

# City of Hutchinson

## Soybean Oil Based Pavement Preservation

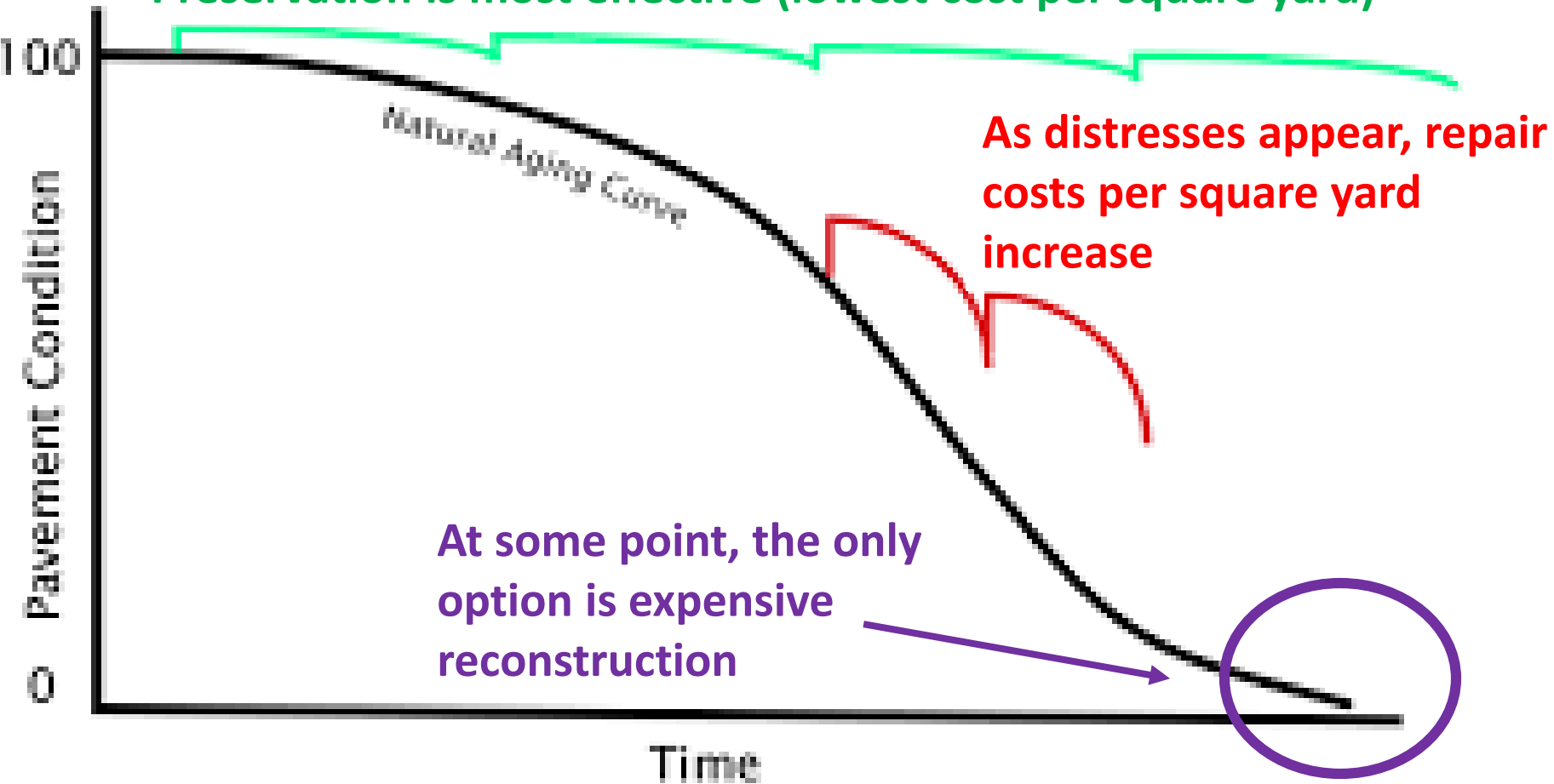


JOHN OLSON

PUBLIC WORKS MANAGER

CITY OF HUTCHINSON, MN

Preservation is most effective (lowest cost per square yard)



As distresses appear, repair costs per square yard increase

At some point, the only option is expensive reconstruction

# Experimenting with RePlay

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## 2010

- Operational Research Assistance (OPERA) grant
  - In cooperation with McLeod County
  - Borgen, Inc. – contractor
  - 15 year-old multi-use path near County fairgrounds
    - Cracks & significant raveling
  - <5 year-old driveway in the fairgrounds
    - No cracks, very little raveling

# What is RePlay?

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## Environmentally responsible product

- Non-toxic, 88% bio based, 56% soybean oil
- About 100 bushels of soybeans per lane mile (good for the farm economy)
- Minimal environmental impact

## Safety

- Doesn't negatively affect skid resistance
- Sheds precipitation better than untreated segments
- No heating of the material is required

# What is RePlay?

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## What it does:

- Penetrates into the top inch or so of the pavement
- Rejuvenates oxidized polymers in the pavement surface
- Introduces new polymers into the surface of the pavement
- In essence, glues the top inch or so of the surface together.

# Applying RePlay

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- Sections prepared by sweeping & air blowers
- Product comes in totes
- Applied by 1-ton truck-mounted sprayer
- Spray bars adjust to road width
- Hand sprayer used to reach odd angles
- Citrus odor, slight odor for a day or two.
- Stays “wet” looking for about 2 weeks.

# Testing

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- Surface water tests
- Visual tests
- Cores taken of treated vs. untreated sections
- Percolation tests
- Anecdotal evidence

# Decision time

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## IF WE:

- Treat new pavements within the first 1 to 3 years after paving

## WILL IT:

- Be feasible to delay the first chip seal for 6-8 years?
- Be possible re-treat streets one more time before chip seal & push the first chip seal out to 12-16 years... or more?



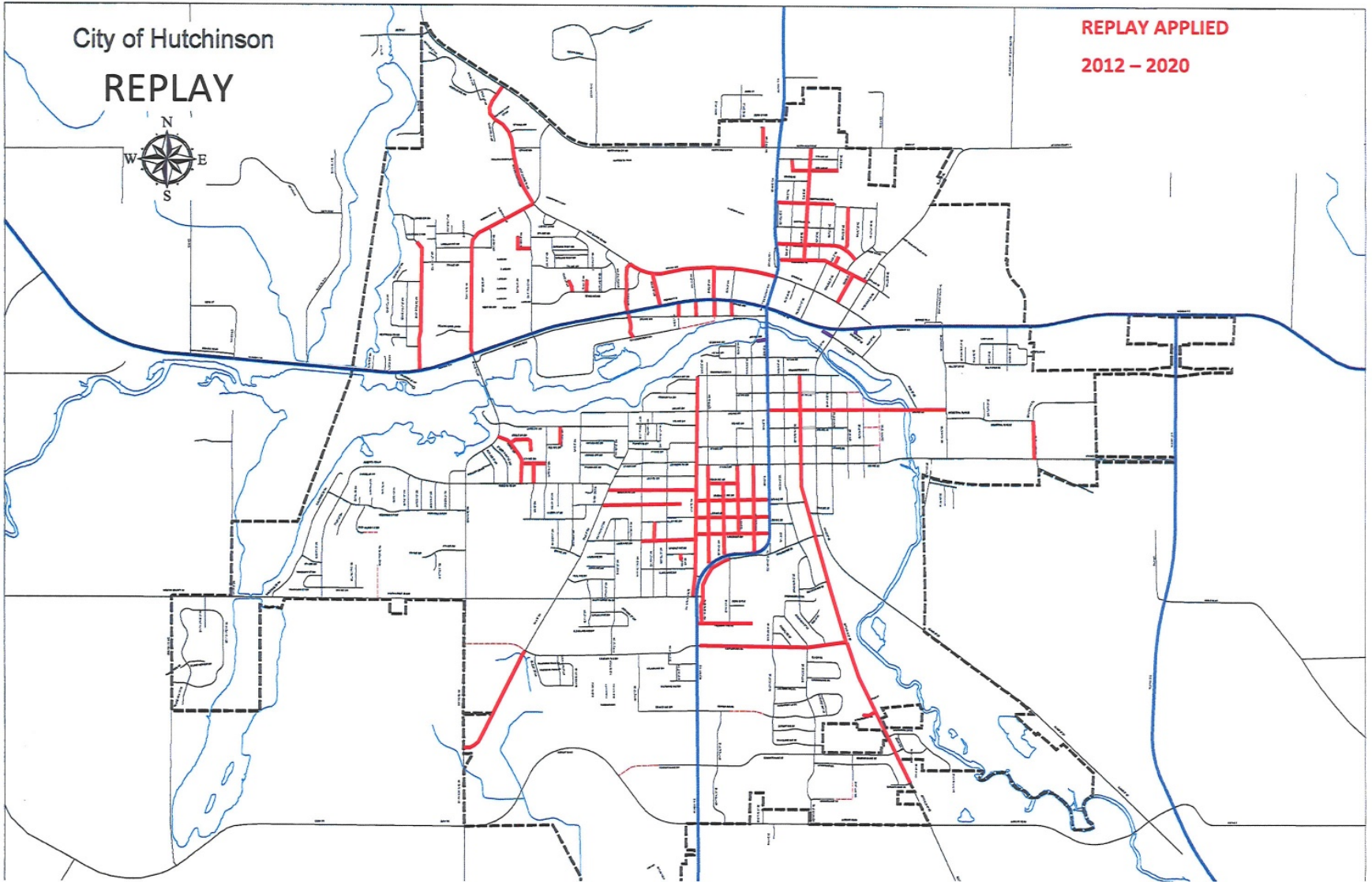
City of Hutchinson

REPLAY



REPLAY APPLIED

2012 - 2020



# Why?

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## Money

- Pressure on capital and operational budgets
  - Construction cost inflation
  - Repair cost inflation

## Staffing

- In November 2008, there were 17 Public Works operations & maintenance staff
  - Dropped to 10 prior to 2015
  - 2 positions added in 2015
  - 1 position added in 2019
  - Let's not talk about 2020....
  - Less ability to focus on street maintenance

# Why?

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## Convenience

- Open to traffic in about ½ hour
- No rock loss & tracking of loose rock or oils
- Not necessary to remove striping materials

## Aesthetics

- After a few weeks, there's no evidence we were there, other than a slight 'graying' of the bituminous
- Doesn't hurt roadside vegetation

# Future

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## One of the tools

- My thought is that bio-based sealers DO NOT replace other maintenance treatments, rather they are a great, additional tool to use in the fight to preserve pavement

## Refining strategy

- Watch re-treatment performance. 2 treatments may be feasible. May be able to chip seal for the first time 12-16 years after construction, maybe more?

# Questions?



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