



FREIGHT OPPORTUNITIES IN INTERMOUNTAIN WEST

INTERMOUNTAIN ANNUAL MEETING
PHOENIX: APRIL 2016

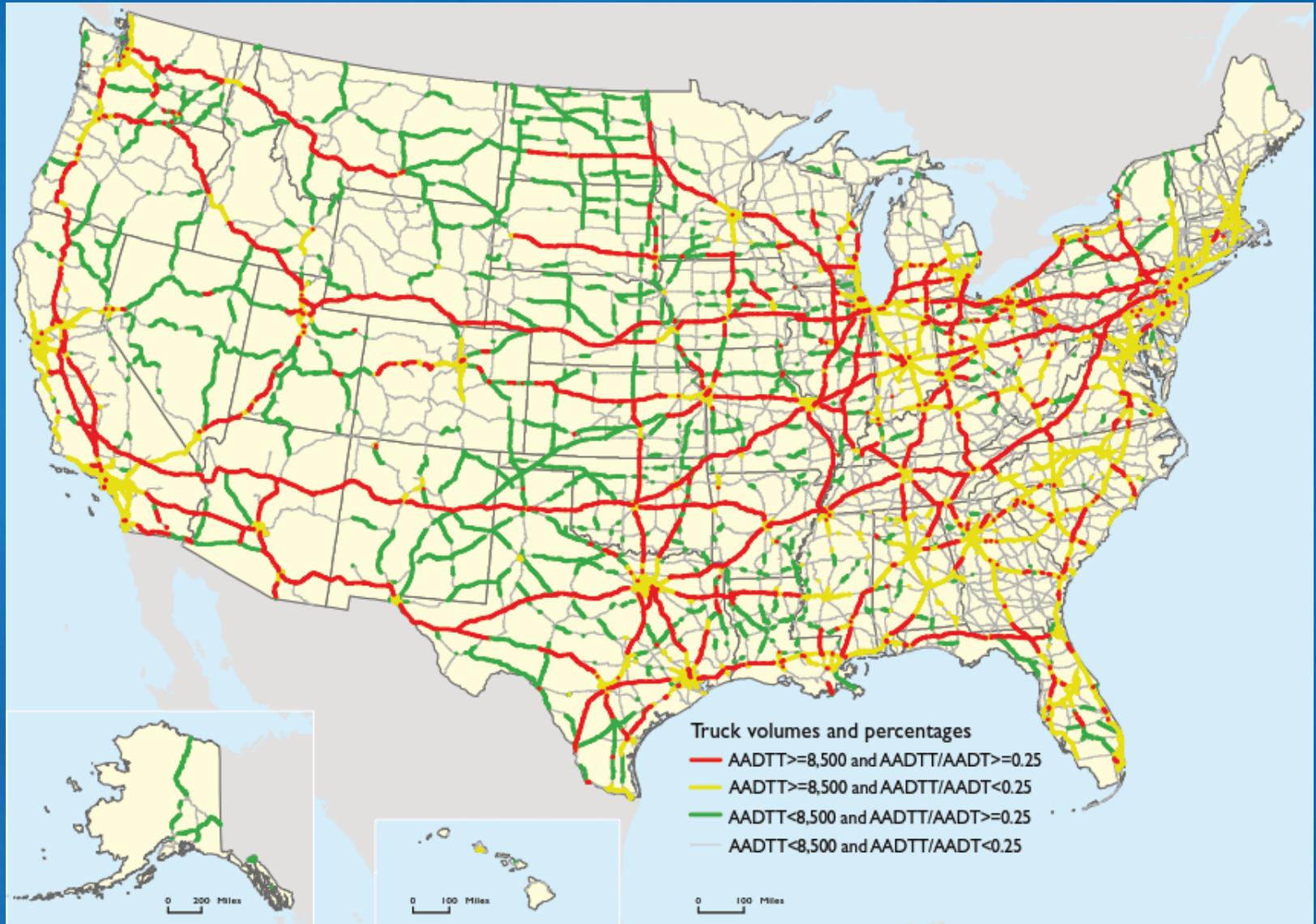




- **Orientation**
- Intermountain Freight Forecast (FAF)
- Intermountain 5-Day Truck Flow (ATRI)
- Supply Chain Performance Measurement
- FAST Act Freight Funding



Major Truck Routes on National Highway System (NHS) – AADTT in 2040



Source:
FHWA

Peak-Period Congestion on High-Volume Truck Portions of NHS - 2011



Source:
FHWA

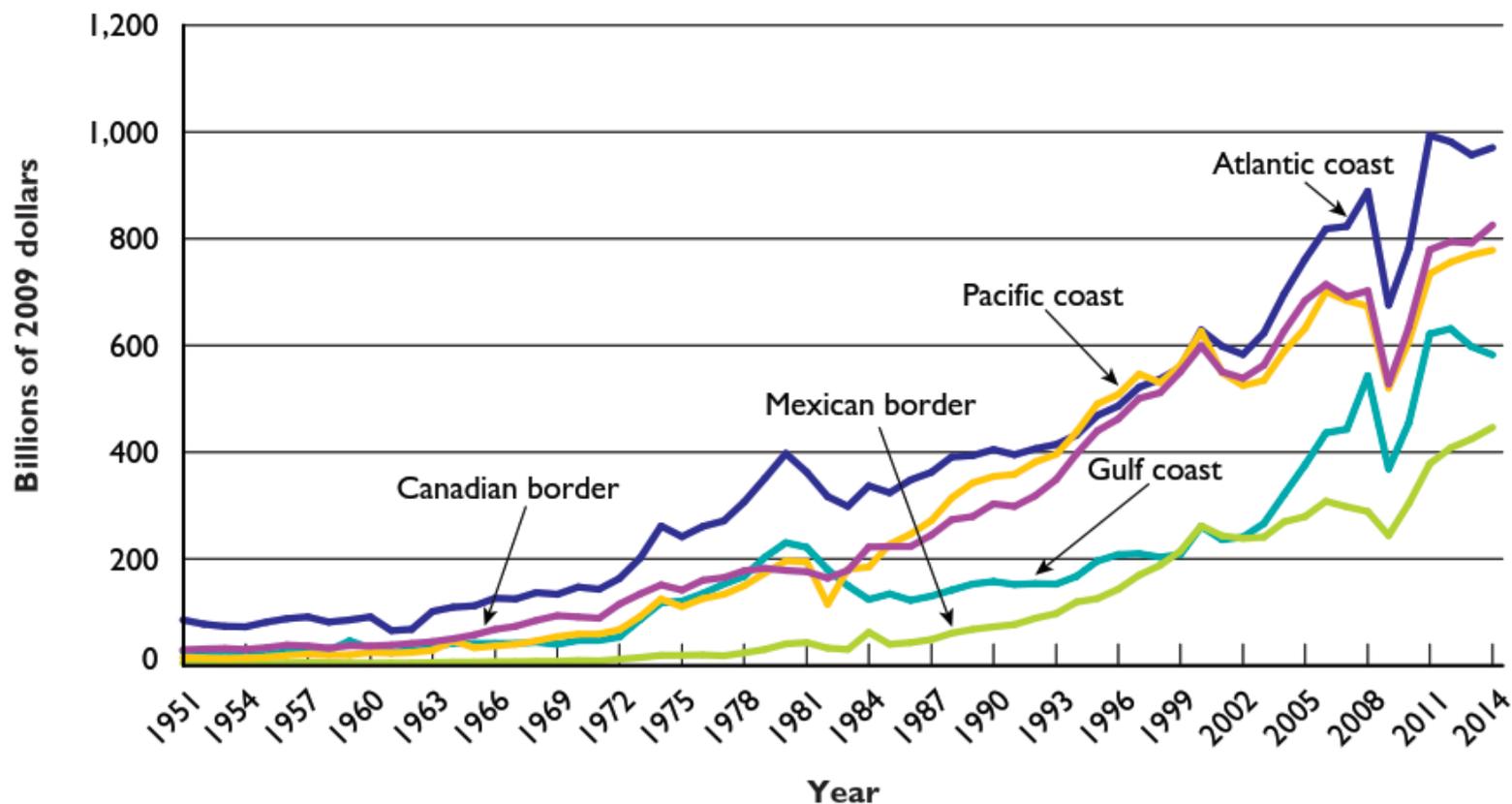
Peak-Period Congestion on High-Volume Truck Portions of NHS - 2040



Source:
FHWA

Trends in US International Trade by Border & Coast

Figure 2-8 Value of U.S. International Merchandise Trade by Coasts and Borders 1951–2014



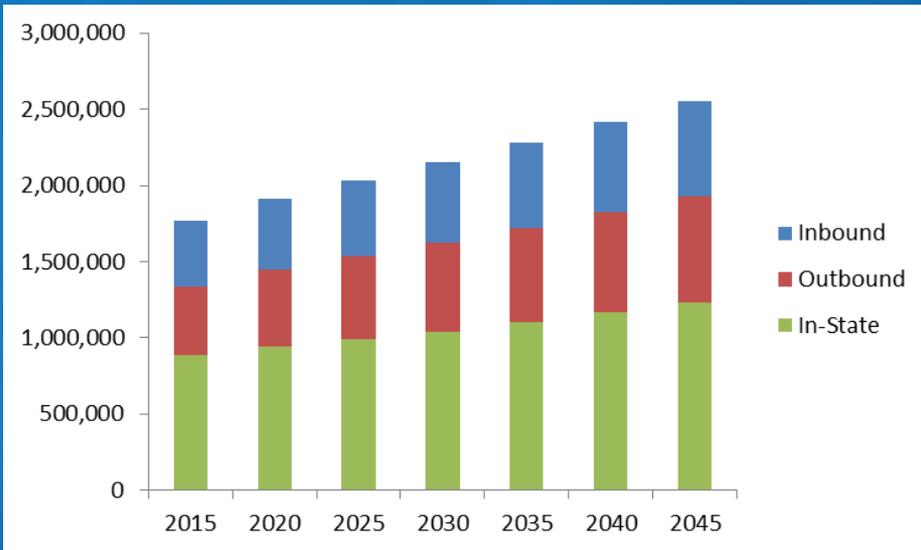


- Orientation
- Intermountain Freight Forecast (FAF)
- Intermountain 5-Day Truck Flow (ATRI)
- Supply Chain Performance Measurement
- FAST Act Freight Funding



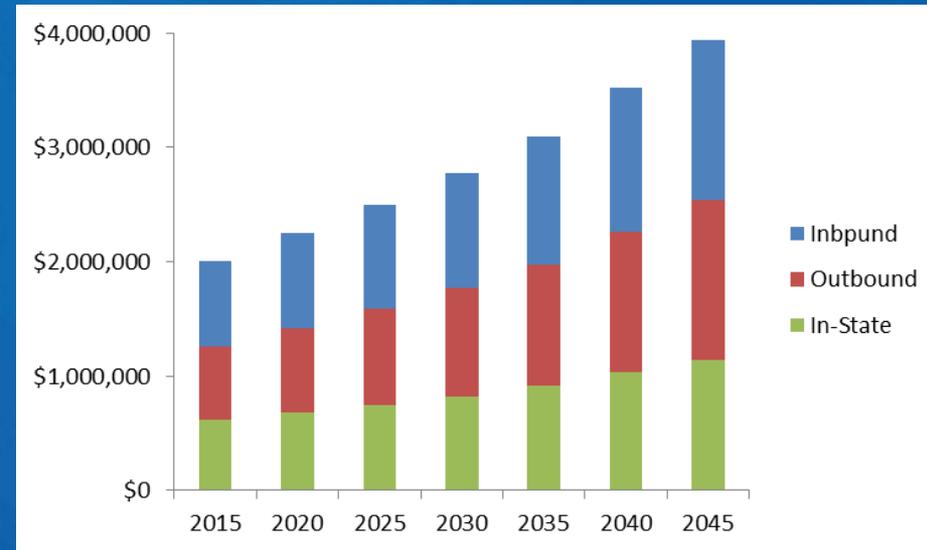
Forecast Growth in Intermountain Freight Traffic

Tonnage (thousands)



1.8 bil to 2.6 bil: 45%
 Fastest: Outbound 55%
 Slowest: In-State 40%

Value (millions)



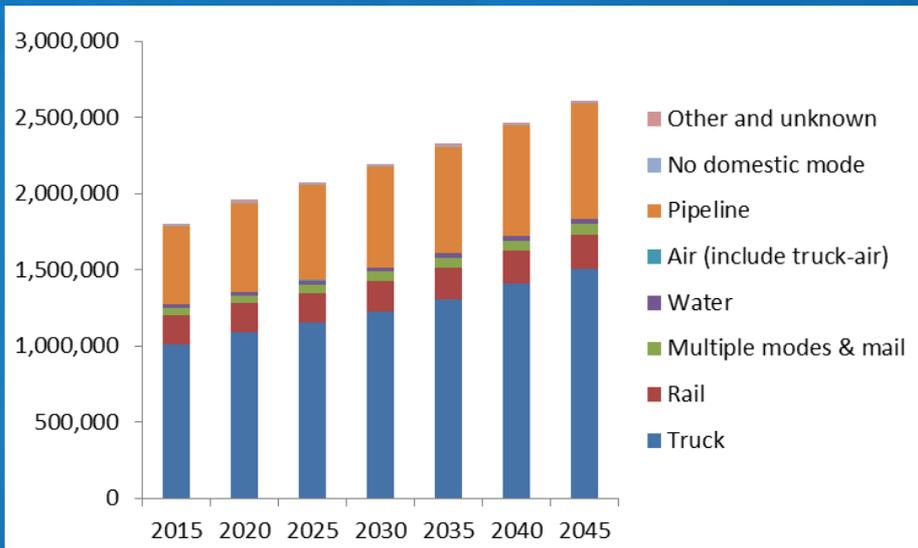
\$2.0 tril to \$3.9 tril: 96%
 Fastest: Outbound 117%
 Slowest: In-State 86%

Source: FAF 4.1

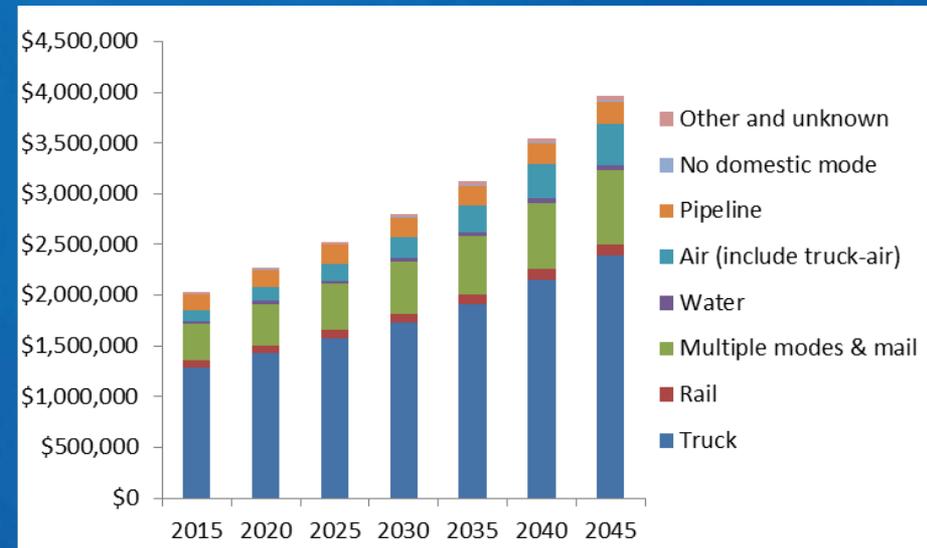
Outbound includes to Intermountain states, Inbound includes from Intermountain states

Intermountain Freight Forecast by Mode

Tonnage (thousands)



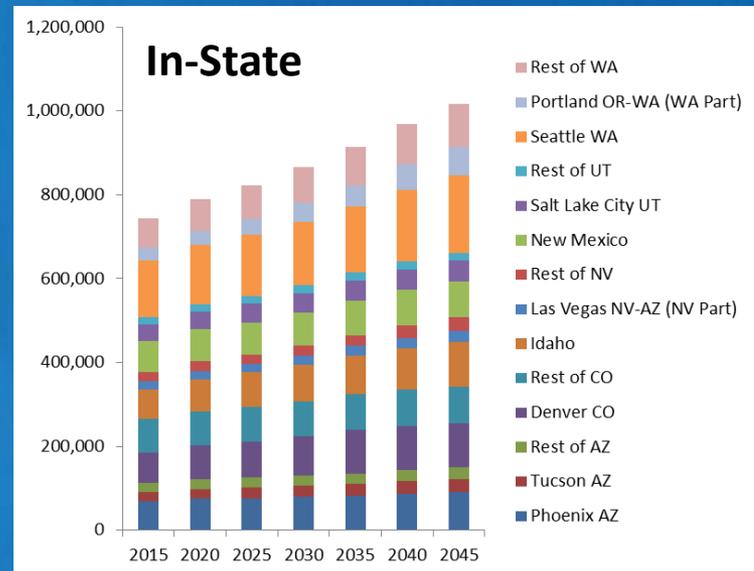
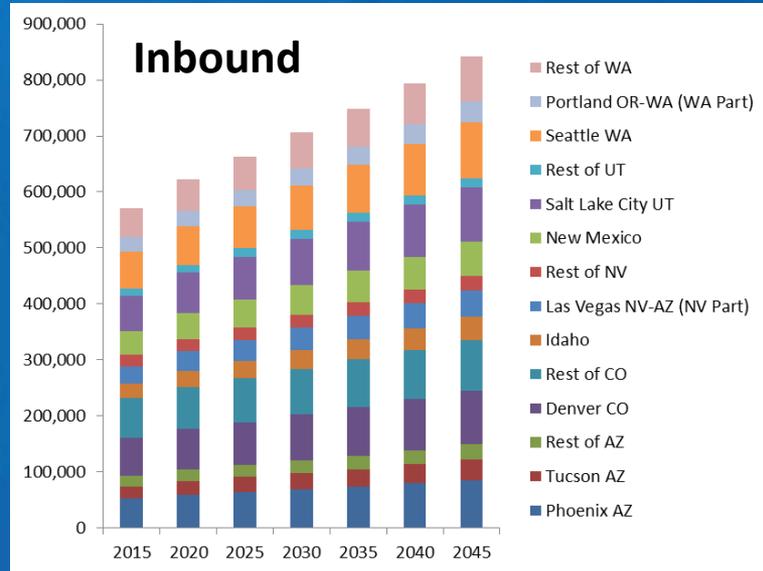
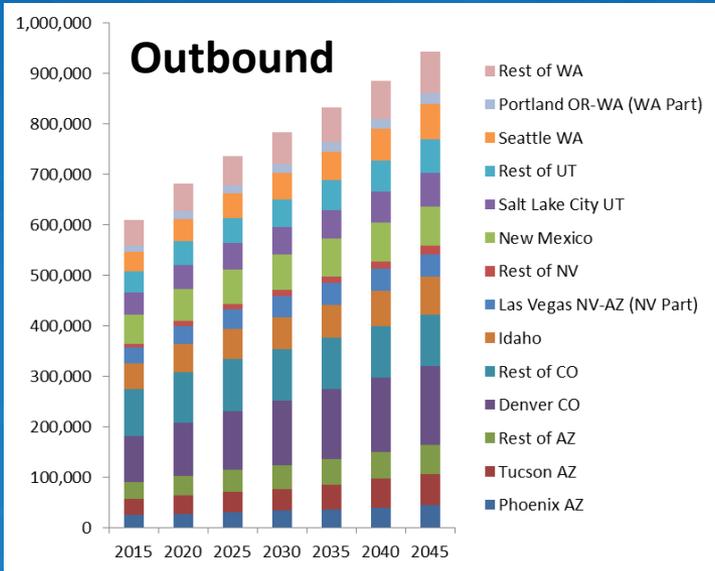
Value (millions)



56% truck, 29% pipeline in 2015
 800 mil. new tons thru 2045
 Share of new tons:
 61% truck, 30% pipeline

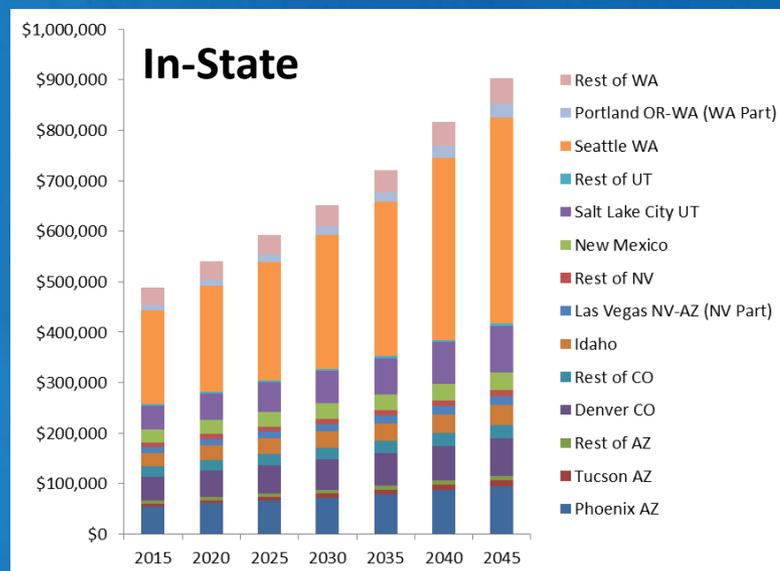
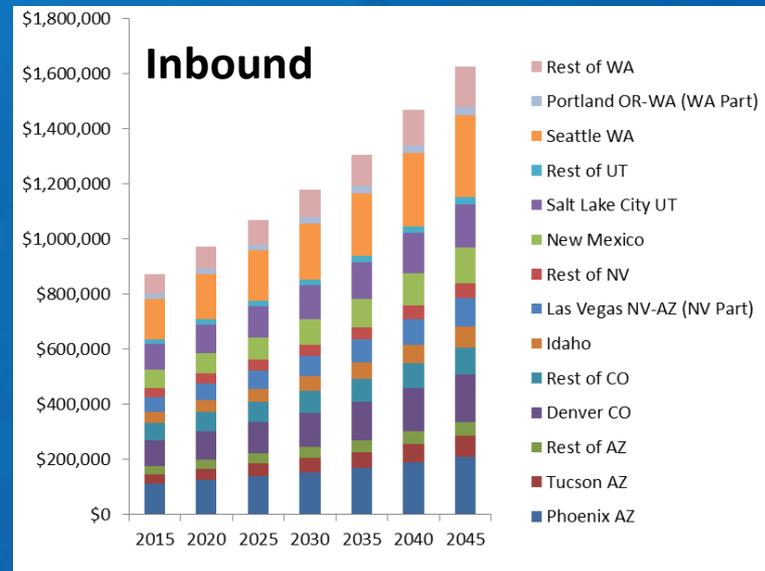
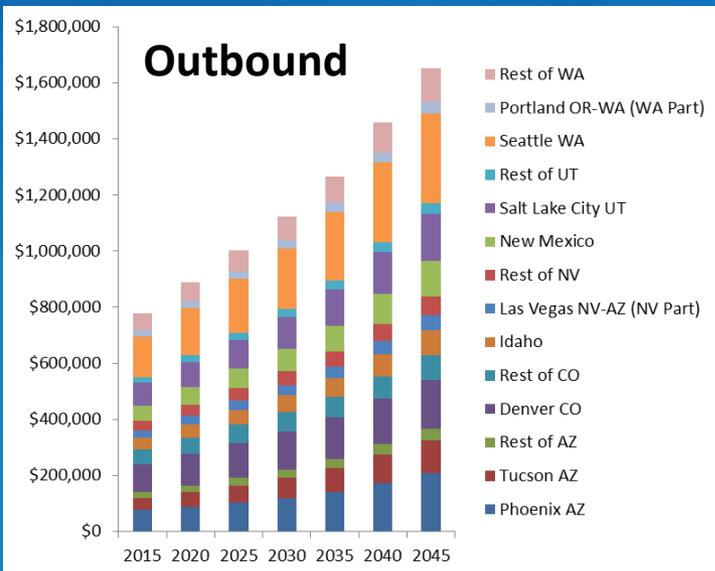
63% truck, 18% mixed modes in 2015
 \$1.9 tril. new value thru 2045
 Share of new value:
 57% truck, 19% multiple, 16% air

Intermountain Forecast: 800 Million New Tons by Sub-Region



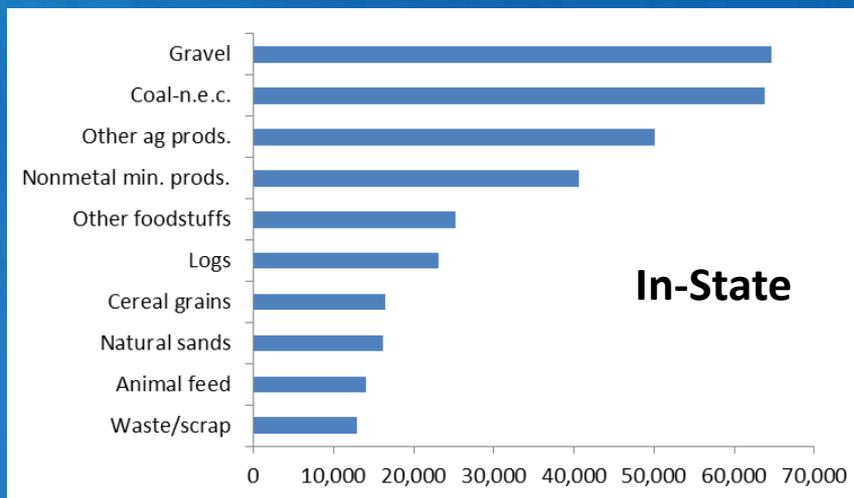
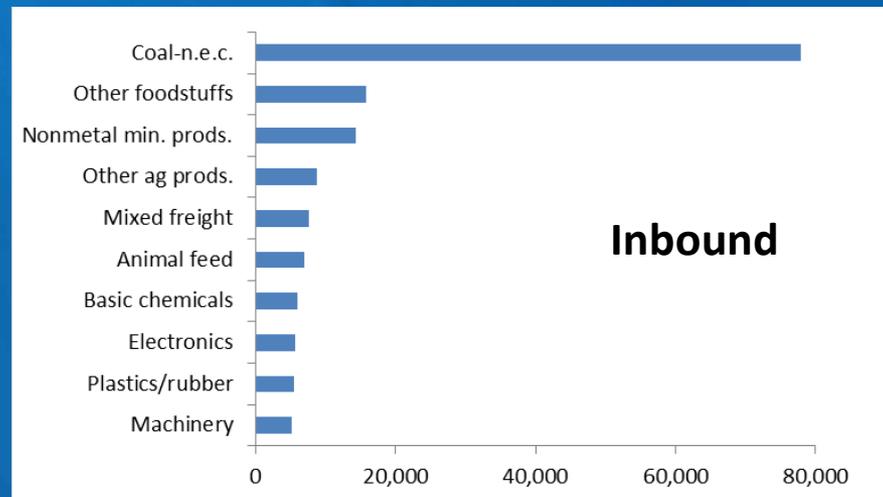
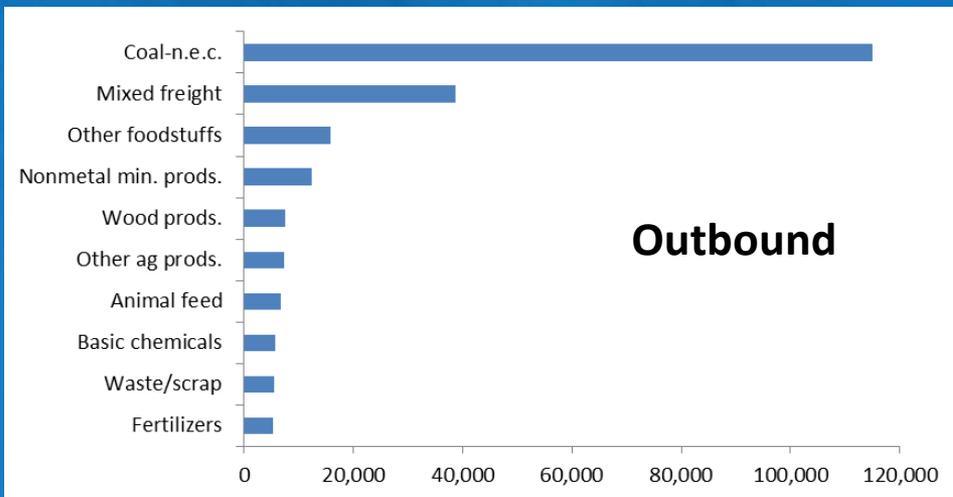
Source: FAF 4.1
Tons (K), Value (MI)

Intermountain Forecast: \$1.9 Trillion New Value by Sub-Region



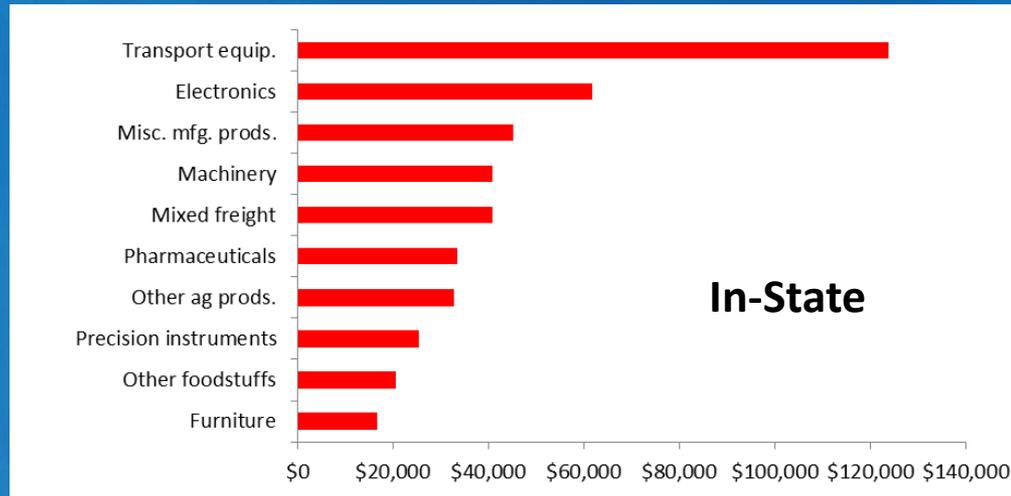
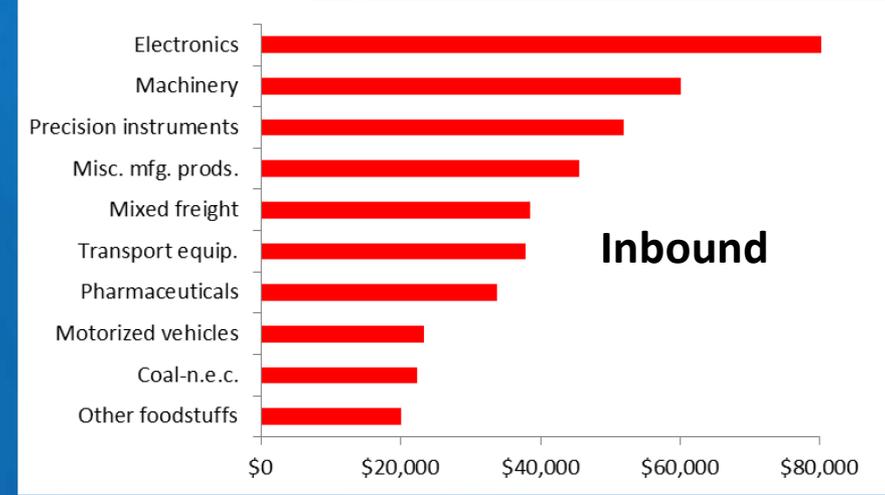
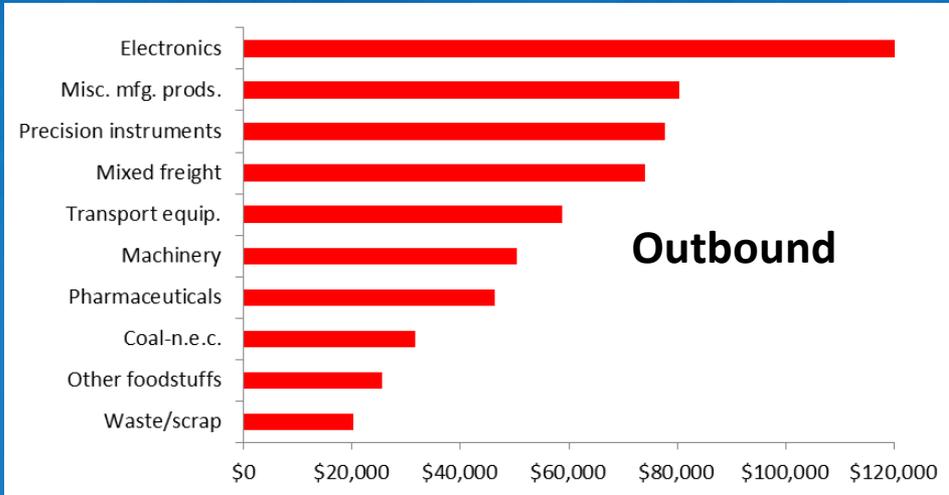
Source: FAF 4.1
Tons (K), Value (MI)

Intermountain Forecast: Top Commodities by New Tons thru 2045



Source: FAF 4.1
Tons (K), Value (MI)

Intermountain Forecast: Top Commodities by New Value thru 2045

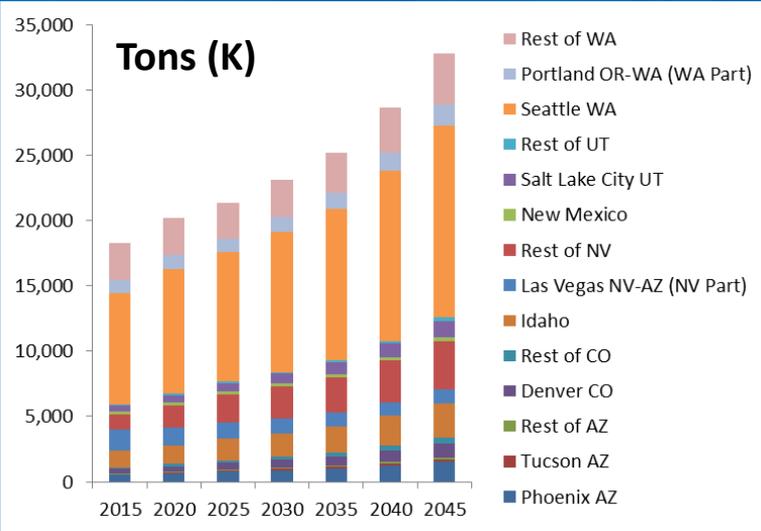


Source: FAF 4.1
Tons (K), Value (MI)

Intermountain Forecast: NAFTA Exports by Sub-Region

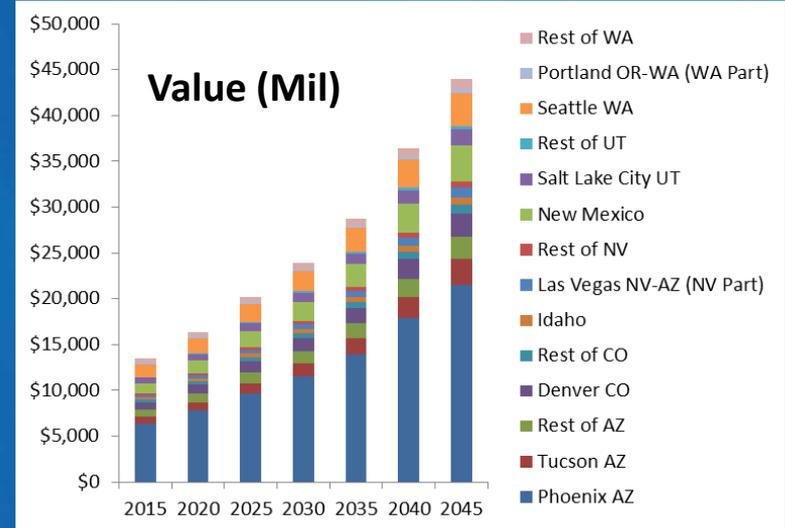
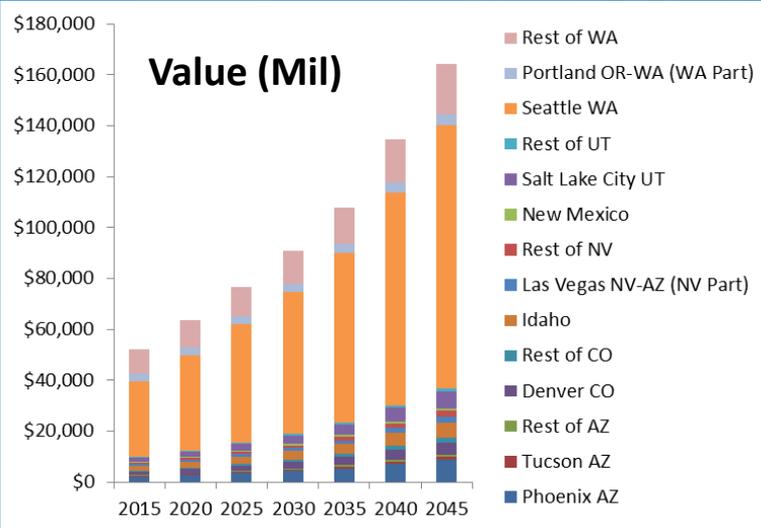
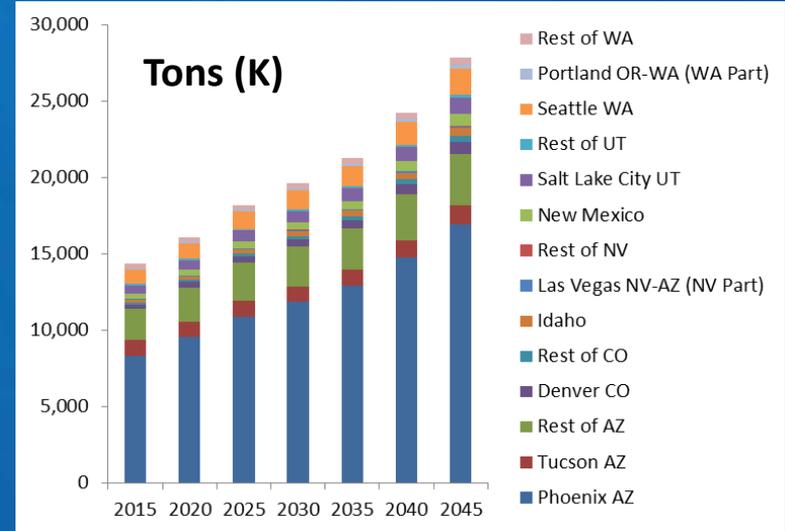
Canada

+ 15 ml. tons, +80%
+ \$112 bl., +216%



Mexico

+ 14 ml. tons, +94%
+ \$31 bl., +226%

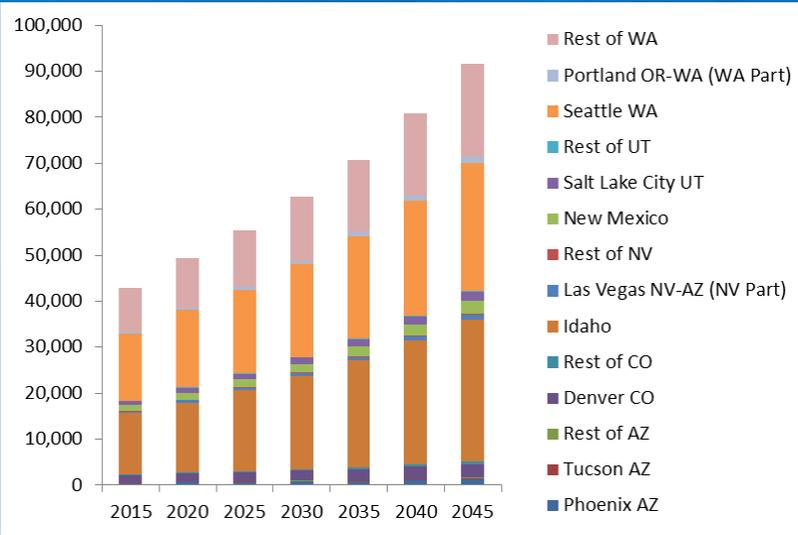


Source:
FAF 4.1

Intermountain Forecast: NAFTA Imports by Sub-Region

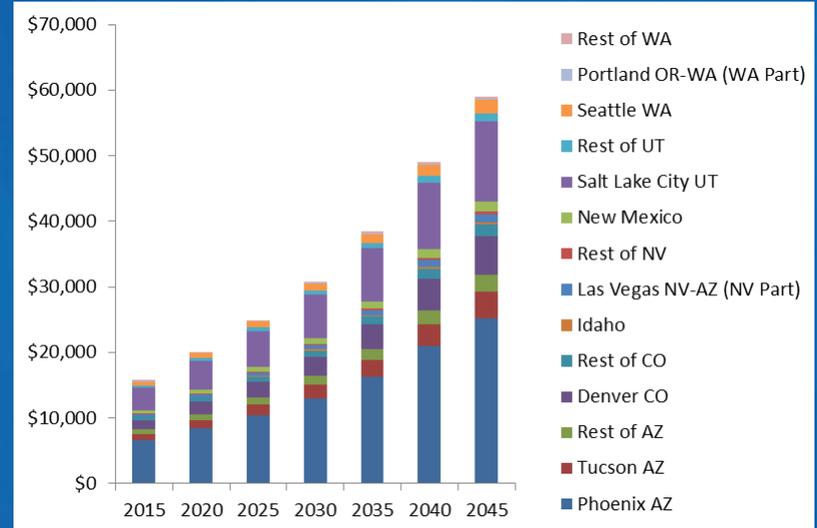
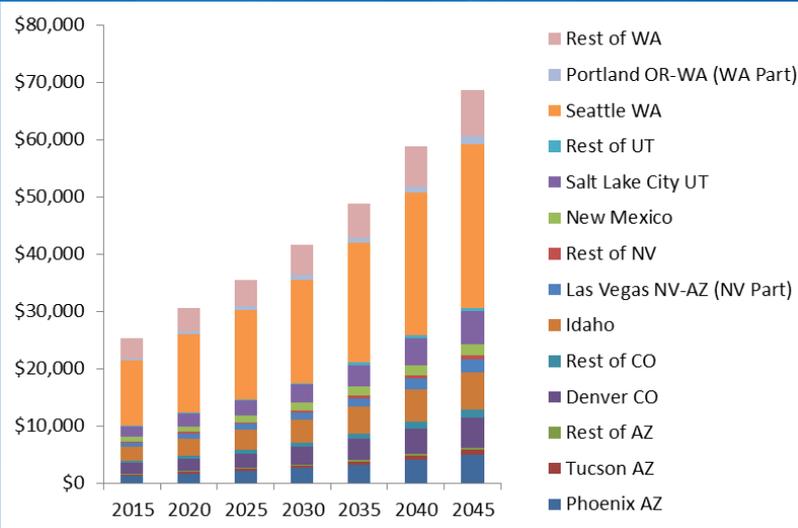
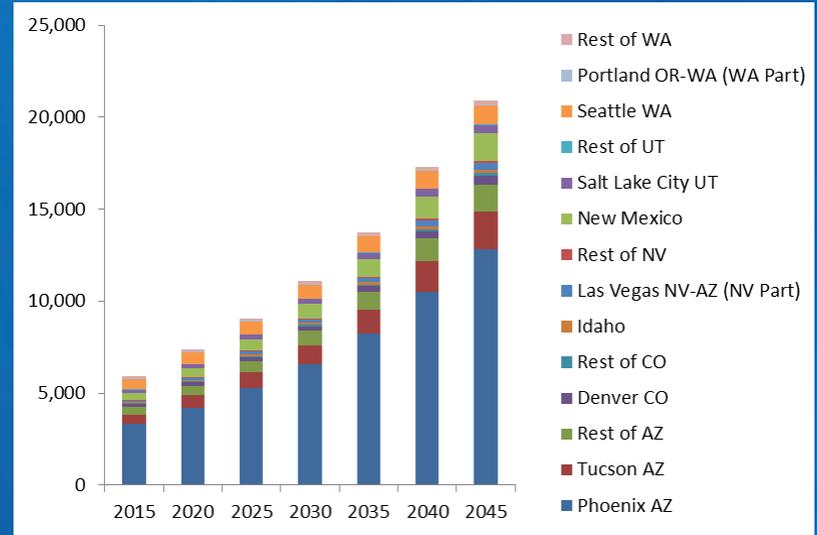
Canada

+ 49 ml. tons, +114%
+ \$43 bl., +172%



Mexico

+ 15 ml. tons, +253%
+ \$43 bl., +275%



Source:
FAF 4.1



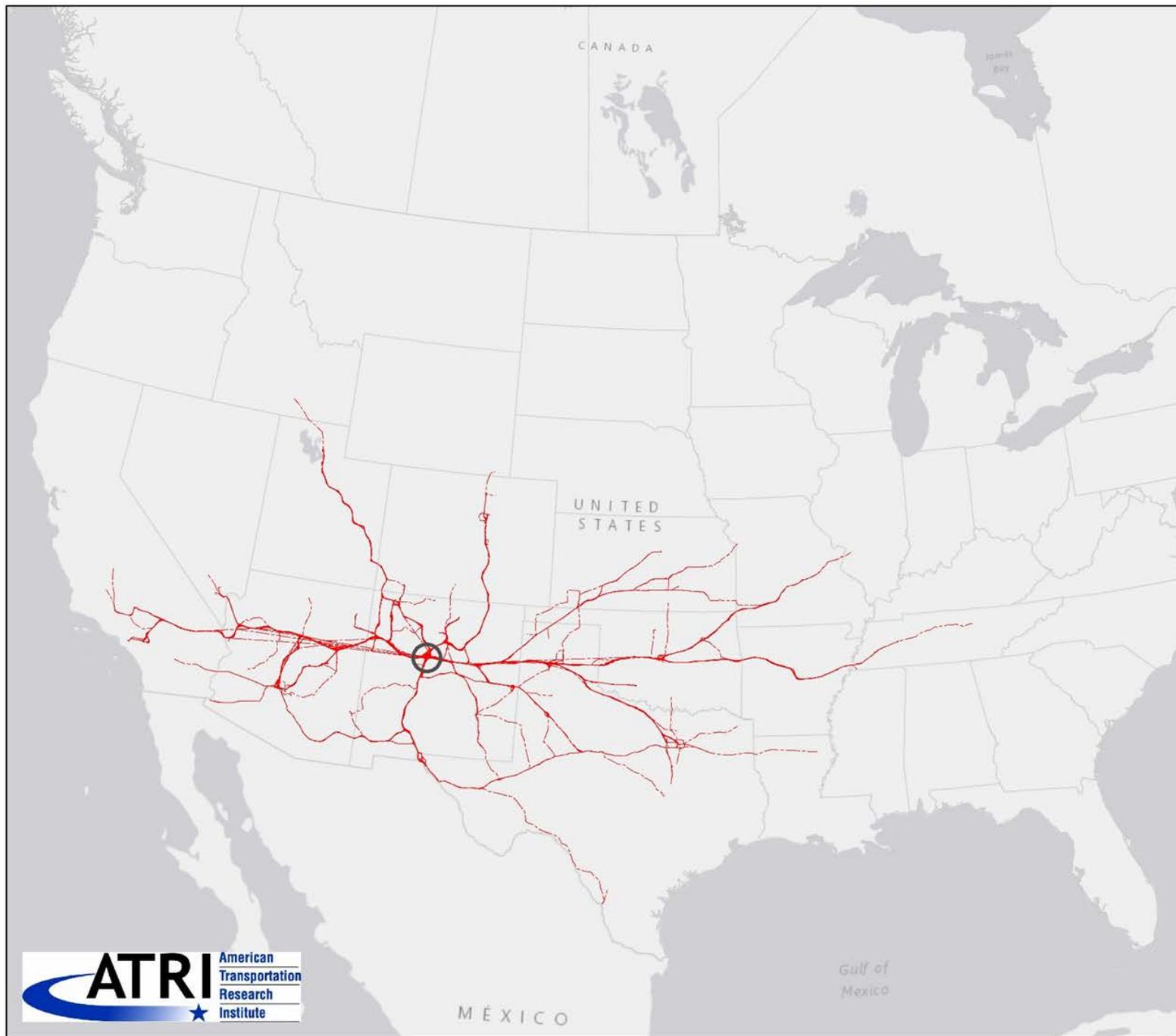
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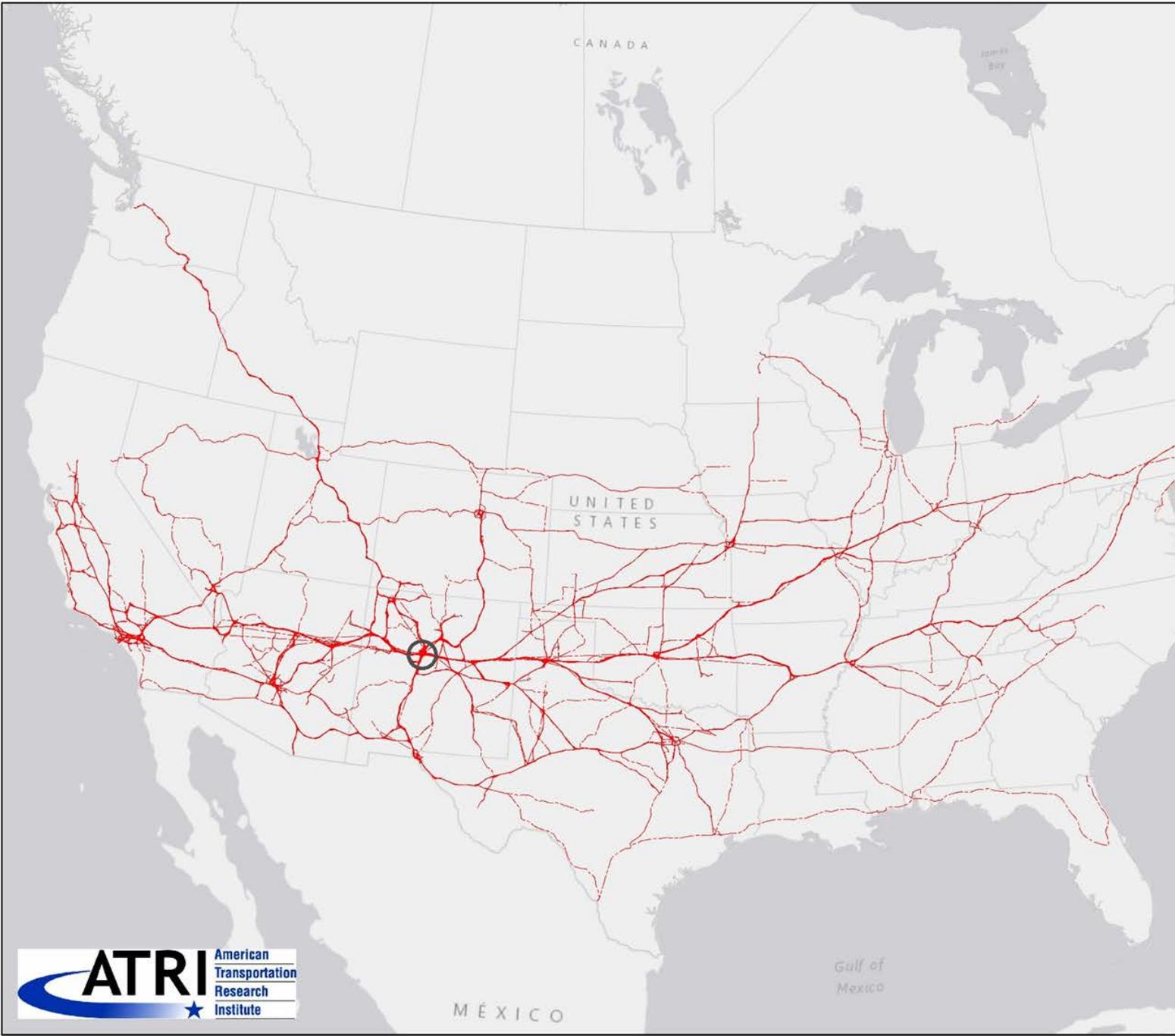
Albuquerque, NM 5-day Truck Flows

By ATRI

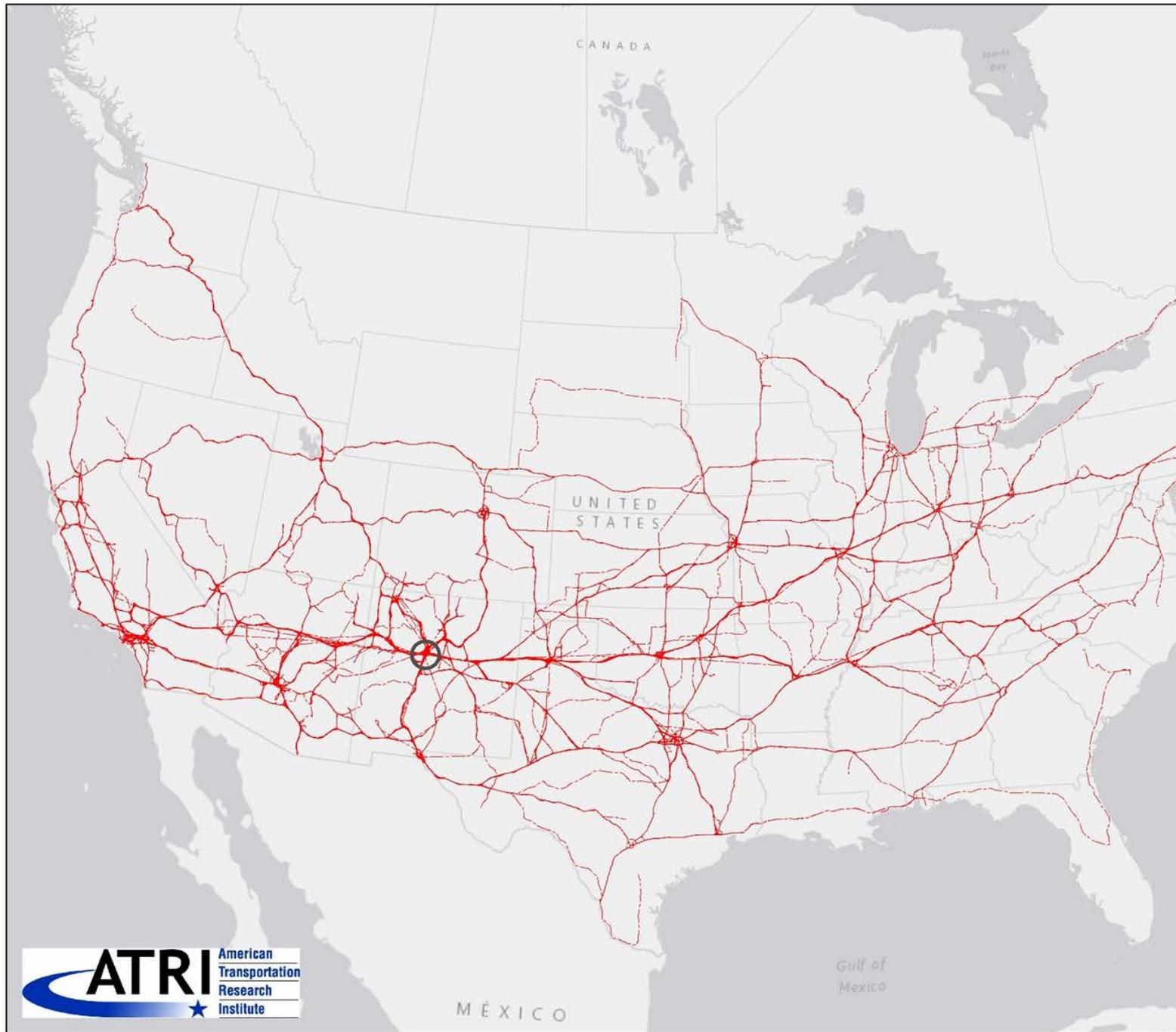
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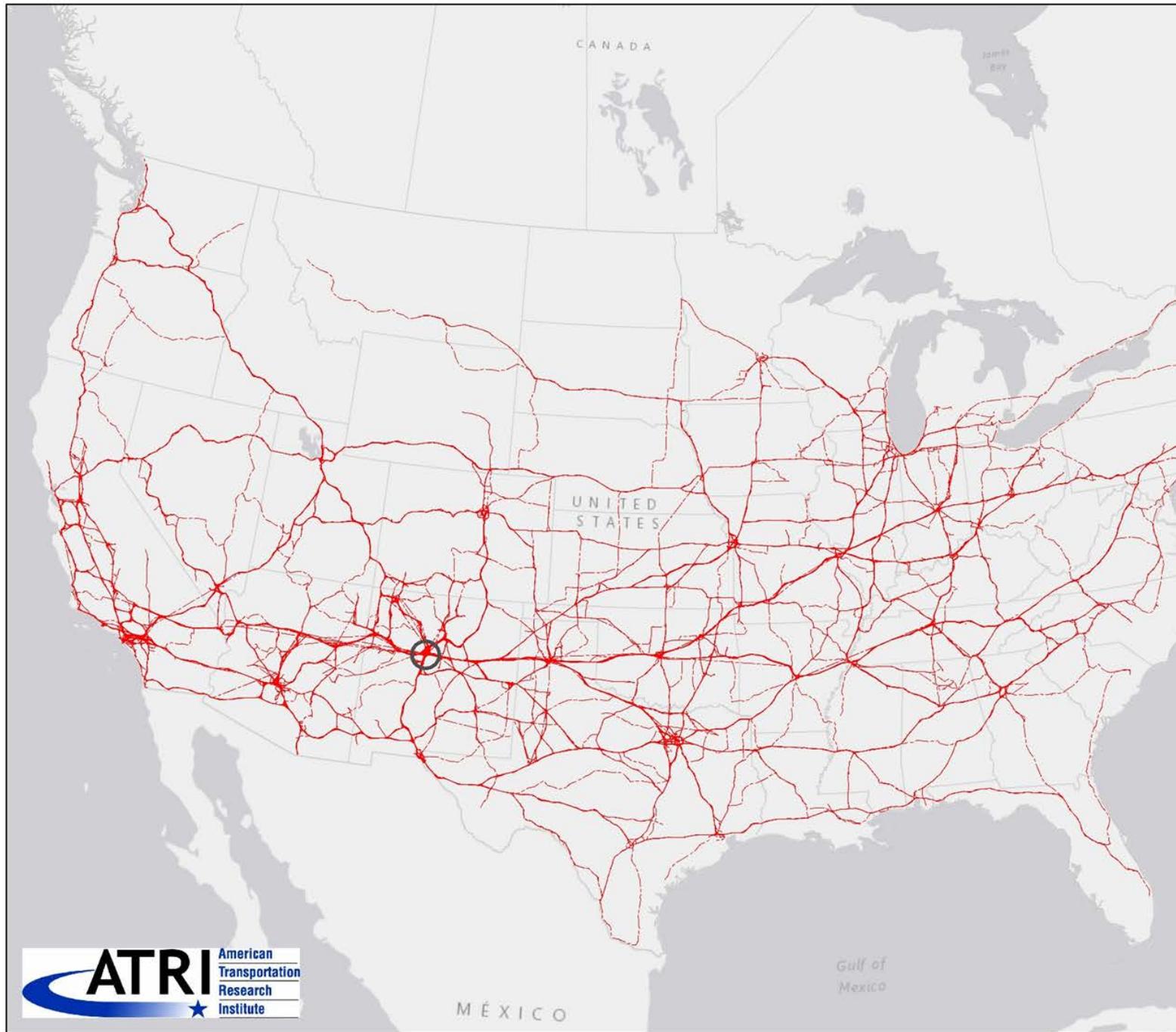
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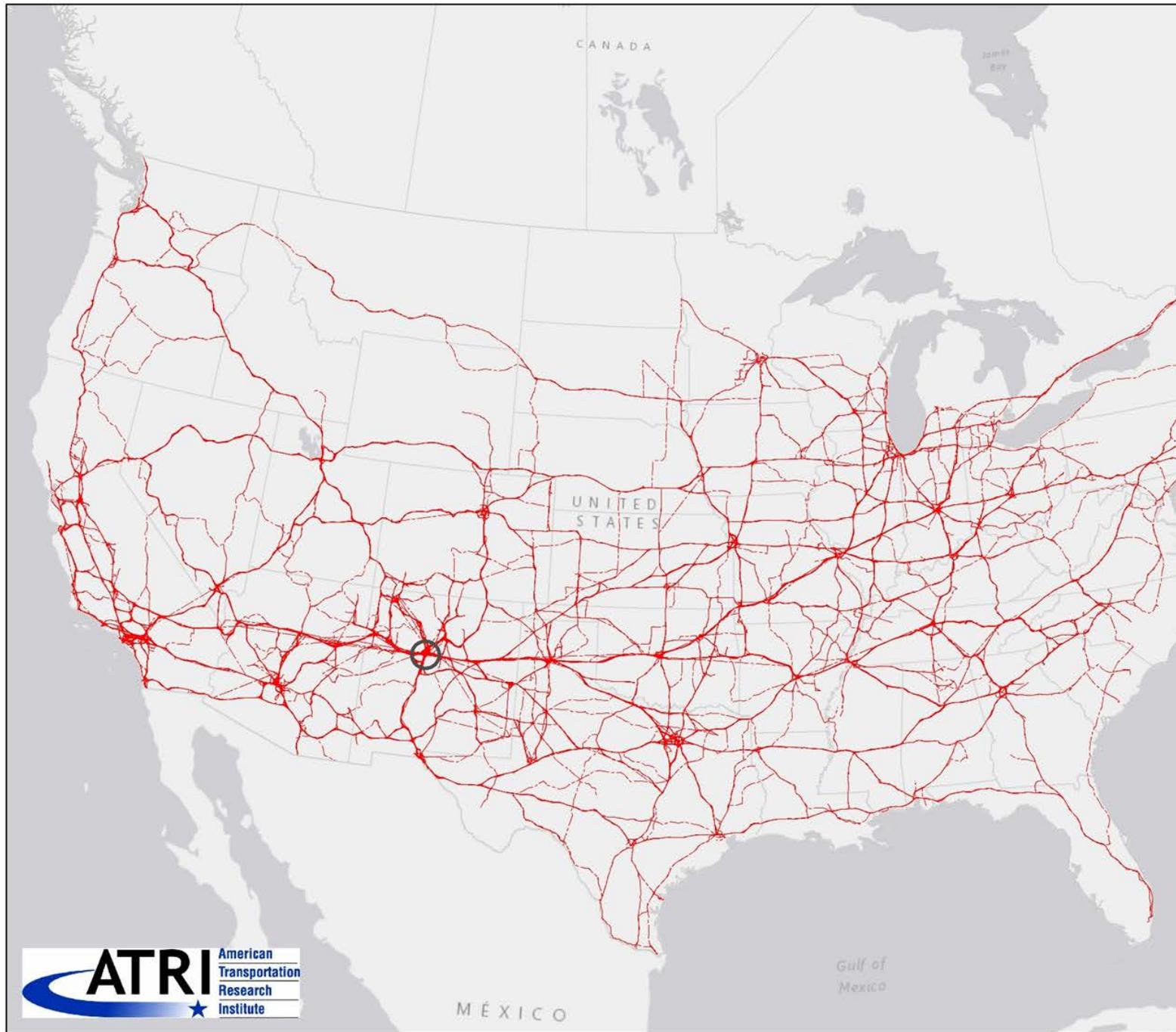
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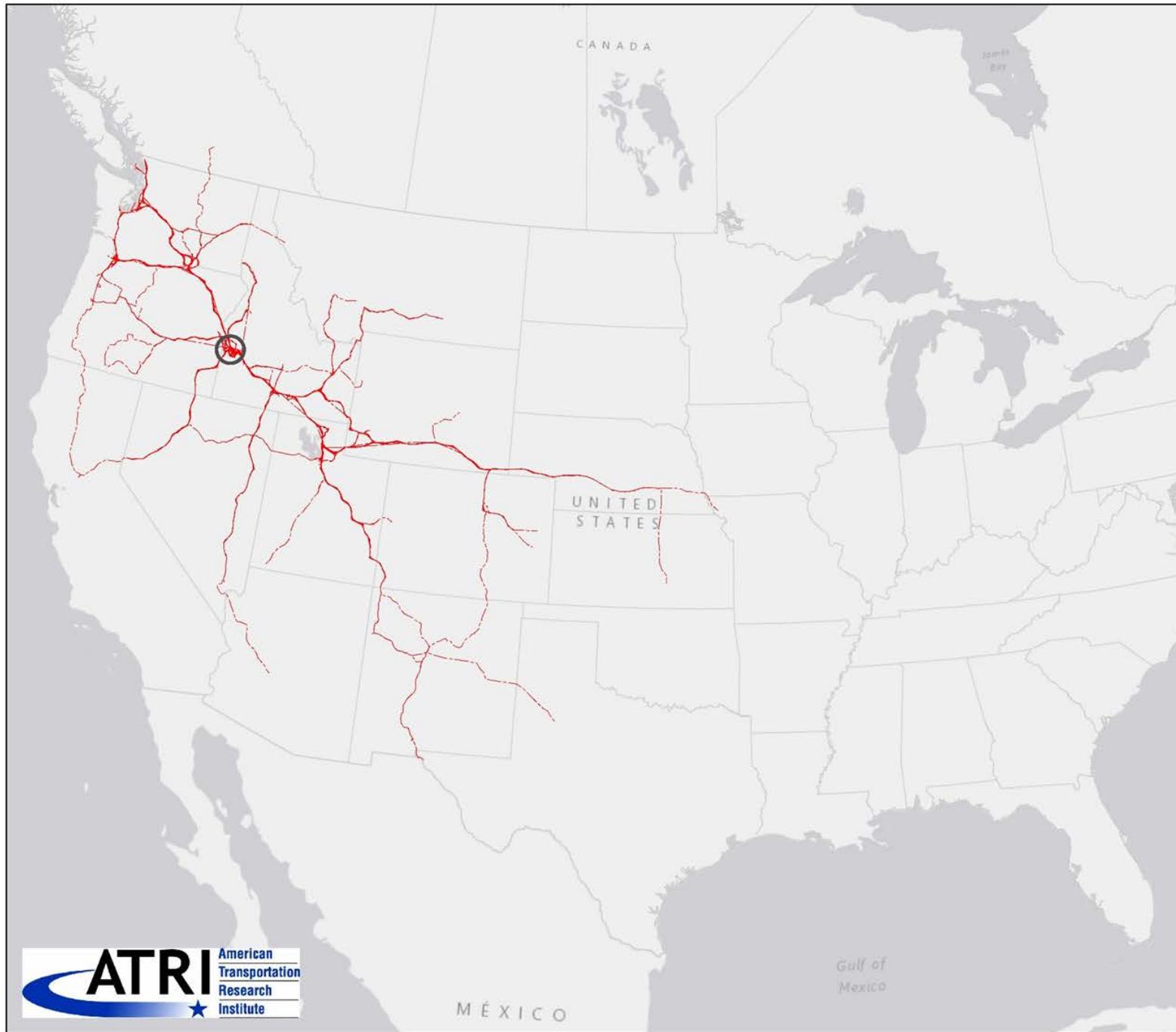
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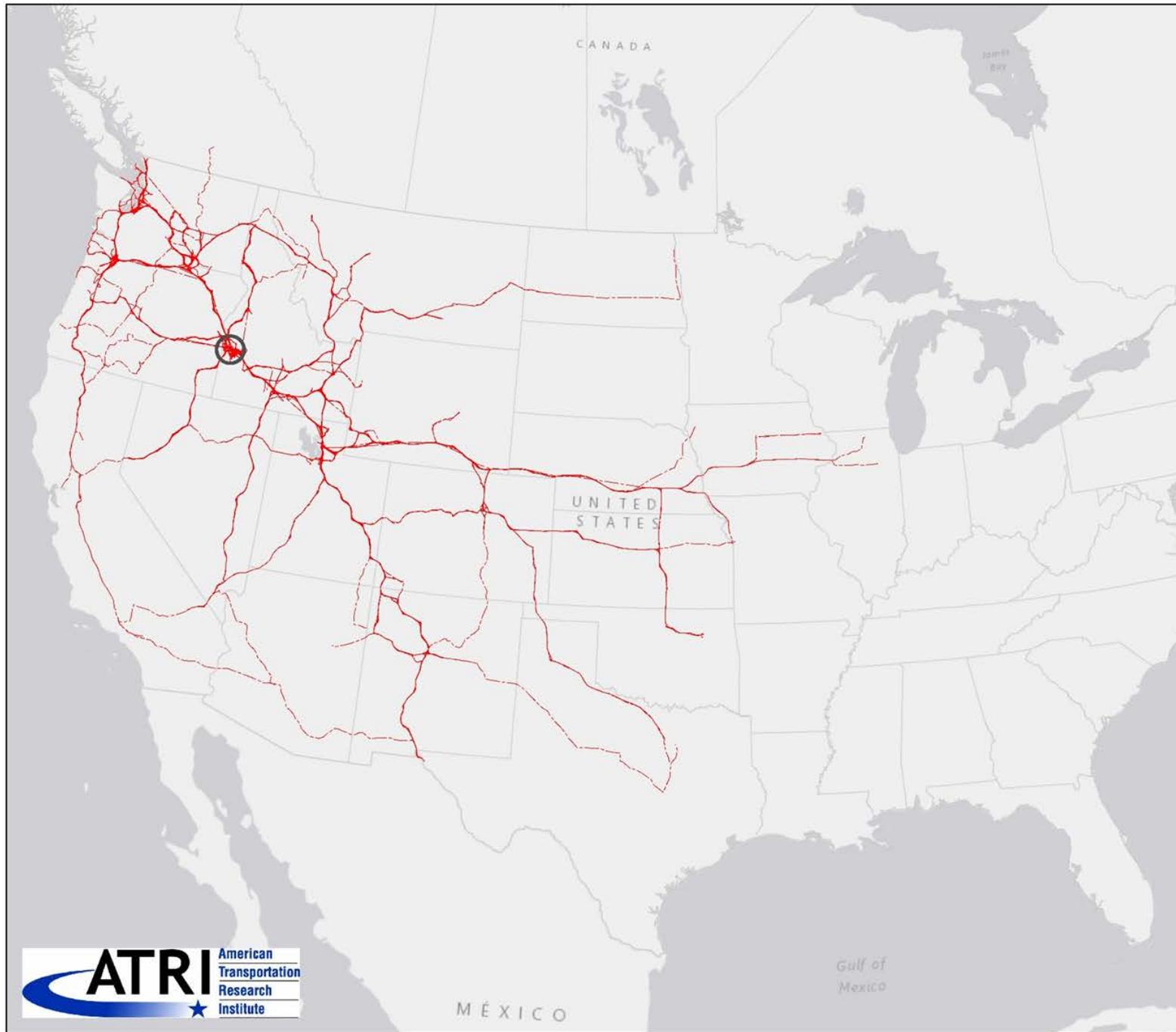
Boise, ID 5-day Truck Flows

By ATRI

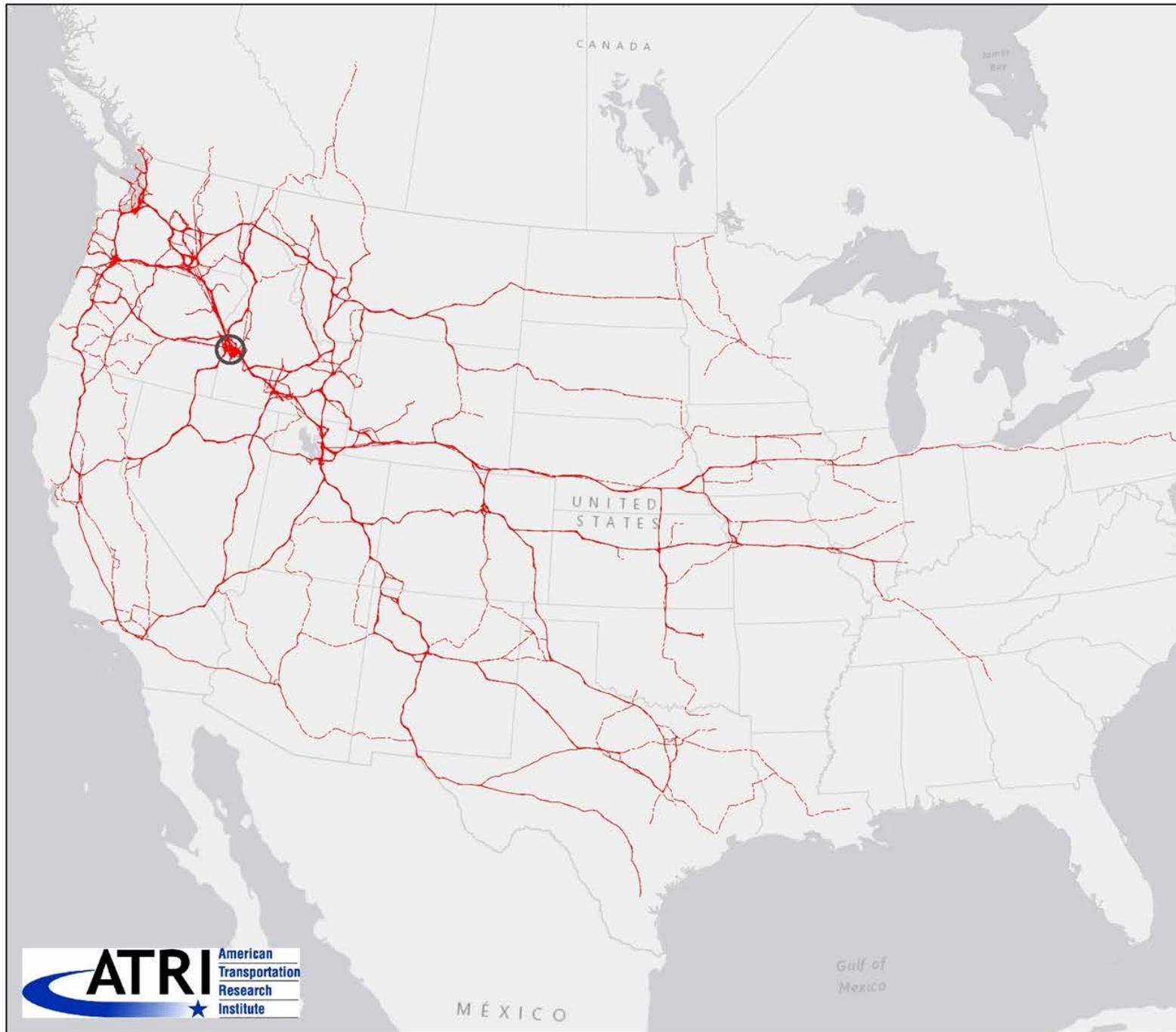
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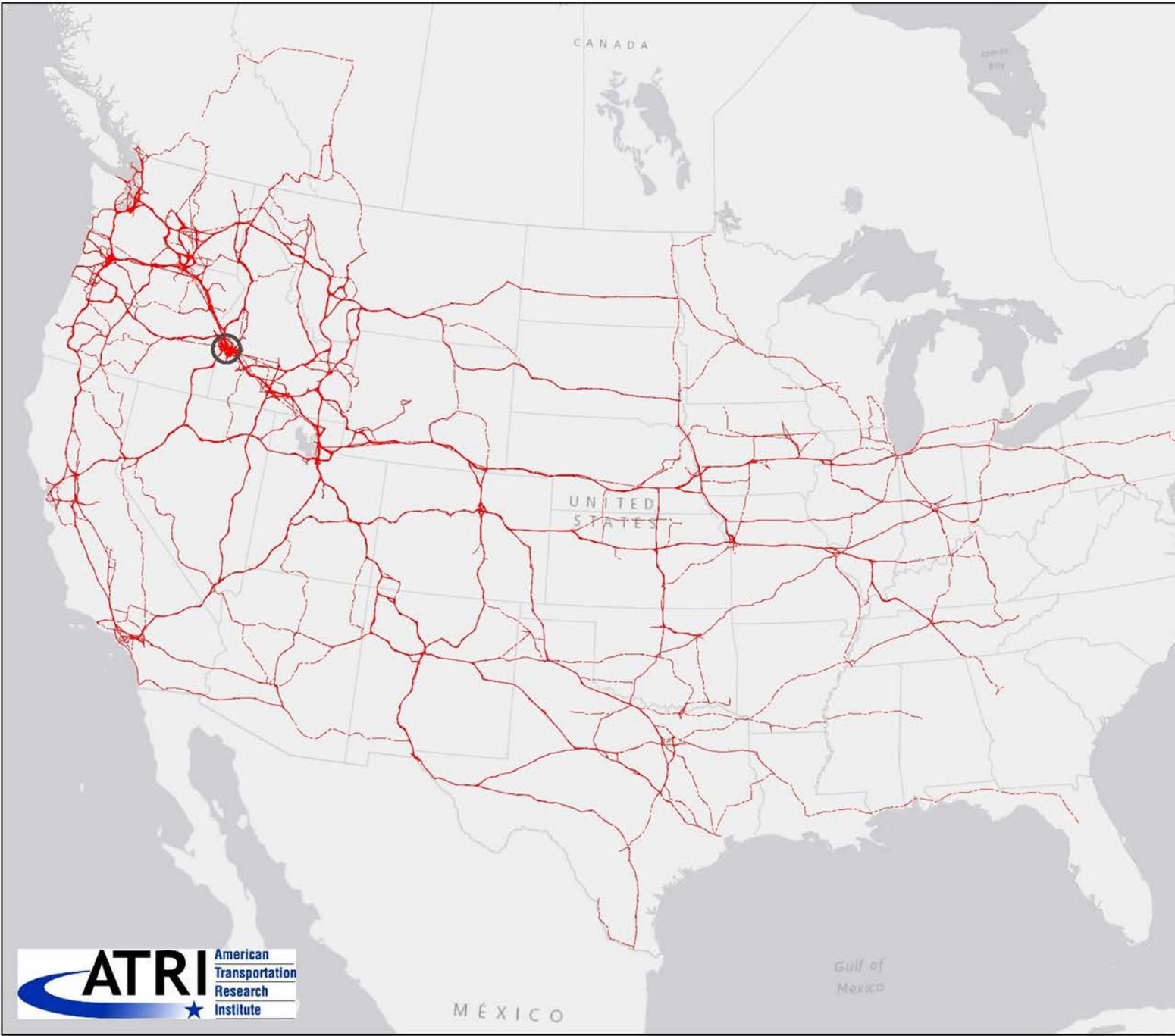
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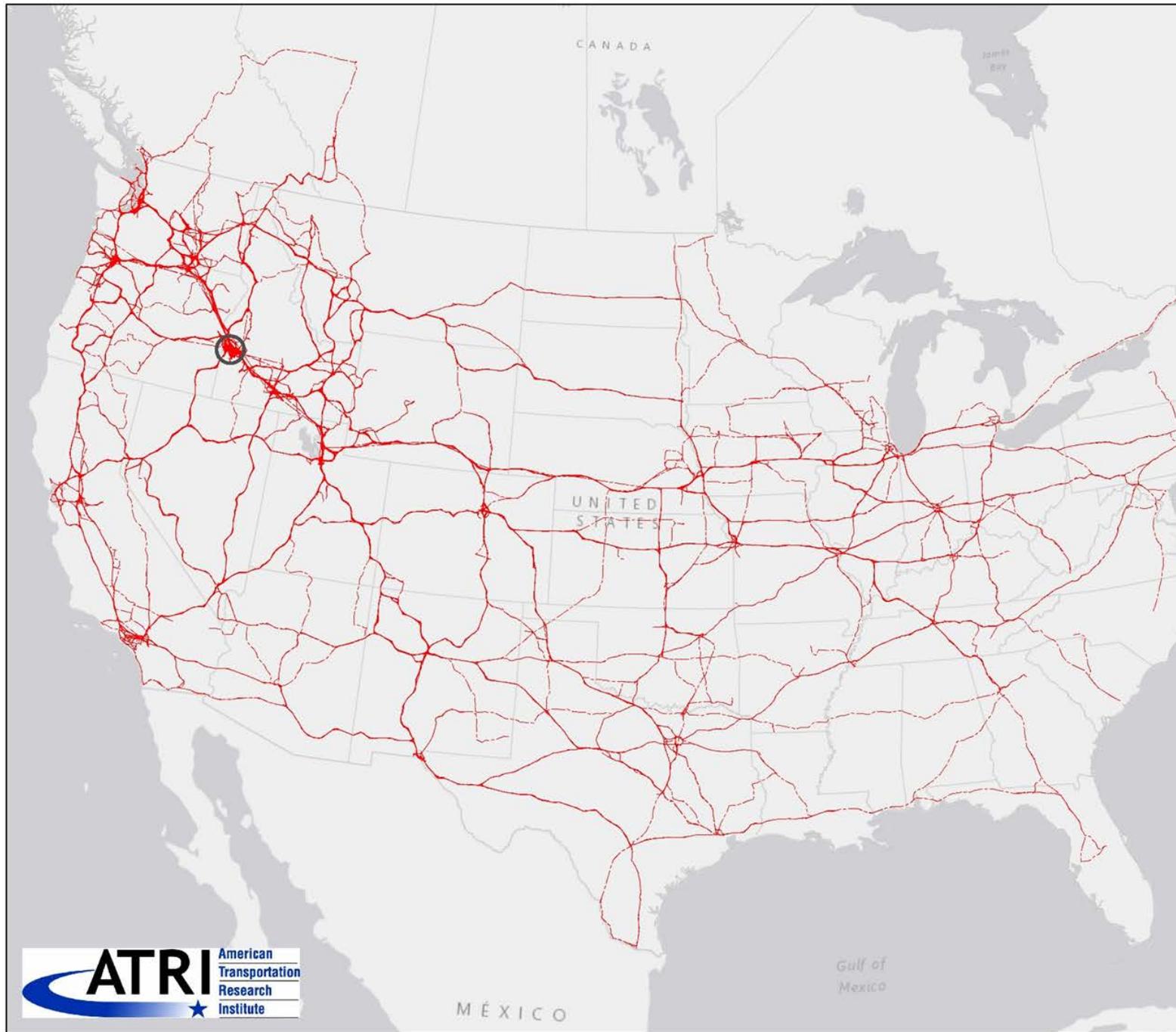
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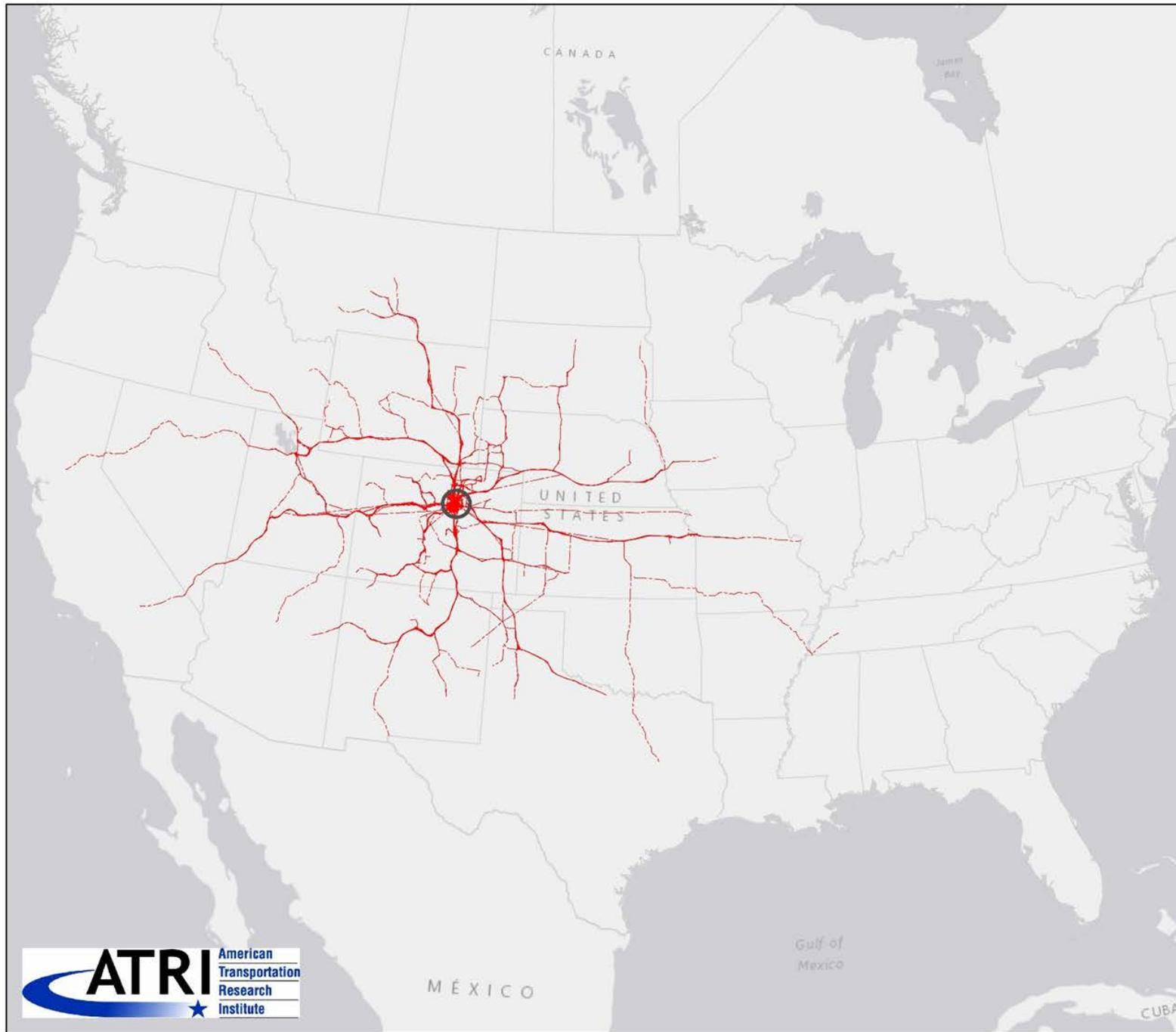
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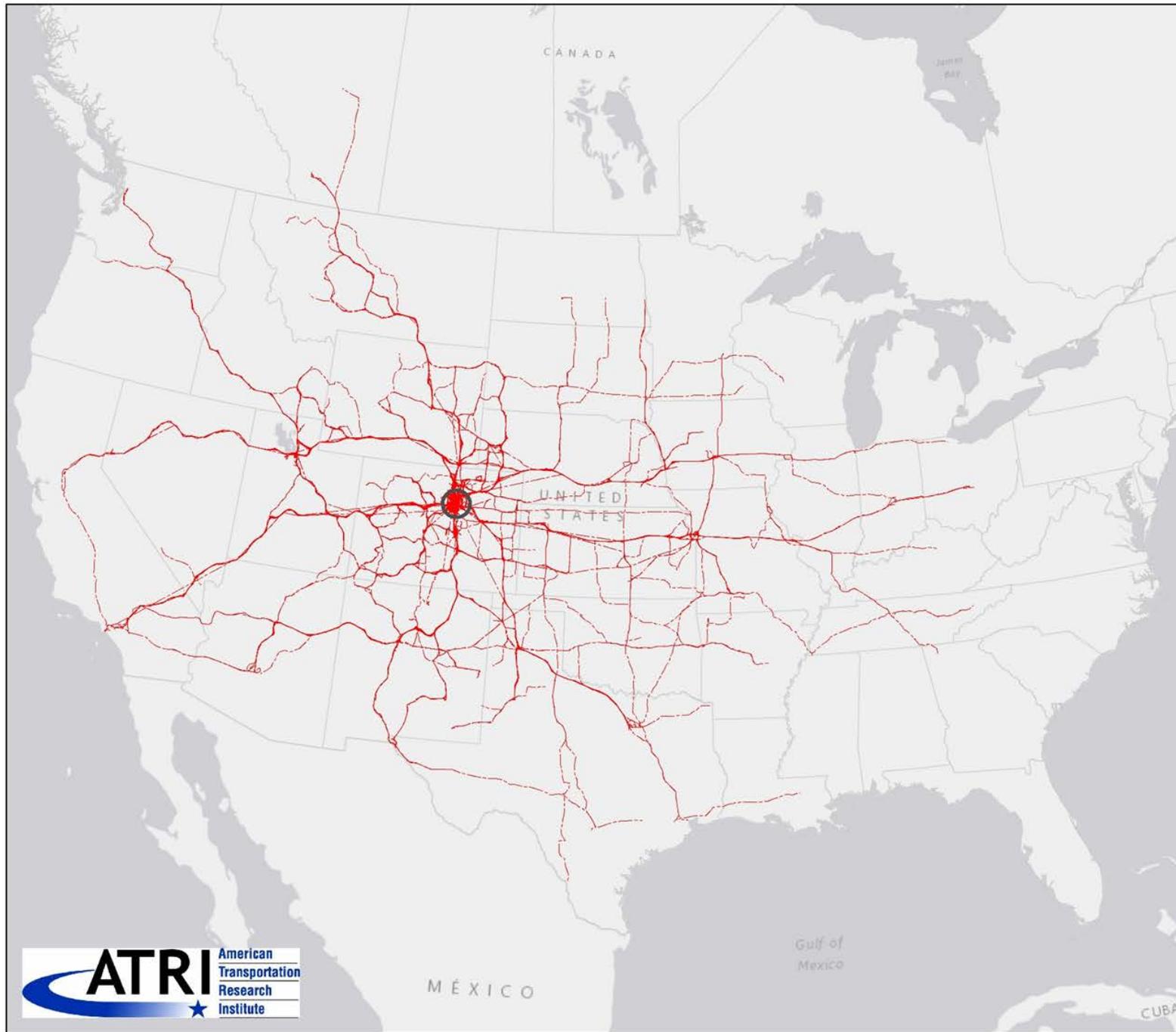
Denver, CO 5-day Truck Flows

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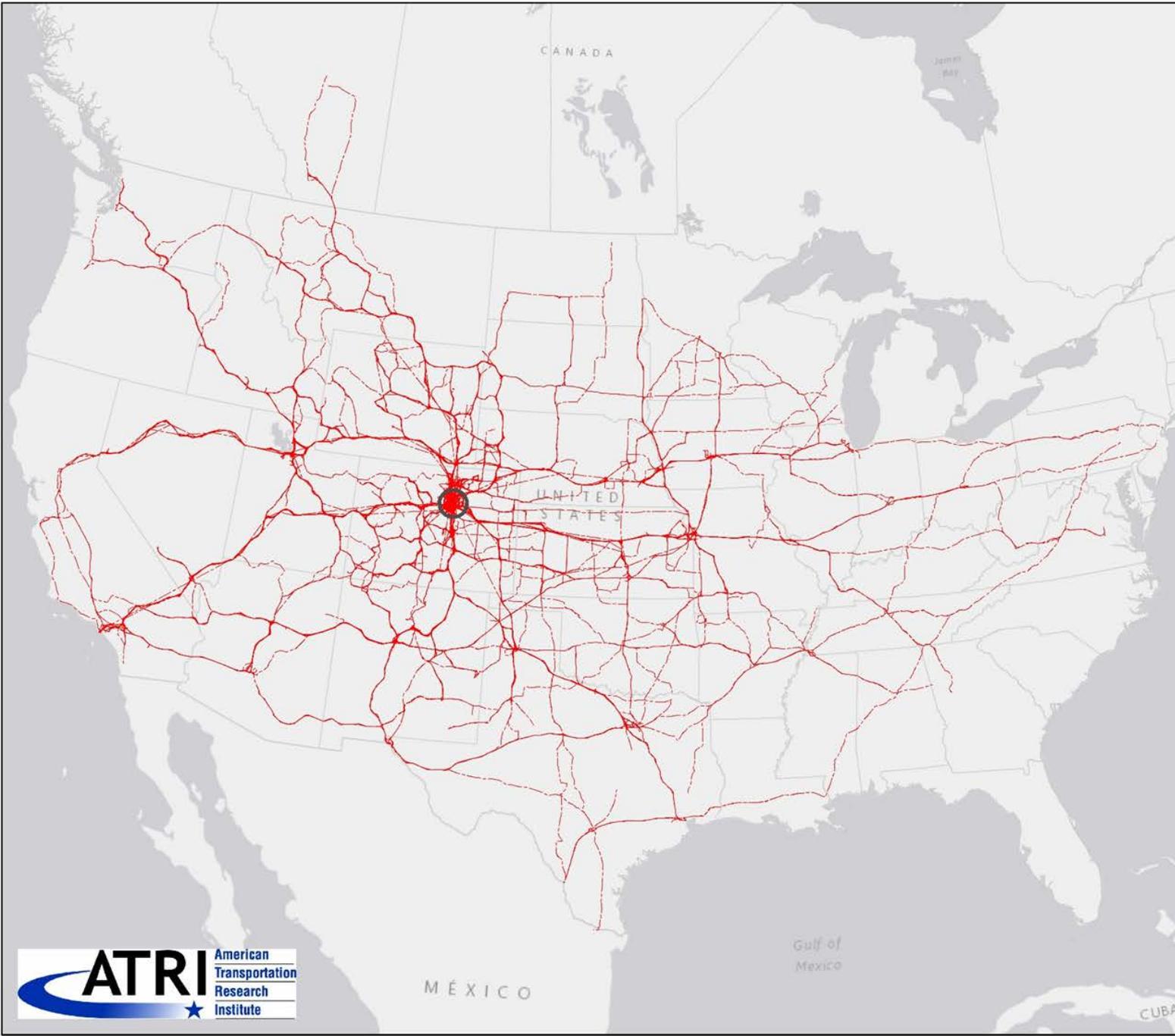
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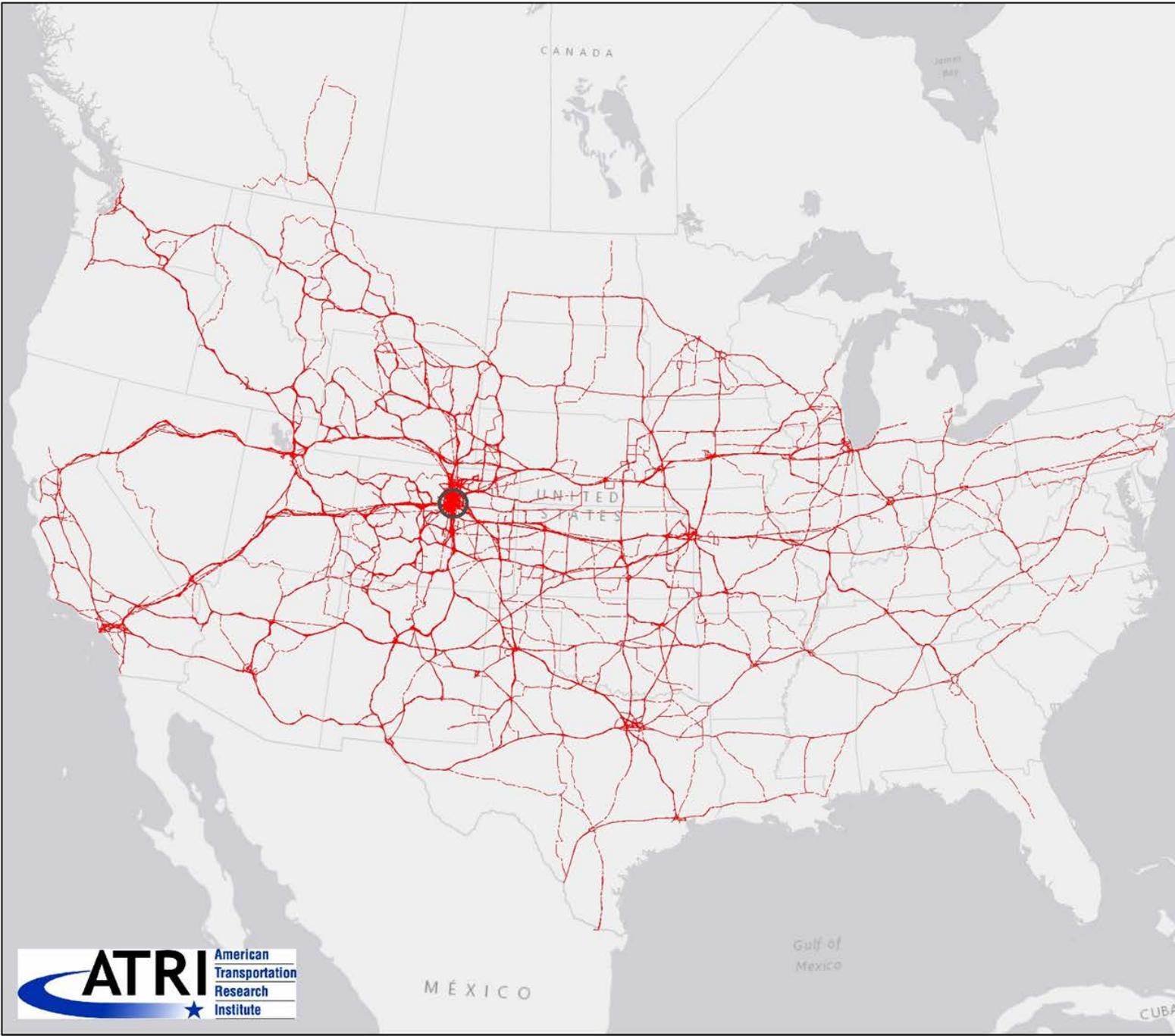
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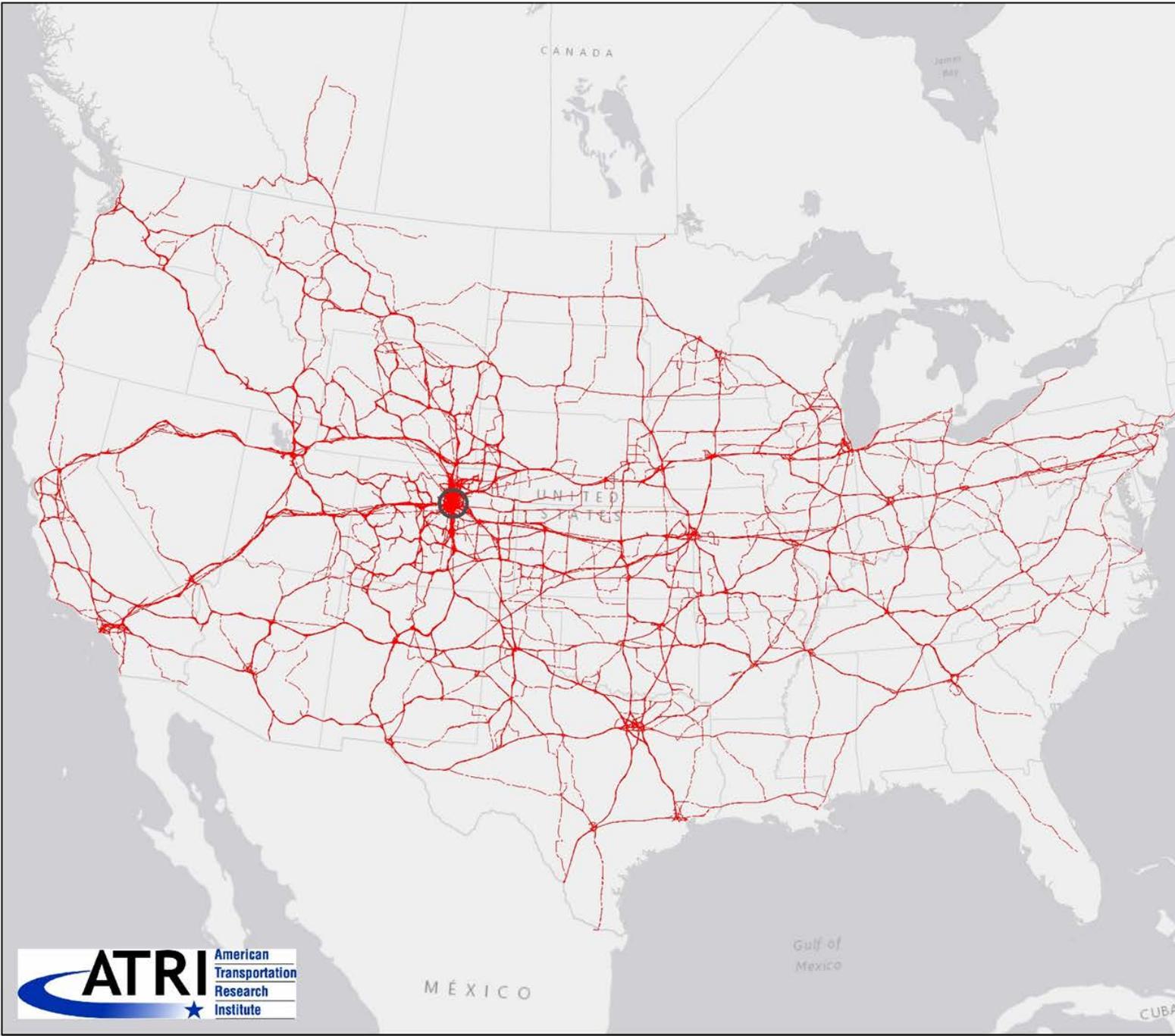
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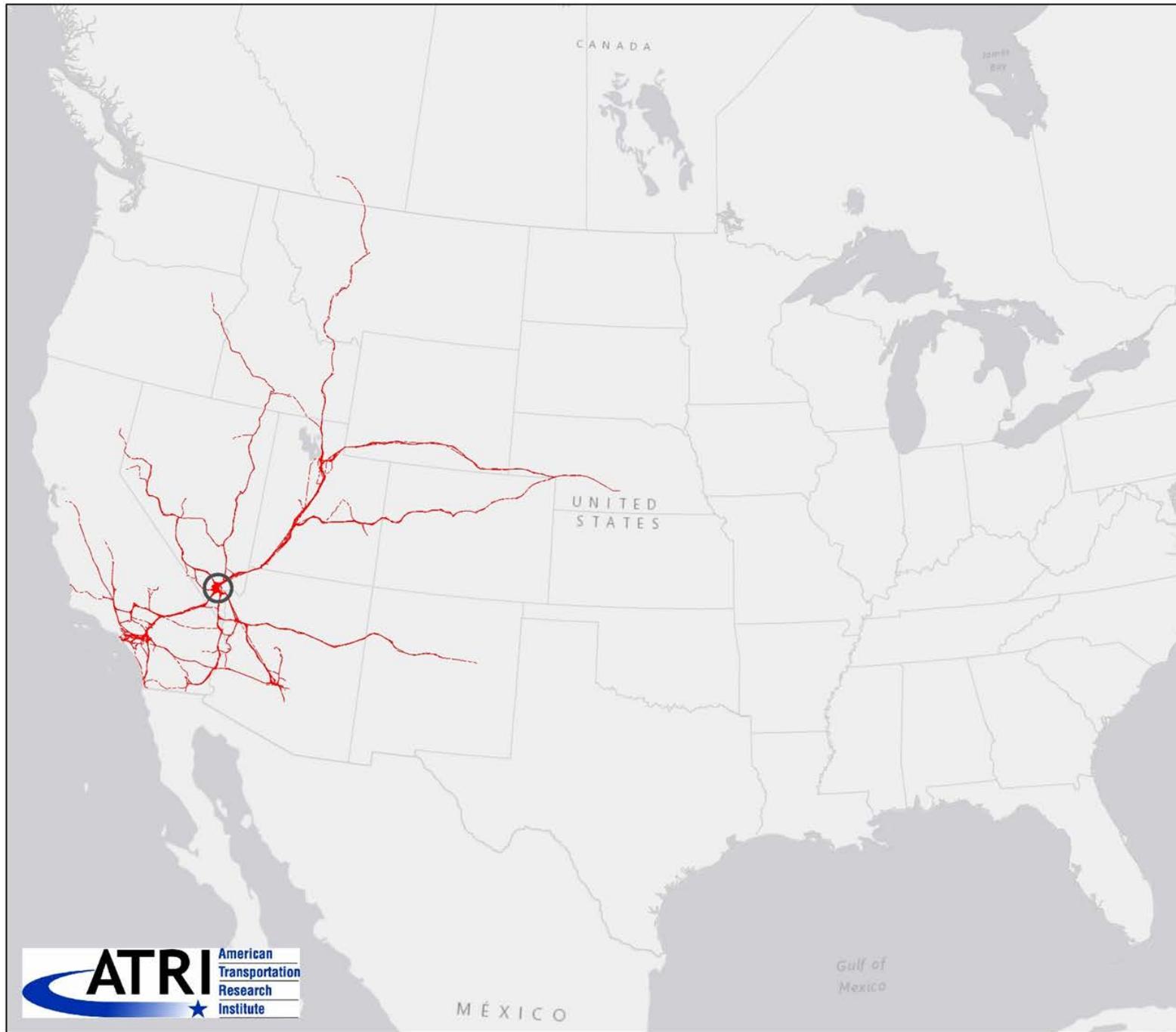
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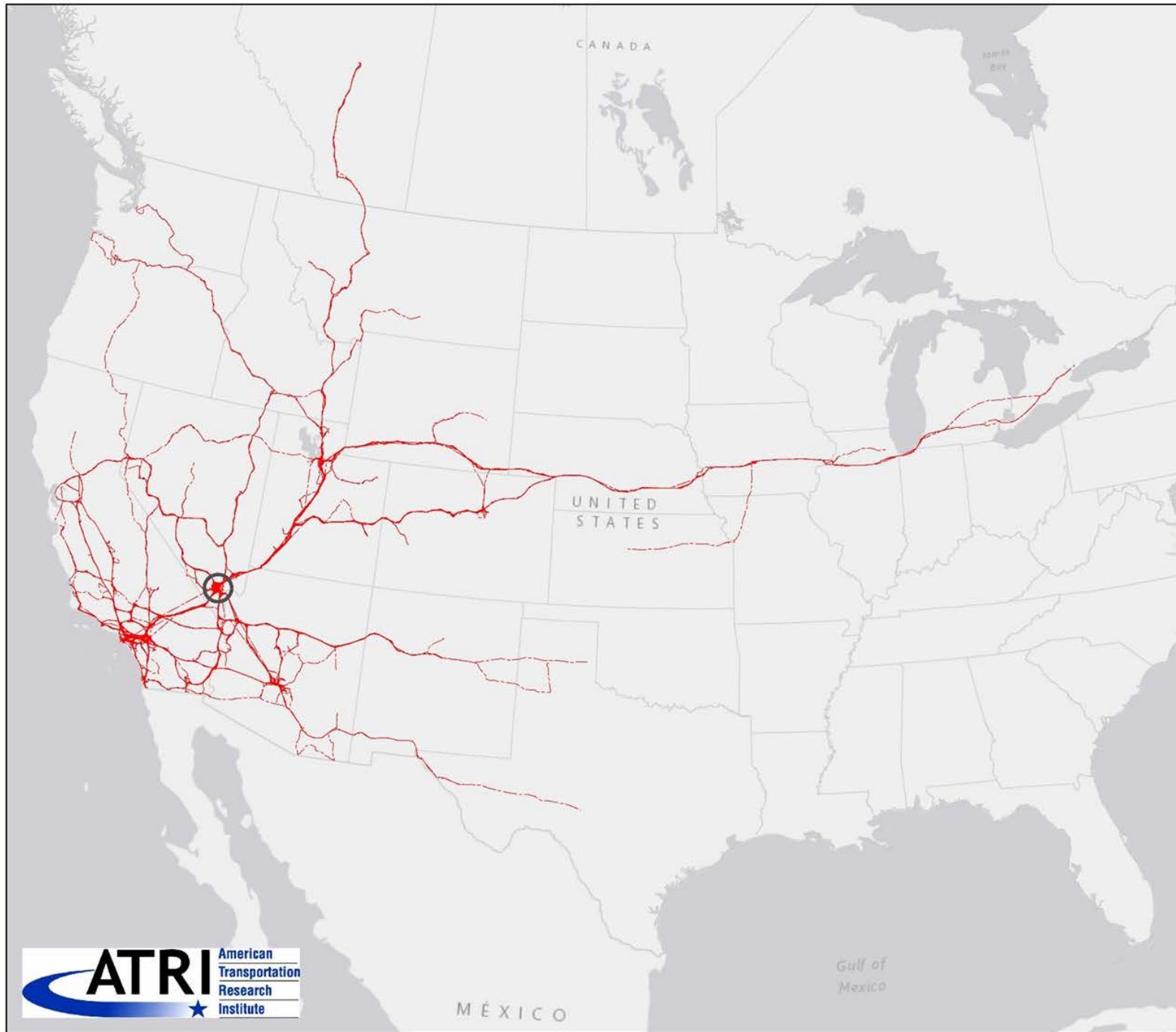
Las Vegas, NV 5-day Truck Flows

By ATRI

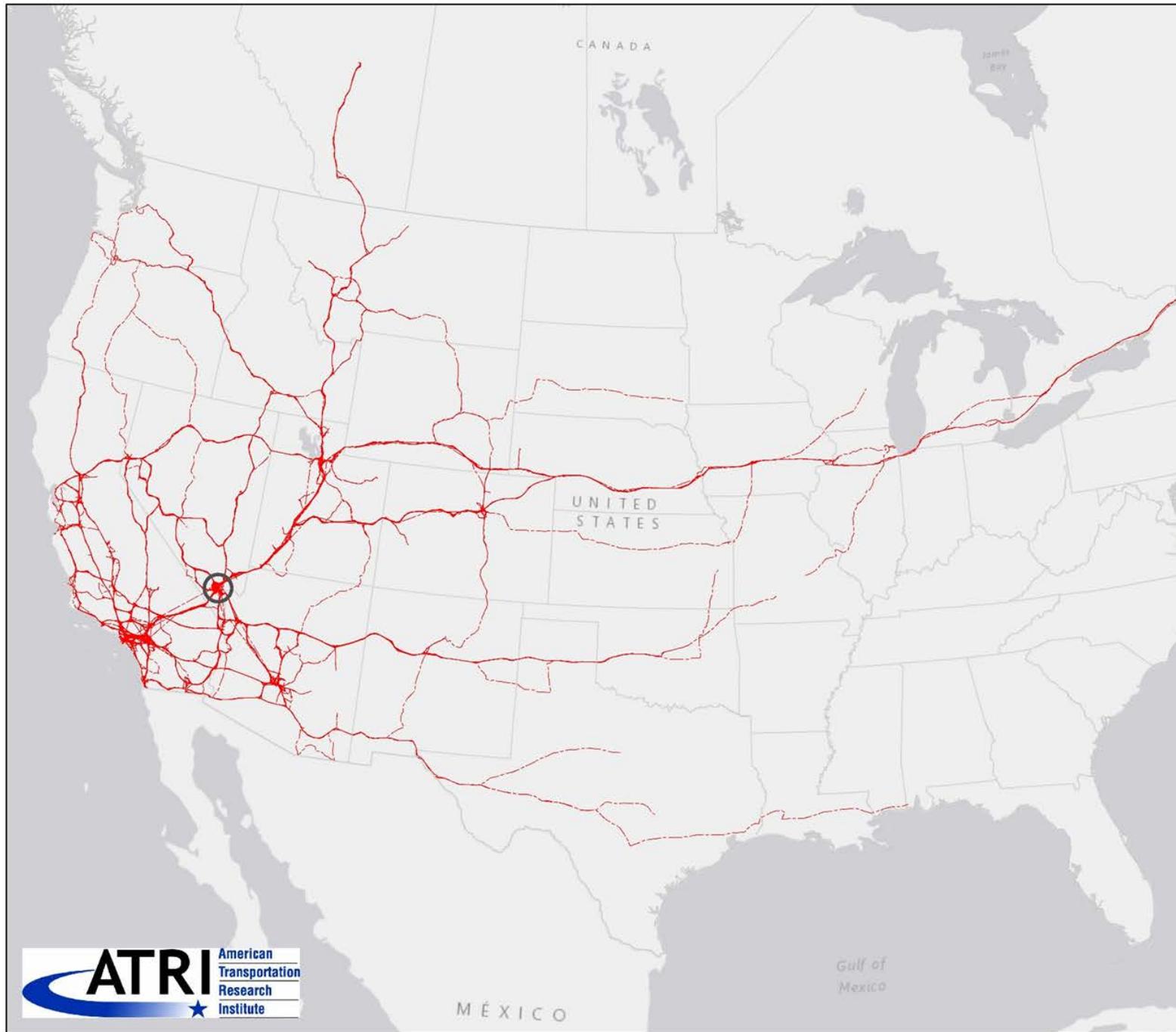
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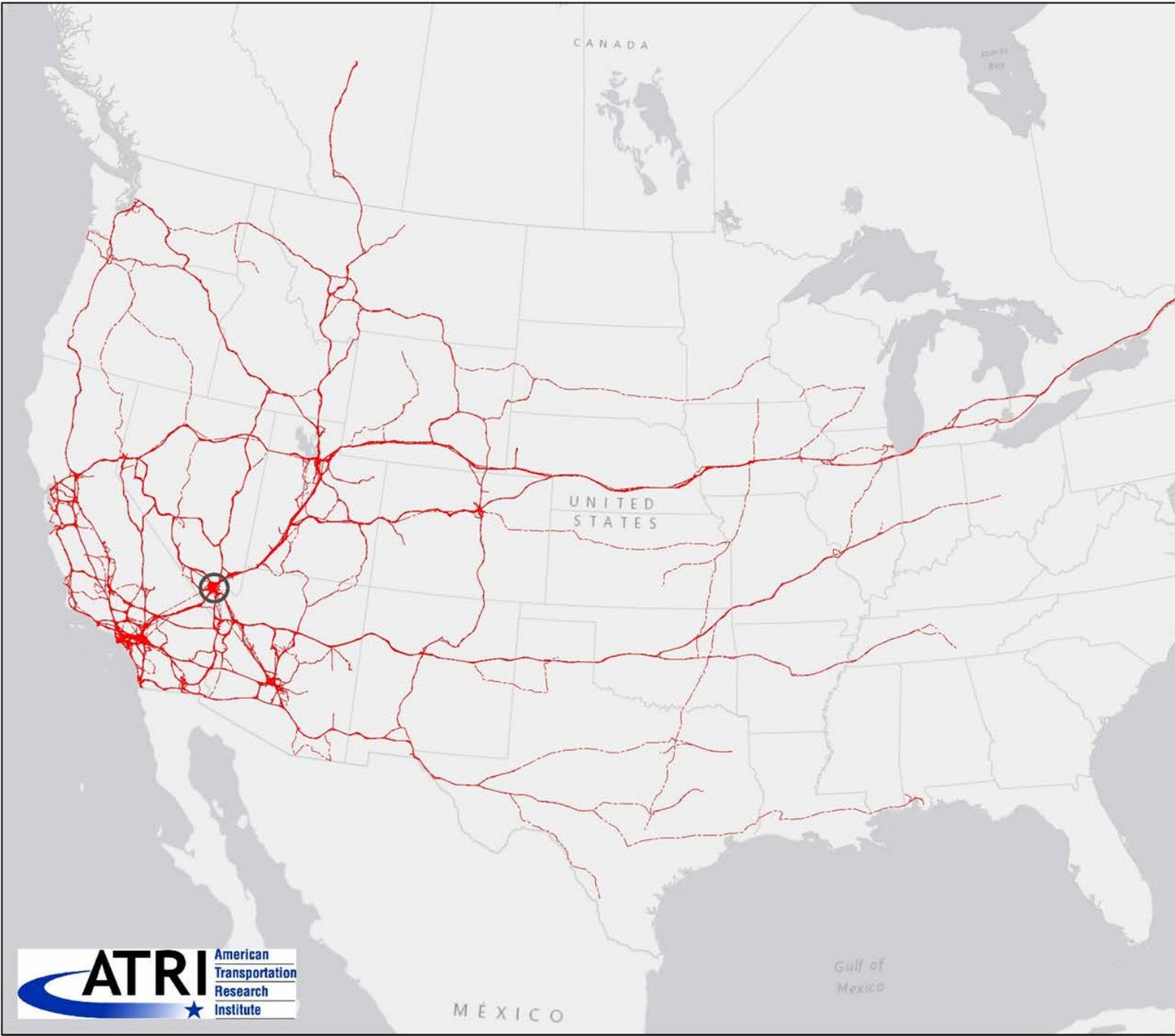
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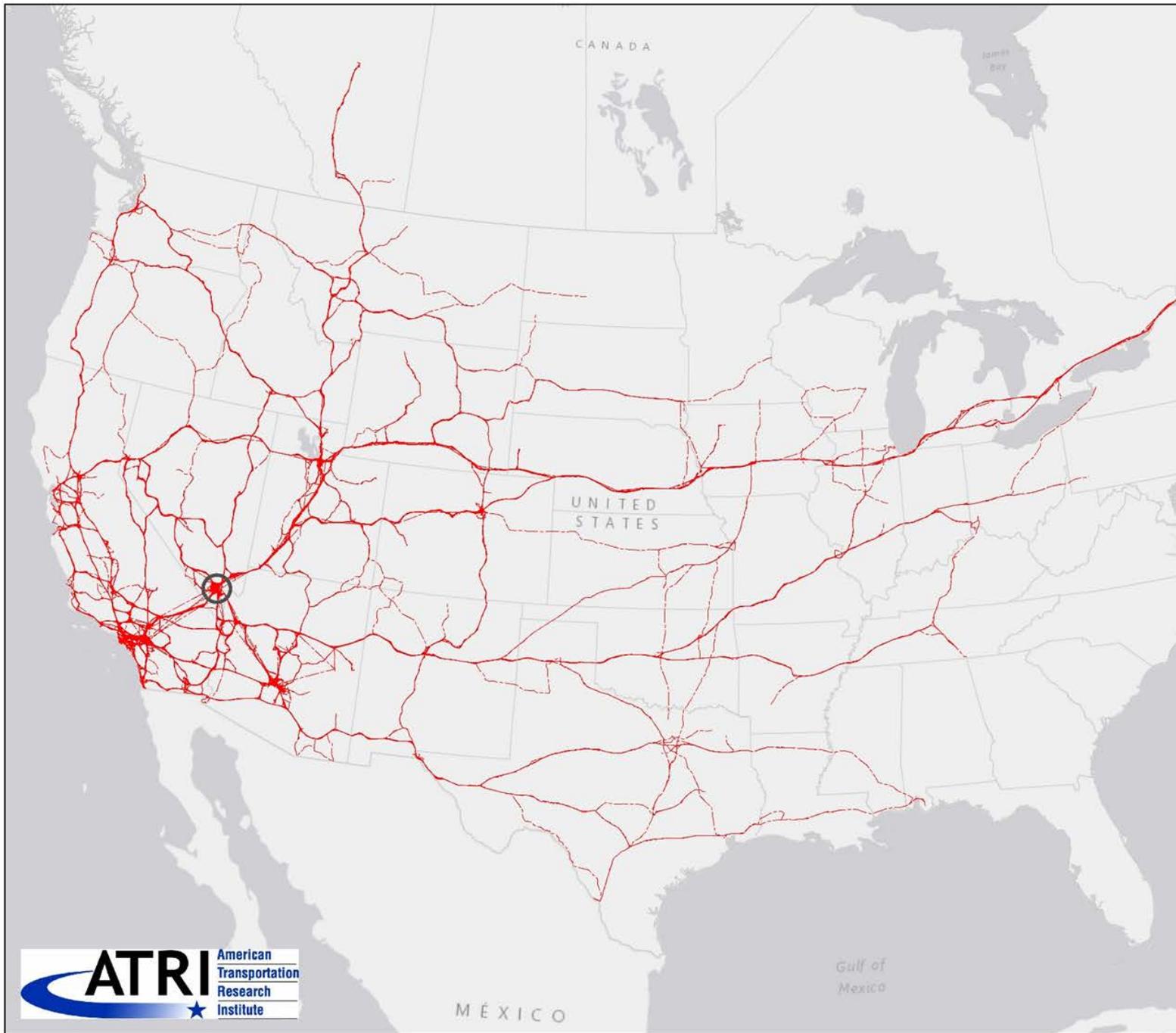
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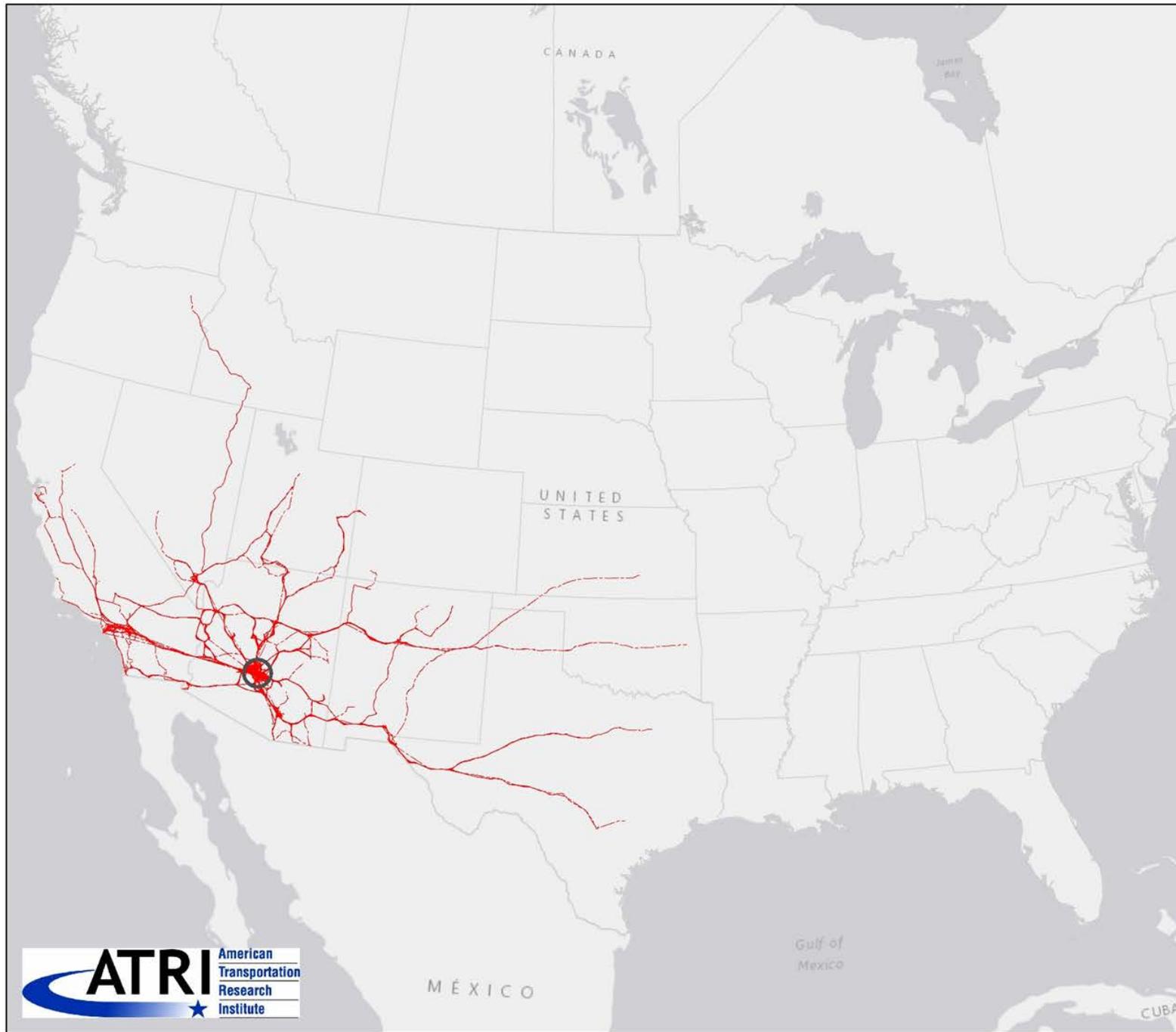
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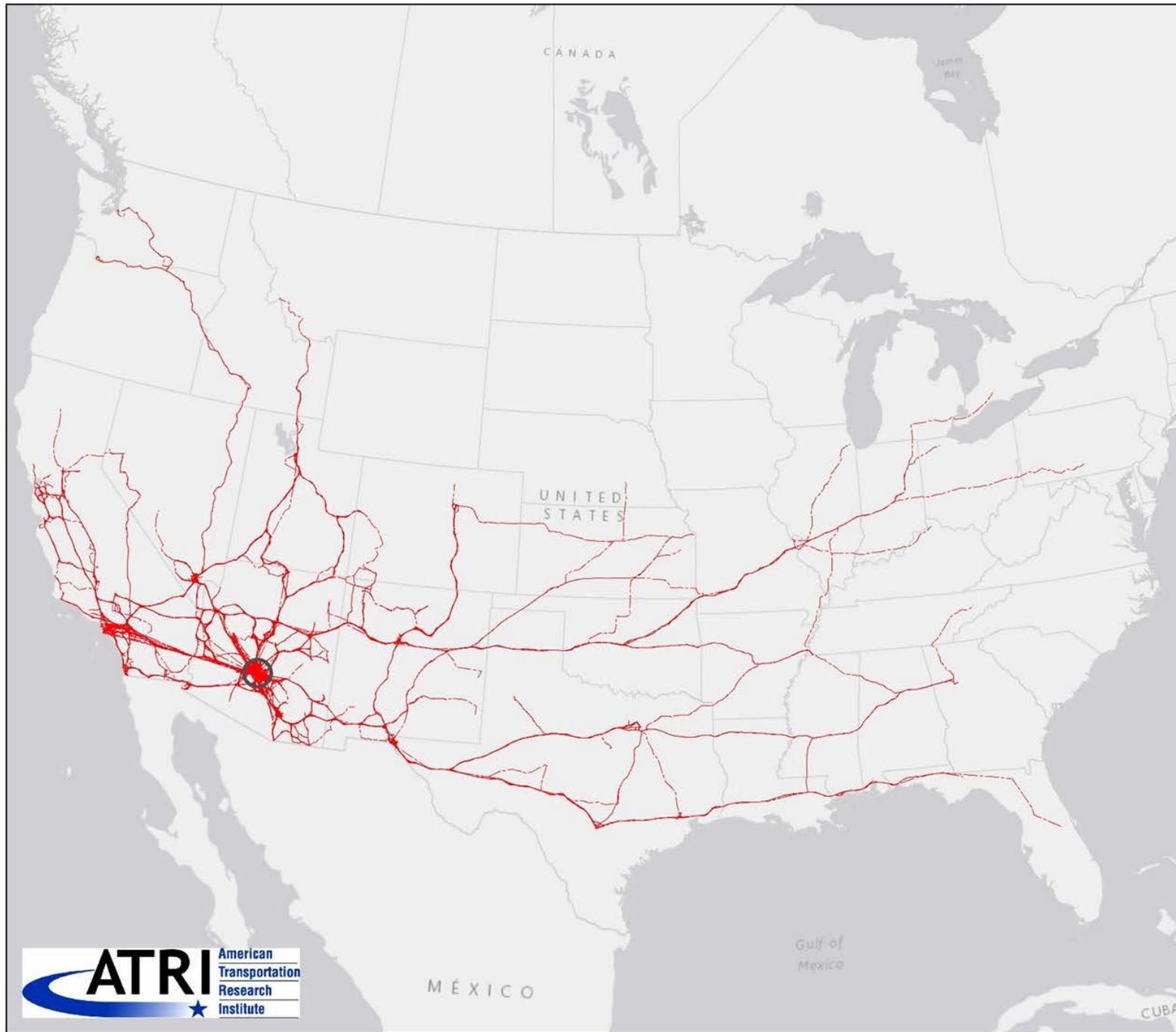
Phoenix, AZ 5-day Truck Flows

By ATRI

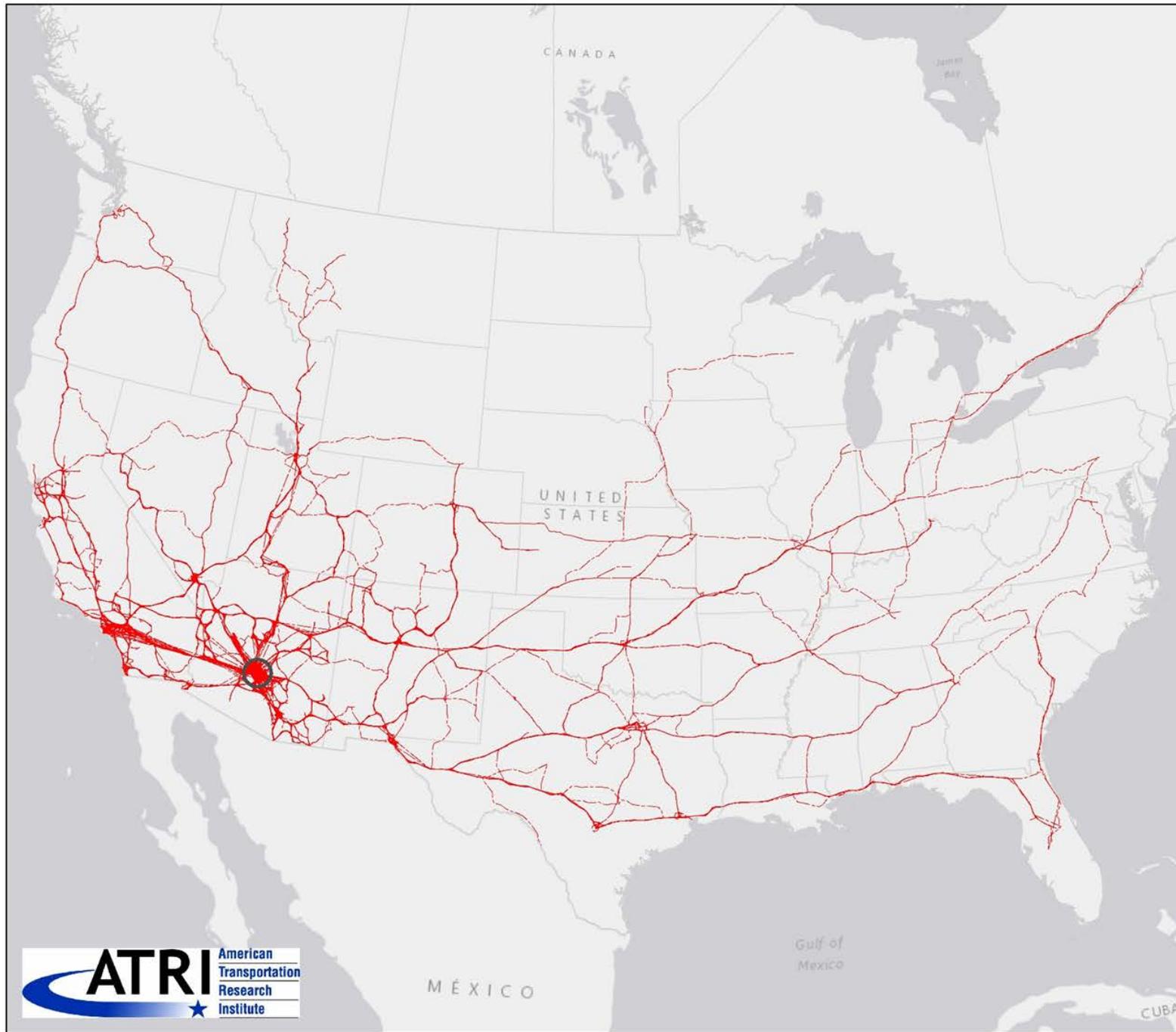
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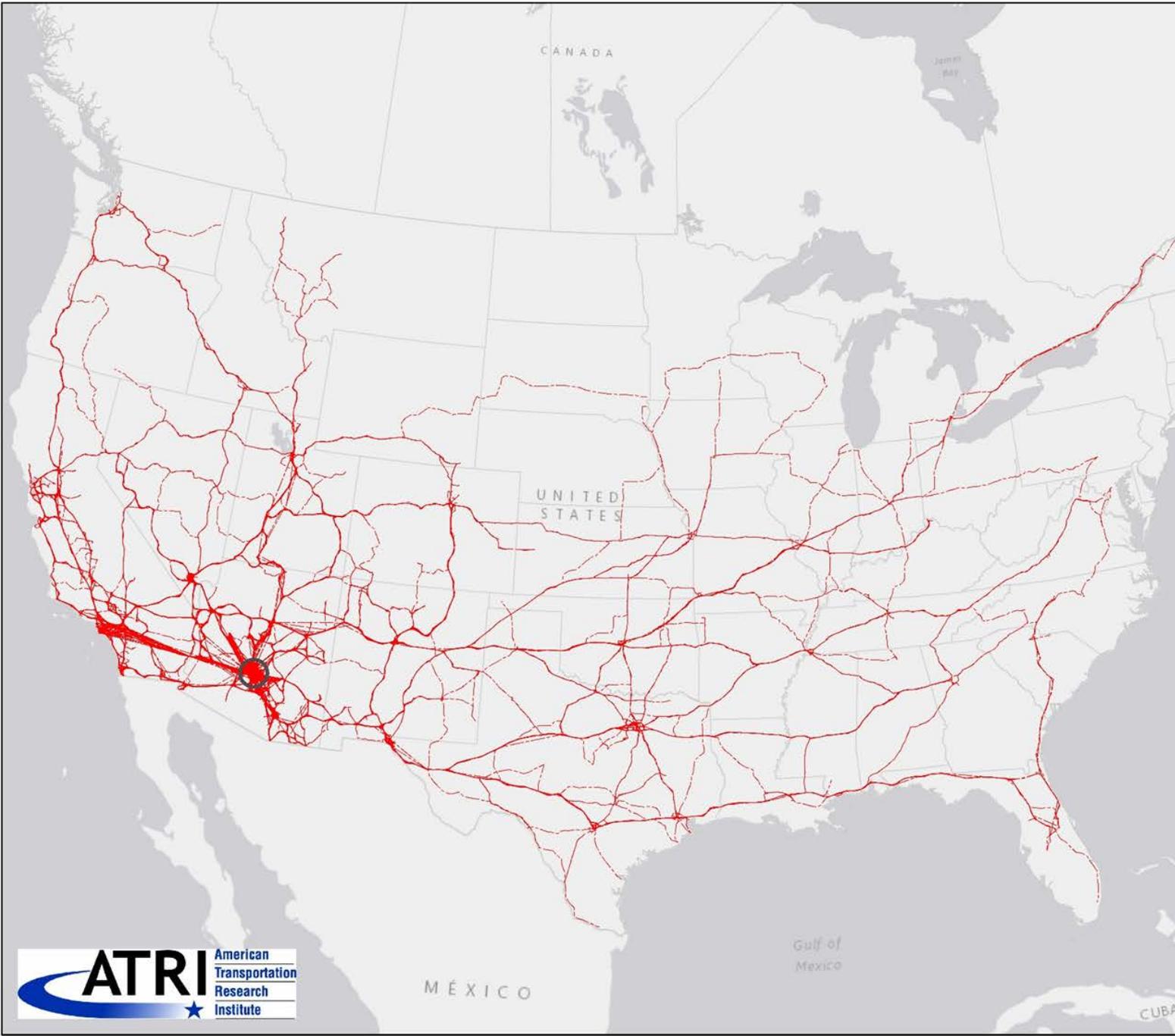
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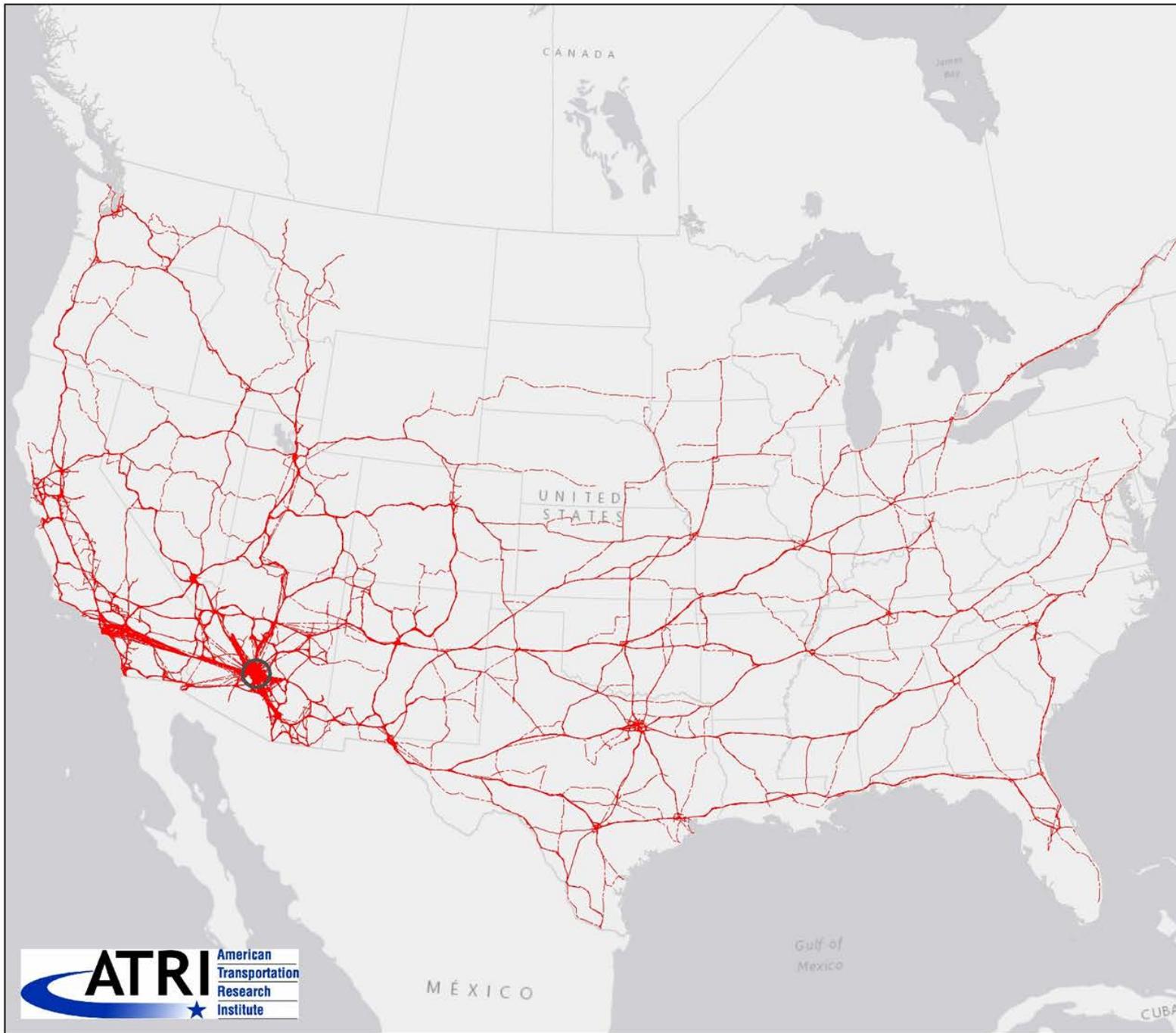
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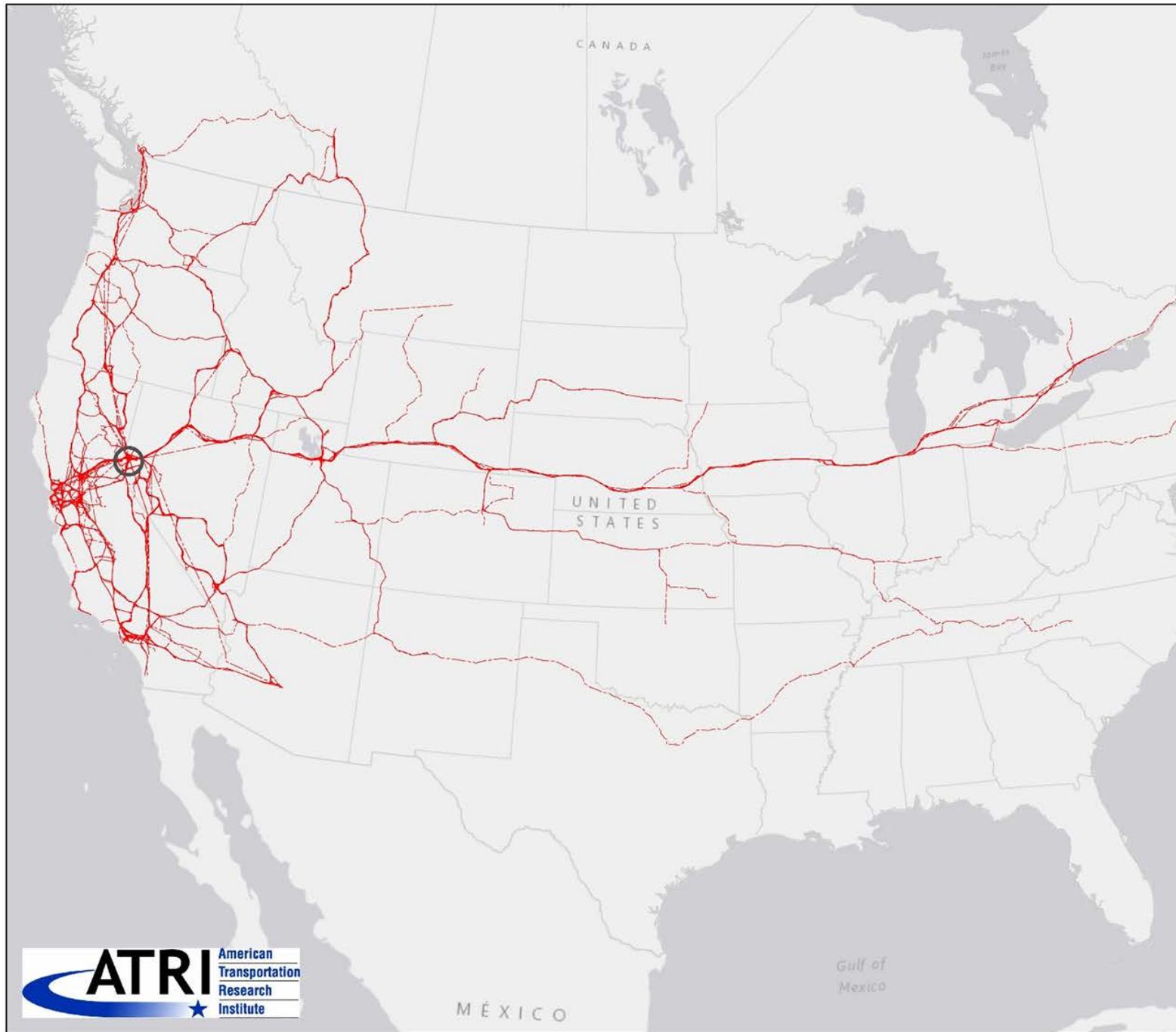
Reno, NV 5-day Truck Flows

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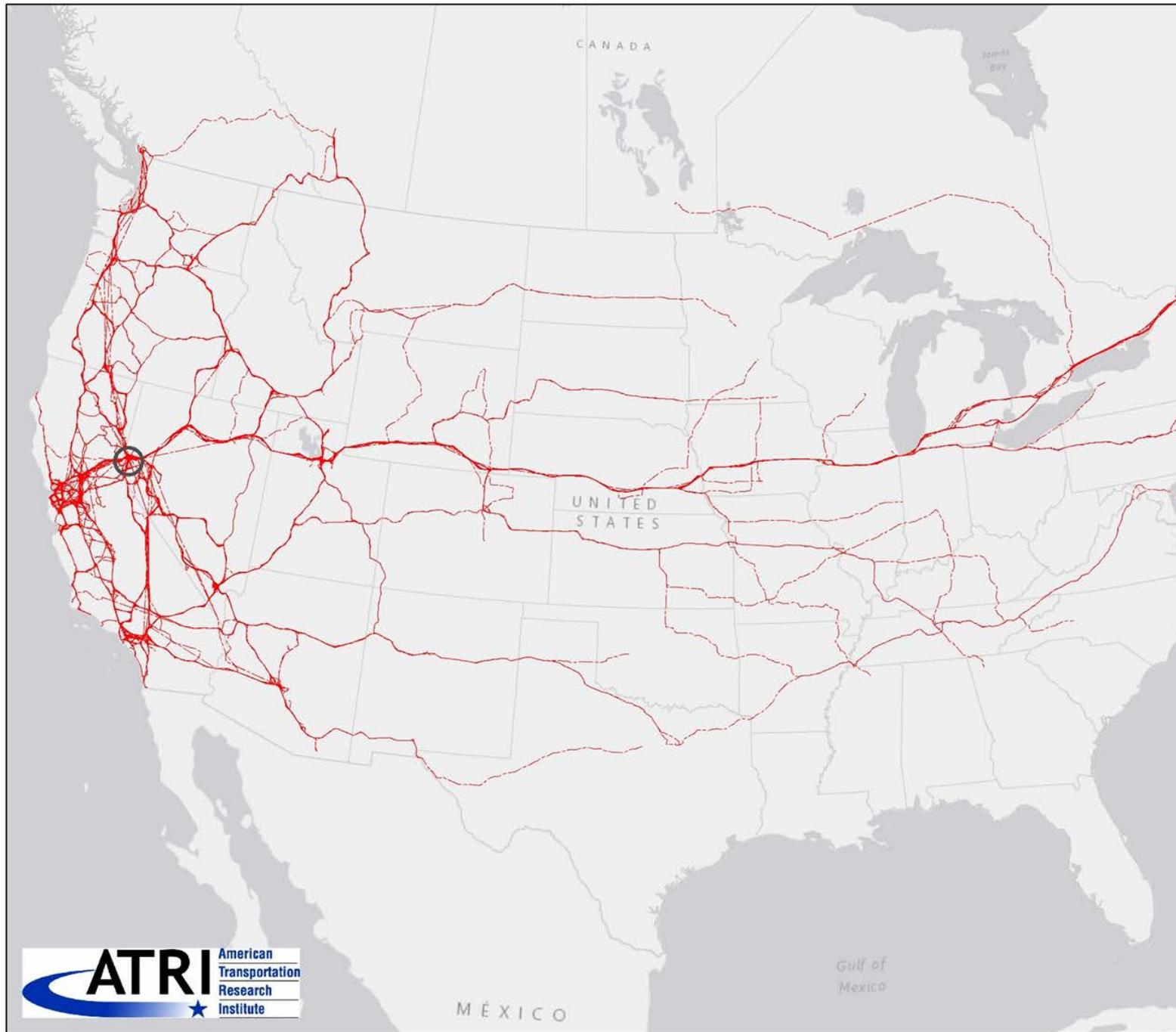
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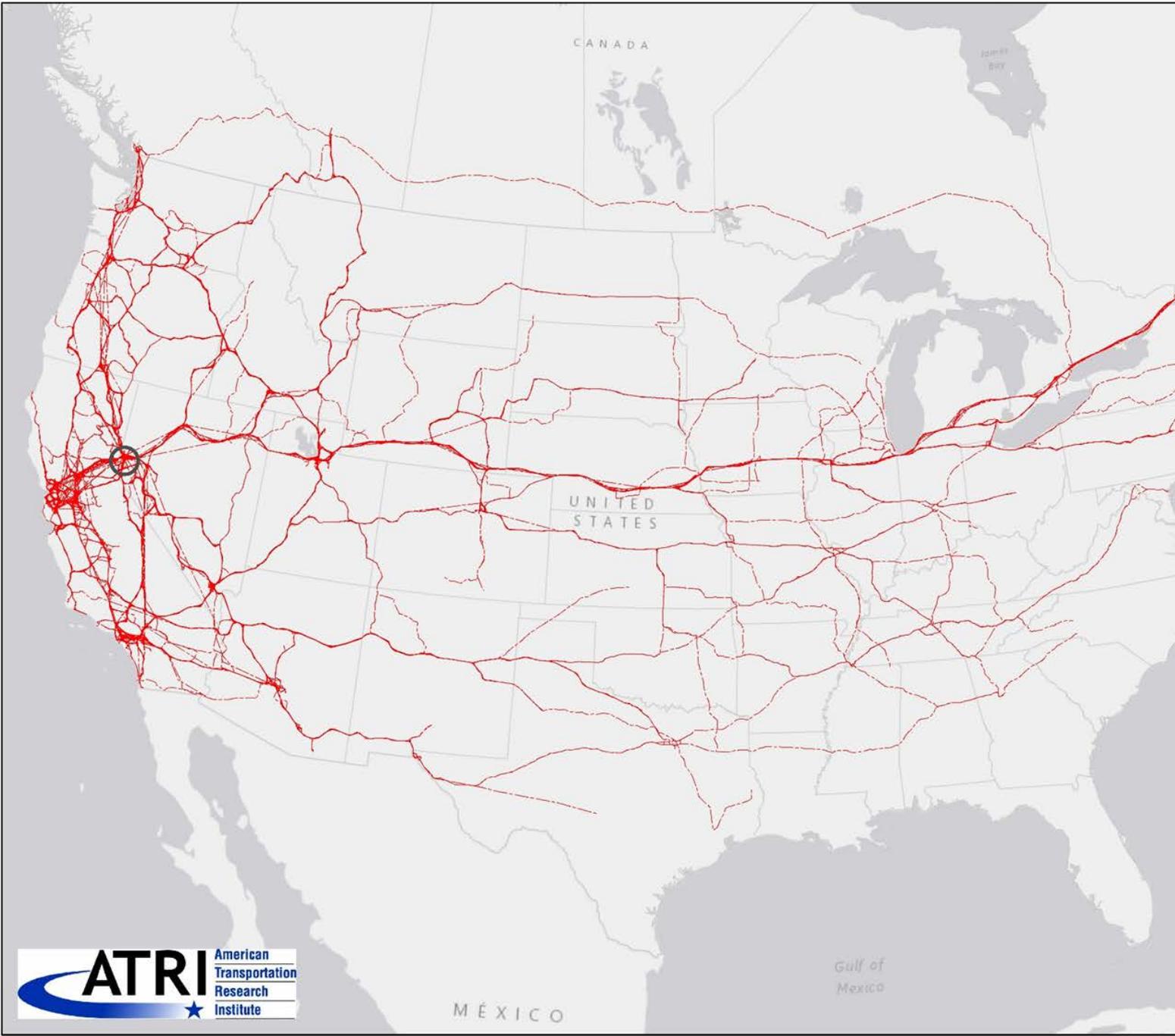
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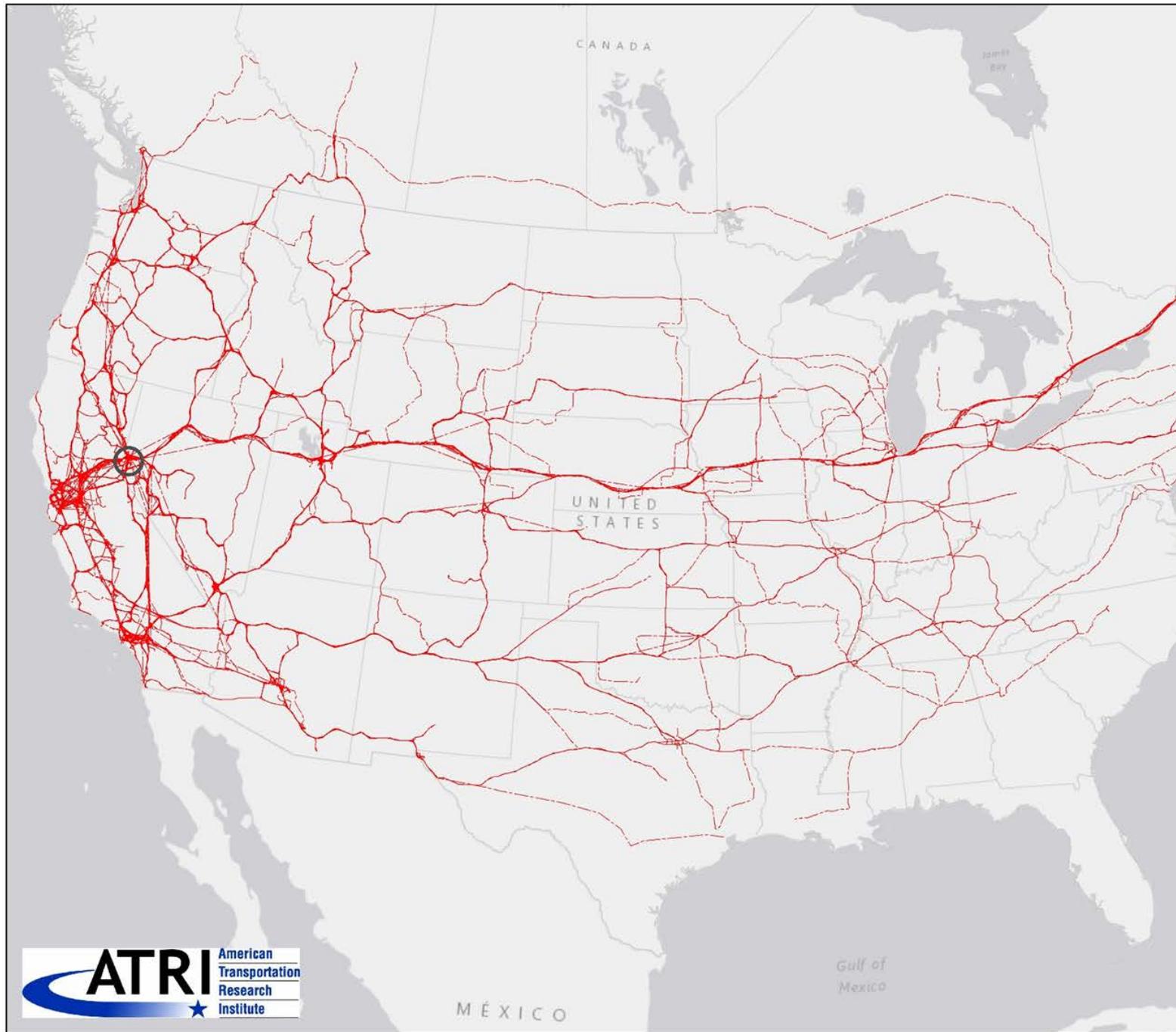
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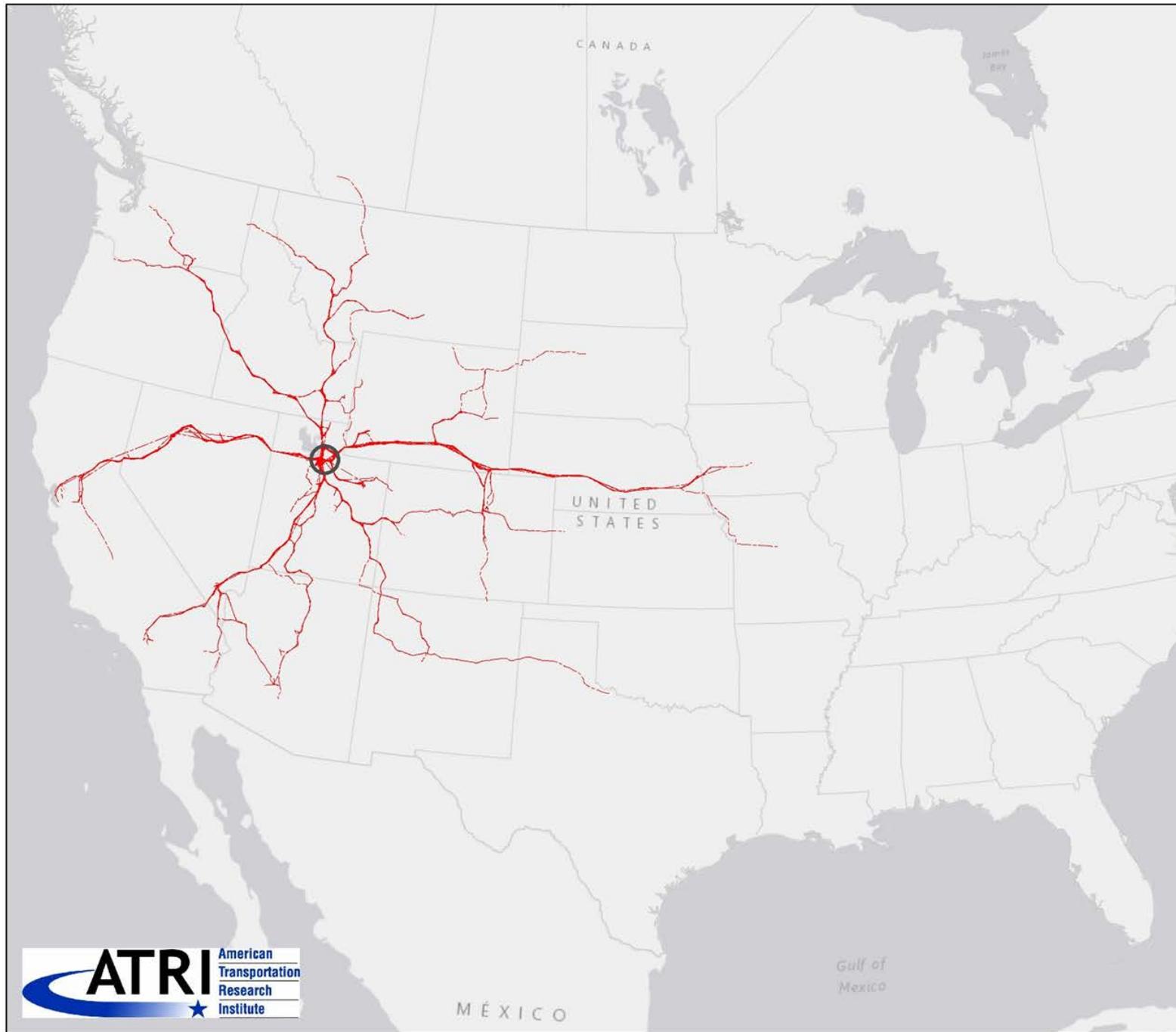
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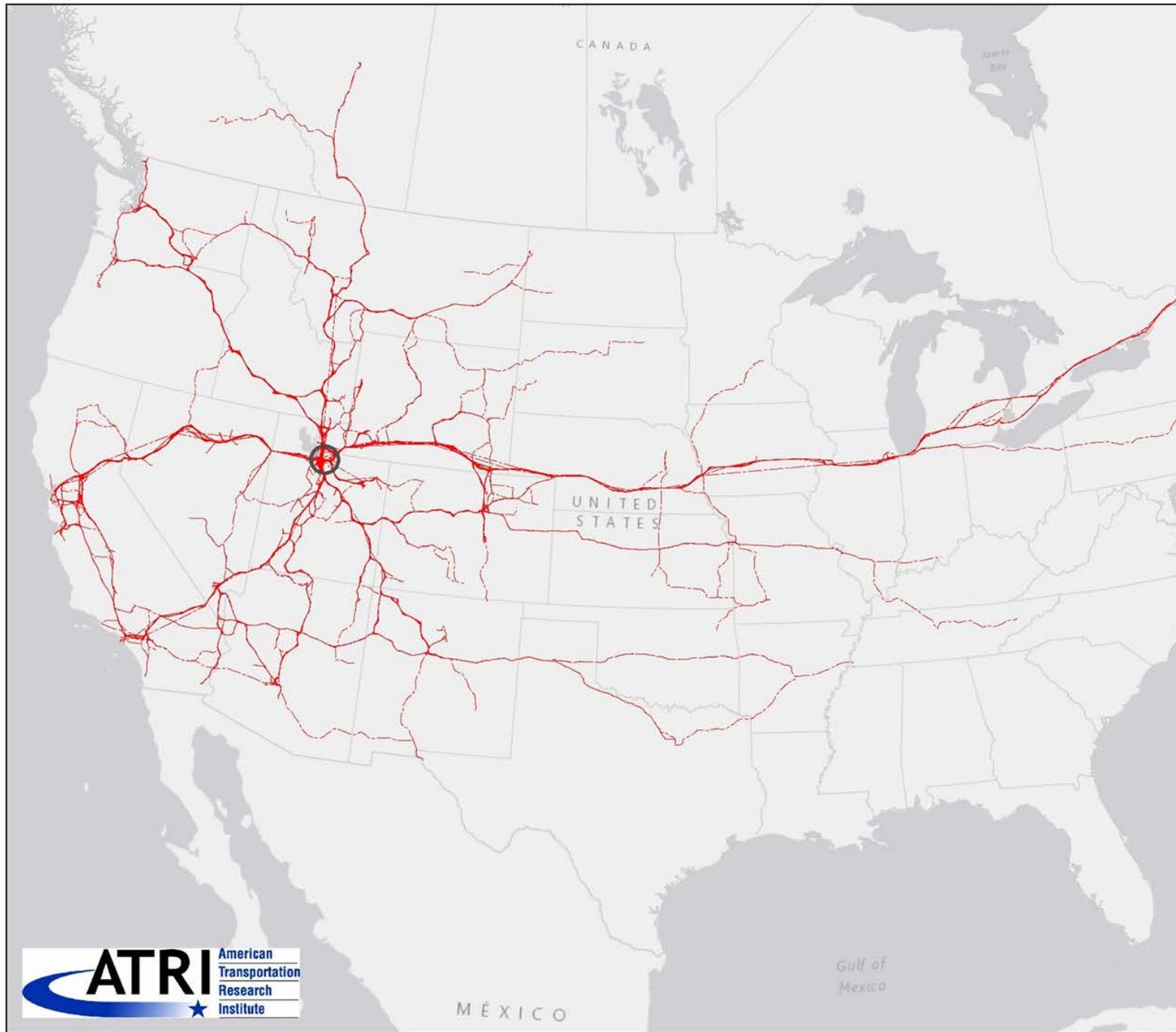
Salt Lake City, UT 5-day Truck Flows

By ATRI

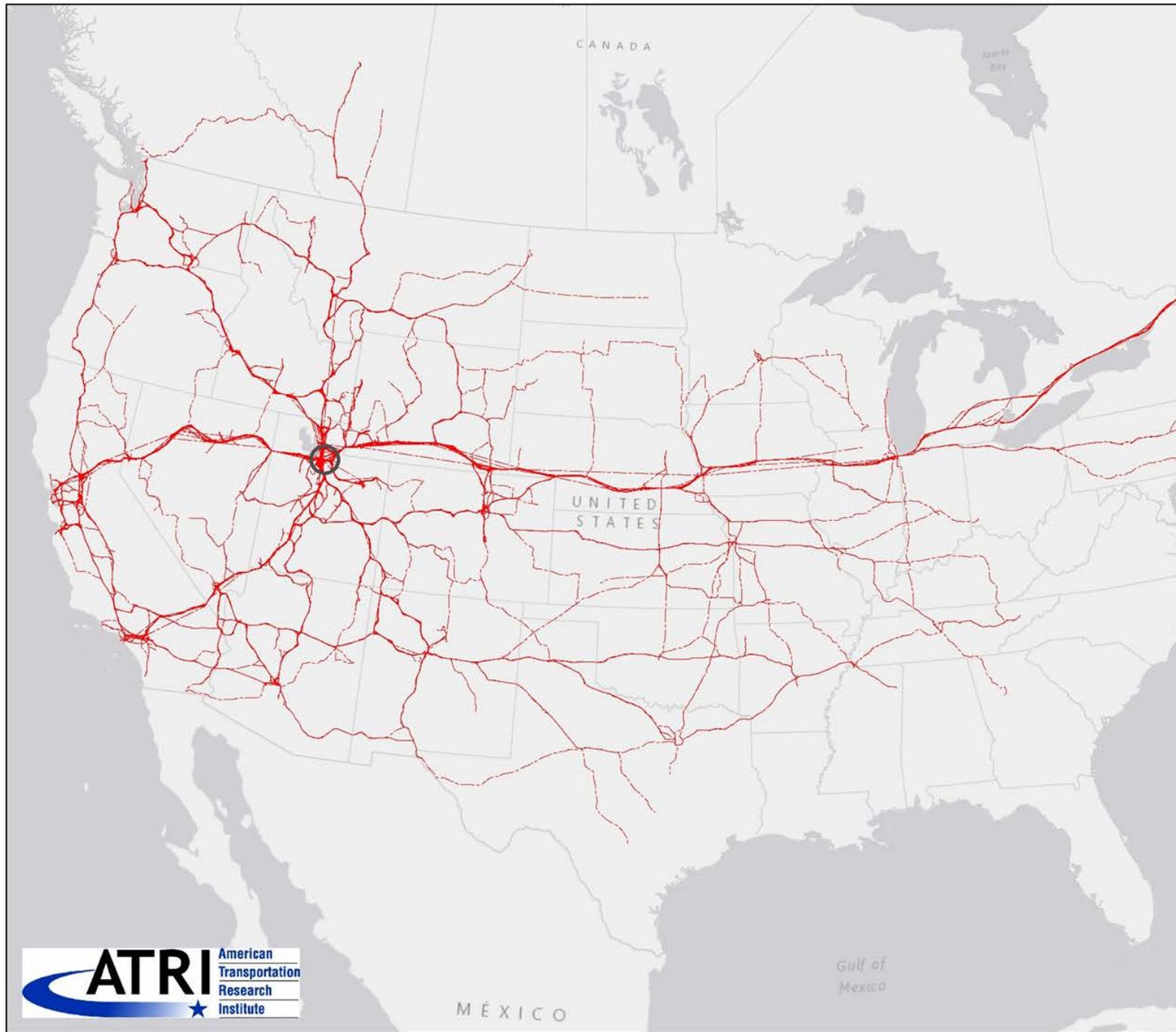
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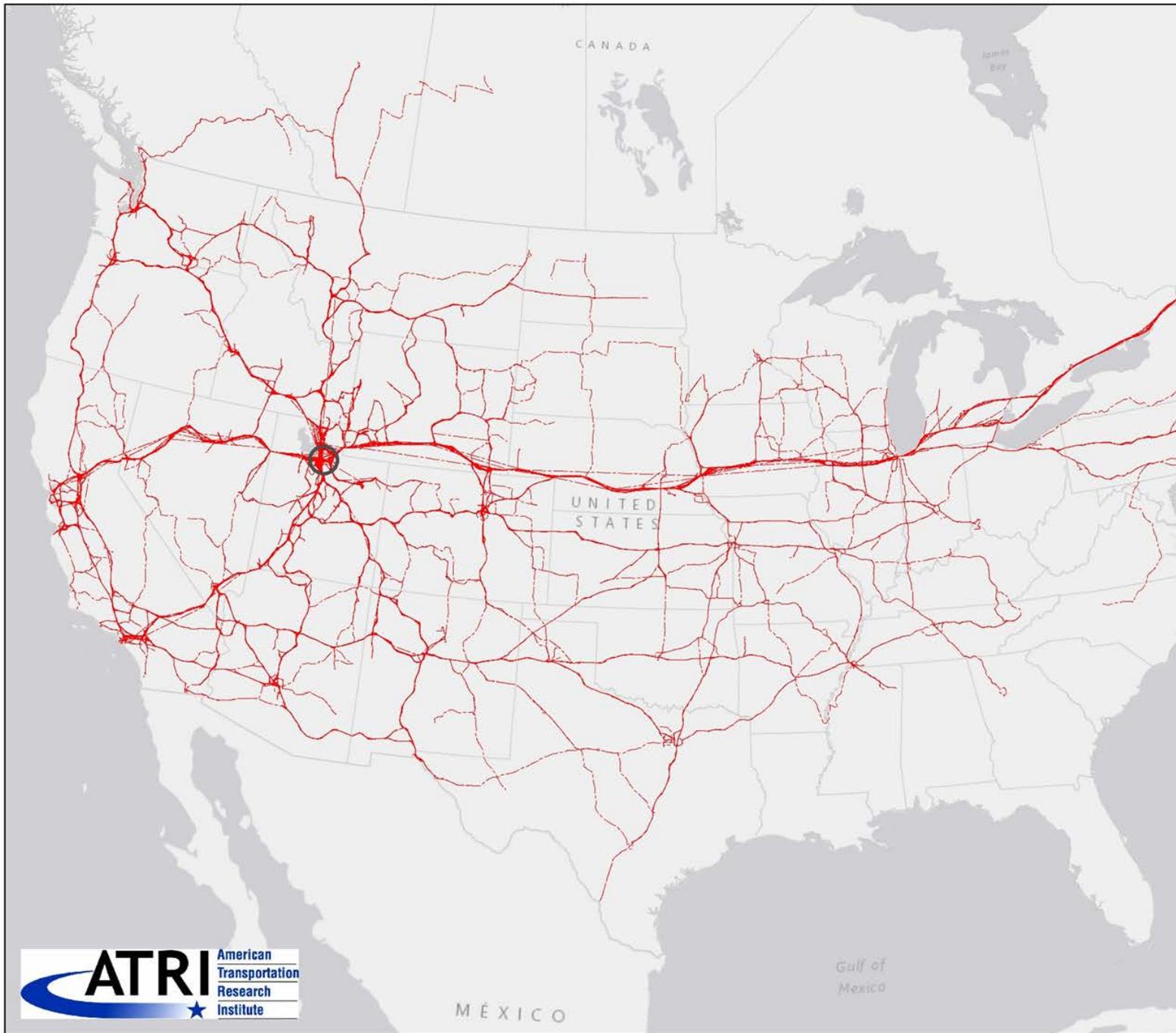
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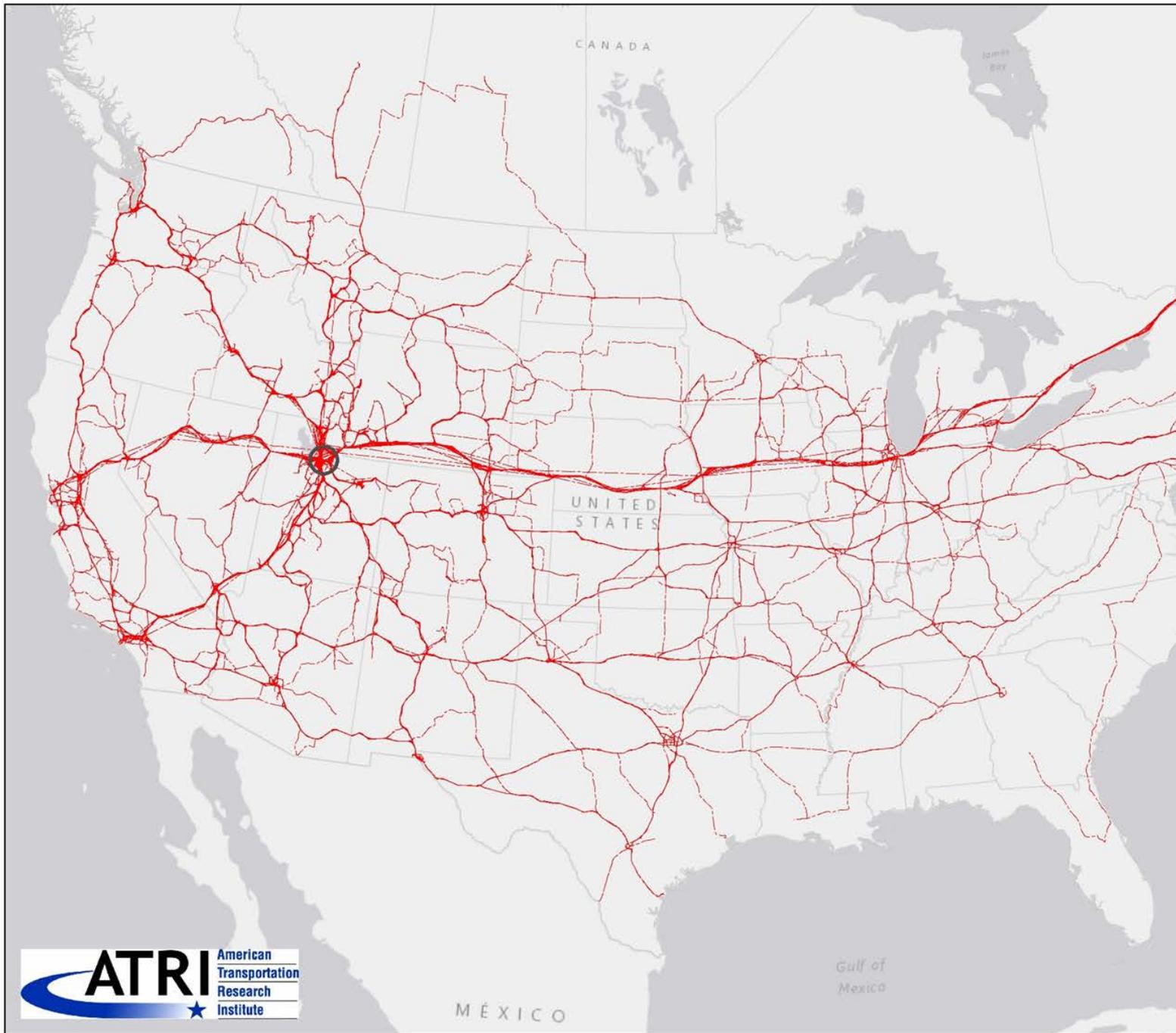
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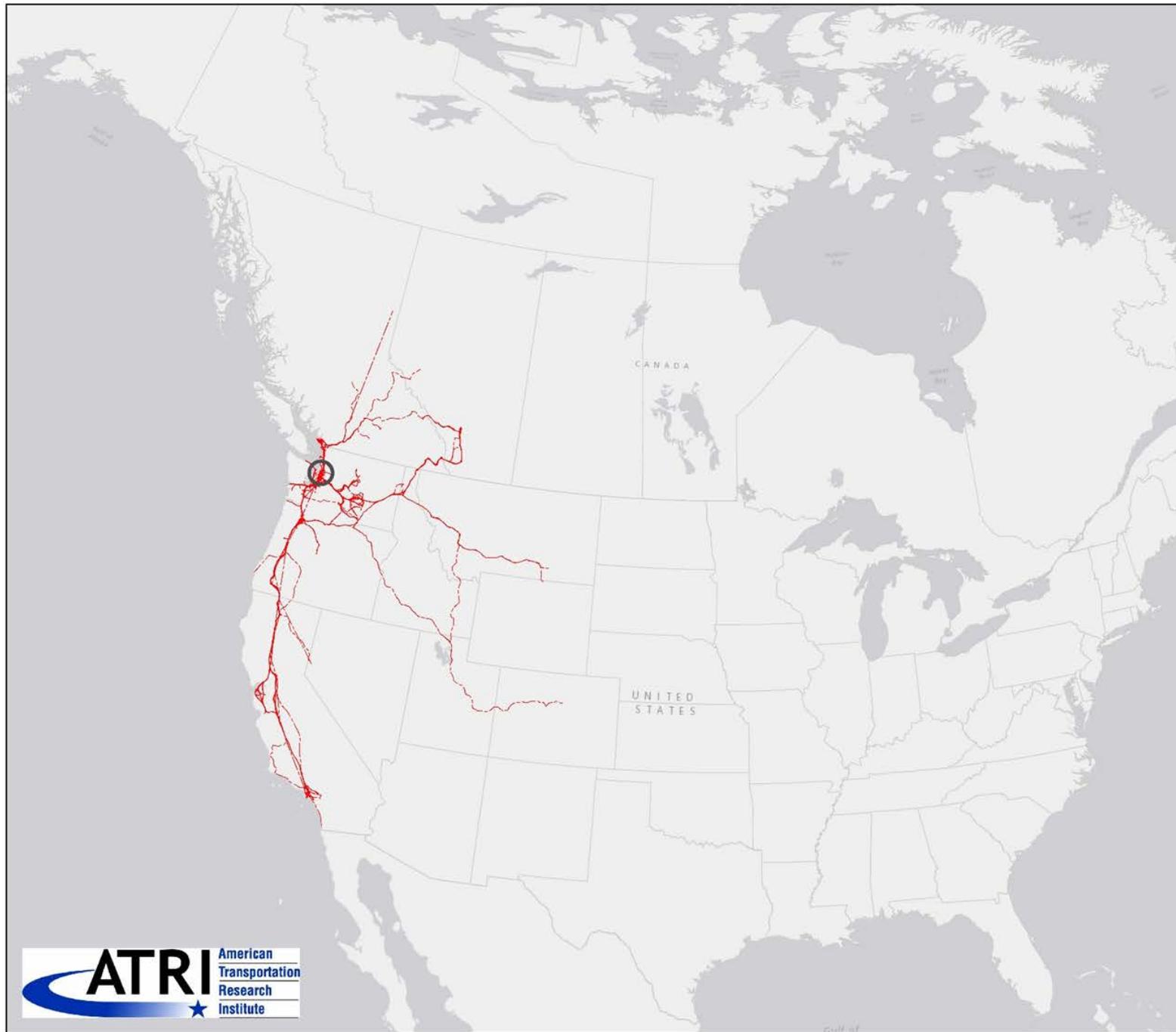
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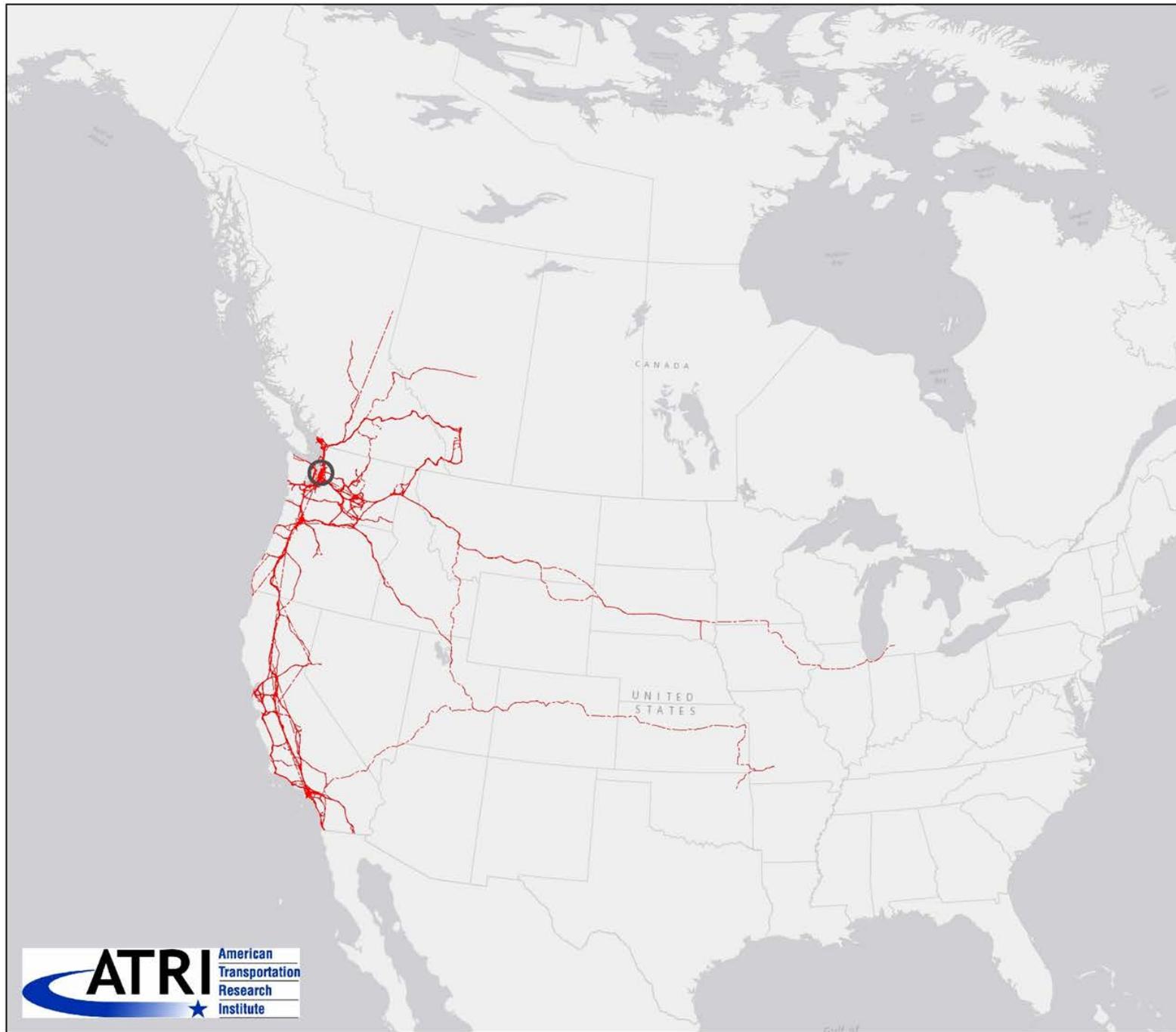
Seattle, WA 5-day Truck Flows

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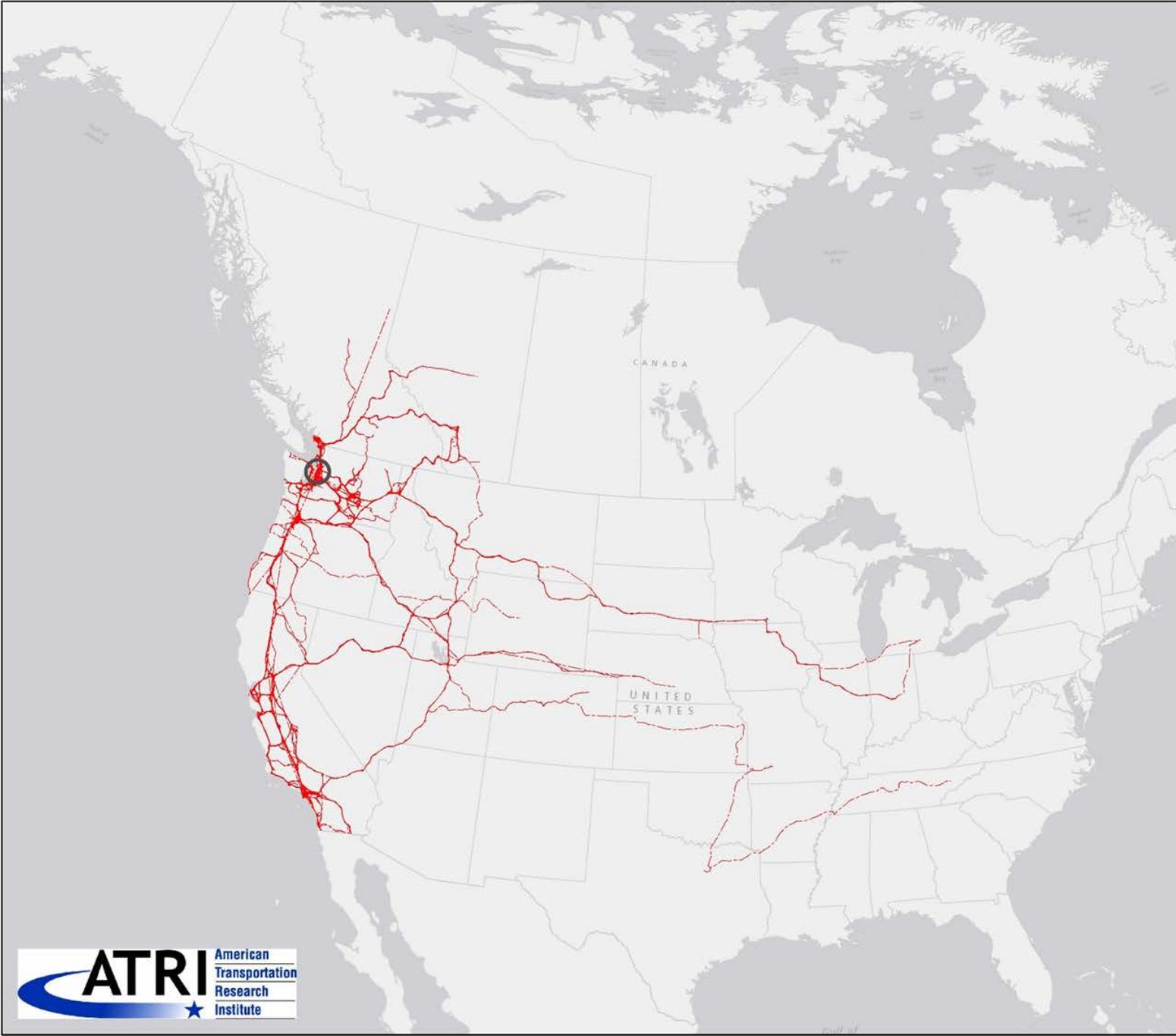
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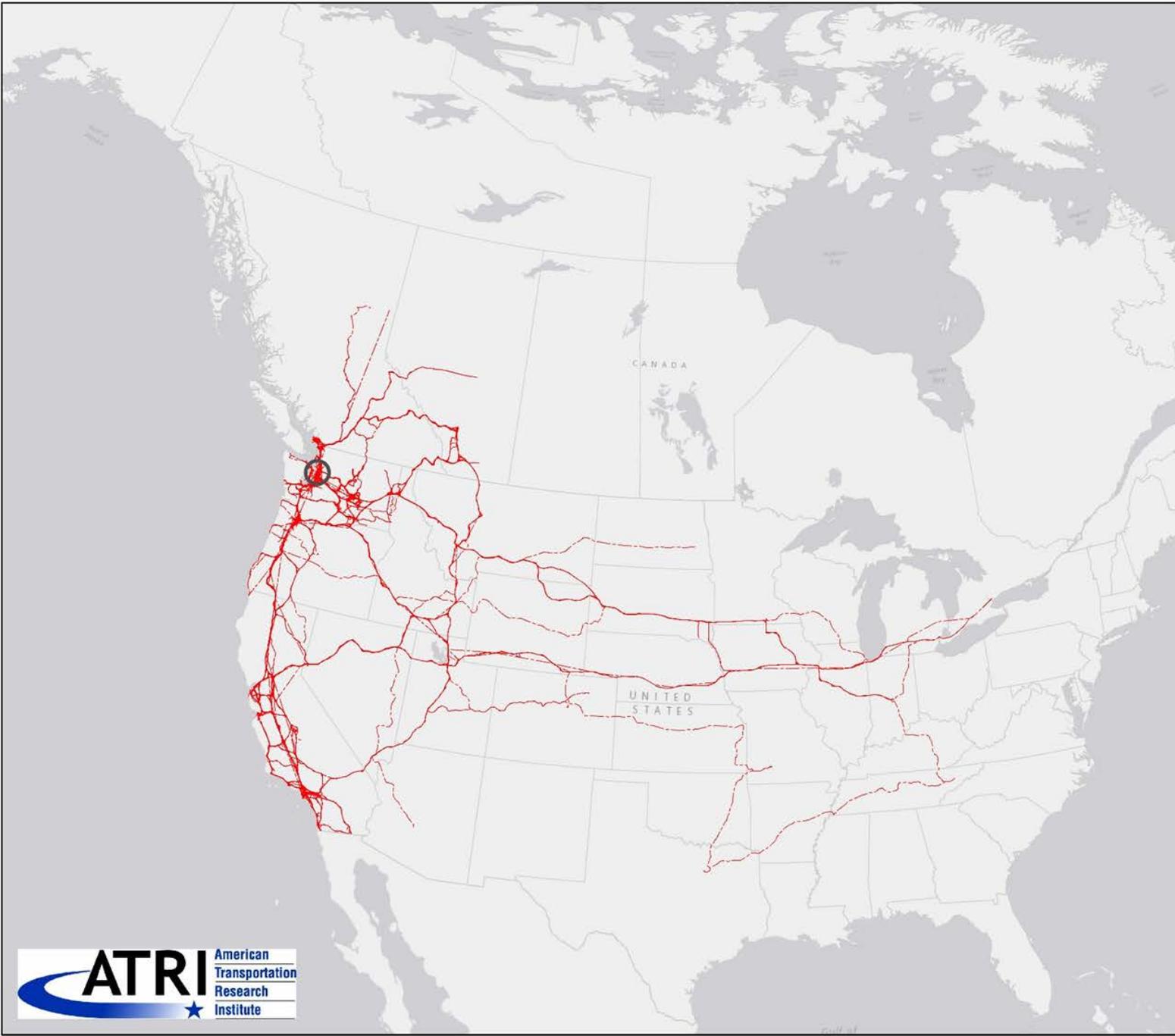
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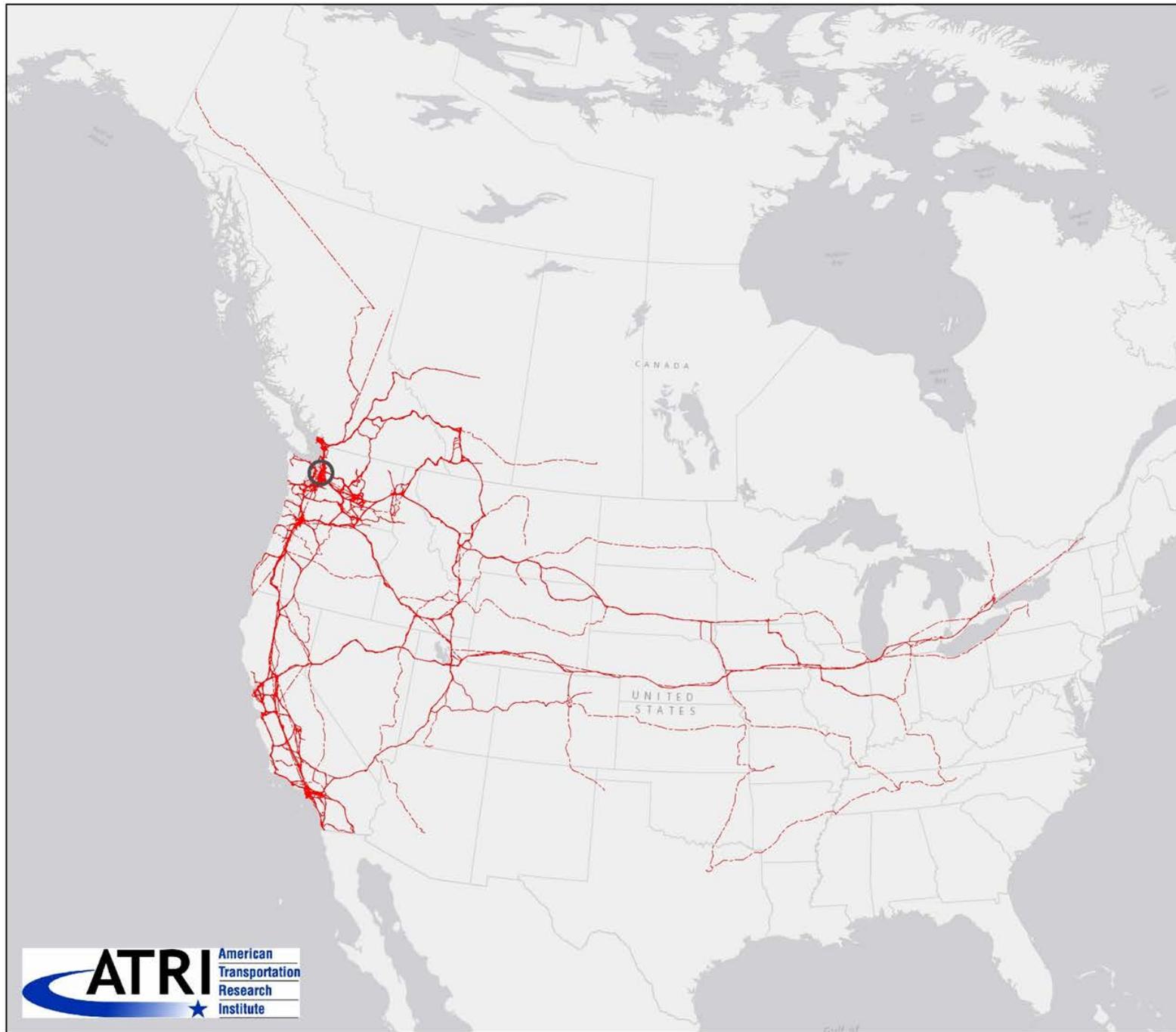
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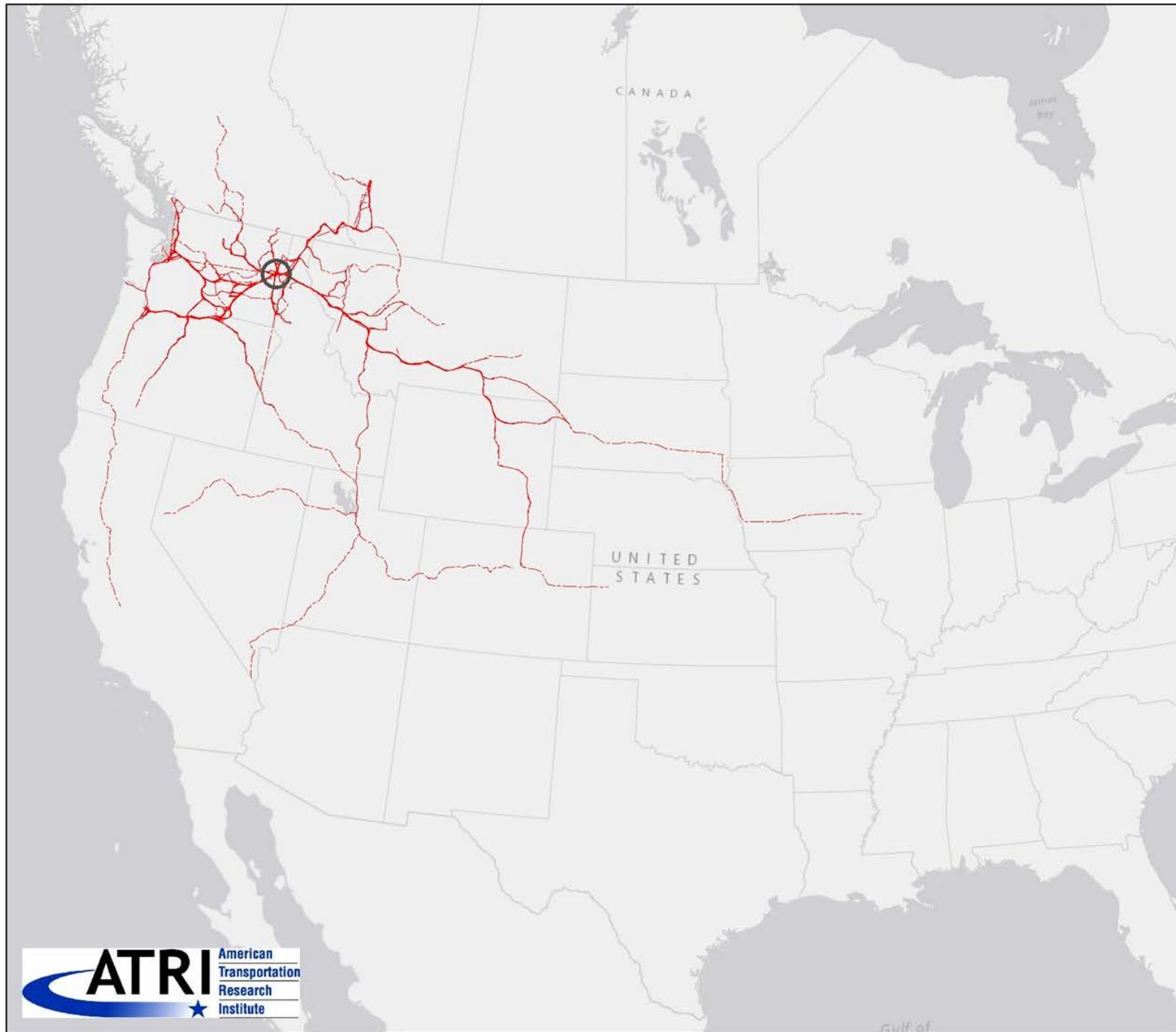
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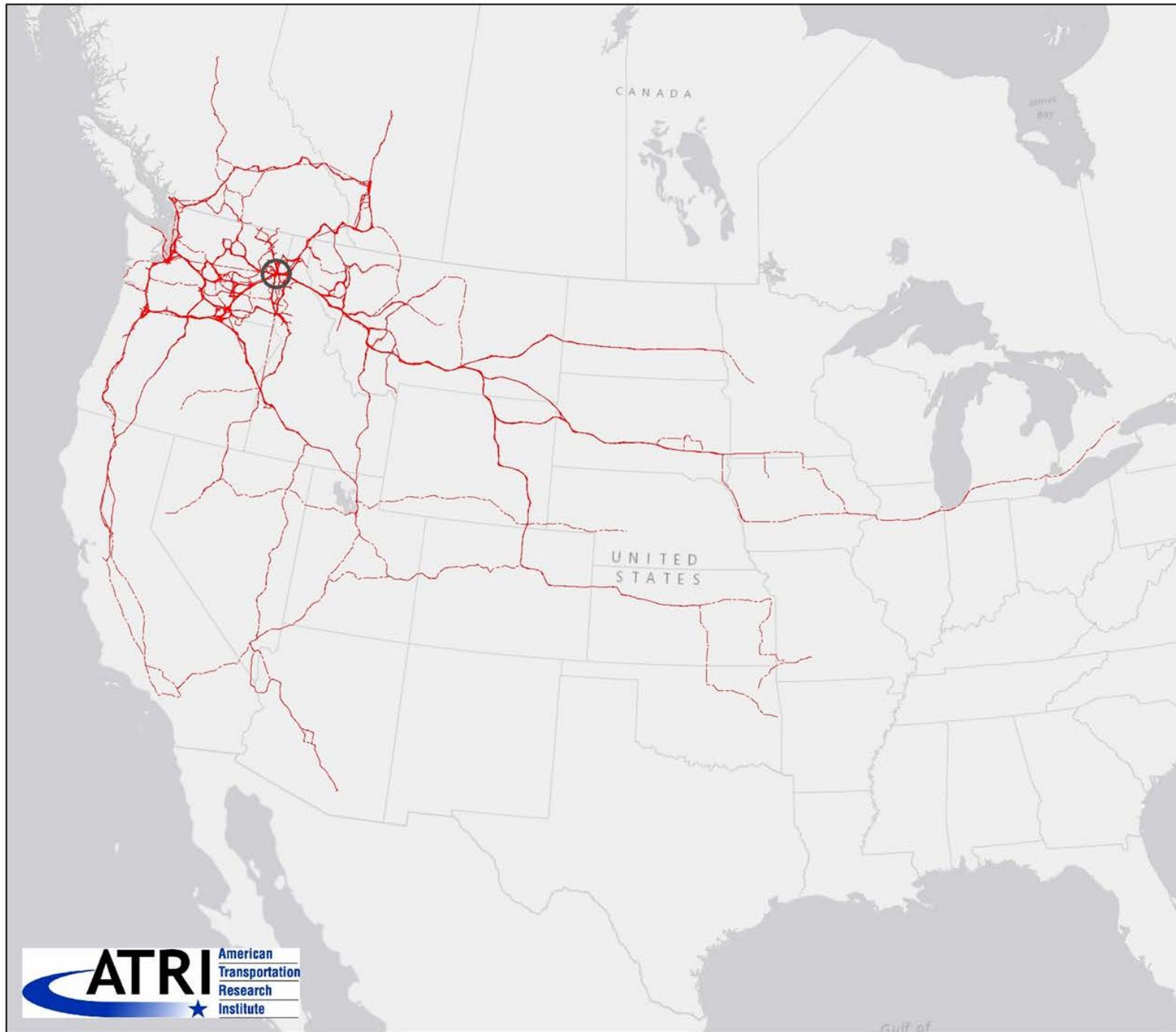
Spokane, WA 5-day Truck Flows

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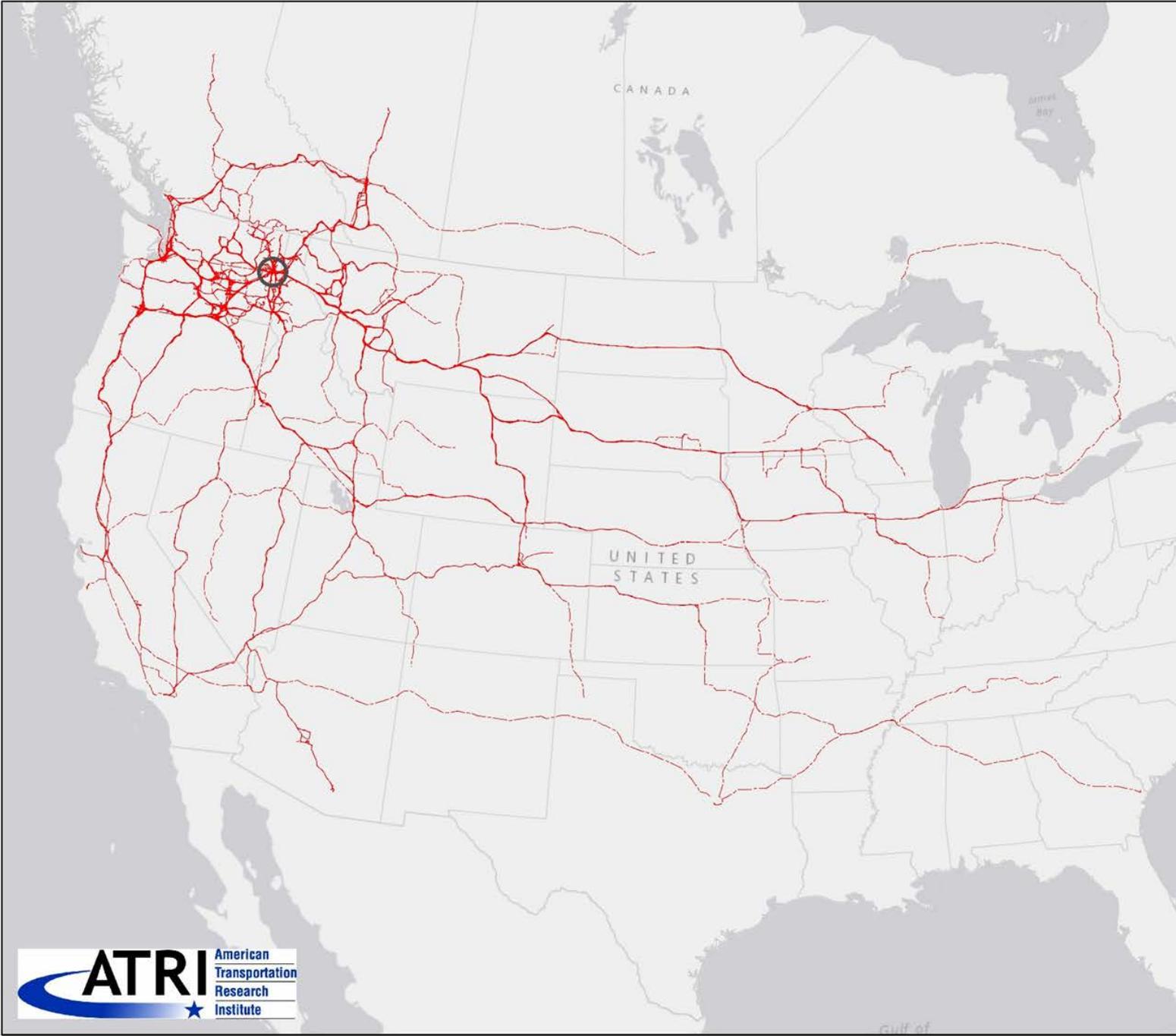
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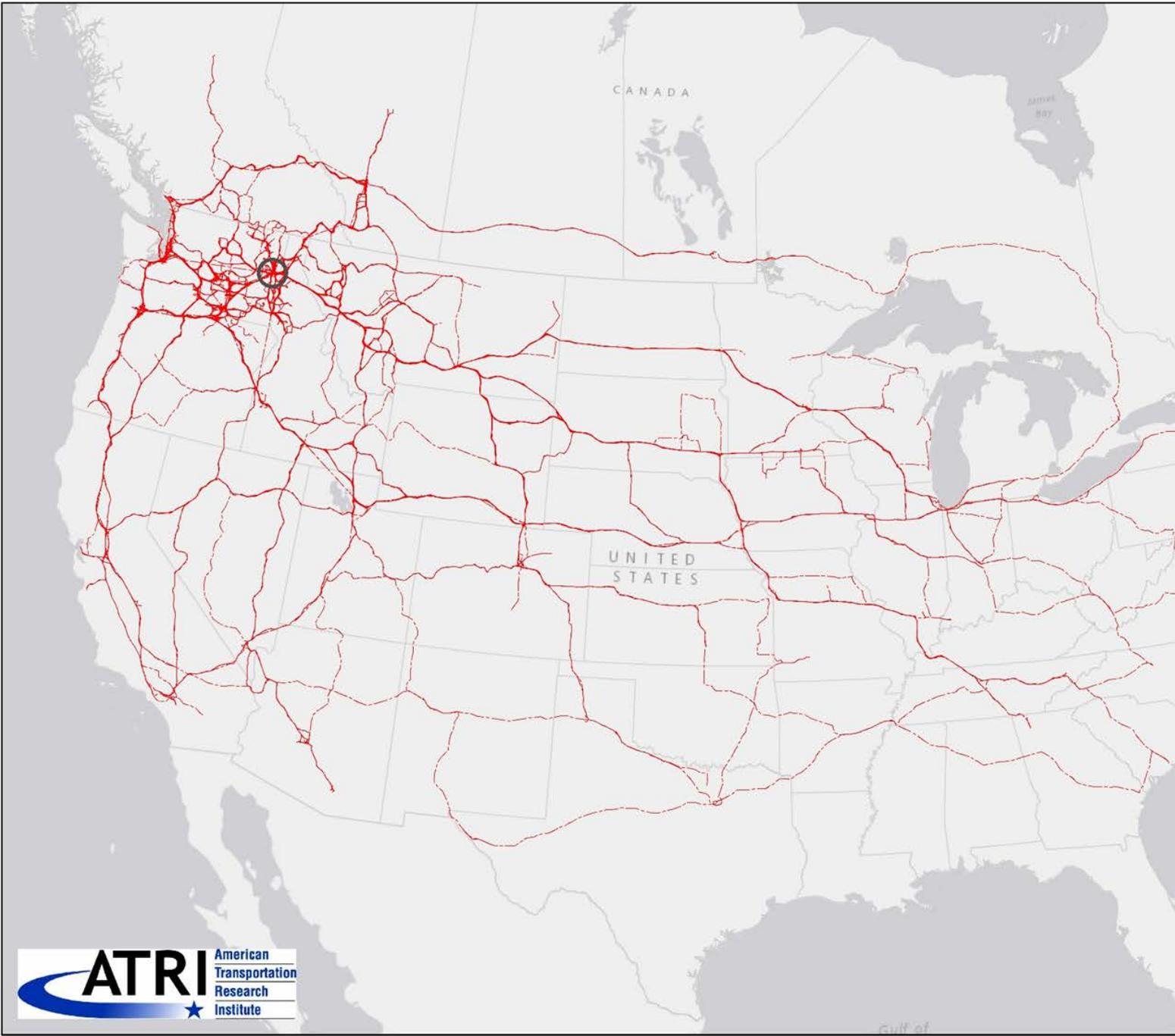
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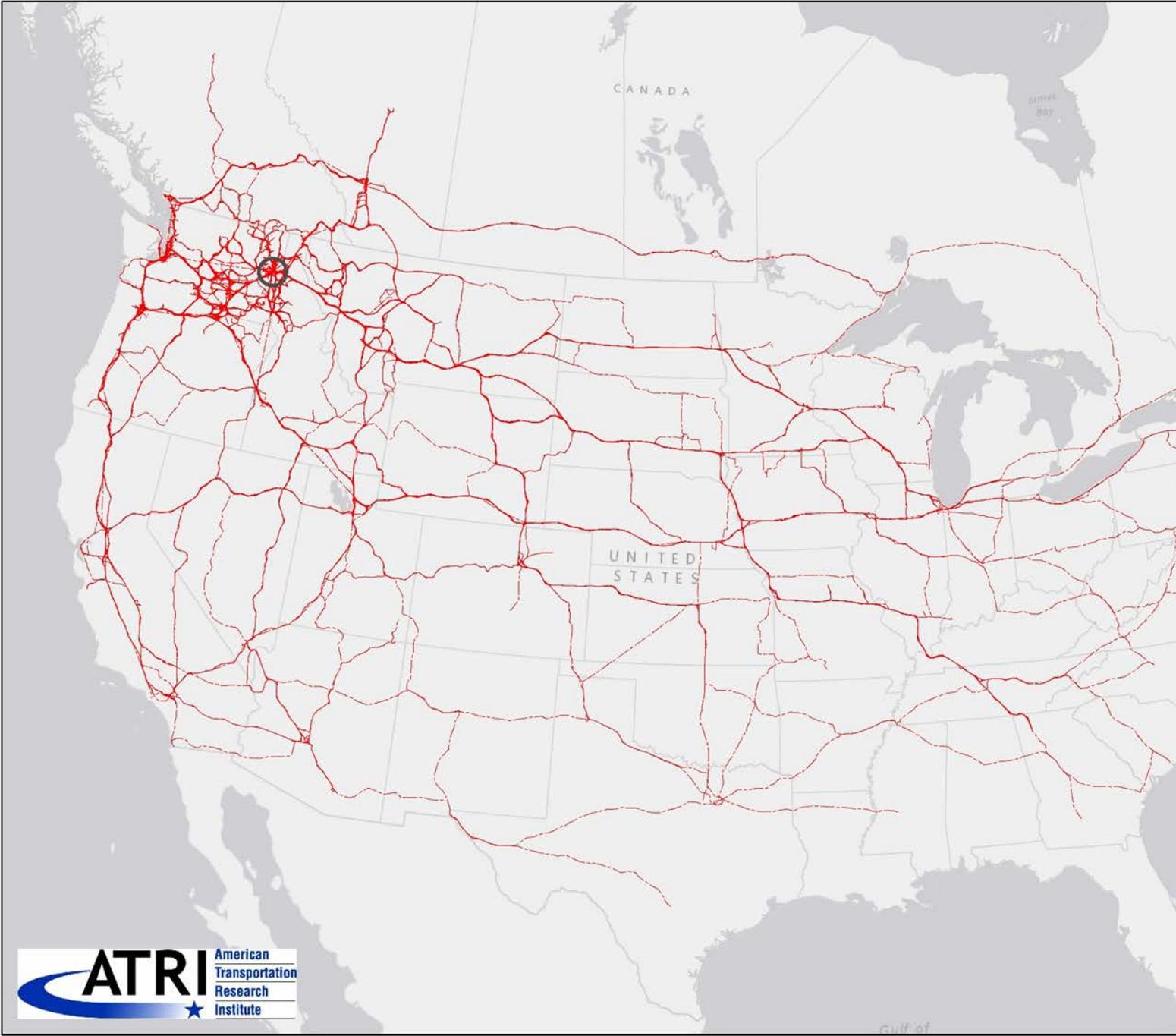
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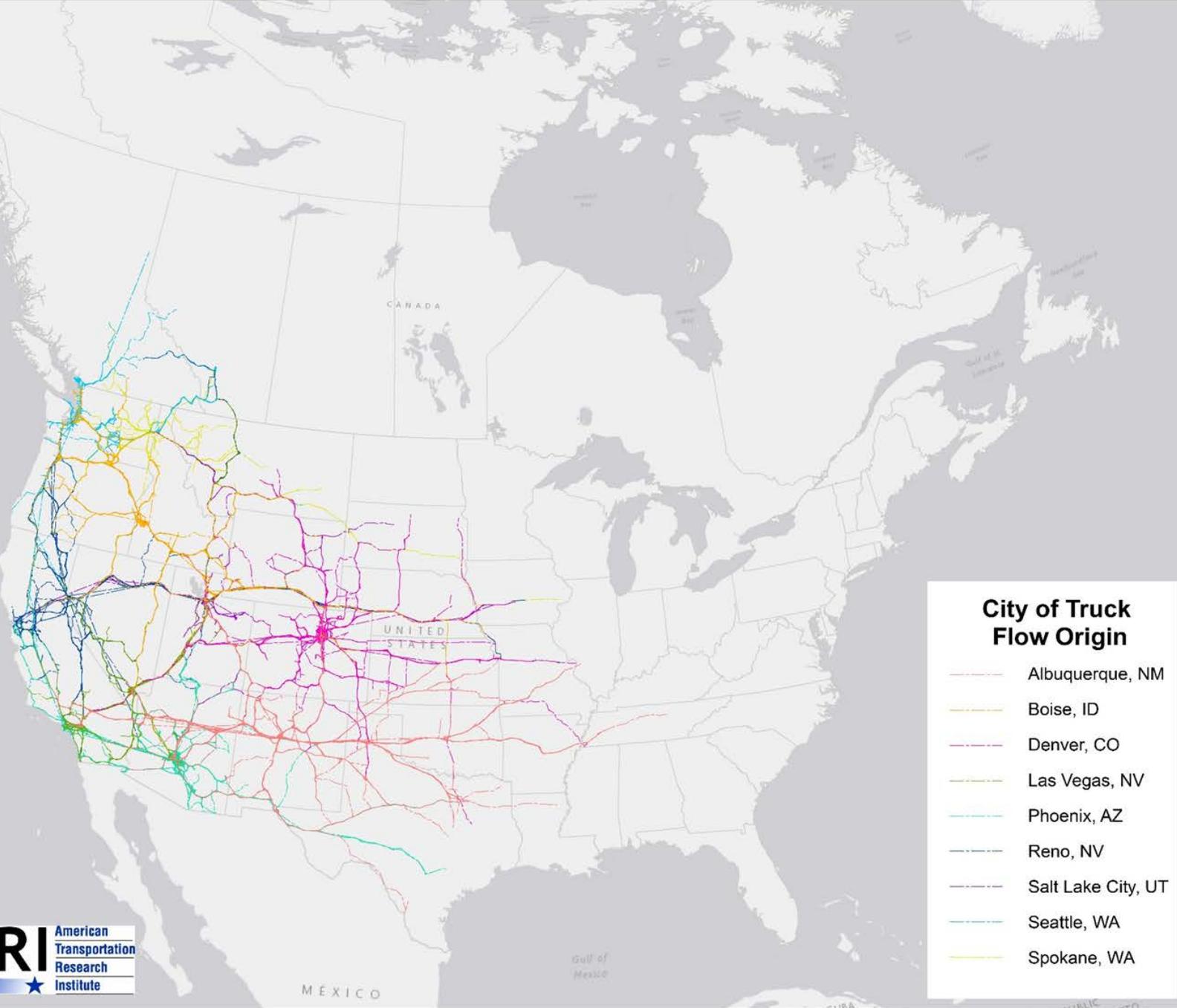
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All Cities: 5-day Truck Flows

By ATRI

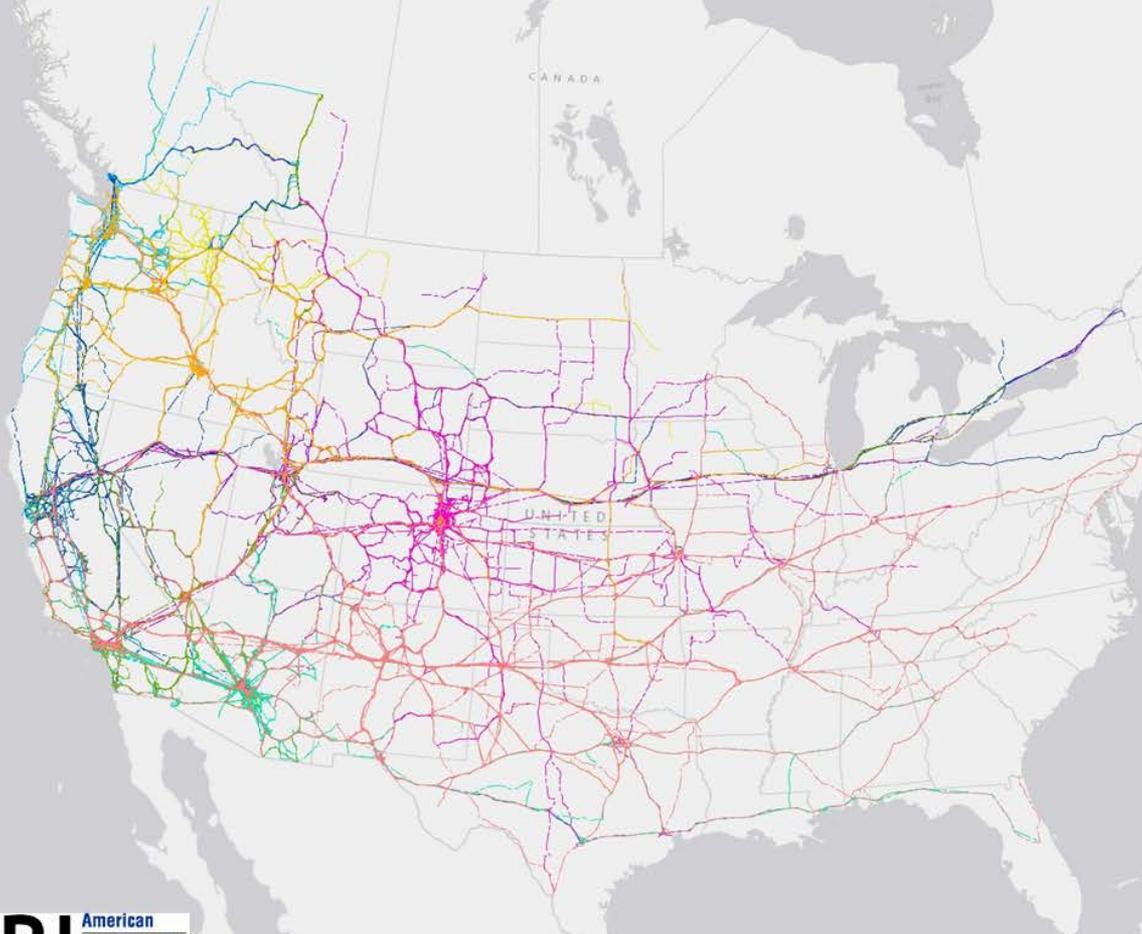
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City of Truck Flow Origin

- Albuquerque, NM
- Boise, ID
- Denver, CO
- Las Vegas, NV
- Phoenix, AZ
- Reno, NV
- Salt Lake City, UT
- Seattle, WA
- Spokane, WA

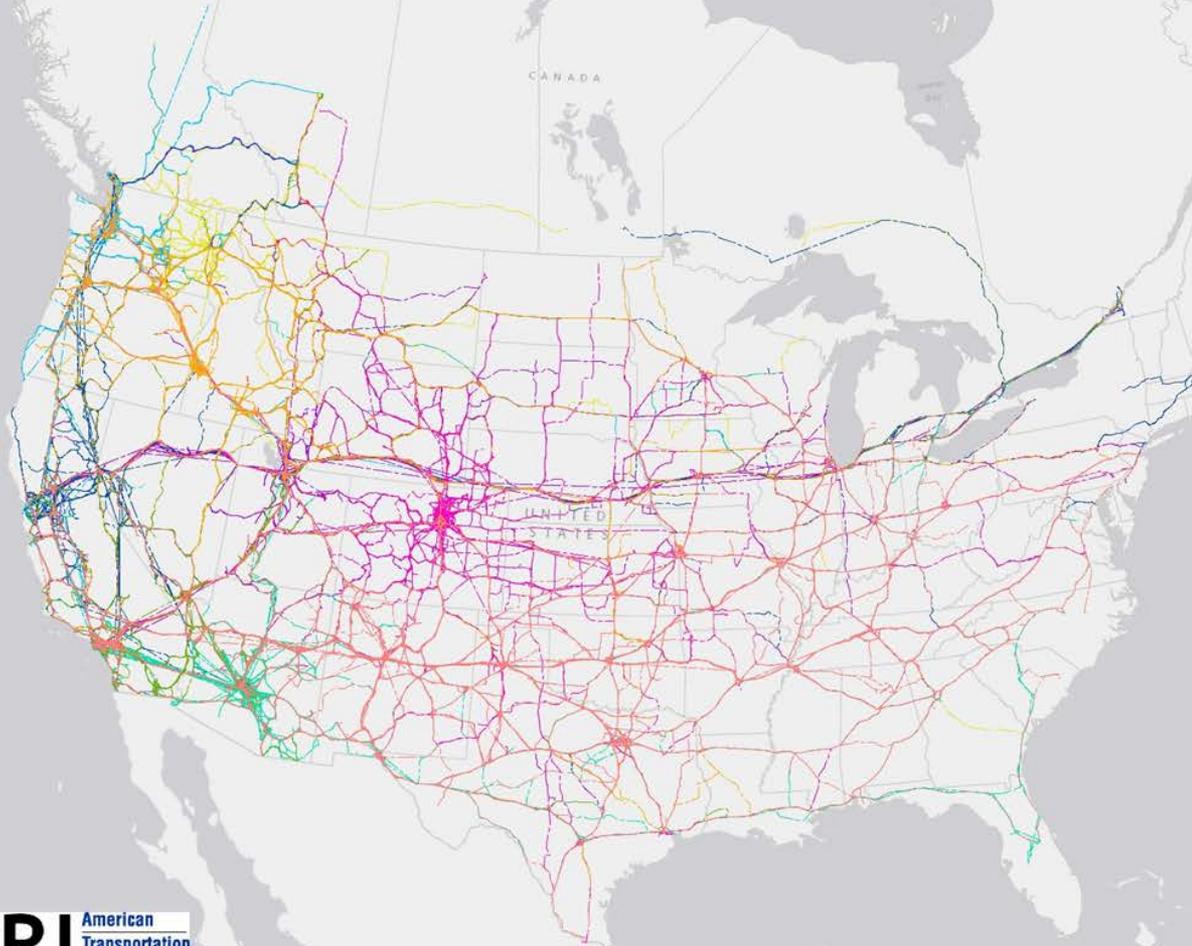
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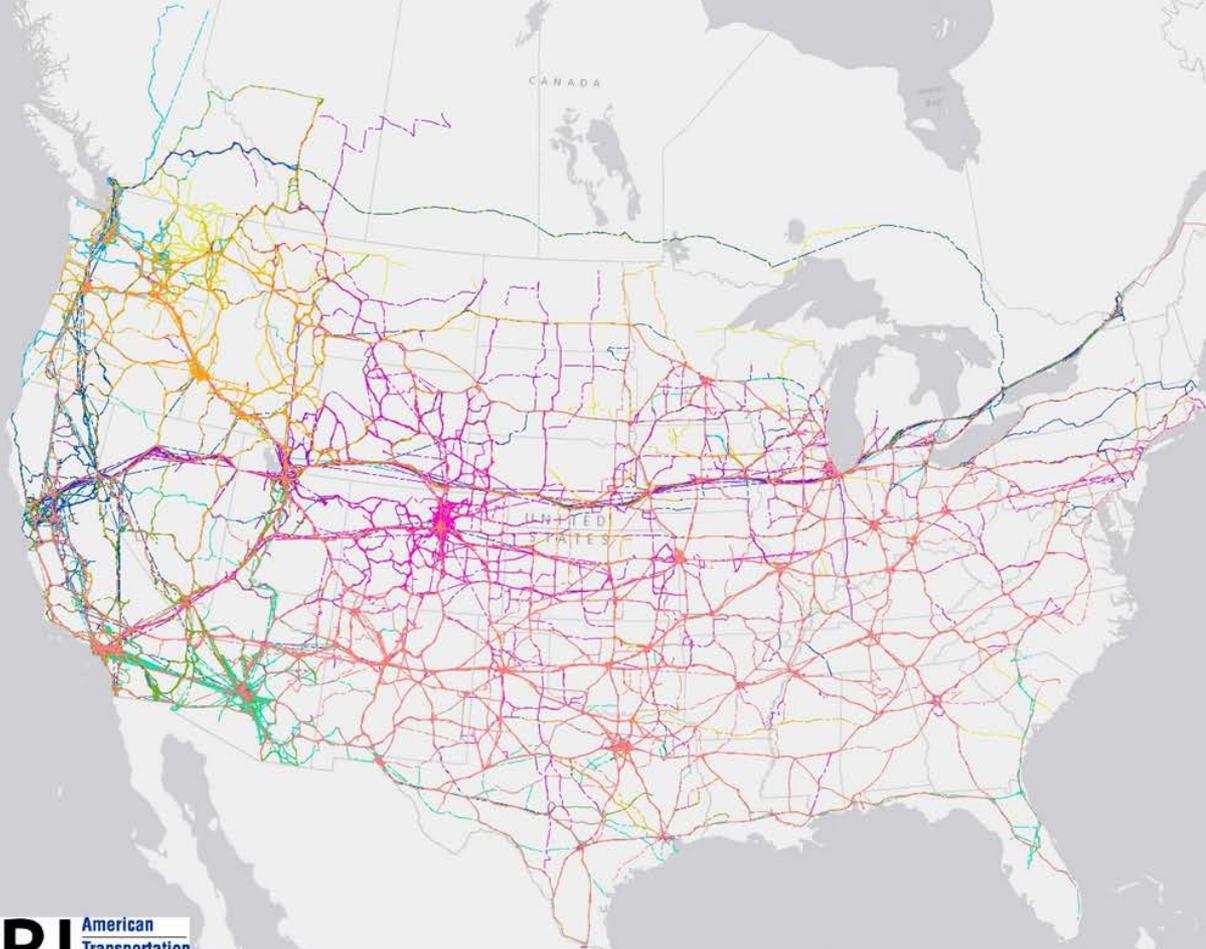
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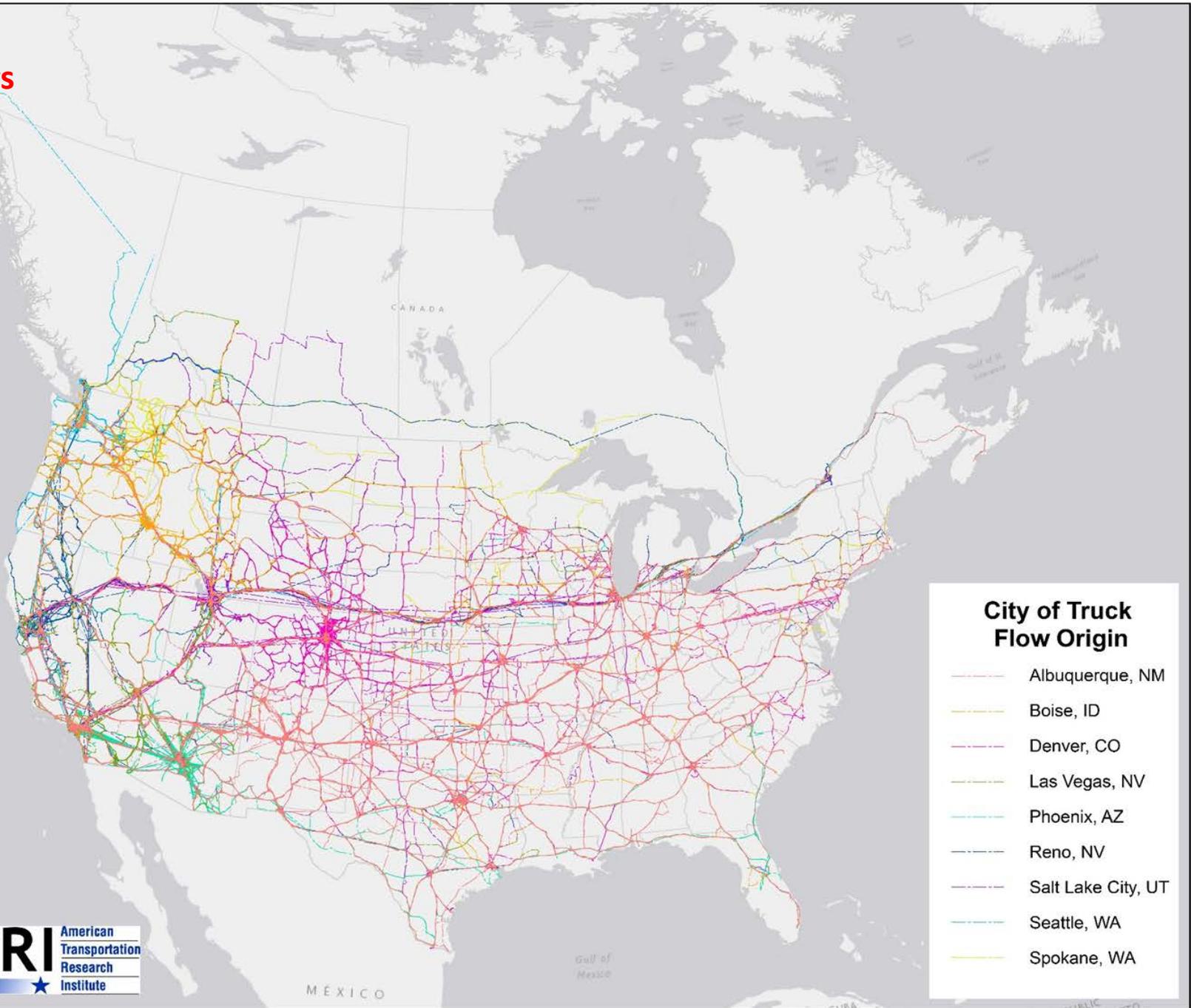
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Supply Chain Performance Measurement: I-95/FHWA Freight Fluidity Pilot

- Objective
 - Demonstrate and improve the measurement of freight transportation performance using a supply chain perspective
 - ➔ ***End to end*** conception of performance and measurement
- Case Study Sponsors
 - I-95 Corridor Coalition, Intermodal Committee
 - FHWA, Office of Freight Management
 - U.S. Department of Commerce, Advisory Committee on Supply Chain Competitiveness
- Foundation for new FHWA Fluidity Program

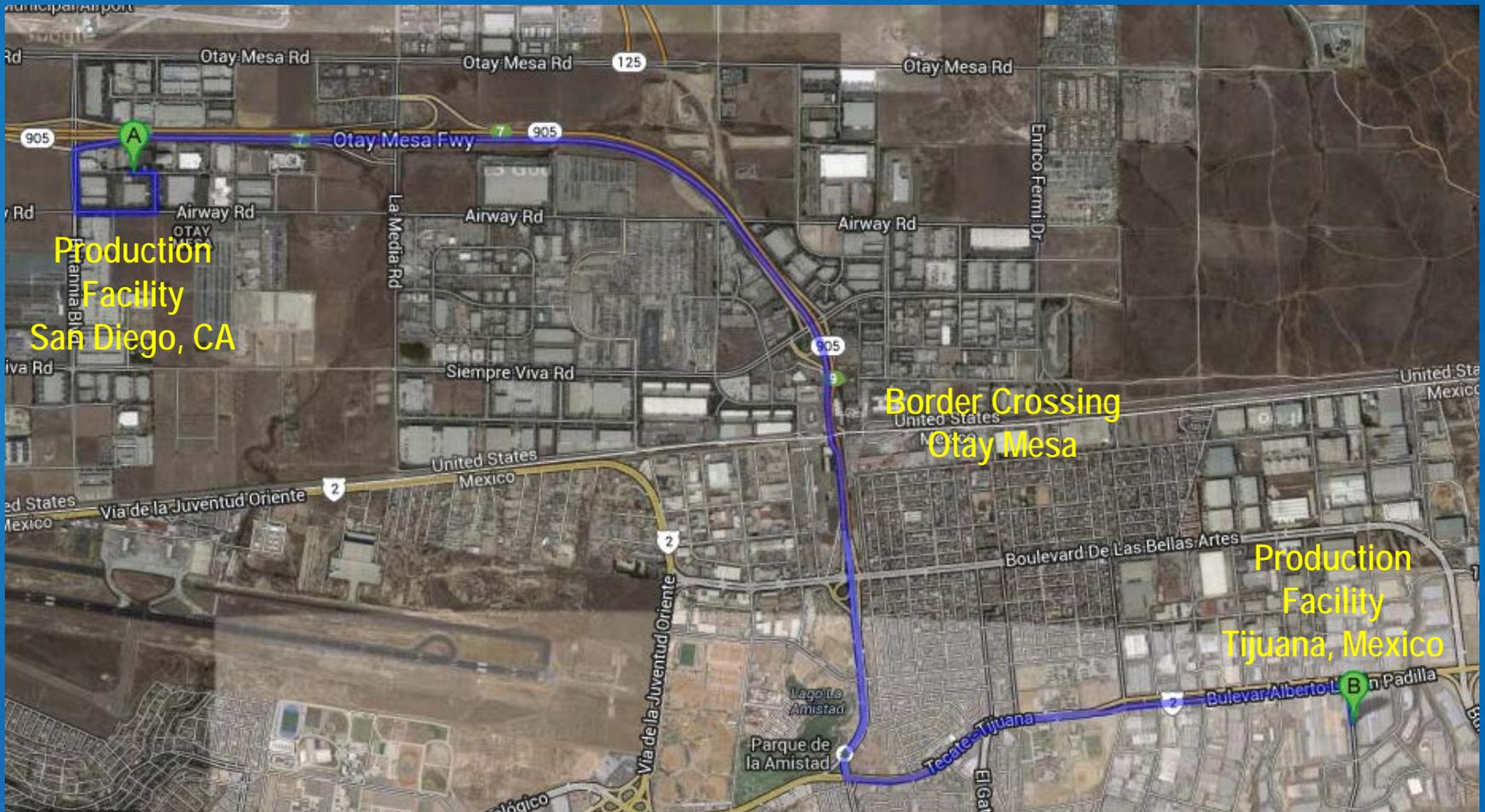
Supply Chain Fluidity: Retail



Retail Supply Chain Performance: Seattle to New York

Links and Nodes	Transit Time/Dwell		
	Time (Hours)	Reliability (95% travel time)	Cost (2014 \$'s)
West Coast port (SEATAC)	36	86	
Dray move	1.0	1.4	\$299
<i>Transload or Consolidation Center</i>			
Dray move	1.0	2.25	\$308
West Coast rail intermodal terminal	20		
Rail move	104	154	\$3,178
Midwest rail intermodal interchange	71	160	
Rail move			
East Coast rail intermodal terminal			
Dray move	1.1	1.4	\$318
<i>East Coast Regional Distribution Center</i>			
Truck P&D move	6.0	9.5	\$775
<i>Retail Store</i>			
Totals			\$4,878

Supply Chain Fluidity: Cross-Border Electronics



Electronics Supply Chain Performance: San Diego to Tijuana via Otay Mesa

Links and Nodes	Transit Time/ Dwell Time (Hours)	Reliability (95% travel time)	Cost (2013)
Panasonic San Diego Facility			
Truckload move	0.1 hours (6 mins.)	0.5 hours	\$288
Otay Mesa International Border Crossing	1.1 hours*	2.7 hours*	
Truckload move	0.1 hours (6 mins.)	0.5 hours	\$442
Panasonic Tijuana Facility			
Totals	1.3 hours	3.7 hours*	\$730**



* Estimated using data from *Measuring Cross-Border Travel Times for Freight: Otay Mesa International Border Crossing*, (Final Report), prepared by Delcan for FHWA, September 2010.

** Preliminary (high) estimate.



- Orientation
- Intermountain Freight Forecast (FAF)
- Intermountain 5-Day Truck Flow (ATRI)
- Supply Chain Performance Measurement
- **FAST Act Freight Funding**



FAST Act Freight Provisions

- Funding expressly for freight created for first time through \$300 bil. 5-year federal FAST Act
 - \$6.3 bil. National Highway Freight Program “formula” funds dedicated to freight
 - \$4.5 bil. Nationally Significant Freight & Highway Projects (NSFHP) competitive grant program – aka FASTLANE
 - \$4.0 bil. for highway projects, freight and passenger
 - \$0.5 bil. dedicated to freight rail and ports
- Yields **\$528 mil.** Intermountain formula freight funds, averaging **\$106 mil.** per year
 - Graduated amounts
 - Up to 10% for freight rail and ports



CMACGM 18,000 TEU Vessel at
Los Angeles 1/16

Use of Formula Funds

- Intermountain formula funds useable on **7,400 mile network** with 3-4 components:
 - Primary highway freight system: 5,400* miles of interstates and intermodal connectors already designated by US DOT in 41,500 mile national system adopted in FAST
 - Critical Rural Freight Corridors: 1,200 miles statewide, designated by states
 - Critical Urban Freight Corridors: ~550 miles statewide generally designated by MPOs - but total presumably adjudicated by states
 - Remainder of Interstate system in some states: 280 miles

* Excluding I-5



Primary Highway Freight System



0 250 500 Miles

U.S. Department of Transportation,
Federal Highway Administration,
Office of Freight Management and Operations

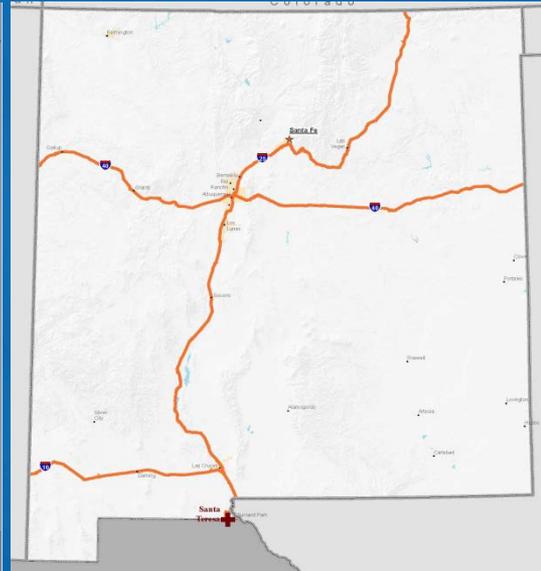
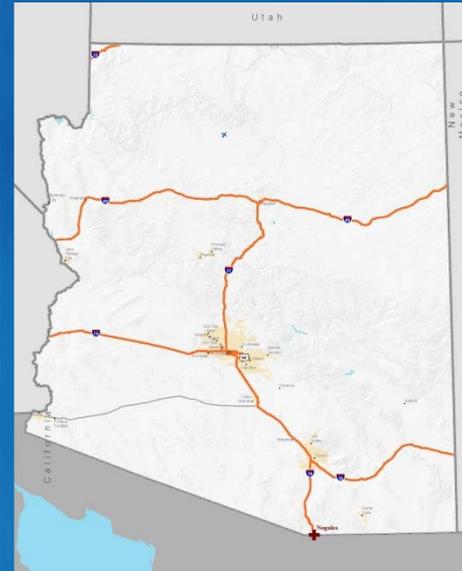
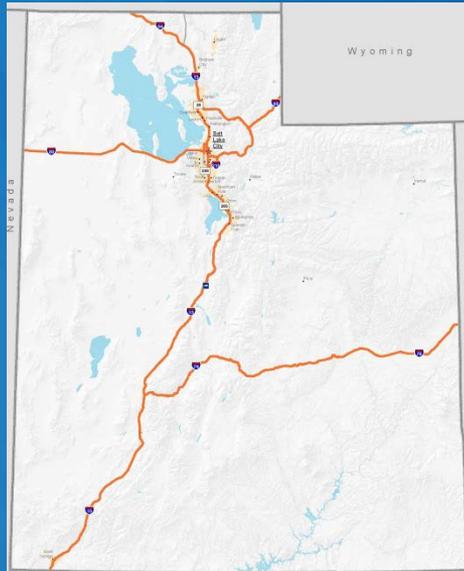
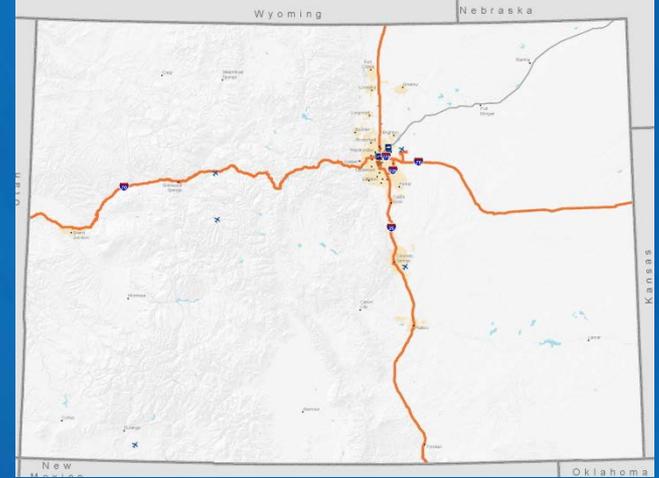
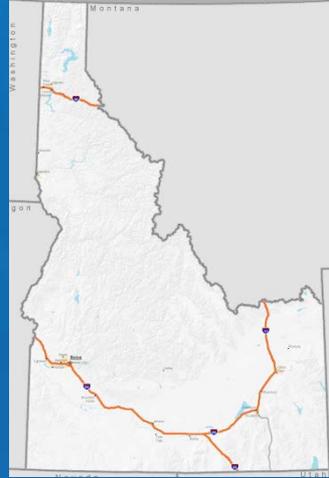
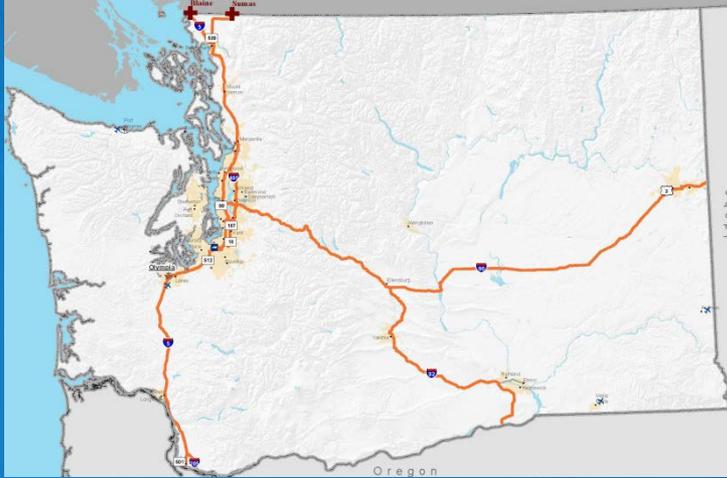
LEGEND

NHFN Features

- Primary Highway Freight System (PHFS) (approx. 41,518 miles)
- Remainder of the Interstate System (not part of PHFS) (approx. 9,511 miles)
- Border Crossings

December 2015

Intermountain PHFS By State



NSFHP “FASTLANE” Program

- NSFHP is for shovel-ready projects, mostly of minimum \$100 mil. size
 - Construction can start 18 months from obligation
 - Set asides: 25% for rural, 10% for small projects
 - \$25 mil. minimum grant; \$5 mil. minimum for small projects
- FAST Act creates National *Multimodal* Freight Network
 - Highway freight network plus Class I rail systems, major ports and airports, some other
 - Not tied to NSFHP but apt to influence awards
- NSFHP favors **multi-jurisdictional** projects
 - Multi-jurisdictionality not required, but NSFHP is the one program encouraging and supporting them
 - Awards subject to congressional disapproval by joint resolution within 60-day notice period
 - ➔ Implication: political coalition probably useful in competing for awards



FASTLANE Opened in 2016

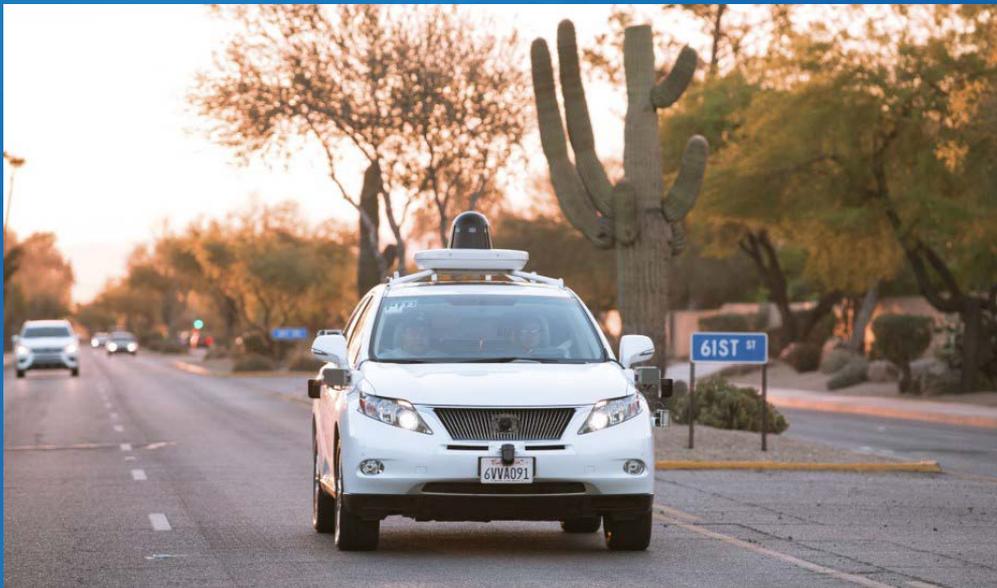
- Notice Of Funding Opportunity issued with April deadline:
 - \$759 Mil. available nationally
 - Initial release of annual grants
 - Eligible projects:
 - Highway freight projects carried out on the NHFN
 - Highway or bridge projects carried out on National Highway System (NHS)
 - Rail-highway grade crossing or grade-separation projects
 - Freight intermodal, rail and port projects (\$ dedicated & capped)
 - 2016 FASTLANE applications something of a free-for-all; 2017 and beyond will be planned and deliberate
 - Much to be learned from awards this summer
- ➔ **The time to be planning, designing, and partnering is now**



Intermountain Network Planning: The Future is Already Here



- Mercedes Autonomous Truck Platoon in Netherlands



- Google Self-Driving Car in Phoenix

Thank You!

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