



Paving for Progress Update Bowling Street Pavement Rehabilitation & Lane Conversion

Paving for Progress Update

Doug Wilson
Paving for Progress Manager
City of Cedar Rapids

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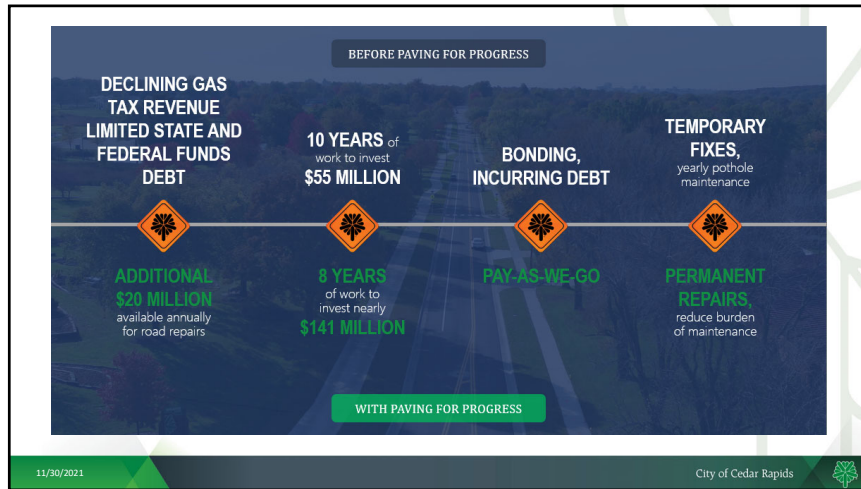
PROGRAM DESCRIPTION AND STRATEGY

Paving for Progress

- 1 percent local options sales tax
- Initial 10-year investment: 2014 –2024
- Sales tax generated by Cedar Rapids residents and visitors
- Approximately \$20 million annually; \$200 million over the life of the program
- Funds set aside solely for the maintenance, repair, construction and reconstruction of public streets
- Renewed on November 2, 2021 for 2024 – 2034 with 70% support



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The Strategy

- Address neighborhood streets
- Invest in roads *before* the end of their service life
- Completely replace some of our most deteriorated roads
- Data-driven, impartial, and measurable

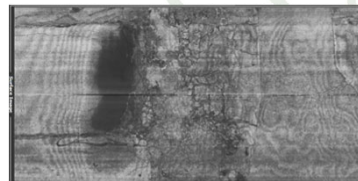


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Data and Planning

- Every road inspected & categorized
- Ranked Very Poor to Very Good
- Data re-collected every two years, so we can measure progress
- Revised 10 year plan every two years



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Treatment Types

Reconstruction

Complete removal and replacement of street

Rehabilitation

Asphalt resurfacing, concrete patching, etc.

Maintenance

Preventative – microsurfacing, seal coat, crack filling, etc.

AVERAGE COST*

\$3 MILLION / MILE

\$\$\$\$\$\$\$\$\$\$\$\$

\$700,000 / MILE

\$\$\$\$\$\$\$\$

\$85,000 / MILE

\$

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PUBLIC OUTREACH

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Planning Ahead

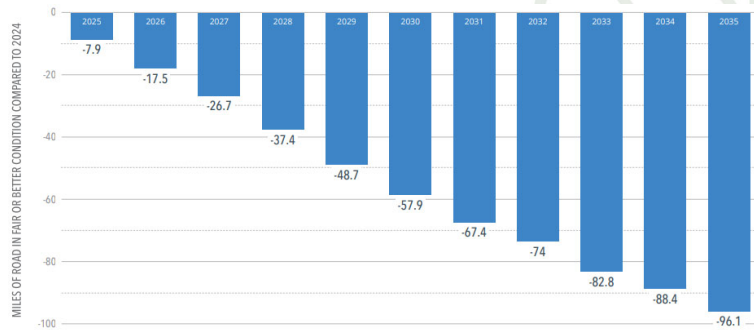
- Public Outreach and Messaging from the time the program began
- Without the extension of LOST, the City would have needed seek other funding options to maintain the progress we have made so far.
- The City stayed “shovel-ready,” by planning projects through FY 2027.



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Pavement Condition if Paving for Progress ended in 2024



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Program Renewal Pre-vote Polling

In 2013, voters in Cedar Rapids approved a local one penny sales tax to fund repairs and improvements for the city's roads, streets, and bridges. Generally speaking, do you believe this money has been put to good use by the city?

Strongly Yes.....	235	45.7%
Somewhat Yes.....	117	22.8%
TOTAL YES.....	352	68.5%
Somewhat No.....	45	8.8%
Strongly No.....	95	18.5%
TOTAL NO.....	150	27.3%
Unsure.....	22	4.3%

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Pre-vote Polling (Cont)

The local Cedar Rapids one penny sales tax, which is used to fund street repairs and improvements, expires in 2024. If you had to vote today, would you vote to extend the sales tax for 10 years or end this sales tax?

Definitely Extend.....	276	53.7%
Probably Extend.....	67	13.0%
TOTAL EXTEND.....	343	66.7%
Probably End.....	40	7.8%
Definitely End.....	112	21.8%
TOTAL END.....	152	29.6%
Unsure.....	19	3.7%
Refused.....	0	0

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Pre-vote Polling (Cont)

Generally speaking, do you think the inconvenience of traffic delays during road construction are worth the end result of better streets?

Yes.....	422	82.1%
No.....	72	14.0%
Unsure.....	19	3.7%
Refused.....	1	0.2%

Generally speaking, would you say the roads and streets in Cedar Rapids are more safe, less safe, or about as safe as they were 8 years ago before the start of Paving for Progress?

More Safe.....	165	32.1%
As Safe.....	183	35.6%
Less Safe.....	125	24.3%
Unsure.....	40	7.8%
Refused.....	1	0.2%

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Pre-vote Polling (Cont)

Generally speaking, do you believe Cedar Rapids has too many bicycle lanes, not enough bicycle lanes, or the right amount of bicycle lanes?

Too Many.....	210	40.9%
The Right Amount.....	188	36.6%
Not Enough.....	89	17.3%
Unsure.....	26	5.1%
Refused.....	1	0.2%

Generally speaking, do you believe Cedar Rapids has too many roundabouts, not enough roundabouts, or the right amount of roundabouts?

Too Many.....	194	37.7%
The Right Amount.....	203	39.5%
Not Enough.....	75	14.6%
Unsure.....	39	7.6%
Refused.....	3	

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Message Ranking

Message	Much More	//	Total Likely
Makes Streets Safer	60.9%	//	72.8%
Saves Money for Auto Owners	58.2%	//	72.4%
Everyone using streets, pay fair share	52.9%	//	69.0%
Not Renewed, Have to Increase Prop Taxes	56.6%	//	67.9%
Pay as you Go Approach, No debt	53.3%	//	65.9%

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Neighborhood Outreach



Neighborhood Meetings
Service Groups
Informational Letters
Media Stories
Public Hearings
Online Database
Project E-Newsletters



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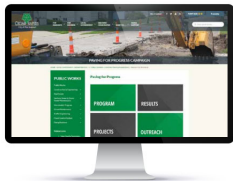
Publications



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Staying in Touch



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www.cityofcr.com/pavingforprogress



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PROGRAM ACHIEVEMENTS

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Achievements to Date

- Approximately **\$141 million** invested into our roads
- More than **77 linear miles** of roadway improved
- **252 projects** completed to date
- 73% of completed projects have been residential
- 27% of completed projects have been arterial



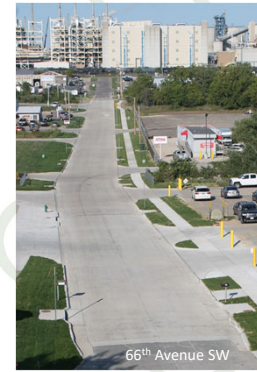
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Achievements to Date (Con't)

Year	Concrete Used (CY)	PFP Usage (CY)	All Other Usage (CY)
All	293,232	118,148	175,808

Year	Concrete Used (CY)	PFP Usage (CY)	All Other Usage (CY)
2014	14,737	5,669	9,068
2015	23,765	13,915	9,850
2016	51,392	29,758	21,634
2017	34,957	11,785	23,173
2018	56,027	31,827	24,199
2019	22,594	13,834	8,760
2020	43,481	17,242	26,239
2021	47,004	30,713	16,291

- Between 2014 and now, the City has consumed an average of 9.8 concrete trucks (10 CY each) every single day.
- The concrete used could fill more than 38 Goodyear blimps, or build 104 miles of 8", 21' wide pavement.

66th Avenue SW

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Achievements to Date (Con't)

Pre-Cast Products Used by PFP

- Cedar Rapids awarded \$12.7 million in drainage infrastructure for PFP work between summer 2014 and now. This includes:
 - \$6.7 million in RCP products
 - \$3.8 million in storm sewer intakes
 - \$1.4 million in manholes
 - \$600,000 in culverts and miscellaneous items
- The \$12.7 million amounts to:
 - An average of \$1.8 million per fiscal year in drainage infrastructure
 - Approximately 10% of the \$122.7 million spent overall through March 2021



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TRANSFORMATIONS & TESTIMONIAL

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Northwood Drive NE



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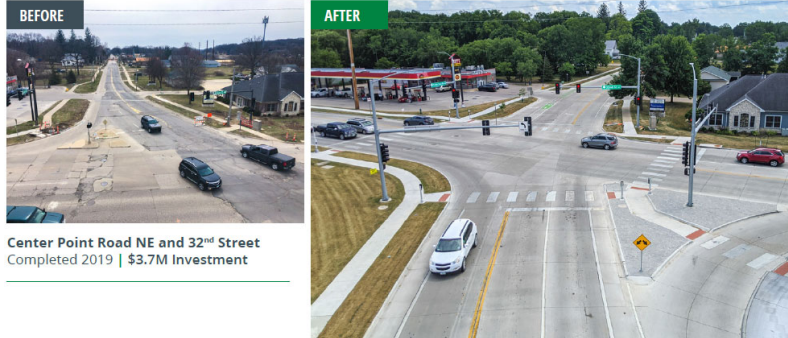
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C Avenue NE between Collins Road and 40th Street
Completed 2017 | \$2.3M Investment

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Center Point Road NE and 32nd Street
Completed 2019 | \$3.7M Investment

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West Post Road NW



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Thank you!

Questions?

Presented by:

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Bowling Street Pavement Rehabilitation & 4 Lane to 3 Lane Conversion

Presented by:

Tim Mroch, PE
CIP Program Manager
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PROJECT GOALS

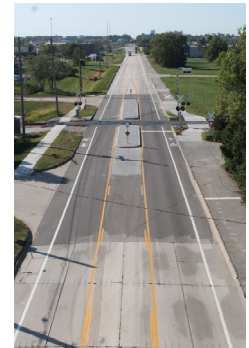
- Reduce collisions
- Improve rail crossing safety
- Cost effective pavement preservation technique
- Pedestrian access



REDUCE COLLISIONS

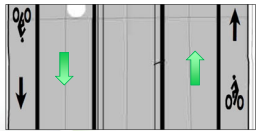
4-lane to 3-lane conversion

- 95 collisions in 10 years, 3 serious injuries, 12 minor, 15 possible
- 28 Speed related collisions
- 12 main cross streets
 - Many more driveways
- Railroad crossing improvements



PAVEMENT PRESERVATION

- Slab displacement
- Some panel failures
- Pavement profiling
- Reallocation of pavement width to center turn lane and bicycle lanes



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PEDESTRIAN ACCESS

- Reduced number of lanes to cross
- Upgraded to Rapid Rectangular Flashing Beacon (RRFB)
- Added sidewalk crossing of railroad on Bowling Street



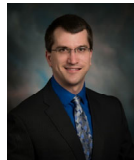
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Cedar Rapids – Bowling Street Rehab & Lane Conversion Design

- Presented by:
Patrick Schwickerath, P.E.
Civil Engineer

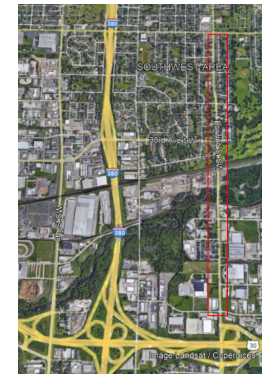


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Cedar Rapids – Bowling Street Rehab

- Minimal Panel Cracking
- Minimal Joint Deterioration
- Faulted Pavement Joints
- Good Candidate for Rehab
- Pavement 1979



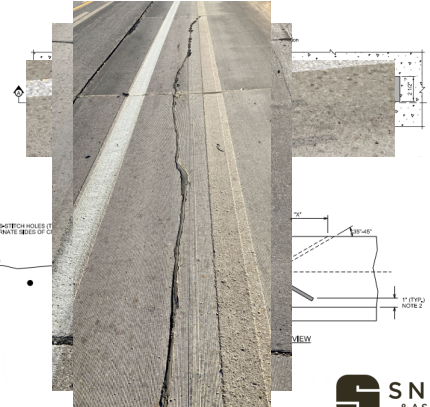
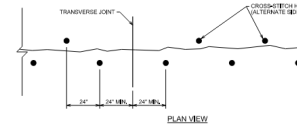
Joint Analysis

- Ground Penetrating Radar Scan
 - Longitudinal Joints
 - Transverse Joints
- Falling Weight Deflectometer
 - Confirmed Areas of Load Transfer Inefficiency
 - Dowel Bar Retrofit
 - Areas to be Reviewed Further



Rehabilitation

- Dowel Bar Retrofit
- Cross Stitching



Rehabilitation

- Partial Depth Patches
- Full Depth Patches



Rehabilitation

- Diamond Grinding
- DBR Not Included with the Bike Lanes



Bridge Approach

- Field Review
 - Faulting
 - Joint/Pavement Deterioration
 - Paving Notch
- Reconstruct
 - Approach Pavement
 - Barrier Rail
 - Trail



Railroad

- CRANDIC
- New Rail Crossing
 - Pavement
 - Signals
- Approach Pavement
- Medians



4 to 3 Lane Conversion

- Existing Roadway Configuration
- Proposed Section
- Grooves & Pavement Markings
- Bike Route
- Final Section



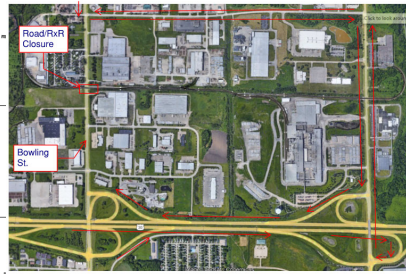
Pedestrian Crossing

- Existing Conditions
- Rectangular Rapid Flashing Beacon (RRFB)
 - Solar
 - Pushbuttons
 - Audible
 - Footings
- Median



Traffic Control & Staging

- Maintain Two-Way Traffic When Possible
- Closures for Railroad
- Detours
- DOT Coordination



SNYDER
& ASSOCIATES

Mark Rhinehart - Project Manager/Estimator Iowa Civil Contracting, Inc.



IOWA CIVIL CONTRACTING
TOTAL PAVEMENT AND BRIDGE RESTORATION

Contractor's Perspective At the bidding Table

- Positives
 - Work type. All inclusive pavement rehab are some of our most successful projects.
 - Full & Partial Depth Patching, Cross Stitching, Dowel Bar Retrofit, Diamond Grind, Joint Sealing.
 - The staging was contractor friendly. Having the ability to put traffic in a head-to-head configuration should allow us more & easier access to our work.

IOWA CIVIL CONTRACTING
TOTAL PAVEMENT AND BRIDGE RESTORATION

Contractor's Perspective At the bidding Table

- Potential Challenges
 - Coordination with CRANDIC Railroad
 - Without proper communication this can hinder our production.
 - I have to say having never worked with Crandic, they were great to work with.

IOWA CIVIL CONTRACTING
TOTAL PAVEMENT AND BRIDGE RESTORATION

Contractor's Perspective At the bidding Table

- Need for Sub-Contractor's. We were able to partner with these great companies.
 - Advanced Traffic Control – Traffic Control, Paint, Permanent signs & crosswalk signs
 - LL Pelling – Milling, HMA overlay, & HMA for RR track crossings
 - M. Clark – Survey
 - Pirc Tobin – Pavement Removals, Dirt work, underground Storm sewer repairs
 - West Fork Grinding – Diamond Grinding



Contractor's Perspective At the bidding Table

- Need for Sub-Contractor's. We were able to partner with these great companies.
 - Curtis Contracting – ADA & Sidewalks
 - Hardscape Solutions – Decorative Brick Pavers
 - Soil-Tek – Seeding



Key's to Success after Project Award

- These are some Key's to success we as Manager's meet and discuss with crew leaders prior to start of construction.
- **Safety** of Our Crews, Subcontractors, Pedestrians, & the Traveling public are of the utmost importance
- **Communication & Coordination**, always important.
- **Work Quality**
- **The Project Schedule**



Keys to Quality

- Iowa Civil Contracting includes a wide discussion of project specifics during our pre-work meetings.
- Each work type presents its own set of challenges. We are fortunate to have extensive experience in the pavement rehab industry.
- Here are 2 examples



Keys to Quality, We hold ourselves to a High Standard

- Dowel Bar Retrofit (DBR)
 - We STRESS cleanliness of the Slot for the DBR. This is achieved by thorough & competent sandblasting.
 - Accurate sawing for DBR slots.
 - Depth, based on existing roadway for the bar to be at T/2
 - Alignment, parallel to centerline
 - Quality Materials For the Concrete
 - FasTrac 300 Rapid Set Cement
 - 3/8 Pea Rock
 - Clean Concrete Sand

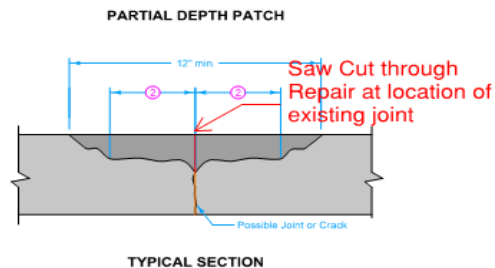


Keys to Quality

- Partial Depth Concrete Repairs
 - We STRESS cleanliness of the Repair. Again, this is achieved by thorough & competent sandblasting.
 - Timely & Accurate sawing to re-establish the existing joints.
 - We view this a Key to success & quality of Partial Depth Concrete repairs.



Sawing of Partial Depth Repairs



Keys to Quality

- Partial Depth Concrete Repairs
 - We agree and were pleased that this roadway was a good candidate for this type of repair. We have seen roads once the top 2 inches is milled away, D-Cracking and moisture end up being full depth at the joints.



Keys to Quality

- Cross Stitching
- We were pleased there was the option to use cross stitching on this project to repair random cracks or joints that had no other issues with deterioration, such as spalling.
- In our experiences we have been asked to Partial depth repair random cracks that could or should have been cross stitched.



Diamond Grinding

- I wanted to include a side note regarding collection and disposal of the diamond grinding slurry. If you are considering a project with Diamond Grinding any help you could provide for a disposal site would be much appreciated as it is getting more difficult to find sites.
- We appreciate help that was provided by the City of Cedar Rapids.



In Conclusion

- We were pleased to work with the City of Cedar Rapids on this project.
- Project adjustments made during construction were challenging yet successful.
- We were able to Commit & Deliver a Safe and Quality project on schedule.
- Thank you.



Thank you!

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