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MARYLAND DEPARTMENT OF TRANSPORTATION

May 26, 2011

**MEMORANDUM**

**TO:** Mr. Kirk McClelland  
Director, Office of Highway Development

**FROM:** Dennis German  
Chief, Community Design Division 

**PROJECT:** MD 24 (Rocks Road) Slope Repair Project Priority Sections

**RE:** Advisory Committee Meeting Minutes

The fifth Advisory Committee Meeting for the MD 24 project was held on April 6, 2011 at the McFaul Activities Center, Room 4, 525 West MacPhail Road, Bel Air, Maryland. The following people were in attendance:

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|--------------------------------|--|
| Mr. Tony Redman                | Maryland Department of Natural Resources (DNR) –<br>Environmental Review Unit  |
| Mr. Daryl Anthony              | DNR – Maryland Park Service  |
| Ms. Nicole Merrick             | DNR – Maryland Park Service  |
| Mr. Jeff Stratmeyer            | Harford County, Department of Public Works   |
| Mr. David Peake                | Maryland State Highway Administration (SHA) –<br>District 4  |
| Ms. Fran Ward                  | SHA – District 4   |
| Mr. Cornelius Barmer           | SHA – Office of Highway Development  |
| Mr. Dennis German              | SHA – Office of Highway Development  |
| Mr. Kirk McClelland            | SHA – Office of Highway Development  |
| Ms. Jialin Tian                | SHA – Office of Highway Development  |
| Ms. Dami Kehinde               | SHA – Office of Planning and Preliminary Engineering   |
| Ms. Jessica Silwick            | SHA – Office of Planning and Preliminary Engineering   |
| Councilmember Chad Shrodes     | Harford County Council   |
| Councilmember Mary Ann Lisanti | Harford County Council   |
| Mr. Steve Hurt                 | McCormick & Taylor, Inc -Maryland Department of the<br>Environment (MDE) – Nontidal Wetlands and<br>Waterways Division |
| Ms. Marsha Kaiser              | Parson Brinckerhoff and Lower Susquehanna Heritage<br>Greenway Consultant  |

Mr. Paul Baker	Rocks Area Resident
Mr. Todd Holden	Rocks Area Resident
Mr. Robert Taylor	Rocks Area Resident
Mr. Ben Lloyd	Rocks Area Resident
Ms. Deborah Bowers	Rocks Area Resident – Save the Rocks
Ms. Debbie Coomes	Rocks Area Resident – Save the Rocks
Mr. Brian Goodman	Rocks Area Resident – Save the Rocks
Mr. Scott McGill	Rocks Area Resident – Save the Rocks
Mr. Joseph DaVia	US Army Corps of Engineers
Mr. Jack Dinne	US Army Corps of Engineers
Mr. Mitch Keiler	US Fish and Wildlife Services

Mr. Dave Peake made the opening remarks by welcoming everyone to the fifth MD 24 Advisory Committee meeting. The purpose of this meeting was to present to the Committee the findings from the stream study and seismic refraction study and evaluate the refined design alternatives for Sections A and G. The goal of the meeting is to have a mutual agreeable design option selected for both sections.

Mr. Cornelius Barmer started the presentation by reviewing the discussions at the previous meetings. Section 404 of the Clean Water Act requires in its permit review process that alternatives be evaluated in the interest of pursuing the least environmentally damaging practicable alternative (LEDPA). The alternative review and evaluation sequence is in the order of first avoiding, then minimizing, and lastly, mitigating. As a fundamental precept of Section 404 permitting process, if the aquatic impacts can be avoided, they should be avoided. The review agencies include MDE, DNR, US Fish and Wildlife Services, and US Army Corps of Engineers.

Mr. Scott McGill asked what stream impacts would be if the work is to armor the slope. The work performed to stabilize the embankment with either retaining walls or riprap slopes could change the cross-section of the stream channel and take away existing vegetation. These changes could have direct and/or indirect irreversible impacts to Deer Creek and aquatic habitats in the stream.

Additional studies SHA performed in the past 9 months include updating the hydrology study based on the Sept 30<sup>th</sup>, 2010 storm event, dendrogeomorphic study – tree and root ring evaluation, detailed geomorphic studies, and additional seismic refraction study. In the major storm event of September 2010, the water overtopped its banks and spread along the road north of the Deer Creek Bridge. This section of MD 24 had to be closed. Due to the storm, four pressure transducers were washed out and lost due to the significant bank erosion of greater than 3 feet. By evaluating real-time USGS gage reports from this storm, the project team concluded that a smaller storm could produce a higher water level and the road could be flooded more frequently than was expected.

The dendrogeomorphic techniques utilize the patterns of tree and root rings to estimate the erosion rate over a time period of between 5-50 years. This study identified piping as a major contributor to erosion, along with stream forces. Piping can be described as the groundwater seepage that discharges underneath the roadbed toward the stream bank and carries particles of soil through a cavity. The erosion rate varies at different locations. At critical locations, the erosion rate could be as much as 9 inches per year.

Based on the study findings, two design alternatives were developed for Section A and Section G. In Section A, Option 1 is maintaining the existing road alignment and stabilizing the stream slope with an imbricated stone wall (ISW). Minimal to non-existent land-side excavation could occur for drainage and piping controls. Option 2 for Section A proposes to shift the roadway at the most critical location. This option does not require retaining walls but a massive land-side excavation, including rock cutting and tree removals on top of the hill. In order to address the stream erosion and piping, slope revetment may still be necessary for bank stabilization.

Two alternatives were proposed in Section G. Option 1 for Section G is maintaining the existing road alignment and constructing a concrete wall to stabilize the slope. Due to the height and the steepness of the existing embankment, ISW may not be a feasible option in Section G. Option 2 proposes to shift the road away from the stream, which provides space for constructing a slope revetment. An approximately 200 foot long stream-side wall north of the private bridge will still need to be constructed. This shift would result in rock excavation at the northern end of this section and removing the existing masonry stone wall along the west side of the road.

Ms Deborah Bowers asked why it is necessary to stabilize the slope downstream of Section A. Cornelius explained that the upstream armoring could affect the stream migration pattern and shift the force to downstream. The detailed stream study indicated that downstream erosion could be exacerbated due to the slope stabilization proposed along the upstream. The project team decided to include this downstream stabilization in the project.

The Committee is concerned that the man-made appearance of the concrete wall might impact the natural settings in the area. Ms. Bowers said although most of Section G is out of Rocks State Park, local residents treat this area as a Gateway to the Park. Mr. Terry Maxwell said the concrete wall face could mimic the stone pattern of the "Ma & Pa" railroad embankment in this region. Ms. Debbie Coomes asked if it was possible to construct a concrete footing below the water level and then place imbricated stones on top of the footing. The maximum height for an ISW is 10 feet according to the MDE waterway construction guidelines. The project team will evaluate the feasibility of constructing these combination retaining walls. The road is anticipated to be fully closed during construction, but only one section at a time. The construction work in each section is estimated to be complete within one construction season.

Mr. Kirk McClelland presented the summary of the subsurface study findings. The previous borings logs and seismic surveys indicated the existing land-side in Section A consists of rippable and unrippable rock mixtures. Option 2 in Section A, shifting the road away from the stream, will require rock excavation to the west and therefore requires a minimum 6-foot rockfall catchment area for safety purposes. Ideally, it is preferable to grade to a 2H:1V slope on top of the unrippable rock; however, this would have a massive impact to the historic and scenic setting of the Rocks State Park. The project team recommends stabilizing the overburden by using a mechanical support system which allows the slope to be graded as steep as 1H:1V. Trees will not be able to be planted on the 1H:1V slope.

Once an alternative is selected, SHA will start design and submit a permit application to the regulatory agencies for review and approval. Depending upon the amount and severity of the

impacts, either a General Permit or a Standard Individual Permit is required where the project has impacts to the waters of the U.S.. If a General Permit is applicable, a public notice will be published to receive comments and provide opportunity for the public to request a public hearing. Based on the impact summary chart presented at the meeting, a General Permit seems to be sufficient for the options in which the overall impact is less than one acre. Mr. McClelland stated that SHA would like to apply for a permit for these two sections independently. Mr. Steve Hurt stated that MDE would consider these two projects individually because each section has its own independent safety needs. Mr. Joe DaVia said the Corps of Engineers would like to review the application and evaluate the impacts before making a decision on segmentation. Subsequent to the meeting SHA has decided to initiate permit activities for Section 'A'. Should a Section 'G' alternative be agreed upon shortly, every effort will be made to rejoin the 2 projects.

Ms. Marsha Kaiser then asked for feedback from local residents regarding the study findings and the options presented earlier in the meeting. Mr. Brian Goodman said either option has its own level of stream disturbance. Ms. Deborah Bowers stated personally she was in favor of Option 1 between the two proposed in Section A. She asked whether it is feasible or is in the best interests of the Committee to develop additional options of relocating the stream in Section G. Relocating the stream away from the roadway could provide space to construct a slope revetment without impacting the existing masonry stone wall and rock outcropping on the west side of MD 24. Mr. McClelland explained that both proposed options in Section G are intended to avoid impacts to the private-owned farm land east side of Deer Creek. Relocating the stream could have significant impact to the farm land. Councilmember Mary Ann Lisanti stated the farm land is preserved under an agriculture conservation easement in Harford County. Councilmember Chad Shrodes expressed his appreciation to the Committee and stated it is time to move the projects forward. He added that, to retain the scenic setting in the area, natural stone is preferable. If a concrete wall is the only feasible option in Section G, a natural-looking wall face should be considered. Since these sections of MD 24 are located within the park, pedestrian safety needs to be enhanced as well. In order to quantify the impacts to the surrounding environmental resources, Mr. McClelland agreed to perform a preliminary study and present the results to the Committee at next meeting.

### What is next?

Task	Expected Complete Date
1. Investigate the feasibility and quantify impacts of the additional option, brainstormed in Section G	Next Committee Meeting (May 2011)
2. Prepare rendering images showing the proposed conditions in both Sections	Next Committee Meeting (May 2011)
3. Field Walk to discuss the viability of the concept options	Early May
4. Start preliminary design activities for Section A with Option 1 and prepare a permit application for review*	Late Summer, 2011

\* Based upon the feedback received at the field meeting at May 5, 2011, further discussion will be conducted to reach a consensus of the design option in Section A.

The next meeting will be scheduled for late May/Early June.

The above comments reflect my understanding of the topics, discussions, and decisions reached at this meeting. If you have any questions, comments, or corrections regarding this meeting or these minutes, please contact Mr. Dennis L. German, Chief, Community Design Division, SHA at 410-545-8900, toll free 888-228-5003, or via email at [dgerman@sha.state.md.us](mailto:dgerman@sha.state.md.us) within fourteen (14) days of this date.

cc: Attendees