

## Highway Pavement Rehabilitation Practice and Nevada's Experience

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The Nevada Department of Transportation (NDOT) is responsible for preserving and improving approximately 5,400 centerline miles of roadway throughout the state. In order to optimize available funds and make an objective and sound engineering design decision regarding pavement rehabilitation, the pavement designer uses the following steps as a guide prior to making design recommendations:

1. Obtain all available project information. The information should include traffic data, roadbed construction history, soil reports, pavement management performance data, climate information, etc.
2. Historical soil data along the project may be obtained through a file search. If new or additional soil information is needed, the designer may need to coordinate with the Geotechnical Section to obtain base course and subgrade samples. Other project information may include pavement deflection data (FWD test), descriptions and photographs of typical pavement conditions, skid resistance, and pavement cores.
3. Representative climate information for the project area should also be obtained. The information is available at NDOT Road Weather Information System (RWIS) or from the National Oceanic and Atmospheric Administration (NOAA).
4. Evaluate the condition of the existing pavement. A field review is required during this step to document the visible pavement distresses. This review may be conducted during the Preliminary Design Field Study (PDFS), or the designer may choose to perform a detailed study separate from the PDFS. All available project information, including pavement management data, should be reviewed prior to attending PDFS.
5. Identify the causes of pavement distresses. A thorough evaluation of the data collected in steps 1 and 2 will help the designer identify the causes as well as the extent and rate of deterioration. The successful rehabilitation of an existing pavement requires an extensive evaluation of current conditions and performance.
6. Develop several alternate repair methods and review the feasibility of each alternative. The alternatives should mitigate the existing deterioration and prevent its immediate recurrence. The type, quality, and availability of construction materials should be considered when reviewing alternatives.
7. Design a structural section for the selected rehabilitation method.

In order to optimize available funds and make a sound engineering decision regarding pavement rehabilitations, NDOT uses "proactive" pavement treatment strategies to maintain the roadway at an acceptable level of serviceability and also to extend the pavement service life beyond its initial design life. The pavement rehabilitation project recommendations were developed based on the following criteria:

1. Interstate projects were given the highest priority because the interstate system has the highest financial consequence to the Department.
2. Projects on the interstate requiring time sensitive strategies such as a 1.5-inch cold mill and 2-inch overlay received the highest priority in order to minimize future agency cost.
3. Projects on the National Highway System (NHS) received a higher priority due to the higher standards expected for the NHS.

In conclusion, NDOT will continue to coordinate an all-inclusive Pavement Preservation Program that allows the Department to better serve the traveling public by cost-effectively planning maintenance preservation and rehabilitation needs in order to maximize the value of the State's pavement preservation funds. We must try to stay with our philosophy of "Good Roads Cost Less" and continue promoting our financial consequences based on Pavement Prioritization process. Proactive maintenance and rehabilitation strategies can prevent deterioration, extend pavement service life, improve pavement functional condition, and provide a safer environment for the traveling public.