheduled.</p> <p>Any sudden interruption in the operation of the fixed functional equipment, due to damage, breakdown or malfunction, shall be restored within the period specified in the Operation and Maintenance Manual.</p>	EA
	System accuracy for toll transaction creation and transmission	99.5		
	Vehicle Transponder identification and account association	99.5		
	Vehicle classification accuracy	99.5		
	Violation image accuracy	85		

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
<u>TOLL FACILITIES AND SYSTEMS</u>				
	Toll collection lane availability	99		
	Computer system availability	99.5		
<u>Grassed Areas</u>	Attractive, mowed, no bare ground	95	The Contractor shall ensure that all grass areas to be attractive, managed, uniform in height (not to exceed six inches). There shall be no bare ground areas larger than five square feet. There shall be no prohibited, invasive or noxious weeds present.	EA
<u>Edging</u>	No encroachment of vegetation or debris	95	The Contractor shall ensure the completion of sufficient edging and trimming so that there is no encroachment of vegetation or debris for more than two inches onto any curb or sidewalk located throughout each rest area. There shall be no deviation of soil or mulch above or below the top of the curb.	EA
<u>Vegetation</u>	Attractive, pruned	95	The Contractor shall maintain an overall appearance that is neat. Ornamentals and shrubs shall be pruned for optimum aesthetics. Plant beds shall be regularly mulched and weed free, at all times. Wildflowers shall be planted and managed to meet or exceed usual practice of the Department.	EA
<u>Litter</u>	Site free of litter	95	The Contractor shall maintain the site free of any visible litter, all litter shall be properly disposed.	EA
<u>Trash Receptacles</u>	Available, sufficient quantity	100	The Contractor shall ensure that all trash receptacles are available for use, all trash receptacles are clean, complete and secure, no overflowing trash receptacles, all dumpsters secured and out of sight. There shall be a sufficient number of trash receptacles on site to handle traffic volume.	EA
<u>Fencing</u>	Secure and unbroken	100	The Contractor shall ensure that all fencing along the facility right-of-way is free of any defect, and shall not contain any opening greater than two square feet. Any defective fencing shall be replaced <u>within 30 days</u> .	LFT
<u>Flower Bed</u>	Attractive, decorative	100	The Contractor shall ensure that annual installation and maintenance of flower beds meet	EA

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
<u>TOLL FACILITIES AND SYSTEMS</u>				
			or exceed existing design.	
<u>Directional Signs</u>	Present, functional, sound	100	The Contractor shall ensure that all directional, informational, safety and any other sign in the toll facility is properly installed, contain accurate information and be visible from a reasonable distance. Any defective sign shall be replaced <u>within 30 days</u> .	EA
<u>Striping</u>	Visible	95	The Contractor shall maintain all striping intact and all parking and access areas clearly marked. Any defect in the striping shall be corrected within 30 days, or as weather permits.	LFT
<u>Curb</u>	In-line	95	The Contractor shall maintain all curb in place and intact. All maintenance and repair work shall be done <u>within 60 days</u> unless otherwise noted.	LFT
<u>Sidewalks</u>	Structurally sound	90	The Contractor shall maintain clean and safe functional sidewalks with minimal obstruction at all times. Sidewalks shall have less than two inches undermining with no unsealed cracks greater than 0.5 inch and no misalignment greater than 0.5 inch. Maintenance and repair work shall be done within 60 days.	LFT
<u>Roofs, gutters</u>	Clear and good condition	100	All roofs and gutters shall be clear of debris and functional. Any leaks or defects shall be reported immediately and repairs made <u>within 48 hours</u> .	LFT
<u>Fire Extinguishers</u>	Inspected and functional	100	All required fire extinguishers shall be in place and inspected per regulation.	EA
<u>Parking lot surface</u>	Smooth and safe	90	The parking lot pavement shall be free of potholes and depressions greater than one square foot and deeper than two inches. All maintenance and repair work shall be done <u>within 120 days</u> unless otherwise noted.	LFT
<u>Parking lot and ramp shoulders</u>	Stable	90	The Contractor shall ensure that no shoulder buildup is greater than two inches. There shall be no shoulder drop-off greater than three inches. There shall be no ruts or washouts greater than six inches in depth.	LFT

PERFORMANCE MEASURES

ASSET	OUTCOME	PERFORMANCE TARGET (%)	TOLERANCE & CRITERIA	UNIT OF MEASURE
TOLL FACILITIES AND SYSTEMS				
			All maintenance and repair work shall be done <u>within 30 days</u> unless otherwise noted.	
<u>Drainage</u>	Drain, free of debris	90	The Contractor shall ensure drainage that is functioning with no obstruction to water flow. All grates shall be without defect. All maintenance and repair work shall be done <u>within 60 days</u> unless otherwise noted.	LFT
<u>VOSH</u>	Compliant	100	Toll facilities shall be fully compliant with all Virginia Occupational Safety and Health (VOSH) regulations. The Contractor shall be responsible for arranging annual inspection by the Department and for all corrective actions.	EA

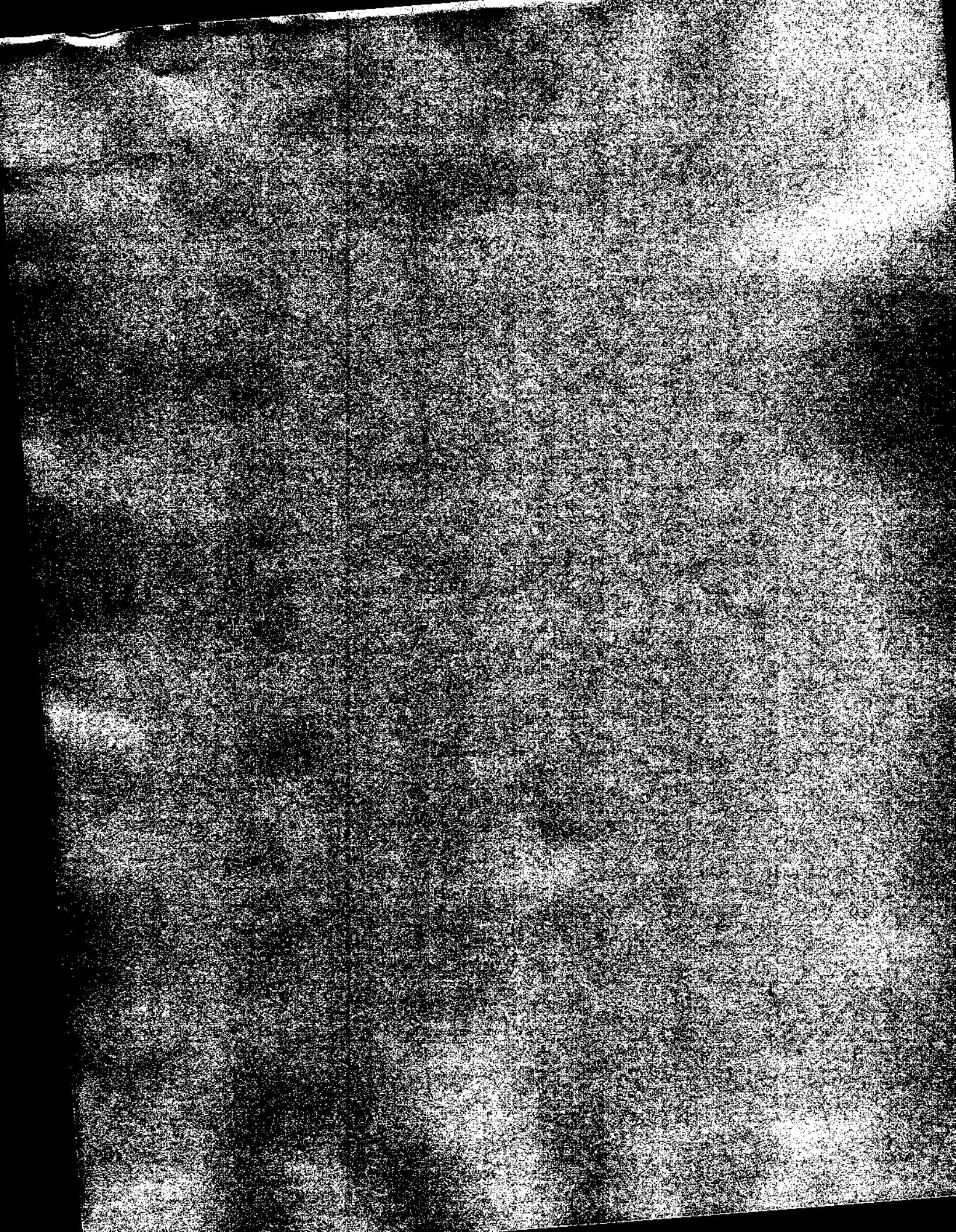


Exhibit H: Asset Lifecycle Estimates

Asset Element	Maintenance Element	Design Life (Yrs)	Treatment
P-P-01 Flexible Pavement	Asphalt surface	15	Pavement Rehabilitation
P-P-02 Rigid Pavement	Asphalt surface	15	Pavement Rehabilitation
P-P-03 Sealed Shoulders	Sprayed Bitumen Seal	15	Pavement Rehabilitation
P-B-01 Concrete Bridges	Superstructure Substructure	50 50	Repairs as required Repairs as required Repaint
P-B-02 Steel Bridges	Superstructure Substructure	50 50	Repairs as required Repairs as required
P-B-03 Bridge Joints	Expansion Joints	20	Repairs as required
P-B-04 Bridge Bearings	Elastomeric Bearings Metal Bearings	50 50	Routine Maintenance Item Routine Maintenance Item
P-B-05 Bridge Railings	Metal / Concrete Railings	40	Routine Maintenance Item
P-B-06 Scuppers /Deck Drainage System	Bridge Drains	40	Routine Maintenance Item
P-B-07 Underpasses Stock / Fauna/Peds	Walls / Drainage / Ceilings	40	Repaint
P-B-08 Bridge Waterways	Piers/ Abutments	100	Routine Maintenance Item
P-T-01 Longitudinal Marking	Thermoplastic Waterborne	6 4	Renew Renew

Exhibit H: Asset Lifecycle Estimates

Asset No.	Asset Element	Maintenance Element	Design Life (Yrs)	Treatment
P - T-02	Transverse Marking	Thermoplastic	4	Renew
		Waterborne	4	Renew
P T-03	Pavement Symbols	Thermoplastic	4	Renew
		Waterborne	4	Renew
P - T-04	Raised Pavement Markers	Reflective / non-reflective	6	Replace
P T-05	Warning Signs	Curves, intersection, clearances etc.	12	Replace
P - T-06	Regulatory Signs	Stop / speed / crossing etc	12	Replace
P - T-07/8	Major / Minor Guide Signs	Directional / route / feature etc	12	Replace
P T-09	Non-Pavement Delineators	Guide Posts / safety fencing	6	Replace
P - T-10	Guard Barriers	Guardrail/ wire barrier / New Jersey	40	Replace
P - T-11	Safety Fence / Terminals	BCT / EAB's	20	Repair as necessary Replace
P - T-12	Street Lighting	Standard Poles	20	Replace
		Non standard Poles	20	Replace
		Luminaries - Type 1	4.5	Routine Maintenance Item
		Luminaries - Type 2	4.5	Routine Maintenance Item
		Luminaries - Type 3	4.5	Routine Maintenance Item
		Lighting over help phone	2.28	Routine Maintenance Item
P - T-13	Traffic Devices	Traffic Domes / bollards / grab rails	40	Renew/Replace

Exhibit H: Asset Lifecycle Estimates

Asset No.	Asset Element	Maintenance Element	Design Life (Yrs)	Treatment
P - R-01	Retaining Walls	Reinforced concrete / gabion, crib etc.	100	Repair as necessary
P - R-02	Batters	Unprotected / shotcrete / jute etc.	100	Routine Maintenance Item
P - R-03	Kerb and Gutter	Footpath / median	40	Routine Maintenance Item
P - R-04	Drains, Channels or Swales	Lined / Unlined	40	Routine Maintenance Item
P - R-05	Drainage Pits	Kerb / median / batter / table	40	Routine Maintenance Item
P - R-06	Underground Drainage	Culvert / drainage line / GPT	100	Routine Maintenance Item
P - R-07	Sedimentation Basins	Temporary / Permanent	40	Mechanical Cleaning
P - R-08	Sub-surface Drains		100	Routine Maintenance Item
P - R-09	Noise Barriers	Concrete / Earth / Timber	40	None
P - R-10	Boundary Fencing / Gates	Manproof / timber / wire / metal	20	Replace
P - R-11	Median Areas	Paved / grassed / landscaped	40	Routine Maintenance Item
P - R-12	Roadside and Rest Areas	Grassed / Landscaped	40	None
P - R-13	Travel Lanes			
P - M-01	Help Phone (ramps) Help Phone (Open Road)	Phones Phones	25 25	None None

Exhibit H: Asset Lifecycle Estimates

Asset Element	Maintenance Element	Design Life (Years)	Treatment
P - M-02	Variable Message Signs Enhanced Message Sign	10	None None
	CCTV Trivision (CMS)	7 15	None None
P - M-04	Incident Detection System AID Cameras	7	None
P - M-06	Trip Information Sign	17	None
P - M-07	Not Used		
P - M-08	Moveable Physical Barrier	15	None
P - M-09	Ramp Control Sign	17	None
P - M-10	Not Used		
P - M-11	Emergency Median Gate Open EMGO	15	None
P - M-12	Lane Use Signs Variable Speed Signs (open-road) Cabinets	17 17 20	None None None
P - M-14	Not Used		
P - C-02	TMCS PMCS/TMCS Control Room HW & SW		Replace
	Toil Collection Equipment Technical Shelter Electronics	7	Refurbish

Exhibit H: Asset Lifecycle Estimates

Asset Element	Maintenance Element	Design Life (Yrs)	Treatment
	Roadside Equipment Maintenance Major Garnty Equipment	15 15	Routine Maintenance Refurbish
General	Miscellaneous Reimbursable Spares Inventory		

