Common Questions and Answers
Asphalt Plant (April 1 - r3)

Q: Who is Scotian Materials Limited?

A: Scotian Materials Limited is a Nova Scotia company with its head office in Burnside Park that owns, operates and manages quarries in Nova Scotia.

Q: What is it you are asking to do?

A: We are asking to amend the Planning District 1 and 3 Municipal Planning Strategy (MPS) and Land Use By-law (LUB) to allow our mobile asphalt plant to be operated in our already reviewed and approved quarry.

Q: How is this different from a rezoning?

A: A rezoning would allow a number of industrial uses on the property. We do not support this or think this is an appropriate location for many industrial uses. By applying for a site specific Municipal Planning Strategy amendment to allow only an asphalt plant in the existing quarry we can ensure no other industrial uses are permitted.

Q: Are you planning for a landfill?

A: No. Our application is only to permit an asphalt plant to operate in our existing approved quarry. The MPS amendment would not allow for any other uses such as a landfill.

Q: Do you require a Municipal or Provincial Approval?

A: We will require both but for different reasons. The Province through its industrial approval process regulates and permits the actual asphalt plant and sets out requirements in the permit for site location including zoning compliance. The municipality regulates land use and zoning compliance and will decide on the Municipal Planning Strategy amendment request.
Q: Where is the property located?

A: The property is located on PID #40042822, north of Highway 103 and west of Little Indian Lake, Head of St. Margarets Bay on lands that are zoned Mixed Resource 2. See diagram below.

Q: Why are you choosing this location?

A: We chose this location for a number of reasons. First, it makes sense to locate asphalt plants near or in aggregate quarries as aggregate is the main ingredient in asphalt. This location is also more than two kilometres outside the separation requirements for an asphalt plant from residential uses. Finally, this location is adjacent to a 100 series highway and interchange allowing for safe and efficient access.
Q: Why don’t you set up in an area already zoned for an asphalt plant?

A: We have found areas that are zoned to permit an asphalt plant; however, these locations do not have available land or are unsuitable because they would not meet the stringent requirements for separation distances required in the provincial asphalt plant approval.

Q: Will this be a permanent asphalt plant?

A: No, our plants are mobile plants and are meant to be moved around. Although the planning amendment will be a permanent change allowing an asphalt plant, the plant will only be set up when a job is being done in the area.

Q: What are the required separation distances from other uses for an asphalt plant?

A: Our existing provincial permit for operating the asphalt plant from Nova Scotia Environment requires the following separation distances be achieved:

6. **Separation Distances**

   a) The Facility, loading, unloading and discharge areas of aggregate stockpiles shall not be located within the following minimum separation distances:

   (i) 360 metres from any area zoned for residential, commercial, park or recreational use

   (ii) 90 metres from any residential property boundary

   (iii) 30 metres from any surface watercourse

   (iv) 90 metres from any domestic water supply

   (v) 30 metres from any other property boundary

   (vi) 30 metres from any common or public highway

   b) No settling pond shall be located closer than:

   (i) 30 metres from any surface watercourse

   (ii) 90 metres from any domestic water supply

   (iii) 30 metres from any other property boundary
Q: How close are you to Westwood Hills and other residential communities?

A: We will be located more than 2.5 kilometres from the nearest residential use in Westwood Hills, a substantial distance from the provincial regulation requirement of a 360 metre separation from residentially zoned land. See map below.

Q: I heard about a recent land exchange between the Province and Scotian Materials. Will this affect the application?

A: Scotian Materials was proceeding with this application regardless of the land exchange. The mobile asphalt plant and location proposed remain the same and would proceed regardless of the land exchange.
Q: Don’t we already have enough asphalt plants?

A: The existing permanent asphalt plants near the urban core are all on the east side of the Halifax harbour and are located in Dartmouth and Bedford. Having the ability to set up a mobile asphalt plant in our quarry in the western part of Halifax Regional Municipality provides the ability to put product close to market and reduces transportation distances and the associated impact to the environment and road infrastructure.

Q: Where are the existing asphalt plants located in HRM?

A: There are a number of asphalt plants located in HRM that are located in urban areas including Bedford and Dartmouth. The drawing below shows the location of the plants in HRM.
Q: Who regulates asphalt plants?

A: Asphalt plants are regulated by the provincial government through the Nova Scotia Department of Environment’s industrial approval process.

Q: Does your asphalt plant have a permit already?

A: Yes, we have two plants that have permits to operate in Nova Scotia. A copy of the permit can be viewed on our website at www.scotianmaterials.ca

Q: What type of asphalt plant are you proposing to set up?

A: We would be setting up a 400 tonne per hour ALMIX Uni-Flow Drum Mixer with a baghouse that collects particulate emissions and returns them to the drum mixer preventing release to the environment. See the illustration below.
Q: How does the asphalt plant work?

A: Several aggregate types are proportioned by the calibrated belt feeders on to a common collecting belt. These materials are then conveyed to a 5' x 10' vibrating screen located over the incline truss conveyor. The incline truss conveyor transfers the material to a high speed "slinger conveyer" which throws the material into the drum. An aggregate belt scale located on the incline truss conveyer determines the rate (weight) of combined aggregate fed into the uni-flow drum mixer. The weigh scale generates a signal which is sent via a blending computer to the A.C. drives on the asphalt pump system. Liquid asphalt is usually introduced at the rate of 5-7% based on the weight of the aggregate.

The uni-flow drum mixer is equipped with a heavy oil burner to dry the aggregate. The dry aggregate continues moving down the drum, past the burner nose. At this point returned baghouse fines are introduced. The combined dry aggregate and baghouse fines move thru a short preheat zone binging the product up to temperature and allowing the moisture to be driven off. The liquid asphalt cement is injected and the combined product moves through the mixing zone to be blended together.

This final product is conveyed from the drum mixer via a drag conveyor to a holding silo for discharge into trucks.

The emissions from the drying process are pulled by an exhaust fan through a baghouse with an air to cloth ratio of 4.9 to 1. The captured aggregate dust is returned to the drum mixer via enclosed "screw type" conveyors for use in the final product.
Q: Do you have to test and report on the plant operations?

A: Yes, as a condition of our permit, Scotian Materials must monitor and report to the Nova Scotian Department of Environment on several aspects of the operation at various stages. Monitoring and reporting takes place at such stages as prior to set up, during operation and at the request of the Nova Scotia Department of Environment. Submissions include Erosion and Sedimentation Controls, Surface Water, Separation Distances, Sound Levels, Air and Particulate Emissions and Odour Control.

Q: What is arsenic and does your operation put me at risk for exposure?

A: Arsenic is a metalloid that is most often found in compounds with sulphur and is present naturally in the aquatic and terrestrial environments from weathering and erosion of rock and soil and can also be found in fuels.

Emissions of arsenic related to asphalt plants are associated with fuel combustion or from the aggregate during the drying process.

The quarry is not in an area of arsenic-enriched bedrock and we would not use fuels with arsenic, so it is unlikely that arsenic would be present in any significant amount. Any trace amounts of arsenic that may be present would be captured by the baghouse.

Q: What is bitumen and does it put me at risk of exposure to polycyclic aromatic hydrocarbons (PAH's)?

A: Asphalt or bitumen is a product that is used as a binder in asphalt mixes. The primary source of asphalt/bitumen originates or is derived from petroleum crude oil. Subsequently, it is submitted to refinery distillation which yields a residual fraction containing bitumen. Bitumen contains very low concentrations of polycyclic aromatic hydrocarbons (PAH’s) and is not considered to be a risk of exposure to the community.

Q: What is benzene and will your operation put me at risk of exposure?

A: Benzene is an organic compound found naturally in the environment in low concentrations and a natural component of many products including petroleum.
Benzene is used in Canada in a variety of ways that result in it entering the environment. The major source of benzene release to the environment, according to Environment Canada, is from vehicle emissions accounting for nearly 76% of total atmospheric releases. Benzene will be present in the operation through the combustion process of burning fuels in trucks, vehicles and the mobile asphalt plant burners. The primary human exposure to benzene is indoor air.

Another major source of benzene in indoor air is from cigarette smoke as well as from other household products. Benzene does not persist in water or soil because it biodegrades and volatilizes rapidly to the atmosphere. It also does not persist in the atmosphere because it undergoes rapid photo-oxidation.

Federal regulations that are in place to manage the risk associated with releases of benzene include “On-Road Vehicle and Engine Emission Regulations” and “Benzene in Gasoline Regulations”.

Q: What measures are taken to protect the environment from spills?

A: Although spills are unlikely and rare, the possible sources would be rejected asphalt, liquid asphalt and fuel. Scotian Materials must follow strict provincial regulations to manage any risk and respond to any incidents.

Under our permit, all rejected asphalt must be disposed of in a manner acceptable to the Nova Scotia Department of Environment and a plan must be submitted for their approval prior to operations. Our plan is to send all rejected asphalt to an authorized C&D recycling location as we have on past operations.

Liquid asphalt and fuel are maintained at specific site locations in accordance with the provincial Petroleum Storage Regulations. Maintaining a specific location allows them to be monitored and dealt with in the unlikely event of a spill. If a spill did occur it would need to be reported as required by the provincial Environment Act and the provincial Emergency Spill Regulations and cleaned up immediately. Scotian Materials has an emergency spill response procedure that is overseen by an independent consultant.
Q: What are the emissions from the plant and are they tested?

A: The emission from the plant is mainly steam. Under our provincial permit, however, we will undertake an initial stack test to demonstrate that we achieve the standards as set out by the Nova Scotia Department of Environment. The plant, which contains a baghouse, will be only operated according to the manufacturer’s instructions and kept in good maintenance and repair. Additional stack tests will be conducted at intervals required by the Nova Scotia Department of Environment. The emissions that are tested for can be seen in the chart below.

<table>
<thead>
<tr>
<th>CONTAMINANT</th>
<th>AVERAGING PERIOD</th>
<th>MAXIMUM PERMISSIBLE GROUND LEVEL CONCENTRATION</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>µg/m³</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1 hour</td>
<td>34 600</td>
</tr>
<tr>
<td></td>
<td>8 hours</td>
<td>12 700</td>
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<tr>
<td>Hydrogen Sulphide (H₂S)</td>
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<td>42</td>
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<tr>
<td></td>
<td>24 hours</td>
<td>8</td>
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<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>1 hour</td>
<td>400</td>
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<td></td>
<td>Annual</td>
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<tr>
<td>Ozone (O₃)</td>
<td>1 hour</td>
<td>160</td>
</tr>
<tr>
<td>Sulphur Dioxide (SO₂)</td>
<td>1 hour</td>
<td>900</td>
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<td></td>
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<td>300</td>
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<tr>
<td></td>
<td>Annual</td>
<td>60</td>
</tr>
<tr>
<td>Total Suspended Particle (TSP)</td>
<td>24 hours</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>70*</td>
</tr>
</tbody>
</table>

* - Geometric mean
µg/m³ - micrograms per cubic metre
pphm - parts per hundred million

Q: Will the emission be a concern in Westwood Hills?

A: Because of the distance from our site to Westwood Hills, emissions will not reach that community. Particulate matter will be monitored for acceptable concentrations. The graph below shows the impact of particulate matter over the distance from the site.
Q: Will I be able to smell odours from the plant?

A: Odour from the plant will not be detectible in the closest residential communities. In the unlikely event that stack emissions do not meet the standards set by the Nova Scotia Department of Environment or odour is deemed excessive by that Department, we will take any and all actions to come into compliance, or else we will not be able to operate.

Q: Will I be able to hear the plant running?

A: You will not be able to hear the plant running from the nearest residential community. Noise levels were predicted using an acoustic modelling program (CadnaA). Information used in the model included local terrain, sound power levels from a typical asphalt plant and meteorological conditions.

Results of the model indicate that the average predicted noise levels beyond 2 km of the asphalt plant will be < 20 dBA and that the operation of a typical asphalt plant would
meet Nova Scotia Department of Environment Noise Limits (< 65 dBA) at the site boundaries.

For comparison, noise level in a quiet library is usually 20 to 30 dBA and general conversation levels are 50 to 60 dBA.

The figure below illustrates the predicted noise levels.

Q: Will the asphalt plant have a negative impact on the lakes, streams or watershed?

A: The location chosen exceeds all required setbacks ensuring the protection of watercourses and wetlands. As an additional precaution, Scotian Materials, as a condition
of its quarry permit, is required to take baseline data for water quality and report that information and subsequent test data to the Nova Scotia Department of Environment. Baseline testing has been completed.

The permit for the asphalt plant also includes requirements for water quality testing and reporting to the Nova Scotia Department of Environment independent of that of the quarry. As the asphalt plant is proposed to be located in the quarry, the baseline data would be considered the same.

Q: Will the asphalt plant impact the health of children at the daycare and school?

A: The location of the plant is sufficiently located away from residential use, schools and daycares and exceeds the minimum separation distance by more than 7 times.

In addition to the extensive separation distance from these uses, the plant is monitored and reports on the operations, including the emissions, are reported to the Nova Scotia Department of Environment to ensure that there is no impact to the environment or health and safety of surrounding communities.

Q: I am concerned that this proposal will negatively impact our property values. Can you comment?

A: There is no evidence to suggest that this operation would have a negative impact on property value as it exceeds the minimum required separation distance by more than 7 times. Due to the significant distance from existing residential uses, it is unlikely that there would be an impact.

We have not witnessed any negative impact to property values near other asphalt plants in Halifax Regional Municipality, which operate much closer to residential neighbourhoods than our site.

Q: Who do we contact if we have an issue or concern?

A: There are multiple avenues for you to report a concern but we would recommend the following steps be followed. The first contact would be directly to Scotian Materials at 902-481-9800. If the issue is not resolved you can report it to the Community Liaison...
Committee that we have created at 902-482-4575. Finally, or at anytime, you can report your concerns to the Nova Scotia Environment at 902-424-7773.

Q: Where will truck traffic access Highway 103?

A: All traffic to and from the asphalt plant will be via the new Ingram Port Interchange and an access road from there to the quarry. See map below.