

# Pavement Report 2010



## New York State Department of Transportation

Joan McDonald, Commissioner

Andrew M. Cuomo, Governor

### Reliable/Responsible/Revitalize New York

Over the past year, the New York State Department of Transportation adopted three key priority areas as guiding principles: Reliability, Responsibility and Revitalization (3Rs). The Department's paving program aligns most closely with the "Revitalizing" principle. The 3R Detailed Report announces:

*We are Revitalizing New York: The NYSDOT preserves our transportation assets and strategically enhances the transportation system through a balance of preventive maintenance and capital investment.*

The transportation system depends on a viable capital and maintenance program, but due to growing fiscal constraints at the state and national level, these programs are becoming less able to meet the State's infrastructure revitalization needs.

The federal American Recovery and Reinvestment Act (ARRA) provided much needed funds to the State. A large portion of the transportation funding was used for pavement preservation projects. In state fiscal year 2009/10, ARRA funding added more than \$210 million for preservation work that revitalized over 1,830 lane miles of pavement.

The Department is continuing with the proven asset management strategy of keeping the good roads good. This targets resources to preserving the most heavily traveled roads first with low-cost preservation treatments that extend the life of the pavement many years. This also means that the driving public may see paving projects on roads that are in fairly good condition, while other pavements are left in poor condition. The worst thing to do is to try

to fix all the poor pavements first. The money will be spent on very expensive projects that fix only a few miles of pavement while the rest of the pavements deteriorate. It is much less expensive to preserve the good, then, over time the savings can be used to repair the poor roads.

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### Pavement Condition Highlights

**This report includes '09-'10 spending and construction accomplishments and the resulting 2010 pavement conditions.**

**More than one-third of the State Highway system has a Fair or Poor surface condition.**

**The Department spent about \$551 million to maintain, repair or replace about 2,900 lane miles of pavement in 2009.**

**87% of vehicle travel on the State's most important roads has acceptable ride quality.**

**Currently, there is \$4.2 billion of work needed to bring the pavement system to a State of Good Repair.**

**New York  
Touring  
Route**



## Highway Systems in New York

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

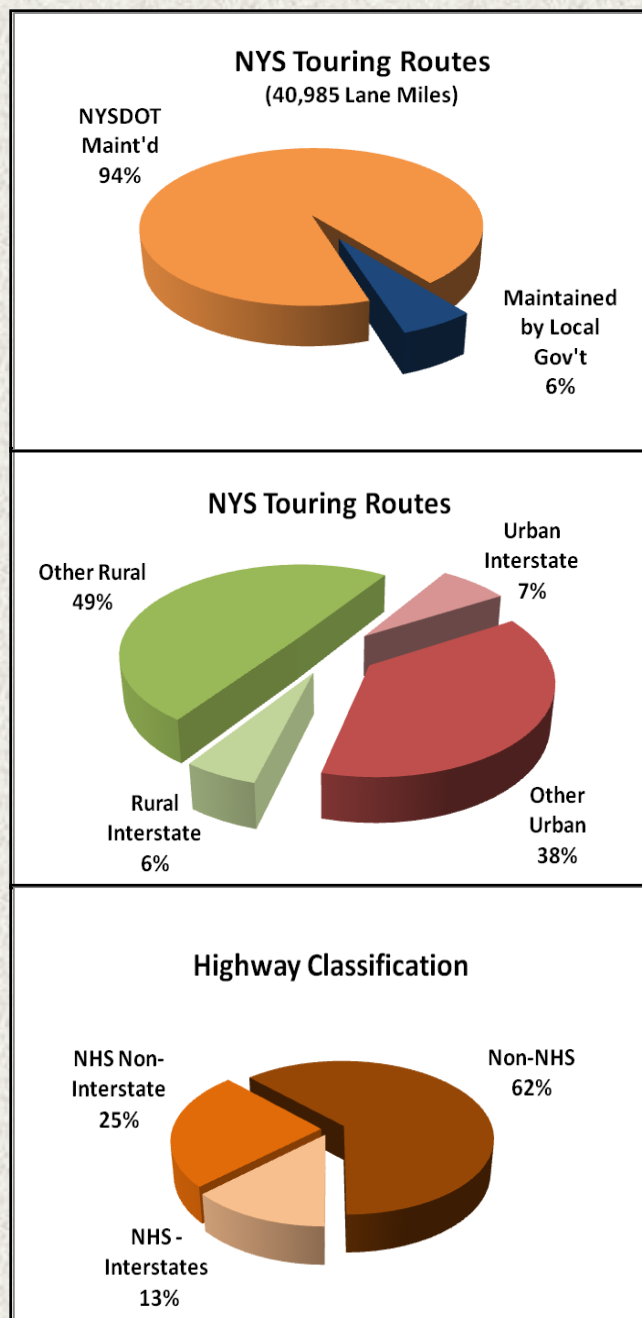
### New York State Touring Route System

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) consists of 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 since 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 38 percent of the State highway system is designated as a part of the NHS.

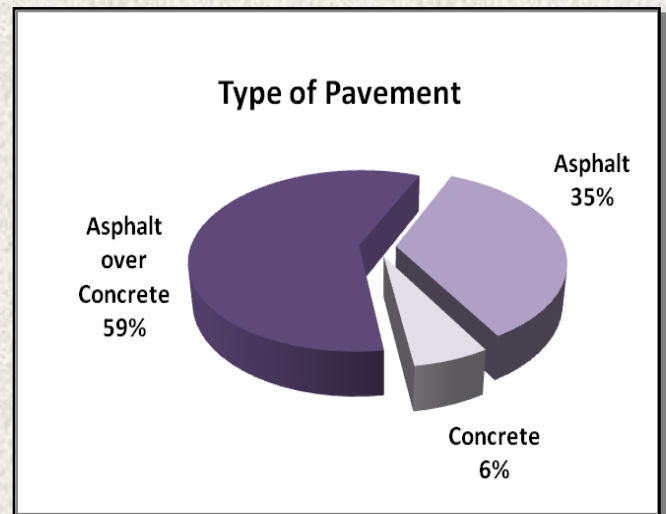




## Type of Pavement

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.

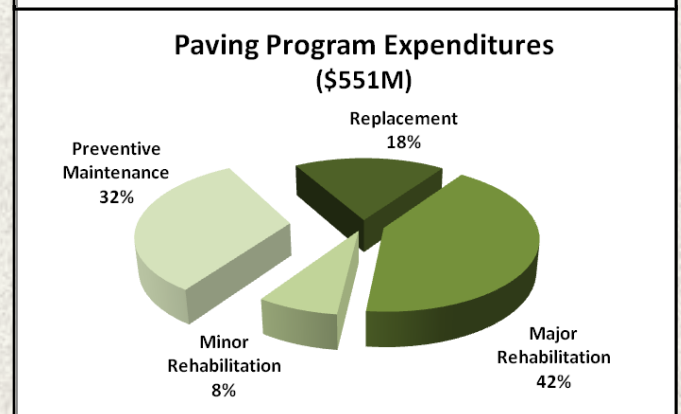
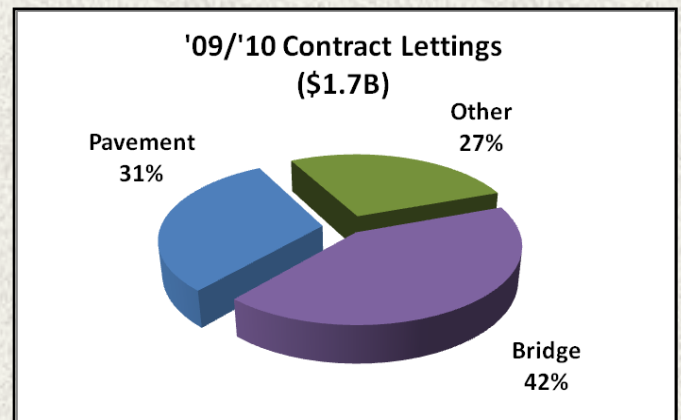
Overlaid pavements were once concrete, but as the old concrete deteriorated due to years of weathering and traffic, the pavement was rehabilitated by placing one or more layers of asphalt on top of the concrete. This allows the pavement to continue in service for many more years.



## What funding was spent on pavements?

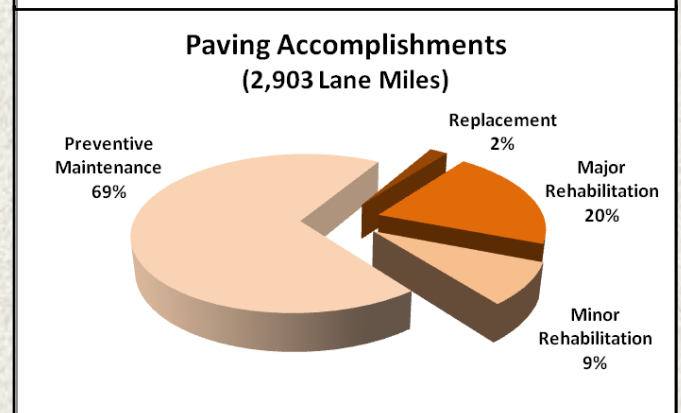
In 2009, about \$551 million was spent on pavements. This represents about 31 percent of all project contract dollars spent by the Department. The money spent in fiscal year 2009-10 is reflected in the paving accomplishments that contribute to the 2010 pavement conditions.

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 construction 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.



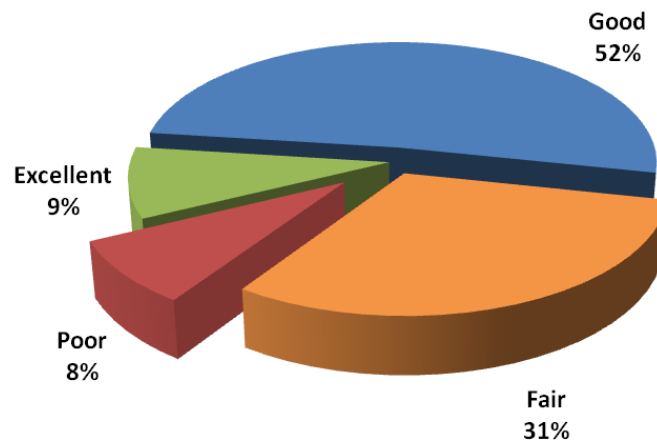


**Excellent**  
No Cracking



**Good**  
Infrequent  
Minor Cracking

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

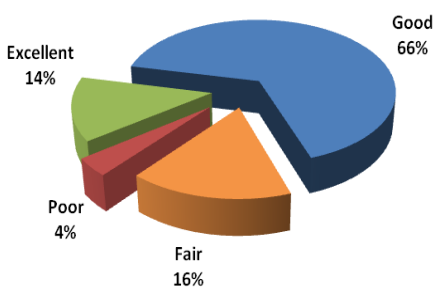


**Poor**  
Very Frequent  
Severe Cracking

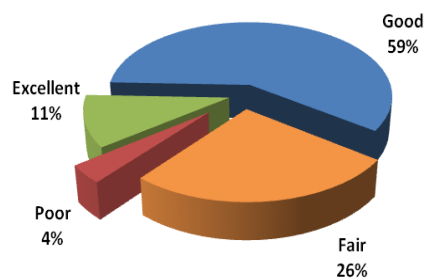
**Fair**  
Frequent  
Minor Cracking



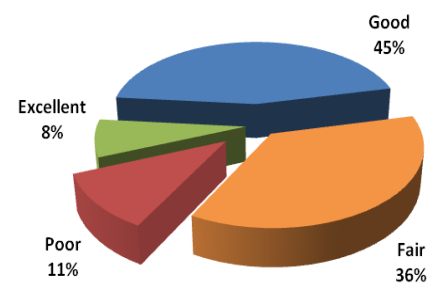
**Surface Condition by LM  
NHS - Interstates**



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



**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.

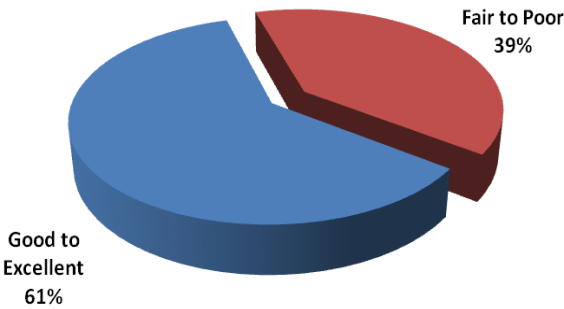
Good ride quality means satisfied customers.

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.

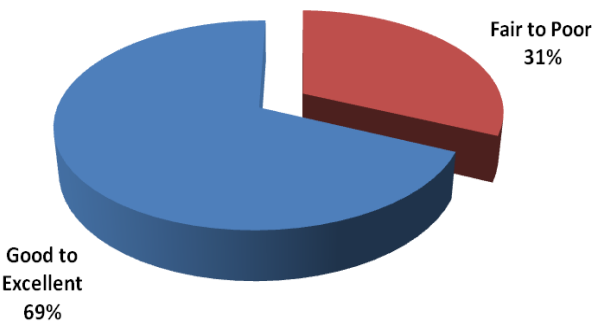
When evaluating the condition of a pavement by the amount of cracking on the surface, 39 percent of the lane miles are Fair or Poor, but those Fair and Poor pavements carry only 31 percent of the vehicle travel. So as far as cracking is considered, roads with more traffic tend to be in better condition.

With respect to ride quality, only 21 percent of the highway system lane miles have a Fair or Rough ride quality, but those pavements carry 37 percent of the vehicle travel. This means that there is a significant amount of traffic riding on pavement that does not have a comfortable ride quality.

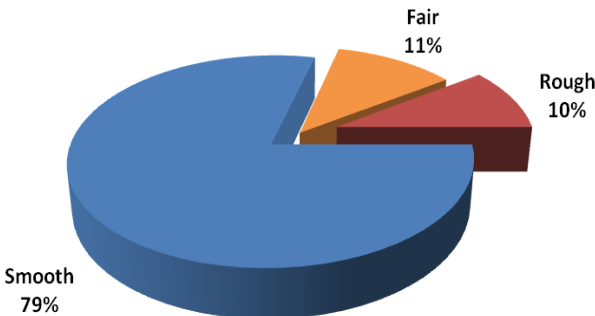
Surface Condition by Lane Miles



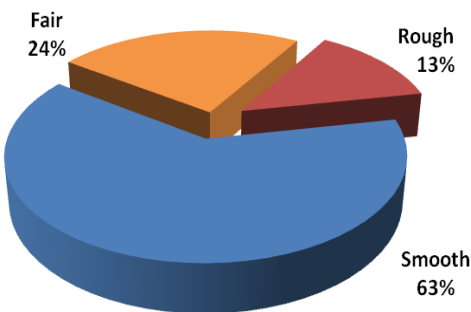
Surface Condition by Vehicle Travel



Ride Quality by Lane Miles



Ride Quality by Vehicle Travel

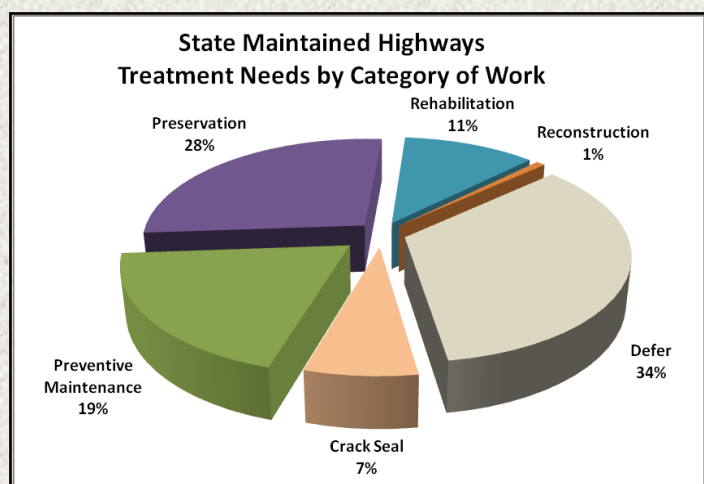




### What happens if a road is not maintained?

If a pavement is left untreated, it will eventually 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, and 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 even a complete reconstruction, which costs at least twice as much over the life of the pavement than if the pavement received regular preventive maintenance to keep it in good condition. Currently, there are 300 lane miles on the Touring Route System that are beyond repair and require reconstruction.



### New York compared Nationally

Pavement ride quality is measured using specialized equipment that travels down the road at traffic speed. Lasers are used to measure the road surface to calculate the *International Roughness Index (IRI)*.

The International Roughness Index is the only condition measure that is routinely collected and reasonably consistent among all the States, so it is often used to evaluate pavement condition and to make comparisons among the States.

### Percent National Highway System Acceptable Ride Quality

State	Percent Acceptable Ride Quality	National Rank
Georgia	99.7	1
Nevada	99.5	2
Kansas	99.4	3
Maryland	91.8	40
Michigan	90.2	41
<b>New York</b>	<b>87.7</b>	<b>42</b>
California	87.0	43
Louisiana	85.4	44
Massachusetts	78.4	48
New Jersey	78.3	49
Hawaii	77.2	50

Data Source: 2008 Highway Statistics Table HM-47, Oct. 2009, FHWA

Historically, New York has identified locations needing work based on the type and extent of surface cracking. Only recently has the Department begun to add ride quality as a factor in specifying the type of work needed to repair a pavement. Without this intentional focus on ride quality, many pavements in the State have a rough ride. Compared nationally, New York in 2009 ranked 42<sup>nd</sup> of the 50 States in ride quality.