

COMMITTEE OF THE WHOLE - APRIL 4, 2005

RECYCLING OF USED ASPHALT ROOFING SHINGLES

Recommendation

The Commissioner of Engineering and Public Works recommends that:

1. No change be made to the City's design standard for hot mix asphalt at this time; and,
2. This report be received for information.

Purpose

To respond to a deputation made by Canadian Waste Recycling Inc. to Vaughan Council concerning the recycling of used asphalt roofing shingles.

Background - Analysis and Options

At its meeting of February 12, 2004, Mr. Gary Grant of Canadian Waste Recycling Inc. (CWR) appeared before Committee of the Whole asking the City to consider the concept of recycling asphalt shingles, and using the end product in the City's design mix for hot mix asphalt, or as a dust suppressant on gravel roads. It should be noted that Canadian Waste Recycling Inc. is not related in any way to Canadian Waste Services Inc. (a division of Waste Management), who is the City's current collection contractor for blue box and yard waste materials.

There has been a great deal of testing concerning the recycling of asphalt shingle performed in the United States. However, almost all of the information available deals with asphalt shingle cuttings from the manufacturing process known as "scrap". Used asphalt roofing shingles generated from a re-roofing project are known as "tear-offs". "Tear-offs" pose problems due to the fact that they have undergone weathering and ultraviolet degradation, the mix contains shingles produced by a number of manufacturers, and they are not uniform in terms of content. Another significant concern with recycling used asphalt roofing shingles is the potential for older shingles containing asbestos to find their way into the end product.

In Minnesota, the use of shingle byproduct from the manufacturing process in hot-mix asphalt began with laboratory research and field testing. In 1991, the Minnesota Department of Transportation (Mn/DOT), the University of Minnesota, and the Minnesota Office of Environmental Assistance (OEA) collaborated on a research project that paved the way for the use of shingle byproduct in hot-mix asphalt.

The research defined the characteristics and limitations of bituminous paving mixtures that contain ground shingle byproduct. The study investigated the influence of ground shingle byproduct on asphalt concrete properties, and at the project's conclusion, researchers recommended the development of a specification to allow up to 5 percent shingle byproduct for use in hot-mix asphalt.

The processed asphalt shingle material has also been tested as a dust suppressant on gravel roads. The material is mixed into the road during grading operations, and has proven to be somewhat effective.

Staff have contacted the Ontario Hot Mix Producers Association (OHMPA) and requested information on which local asphalt producers are using recycled asphalt shingle product in their hot asphalt mix. To date, staff have received no response.

The majority of “tear-off” waste (used asphalt shingles), is generated by contractors who typically dispose of the material at private transfer stations. However, there are times when homeowners do undertake small roofing jobs on their own and need a place to dispose of the materials. The City does not accept these materials in its curbside collection programs; however, the Region accepts these materials at their Georgina Transfer Station. CWR’s literature indicates that there is a 1% garbage factor involved with processing “tear-off” asphalt shingles. This garbage consists of nails, paper, aluminium, metal, wood, and other materials that are used in a typical roofing operation. CWR indicated the cost for separating, cleaning and grinding used asphalt shingles is \$67.50 per tonne.

Should CWR wish to conduct a pilot project recycling “tear-off” shingles somewhere in York Region, and wish government partners, they should contact the Regional Municipality of York to determine the feasibility of establishing the necessary drop-off locations at their transfer facilities for the materials. Should the Region decide to partner with CWR and implement such a pilot project, Vaughan staff would assist the Region in promoting such a program. If the costs were comparable to current methodologies, Public Works staff would also consider participating in a trial use of the ground end product as a dust suppressant on some of the City’s gravel roads. However, given the limited information concerning the use of “tear-offs” in hot mix asphalt production, it is recommended that no change be made to the City’s current design mix for hot mix asphalt at this time.

Relationship to Vaughan Vision 2007

This report is consistent with the priorities previously set by Council and the necessary resources have been allocated and approved.

Conclusion

The recycling of “tear-off” asphalt shingles would be extremely beneficial in terms of reducing materials going to landfill, as well as reducing the need for virgin petroleum based products in the production of hot mix asphalt. However, to date, most of the recycling of asphalt shingles into hot mix asphalt production has been performed with “scrap” materials generated through the shingle manufacturing process, and little data is available on “tear-off” recycling.

Notwithstanding the above, should CWR wish to pursue such a recycling initiative using “tear-offs”, they should discuss this matter with the Region of York, as the Region has the infrastructure to collect asphalt shingles for recycling.

Should the Region decide to undertake a pilot project with CWR, Public Works could consider testing the material as a dust suppressant on some of the City’s gravel roads. However, given the lack of information concerning the use of “tear-off” materials in hot mix asphalt production, it is recommended that no change be made to the City’s standard for hot mix asphalt at this time.

Attachments

N/A

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Respectfully submitted,

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Commissioner of Engineering and Public Works

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Director of Public Works