RECYCLING & REHABILITATION:
COLD-IN-PLACE RECYCLING
BASE STABILIZATION
FULL-DEPTH RECLAMATION
THE MCA ADVANTAGE
With the MCA Advantage, you get a partner and advisor who will consult with you about designs, specifications, technical services, processes and material selection. By developing innovative, custom-designed products that offer additional benefits, such as peak performance in unique conditions, improved field performance, greater environmental and health benefits, the MCA Advantage provides significant long-term cost savings, resulting in lower “total cost of ownership.”

RECYCLING & REHABILITATION
Recycling and rehabilitation can be used to address many road defects including: rutting, cracking, profiling and polishing. Recent advances allow the addition of engineered materials to modify the structural strength of marginal materials that may have been used in the original construction.

COLD-IN-PLACE RECYCLING
Cold-in-place (CIP) recycling typically refers to milling the existing asphalt mat up to a depth of 125mm, crushing the recycled asphalt pavement (RAP) to a maximum size of 37.5mm, mixing a rejuvenating emulsion into the RAP and laying the material back down on the road via a regular paver or grader. Mix design optimizes the addition rate and the composition of the rejuvenating emulsion. Virgin aggregate can also be added to the CIP recycling train, if required.
Recently developed expanded/foamed road construction equipment, allows foamed asphalt to be used in place of rejuvenating emulsions. Hot asphalt cement and water are added in the mixing chamber of the special asphalt reclaimer/stabilizer. The water causes the asphalt to disperse inside the mixing chamber with the recycled asphalt pavement (RAP). The material is then re-laid by a paver or grader for a new stabilized base or partial depth rehabilitation.

BASE STABILIZATION
The purpose of base stabilization is to increase the bearing capacity (or strength) of the roadbed materials. Adding an emulsified asphalt, and possibly other fillers, increases the road’s firmness and resistance to weather, while reducing movement or rutting in the base layer. Mix-design work performed in the lab seeks to maximize the strength of the base materials and minimize the effects of moisture and freeze/thaw cycles.

FULL-DEPTH RECLAMATION
Full-depth reclamation (FDR) consists of pulverizing the asphalt-wearing layer (top) of the road into the base material and evening the sub-base material to depths of up to 300mm. Emulsified asphalts, fillers, virgin aggregates or recycled asphalt pavements (RAP) can be added to maximize the effectiveness of the system. The process is ideal for increasing the bearing capacity of roads that utilized maintenance techniques such as pothole patching, seal coats, slurry seals and overlays, as well as increased traffic loadings.

FEATURES AND BENEFITS
- Savings of 25–33% over traditional reconstruction technologies.
- Particulate and VOC emissions are reduced.
- Zero waste materials are generated; additional waste materials may be used.
- Marginal materials can be added to the road structure and performance enhanced with additives.
- Opportunity to enhance engineering design over traditional reconstruction strategies.
- Strategic use of additives and fillers can optimize the performance of the road to maximize your project’s life cycle.
- Work-zone safety can be increased by a shorter work zone and reduced project time.
- More economical wearing courses other than overlays, such as slurry seals and seal coats, can be used to further enhance project economics.