

## SR 4099 Section EMR SR 4099 Emergency Slide Repair Abstract

A Scoping Field View was held via skype due to Coronavirus quarantine. This project is for the remediation of a slide area located on SR 4099 in East Vandergrift Borough, Westmoreland County. SR 4099 (East Vandergrift Lane) has a history of roadway subsidence. Voids develop under the roadway due to the geology of the area. The road is built on a hillside that is categorized as an ancient slide plane. The Department has previously made repairs to this area, but the deterioration has continued. Currently, a wall that was built to support the sidewalk is collapsing, exposing voids under the sidewalk.

### Project Overview

- Let Date – No let, Emergency Procurement was received on 3/13/20. The work will be work ordered in to an existing contract with a local construction company.
  - Funding – 100% State
1. East Vandergrift Lane is the only roadway connecting East Vandergrift Borough to Vandergrift Borough. Closure of this roadway would result in a 6-mile detour and leave East Vandergrift one access road. Damage to the remaining access could leave East Vandergrift land locked. This is an ancient slide form and District 12 has been dealing with it for years; however, due to the amount of precipitation in recent years, the slide has grown worse.
  2. Repairs were completed to this area in June 2017 and consisted of: 2' wide, 8' deep, 40' long trench filled with Class C Concrete and bottom of excavation sloped towards the slope above the roadway (so as to force the concrete to 'fall back towards the uphill side of the trench').



3. During a field view on Monday March 2, 2020, severe damage to the sidewalk structure was observed. This slide is slipping along the soil bedrock interface which varies

between 15 to 32 feet below the road surface. The most active area of the slide accounts for approximately 450 linear feet of roadway and sidewalk damage.



4. The Department has installed geotechnical monitoring devices that have shown a slow creep. This creep has created a condition that is allowing the soil under the roadway and adjacent sidewalk to fall away creating voids.
5. This slide is slipping along the soil/bedrock interface which varies between 15 to 32 feet below the road surface. The most active area of the slide accounts for approximately 450 linear feet of roadway and sidewalk damage.
6. The proposed repair will install two lines of pipe dowels under the outside edge of the sidewalk to stabilize both the roadway and sidewalk. The sidewalk would be reconstructed, and structure mounted guiderail installed.
7. Due to the emergency nature and the need to begin work quickly, the work will be added to an existing construction contract used to repair five other slides in the District.
  - a. They are nearing completion of the contract work and have capacity to begin this work as soon as the design permits. They have a track record of performing quality work in a prompt manner. The close proximity of the contractors office will allow them to respond quickly and minimize mobilization costs.
8. Design will be completed using both inhouse forces with help from the District Geotechnical Engineering Open End Agreement with a prime consulting firm.
9. Emergency Procurement Procedures were approved March 13, 2020.

Following are pictures of a similar project where a staggered dowel system was used which is similar to what is being proposed. SR 4099's detail will provide a seamless transition from the existing sidewalk construction to the dowel system/sidewalk cap/structure-mounted guiderail.



## **Roadway**

- SR 4099 is an Urban Collector
- Current ADT is 1096 (2013) – Posted Speed 55 MPH – Terrain is rolling
- The proposed roadway width will match the existing. Sidewalk widths will be widened to the maximum width possible if ROW allows.

## **Environmental**

- No permit will be required. There are no streams in the project area and it is anticipated that the disturbance will be less than 1 acre.
  - Approved E&S plan is required.
  - Construction company already has an approved waste site for the project.
- There are no environmental impacts anticipated, a preliminary PNDI was run and there were no hits.
- There are no environmental impacts anticipated, a preliminary PNDI was run and there were no hits.
  - An archeological monitor may need to be present during the excavation of the sidewalk.
  - The NR-listed Vandergrift Historic District (key number 096607) has its southern boundary at (assume north side of) Ninth Street on the hillside just above the slide. As long as the work is done along Vandergrift Lane there should be no impacts to the Historic District.
  - A BRPA is anticipated for the environmental document.

## **Utilities**

- Surveyors found evidence of underground gas, water and sewage. It is unknown at this time of the impact, but it is anticipated that these utilities will be affected.
- There are overhead WPP poles that will be affected. The poles appear to be secondary/service poles. Approximately 3 of them. The poles appear to be owned by West Penn Power.

## **Traffic**

- A 6-mile detour is anticipated to be implemented during construction. Westmoreland County will be setting up the detour and maintain during construction. There are two homes at the bottom of Vandergrift Lane that must always be maintained during construction.

## **ROW**

- DM-3 Chapter 3 for defining a right of way where none exists should be followed.
- Cart path and assumed slope easement should be used allowing most if not all the work to occur within existing right of way or slope easement eliminating the need for ATE's. The slope easement would be any slope and area that is used to protect and maintain the existing slope.
- PennDOT doesn't have any highway plan coverage for the subject area but, has adopted this road from the local municipality on January 1, 1936. Viewing deeds adjacent to the road it appears the original lots on the lower side of SR 4099 have a width of 25 feet. From the deed information I noted on the attached some property dimensions and also scaled the road at 33 feet.

### **PennDOT Connects**

- There is pedestrian that use the sidewalk to go to and from the grocery store. Would like to see pedestrian access maintained during construction. With the use of channelizers and fencing the Department will try and accommodate pedestrians as much as possible.
- School buses along with emergency services us this route. Coordination will need to take place to make sure proper planning is in place.
- The overall public perception is they will be happy about the project but not the impact.

### **Construction Sequence**

- 1) Remove the sidewalk and portion of roadway to create a bench for the drill. Dowels would be drilled and grouted.
- 2) Excavate as necessary.
- 3) Use soil arching to maintain stability during this phase.
- 4) Form and pour the wall section.
- 5) Place moment slab/sidewalk.
- 6) Install guiderail and asphalt.

**Photos from Actual Construction to be provided**