Proposed Bridge Replacement for Aden Road (Rte 646) over the Norfolk Southern RR, Nokesville, Virginia

January 9, 2013

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Project Location & Key Features

**Aden Rd**
- Rural Major Collector
- AADT 2,354 (2011)
- AADT 4,900 (2036)

**Bristoe Station**
- 1863 Battlefield
- 1862 Battlefield
- 1882 Truss
- Nat’l Historic Registry

**Major Commercial & Residential Developments**

**Kettle Run**
- 1862 Battlefield

**Rural Crescent**

[Map of project location and key features with marked locations.]
Proposed Bridge

- Prince William County’s transportation plan indicates increasing the capacity of Aden Road
  - Average Daily Traffic is expected to increase from 2,800 to 4,900 by 2036
- Funding for the project was approved by the Prince William County Board of Supervisors in 2008 and it is in VDOT’s Six Year Plan
- County requires two lanes over the Norfolk Southern RR
- New bridge will be maintained by VDOT in accordance with the current Virginia Code
- Meet Norfolk Southern design requirements for vertical & lateral clearance for future conditions
Bridge is a wrought iron truss built in 1882 by Keystone Bridge Company for the Virginia Midland Railway to carry a single track railway

- Relocated to its current location sometime between 1904 and 1928 by Southern RR
- Placed on the National Historic Registry in 1977
- Owned and maintained by Norfolk Southern Railroad
- VDOT inspects and monitors the bridge
  - Presently classified as Structurally Deficient & posted for a 6 ton weight limit
  - Health Index rating is 47 out of 100 and Sufficiency Rating is 24.3 out of 100
Options Considered

Options 1 or 2 w/ Options 4, 5, or 6 as Bike/Ped Bridge

Options 1 or 2 – Single Lane w/ Options 4, 5, or 6 – Single Lane
Preliminary Option 4 Rev
Existing 1-Lane Bridge in Place Modified for VA Legal Loads w/ New “Hammerhead” Abutments

☑ Meets NSRR Operational Requirements for Vertical Clearance
☒ May Not Meet NSRR Operational Requirements for Clearance Between Track and Face of Hammerhead
Preliminary Options 9A-C & 10A-C

Location Plan

• **Option 9A-C**
  - ½ Option 1 for single lane & Options 4-6, bridge approaches separated by a median strip

• **Option 10A-C**
  - ½ Option 2 (w/ replica truss?) for single lane & Options 4-6, bridge approaches separated by a median strip

Optional centerline alignment if intersection sight distance on Marsteller is below standard

1882 Truss could be re-erected on the inside curve radius to avoid superelevation
Draft Elevation Rendering for Option 9A

SB – New bridge w/ steel beams & concrete deck
NB – Rehabilitated 1882 truss on Hammerhead abutments
Draft Perspective Rendering for Option 9A

SB – New bridge w/ steel beams & concrete deck
NB – Rehabilitated 1882 truss on Hammerhead abutments
Existing view of single lane 1882 truss crossing over NSRR from north approach on Aden Rd

Proposed view of new 2-lane road crossing over NSRR w/new bridge & 1882 truss from north approach on Aden Rd