Pavement Determination Process

Design Manual
Chapter 1
General Information
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Major Rehabilitation and Resurfacing Projects

Generally, for the first fiscal year being considered, by the time the list of rehabilitation and resurfacing projects are put together, the District and design staff will have completed concepts of their projects including preliminary treatment options. The specific information required for each project within that fiscal year, such as the significant paving items and quantities, are gathered from the Districts and design staff and then tabulated.

Full Depth Paving Projects with at Least 5,000 SY or Tons of Paving

Each year around mid-January, the Program Management Bureau (PMB) provides the Pavement Engineer in the Construction and Materials (C&M) Bureau a list of paving projects that will likely be included in the program for each of the following two fiscal years. This list is then analyzed and full depth projects with a paving quantity greater than 5,000 SY are selected to be included in the pavement determination process. The pavement type for projects included in the prior fiscal year's pavement determination list remains the same, and only updated quantities are requested from the DOT designers and consultants for these projects without further analysis needed.

For projects not included in the prior year's list, the Pavement Engineer determines comparable thicknesses for PCC and HMA pavement types according to the following:

A. The HMA design is the minimum thickness obtained from any of the following three approaches:
   - AASHTO 1993 design procedure for full depth HMA.
   - The Pavement ME (Mechanistic-Empirical) design procedure for full depth HMA**.
   - The state map showing the maximum thickness for full depth HMA pavements in various parts of state using the Per-Road design procedure, a perpetual design approach. This map and the information regarding how this map was generated can be found in the following link: Iowa DOT Maximum HMA Thickness Design Procedure Using PerRoad_1 Jul 2020.

B. The PCC design is the minimum thickness obtained from either of the following two approaches; however, a practical minimum PCC thickness of 9" is being used for highway pavements at this time:
   - PCA (Portland Cement Association) design procedure (1984).
   - The Pavement ME (Mechanistic-Empirical) design procedure for full depth PCC**.

**The procedure for completing these designs and how these specific approaches were selected are included in the following document: IA Pvt Des Sens Tech Memo Task 8.

Once the designs are complete, the entire list of projects in each of the next two fiscal years, with the appropriate PCC thickness for each project, is sent to the DOT designers and consultants. They are asked to provide quantities for major paving items by completing a work sheet for each project within a specified time.

After receiving quantities, the Pavement Engineer updates the quantities for any project from a previous fiscal year and completes a Life Cycle Cost Analysis (LCCA) for the new projects.

Decision Making Process

For all appropriate projects included in each of the next two fiscal years, the proposed pavement type, the quantity of major paving items and other relevant information is gathered and presented to the Transportation Development Division (TDD) Deputy Director. The TDD Deputy Director, in consultation with other staff as appropriate, then determines if any changes are required based on the desire to maintain a steady and balanced workload for each of the two paving industries from year to year. This information is then reviewed with Executive Leadership within the Department and subsequently presented to the state paving industries for their initial review and feedback.

After considering the comments received from the paving industries, the TDD Deputy Director and the Executive Leadership Team finalize their selections and the industries and designers are informed. This information enables the industries to tentatively plan their workload and target projects that are of interest to them.

Chronology of Changes to Design Manual Section:

001D-004 Pavement Determination Process

9/30/2024	Revised Retitled and rewrote.
11/30/2011	Revised Updated the section with the new traffic forecast request process.
4/15/2010	NEW Document current DOT practices