

**From:** Paul Bruhn [<mailto:bruhn.paul@gmail.com>]  
**Sent:** Tuesday, January 28, 2014 10:54 AM  
**To:** Wrucke, Andrew  
**Subject:** Fwd: RE: HPA Meeting

Thanks Andrew. One quick question, our road was completed about 10 years ago and we have been very good on maintaining the roadway. Do you think the chip seal is worth the \$45k? What benefits does it do in the future and does that out way the cost/benefit ratio.

Thanks. Paul

**From:** Wrucke, Andrew  
**To:** Paul Bruhn [<mailto:bruhn.paul@gmail.com>]  
**Subject:** Fwd: RE: HPA Meeting

Paul,

This is just another step in maintenance. The chip seal adds fresh oil to the top layer of the asphalt surface. This top surface has oxidized, lost oil and become more brittle in the passing years. Adding additional oil to the mix will keep it in better working condition with less crack propagation for a longer period of time. The rocks are just there so the surface has some roughness for tires to grip on (also, for your neighborhood a fine chip mix should be used for better ride/ability to rollerblade).

Some background information on our maintenance program at the County: we usually chip seal our roads two years after they are paved/overlayed and then expect them to last in the 13-20 year range after that, with an occasional additional seal between years 8-13. However, the cost benefit of a chip seal diminishes with additional time, even with a chip seal around 20 years is the expected lifespan of an asphalt pavement without overlay. Any longer without an overlay, and the asphalt runs the risk of failing (i.e. potholes, etc.) and will cost more to repair the longer it sits in a failed state. Additionally to the chip seal, you should look into a crack seal program for the road so that the chip seal is not completed on a cracked up road already. The County crack seals the same year before a chip seal is completed.

With a good maintenance program, a thinner (and therefore cheaper) overlay would be required before the pavement has reached the end of its lifespan (again the approx. 20 years). These overlays could be as low as a 1.5" maintenance overlay rather than a full 3"+ structural rebuild of the road. Chip seals and crack seals also make it so the new overlays do not fail nearly as quickly when they are done as a thin maintenance overlay since all cracks and bad spots in the pavement show through on these thin overlays.

Overall, the asphalt roads are not cheap to keep in good repair, and must be up kept with these maintenance programs to prevent a more costly repair in the future. With the current rising cost of oil and asphalt prices, an overlay is slowly becoming more and more expensive to be completed in the future. Right now, an overlay is costing approximately \$800,000/mile per 1.5" thickness, so a \$22,500/mile maintenance program that buys additional time and reduces future overlay thickness can go a long way.

Sorry for the roundabout answer, but I cannot give you a more firm cost/benefit analysis for this maintenance project. Hopefully this additional information will help you and Highland park decide how to attack the problem of deteriorating roads.

Let me know if you have any further questions.

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