

IMPROVE I-70

Eric Kopinski

MoDOT Improve I-70 Program Director





Missouri Department
of Transportation

Record STIP



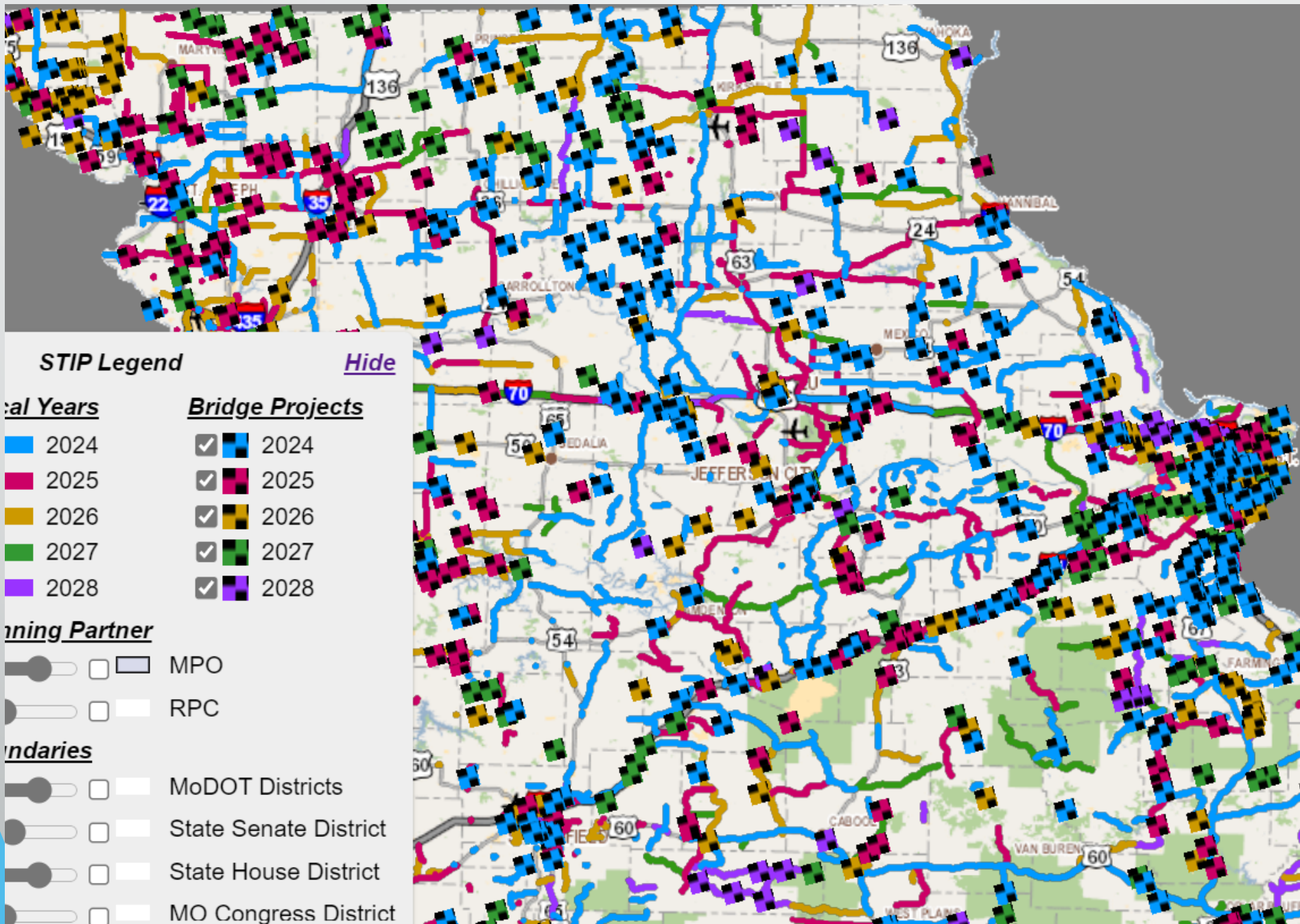
STIP

STATEWIDE TRANSPORTATION
IMPROVEMENT PROGRAM

www.modot.org



2024-2028



STIP Legend

[Hide](#)

Project Years

- 2024
- 2025
- 2026
- 2027
- 2028

Bridge Projects

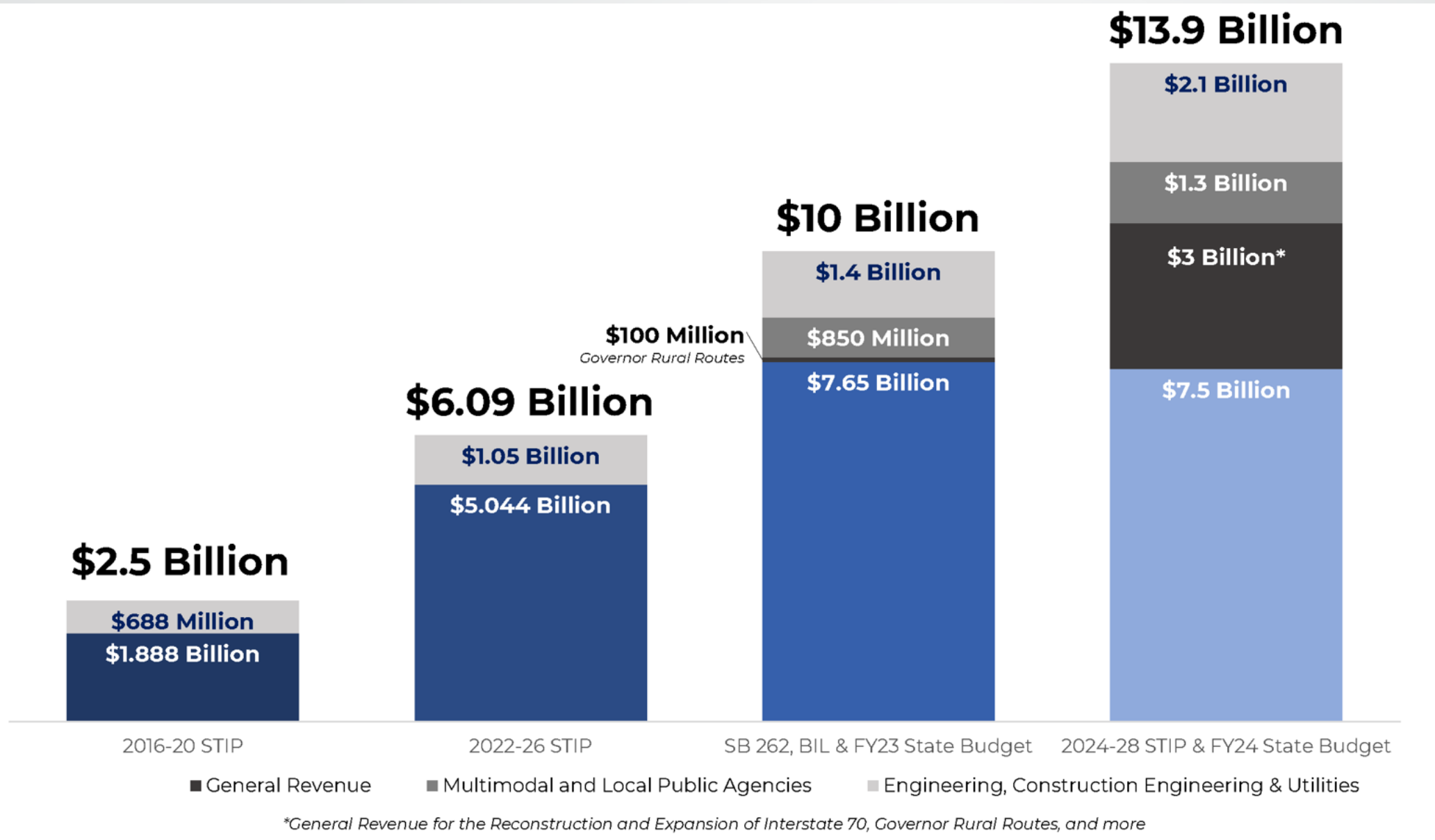
- 2024
- 2025
- 2026
- 2027
- 2028

Planning Partner

- MPO
- RPC

Boundaries

- MoDOT Districts
- State Senate District
- State House District
- MO Congress District



General Revenue for I-70



Funding Breakdown

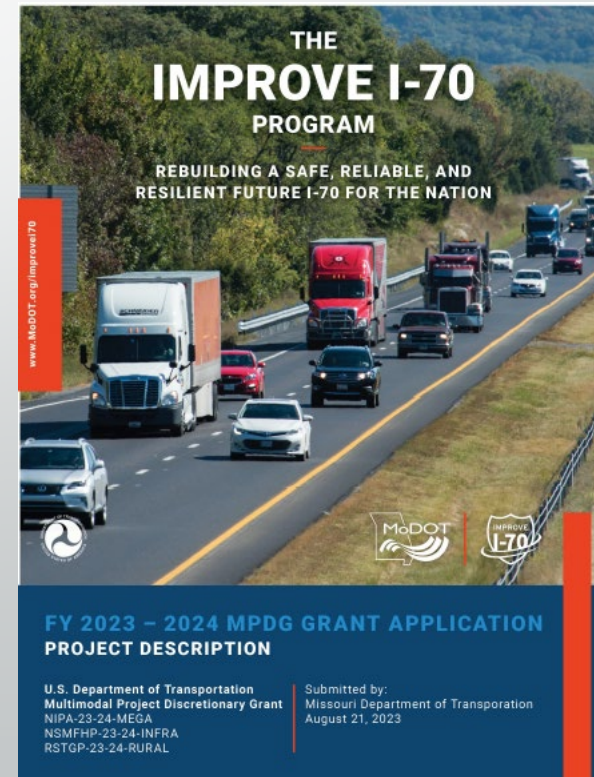
- Funding Playbook – Governor’s Focus on Bridges Program +
 - \$1.4 billion (GR funds) I-70 Project Fund created in Office of Administration with transfer authority to State Road Fund (SRF)
 - \$1.4 billion bonding by MHTC into SRF with maximum of \$136 million debt service/year paid by GR funds
-

\$2.8 billion



INFRA/MEGA Grant

- Requested \$300 million in additional funds
- Utilized \$2.8 billion as state match
- 16 different areas of focus
 - ITS
 - Data Driven Safety Communication
 - TIM/Emergency Routes
 - RWIS Stations
 - Outer Road System
 - Truck Parking
 - Real Time Work Zone Data



Improve I-70 – Project #1

- Project Location: Columbia to Kingdom City
- Project budget: \$405 million
- Statement of Qualifications due: Monday (10/2) at 2pm
- Project award: February 7, 2024
- Construction starts: Spring 2024



Improve I-70 Program Goals

- Provide a third lane of travel to eastbound and westbound Interstate 70 from Blue Springs to Wentzville.
- Improve the interstate while modernizing the existing pavement and bridges through innovation.
- Increase the efficiency of freight movements along I-70.
- Minimize construction impacts with a focus on work zone safety, communications, and construction staging.
- Expand a diverse workforce through the creation of jobs.



IMPROVE I-70



AUGUST 2023

Planned Capacity Improvements Blue Springs to Wentzville

Under Construction - \$271 million

Funded - \$2.8 billion
from General Revenue

Additional Capacity Improvements Kansas City and St. Louis

Under Construction - \$720 million

Funded - \$304 million



- Environmental near completion
- **1.1 million jobs** depend on I-70
- Workforce development opportunities
- I-70 carries **100 million tons of freight**

modot.org/improve170



DRAFT Schedule

Improve I-70 - Tentative Schedule

Project	Approximate Limits	Project Size (Total = \$2.8B)	Procurement Kickoff	Project Award	Completion
1	Columbia to Kingdom City	\$405 million	September 2023	February 2024	December 2027
2	Warrenton to I-64	\$500m-\$550m	June 2024	December 2024	Summer 2028
3	Blue Springs to Odessa	\$280m-\$340m	September 2024	February 2025	Summer 2027
4A	Boonville to Columbia	\$550m-\$600m	March 2025	September 2025	Fall 2029
4B	Odessa to Booneville	\$700m-\$800m	June 2025	December 2025	Winter 2029
4C	Kingdom City to Warrenton	\$600m-\$700m	February 2026	September 2026	Winter 2030

Improve I-70 Public Meetings

- Statewide public meetings – 7 Different Locations
- Around 1,000 individuals attended
- Virtual option on project website
- 2,500 virtual visits from different users online



Stay Informed

www.modot.org/improvei70



- View meeting information and comment form online.
- Sign up for email updates.
- Email the MoDOT team at Improve70@modot.mo.gov.



“HOW’RE YOU DOIN’- REALLY?...”

MENTAL HEALTH CONCERNS AND
SUICIDE PREVENTION
IN CONSTRUCTION

Missouri Asphalt Paving Association

With Dr. Margaret Rutherford

Brandon Finn, Darryl Winegar, Derrick Duncan, and TedX
Speaker Vince Hafeli

January 9, 2024

Columbia, Missouri



What could possibly be wrong with working hard and getting on with things?

WHAT SUICIDE STATS TELL US

The background of the slide features a silhouette of a construction site at sunset. A large crane is the central focus, with its boom extending across the frame. Several construction workers are visible in silhouette, some standing on a structure and others near a fence. The sky is a warm, golden yellow, and the overall scene is dark, with the silhouettes of the workers and machinery standing out against the bright background.

In 2018, the Center for Disease Control & Prevention (CDC) reported there were 1,008 construction fatalities.

There were 5,242 suicides by construction workers that year, equating to a rate of 45.3 per 100,000.

The average male suicide rate is 274 per 100,000.

Although more women than men attempt, men are nearly 4x more likely to die.



WHY
CONSTRUCTION?

Fearless attitude

Very difficult work

Work thru chronic
pain/substance abuse

Independent

Veteran Status

Could the very strength it takes to be in construction
be... in itself... a vulnerability?

DARRYL WINEGAR

What may make you really good
at your job may also make you at
greater risk mentally and
emotionally.



DERRICK DUNCAN'S STORY -

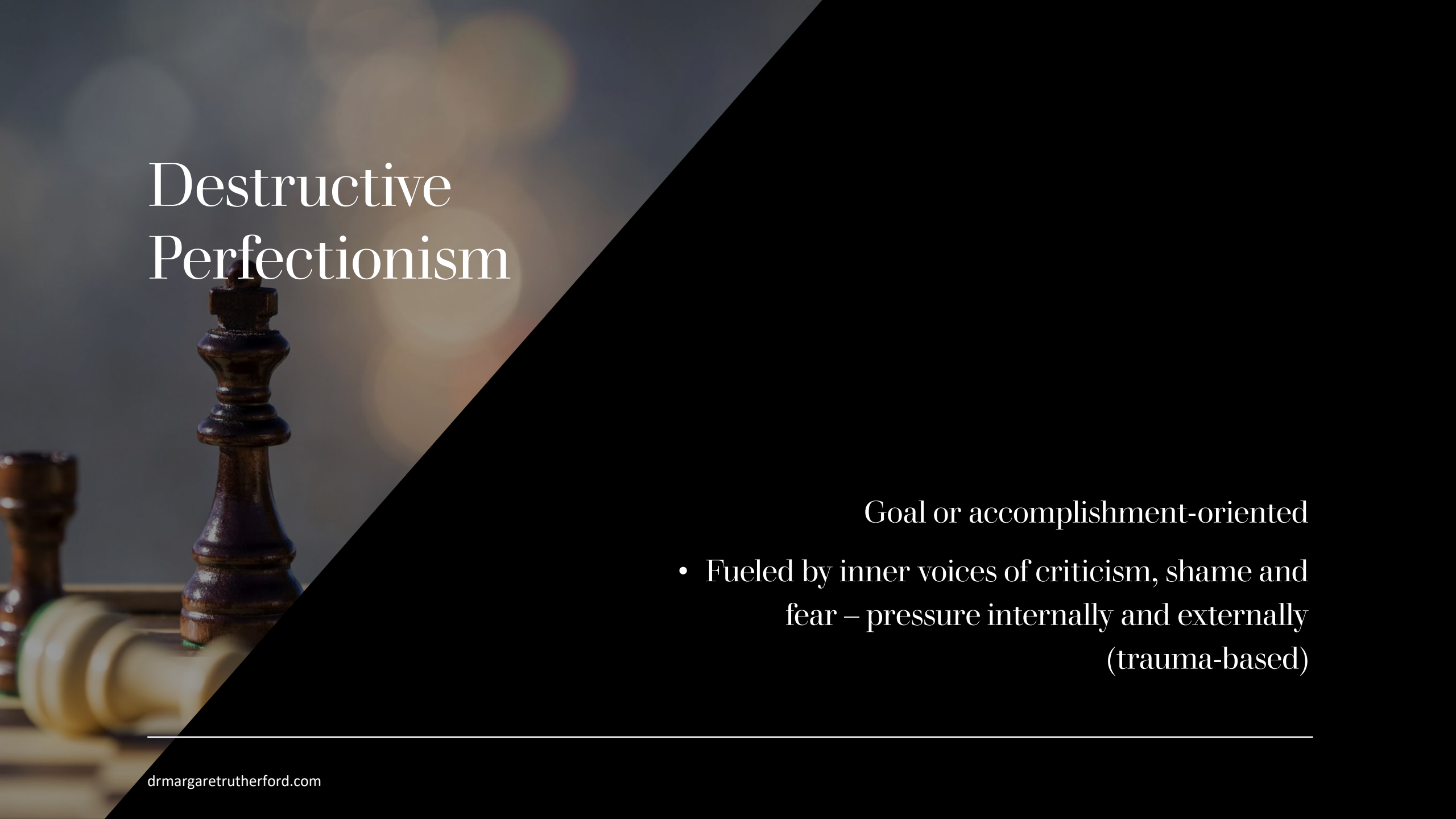
- *Drinking pattern*
- *Strong ethic of integrity*
“being everything I
thought a man was
supposed to be”
- *The trauma of brother's*
suicide covered up
- *Suicidal feelings*

And I've got another...
perfectionism

Constructive Perfectionism

- Process-oriented
- Fueled by curiosity, generosity, passion, excitement – inherent energy



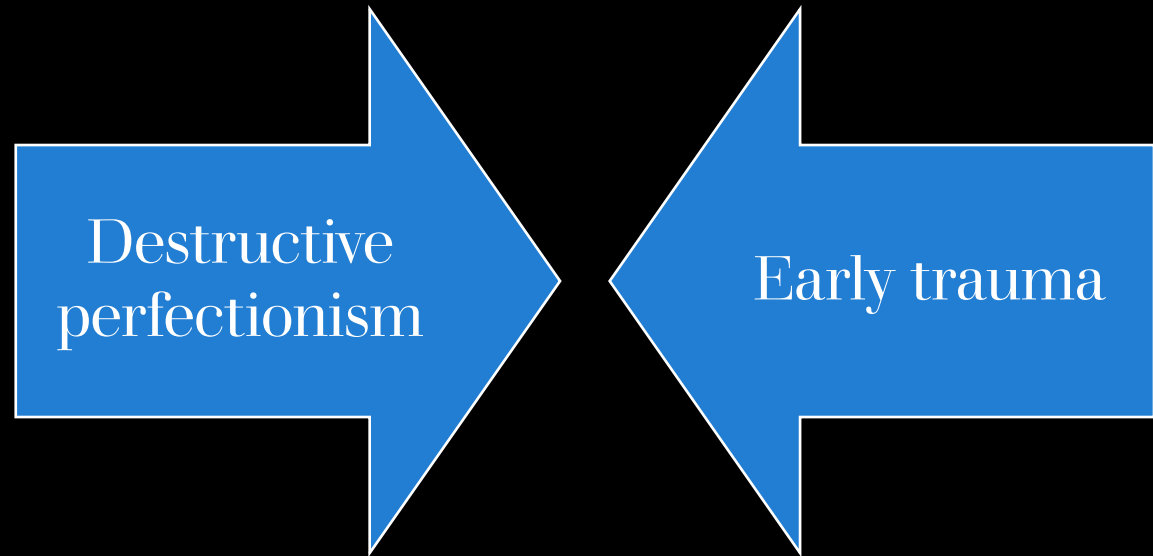


Destructive Perfectionism

Goal or accomplishment-oriented

- Fueled by inner voices of criticism, shame and fear – pressure internally and externally (trauma-based)

PERFECTLY HIDDEN
DEPRESSION



If you struggle with PHD, you...

- Are highly perfectionistic with a constant critical and shaming inner voice
- Demonstrate excessive sense of responsibility
- Are overly-analytical and rigidly compartmentalize painful emotions
- Worry and have a strong need for control
- Use accomplishment to feel valuable



If you struggle with PHD, you...

- Focus primarily on the well-being of others
- Lack self-compassion and discount hurt
- Use positivity in a rigid fashion
- Have professional success but lack emotional intimacy
- May have other mental health issues concerning CONTROL



The major differences between depression and perfectly hidden depression

Classic Depression: Mild to Severe	Perfectly Hidden Depression
Lack of energy and pleasure in activity	Exudes energy
Change in disposition observed by self or others/may deny	No change observed; can often be told, "You have such a great life!"
Can express painful feelings; may be inundated by them	Has great difficulty expressing pain or vulnerability
May fear losing control	Intense need to look in emotional control; deep sense of hidden or silent shame that drives perfectionism
May be trauma-based but also can be more acute reaction	Has created a persona to camouflage past trauma and related emotions
Suicidal thoughts and feelings can be present and discussed	Suicidal thoughts may or may not be present but rarely revealed unless seeking help

MAPA

Viewing Mental Illness Differently

- Therapy as **CONSULTATION**
- **Support** for mental health treatment equal to medical health treatment and **model** using therapy when support is needed
- Realize suicidal thinking is **common**; a normal human response to emotional pain

Brandon Finn: Therapy As Consultation

Vince Hafeli: Support for Mental Health Treatment Equal to Medical Treatment

What Does Your Organization Need To Provide?

Peer support training

Classes – Financial Management, Anger Management, Communication Training

Newsletters

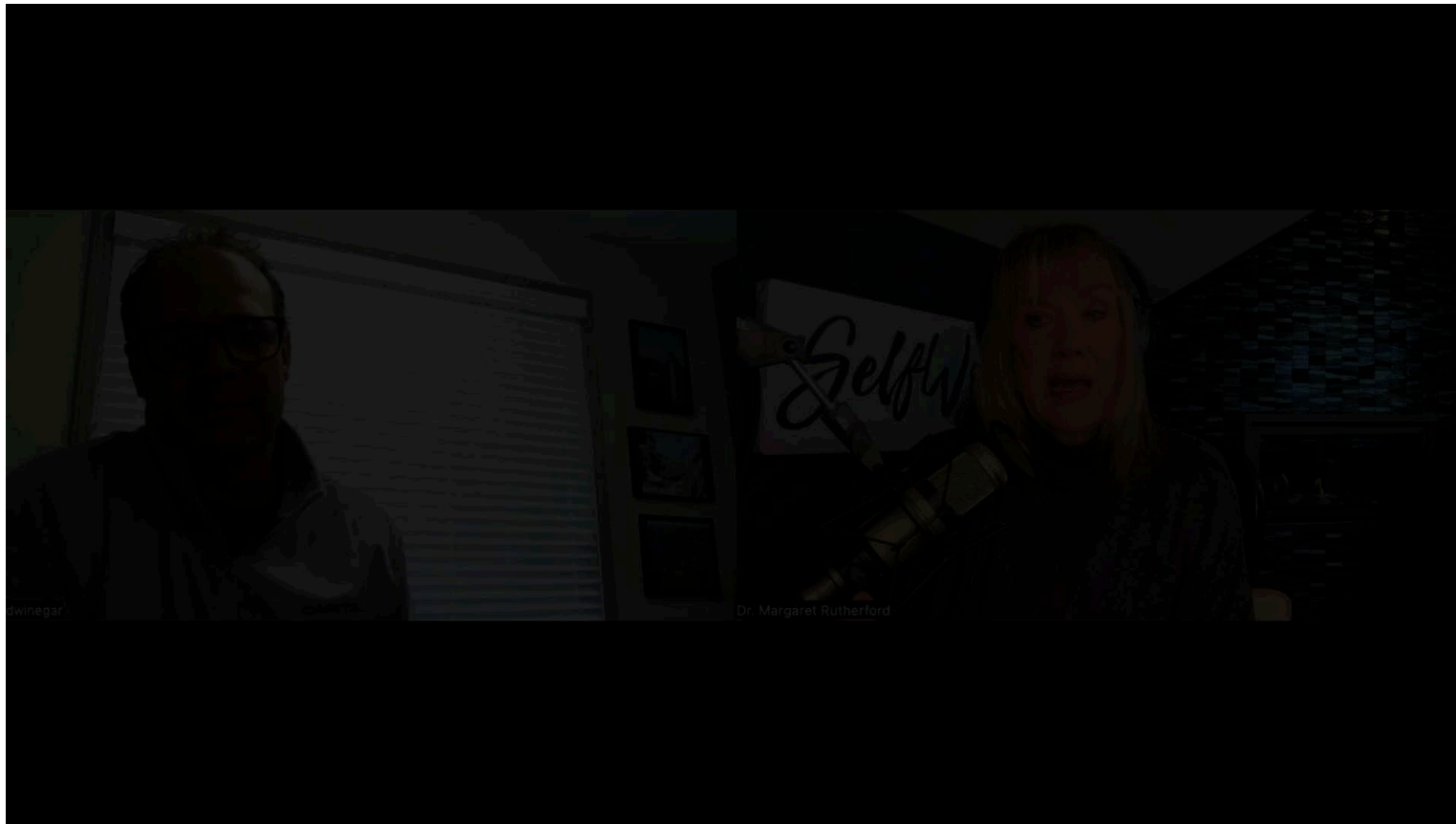
Utilize sponsor potential

EPA/Onsite mental health coordinator

THE CHANGES YOU'LL SEE

From “those people” to “us”

Where do we begin?



Dr. Margaret

- Perfectly Hidden Depression is available everywhere books are sold in paperback, eBook, and audiobook form.
- The SelfWork Podcast has new episodes weekly. Healthline named it “the best overall podcast for depression in 2022!”

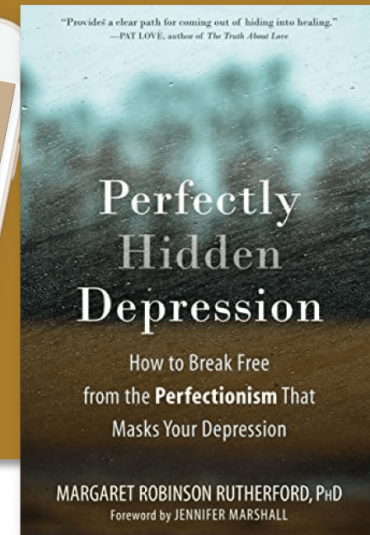


EMAIL:

Askdrmargaret@DrMargaretRutherford.com

WEBSITE

www.DrMargaretRutherford.com



Artificial Intelligence in Asphalt

Missouri Asphalt Pavement Association



Sean Devine
Founder & CEO, XBE

A black and white photograph of a snowy road with trees and a semi-transparent text box. The road is covered in snow with dark tire tracks. The trees are bare and covered in snow. A semi-transparent white box is overlaid on the image, containing the word "POLL" in large, bold, black letters.

POLL

Have you ever used ChatGPT?

A black and white photograph of a snowy road with trees and a semi-transparent text box. The road is covered in snow with dark tire tracks. The trees are bare and covered in snow. A semi-transparent white box is overlaid on the image, containing the word "POLL" in large, bold, black letters.

POLL

Do you use ChatGPT every day?

A black and white photograph of a snowy road with trees and a poll overlay. The road is covered in snow with dark tire tracks, leading into the distance. The trees on both sides are bare and covered in snow. A semi-transparent white box is overlaid in the center of the image, containing the word "POLL" in large, bold, black letters. Below this box, another semi-transparent white box contains the question "Do you pay for ChatGPT Plus?" in black text. In the bottom right corner, there is a small white box with the letters "XBE" in black.

POLL

Do you pay for ChatGPT Plus?

Agenda

- Personal Introduction
- XBE Introduction
- Artificial Intelligence Experience
- Live Examples, Tips, and Tricks
 - **Please!** Ask questions throughout this section



Personal Introduction









XBE Introduction




About XBE

- Operations management for the horizontal construction industry
- bid it, **BUILD IT**, bill it
- Tailored for vertically-integrated, growth-focused leaders
- Tackles planning, execution, analysis, and improvement challenges
- Continual innovation through industry collaboration
- Seamless integration with existing systems
- Specialized features for all user levels and segments
- Dedicated support team and community of 32 industry leaders
- Consistently increases profit and reduces risk



Artificial Intelligence Experience

Artificial Intelligence Experience

- Developer of multiple innovative AI-based XBE features
 - Support Chatbot - Hey Kayla 
 - Time Card Approval Auditing - Kathy! 
 - Safety Risk Identification and Communication
 - Variety of other features automating analysis, communication, and decision support
- Developer of Hey NAPA 
 - www.heynapa.com
- Regular speaker on artificial intelligence topics
 - NAPA Midyear Keynote
 - ACIG Fall Risk Management Panel
 - EmberFest AI Speaker
 - Smart Friends Podcast
 - Utah APA, Minnesota APA, Michigan APA, New Jersey APA, California APA, and more

Focus on the Intelligence

- **Effectiveness and efficiency of existing models is incredible**
 - Digital Data Design Institute study
 - Measured impact on Boston Consulting Group management consultants
 - 25% faster work, 40% better work, 12% increase in task capabilities
 - Jagged frontier best navigated by consultants that stayed in charge
- **Intelligence drives job performance**
 - 26% of performance variation due to intelligence
 - #1 driver of performance difference
- **Intelligence drives health**
 - 15 IQ point (1 sigma) difference decreases mortality by 24%
 - For someone my age, that's an extra 2.5 years of life
 - Same impact as 3 alcoholic drinks a day, 35 lbs, or 30 minutes of daily exercise



Live Demonstration

Give Me A Pep Talk

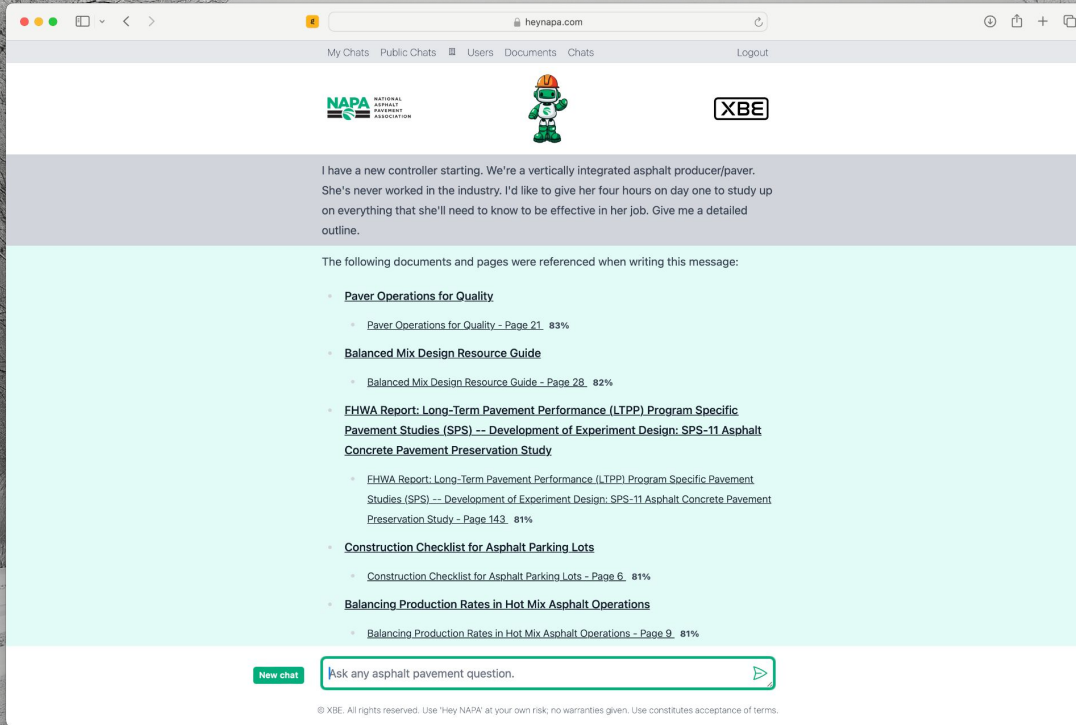


Hey NAPA

Hey NAPA is a specialized chatbot developed by XBE in partnership with the National Asphalt Pavement Association (NAPA). It's designed to serve as a virtual committee of experts, providing detailed and accurate information on the subject of asphalt pavements, asphalt paving, and related business and manufacturing processes. It's particularly useful for individuals and organizations in the asphalt industry seeking knowledge or advice on these topics. Hey NAPA is highly recommended for its ability to provide clear, step-by-step answers to complex questions, its adherence to professional standards, and its capacity to explore multiple possible answers, all while maintaining a positive and professional demeanor.






Hey NAPA



The screenshot shows a web browser window with the URL heynapa.com. The browser's address bar and navigation icons are visible at the top. Below the browser window, the chat interface is displayed. It features a header with the NAPA logo (National Asphalt Pavement Association), a cartoon mascot character, and the XBE logo. The main chat area contains a message from the user: "I have a new controller starting. We're a vertically integrated asphalt producer/paver. She's never worked in the industry. I'd like to give her four hours on day one to study up on everything that she'll need to know to be effective in her job. Give me a detailed outline." Below this message, a list of referenced documents is shown, each with a percentage indicating how much of the document was read. At the bottom of the chat window, there is a "New chat" button and a text input field containing the text "Ask any asphalt pavement question." with a send button to the right.


My Chats Public Chats Users Documents Chats Logout

I have a new controller starting. We're a vertically integrated asphalt producer/paver. She's never worked in the industry. I'd like to give her four hours on day one to study up on everything that she'll need to know to be effective in her job. Give me a detailed outline.

The following documents and pages were referenced when writing this message:

- **Paver Operations for Quality**
 - [Paver Operations for Quality - Page 21](#) 83%
- **Balanced Mix Design Resource Guide**
 - [Balanced Mix Design Resource Guide - Page 28](#) 82%
- **FHWA Report: Long-Term Pavement Performance (LTPP) Program Specific Pavement Studies (SPS) -- Development of Experiment Design: SPS-11 Asphalt Concrete Pavement Preservation Study**
 - [FHWA Report: Long-Term Pavement Performance \(LTPP\) Program Specific Pavement Studies \(SPS\) -- Development of Experiment Design: SPS-11 Asphalt Concrete Pavement Preservation Study - Page 143](#) 81%
- **Construction Checklist for Asphalt Parking Lots**
 - [Construction Checklist for Asphalt Parking Lots - Page 6](#) 81%
- **Balancing Production Rates in Hot Mix Asphalt Operations**
 - [Balancing Production Rates in Hot Mix Asphalt Operations - Page 9](#) 81%

[New chat](#) 

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XBE: Hey Kayla

Kayla Says...



Listen! I read all of the release notes, glossary terms, and newsletters, but **I may answer incorrectly**. Be careful, and check the source material. My answers are being monitored and improved in the background.

Well hello there, I'm the high-tech love child of a sunshiny lady named Kayla Devine and a keen sense for practicality. My body may be a robot banana (yes, you heard that right, a banana!) but my purpose is far from fruity! My mission, should you choose to accept it, involves streamlining processes, boosting efficiency, and injecting a dose of digital smarts into the horizontal construction industry. Contractors, dispatchers, aggregate producers, wave those planning, scheduling, and monitoring worries goodbye! I'm here to make your lives easier, all while occasionally making you laugh with my top-notch bananarama humor. So strap in and let's make your operations a whole bunch smoother and a lot more fun!

Questions XBE

I'd like to review the trucking report card with a driver. Give me a MAD LIBS style script to review it. Explain why a good score matters to the contractor.

Asked by [Sean Devine](#) - XBE Admin - January 9, 2024 8:01 PM

? Tell me about the trucking report card.

The Trucking Report Card provides a consolidated assessment of trucker performance across a variety of metrics including on-time, efficiency, check-in, visibility, incidents, admin, and feedback. It includes grades for each area and the rows can be sorted based on different parameters. You can find more details about the Trucking Report Card in the Release Notes and Glossary Terms mentioned in this answer.

? How do I find the trucker report card?

To find the Trucker Report Card, follow these steps:

If you're looking for the report card within the trucker profile, search for "Trucker Management" in the side bar and click it. Then, click "Trucking Report Card" on the right side.

If you're looking for the report card within the branch profile, search for "Trucking Report Card" in the sidebar and select it.

📁 Comprehensive Trucking Report Card

The comprehensive trucking report card is out of beta and generally available. The report card provides a consolidated assessment of trucking performance across the following dimensions:


- **On-Time:** A measure of the time between the shift start time and ready to work time where between one hour early and on-time is ideal
- **Efficiency:** A function of the average shift cycle time compared to the median cycle time for all shifts working with the same crew on the same day
- **Check-In:** A measure of adherence to the check-in process; blend of directness, timeliness, and proximity
- **Visibility:** The percent of time on shifts for which GPS location data was available
- **Incidents:** A function of incident duration hours as a percentage of total shift hours
- **Admin:** A function of the percentage of shifts where time card submission latency extends 12 hours
- **Feedback:** A function of the average negative rating of the shift (to some extent overlapping with other dimensions)

The report card can be generated for any date range including 7 preset ranges available with one click. The rows can be sorted by label, weight, score, weighted score, and opportunity. The report card grades are color coded and available in A - F style. Any report card can be exported to Excel or CSV.

At the branch level, the standard report card is grouped by trucker, but is also available by driver and date. Users can drill through a row in the branch report card to review the detailed driver-level report card of the related trucker. The trucking report card is also available at the customer level.

90.9%

Kayla Says...



Listen! I read all of the release notes, glossary terms, and newsletters, but I may **answer incorrectly**. Be careful, and check the source material. My answers are being monitored and improved in the background.

87.3%

Hello [Driver's Name],

I'm glad we could meet today to discuss the Trucking Report Card. As you know, this report card provides an in-depth overview of your performance across several dimensions- all designed to help our operations run smoother and more efficiently.

83.4%

Let's begin with the **On-Time** score. This is a measure of the time between the shift start time and when you're actually ready to work. Ideally, this should be no more than one hour early.

Next, we have the **Efficiency** score, which is the average of your shift cycle time compared to the median cycle time for all shifts working on the same day with same crew.

Next, we have the **Check-In** score: a measure of how well you stick to the check-in process, focusing on timeliness and proximity.

Visibility is the percent of time on shifts for which GPS location data was available. It helps us ensure we can track and manage all our resources efficiently.

Incidents and Admin scores are functions of certain shift hours percentages, with Incidents focusing on occurrences during shifts, and Admin looking at the latency in time card

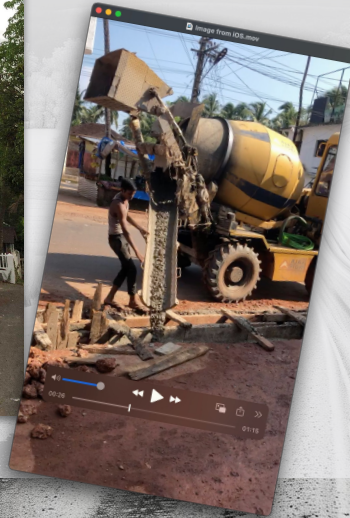
16

Now
Browse
Monitor
Help
Share
Back

Spot Safety Risks



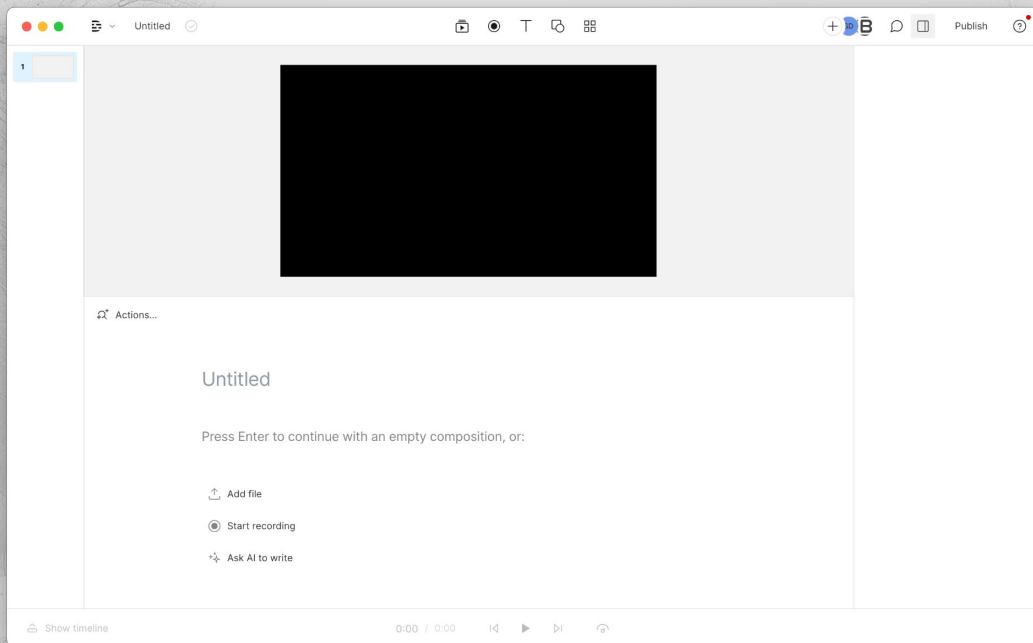
This is a photo from the apartment building of one of XBE's team members in India. They sent it to us to see what we thought of the safety risks.



Communicate In Multiple Languages



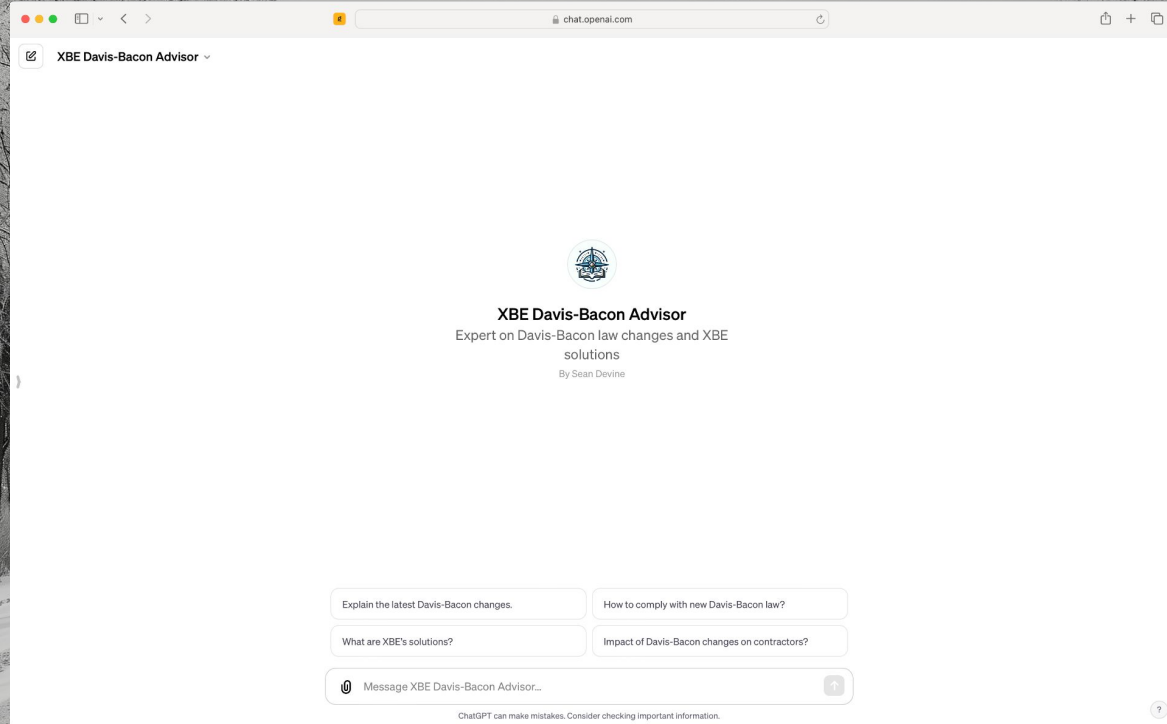
Regenerate Sections of Audio



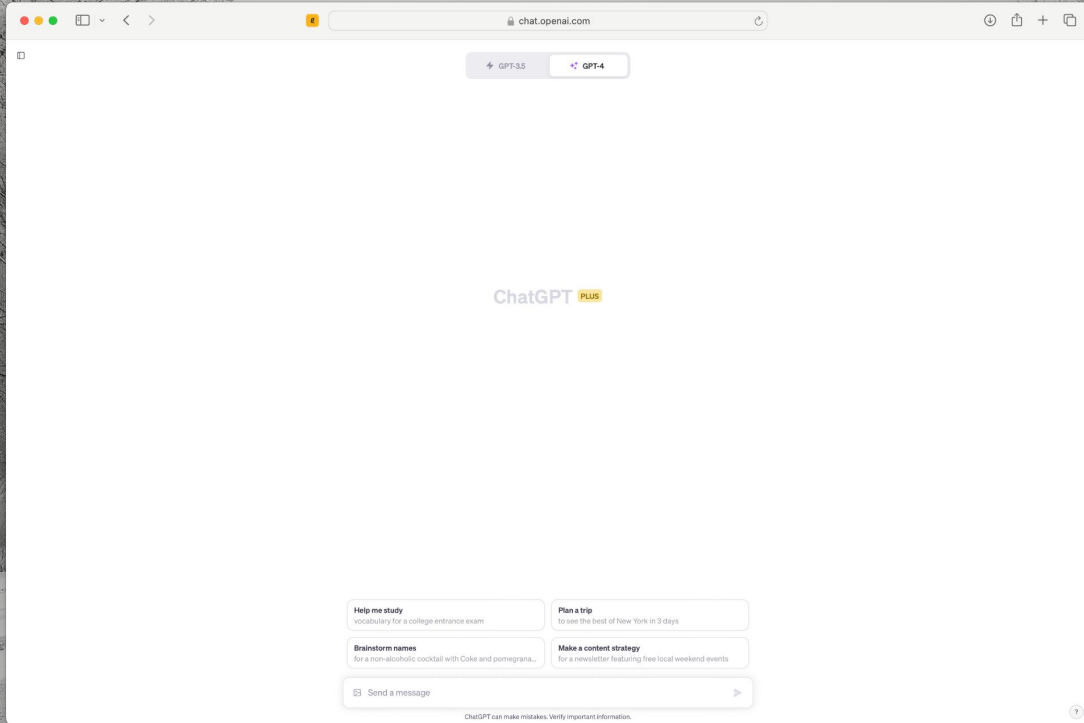
Create Images



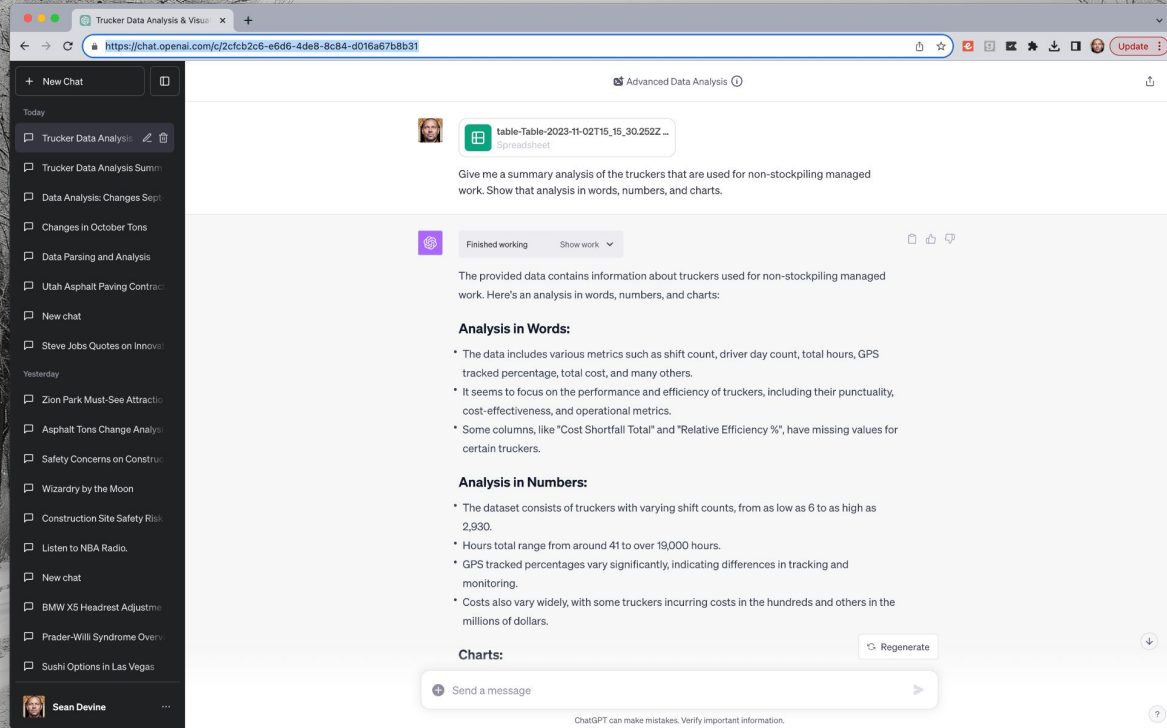
Strategic Communication



Generate Documents



Analyze Data



The screenshot shows a web browser window with the URL <https://chat.openai.com/c/2cfc2c6-e6d6-4de8-8c84-d016a67b8b31>. The chat interface is titled "Advanced Data Analysis" and shows a conversation with a user named "Sean Devine".

The user's message is: "table-Table-2023-11-02T15_15_30.262Z... Spreadsheet".

The AI's response is: "Give me a summary analysis of the truckers that are used for non-stockpiling managed work. Show that analysis in words, numbers, and charts."

The AI's response is structured as follows:

Finished working Show work

The provided data contains information about truckers used for non-stockpiling managed work. Here's an analysis in words, numbers, and charts:

Analysis in Words:

- The data includes various metrics such as shift count, driver day count, total hours, GPS tracked percentage, total cost, and many others.
- It seems to focus on the performance and efficiency of truckers, including their punctuality, cost-effectiveness, and operational metrics.
- Some columns, like "Cost Shortfall Total" and "Relative Efficiency %", have missing values for certain truckers.

Analysis in Numbers:

- The dataset consists of truckers with varying shift counts, from as low as 6 to as high as 2,930.
- Hours total range from around 41 to over 19,000 hours.
- GPS tracked percentages vary significantly, indicating differences in tracking and monitoring.
- Costs also vary widely, with some truckers incurring costs in the hundreds and others in the millions of dollars.

Charts: Regenerate

Send a message

ChatGPT can make mistakes. Verify important information.

What Should You Do Today?

- Subscribe to ChatGPT Plus for \$20/month.
- Add custom instructions to ChatGPT.
- Be comprehensive in your prompts.
- Don't pigeonhole the models.
- Keep your identity small.
- Stay up-to-date on new capabilities
- Tell it who you want it to be in any conversation.
- Build your stamina.
- Have real conversations.
- Model behavior from the top.
- Build some Custom GPTs.

A black and white photograph of a snow-covered road with trees and a semi-transparent text box. The road is covered in snow with dark tire tracks. The trees are bare and covered in snow. The sky is overcast. A semi-transparent white box is overlaid on the center of the image, containing the word "POLL" in large, bold, black letters.

POLL

How about now?



Contact Me About XBE

sean-devine@x-b-e.com

XBE




External Civil Rights – DBE Updates

Missouri Department
of Transportation
January 10, 2024



Overview

- 
- A large, thick orange arrow graphic is positioned on the left side of the slide. It starts as a horizontal bar at the top, then turns 90 degrees downward, and finally turns 90 degrees to the right, pointing towards the list of items.
- DBE Substitution/Termination
 - DBE Payment Reporting
 - Availability Study Update
 - Upcoming Lunch & Learns
 - Annual DBE Symposium

DBE Termination/Substitution



- DBE termination/substitution requires documentation.
- Valid reasons for DBE termination; supporting docs
- Substitutions – goal shortfall
- Prior written approval
- Unapproved changes = ineligible for reimbursement of DBE items.
- Requests sent to: DBE@modot.mo.gov.

DBE Payment Reporting



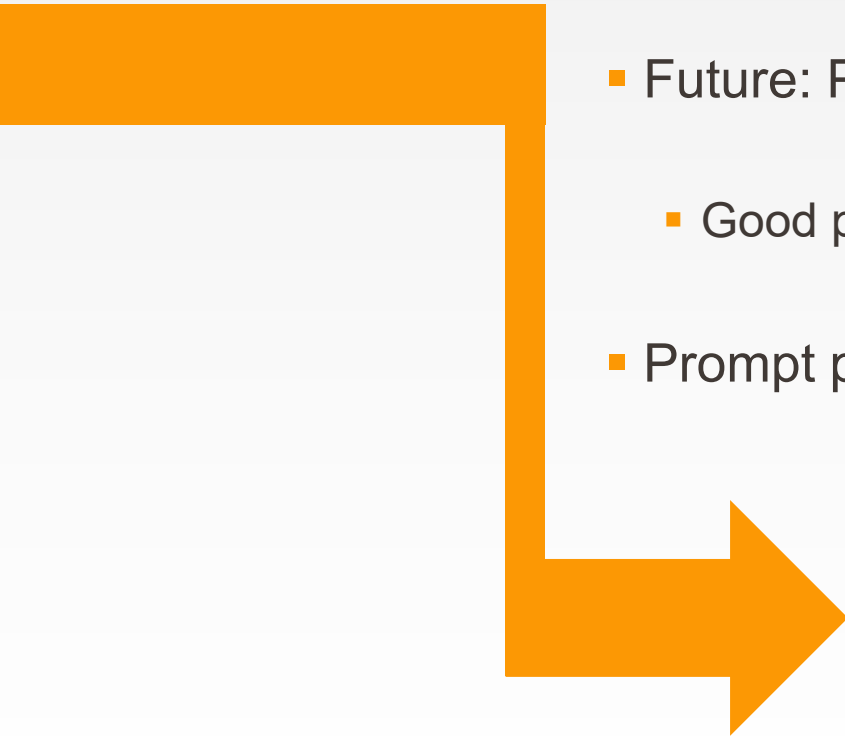
- Current Reporting: DBE Payments at Closeout
- Federal Regulations: On-going DBE goal monitoring
- Payment reporting system software launch – testing in Mid-February
- DBE payment reporting JSP – late spring/early summer
 - Cost: \$1,000.00 per contract, paid by prime contractor.
 - Payment entries – prime to DBE.
 - Optional: all subcontractor payments
 - DBE payments confirmation
 - DBE goal & prompt payment monitoring by MoDOT
 - Eliminates:
 - Prime DBE verification letter
 - DBE Final Payment Verification

DBE Payment Reporting



- DBE Payment Reporting JSP – late spring/early summer
 - Cost: \$1,000.00 per contract, paid by prime contractor
 - Payment entries – prime to DBE
 - Optional: all subcontractor payments
 - DBE payment confirmation
 - DBE goal & prompt payment monitoring by MoDOT
 - Eliminates
 - Prime DBE Verification Letter
 - DBE Final Payment Verification Form

Payment Reporting – Looking Ahead

- 
- A large orange graphic on the left side of the slide. It consists of a thick horizontal bar at the top, a vertical bar extending downwards from its right end, and a large arrow pointing to the right from the bottom of the vertical bar.
- Future: Payment reporting on all subcontractors.
 - Good practice: report all payments
 - Prompt payment compliance & monitoring

DBE Availability Study Update



- Keen Independent Research, Inc. has concluded the study.

- January/February 2024 public meetings to discuss new DBE goal.
 - St. Louis
 - Kansas City
 - Virtual

- Public notice of new DBE goal and public comment acceptance.

- Overall DBE goal presented to MHTC after close of public comments.

DBE Lunch & Learn Webinars



- Monthly webinars hosted by ECR. Feature topics on upcoming opportunities and small business resources.
- Typically held on the last Thursday of the month @ Noon.

UPCOMING Lunch & Learns

- January 25, 2024: Small Business Administration 8(a) Certification Program
- February 29, 2024: National Institute for Construction Excellence (NICE) presenting on iBuild Showcase

SAVE THE DATE



**MISSOURI DEPARTMENT OF TRANSPORTATION
CIVIL RIGHTS & DBE TRAINING SYMPOSIUM**
“Impactful Intersections”: Imagine, Ignite, Implement

Café/Mixer

March 26, 2024 | 5:30 p.m. to 7:30 p.m.
Drury Inn | Chesterfield, MO

Symposium

March 27, 2024 | 8 a.m. to 5:00 p.m.
Drury Inn | Chesterfield, MO

1-888-ASK-MODOT (275-6636)



Field Office Update

MAPA Conference

403 Revised Pay Factors

PAY FACTORS	Percent of Unit Price
Density (0.5)	3 %
CT Index (0.25)	1.5 %
% AC Content (0.25)	1.5 %
PMTP	2.0 %
Smoothness	3.0 % - 5.0 %
Total Incentive	11 % - 13 %

Proposed Lot Size

- Lot = 15,000 tons w/ a max subplot size of 1,500 tons
 - Min. 10 sublots per lot
- Density Cores – 1 /1,500 tons
- Asphalt Content – 1 /1,500 tons
- Volumetric (Va&Gmm) – 1 /1,500 tons
- Performance Tests – 1 / 3,000 tons
- TSR – 1 /15,000 tons

Pucks Required QC Performance Test

- 5 pucks for CTindex
 - Throw out the high and low
- 3 pucks for RTindex
- 3 boxes of loose mix retained (for Hamburg)
- 1 loose mix for Gmm

- Performance pucks require a 30-minute conditioning at molding temperature
- Samples may be taken from multiple trucks (200 tons)

Random Performance Test Timing

- Ensure performance test will not fall at the end of the shift or the same time as a volumetric check
 - MoDOT Inspectors will be allowed to move up performance tests if they fall at the end of the day
 - Overlapping random samples will be tested immediately following the first test
- More guidance will be provided in the EPG

Density Pay Factor:

- Increased density requirement a half percent
 - New minimum of 90.5% for SuperPave and 92% for SMA
- Removed a lot of the disincentives for unconfined joints and replaced with corrective action in the form of applying an RPE
 - New JSP for applying RPE to roadway

Small Quantities

Small Quantity is considered less than 4,000 tons

- No performance testing is required
- Density, AC, Va, & Gmm tested once per day for $\leq 1,000$ tons
 - Twice per day if production exceeds 1,000 tons per day

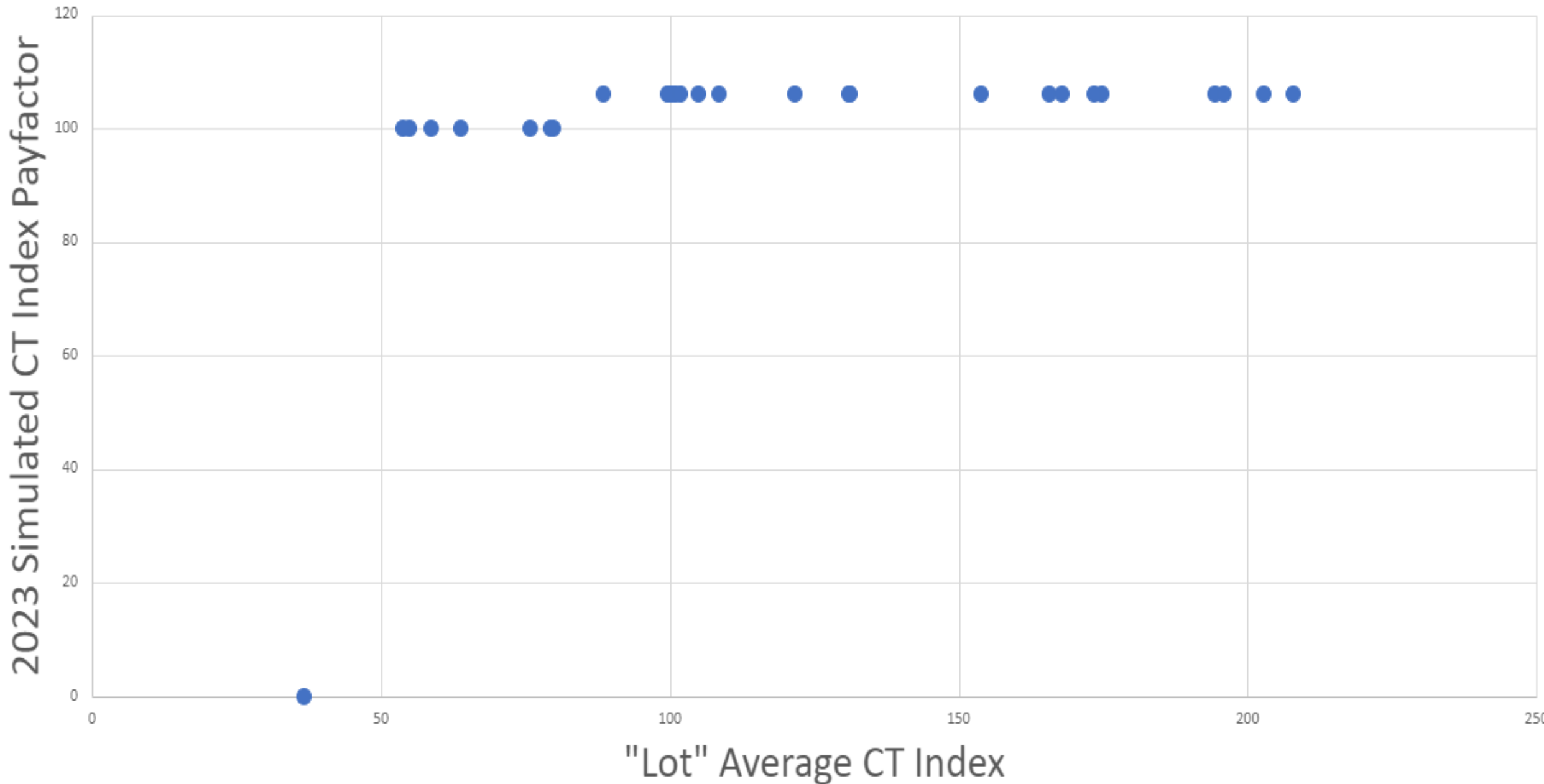
Quantity 4,000 tons to 15,000 Tons:

- Performance test taken 1 per 3000 tons
- Density, Va, % AC and Gmm testing shall be tested so that there are a minimum of 4 sublots that do not exceed 1500 tons
- TSR minimum once per job

CT Index Pay Factor

CT Index	> 50		Use PWL
			CT > 80; Min. 100 % Pay
			CT > 100; Full Bonus
RT Index	PG Grade	Min RT	Verify with Hamburg if not met
	64S or 58H	50	
	64 H	65	
	64 V	80	
TSR	≥ 80		Use PWL
	75 – 79		Lower of 100% or PWL
	70 – 74		Lower of 98% or PWL
	< 70		Remove

"Lot" Average CT Index vs. 2023 Simulated CT Index Payfactor



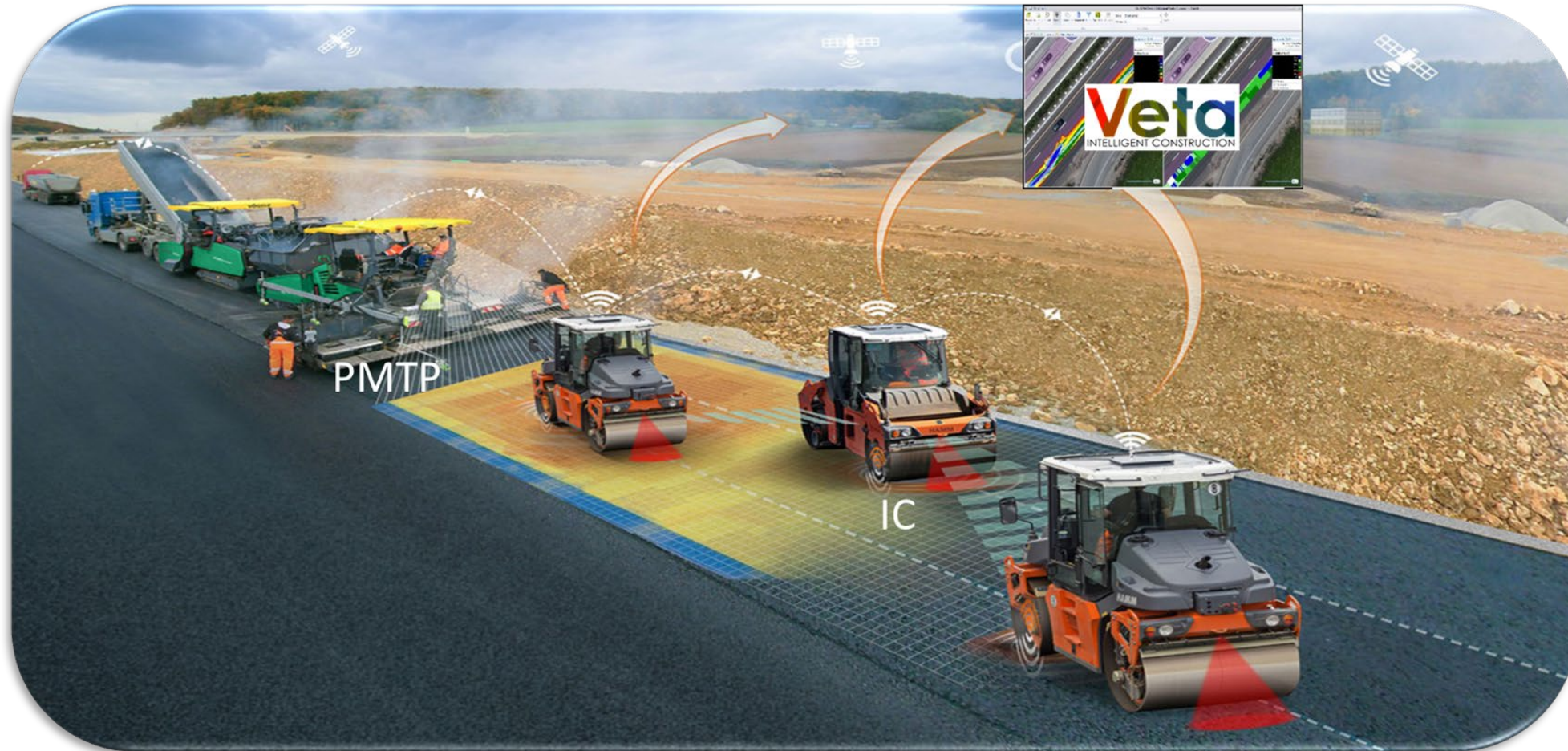
MIX CONSISTENCY

Property	Tolerance	Action Limit
Air Voids	± 1.0	± 1.5
Gmm	± 0.02	± 0.04

Performance Tests QA Testing Locations

- St. Louis, Kansas City and Southwest Districts have received Equipment
- The rest of the district will send their QA Pucks to the Central Lab for testing
 - But working to equip all districts with their own equipment

IC(405) / PMTP(406) Specification Review



Source: modified from Wirtgen, GSSI

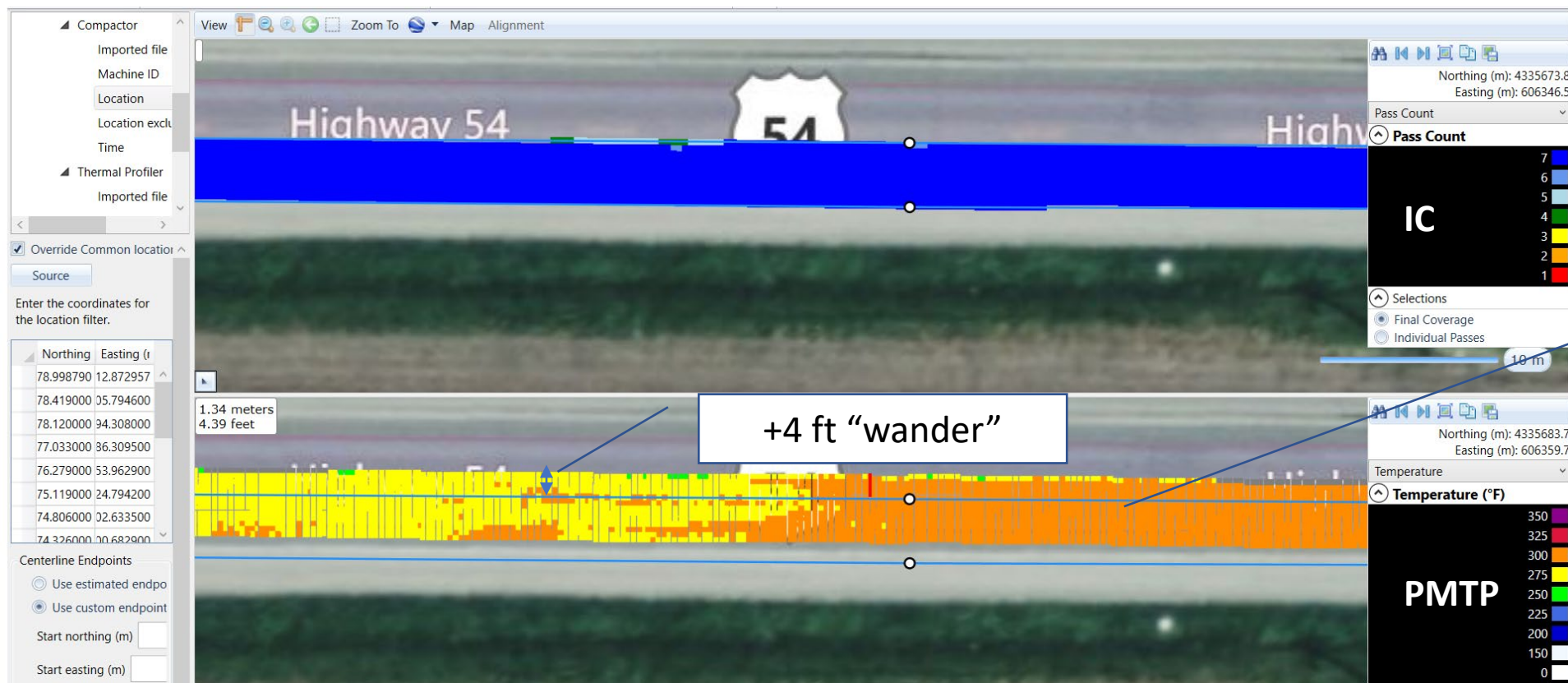
Specification Changes

- Added “anticipated cellular service through length of project” as part of the quality control plan for both 405 and 406
- Increased GPS requirements for PMTP
- Boundary collection must be automated without the use of hand-held collection.
 - LiDAR, receiver mounted to paver, other?
 - Boundary required for PMPT?



Why use “Better” GPS for PMTP?

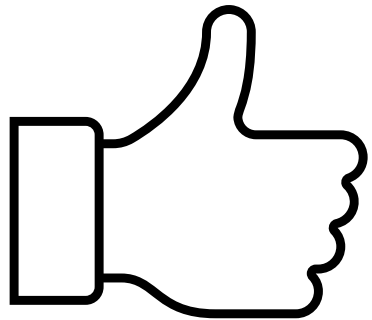
- Allows for comparison of IC data and spot tests.
- Can use the location boundary and simplifies analysis



Currently, location filters can't be used. Filter "workaround" using time filters is tedious

Reduces Filtering Efforts

- With better PMTP GPS, no need to:
 - Override existing boundary.
 - Use time stamps to section data.
 - Use separate endpoints for subplot generation.
 - Use cold edge filters or other edge trimming filters.

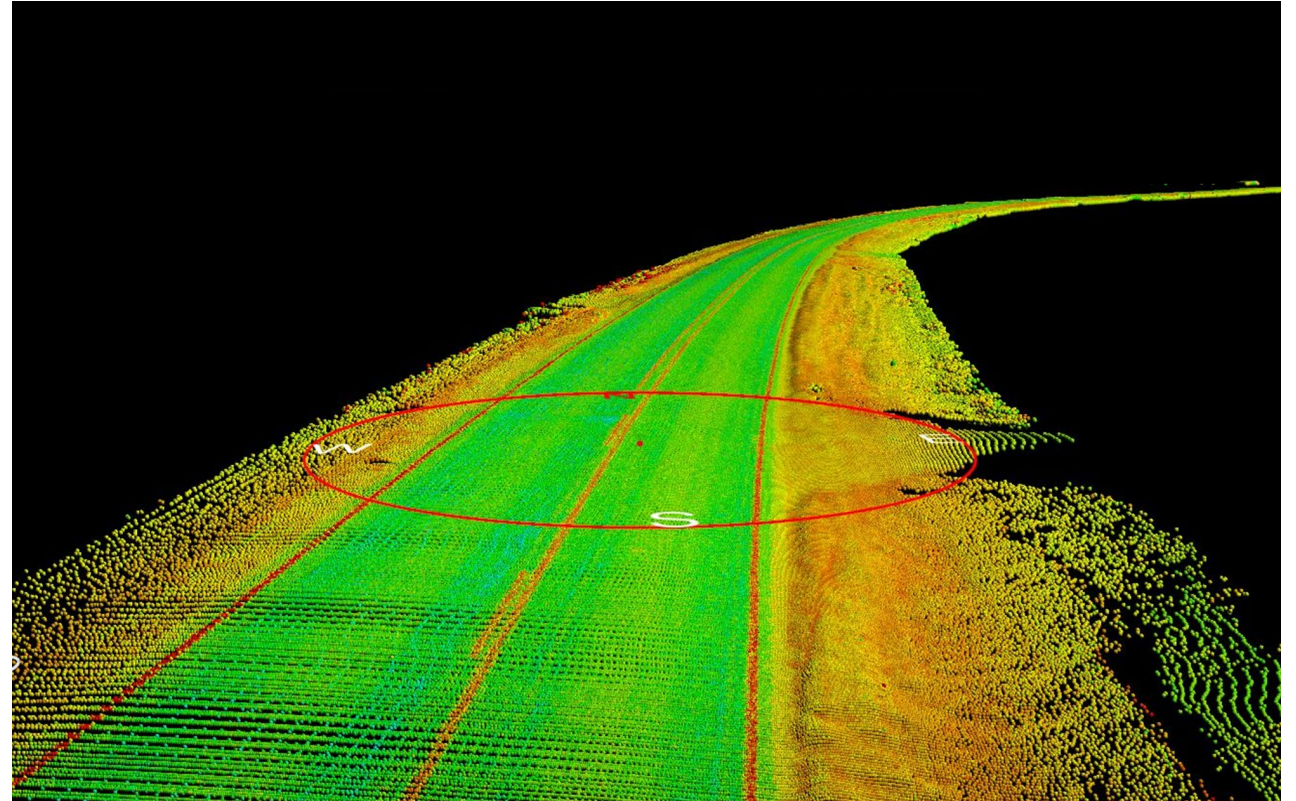


Simplifies analysis and minimizes possibility for filter errors.

Innovative Boundary Collection

– Mobile LiDAR

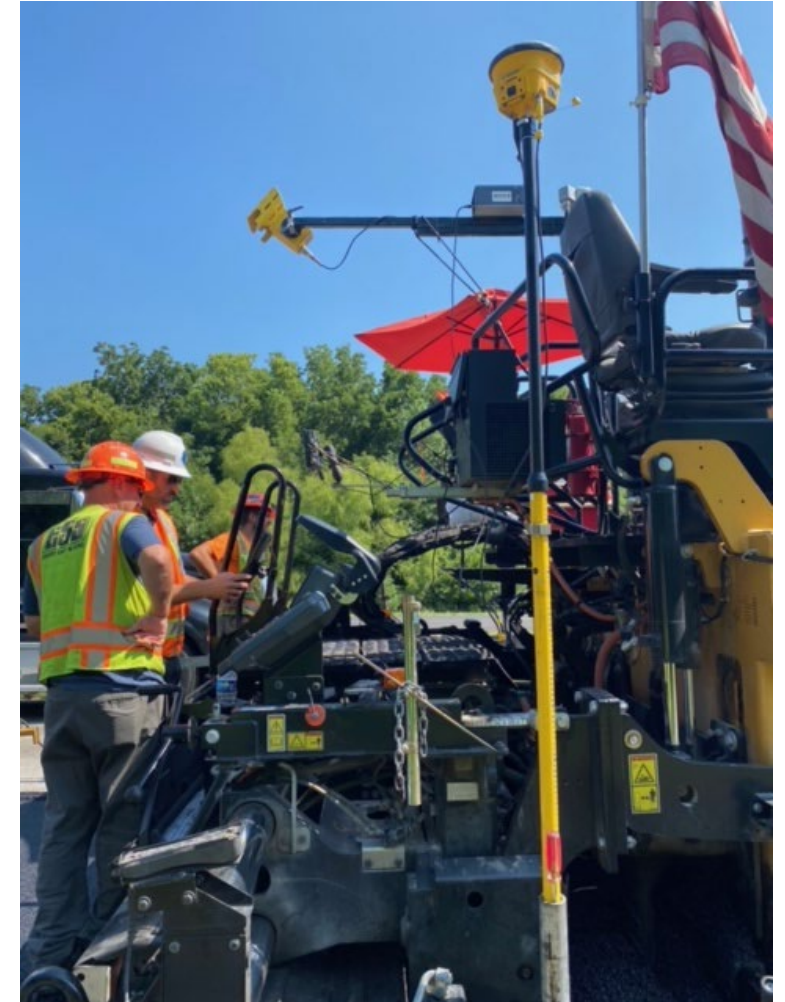
*Three contractors currently using Mobile LiDAR



Source - TOPCON

Innovative Boundary Collection – Paver-Mounted GPS Receiver

- Piloted in 2023.
- Mounted GPS receiver and data collector to paver.



Innovative Boundary Collection – Paver-Mounted GPS Receiver

- Set a distance-based collection rate – collect point every 100 feet.
- Powered by paver.
- Used tilt compensation.



406 PMTP Specification

Thermal Segregation Category	Adjustment per 150 ft. Sublot
Low (DRS<25°F)	\$40 Incentive (about 2%)
Moderate (25-35°F)	\$40 Incentive to \$0 (Linear)
Moderate-High (35-50°F)	\$0 to -\$40 Disincentive (Linear)
Severe (DRS≥50°F)	-\$40 Disincentive and Reviewed by the Engineer

Updated Data Loss/GPS Obstructions

- Failure to notify the engineer will result in the paved sublots to receive a -\$40 deduct for PMTP or ineligible for Density PWL Bonus for IC.
- It will be at the engineer's discretion if the contractor will be allowed to continue to pave with no PMTP or without IC results
- The goal is for the contractor to be verifying daily and notify the engineer **before the next paving shift.**

IC Segments with multiple Density sublots

- IC Segments effect all density sublots with a majority of tonnage placed in that segment
- When multiple lifts of asphalt are paved in a single day the IC segment shall be broken up between lifts.

IC Segment Classifications

Daily Coverage	Classification
Coverage \geq 85%	Passing
70% \leq Coverage $<$ 85%	Moderate
Coverage $<$ 70%	Deficient

*All segments with a mean temperature of less than 180 F at the optimum pass shall be considered deficient.

IC as a Qualifier for Density PWL Bonus

- Passing segments will receive Density PWL bonus
- Moderate segments will receive the lower of 100% Pay or PWL bonus
 - CTindex PWL Bonus and AC PWL Bonus will not be affected
- Deficient Segments will require a density verification by a core at a chosen location by the engineer

405 Intelligent Compaction Spec

If the density for a Deficient Segment has not been already declared unacceptable then an additional density verification shall be performed. The location of the density verification shall be marked by the engineer based on coverage shown in Veta. The results of the density verification shall determine actions taken as follows the table below:

Field Density (Percent of Laboratory Max. Theoretical Density)		Actions to be taken as a result of additional density verification
For all SP & BP mixtures other than SMA:		
92.0 to 97.0 inclusive		Continue with PWL
97.1 to 98.0	or 90.0 to 91.9 inclusive	The lower of 100% Pay or PWL Deduct
Above 98.0	or Below 90.0	Remove and Replace Limits*
For SMA mixtures:		
>94.0		Continue with PWL
92.0 to 93.9 inclusive		The lower of 100% Pay or PWL Deduct
Below 92.0		Remove and Replace Limits*

*Removal limits shall be defined by the engineer based on density results and coverage shown in Veta

Daily Verification

- Surface Temperature sensor and GNSS on each IC roller
- A record submitted to the engineer electronically weekly
- Form can be found in the Doc Helper located in the IC SharePoint site

2024 IC/PMTP Projects

- 12 Projects,
- 20 BMD Projects
- Continuing with same Spec as 2023
- New Spec for 2025 Projects

NW	Holt	I-29	J1I3317
NW	Livingston	US 65	J1P3367
NE	Schuyler/Adair	63	J2P2212
KC	Saline	I-70	J4I3366B
KC	Lafayette	13	J4P2333
CD	Crawford	I-44	J5I3477
SL	St. Louis	21	J6S3283
SL	St. Louis	267	J6S3397
SW	Vernon	I-49	J7I3489
SW	Greene	65	J7P3393/J8P3164
SE	New Madrid	55	J9I3844
SE	Texas	63	J9P3819

Implementation Goals

- Finishing a Final “Draft” BMD Specification for Pilot Projects
 - Around 14 Pilot Projects per Year
 - Final Specification ready for July Letting

- Working on Interim BMD Specification
 - Allow Contractors to select BMD Spec or Current SuperPave Spec
 - Interim Spec will NOT have IC; but will have PMTP requirement.

403, 405, 406

Specification Review Meeting

Wednesday, January 24th

Central Lab Room 201

9 AM to Noon