Aggregate Recycling in Ontario
FAQ

Q: Can asphalt and concrete be recycled?

A: Yes, both asphalt and concrete are 100% recyclable. These products can be crushed, cleaned and screened, and reused as valuable construction material.

Q: Where does this material come from?

A: Every year, tens of millions of tonnes of asphalt and concrete are removed from construction sites across Ontario as roads are repaired, bridges are maintained, old buildings are demolished, and infrastructure is replaced.

Q: How are asphalt and concrete reused?

A: RCM (recycled concrete material) and RAP (recycled asphalt pavement) are processed and reused as aggregate – for example in road bases, shoulders and backfill. RAP can also be reused in making new hot mix asphalt.

Q: How much recycled aggregate is now used in Ontario?

A: A total of about 184 million tonnes of aggregate are used annually in the province. New aggregate (from quarries and pits) meets most of this demand. Only about 13 million tonnes or 7% come from recycled sources.[1]

In contrast, some European countries use up to 20% recycled aggregate. Ontario's Ministry of Transportation also uses about 20% recycled materials in its highway construction.

According to a report by the province's Environmental Commissioner, Ontario could avoid extracting up to 33 million tonnes of new aggregate a year if a similar recycling rate could be achieved province-wide.[2]

Q: Why is asphalt and concrete not being recycled in greater quantities?

A: Because many municipalities in Ontario prohibit or severely limit the use of recycled aggregate in road construction and other public works. And yet, collectively, municipalities are the largest consumers of aggregate in the province, using between 60 and 70 million tonnes a year.[3]

Q: Why are municipalities generally reluctant to support greater use of recycled aggregate in their construction projects?

A: It may be that they're unfamiliar with the facts about recycled aggregate, or lack experience.

As long as the recycled asphalt and concrete conform to Ontario Provincial Standard Specifications (OPSS), municipalities can be confident that these materials will meet all performance requirements and quality expectations. As responsible owners, they should also do their own quality assurance testing to confirm quality.

Municipalities should try to emulate the Ontario Ministry of Transportation which uses about 20% recycled materials in its highway construction.

According to a paper presented at the 2014 conference of the Transportation Association of Canada, "incorporating recycled concrete aggregate as a base/subbase into municipal roads can result in a quality product and long-term performance while promoting environmental stewardship and cost-effective solutions."[4]

Q: What is the impact of not recycling asphalt and concrete?

A: If not reused, these products end up being stockpiled in growing mountains of urban rubble, or dumped in landfill. That's a terrible waste of a precious resource.

Q: How would municipalities benefit by allowing more recycled aggregate to be used in their road construction and other infrastructure projects?

A: The benefits would be significant:

- By using more recycled aggregate, which is located close to major construction projects, the need to haul new aggregate from distant quarries is dramatically reduced. This lowers energy consumption and greenhouse gas emissions.

- Keeping aggregate out of the waste stream.

- Easing pressure to develop and expand quarry operations.

- Finding cost efficiencies and building more sustainable infrastructure.

Municipalities should be striving to use more recycled aggregate that meets OPSS specifications in their infrastructure projects.

Q: What is the OPSS and what do they specify?

A: The Ontario Provincial Standard Specifications (jointly administered by the Ontario Ministry of Transportation and the Municipal Engineers Association) set the standards for road construction and materials in the province.

OPSS 1010 allows aggregate used in road bases, shoulders and backfill to be composed of up to 100% recycled concrete and up to 30% recycled asphalt.

As well, hot mix asphalt can contain up to 30% recycled asphalt pavement.

Q: Do some municipalities in Ontario do better than others at recycling asphalt and concrete?

A: Yes, there are a few “Leaders”. Then there is a group in the middle. And finally a number who do poorly we call the “Laggards”.

While there is room for improvement even among the “Leaders”, the municipalities in the middle and especially the “Laggards” need to change their policies and practices so they support – rather than hamper – aggregate recycling. They need to be part of the solution rather than part of the problem.

Q: What is the industry doing to promote aggregate recycling?

A: A number of industry associations have come together to research this issue, and to undertake a public information campaign.

The Toronto and Area Road Builders Association (TARBA) spearheaded the initiative, and has been joined by: the Heavy Construction Association of Toronto (HCAT), Greater Toronto Sewer and Watermain Contractors Association (GTSWCA), Ontario Sewer and Watermain Construction Association (OSWCA), and Residential and Civil Construction Alliance of Ontario (RCCAO).

Q: What did the research entail?

A: Research was conducted in July and August, 2018. The independent study examined the aggregate recycling practices of large municipalities in Ontario. Data was obtained for five regional and 15 single or lower-tier municipalities. Each municipality and regional government was assessed and assigned a score (on a scale of 0 to 100).

Q: What are the results?

A: The “Leaders” – those scoring more than 50 in encouraging greater use of recycled aggregate – are Toronto, Cambridge, Markham, Kitchener, London, York Region, and Ottawa.

The “Middle Group” – those scoring between 41 and 50 – include Hamilton, Barrie, Waterloo, and Burlington.

The “Laggards” – the worst performers with scores of 40 and less – are Kingston, Windsor, Brampton, Halton Region, Niagara Region, Durham Region, Peel Region, Oshawa, and Mississauga.

Q: Why are you publishing these scores?

A: Because residents have a right to know whether their municipality is doing a good job – or not – of recycling asphalt and concrete.

Because local and regional governments should be transparent. Are they truly green when it comes to reusing asphalt and concrete, keeping these materials out of landfill, and reducing energy consumption and GHGs associated with trucking aggregate?

Our goal is to inform the public of the municipal “Leaders” and “Laggards” in recycling aggregate in Ontario. And it is our hope that where improvement is needed, residents will get involved by urging their elected representatives to take action; to adopt policies and practices that encourage the reuse of asphalt and concrete.

[1] Environmental Commissioner of Ontario, *Good Choices, Bad Choices*, 2017 Environmental Protection Report.
[2] Ibid.
[3] Ontario Ministry of Natural Resources, *State of the Aggregate Resource in Ontario Study, Consolidated Report,* 2010.
[4] *Quality Metrics for Recycled Concrete Aggregates in Municipal Roads*, presented at the Green Technologies – Innovation to Implementation and Evaluation Session, 2014 Conference of the Transportation Association of Canada. http://conf.tac-atc.ca/english/annualconference/tac2014/s-22/jagdat.pdf