

BARGEN

INCORPORATED

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Fax/Email COVER SHEET

Company City of Carlos

From Bryan Coons

Attention City clerk

Date 8-12-21

Fax # _____

Phone: 1-800-434-2924
Fax: 1-507-427-2697

Email: office@cityofcarlos.com

Email us back at bargen@bargeninc.com

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For Review
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RePlay information

RePLAY

agricultural oil seal
preservation agent

RePlay extends the life of asphalt surfaces and restores the pavement binder up to 1¼" deep



RePlay makes asphalt last longer with one application every three to five years. Over time, asphalt oxidizes and erodes. RePlay reverses this process, adding years to your surface.

88% biobased

- ✓ Cures in 30 minutes or less
- ✓ Adds 9 new, unique polymers to the mix
- ✓ Prevents asphalt breakdown: potholes, edge rutting, center line cracks, etc
- ✓ Penetrates ¾-1¼ inches deep
- ✓ Reduces moisture penetration
- ✓ Maintains skid resistance and pervious porosity
- ✓ Non-toxic
- ✓ Easy to use and apply
- ✓ Made in Missouri, USA



How RePlay works

Our process introduces nine new biobased nanopolymers to the mix, including SBS and SBBS polymers, to reverse weak conditions below and strengthen the surface. When used every three to five years, our process creates a perpetual road that saves the high cost of repaving.



Use it everywhere you pave:

- ✓ Streets
- ✓ Roads
- ✓ Rumblestrips
- ✓ Parking lots
- ✓ Trails and paths
- ✓ Runways and taxiways
- ✓ Tennis courts

Build a better surface, save your budget

Regular applications of RePlay strengthen and maintain existing pavement for a fraction of the cost of laying new pavement. How does RePlay compare to the competition, including conventional, petroleum-based sealcoats?

Product	RePlay	Competitors
Avg Life Exepectancy	5-7 Years	3-5 Years
Treatment Type	Penetrating Seal and Preservation Agent	Surface Seal
Cure Time	15-30 Minutes	1-24 Hours
Min Application Temperature	20°F (-6°C)	41°F (5°C)
Reapplication	5-7 Years	2-5 Years
Diluted in Water	No	Yes
Time before Rain	15 Minutes	1-24 Hours
Sand Blot	No	Varies
Material Type	Biobased, Soy and Other Agricultural Oils	Asphalt, Petroleum Oils
Skid Resistance	Maintains and/or Improves	Reduces

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www.bargeninc.com

BioSpan PAVEMENT SOLUTIONS

BioSpan is proud to be a part of



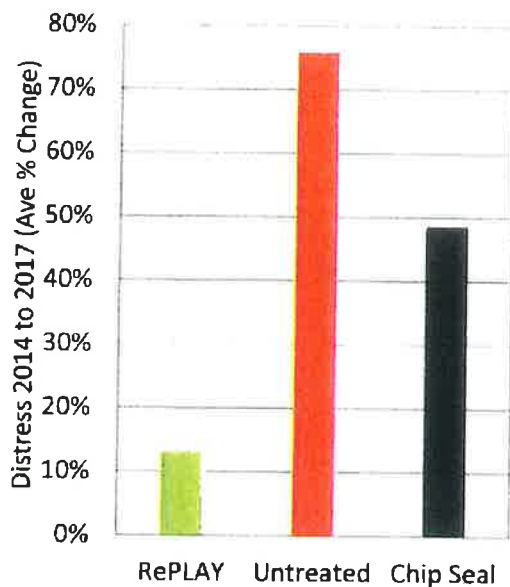
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Decision Aid: Soy-Based Asphalt Preservation

A Case Study Report Based on Hutchinson, Minnesota.

An excerpt from, Volume 2: Assessment of Biobased Asphalt Preservation.

AURI has developed a case study using historical data collected by the City of Hutchinson Public Works Department using independent third-party contractors. The goal of the study was to understand the performance of soy-based asphalt preservation products relative to standard practices.



Observed Increase in Cracking

- 76% increase when untreated
- 49% increase with chip seal
- **13% increase with RePLAY**

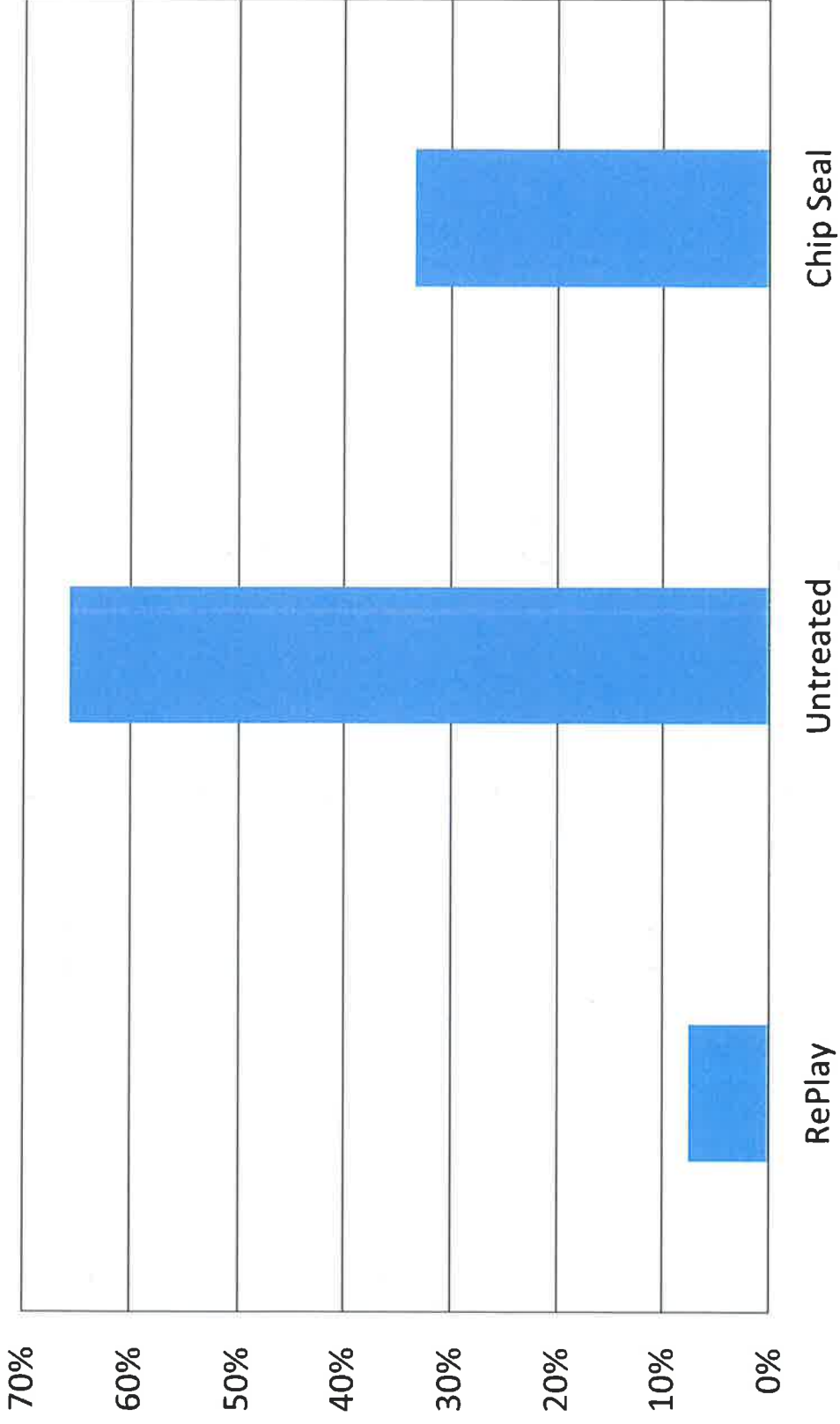
Percent change in distress from 2014 to 2017. Values are average percent change for crack data from segments with asphalt applied between 2007-2009.

Additional 2017 Case Study Details

- **RePLAY survey**
 - 28 segments for total of 9,525 center line feet and 340 ft average length
 - 5,082 linear feet of cracking and no observed block cracking
- **Untreated survey**
 - 16 segments for total of 8,435 center line feet and 527 ft average length
 - 8,434 linear feet of cracking and 2,250 square feet of block cracking
- **Chip seal survey**
 - 46 segments for total of 23,883 center line feet and 519 ft average length
 - 21,332 linear feet of cracking and no observed block cracking

The full report is available on request from AURI.

Average Percent Increase in Distress 2014 to 2017





City of Hutchinson, MN

Demonstrating how RePlay stands the test of time in Minnesota

Repeated use of RePlay extends the life of good roads and delays more costly maintenance work in Hutchinson, Minnesota

Executive Summary

Based on a product trial in 2010, Hutchinson's Public Works and Engineering department has expanded the city's use of RePlay as a powerful tool in its street maintenance strategy. Through a series of tests, Hutchinson found that RePlay pushed back the timeline for chip seals and other costly repaving works. Regular treatments of RePlay are done at a fraction of the cost of more significant maintenance methods that typically lead to repaving.

Challenges

As public works budgets and resources have tightened in most local governments, coordinating the effort to find, test and innovate new strategies often takes a backseat to regular maintenance and critical repairs. The City of Hutchinson oversees 1.5 million square yards of streets, plus an airport, alleys, parking lots and other facilities, and constantly balances the need to keep maintenance costs down with harsh winters and other factors that shorten the life of the city's roads.

"With more than \$1 million in replacement costs, it makes sense for the City of Hutchinson to do everything possible to delay expensive rehabilitations of existing pavements. We have found RePlay to be an important tool for preserving pavements, adding years to the life of our asphalt."

John Olson
Public Works Manager
City of Hutchinson, Minnesota

When a local distributor introduced John Olson, Hutchinson's Public Works Manager, to RePlay in 2010, Olson approached the product with a healthy dose of skepticism. He had seen a lot of "snake oils billed as the answer to all road repair needs" and was wary of investing taxpayer funds into a new product he hadn't tested firsthand.

A grant from Minnesota's Local Road Research Board in cooperation with McLeod County provided Hutchinson with the chance to put RePlay through its paces with a minimal initial investment of city funds. "I was less hesitant to try a new product," says Olson, "since the City wouldn't be investing much money to see if it worked as advertised."

Fast Facts: Hutchinson, MN



- Population: 13,888 (2016)
- Total Lane Miles: 183.3
(74.4 total centerline miles)
- Total Lane Miles Covered by RePlay:
approximately 34 (18.5%)
- RePlay Customer Since: 2010
- Number of RePlay Applications Since 2010: 8
(completed annually)

How BioSpan Helped

Working with Bargaen, Inc. as the contractor for the project, Hutchinson treated two paved areas with very different conditions: a 15-year-old multiuse trail that was cracked, dry and had significant raveling, and a

newer driveway area with no cracks or raveling. "After the first application of RePlay, we ran a number of tests to compare treated and untreated sections in the same area," Olson says. "Initial tests after the first application showed the areas treated with RePlay had a higher rate of water runoff and 30 percent less penetration of water into the asphalt than in untreated areas."

Pavement treated with RePlay in follow-on projects across Hutchinson showed no additional cracking and no extension of existing, sealed cracks two to four years later – even enduring the state's cold winters and a freeze-thaw cycle that makes it hard to preserve asphalt. "In Minnesota, there are only two kinds of pavement: cracked and will be cracking," jokes Olson. Yet in tests conducted between 2014 and 2017, RePlay withstood the elements, averaging an increase of less than 10 percent in the city's distress index, compared to 65 percent in untreated areas and more than 30 percent in those treated with a chip seal.

"Once we had a chance to take a close look at RePlay, we began to structure a program to introduce its use. Our strategy is to apply it to new pavements and pavements in excellent condition to delay the first chip seal treatment of the roadway by six to eight years. It appears promising that RePlay will allow us to push higher levels of maintenance out into the future, even further than we expected."

Measured against other methods Hutchinson uses to maintain its streets, RePlay falls among the most economical at a planning cost of approximately \$1.50 per square yard. At the other end of the spectrum, partial and full reconstruction are 50-100 times that cost. But more importantly, RePlay buys the city time by extending the lifecycle of its pavements, which in turn frees up funds for other projects.

"The ability to open a road to traffic relatively soon after treatment is another benefit to RePlay," says Olson. "We didn't see any loose rocks or oil getting away from us, and there was no need to remove and replace pavement markings – RePlay goes right over the top."

And while the untrained eye can't tell the difference between treated and untreated pavements, Olson cites one more hidden benefit: "Because RePlay is a biobased product, our roadside vegetation isn't affected. We aren't killing any grass or flowers against the edges of the roadway." That's important for Hutchinson's homeowners as well as local industry, which is focused on agriculture and manufacturing.

Results and Future Plans

Based on the results of the first test in 2010, Hutchinson has expanded the use of RePlay as a cost-effective strategy to extend the life of its roads and delay more resource-intensive repaving projects.

The city has expanded use of RePlay to all kinds of street projects and expects to add at least five to nine years – or more – to the life of its streets.

Hutchinson's new roadmap focuses on applying RePlay within the first three years of paving, and the city is hoping to re-treat those areas once more before undertaking the first chip seal, pushing the chip seal process back from seven years to as many as 16 years after construction.

Hutchinson continues to refine its strategy to incorporate biobased sealers and is just starting to test the second treatment of RePlay on some of the initial projects. Learn more about the City of Hutchinson, Minnesota at www.ci.hutchinson.mn.us.

Why Repave when you can RePLAY?

Pavement is a serious investment. Pavement preservation is a crucial step when it comes to ensuring a lasting asphalt surface. Many preservation processes and sealcoats are petroleum-based, which damages the environment. RePLAY is a tried-and-true alternative that is safe for both the planet and the people using it.

RePLAY extends the life of pavement when used on the right road at the right time

Repaving requires...



Time



Energy



Money



Lane closures

Treated versus **Untreated** Asphalt



Spending **\$1** on preservation postpones or eliminates spending

\$6-\$10

in reconstruction costs every 5 to 7 years



RePLAY *stops* water penetration



Potential to **extend life** of highway, street or parking lot while decreasing spending of taxpayer money

RePLAY is...



88%

biobased

56%

derived from soybeans



On average, only **30 minutes** to traffic after application



16% increased skid resistance =

safer roads

3/4—1 1/4 inches deep



penetrates the asphalt **deeper than** other products



Soy-based = **little to no toxicity**



Dries clear: no need to restripe



Negative carbon footprint reducing CO2 in environment



No residual runoff or discharge



Low-temp application vs. petroleum's high-temp application



Learn more at www.biospantech.com/products/replay