COLD IN-PLACE RECYCLING (CIR) is a surface pavement rehabilitation technique that reduces the life cycle cost of the pavement structure by reusing the existing asphalt pavement. This process generally uses 100% Reclaimed Asphalt Pavement (RAP) mixed with a new binder which may be either emulsion or foamed asphalt cement. The cold nature of the process reduces the impact on the environment and preserves energy due to the absence of heat application.

CIR may be considered wherever cracking, permanent deformation and/or loss of integrity in the existing bituminous pavement occurs. Structurally sound and well-drained pavements are the most suitable candidates.

When the pavement is distorted, corrective operations may be required prior to the CIR process which include road profiling and/or the addition of corrective aggregate. The addition of a corrective aggregate may be required to modify the gradation or to improve the strength of the recycled material when rutting, shoving and flushing exists.

Regardless of whether emulsion or foamed asphalt cement is utilized as the binder, Portland cement may be utilized to achieve rapid curing of the recycled material. Rapid curing of the recycled material allows the roadway to remain unaffected by traffic prior to being overlaid with Hot Mix Asphalt (HMA) or a Seal Coat.

CIR is considered the most effective process to mitigate reflective cracking in a cold climate and is widely utilized as a cost effective surface rehabilitation alternative to traditional reconstruction methods due to its comparatively low cost, higher life cycle, and ease of construction.