Above & Below: CIREAM operations on Trafalgar Road
Above & Below: CIREAM operations along Trafalgar Road
Reduced energy consumption
Increased worker safety during construction
Minimized social disruption

**Pavement Design:** Doing More with Less


The Regional Municipality of Halton recognizes the inherent environmental issues associated with construction projects, such as pollution, disruption to the local communities, traffic interruptions, and high resource consumption. To help address these concerns, the Region adopted a Green Procurement Policy that integrates sustainability considerations into the decision process at all phases of a project's (and product's) lifecycle.

For three recent road resurfacing projects, this forward-thinking approach allowed the Region to realize improved environmental net benefits, as well as cost-savings, through implementing more sustainable technologies, and getting them to work in the “real world.”

Traditional road resurfacing projects involve pavement removal and disposal, production, transportation, and placement of asphalt. These activities consume considerable energy and resources, as well as disrupt the local community. Recognizing this, efforts were made during the planning stage to find “greener” methods.

Detailed pavement condition assessments undertaken at the planning stage found that three innovative, “green” solutions could be used: CIREAM (cold-in-place recycling with expanded asphalt mix), SAMI (stress absorbing membrane interlayer), and pulverized asphalt.

Although these technologies are not new, the Ontario engineering and construction industry has been relatively slow to adopt their regular use, mostly due to general unfamiliarity and uncertainty about their historical track records.

The combined technologies used on these projects resulted in significantly reduced carbon footprint in comparison to traditional removal and replacement techniques. The technologies reduced the overall construction duration, which allowed the road conditions to return to normal more quickly. This improves general safety for the public and workers.

Warm mix asphalt placed on Trafalgar Road produced lower emissions, which provided a safer environment for workers. The technologies reduced the overall construction duration, which allowed the road conditions to return to normal more quickly. This improves general safety for the public and workers.

Reduced carbon footprint

The three technologies utilized significantly reduced the hauling of materials off-site, as well as the production, transportation, and placement of asphalt.

Reduced energy consumption

Approximately 4,000 tonnes of warm mix asphalt was placed on Trafalgar Road. Warm mix asphalt requires a lower mix temperature than the standard hot mix asphalt, reducing the average production energy consumption by 20 to 30 per cent.

Using SAMI technology along Steeles Avenue resulted in less energy consumption for removal of the existing pavement, as well as less energy consumption in the production, transportation, and placement of additional asphalt.

Minimized social disruption

The use of the SAMI technology at Steeles Avenue resulted overall noise and pollution – a general inconveniences to the public. It also significantly reduced the construction duration when compared with conventional methods of pavement structure removal and replacement.

SAMI allows traffic to drive on the new surface almost immediately after it is placed. Four metre sections can be placed at a jogging speed. The technology offers significantly less traffic disruption and lower impacts on local businesses and residents.

Increased worker safety during construction

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