Thank you

Questions?

Myron Hora
Project Manager

303.390.5875
Myron.Hora@WSP.com

State Highway 71 Truck Freight Diversion Feasibility Study

Pro 15
Annual Meeting

October 20, 2017

Project Team

CDOT	
Eric Salemi	Project Manager
Rich Christy	Resident Engineer
Heather Paddock	Program Engineer
Travis Miller	Resident Engineer
Jeff Vickers	Resident Engineer

WSP	
Myron Hora	Project Manager
Randy Grauberger	Deputy Project Manager/Freight Specialist
Mary Lupa	Travel Demand Modeling
Nick Amrhein	Economic Analysis
Andy Garton	Cost Estimates
Lisa Nguyen	Traffic Analysis
Shane Roberts	GIS Mapping
Jamie Grim	Existing Conditions and Report

Purpose and Objectives

- Analyze freight movement and the impact of SH 71 improvements on truck traffic
- Identify the types and cost of improvements to SH 71 that will draw additional truck traffic
- Determine the potential economic benefit to the trucking industry and local economies
- Develop funding options and implementation scenarios

State Highway 71

- High priority designation as part of the Heartland Expressway Corridor
- Part of the Ports to Plains Alliance (P2P)
- Surrounding states have made significant improvements to their segments
- **SH 71 is the only segment of the P2P corridor in Colorado that remains unimproved**

COLORADO Department of Transportation

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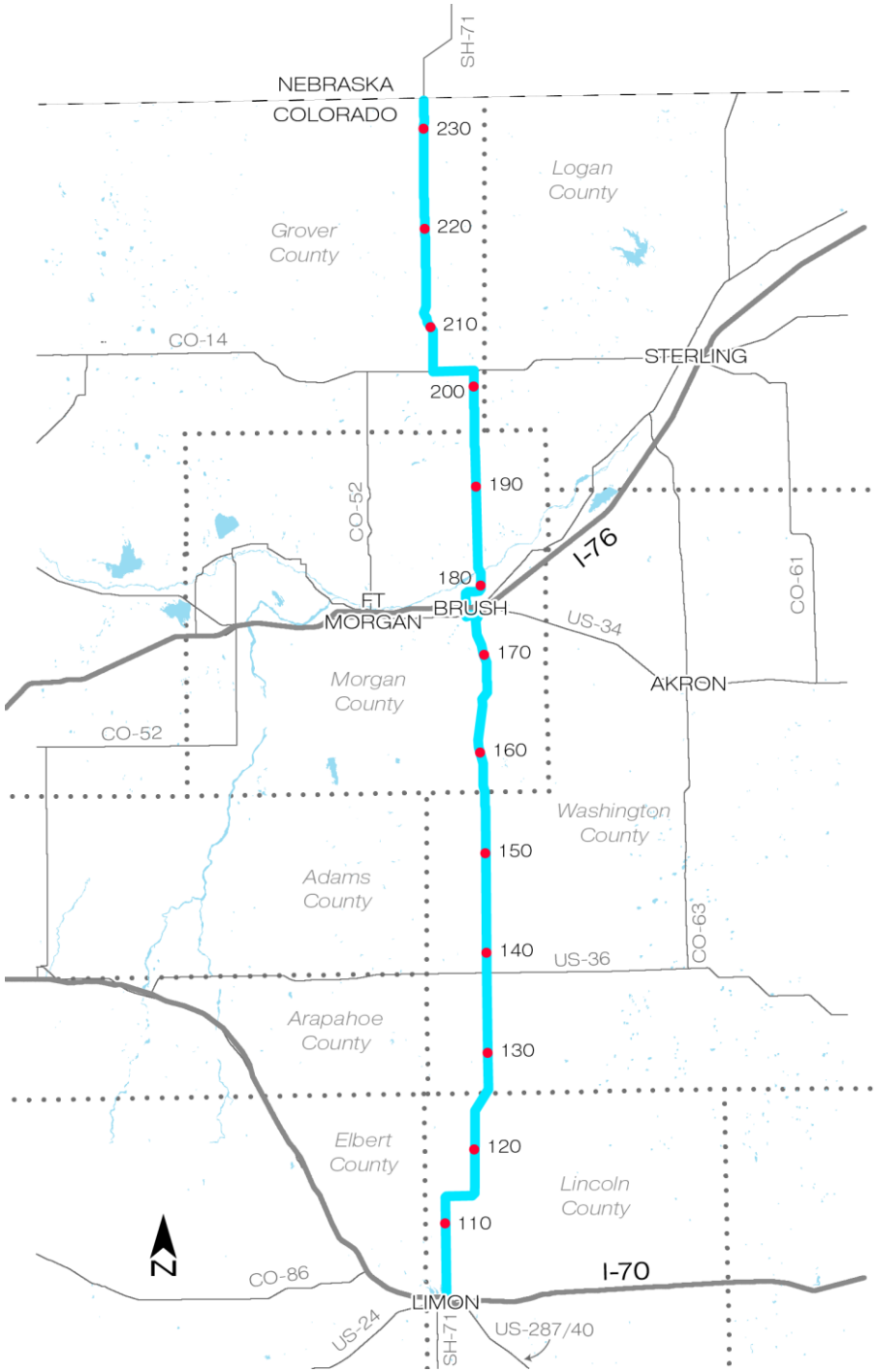

Project Limits

- SH 71 from Milepost 102 to Milepost 232
- Limon, CO to the Colorado/Nebraska state line
- Regional connections for freight traffic
  - *Northern Texas to Nebraska/Wyoming*

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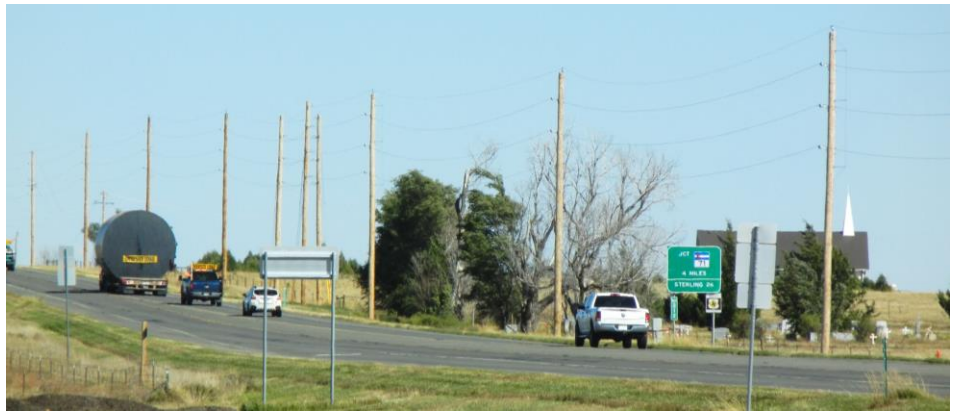

Project Schedule

TASK	2017						2018					
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
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Existing Conditions												
Modeling & Improvements Evaluation												
Implementation Plan												
Final Report												

X = Stakeholder Meeting

General Project Scope

- Existing Conditions
  - *Document current truck freight movement*
  - *Document existing roadway conditions*
- Identify Improvements
  - *Develop potential improvements*
  - *Model and analyze proposed improvements*
  - *Develop cost estimates*
- Final report with implementation plan
  - *Provide economic impact analysis*
  - *Prioritize improvements*

Stakeholder Involvement

Group	Meeting Requirements
Technical Advisory Group (TAG)	4 meetings
Corridor General Stakeholders	2 corridor-wide meetings
ETPR & UFR TPR	4 meetings (2 each)

Existing Conditions

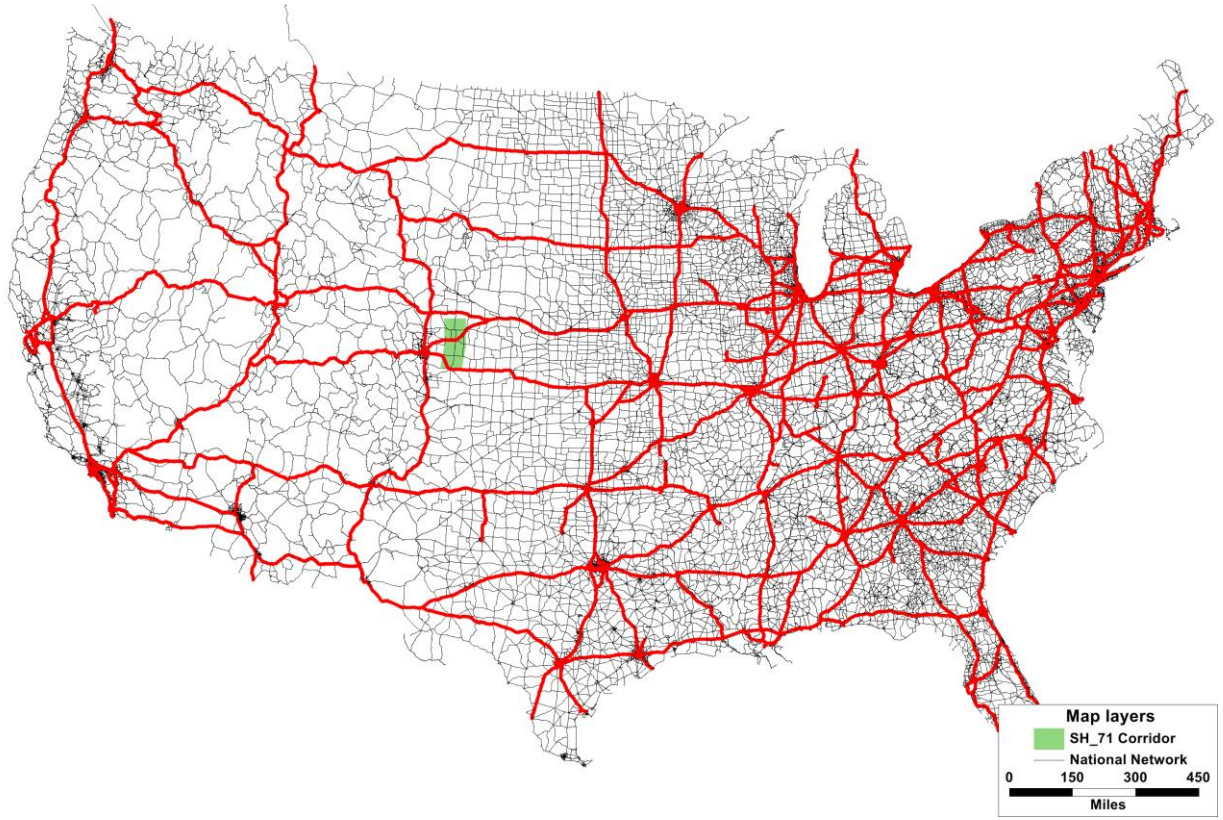
- Environmental resources
- Vehicle counts along P2P corridor in Colorado
- Truck AADT
- Travel speeds
- Horizontal and vertical challenges
- Crash data / Level of Safety Service (LOSS)
- Bridges and other major structures
- Truck amenities
  - *Truck stops, restaurants, parking, WiFi service, rest areas*
- Railroads
- Weigh Stations

Proposed Improvements Analysis and Evaluation

- Model up to six scenarios of improvement packages, with a mixture of improvements to help differentiate their impact
- Use the model to predict potential freight increases based on proposed improvements
- Determine potential crash reductions on SH 71 and I-25 if improvements are implemented

Travel Demand Modeling

- Establish models to capture future growth of vehicles along the corridor
- Long term analysis through **2040**
- Additional analysis will coincide with CDOT's capital improvement plan
- Prepare current Truck Freight Movement Plan



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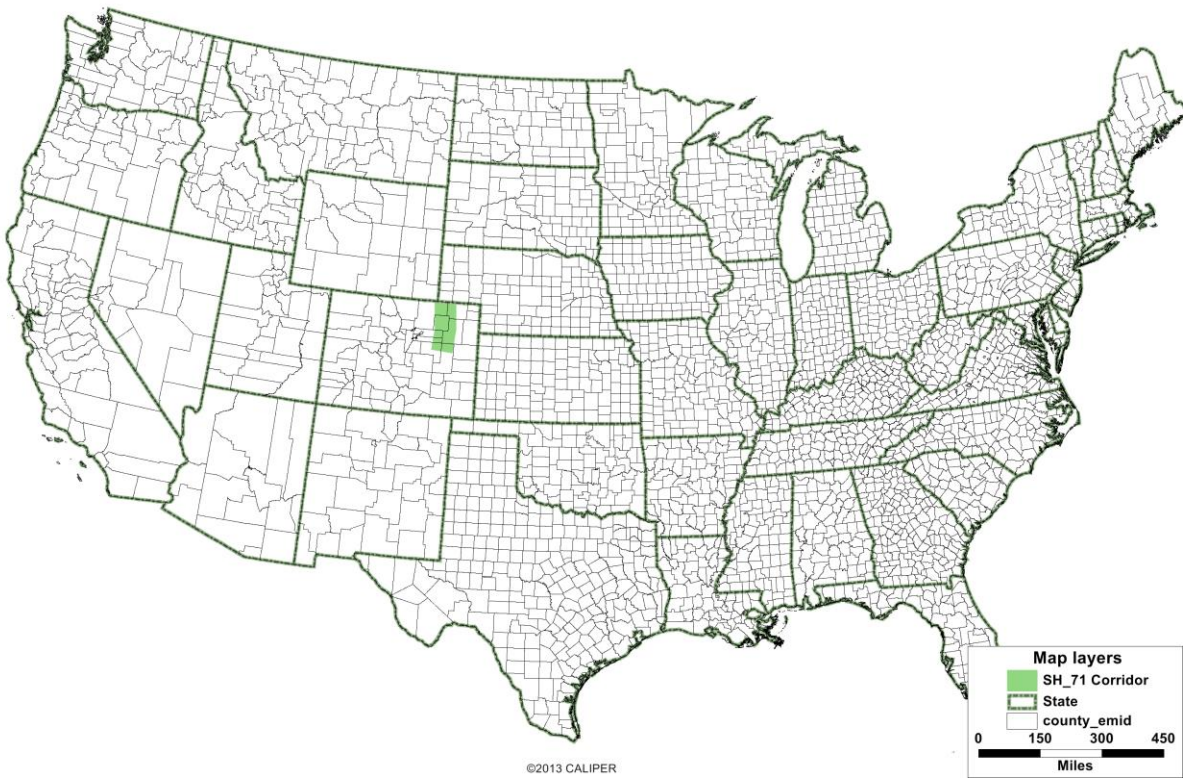

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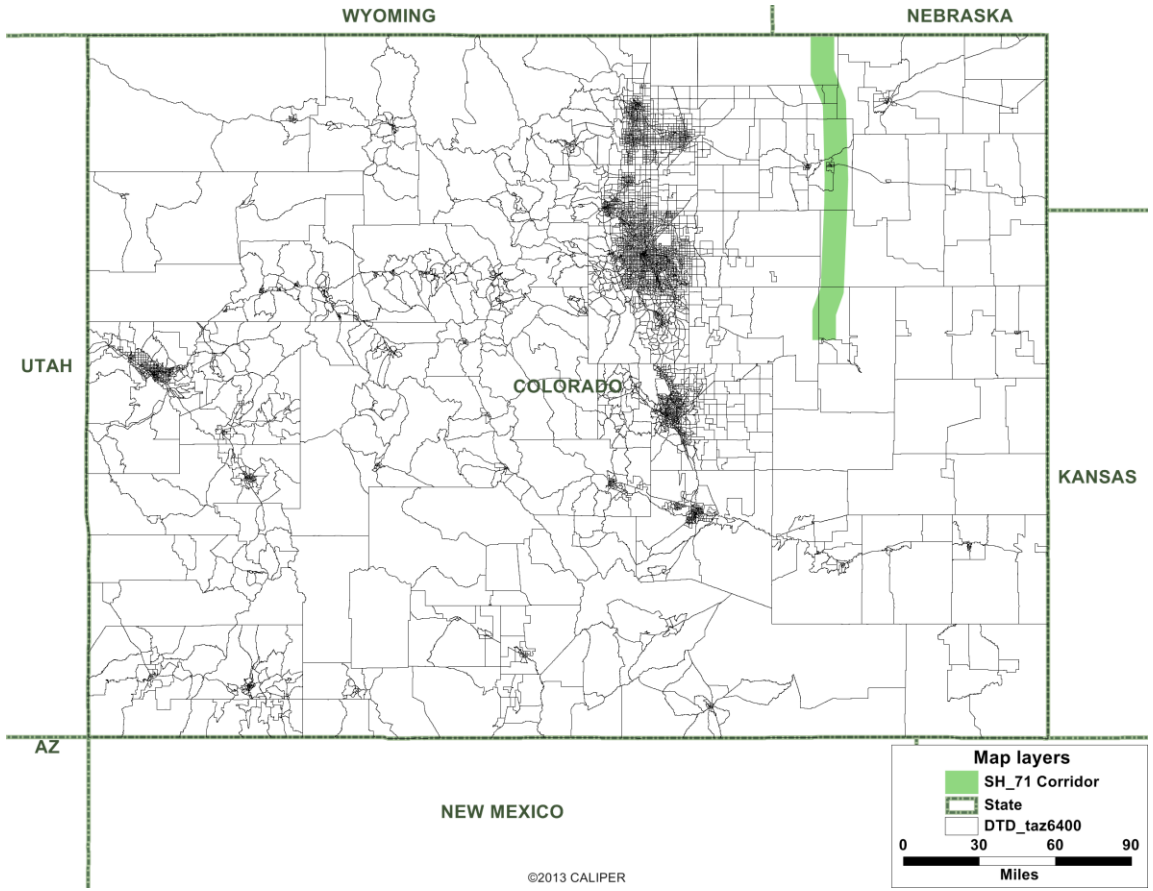

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Three Key MPO TAZ System Extents

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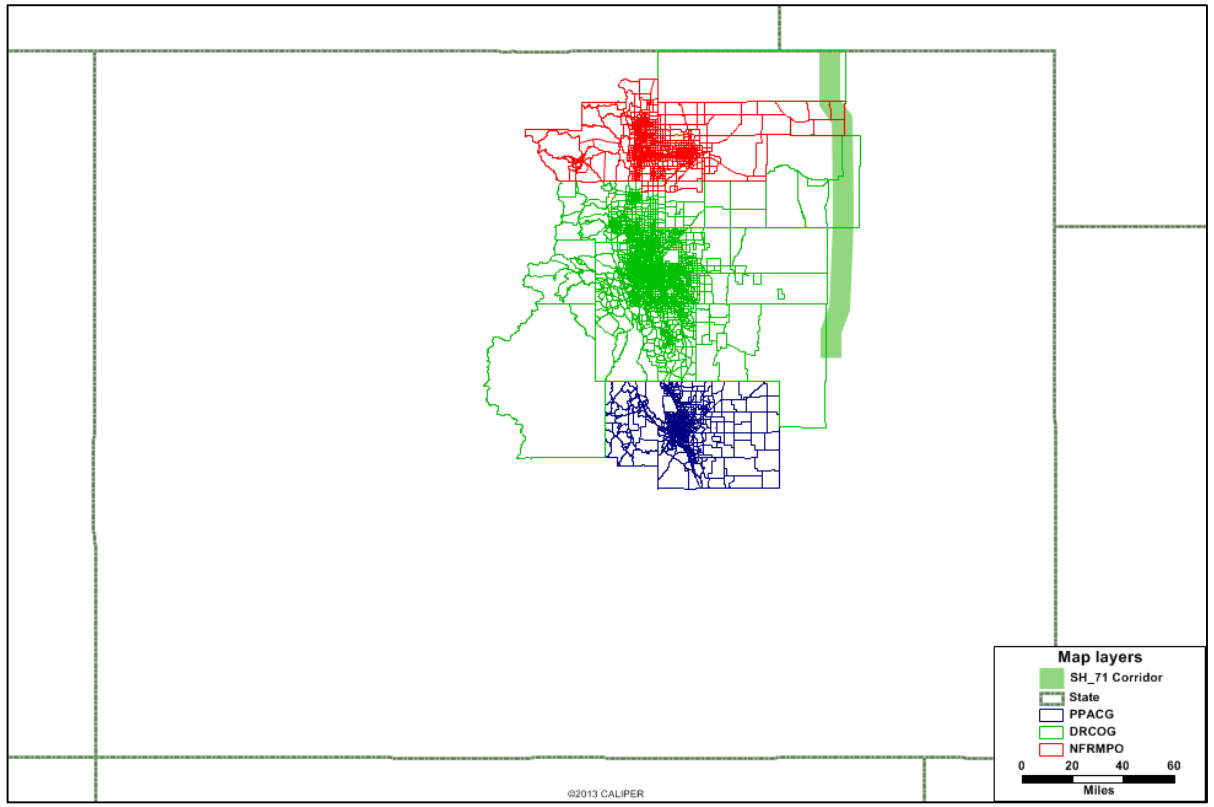

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Develop Implementation plan

- Develop cost estimates for top 10 rated improvement packages
- Develop rating criteria for potential improvements
- Prepare funding options and scenarios

Opportunities for Improvements

- Passing Lanes
- Climbing Lanes
- Safety Improvements

- Roadway Improvements
  - *Shoulders*
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  - *Sight Distance*

Where are areas of concern?

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- Establish TAG
- Host Additional Stakeholder Meetings
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  - *Traffic Counts*
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  - *Analysis*
  - *Alternatives Packages*

Thank you

Questions?

Randy Grauberger

Deputy Project Manager

Randy.Grauberger@WSP.com

Meeting Notes

Meeting with John Addison, Colo. Dept. of Agriculture
November 29, 2017
Re: SH 71 Truck Diversion Feasibility Study

By Randy Grauberger

I met with John Addison to provide him with background and basic information related to our request to have him serve as a representative of the Colorado Dept. of Agriculture on the Technical Advisory Group (TAG).

I provided John with an overview of the project by walking him through the PowerPoint presentation that had been provided at the first stakeholder meeting in Brush. John was very interested in participating on the TAG in his role as International Markets and Business Development Lead for the Colorado Dept. of Agriculture. Due to John's considerable amount of travel, he could not commit to being able to attend all meetings of the TAG but would review and comment on meeting notes, etc.

John stated that he had recently met with Hirakata Farms in Rocky Ford and they ship 600 truckloads of fresh produce on SH 71 from Rocky Ford to Limon every fall. Most of those trucks then take I-70 into the Denver area. I noted that the Study covers SH 71 from Limon north to the Nebraska state line; not from Limon south on SH 71.

He stated the Agriculture community would be very interested in seeing SH 71 infrastructure improvements; especially shoulder widening and additional delineation/ reflectors to assist in nighttime driving.

John also expressed a strong desire to consider improving the "parking lot" at the west junction of SH 71 and SH 14 in eastern Weld County. This type of improvement might attract additional trucks to this route.

John is very interested in the shipment of agricultural products by rail; even though rail is not the focus of this Study.

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SH 71 – Truck Freight Diversion Feasibility Study

Stakeholder Meeting

November 30, 2017
1:00 pm – 3:00 pm
East Morgan County Library
500 Clayton St, Brush, CO 80723

1. Introductions
2. Project Concept –Scope and Overview
    a. Purpose & objectives
    b. Project schedule
    c. Work Flow
        i. Existing Conditions
        ii. Identify Improvements
        iii. Implementation Plan
3. Opportunities for Involvement
4. Discussion on Economic Development Along Corridor
    a. Discuss areas of concern and challenges
    b. Discuss Opportunities
5. Next Steps

State Highway 71 Truck Freight Diversion Feasibility Study

November 30, 2017

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CDOT COLORADO Department of Transportation

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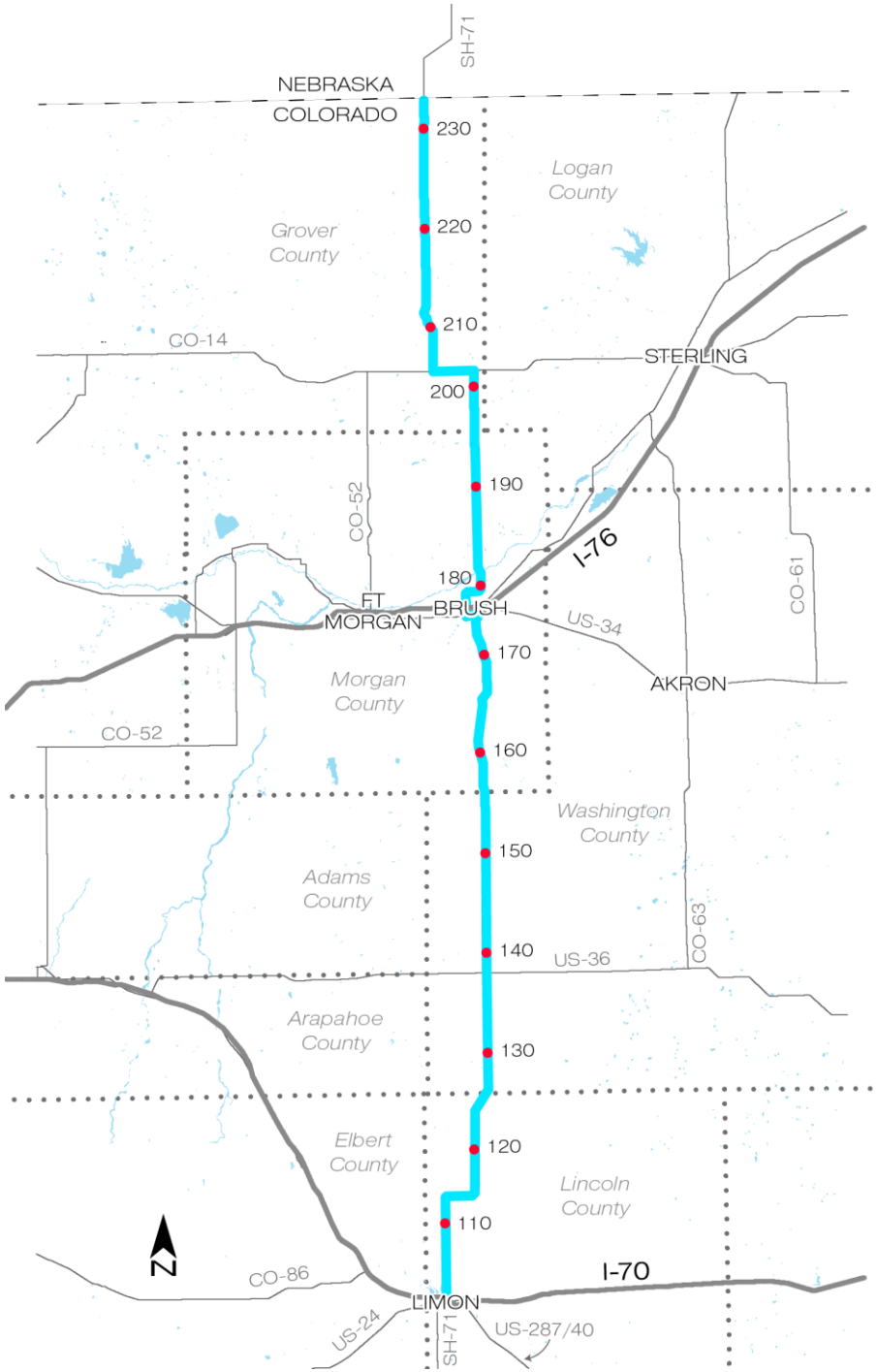

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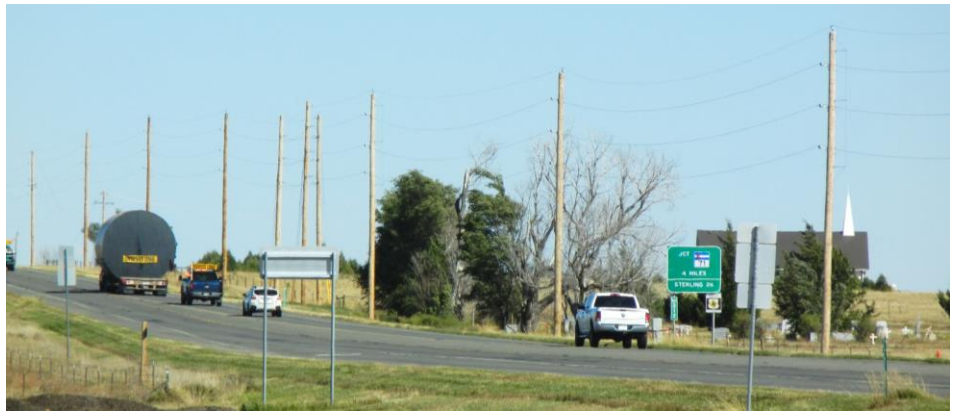

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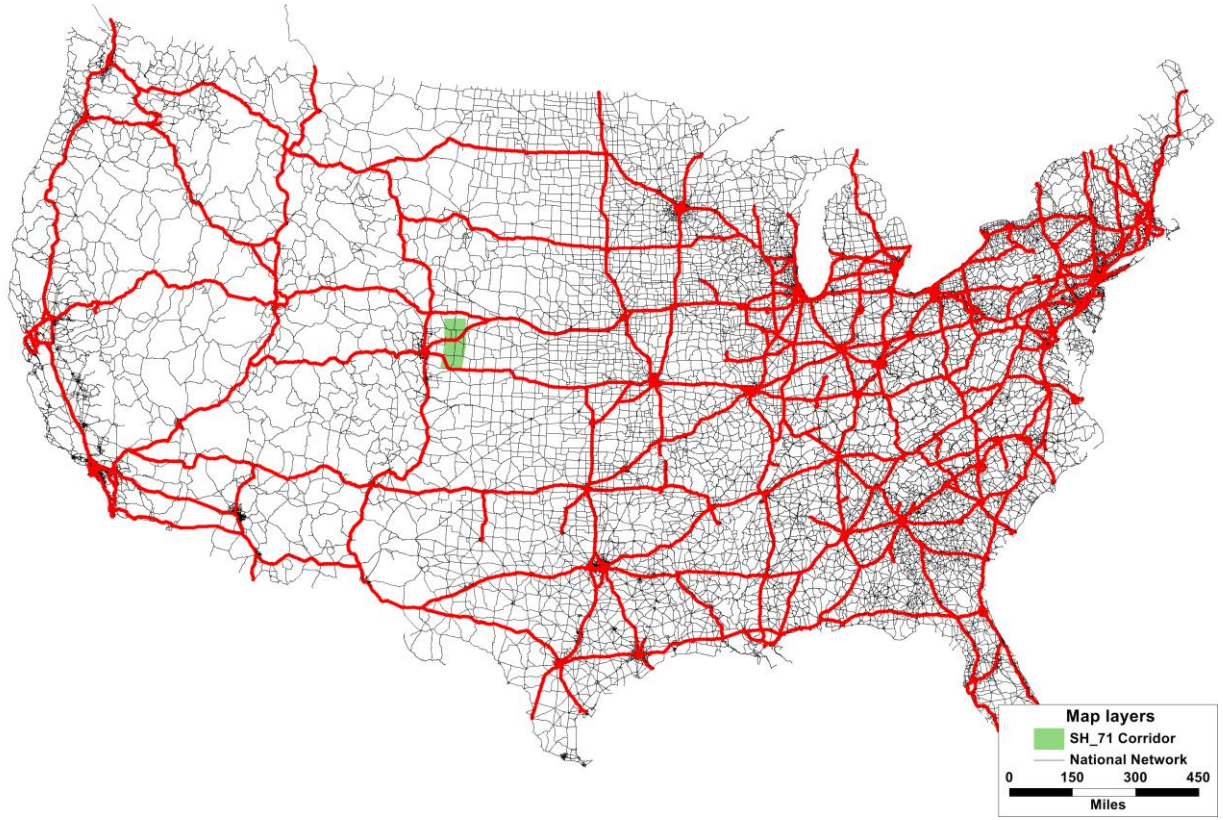

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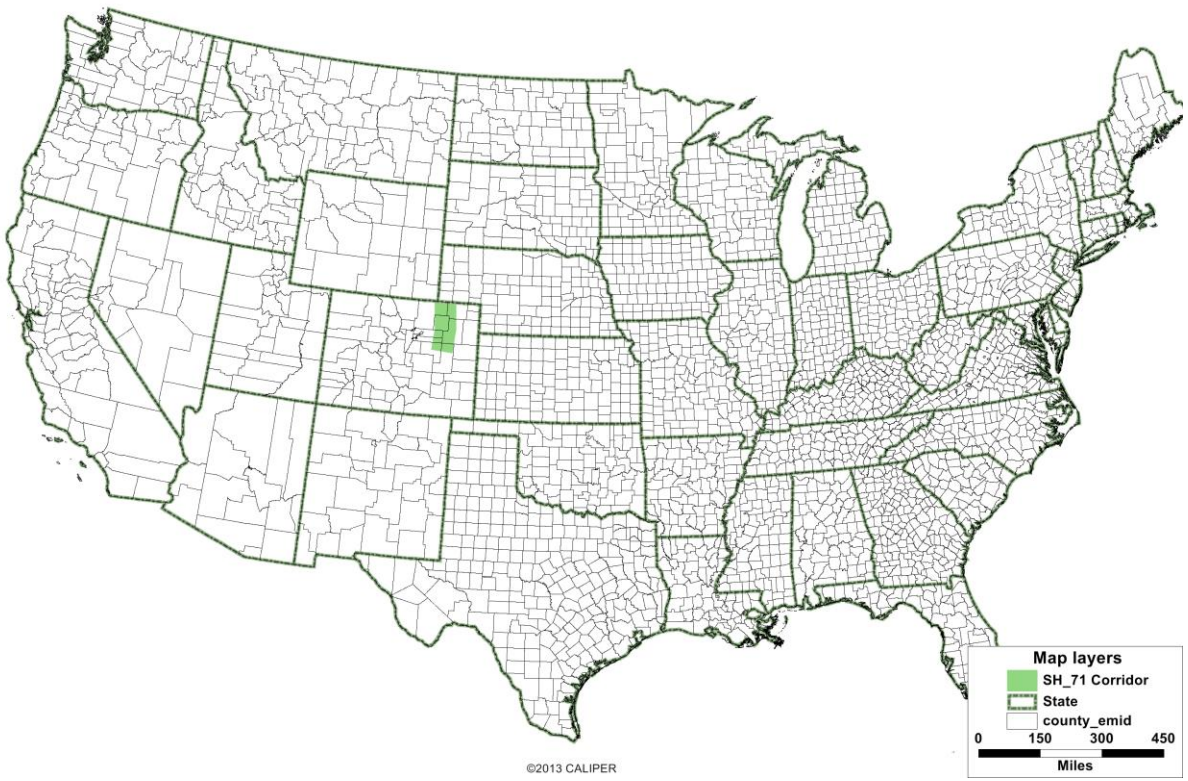

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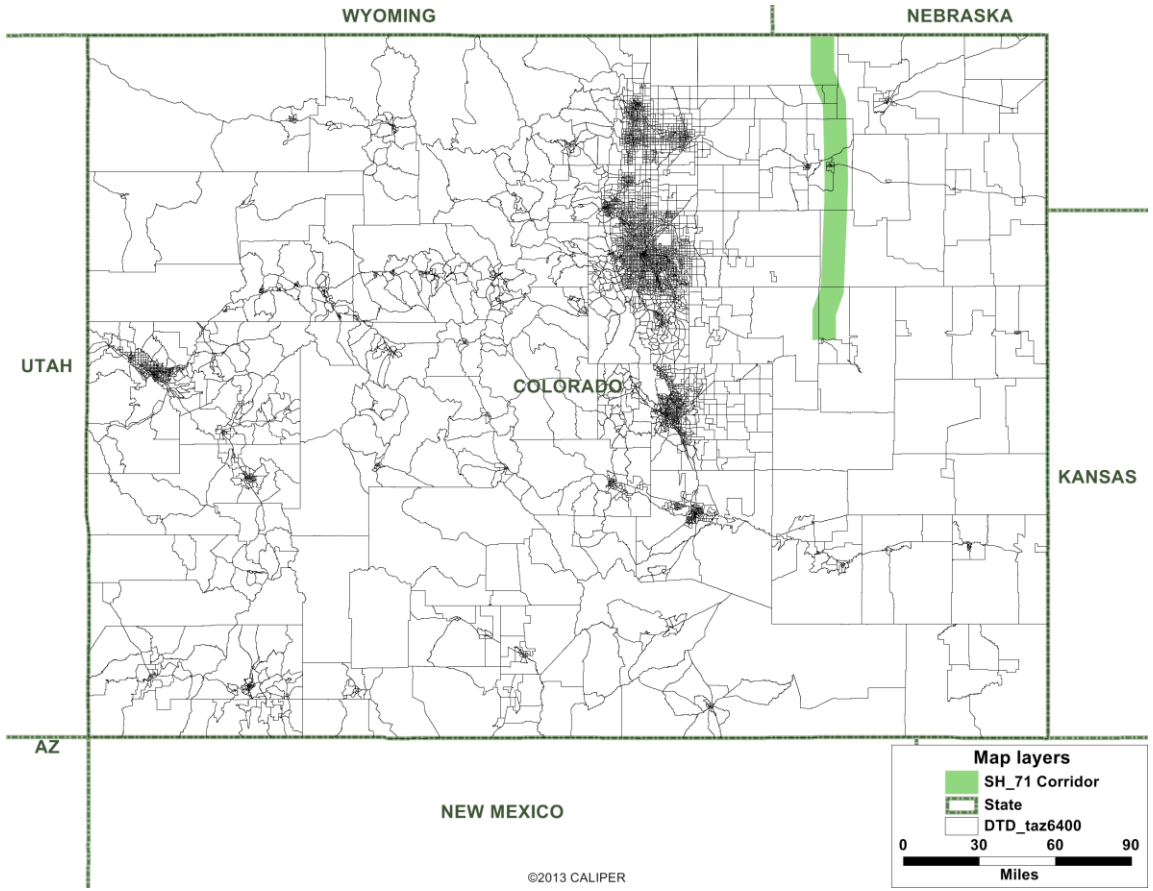

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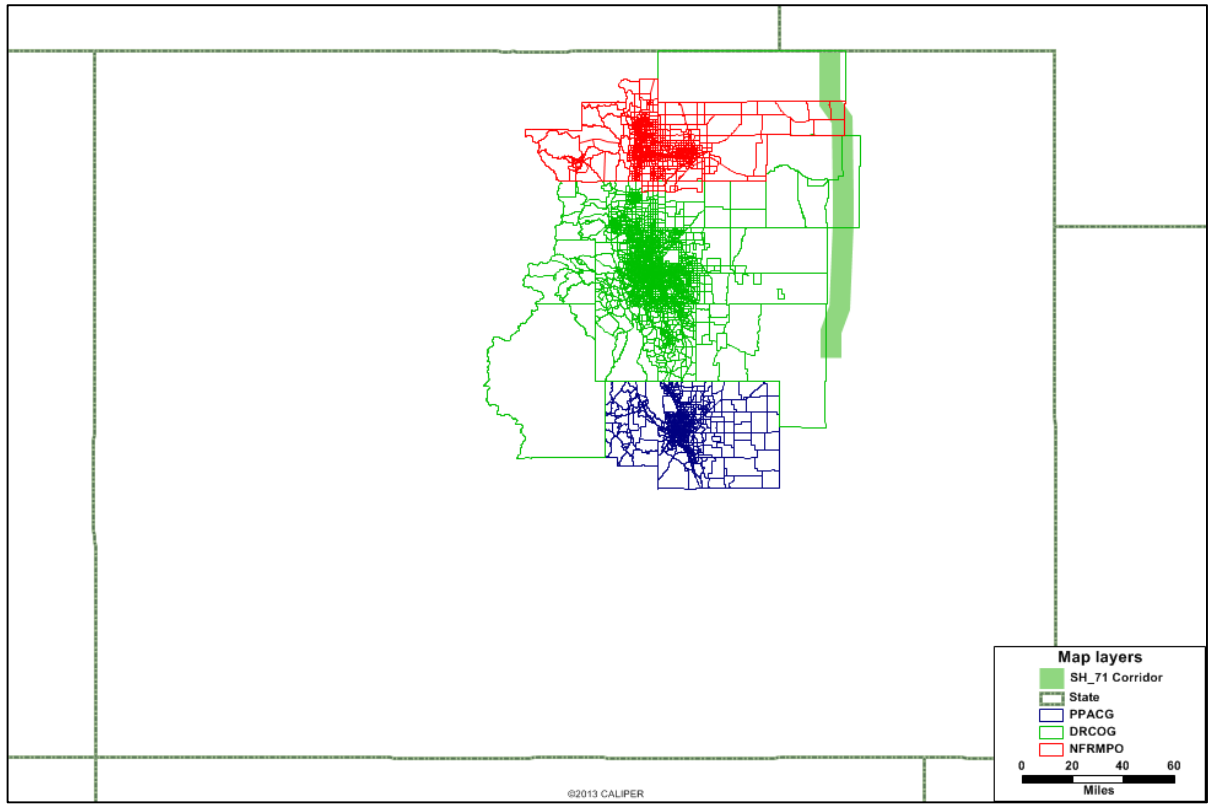

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Project Manager

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COLORADO Department of Transportation

State Highway 71 Truck Freight Diversion Feasibility Study

December 7, 2017

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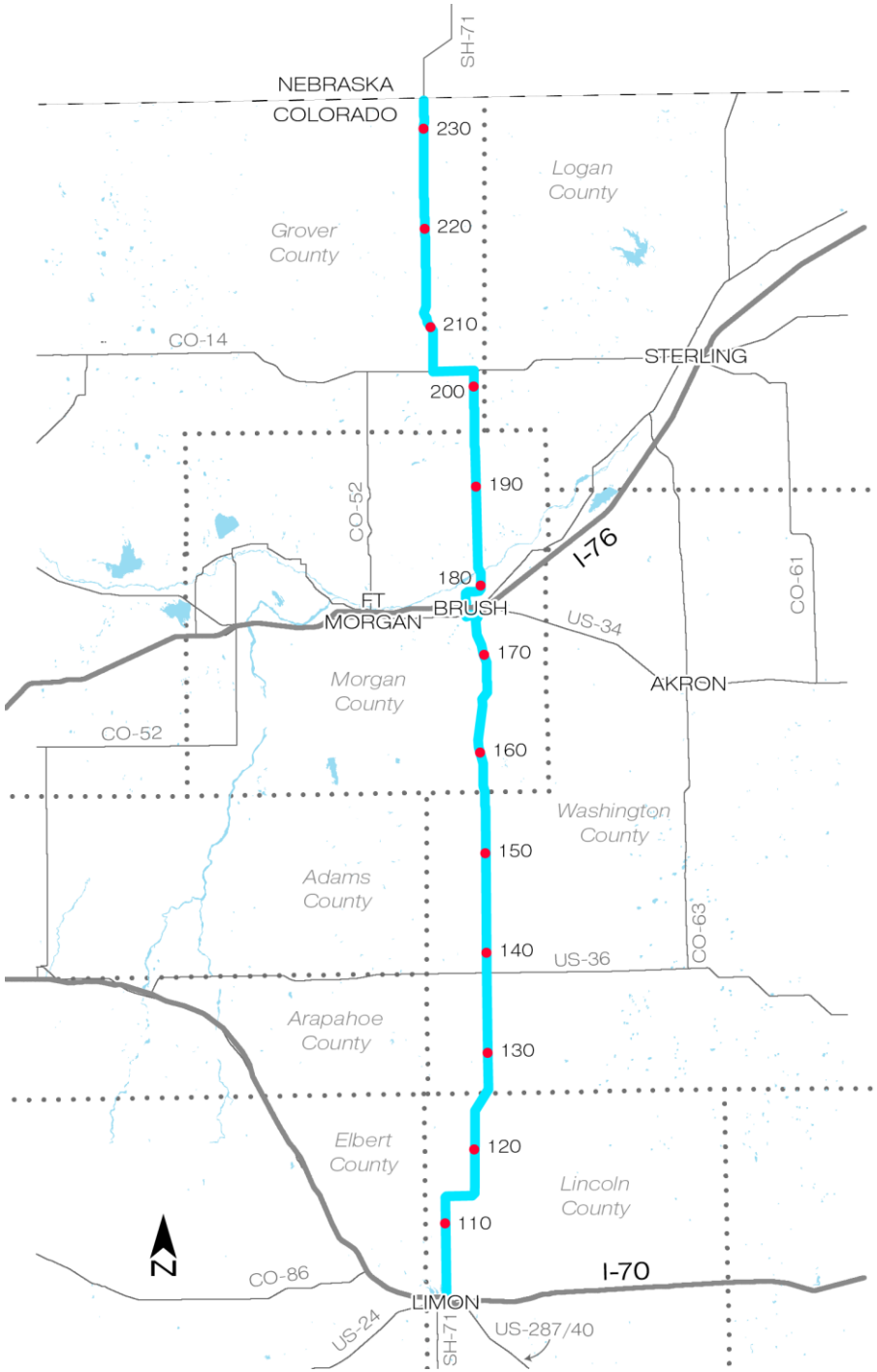

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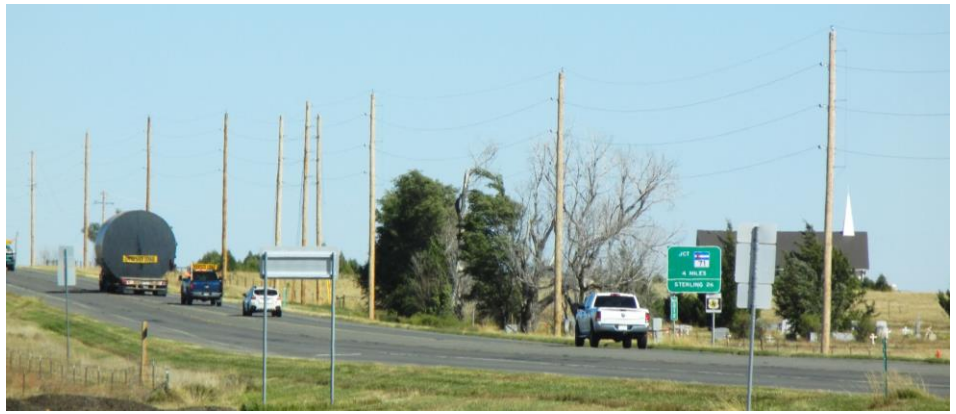

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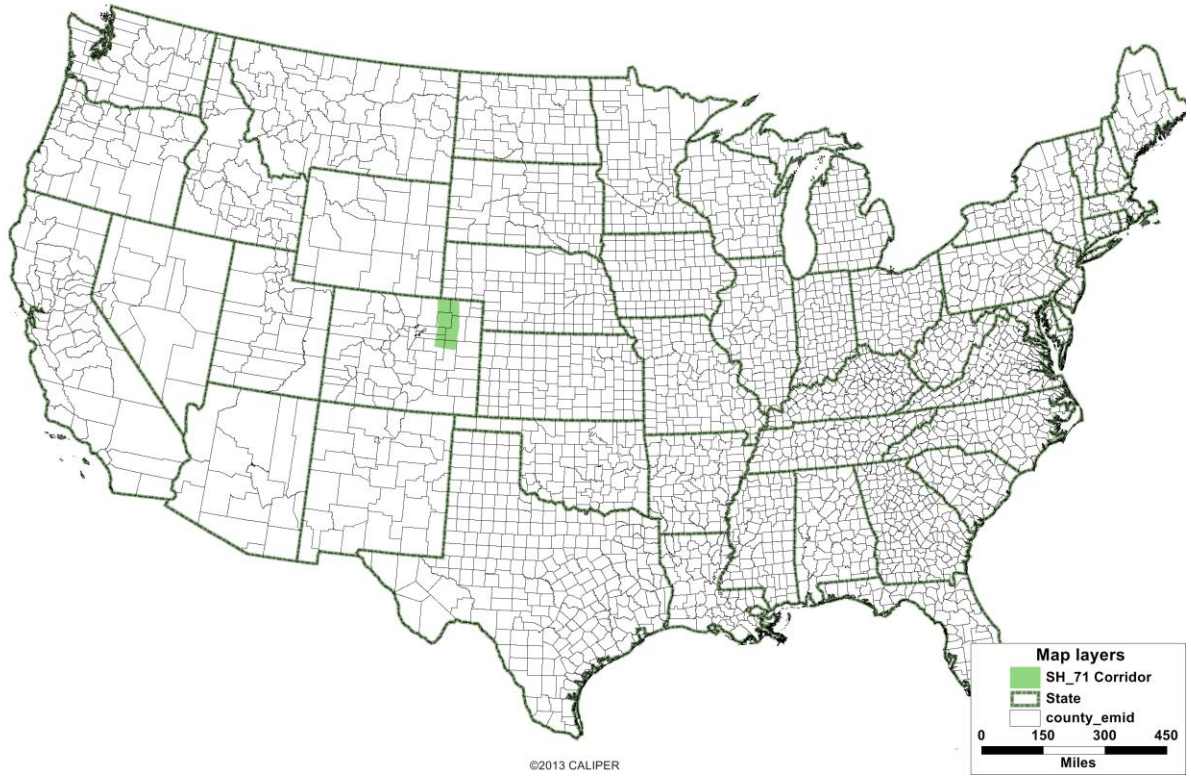

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Project Manager

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COLORADO Department of Transportation

SH 71 – Truck Freight Diversion Feasibility Study

Colorado Motor Carriers Association

December 13, 2017
10:30am

1. Introductions
2. Safety Moment
3. Project Concept – Project PowerPoint Information
    a. Purpose & objectives
    b. Process
    c. Project schedule
4. CMCA Role
    a. Member contacts
    b. TAG Participation
    c. Driver preference survey
5. Next Steps

SH 71 Truck Freight Diversion Feasibility Study

Colorado Motor Carriers Association (CMCA) Small Group Meeting

02/15/2018

Attendees: Tracy Sakaguchi (CMCA), Chris Mann (Great West), Steve Beckwith (Reddaway), Randy Grauberger and Myron Hora (WSP)

Purpose: To get trucking industry and truckers perspectives on SH 71 and truck routing

Discussion - time versus distance: 15 to 20 minutes of additional travel time and distance is negligible if it means you are running on better roads. These roads have 12 to 14 foot lanes and wide shoulders; preferably at least 10 foot shoulders.

Truckers will default to better roads when defining new routes. Some companies require their drivers to stay on the better roads.

Reddaway is paying tolls on E-470 instead of running on I-25 or other congested roads through Denver.

Trucks will take the quickest route to make deadlines.

If SH 71 is improved, yes, some trucks will run faster on it than they do currently. Look at WCR 49 and how you get passed going 5 MPH over the limit.

Improved Kersey Road (Weld Co. Road 49) is seeing traffic diverting off of I-70 at Bennett and going north.

Discussion - What makes a good road for trucking: Truckers, besides the full lanes and shoulders, need pullouts where they can stop, rest, stretch their legs, and check loads. Best case these would be every 15 to 20 miles. These pullouts can double as locations for portable weigh station locations. A good example is between Douglas and Casper/Glen Rock Wyoming on I-25.

Pullouts are more important in making route decisions than are services.

Rest areas – there aren't any on I-70 west of Burlington, and then there are three in Glenwood Canyon. The only spot on SH 71 is at Last Chance, and it's not good.

Discussion – Passing lanes: Passing lanes are important to truckers and other vehicles as well. The passing lanes need to be long enough to allow for safe passing and speeds. Good signage helps too in keeping people from getting impatient and making risky moves. SH 26 in Wyoming has good passing lane signage.

Helena to 3 Forks is a good example of alternating passing lanes

Discussion – Truckers perception of less than full width shoulder: 10' shoulders are minimum, trucks are 8 ½ feet wide and mirrors hang out even farther. Truckers will put their outside wheels on the very edge, and still be extending into the lane with 8' shoulders.

What about 6' paved and 4' gravel? If it's signed or made known that it's a stabilized gravel? Truckers will not trust the gravel and will stay on the paved surface. Even if it's stabilized, after a few years it will become soft. Tanker trucks or swinging meat haulers will not use gravel at all, too easy to tip over when the load shifts.

Discussion – Oversize / Overweight: Oversize are generally 16' wide. Trucks need enough room to get over and not 'bang mirrors'. Oversized loads can be up to 24' wide but those have multiple pilot cars and move slower.

Discussion – Brush "Bypass": Height is an issue. It is nice to not have to go through town, but it's not a deciding factor on a long trip. Longer loads have dual steering so going through town and its 90 degree turns is not that bad. On a priority scale, having shoulders and passing lanes is more important than the bypass.

Discussion – Is time of day a deciding factor in routing?: Personally, they liked driving at night on less traveled rural highways with high beams on. But they admit that their perception is different than others. They run with other truckers that will not get off the interstate or four-lane roads at night. Some companies require their drivers stay on interstate or four-lane roads at night.

Discussion – Why aren't truckers using SH 71 now? It's not a good road for commercial trucks. A lot of trucks are staying east on US 385 or in Kansas and Nebraska. There are most likely livestock trucks and grain hoppers on SH 71 now due to the proximity of cattle and grain producers.

Discussion – What else would you like us to know:

Alternating 3 lane with wide shoulders would be a great improvement

Add variable speed limits. Trucks find they are very good at keeping travel at safe speeds, including passenger cars and the cars are less likely to push.

Fix the 90 degree curves north of Limon.

Truckers talk, and they will tell each other when roads are improved.

CMCA would do press releases or new letters to the industry about the improvements to SH 71.

Will this require that CDOT do increased maintenance, especially night-time plowing? It was noted that CDOT would most likely lift the restriction on night-time snow plowing if SH 71 improvements were made to improve freight traffic.

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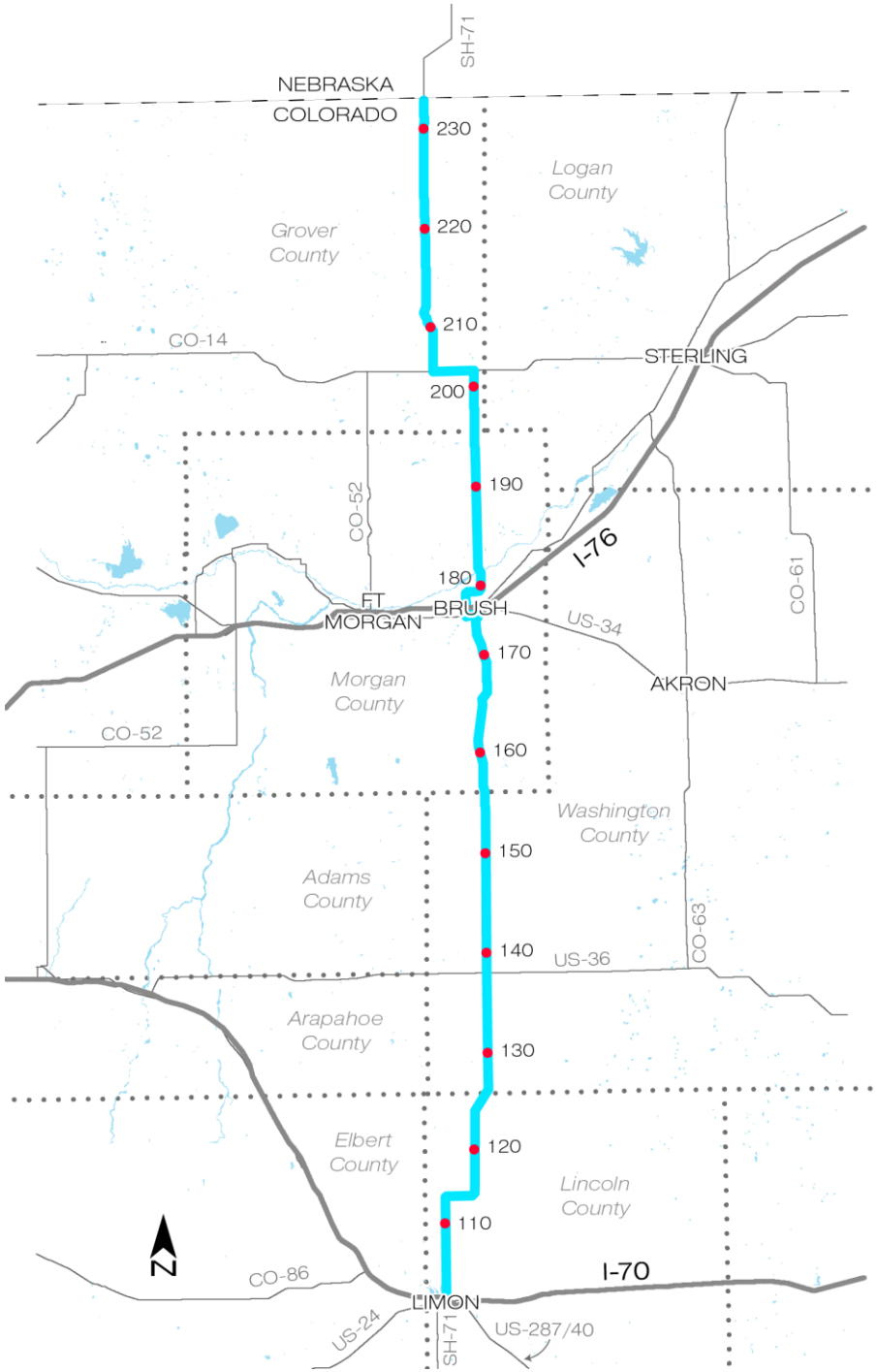

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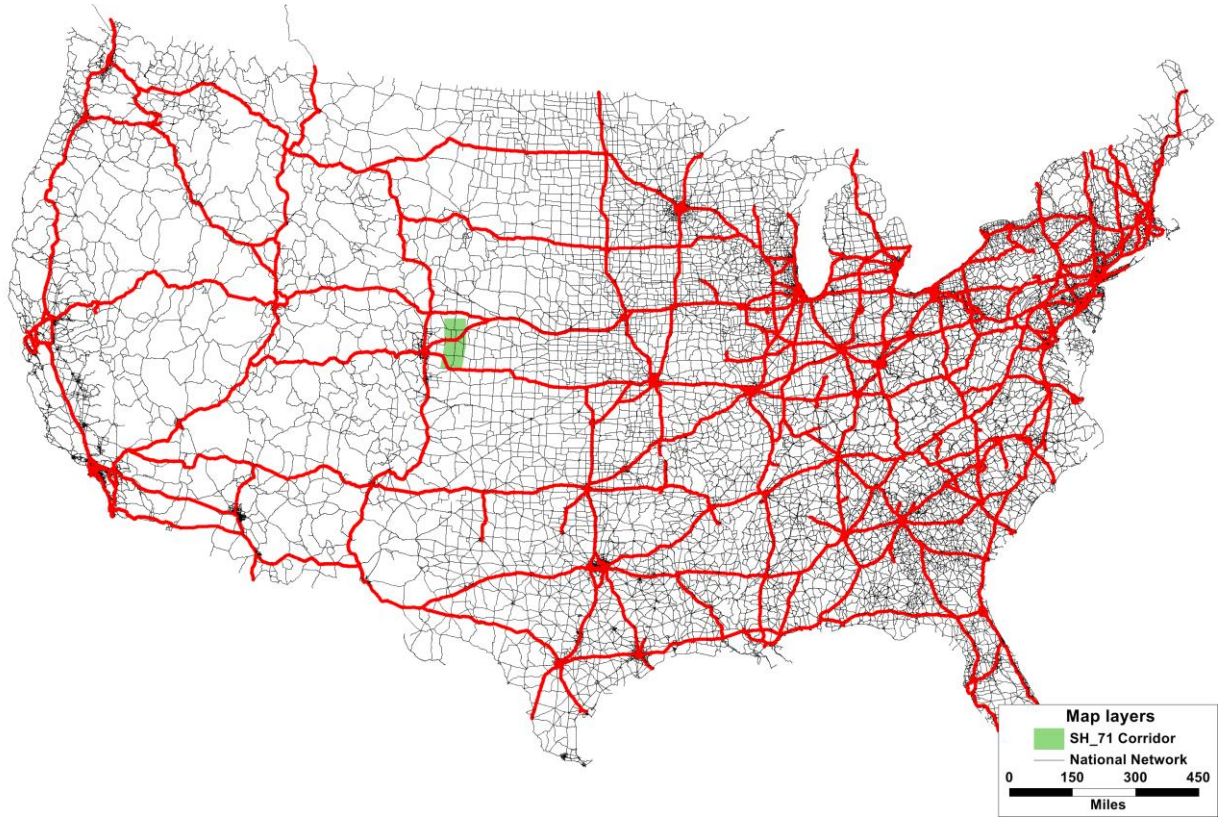

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Opportunities for Improvements

- Passing Lanes
- Climbing Lanes
- Safety Improvements

- Roadway Improvements
  - *Shoulders*
  - *Geometry*
  - *Sight Distance*

Thank you

Questions?

Myron Hora

Project Manager

Myron.Hora@WSP.com

COLORADO Department of Transportation

State Highway 71 Truck Freight Diversion Feasibility Study

January 4, 2018

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CDOT COLORADO Department of Transportation

Purpose and Objectives

- Analyze freight movement and the impact of SH 71 improvements on truck traffic
- Identify the types and cost of improvements to SH 71 that will draw additional truck traffic
- Determine the potential economic benefit to the trucking industry and local economies
- Develop funding options and implementation scenarios

State Highway 71

- High priority designation as part of the Heartland Expressway Corridor
- Part of the Ports to Plains Alliance (P2P)
- Surrounding states have made significant improvements to their segments
- **SH 71 is the only segment of the P2P corridor in Colorado that remains unimproved**

COLORADO Department of Transportation

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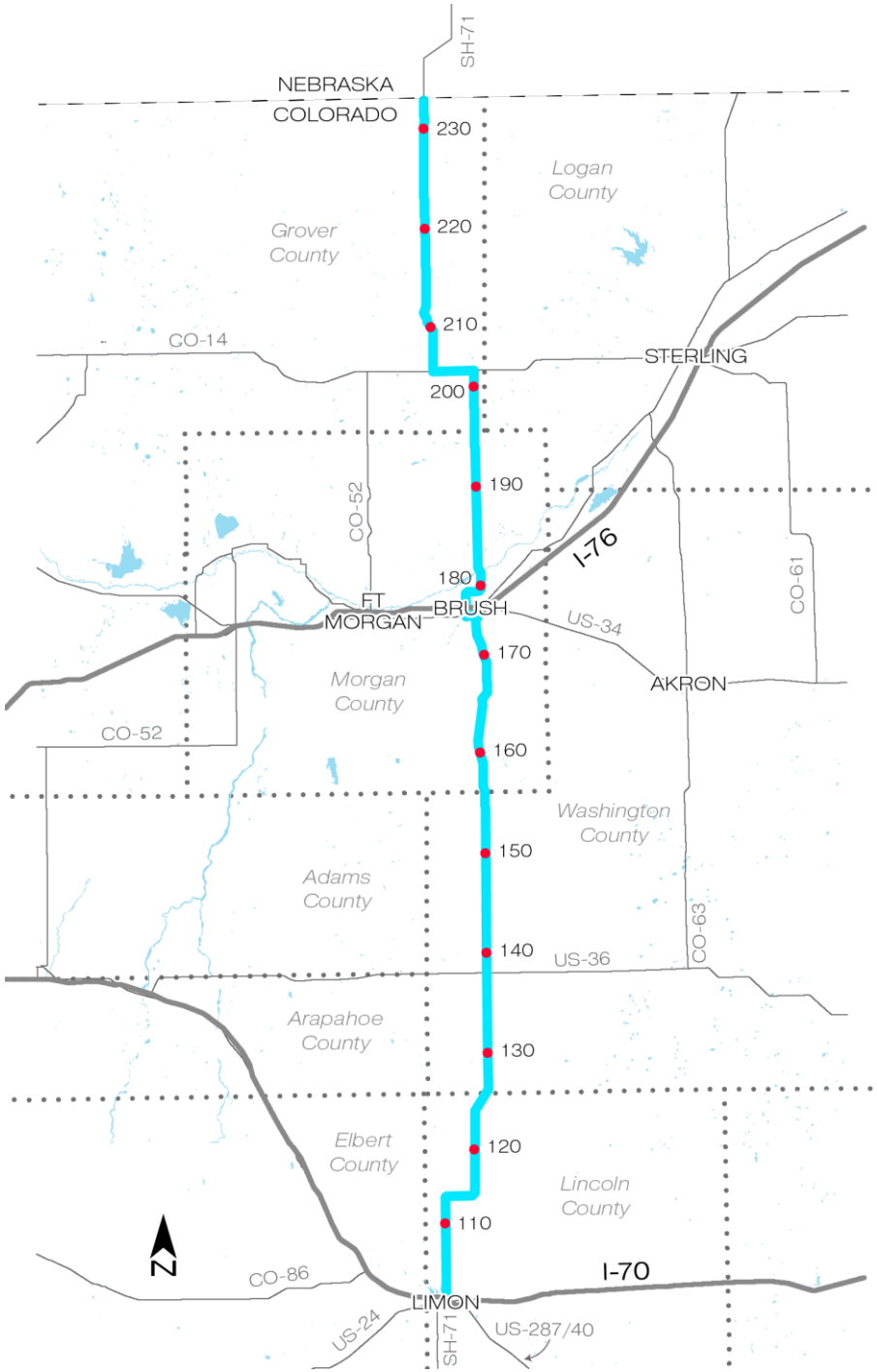

Project Limits

- SH 71 from Milepost 102 to Milepost 232
- Limon, CO to the Colorado/Nebraska state line
- Regional connections for freight traffic
  - *Northern Texas to Nebraska/Wyoming*

COLORADO Department of Transportation

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Project Schedule

TASK	2017						2018					
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Project Mgmt				X					X			
Existing Conditions												
Modeling & Improvements Evaluation												
Implementation Plan												
Final Report												

X = Stakeholder Meeting

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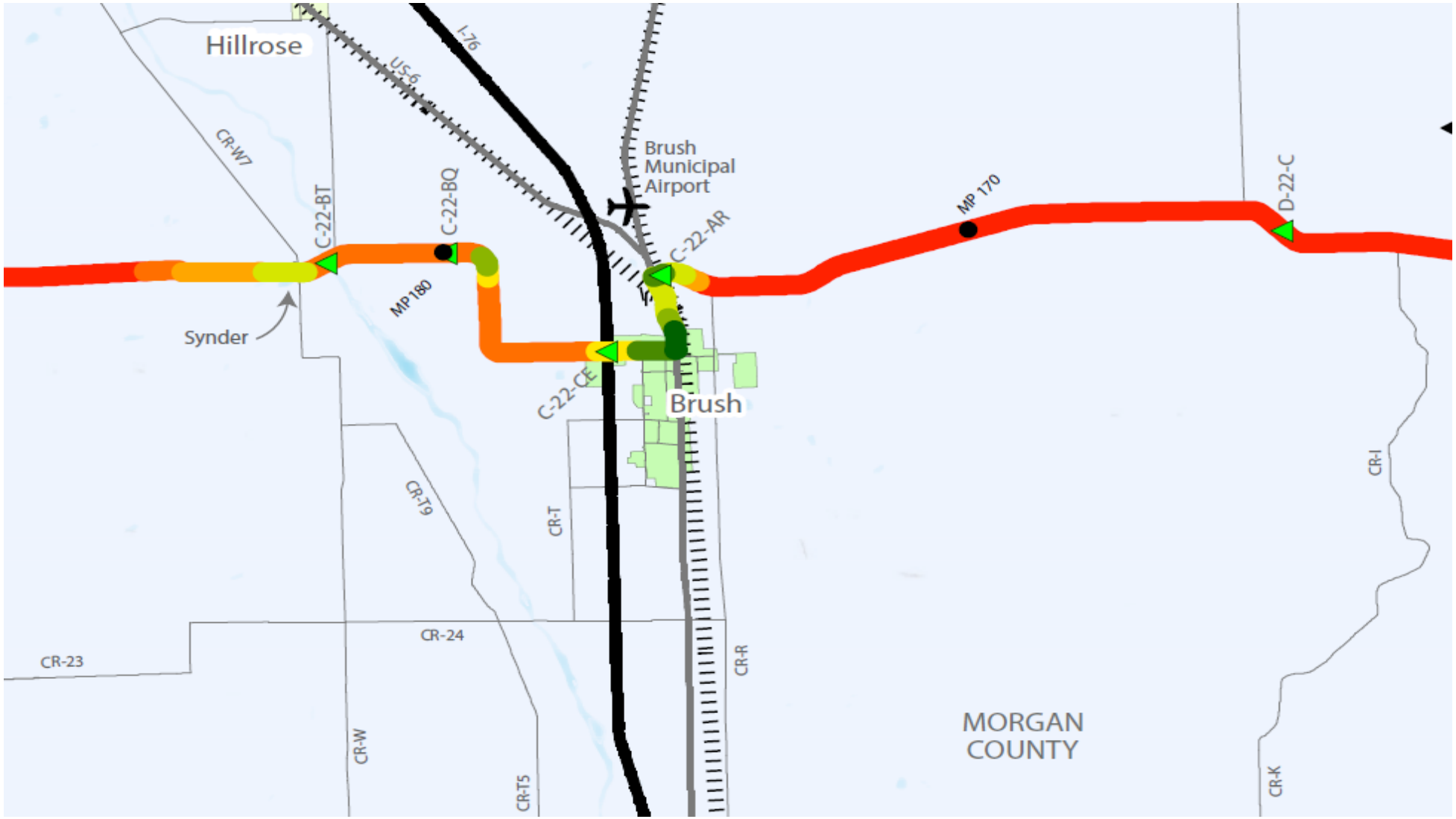
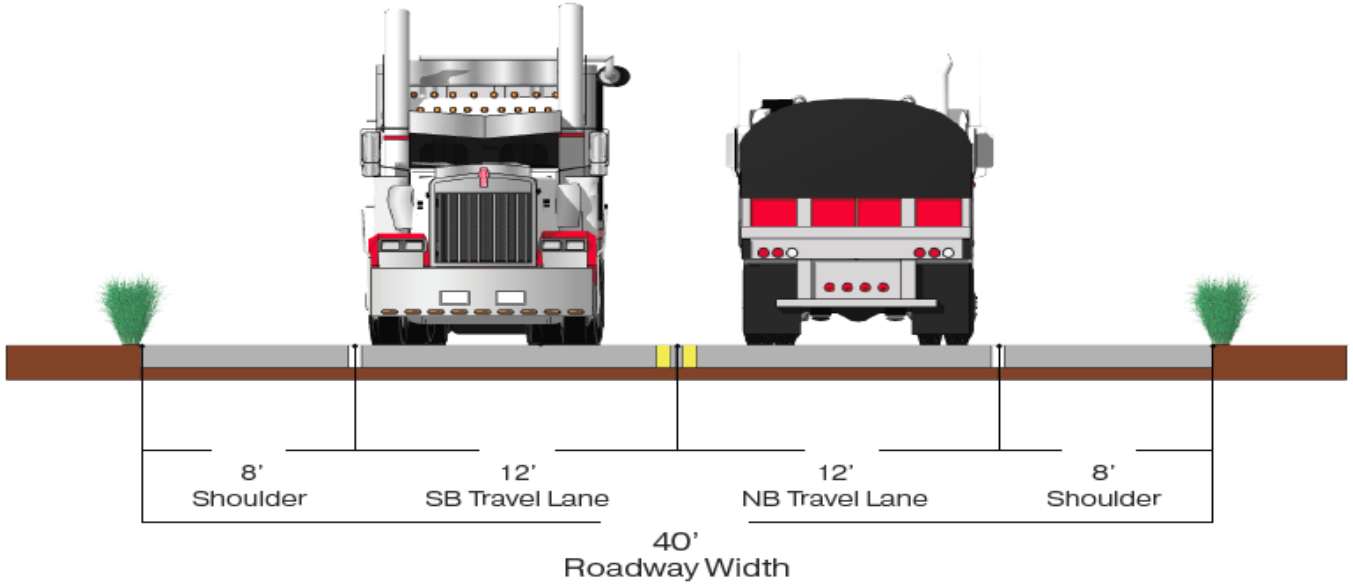
Brush Existing Conditions



Super 2 Alternative

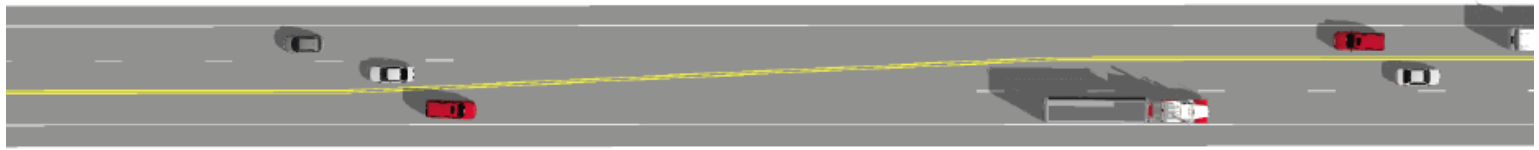
Aerial View

Cross Section



Super 2 with Passing Lanes Alternative

Aerial View



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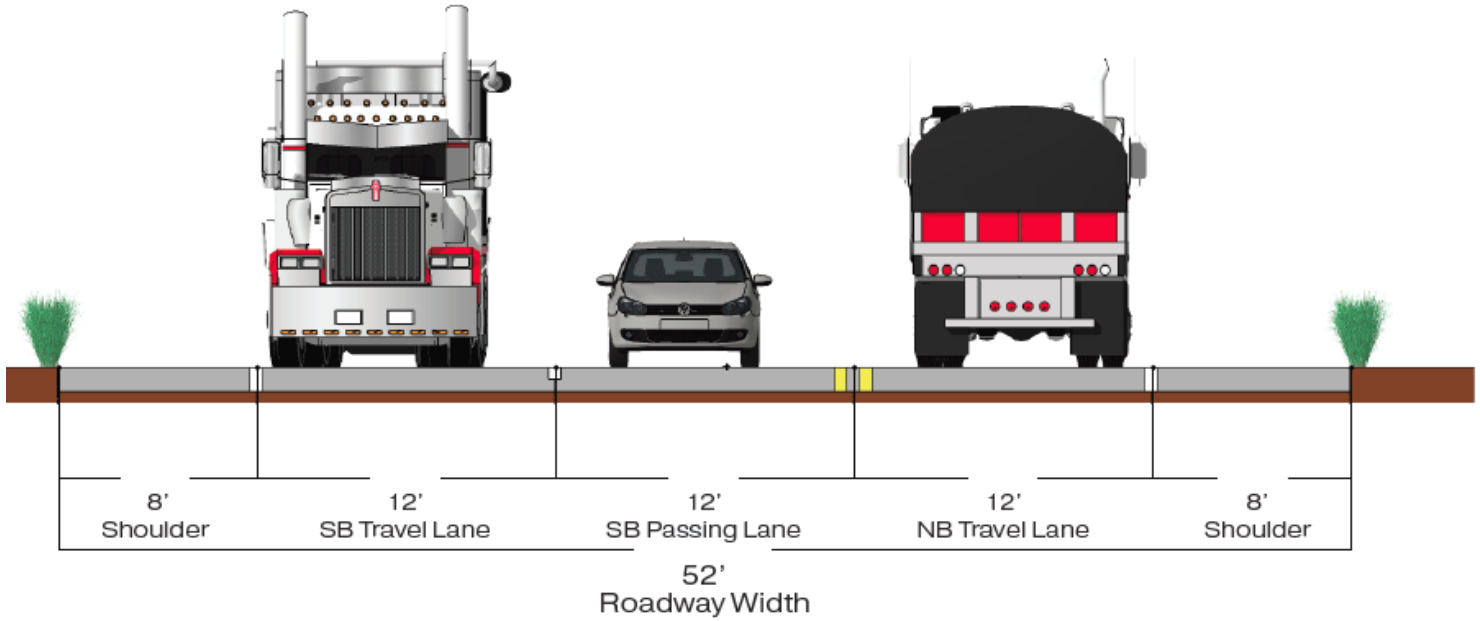
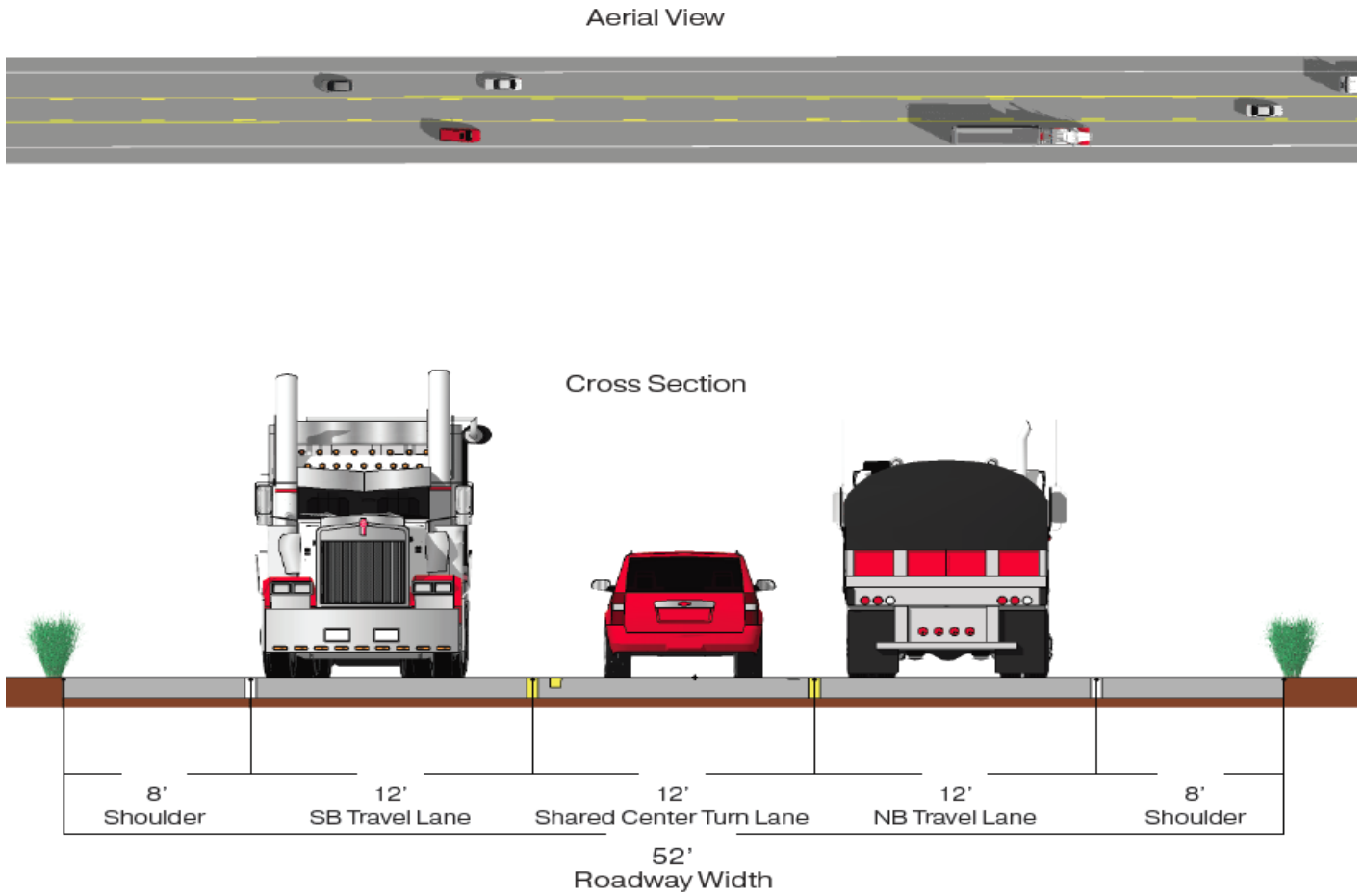
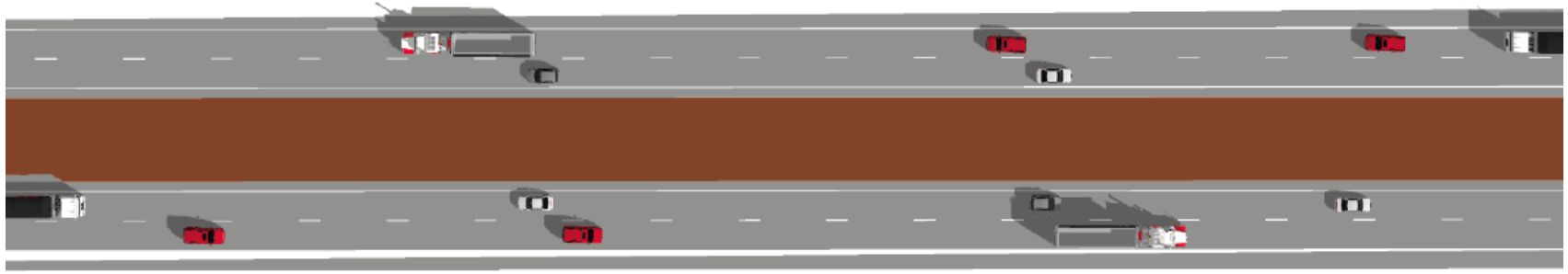


Super 2 with Center Turn Lane Alternative



4 Lane Divided Alternative

Aerial View



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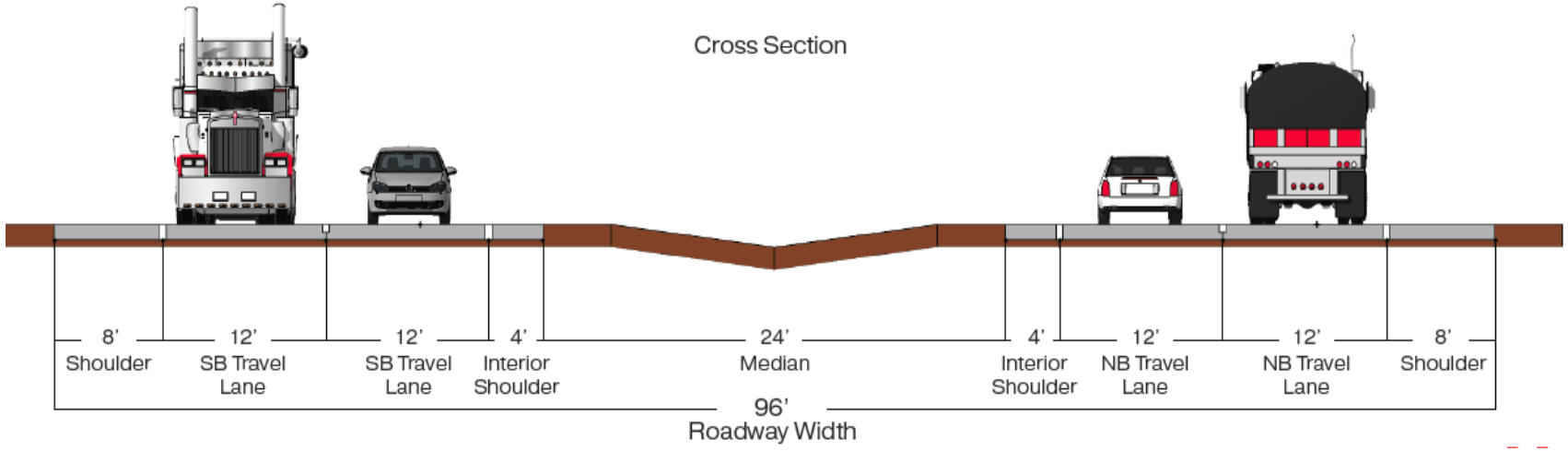
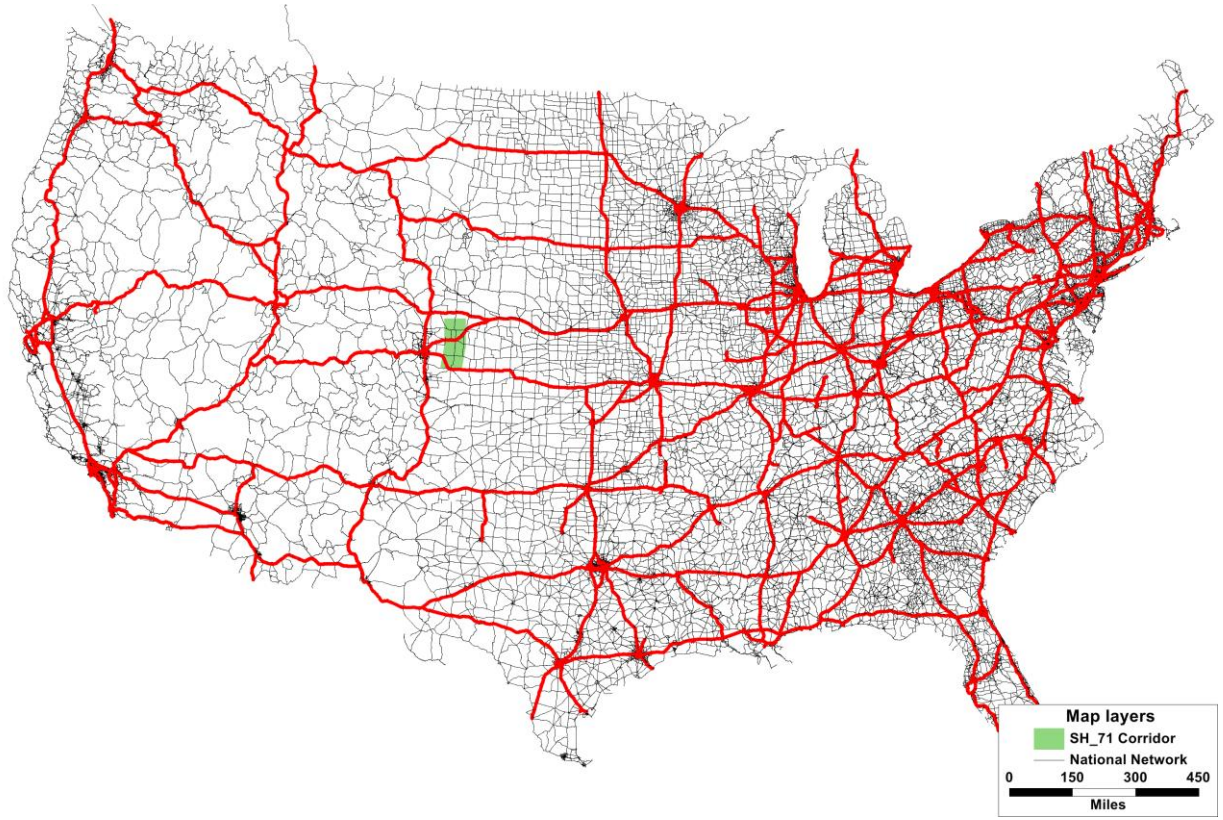


Proposed Improvements Analysis and Evaluation

- Model up to six scenarios of improvement packages, with a mixture of improvements to help differentiate their impact
- Use the model to predict potential freight increases based on proposed improvements
- Determine potential crash reductions on SH 71 and I-25 if improvements are implemented

Travel Demand Modeling

- Establish models to capture future growth of vehicles along the corridor
- Long term analysis through **2040**
- Additional analysis will coincide with CDOT's capital improvement plan
- Covers 43 commodities
- Based on Freight Analysis Framework (FAF), version 4.2



WSP National Truck Model Network
Includes all Interstates and State Highways

COLORADO Department of Transportation

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CMCA Involvement and Coordination

- Met with Greg Fulton 12/13/17
  - *Developed approach for coordinating with CMCA*
- Rick Yost represents CMCA on TAG
  - *Initial meeting on 12/18/17*
- Next steps with CMCA Members
  - *Small Group Discussion*
    - Focus on trucking needs / requirements
    - Meet by end of January
  - *Continued involvement on TAG*

Thank you

Questions?

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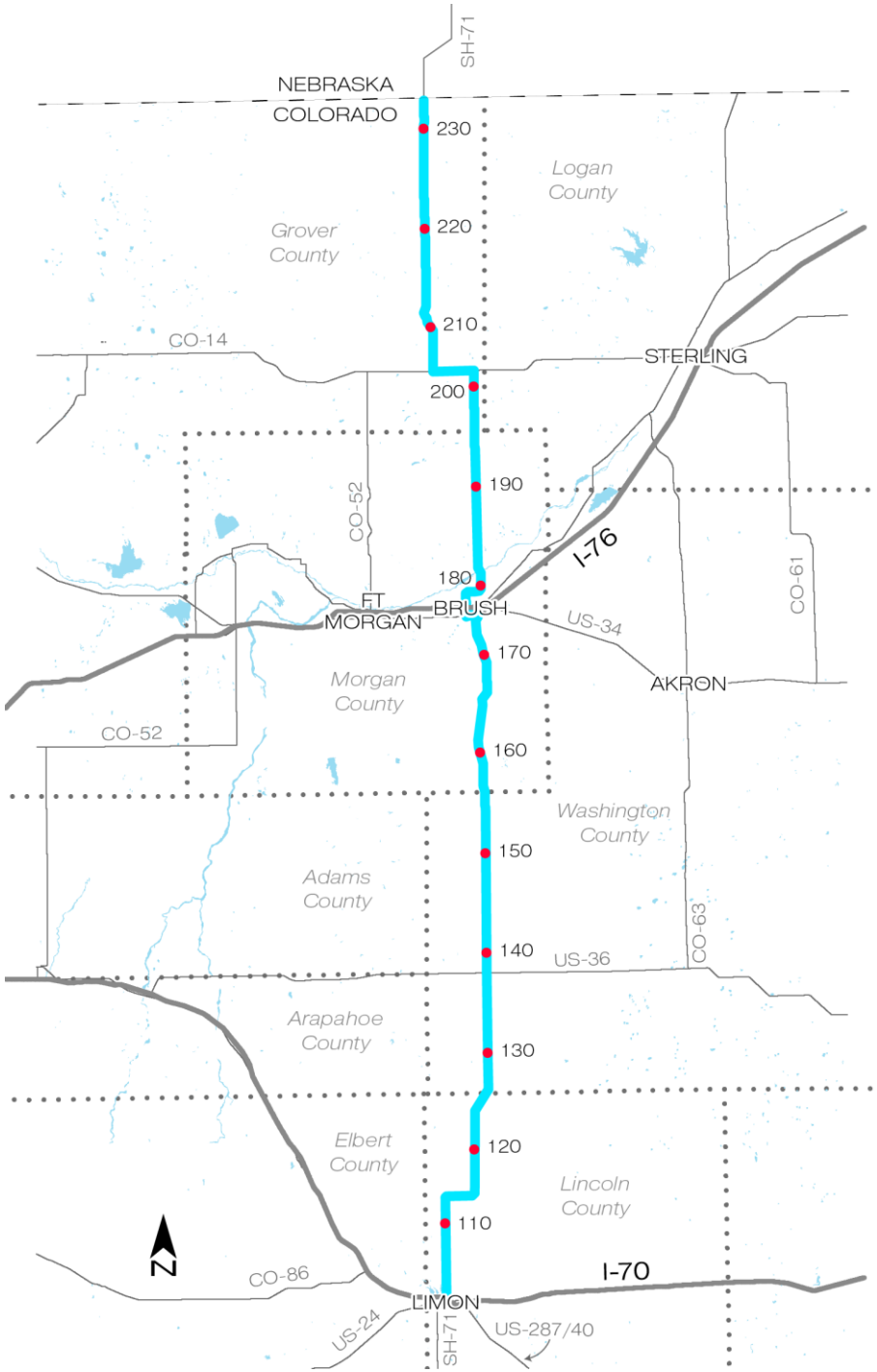
State Highway 71 Truck Freight Diversion Feasibility Study

ETPR

January 8, 2018



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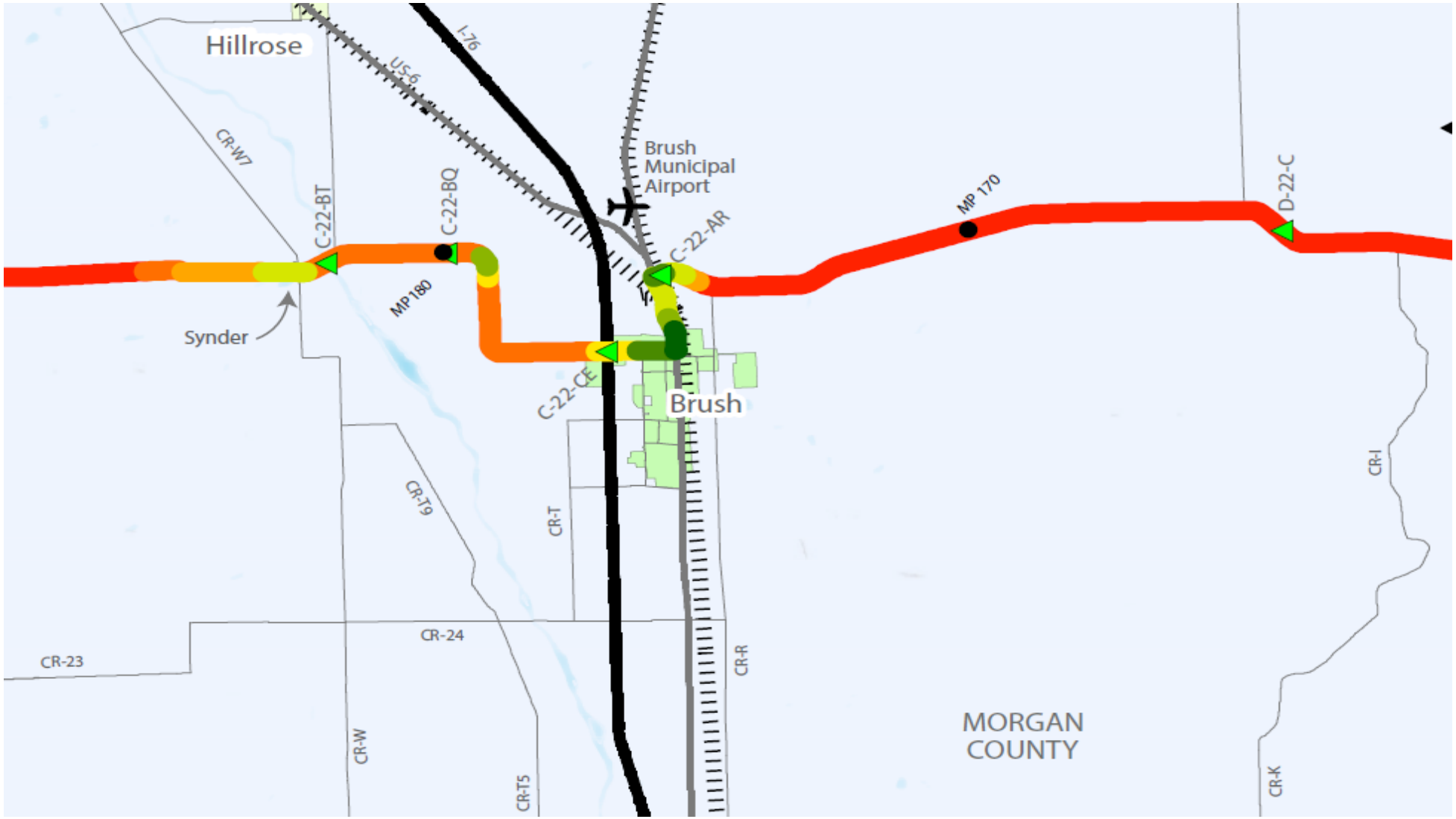

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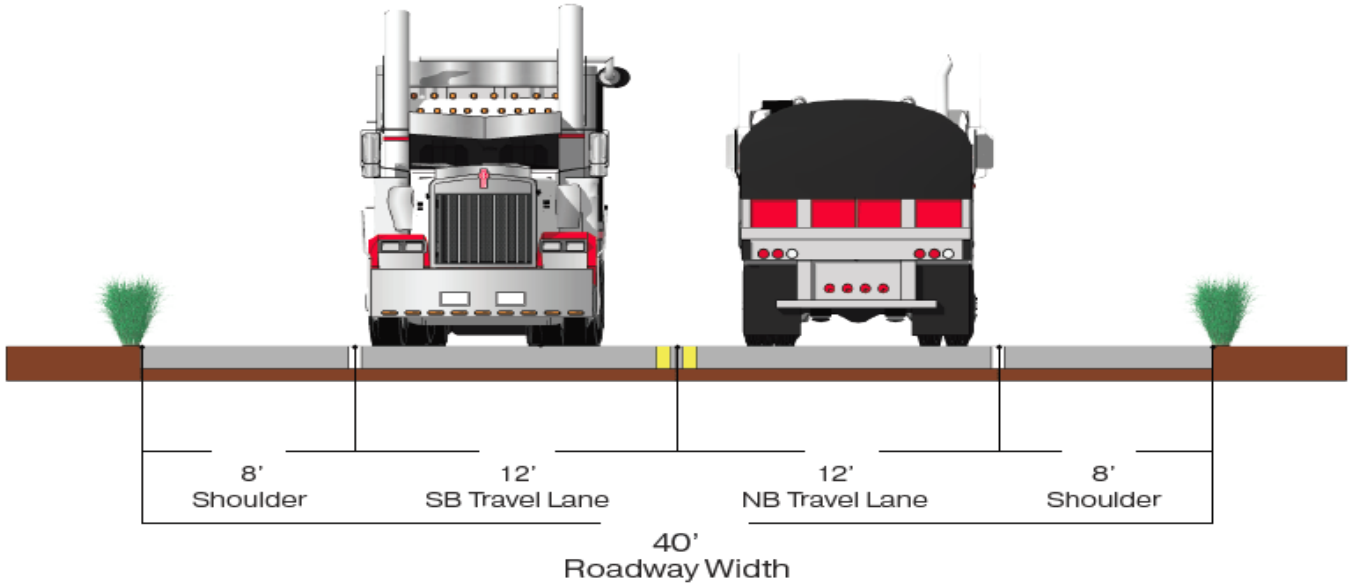

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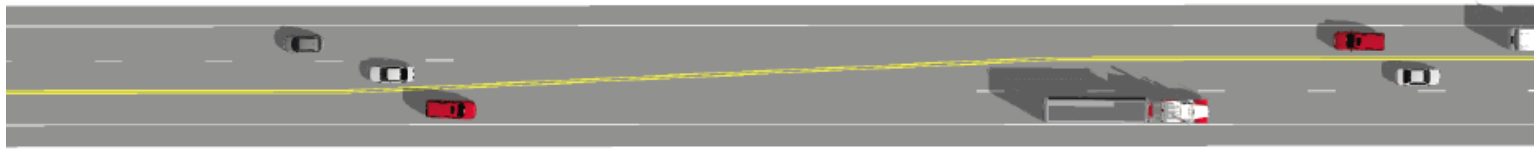

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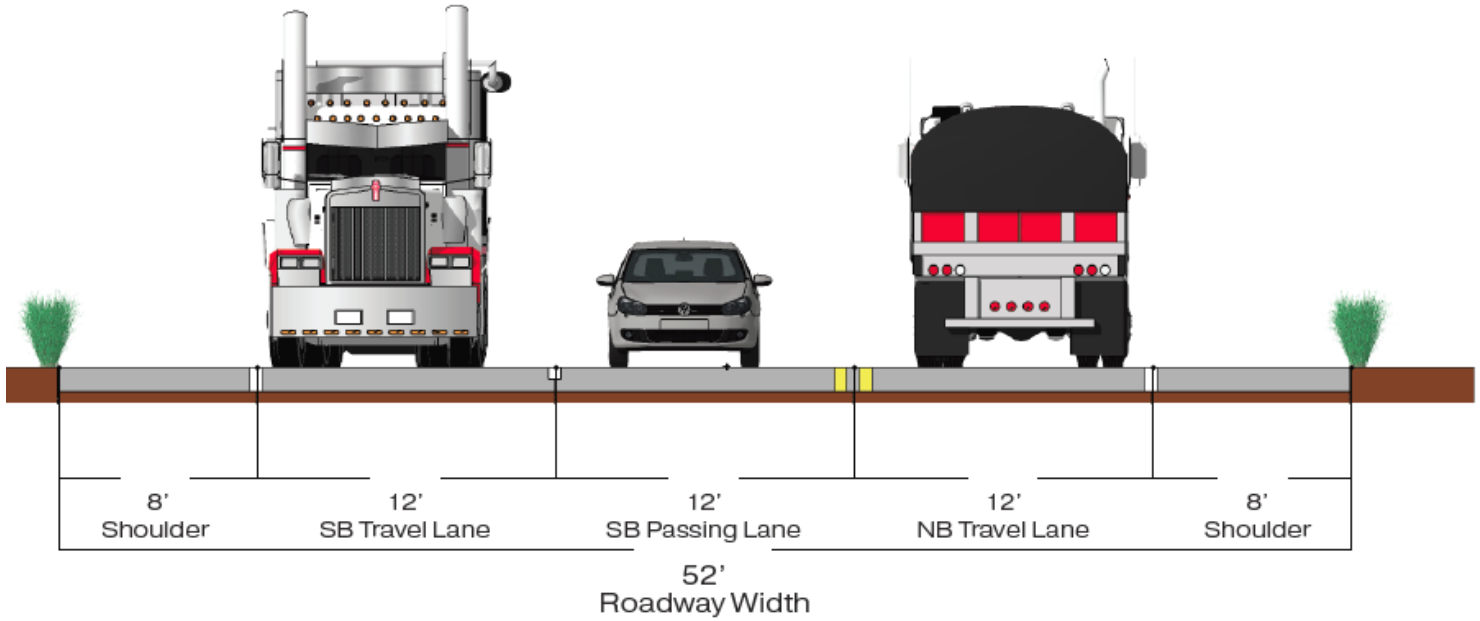

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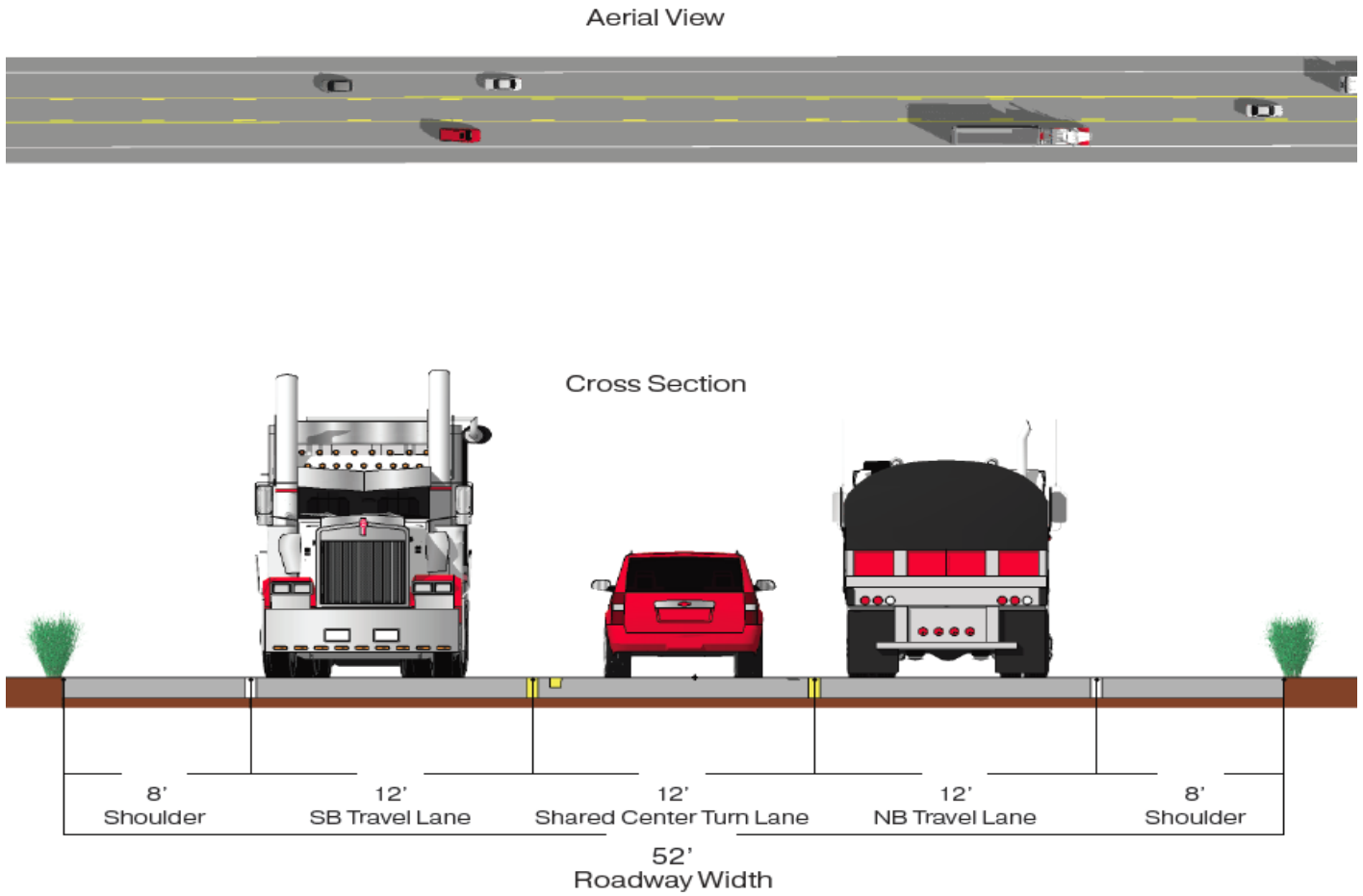

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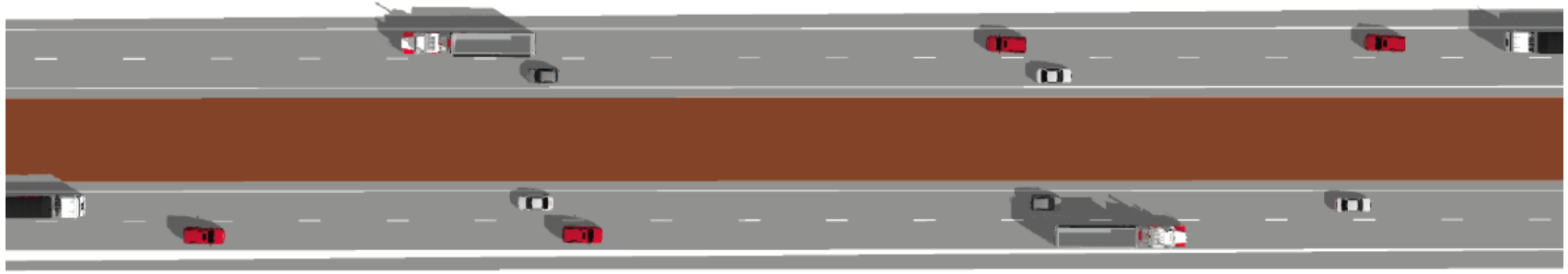

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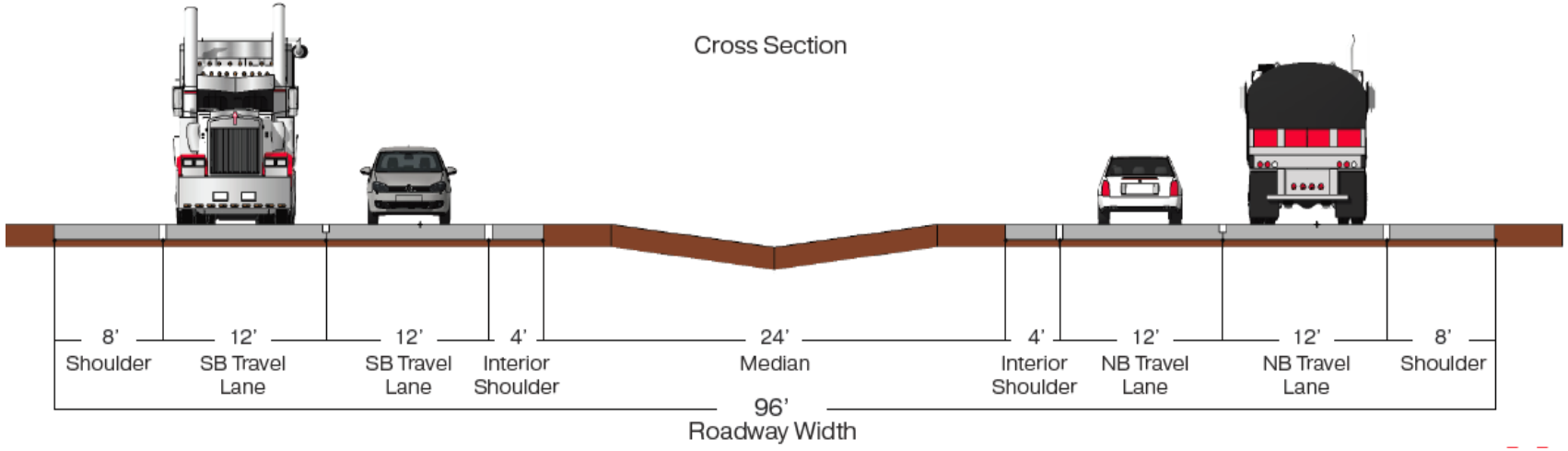

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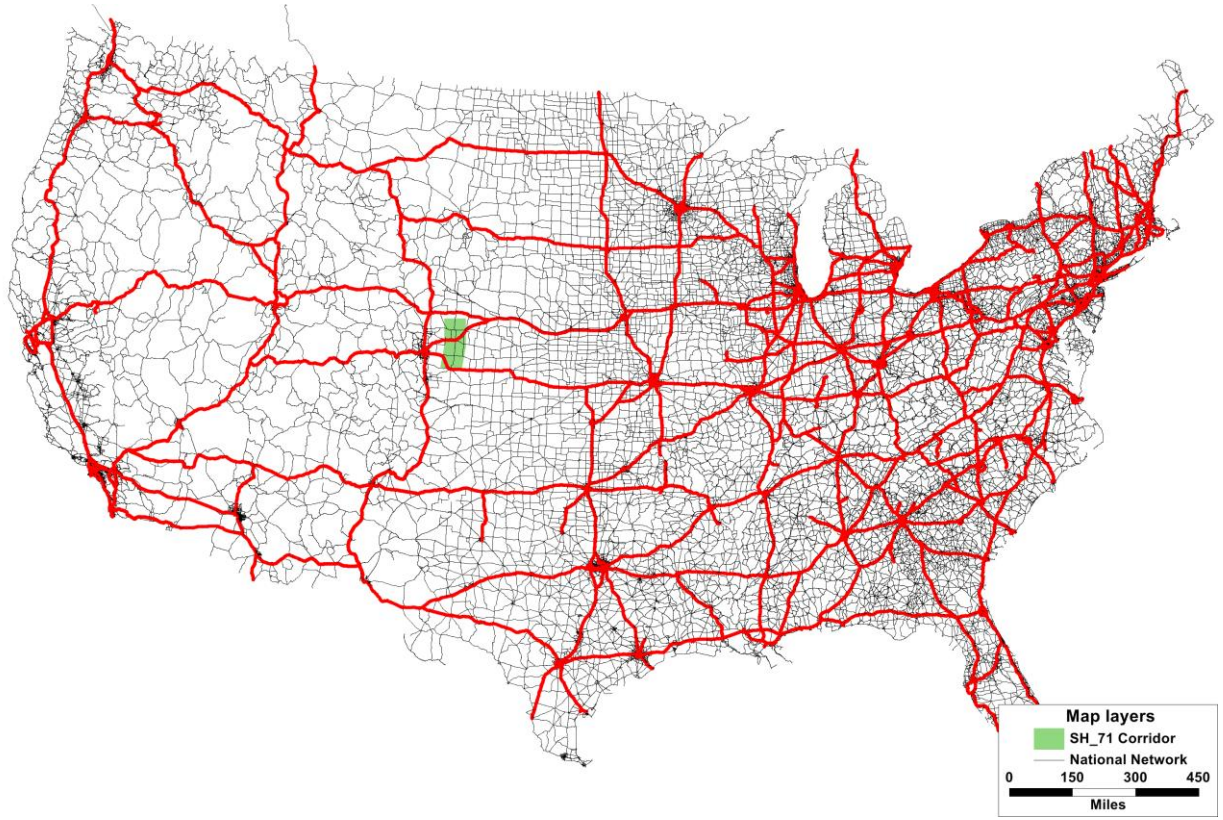

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