

Budget Justification for New & Existing State Rail Safety Programs

State Managers Meeting
Washington D.C.
Oct. 21, 2015



FRA – Office of Railroad Safety

11/6/2015



U.S. Department
of Transportation
**Federal Railroad
Administration**

Justification for State Participation

- **Increased Number of Safety Inspections**
- **Anticipate and Address Future Rail Safety Issues**
- **Accident Response and Complaint Resolution**
- **High-Profile State Rail Safety Concerns**
- **Security**
- **State Transportation Planning**
- **FRA Outreach and Support**



Increased Number of Rail Safety Inspectors

- FRA estimates that it is able to inspect about 0.2 percent of railroad operations each year;
- Results in a net increase in safety inspections:
 - 15,331 inspection reports (2014)
- More safety defects corrected;
 - 49,870 safety defects corrected (2014)
- Better response to public complaints and railroad accidents; and



Increased Number of Rail Safety Inspectors (continued)

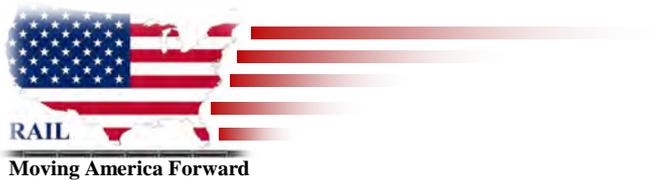
- Provide solid, qualitative and quantitative narrative for justification
 - Accident statistics and trends from secure site or elsewhere
- Know where to look for funds
 - Federal grants
 - State funds
 - MN state program funded by Class I railroads

Anticipate and Address Rail Safety Issues

- Crude oil/ethanol transportation;
- Rail transportation of spent nuclear fuel;
- High-speed rail passenger operations;
- Commuter rail operations; and
- Effect of changing traffic patterns on communities and grade crossing safety.



Commuter/HSR



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COMMUTER RAILROADS

Trinity Railway Express: Dallas to Fort Worth

New Mexico Railrunner: Belen, to Santa Fe

Denton County Transportation Authority: Dallas to Denton

TexRail: Fort Worth to DFW Airport

Capitol Metro: Austin to Leander

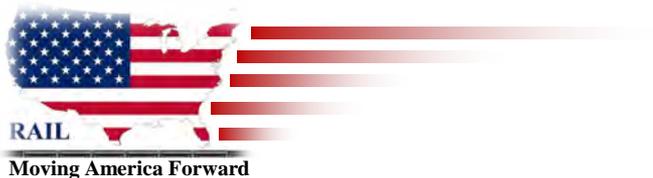


Capitol Metro



High Speed Rail

Texas Central Railway: Dallas to Houston



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Texas Central Railway



Texas Central Railway

- Texas Central Railway (TCR) is promoting the deployment of a high-speed rail system, which will provide a safer and more efficient way for Texans to move between Dallas and Houston – in less than 90 minutes.
- TCR works closely with Central Japan Railway Company (JRC) in the promotion of this project, and the system promoted by TCR, the N700-I Bullet train system, is based on fifth-generation Shinkansen technology.
- The Tokaido Shinkansen has been in operation in Japan since 1964.



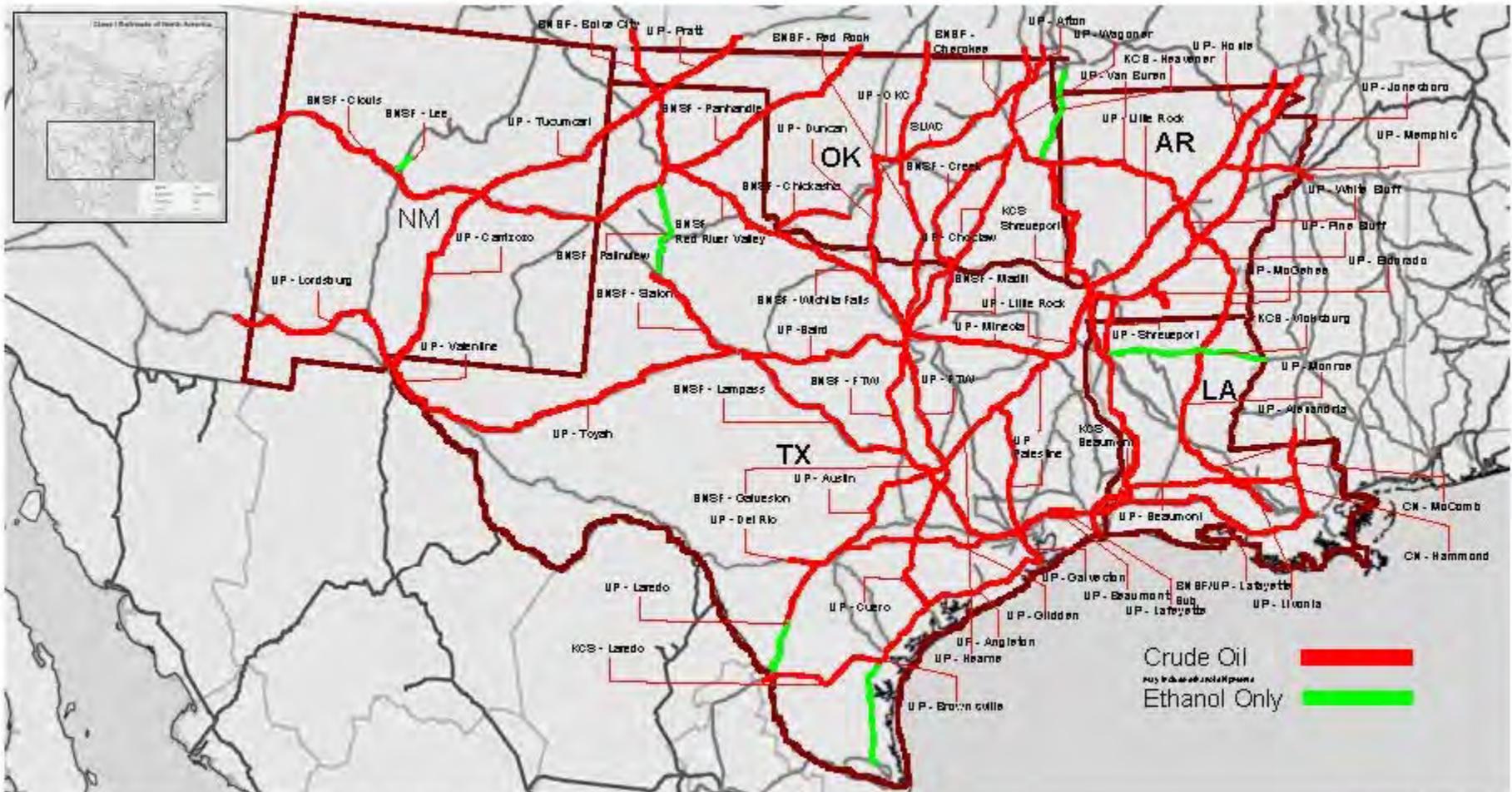
Crude Oil

Crude Oil Volume

Originated Carloads of Crude Oil on U.S. Class I Railroads



*estimate based on first three quarters annualized Source: AAR



Federal Railroad Administration - Region 5 (Crude Oil Routes)

Updated 6/19/2014



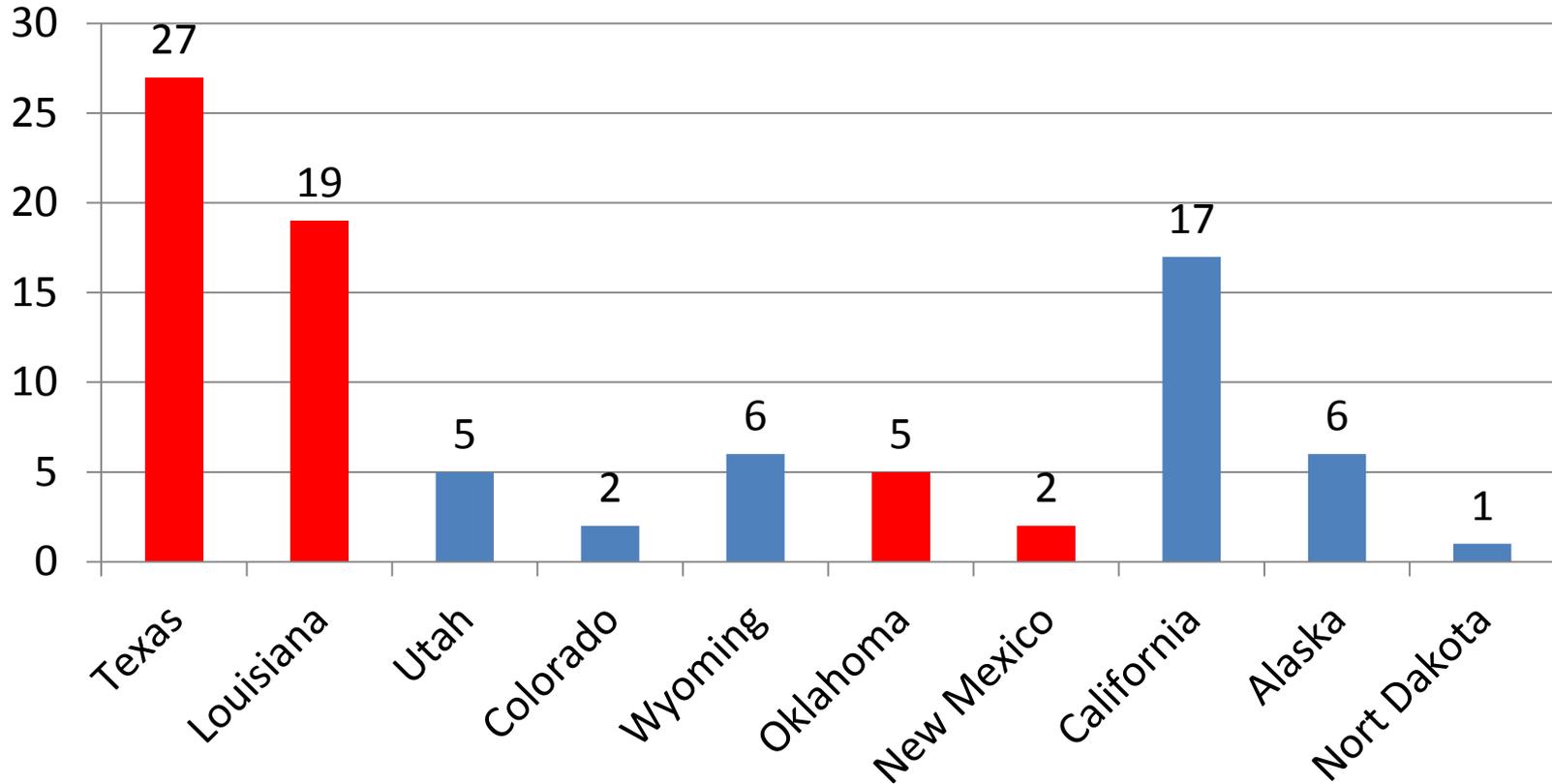
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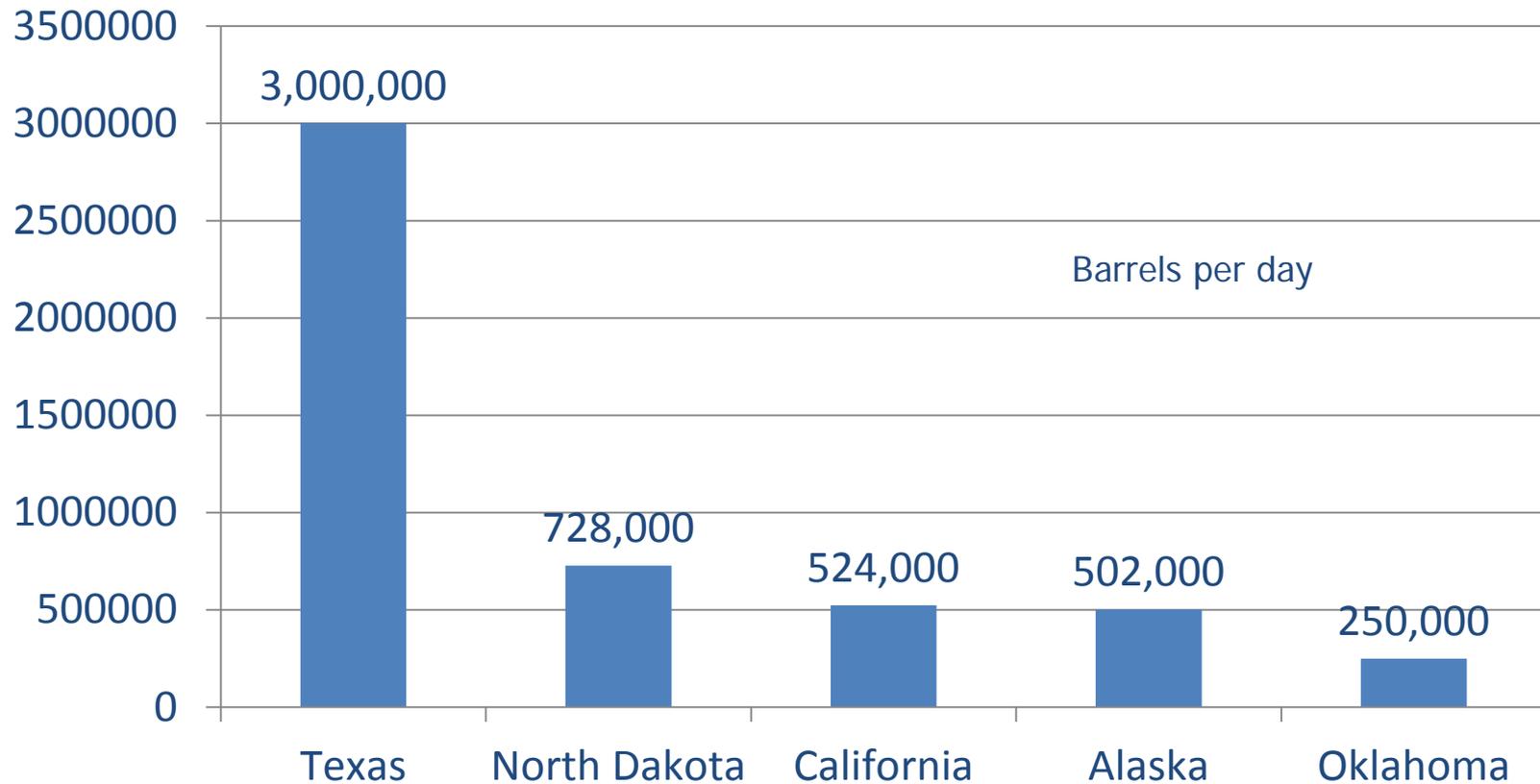


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10 most Oil Rich States (Refineries)



Top 5 Oil Producing States 2014



Anticipate and Address Rail Safety Issues (continued)

- Trespassers
- Positive Train Control (PTC)
- Road crossing safety and blocked crossings
- Weather related accidents
- Infrastructure concerns, particularly with short line railroads (funding of maintenance)
- Develop relationships with local emergency response for accident preparedness

Complaint and Accident Response

- Ability to identify appropriate railroad personnel to address specific complaints;
- More timely and effective response to citizen complaints and accidents;
- Knowledge to identify, propose and enforce needed state rail safety rules or legislation;
- Investigate and report on all railroad accidents, including those FRA does not respond to.



Complaint and Accident Response (continued)

- Monitor train accidents at the state level
- States should be included in receiving National Response Center (NRC)
- FRA should consider forwarding Initial Accident Reports (39i) to affected state officials
 - Consider adding state managers to Accident Notification Distribution List

Complaint and Accident Response (continued)

- Federal and State partners should improve communication with regards to the differences between various Federal and State regulations to better respond to public complaints

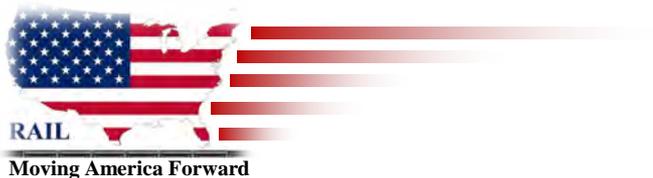
High-Profile State Rail Safety Concerns

- International border crossings;
- Ports;
- Chemical and oil refineries;
- Military installations/STRACNET routes;
- Rail operations adjacent to natural resources;
- Nuclear power plants
- Passenger operations, intercity and commuter

Train Operations near Natural Resources



Border Crossings with Mexico

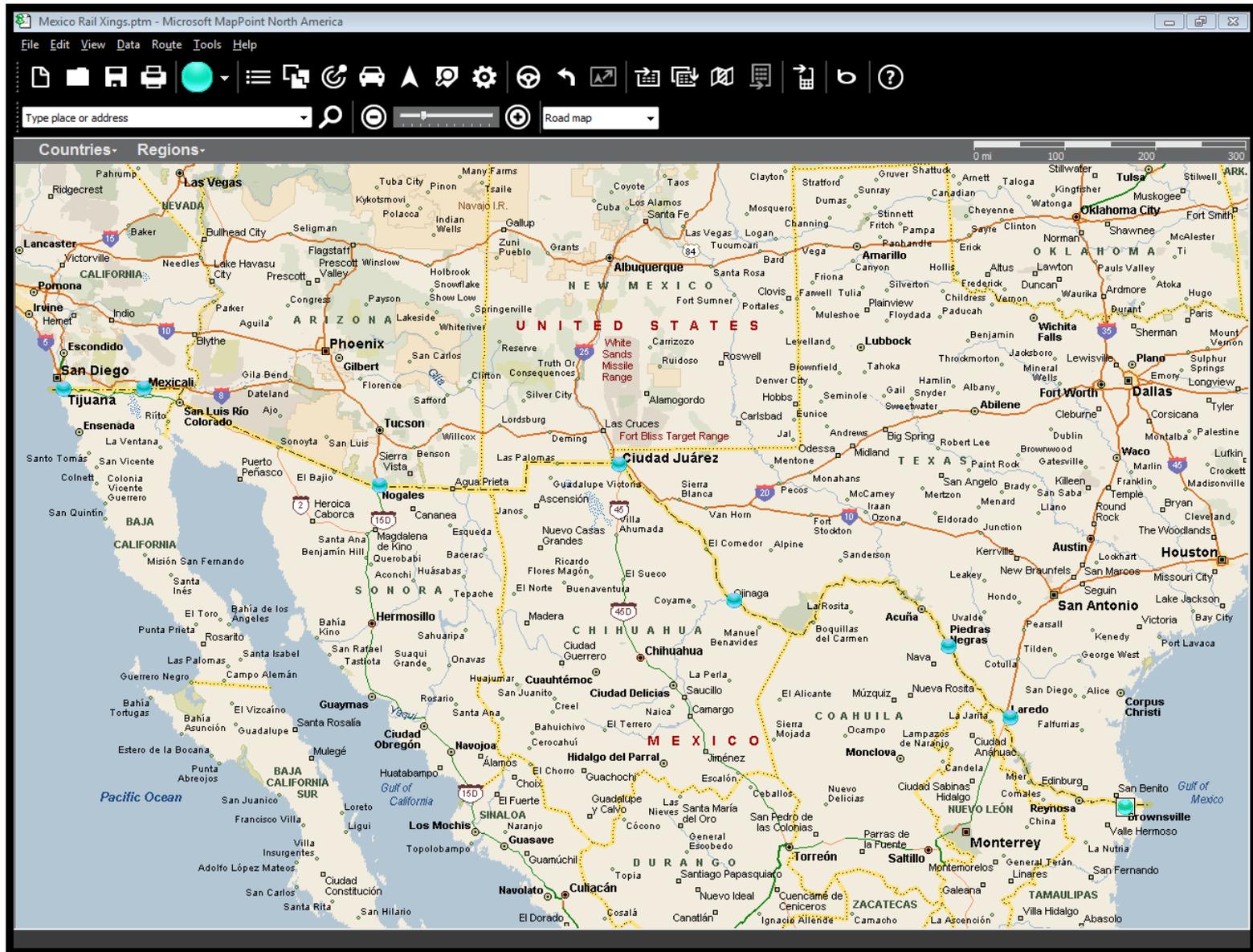


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Top Ports of Border Crossing/Entry (Yearly) Ranked by Trains

Rank	Port Name	Year	Trains	Loaded Rail Containers	Empty Rail Containers
1	TX: Laredo	2014	3,758	254,849	150,227
2	TX: Eagle Pass	2014	2,728	121,329	132,998
3	TX: El Paso	2014	1,990	43,351	55,944
4	AZ: Nogales	2014	795	42,802	32,963
5	TX: Brownsville	2014	685	10,947	54,346
6	CA: Calexico East	2014	252	587	6,561
7	CA: Otay Mesa	2014	205	1	3,088
Total			10,413	473,866	436,127



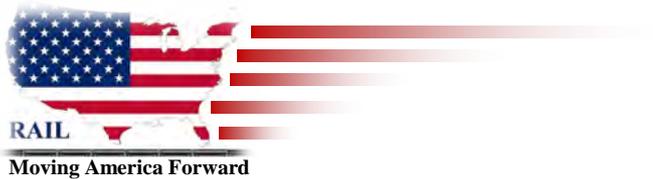
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Deep Water Ports



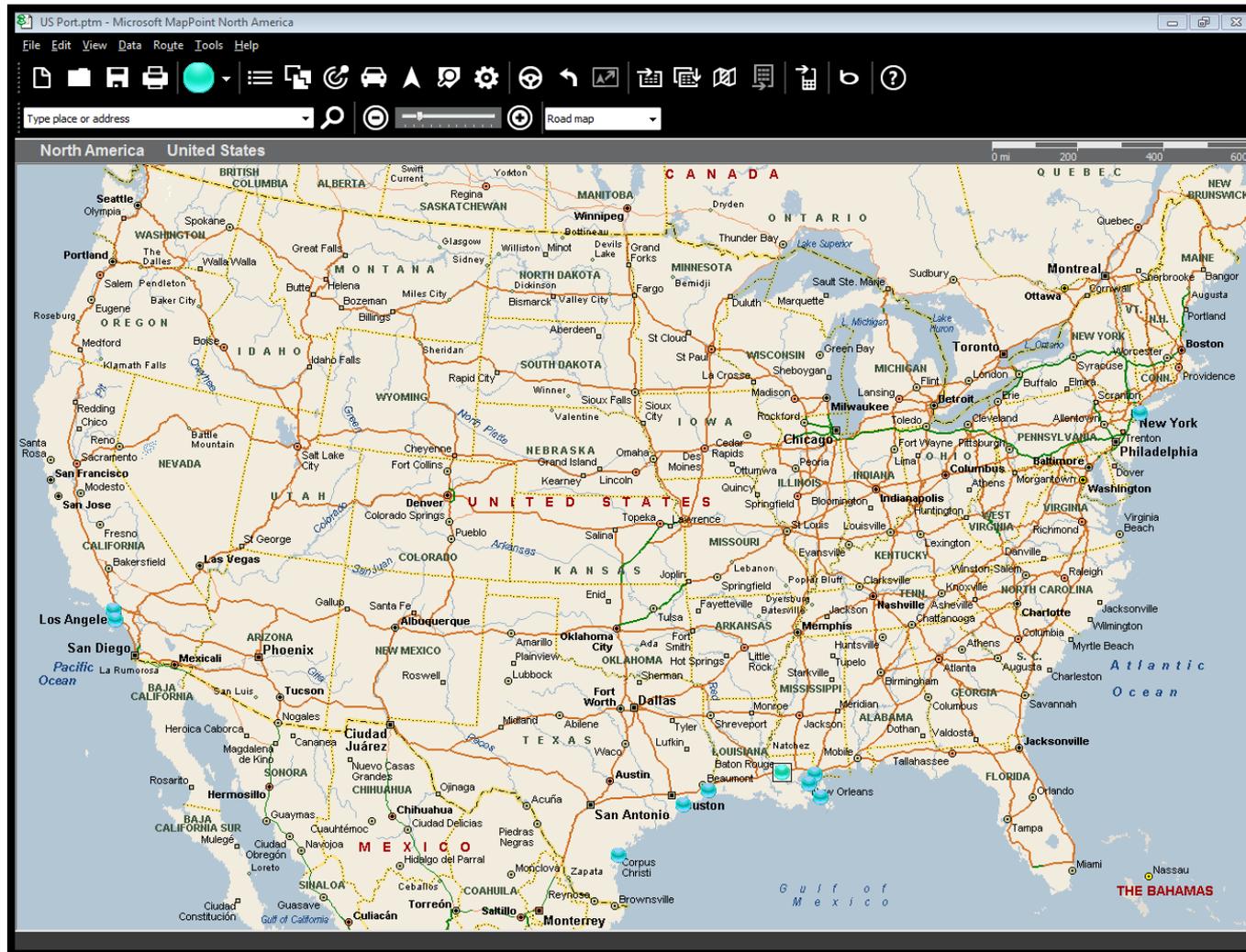
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Top 10 U.S. Water Ports Ranked by Total Tons 2012



Tonnage of Top 10 U.S. Water Ports
Ranked by Total Tons 2012

Ports	Rank	Total tons (Millions)
South Louisiana, LA, Port of	1	252.1
Houston, TX	2	238.2
New York, NY and NJ	3	132
New Orleans, LA	4	79.3
Beaumont, TX	5	78.5
Long Beach, CA	6	77.4
Corpus Christi, TX	7	69
Los Angeles, CA	8	61.8
Baton Rouge, LA	9	60
Plaquemines, LA, Port of	10	58.3



High-Profile State Rail Safety Concerns (continued)

- Natural resources
- Ports and international borders
- Schools, hospitals and residential areas adjacent to high-density rail lines
- Railroad lines that consist of both high speed passenger and freight traffic
- Inland ports
- Impact of intermodal facilities on all modes of transportation



Security

- Increased inspector presence can identify persons not authorized to be on railroad property;
- Ensure that hazardous materials shippers and consignees have a viable security plan

Security (continued)

- Identify and monitor locations that store HAZMAT rolling-stock
- FRA consider sharing TSA concerns and incident reports with state managers

State Transportation Planning

- Specialized technical expertise of rail safety inspectors can facilitate:
 - intermodal project development,
 - evaluation of rail properties,
 - project monitoring and asset management.
- Freight planning studies



State Transportation Planning (continued)

- Federal and State grade crossing managers share information with regards to high-traffic and problematic grade crossings

FRA Outreach and Support

- Support Letters
- Testimonial support before legislative budget committees
- Data mining and analysis

Data Mining Example

Damage per Train Accident*				
Rank	State	Accidents 2010-2014	Damage Totals 2010-2014	Damage Per Accident
1	North Dakota	110	33,156,276	301,421
2	Connecticut	81	21,936,170	270,817
3	New Mexico	108	28,441,597	263,348
4	Montana	177	43,559,699	246,100
5	Missouri	251	60,283,900	240,175
6	Wyoming	134	31,642,066	236,135
7	Kansas	309	71,573,656	231,630
8	Oklahoma	221	50,831,204	230,005
9	Nebraska	361	76,780,809	212,689
10	Minnesota	252	49,004,112	194,461



Data Mining Example

Rank	State	At Public Crossing					At Private Crossing					Total
		2010	2011	2012	2013	2014	2010	2011	2012	2013	2014	
1	Texas	184	169	182	183	233	29	35	47	42	54	1158
2	California	118	98	109	127	113	10	18	17	19	15	644
3	Illinois	118	90	90	102	111	10	14	19	24	23	601
4	Indiana	109	117	109	86	118	4	2	3	7	4	559
5	Georgia	75	91	78	90	91	6	6	8	6	16	467
6	Louisiana	89	77	66	70	71	17	18	13	2	13	436
7	Alabama	68	71	82	81	88	3	8	8	4	7	420
8	Ohio	66	67	72	60	79	9	9	4	11	7	384
9	Florida	54	44	47	52	76	13	8	12	13	10	329
10	Pennsylvania	51	58	50	43	51	8	5	9	17	21	313



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Data Mining Example

Percentage of Train Accidents on Main Track*				
Rank	State	All Train Accidents 2010-2014	Train Accidents on Main Track 2010-2014	Percentage of Train Accidents on Main Track
1	New Hampshire	2	2	100%
2	Connecticut	81	61	75%
3	Rhode Island	11	8	73%
4	Alaska	12	8	67%
5	North Dakota	110	66	60%
6	Wyoming	134	80	60%
7	Vermont	7	4	57%
8	West Virginia	102	58	57%
9	Delaware	22	12	55%
10	Massachusetts	64	32	50%



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Data Mining Example

Rank	State	Crossing Fatalities					
		2010	2011	2012	2013	2014	Total
1	California	29	23	30	37	34	153
2	Texas	24	15	34	19	20	112
3	Illinois	28	19	17	13	21	98
4	Indiana	9	10	13	15	11	58
5	Florida	11	7	12	8	10	48
6	Louisiana	13	8	7	6	13	47
7	Georgia	8	7	7	13	8	43
8	Alabama	9	11	1	5	15	41
9	Oklahoma	5	6	5	8	12	36
10	Kansas	7	13	6	3	6	35



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Data Mining Example

Rank	State	Private Vehicle Crossing	Public Vehicle Crossing	Total Crossings
1	Texas	4,685	9,150	13,835
2	Illinois	3,830	7,768	11,598
3	California	3,265	5,853	9,118
4	Ohio	2,762	5,703	8,465
5	Kansas	2,696	5,153	7,849
6	Indiana	1,874	5,693	7,567
7	Georgia	2,350	5,149	7,499
8	Michigan	2,222	4,831	7,053
9	North Carolina	3,090	3,961	7,051
10	Iowa	2,536	4,331	6,867



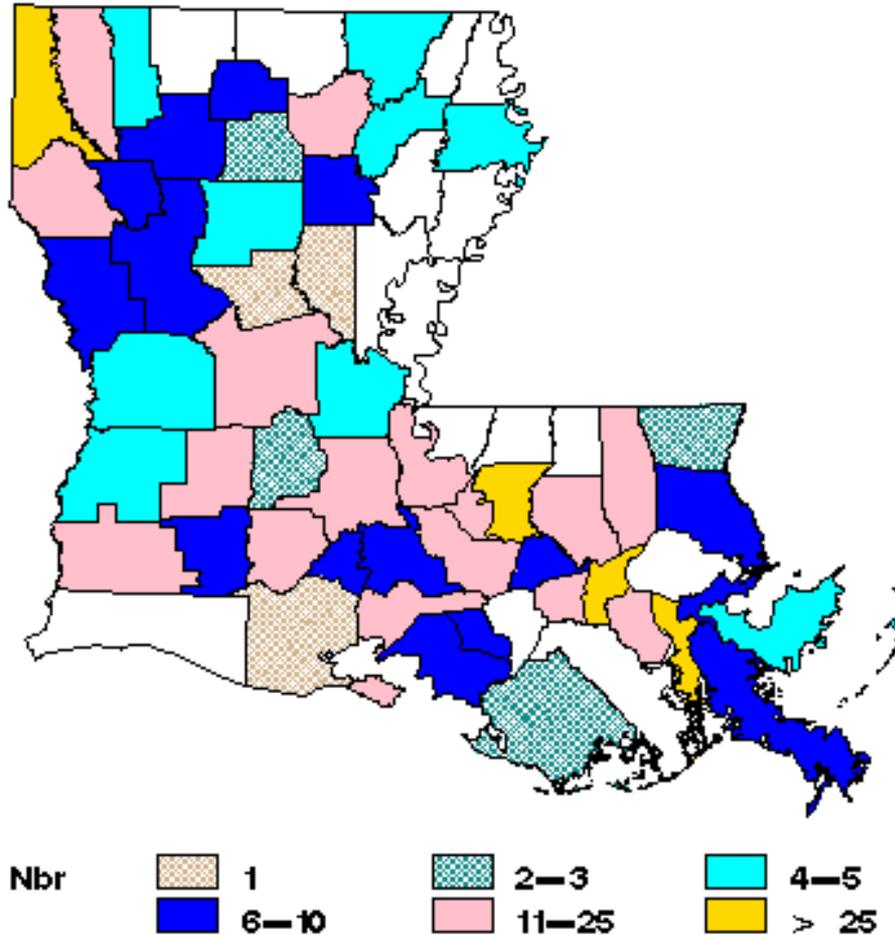
Data Mining Example

States	Accidents				States	Deaths				States	Non-Fatal			
	Cnt	Per 100 Xings	Per 100K Vehicles	Per 100K ADT		Cnt	Per 100 Xings	Per 100K Vehicles	Per 100K ADT		Cnt	Per 100 Xings	Per 100K Vehicles	Per 100K ADT
North Dakota	22	0.64	2.8	2.1	Alabama	1	0.04	0	0.02	Alabama	33	1.19	0	0.58
Arkansas	46	1.7	1.88	1.5	Alaska	0	0	0	0	Alaska	0	0	0	0
Alabama	81	2.92	0	1.41	Arizona	1	0.14	0.02	0.04	Arizona	4	0.54	0.78	0.15
South Dakota	14	0.75	1.41	1.32	Arkansas	5	0.18	0.2	0.16	Arkansas	18	0.66	7.35	0.59
Oklahoma	49	1.31	1.43	1.24	California	10	0.17	0.03	0.03	California	94	1.6	3.22	0.3
Nebraska	22	0.74	1.17	1.22	Colorado	2	0.12	0.05	0.06	Colorado	4	0.23	0.92	0.11
Missouri	40	1.16	0.77	1.05	Connecticut	2	0.55	0.07	0.15	Connecticut	2	0.55	0.71	0.15
Louisiana	63	2.32	1.55	0.93	Delaware	0	0	0	0	Delaware	2	0.74	2.15	0.16



Data Mining Example

HIGHWAY—RAIL INCIDENTS FOR LOUISIANA, January 2006 TO December 2010
RAILROAD: ALL



All Crossings

Crossing Incidents by Parish

2006-2010

Rank	Parish	Totals			At Public Crossing						At Private Crossing		
					Motor Vehicle			Other			Motor Vehicle		
		Cnt	Kld	Inj	Cnt	Kld	Inj	Cnt	Kld	Inj	Cnt	Kld	Inj
1	EAST BATON ROUGE	44	0	1	37	0	1	0	0	0	7	0	0
2	CADDO	31	2	10	28	2	10	0	0	0	3	0	0
3	ST JOHN THE BAPTIST	29	3	30	27	3	27	0	0	0	2	0	3
4	JEFFERSON	26	2	8	25	1	8	1	1	0	0	0	0
5	CALCASIEU	25	2	10	23	2	10	0	0	0	2	0	0
6	OUACHITA	25	4	10	24	4	10	0	0	0	1	0	0
7	ST LANDRY	23	4	11	17	3	10	1	1	0	5	0	1
8	TANGIPAHOA	22	8	16	16	7	13	1	1	0	5	0	3
9	WEST BATON ROUGE	19	0	11	16	0	9	0	0	0	3	0	2
10	ALLEN	18	7	6	17	7	6	0	0	0	1	0	0
11	IBERIA	18	0	8	17	0	8	0	0	0	1	0	0
12	IBERVILLE	18	3	6	17	2	6	0	0	0	1	1	0
13	DE SOTO	17	0	10	14	0	6	1	0	1	2	0	3
14	ST JAMES	16	1	6	13	1	5	0	0	0	3	0	1
15	BOSSIER	15	1	7	10	1	5	1	0	1	4	0	1
16	RAPIDES	13	2	6	10	2	5	0	0	0	3	0	1
17	ACADIA	12	6	29	11	5	29	0	0	0	1	1	0
18	POINTE COUPEE	12	0	8	6	0	8	0	0	0	6	0	0
19	ST CHARLES	12	2	10	5	0	2	0	0	0	7	2	8
20	LIVINGSTON	11	3	5	10	3	5	0	0	0	1	0	0

FRA Outreach and Support (continued)

- Contact Andrew Martin (FRA) for specific data mining requests:

andrew.martin@dot.gov , office phone: (202) 493-6297

Questions?

