



# Pavement Report 2014

## 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 management strategies and sophisticated modeling techniques, NYSDOT strives to deliver the best transportation system possible.

Investment decisions continue to be guided by four key principles with an overarching theme of continually improving the safety and accessibility of the highway system. First, preserve the existing system 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 highway system users.

### Pavement Condition Highlights

This report includes 2014 pavement program funding, construction accomplishments and **pavement conditions**.

Nearly **63 percent** of the state highway system has an **Excellent or Good** surface condition.

**85% of vehicle** travel on the state's priority highway system has acceptable ride quality.

Currently, there is **\$4.3 billion** of work needed to bring the pavement system to a State of Good Repair.

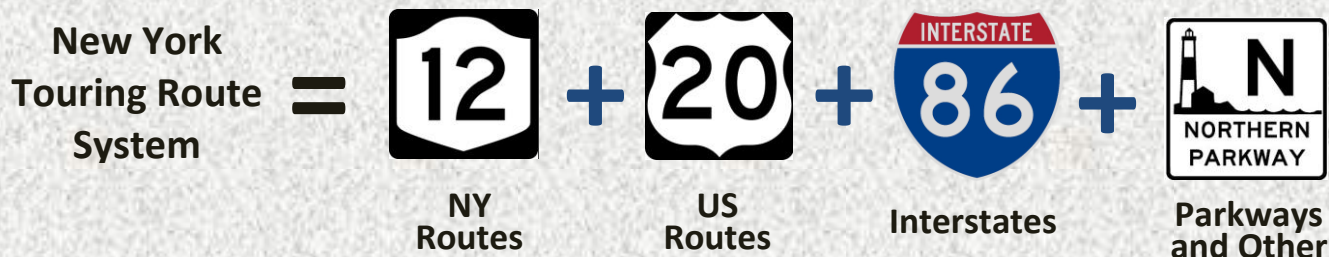
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## Highway Systems in New York

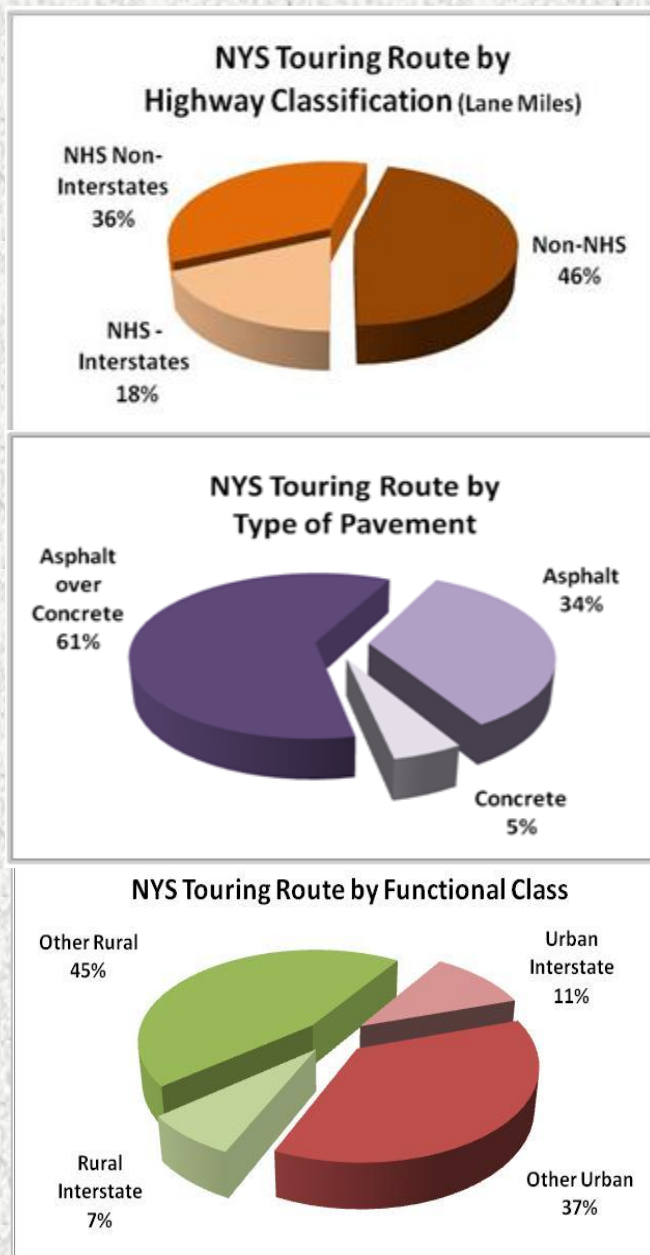
The highways in New York State can be grouped into categories depending on how each highway serves its users. The broadest category of highways is the New York State Touring Route System. This collection of roads includes Interstates, US Routes, NY State Routes, most Parkways, and some local roads. The Touring Route System connects the cities, towns, and villages in the state with other regions of the state and with other states. There are 43,577 lane miles of roads on the Touring Route System (including the NYS Thruway).

### 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. Today, the majority of roadways in the NYS Touring Route System are overlaid pavements as illustrated in the pie chart to the right.





## Functional Class

The Functional class of a given road is a way to identify the particular role it plays in allowing vehicles to move around the overall network. For example, a road's functional class identifies whether it is located in a rural or urban environment. About 48 percent of the Touring Route System in New York has an urban functional classification.

## Jurisdiction

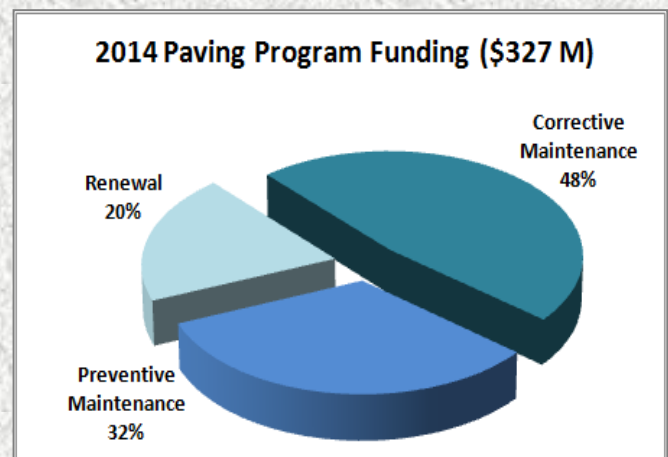
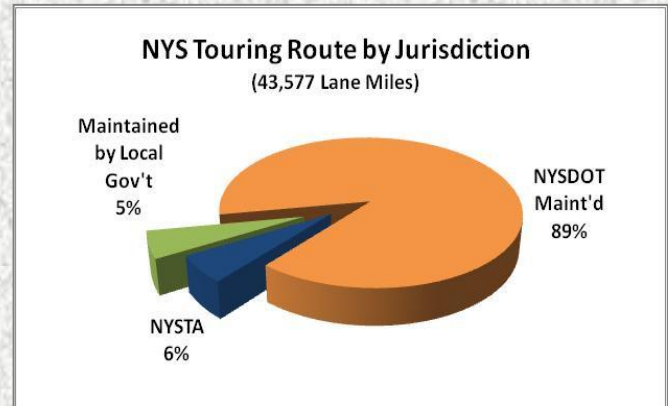
Many different entities contribute to maintenance of the Touring Route System. These include NYSDOT, county, town and village governments, and other independent authorities. About 89 percent of the Touring Route System is maintained by NYSDOT.

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

## Pavement Funding

In calendar year 2014, approximately \$327 million was allocated for pavement projects. Not all of this work was completed in 2014. As such, that work is not reflected in the pavement conditions shown in this report.

The NYSDOT Pavement Program includes three primary categories of treatments: preventive maintenance, corrective maintenance, and renewal. Preventive maintenance treatments are the least expensive and can treat many lane miles of pavement for the money spent. These include several types of thin treatments similar to those for seal-coating your driveway. They help the pavement last longer. Corrective maintenance treatments are used to address more significant pavement distresses and are typically more costly. Renewal projects usually involve major rehabilitation or reconstruction of the pavement and are the most expensive. Renewal projects address fewer lane miles of pavement for the investment made, but are necessary to address more serious pavement distresses.



# Pavement Condition Measures

Identifying the places where work is needed on pavements and the type of work that 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.



**Excellent**  
No Cracking

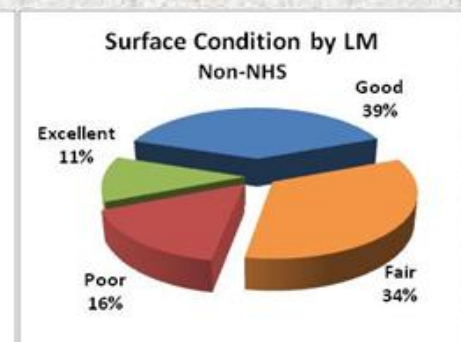
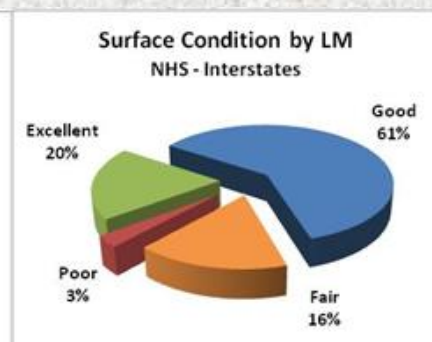
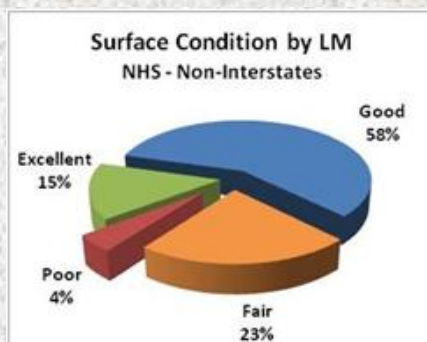
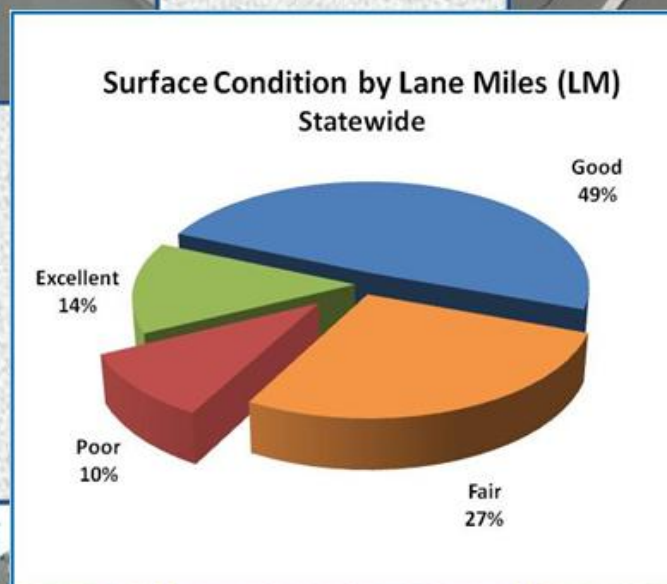


**Good**  
Infrequent  
Minor Cracking

**Poor**  
Very Frequent  
Severe Cracking



**Fair**  
Frequent  
Minor Cracking





## 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.

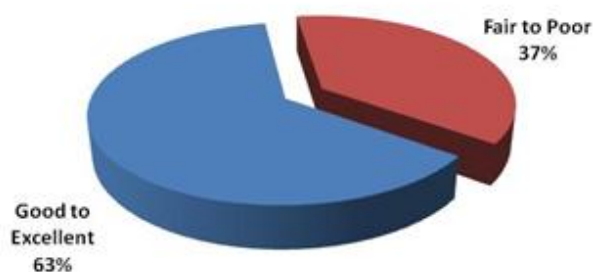
## Good ride quality means satisfied customers.

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 but not necessarily the amount of cracks on the surface.

When evaluating the condition of a pavement by the amount of cracking on the surface, 37 percent of the lane miles are Fair or Poor. Those Fair and Poor pavements carry only 25 percent of the vehicle miles traveled.

Regarding ride quality, about 34 percent of the highway system lane miles have a Fair or Rough ride quality. Those pavements carry about 35 percent of the vehicle miles traveled.

Surface Condition by Lane Miles



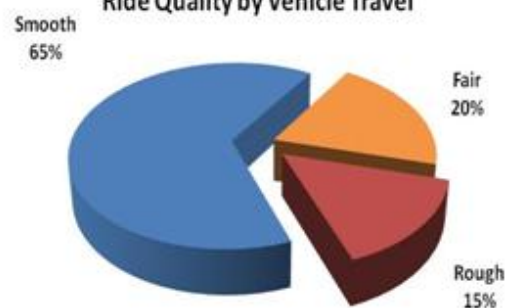
Surface Condition by Vehicle Travel



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.

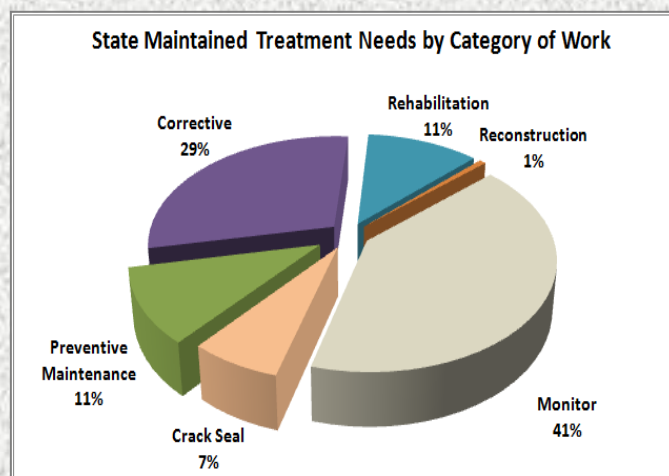
The pavement structure shown to the left is so badly damaged that it needs a renewal treatment such as major rehabilitation work or complete reconstruction. Renewal costs at least twice as much over the life of the pavement compared to regular preventive maintenance to keep it in good condition. Currently,

there are 263 lane miles on the State maintained system that are beyond repair and require reconstruction.

## New York's Pavement Needs

The work needed to bring a pavement 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 a renewal project of costly reconstruction. The 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.

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



*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.