

July 20, 2010

Brian Blanchard
Chief Engineer
Florida Department of Transportation
604 Suwannee Street
Tallahassee, FL 32399



Re: Comments on Chapter 4: Pavement Selection Process & Industry Involvement Draft dated July 9, 2010.

Dear Brian,

The Asphalt Contractors Association of Florida would like to thank the Florida Department of Transportation for the opportunity to comment on this draft. We believe the process of involving the industry in the pavement type selection process is appropriate and we appreciate the Department's consideration of our comments.

We believe the approach of identifying the procedure used in the pavement selection process as shown in draft Chapter 4 dated 07/09/2010 is a reasonable approach. We are submitting additional comments as noted below.

It should be noted that Florida enjoys a very high serviceability with its current pavements (and systems) mostly due to its strong use of sustainable materials, implementing research into practice, tough but fair specifications, and a strong partnership with its contractors. In fact, in 2010 Overdrive magazine awarded top honors to the State of Florida for its roads, naming Florida Number 1 in the nation for its highways and singling out I-75 and I-10 as two of the top three roads in the Country. This award is voted on by the nation's truck drivers (Florida's customers) and FDOT should be proud of its policies and procedures that led to this prestigious award. This award validates that the Florida DOT already has a good handle on its pavement selection process and is a testimony to the performance of asphalt pavements across the State.

It should also be noted that the FDOT undertook a third party review of its Pavement Type Selection Manual by premiere consultants in concrete and asphalt. We believe the review was fair, and although the FDOT elected not to address all asphalt industry's comments in this review, the changes FDOT chose to adopt from both consultants will help improve the process. We understand there are very divergent viewpoints from the two industries and it would be impossible to accept and adequately address all our comments. In the end, FDOT has been very deliberate and judicious in adopting a conservative approach to investing tax dollars in pavements, and the performance of these pavements has stood the test of time. Florida's pavement designs and pavement preservation process is making a difference and has shown it is more economical to maintain roadways than to rebuild them. That is the premise behind the Perpetual Pavement Concept - build the pavement foundation and structure one time, and maintain the surface through periodic renewals.

4.1 General

No comments on this section.

4.2 Economic Analysis

We agree with this recommended procedure.

4.3.1 Time Periods

A 2010 study of State DOTs showed that 24 States are using a 4 percent discount rate, so Florida is well within the norm of properly accounting for this attribute. These attributes are conservative, and given the volatility of today's financial markets, it makes complete sense to not speculate. See Appendix 1 for an additional discussion.

In addition, the survey showed the average analysis period was 38 years (very close to Florida's 40 years). There seems to be some confusion over what the analysis period is and isn't. It isn't the service life of the pavement. We don't and can't afford to build pavements for the analysis period only – pavements are built to last indefinitely and each pavement type will need to be maintained, rehabilitated, and some may even have to be eventually reconstructed (removed and replaced). The analysis period needs to be long enough to account for a major rehabilitation for each pavement type.

4.3.2. Rehabilitation Strategies

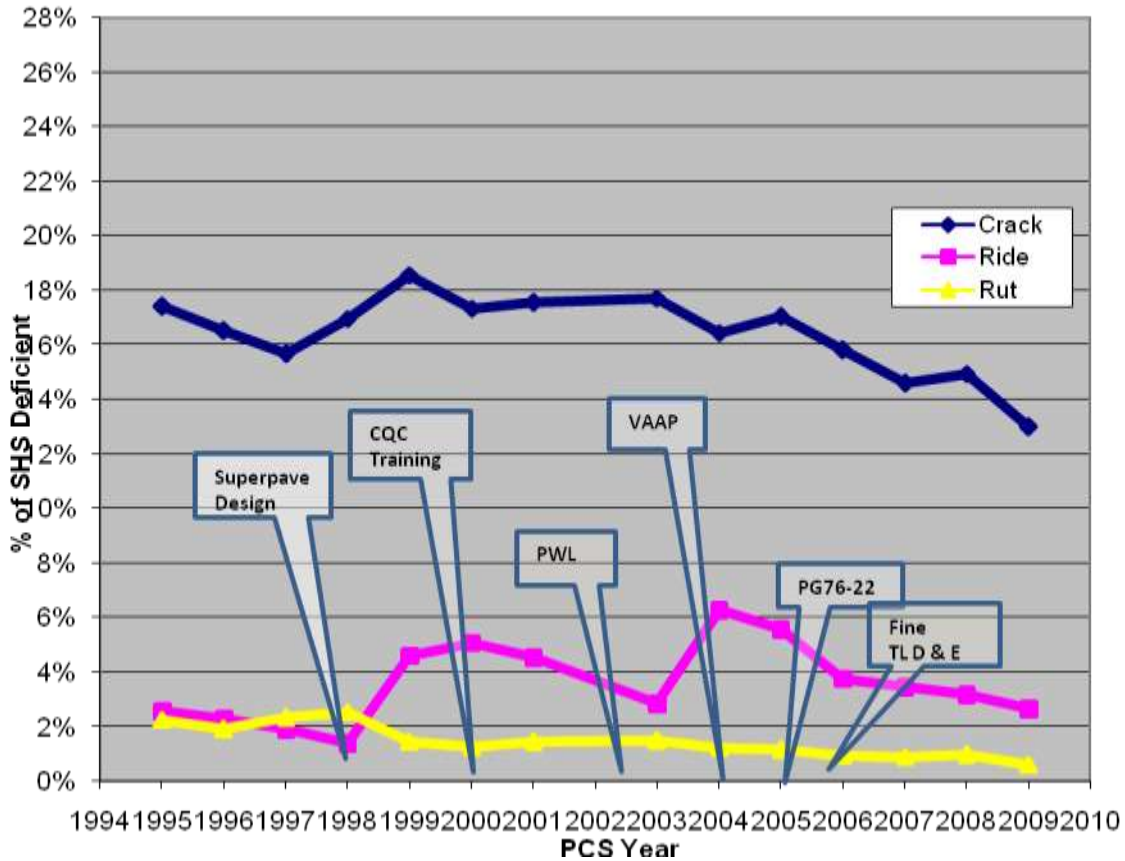
The strategies for both materials are relatively unchanged from the current Pavement Type Selection Manual though there are changes to the concrete table. Could the Department provide some data to support the decision to an option for 5% slab replacement at 30 years for Rural Arterial and Limited Access? Crack, Seat, and Overlay is a viable proven technology that greatly improves the performance of concrete pavement in the out years. Interstate 10 is an excellent example of the proper use of Crack, Seat, and Overlay and has greatly improved the serviceability of this pavement.

It is difficult to predict future performance especially for several decades, so the FDOT is proper in being conservative in their estimates of pavement performance. In other words, it is better to under-predict the performance rather than over-predict the performance and incur unanticipated costs in the future. The rehabilitation periods and strategies are conservative for the asphalt sections given advances in materials, mix designs and construction quality assuming there are no imminent changes to the asphalt pavement thickness design. If I understand correctly, the new MEPDG for concrete may significantly reduce the thickness of new concrete pavements. The concern here is that the current rehabilitation strategies for concrete (based on older thicker designs) may actually over-predict the actual performance of newer thinner concrete pavements. In fact, these pavements may require more extensive rehabilitation or an earlier reconstruction if the assumptions and theory behind the MEPDG is not proven over time to be valid.

Resurfacing schedules:

1. There is a difference of opinion between the two industries regarding how long pavements last before needing some type of work (maintenance or rehabilitation). The asphalt industry recognizes the nature of asphalt pavements requires periodic surface renewal (mill and fill) as an integral advantage of this flexible type of pavement system. Those periodic surface renewals offer the Department the advantage of improvements in technology, adjusting the structural design to account for changes in traffic loading, and restoring the smoothness and surface characteristics that make Florida's highways number 1 in the nation. Significant advances in technology and processes have dramatically improved the performance of asphalt as shown in the following graph.

Statewide PCS Data – Asphalt Pavement Performance



Actual data from FDOT shows the average rehabilitation age for asphalt pavements to be 18.5 years for asphalt and 18.4 years for time to first rehab for concrete. In those few areas where asphalt has not performed as expected, there is generally an assignable cause, one which the Department has already addressed. Pro-active research and development by the State Materials Office in Gainesville and cooperative national studies have validated the decisions to add polymers to asphalt, and improve the performance of open graded friction course to name just a few improvements. In summary, the historical record for asphalt is one of continuous improvement and is outperforming the department's expectations.

Surface characteristics:

1. In order to make a legitimate comparison, the requirements for ride should be identical for either pavement type when constructed or rehabilitated. The traveling public deserves the same ride regardless of the pavement type. Therefore, a full project diamond grinding needs to be included and documented in the rehabilitation schedule for the concrete pavements in order to maintain some parity with the ride provided by asphalt pavements. Representatives of the concrete industry agreed that full diamond grinding following CPR should be done – discussed at the meeting on 7/20/2010.

2. The public enjoys the unique benefits provided by an open graded asphalt friction course on all high speed asphalt pavements in terms of ride, wet weather handling, visibility, and noise reduction. This premium surface is so well accepted that it is required by the Department for all high speed asphalt pavements. In order to maintain parity and provide the same unique benefits to the public, the Department should consider requiring concrete pavements be surfaced with an open graded asphalt friction course to provide the public with an equivalent roadway. This OGFC needs to be added to the rehabilitation table for pcc and should be included in the LCC analysis. Both Arizona and Texas DOT have started to adopt this policy with dramatic improvements for their customers.

4.3.3 Considerations

It should be noted that if the current economic situation is prolonged in Florida, the importance of the initial cost will be magnified. If the initial cost of one alternative is much higher than the initial cost of the other alternative, needed projects in other parts of the system may need to be postponed. There is an opportunity cost of not building needed projects, and this should be a consideration.

Also, we suggest that Central Office issue guidance on the “Engineering Consideration” discussion noted in this section to maintain uniformity throughout the districts. In addition, the smoothness requirement should be the same regardless of pavement type selected as smoothness is a primary consideration for the driving public.

4.3.4 Project Development Time Frame and Solicitation of Industry Input

We support making the decision as early as possible (assuming enough data is available to make a legitimate comparison). Three weeks appears to be an adequate time period for review. Please note the proper name is Asphalt Contractors Association of Florida, Inc.

Again, we appreciate the opportunity to comment on this process.

Yours truly,

Jim Warren
Executive Director

The Asphalt Industry's Position

On

Discount Rate for Life Cycle Cost Analysis

The selection of a discount rate in life cycle costing can be contentious because there is a great deal of uncertainty associated with future interest rates and inflation. However, the time value of money has been historically established to reflect that money loses its relative value with time. An unreasonably low or negative discount rate essentially means that it would not matter financially if a project were to be constructed today or 10 years from now and overemphasizes the influence of uncertain future costs. Too high a discount rate would overemphasize the importance of the initial cost and not allow the proper influence of future maintenance and rehabilitation costs over the analysis period. The FHWA (1998) recommends using a discount rate between 3 and 5%, and the *MEPDG* recommends establishing the discount rate according to that set by the federal Office of Management and Budget Circular A-94 which is updated annually. This circular may be accessed through this web site: <http://www.whitehouse.gov/omb/rewrite/circulars/a094/a094.html>.

In any case, the same discount rate is to be used for all alternatives considered in an analysis. This is because the discount rate reflects the time value of money to the entity making the investment and considers all factors inherent in inflation including other opportunities for spending the money, not simply the cost of one product. Below is a quote from the Federal Energy Management Program on conducting Life Cycle Cost Analysis:

Chapter 2 discussed the need to establish a **common study period, base date, and service date** when conducting an LCC analysis of two or more project alternatives. It is also essential that **the same discount rate and inflation treatment** be used in LCC analyses of multiple project alternatives. This chapter explains the fundamentals of discounting future costs to present value,¹ the use of **constant dollars** in an economic analysis as a way of treating inflation, and the adjustment of future costs for real price escalation. The methodology presented in this handbook for discounting and treating inflation is in accordance with the requirements of 10 CFR 436. It is identical to the methodology prescribed in OMB Circular A-94 and is consistent with most engineering-economics textbooks.

This is consistent with the FHWA guidelines on conducting LCCA and it is the approach they use in their RealCost software.