

## Plastic Research In Action (PRIA) Asphalt project on Alexander First Nation



The asphalt project is one of several plastic recycling applied research projects being conducted through the Plastics Research in Action initiative between Inter Pipeline and NAIT. The primary objective of this project is to test, validate and demonstrate the blending of post-consumer plastics into asphalts for the Alberta climatic conditions. This technology convert's plastic waste to a wax product for blending into asphalt has shown favourable results when applied to roadways in warmer climates, so now they would like to test against Alberta's harsh climate.

The post-consumer recycled content (PCR) (plastic) that is being incorporated into the asphalt comes from material that is made from the items that consumers recycle every day, like recycled plastic bags, plastic bottles, etc. Post-consumer plastics are typically collected by recycling programs and shipped to recycling facilities to be sorted into bales, based on the material. The bales are then melted or ground into small pellets and used to mold into new items.

## Project Timeline

- The asphalt project started June 1, 2021 and is expected to be complete October 31, 2023
- There are three phases to the project:
  - Phase 1 - Development and testing of a portfolio of bench-scale waxes produced from post-consumer plastics with asphalt samples from Alberta
  - Phase 2 - Testing of suitable wax candidate prototypes with asphalt to determine quality and suitability for Alberta roadways and climate conditions
  - Phase 3 - Field demonstration of the modified asphalt. This will involve producing the modified asphalt for field demonstration and ongoing monitoring of the site(s)
- Phase 1 and 2 are complete; laying of the modified asphalt is taking place at the end of June 2022.
- We expect to have results from the field trials in 12-18 months.
- There will be 4 field trial sites:
  - Inter Pipeline's Heartland Petrochemical complex (control and modified asphalt sites)
  - Alexander First Nation (modified asphalt sites)
  - Strathcona county (modified asphalt site)
  - Sturgeon county (modified asphalt site)

Across the four sites, we diverted 4,211 kg (4.2 tonnes) of post-consumer plastic waste, equivalent to approximately 770,000 plastic bags or about 450,000 plastic water bottles, from the landfill.

The project is in collaboration with GreenMantra Technologies, McAsphalt Industries Limited, Strathcona County and Sturgeon County.