



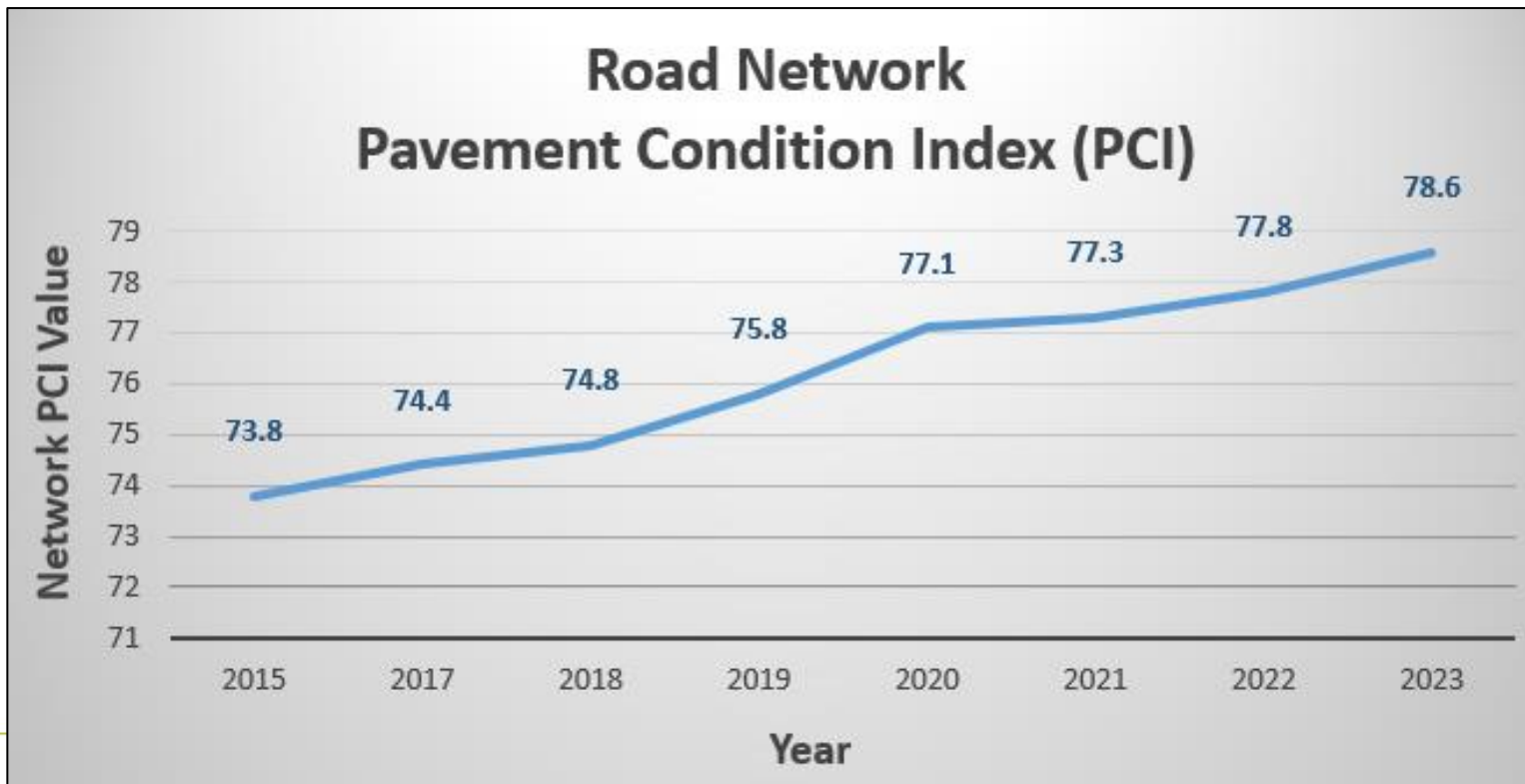
Linn County Concrete Overlay Overview

2024 ICPA Conference
February 8, 2024



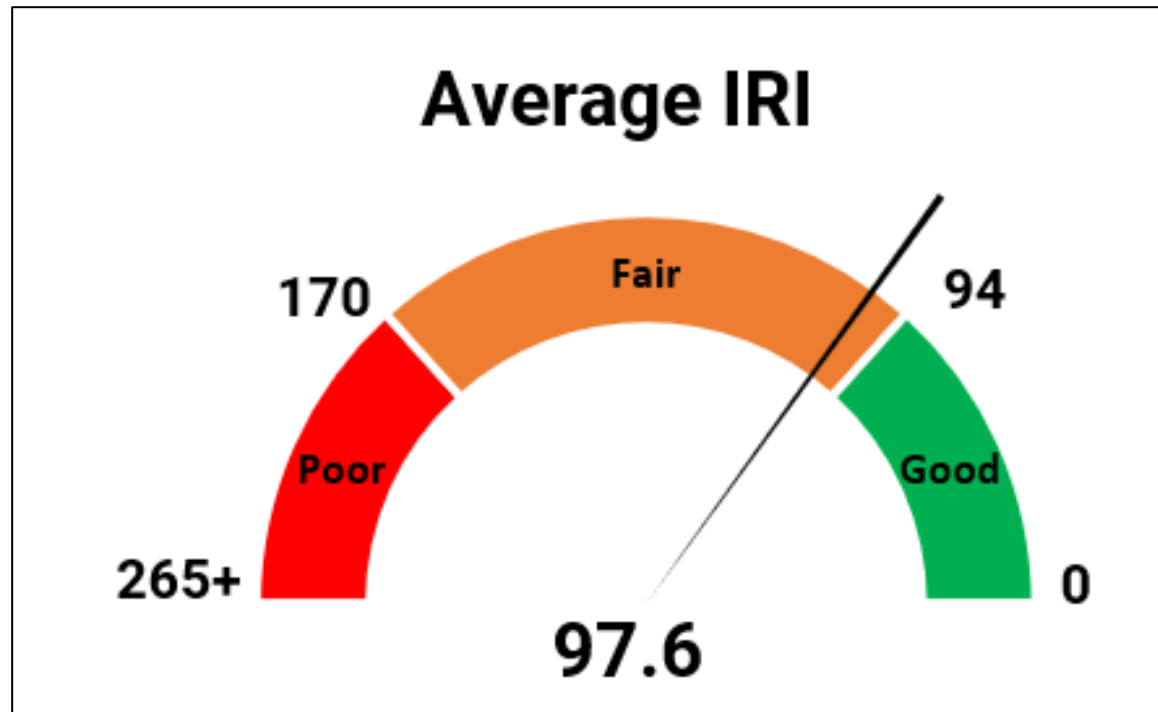
Accomplishments 2000 to Today

- 92 PCC paving projects
- 78.6 Average PCI value
- Almost 200 miles of overlays



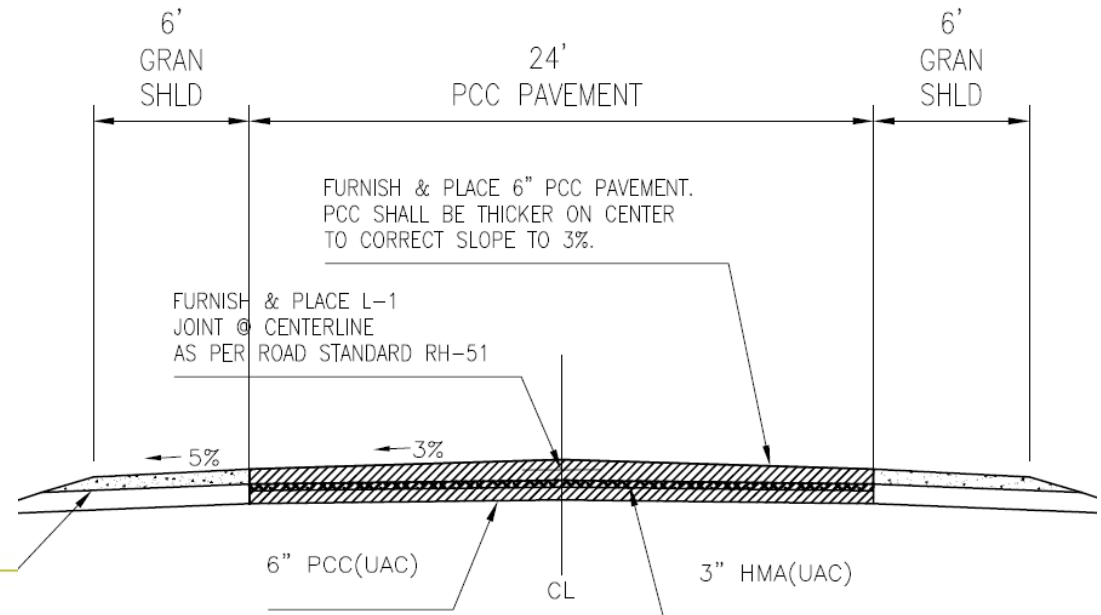
Accomplishments 2000 to Today

- 92 PCC paving projects
- 78.6 Average PCI value
- Almost 200 miles of overlays



Where we started in 2000!

- Concrete over existing asphalt road
- No prep work to the existing road surface
- 6" average depth, 5" minimum depth
- 24' wide pavement

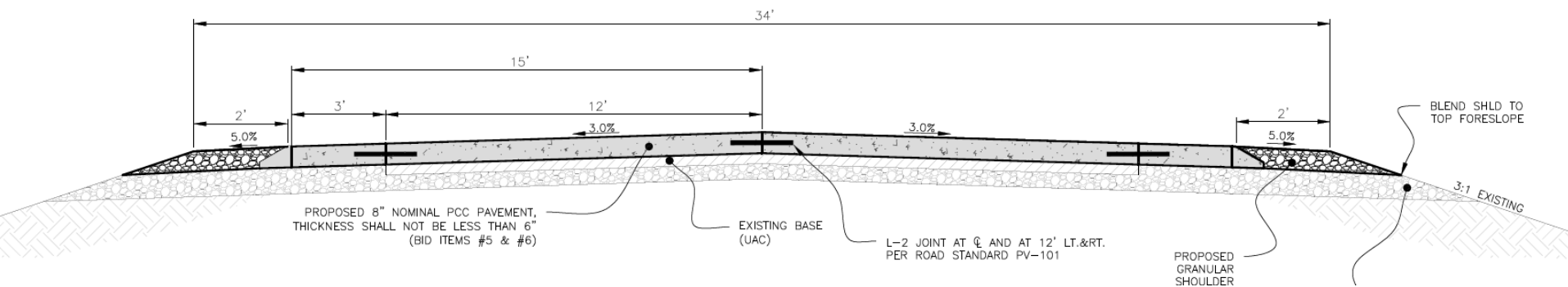


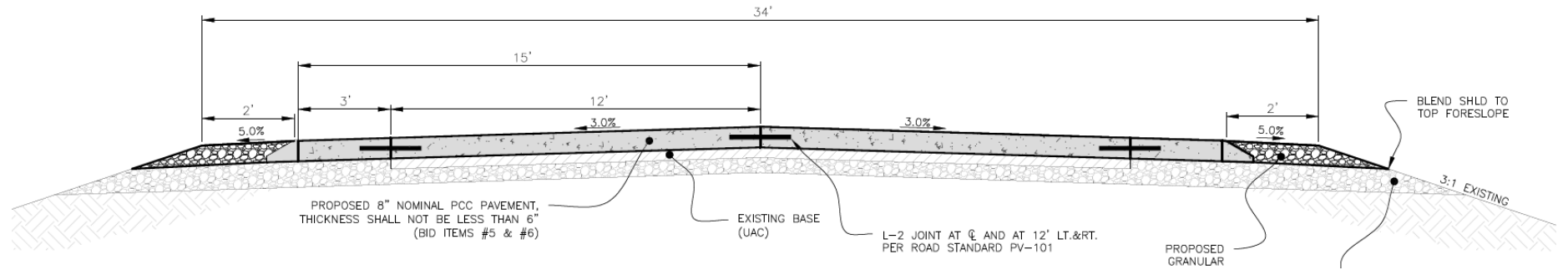
Goals in 2024!

- Complete projects, not just resurfacing
- Improved Pavement Structure
- Smooth (IRI value)
- Improved Safety
- Cost Effective
- Less Maintenance & Longer Lifespan

Starting Point – Design Concept

- 30' pavement width, +rock shoulders
- 8" average depth, 6" minimum
- Safety Edge
- Patch/Repair Existing Road
- Improve Drainage & Culvert Replacements
- 3:1 foreslopes, remove all obstructions
- Driveway Upgrades (6:1 slopes)



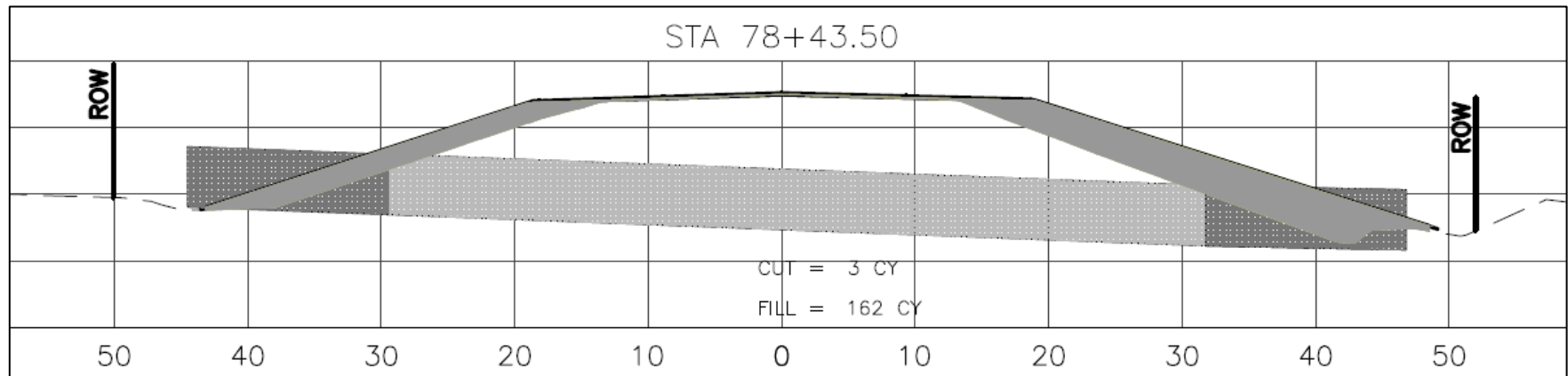


Obstacles



Obstacles

- Existing Roadway Width



Obstacles

- Insufficient Right-of-Way



Obstacles

- Poor Geometry of the Existing Road



Obstacles

- Vertical Adjustments at Intersections & Driveways



Obstacles

- Public Perception & Acceptance
 - Detour Route
 - Traffic on rock roads – dust problems
 - Property Owner Access
 - How we spending tax dollars

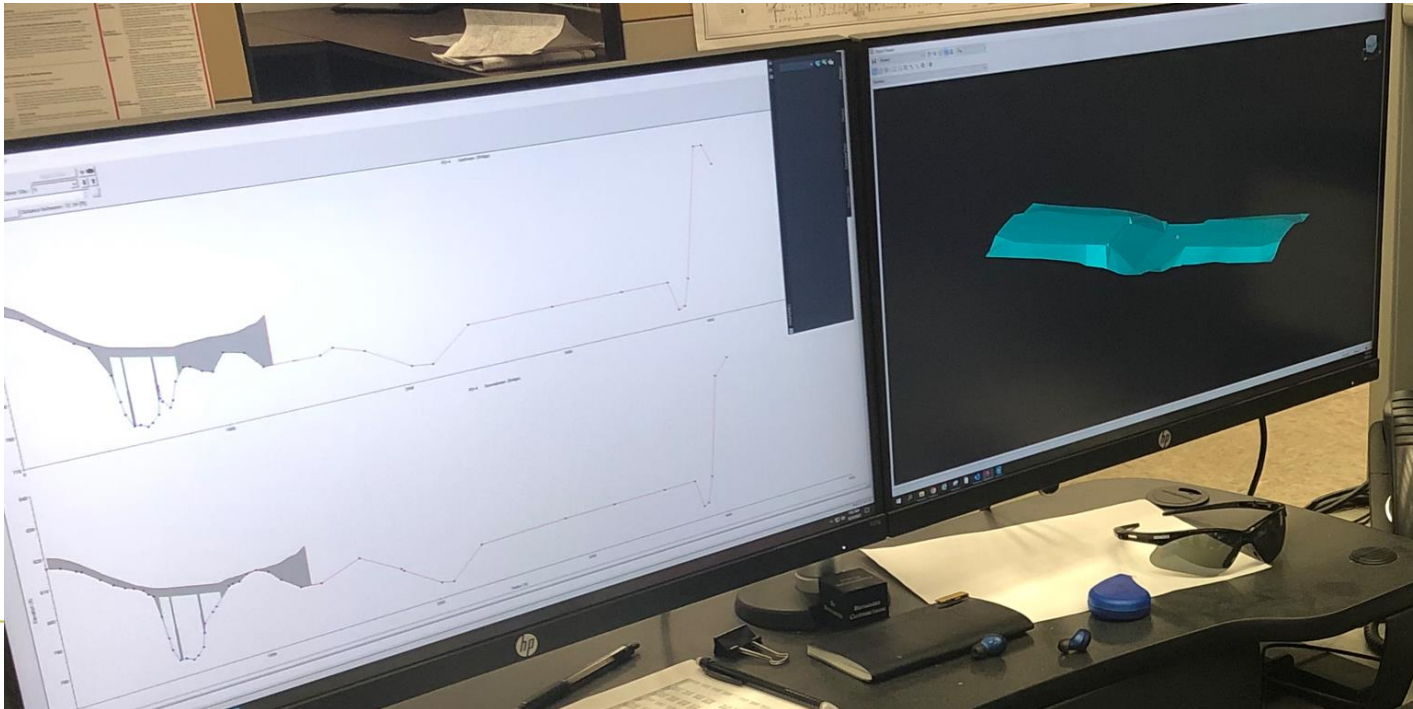


Linn County's Approach To Overcoming Obstacles



Linn County's Approach

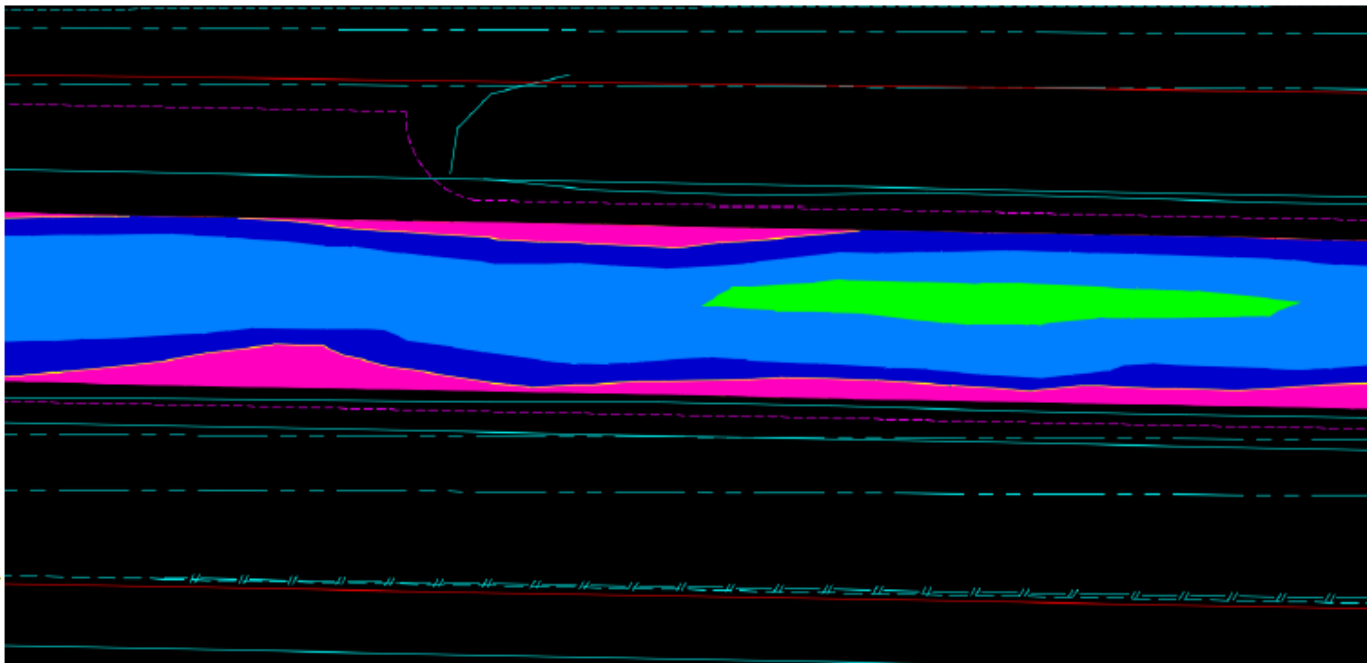
- AutoCAD Design
- Survey: Cross-sections every 25'
- Min. 5 shots – edge of shoulder, edge pavement, centerline
- Create a volume surface in Civil 3D
- Achieve desired design speeds (K Values)



Linn County's Approach

- AutoCAD Design

Minimum Elevation	Maximum Elevation	Color Scheme
0.000'	0.520'	Red
0.520'	0.600'	Yellow
0.600'	0.670'	Green
0.670'	0.850'	Blue
0.850'	1.000'	Dark Blue
1.000'	1.500'	Magenta



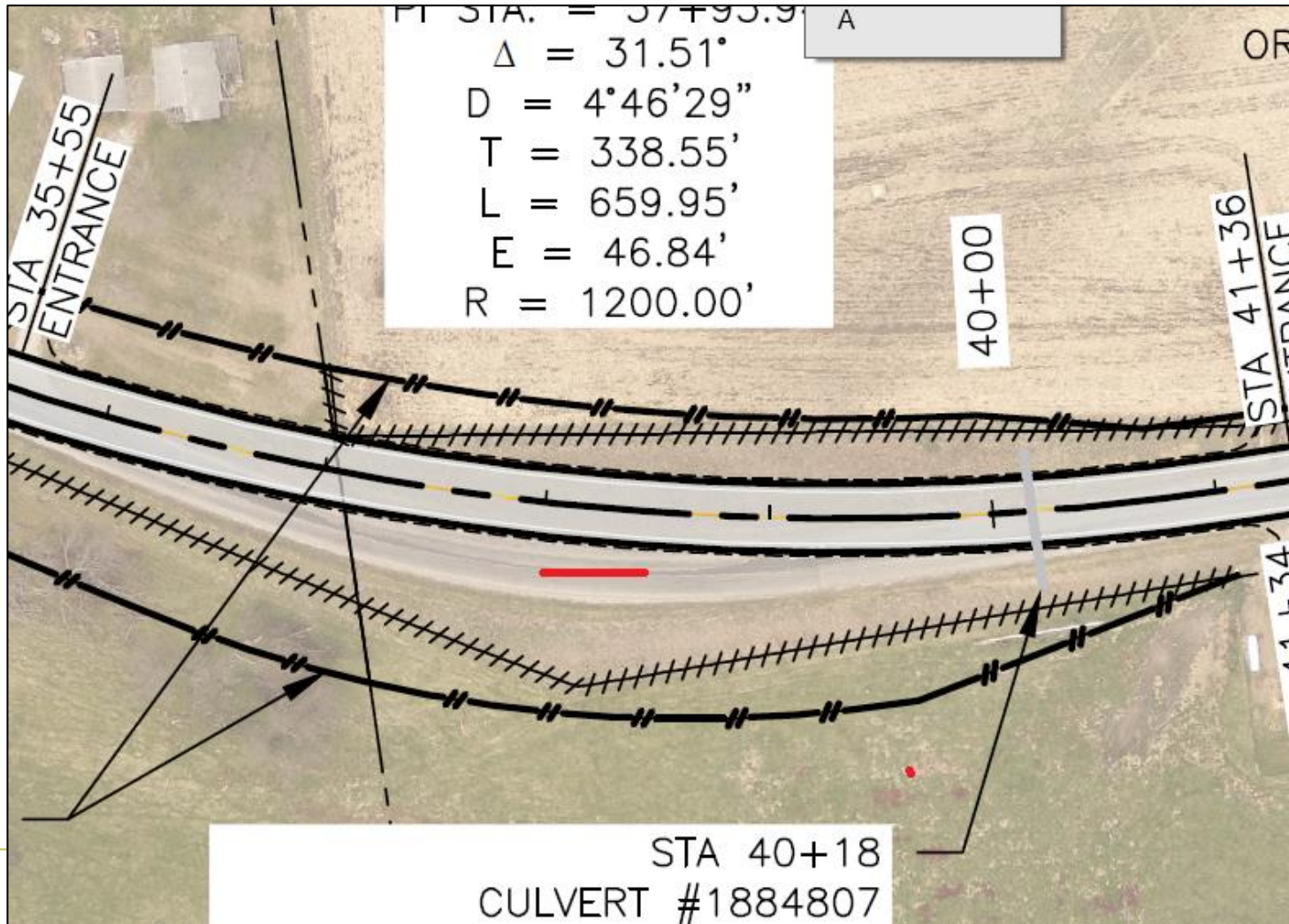
Linn County's Approach

- Existing Roadway Width



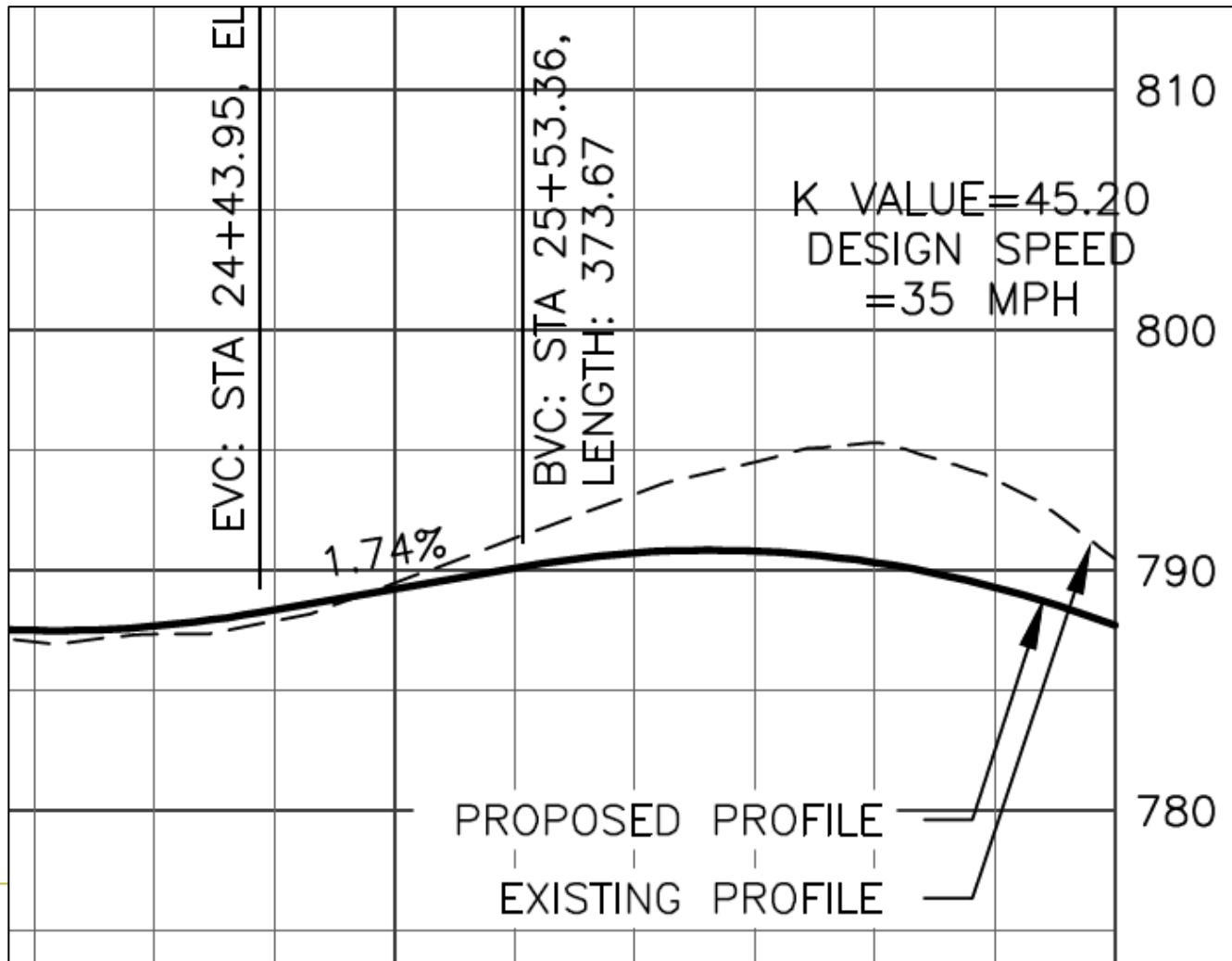
Linn County's Approach

- Poor Geometry of the Existing Road



Linn County's Approach

- Poor Geometry of the Existing Road



Linn County's Approach

- Insufficient Right-of-Way



Linn County's Approach

- Insufficient Right-of-Way



Linn County's Approach

- Insufficient Right-of-Way



Linn County's Approach

- Insufficient Right-of-Way



Linn County's Approach

- Dust Control



Linn County's Approach

- Mix Design: Straight C-4

Project No.:	<u>STP-S-C057(165)-5E-57</u>	
Mix No.:	<u>C-4</u>	Ab
Cement (IM 401):	<u>618</u>	lbs
	%	
Fly Ash (IM 491.17):		<input type="text" value="0"/>
	%	
Slag (IM 491.14):		<input type="text" value="0"/>
	%	
CarbonCure:		<input type="text" value="0"/>

Linn County's Approach

- Mix Design: Straight C-4

Cement	618	lbs/cy
Fly Ash	0	lbs/cy
Slag	0	lbs/cy
Water	266	lbs/cy
Fine Agg.	1477	lbs/cy
Interm. Agg.	0	lbs/cy
Coarse Agg.	1382	lbs/cy

Linn County's Approach

- Mix Design: Straight C-4

Air Entrainment: ConAir 260-Premiere Admix. 

Normal Water Reducer: OptiFlo 700-Premiere Admix 

Mid-Range Water Reducer:

High-Range Water Reducer:

Retarder: ProLong L-Premiere Admix 

Special Performance Admixture:

Fibers:

Carbon Cure:

Maintenance & Rehab Projects

- Patching by County Crews



Maintenance & Rehab Projects

- Profile Grind



Linn County's Approach

- Customer Satisfaction



Linn County's Approach

- Public Outreach – 'Road to be Closed' signs



Linn County's Approach

- Public Outreach – Project Letters

Frequently Asked Questions

Will vehicle access be available at all times during the project?

No, there will be times when access is not possible for local traffic during concrete paving. Local traffic will be allowed on the concrete pavement as soon as maturity is reached (typically within 48hrs.). All residents adjacent to the concrete paving are encouraged to plan travel accordingly during construction. The lack of access is an inconvenience but greatly reduces the amount of time for construction and results in a better overall product.

If access is not available at times throughout the project, how are emergency situations handled?

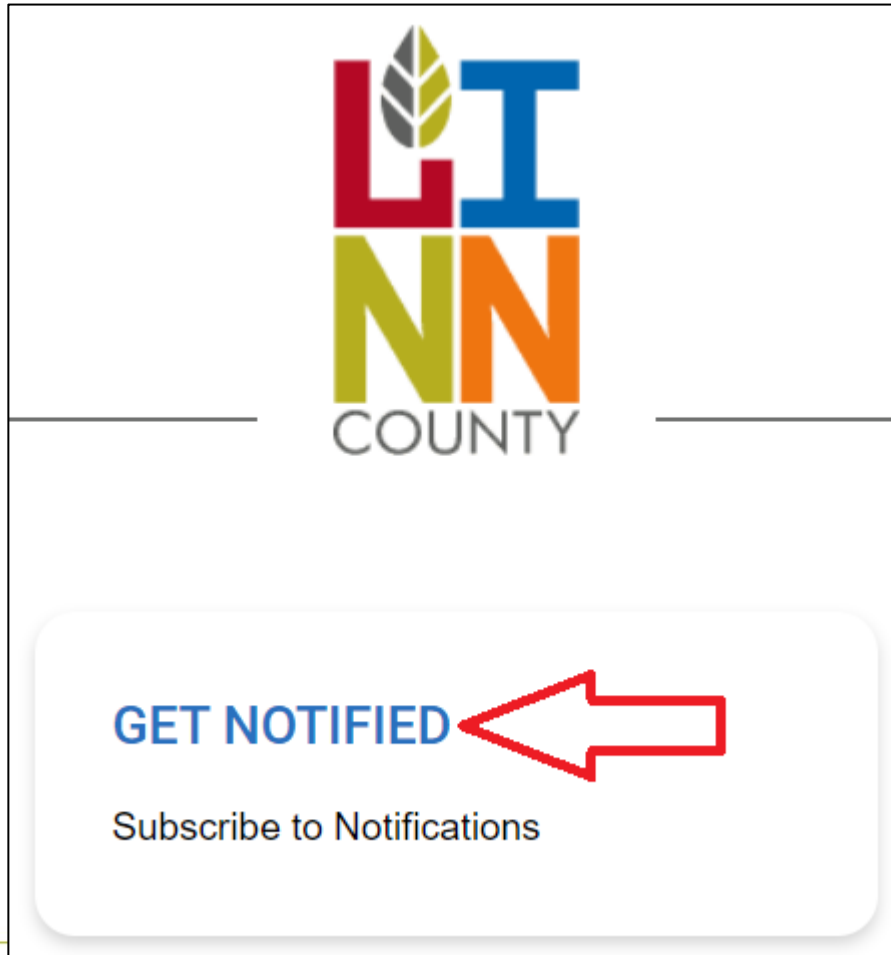
Emergency services will do all they can to respond to emergency situations. If the shoulder width is not sufficient for access, emergency vehicles will travel on the paved roadway, whether the concrete is mature or not. Concrete can be replaced.

How will I know when the paving will pass by my house or property?

Regular project updates are provided via email, text or by calling the Engineer's Office. Email updates are detailed and will be sent out daily during paving operations and as other work progresses. To receive the updates, go to www.linncounty.org and select the 'Notify Me' icon. You will need to create a free account for this service and select which projects you would like to be notified of. Please contact our office if you need assistance with this service.

Linn County's Approach

- Public Outreach – Email & Text Updates



Linn County's Approach

- Public Outreach – Road Department's Website

Project Types

Concrete Paving

The roads scheduled for concrete overlays will be closed to all traffic during paving. Local traffic will be allowed on the concrete pavement as soon as joints are sealed and maturity is reached (typically within 40 hours). The contractor is required to allow local access as soon as possible. All residents adjacent to the concrete paving are encouraged to plan travel accordingly during construction. There will be times when access is not possible for local traffic. If this is a concern, parking your vehicle at the nearest point of relief and walking to your home will be required.

Grading Projects

A typical grading project involves replacing or extending crossroad and entrance culverts, cleaning ditches to improve drainage, curing snow trap areas, removing obstructions (trees, landscaping, headwalls) within the right of way, flattening slopes, etc. Traffic count determines the amount and type of rock placed on the road. Gravel roads with a traffic count over 150 vehicles per day (VPD) will generally receive a 3-inch macadam stone (1-3-inch sized rock) base with a 3-inch choke stone (three fourths inch plus sized rock) surface layer.

Future Projects

View the [2024-2028 5-year Construction Program \(PDF\)](#).

Local Road Safety Plan

In 2018 Linn County partnered with the Iowa DOT and Kimley-Horn (consultant) to develop of Local Road Safety Plan and it was updated in 2023. This plan provides a basis for systemic safety improvements based on risk factors. The plan assists Linn County in making informed, prioritized safety decisions.

View Linn County's [Local Road Safety Plan \(PDF\)](#).

FAQs

- [When a road is closed for a project and traffic uses rock roads, how is the dust being controlled?](#)
- [Where can I find information about current road construction?](#)
- [How can I receive regular project updates and other project details?](#)

[View All FAQs](#)

Linn County's Approach

- Public Outreach – Road Department's Website

Home › Departments › Secondary Road Department › Bertram Bridge Replacement & Relocation Project

BERTRAM BRIDGE REPLACEMENT & RELOCATION PROJECT

The Bertram Bridge, also known as the Blue Bridge, relocation project includes replacing the current bridge with a new IDOT standard concrete beam bridge and relocating it to the Indian Creek Nature Center where it will be used on their trail system. Due to the existing truss bridge being a registered historic structure, the Linn County Historic Preservation Commission is participating in this project with the Secondary Road Department and Indian Creek Nature Center to ensure the bridge is preserved and properly signed in its new home.

Project Details

The projects were let on December 22, 2021 and both were awarded to Peterson Contractors Inc. of Reinbeck, Iowa. The bridge replacement project (new bridge) will cost \$2,425,608.45 and the truss relocation project will cost \$184,373.00. The projects are both funded with Local Option Sales Tax (LOST) money. Construction is expected to begin in November 2022 and the road is scheduled to be open on Friday, October 6, 2023.

Get Notified



The Linn County Secondary Road Department will provide updates throughout this project. Sign up to receive text or email updates on the Bertram Road Bridge Replacement Project under the Alert Center on the [NotifyMe](#) page. [View previous updates.](#)

Timeline

Date	Activity	Status
November 1, 2022	Tree Clearing and Grubbing	Completed
Winter 2022-2023	New Bridge Substructure Construction	Completed
Summer 2023	New Bridge Superstructure Construction	Completed
August/September 2023	Relocate Historic Truss Bridge to Indian Creek Nature Center	Completed
Late September / Early October 2023	Project Completion	On Schedule

Linn County's Approach

- Public Outreach – Social Media

 Linn County, Iowa 
October 9, 2023 · 

The new bridge on Bertram Road is now open! This bridge is an IDOT standard concrete beam bridge and replaces the old Bertram "Blue" Bridge. The relocation of the old bridge to the trail system at the [Indian Creek Nature Center](#) is underway, and more details will be communicated when they are available.

Learn more about the project: <https://www.linncountyiowa.gov/.../Bertram-Bridge...>



Linn County's Approach

- Public Outreach – Newsletter

2023 Construction and Maintenance Projects

The following projects are scheduled to be completed by contract and County crews in 2023. The projects listed are in line with the goals highlighted in the Secondary Road Department's 5-Year Construction Plan and 2023 Maintenance Plan.

In addition to the projects listed below, there are more than 80 miles of rock overlay projects planned. Rock overlay projects consist of placing rock on sections of roadway that have drainage, crown, and meet standards for a Class A road. Owners are responsible for the entrance from their property to the county road. The County will work with owners to use existing drives or to improve drives to fit current needs.

Crews also work throughout the year to remove obstructions from the right-of-way, flatten foreslopes, upgrade signage, remove snow and ice, and repair pavement markings. For an interactive project map visit LinnCountyIowa.gov/803/Projects.

District 4 | Northwest

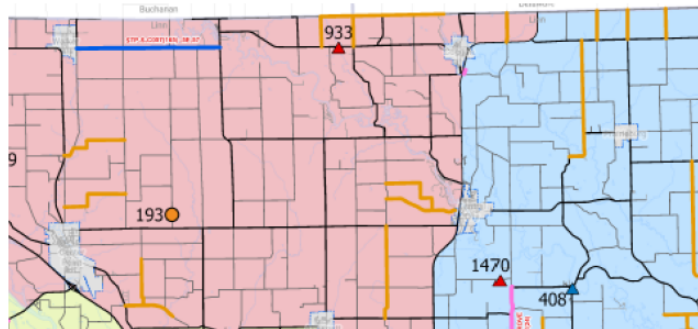
Bridge Replacement

- Coggon Road Bridge

Concrete Paving

- Walker Road

Culvert Replacement



District 3 | Northeast

Bridge Replacement

- Waubeek Road Bridge (RCB)

Bridge Deck Overlay

- Boy Scouts Road Bridge

District 2 | Southeast

Linn County's Approach

- Public Outreach – Newsletter



Linn County Routes

Linn County Secondary Road Department

Fall 2023

319-892-6400
1888 County Home Road
Marion, IA 52302
LinnCountyIowa.gov

Ready for Winter Weather? We are.

Winter is on its way, so now is the time to review Linn County's Snow & Ice Removal Ordinance and the Secondary Road Department Snow & Ice Policy adopted by the Board of Supervisors. The ordinance and policy are available for review online at LinnCountyIowa.gov or at the Engineer's Office. Important points of the policy include:

- No "dry pavement" policy
- Hard surface and high traffic roads are given priority during and after snow and ice events
- Salt and sand are only applied to hard surface roads
- Rock roads are plowed to provide access to the hard surface system
- In an emergency, always call 911. Residents should keep sufficient supplies of food and fuel on hand to avoid becoming an emergency.
- Linn County does not remove snow from sidewalks or driveways. Unavoidably, snow is deposited on sidewalks and in driveways during county plowing.



Regular hours of operation are Monday through Friday 7 a.m.-3:30 p.m. Hours may be extended during a snow event to 4 a.m.-6 p.m., including Saturday and Sunday, at the direction of the County engineer or designee. This expansion allows crews time to clear the roads for residents to commute to and from work and to respond to weekend snow events.

Sign up to receive alerts regarding snow removal operations at LinnCountyIowa.gov/NotifyMe.

Linn County's Approach

- Public Outreach – Newsletter

Winter Weather Operations FAQs

Each year, the Secondary Road Department receives a multitude of calls relating to winter weather operations. While each snow or ice event is unique, there are general rules we follow when clearing the Linn County secondary road system. Here are the answers to some of our most frequently asked questions:

Q: What is the difference between priority and standard routes?

A: Priority routes include all hard surfaced roads (30 routes total) and standard routes (41 total) include all priority routes and all other secondary roads in Linn County. Priority routes are cleared first as they experience higher traffic counts than the other roads. A snow route map is available at LinnCountyIowa.gov.

Q: How do you decide if crews will plow outside of normal hours of operation?

A: The operations superintendent monitors multiple weather forecasting apps, uses the Iowa DOT Road Weather Information System to check air and pavement temperatures, and watches Iowa DOT live cameras to see current conditions when a winter weather event is predicted for Linn County. Then, around 1 a.m., the superintendent drives a two-hour route through the whole county in two-wheel drive to get a sense of how difficult it is to get around. If the superintendent decides to call in crews for extended

Q: Why don't you salt the rock roads?

A: Salt and sand are only applied to hard surfaced roads due to the damage it can cause to rock roads. As the salt melts the snow/ice, the salt and water solution penetrate into the road surface. This causes the road surface to break up and loosens the previously hard packed surface. This process will continue to progress into the base of the road and can create a quicksand-like effect. Further damage to the road can occur as vehicles drive over the road because they sink into the road instead of riding across the top.

Q: Why do the plows push snow beyond the edge of the road?

A: We push snow beyond the shoulders to reduce drifting problems and to prepare for the next snow event. Snow that is piled just outside of the traveled portion of the road, including shoulders, is a visual obstruction for motorists entering the roadway from driveways and intersections. Also, snow that is

Linn County's Approach

- Public Outreach – Newsletter

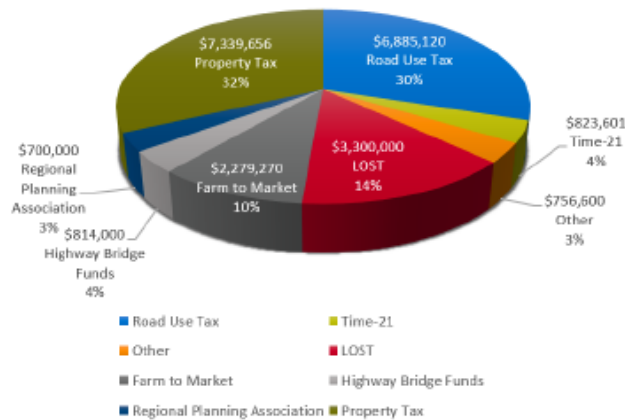
Property Tax Dollars at Work

If you own property in Linn County, your annual tax bill funds much more than County government. Other government entities – such as school districts – also establish a levy rate, which is reflected in annual tax bills. The Linn County Treasurer's Office collects property taxes and then distributes them to each of the taxing jurisdictions. The percentage of property taxes that fund Linn County services will vary depending on where your property is located. Linn County taxes represent slightly more than one-third of property taxes for rural residents.

The tax dollars you pay to Linn County fund the following important services:

- Public safety and legal services
- Physical health and social services
- Mental health
- Administration
- Roads and transportation
- Capital projects
- Environment and education
- Government services
- Debt service

FY24 Revenue Sources



Breakdown of PCC vs HMA Roads

Road Surface Type	Miles of Road	%
Concrete	209	17.9%
Asphalt	73	6.3%
Seal Coat	106	9.1%
Rock	756	64.9%
Earth	20	1.8%
Total	1165	

Summary

- Focus on **Complete Projects**, not just resurfacing.
- Nothing fancy about our projects or decisions.
- Material selection is one of many decisions we make, and **concrete** is a quality material we often choose.

Thank you!



GARRET REDDISH, P.E.

Assistant Engineer II

SECONDARY ROAD DEPARTMENT

1888 County Home Road | Marion, IA 52302

Ph: 319-892-6407 | Fax: 319-892-6419

LinnCountyIowa.gov

