

Pavement Report 2013



New York State Department of Transportation

Joan McDonald, Commissioner

Andrew M. Cuomo, Governor

Keeping New York Moving

The New York State Department of Transportation is responsible for maintaining and operating the 17,000 miles of state-owned highways in New York State. By using advanced management strategies and sophisticated modeling techniques, the Department is striving to deliver the best transportation system possible.

Investment decisions continue to be guided by four key principles woven together by an overarching theme of continually improving the safety and accessibility of the highway system.

First, preserve what we have by using low-cost treatments that slow the rate of deterioration. This helps pavements last longer and delays more expensive repairs into the future. Second, consider impacts to the overall transportation system, not just at the location of a specific project. Work accomplished by one project is not done in isolation but in concert with other work on the pavement system. Third, maximize the benefit of every investment. Pavement repairs are performed at the optimum time by waiting until the end of the remaining service life of the prior treatment before initiating the next repair action. Priority also is given to higher traffic roads to benefit the greatest number of users. Fourth, consider and include the environment and social benefits of the work when developing projects. Good roads are an important foundation for the economy and quality of life for the users of the highway system.

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Pavement Condition Highlights

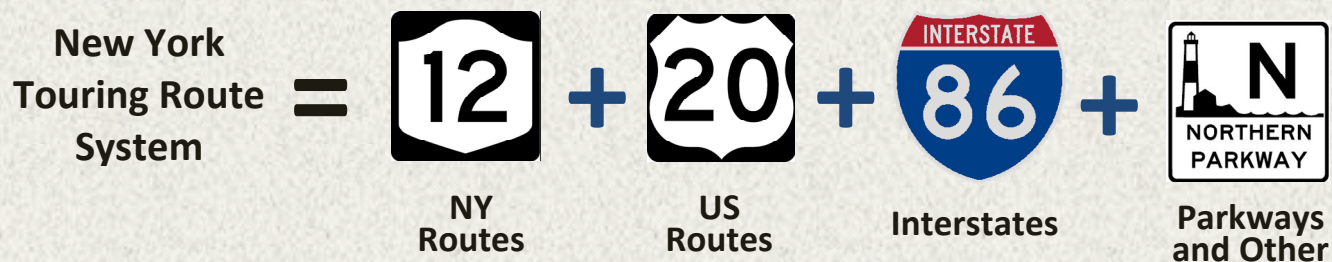
This report includes SFY 2012-13 spending and construction accomplishments and the resulting 2013 pavement conditions.

Nearly 62 percent of the state highway system has an Excellent or Good surface condition.

The Department spent about \$317 million to maintain, repair or replace about 2,885 lane miles of pavement in 2012-13.

84% of vehicle travel on the state's priority highway system has acceptable ride quality.

Currently, there is \$4.5 billion of work needed to bring the pavement system to a State of Good Repair.



Highway Systems in New York

The highways in New York can be grouped into categories depending on how each highway serves its users. The broadest category of highways is the New York State Touring Route System. This collection of roads includes Interstates, US Routes, NY State Routes, most Parkways and some local roads. The Touring Route System connects the cities, towns and villages in the state with other regions of the state and with other states. There are 41,168 lane miles of roads on the Touring Route System.

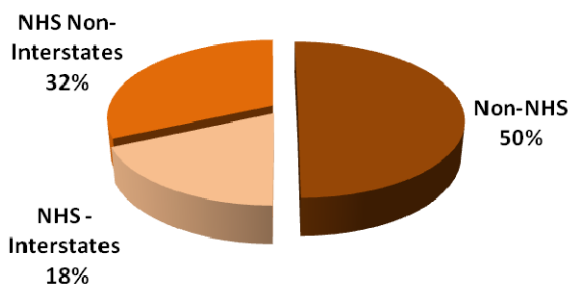
The National Highway System

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 receive higher priority for maintenance and repair. About 50 percent of the Touring Route System is part of the NHS.

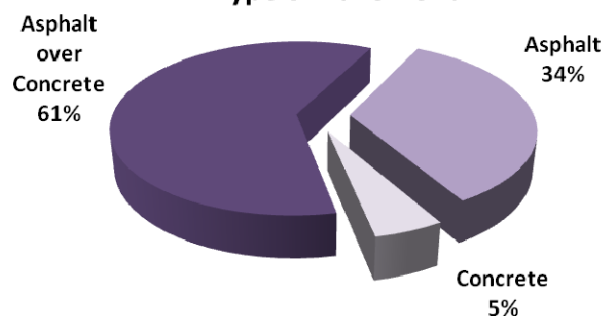
Type of Pavement

There are three types of pavement on the Touring Route System: asphalt, concrete and asphalt over concrete (otherwise called “overlaid” or “composite” pavements). There are no unpaved or gravel roads on the State Touring Route System. About 61 percent of the lane miles on the Touring Route System are overlaid pavement. Overlaid pavements were once concrete. As the old concrete deteriorated due to years of weathering and traffic, the pavement was rehabilitated by placing one or more layers of asphalt on top of the concrete. This allows the pavement to continue in service for many more years.

NYS Touring Route by Highway Classification (Lane Miles)



NYS Touring Route by Type of Pavement



Functional Class

The functional class of a given road is a way to identify the particular role it plays in allowing to move vehicles around the overall network. For example, a road's functional class identifies whether it is located in a rural or urban environment. About 10 percent of the Touring Route System is an urban interstate.

Jurisdiction

Many different entities contribute to maintenance of the Touring Route System. These include NYSDOT, county, town and village governments, and other independent authorities. About 94 percent of the Touring Route System is maintained by NYSDOT. Unless otherwise identified, the charts and information in the remainder of this report refer to the NYSDOT maintained portions of the system.

What funding was spent on pavements?

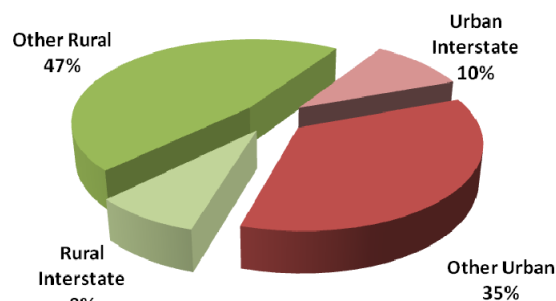
In fiscal year 2012-2013, about \$317 million was spent on pavement projects that contribute to the 2013 pavement conditions.

The Pavement Program includes several categories of treatments, ranging from preventive maintenance to rehabilitation to complete reconstruction. Preventive maintenance treatments are the least expensive and can treat many lane miles of pavement for the money spent. These thin treatments are like seal-coating your driveway. They help the pavement last longer. On the other hand, it is very expensive to perform major rehabilitation and reconstruction projects. Only a few lane miles can be repaired for the large amount of money spent.

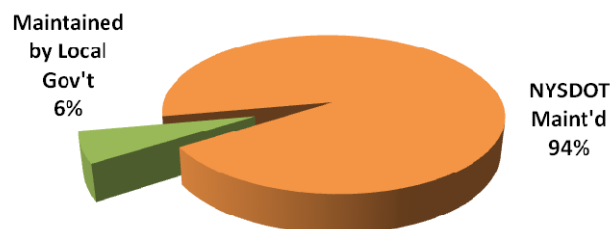
Pavement Condition Measures

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 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.

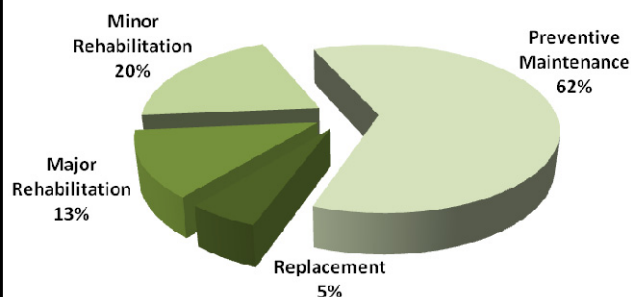
NYS Touring Route by Functional Class



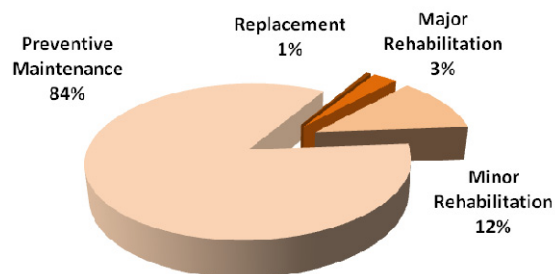
NYS Touring Route by Jurisdiction
(41,168 Lane Miles)



2013 Paving Program Expenditures (\$317 M)



2013 Paving Accomplishments (2,885 Lane Miles)



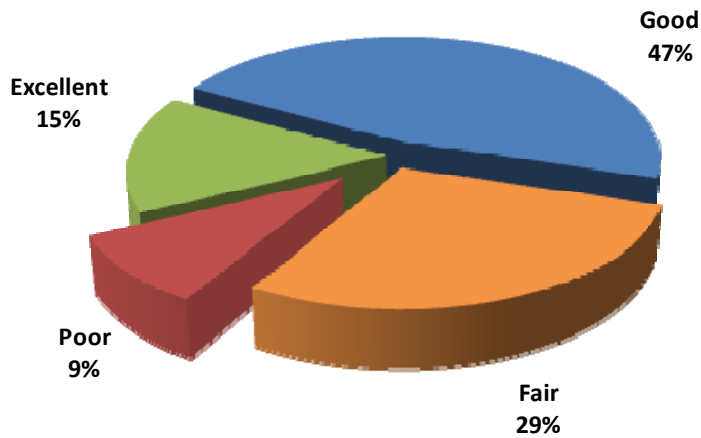


Excellent
No Cracking



Good
Infrequent
Minor Cracking

**Surface Condition by Lane Miles (LM)
Statewide**



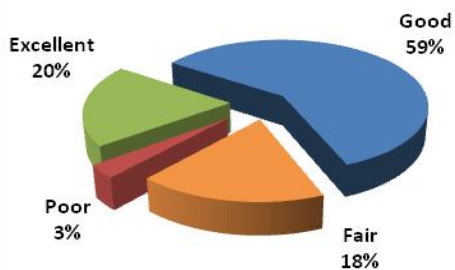
Poor
Very Frequent
Severe Cracking



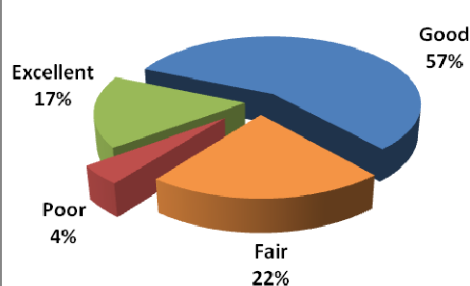
Fair
Frequent
Minor Cracking



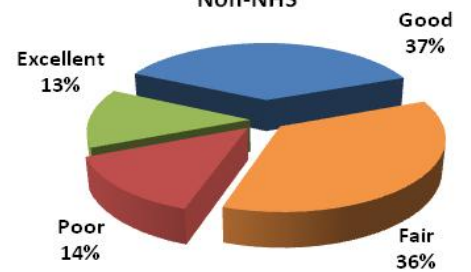
**Surface Condition by LM
NHS - Interstates**



**Surface Condition by LM
NHS - Non-Interstates**



**Surface Condition by LM
Non-NHS**



Pavement Ride Quality

Smooth

Comfortable ride; only slight bumps are present and are generally not noticed.

Fair

Roughness is noticeable; may be difficult to drink open liquids; some loss of fuel economy and increased maintenance costs.

Rough

Very uncomfortable ride; roughness is annoying and distracting; increased vehicle operating costs, especially for trucks.

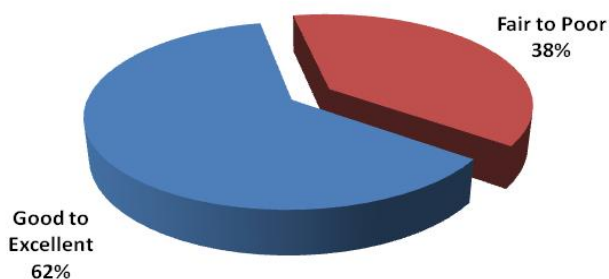
Good ride quality means satisfied customers.

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.

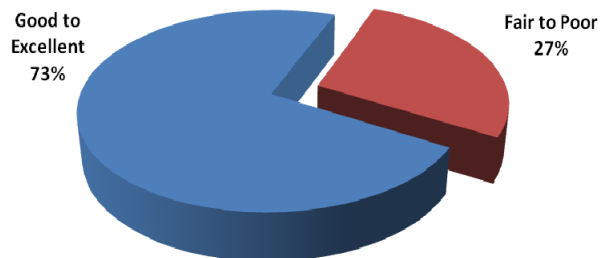
When evaluating the condition of a pavement by the amount of cracking on the surface, 38 percent of the lane miles are Fair or Poor. Those Fair and Poor pavements carry only 27 percent of the vehicle travel.

Regarding ride quality, about 35 percent of the highway system lane miles have a Fair or Rough ride quality. Those pavements carry about 39 percent of the vehicle travel.

Surface Condition by Lane Miles



Surface Condition by Vehicle Travel



Ride Quality by Lane Miles



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 above 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 290 lane miles on the Touring Route System that are beyond repair and require reconstruction.

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 only a little maintenance work, while a pavement with a lot 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.

Pavements that are relatively free of cracking and in Good condition fall into the *Monitor* category. Even though work is not needed today, these pavements are monitored regularly to determine the optimal time for treatment.

Preventative 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 pavements 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.

