

SECTION I

Executive Summary

Pavement Engineering Inc. (PEI) was contracted by the City of Paso Robles to perform pavement evaluation services to establish future treatments and costs for several City streets. PEI worked with Ms. Ditas Esperanza to develop this project.

Background

The City of Paso Robles passed a sales tax measure in November 2012 for street maintenance that is estimated to generate about \$4M per year for the next 12 years. The City has developed a list of streets they would like to maintain and rehabilitate over the next few years and wants PEI to perform the field work necessary to design treatments and develop preliminary budgets to assist in strategizing and prioritizing the work. This proposal provides a scope of work and associated fees for this work.

Scope of Work

PEI's scope of work included measuring field quantities to establish the pavement area and major bid items, performing pavement evaluations, including deflection testing, coring and R-values to establish structural needs; and preparing preliminary engineer's estimates.

Pavement Evaluation

Performing a structural evaluation requires four input items: Traffic Index, Existing Structural Section, Pavement Deflections, and native soil R-Value. The pavement is evaluated using two methods. A component analysis uses the traffic index, existing structural section and native soil R-value to determine the capacity of the existing pavement. The evaluation is performed in accordance with California Test CTM 301. The deflection analysis uses the traffic index, pavement deflections, and structural section to evaluate the structural adequacy of the existing pavement in general accordance with CTM 356.

The City of Paso Robles provided the traffic index for each road segment.

Measurement of Field Quantities

PEI physically walked each of the project streets to measure and record all pertinent field quantities. The information collected included the location of existing striping, pavement markers and paint markings; locations of underground utility covers and the total area of pavement to be rehabilitated.

Recommendations, Costs and Life Expectancies

Using the findings from the pavement evaluations, PEI developed several rehabilitation options for each street segment. Options include overlays using HMA and RHMA, recycling and mill and replacement, and reconstruction. Each option has an estimated construction cost and estimated life expectancy. This information will assist the City to evaluate each option using a life-cycle cost analysis. This information will help guide the City to select the most cost effective rehabilitation approach for each of the evaluated streets.

Report Organization

For easy reference, the project report is divided into sections that focus on specific tasks. An outline of each section is listed below:

Section II, Pavement Background - Provides a basic understanding of pavement design and how pavements deteriorate and a description of some of the more common pavement defects.

Section III, Pavement Maintenance / Rehabilitation Procedures – Outlines common pavement maintenance and rehabilitation treatments for use in understanding the report's recommendations.

Section IV, Structural Evaluation – This section provides a general discussion on Traffic Indexes and pavement loading, Pavement Thicknesses, the effect of R-values on design and deflection testing

Section V, Evaluation Summary, Recommendations and Costs - PEI performed non-destructive deflection testing, including coring, to determine the pavement's existing structural section and evaluation of collected native soil samples to determine the resistance values (R-Values) for design and analysis purposes. This section contains our findings, recommendations and costs. Each tabbed section contains an evaluation summary sheet, deflection summary sheets, R-value test results and photographs.

Section VI, Glossary of Terms – Provides general pavement terms and definitions.