



## Improvement Status

The “NH Pavement Condition” graph shows pavement condition for 1996 through 2017. The data for 1996 through 2012 is based on measured roughness data and shows that the mileage of roadways in good or fair condition reached an all time high of 3,064 miles in 2000 and has steadily declined reaching an all time low of 2,597 miles in 2012. The American Recovery and Reinvestment Act (ARRA) was successfully utilized to stabilize and slightly increase the 2010 good/fair mileage by 42 miles. The Pavement Management System was used to predict future pavement conditions using the current funding level of \$57M per year. The System predicted that the good/fair mileage would decline to 2,611 miles in 2012. Based on the collected roughness data in 2011/2012, the good/fair mileage declined 98 miles to an all time low of 2,597. At the current funding level, the good/fair mileage is predicted to continue to decline over the next five years at a rate of approximately 43 miles per year to 2,385 in 2017.

The “Average Price of Asphalt Cement” graph illustrates the increased price of this key ingredient in hot mix asphalt (HMA) from 1992 to 2012. Since the last NH gas tax increase in 1991, the average price of asphalt cement (AC) has risen steadily from \$110 per ton in 1992 to \$620 per ton in 2012 with the majority of the increase occurring between 2005 and 2012.

The Department’s goal is to resurface 500 miles of roadways per year, which equates to resurfacing roadways once approximately every 10 years. As illustrated on the “NH Miles of Road Resurfaced” graph, the Department was consistently meeting, exceeding, or coming close to this goal from 1992 to 2004. Given the marked increase in AC, resurfacing mileage has steadily decreased from 2005 until reaching a low of 290 miles in 2008. The ARRA funding was utilized to increase resurfacing from 250 to 706 in 2009 and from 294 to 496 miles in 2010 effectively holding the good/fair mileage constant over this time period. Since ARRA, the miles of resurfacing has declined to an all time low of 248 miles in 2011 and 346 miles in 2012.

## Improve Asset Conditions

### State Highway Pavement in Good or Fair Condition

#### **Purpose:**

The Ride Comfort Index (RCI) has been used by the Department since 1995 to measure, report, and monitor the pavement condition of the 4,559 miles of state-maintained roadways. The RCI is a measure of the roughness of a roadway and is reported on a scale from 0 to 5, with 5 representing the smoothest roads. The RCI is calculated from the International Roughness Index (IRI), a numerical value that is measured by the Department’s Data Collection vehicle along the pavement surface and provides a representation of what motorists feel as they drive down the road. The vehicle also collects other pavement condition data such as wheel path rutting and cracking which when combined with the roughness data is used to support the Department’s software driven Pavement Management System. The Pavement Management System is an asset management tool that is used to forecast future pavement conditions, set performance goals, and develop funding levels to achieve those goals.

#### **Data:**

Limits have been established to categorize pavements into “Good”, “Fair”, and “Poor” condition levels with a RCI greater than 3.5 defining “Good”, between 3.5 and 2.5 defining “Fair”, and less than 2.5 defining “Poor”. Statewide pavement condition maps are published biennially in the State’s Ten Year Transportation Improvement Plan.

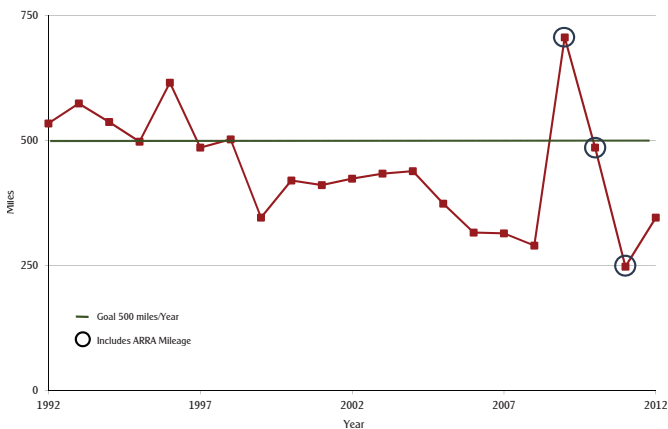
## The Future:

With the current funding levels and the steadily increasing cost of AC, it is predicted that the condition of the roadway network will continue to decline. Based on the Pavement Management System, funding will need to be increased from \$57M to \$69M per year in order to maintain the current mileage of roadways in good/fair condition. If funding levels are not increased from the \$57M, the downward trend that was observed from 2010 to 2012 is expected to continue in 2014, 2015, and 2017 as depicted in the “NH Pavement Condition” graph. As the roadway network condition continues to deteriorate, the cost of restoring roadways back to good condition increases dramatically. Studies have also shown that poor condition roadways cost more to maintain in the winter requiring more salt and costing drivers more in additional vehicle repair costs. In 2012, a TRIP, a national transportation research group, report identified that poor condition roads cost each NH motorist an average of \$323 annually in extra vehicle operating costs including accelerated vehicle depreciation, additional repair costs, and increased fuel consumption and tire wear. This amounts to a total cost to NH taxpayers of \$333M per year.

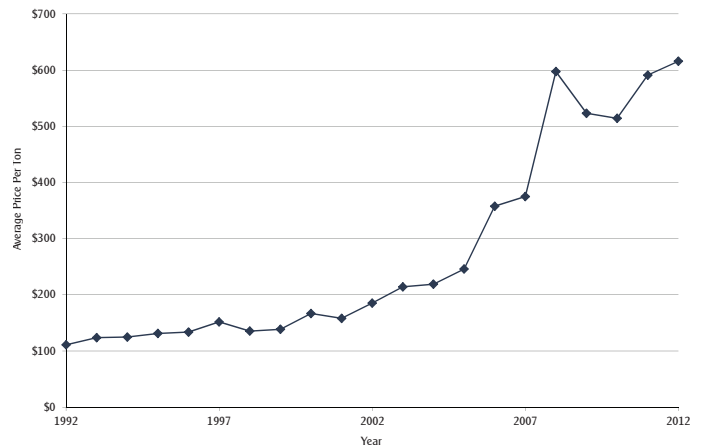
The Department’s roadway maintenance strategy is to focus resurfacing activities on higher volume roadways thus keeping them from deteriorating to a poor condition. The lesser traveled roadways that are already in fair or poor condition will receive patching and hot mix asphalt (HMA) spot leveling treatments applied by Department forces in an effort to keep the roadway passable.

The Department will continue to employ newer technologies and pavement preservation techniques to reduce the overall cost of maintaining pavements, however, there is still a need to develop a permanent sustainable means to stop the deterioration trend that has been observed since 2000.

### NH Miles of Road Resurfaced 1992-2012



### Average Price of Asphalt Cement 1992-2012



### New Hampshire Pavement Condition 1996-2017

