



2016 Pavement Condition Report

Keeping New York Moving

Daily, people travel more than 200 million miles on New York State owned highways, including trips through and within New York State. This includes trips to the grocery store, to the doctor, to the park and to work. It includes trucks carrying goods from farm to market and from Buffalo to Seattle. New York's highways are critical to everything we do and integral to our way of life. They support our health, education, leisure and economy.

The New York State Department of Transportation (NYSDOT) is responsible for maintaining and operating the 17,000 miles of state-owned highways in New York State. By using advanced asset management strategies, modern data collection technologies and sophisticated modeling techniques, the Department optimizes investments to best maintain this pavement network and satisfy the many transportation needs.

Within an overarching emphasis on safety and accessibility, NYSDOT's pavement management strategy is guided by four key principles. First, preserve what we have by using low-cost treatments that slow the rate of deterioration and push the need for more expensive repairs into the future. Second, consider impacts to the overall transportation system to ensure that work done on individual projects is coordinated with work done elsewhere on the pavement system. Third, maximize the benefit of every investment by ensuring that the right treatment is performed at the right time and by emphasizing work that benefits the most travelers at the lowest cost. Fourth, consider and include the environment and social benefits of the work when developing projects to enhance the economy and quality of life for all New Yorkers.

Pavement Condition Highlights

This report includes 2016 pavement program funding, construction accomplishments and pavement conditions.

Nearly **64%** of the state highway system is in excellent or good condition.

84% of vehicle travel was on smooth or fairly smooth pavement.

More than **1,687 lane miles** of pavement were treated during 2016.

In this report ...

- Pg. 2 The Highway System
- Pg. 3 Funding
- Pg. 4 Conditions
- Pg. 6 Need for work



Highway Systems in New York

The highways in New York are grouped into categories based on how each highway serves its users. The broadest category of highways is the NYS Touring Route System, which includes 43,496 lane miles of roads. These roads include Interstates, US Routes, NY State Routes, most Parkways and some local roads. The NYS Touring Route System connects the cities, towns and villages in the state with other regions of the state and with other states.

The National Highway System

The National Highway System (NHS) has the most important roads for interregional travel and for access to other transportation facilities, such as airports, train stations and shipping ports. The Federal Highway Administration (FHWA) is particularly interested in roads designated for the NHS because they have high national significance for interregional travel and are a critical part of the national defense system.

Because of their national significance, highways on the NHS typically receive higher priority for maintenance and repair. About 55 percent of the Touring Route System is part of the NHS.

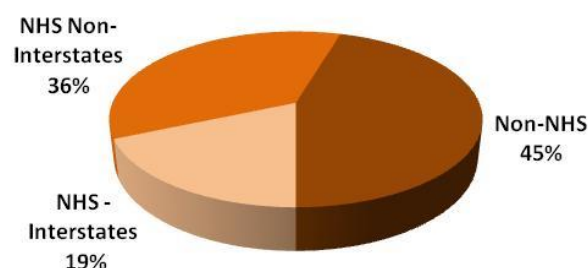
Type of Pavement

There are three types of pavement on the NYS Touring Route System: asphalt, concrete and asphalt over concrete (also called “composite” pavements). There are no unpaved or gravel roads on the NYS Touring Route System. Today, most roadways on the NYS Touring Route System are composite pavements as illustrated in the pie chart to the right.

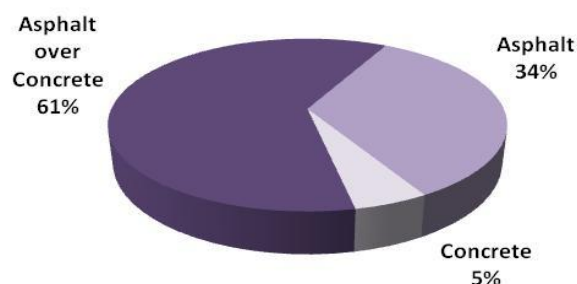
Functional Class

Functional class is another way to group or categorize roads and highways, in this case by the type of service and access that they are intended to provide. Examples include interstates, arterials,

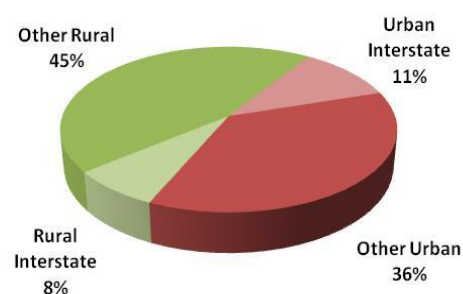
2016 NYS Touring Route by Highway Classification (Lane Miles)



2016 NYS Touring Route by Type of Pavement



2016 NYS Touring Route by Functional Class



collectors and local roads; distinguished between urban and rural environments. About 47 percent of the NYS Touring Route System has an urban functional classification.

Jurisdiction

Many entities contribute to maintenance of the NYS Touring Route System. These include NYSDOT, county, town and village governments, and other independent authorities. NYSDOT maintains approximately 89 percent of the NYS Touring Route System.

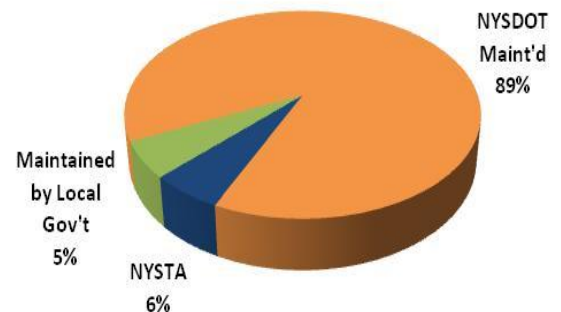
Unless otherwise identified, the charts and information in the remainder of this report refer to the NYSDOT-maintained portions of the system.

Pavement Program and Funding

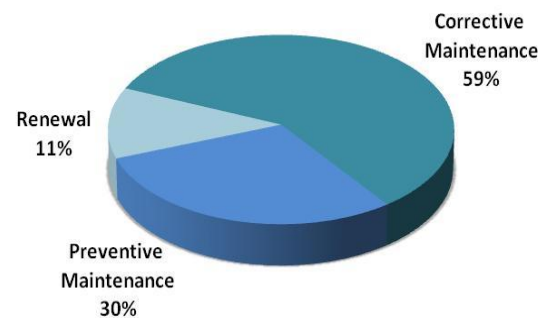
The pavement program includes three primary categories of work treatments: preventive maintenance, corrective maintenance and renewal. Preventive maintenance treatments are the least expensive and can cover many lane miles of pavement for the money spent. These include several types of thin treatments that are a bit like seal-coating your driveway. They help the pavement last longer. Corrective maintenance treatments are used to address more significant pavement distresses, like moderate cracking or rutting, and are typically costlier. Renewal projects usually involve major rehabilitation or reconstruction of the pavement and may include improvements to enhance safety and mobility. Renewal projects are typically the most expensive and address fewer lane miles of pavement for the investment made, but are necessary to address more serious pavement distresses.

In calendar year 2016, approximately \$555 million was allocated for Highway projects. Of the allocation, \$325 million focused primarily on pavement maintenance and renewal, and another \$230 million included pavement improvements to enhance safety and mobility. Not all the work associated with the allocation was completed in 2016. The paving accomplishments shown in this report only reflect the work completed in 2016.

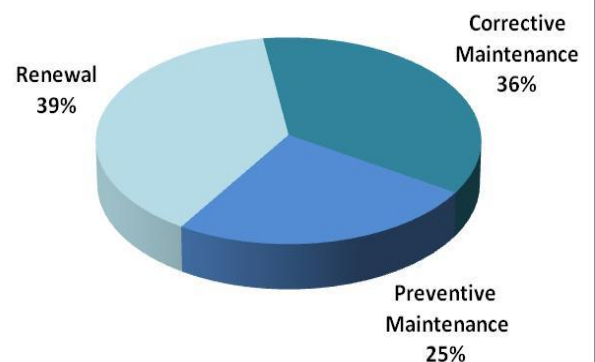
2016 NYS Touring Route by Jurisdiction
(43,496 Lane Miles)



2016 Paving Accomplishments
(1,687 Lane Miles)

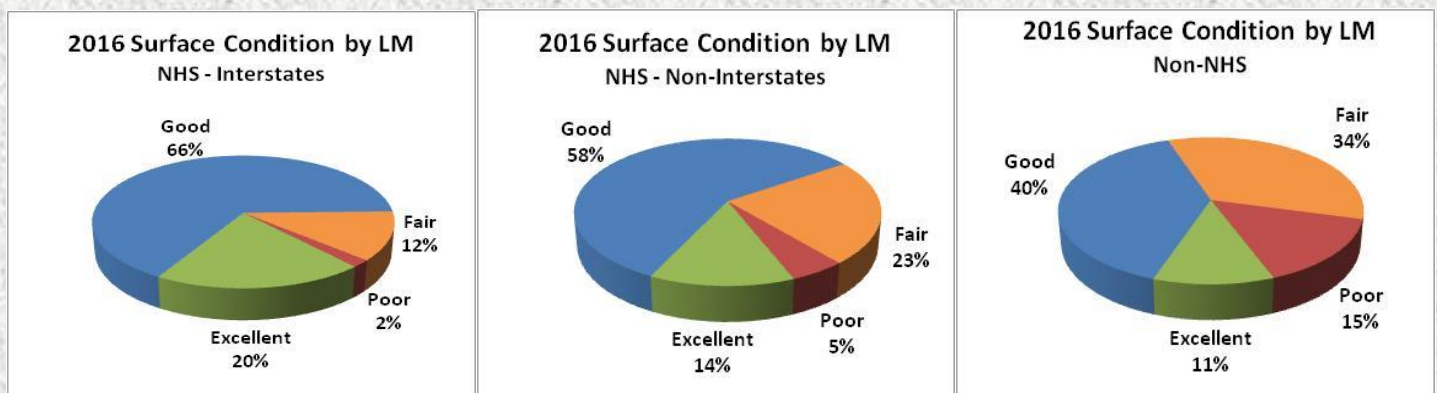
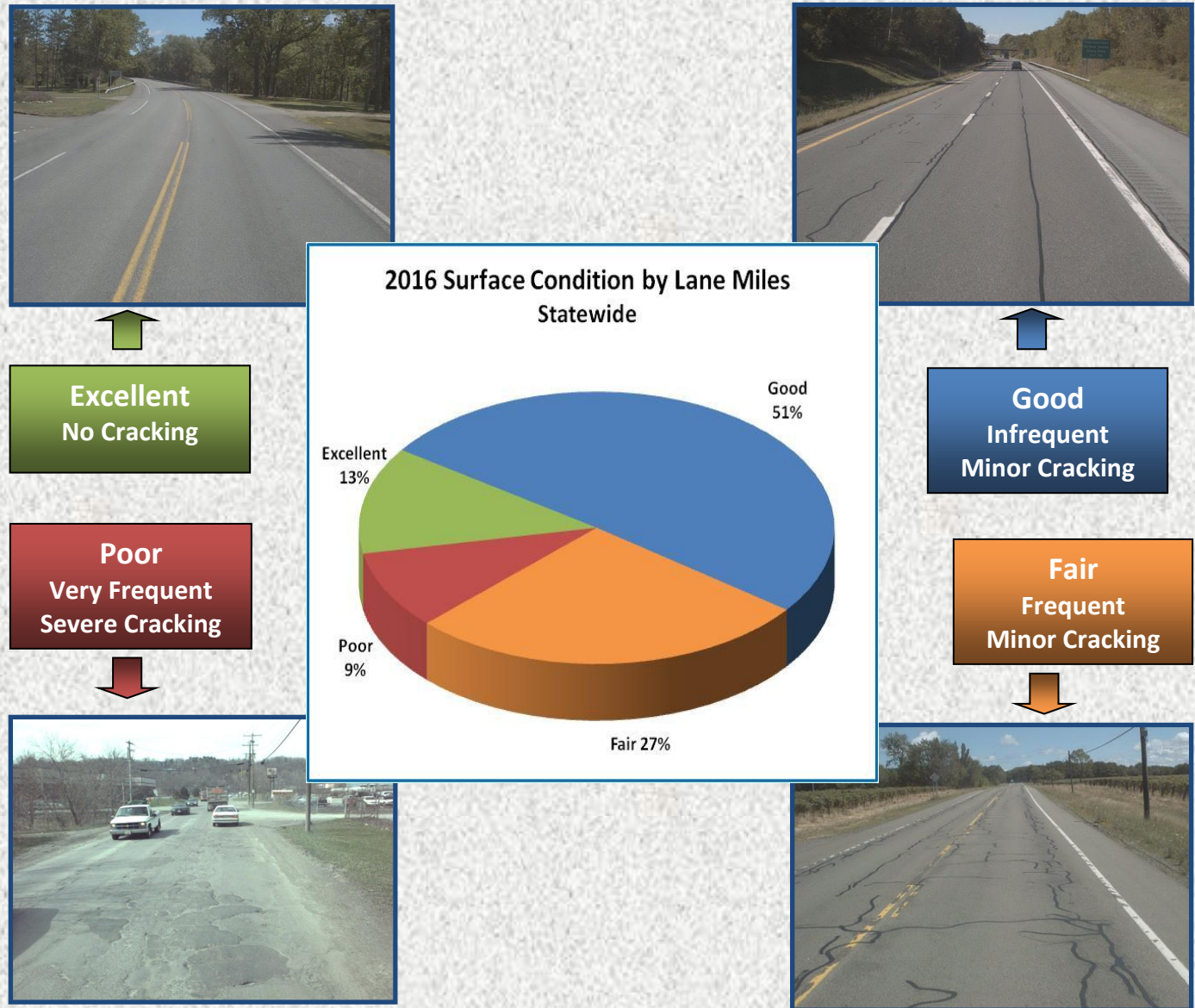


2016 Paving Program (\$325M)

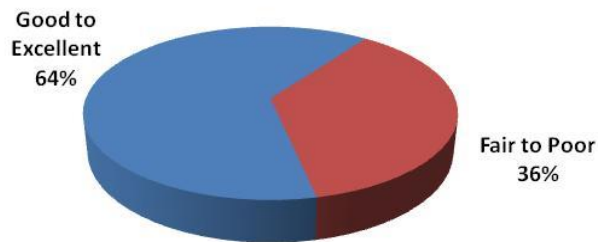


Pavement Condition Measures

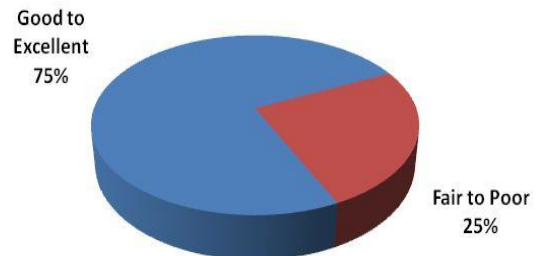
Identifying the places where work is needed on pavements and what type of work should be done is based on a surface rating system that describes the amount, severity and type of cracks on the surface of the pavement. In addition, a measurement of ride quality is used to identify locations with rough riding pavement. The following charts show current pavement conditions.



**2016 Surface Condition by Lane Miles
Statewide**



**2016 Surface Condition by Vehicle Travel
Statewide**

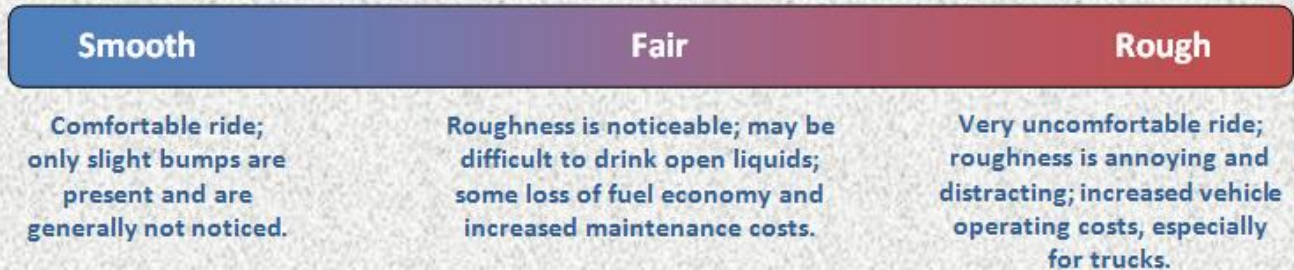


When evaluating the condition of a pavement by the amount of cracking on the surface, 36 percent of the lane miles are Fair or Poor. Those Fair and Poor pavements carry approximately 25 percent of the vehicle miles traveled.

Ride Quality

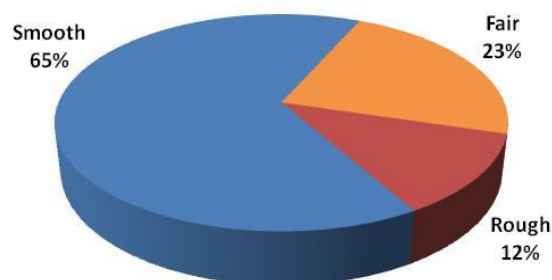
Pavement ride quality is a good indicator of customer satisfaction with the quality and performance of a pavement. This is because most travelers will notice how rough or smooth a pavement is to ride on and not necessarily the amount of cracks on the surface.

Pavement Ride Quality

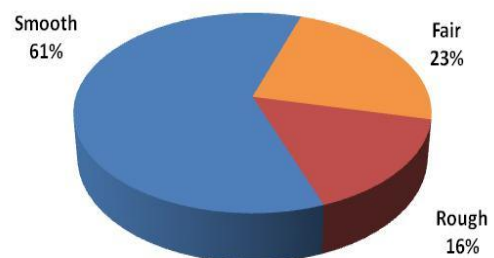


Regarding ride quality, about 12 percent of the highway system lane miles have a Rough ride quality. Those pavements carry about 16 percent of the vehicle miles traveled.

2016 Ride Quality by Lane Miles



2016 Ride Quality by Vehicle Travel



What happens if a road is not maintained?

If a pavement is left untreated, it will deteriorate to a point where normal travel is impaired. The pavement surface will become so rough that vehicles will be forced to travel at slower speeds. Snowplows can have difficulty effectively clearing the pavement of snow and ice.

The pavement structure shown here is so badly damaged that it needs major rehabilitation work or complete reconstruction. This costs at least twice as much over the life of the pavement compared to regular preventive maintenance to keep it in good condition. Currently, there are 269 lane miles on the State Maintained System that are beyond repair and require reconstruction, a slight increase from 2015.

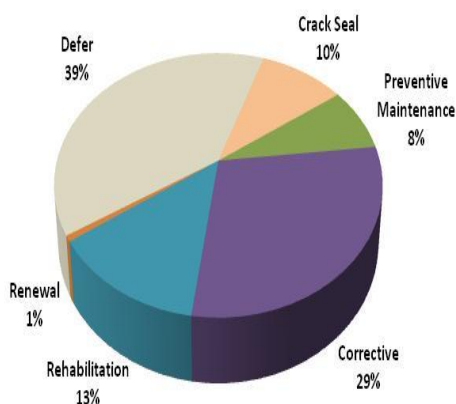


New York's Pavement Needs

The work needed to bring a pavement back to a State of Good Repair depends on the types and severity of cracking and other distresses in a pavement. A pavement with little cracking requires maintenance work, while a pavement with a number of potholes and large cracks may require costly reconstruction. The pie chart below shows the general categories of treatments and the amount of each that is required to address the current pavement needs on the state-maintained highway system. The current total cost for this work, if undertaken today, is \$5.5 billion; however, the work will be extended as part of a long-term pavement strategy.

Pavements relatively free of cracking and in Good condition fall into the *Monitor* category. These pavements do not require work today, but are monitored to determine the optimal time for treatment.

2016 State Maintained Treatment Needs by Category of Work



Preventive Maintenance typically is done to pavements in Good condition with only minor amounts of cracking. Preventive treatment at this stage extends the life of the pavement by keeping water out, refreshing the riding surface, and slowing the rate of deterioration.

Corrective treatments repair pavement with more frequent cracking, areas of rutting, and high roughness. Treatment usually involves removing the top layer of the pavement and replacing it with new material.

Rehabilitation treatments are applied to pavements in Fair condition. These treatments cost more and usually involve adding multiple layers to the pavement to increase the strength.

Reconstruction of a pavement that has deteriorated to Poor condition is very expensive. The structure of a poor pavement is usually damaged beyond repair due to the infiltration of water. The old pavement, including the layers under the pavement, must be replaced. The expense and inconvenience of having to reconstruct a pavement can be delayed by regular maintenance.