
Safe Transportation of Hazmat

An aerial photograph of a BNSF freight train crossing a long bridge over a wide river. The train consists of several orange locomotives and a long line of white and brown hazmat containers. The surrounding landscape is lush with green trees and grass, with mountains visible in the background under a clear sky.

 **BNSF HAZMAT**

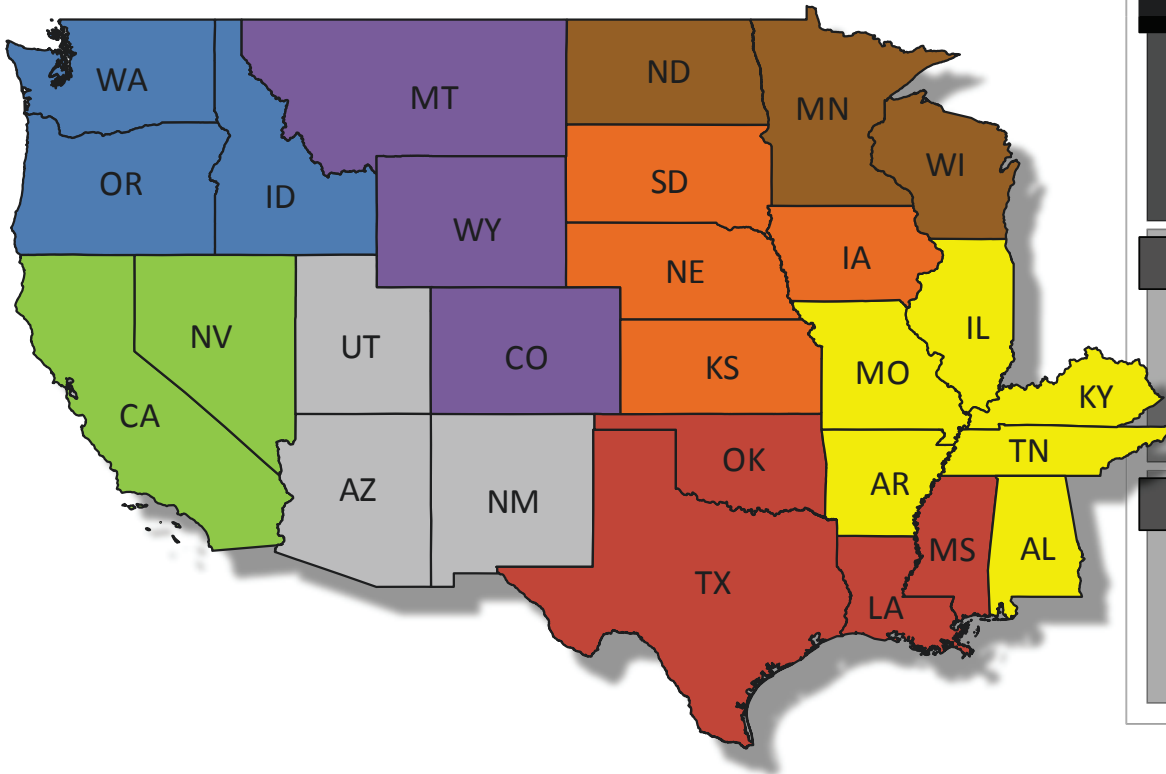
Who and What We Are.....



- **32,500** Miles of Track,
44,000+ employees
- Operating in **28** States,
3 Canadian Provinces
- Over **8,000** Locomotives
- Operating approximately **1,600**
trains per day
- 2017 – **1.3 Million** Hazardous
Material Shipments
- 2017 Capital Investment of
\$3.8 Billion

**BNSF can move 1-ton of freight
approximately 500 miles on
1-gallon of fuel**

BNSF Hazmat Region Map



Hazmat - System Wide

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Hazmat – East Region

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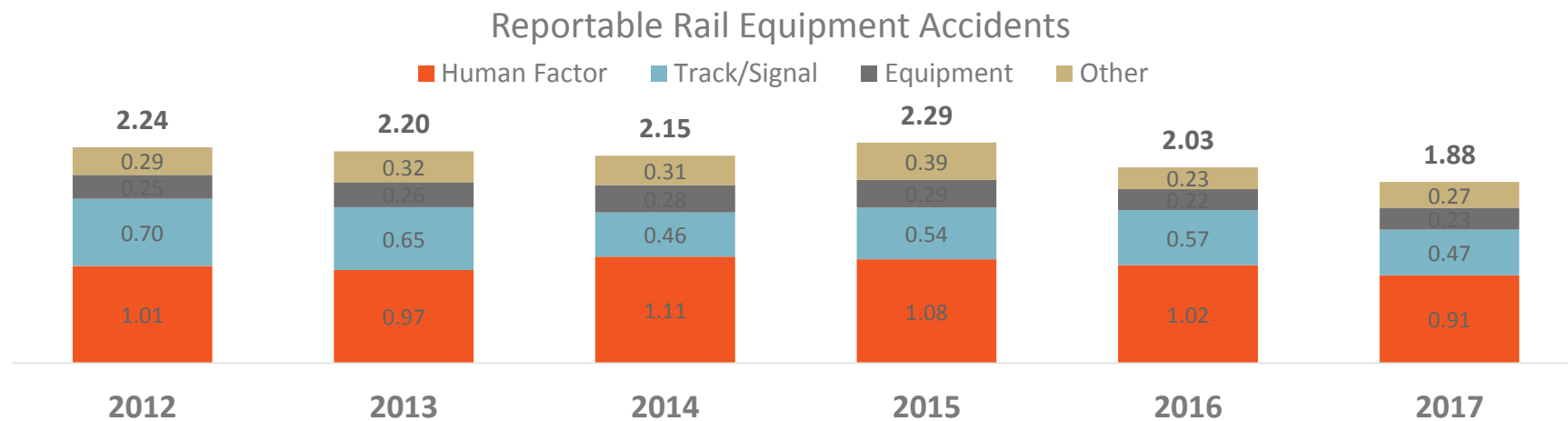
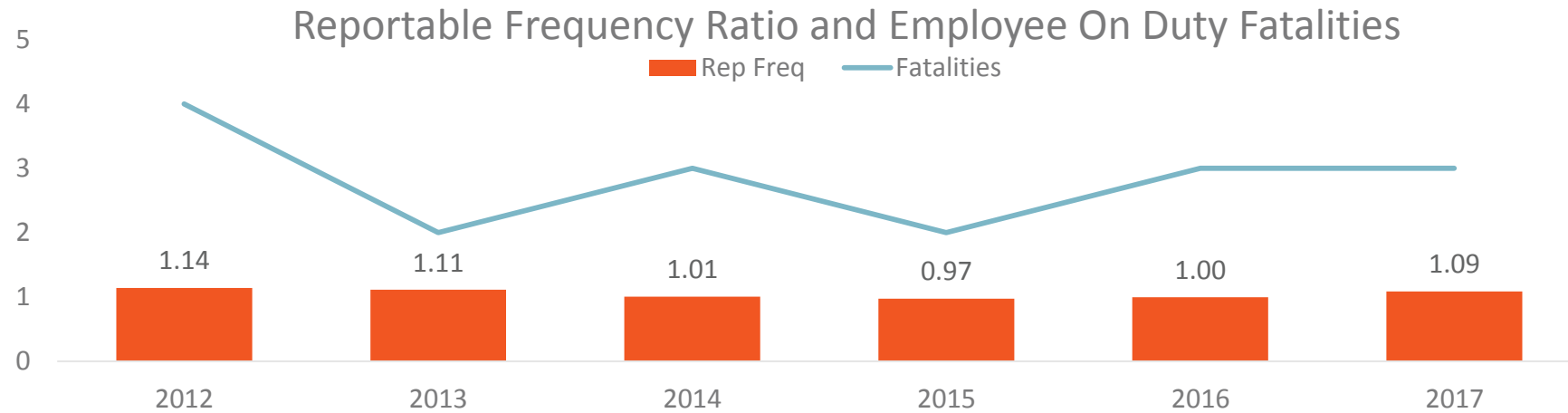
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 jeffrey.hankins2@bnsf.com

BNSF's Safety Overview

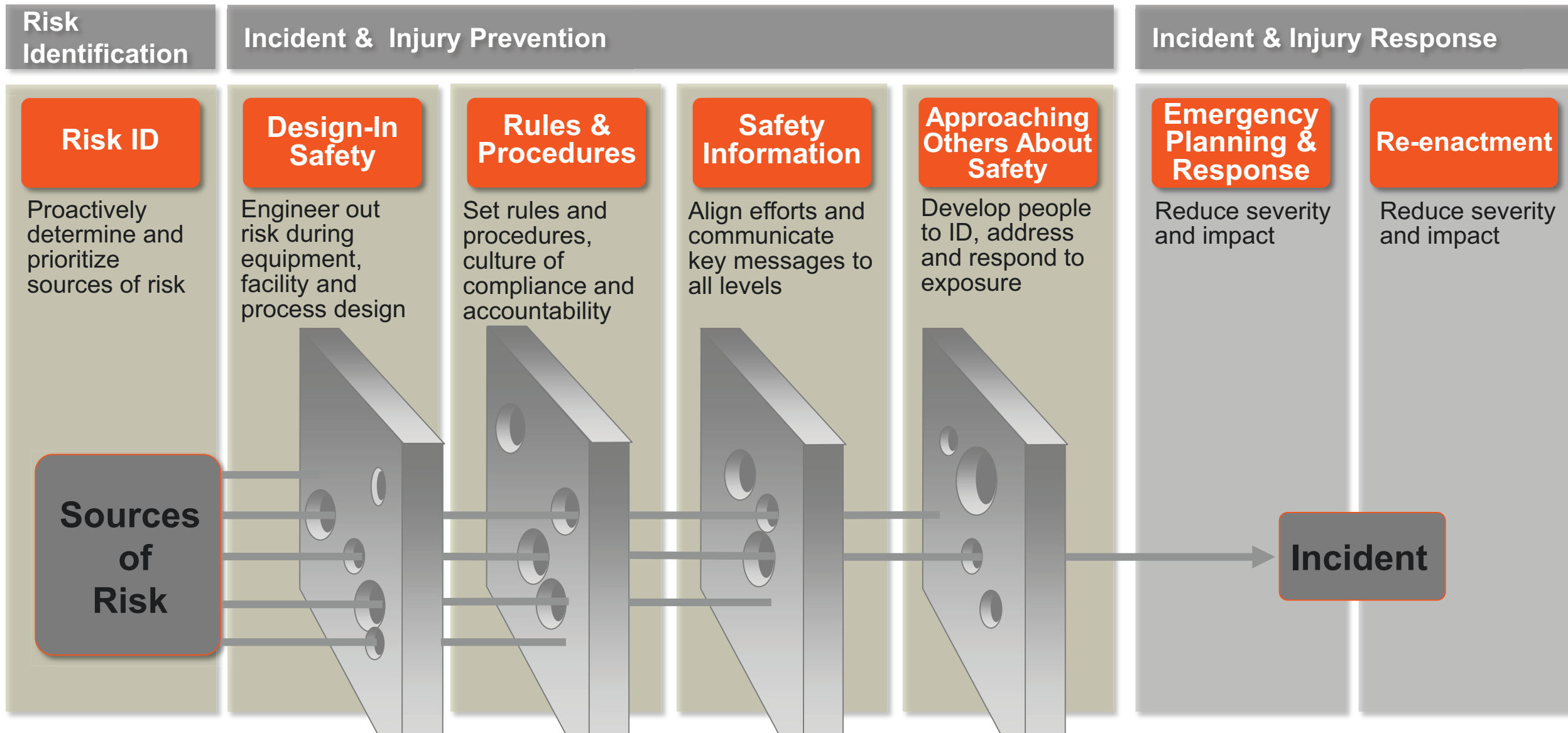
- Rail is the safest mode of land transportation.
- BNSF's safety vision is to prevent accidents in the first place.
- BNSF has a broad-based risk reduction program.



BNSF Safety Results



Prevention: Risk-Reduction Efforts – Layers of Safety



Prevention: Reducing Risk

Human Factor

- Training
- Remote monitoring
- Positive Train Control
- Self reporting protocol

Equipment/Mechanical

- Ultrasonic inspection
- Detector network - dragging equipment
- Technology
 - Thermal/infrared scanning for warm bearing detection

Track/Signal

- Enhanced track inspection training
- Continued elimination of jointed rail
- Strong capital program for tie renewal
- Technology - ground penetrating radar and enhanced geometry testing



Our ongoing focus is on instilling a culture of commitment and compliance – a culture that is sensitive to exposure and risk.

BNSF Transports Hazmat Safely



In 2017:

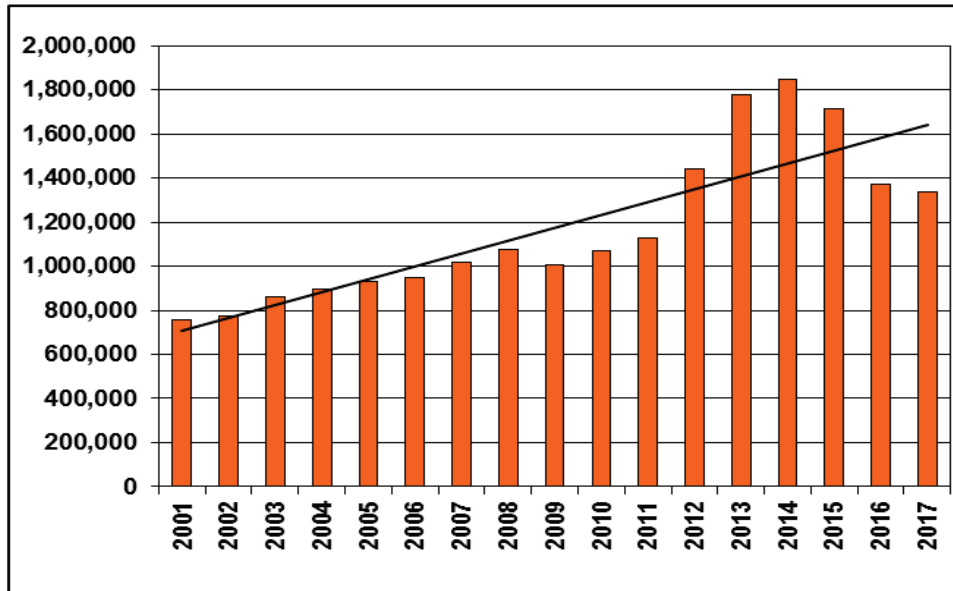
- BNSF moved hazardous materials **99.9997%** of the time without an accidental release.
- Safely Transported over **3.7 billion gallons** of crude and released less than **2 quarts**



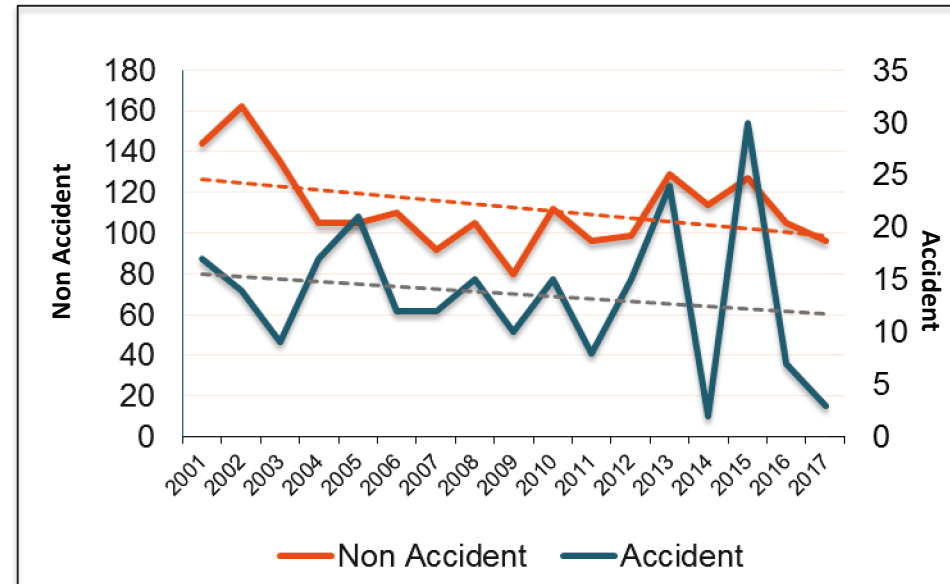
BNSF Hazardous Material Stats



BNSF Number of Hazmat Shipments



BNSF Total Hazmat Releases

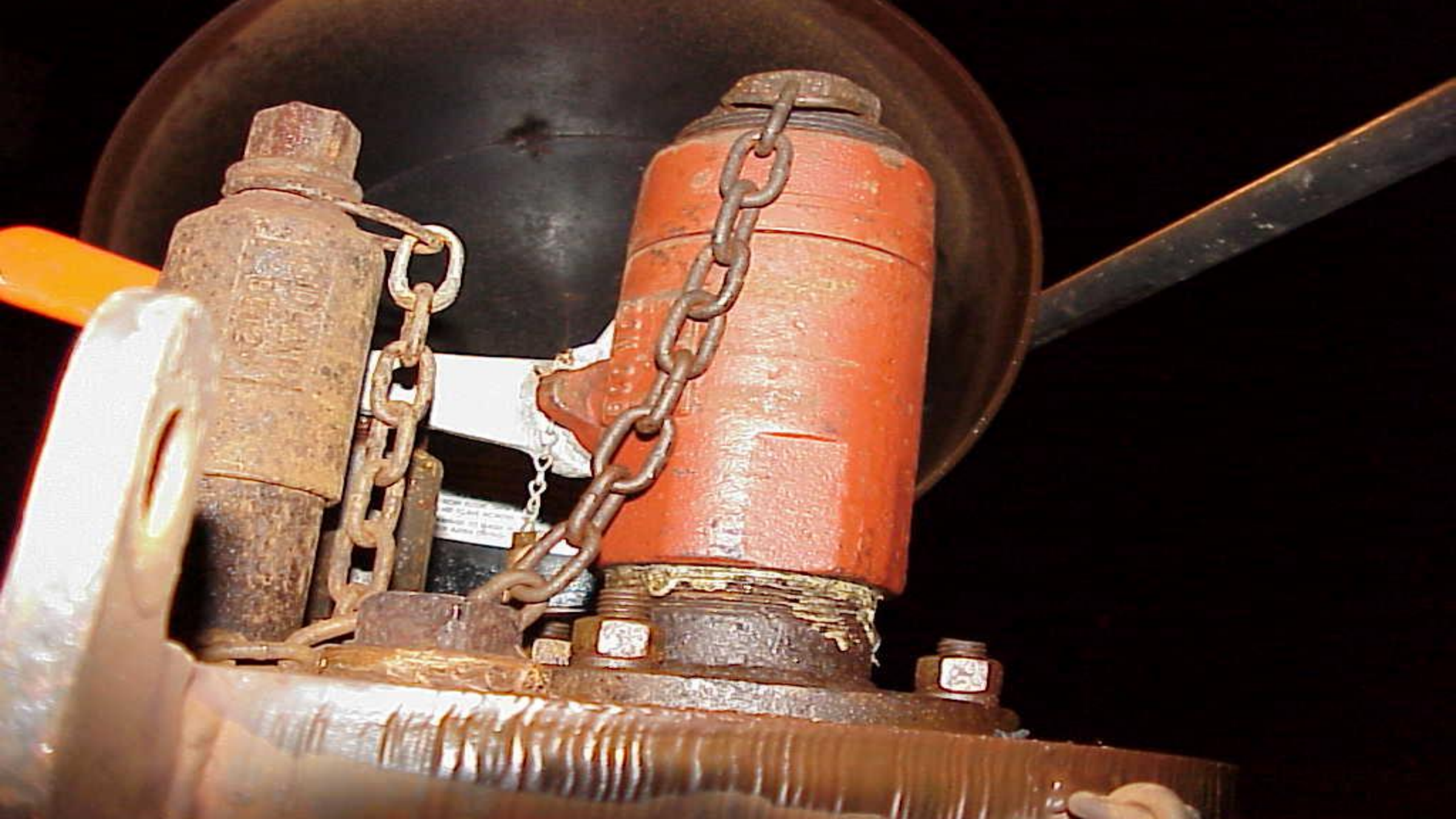


HAZMAT TRENDS	2011	2012	2013	2014	2015	2016	2017
Accident Release (AR) Yearly Totals	8	15	24	2	30	7	3
Number of Derailments with an AR	5	4	6	2	7	6	3
AR per 100 K Hazmat Shipments	0.71	1.04	1.35	0.11	1.75	0.51	0.22
Non Accident Release (NAR) Yearly Totals	96	99	129	114	127	105	96
NAR per 100K Hazmat Shipments	8.5	6.9	7.3	6.2	7.4	7.7	7.2

Non Accident Release

AN UNINTENTIONAL
RELEASE OF A HAZARDOUS
MATERIAL DURING TRANSPORTATION









Why Worry About NARs ?

- Employee and Public Safety
- Environmental Protection
- Customer Concerns
- Concerns Expressed by Regulators
- Litigation
- Costs of Transportation



Each package used for the shipment of a hazardous material shall be designed, constructed, maintained, filled and closed so that under conditions normally incident to transportation there will be no identifiable (without the used of instrumentation) release of hazardous material to the environment (49 CFR 173.24

DOT Regulations

Closures on tank cars are required to be designed and closed so that under conditions normally incident to transportation, including the effects of temperature and vibration, there will be no identifiable release of hazardous material to the environment. In any action brought to enforce this section, the lack of securement of any closure to a tool tight condition detected at any point, will establish a rebuttable presumption that the a proper inspection was not performed by the offeror of the car. [49CFR173.31(d)(2)]

NAR and Securement Tariffs




NAR

\$5,000 will be assessed for the first occurrence, \$10,000 for the second occurrence, and \$20,000 for a third or more occurrences over 12 months, to the Shipper as identified on the applicable bill of lading

Securement

Railcars carrying hazardous materials or environmentally sensitive materials, whether loaded or carrying only residue amounts, that are found not to comply with all applicable safety standards or requirements or to otherwise be improperly prepared for transport or deemed unsafe by regulators may be moved to an isolation track for securement or correction of the concern.

A charge of \$1,500 will be assessed for the first occurrence, \$3,000 for the second occurrence and \$6,000 for a third or more occurrences over 12 months, to the shipper identified on the applicable bill of lading.

A group of people, including men and women, are gathered around a large, circular, metallic object, possibly a piece of equipment or a large container, in what appears to be a workshop or training facility. The scene is dimly lit, with a greenish tint. The text is overlaid on the image.

**Preparedness
Awareness
Planning
Training
RESPONSE**

Hazmat/Spill Response Training and Exercises





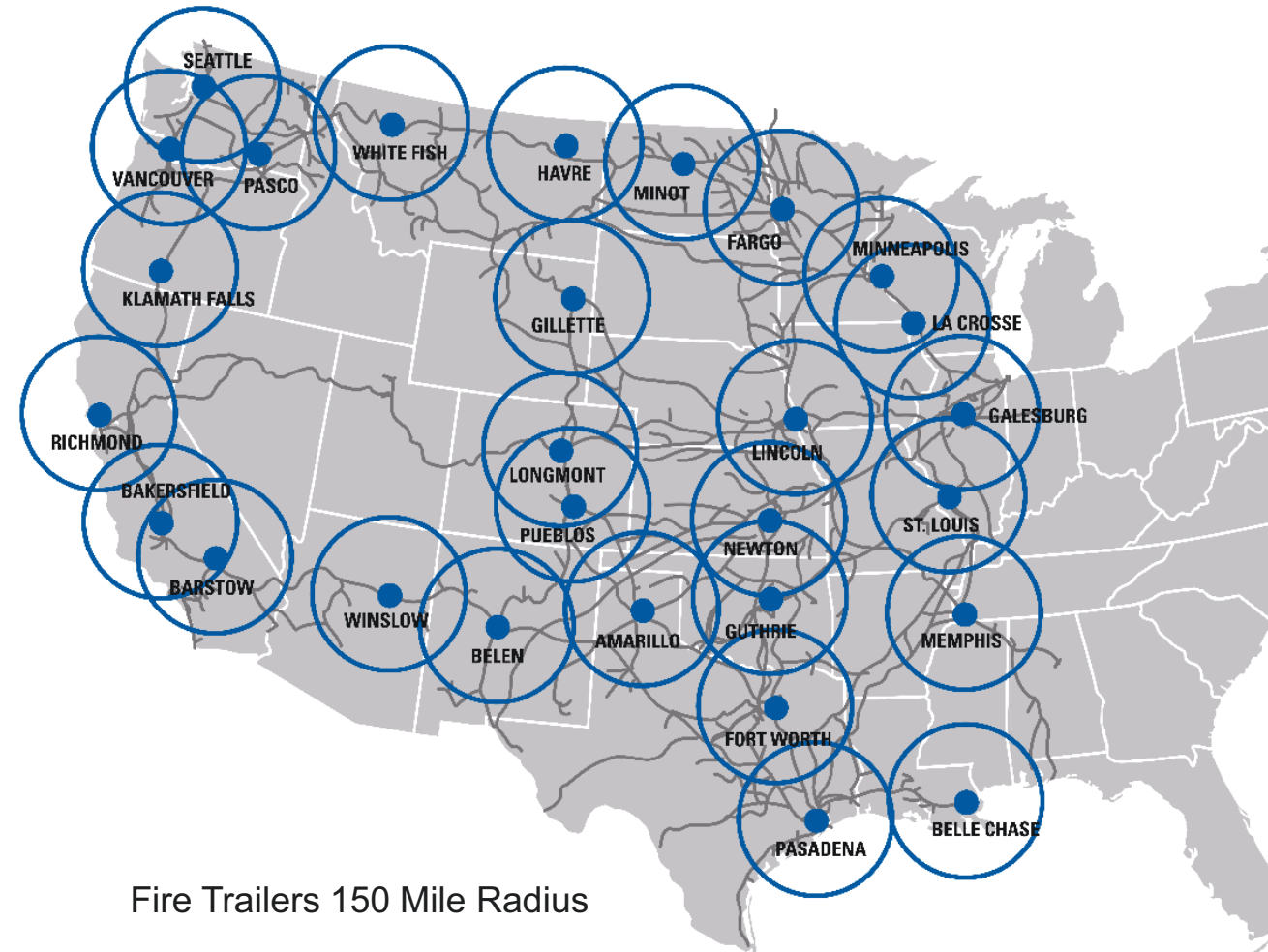




Response: Incident Mobilization

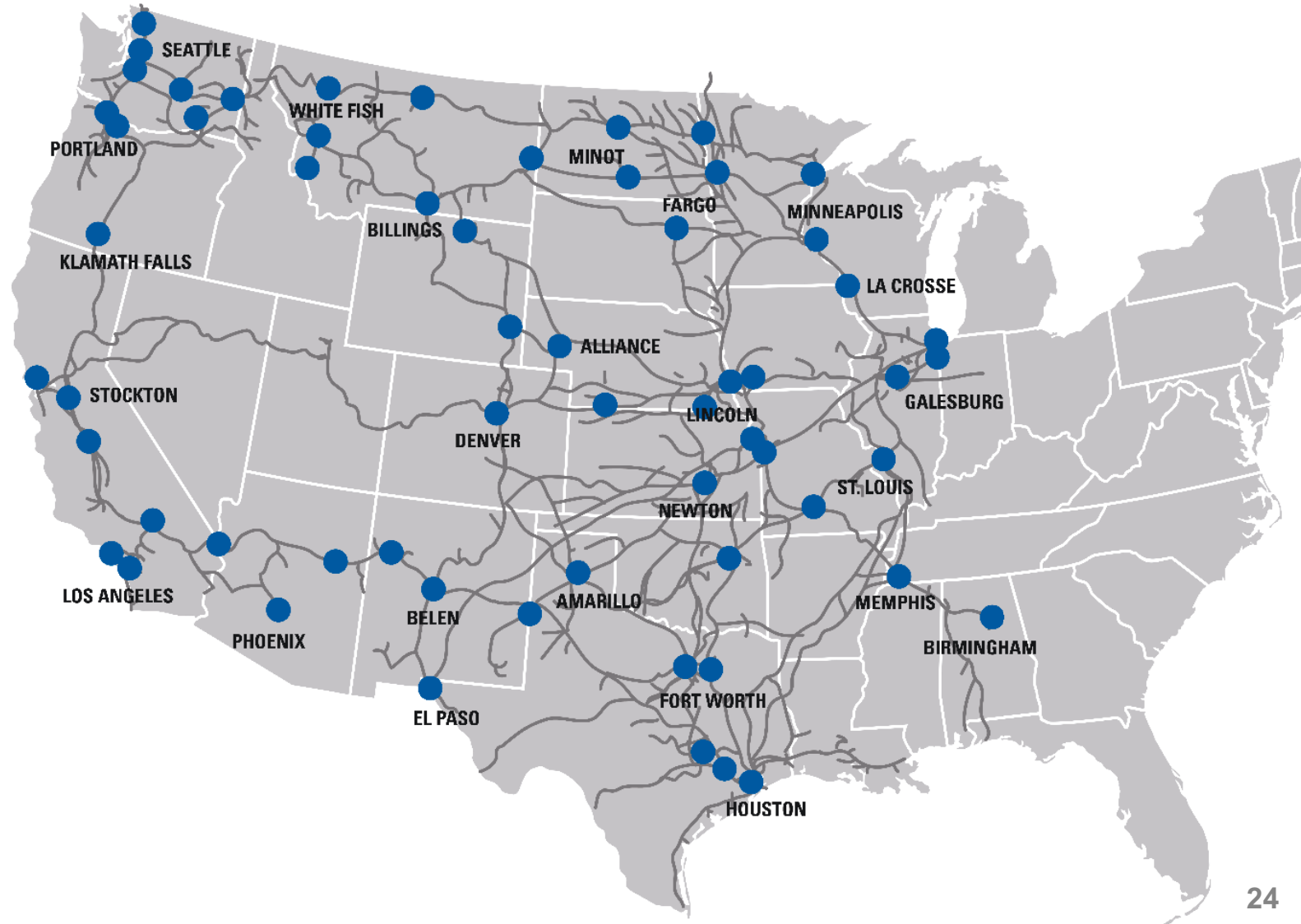
BNSF pre-positions equipment across its network

- Industrial fire-fighting foam trailers
- Emergency breathing air trailers
- Chlorine kits
- Midland kits
- Air monitoring assets



Response: Mobilization of Prepositioned Hazmat Responders

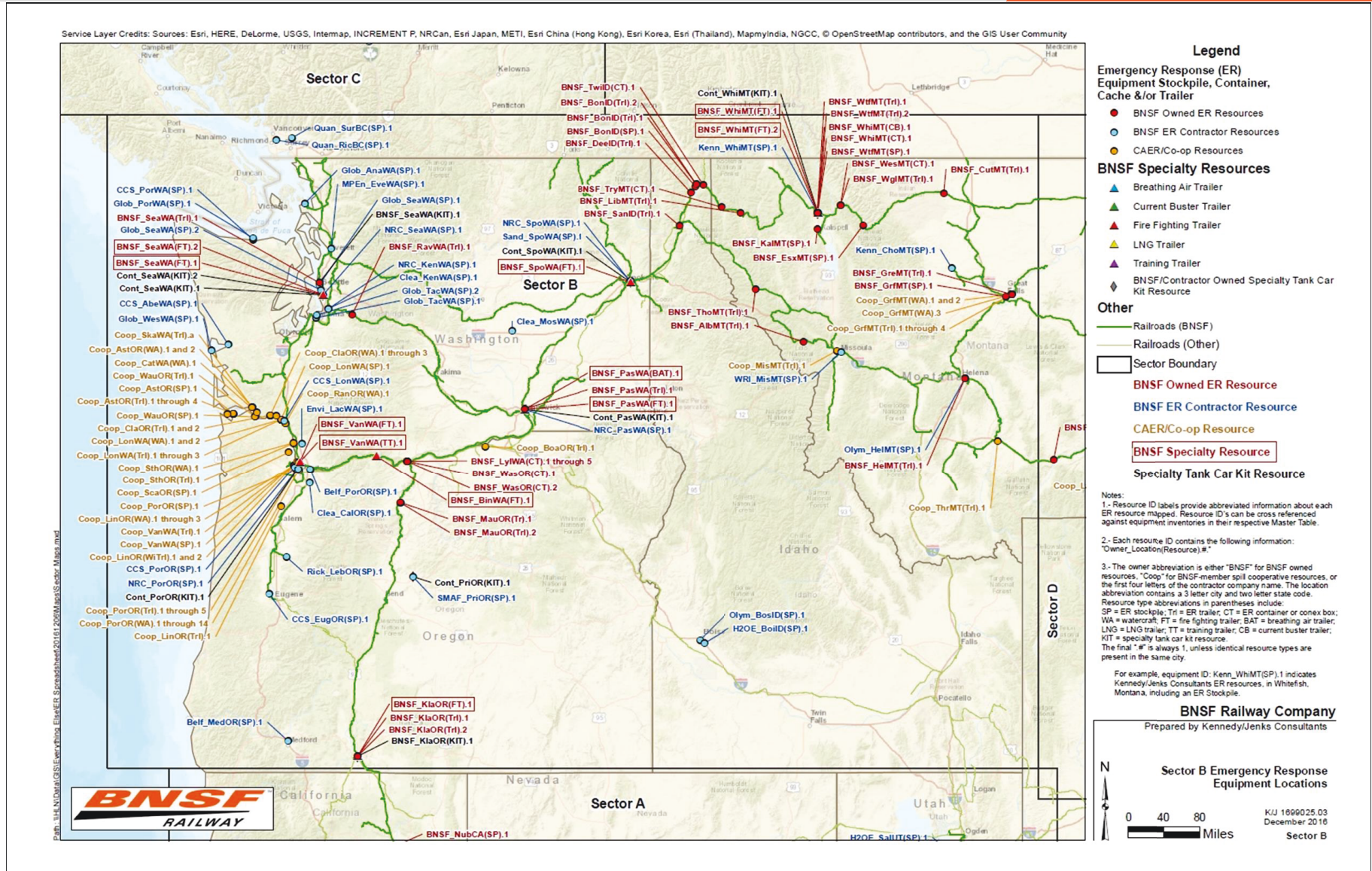
More than
260 responders at
67 locations



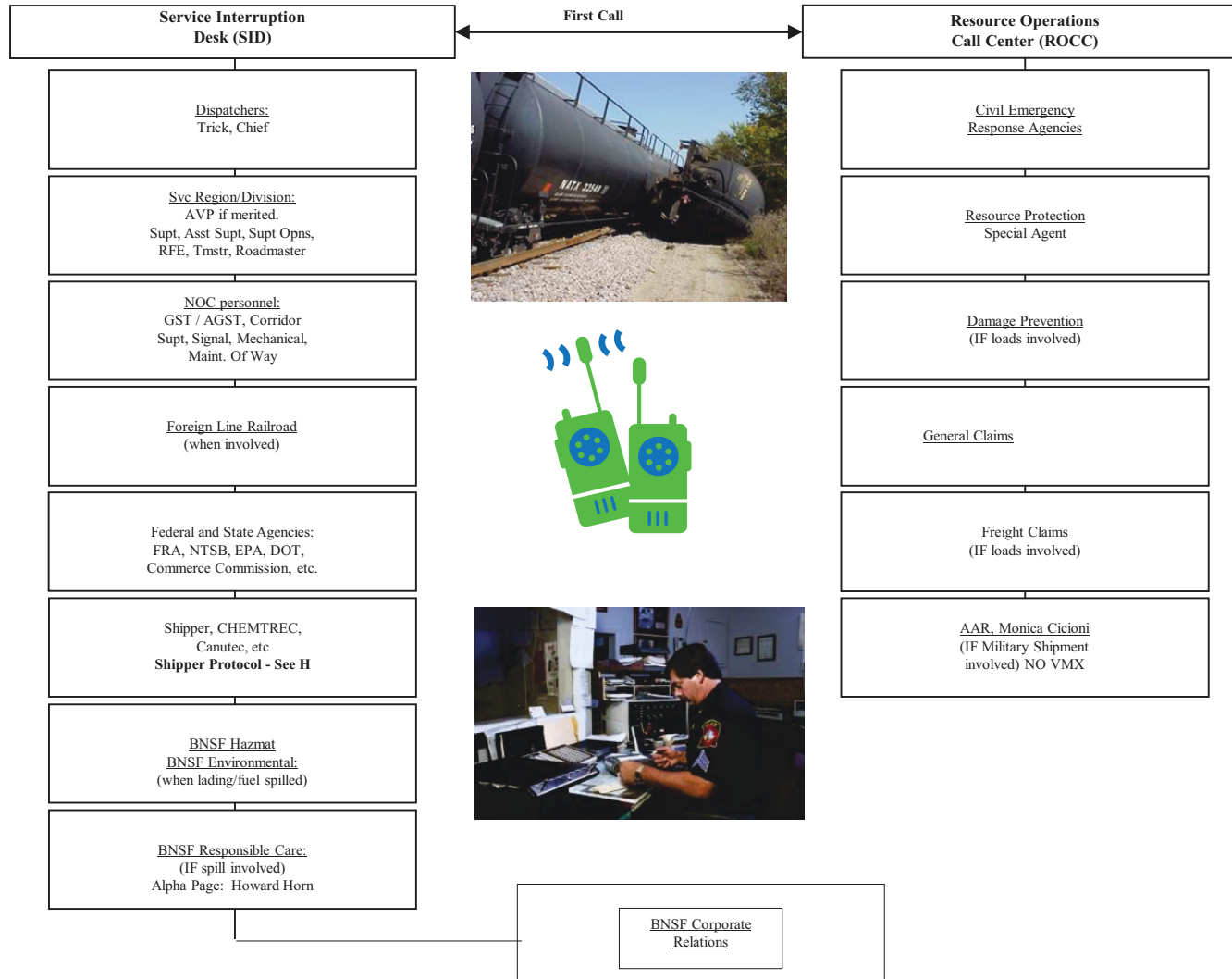
Equipment – Ready to Respond (owned/contracted)



- Fire Trailers
- Breathing Air Trailer
- Oil Spill Response Assets
- CRC/MSRC/W SPA
- Wildland Fire Assets
- Tactical Toxicology



Incident Notification



BNSF Response Contractor Network

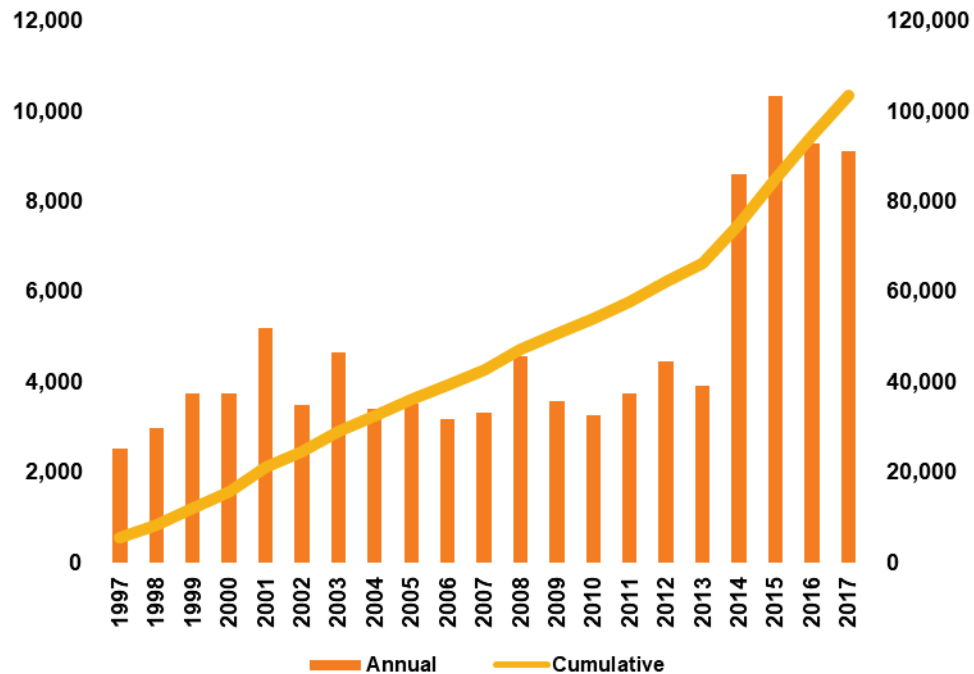


- Experience
- Locations
- Limitations
- Ability
- Duties
- Equipment
- Regulatory Compliance
 - Training
 - Respiratory
 - Med. Surveillance
- Contract Compliance
 - Audit
 - Drills
 - Experience



Training – The FIRST Responders

Number of Responders Trained



BNSF has trained over 100,000 First Responders Since 1996

On-site Community Hazmat Awareness/Response Training

- Prepares Fire/Law Enforcement/EM for responding to Railroad Hazmat Incident
- 4,234 First Responders Trained in WA since 2014
- Support Communities during EM Drills

Crude By Rail (3 day RR Sponsored)

- Intensive 3 day program in CO/TX with simulated exercises in handling Crude by Rail derailments/releases
- 287 Fire Department Members Trained in WA since 2014

On-Line Training Resources for First Responders

- www.BNSFHAZMAT.com

BNSF's Training Equipment



BNSF's Training Equipment



Community focus is on training of responders and providing required information for emergency preplanning.

- Information:
 - Hazmat traffic flows for communities
 - Last 12 mo. shipments
 - Written request required
- www.BNSFHAZMAT.com

Training and Response: Community

Community focus is on training of responders and providing required information for emergency preplanning.

- Last 12 Months
 - Loaded Shipments
 - 12,531
 - Top 10 = 7,483 (60%)

STCC DESCRIPTION	CLASS CODE	RESIDUE CAR COUNT	LOADED CAR COUNT
LIQUEFIED PETROLEUM GAS	2.1	2591	2708
CHLORINE	2.3	943	1024
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	9	751	765
SULFUR, MOLTEN	9	214	593
SODIUM HYDROXIDE SOLUTION	8	91	540
HYDROCHLORIC ACID	8	323	512
ETHYLENE OXIDE	2.3	725	398
OTHER REGULATED SUBSTANCES, LIQUID, N.O.S.	9	151	368
AMMONIA, ANHYDROUS	2.2	517	300
PHENOL, MOLTEN	6.1	193	275
		6499	7483

Train List / Consist

Power Header
(locomotives)



Train List starts
here



EXAMPLE - MANIFEST TRAIN LIST

**** Train Documents ****

Train Head End	H	KCKBAR1	29A	Passed	MAINE	AZ	1/29/11	1225	2 hr	10 min	Ahead	----Isolated----	
Locos	HP	Av1HP	Dyn	Brk	Evt	2WY	Cum	Loco	Online	Destin	Cd	From	To
BNSF	4981	4400	4400	8 EF+	Y	Y	6	210	WEST	BARSCA	N		
BNSF	1069	4400	4400	8 EF+	Y	N	12	196	EAST	BARSCA	N		
BNSF	5352	4400	4400	8 EF+	Y	N	18	210	EAST	BARSCA	N		
BNSF	7356	4400	4400	8 EF+	Y	N	24	210	WEST	BARSCA	N		
Total		17600	17600				24	826					
Incl	DPU's	17600	17600										
										Actual HPT = 2.3 (17600 HP / 7786 tons)			
										Scheduled HPT = 1.8			

Seq Num	Init	Number	Car Knd	L E	Contents	Online Destin	J T	RAJP	Grs Ton	Consignee	Final City	Dest ST	Cum Axle
1	BNSF	512019	GO5	L	SHAPES	LOSANG			94	IMMLERSTEEL	LOSANG	CA	28
NP		NO PLACARDS REQUIRED											
2	CGLX	582069	C5P	L	PLASTC	LOSANG		LAJ	127	LESBRO	LOSANG	CA	32
ER		RETURN EMPTY VIA REVERSE ROUTE											
3	NAHX	550932	C5P	L	AGGRGT	LOSANG			127	AKZOCHM	LOSANG	CA	36
LV		LOADED TO FULL VISIBLE CAPACITY											
BN		IF BAD ORDER NOTIFY SHIPPER											
4	NAHX	550341	C5P	L	AGGRGT	LOSANG			132	AKZOCHM	LOSANG	CA	40
LV		LOADED TO FULL VISIBLE CAPACITY											
BN		IF BAD ORDER NOTIFY SHIPPER											
5	KCS	152471	N55	L	PRTPPR	LAMIRA			107	CALFODISC	LAMIRADA	CA	44
6	BNSF	99911	T5H	L	HAZMAT	LAMIRA			129	PLASTICHEM	LAMIRADA	CA	48
FL		FLAMMABLE											

* HAZMAT *

1 TNK // 192799 LB //
UN2055 // STYRENE MONOMER, STABILIZED
3

*****Asterisks***** Mean HazMat Shipment!



First HazMat shipment



Seq Num	Init	Number	Car Knd	L E	Contents Want Dy	Online Destin	J T RAJP	Grs Ton	Consignee	Final City	Dest ST	Cum Axle	
1	BNSF	512019	GO5	L	SHAPES	LOSANG		94	IMMLERSTEEL	LOSANG	CA	28	
	NP	NO PLACARDS REQUIRED											
2	CGLX	582069	C5P	L	PLASTC	LOSANG	LAJ	127	LESBRO	LOSANG	CA	32	
	ER	RETURN EMPTY VIA REVERSE ROUTE											
3	NAHX	550932	C5P	L	AGGRGT	LOSANG		127	AKZOCHM	LOSANG	CA	36	
	LV	LOADED TO FULL VISIBLE CAPACITY											
	BN	IF BAD ORDER NOTIFY SHIPPER											
4	NAHX	550341	C5P	L	AGGRGT	LOSANG		132	AKZOCHM	LOSANG	CA	40	
	LV	LOADED TO FULL VISIBLE CAPACITY											
	BN	IF BAD ORDER NOTIFY SHIPPER											
5	KCS	152471	N55	L	PRTPPR	LAMIRA		107	CALFODISC	LAMIRADA	CA	44	
6	BNSF	99911	T5H	L	HAZMAT	LAMIRA		129	PLASTICHEM	LAMIRADA	CA	44	
	FL	FLAMMABLE											
		*****						1 TNK // 192799 LB //					
		* HAZMAT *						UN2055 // STYRENE MONOMER, STABILIZED					
		*****						3					
		EMERGENCY CONTACT: 800-424-9300						PG III					
		SHIPPER CONTACT: CHEMTREC						RQ (STYRENE)					
								HAZMAT STCC 4907265					
		RAIL CONSIGNEE						RAIL SHIPPER					
		PLASTICHEM						AMERICAN PLASTICS					
		3314 JACARANDA						4700 CHEMLANE					
		LAMIRADA CA 90637						NEW BRUNSWICK NJ 08901					
7	GATX	153931	TGI	L	LUBOIL	LOSANG		114	MOBILOIL	LOSANG	CA	52	

HazMat, HazMat, HazMat.....



HazMat!

```
16 ACFX 86225 T6H E HAZMAT WATSON 32 SHELL WATSON CA 88
IH INHALATION HAZARD
PO POISON GAS

*****
* HAZMAT *
*****
EMERGENCY CONTACT: 800-424-9300
SHIPPER CONTACT: CHEMTREC

RAIL CONSIGNEE
SHELL CO
22473 INDUSTRIAL
WATSON CA 90744

RAIL SHIPPER
OXYCHEM
127 BLUEBONNET
PASADENA TX 77502
129 KOCH DODGECITY KS 92

17 BADX 1007 T6H L HAZMAT DODCIT
50 SPEED RESTRICTED TO 50 MPH
IH INHALATION HAZARD
NG NON FLAMMABLE GAS
RC *** RAILROAD SECURITY SENSITIVE MATERIAL (RESTRICTIVE COMMODITY) ***
> > KEY SHIPMENT (FIVE) < < <

*****
* RSSM HAZMAT *
*****
EMERGENCY CONTACT: 800-424-9300
SHIPPER CONTACT: CHEMTREC

RAIL CONSIGNEE
CAL AMMONIA
22475 MACAW
LA MIRADA CA 90638

RAIL SHIPPER
DAKOTA GASIFICATION CO INC
420 COUNTY ROAD 26
BEULAH ND 58523

18 SHPX 208022 T5H L HAZMAT ELSEGU 110 CHEVRO ELSEGUNDO CA 96
FL FLAMMABLE
*****
* HAZMAT *
*****
EMERGENCY CONTACT: 800-424-9300
SHIPPER CONTACT: CHEMTREC

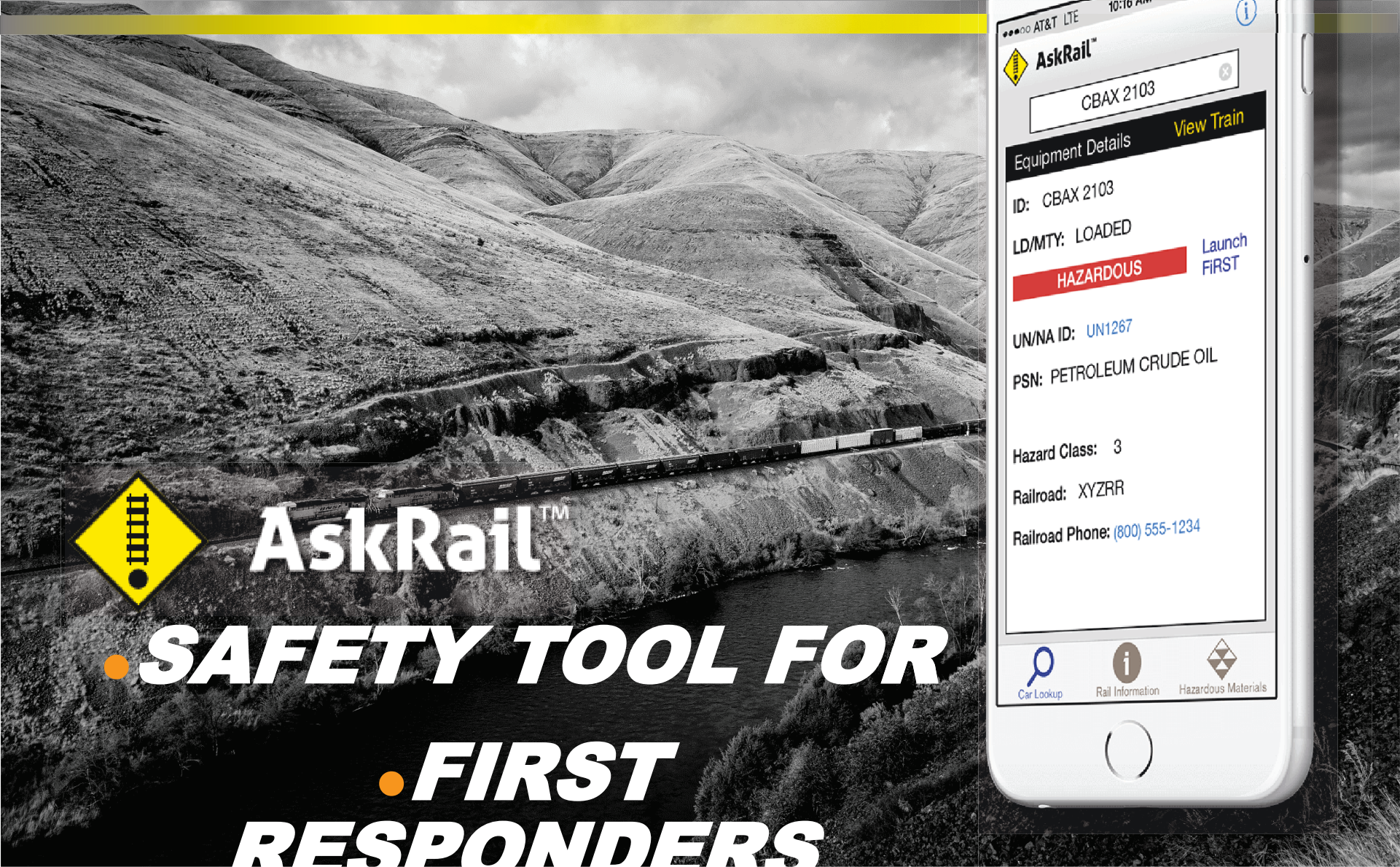
RAIL CONSIGNEE
CHEVRON
47552 INTERSTATE
EL SEGUNDO CA 90245

RAIL SHIPPER
CHIEF ETHANOL
EAST HWY 34
MCCOOK NE 69001

1 TNK //
RESIDUE: LAST CONTAINED //
UN1017 // CHLORINE
2.3 (8)
RQ (CHLORINE)
MARINE POLLUTANT (CHLORINE)
(POISON INHALATION HAZARD) ZONE B
HAZMAT STCC: 4920523

1 TNK // 157850 LB //
UN1005 // AMMONIA, ANHYDROUS
2.2
RQ (AMMONIA)
(INHALATION HAZARD)
HAZMAT STCC 4904210

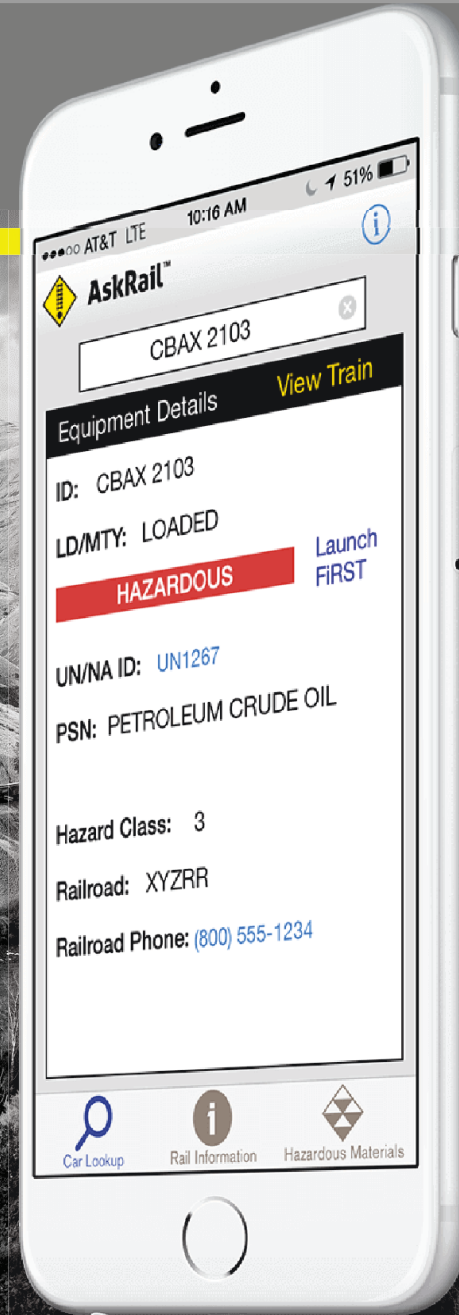
1 TNK // 160250 LB //
UN1987 // ALCOHOLS, N.O.S.
3
PG II
HAZMAT STCC 4909152
```

AskRail™

• ***SAFETY TOOL FOR***

• ***FIRST RESPONDERS***



• *The AskRail™ app provides first responders immediate access to accurate, timely data about a railcars contents so they can*

• *make informed*

• *decisions in the*

• *event of an*

• *emergency.*



• *Backup resource if information from the train conductor or train consist is not available*



• *Map features provide isolation zone and points of interest (street or satellite view)*



• *Available in English and French in the U.S., Canada and Mexico*



• *Used by all North American Class 1 Railroads*

BNSF
RAILWAY

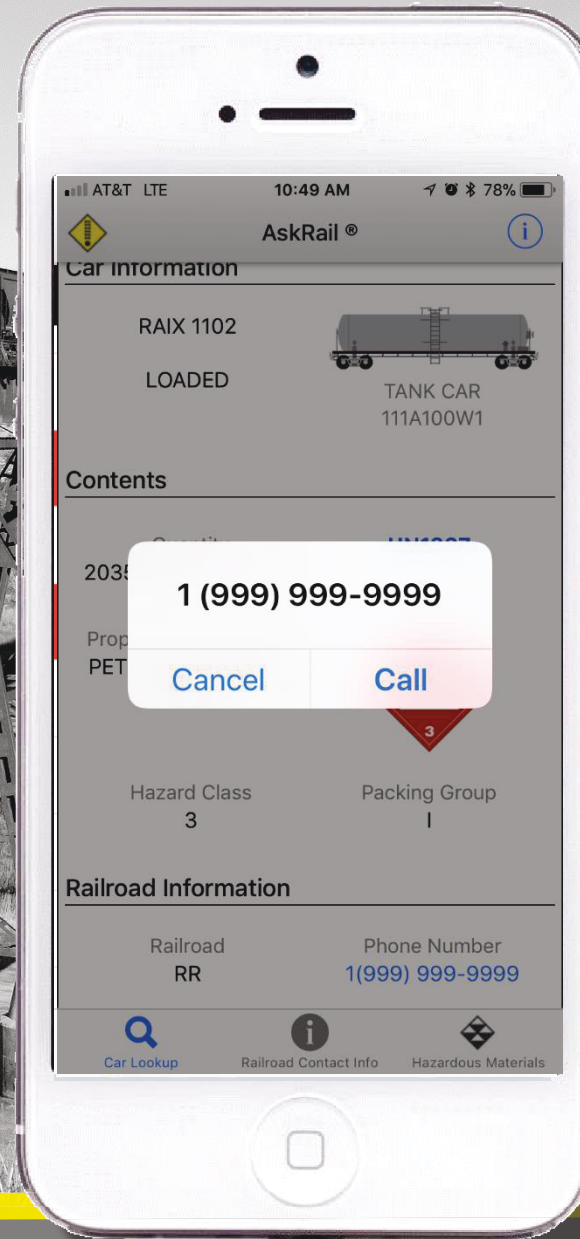


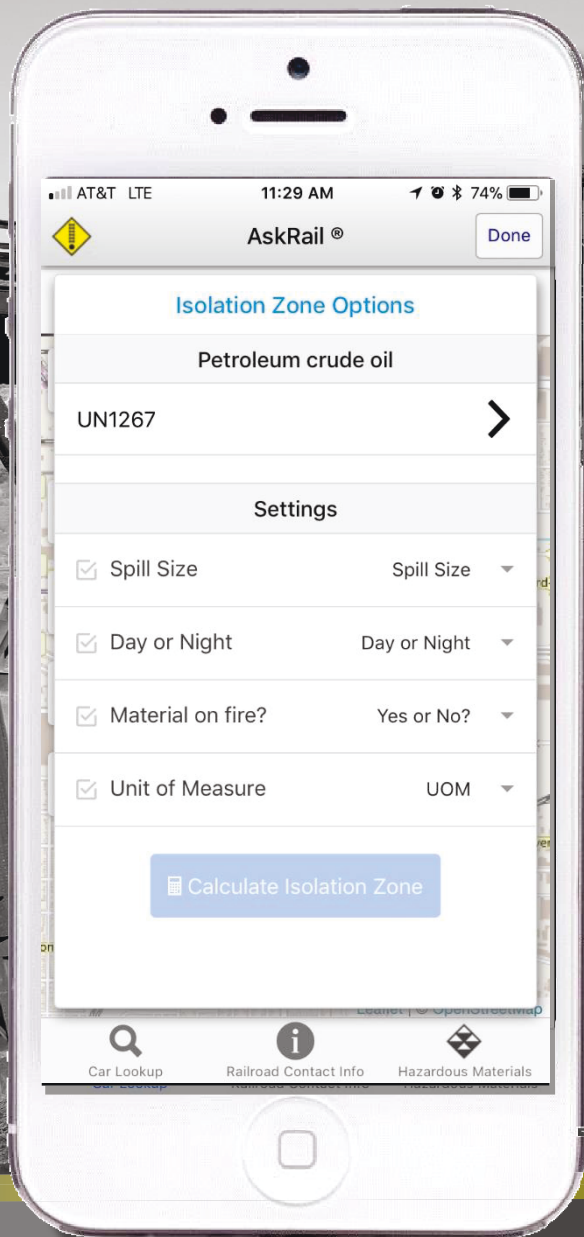
AskRail™



• **Through AskRail's easy-to-use mobile interface, emergency responders can:**

- ▣ **Use a simple railcar ID search to see if the train is transporting hazardous materials**
- ▣ **View the contents of the entire train**
- ▣ **See the railroad's emergency response contact number.**



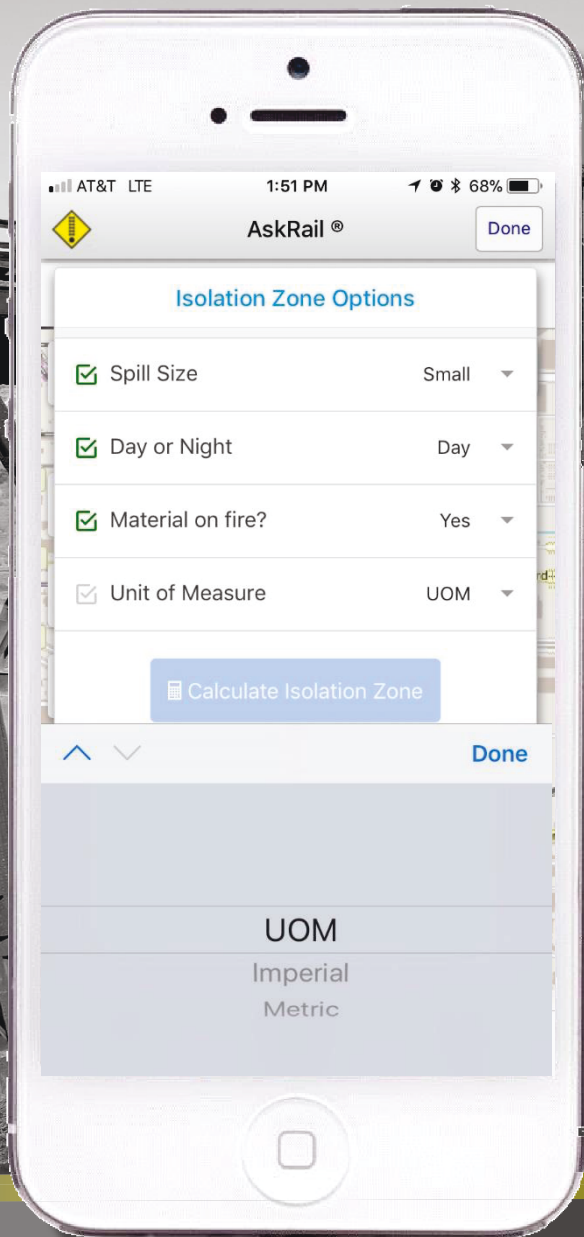


• **By selecting the UN/NA Number or the DOT Placard, you will be provided two options.**

• **View the Emergency Response Guide (ERG)**

• **View the ERG Isolation Zone Map**





To calculate the isolation zone, you must provide some information regarding the incident.

Spill Size, Small or Large?

Is it Day or Night?

Is the Material on fire, Yes or No?

Unit of Measure: Imperial or Metric?



• **ERG Isolation Zone results based upon the information you supplied**

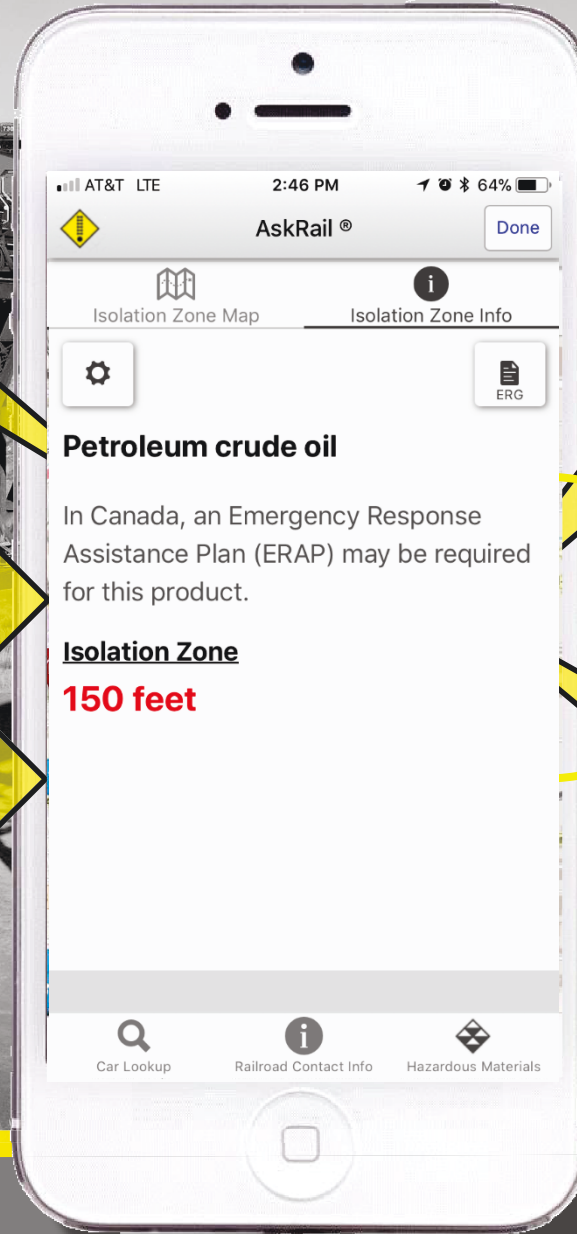
• **You are now ready to calculate your Isolation Zone**

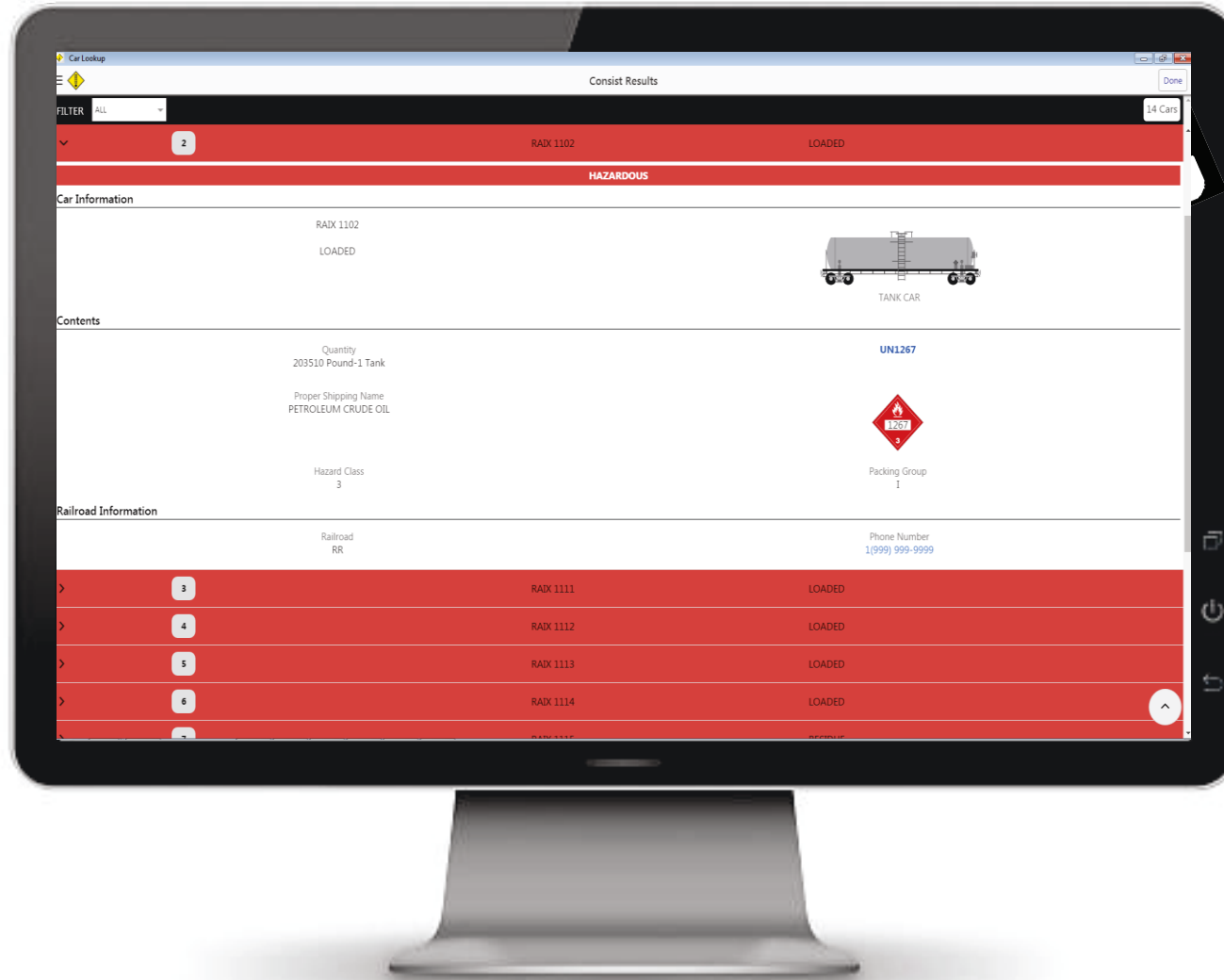
• **Move Location**

• **Points of Interest**

• **Select Points of Interest**

• **Select go to see the Isolation Zone Map**





• **AskRail Desktop Version**



AskRail™



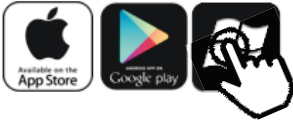
only qualified emergency responders who have completed rail emergency training sponsored by one of the Class I freight railroads or at the Security and Emergency Response Training Center (SERTC) can download and use the restricted features in the AskRail app. In addition, railroads can offer the app to known emergency responders along their routes.

ABOUT THE APP

REQUEST THE APP

HOW TO REQUEST FULL ACCESS TO THE APP

- 1 Download the app from the Google Play Store, Apple App Store, or, you can download the Windows Desktop Application here by clicking the icon.



- 2 Complete the registration process in the app on your device.
- 3 You will receive an email notification once your registration has been approved. The approval process may take up to several weeks.
- 4 Once you have been approved to use the app, the app will become fully functional and ready for use.



CONTACT INFORMATION

Select a railroad

[View Terms of Use](#)

Please do not send any other communication to these email addresses other than requests to use the AskRail app. Please note that Amtrak is not included on the contact list because they do not approve access to the app.

Do you want to run or save **askrail-ird Setup 1.0.0.exe** from **askrail.us**?



This type of file could harm your computer.

Run

Save



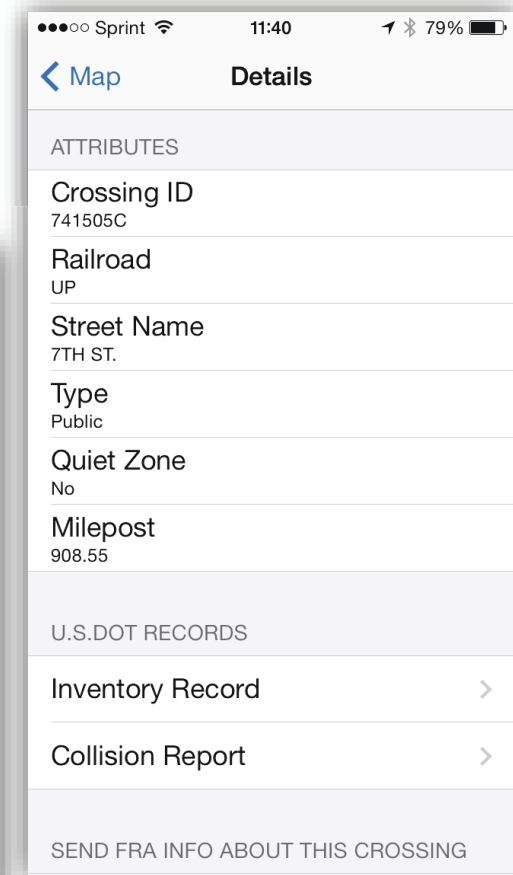
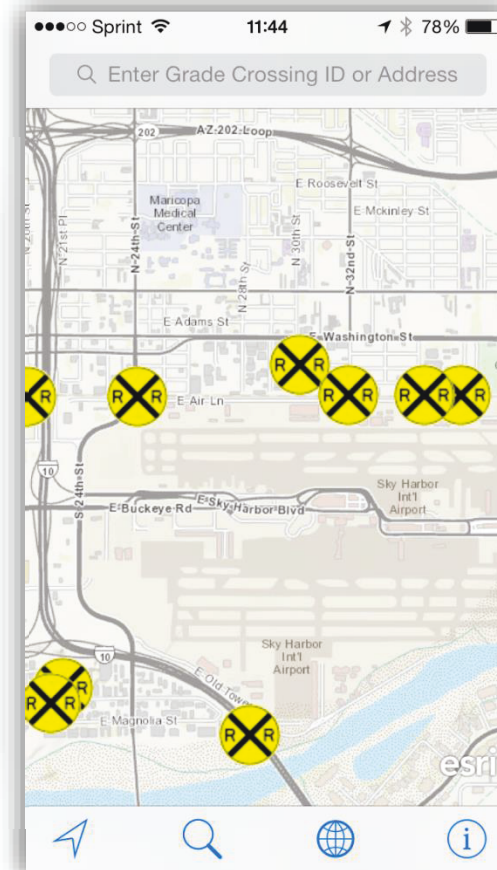
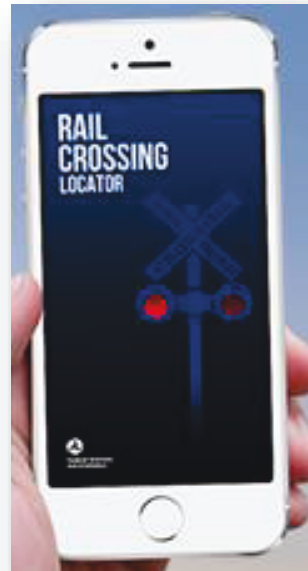
Cancel



Information at Your Finger Tips

Rail Crossing Locator (FRA)

- iOS and Android Devices
- Emergency Notification
- Railroad Owner
- Crossing ID
- Milepost
- Speed Limits
- Collision Reports



Restoration of sites

- BNSF is responsible for mitigation of the spill and any restoration tasks
- BNSF contracts with pre-approved consultants and contractors to perform the remediation and restoration
- State agencies oversee the work and BNSF must obtain their concurrence before a site is acceptably closed



Cameron, Texas, post derailment

BNSF
RAILWAY



DET