

# Pavement Report 2012



## New York State Department of Transportation

**Joan McDonald, Commissioner**

**Andrew M. Cuomo, Governor**

### New York Works

In 2012 Governor Andrew Cuomo initiated the NY Works program, an innovative construction initiative designed to preserve the state's pavement and bridge infrastructure while creating thousands of construction jobs.

The paving portion of NY Works focused on improving roads that were in fair condition to bring their condition to good. The infusion of NY Works funding helped to improve the overall health of our state's roads. The program included \$230 million in contracts to resurface 2,157 lane-miles of pavement at 172 locations. These projects were delivered in addition to the existing program, on time and under budget.

### System Preservation

To be as effective as possible with available funding, the Department is continuing an asset management strategy with a focus on preservation. This approach targets resources to preserve the most heavily traveled roads first with low-cost treatments that extend the life of the pavement for many years. It would not be prudent to address only poor pavements while neglecting the rest of the system. Limited money would be spent on very expensive projects that fix only a few miles of pavement while the rest of the pavements continue to deteriorate. This creates a situation where pavements deteriorate faster than they can be repaired. The long-term health of the system depends on a reliable, system-wide preservation program.

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### Pavement Condition Highlights

This report includes SFY 2011-12 spending and construction accomplishments plus the 2012 NY Works Program and the resulting 2012 pavement conditions.

Nearly 60 percent of the state highway system has an Excellent or Good surface condition.

The Department spent about \$614 million to maintain, repair or replace about 4,475 lane miles of pavement in 2011-12.

83% of vehicle travel on the state's priority highway system has acceptable ride quality.

Currently, there is \$4.7 billion of work needed to bring the pavement system to a State of Good Repair.

**New York  
Touring  
Route**

**=**



**NY  
Routes**

**+**



**US  
Routes**

**+**



**Interstates**

**+**



**Parkways  
and Other**

## Highway Systems in New York

The highways in New York can be grouped into categories depending on how each highway serves its users. Two common categories are the New York State Touring Route System and the National Highway System.

### New York State Touring Route System

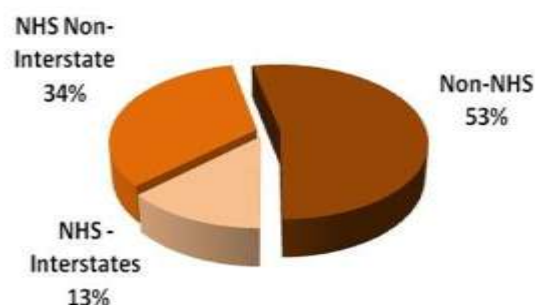
The broadest category of highways is the New York State Touring Route System. This collection of roads includes Interstates, US Routes, NY State Routes, most Parkways and some local roads. The Touring Route System connects the cities, towns and villages in the state with the surrounding farm land, other regions of the state and other states. There are 41,000 lane miles of roads on the Touring Route System, about 94 percent of which are under the maintenance responsibility of the Department.

### 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 National Highway System because they have high national significance for interregional travel and are a critical part of the national defense system.

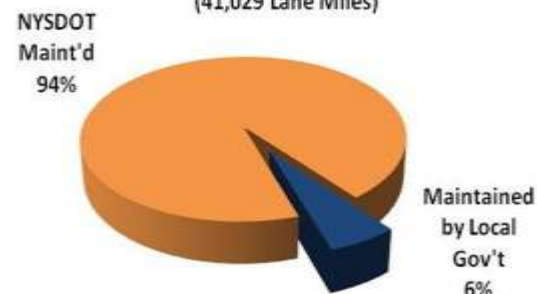
Because of their national significance, highways on the National Highway System receive higher priority for maintenance and repair. About 47 percent of the New York State highway system is designated as a part of the NHS.

### Highway Classification

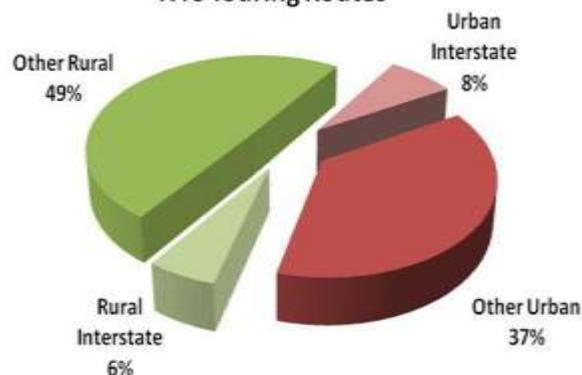


### NYS Touring Routes

(41,029 Lane Miles)



### NYS Touring Routes

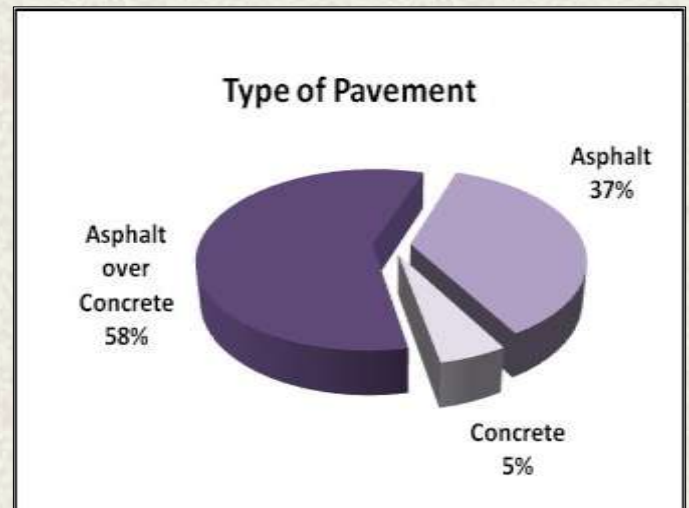




## Type of Pavement

There are three types of pavement on the New York State 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.

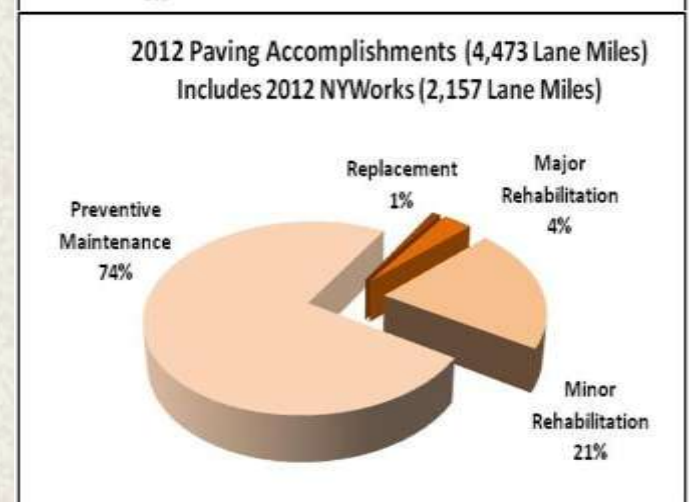
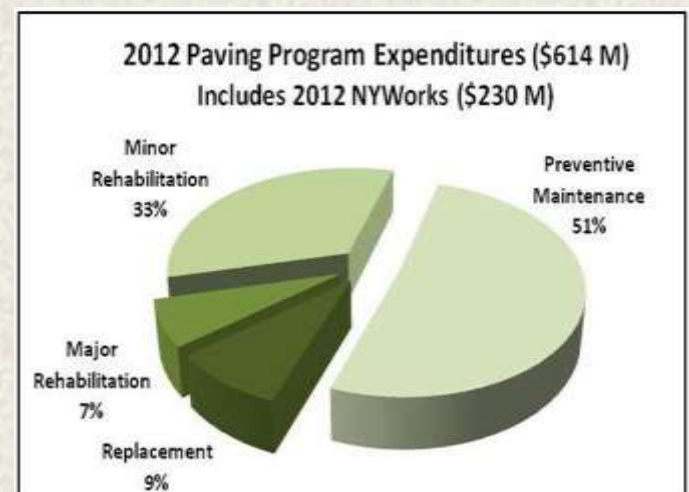
Overlaid pavements were once concrete, but as the old concrete deteriorated due to years of weathering and traffic, the pavement was rehabilitated by placing one or more layers of asphalt on top of the concrete. This allows the pavement to continue in service for many more years.



## What funding was spent on pavements?

In fiscal year 2011-2012, about \$384 million was spent on pavement projects. An additional \$230 million was spent on pavement projects completed during the 2012 construction season as part of the NY Works Program. These monies are primarily reflected in the paving accomplishments that contribute to the 2012 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

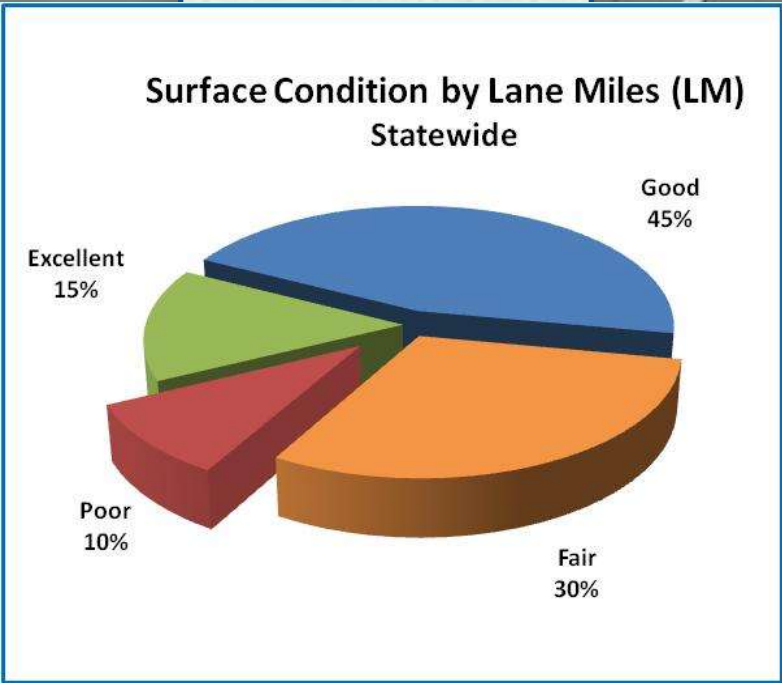
Identifying the places where work is needed on pavements and what type of work should be done is based on a surface rating system that describes the amount and type of cracks on the surface of the pavement. In addition, a measurement of ride quality is used to identify locations with rough riding pavement.



Excellent  
No Cracking



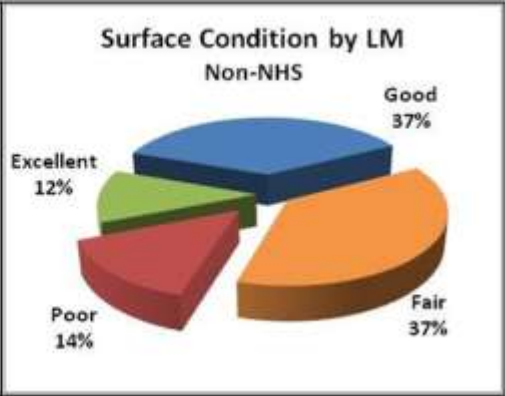
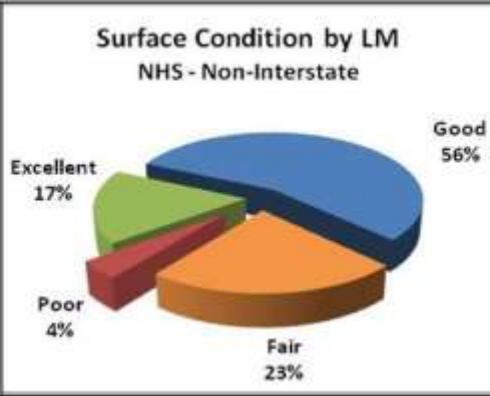
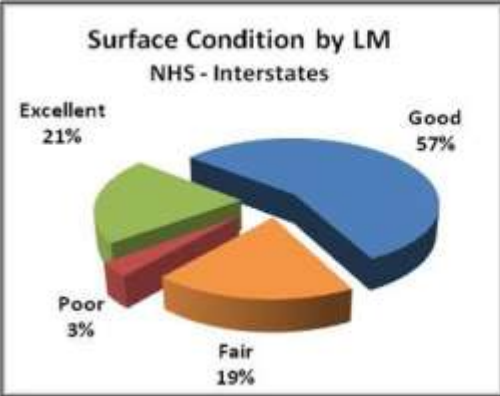
Good  
Infrequent  
Minor Cracking



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.

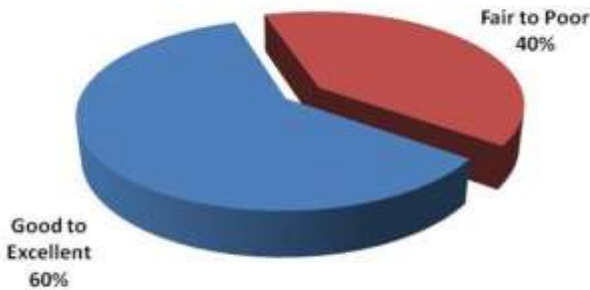
Good ride quality means satisfied customers.

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 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, 40 percent of the lane miles are Fair or Poor, but those Fair and Poor pavements carry only 29 percent of the vehicle travel.

Regarding ride quality, only 17 percent of the highway system lane miles have a Fair or Rough ride quality, but those pavements carry 33 percent of the vehicle travel.

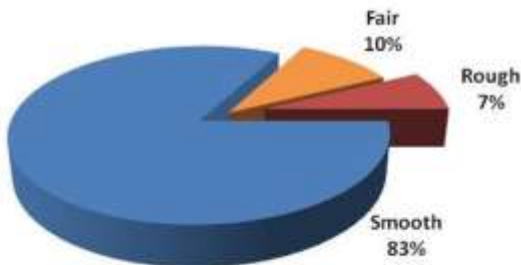
Surface Condition by Lane Miles



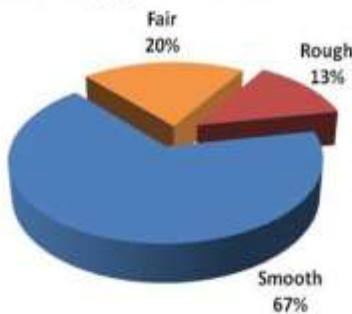
Surface Condition by Vehicle Travel



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 554 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 *Defer* category. Even though work is not needed today, these pavements are regularly monitored 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 sealing cracks to keep water out, refreshing the riding surface, and slowing the rate of deterioration.

*Preservation* 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 avoided by regular maintenance.

