



PAVING FOR
PROGRESS



Paving for Progress

Municipal Streets Seminar

November 15, 2017

Doug Wilson, PE

City of Cedar Rapids

Paving for Progress Program Manager

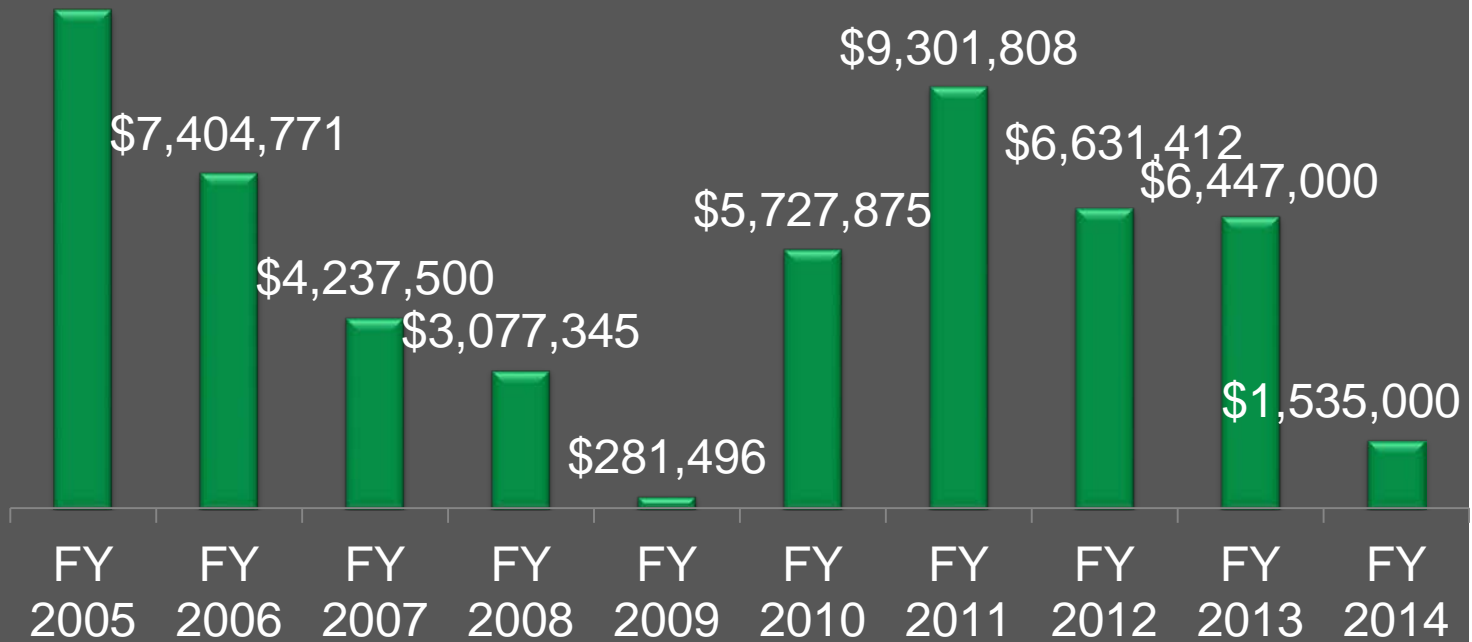


PAVING FOR
PROGRESS



Prior Funding: General Obligation Bond Revenue

\$10,996,122





PAVING FOR
PROGRESS



What is Paving for Progress?

Objective: *Improve the neighborhoods of Cedar Rapids, making them more comfortable, convenient and desirable places to live, play and work.*

- Strategic, data-driven approach
- Residential + main streets
- Complete rehabs + proactive preservation
- Stop the deterioration of our roads
- Unique funding source



PAVING FOR
PROGRESS



What is Paving for Progress?

Goals:

- *Improve/maintain the network so the average road is in “Fair” or better condition.*
- *Follow through on promises to the citizens of Cedar Rapids who approved the tax.*
- *Dedicate additional effort to the local street network.*
- *Commit to spending the revenues wisely on behalf on the public through a strategic, data driven plan.*



PAVING FOR
PROGRESS



Utilizing Local Option Sales Tax

- 1% local option sales tax approved November, 2013
- Effective July 1, 2014 – June 30, 2024
- Estimated to generate approximately \$18M per year
- ***100% of the revenues generated going toward the maintenance, repair, construction and reconstruction of public streets.***



PAVING
FOR
PROGRESS



Developing the Plan

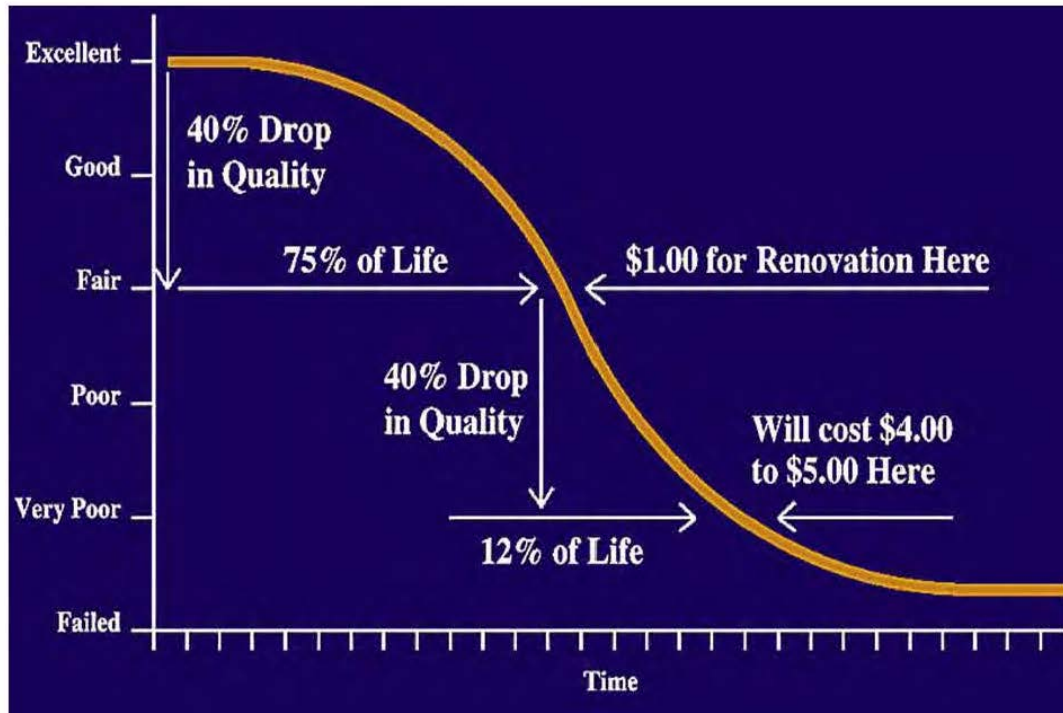
- Plan was under development by Spring 2014.
- Highest and best use of taxpayer dollars.
- Prioritization that is data driven, impartial, and measurable.
- Answers the need to reconstruct and rehabilitate poor roads while also maintaining good roads – proactive maintenance!



PAVING FOR
PROGRESS



Pavement Maintenance



“a small investment at the right time can drastically improve the life of a pavement”



PAVING FOR
PROGRESS



Pavement Management 101

- Inventory/condition assessment
- Set pavement condition thresholds
- Develop maintenance and reconstruction strategies
- Prioritize improvements
- Development pavement management plan
- Measure and track performance



PAVING FOR
PROGRESS



Pavement Management 101

- **Inventory/condition assessment**
- Set pavement condition thresholds
- Develop maintenance and reconstruction strategies
- Prioritize improvements
- Development pavement management plan
- Measure and track performance



PAVING FOR
PROGRESS



Inventory/condition assessment

- Pavement condition data collected on all Cedar Rapids' 600 miles of roadways by an ARAN.
- Data and field inspections combined in modeling software ArcGIS, by Iowa State University's Institute for Transportation.
- Roads categorized: Very Poor to Very Good, with PCI.



Fugro Roadware Automatic Road Analyzer (ARAN)





PAVING FOR
PROGRESS



Pavement Management 101

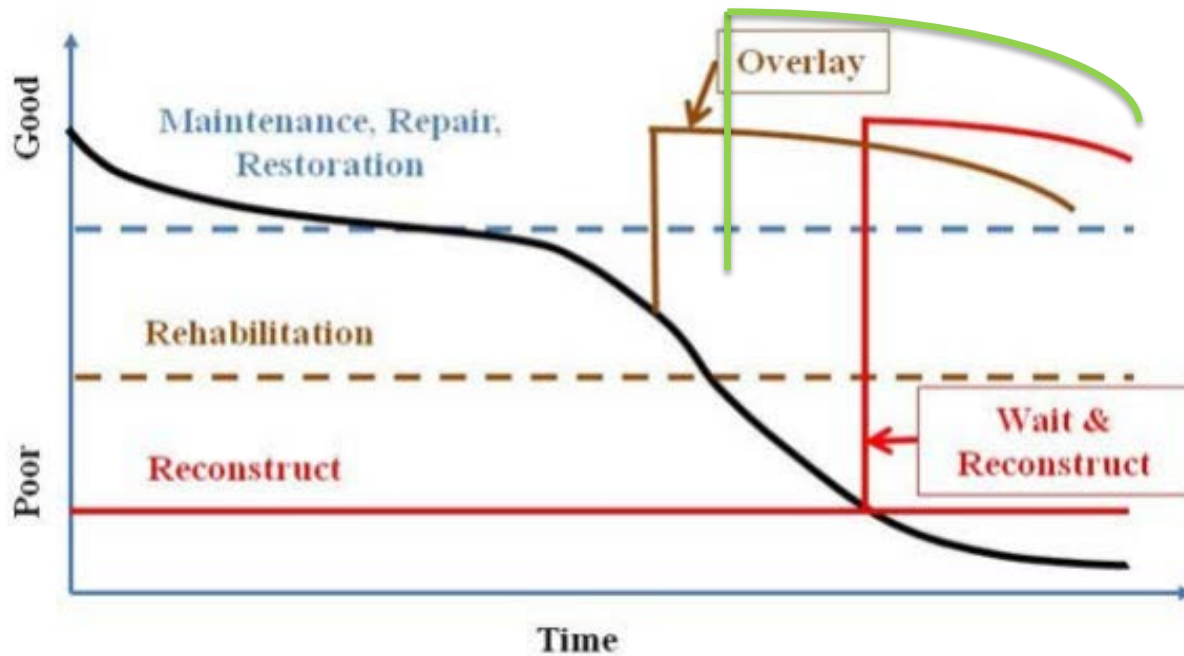
- Inventory/condition assessment
- **Set pavement condition thresholds**
- Develop maintenance and reconstruction strategies
- Prioritize improvements
- Development pavement management plan
- Measure and track performance



PAVING FOR
PROGRESS



Pavement Condition Thresholds



PCI		Repair Type
81 – 100		Preventive Maintenance
66 – 80		
51 – 65		Major Rehabilitation
41 – 50		
0 – 40		Reconstruction

Apply the right *treatment* at the right *time*

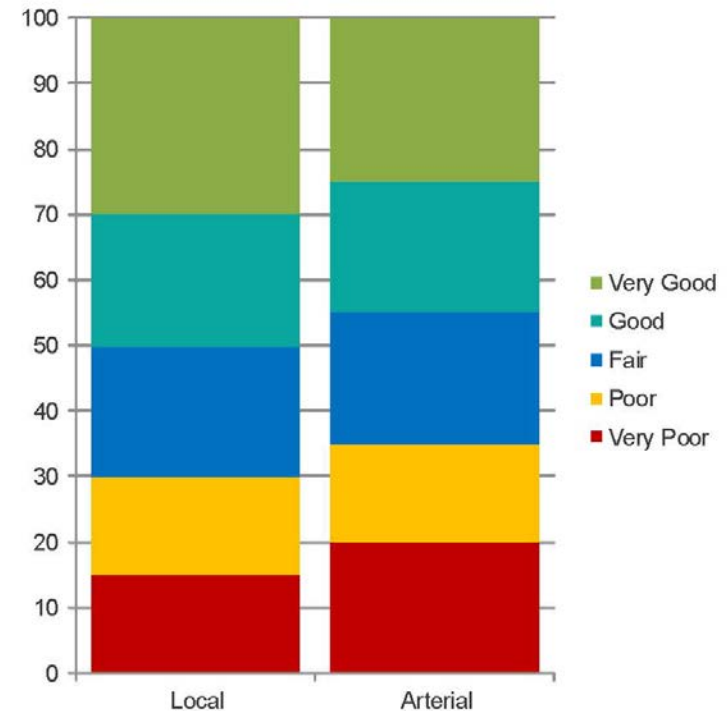


PAVING FOR
PROGRESS



Pavement Condition Thresholds

- PCI thresholds set to determine when roads should be repaired.
- Local and arterial streets have different thresholds.





PAVING FOR
PROGRESS



Pavement Management 101

- Inventory/condition assessment
- Set pavement condition thresholds
- **Develop maintenance and reconstruction strategies**
- Prioritize improvements
- Develop pavement management plan
- Measure and track performance

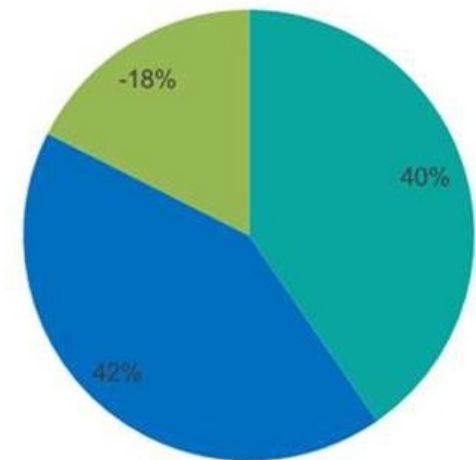


PAVING FOR
PROGRESS



Maintenance & Reconstruction Strategies

- **Reconstruction:** The complete removal and replacement of a pavement section
- **Rehabilitation:** Asphalt resurfacing, concrete patching, surface profiling
- **Maintenance:** Crack filling and sealing, diamond grinding





PAVING FOR
PROGRESS



Pavement Management 101

- Inventory/condition assessment
- Set pavement condition thresholds
- Develop maintenance and reconstruction strategies
- **Prioritize improvements**
- Develop pavement management plan
- Measure and track performance



PAVING FOR
PROGRESS



Prioritize Improvements

- Functional class
- Pavement condition
- Pavement types
- Truck traffic
- Speed limit
- Underground infrastructure
- Complete Streets
- Improvement costs





PAVING FOR
PROGRESS



Pavement Management 101

- Inventory/condition assessment
- Set pavement condition thresholds
- Develop maintenance and reconstruction strategies
- **Develop pavement management plan**
- Measure and track performance



PAVING FOR
PROGRESS



Final Plan - 2015

- Plan was presented to the community in May, 2015
- Phased prioritization of projects
 - Quick Start: 2015
 - Phase 1: 2016-2018
 - Phase 2: 2019-2021
 - Phase 3: 2022-2024



CEDAR RAPIDS CAPITAL IMPROVEMENT **10** YEAR PLAN

PAVING FOR PROGRESS

MAY 2015

PREPARED BY
CEDAR RAPIDS City of Tree Swains
HRGreen



PAVING FOR
PROGRESS



Final Plan - 2015

- Recommendations for treatment & preservation
- Improvements to 150 miles of roadway
- Funding split between high traffic roads and residential streets (40/60)
- Pavement condition data updated every two years and plan re-evaluated

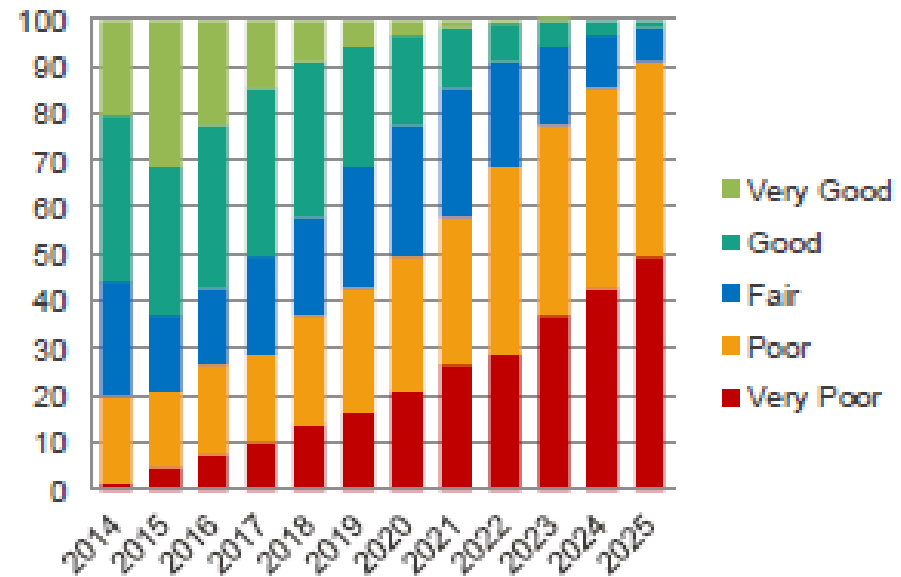


PAVING FOR
PROGRESS



Road Outlook **Without Pfp**

Without this program, 90% of the Cedar Rapids road network would likely fall below the “Poor” condition threshold sometime in the next 10 years.

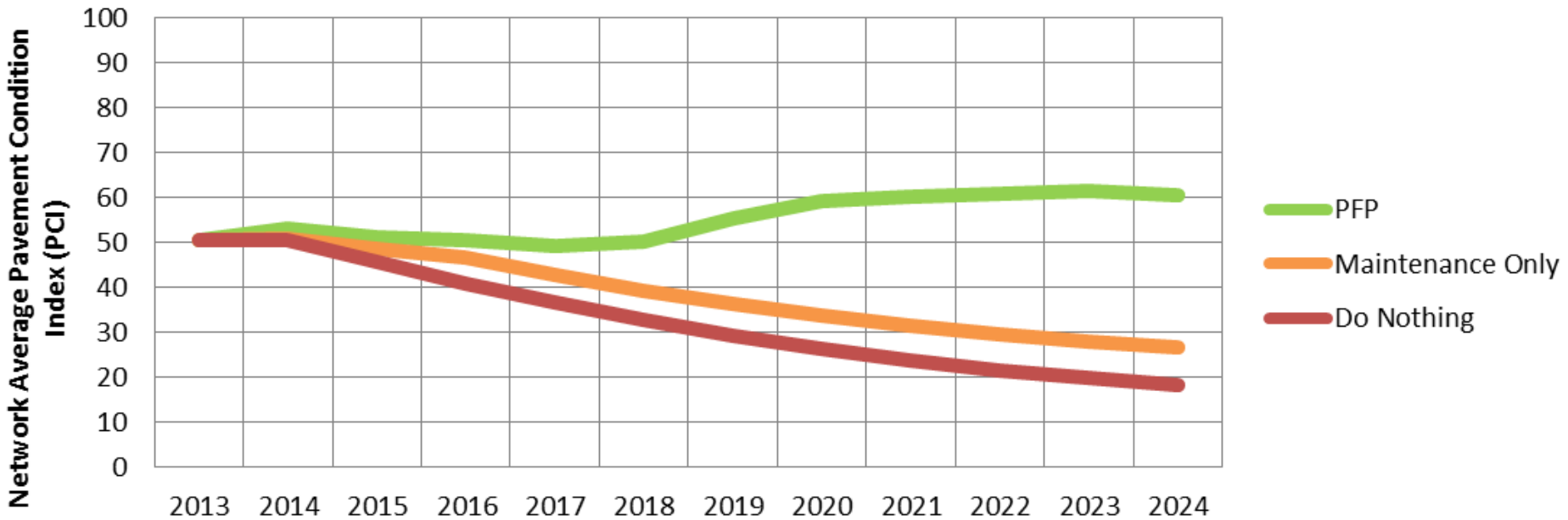




PAVING FOR
PROGRESS



Road Outlook With Pfp





PAVING FOR
PROGRESS

Launching the Program: Quick Start

- Projects with minimal underground utilities, no right-of-way needs
- Ability to show progress immediately

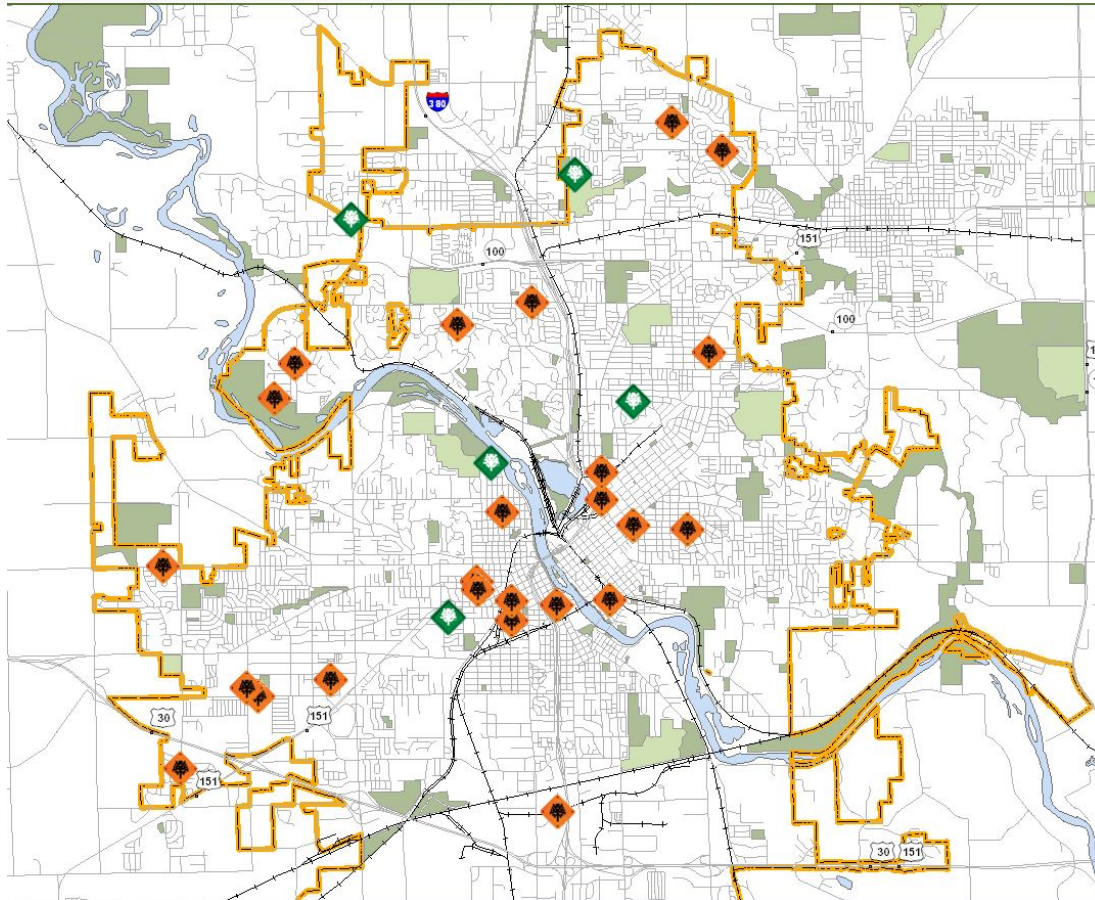


Glass Road –
Before & After





PAVING FOR
PROGRESS





PAVING FOR
PROGRESS

Launching the Program: Phase 1

- Program grew in project intensity and design
- Focused more on reconstruction projects and the arterial network



42nd Street—
During & After





PAVING FOR
PROGRESS



Pavement Management 101

- Inventory/condition assessment
- Set pavement condition thresholds
- Develop maintenance and reconstruction strategies
- Develop pavement management plan
- **Measure and track performance**

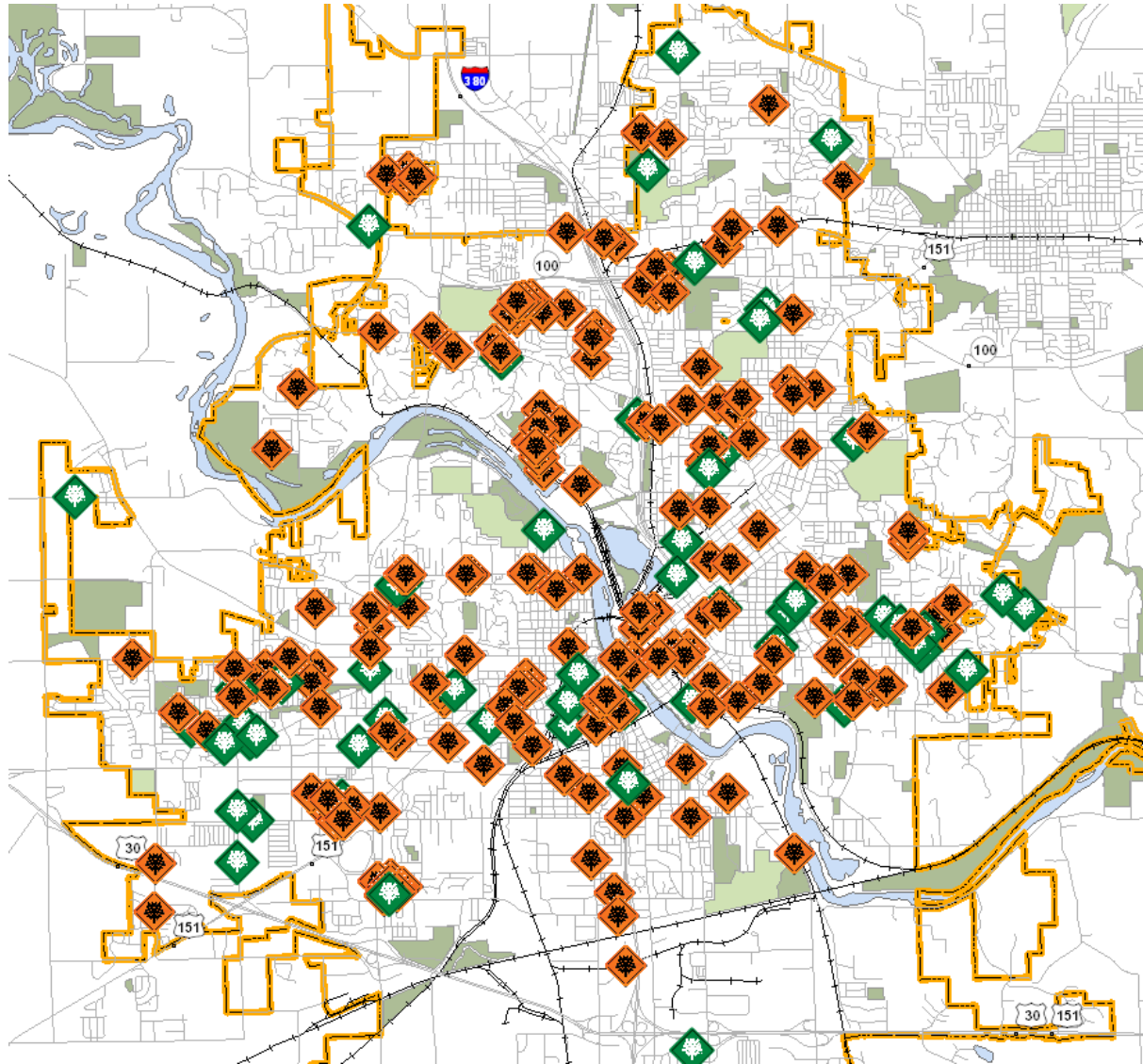


PAVING FOR
PROGRESS

Measure and Track Performance

- 2017 is year three of the program
- 105 projects completed, to date
- As of October, 2017, over \$52.7M spent on roads
- 35 miles of Cedar Rapids roadways have been improved so far
- More than 5% of all CR traffic (VMT) is now on PfP improved roads

Paving for Progress: Completed & Future Projects 2014 -- 2018





PAVING FOR
PROGRESS

What's New for Paving for Progress?

- 10-Year Plan updated in March 2017:
 - New pavement data
 - Utility needs included
 - Adjusted treatment costs
 - Improved calculations and projections
- Approximately 75% of the projects in the updated 2017 plan were included in the original 2015 plan



PAVING
FOR
PROGRESS



Complete Streets

- Passed in 2014
- Ensures we are asking *Quality of Life* questions as we improve roads we may not touch again for 30 – 50 years.
- Supports community desires expressed through EnvisionCR:
 - Walkable neighborhoods
 - Bike-able roads
 - Moving naturally and easily



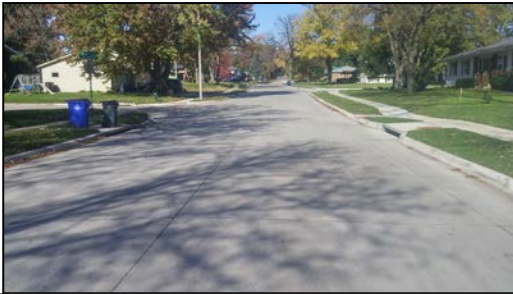


PAVING FOR
PROGRESS



Driving Factors of Complete Streets

Route Selection and Prioritization



10-Year Paving for Progress Plan | Utilities | Trails | Unexpected Needs | Deterioration





PAVING FOR
PROGRESS

Community Outreach and Branding

- Program name: “Paving for Progress”
- Signage on construction sites
- Public open houses to communicate plan
- Farmer’s Market, CR Kernels Game, other public events
- Program specific URL, website and social media presence

Capital Improvement 10-Year Plan

The right treatment, at the right time, to the right road



PAVING FOR
PROGRESS



[Click to view the plan and learn more about Paving for Progress >>](#)



PAVING FOR
PROGRESS



Public Meetings & Resident Outreach

Challenges with More Complex Projects

- Need for **EDUCATION** on City policies and programs.
- Need for **CLARITY** on City vision for walkability.
- Need for **COMMUNICATION** on policy's flexibility and implementation.





PAVING FOR
PROGRESS

Staff Response

Retool Public Meetings

- Presentation at open houses
 - Paving for Progress
 - Complete Streets
- More individualized attention for property owners at tables.
- Additional communication throughout entire length of projects.





PAVING FOR
PROGRESS

PCC use on Projects

- 14 complete reconstruction projects
- More than 20,000 CY of Patching
- 20 Miles of new and patched PCC streets
- More than \$1.5M spent on curb and gutter replacement





PAVING FOR
PROGRESS

Why PCC?

- Proven Performance
- Strength and Durability
- ADA compliance
- Competitive Bidding





PAVING FOR
PROGRESS



PCC Street Design Changes

- Geogrid
- 12" granular subbase
- No less the 8" thickness
- Subdrain and Storm Sewer





PAVING FOR
PROGRESS



Before and After





PAVING FOR
PROGRESS



Before and After





PAVING FOR
PROGRESS

What's Coming up for PfP?

- 270 projects are programmed over three, 3-year phases
 - Phases 1 & 2 focus heavily on reconstruction projects and the arterial network
 - Phase 3 will likely include large amounts of rehab work with heavy emphasis on local streets



PAVING FOR
PROGRESS



What's Coming up for PfP?

- By 2024, 30% of traffic in CR will be on PfP roads.
- Nearly 2300' of roughness will be smoothed – twice the height of the Empire State Building!
- Approximately 150 miles of roads will be improved by 2024 (60% will be local roads).



PAVING FOR
PROGRESS

Thank you

www.CityofCR.com/PavingforProgress

d.wilson@cedar-rapids.org

pavingforprogress@cedar-rapids.org