Replay® & the City of Hutchinson

Our story

Testing the product

- 2010
  - Operational Research Assistance (OPERA) grant
    - In cooperation with McLeod County
    - Bargen, Inc. – contractor
  - Application on two very different asphalt sections
    - 15 year-old multi-use path near County fairgrounds
      - Cracks & significant raveling
    - <5 year-old driveway in the fairgrounds
      - No cracks, very little raveling

OPERA grant

- Sections prepared by sweeping & air blowers
- Product comes in totes
- Applied by 1-ton truck-mounted sprayer
- Spray bars can turn on/off to adjust to width
- Hand sprayer was used to reach odd angles
- Stayed “wet” looking for about 2 weeks
- Citrus odor diminished after application

Our tests

- Water test
  - Pour water on test sections before & after treating
  - Significant “wicking” on untreated areas before water ran away (most notable on older pavement)
  - After treatment, water ran off the surface at a much higher rate, with nominal “wicking”
- Visual test
  - Close inspection indicated treated surfaces had sealed, and become slightly lighter in color

Further tests after OPERA

- Coring
  - Cored adjacent treated & untreated test sections
  - Verified penetration of top ¾” to 1¼ ”
- Percolation
  - Sealed a 1” plastic tube to treated and untreated cores
  - Over the weekend, almost 3 times the amount of water percolated through untreated cores

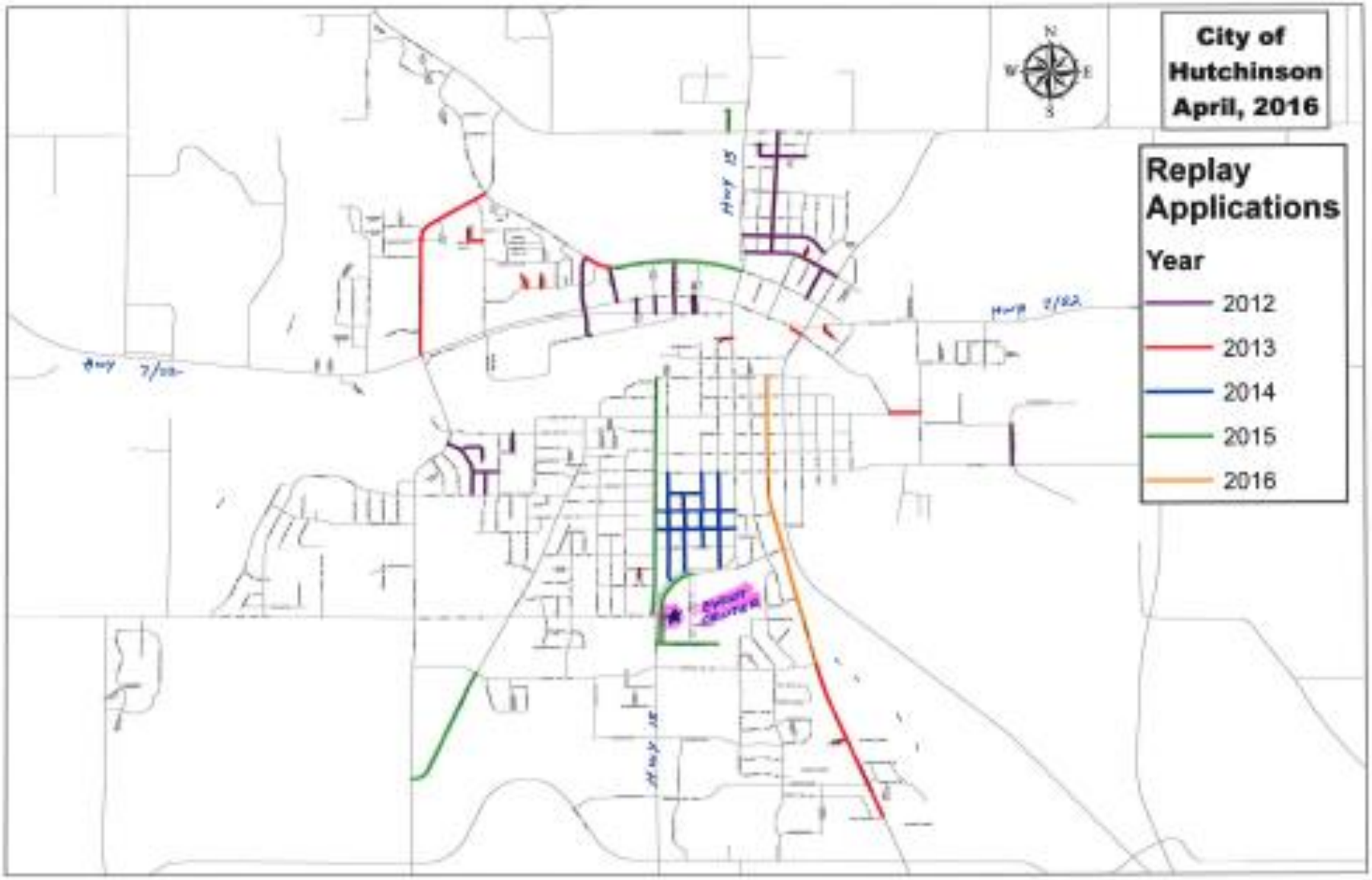
Further tests after OPERA

- Anecdotal
  - Cutting or jack hammering pavement from around manholes, valves, etc.
  - City staff report significantly more effort required for removing treated pavements around manholes, valves, etc. when compared to untreated pavements

Consideration

- 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?

Treatments


City of Hutchinson April, 2016
Replay Applications
Year
2012
2013
2014
2015
2016
N
S
E
W

Success story

- McLeod Ave/6th Ave NE
  - Constructed in 2009, following use as a detour for Hwy 7 reconstruction
  - Crack filling in 2012 prior to treatment
  - Replay® application in 2012
  - Physical pavement condition survey in 2014
    - No additional cracking noted
    - Existing, sealed cracks did not extend
  - Only minor transverse cracking in 2015/2016

Success story

- McLeod Ave/6th Ave NE
  - Future considerations for this section
    - Crack fill
    - Re-treat with bio-based sealer in 2017
    - Defer first chip seal to 2022
      - 13 years after construction
  - If this works, this will help to maintain newly constructed City streets.

Why?

- 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
    - Less ability to focus on street maintenance

Why?

- Convenience
  - Open to traffic in about ½ hour
  - No rock loss & tracking loose rock
  - Not necessary to remove striping materials
- Aesthetics
  - After a couple of weeks, there's no evidence we were there, other than a slight 'graying' of the bituminous
  - Doesn't hurt roadside vegetation

Future

- 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 after 12-16 years on new construction.

Questions

- Thank you
- Questions?