

**Steven J. Tyler, P.E., Town of Spencer, December 2012 Pavement Management Presentation
at the Massachusetts State House Transportation Bond Hearings**

Good Afternoon. My name is Steven Tyler. I am in my second year as Superintendent of Utilities and Facilities (or same position as “DPW Director” if you prefer) in Spencer. Prior to coming to Spencer in 2011 I was consulting engineer managing road and bridge engineering design projects at Bayside Engineering for nearly 20 years, 13 of those years as Vice President. I have completed road and bridge projects in many different cities and towns throughout the Commonwealth including every MassDOT District. Now I am working for my own home Town of Spencer Massachusetts and in part the Commonwealth ... in that I try to stay active and involved in transportation planning regionally and statewide. I am Chairman of the regional Transportation Improvement Program (TIP) Advisory Committee and I sit on the MPO Board that makes final decisions for all TIP funded roadway, bridge and transit projects in the Central Region.

I am here to talk about Spencer’s Pavement Management Plan and good pavement management principles and their vital role in long term fiscal management and maintenance planning for our roadway infrastructure. As part of my discussion I will highlight the critical fiscal benefits of maintenance early in a road’s life cycle and the extensive short-term and long-term cost savings of a good roadway maintenance programs including repairing roads at the earliest stages of deterioration and well before it is obvious to everyone that the road or a section of road is in need of repair.

The Town of Spencer’s roadway inventory and Pavement Management Plan maintains a lot of import data for each and every road. Information such as length, width, structure and substructure conditions, drainage conditions, vehicular and truck traffic load data, history of improvements, and the relative effect of each of those factors on the rate of roadway deterioration. Each road depending upon its condition and the combination of those other factors mentioned will have a different rate of deterioration and that rate will change on an annual basis. Thus the Pavement Management Plan should be maintained so that it is complete and up to date as possible.

The next step is using the afore mentioned roadway inventory data to generate an overall Pavement Condition Index (PCI) for each and every road. The PCI value can then be used for budgeting and planning.

For example, the highest possible PCI value for a single road segment is **88-100** this in **Excellent Condition** and is in the early years after reconstruction or resurfacing.

The next PCI **68-87** level is a road in **Good Condition** but may be in need of crack repair, crake sealing or minor localized repair or patching.

A PCI of **47-67** is a road in **Fair Condition** where the pavement surface needs surface sealing; a thin overlay or possibly hot in-place resurfacing with a micro overlay.

A PCI **21-46** is a road in **Poor Condition** and the pavement structure needs additional pavement thickness to resist traffic loading through methods such as cold planning and resurfacing, or hot in-place recycling with thicker overlays that increase overall pavement structure depth.

A PCI **0-20** is a road in **Failed Condition** in need of full depth reconstruction or rehabilitation.

The Pavement Management Plan and the PCI gives us the tool we need to be able to predict and plan for long term maintenance and costs in a fiscally responsible way.

The next important step is providing adequate funding to get the road network to the ideal PCI value that represents best fiscal management and the lowest consistent rate of annual reinvestment. For example Spencer's entire road inventory PCI is at 55, which means overall our roads are in fair condition. Of course in reality they vary by road from very poor to excellent. But overall "Fair".

On the PCI scale, a 68 or higher, which means the roads would be in overall good condition is the range where we want to be. That does not mean that every road in Town is in good condition. NO, of course not. There will still be roads at most condition levels. Hopefully none in failed condition level where reinvestment costs are at their absolute highest but there will be roads in poor and fair condition as well as good and excellent condition. Each road has its own respective PCI which gets factored into the overall Townwide PCI value.

In order to properly implement a good or ideal Pavement Management Plan the key idea we have to understand is making sure we properly maintain the streets in better condition first. What? Fix the roads in better condition first? I realize this is a difficult concept to quickly grasp or explain because most people talk about roads in the worse condition and say things like why isn't this other road in terrible condition being fixed first? Most people seem to focus on fixing the streets in the worst condition first.

The fiscal facts are that we have to maintain all our streets especially those that are in better condition first because it is being done at a considerably lower cost in both the short and long run of time and money management. This holds true for typically all our infrastructure from roads and bridges to utilities, building and vehicles. If there are exceptions to this I cannot think of them.

The best fiscal management is to rebuild infrastructure to a condition where maintenance cost are at their lowest possible annual rate and providing adequate future budgets to reinvest and maintain that infrastructure at a level where the required rate of annual reinvestment is at its lowest possible fiscal level.

The Pavement Management Plan helps us do just that.

However, the absolute most critical element in the equation is that we increase and maintain our funding to the point where we are providing adequate funds to cities and towns on a regular basis. As a local municipality it is vital that state assistance through programs such as Ch. 90 or other roadway infrastructure assistance be increased to help us close the gap on the funding needed to sustain our local roadway infrastructure in the most fiscally responsible way possible.

We have to do this to keep our overall asset values from dropping. Every city, town and state has asset value. Our asset value is what we use to bond and fund other necessary major improvements, new growth and new development. Other major projects such as schools, fire trucks, energy efficient public transit and other important needs. The most significant portion of that asset value is the tangible fixed infrastructure (the roads, the bridges, the buildings, the utilities). As the overall conditions of our roads drop the overall asset value of the municipality and the state as a whole drops and this has direct ramifications on our budgets, funding and bond ratings to sustain ourselves over the long term. In terms of infrastructure maintaining a road is just as important, if not more important than a building. I ask you, how do you get everybody to the building without the road?

Cities and towns for practical purposes live forever; therefore, it is more than prudent that we fiscally plan that way. We have to fiscally plan that way. It is poor management and poor planning if we don't do our absolute best to try to fiscally plan that way.

We must increase roadway funding so that the roadway infrastructure can be maintained at that ideal PCI value which represents best fiscal management and the lowest consistent rate of annual reinvestment.

That is what we strive for and that is why we hope that one day soon we really will be able to fully implement the Pavement Management Plan in the best fiscal way possible. I would like to thank Fay, Spofford & Thorndike (FST) for all their help with setting up and maintaining Spencer's Pavement Management Plan. And thank you all for your time this afternoon. I hope I did not put you all to sleep.

I hope you all have a fabulous holiday season and a Happy New Year! Thank you.