Pavement Preservation in Today's Road Industry

Pavement Preservation Today

- Accelerating use, but we'd like to see more speed
- Our own awareness and action has been a combination of coincidence and dumb luck
- We can do more and so can you

75 Years of *Better Roads*

- A little background about *Better Roads…*
- 2006 is our 75th Anniversary
- For 70 of those years, primary focus was government agencies
- Current ownership acquired the magazine in late 2000
  - Added contractor circulation
  - Changed editorial model in 2001

2001 Changes

- Become a valued source of information about pavement construction, maintenance and management
- Remain a valued source of information about road management from an agency perspective

Change in Scope and Mission

- Added lots of editorial pages
- Looked for strong alliances with writers and information sources
- Redesigned the magazine with the goal of creating a new concept

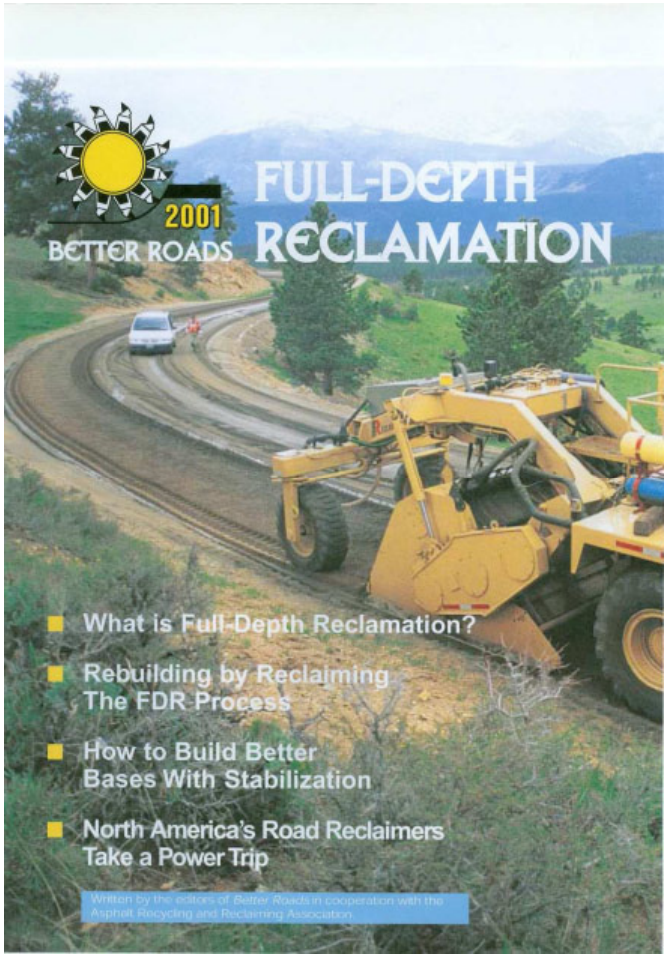
First Move: ARRA

- ARRA's book on FDR
  - Issued in 2001
  - Authoritative text, strong visuals
  - Our needs exactly
  - ARRA agreed to work with us on it
- Special supplement: July 2001
  - Annually in July ever since

Next Move: Tom Kuennen

- Search for authoritative authors brought us to Tom
  - previous business relationship
  - mutual interest in doing something new
- Road Science
  - cover important topics completely
  - we'll make the space
- Tom got us to FP2

Getting the Word Out:
ARRA Supplements



- 6 annual supplements starting with this one
- Some revolve around job stories
- Some focus on service slants: when to apply which technology.

Getting the Word Out:
Road Science—June ‘03

ROAD SCIENCE

by Tom Kuennen, Contributing Editor

When Prevention Is the Cure

A systematic pavement preservation program delivers more road-quality bang for the taxpayers' buck.

A current pavement inventory, identification of conditions, and correct timing of pavement preservation applications are the secrets to successful preservation of hot-mix asphalt driving surfaces, according to a growing body of experts and research.

Photo courtesy FP2.

An Etnyre chip spreader places chips behind a distributor truck for a Minnesota chip seal demonstration.

In Minnesota, a distributor truck sprays polymer-modified binder in advance of demonstration chip seal.

Naturally, government agencies want to keep citizens happy by providing as large an inventory of smooth streets as possible. But state, city, and county road agencies alike have to remember that maintenance techniques applied to pavements that are completely deteriorated beyond a certain point are a waste of money.

A "worst-first" pavement maintenance philosophy tosses scarce public funding at pavements that should be allowed to fail first, then be reconstructed in an orderly, programmatic manner.

Asphalt pavements will perform well and deteriorate very slowly through the first eight to 10 years of their lives, then fail rapidly as an assortment of ills does them in. (see chart page 46).

The best way, experts say, to spend scarce maintenance funds is to determine where the pavement is in its life-cycle "curve," and apply preventive maintenance techniques just before the period of rapid deterioration sets in.

Unfortunately, the public agencies responsible for pavements ultimately must answer to elected officials. It takes guts for a public works supervisor to insist to a mayor or aldermen that the municipality will get the best use of funds by allowing a street to fall apart before rebuilding, despite what the voters say.

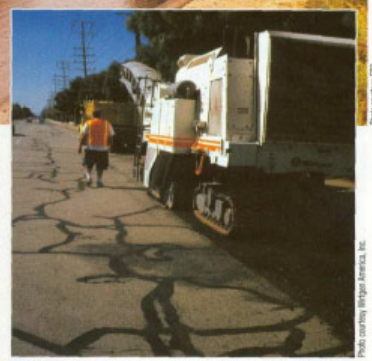


Photo courtesy Wirtgen America, Inc.

Beyond preservation, severely cracked asphalt friction course is milled in Ontario, California, by Lindy's Cold Planing, LaHabra.

Support for preservation

Experts agree pavement preservation is best executed in the framework of a pavement management system that will enable a road agency to identify pavement condition throughout its road inventory. Not only will such a system help allocate where funds are best spent, but it will also provide a database to prove the long-term benefits of pavement preservation and justify additional preservation spending.

Getting the Word Out:
Road Science—April ‘05

Preservation techniques for local roads work for high-volume pavements, too — but top-flight discipline, designs, and materials are required.

Crack sealing, chip seals, slurry surfacings, and thin overlays are part of a standard pavement preservation "tool box" for low-volume, secondary roads.

Now, a growing accumulation of research indicates these same techniques also work on high-volume roads, but with a catch: success demands a disciplined approach to these techniques rather than the seat-of-the-pants, intuitive procedures that often mark work done on low-volume pavements.

Where chip seals might have been done by agency forces using tried-and-true, "hand-me-down" procedures with off-the-shelf binder and chips, today's successful chip seal for high-volume roads likely will be designed in a lab based on existing conditions, climate, and traffic loads, with a binder that is polymer-modified, and chip attributes that specify shape size, moisture content, and placement.

And, rather than being installed by an agency's general maintenance crew, it may be placed by a contractor — or a highly trained agency crew — with the quality controls and material suppliers that can assure the quality materials demanded for long-term performance. Its performance may be warranted. And in some instances, the preservation treatment may be a proprietary product that is available only through a dedicated contractor, such as an ultra-thin bonded wearing course like Koch's NovaChip.

As agencies invest more in preservation for high-volume pavements, competition for that market is growing. A case in point: Rather than conceding the prevention market to chip seal interests, the hot-mix asphalt industry has been supporting research into thin asphalt overlays and how they fit into a pavement preservation program.

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And, all treatments are benefiting from new research that identifies best practices for pavement preservation for high volume roads, and establishes valid lifecycle cost-analysis that makes the argument for increased budget emphasis on prevention more effective.

New choices

Conventionally, chip seals and other surface treatments have not been associated with high-volume arterial, collector, or interstate-type pavements. Instead, with regional exceptions, the preferred application is an asphalt overlay, following years of minimal care — typically, pothole patching and occasional crack sealing. But a variety of surface treatments for high-volume roads exists, and experts say they have the potential to prolong pavement serviceability at minimal cost.

"Historically, the agency managers felt that the high-type asphalt and concrete pavements always needed an additional section of asphalt placed on them, and that chip seals, slurry seals, and other preservation treatments would not stand up to the traffic and loadings of those high-level pavements," said Jim Sorenson, senior construction and maintenance engineer, Federal Highway Administration Office of Asset Management.

"But with the advent of SHRP [Strategic Highway Research Program], 1988-1993, it was clearly demonstrated that preservation treatments were fully viable for any volume of road," Sorenson told *Better Roads*.

"There are the right techniques to use; for example, the chip seal must be properly designed, with good embedment and traffic speed held down. But on the Tacoma Narrows Bridge, with about 178,000 ADT [average daily traffic], Washington State DOT has been putting chip seals on the deck for years" noted Sorenson. "They don't want to add a lot of extra weight but need to keep friction up. Caltrans has main-line pavements on I-5 and I-80 where they did not think surface treatments would work, but the treatment has held up to the traffic."

Such surface treatments can afford to have a higher quality aggregate in them, because other costs are lower. "As a result, their durability is much better," Sorenson said. "The surfacings are not expected to carry the load or provide structural value, but to ward off the effects of aging and oxidation that Mother Nature sends. It's a matter of putting them

New Pavement Preservation Boss at FHWA

Tom Deddens, P.E., joined the FHWA's Office of Asset Management as pavement preservation and construction engineer in February. He will manage the pavement preservation program, as well as the program manager moving the FHWA's interests in performance specifications.

Deddens has 30 years' experience in the industry. He worked more than 10 years in the U.S. Army Corps of Engineers, and has since worked in the private sector for several consultants, and in industry as a district engineer for the Asphalt Institute. With the Asphalt Institute, he provided technical assistance and training opportunities to the states of Arkansas, Illinois, Kansas, Missouri, and Nebraska, including maintenance of hot-mix asphalt pavements, rehabilitation of pavements using HMA, advanced Superpave mix design, and construction of asphalt pavements.

Deddens is a qualified National Highway Institute instructor, having taught its course in *Pavement Preservation: Selecting Pavements for Preventative Maintenance*. He holds a bachelor of science degree (1975) from the University of Missouri-Rolla, and a master of science degree (1985) from the University of Kansas. He is a registered professional engineer in Kansas and Missouri, and has been professionally active in the Association of Asphalt Paving Technologists and American Public Works Association.

Special Features:
Sohila Bemanian, Nevada DOT, July 2003

ASPHALT IN-PLACE RECYCLING

SOHILA BEMANIAN

HOW RECYCLING FITS NEVADA'S PAVEMENT PROGRAM

The task force ultimately made three sweeping recommendations calculated to change the state's prevention strategy from reactive to pro-active.

In 1997, the Nevada Department of Transportation confronted a growing problem. Our state had the fastest-growing population in the United States, and the department needed to invest a larger percentage of its annual budget in increased road capacity.

As the department looked for places to trim and save, one promising source was the pavement preservation program. In 1997, a Pavement Task Force was formed to study the program and look for ways to make it more cost effective.

The task force ultimately made three sweeping recommendations calculated to change the state's prevention strategy from reactive to pro-active — saving tens of millions of dollars a year and maintaining state roads at the highest level of quality.

First, the task force said the department should prioritize projects based on rate of deterioration or prediction models, not on pavement condition.

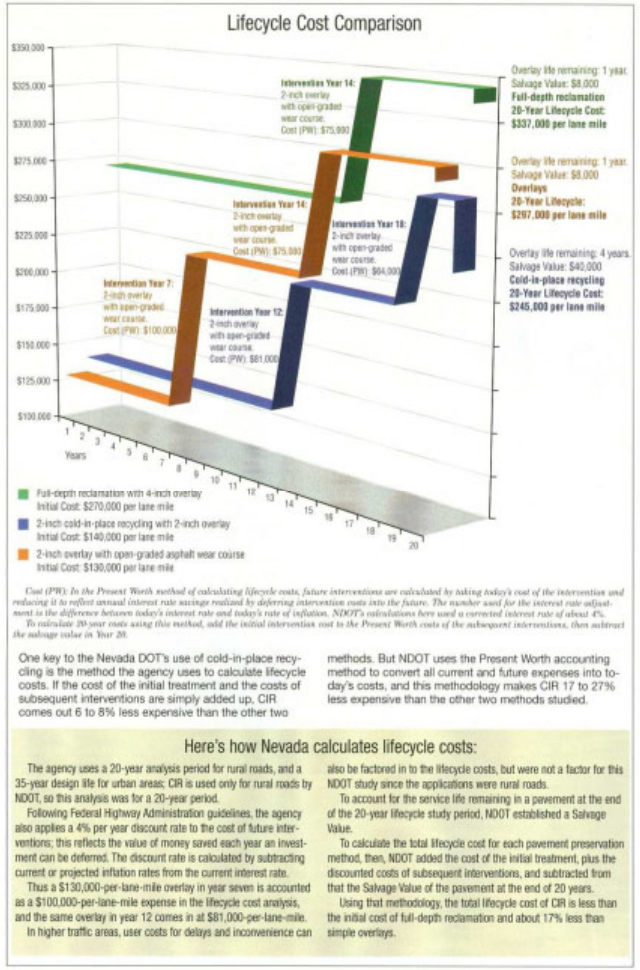
Second, they should select prevention strategies based on life-cycle cost, not initial cost.

And, third, the task force recommended that the DOT increase pavement preservation funding initially in order to optimize the program by reducing the project backlog.

Over the next six years, Nevada DOT spending on pavement preservation averaged $116 million, down from a pre-1997 average of $120 million — and the department reduced its project backlog by 50%, from $528 million to $263 million.

One of the strategies that helped NDOT expedite the pavement optimization process was cold-in-place recycling. This process has proven to be very cost-effective for roads

A cold-in-place recycling train makes its way along a secondary road in Nevada.



Cost (PW): In the Present Worth method of calculating lifecycle costs, future interventions are calculated by taking today's cost of the intervention and reducing it to reflect annual interest rate savings realized by deferring intervention costs into the future. The number used for the interest rate adjustment is the difference between today's interest rate and today's rate of inflation. NDOT's calculations here used a corrected interest rate of about 4%.

To calculate 20-year costs using this method, add the initial intervention cost to the Present Worth costs of the subsequent interventions, then subtract the salvage value in Year 20.

One key to the Nevada DOT's use of cold-in-place recycling is the method the agency uses to calculate lifecycle costs. If the cost of the initial treatment and the costs of subsequent interventions are simply added up, CIR comes out 6 to 8% less expensive than the other two methods. But NDOT uses the Present Worth accounting method to convert all current and future expenses into today's costs, and this methodology makes CIR 17 to 27% less expensive than the other two methods studied.

Here's how Nevada calculates lifecycle costs:

The agency uses a 20-year analysis period for rural roads, and a 35-year design life for urban areas; CIR is used only for rural roads by NDOT, so this analysis was for a 20-year period.

Following Federal Highway Administration guidelines, the agency also applies a 4% per year discount rate to the cost of future interventions; this reflects the value of money saved each year an investment can be deferred. The discount rate is calculated by subtracting current or projected inflation rates from the current interest rate.

Thus a $130,000-per-lane-mile overlay in year seven is accounted as a $100,000-per-lane-mile expense in the lifecycle cost analysis, and the same overlay in year 12 comes in at $81,000-per-lane-mile.

In higher traffic areas, user costs for delays and inconvenience can also be factored in to the lifecycle costs, but were not a factor for this NDOT study since the applications were rural roads.

To account for the service life remaining in a pavement at the end of the 20-year lifecycle study period, NDOT established a Salvage Value.

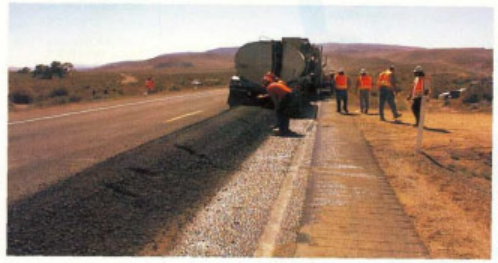
To calculate the total lifecycle cost for each pavement preservation method, then, NDOT added the cost of the initial treatment, plus the discounted costs of subsequent interventions, and subtracted from that the Salvage Value of the pavement at the end of 20 years.

Using that methodology, the total lifecycle cost of CIR is less than the initial cost of full-depth reclamation and about 17% less than simple overlays.

Special Features:
Sohila Bemanian, Nevada DOT, July 2003

ASPHALT IN-PLACE RECYCLING

The CIR cores taken on U.S. 95 in NYE were in excellent condition after 12 years.



A Nevada recycling train windrows cold-mix recycled asphalt for a trailing paver. Nevada projects a 10-12 year life for its older CIR pavements, and 12 years or more for projects using newer mixes which contain lime.

that are experiencing medium to high severity *non-load-related* cracking.

Nearly 700 lane miles of cold-in-place recycling has been completed since 1997. Prior to 1997, the department completed 236 lane miles of CIR using primarily cutbacks and rejuvenating agents. Those pre-1997 projects were used to establish the long-term performance of CIR, while the post-1997 projects were used to develop short-term performance and lifecycle costs.

Pavement Optimization

Since pavement deteriorates at different rates based on traffic volume and environmental conditions, Nevada divided its 13,000-mile road system into five categories (see Table 1).

For each category of road, the department calculated the average life expectancy for the pavement based on the point where the pavement reaches its optimum point for rehabilitation, and then compared that data to the average life expectancy of roads in each category that are allowed to age to the failure point. The data for both calculations came from the state's own pavement performance records.

The optimum point for pavement rehabilitation was when little or no cracking was evident. The agency also gave higher priority to roads experiencing a rapid rate of deterioration than those with a slow or moderate rate of deterioration.

Based on the calculations in Table 1, NDOT concluded that by using a pro-active preserva-

Initial Project Cost Comparison

	FDR & Overlay	CIR & Overlay	Overlay
Strategy	FDR, 4-inch overlay with open-graded asphalt wear course	2-inch CIR, 2-inch overlay, plus chipseal	2-inch overlay with open-graded asphalt wear course
Year	1998	2000	1999
Lane Miles	49 miles RBM & overlay; 8 miles overlay only	59 miles	20 miles
Average Daily Traffic	1,400 vehicles	195 vehicles	1,400 vehicles
Equivalent Single Axle Loads	113	27	150
Project Cost	$14 million	$8.2 million	*$12 million
Cost Per Lane Mile	$270,000	$140,000	*$130,000

** Overlay contract included other non-related work; cost-per-lane-mile data reflects overlay portion of the contract only.*
FDR: full-depth reclamation; CIR: cold-in-place recycling.

The Nevada DOT drew on specific projects to establish average costs per lane mile for three types of intervention — full-depth reclamation, cold-in-place recycling, and simple overlays.

ASPHALT IN-PLACE RECYCLING

The CIR cores taken on U.S. 95 in NYE were in excellent condition after 12 years.

tion program that intercedes at the first signs of pavement degradation, it could reduce the cost of pavement preservation by as much as $41 million annually.

The next challenge was to select the most cost-effective means of treating different pavement conditions, based on life-cycle and user costs, present and future funding, and the risks associated with each strategy.

Cold-in-Place Performance

Like many states, Nevada had a problem with reflective cracking in its asphalt pavements. The DOT's conventional practice had been to correct the condition with full depth reclamation. This process consisted of pulverizing 8 to 10 inches of existing pavement, adding and mixing 2% cement, and placing 3.5 to 5.5 inches of hot-mix asphalt over the processed material.

Even though this method was very effective in retarding reflective cracking, it considerably reduced the in-place structural section, which forced the state to invest in a 3.5- to 5.5-inch overlay to meet structural requirements.

One lower-cost alternative to full depth reclamation was cold-in-place recycling. The state had invested in six projects and 236 lane-miles of cold-in-place recycling work prior to 1997 (Table 2). Three of the projects, totaling 136 lane miles, received only a chip seal wearing surface and the other three projects, totaling 100 lane miles, received 2.0 to 2.5 inches of overlay with an open-graded wearing surface. As of 1997, most of those projects had performed very well, and we elected to employ CIR in more interventions in the future.

Cores were taken from these pre-1997 projects in 2001 to evaluate the condition of the CIR pavements. Based on analysis of those cores and a review of the construction records, we reached the following conclusions:

- The average life expectancy of a CIR pavement is 10 to 12 years using the old process. We believe lime slurry used in post-1997 projects will improve the performance considerably. This finding was verified by laboratory tests conducted by the University of Nevada.
- The CIR cores taken on U.S. 95 in NYE were in excellent condition after 12 years. The mode of distress prior to the second recycle was located in the overlay. The failure of the overlay was due to the binder, not the first recycle. The environmental condition in this area is mild.
- When traffic averages more than 300 vehicles a day, CIR should receive a structural overlay in order to optimize the process. Not having a structural overlay on U.S. 95 in Mineral County was the main cause of early failure. The overlay depth should be based on projected traffic.
- Based on falling weight deflectometer results, NDOT established a structural layer coefficient of 0.25 to 0.28 for CIR pavements.
- Adequate depth of existing asphalt pavement must exist throughout the project to have a successful CIR project. The adequate depth for NDOT is the specified recycle depth plus an additional 1.5 inches.
- The life expectancy of CIR pavement is

The CIR cores taken on U.S. 95 in NYE were in excellent condition after 12 years. The mode of distress prior to the second recycle was located in the overlay.

Table 2: CIR Projects Prior to 1997

Date of CIR Work	Location	Repair Strategy	ADT (one direction)	Age before next overlay	Source of failure
1982	SR 319 LN	3-inch CIR and chip seal	240	17 years	CIR pavement
1986	US 95 MI-LY-CH	2.5-inch CIR and chip seal	1,240	5 years	CIR pavement
1987	US 95 NY	2.5-inch CIR and 2.5-inch overlay	1,400	12 years	Overlay
1990	US 93 EL	2.5-inch CIR and 2.5-inch overlay	1,000	12 years	Overlay and CIR pavement
1991	US 50 EU	2.5-inch CIR and 2-inch overlay	2,200	10 years	Overlay
1992	SR 722 LA	3-inch CIR and chip seal	25	None scheduled	Inadequate depth

Nevada's early history with cold-in-place recycling was largely successful. The single exception was a 1986 project on a busy section of U.S. 95, which should have had an overlay rather than a chip seal to handle the traffic volume.

Special Features:
Tinley Park, IL – July 2006

by the Better Roads staff

Winning with Hot Recycling and Preventive Maintenance

How the Village of Tinley Park saves millions by keeping its streets in pristine condition.

Everyone talks about preventive road management, but the village of Tinley Park, Illinois has been living it for many years — and has great results to show for the effort.

Located in the south suburbs of Chicago, Tinley Park is more than 100 years old and has a population of over 60,000. The current asset value of its roads is just over $88 million, or nearly $1,600 per resident.

But perhaps the most impressive data regarding Tinley Park's roads is the system's Overall Condition Index: it is a scintillating 89. In the Chicago area, with its high traffic loads and freeze-thaw temperature extremes, municipal OCI numbers typically run in the 50s and 60s.

Gallagher's hot-in-place recycling train heats and scarifies old asphalt to a depth of 2 inches along the curb line. The train completes a 420-foot city block in less than an hour and residents have access to their driveways as soon as the train passes by.

How they do it

For more than a quarter century, Tinley Park has retained the services of Robinson Engineering to handle its engineering needs for transportation and other infrastructure categories, and to assist in managing projects. Robinson Engineering sold the village on the concept of rehabilitating pavement long before it deteriorates into the critical zone.

As a result of this strategy, Robinson and Tinley Park became one of the pioneer users of hot-in-place recycling back in the 1980s. Always on the lookout for value-added ideas and processes, Robinson began specifying HIR for Tinley Park and its other clients more than 30 years ago.

The initial projects were successful and hot-in-place recycling has been one of the mainstays of Tinley Park's prevention program ever since.

Hot-in-place recycling typically saves the agency more than 30% compared to a standard mill-and-fill operation.

Gallagher Asphalt's crew starts recycling the second lane of a Tinley Park residential street. The two-block project was completed in one day last May and is part of a 350,000- to 400,000-cubic yard contract Gallagher has with the village this year.

Christopher King, P.E., president of Robinson Engineering, says hot-in-place recycling typically saves the agency more than 30% compared to a standard mill-and-fill operation (milling off the top 2 inches of old asphalt and replacing it with new hot mix). And equally important, the HIR process can be done in about half the time, says King.

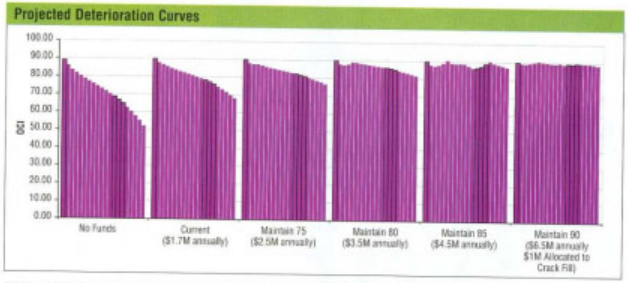
The process

For the past 20 years, most of Tinley Park's HIR work has been performed by Gallagher Asphalt, an 80-year-old, family-owned asphalt producer/contractor with multiple plant locations in the Chicago area.

The hot-in-place recycling process used by Gallagher and Tinley Park is a multi-step, continuous method that heats the pavement slowly to a viscous state, introduces a liquid rejuvenating agent, then remixes the pavement with tines and augers, usually to a 2-inch depth, which removes typical aging imperfections.

The heated pavement is then re-profiled and compacted. The rehabilitated pavement then receives an overlay of fresh hot-mix asphalt — usually a 1.5-inch lift. For some applications, less expensive surface treatments are used, including micro surfacing, chip seals, and slurry seals.

Robinson, which has contracts with 36 municipalities in the region, says the savings HIR offers are even higher today, with liquid asphalt prices having more than doubled in the past year or so.



Robinson Engineering and the Village of Tinley Park have calculated the results of various levels of preventive maintenance funding in terms of its affect on the village's pavement conditions. As pavement conditions decline on the deterioration curve, says Robinson, the cost to improve goes up.

Special Features:
Tinley Park, IL – July 2006

pavement condition to measure the progress of the program. The next update will be completed in 2007.

Prevention's payoff

Robinson Engineering and the Village of Tinley Park use Projected Deterioration Curves to estimate how various levels of preventive maintenance spending will affect the overall condition of the city's pavements.

In the Overall Condition Index, 100 is the value for a new road.

While substantially more annual maintenance funding is necessary to keep the pavements at a high OCI level, as lesser-maintained pavements deteriorate, the types of interventions needed to bring them back to good condition becomes increasingly burdensome.

Robinson Engineering's Christopher King offers an even more dramatic example. "Let's look at two alternatives for maintaining 1 mile of street. Alternative 1 is to do no maintenance at all. The pavement will fail in 25 years and the cost to replace it is $1,320,000, or $52,800 per year.

"Alternative 2 is to maintain pavement condition with preventive maintenance practices, including crack sealing and hot-in-place recycling every 8 to 12 years. Over a 25 year period, this program would cost about $320,000, or $12,800 a year. That represents a savings of 412% compared to doing nothing."

How High-OCI Pavement Pays Off

Overall Condition Index (OCI)	90	85	80
Average Cost per Foot to resurface	25	30	50
Number of years in Pavement Management Program cycle	12	12	8
Miles of Streets	240	240	240
Estimated Annual Cost	$2,640,000	$3,168,000	$7,920,000

Maintaining its 240 miles of pavements at an OCI level of 90 saves the Village of Tinley Park hundreds of thousands of dollars each year compared to holding at an OCI level of 85, and millions compared to an OCI level of 80. This reflects the fact that, as overall pavement quality declines, the cost of interventions increases substantially.

Highlights:

- **Hard data on costs for each option**
- **Introduction to Overall Condition Index**
- **Cost/benefit analysis of preventive maintenance program using a real-life example**

Exploring the FP2 Website

- FP2 has a lot of data-rich documentation on the benefits of prevention
- How much of it has been publicized in industry publications and meetings?

Going Pro-Active

- Some ideas about how to get the word out
  - Who’s the target?
  - How to reach them

Fun with Numbers:
Profiling Road Agency Pros

- Who are they?
  - Male (96%)
  - 51 years old
  - 60% are college grads
  - Average annual income: $66,500
  - 22 years in the road industry
  - 12 years in current job

Fun with Numbers:
Profiling Road Agency Pros

- Vital Statistics
  - 82% are satisfied with current job; 3% are not satisfied
  - Most are politically conservative (36%) or moderate (28%); only 7% are liberal
  - Most are “very enthusiastic” about their work
  - 58% say they aren’t afraid to take a chance on new technology/techniques
  - About half consider their colleagues to be highly motivated and competent

Fun with Numbers:
Profiling Road Agency Pros

- What they think about
  - More than half (55%) think they are underpaid
  - 70% plan to retire before age 65
  - 69% say pavement maintenance is a primary responsibility; 82% like to read about it
  - About 1/3 say failing pavements are a major problem

Fun with Numbers:
Profiling Road Agency Pros

- What do they know about prevention?
  - A mixed bag
  - 33% say they are “big advocates” of recycling technologies for road repair and renovation
  - Less certain: how many…
    - understand lifecycle costs?
    - have pavement inventories?
    - can match intervention techniques to conditions?

Fun with Numbers:
Profiling Road Agency Pros

- How to reach them
  - 78% try to attend the AASHTO annual meeting
  - 42% would like to attend FP2 meetings
  - 75% get information about products and services from trade magazines

Popularizing PP:
The Webinar

- What it is:
  - A seminar on the internet
  - 30 to 60 minutes
  - Images—Power Point, graphs, film clips
  - Audio—by phone
- Benefit:
  - reach people where they live
  - archive audio and visual on your website

Popularizing PP: The Webinar

- How it works
  - Specialty vendor hosts the event
    - Technical expertise
  - You create the content
  - Sponsors defray the cost
  - Promotion partners publicize the event

Popularizing PP: The Webinar

- Great potential
  - Lecture series
    - Prevention techniques and applications
    - How to inventory pavement conditions
  - Breaking trends and news
    - New techniques, materials
- Magazines would be interested, too

Popularizing PP:
The Webinar

- Potential Sponsors:
  - Companies with a commercial interest in reaching government highway agencies
  - Manufacturers, material suppliers, specialty contractors
- Potential Promotion Partners
  - Publications
  - Highway associations (AASHTO, NACE)

Popularizing PP:
Create Data Rich Articles

- Finding a topic
  - meet with editors of target publications
  - identify unexplored but important topics
  - identify editors' needs
  - Get cost/benefit data in front of the industry

Popularizing PP:
Create Data Rich Articles

- Finding a writer
  - FP2 member employees are ideal—if they can write
  - Search for free lancers
    - High visibility people: Tom Kuennen, Dan Brown
    - Construction Writers Association
    - Canvas construction magazine editors for names

Popularizing PP: Create Data Rich Articles

- Finding a publication
  - Publications with a stake in the road/pavement business
    - Better Roads
    - Roads & Bridges
    - Public Works
    - Asphalt Contractor
    - ACPs and other regional groups
- Don’t duplicate ideas

Popularizing PP: Cultivate Editors

- When and how to educate us
  - Most editors welcome insights and advice from industry experts
  - Shows, association meetings, in-office visits, telephone, email
  - Bring ideas, capabilities
  - Annual editorial planning runs from spring through fall, depending on the book
  - Authoritative articles on pavement are always in demand

In Summary

- SAFETEA-LU is a window of opportunity
  - Under-funded programs are looking for new solutions
  - Some managers and engineers who weren't interested 5 years ago might be now
  - Prevention is probably the single most important discipline for today's conditions

In Summary

- Thank you!