

28th meeting of the
IOWA FREIGHT ADVISORY COUNCIL

December 13, 2019
10:00 AM to 2:00 PM
Courtyard Marriot
2405 SE Creekview Dr, Ankeny, IA 50021

Meeting input objectives

1. Discuss the potential impacts of Blockchain technology to supply chain management and identify strategies for Iowa DOT to prepare for this implementation.
2. Identify two or three innovations/methods that could have significant application in Iowa and strategies for promoting implementation.

10:00 AM Safety Briefing

Amanda Martin
Iowa DOT

Welcome and Introductions

Mike Steenhoek, Chair
Soy Transportation
Coalition

10:30 AM Iowa DOT Updates

An update on current activities and initiatives.

Stu Anderson
Craig Markley
Iowa DOT

11:00 AM Blockchain 101

An overview of blockchain technology, how it is being implemented in different industries, and its relevance to supply chain management.

Henrik Sternberg
Iowa State University

11:30 AM Blockchain Discussion

Open discussion relating to Blockchain and the potential impacts to supply chains and Iowa DOT.

Mike Steenhoek, Chair
Soy Transportation
Coalition

12:00 PM Lunch

12:45 PM Competitive Highway Bridge Program award

Overview of a grant recently received by the state of Iowa and what it means for first mile/last mile infrastructure.

Nicole Moore
Iowa DOT

1:00 PM Innovative Methods Panel

A panel to continue discussions from the September meeting looking at multiple innovations and/or methods that could have significant application in Iowa without sacrificing safety, structural integrity, etc., including limitations and barriers to statewide implementation.

**Mike Steenhoek, Chair
Soy Transportation
Coalition**

- **Brian Keierleber**
Buchanan County
- **Guy Nelson**
TEG Engineering
- **Nicole Moore**
Iowa DOT

2:00 PM Adjourn

2020 meetings:

- Friday, March 27
- Friday, June 19
- Friday, September 18
- Friday, December 18

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IOWA FREIGHT ADVISORY COUNCIL

December 13, 2019
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Members

	Andy Cernin	x	Delia Moon-Meier
x	Tom Determann	x	James Niffenegger
	Greg Dickinson	x	Kelli O'Brien
x	Don Egli		Joe Parsons
	Greg Jenkins	x	Scott Bannister for Dan Sabin
	Calean Kokjohn	x	Mike Steenhoek
	Ron Lang	x	Reilly Vaughan
	Jody Sandy	x	Tony Miller for Ron White
	Don McDowell	x	Tim Woods

Ex-Officio Members

x	Todd Ashby	x	Zach James for Mike Norris
x	Mike Hadley	x	Paul Ovrom
	Mark Johnson		Robert Palmer
x	Michael Kober	x	Joseph Rude
x	Sean Litteral		Col. Steven Sattinger
	Mark Lowe		Louis Vander Streek
	Shirley McGuire	x	Jennifer Wright

Iowa DOT

x	Stu Anderson	x	Justin Meade
x	Phou Baccam	x	Phil Meraz
	Mikel Derby		Tammy Nicholson
x	Sam Hiscocks	x	Garrett Pedersen
x	Laura Hutzell	x	Charlie Purcell
x	Alex Jansen		Angel Robinson
	Renee Jerman		John Selmer
	David Lorenzen		Melissa Spiegel
x	Craig Markley	x	Jeff von Brown
	Scott Marler		Andrea Henry
x	Amanda Martin		Susan Fenton

Guests

x	Tim Marshall	x	Ben Lampe (Iowa Dept. of Public Safety)
x	Brian Keierleber (Buchanan County)	x	Nicole Moore (Iowa DOT)
x	Guy Nelson (TEG Engineering)	x	Henrik Sternberg (Iowa State Univ)
x	Isidro Linan-Jiminez (Iowa State Univ)		

Meeting input objectives

1. Discuss the potential impacts of Blockchain technology to supply chain management and identify strategies for Iowa DOT to prepare for this implementation.
2. Identify two or three innovations/methods that could have significant application in Iowa and strategies for promoting implementation.

10:00 AM Safety Briefing

Amanda Martin
Iowa DOT

Welcome and Introductions

Mike Steenhoek, Chair
Soy Transportation
Coalition

Amanda Martin opened the meeting with a safety briefing. Mike Steenhoek, Chair of the FAC, then led introductions and identified the two primary meeting objectives relating to impacts of blockchain technologies and identifying innovative methods.

10:30 AM Iowa DOT Updates

An update on current activities and initiatives.

Stu Anderson
Craig Markley
Iowa DOT

Stu Anderson provided information on the upcoming 2020 Iowa Legislative Session and updates relating to federal transportation funding. The upcoming session includes two minor DOT bills. The first will add to Iowa Code a new law banning individuals from getting a commercial driver's license (CDL) for life if convicted of human trafficking. The other is a minor change related to vehicle odometer reporting. The DOT budget request is status quo.

On the federal side of funding, Congress has reached an agreement with the administration on full FY2020 appropriations, as well as some additional funding. The proposed rescission in the FAST Act was repealed. The FAST Act is set to expire in September 2020. Since a new transportation authorization bill is unlikely, it is assumed there will be an extension of some kind. The House and Senate are both considering what the next transportation authorization bill will look like. It is expected that it will have a freight-focus like the FAST Act.

Craig Markley informed the group of an ongoing effort to establish one or more port statistical areas (PSA) along the Mississippi River in Iowa, as well as in Illinois and Missouri. PSAs are federally-recognized and allow for improved data collection, marketing, planning, etc. There are current discussions covering boundaries of the proposed PSAs. There will be more updates coming at future meetings. Also relating to the Mississippi River, Mr. Markley provided an update on Iowa DOT's work with the U.S. Army Corps of Engineers to explore the construction of a mooring cell in the waterway for barge operators to utilize. Discussions are ongoing. On the Missouri River, a new barge terminal has been proposed near Blencoe, Iowa by a group of cooperatives. There are numerous upbound and down bound opportunities for such a facility.

Finally, Mr. Markley addressed the current propane shortage in the Midwest. Due to the wet spring, late planting, late harvest, and weather issues, there has been an increased demand for propane for home heating, livestock heating, and grain drying. Due to this, Governor Reynolds signed an hours of service waiver that expired in December, but the Federal Motor Carrier Administration has a regional multi-state hours of service waiver in effect until January 10, 2020. Governor Reynolds also petitioned FERC to have certain pipelines transport only propane temporarily.

Mike Steenhoek then asked Todd Ashby to provide a status update on the Des Moines Transload Facility. Mr. Ashby notified the group that the Des Moines City Council took action recently to transfer the property to the new operator, Des Moines Transload. Environmental documentation has been submitted to FRA and agreements are being lined up with local businesses.

11:00 AM Blockchain 101

An overview of blockchain technology, how it is being implemented in different industries, and its relevance to supply chain management.

**Henrik Sternberg
Iowa State University**

11:30 AM Blockchain Discussion

Open discussion relating to Blockchain and the potential impacts to supply chains and Iowa DOT.

**Mike Steenhoek, Chair
Soy Transportation
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Henrik Sternberg provided a presentation on blockchain technologies and the potential impacts to supply chains. The presentation included a brief “blockchain 101,” theory and practice, and a blockchain pilot in Europe. Blockchain is a series of nodes where all involved parties have identical copies of every transaction ever made and updated in real time. The steps below were explained to give a general overview of the technology.

- Step 1 - owner 1 wants to send asset to owner 2
- Step 2 - requested transaction is broadcasted to whole network consisting of nodes/computers
- Step 3 - the network of nodes validates transactions, using known algorithm
- Step 4 - once verified, the transaction is added with other transactions creating a new block of data for the ledger; new block also contains signature of previous block (every block contains a link to previous block) - series of blocks is the block chain
- Step 5 - the new block is then added to the blockchain. The block is now immutable making it permanent and unchangeable. New block is copied to all nodes
- Step 6 - check confirmation on ledger transaction complete

Bitcoin is the most notable example, but it can be used for any digital resource. It is an incorruptible ledger of transactions and has the ability to disrupt every industry and change the way supply chain is done. Blockchain can help overcome some existing issues in intra-business information sharing, assist with supply chain finance, and improve operations management. ReLog is an example of an application developed using blockchain that allows consumers to scan products to review production, transportation, etc. details about the product.

Follow up discussions were centered around challenges with some systems to integrate in the technology, data entry for certain products, necessity for application in different business models, law enforcement visibility, and transparency. The general conclusion of Mr. Sternberg’s presentation is that the application of blockchain technology will still be limited by the accuracy and honesty of those submitting data, and there is not currently a specific business problem that traditional centralized database systems cannot solve.

12:00 PM Lunch

12:45 PM Competitive Highway Bridge Program award

Overview of a grant recently received by the state of Iowa and what it means for first mile/last mile infrastructure.

Nicole Moore
Iowa DOT

Nicole Moore gave an overview of a grant recently awarded to Iowa DOT. The Competitive Highway Bridge Program provides funding for states to replace and rehab roadway bridges. Selection criteria for the program awards included innovative technologies, project delivery, and financing, as well as support for economic vitality, life-cycle cost, state of good repair bridge conditions, and project readiness.

Iowa received the largest award of the 18 states that received funding. The Iowa application included 77 bridges across 50 jurisdictions (68 county bridges, 5 city bridges, and 4 state bridges). These funds must be obligated by the Federal Highway Administration by September 30, 2021.

1:00 PM Innovative Methods Panel

A panel to continue discussions from the September meeting looking at multiple innovations and/or methods that could have significant application in Iowa without sacrificing safety, structural integrity, etc., including limitations and barriers to statewide implementation.

Mike Steenhoek, Chair
Soy Transportation
Coalition

- **Brian Keierleber**
Buchanan County
- **Guy Nelson**
TEG Engineering
- **Nicole Moore**
Iowa DOT

Mike Steenhoek facilitated a panel covering innovative methods/designs for constructing and/or maintaining roads and bridges. Panelists were asked to highlight methods/designs they would like to see more widely adopted in the state. These could include methods/designs that may result in significant cost savings and accelerated project delivery without compromising safety or structural integrity. Methods and designs highlighted were:

- Vibratory piling
- Press-brake tub girders
- Prefabricated bridges

The follow-up discussion was surrounding reasons certain innovations haven't been more widely adopted. Mike Steenhoek identified potential reasons that prevent ideas from being implemented including a lack of

awareness, a lack of understanding, and/or a lack of motivation. Panelists discussed these as well as others, including:

- Certain areas are more appropriate for different applications
- Geologic issues such as differences in bedrock
- Risk aversion

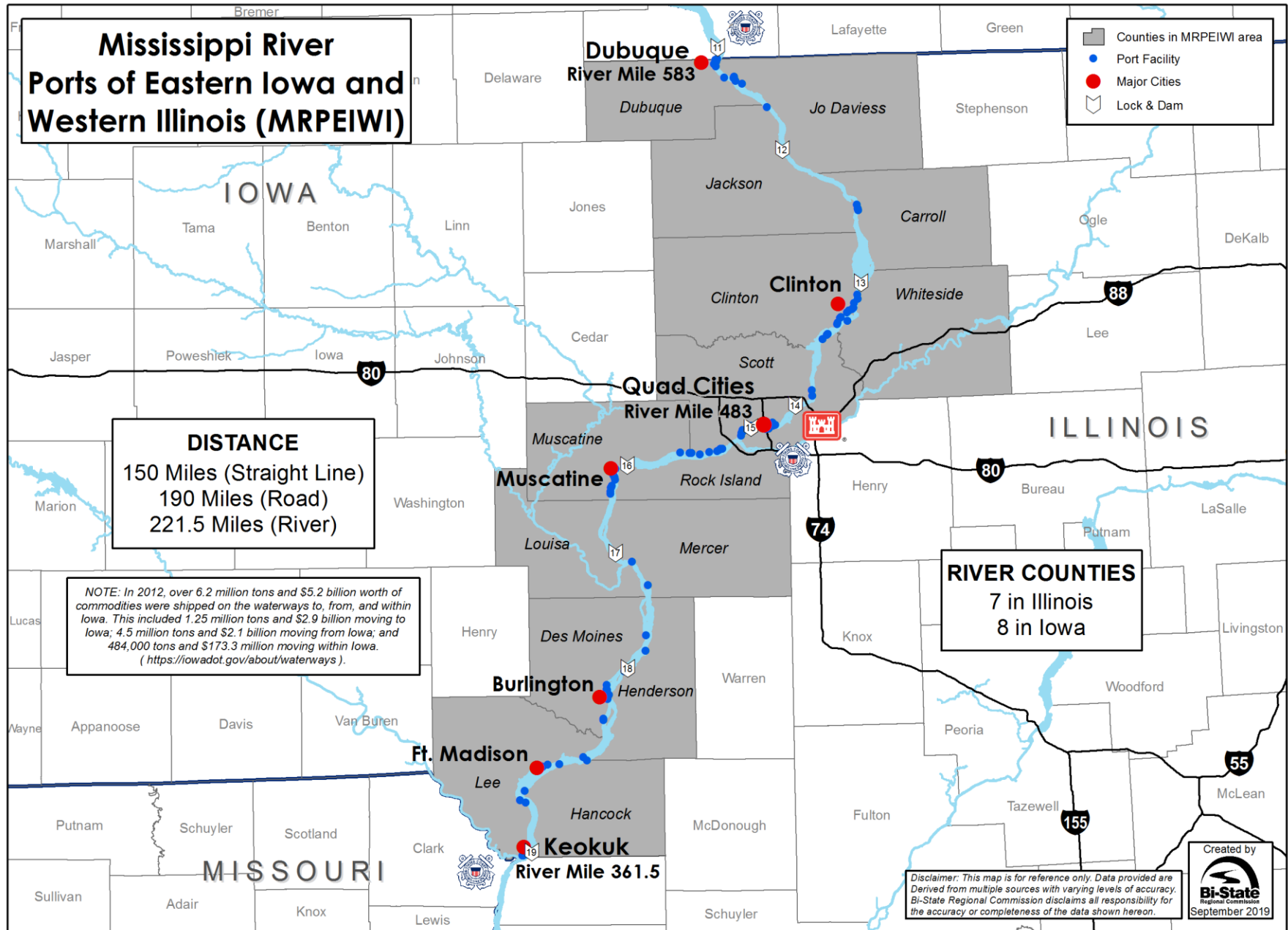
The session concluded with Mr. Steenhoek suggesting Iowa DOT continue to be a resource helping to identify innovative methods to support cost savings.

2:00 PM Adjourn

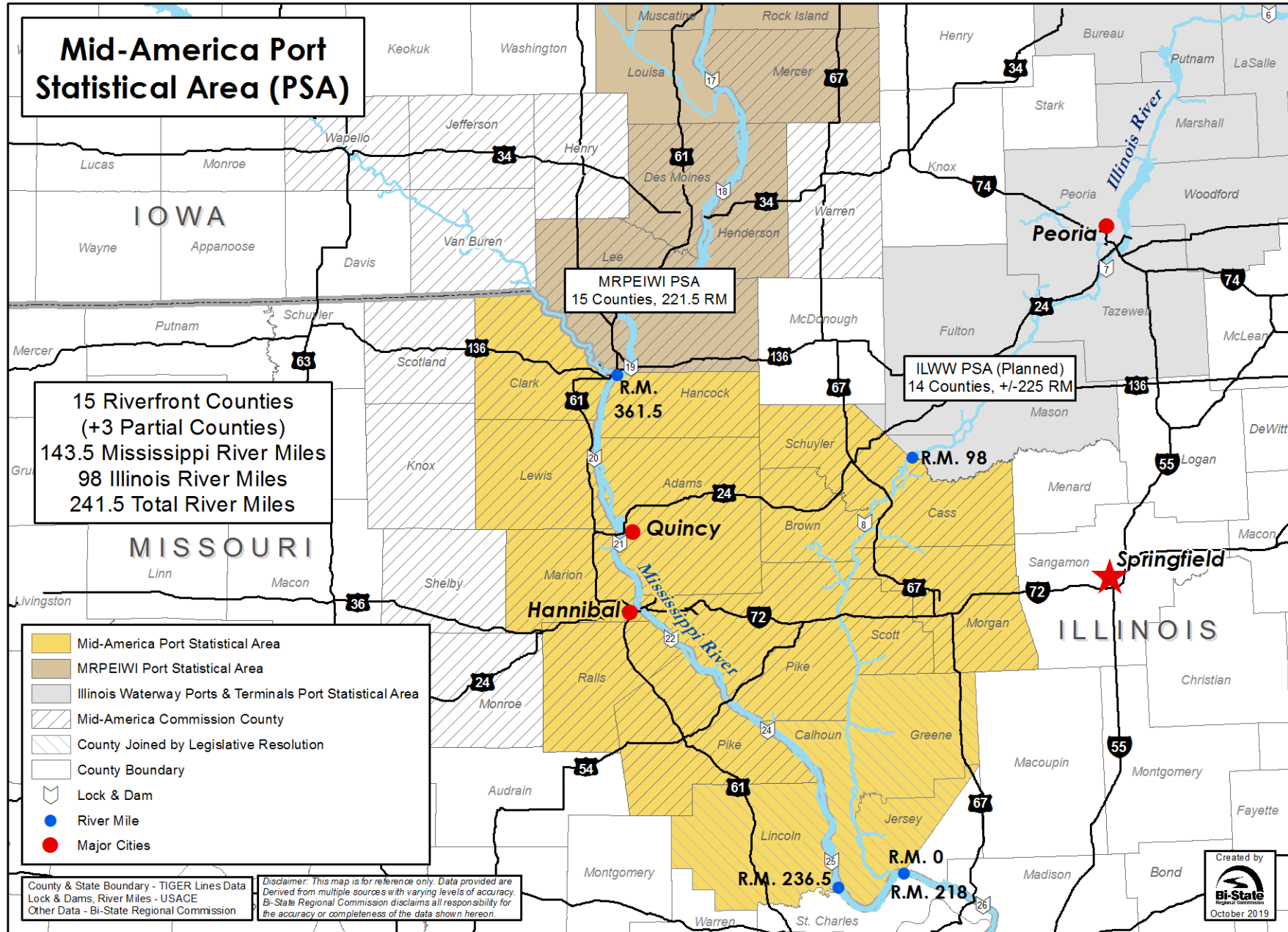
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Proposed Port Statistical Areas



Proposed Port Statistical Areas



A large concrete arch bridge spans a wide river. The bridge features a prominent central arch supported by a series of vertical hangers. The background shows a lush, green forested hillside under a clear blue sky. The overall scene is bright and scenic.

Competitive Highway Bridge Program (CHBP)

18 states awarded funding!

- **Iowa - \$33,442,000 – largest award!**
- Maine – 2 grants – total \$25 Million
- Missouri - \$20.8 Million
- Kansas - \$3.9 Million – 3 counties
- Colorado - \$12.5 Million
- Minnesota – St. Louis County – 21 structures
- Nebraska - \$8.5 – 7 bridges
- North Dakota - \$6.5 M – 18 bridges – standard design details
- South Dakota - \$2.2 M – 4 bridges - standard design details

CHBP Selection Criteria

○ Innovation

- Innovative Technologies - innovative design, materials and construction techniques – Iowa's Standard Bridge Plans

- Innovative Project Delivery - Efficiency of the environmental permitting process – NEPA Pre-screening

- Innovative Financing - Use of private sector funding or recycled revenues – CHBP plus Swap – net ZERO for LPAs

- Support for Economic Vitality – Benefit Cost Analysis

- Life-Cycle Cost and State of Good Repair Bridge Conditions

- Project Readiness - obligate by September 30, 2021 & expend funds by September 30, 2026

Iowa's CHBP Application



How did we choose county bridges?



Data Driven Analysis

Structurally Deficient (Poor Condition)

100 or more ADT

Bridges 150 feet in length or less (easier permitting, benefits project readiness)

Programmed (also project readiness)

Ranked by Priority Points used in County State Bridge Program

Top 15 in each district

Iowa's CHBP Application

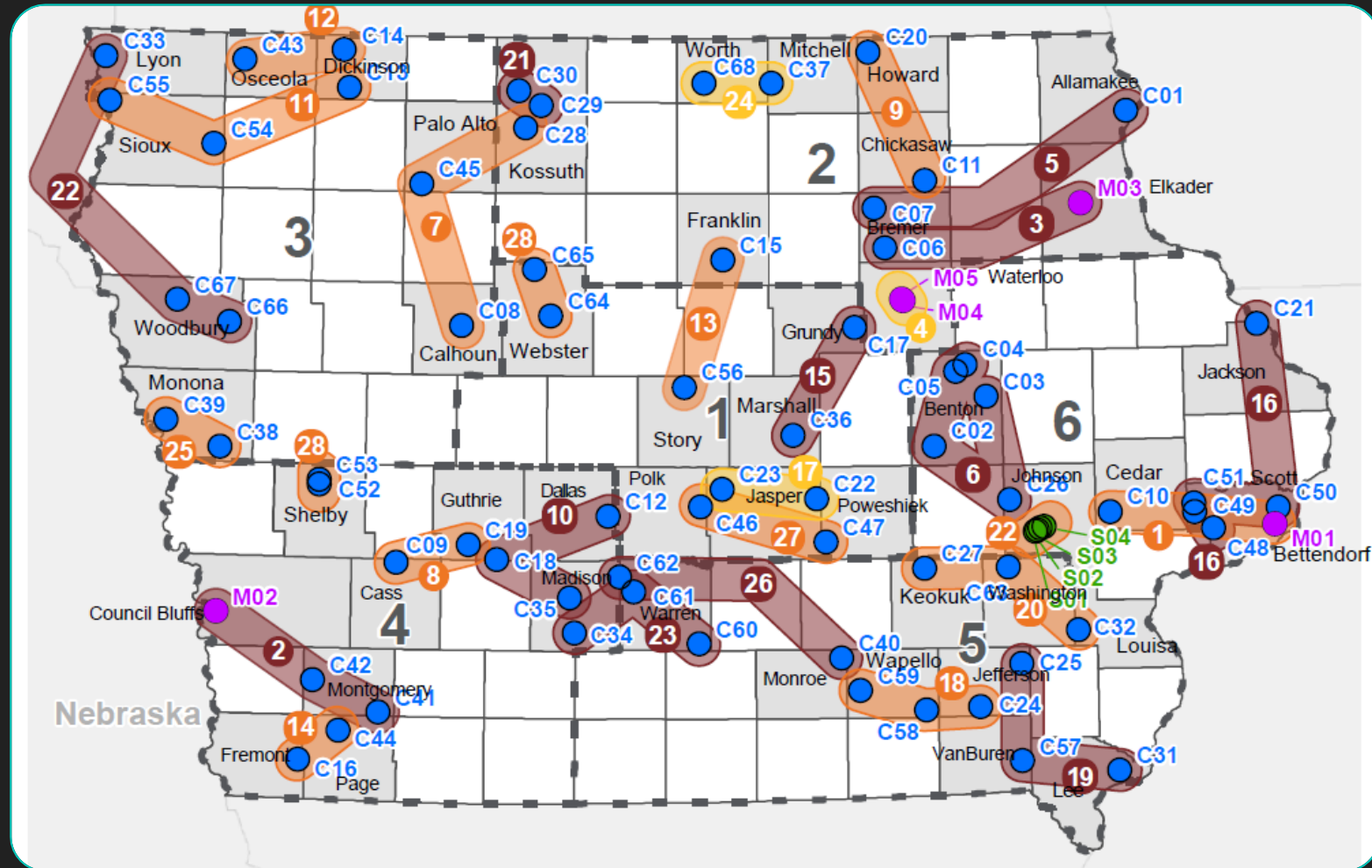
- 77 total bridges in the application, across 50 agencies
- Total Construction cost of \$61.2 Million
- Awarded \$33,442,000
- Largest award of any state

Bridges in Iowa's Request for Funding



Iowa's CHBP Application

- 29 bundles
- 2 to 5 bridges per bundle
- Geographic Proximity
- Bridge Type and Year ready



CHBP Project Schedule

Upcoming Iowa DOT Lettings

- January Letting - Monona County – 2 bridges
- February Letting – Palo Alto & Kossuth Counties
- March Letting – Page & Fremont Counties
- April Letting – Scott County (2) & Jackson County
- May Letting – Shelby County – 2 bridges

City bridges

- Waterloo – 2 bridges over Cedar River
- Council Bluffs
- Bettendorf
- Elkader – historic stone arch bridge rehab



CHBP – Next Steps

These projects are
Federal-aid

Corps Permits/DNR
Floodplain permits
can be obtained

Coordination with
your bundle
counties/cities

Hydraulic
Calculations to
determine type and
size of
bridges/culverts

DOT will:

- Send you Funding Agreements
- Work up some template 28E agreements

Concept Statements
& Cultural Resources
work

Preliminary Plans

What prevents good ideas from being implemented?

- A lack of awareness (i.e. – “I am not familiar with that new idea.”)
- A lack of understanding (i.e. – “I am familiar with it, but I don’t fully understand why it is so consequential.”)
- A lack of motivation (i.e. – “I am familiar with it and understand it, but I prefer the old way of doing business.”; “I have too many other things on my plate to take the time to explore it.”)

