

# WHY ASPHALT IS THE BETTER WAY TO PAVE.

THE  
FACTS



Ontario rides on approximately 150,000 centreline kilometers of paved roads. These roads are an integral part of the province's total infrastructure network. Our economy, public safety and environment depend on how we maintain this vital asset. Asphalt paving is the sustainable and superior way to build upon and maintain Ontario's roadways. It is one of the most versatile construction materials and is also used for airport runways, parking lots and driveways. There are many good reasons why 95 percent of Ontario's roads are paved with asphalt. Read more to find out why Ontario rides on asphalt.



Asphalt.

ONTARIO RIDES ON US



# THE GREEN SIDE OF ASPHALT **ASPHALT IS 100% RECYCLABLE**

Asphalt is North America’s most recycled material, more than aluminum, paper or plastic. Four out of every five tonnes of asphalt pavement removed for widening and resurfacing projects are reused. Reclaimed asphalt pavement (RAP) greatly reduces the amount of virgin asphalt cement needed to construct new roadways. Asphalt is easily recyclable because little additional energy is required to recapture the raw materials. When we pave with asphalt, we put aggregate and asphalt cement resources in “the bank” to be used by future generations.



## ENVIRONMENTAL APPLICATIONS

Asphalt pavements do not leach toxins. Drinking water reservoirs are often lined with asphalt and asphalt cement is used to line water pipes that supply potable municipal water. Landfills are frequently lined and capped with asphalt and some natural resource and wildlife agencies use asphalt pavement to line fish ponds.



### ASPHALT IS THE ECONOMICAL CHOICE

Asphalt pavement designs are tied directly to anticipated traffic volume and vehicle weight. Altogether, hot mix asphalt (HMA) pavements can handle the toughest traffic. Additionally, HMA pavements require only periodic surface restoration, providing a smooth, durable pavement for decades. Maintenance is quick, cost-effective and less disruptive than with Portland Cement Concrete (PCC) pavements.

## COMPETITIVE OPTIONS

Choosing asphalt for paving projects allows for more competitive bidding because of the ample number of asphalt plants and crews located in each Ontario region. Our large market share throughout the province makes materials easily accessible, in any location, which provides easy access for construction. We have the resources, expertise and the labour to get the job done right, at the right price.



### SPEED OF CONSTRUCTION ASPHALT CROSSES THE FINISH LINE FIRST

The cost of keeping motorists stuck in traffic during construction, known in the industry as user delay cost, should be considered in any analysis of lifecycle cost. When paving with asphalt, rehabilitation work can take place during off-peak hours, nights and weekends, allowing for quick, cost-effective maintenance. Choosing asphalt pavement saves everyone time; less time spent in traffic delays helps to increase overall productivity, which equals dollars saved.

Paving with asphalt significantly reduces the amount of time spent on road construction projects because it eliminates the need for the long curing period required when paving with PCC pavements.

# HOW IT WORKS & MAJOR ADVANTAGES

Stage construction of asphalt pavements allows for successive layers to be added as needed. This process provides a way to easily strengthen the pavement over time to handle increased load carrying capacity requirements.

Perpetual asphalt pavement combines the well-documented smoothness and safety advantages of asphalt with an advanced, multi-layer paving design process. With routine maintenance, perpetual pavement extends the life of a roadway to half a century or more. Pavements designed and constructed in this manner will last for generations.



## **PUBLIC SAFETY** ASPHALT IS THE SAFE CHOICE

One hundred percent of Ontario experiences inclement weather. This fact makes skid resistance on roads paramount to public safety. High quality aggregate in surface course mixes for highway applications play a vital role in making HMA the best choice when considering the importance of tire grip in relation to road safety.

New porous asphalt mixes disperse surface water, which reduce blinding spray and help to decrease the risk of aquaplaning.

The contrast in colour between asphalt pavement and road line markings provides drivers with better road visibility in any weather condition, day or night.



## **UTILITY CUTS** ASPHALT IS THE FLEXIBLE CHOICE

In municipal environments, utility cuts are inevitable. Asphalt pavements are the flexible choice because they can be easily opened and quickly reinstated, without damaging the integrity of the road.

## **SNOW REMOVAL & FROST DAMAGE**

### **ASPHALT WINS THE WINTER CHALLENGE**

Snow removal is not problematic on asphalt pavements. Unlike concrete pavements, there are no joints for plough blades to catch on when ploughing asphalt pavements. Additionally, asphalt pavements tend to move less in winter conditions due to the greater thickness of nonfrost susceptible material beneath them.

Snow also melts faster on asphalt and the pavement surface is not damaged by ice-melting chemicals.





## SMOOTHNESS ASPHALT IS THE SMOOTH OPERATOR

Smooth, flexible pavements constructed from HMA stand up to the punishment of heavy trucks and other vehicles, significantly reducing initial and total costs over the entire life cycle of a road. At the same time, the smoothness of asphalt pavements reduces wear and tear on all vehicles, saving on maintenance costs.

Smoothness has an impact on fuel economy. In 2007, Applied Research Associates reviewed a database from Ontario's Ministry of Transportation containing over 35 years' worth of biannual pavement condition surveys. Their report found that asphalt pavements are much smoother initially and remain smoother over their lifetime when compared to concrete pavements.<sup>1</sup> According to the US Federal Highway Administration (FHWA), "Roughness as measured by [International Roughness Index] IRI generally has the greatest effect on fuel economy for typical ranges of IRI on U.S. highway networks."<sup>2</sup> Tests from the FHWA's Westrack, located on the grounds of the Nevada Automotive Test Center (NATC), some 60 km southeast of Reno, measured the relationship between smooth pavements and improved fuel economy. In the WesTrack tests, smoother pavements lead to lower fuel consumption by 4.5 percent.<sup>3</sup> Asphalt pavements start out smooth and stay smooth over the long haul.



## NOISE ASPHALT IS THE QUIET PAVEMENT

Asphalt is the strong quiet type. Highway noise is greatly reduced when paved with asphalt. Paving with asphalt also reduces the need to build expensive sound absorbing walls. Typically, asphalt pavements are 3 decibels quieter than concrete pavement which is like moving the sound source twice as far away. According to a 2013 study by the Virginia Department of Transportation (VDOT) the use of quiet asphalt technology reduced tire-pavement noise by 5 decibels.<sup>4</sup> Go to [www.quietpavement.com](http://www.quietpavement.com) for more information about the noise reduction qualities of asphalt pavements.

## A LONG HISTORY OF SUCCESS

The first record of asphalt being used in road building occurred in ancient Babylon in 625 B.C. Centuries later, in 1915, Canada's first asphalt paved roads were built in Ottawa, Ontario and Edmonton, Jasper and Camrose, Alberta. Throughout the millennia, asphalt has paved the way for better roads and infrastructure for civilizations across the globe. Asphalt's long record of success makes it the time-tested, wise choice for paving.

### Sources

1. Applied Research Associates, Inc., "Life-Cycle Cost 2016 Update", Submitted to Ministry of Transportation of Ontario, Ontario Hot Mix Producers Association and Cement Association of Canada, January 2007.
2. Van Dam, T.J., J.T. Harvey, S.T. Muench, K.D. Smith, M.B. Snyder, I.L. Al-Qadi, H. Ozer, J. Meijer, P.V. Ram, J.R. Roesler, & A. Kendall (2015). Towards Sustainable Pavement Systems: A Reference Document. Report FHWA-HIF-15-002. Federal Highway Administration, Washington, DC.
3. Sime, M., S.C. Ashmore, and S. Alavi (2000). Tech Brief: WesTrack Track Roughness, Fuel Consumption, and Maintenance Costs (FHWA-RD-00-052). Federal Highway Administration, McLean, Virginia.
4. McGhee, K.K. (2013). Virginia Quiet Pavement Implementation Program: Second Interim Report. Virginia Department of Transportation, Richmond, Virginia.

### For more information, contact us:

Ontario Asphalt Pavement Council, A Council of the Ontario Road Builders' Association  
365 Brunel Road, Suite 1, Mississauga, ON L4Z 1Z5  
Tel. 905-507-1107 · Fax. 905-890-8122 · [www.onasphalt.org](http://www.onasphalt.org)

