MEMORANDUM

January 26, 2015

To: ACHD Commissioners and Director

From: Bruce Mills, PE, Deputy Director, Engineering Division
       Tim Morgan, PE, Deputy Director, Maintenance Division

Subject: Warm Springs Avenue Mesa Area - Adoption of Interim Safety Treatment Plan

Executive Summary
As a result of recent slope erosion and rocks falling onto Warm Springs Avenue in the area of the mesa, ACHD has removed loose rocks from the slope above the road, and ACHD staff has prepared a plan for an interim safety treatment ("Plan") consisting of the placement of 1,250 linear feet of concrete guardrail sections along the toe of the slope, as shown in the attached exhibit. The Plan was prepared in substantial conformance with current engineering and design standards. Staff seeks Commission approval and adoption of the Plan as the satisfactory interim treatment to increase the safety to the traveling public, until a more permanent solution can be analyzed, engineered and financed. Upon approval and adoption of the Plan, ACHD Maintenance staff will complete the work in accordance with the Plan and notify the Commission of such completion.

Background
The Warm Springs mesa area is an active geological landslide area, and experiences periodic erosion of the slope (and falling rocks) above Warm Springs Avenue in several localized areas between Windsong Drive and Starview Drive. These occurrences typically happen in the winter months following heavy rain and freeze/thaw events.

On January 7, 2015 a large (approximately 50-ton) boulder landed on Warm Springs Avenue just west of Starview Drive. The road was immediately closed to traffic and a local geotechnical engineering firm, Terracon, was engaged to assess the situation and advise ACHD. Under their observation, several other loose boulders on the slope above Warm Springs Avenue were removed by a contractor on January 19th, and ACHD was advised that additional safety measures were recommended in this area.

As a result, ACHD Engineering staff has prepared a plan for an interim safety treatment ("Plan") consisting of the placement of 1,250 linear feet of concrete guardrail sections along the toe of the slope, as shown in the attached exhibit. The Plan was prepared in substantial conformance with current engineering and design standards. The Plan is set forth in the attached exhibit. This system offers additional safety to the traveling public, as it will prevent most falling rock from reaching Warm Springs Avenue. While this is not considered a final solution for this area, it offers an interim treatment that is much safer than before the January 7th event. The Plan reflects constraints upon ACHD in this situation including but not limited to: the topography, the refusal of the owner of the adjacent private property to allow ACHD to place any structures upon their property, the need to reopen Warm Springs Avenue and the need to keep the roadway open to traffic during the application process.
Avenue, and available funding. ACHD Maintenance personnel will complete the placement of 1,250 linear feet of concrete guardrail sections along the toe of the slope in accordance with the Plan shown in the attached exhibit, and ACHD staff will notify the Commission upon full completion of the work. Staff will continue to closely monitor this area, and proposes to address a more long term solution moving forward.

Development of a long term solution will include compiling previous data and reports that have suggested various alternative projects for this decades-old issue. New or revised alternatives will be developed, analyzed and vetted with the public and elected officials, and considered for design and implementation.

**Recommendation**
Staff recommends that the Commission approve and adopt the Plan as discussed herein and as shown on the attached exhibit, as the satisfactory interim treatment to increase the safety to the traveling public along this section of Warm Springs Avenue, until a more permanent solution can be analyzed, engineered and financed.