# SUIT

# GIP Report

## NPS Guardwall/Rail Inventory Program

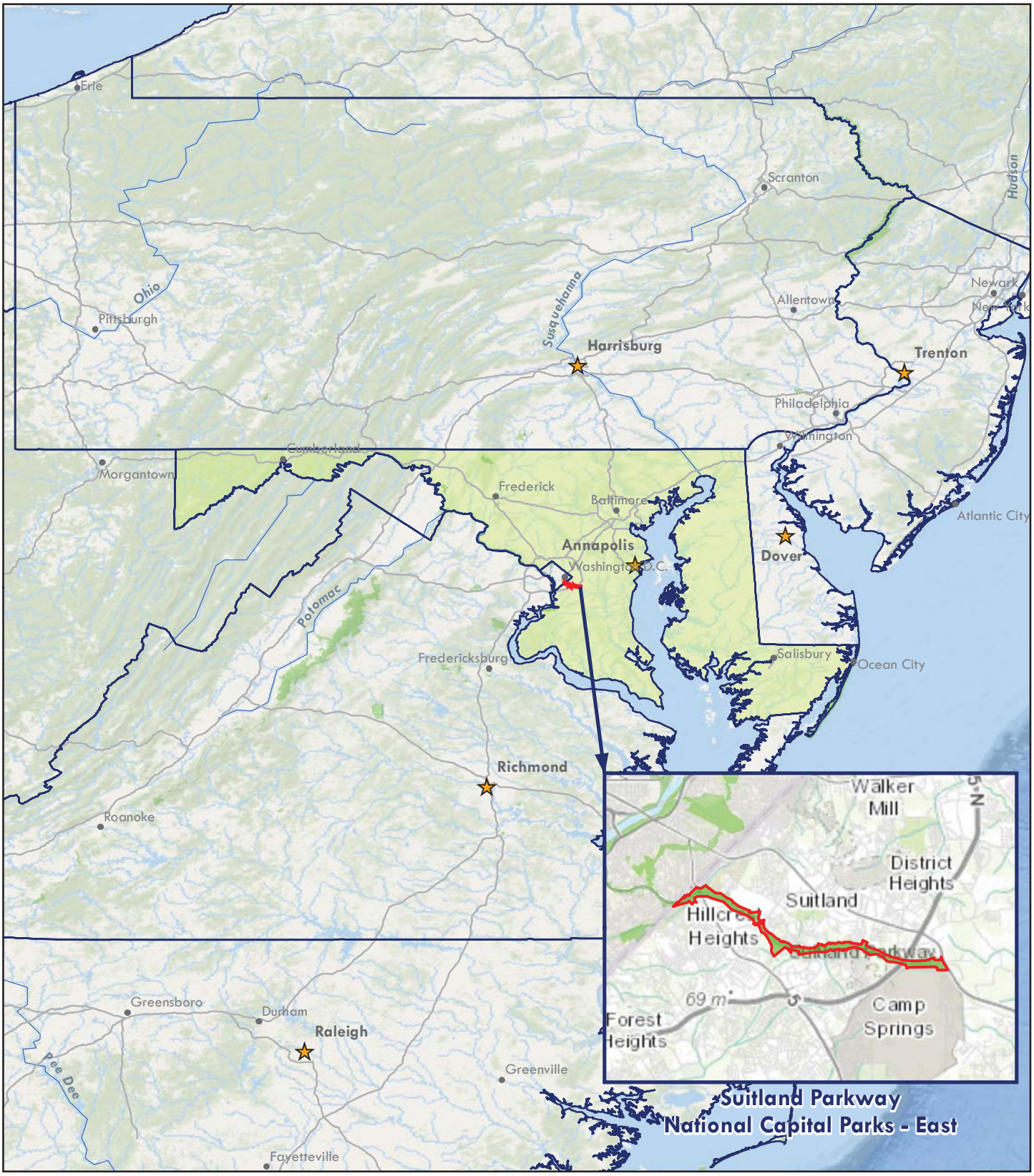
# Suitland Parkway National Capital Parks - East


Federal Lands Highway
Road Inventory Program

**Prepared By:**
Federal Highway Administration
Eastern Federal Lands Highway Division
Road Inventory Program (RIP)

**Data Collection Date: November 2010**
**Report Date: November 2015**

# Suitland Parkway National Capital Parks - East
# in
# Maryland



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# Introduction

## Suitland Parkway National Capital Parks - East

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## Introduction

In support of the NPS Facility Management Software System (FMSS) asset management program, FHWA- contracted staff completed the Guardwall/Rail Inventory Program (GIP) inspections within selected National Park Service (NPS) units between 2010 and 2011. This inventory provides static information to FMSS regarding barrier characteristics such as height, length and location, as well as dynamic information about the condition of the barrier. In addition, when barrier deficiencies were identified, repair recommendations and estimated costs, suitable for use as FMSS work orders, were generated to bring the barrier back to its "new" condition.

In over 30 parks, numerous crashworthy barriers inspected maybe in poor condition by simply applying a new overlay of asphalt without milling previous layers. In instances such as this, basically the critical element of barrier height decreased as the elevation of the roadway increased. Resulting work orders were drafted to raise w-beam barriers or to remove and reset stone masonry barriers to their original design height.

This inventory provides static information and a condition assessment of each barrier inventoried. In addition, when barrier deficiencies were identified, repair recommendations and estimated costs were drafted to bring the barrier back to its "new" condition.

Drafted work orders have been classified as being either deferred maintenance or capital improvement. This classification is based on the type of work recommended, as defined below.

- *Deferred Maintenance* can be classified as repair or replace in kind. Work done to the barrier does not include any upgrading.
- *Capital Improvement* can be classified as upgrading part of or the entire existing barrier. Typically the upgrade will be from a non-crashworthy to a crashworthy device. Other examples of capital improvements would be the addition of a curb to improve drainage.

Care was taken to maintain the cultural significance of historic barriers located in the NPS. While historic traffic barriers likely would not withstand current crashworthiness performance criteria, they are considered by the NPS to be important resources for the historic and/or cultural value. Historic barriers may be "character defining features" that contribute to the cultural significance of historic roadways. As such, these barriers have resource value in and of themselves which may be somewhat independent from their functionality as barriers as previously defined. The consideration of both the crashworthiness and resource value of historic barriers was a significant challenge for the NPS and the FHWA when designing the GIP, to the point that for historic stone masonry barriers, the barrier height had to be more than 6-in below its design height before any work would be considered to deal with height issues. To preserve historic stone masonry barriers, typical drafted work orders for historic barriers were to remove and reset the barrier to the barrier's original design height on a concrete footer, as compared to replacing it with a similar crashworthy barrier.

This report is organized in a tiered approach from the broad park overview perspective (Tier 1) to a route overview perspective (Tier 2), then down to the details of each barrier (Tier 3). Tier 1 presents park barrier location maps and an overall park-specific summary narrative of the results of the guardwall/rail inventory program. Tier 2 presents route overview maps with associated barrier summary information. Tier 3 presents individual barrier information in a one-page detailed format, including a photograph of each barrier. Appendix A provides a condensed summary of guardwall/rail inventory definitions and assessment categories to assist in reading this report.

# Park Barrier Location Maps

## Suitland Parkway National Capital Parks - East

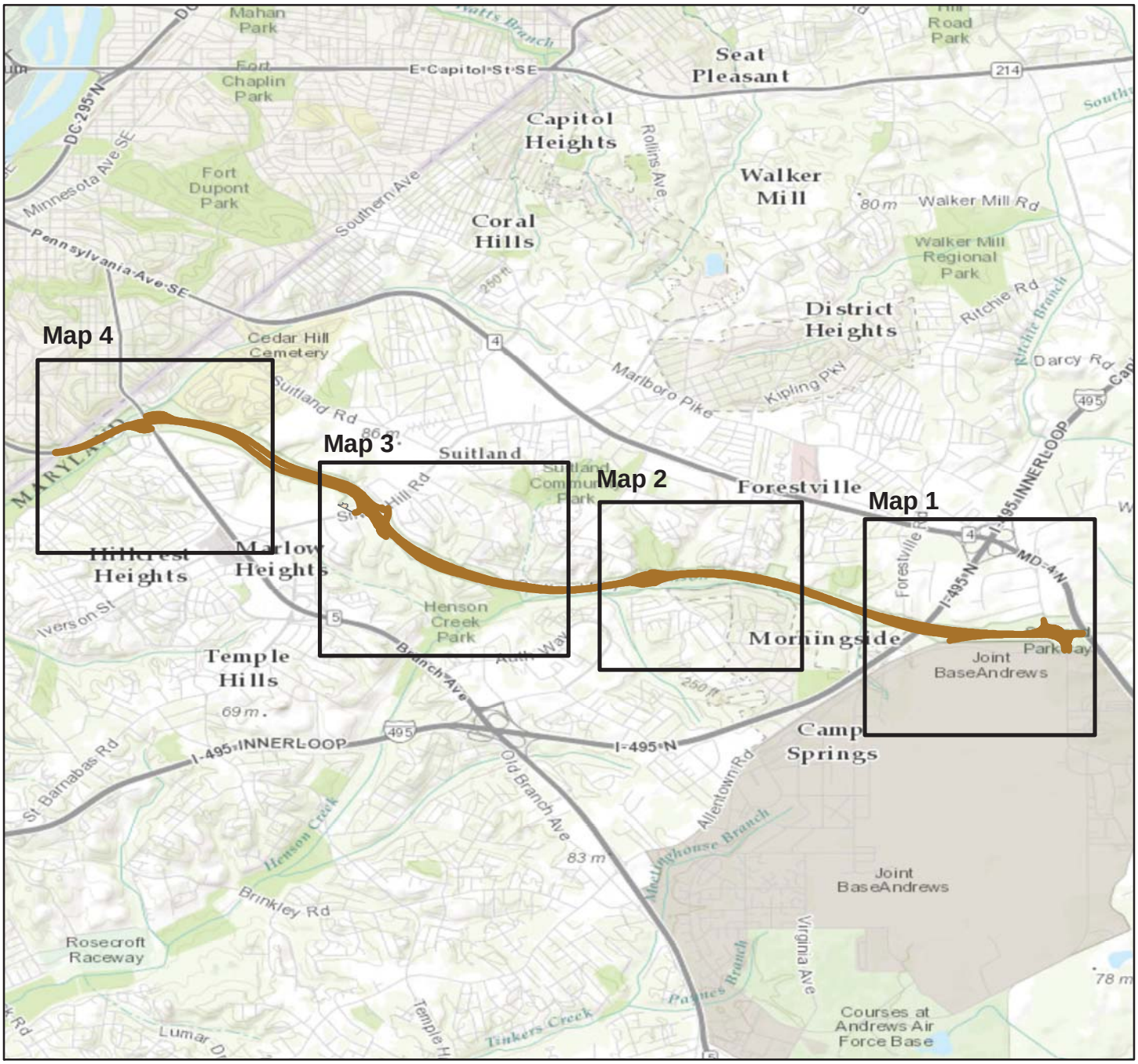
Federal Lands Highway

Road Inventory Program

# Suitland Parkway

## BARRIER LOCATION MAP

### Key Map




Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

**RIP Collected Routes**

Miles

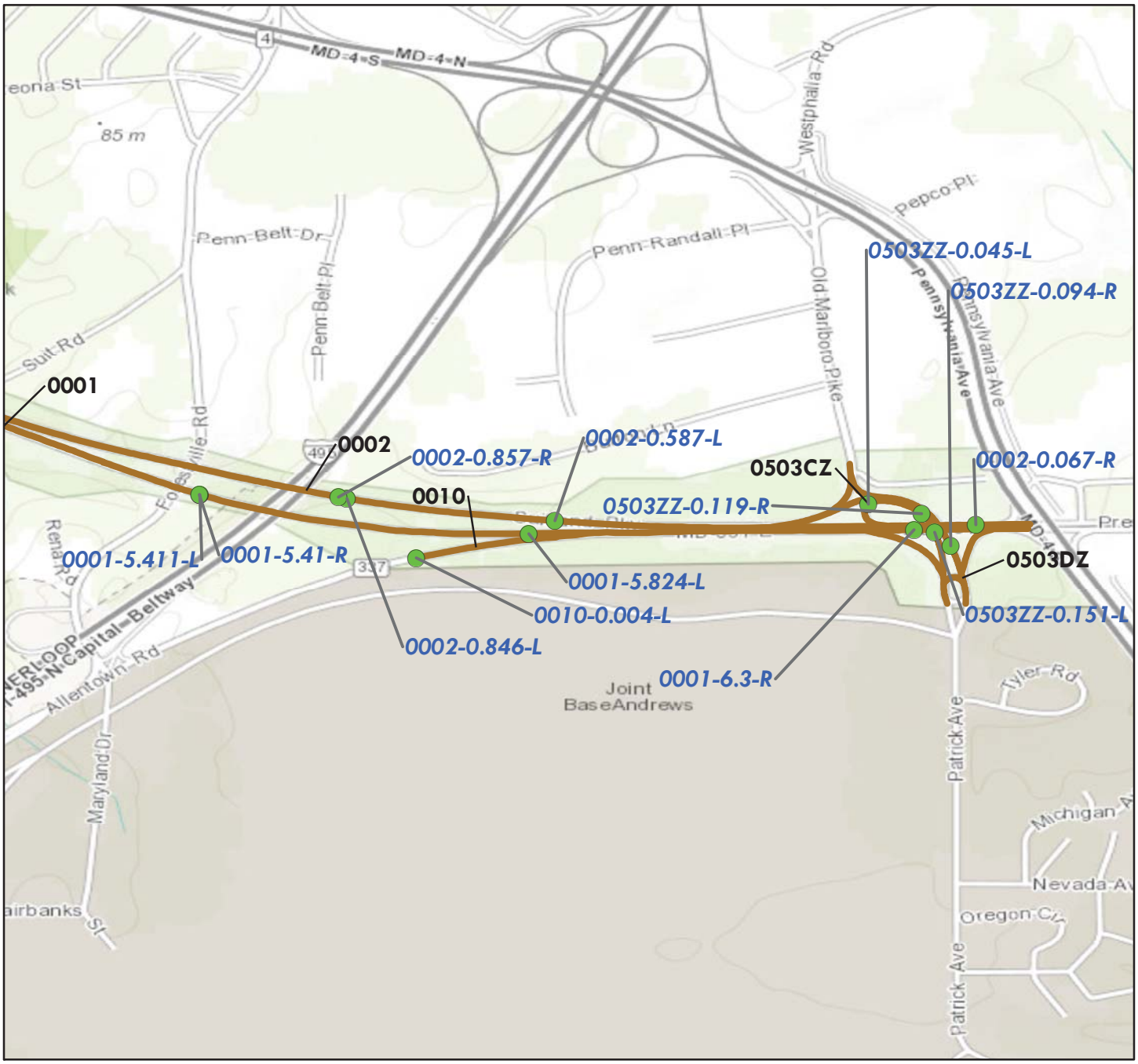
0 1 2

N

# Suitland Parkway

## BARRIER LOCATION MAP

**Map 1**




Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

**Barrier Locations**

**RIP Collected Routes**

Miles

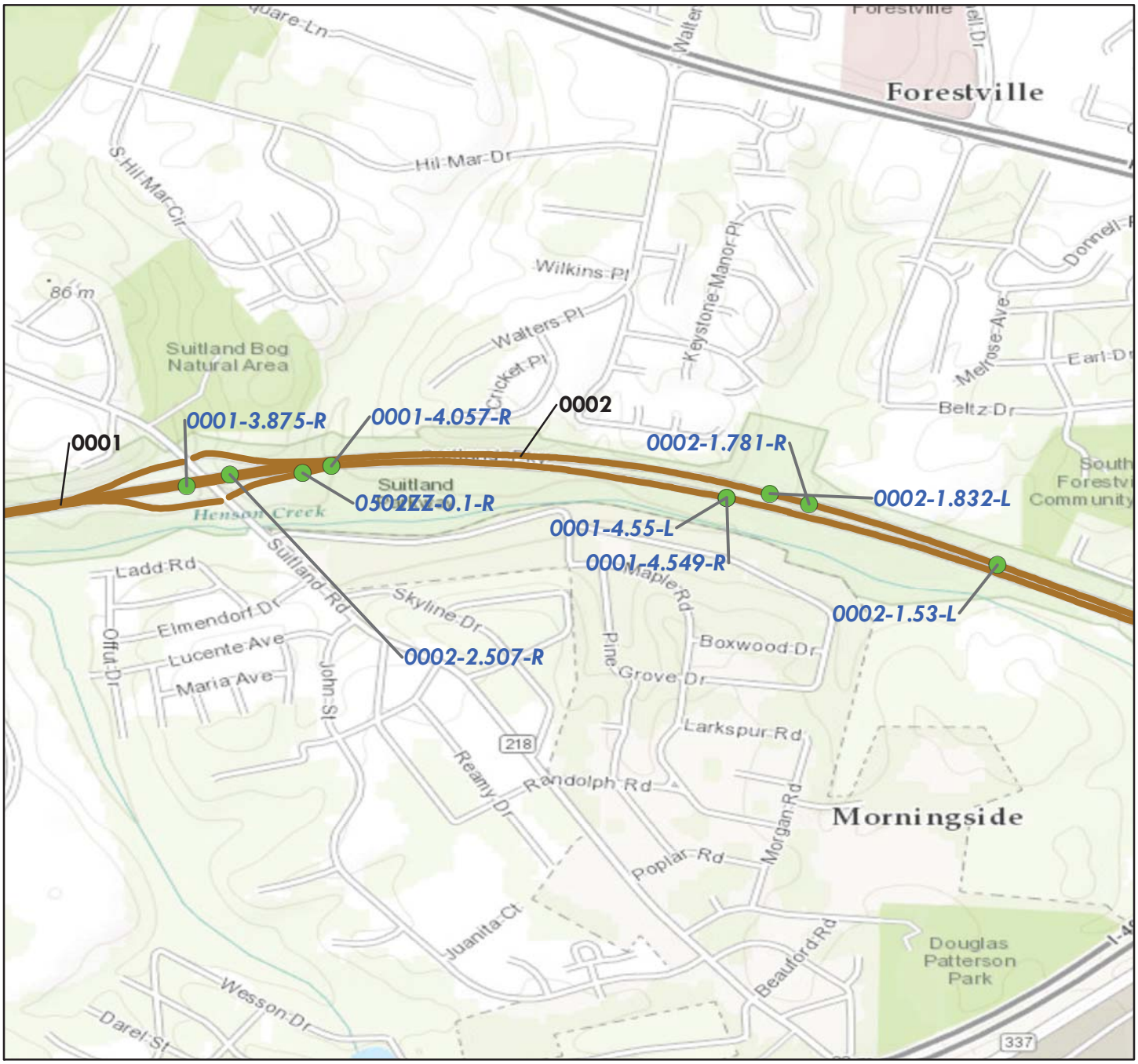
0 0.25 0.5

N

# Suitland Parkway

**BARRIER LOCATION MAP**

**Map 2**




Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

**Barrier Locations**

**RIP Collected Routes**

Miles

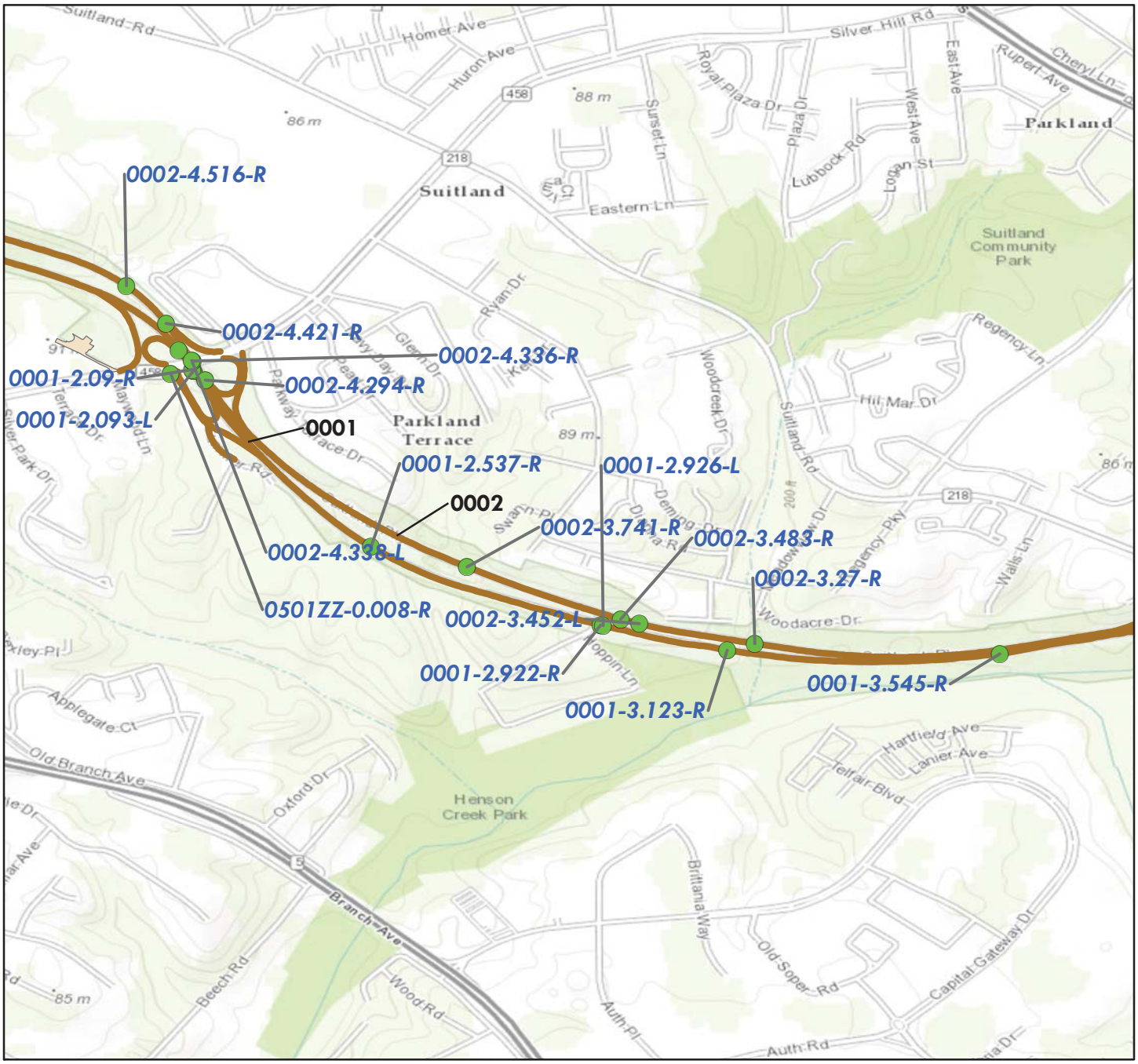
0 0.25 0.5

N

# Suitland Parkway

## BARRIER LOCATION MAP

### Map 3




Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

**Barrier Locations**

**RIP Collected Routes**

Miles

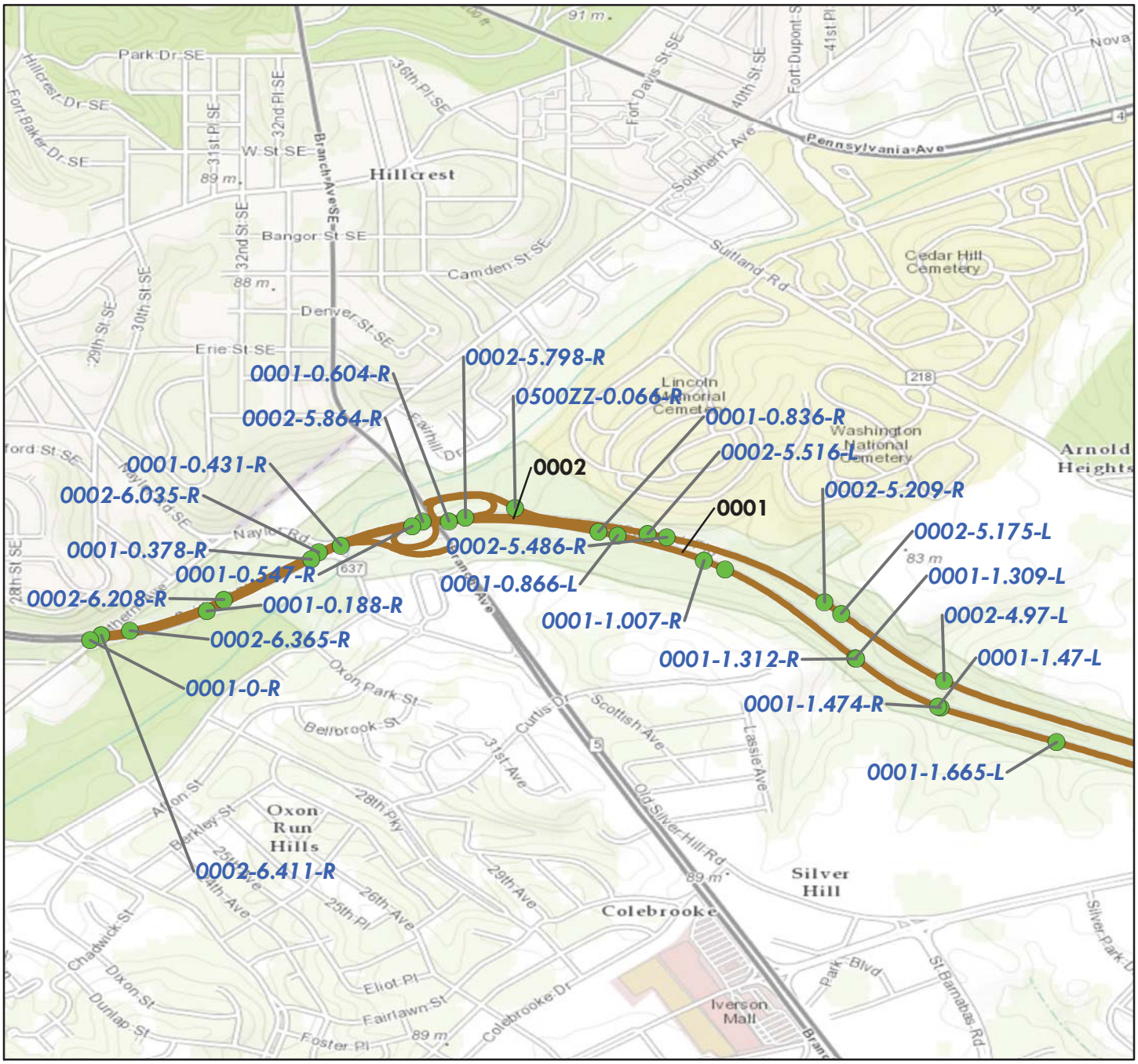
0 0.25 0.5

N

# Suitland Parkway

## BARRIER LOCATION MAP

### Map 4




Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

**Barrier Locations**

**RIP Collected Routes**

Miles

0 0.25 0.5

N

# Tier 1
# Park Barrier Overview

## Suitland Parkway National Capital Parks - East

Federal Lands Highway
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# Parkwide Summary: Suitland Parkway

Initial barrier inspections were conducted at Suitland Parkway in 2010, and encompassed all known barriers associated with Park roadways. In general, walls are not included in this assessment, but were inspected under a separate effort as part of the Retaining Wall Inventory Program (WIP).

All paved roadways and parking areas listed in the RIP Route Identification Report were inspected for barriers.

The following tables provide an overview of the findings of this inspection and assessment effort. In all, 67 barriers were inventoried on the routes listed below.

**Table 1: Number of Barriers by Route**

| Route Number | Route Name | No. of Barriers |
|---|---|---|
| 0001 | EASTBOUND SUITLAND PARKWAY | 31 |
| 0002 | WESTBOUND SUITLAND PARKWAY | 28 |
| 0010 | ALLENTOWN ROAD RAMP TO EB SUITLAND PARKWAY | 1 |
| 0500ZZ | BRANCH AVENUE INTERCHANGE RAMPS | 1 |
| 0501ZZ | SILVER HILL ROAD INTERCHANGE RAMPS | 1 |
| 0502ZZ | SUITLAND ROAD INTERCHANGE RAMPS | 1 |
| 0503ZZ | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | 4 |

Due to the different GIP assessment criteria of barriers based on their intended use, barriers were classified as being either traffic barriers or non-traffic barriers.

- *Traffic* barriers are physical devices intended to keep vehicles or people from straying into dangerous or off-limits areas. For the purpose of this inventory, a traffic barrier is categorized as roadside hardware placed longitudinally, excluding pedestrian railing and fencing.

- *Non-traffic* barriers provide a physical delineation between public access areas and restricted or protected areas in locations such as a parking lot, viewpoint or turnout. **Non-traffic barriers which inhibit access of vehicles are included in this report; non-traffic barriers which only inhibit access of pedestrians or bicyclists are not included. For the purpose of this inventory, non-traffic barriers are guidewalls and guiderails. Note: rocks, stones, boulders, fences or curbs were excluded from this inventory.**

There are instances in parks where a single barrier can switch between being classified as a traffic barrier and a non-traffic barrier. Such instances typically occur at pullouts, where a traffic barrier along the road will continue through the pullout without interruption. In such instances, the traffic barrier and non-traffic barrier were assessed using different criteria. Due to the different criteria, the GIP database was designed to record the traffic barrier and non-traffic barrier as multiple distinct barriers, even though to the eye, they appear as one barrier. Other instances where a single barrier is split into multiple barriers would be when the barrier is placed continuously along two legs of an intersection, so that one portion of the barrier may be on one road and the remaining portion of the barrier is on a different road.

**Table 2: Number of Barriers by Function**

| Barrier Function | No. of Barriers |
|---|---|
| TRAFFIC | 67 |

The following table shows the barrier types that were inventoried and assessed.

**Table 3: Number of Barriers by Type**

| Primary Barrier Type | No. of Barriers |
|---|---|
| Steel-Backed Timber With Blockout | 46 |
| Concrete With Simulated Stone Face | 19 |
| W-Beam Strong Post | 2 |

The following table shows the number of barriers by one of four categories of recommended action along with associated work order costs and the number of barriers that are in each recommended action. All work order information is presented for individual barriers, even though some work orders were not accepted by the Park. Some work orders were later combined to simplify route deferred maintenance requests.

**Table 4: Number of Barriers by Recommended Action and Associated 2008 Cost**

| Recommended Action | Repair Costs* | No. of Barriers |
|---|---|---|
| No Action | $0 | 22 |
| Monitor | $0 | 7 |
| Repair | $148,491 | 38 |
| Replace | $0 | 0 |
| **Totals** | **$148,491** | **67** |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

The following table categorizes the number of barriers that fall into one of ten cost ranges, based on the prepared work orders. The locations, work descriptions, and cost of the recommended repairs for these barriers are listed by individual barrier in Tier 3 of this report.

**Table 5: Number of Barriers Grouped by Associated 2008 Cost**

| Cost Range* | No. of Barriers |
|---|---|
| $0 | 29 |
| $1 - $25,000 | 38 |
| $25,001 - $50,000 | 0 |
| $50,001 - $100,000 | 0 |
| $100,001 - $250,000 | 0 |
| $250,001 - $500,000 | 0 |
| $500,001 - $1,000,000 | 0 |
| $1,000,001 - $2,000,000 | 0 |
| $2,000,001 - $3,000,000 | 0 |
| $3,000,001 - $4,000,000 | 0 |
| **Total Number of Barriers** | **67** |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

Data for end terminals was collected on the GIP data collection form and indicates if an end terminal meets current crashworthiness standards. End terminals are specially designed barrier ends that attenuate impacts to the ends of barriers. This is supplemental information that WASO designed into the inventory program.

A total of 96 end terminals were found on barriers at the Park. There are generally a greater number of end treatments than actual barriers because end treatments are located at both the beginning and end of each barrier.

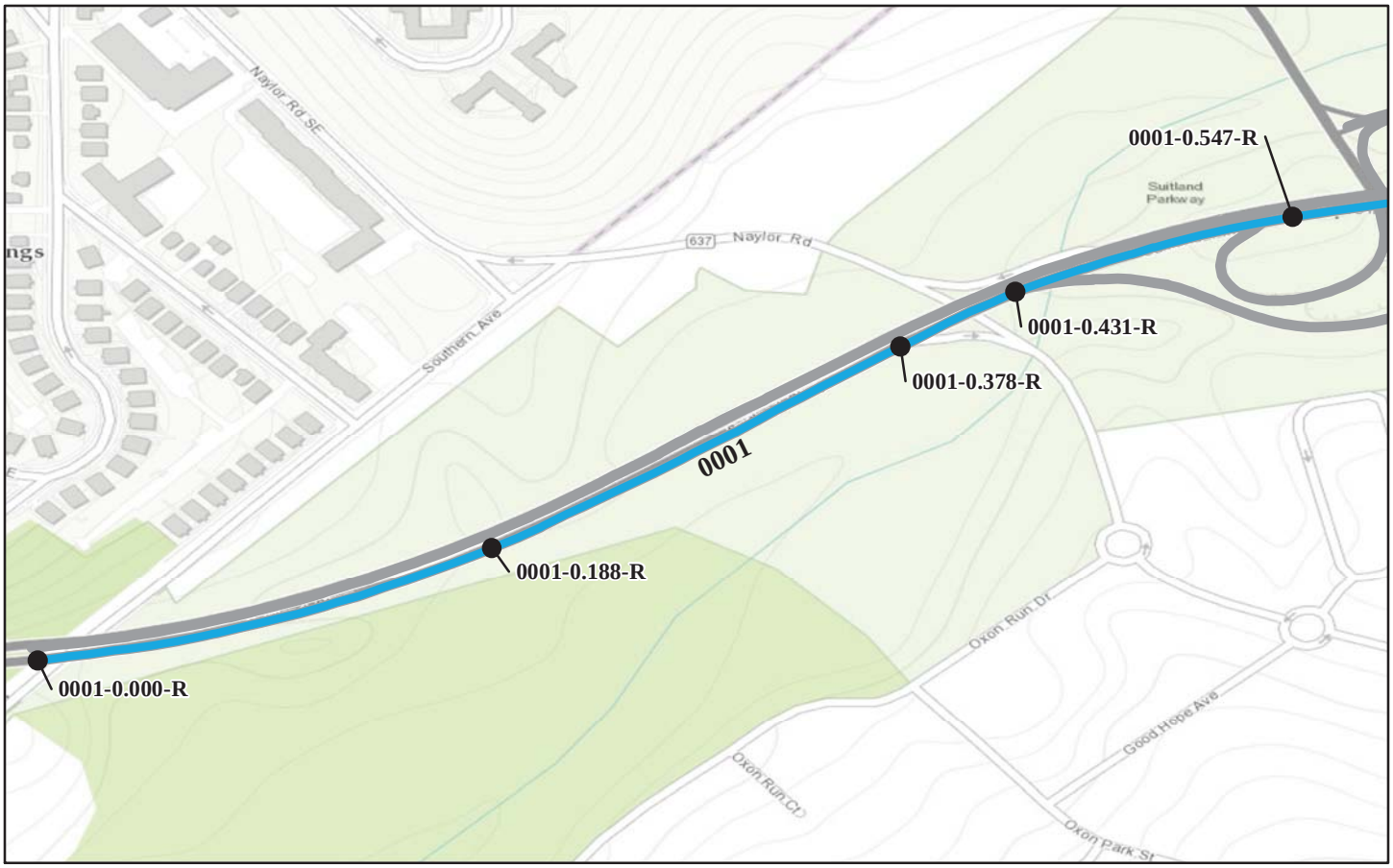
# Tier 2
# Route Barrier Overview

## Suitland Parkway National Capital Parks - East

Federal Lands Highway
Road Inventory Program

# Suitland Parkway National Capital Parks - East

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY



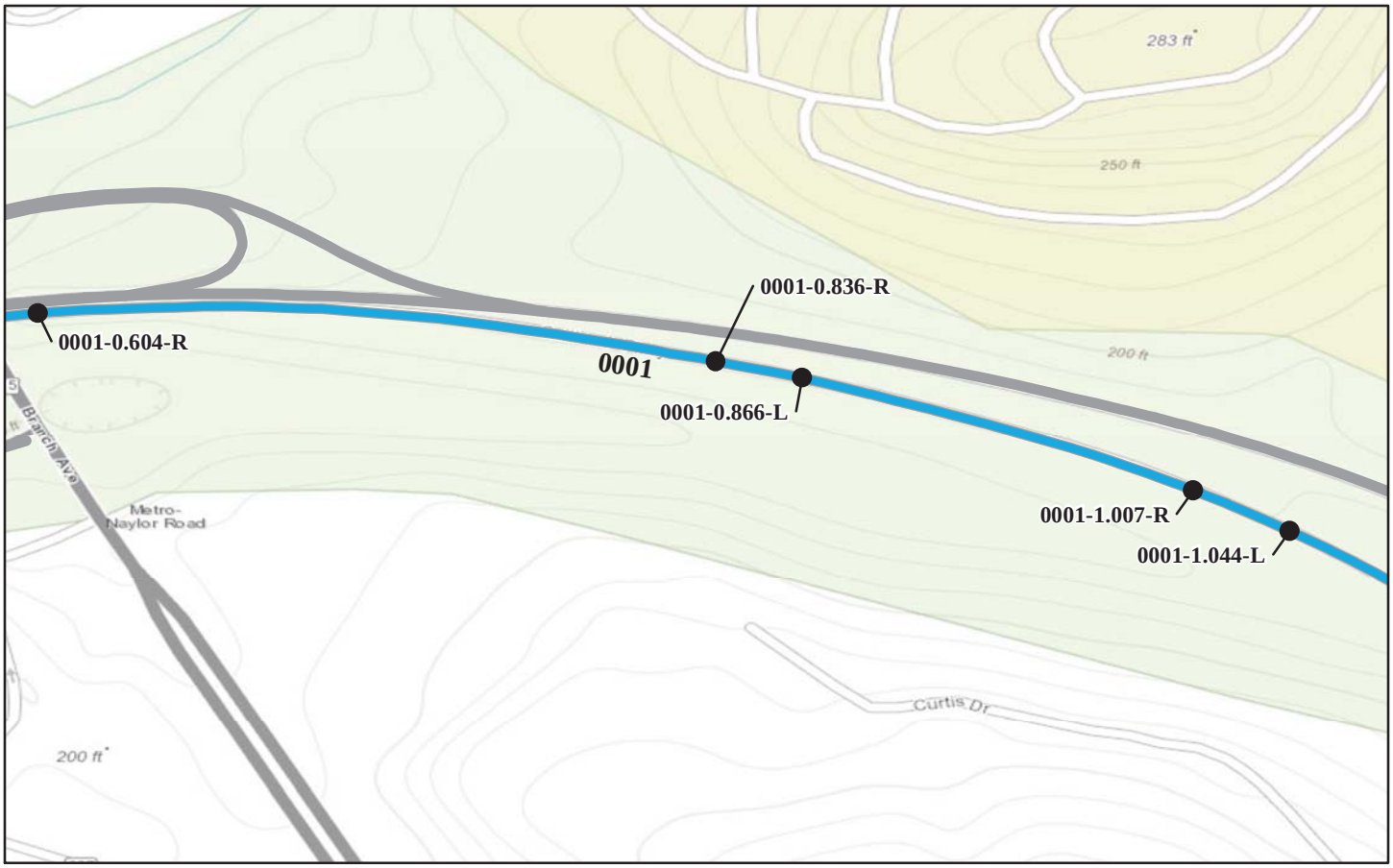

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0001-0.000-R<br>11/3/2010 | 229 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE BURIED | OTHER: STONE WITH CONCRETE CORE FLARED | $1,777.00 |
| SUIT-0001-0.188-R<br>11/3/2010 | 242 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $5,000.00 |
| SUIT-0001-0.378-R<br>11/3/2010 | 167 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | NONE | $4,131.00 |
| SUIT-0001-0.431-R<br>11/3/2010 | 67 | STEEL-BACKED TIMBER WITH BLOCKOUT | NONE | SBT/LOG FLARED | $3,152.00 |
| SUIT-0001-0.547-R<br>11/3/2010 | 145 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | NONE | $2,723.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

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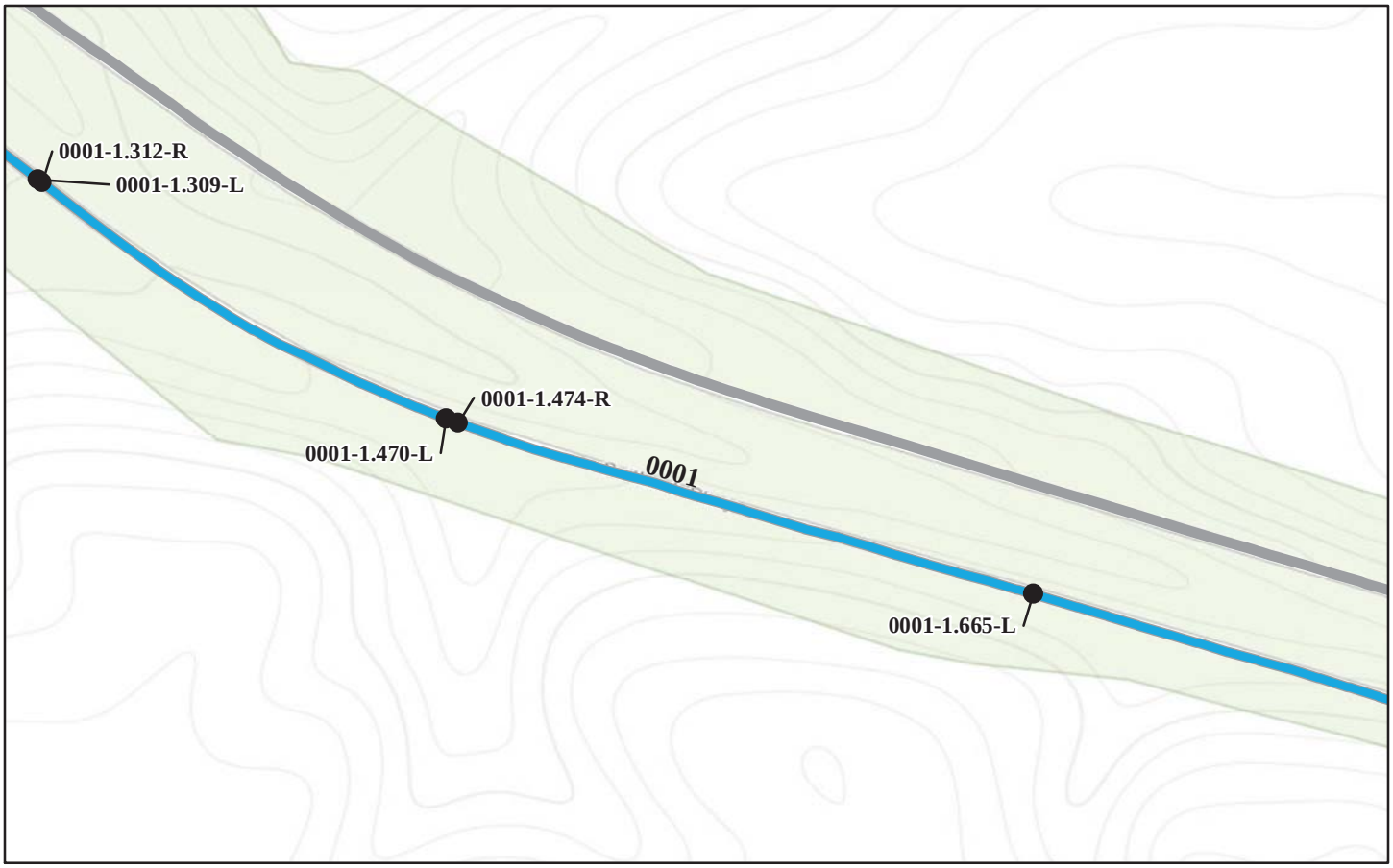
| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0001-0.604-R<br>11/3/2010 | 81 | STEEL-BACKED TIMBER WITH BLOCKOUT | NONE | SBT/LOG FLARED | $1,722.00 |
| SUIT-0001-0.836-R<br>11/5/2010 | 139 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $3,245.00 |
| SUIT-0001-0.866-L<br>11/9/2010 | 137 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $3,575.00 |
| SUIT-0001-1.007-R<br>11/5/2010 | 330 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0001-1.044-L<br>11/9/2010 | 153 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $2,684.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

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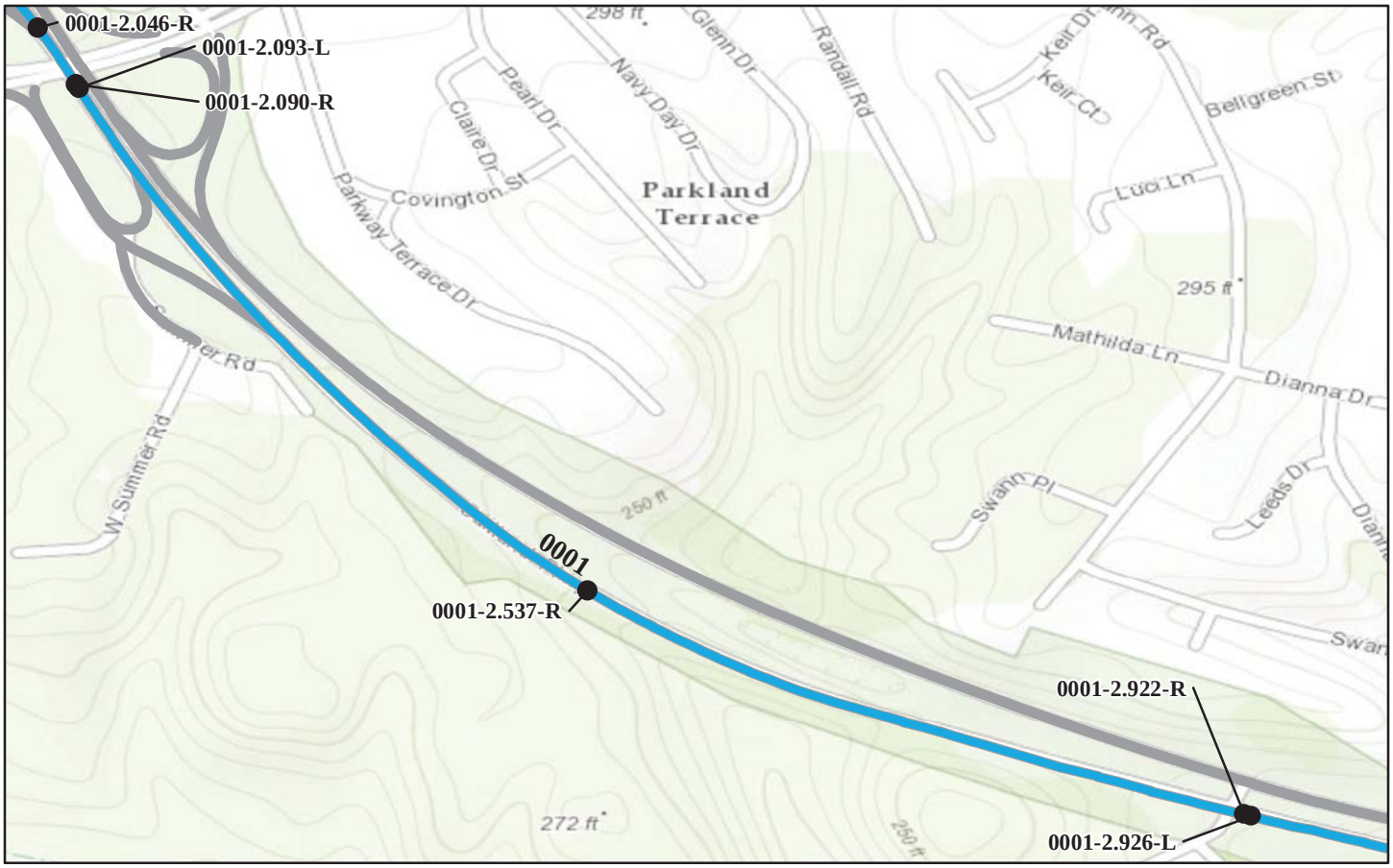
| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment<br>Begin | <br>End | *Repair Cost |
|---|---|---|---|---|---|
| SUIT-0001-1.309-L<br>11/9/2010 | 351 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $2,893.00 |
| SUIT-0001-1.312-R<br>11/5/2010 | 158 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $2,618.00 |
| SUIT-0001-1.470-L<br>11/9/2010 | 151 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0001-1.474-R<br>11/5/2010 | 125 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0001-1.665-L<br>11/9/2010 | 567 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $5,533.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

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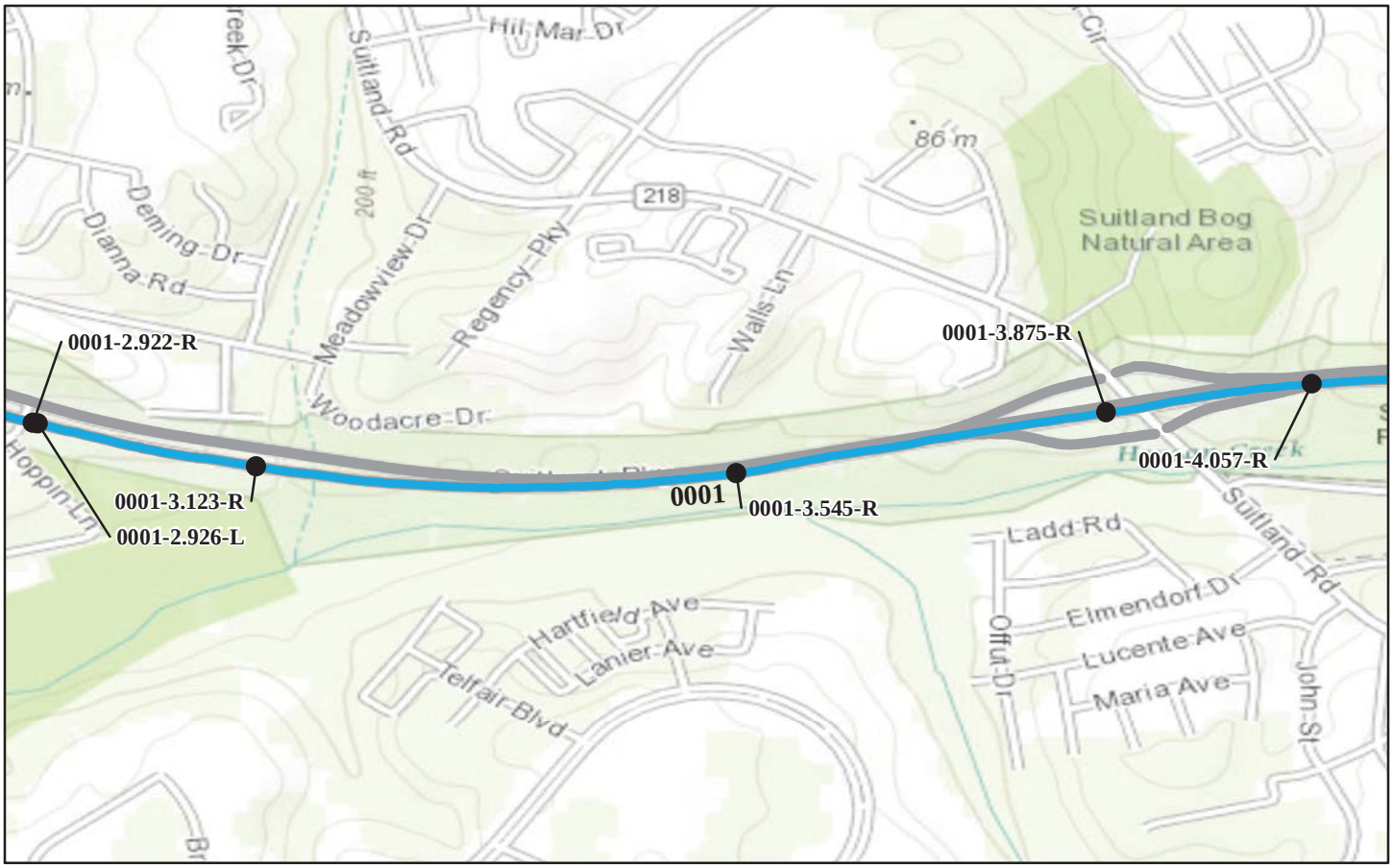
| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0001-2.046-R<br>11/5/2010 | 137 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE FLARED | NONE | $2,739.00 |
| SUIT-0001-2.090-R<br>11/5/2010 | 137 | CONCRETE WITH SIMULATED STONE FACE | NONE | NONE | $2,739.00 |
| SUIT-0001-2.093-L<br>11/9/2010 | 993 | CONCRETE WITH SIMULATED STONE FACE | NONE | NONE | $3,003.00 |
| SUIT-0001-2.537-R<br>11/5/2010 | 1037 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0001-2.922-R<br>11/8/2010 | 348 | STEEL-BACKED TIMBER WITH BLOCKOUT | NONE | SBT/LOG FLARED | $5,544.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

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| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0001-2.926-L<br>11/9/2010 | 210 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $4,015.00 |
| SUIT-0001-3.123-R<br>11/8/2010 | 1486 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $5,984.00 |
| SUIT-0001-3.545-R<br>11/8/2010 | 148 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0001-3.875-R<br>11/8/2010 | 102 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE FLARED | NONE | $0.00 |
| SUIT-0001-4.057-R<br>11/8/2010 | 200 | CONCRETE WITH SIMULATED STONE FACE | NONE | OTHER: STONE WITH CONCRETE CORE FLARED | $0.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

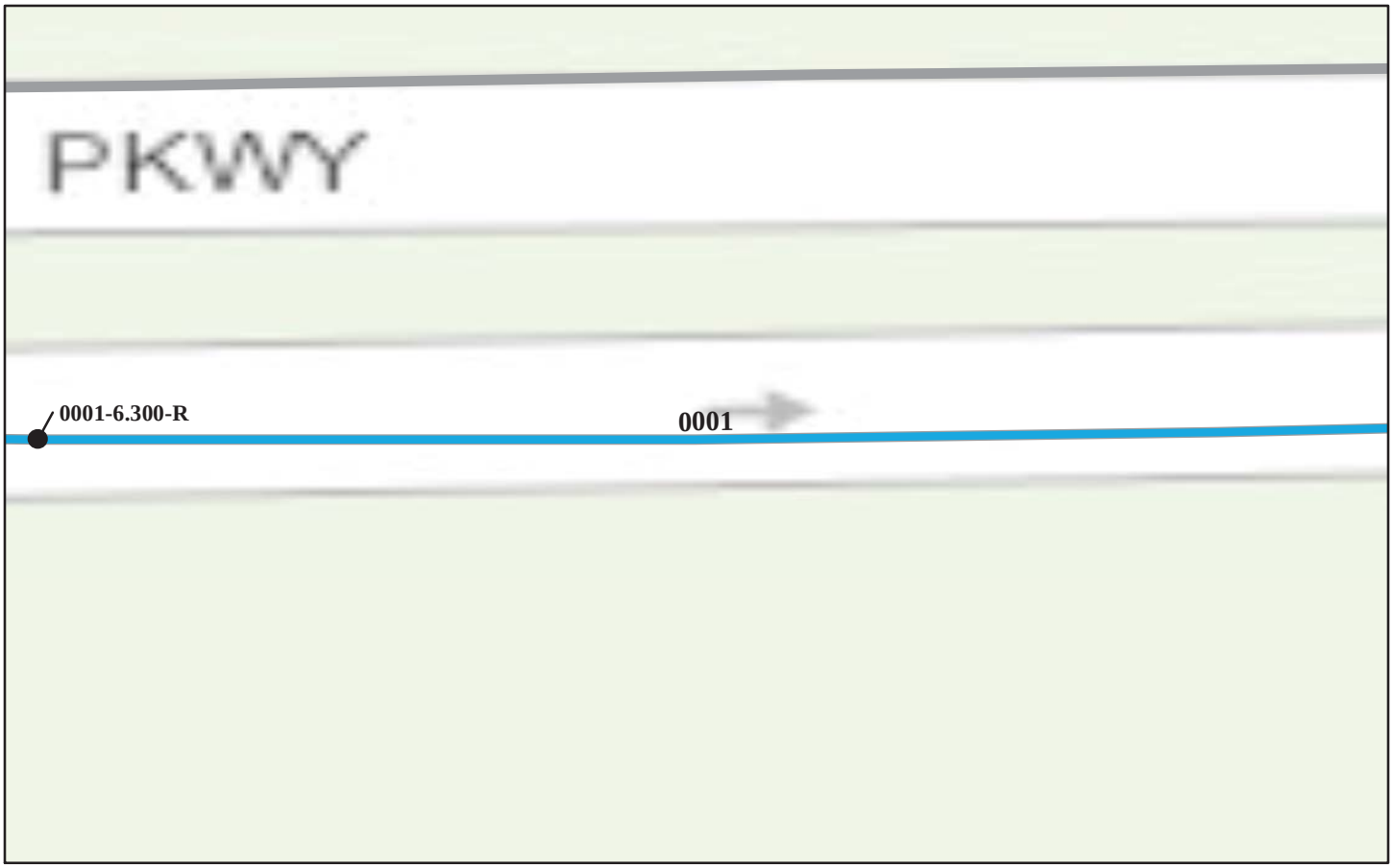

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment<br>Begin | <br>End | *Repair Cost |
|---|---|---|---|---|---|
| SUIT-0001-4.549-R<br>11/8/2010 | 240 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $2,684.00 |
| SUIT-0001-4.550-L<br>11/10/2010 | 245 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $4,323.00 |
| SUIT-0001-5.410-R<br>11/8/2010 | 649 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | NONE | $4,780.00 |
| SUIT-0001-5.411-L<br>11/10/2010 | 641 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | NONE | $6,743.00 |
| SUIT-0001-5.824-L<br>11/10/2010 | 162 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | NONE | $0.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

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| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0001-6.300-R<br><br>11/8/2010 | 88 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE FLARED | NONE | $0.00 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

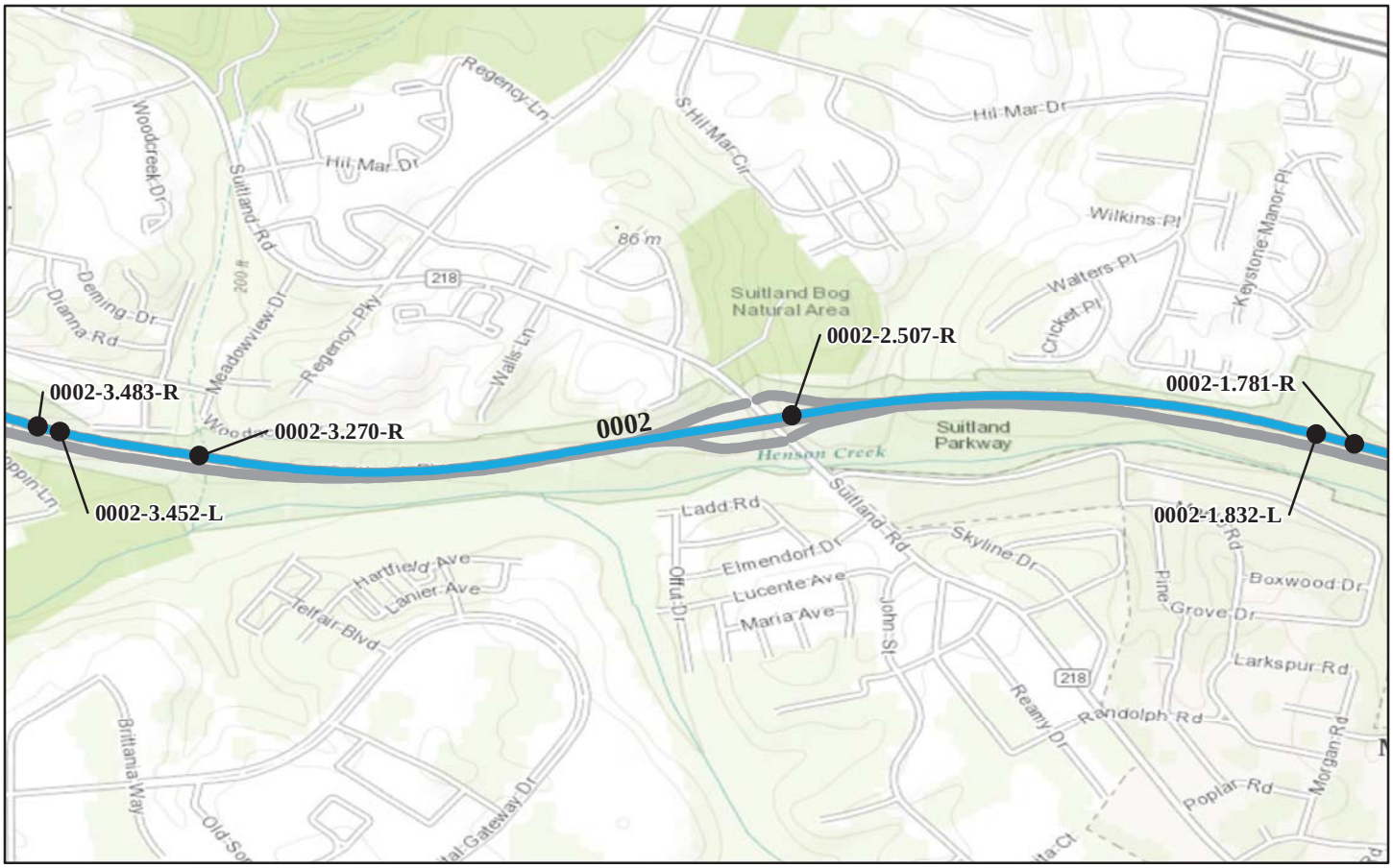

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment<br>Begin | <br>End | *Repair Cost |
|---|---|---|---|---|---|
| SUIT-0002-0.067-R<br>11/3/2010 | 161 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE BURIED | NONE | $0.00 |
| SUIT-0002-0.587-L<br>11/9/2010 | 187 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | NONE | $0.00 |
| SUIT-0002-0.846-L<br>11/9/2010 | 448 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | NONE | $3,625.00 |
| SUIT-0002-0.857-R<br>11/3/2010 | 362 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0002-1.530-L<br>11/9/2010 | 1451 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE FLARED | NONE | $0.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY



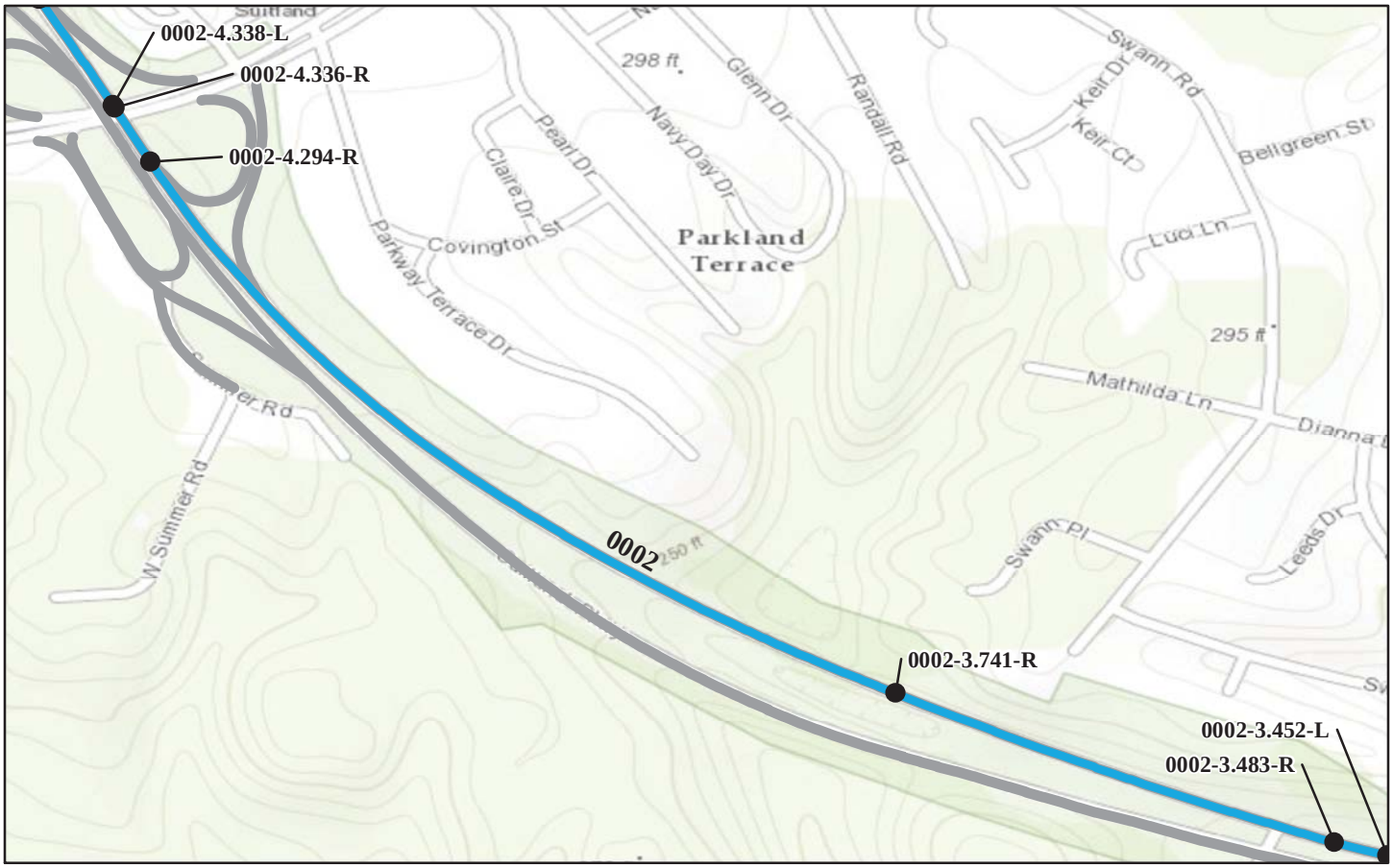

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0002-1.781-R<br>11/3/2010 | 523 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $7,755.00 |
| SUIT-0002-1.832-L<br>11/9/2010 | 174 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $5,060.00 |
| SUIT-0002-2.507-R<br>11/3/2010 | 91 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE FLARED | NONE | $0.00 |
| SUIT-0002-3.270-R<br>11/3/2010 | 176 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $3,504.00 |
| SUIT-0002-3.452-L<br>11/9/2010 | 193 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY



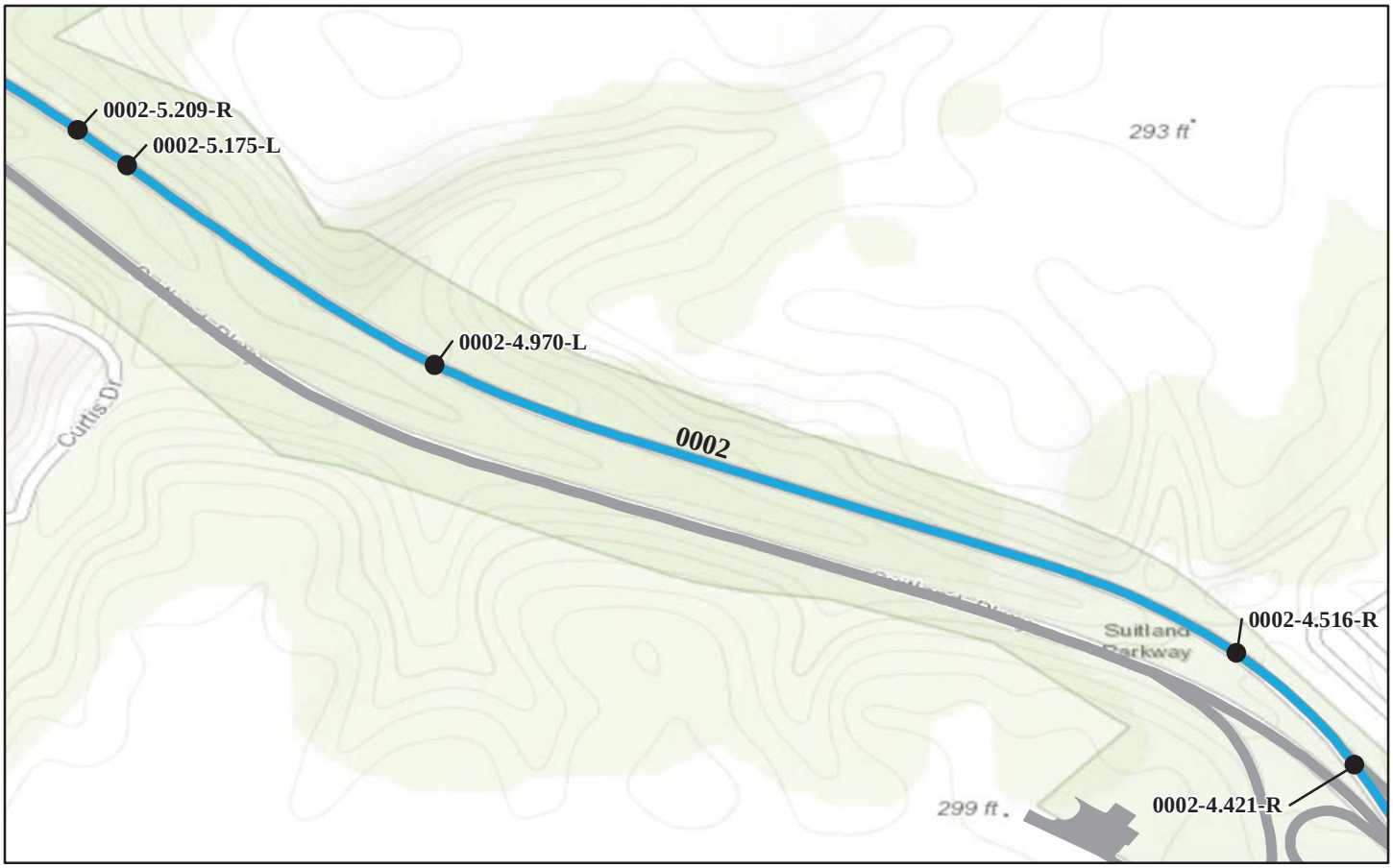

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0002-3.483-R<br>11/3/2010 | 147 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0002-3.741-R<br>11/5/2010 | 510 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $8,085.00 |
| SUIT-0002-4.294-R<br>11/5/2010 | 132 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE FLARED | NONE | $0.00 |
| SUIT-0002-4.336-R<br>11/5/2010 | 131 | CONCRETE WITH SIMULATED STONE FACE | NONE | OTHER: STONE WITH CONCRETE CORE FLARED | $0.00 |
| SUIT-0002-4.338-L<br>11/9/2010 | 341 | CONCRETE WITH SIMULATED STONE FACE | NONE | OTHER: STONE WITH CONCRETE CORE FLARED | $3,201.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY



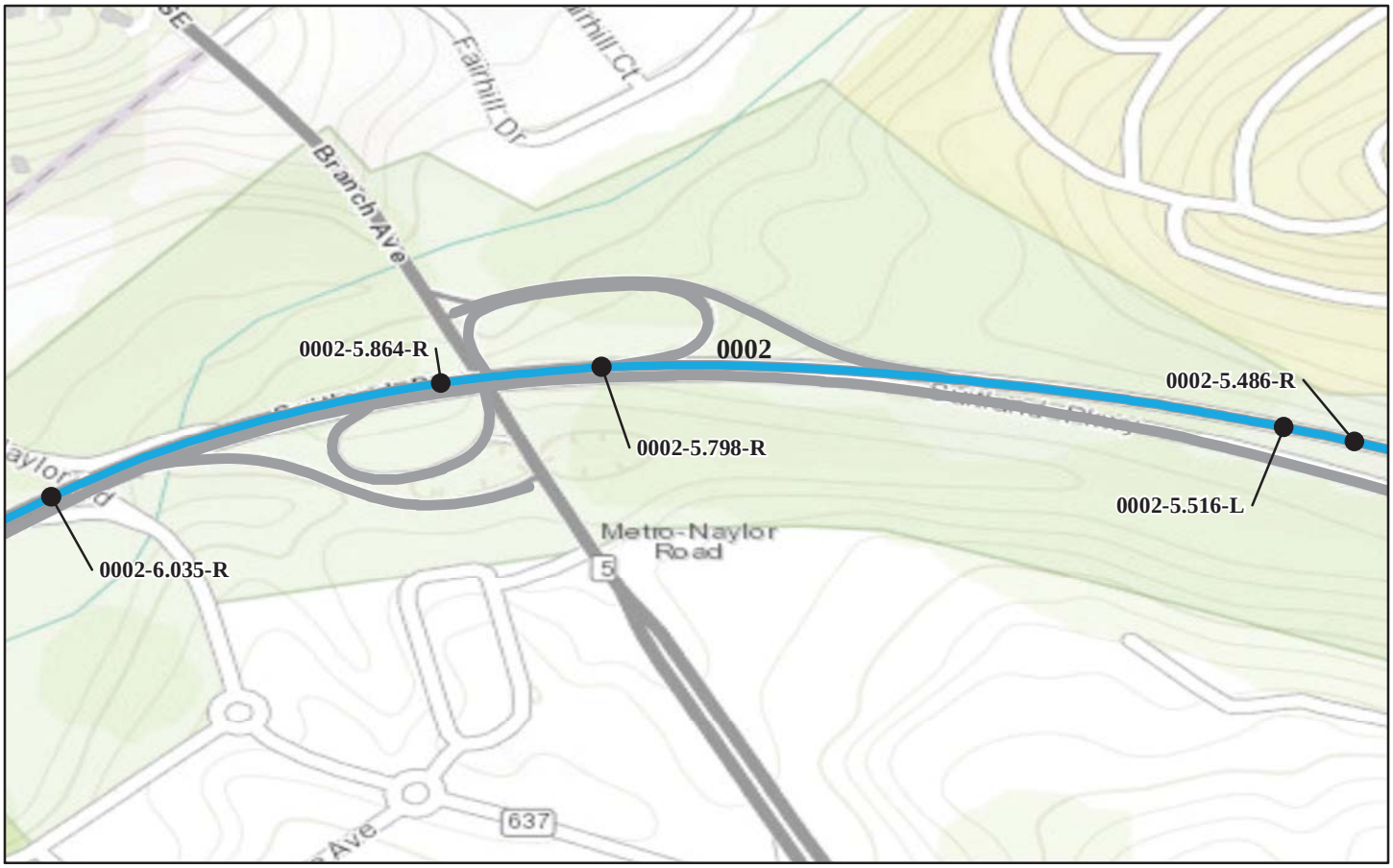

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0002-4.421-R<br>11/5/2010 | 138 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $2,756.00 |
| SUIT-0002-4.516-R<br>11/5/2010 | 317 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0002-4.970-L<br>11/9/2010 | 243 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |
| SUIT-0002-5.175-L<br>11/9/2010 | 195 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $2,684.00 |
| SUIT-0002-5.209-R<br>11/5/2010 | 144 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $0.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY



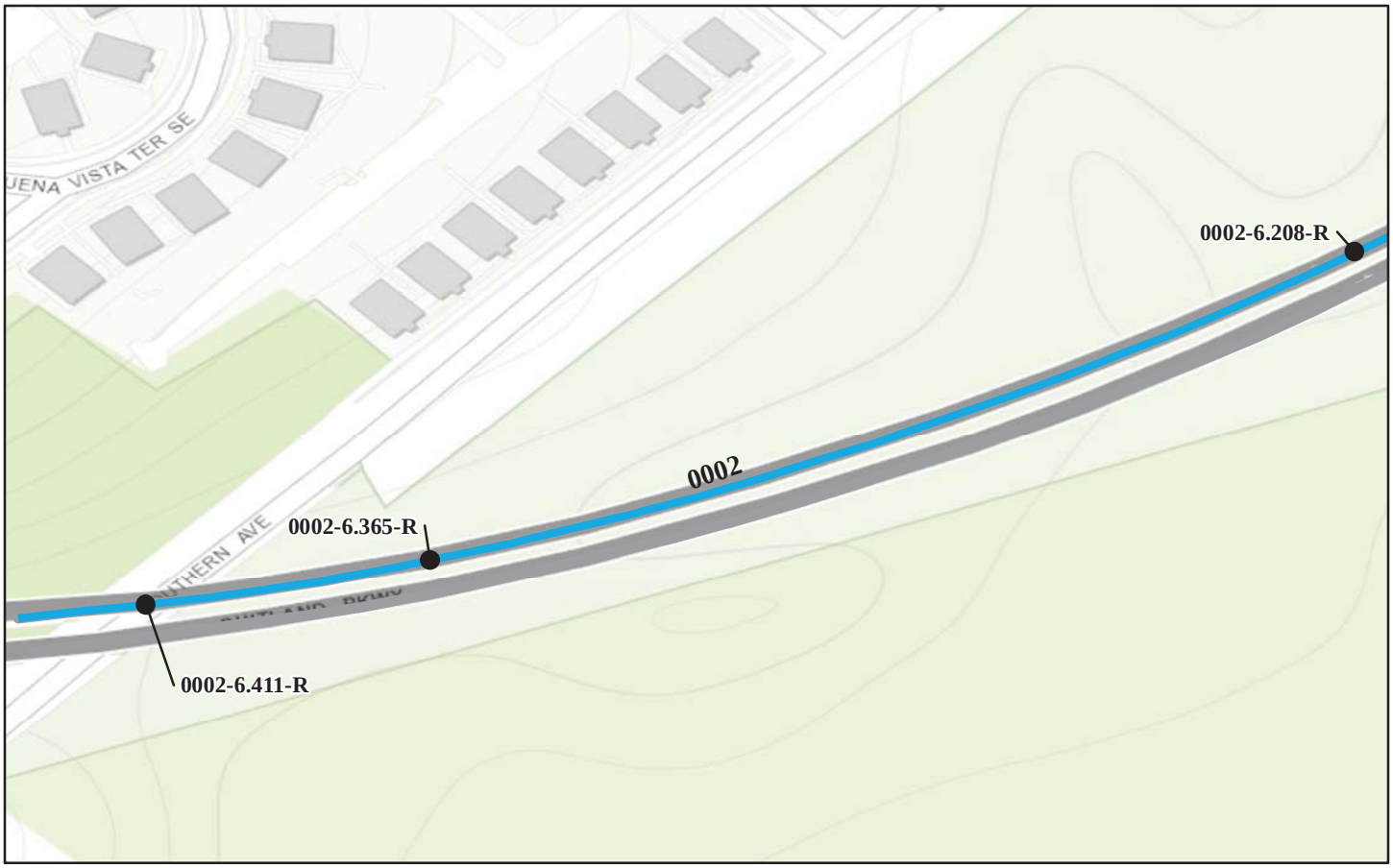

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment<br>Begin | <br>End | *Repair Cost |
|---|---|---|---|---|---|
| SUIT-0002-5.486-R<br>11/5/2010 | 167 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $4,752.00 |
| SUIT-0002-5.516-L<br>11/10/2010 | 166 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $4,389.00 |
| SUIT-0002-5.798-R<br>11/5/2010 | 174 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | NONE | $2,173.00 |
| SUIT-0002-5.864-R<br>11/8/2010 | 883 | STEEL-BACKED TIMBER WITH BLOCKOUT | NONE | NONE | $8,063.00 |
| SUIT-0002-6.035-R<br>11/8/2010 | 65 | STEEL-BACKED TIMBER WITH BLOCKOUT | NONE | SBT/LOG FLARED | $2,536.00 |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY




Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment<br>Begin | <br>End | *Repair Cost |
|---|---|---|---|---|---|
| SUIT-0002-6.208-R<br>11/8/2010 | 240 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $4,131.00 |
| SUIT-0002-6.365-R<br>11/8/2010 | 277 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE BURIED | NONE | $0.00 |
| SUIT-0002-6.411-R<br>11/8/2010 | 89 | W-BEAM STRONG POST | OTHER: W-BEAM FLARED | W-BEAM BCT | $0.00 |
| | | | | | |
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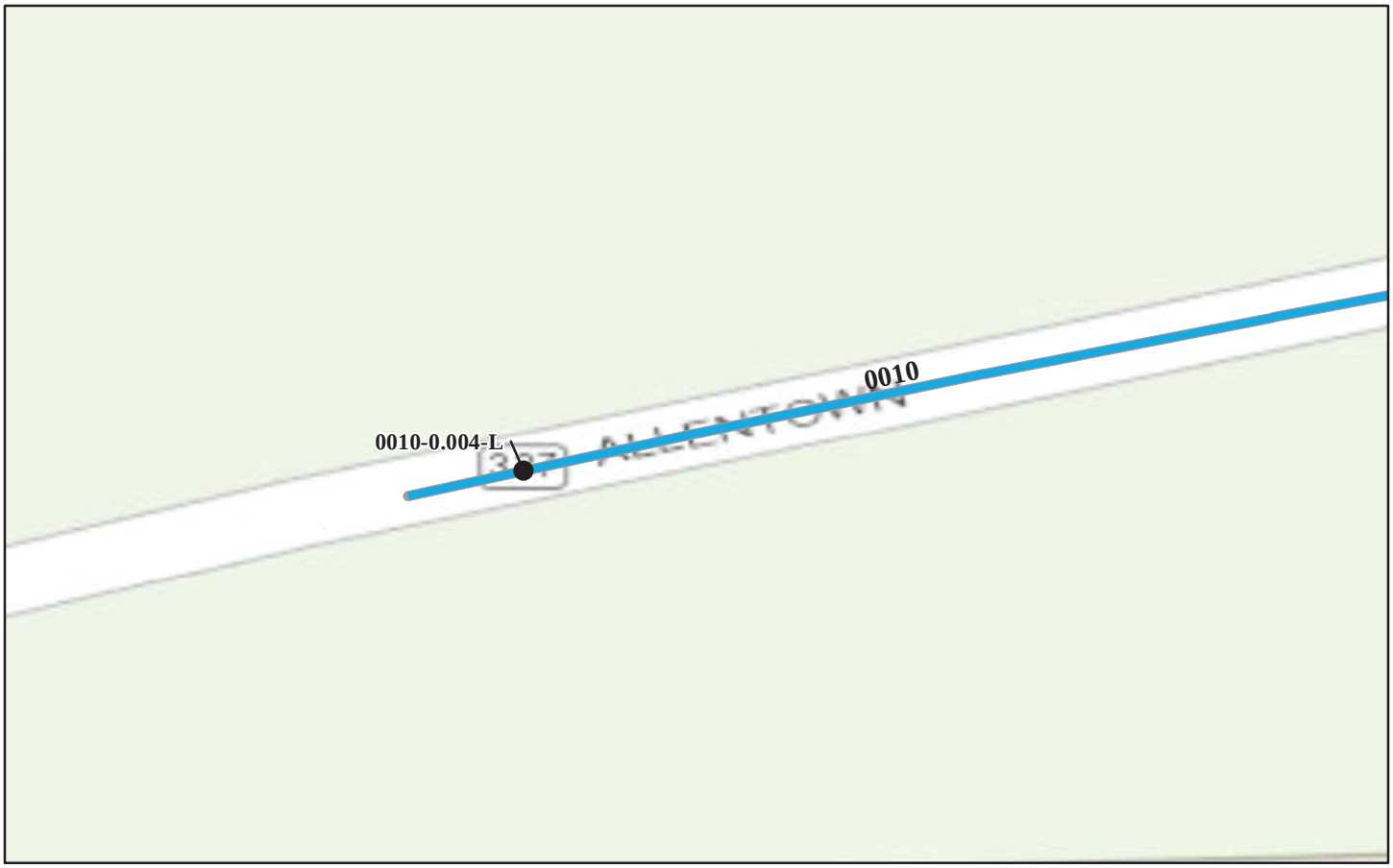
*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway

## ROUTE 0010: ALLENTOWN ROAD RAMP TO EB SUITLAND PARKWAY




Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0010-0.004-L<br><br>11/10/2010 | 87 | W-BEAM STRONG POST | NONE | W-BEAM TURN DOWN | $0.00 |
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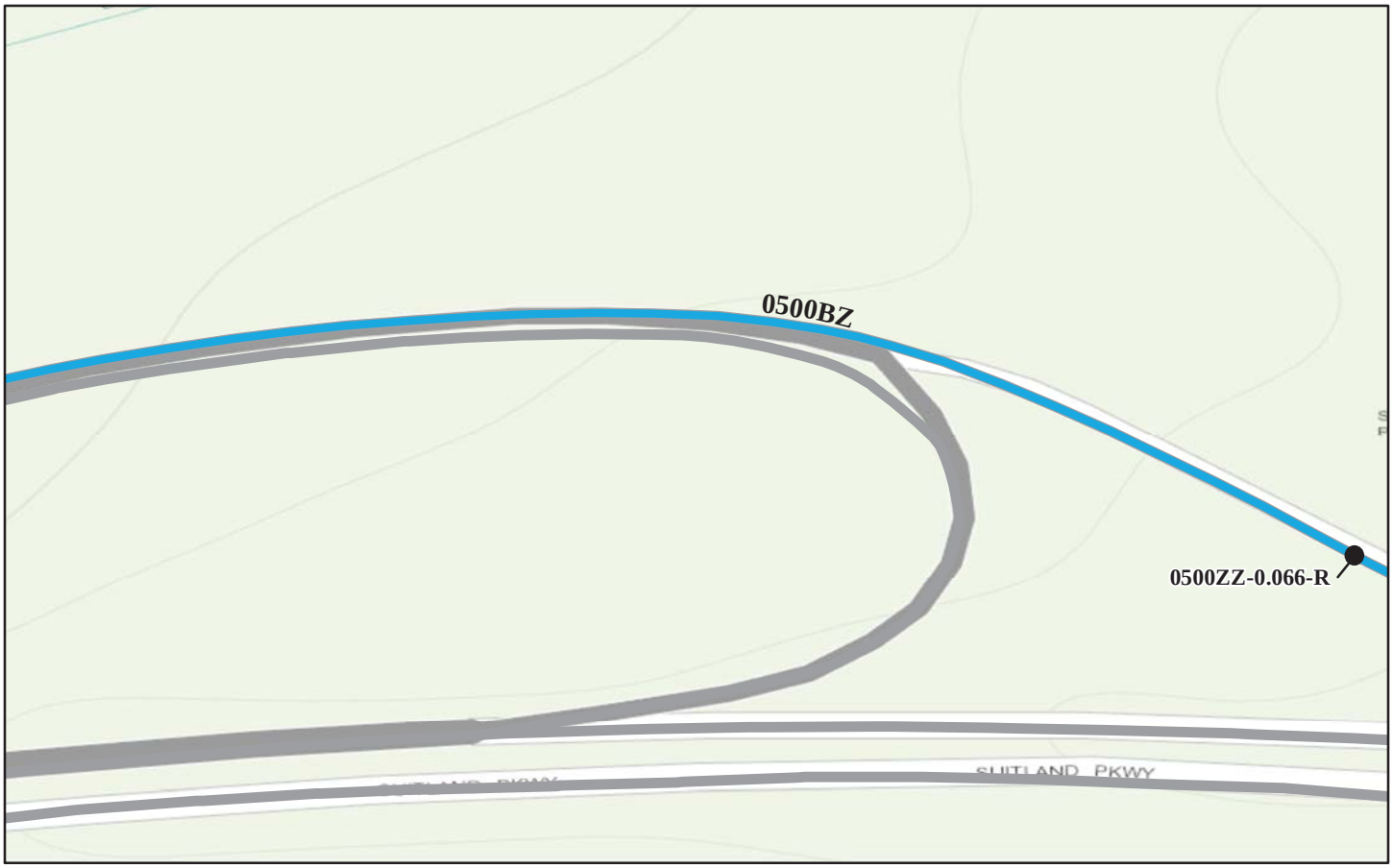
*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0500ZZ: BRANCH AVENUE INTERCHANGE RAMPS




Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0500ZZ-0.066-R<br><br>11/10/2010 | 615 | STEEL-BACKED TIMBER WITH BLOCKOUT | SBT/LOG FLARED | SBT/LOG FLARED | $2,393.00 |
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*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0501ZZ: SILVER HILL ROAD INTERCHANGE RAMPS


Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0501ZZ-0.008-R<br><br>11/10/2010 | 268 | STEEL-BACKED TIMBER WITH BLOCKOUT | NONE | SBT/LOG FLARED | $0.00 |
| | | | | | |
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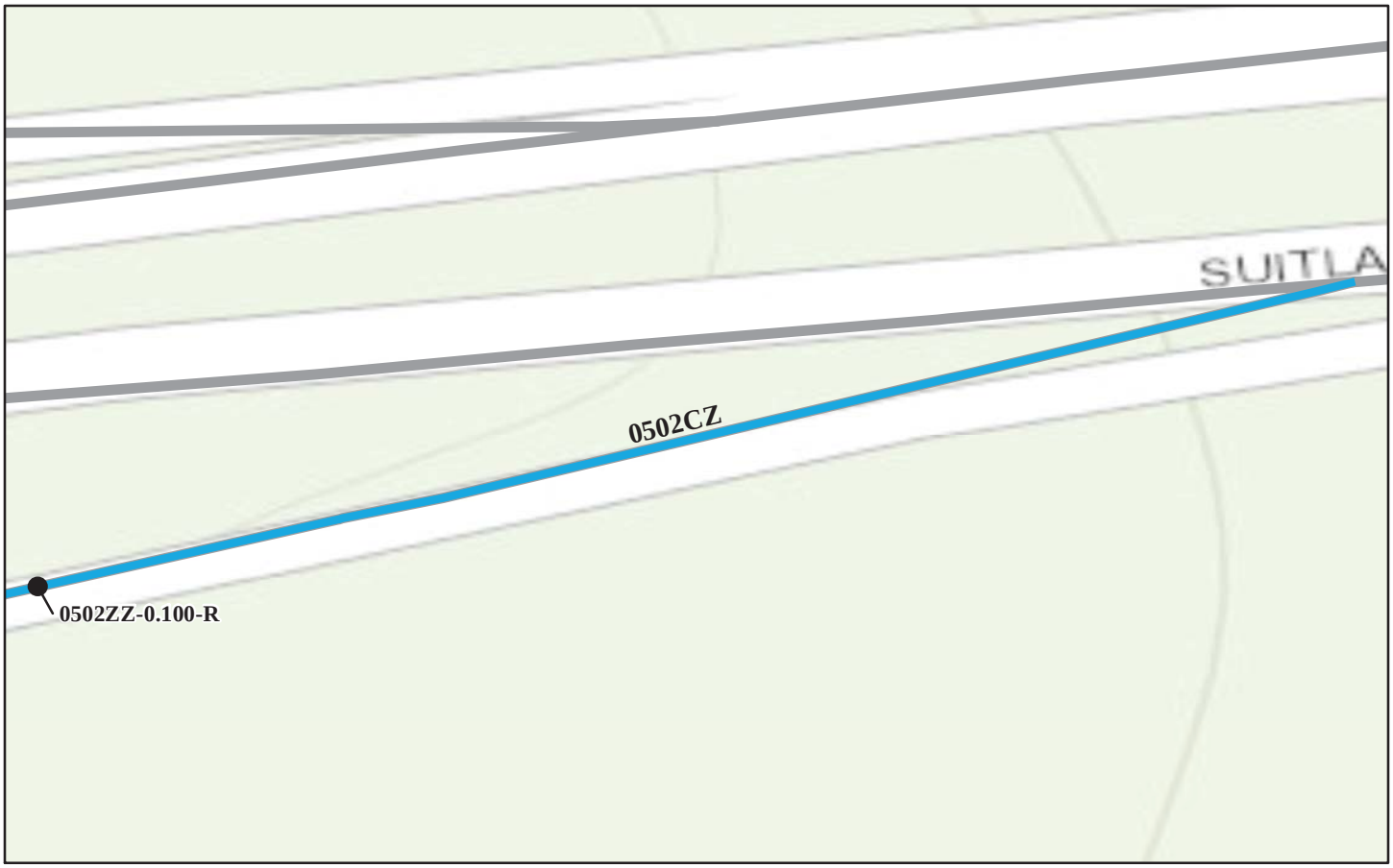
*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0502ZZ: SUITLAND ROAD INTERCHANGE RAMPS




Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0502ZZ-0.100-R<br><br>11/10/2010 | 172 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE FLARED | NONE | $0.00 |
| | | | | | |
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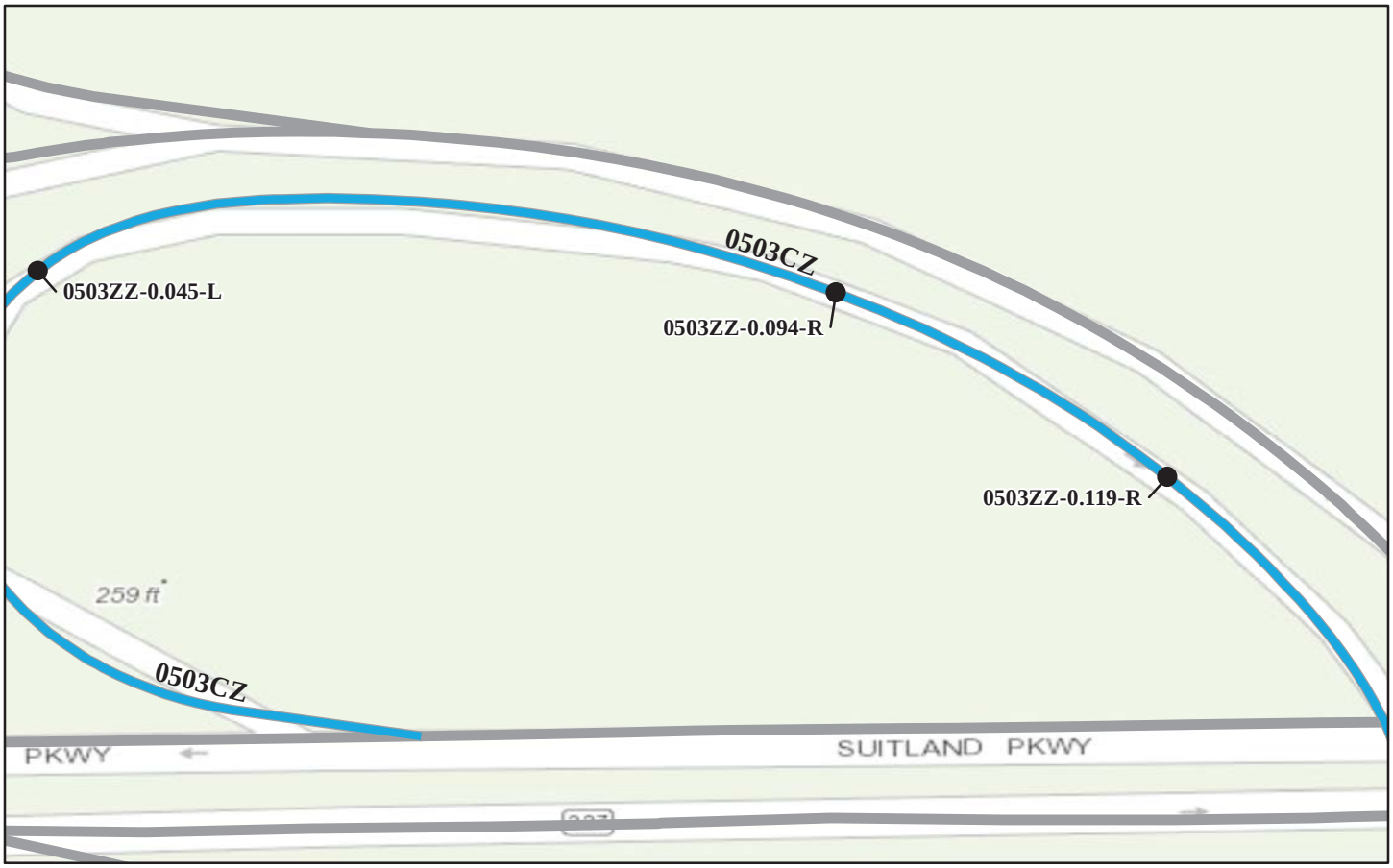
*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0503ZZ: ANDREWS AFB NORTH GATE INTERCHANGE RAMPS



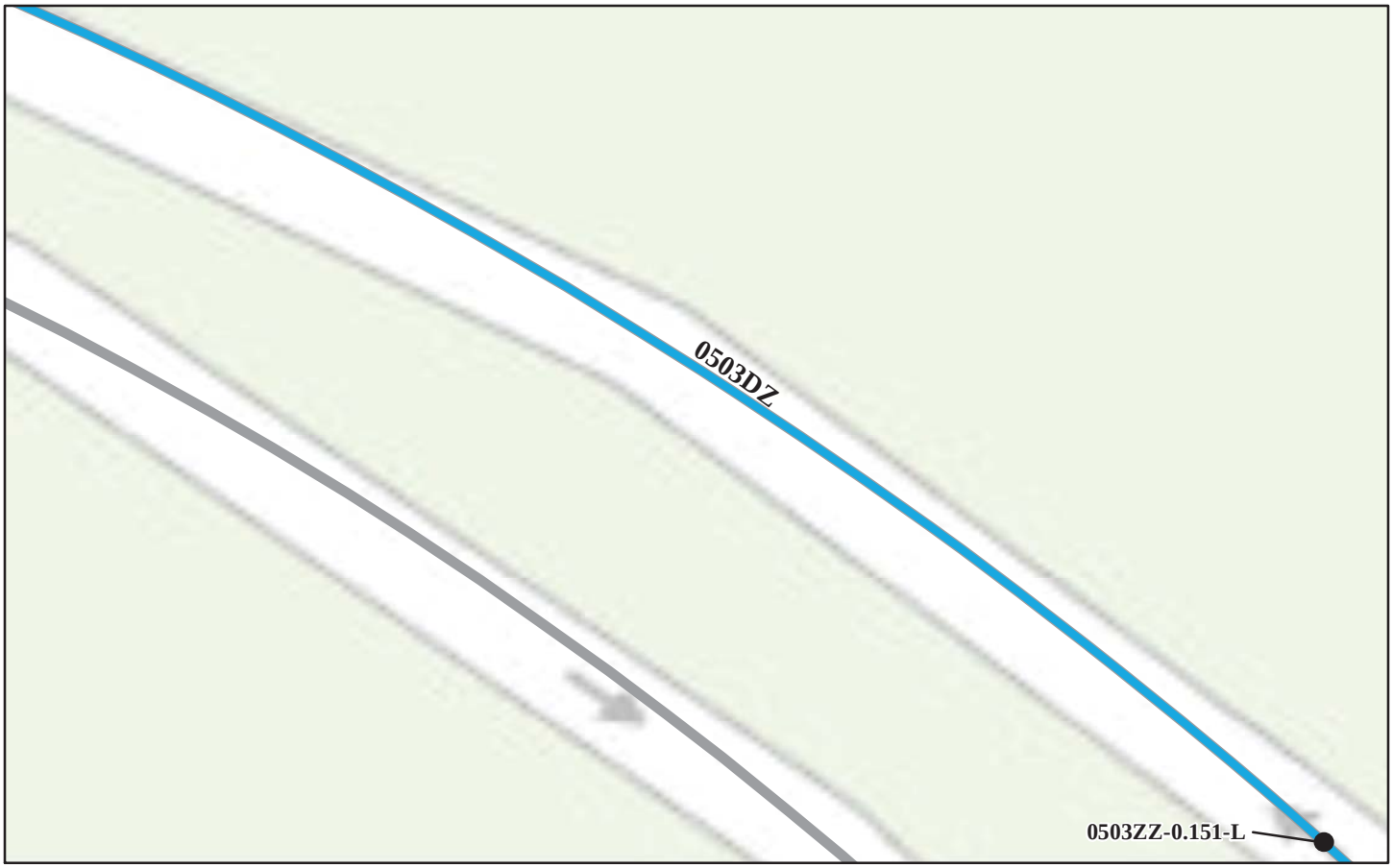

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment<br>Begin | <br>End | *Repair Cost |
|---|---|---|---|---|---|
| SUIT-0503ZZ-0.045-L<br>11/10/2010 | 543 | CONCRETE WITH SIMULATED STONE FACE | NONE | NONE | $1,777.00 |
| SUIT-0503ZZ-0.094-R<br>11/10/2010 | 120 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE BURIED | NONE | $0.00 |
| SUIT-0503ZZ-0.119-R<br>11/10/2010 | 101 | CONCRETE WITH SIMULATED STONE FACE | OTHER: CONCRETE WITH SIMULATED STONE FACE BURIED | NONE | $0.00 |
| | | | | | |
| | | | | | |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Suitland Parkway National Capital Parks - East

## ROUTE 0503ZZ: ANDREWS AFB NORTH GATE INTERCHANGE RAMPS




Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

| Barrier ID<br>Inspection Date | Barrier Length (Ft.) | Barrier Type | Barrier End Treatment | | *Repair Cost |
|---|---|---|---|---|---|
| | | | Begin | End | |
| SUIT-0503ZZ-0.151-L<br><br>11/10/2010 | 124 | CONCRETE WITH SIMULATED STONE FACE | NONE | NONE | $0.00 |
| | | | | | |
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| | | | | | |

*2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Tier 3
# Barrier Details


## Suitland Parkway National Capital Parks - East

Federal Lands Highway
Road Inventory Program

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.000-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 41.40 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 229 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | OTHER: STONE WITH CONCRETE | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 26.7 | **Lateral Offset (In.):** | 197.3 | **Road Grade (%):** | 5.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was within 1/2 in of design height (27 in). |
| | **Breaking and Cracking:** | 5 ft of the barrier has loose stones. Minor cracking of less than 1/4 in observed in the cap. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | 5 ft of the mortar joints were deteriorated resulting in loose stones. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No breaking or cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No surface corrosion or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.000-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 41.40 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $1777 |
| **Brief Workorder:** | Repoint 1 SY of barrier. | | | | |
| **Workorder:** | Re-Point Masonry Barrier at $140- per -Sq. Yd. for 1 SY = $140. [(2.5 sf + 1.1 sf)]/9 = 0.4 sy<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_0.000_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.188-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 48.40 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 242 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.3 |
| **Height (In.):** | 23.7 | **Lateral Offset (In.):** | 136.6 | **Road Grade (%):** | 1.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Some deflections observed in alignment no greater than 4 in. 110 ft of barrier is 3-5 in below 27 in design height. 50 ft of barrier is 1 to 3 ines below 27 in design height. |
| | **Breaking and Cracking:** | 20 ft. guardrail was observed to have impact related cracking. 3 blockouts had cracking that caused full breaking. |
| | **Missing Elements:** | 1 blockout was observed to be missing. |
| | **Corrrosion and Weathering:** | 30 ft guardrail had a loss of at least 50% of cross section. No erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 1 post was cracked through the center about 2 in width. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No erosion around posts observed. No loss of cross section greater than 5% observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.188-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 48.40 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $5000 |
| **Brief Workorder:** | Raise 160-ft of guardrail up to 27-in design height replace 50-ft of rail 1 post and 4 blocks. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 50 LF = $1250. Replace 50-ft of rail.<br>Replace Block at $30- per -Each for 4 Block(s) = $120. Replace 3 cracked blockouts and 1 missing blockout.<br>Replace Post at $100- per -Each for 1 Post(s) = $100. Replace 1 cracked post.<br>Adjust Guardrail at $10- per -Lin. Ft. for 160 LF = $1600. Raise 160 ft of rail to 27 inch design height.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_0.188_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.378-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 39.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 167 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.3 |
| **Height (In.):** | 24.7 | **Lateral Offset (In.):** | 124.6 | **Road Grade (%):** | 0.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was between 1 and 3 in below the 27 in design height for the entire length. |
| | **Breaking and Cracking:** | 10ft of raill and 3 blocks were cracked or broken due to impacts. |
| | **Missing Elements:** | There were 10 bolts/washers/nuts missing and several of the bolts were loose. |
| | **Corrrosion and Weathering:** | Weathering was observed but less than 5 percent of the cross section has been lost. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 10ft of rail was broken due to impact and 1 block was broken. |
| | **Missing Elements:** | Several bolts were loose. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.378-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 39.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $4131 |
| **Brief Workorder:** | Raise 137-ft of guardrail up to 27-in design height replace 20-ft of rail 4 blocks 10 bolt assemblies and tighten loose bolts. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 137 LF = $1370. Raise 137 feet of guardrail to the design height of 27 inches.<br>Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 ft of rail.<br>Replace Block at $30- per -Each for 4 Block(s) = $120. Replace 4 blockouts.<br>Bolt Assembly at $5- per - for 10 = $50. 10 bolt assemblies.<br>Labor at $60- per -Hour for 4 Hrs = $240. Replace and tighten bolts.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_0.378_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.431-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 40.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 67 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 111.3 |
| **Height (In.):** | 23.7 | **Lateral Offset (In.):** | 68.3 | **Road Grade (%):** | 3.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. 10 ft of the barrier was 1 to 3 in below design height (27 ines). 42 ft of the barrier was 3-6 ines below design height (27 ines). |
| | **Breaking and Cracking:** | 30ft of rail had impact related breaking and cracking. 2 blockouts were broken. |
| | **Missing Elements:** | No elements appeared to be missing. Some bolts were loose. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.431-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 40.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $3152 |
| **Brief Workorder:** | Raise 52-ft of barrier up to 27-in design height replace 30-ft of rail 2 blocks and tighten loose bolts. | | | | |
| **Workorder:** | Replace Block at $30- per -Each for 2 Block(s) = $60. Replace 2 blocks<br>Replace Rail at $25- per -Lin. Ft. for 30 LF = $750. Replace 30 ft of rail<br>Adjust Guardrail at $10- per -Lin. Ft. for 52 LF = $520. Raise 52 ft of the barrier to design height (27 inches)<br>Labor at $60- per -Hour for 1 Hrs = $60. 1 hr to tighten loose bolts<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_0.431_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.547-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 38.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 145 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | CONC/MASON SBT |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.6 |
| **Height (In.):** | 25.0 | **Lateral Offset (In.):** | 69.0 | **Road Grade (%):** | 2.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. 100 ft of barrier is 1 to 3 in below 27 in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.547-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 38.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2723 |
| **Brief Workorder:** | Raise 100-ft of guardrail up to the 27-in design height. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 100 LF = $1000. Raise 100 feet of guardrail to 27 inch design height.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_0.547_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.604-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 33.90 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 81 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | CONC/MASON SBT |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 79.8 |
| **Height (In.):** | 29.7 | **Lateral Offset (In.):** | 68.0 | **Road Grade (%):** | 1.10 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier exceeds 27 in design height by 2 to 3.5 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. 3 blockouts were longitudinally broken. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.604-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 33.90 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $1722 |
| **Brief Workorder:** | Replace 3 blockouts. | | | | |
| **Workorder:** | Replace Block at $30- per -Each for 3 Block(s) = $90. Replace 3 blockouts.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_0.604_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.836-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 39.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 139 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.3 |
| **Height (In.):** | 23.7 | **Lateral Offset (In.):** | 128.0 | **Road Grade (%):** | 0.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in observed in the alignment. The barrier height was within 1 in of the 27 in design height for 10 ft between 1 and 3 in below the design height for 10 ft and between 3 and 5 in below for 50 ft. |
| | **Breaking and Cracking:** | The was some minor damage to a rail from a rub impact that should be monitored. No other breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering and no erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of the cross section or erosion was observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.836-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 39.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $3245 |
| **Brief Workorder:** | Raise 60-ft of guardrail up to the 27-in design height. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 60 LF = $600. Raise 60 feet of guardrail to the design height of 27 inches.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_0.836_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.866-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 50.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 137 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | HIGH | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.5 |
| **Height (In.):** | 25.2 | **Lateral Offset (In.):** | 100.1 | **Road Grade (%):** | 0.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. 10 ft of the barrier was between 1 and 3 in below design height (27 ines). 30 ft of the barrier was 3-5 ines below design height (27 ines). |
| | **Breaking and Cracking:** | 20ft of rail had impact related breaking/cracking. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss observed. Monitor erosion at the base of posts. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss observed. Monitor erosion at the base of the posts. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-0.866-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 50.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $3575 |
| **Brief Workorder:** | Raise 40-ft of guardrail up to the 27-in design height and replace 20-ft of rail. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 40 LF = $400. Raise 40 ft of the barrier to 27in design height.<br>Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 ft of rail due to impact related breaking/cracking<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

**ROUTE 0001: EASTBOUND SUITLAND PARKWAY**

## Barrier Condition Photos


**SUIT_0001_0.866_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.007-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 36.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 330 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.3 |
| **Height (In.):** | 26.2 | **Lateral Offset (In.):** | 89.0 | **Road Grade (%):** | 0.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was within 1 in below design height (27 in). |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.007-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 36.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_1.007_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.044-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 39.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 153 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.1 |
| **Height (In.):** | 28.0 | **Lateral Offset (In.):** | 82.6 | **Road Grade (%):** | 0.60 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier exceeds 27 in design height by 0.5 to 2 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 3 blockouts were broken. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.044-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 39.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2684 |
| **Brief Workorder:** | Replace 3 blockouts. | | | | |
| **Workorder:** | Replace Block at $30- per -Each for 3 Block(s) = $90. Replace 3 broken blockouts.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_1.044_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.309-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 36.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 351 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.1 |
| **Height (In.):** | 27.5 | **Lateral Offset (In.):** | 85.1 | **Road Grade (%):** | 1.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was 1/2 in greater than the 27 in design height for the entire length. |
| | **Breaking and Cracking:** | 10ft of rail was broken due to impact. No other impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | 1 blockout was cracked due to weathering. Less than 5 percent of the cross section has been lost and no erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost. |

| | | | | | |
|---|---|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.309-L** | | | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | | | |
| **Inspection Date:** | 09/11/2010 | | **Barrier Rating:** | 36.70 | |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2893 |
| **Brief Workorder:** | Replace 10-ft of rail and 1 block. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 10 LF = $250. Replace 1 broken rail.<br>Replace Block at $30- per -Each for 1 Block(s) = $30. Replace broken block.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_1.309_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.312-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 31.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 158 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.5 |
| **Height (In.):** | 29.7 | **Lateral Offset (In.):** | 87.6 | **Road Grade (%):** | 2.10 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier exceeds 27 in design height by 2.5 to 3.5 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 1 blockout was cracked in half. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.312-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 31.00 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2618 |
| **Brief Workorder:** | Replace 1 blockout. | | | | |
| **Workorder:** | Replace Block at $30- per -Each for 1 Block(s) = $30. Replace 1 cracked blockout.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_1.312_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.470-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 33.90 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 151 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 27.2 | **Lateral Offset (In.):** | 86.3 | **Road Grade (%):** | 1.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was equal to or exceeded design height (27 in) by 1/2 in. |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Monitor 1/2 in cracking on rail. No erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.470-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 33.90 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | MONITOR | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | Monitor 1/2 inch cracking in rail. | | | | |
| **Workorder:** | | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_1.470_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.474-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 39.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 125 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 27.2 | **Lateral Offset (In.):** | 104.6 | **Road Grade (%):** | 1.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was equal to or 1/2 in greater than the 27 in design height for the entire length. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Some minor splintering was present on one of the rails but less than 5 percent of the cross section was lost. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.474-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 39.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_1.474_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.665-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 42.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 567 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.3 |
| **Height (In.):** | 25.3 | **Lateral Offset (In.):** | 87.5 | **Road Grade (%):** | 1.90 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. 240 ft of the barrier is 1 to 3 in below 27 in design height. |
| | **Breaking and Cracking:** | 20 ft of rail had surface impacting that should be monitored. 1 rail had a crack of 2 in width. 1 blockout was cracked in half. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-1.665-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 42.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $5533 |
| **Brief Workorder:** | Raise 240-ft of guardrail up to the 27-in design height replace 10-ft of rail and 1 blockout. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 10 LF = $250. Replace 10 ft of rail.<br>Replace Block at $30- per -Each for 1 Block(s) = $30. Replace 1 blockout.<br>Adjust Guardrail at $10- per -Lin. Ft. for 240 LF = $2400. Raise 240 feet of rail to 27 inch design height.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_1.665_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.046-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 31.30 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 137 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 27.5 | **Lateral Offset (In.):** | 51.7 | **Road Grade (%):** | 2.20 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was 1 in below or exceeded design height (27 in) by up to 3.5 ines. |
| | **Breaking and Cracking:** | A 2 ft section of cap stone was loose. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Cracks in mortar were less than 1/4 in. No erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | Minor cracks of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Cracks in mortar were less than 1/4 in. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.046-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 31.30 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2739 |
| **Brief Workorder:** | Repoint 1 SY of capstone | | | | |
| **Workorder:** | Re-Point Masonry Barrier at $140- per -Sq. Yd. for 1 SY = $140. [(2.2 ft)(2.3 ft)]/9 = 0.6 SY<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_2.046_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.090-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 28.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 137 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 26.2 | **Lateral Offset (In.):** | 104.0 | **Road Grade (%):** | 1.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier is 1 in or less below 27 in design height. |
| | **Breaking and Cracking:** | A 4 ft section of the cap stone was dislodged. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No erosion or undermining at base observed. |
| **End Treatments** | **Alignment and Height:** | |
| | **Breaking and Cracking:** | |
| | **Missing Elements:** | |
| | **Corrrosion and Weathering:** | |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.090-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 28.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2739 |
| **Brief Workorder:** | Repoint 1 SY of grout around 1 cap stone | | | | |
| **Workorder:** | Re-Point Masonry Barrier at $140- per -Sq. Yd. for 1 SY = $140. [(8ft)(1ft)]/9 = 0.9 SY<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_2.090_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.093-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 47.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 993 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | EXTREME | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 29.2 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 32.2 | **Lateral Offset (In.):** | 60.5 | **Road Grade (%):** | 0.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in the alignment. The barrier height was between 1.5 to 6.5 in greater than the 27 in design height for the entire length. |
| | **Breaking and Cracking:** | 5 stones were broken on the face. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | The mortar on the cap stones was deteriorated for 67 ft. No erosion or undermining was observed. |
| **End Treatments** | **Alignment and Height:** | NA |
| | **Breaking and Cracking:** | NA |
| | **Missing Elements:** | NA |
| | **Corrrosion and Weathering:** | NA |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.093-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 47.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $3003 |
| **Brief Workorder:** | Regrout 2SY around the capstones for 67-ft and replace 5 capstones on the wall face. | | | | |
| **Workorder:** | Re-Point Masonry Barrier at $140- per -Sq. Yd. for 2 SY = $280. (67 ft)(0.17 ft) = 1.24 SY<br>Simulated Stone Masonry Surface Treatment at $50- per -Sq. Yd. for 2 SY = $100. (10 ft)(1.5 ft) = 1.7 SY<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_2.093_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.537-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 45.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 1037 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 27.2 | **Lateral Offset (In.):** | 87.5 | **Road Grade (%):** | 1.60 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was within 1 in of the 27 in of the design height for the entire length. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Some minor splintering was observed on a few rails and should be monitored. Less than 5 percent of the cross section has been lost and no erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.537-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 45.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | MONITOR | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | Monitor Guardrail for Weathering | | | | |
| **Workorder:** | | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_2.537_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.922-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 42.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 348 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.6 |
| **Height (In.):** | 25.5 | **Lateral Offset (In.):** | 87.0 | **Road Grade (%):** | 1.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was within 1 in of the 27 in design height for 100 ft and between 1 and 3 in below the design height for 213 ft. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | 20ft of rail and 2 blocks were cracked and broken due to weathering. Other weathering was observed but less than 5 percent of the cross sections was lost. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.922-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 42.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $5544 |
| **Brief Workorder:** | Raise 213-ft of guardrail up to the 27-in design height replace 20-ft of rail and 2 blocks. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 213 LF = $2130. Raise 213 feet of guardrail to the 27 inch design height.<br>Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 foot of rail.<br>Replace Block at $30- per -Each for 2 Block(s) = $60. Replace 2 blocks.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_2.922_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.926-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 37.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 210 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | HIGH | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.6 |
| **Height (In.):** | 26.0 | **Lateral Offset (In.):** | 94.5 | **Road Grade (%):** | 1.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. 55 ft of the barrier was 1 to 3 in below design height (27 ines). |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 30ft of rail had impact related breaking/cracking. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-2.926-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 37.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $4015 |
| **Brief Workorder:** | Raise 55-ft of guardrail up to the 27-in design height and replace 30-ft of rail. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 30 LF = $750. Replace 30 ft of rail due to impact related breaking/cracking<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350.<br>Adjust Guardrail at $10- per -Lin. Ft. for 55 LF = $550. Raise 55 ft of the barrier to the 27-in design height | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_2.926_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-3.123-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 49.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 1486 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 26.7 | **Lateral Offset (In.):** | 88.0 | **Road Grade (%):** | 1.00 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | 50 ft of the barrier had a 6 to 8 in deflection. The entire barrier was 1 in below or exceeded design height (27 in) by up to 1.5 in. |
| | **Breaking and Cracking:** | 90 ft of rail 2 blocks and 3 posts had breaking/cracking due to impacts. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 10 ft of rail 1 block and 2 posts had breaking/cracking due to impacts. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-3.123-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 49.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $5984 |
| **Brief Workorder:** | Replace 100-ft of rail 5 posts and 3 blocks. | | | | |
| **Workorder:** | Replace Post at $100- per -Each for 5 Post(s) = $500. Replace 5 posts due to impacts<br>Replace Block at $30- per -Each for 3 Block(s) = $90. Replace 3 blocks due to impacts<br>Replace Rail at $25- per -Lin. Ft. for 100 LF = $2500. Replace 100 ft of rail due to impacts<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_3.123_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-3.545-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 39.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 148 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.3 |
| **Height (In.):** | 27.0 | **Lateral Offset (In.):** | 90.0 | **Road Grade (%):** | 0.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier is 1 in or less below meets or exceeds 27 in design height by 1/2 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-3.545-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 39.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_3.545_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-3.875-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 31.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 102 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 25.2 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 27.0 | **Lateral Offset (In.):** | 150.1 | **Road Grade (%):** | 0.90 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in the alignment. The barrier height ranged between 3 in above to 2 in below the 27 in design height. |
| | **Breaking and Cracking:** | No breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No cracks in the mortar joints were observed and no stones were loose or missing. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No weathering or erosion was observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-3.875-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 31.00 |

## Repair Recommendations

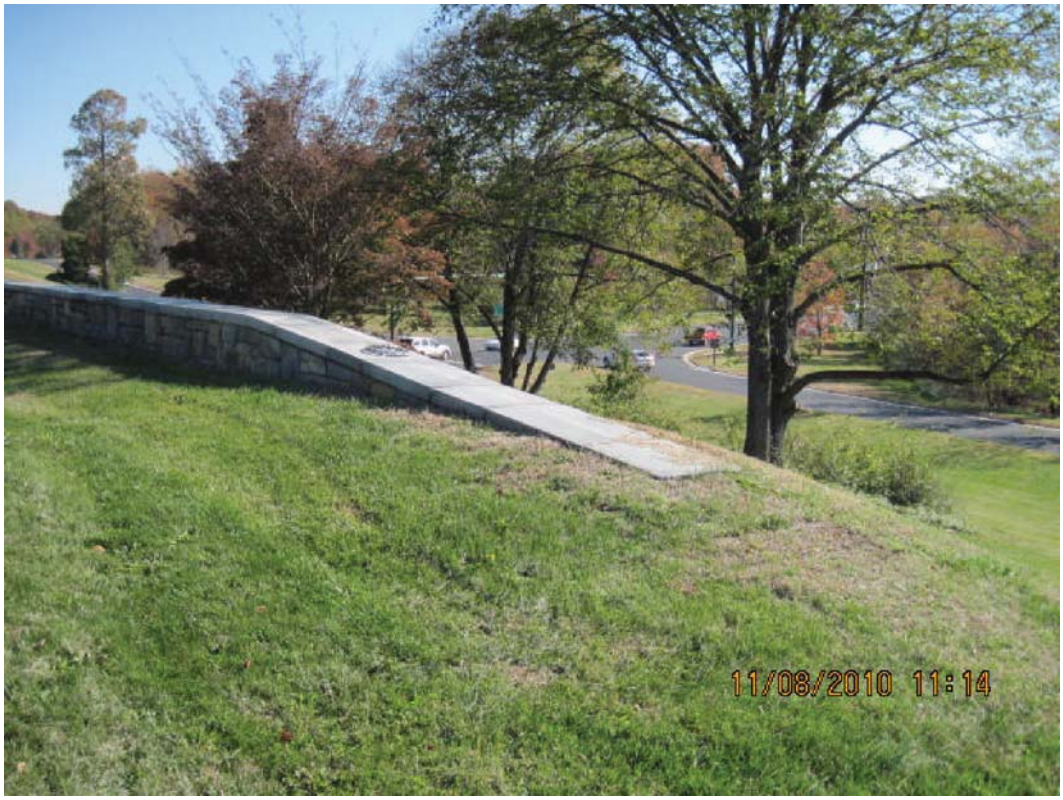
| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos




**SUIT_0001_3.875_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-4.057-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 33.90 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 200 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | OTHER: STONE WITH CONCRETE | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 26.7 | **Lateral Offset (In.):** | 138.3 | **Road Grade (%):** | 0.20 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was within 1 in of design height (27 in). |
| | **Breaking and Cracking:** | No cracks of more than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cracks in mortar loose stones or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cracks in mortar loose stones or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-4.057-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 33.90 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_4.057_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-4.549-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 31.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 240 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.1 |
| **Height (In.):** | 28.0 | **Lateral Offset (In.):** | 140.0 | **Road Grade (%):** | 0.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 2 in observed in alignment. Entire barrier is 1 in or less below or exceeds 27 in design height up to 3 in. |
| | **Breaking and Cracking:** | 2 blockouts were cracked and broken. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 1 blockout was broken in half. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-4.549-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 31.00 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2684 |
| **Brief Workorder:** | Replace 3 blockouts. | | | | |
| **Workorder:** | Replace Block at $30- per -Each for 3 Block(s) = $90. Replace 3 blockouts.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_4.549_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-4.550-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 48.40 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 245 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.6 |
| **Height (In.):** | 25.2 | **Lateral Offset (In.):** | 139.1 | **Road Grade (%):** | 0.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was within 1 in of the 27 in design height for 55 ft and 1 to 3 in below the design height for 130 ft. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | 10 ft of rail was rotted. The rest of the barrier should be monitored for further weathering. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 1 blockout was broken on the beginning end. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-4.550-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 48.40 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $4323 |
| **Brief Workorder:** | Raise 130 ft of guardrail to the 27 inch design height. Replace 10 ft of rail and 1 block. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 130 LF = $1300. Raise 130 feet of guardrail to the design height of 27 inches.<br>Replace Rail at $25- per -Lin. Ft. for 10 LF = $250. Replace 10 ft of rail.<br>Replace Block at $30- per -Each for 1 Block(s) = $30. Replace 1 broken blockout.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_4.550_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-5.410-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 46.90 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 649 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 26.0 | **Lateral Offset (In.):** | 79.4 | **Road Grade (%):** | 1.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | 2 separate 30 ft sections had horizontal deflections greater than 12 in. The height was 1.5 in greater to within 1 in below the 27 in design height for 474 ft between 1 in and 3 in below for 70 ft and 3 to 5 in below for 70 ft. |
| | **Breaking and Cracking:** | 30 ft of rail and 3 blocks were cracked and broken due to impact. |
| | **Missing Elements:** | 1 block was missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-5.410-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 46.90 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $4780 |
| **Brief Workorder:** | Raise 140-ft of barrier up to 27-in design height adjust 60 ft to correct horizontal deflection replace 30 ft of rail and 4 blocks. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 200 LF = $2000. Adjust 60 feet of guardrail to correct horizontal deflections and raise 140 feet of guardrail to the design height of 27 inches.<br>Replace Rail at $25- per -Lin. Ft. for 30 LF = $750. Replace 30 ft of rail.<br>Replace Block at $30- per -Each for 4 Block(s) = $120. Replace 4 blocks.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_5.410_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-5.411-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 41.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 641 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.8 |
| **Height (In.):** | 26.0 | **Lateral Offset (In.):** | 95.5 | **Road Grade (%):** | 1.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. 295 ft of the barrier was between 1 and 3 in below design height (27 ines). 20 ft of the barrier was greater than 3 ines below design height (27 ines). |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section observed. Monitor erosion at base of posts under the bridge. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 1 block was cracked. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-5.411-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 41.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $6743 |
| **Brief Workorder:** | Raise 315-ft of guardrail up to 27-in design height and replace 1 block. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 315 LF = $3150. Raise 315 ft barrier to 27-in design height<br>Replace Block at $30- per -Each for 1 Block(s) = $30. Replace 1 block due to cracking<br>Low Speed Traffic Control at $1475- per -Day for 2 Day(s) = $2950. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_5.411_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-5.824-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 31.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 162 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.3 |
| **Height (In.):** | 27.2 | **Lateral Offset (In.):** | 93.3 | **Road Grade (%):** | 0.20 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier is 1 in or less below or exceeds 27 in design height up to 3 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-5.824-L** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 31.00 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_5.824_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-6.300-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 28.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 88 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 25.2 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 33.7 | **Lateral Offset (In.):** | 159.6 | **Road Grade (%):** | 0.00 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier exceeds design height (27 in) by 4.5 to 10 ines. |
| | **Breaking and Cracking:** | Minor cracks of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Cracks in mortar of less than 1/4 in no loose stones or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | Minor cracks of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Cracks in mortar of less than 1/4 in no loose stones or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0001-6.300-R** | | |
| **Route Name:** | EASTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 28.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0001: EASTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0001_6.300_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-0.067-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 26.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 161 |
| **Speed Limit (MPH):** | 35 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 25.2 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 29.5 | **Lateral Offset (In.):** | 96.6 | **Road Grade (%):** | 1.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was equal to or exceeded the 27 in design height ranging up to 34 in. |
| | **Breaking and Cracking:** | No breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No weathering or erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No weathering or erosion was observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-0.067-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 26.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_0.067_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-0.587-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 31.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 187 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.1 |
| **Height (In.):** | 26.2 | **Lateral Offset (In.):** | 142.3 | **Road Grade (%):** | 0.60 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier is 1 in or less below 27 in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-0.587-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 31.00 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_0.587_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-0.846-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 46.90 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 448 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 27.0 | **Lateral Offset (In.):** | 118.3 | **Road Grade (%):** | 0.10 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | 20 ft of barrier was deflected 13 in due to impact. The barrier height was within 1 in of the 27 in of design height for 303 ft and between 1 and 3 in below the design height for 100 ft. |
| | **Breaking and Cracking:** | 20 ft of rail and 4 blocks were cracked and broken. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering and no erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-0.846-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 46.90 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $3625 |
| **Brief Workorder:** | Raise 100-ft of guardrail up to 27-in design height realign 20-ft of guardrail replace 20-ft of rail and 4 blocks. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 120 LF = $1200. Raise 100 feet of guardrail to the 27 inch design height and adjust 20 feet of mislaigned barrier<br>Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 ft of rail<br>Replace Block at $30- per -Each for 4 Block(s) = $120. Replace 4 blocks.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_0.846_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-0.857-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 31.30 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 362 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 118.8 |
| **Height (In.):** | 27.0 | **Lateral Offset (In.):** | 101.6 | **Road Grade (%):** | 0.20 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was 1 in below or exceeded design height (27 in) up to 1.5 ines. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-0.857-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 31.30 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_0.857_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-1.530-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 41.40 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 1451 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | HIGH | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 30.2 | **Lateral Offset (In.):** | 140.0 | **Road Grade (%):** | 0.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier exceeded design height (27 in) by 1 to 5 ines. |
| | **Breaking and Cracking:** | Minor cracks of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Monitor cracks in the mortar joints of less than 1/2 in. No erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | Minor cracks of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Cracks of less than 1/4 in in mortar joints observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-1.530-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 41.40 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | MONITOR | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | Monitor cracks in mortar joints of less than 1/2 inch. | | | | |
| **Workorder:** | | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_1.530_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-1.781-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 42.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 523 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 24.0 | **Lateral Offset (In.):** | 131.6 | **Road Grade (%):** | 0.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. 270 ft of barrier is 1 to 3 in below 27 in design height. 55 ft of barrier is 3 to 4 in below the 27 in design height. |
| | **Breaking and Cracking:** | 20 ft of rail and 1 post had severe cracking causing rotting. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 10 ft of rail was cracked up to 2 in width. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-1.781-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 42.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $7755 |
| **Brief Workorder:** | Raise 325-ft of guardrail up to 27-in design height replace 30-ft of rail and 1 post. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 30 LF = $750. Replace 30-ft of rail.<br>Replace Post at $100- per -Each for 1 Post(s) = $100. Replace 1 post.<br>Adjust Guardrail at $10- per -Lin. Ft. for 325 LF = $3250. Raise 325 feet of rail to 27 inch design height.<br>Low Speed Traffic Control at $1475- per -Day for 2 Day(s) = $2950. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_1.781_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-1.832-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 38.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 174 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 121.0 |
| **Height (In.):** | 27.7 | **Lateral Offset (In.):** | 82.1 | **Road Grade (%):** | 0.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier meets or exceeds 27 in design height by up to 1.5 in. |
| | **Breaking and Cracking:** | 3 blocks were broken in half. 50 ft of rails are cracked up to 2 in width. 1 post had cracking causing rotting. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | 10 ft of rail had a loss of about 25% of cross section. No erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 2 blocks and 20 ft of rail had cracks up to 1.5 in width. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Rails had a loss of about 5% of cross section. No erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-1.832-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 38.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $5060 |
| **Brief Workorder:** | Replace 80 ft of rail 5 blockouts and 1 post. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 80 LF = $2000. Replace 80 ft of rail.<br>Replace Block at $30- per -Each for 5 Block(s) = $150. Replace 5 blockouts.<br>Replace Post at $100- per -Each for 1 Post(s) = $100. Replace 1 post.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_1.832_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-2.507-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 28.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 91 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 29.0 | **Lateral Offset (In.):** | 153.0 | **Road Grade (%):** | 1.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in the alignment. The barrier height ranged from the 27 in design height up to 30.5 in throughout. |
| | **Breaking and Cracking:** | No breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No weathering or erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No weathering or erosion was observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-2.507-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 28.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_2.507_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-3.270-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 39.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 176 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.3 |
| **Height (In.):** | 24.7 | **Lateral Offset (In.):** | 84.3 | **Road Grade (%):** | 2.30 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. 35 ft of the barrier was 1 to 3 in below design height (27 ines). 35 ft of the barrier was 3 to 4 ines below design height (27 ines). |
| | **Breaking and Cracking:** | 10 ft of rail showed signs of impact. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 20 ft of rail 2 blocks and 2 posts had impact related breaking. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-3.270-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 39.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $3504 |
| **Brief Workorder:** | Replace 30 ft of rail 2 blocks and 2 posts. Raise 70 ft of barrier to design height (27 inches). | | | | |
| **Workorder:** | Replace Post at $100- per -Each for 2 Post(s) = $200. Replace 2 posts in the end treatment<br>Replace Block at $30- per -Each for 2 Block(s) = $60. Replace 2 blocks in the end treatment<br>Replace Rail at $25- per -Lin. Ft. for 30 LF = $750. Replace 30 ft of rail<br>Adjust Guardrail at $10- per -Lin. Ft. for 70 LF = $700. Raise 70 ft of the barrier to 27 inch design height.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_3.270_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-3.452-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 41.40 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 193 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | HIGH | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.1 |
| **Height (In.):** | 27.2 | **Lateral Offset (In.):** | 94.6 | **Road Grade (%):** | 2.20 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The height was within 2 in greater than equal to or within 1 in of the 27 in design height for the entire length. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering and no erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-3.452-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 41.40 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_3.452_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-3.483-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 31.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 147 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 27.2 | **Lateral Offset (In.):** | 87.5 | **Road Grade (%):** | 0.90 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections in alignment observed. Entire barrier meets or exceeds 27 in design height up to 1 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-3.483-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 03/11/2010 | **Barrier Rating:** | 31.00 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_3.483_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-3.741-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 45.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 510 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.3 |
| **Height (In.):** | 25.0 | **Lateral Offset (In.):** | 85.0 | **Road Grade (%):** | 1.30 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was between 1 and 3 in below design height (27 ines). |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-3.741-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 45.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $8085 |
| **Brief Workorder:** | Raise 440-ft of barrier up to 27-in design height. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 440 LF = $4400. Raise 440 ft of barrier to 27 inch design height.<br>Low Speed Traffic Control at $1475- per -Day for 2 Day(s) = $2950. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_3.741_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.294-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 28.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 132 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 28.0 | **Lateral Offset (In.):** | 79.6 | **Road Grade (%):** | 1.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier exceeds 27 in design height by up to 2 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No erosion or undermining of base observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No erosion or undermining of base observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.294-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 28.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_4.294_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.336-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 32.90 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 131 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | OTHER: STONE WITH CONCRETE | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 25.2 | **Lateral Offset (In.):** | 92.6 | **Road Grade (%):** | 1.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in the alignment. The barrier height was within 3 in below the 27 in design height for the entire length. |
| | **Breaking and Cracking:** | No breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No weathering or erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No weathering or erosion was observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.336-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 32.90 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

**ROUTE 0002: WESTBOUND SUITLAND PARKWAY**

## Barrier Condition Photos


**SUIT_0002_4.336_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.338-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 37.40 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 341 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | EXTREME | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | OTHER: STONE WITH CONCRETE | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 32.2 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 33.0 | **Lateral Offset (In.):** | 60.7 | **Road Grade (%):** | 1.60 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier exceeded design height (27 in) by 5 to 7 ines. |
| | **Breaking and Cracking:** | Minor cracks of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Mortar joint on 80 ft of the cap stone shows 3 in of cracking. 1 cap stone is damaged. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | Minor cracks of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | 1 cap stone was damaged. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.338-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 37.40 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $3201 |
| **Brief Workorder:** | Repoint 4 SY of barrier cap and reset 2 cap stones. | | | | |
| **Workorder:** | Re-Point Masonry Barrier at $140- per -Sq. Yd. for 4 SY = $560. [(0.25 ft x 80 ft) + 2(3 ft x 2.2 ft)]/9 = 3.7 SY<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

**ROUTE 0002: WESTBOUND SUITLAND PARKWAY**

## Barrier Condition Photos


**SUIT_0002_4.338_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.421-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 37.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 138 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.8 |
| **Height (In.):** | 26.7 | **Lateral Offset (In.):** | 85.0 | **Road Grade (%):** | 1.80 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. 25 ft of the barrier was between 1 in and 3 in below design height (27 ines). |
| | **Breaking and Cracking:** | 20 ft of rail had impact related breaking. 1 block is cracked. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 10 ft of rail had impact related breaking. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.421-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 37.00 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2756 |
| **Brief Workorder:** | Raise 25 feet of guardrail to the 27 inch design height. Replace 30 ft of rail and 1 block. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 25 LF = $250. Raise 25 ft of the barrier to 27 inch design height.<br>Replace Rail at $25- per -Lin. Ft. for 30 LF = $750. Replace 30 ft of rail due to cracking<br>Replace Block at $30- per -Each for 1 Block(s) = $30. Replace one block due to cracking<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_4.421_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.516-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 42.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 317 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.5 |
| **Height (In.):** | 27.2 | **Lateral Offset (In.):** | 84.0 | **Road Grade (%):** | 2.00 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier is 1 in or less below meets or exceeds 27 in design height by 1 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 20 ft of rail had surface impacting that needs to be monitored. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.516-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 42.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | MONITOR | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | Monitor surface impacts on 20 ft of rail on beginning end treatment. | | | | |
| **Workorder:** | | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_4.516_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.970-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 39.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 243 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.1 |
| **Height (In.):** | 28.0 | **Lateral Offset (In.):** | 82.1 | **Road Grade (%):** | 1.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier meets or exceeds 27 in design height by up to 2.5 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. 20 ft of rail is showing signs of a surface impact that should be monitored. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-4.970-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 39.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | MONITOR | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | Monitor 20 ft of rail with signs of surface impact. | | | | |
| **Workorder:** | | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_4.970_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.175-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 33.90 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 195 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.6 |
| **Height (In.):** | 30.0 | **Lateral Offset (In.):** | 78.6 | **Road Grade (%):** | 1.60 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was greater than the 27 in design height for the entire length by 1 to 4 in. |
| | **Breaking and Cracking:** | 2 blocks were broken. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering and no erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | 1 block was broken on the beginning end. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.175-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 09/11/2010 | **Barrier Rating:** | 33.90 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2684 |
| **Brief Workorder:** | Replace 3 blocks. | | | | |
| **Workorder:** | Replace Block at $30- per -Each for 3 Block(s) = $90. Replace 3 broken blocks.<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_5.175_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.209-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 39.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 144 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.6 |
| **Height (In.):** | 28.2 | **Lateral Offset (In.):** | 84.0 | **Road Grade (%):** | 1.60 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The barrier height was greater than the 27 in design height for the entire length by 1 to 2 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Minor splintering was observed along the entire length of the barrier but less than 5 percent of the cross section has been lost. The barrier should be monitored for further weathering. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Minor splintering was observed and should be monitored. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.209-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 39.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | MONITOR | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | Monitor for further weathering. | | | | |
| **Workorder:** | | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_5.209_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.486-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 54.40 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 167 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.5 |
| **Height (In.):** | 20.5 | **Lateral Offset (In.):** | 136.3 | **Road Grade (%):** | 0.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was 5 - 9 in below design height (27 ines). |
| | **Breaking and Cracking:** | 1 post had cracking. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |
| **End Treatments** | **Alignment and Height:** | 30 ft of barrier alignment was deflected greater than 12 in height within 1in of 27in design height. |
| | **Breaking and Cracking:** | 20 ft of rail had impact related cracking. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No cross section loss or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.486-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 54.40 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $4752 |
| **Brief Workorder:** | Raise 137 ft of barrier to the 27 inch design height. Replace 20 ft of rail and 1 post. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 137 LF = $1370. Raise 137 ft of barrier to 27 inch design height.<br>Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 ft of rail due to impact related cracking<br>Replace Post at $100- per -Each for 1 Post(s) = $100. Replace 1 post due to cracking<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

**ROUTE 0002: WESTBOUND SUITLAND PARKWAY**

## Barrier Condition Photos


**SUIT_0002_5.486_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.516-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 44.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 166 |
| **Speed Limit (MPH):** | 50 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | HIGH | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-3 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.6 |
| **Height (In.):** | 24.7 | **Lateral Offset (In.):** | 98.5 | **Road Grade (%):** | 0.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | 20 ft section was impacted and had a 2 ft deflection. 65 ft of the barrier was 1 to 3 in below design height (27 in). 20 ft of the barrier was more than 3 ines below design height (27 ines). |
| | **Breaking and Cracking:** | 20 ft of rail 2 posts and 3 blocks had cracking/breaking due to impacts. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section observed. Monitor erosion at base of posts under bridge. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.516-L** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 44.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $4389 |
| **Brief Workorder:** | Raise 65-ft of guardrail up to 27-in design height realign 20-ft of guardrail replace 20-ft of rail 2 posts and 3 blocks. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 85 LF = $850. Adjust 65 ft + 20 ft of barrier to 27- in design height.<br>Replace Post at $100- per -Each for 2 Post(s) = $200. Replace 2 post due to impacts<br>Replace Block at $30- per -Each for 3 Block(s) = $90. Replace 3 blocks due to impacts<br>Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 ft of rail due to impacts<br>High Speed Traffic Control at $2350- per -Day for 1 Day(s) = $2350. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_5.516_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.798-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 31.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 174 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | CONC/MASON SBT |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.3 |
| **Height (In.):** | 26.2 | **Lateral Offset (In.):** | 91.3 | **Road Grade (%):** | 1.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in alignment. Entire barrier is 1 in or less below or meets 27 in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | 10 ft of rail had more than 50% loss of cross section. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.798-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 05/11/2010 | **Barrier Rating:** | 31.00 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2173 |
| **Brief Workorder:** | Replace 20-ft of rail. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 ft of rail.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

**ROUTE 0002: WESTBOUND SUITLAND PARKWAY**

## Barrier Condition Photos


**SUIT_0002_5.798_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.864-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 49.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 883 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.3 |
| **Height (In.):** | 26.2 | **Lateral Offset (In.):** | 136.8 | **Road Grade (%):** | 2.60 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. 180 ft of the barrier is 1 to 3 in below 27 in design height. 703 ft of barrier is 1 in or less below or meets 27 in design height. |
| | **Breaking and Cracking:** | 2 posts 6 blocks and 70 ft of rail was broken and/or bent due to impact loading. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | 2 posts and 10 ft of rail were cracked and rotted causing more than 50% loss of cross section. No erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | |
| | **Breaking and Cracking:** | |
| | **Missing Elements:** | |
| | **Corrrosion and Weathering:** | |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-5.864-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 49.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $8063 |
| **Brief Workorder:** | Raise 180-ft of guardrail up to 27-in design height replace 80-ft of rail 6 blocks and 4 posts. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 80 LF = $2000. Replace 80 ft of rail<br>Replace Block at $30- per -Each for 6 Block(s) = $180. Replace 6 blocks.<br>Replace Post at $100- per -Each for 4 Post(s) = $400. Replace 4 posts.<br>Adjust Guardrail at $10- per -Lin. Ft. for 180 LF = $1800. Raise 180 ft of guardrail to 27 inch design height.<br>Low Speed Traffic Control at $1475- per -Day for 2 Day(s) = $2950. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_5.864_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-6.035-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 32.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 65 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 108.5 |
| **Height (In.):** | 27.5 | **Lateral Offset (In.):** | 81.0 | **Road Grade (%):** | 3.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections greater than 6 in were observed in the alignment. The height was within 3 in greater than the 27 in design height for 15 ft and between 1 in and 3 ines below the design height for 15 ft. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | 7 sets of nuts and washers were missing. |
| | **Corrrosion and Weathering:** | 20 ft of rail and 2 blocks were cracked and broken due to weathering. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-6.035-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 32.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2536 |
| **Brief Workorder:** | Raise 15-ft of barrier up to the 27-in design height replace 20-ft of rail 2 blocks and 7 nuts/washers. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 15 LF = $150. Raise 15 feet of guardrail to the design height of 27 inches.<br>Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 ft of rail.<br>Replace Block at $30- per -Each for 2 Block(s) = $60. Replace 2 blocks.<br>Labor at $60- per -Hour for 2 Hrs = $120. Replace 7 washers and nuts.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_6.035_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-6.208-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 42.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 240 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 119.6 |
| **Height (In.):** | 24.7 | **Lateral Offset (In.):** | 136.1 | **Road Grade (%):** | 1.10 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | A 20 ft section had a deflection of more than 12 in. 100 ft of the barrier was between 1 and 3 in below design height (27 ines). |
| | **Breaking and Cracking:** | 40 ft of rail 1 post and 2 blocks had impact related breaking/cracking. |
| | **Missing Elements:** | 6 bolts were missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-6.208-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 42.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $4131 |
| **Brief Workorder:** | Raise 100-ft of guardrail up to 27-in design height correct 20-ft section that is misaligned replace 1 post 2 blocks 40 ft of rail and missing bolts. | | | | |
| **Workorder:** | Adjust Guardrail at $10- per -Lin. Ft. for 100 LF = $1000. Raise 100 ft of barrier to 27 inch desgin height and correct 20-ft section that is out of alignment.<br>Replace Post at $100- per -Each for 1 Post(s) = $100. Replace 1 post due to impact.<br>Replace Block at $30- per -Each for 2 Block(s) = $60. Replace 2 blockouts due to impact.<br>Replace Rail at $25- per -Lin. Ft. for 40 LF = $1000. Replace 40 ft of rail due to impact<br>Labor at $60- per -Hour for 2 Hrs = $120. 2 hrs to replace 6 missing bolts<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_6.208_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-6.365-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 36.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 277 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 26.7 | **Lateral Offset (In.):** | 192.6 | **Road Grade (%):** | 3.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier is 1 in or less below or exceeds 27 in design height by 1/2 in. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No erosion or undermining of base observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No erosion or undermining of base observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-6.365-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 36.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_6.365_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-6.411-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 31.30 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | W-BEAM STRONG POST | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | GALVANIZED STEEL | **Post Material:** | GALVANIZED STEEL |
| **Blockout Type:** | WOOD | **Length (ft.):** | 89 |
| **Speed Limit (MPH):** | 45 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: W-BEAM FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | W-BEAM BCT | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 75.0 |
| **Height (In.):** | 31.2 | **Lateral Offset (In.):** | 29.2 | **Road Grade (%):** | 4.70 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in the alignment. The barrier height was greater than the 27 in design height for the entire length by 3.5 to 5 in. |
| | **Breaking and Cracking:** | No twisting bending tearing, or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering and no erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No twisting bending tearing, or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0002-6.411-R** | | |
| **Route Name:** | WESTBOUND SUITLAND PARKWAY | | |
| **Inspection Date:** | 08/11/2010 | **Barrier Rating:** | 31.30 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0002: WESTBOUND SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0002_6.411_R_12.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0010-0.004-L** | | |
| **Route Name:** | ALLENTOWN ROAD RAMP TO EB SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 22.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | W-BEAM STRONG POST | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | GALVANIZED STEEL | **Post Material:** | GALVANIZED STEEL |
| **Blockout Type:** | STEEL | **Length (ft.):** | 87 |
| **Speed Limit (MPH):** | 35 | **Placement with Respect to Road:** | TANGENT |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-2 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | W-BEAM TURN DOWN | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 75.1 |
| **Height (In.):** | 26.2 | **Lateral Offset (In.):** | 185.0 | **Road Grade (%):** | 1.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in the alignment. The barrier height was within 1 in of the 27 in design height for the entire length. |
| | **Breaking and Cracking:** | No twisting bending tearing, or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No twisting bending tearing, or cracking was observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Less than 5 percent of the cross section has been lost due to weathering. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0010-0.004-L** | | |
| **Route Name:** | ALLENTOWN ROAD RAMP TO EB SUITLAND PARKWAY | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 22.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0010: ALLENTOWN ROAD RAMP TO EB SUITLAND PARKWAY

### Barrier Condition Photos


**SUIT_0010_0.004_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0500ZZ-0.066-R** | | |
| **Route Name:** | BRANCH AVENUE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 38.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 615 |
| **Speed Limit (MPH):** | 25 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-1 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | SBT/LOG FLARED | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.0 |
| **Height (In.):** | 27.6 | **Lateral Offset (In.):** | 84.0 | **Road Grade (%):** | 4.60 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | 20 ft of rail was deflected 6 in. Entire barrier meets or exceeds 27 in design height by up to 1.5 in. |
| | **Breaking and Cracking:** | 10 ft of rail was broken in half and 10 ft of rail was cracking up to 2 in width. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion around posts observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0500ZZ-0.066-R** | | |
| **Route Name:** | BRANCH AVENUE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 38.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $2393 |
| **Brief Workorder:** | Replace 20 ft of rail and adjust 20 ft of barrier that deflected 6 inches. | | | | |
| **Workorder:** | Replace Rail at $25- per -Lin. Ft. for 20 LF = $500. Replace 20 ft of rail .<br>Adjust Guardrail at $10- per -Lin. Ft. for 20 LF = $200. Adjust 20 ft of rail that are deflected 6 inches.<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0500ZZ: BRANCH AVENUE INTERCHANGE RAMPS

### Barrier Condition Photos


**SUIT_0500ZZ_0.066_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0501ZZ-0.008-R** | | |
| **Route Name:** | SILVER HILL ROAD INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 23.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | STEEL-BACKED TIMBER WITH BLOCKOUT | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | STEEL-BACKED TIMBER/LOG | **Post Material:** | WOOD |
| **Blockout Type:** | WOOD | **Length (ft.):** | 268 |
| **Speed Limit (MPH):** | 25 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-1 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | SBT/LOG FLARED | **Ending End Trtmt Crashhworthy?:** | NO | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 0.0 | **Post Spacing (In.):** | 120.1 |
| **Height (In.):** | 29.7 | **Lateral Offset (In.):** | 66.3 | **Road Grade (%):** | 2.30 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier exceeded design height (27 in) by 2 to 4.5 ines. |
| | **Breaking and Cracking:** | No impact related breaking/cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 1-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking/ cracking observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | No loss of cross section or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0501ZZ-0.008-R** | | |
| **Route Name:** | SILVER HILL ROAD INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 23.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0501ZZ: SILVER HILL ROAD INTERCHANGE RAMPS

### Barrier Condition Photos


**SUIT_0501ZZ_0.008_R_1.JPG**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0502ZZ-0.100-R** | | |
| **Route Name:** | SUITLAND ROAD INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 25.20 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 172 |
| **Speed Limit (MPH):** | 25 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-1 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 26.7 | **Lateral Offset (In.):** | 138.3 | **Road Grade (%):** | 0.50 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier is less than 1 in below or meets 27 in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No erosion or undermining around base observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No impact related breaking or cracking observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No erosion or undermining around base observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0502ZZ-0.100-R** | | |
| **Route Name:** | SUITLAND ROAD INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 25.20 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0502ZZ: SUITLAND ROAD INTERCHANGE RAMPS

### Barrier Condition Photos


**SUIT_0502ZZ_0.100_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0503ZZ-0.045-L** | | |
| **Route Name:** | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 33.90 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 543 |
| **Speed Limit (MPH):** | 25 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-1 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 26.7 | **Lateral Offset (In.):** | 66.3 | **Road Grade (%):** | 2.00 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in the alignment. The barrier height was equal to or within 1 in of the 27 in design height for the entire length. |
| | **Breaking and Cracking:** | No cracks greater than 1/4 in were observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | 1 cap stone had decayed mortar joints and was slightly displaced. No erosion was observed. |
| **End Treatments** | **Alignment and Height:** | NA |
| | **Breaking and Cracking:** | NA |
| | **Missing Elements:** | NA |
| | **Corrrosion and Weathering:** | NA |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0503ZZ-0.045-L** | | |
| **Route Name:** | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 33.90 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | REPAIR | **FMSS Work Type:** | DEFERRED MAINTENANCE | **Repair Cost:** | $1777 |
| **Brief Workorder:** | Repoint 1 capstone that has decayed mortar joints. | | | | |
| **Workorder:** | Re-Point Masonry Barrier at $140- per -Sq. Yd. for 1 SY = $140. [(1.8 ft)(2.2 ft)]/9 = 0.43 SY<br>Low Speed Traffic Control at $1475- per -Day for 1 Day(s) = $1475. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0503ZZ: ANDREWS AFB NORTH GATE INTERCHANGE RAMPS

### Barrier Condition Photos


**SUIT_0503ZZ_0.045_L_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0503ZZ-0.094-R** | | |
| **Route Name:** | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 28.50 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 120 |
| **Speed Limit (MPH):** | 25 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-1 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 28.0 | **Lateral Offset (In.):** | 156.0 | **Road Grade (%):** | 1.90 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections were observed in the alignment. The barrier height was equal to or greater than the 27 in design height by up to 2 in. |
| | **Breaking and Cracking:** | No cracks were observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No cracking or erosion was observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | No cracks were observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | No cracking or erosion was observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0503ZZ-0.094-R** | | |
| **Route Name:** | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 28.50 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0503ZZ: ANDREWS AFB NORTH GATE INTERCHANGE RAMPS

### Barrier Condition Photos


**SUIT_0503ZZ_0.094_R_1.jpg**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0503ZZ-0.119-R** | | |
| **Route Name:** | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 22.70 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 101 |
| **Speed Limit (MPH):** | 25 | **Placement with Respect to Road:** | INSIDE OF CURVE |
| **Hazard Behind Barrier:** | LOW | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-1 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | OTHER: CONCRETE WITH | **Is Beg. End Trtmt Crashhworthy?:** | NO | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 26.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 27.0 | **Lateral Offset (In.):** | 131.3 | **Road Grade (%):** | 1.40 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | Alignment deflection was less than 6 in. The entire barrier was equal to design height (27 in). |
| | **Breaking and Cracking:** | Minor cracking of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Cracks in mortar joints of less than 1/4 in observed. No loose stones or erosion observed. |
| **End Treatments** | **Alignment and Height:** | Alignment acceptable. Height within 3-in of 27-in design height. |
| | **Breaking and Cracking:** | Minor cracking of less than 1/4 in observed. |
| | **Missing Elements:** | No elements appeared to be missing. |
| | **Corrrosion and Weathering:** | Cracks in mortar joints of less than 1/4 in observed. No loose stones or erosion observed. |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0503ZZ-0.119-R** | | |
| **Route Name:** | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 22.70 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | NO ACTION | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | N/A | | | | |
| **Workorder:** | No action required. | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0503ZZ: ANDREWS AFB NORTH GATE INTERCHANGE RAMPS

### Barrier Condition Photos


**SUIT_0503ZZ_0.119_R_1.JPG**

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0503ZZ-0.151-L** | | |
| **Route Name:** | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 31.00 |

## Barrier Description

| | | | |
|---|---|---|---|
| **Type:** | CONCRETE WITH SIMULATED STONE FACE | **Barrier Function:** | TRAFFIC |
| **Barrier Material:** | CONCRETE | **Post Material:** | N/A |
| **Blockout Type:** | N/A | **Length (ft.):** | 124 |
| **Speed Limit (MPH):** | 25 | **Placement with Respect to Road:** | OUTSIDE OF CURVE |
| **Hazard Behind Barrier:** | MEDIUM | | |

## Barrier Crashworthiness

| | | | | | |
|---|---|---|---|---|---|
| **Appropriate Test Level:** | TL-1 | **Barrier Test Level:** | TL-3 | **Is Barrier Crashworthy?:** | YES |
| **Beg. End Trtmt Type:** | NONE | **Is Beg. End Trtmt Crashhworthy?:** | N/A | **Approach Transition Type:** | NONE |
| **Ending End Trtmt Type:** | NONE | **Ending End Trtmt Crashhworthy?:** | N/A | | |

## Average Measurements

| | | | | | |
|---|---|---|---|---|---|
| **Design Height (In.):** | 27 | **Width (In.):** | 48.0 | **Post Spacing (In.):** | 0.0 |
| **Height (In.):** | 28.2 | **Lateral Offset (In.):** | 233.0 | **Road Grade (%):** | 4.30 |

## Physical Condition

| | | |
|---|---|---|
| **Barrier** | **Alignment and Height:** | No deflections observed in alignment. Entire barrier exceeds 27 in design height by 0 to 2 in. |
| | **Breaking and Cracking:** | No cracks greater than 1/4 in width observed. |
| | **Missing Elements:** | No elements were observed to be missing. |
| | **Corrrosion and Weathering:** | Stone degradation on back face in one area. |
| **End Treatments** | **Alignment and Height:** | |
| | **Breaking and Cracking:** | |
| | **Missing Elements:** | |
| | **Corrrosion and Weathering:** | |

| | | | |
|---|---|---|---|
| **Barrier ID:** | **SUIT-0503ZZ-0.151-L** | | |
| **Route Name:** | ANDREWS AFB NORTH GATE INTERCHANGE RAMPS | | |
| **Inspection Date:** | 10/11/2010 | **Barrier Rating:** | 31.00 |

## Repair Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Repair Action:** | MONITOR | **FMSS Work Type:** | N/A | **Repair Cost:** | $0 |
| **Brief Workorder:** | Monitor surface degradation in one area on back of barrier | | | | |
| **Workorder:** | | | | | |

**2008 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.**

# Suitland Parkway

## ROUTE 0503ZZ: ANDREWS AFB NORTH GATE INTERCHANGE RAMPS

### Barrier Condition Photos


**SUIT_0503ZZ_0.151_L_1.JPG**

# Appendix A
# Summary of GIP Definitions and Assessment

## Suitland Parkway National Capital Parks - East

Federal Lands Highway
Road Inventory Program

# Appendix A:
# Guardwall/Rail Inventory Program (GIP)
# EXPLANATION OF REPORT TERMS

The Guardwall/rail Inventory Program (GIP) was commissioned by WASO to identify deferred maintenance related to barriers in National Parks that have more than one mile of guardwall or guardrail. GIP was designed jointly by the NPS and FHWA and the inventory process records both static characteristics of the barrier (e.g., length, height, etc.) as well as dynamic information about the condition of the barrier.

Barriers that traverse bridges are not included in this inventory, these barriers are covered in FHWA's Bridge Inventory Program (BIP); however, barriers that are approaches to bridges were part of this inventory.

The following discussion highlights each of the elements found in the reports.

## Static Barrier Characteristics

**BARRIER TYPE**

Refers to both the design and the construction materials used:

- W-Beam, Strong Post
- W-Beam, Weak Post
- Thrie Beam/Modified Thrie Beam
- Box Beam
- Steel-Backed Timber, w/ Blockout
- Steel-Backed Timber, w/o Blockout
- Steel-Backed Log Rail
- High Tension Cable
- Three-Strand Cable
- Stone Masonry, w/o Concrete Core Wall
- Stone Masonry, w/ Concrete Core Wall
- Random Rubble Cavity Wall
- Concrete Barrier
- Concrete, with Simulated Stone Face
- W-Beam (Double Face), Strong Post
- Steel-Backed Timber (Double Face)
- Other: *Completed by field crew*

**BARRIER MATERIAL**

The type of material of which the barrier is composed:

- Cable
- Concrete
- Galvanized Steel
- Log/Timber/Wood
- Steel-Backed Timber/Log
- Weathering Steel/Corten
- Stone
- Other: *Completed by field crew*

**LENGTH**

The longitudinal distance between the beginning and end of the barrier. It should include the length of end treatments in the overall length of the barrier. For roadside barriers, this can be calculated from the start and end locations.

**BARRIER FUNCTION: Traffic or Non-Traffic Barrier.**
Due to the different GIP assessment criteria of barriers based on their intended use, barriers were classified as being either traffic barriers or non-traffic barriers.

> *Traffic barriers* are physical devices intended to keep vehicles or people from straying into dangerous or off-limits areas. For the purpose of this inventory and assessment, a traffic barrier is categorized as roadside hardware placed longitudinally, excluding pedestrian railing and fencing.
>
> *Non-traffic barriers* provide a physical delineation between public access areas and restricted or protected areas in locations such as a parking lot, viewpoint or turnout. Non-traffic barriers which inhibit access of vehicles are included in this report; non-traffic barriers which only inhibit access of pedestrians or bicyclists are not included. For the purpose of this inventory, non-traffic barriers are guidewalls and guiderails. Note: rocks, stones, boulders, fences or curbs were excluded from this inventory.

There are instances in parks where a single barrier can switch between being classified as a traffic barrier and a non-traffic barrier. Such instances typically occur at pullouts, where a traffic barrier along the road will continue through the pullout without interruption. In such instances, the traffic barrier and non-traffic barrier were assessed using different criteria. Due to the different criteria, the GIP database was designed to record the traffic barrier and non-traffic barrier as two distinct barriers, even though to the eye, they appear as one barrier. Other instances where a single barrier is split into multiple barriers would be when the barrier is placed continuously along two legs of an intersection, so that one portion of the barrier may be on one road and the remaining portion of the barrier is on a different road.

**POST MATERIAL**
The type or material that the barrier's supporting posts are made of:

- Galvanized Steel
- Wood
- Corten
- Other: *Completed by field crew*
- N/A

**BLOCKOUT TYPE**

The type of blockout or of what it is comprised:

- Wood
- Plastic
- Steel
- N/A

**BARRIER PLACEMENT WITH RESPECT TO ROADWAY**
To identify the roadway alignment the barrier is located upon:

- Tangent
- Inside of Curve
- Both Inside and Outside of Curve
- Outside of Curve

**POSTED SPEED LIMIT**
The posted speed limit of the roadway section.

**HAZARD BEHIND BARRIER**

A qualitative description of the severity of the hazard behind the barrier:

- Low
- Medium
- High
- Extreme

**APPROPRIATE TEST LEVEL (TL) FOR ROAD**

Based on the posted speed limit, the NCHRP 350 Crashworthiness test level appropriate for the roadway.

- TL-1, 30 mph and lower
- TL-2, 35-45 mph
- TL-3, 50 mph and higher

**BARRIER TEST LEVEL (TL)**

A traffic barrier is crashworthy if it was successfully crash tested under *NCHRP Report 350* at speeds along the park road or parkway or if it was accepted through analysis by FHWA, based on similarity to other crashworthy critical design element features. Non-traffic barriers are classified at N/A.

- TL-1
- TL-2
- TL-3
- No
- N/A – Non-Traffic Barrier

**IS BARRIER CRASHWORTHY**

This compared the appropriate crashworthy test level required for the posted speed limit to the barrier's test level.

- Yes
- No

**BEGINNING END TREATMENT TYPE**

An end treatment is safety hardware that mitigates impacts to the ends of a barrier. Most common end treatments are for w-beam systems. Note that stonemasonry barriers typically do not have end treatments.

The beginning end treatment is based on the travel lane closest to the barrier. A vehicle traveling in the lane closest to the barrier will encounter the barrier's beginning end treatment first. It is not based on the RIP primary direction. Identifies the barrier's beginning end treatment type:

- W-Beam Flared 350 Compliant
- W-Beam Tangent 350 Complaint
- W-Beam Buried End
- W-Beam Trailing End/CRG
- W-Beam BCT, Flared
- W-Beam, Turn Down
- SBT/Log, Flared
- SBT/Log, Buried
- Median Treatments
- Box Beam
- Cable
- Crash Cushions/Attenuator
- Other: *Completed by field crew*
- None

**IS BEGINNING END TREATMENT CRASHWORTHY**

Identifies if the barrier's beginning end treatment (based on direction of travel for the travel lane closest to barrier) is crashworthy, based on NCHRP-350.

- Yes
- No
- N/A

**APPROACH TRANSITION TYPE**

A transition is safety hardware designed to be placed between two different types of barrier. Most common transition types are between bridge rail and w-beam systems.

This identifies the barrier's transition type:

- Bridge Rail, W-Beam
- Bridge Rail, SBT
- Rigid W-Beam, W-Beam
- Rigid SBT (Wall), SBT
- Concrete/Masonry, W-Beam
- Concrete/Masonry, SBT
- Concrete/Masonry, Thrie Beam
- Other: *Completed by field crew*
- None

**ENDING END TREATMENT TYPE**

The ending end treatment is based on the travel lane closest to the barrier. A vehicle traveling in the lane closest to the barrier will encounter the barrier's ending end treatment last, after passing the rest of the barrier. It is not based on the RIP primary direction. Identifies the barrier's ending end treatment type:

- W-Beam Flared 350 Compliant
- W-Beam Tangent 350 Complaint
- W-Beam Buried End
- W-Beam Trailing End/CRG
- W-Beam BCT, Flared
- W-Beam, Turn Down
- SBT/Log, Flared
- SBT/Log, Buried
- Median Treatments
- Box Beam
- Cable
- Crash Cushions/Attenuator
- Other: *Completed by field crew*
- None

**IS ENDING END TREATMENT CRASHWORTHY**

Identifies if the barrier's ending end treatment (based on direction of travel for the travel lane closest to barrier) is crashworthy, based on NCHRP-350.

- Yes
- No
- N/A

**BARRIER DESIGN HEIGHT**

Identifies the barrier's original "as-built" design height:

- 27-in, W-beam, Steel-Backed Timber, Stone Masonry w/ Concrete Core Wall
- 24-in, Stone Masonry w/o Concrete Core Wall, Log on Log
- 20-in, Timber on Wood Posts, Timber on Concrete Posts, Timber on Granite Posts
- 18/24-in, Crenellated Stone Masonry Barrier
- 18/24-in, Dry Stack Stone Wall
- 31-in, Steel-Backed Log
- 32-in, Jersey Barrier

**AVERAGE MEASUREMENTS**

Minimum of three measurements taken on each barrier.

First measurement approximately 50-ft from the beginning of the barrier, measured from the extreme ends of the barrier's end treatment/transition. Do not take a measurement along the end treatment
Measure and record measurement every 200-ft thereafter for the run of barrier

Last measurement approximately 50-ft from the end of the barrier. Do not take a measurement along the end treatment
If a barrier is less than 300-ft, even say 45-ft, a minimum of three measurements were still taken.

**AVERAGE WIDTH**

The width of the barrier. Only recorded for guardwalls; not guardrail.

**AVERAGE POST SPACING**

The spacing of the barrier's (not the end treatments') posts. Only recorded for guardrails; not guardwalls or non-traffic barriers.

**AVERAGE BARRIER HEIGHT**

The average barrier height. If the barrier has crenellations, the height is measured in the non-crenellated sections of the barrier. If the average lateral offset is less than or equal to 4-ft, average barrier height is measured from the roadway; if the average lateral offset is greater than 4-ft, average barrier height is measured at the barrier face.

**AVERAGE LATERAL OFFSET**

Determine the average distance between the barrier and the edge of roadway. If a white edgeline is present on the roadway, average lateral offset is measured from the outside edge of the white line to the barrier face. If no white edgeline is present, average lateral offset is measured from the edge of pavement to the barrier face.

**AVERAGE ROAD GRADE and UPHILL OR DOWNHILL**

Determine an average roadway grade at each barrier location, based on the direction of travel in the lane closest to the barrier.

## DYNAMIC BARRIER CHARACTERISTICS – CONDITION ASSESSMENT NARRATIVES

Field crews were directed to write a narrative of the barrier's physical condition. To keep consistency between field crews, all narratives were based on severity and distress criteria, which were developed jointly by the NPS and FHWA. Condition assessments were based on barrier type and can be found directly after this description of report elements.

**BARRIER ALIGNMENT/HEIGHT**

Narrative completed by field crew describing the barrier's alignment and height. Height comments are based on the barrier's original "as-built" design height.

**BARRIER BREAKING/CRACKING**

Narrative completed by field crew describing any barrier breaking or cracking found during the inspection.

**BARRIER MISSING ELEMENTS**

Narrative completed by field crew describing any barrier missing elements encountered during the inspection.

**BARRIER CORROSION/WEATHERING**

Narrative completed by field crew describing and corrosion or weathering issues associated with the barrier.

**END TREATMENTS ALIGNMENT/HEIGHT**

Narrative completed by field crew describing the barrier end treatment's alignment and height, when present. Height comments are based on the end treatment's original "as-built" design height.

**END TREATMENTS BREAKING/CRACKING**

Narrative completed by field crew describing any barrier end treatment's breaking or cracking found during the inspection.

**END TREATMENTS MISSING ELEMENTS**

Narrative completed by field crew describing any barrier end treatment missing elements encountered during the inspection.

**END TREATMENTS CORROSION/WEATHERING**

Narrative completed by field crew describing and corrosion or weathering issues associated with the barrier's end treatments.

**BARRIER PHOTOGRAPHS**

During the inspection, the field crews photographed the beginning end (based on the closest lane's direction of travel) of each barrier. Additional photographs were taken of any unusual deficiencies encountered. Up to two photographs of the barrier are included in this report.

# CONDITION AND SEVERITY DISTRESS TABLES

Due to the extreme number of possible conditions of the barrier, transition and end treatment, the following descriptions and matrices are guidelines created to help classify the condition of the element. While the distinction between good and fair is needed, the distinction between fair and poor is much more important since this is the threshold that defines if the element is slightly compromised or is not functional.

In all likelihood, according to these guidelines different portions of an element (most likely a barrier) may be classified differently; however, a single classification will need to be provided for the element. The survey team will use their professional judgment to determine this single classification. The single classification of each element should be considered an index value that provides a general indicator of overall performance, but not necessarily indicate that a specific treatment is warranted. The specific work order that is prepared based on the observed deficiencies will be a much more definitive indicator of the appropriate treatment based on existing distresses. The overall condition will be used as part of the risk assessment tool to evaluate the risk to driver safety associated with the physical condition of the barrier.

**GOOD**

*The barrier performs as intended.* The barrier is in fairly straight alignment but may have some small amount that is slightly out of alignment. While the height of the barrier may vary over its run, the height is relatively consistent and is close to its original "as-built" design height. Minor cracks may be visually observed on some the posts, though these cracks are neither long nor deep and the only hardware missing are isolated nuts and bolts. Minor surface corrosion on small portions of the surface is visible but there is no decay associated with connections.

*The end treatment performs as intended.* The end treatment is in good alignment and tension is acceptable. While the end treatment may exhibit some dents, there are no cracked rails, posts, blocks or any missing elements. Corrosion and erosion, while present, are at a minimum.

In general, all distresses observed, either in isolation or in combination, do not seriously affect the ability of the element to serve the intended functions of protecting drivers from a roadside hazard and/or contributing to the cultural value of the roadway corridor. Keep in mind that "intended function" is a relative term. In many cases, older designs were "intended" to protect drivers but would not be considered fully functional in that regard by today's standards.

**FAIR**

*The barrier is slightly compromised.* The barrier is noticeably out of alignment and the height along the run of barrier varies considerably. Cracks and broken elements are visible from the roadside. The barrier may be missing elements, such as nuts, bolts, blockouts or even a post. Surface corrosion is visible on a fair amount of the barrier but connections will still provide element interlock. Decay and minor erosion, while not always visible, may begin to reduce element strength and individual post stability.

*The end treatment is slightly compromised.* The end treatment may be somewhat out of alignment, have low cable anchor tension or isolated broken or cracked rail, posts or blocks. Corrosion and erosion are evident.

In general, the distresses observed, either in isolation or combination, may generate unpredictable outcomes related to the functions of the element stated above.

**POOR**

*The barrier is not functional.* The barrier will not function as intended. Any of the following could mean that the barrier is in poor condition: The barrier has fallen out of alignment or its height varies greatly from the designed height. Cracks and broken elements are visible from the roadside. The barrier is missing several elements, such as nuts, bolts, blockouts or consecutive posts. Corrosion, causing structural compromise is significant and obvious. Erosion around posts will reduce the barrier's strength and capacity.

*The end treatment is not functional.* The end treatment does not function as intended. There is no tension in the cable anchor. A significant portion of the end treatment has broken, cracked or dented elements. Elements are missing and corrosion or erosion is significant.

In general, the distresses observed clearly illustrate the inability of the element to perform the intended functions.

# CONDITION AND SEVERITY DISTRESS TABLES – BARRIERS

**Condition and Severity Distress Table for Semi-Rigid Barriers (including barriers with posts, rail elements and blocks).**

| | GOOD | FAIR | POOR |
|---|---|---|---|
| **Alignment/Design Height** | | | |
| | • Alignment off by less than 6” | • Alignment off by 6”-12” | • Alignment off by more than 12” |
| | • Within 1” of ***design height*** | • Less than 3” lower than ***design height*** | • Greater than 3” lower than ***design height*** |
| **Breaking/Cracking, an member, post or rail – due to impact loading** | | | |
| | • Metal – no twisting/bending, tears or cracking | • Metal – no cracking or tearing (but minor twisting/bending is ok) | • Metal – any cracks or tears |
| | • Wood – no impact related cracking | • Wood – maybe cracked but retains original cross section | • Wood – cracks or tears that deform original section |
| | • Isolated broken blocks | • Two Consecutive broken blocks | • Consecutive broken blocks (three or more consecutive) |
| **Missing Elements** | | | |
| | • No bolts and nuts missing | • One or two bolt/nut missing at one rail/rail connection | • Three or more bolts/nuts missing at one rail/rail connection |
| | • n/a | • Two consecutive missing blocks | • Three or more consecutive missing blocks |
| | • n/a | • n/a | • One missing rail element or post |
| **Corrosion/Decay/Weathering, all posts, rails and blocks – due to aging** | | | |
| | • Loss of 5% or less of cross section | • Loss of 5% to 50% of cross section | • Loss of 50% or more of cross section |
| | • Erosion (less than 8” of post exposed below original groundline) | • Erosion around posts (8” or more of post exposed below original groundline) for one | • Erosion around consecutive posts (more than 8” of post exposed below original groundline) |

**Condition and Severity Distress Table for Rigid Concrete Barriers (including pre-cast).**

| | GOOD | FAIR | POOR |
|---|---|---|---|
| **Alignment/Design Height** | | | |
| | • Alignment off by less than 6” | • Alignment off by 6”-12” | • Alignment off by more than 12” |
| | • Within 1” of *design height* | • Less than 3” lower than *design height* | • Greater than 3” lower than *design height* |
| **Breaking/Cracking– due to impact loading** | | | |
| | • Minor cracks (less than ¼”) present | • Cracking present ¼” or greater but no displacement or discontinuity in face | • Barrier displaced and/or discontinuous |
| | • n/a | • Pieces broken from barrier 3” deep or less without exposing rebar | • Cracking exposes rebar |
| | • n/a | • n/a | • Pieces broken from face greater than 3” deep |
| **Missing Elements** | | | |
| | • n/a | • n/a | • n/a |
| **Corrosion/Decay/Weathering – due to aging** | | | |
| | • Surface corrosion on less than 5% of the run | • Surface corrosion on between 5-25% of the run | • Surface corrosion on more than 25% of the run |
| | • n/a | • Spalling 3” deep or less without exposing rebar | • Spalling greater than 3” deep |
| | • Erosion (less than 8” below groundline) around base | • Erosion (8” or more below groundline) around base | • Erosion (8” or more below groundline) |
| | • n/a | • Less than 50% undermined (less than half barrier width) | • 50% or more undermined (less than half barrier width) |

**Condition and Severity Distress Table for Rigid Stone/Masonry Barriers (including all types of stone or masonry barriers).**

| | GOOD | FAIR | POOR |
|---|---|---|---|
| **Alignment/Design Height** | | | |
| | • Alignment (off by less than 6”) | • Alignment (off by 6”-12”) | • Alignment (off by more than 12”) |
| | • Within 3” of *design height* | • Between 3.1 - 6” lower than *design height* | • Greater than 6.1” lower than *design height* |
| **Breaking/Cracking – due to impact loading** | | | |
| | • Minor cracks (less than ¼”) present | • Cracks, less than ½” present | • Cracks greater than ½” present |
| | | • Stones broken/displaced extending less than 1/3 of width of barrier | • Stones broken/displaced extending 1/3 width or more through the barrier |
| **Missing Elements** | | | |
| | • n/a | • n/a | • n/a |
| **Corrosion/Decay/Weathering – due to aging** | | | |
| | • Cracks in mortar joints 1/4” or less and/or single loose or missing stones | • Mortar joints deteriorated resulting in two - three loose or missing adjacent stones (without impact) | • Mortar joints deteriorated resulting in more than three continuous/adjacent loose or missing stones (without impact) |
| | • Erosion (less than 8” below groundline) around base | • Erosion (8” or more below groundline) around base | • Erosion (8” or more below groundline) |
| | • n/a | • Less than 50% undermined (less than half barrier width) | • 50% or more undermined (less than half barrier width) |

**Condition and Severity Distress Table for Flexible Barriers, (including cable barriers and weak-post systems designed without blocks).**

| | GOOD | FAIR | POOR |
|---|---|---|---|
| **Alignment/Tension/Design Height** | | | |
| | • No bent posts | • Bent posts; one to three consecutive posts | • Bent posts; four or more consecutive posts |
| | • Cable has tension | • Cable under-tensioned/sagging | • No cable tension |
| | • Less than 1” too low | • 1-3” too low | • Greater than 3” too low |
| **Breaking/Cracking** | | | |
| | • No cracked or broken posts | • One to three isolated broken posts | • Four or more consecutive broken posts |
| | • n/a | • Cable frayed | • Cable broken or severed |
| **Missing Elements** | | | |
| | • No bolts and nuts missing at anchors | • n/a | • Bolts and nuts missing or loose at anchors |
| | • n/a | • n/a | • Any missing posts or cable for any length of run |
| **Corrosion/Decay/Weathering – due to aging** | | | |
| | • Loss of 5% or less of cable cross section | • Loss of 5% to 15% of cable cross section | • Loss of 15% or more of cross section |
| | • Erosion (less than 8” of post exposed below original groundline) | • Erosion around one post (8” or more of post exposed below original groundline) | • Erosion around consecutive posts (more than 8” of post exposed below original groundline) |

# CONDITION AND SEVERITY DISTRESS TABLES – END TREATMENTS

**Condition and Severity Distress Table for Flexible End Treatments, (including cable end terminals).**

| | GOOD | FAIR | POOR |
|---|---|---|---|
| **Alignment/Tension** | | | |
| | • Alignment off by less than 4” | • Alignment off by 4”-8” | • Alignment off by more than 8” |
| | • Adequate cable tension | • Low cable anchor tension | • No cable anchor tension |
| **Breaking/Cracking – due to impact loading** | | | |
| | • No broken or cracked elements | • Minor cable fraying but still with adequate tension | • Broken or cracked cables or posts |
| | • No damage to posts, cable or anchor | • Slight damage to posts without cracking or tearing (*but minor twisting/bending on isolated posts is OK)* | • Cable broken or severed on any cable |
| **Missing Elements** | | | |
| | • No bolts and nuts missing at anchors; No missing cables | • n/a | • Any missing element (post, cable, bolts, nuts, or anchor) |
| **Corrosion/Decay/Weathering – due to aging** | | | |
| | • Loss of 5% or less of cable cross section | • Loss of 5% to 15% of cable cross section | • Loss of 15% or more of cross section |
| | • Connections weathered but still provide element interlock on less than 5% of the end treatment | • Connections weathered but still provide element interlock on between 5% to 15% of the end treatment | • Connections weathered but still provide element interlock on more than 15% of the end treatment |

**Condition and Severity Distress Table for Semi-Rigid End Treatments, including Flared and Tangent**

| | GOOD | FAIR | POOR |
|---|---|---|---|
| **Alignment/Tension** | | | |
| | • Alignment of flares and offsets off by less than 4” | • Alignment of flares and offsets off by 4”-8” | • Alignment of flares and offsets off by more than 8” |
| | • Within 1” of *design height* | • Less than 3” lower than *design height* | • Greater than 3” lower than *design height* |
| For *Aesthetic Barriers* (i.e. – SBT and SBL guardrail) that do not have crashworthy terminals: | • Approach barrier terminals are buried, anchored, and flared away from the travel lane | • Approach barrier terminals are buried, anchored, and flared away from the travel lane | • Approach barrier ends are NOT buried, anchored, nor flared away from the travel lane |
| **Breaking/Cracking – due to impact loading** | | | |
| | • Metal – no twisting/bending, tears or cracking | • Metal – no cracking or tearing (but minor twisting or bending is ok) | • Metal – any cracks or tears |
| | • Wood – no impact related cracking | • Wood – maybe cracked but retains original cross section | • Wood – cracks or tears that deform original section |
| | • No broken blocks | • One broken block | • Two consecutive broken blocks |
| **Missing Elements** | | | |
| | • No missing elements, including breakaway cables and struts | • Isolated bolts, nuts, or blocks loose on non-consecutive posts | • Any missing element, including blocks, rails, posts cables, or struts |
| | • No bolts, nuts, or blocks missing or loose | • Breakaway strut present but vertical height off by more than 2” | • Missing nuts / bolts on consecutive posts |
| **Corrosion/Decay/Weathering – due to aging** | | | |
| | • Surface corrosion / decay / connections weathered with a loss of 5% or less of cross section of interlocking elements | • Surface corrosion / decay / connections weathered with between 5-25% loss of cross section along transition interlocking elements | • Surface corrosion / decay / connections weathered with more than 25% loss of cross section along transition interlocking elements |
| | • Erosion (less than 8” of post exposed below original groundline) | • Erosion around 1 post (8” or more of post exposed below original groundline) | • Erosion around consecutive posts (8” or more of post exposed below original groundline) |

## SPECIFIC RISK ELEMENTS

The potential risk to a motorist after a vehicle impacts a traffic barrier depends on the crashworthiness of the traffic barrier as well as traffic exposure factors. Variables relating to the roadside, the traffic barrier's crashworthiness and traffic data include the following:

*ADT*. The number of vehicles (in both directions) that travel the roadway on which the traffic barrier is located.

*Barrier Crashworthy*. A traffic barrier is crashworthy if it was successfully crash tested under NCHRP Report 350 at speeds along the park road or parkway or if it was accepted through analysis by FHWA, based on similarity to other crashworthy critical design element features. If crashworthy, the appropriate test level also needs to be recorded. For crashworthy barriers, the barrier test level will be compared to the test level appropriate for the roadway (based solely on posted speed limit). The intent is to record situations in which a crashworthy barrier of a lower test level is installed on a roadway which should have a barrier of a higher test level.

*Barrier Height*. Determined from barrier height as collected in the physical condition assessment. The database will compare this value to the NCHRP test level height that is appropriate for the posted speed of the road and barrier type.

End Treatment Crashworthy. An end treatment is crashworthy if it has been successfully crash tested. This is for the approach end treatment, which is defined as the end treatment which a vehicle will first pass when traveling on the same side of the road as the barrier.

*Existing Roadway Features.* The list of roadway features is limited to the following, all of which have a documented history of reducing the number of crashes, and are found later in the GIP as possible countermeasures.

| | |
|---|---|
| Centerline pavement markings | Grooved pavement surface |
| Edgeline pavement markings | Delineators on curve and tangent |
| Wider centerline | Chevrons |
| Wider edgeline | Warning sign |
| Centerline rumble strips | Flashing beacon on warning sign |
| Shoulder rumble strips | Lighting |
| Barrier reflectors | Speed feedback sign |

*Factored Crash Rate*. The average annual number of crashes (on the overall road and by barrier segment), over the last 5 years. If the road has an ADT of less than 1000, evaluate a minimum of
7 to 10 years of crash data, if available.

*Lateral Offset of Barrier from Edge of Traveled Way*. The distance from the edge of traveled way to the face of the barrier is useful for determining impact to asset during different types of construction. Two or three measurements will be taken – beginning, middle and end of barrier run (not including the end treatments) – and the average will be used.

*Posted Speed Limit*. The posted speed limit(s) of the roadway section.

*Roadway Grade and Uphill or Downhill*. Is refers to the grade of the roadway, in the direction of travel closest to the barrier.

*Severity of the Hazard behind Barrier.* A rating system based on photos will be used to rate the severity of the hazard behind the barrier. Choices include:

- Low
- Medium
- High
- Extreme

## RISK ASSESSMENT AND RISK SCORE

The following table shows the variables relating to the overall roadway safety in the vicinity of barriers. In addition, the table illustrates the range of values considered for each variable and associated levels of risk. For categorization purposes, variables have been placed into one of three categories: segment, site or barrier variables. The "Associated Risk" column identifies the relative risk posed by each variable. This looks at the relative risk of the each variable itself and is only a cursory evaluation.

A Risk Score or Rating ("Barrier Rating" on Tier 3 Barrier page) was created for each barrier based on the table values. The level of risk tolerated is dependent on the category of road, which will be discussed in subsequent pages.

Once the inventory has been conducted, a total risk value can be assigned to each barrier. A comparison of the relative risk to an acceptable risk threshold will be performed in order to analyze the overall risk of a given barrier.

**Variable and Associated Levels of Risk**

| VARIABLE | RANGE | ASSOCIATED RISK |
|---|---|---|
| **SEGMENT VARIABLES** | | |
| ADT | 0 – 1000 | 0.0 |
| | 1001 – 4000 | 2.9 |
| | 4001 – 8000 | 5.7 |
| | 8001 – 20,000 | 7.1 |
| | 20,001 and greater | 8.6 |
| Crash Factor | 0 | 0.0 |
| | 0.1 – 5.0 | 4.2 |
| | 5.1 – 20.0 | 8.7 |
| | 20.1 – 30.0 | 17.1 |
| | 30.1 – 75.0 | 25.8 |
| | 75.1 and greater | 34.2 |
| Posted Speed Limit | 15 – 25 mph | 0.0 |
| | 30 – 40 mph | 4.3 |
| | 45 and higher | 8.6 |
| **SITE VARIABLES** | | |
| Barrier Placement w/ Respect to Roadway Geometry | Tangent | 0.0 |
| | Inside of curve | 2.9 |
| | Both inside and outside of curve | 8.6 |
| | Outside of curve | 8.6 |
| Severity of Hazard behind the Barrier | Low severity | 2.6 |
| | Medium severity | 5.1 |
| | High severity | 6.9 |
| | Extreme severity | 8.6 |
| Longitudinal Length of Barrier | 1 – 250-ft | 0.0 |
| | 251 – 750-ft | 2.9 |
| | 751 – ft and greater | 5.7 |
| Lateral Offset of Barrier from Edge of Traveled Way | 4.1 – ft and greater | 0.0 |
| | 2 – 4-ft | 2.9 |
| | less than 2-ft | 5.7 |
| Roadway Grade | Uphill/level/downgrade less than 3% | 0.0 |
| | Mild downgrade (3 – 6%) | 4.3 |
| | Steep downgrade (greater than 6%) | 8.6 |
| **BARRIER VARIABLES** | | |
| Actual Barrier Height (compared to test level height) | 0 – 1-in lower | 0.0 |
| | 1.1 – 4-in lower | 4.4 |
| | 4.1 – 7-in lower | 12.9 |
| | 7.1 – 12-in lower | 19.4 |
| | 12.1-in and greater lower | 21.5 |
| Dynamic Barrier Condition Rating (based on design height) | 0 – 25 | 0.0 |
| | 26 – 200 | 4.4 |
| | 201 – 400 | 8.6 |
| | 401 – 600 | 12.9 |
| | 601 – 800 | 17.1 |
| | 801 and above | 21.5 |
| Barrier Conformance with Current Crashworthiness Criteria | Yes | 0.0 |
| | No | 5.7 |
| | **Maximum Total Possible Risk Score** | **100** |

## REPLACEMENT/REPAIR STRATEGIES

Information is integrated by combining static data on barrier type, materials, dimensions, etc. with the condition and risk assessments, and the asset management roadway categories (which include cultural and historic resource considerations) to come up with actionable repair strategies for barriers. In addition, repair costs are accounted for so that estimates can be made for repair actions identified. Costed repair estimates, or work orders, then form the basis for estimating deferred maintenance associated with roadside barriers.
Repair recommendations generated by this assessment are intended to provide an estimated cost of deferred maintenance of barriers. As such, the evaluation is not rigorous and may be changed when a more detailed review and assessment at a project level is completed. In addition, any repairs or replacements that are recommended by this inventory and assessment process must be vetted through a project selection, planning and design process, including compliance with the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA).

Many park barriers are located in harsh environments where freeze-thaw cycles, avalanche impacts, surface erosion, rockfall and vehicle impacts damage them; consequently, they are showing signs of fatigue, at times serious. Whenever possible, historic barriers are repaired or rehabilitated in place so that the historic significance can be preserved; however, removal or reconstruction, which is typically the least preferred alternative, is at times necessary.

Barrier deficiencies can generally be categorized into one of two categories:

- Barriers that pose an unacceptable risk to the traveling public (as determined by the risk assessment methods described in Chapter Seven and including standards found in NCHRP Report 350), or
- Damaged barriers, due to either crash impacts, other loadings (e.g., snow / avalanche, etc) or deteriorated parts (from age / weathering).

Outside of the national park system, barriers that do not meet NCHRP Report 350 crashworthiness standards are typically removed and a barrier of a crashworthy design is constructed in its place. However given the sensitive natural and cultural environments found within the national park system, deficient barriers not meeting national crashworthiness standards may warrant no action, particularly where risk is low.

The type of repair strategy is often dependent on the barrier deficiency and its cultural context. Typically barriers that do not meet current crashworthiness criteria may be replaced while damaged or deteriorated barriers can be repaired. However, under unique situations found in certain national parks and as evaluated using the risk assessment and asset management roadway categories, some barriers that do not meet current crashworthiness criteria may warrant no action being taken for their replacement or repair.

Risk assessment and asset management roadway categories are integrated in the following table, which establishes different risk thresholds within each roadway category. In essence, a higher level of risk will be tolerated in Asset Management Roadway Category A, as demonstrated by the higher risk threshold (90), while less risk will be tolerated in Roadway Category B (70) and even less risk in Roadway Category C (50).

**Asset Management Roadway Categories, Risk Thresholds and Treatment Recommendations.**

| ASSET MANAGEMENT ROADWAY CATEGORY | RISK THRESHOLD | PROGRAM-LEVEL TREATMENT RECOMMENDATION |
|---|---|---|
| A | 90-100 | 1. Identify measures other than barrier replacement that could be taken to reduce risk (including engineering countermeasures).<br>2. Corrective action (including reconstruct/replacement, if necessary) needed to reduce risk below 90. |
| | Below 90 | 1. Identify measures that could be taken to reduce risk (including engineered countermeasures).<br>2. Identify repairs needed to improve physical condition/maintain historic integrity.<br>3. When condition is good and risk is acceptable, no action is necessary. |
| B | 70-100 | 1. Identify measures that could be taken to reduce risk (including engineered countermeasures).<br>2. Corrective action (including reconstruct/replacement, if necessary) needed to reduce risk below 70. |
| | Below 70 | 1. Identify measures that could be taken to reduce risk (including engineered countermeasures).<br>2. Identify repairs needed to improve physical condition/maintain historic integrity.<br>3. When condition is good and risk is acceptable, no action is necessary. |
| C | 50-100 | 1. Identify measures that could be taken to reduce risk (including engineered countermeasures).<br>2. Corrective action (including reconstruct/replacement, if necessary) needed to reduce risk below 50. |
| | Below 50 | 1. Identify measures that could be taken to reduce risk (including engineered countermeasures).<br>2. Identify repairs needed to improve physical condition/maintain historic integrity.<br>3. When condition is good and risk is acceptable, no action is necessary. |

Fourteen engineering countermeasures have been specifically selected for use with the GIP risk assessment tool, and are show in the next table. This is an all-inclusive list of available countermeasures for the risk assessment toll; countermeasures not on the list should not be considered.

The concept of employing countermeasures is evident with barriers that have a risk score just above the risk threshold. For such barriers, installing countermeasures should reduce the future number of crashes by a given amount, based on the countermeasure. Depending on the factored crash rate, reducing the number of crashes will lower the overall risk score. Thus, barriers that were classified as “reconstruct/replace” may be able to be reclassified as “repair”.

The decision to include any of the engineering countermeasures can be done only when the risk score is over the risk threshold by three points or less. When countermeasures are employed to reduce the risk score, they must be based on engineering judgment. The GIP database will allow the user to select up to three countermeasures to reduce the risk score under the threshold, based on crash reduction factors from the FHWA publication “Desktop Reference for Crash Reduction Factors” FHWA-SA-07-015.

**Proposed Countermeasures**.

| COUNTERMEASURE | CRASH REDUCTION FACTOR |
|---|---|
| Speed Feedback Signs | 0.46 |
| Flashing Beacons On Warning Signs | 0.30 |
| Centerline Pavement Marking | 0.30 |
| Lighting | 0.25 |
| Chevrons | 0.20 |
| Warning Signs | 0.20 |
| Barrier Reflectors | 0.16 |
| Grooved Pavement Surface | 0.15 |
| Edgeline Pavement Marking | 0.12 |
| Shoulder Rumble Strips | 0.12 |
| Delineators on Curve and Tangent | 0.05 |
| Centerline Rumble Strips | 0.04 |
| Wider Edgeline | 0.02 |
| Wider Centerline | 0.02 |

**Maintaining Barriers As Is**

Individual barrier elements and roadside conditions are interrelated. Sometimes, barrier deficiencies will be obvious and the best course of action is apparent; however, in context sensitive environments barrier deficiencies may be marginal and a decision will be based on judgment.

If risk is low (as determined by the assessment of variables such as traffic speeds, volumes), it may be acceptable for an historical or culturally significant barrier that does not meet current crashworthiness standards to remain until changes in risk factors would require an upgrading.

If the maintaining barrier as is alternative is the preferred choice through this approach, low cost mitigation measures may be considered to improve safety, such as improving roadside delineation (e.g., pavement markings / rumble strip(e)s, etc.), improving visibility (e.g., advance warning signs, increased sign size, etc.), upgrading the roadway shoulder, or improving skid resistance of the road surface. Although these measures will not reduce crash severity of an errant vehicle impact, these improvements have been tried or proven to reduce the frequency or probability of a vehicle striking the barrier.

**Barrier Repair**

If a barrier has been damaged due to a crash or there are parts that have deteriorated due to age or weathering but the majority of the barrier meets current crashworthiness standards and is functionally sound, repairing the system can be considered a viable option. Examples of these improvements include replacing damaged timber rail, removing a corroded, weathered steel post and replacing with new, upgraded guardrail blockouts to meet standards on high speed facilities or repointing, resetting or replacing loose or missing stones on the concrete corewalls of stone masonry guardwalls. Pursuing a repair approach should be the first consideration for Roadway Category A and B road assets.

For barriers that do not meet crashworthiness criteria but are functionally sound and have been determined good candidates to be maintained as-is based on the risk assessment and application of asset management roadway categories, repair could include measures such as repointing deteriorated masonry, re-setting or replacing loose, broken or missing stones, restoring walls to their original height (by adding a concrete footing, for example), restoring or improving drainage through or under walls or restoring wall foundations. Alterations to improve safety may also be considered, such as adding or changing end treatments or other mitigation measures as mentioned above.

For historic, stone masonry barriers that have a risk score below the threshold, it is possible that portions of the barrier need to be removed and reset in order increase the height of the barrier. The following guidelines are provided to assist in determining when this should be done and to what height the barrier should be rebuilt:

1. If all or a portion of stone masonry guardwall has a deficient height based upon the Severity Description Charts, that is, at worst, within the fair category, do not raise it. (Other work besides raising the barrier can be specified.)

2. If a portion of a stone masonry guardwall has a deficiency in height based upon the Severity Description Charts, considered "poor" (assumed typically to be less than 18-in) write a work order to raise the poor segment to the height of the adjacent barrier with a non-poor height.

3. If the entire stone masonry guardwall is in poor condition due to height based upon the Severity Description Charts– write a work order to raise the entire segment to its design height (assumed typically to be 24-in).

For aesthetic barrier systems used on many park roads and parkways, there is not a sufficient bid history database for estimating costs to repair or replace individual elements of the system, such as posts or rail. Usually repair of an aesthetic barrier system, such as steel-backed timber guardrail consists of removing and resetting the post or rail section or raising the guardrail to meet standard height requirements.

**Barrier Replacement/Reconstruction**

If the risk analysis, including the application of asset management roadway categories, indicates the barrier poses an unacceptable safety risk, the first step should be an analysis to determine if there are mitigating measures that can be applied to reduce the risk to an acceptable level without the need to reconstruct the barrier. A second step is to determine if the barrier is needed. If it is practical to eliminate the shielded hazard (by removal, relocation or redesign) removal of the barrier should be considered. However, if the shielded hazard cannot be eliminated or if it is determined inappropriate to remove the barrier (e.g., it is historically significant and/or contributes to the historical or aesthetic significance of the associated road, district or landscape), reconstruction or replacement of the barrier to meet current criteria for crashworthiness may be the appropriate recommended treatment.

The typical reconstruction option used by the NPS for stone masonry guardwalls is to document then dismantle the existing barrier, construct a concrete core and build a stone masonry veneer around the concrete core using the original wall materials and using stone masonry designs that are compatible with the historic road, district or landscape. A number of concrete core stone masonry barrier types have been designed for use in national parks, including 18-in, 22-in, 24-in and 27-in barriers; however, not all have been crash tested or otherwise determined to meet current criteria for crashworthiness.

**WORK ORDERS**

Work order preparation is essentially determining and documenting the repair actions needed to correct the deficiencies observed during the condition assessment. Barriers are relatively simple structures so this determination can be made by trained inspectors. Keep in mind that this is not a design environment and that more rigorous analysis (if needed) may change the work that is actually performed. The intent of this effort is to prepare a credible estimate of deferred maintenance that may or may not be directly actionable. Simple repairs and/or those that require no compliance with environmental policies (which may be a large percentage of the work orders) can probably be executed without modification.

Once a repair strategy is determined, a cost must be developed for the proposed action. Work orders will be classified as being either deferred maintenance or capital improvement. This classification is based on the type of work recommended, as defined below.

Definition: *Deferred Maintenance* can be classified as repair or replace in kind. Work done to the barrier does not include any upgrading.

Definition: *Capital Improvement* can be classified as upgrading existing barrier. Typically the upgrade will be from a non-crashworthy to a crashworthy device. Other examples of capital improvements would be the addition of a curb to improve drainage or the inclusion of any countermeasure.

There are four types of work:

- No Action
- Monitor
- Repair
- Replace

"No Action" – if risk is low (based on the GIP risk score), a barrier that does not meet current crashworthy performance standards may be acceptable to remain until changes in risk factors would require upgrading.

"Monitor" – if risk is low (based on the GIP risk score), a barrier that does not meet current crashworthy performance standards may be acceptable to remain until changes in risk factors would require upgrading, however, if conditions exist that the park should monitor (e.g., erosion), then "monitor" can be selected as a recommended action.

"Repair" – considered when a barrier damaged by impact deteriorated due to age/weathering and the barrier is functionally sound in a low risk environment. The goal is to bring the barrier back to its "new" condition.

"Replacement/Reconstruction" – when a barrier poses an unacceptable safety risk:

1. If the risk score is less than 3 points above the risk threshold, determine if countermeasures can reduce risk so the barrier can be repaired.
2. Determine if the barrier is warranted and either shielded hazard or barrier itself can be removed (only when barrier NOT considered historically/culturally significant)

For all barrier repair/replace/reconstruction recommendations, the NPS will vet the recommendations through a project selection, planning and design process, including compliance with:

National Historic Preservation Act (NHPA)
National Environmental Policy Act (NEPA)

Aesthetic barriers are commensurate with an approved crashworthy design for the specific conditions at the barrier site as the basis for selecting a crashworthy structure. Types of barriers are generally selected based on emulating the existing types of barriers in the park.