The Michigan Department of Transportation (MDOT) continues to work with road construction industries and its many other customers to develop and enhance alternative road surface materials for road construction projects as required by Public Act 268 of 2016, Section 660. MDOT has a long and rich history of looking to incorporate new materials, recycled materials, and new processes into the department’s road construction portfolio, and has been a leader in the use of recycled asphalt in pavements for the last 30 years. In accordance with the reporting requirements, the following items demonstrate the efforts of the department in FY 2016.

1. The legislature encourages the department to examine the use of alternative road surface materials, including recycled materials, and to develop criteria and specifications for their use in both department-managed and contracted projects.

MDOT continues to examine the use of alternative road surface materials, including recycled materials. Currently, MDOT has permissive specifications for the use of Reclaimed Asphalt Pavement (RAP), Recycled Asphalt Shingles (RAS), recycled tire rubber, and recycled concrete pavement, meaning these materials are allowed on a case-by-case basis as reviewed by the department. In addition, MDOT continues to monitor a recycled tire project built in 2013 and a Hot-in-Place Recycled project built in 2015. Hot-in-Place is a process that heats up existing pavement, removes the top layer, mixes in emulsion additives, and immediately places the recycled asphalt.

2. The department shall report on efforts taken to implement this section. The report shall include descriptions of specific materials evaluated, evaluation methods, and results of specific field or laboratory tests. The department shall complete and submit the report to the state budget director, the house and senate appropriations subcommittees on transportation, and the house and senate fiscal agencies on or before March 1 of each year.

   a. Crumb Rubber/Recycled Tire Rubber: MDOT developed a permissive specification for use of recycled tire rubber. The specification included modifications to address performance issues identified on Local Agency projects and MDOT’s 2013 pilot project. Premature stressing is believed to be related to modifications or waiver to the PG Binder tests. MDOT specifications disallow altering or waiving of the AASHTO PG Binder tests. Acceptance on future projects incorporating recycled tire rubber will be based on a combination of field inspection and testing.

In 2016 Michigan hosted the 7th Rubber Modified Asphalt Conference in Ann Arbor. MDOT employees participated in the planning of the event and spoke at the conference. Topics included origins of the technology, current usage and costs, and case studies from various transportation departments. The information presented will assist Michigan in future efforts to incorporate recycled tires into the roadway.

MDOT has increased partnering efforts with the Department of Environmental Quality (DEQ). MDOT is also assisting in the review of applications for DEQ recycled tire grants.
b. **Reclaimed Asphalt Pavement (RAP)/Recycled Asphalt Shingles (RAS):** MDOT continues to base acceptance of asphalt mixes, including those containing RAP/RAS, on a combination of testing and field inspection.

MDOT added an allowance for RAP on gap-graded superpave projects. Previously, this mix did not allow for the use of RAP.

c. **Hot-in-Place Recycling:** This pilot project will continue to be monitored for performance to determine if this is a viable fix for MDOT to use in the future, and if any changes need to be made to the specification for future projects. Early indications are that the road has a significant amount of reflective cracking, but the pavement is holding together.