

**Feasible Alternates:**

A review of 3 alternates was performed: HMA Resurfacing with Cold In Place Recycling, PCC Overlay, and HMA Resurfacing with Rubblization.

Pavement structural analysis indicates 2 inches of additional asphalt is needed for a 20 year design life.

**Alternate 1 (HMA Resurfacing with Cold In Place Recycling)** - This alternate includes cold in place recycling 3 inches of the existing asphalt surfacing and then placing a 4 inch HMA overlay. Patching would be done first to fix some failed pavement areas. Paved shoulders (4 feet wide) will be added for the entire project. The anticipated cost for this alternate is \$3,000,000. Traffic would be maintained during construction, but would be disrupted for several weeks.

**Alternate 2 (PCC Overlay)** - This alternate includes scarifying 3 inches of the existing asphalt surfacing and then placing a 5 inch PCC overlay. Patching would be done first to fix some failed pavement areas. Paved shoulders (4 feet wide) will be added for the entire project. The anticipated cost for this alternate is \$3,150,000. Traffic would be maintained during construction from 300<sup>th</sup> Street to 290<sup>th</sup> Street. For the remainder of the project, traffic would be detoured during construction using US 30, IA 146, and County Road E63. (A pavement determination has not been done for this alternate and would need to be performed before further developing this alternate.)

**Alternate 3 (HMA Resurfacing with Rubblization)** - This alternate includes scarifying the existing 6 inches of asphalt surfacing and then placing a 3 inch choke stone layer and a 9 inch HMA overlay. Some patching and core outs would be done to fix some failed pavement areas. Paved shoulders (4 feet wide) will be added for the entire project. The anticipated cost for this alternate is \$5,080,000. Traffic would be maintained during construction from 300<sup>th</sup> Street to 290<sup>th</sup> Street. For the remainder of the project, traffic would be detoured during construction using US 30, IA 146, and County Road E63. (A pavement determination has not been done for this alternate and would need to be performed before further developing this alternate.)

There are many residences on the north end of this project route and it would be difficult for the contractor to maintain local access for these residences during construction of Alternates 2 & 3, eliminating these alternates from further consideration.

**Recommendation:**

The recommended method of rehabilitation is Alternate 1. The 1993 PCC section will not be resurfaced (MP 97.48 to 97.90), but will include some minimal patching. Paved shoulders and shoulder rumble strips (four feet wide) will be added for the entire project length, except from MP 97.30 to 97.58 (station 430+00 to 444+50) where full width paved shoulders (8 feet wide) will be added on the right side. Centerline rumble strips will be added from 0.3 mile north of 315<sup>th</sup> Street to the beginning of the 4 lane section in Marshalltown (MP 91.9 to 98.57).