Event
Diverting Derailments: Working Together for Rail Safety

Paper
Back on Track: Bringing Rail Safety into the 21st Century

Event Transcript:

Shane Skelton: Thank you all for coming, and sorry that we're getting started a little late. I've heard there's some traffic out there which -- so maybe we'll have some people straggling in, but I want to get going with the program. So first and foremost, I just want to welcome you all here and thank you very much for taking time out of your day to join us. We think this discussion is really important and really timely and focusing now in rail transportation and rail safety seems to be large not just in the freight space, but in the passenger space, and so we've assembled a great panel here to talk about that. We think that it's a boom to our economy, and everyone benefits from it, increase traffic in both commuter rail and freight rail. But in order to continue to enjoy these benefits, rail infrastructure needs to stay modern and well maintained, and most importantly, it needs to be safe.

So we asked you all to join us, because we believe that positive and proactive efforts to identify issues and improve safety is a far better approach than reacting to incidents and infrastructure breakdowns after they occur.

And to that end, we've assembled this great panel, as I mentioned, and without further ado, I'll turne it over to Aii's Chairman and CEO, Brigham McCown, to get the morning started and introduce.

Brigham McCown: All right. Good morning, everybody. Thanks for being here. I'd like to thank Shane for putting it together and the staff as well and they've put a lot of, as we all know, real hours and work into this event. I'd also like to thank Addison Smith. Addison, thanks for making this location available for us. We really, really do appreciate it very much.

And I'd like to thank the panel and the moderator for being here today. Just a tiny advertisement on Aii. Aii is the Alliance for Innovation and Infrastructure. It's an alliance between the National Infrastructure Safety Foundation which is a 501(c)(3) and the Public Institute for Facility Health, a (c)(4). It's focused on examining innovative and outside of the box policy solutions to address infrastructure and mobility challenges we

have through both awareness and education. I'm honored to serve as the chairman and hope you'll have an opportunity to review if you haven't already, the recently released study on rail technologies and best practices which we have available here today.

Being a former regulator, I like the word safety; I like the word innovation. In fact, I like them a lot. Safety is something that should be at the forefront of what we think about. It's something I wake up with in the morning. It's something I think about all day long. And I, for one, believe that we can have both safety and efficiency in moving our transport network forward.

So while recent actions have focused on certain aspects of the industry, our goal is to recalibrate all stakeholders and call for an expanded focus on prevention as our first line of defense. Collaborative efforts to bring together our diverse stakeholders aimed at utilizing innovation to drive safety decisions in order to identify, analyze, model, predict, and prevent incidents should be our watchword and prevention should be our shield.

And so today, our panelists are going to shed some light on lots of issues and bring their expertise to bare. I'd also like to point out that Aii sent out personal invitations to PHMSA, to the FRA, to RSI, to the AAR, to the class one railroads, to AMTRAK, shippers, safety experts, and others. I'd like to commend those present ____ [00:03:39] here for joining us in our mission of improving safety. It's up to each of us to convince everyone else to join the conversation in the future, and we'll certainly keep trying to do so.

With that, I'd like to introduce our moderator for the discussion, Jason Fordney, the editor of Argus Rail Business, and Jason has some material up here with Argus. If you would pick it up -- we really appreciate you volunteering to moderate the panel today. And his experience and insight in this industry sector is well respected, and we're very lucky to have you and each of the panel members with us. So, Jason, I turn it over to you, sir.

Jason Fordney: All right. Thanks, Brigham.

Brigham McCown: Thank you.

Jason Fordney: All right. And as he mentioned, we're focusing on sort of a proactive discussion today. Hopefully, positive, forward looking, and we want to get into both the passenger rail system and the freight side with the focus on crude where a lot of the public discussion has been lately. Just to sort of set the scene, I guess it was the July 2013 derailment in Lac-Megantic, Quebec that had really pushed this issue to the forefront of the public's mind. As I'm sure most of you are aware, there were 47 people died when a runaway train ran into town and exploded in the middle of town. Enormous loss of life had seemed to kick the process into what ended up being a new suite of tank car rules _____ [00:05:13] issued in May by the Department of Transportation. And then this year, we've seen a series of crude derailments, some pretty nasty ones in Lynchburg, Virginia, at Mount Carbon, West Virginia that are bad for everybody. The railroads

don't like them. The public obviously doesn't like them. So I wanted to frame the discussion in that way and also to mention two major regulatory initiatives that are coming into play and that's Positive Train Control, which is a $9 billion system currently being installed by the railroads that is seen as really increasing safety through technology, GPS positioning, and other measures. So just one statistics I wanted to mention on the positive side is something stated by DOT Secretary, Tony Foxx, when he released the rules, and that's 99.9 percent of crude trains arrive at their destination safely. Like he says, he wants perfection. I guess one derailment is too many, but that is one thing that I wanted to mention.

So today, we have a great panel. To my right is David Friedman, vice chair of the Transportation Research Board. To his right, Joseph Kane is a researcher at the Brookings Institution; Beth Treseder, who is a policy advisor with American Petroleum Institute; David Willauer, who is manager of transportation and technological hazards at IEM; and then we have Sean Jean-Gail, who is vice president of the National Association of Railroad Passengers, so we've got quite a mix here.

To start things off, I guess, in general terms, I wanted to get an idea of what are the benefits of a reliable and safe rail system on the freight and passenger side. So I wanted to toss that to Joseph Kane of the Brookings Institute to see if we could talk about that a little bit. What are the benefits to the economy of a safe system?

Joseph Kane: Yeah. Thanks, Jason. Yeah, I think it's important when we're considering all these different safety issues, right? _____ [00:07:32] Taking a step back knowing that a safe and reliable infrastructure network is ultimately serving broader economic growth rate that our rail infrastructure is connecting hundreds of different regions domestically and internationally, and then ultimately satisfying the demands of many different consumers, producers, travelers throughout the country. If we just look at passenger rail, more than 20,000 miles of short and long-distance routes nationally and AMTRAK is seeing record levels of ridership over 31 million passengers annually about 55 percent more than 1997 and exceeding really most other domestic moves over the span including domestic aviation _____ [00:08:16]. Really, it's supporting business travelers, tourists, particularly in our densest urban corridors, the 100 largest metros _____ [00:08:26] nationally account for 90 percent of AMTRAK's total ridership, so as we kind of look at these safety issues, especially on the passenger side, we think of the Northeast Corridor--a lot of these urban corridors are particularly important in that respect, but then obviously freight rail with crude by rail movements is also important. About 140,000 rail miles nationally operated by our class one, two, and three railroads. Car loads in 2014 were up to over 15 million which is about four percent more than in 2013, at their highest level since 2008. And I'm sure several of our other panelists will speak to this, but our energy products in particular are driving a lot of that, well, minus sudden fluctuations currently too, but you can imagine, with all of this increased traffic, at least more delays, bottlenecks, and just pure wear and tear on the tracks themselves, which leads to these kind of the safety concerns that we're going to talk about and then just these larger investment needs. According to World Economic Forum, US rail infrastructure ranks 15th internationally, so we're not exactly leading in that respect and then we can look at

traditional sort of AFCE report card, C+ is our grade for rail infrastructure, so there's a lot of kind of just national issues in that respect in addition to just several long-standing projects that could use help that we've seen in the news lately like the Hudson River rail tunnels that are over a century old that could cost commuters and businesses hundreds of millions of dollars if they were ever shut down. So I think there's a lot of kind of gloom and doom in this phase, too, but there's a lot of good, too. We see a lot of investments happening particularly between federal, state, and local players. Hopefully, over the passage of PRIYA for passenger rail, we can see more of this success in the national level.

And then freight rail, right, the freight rail with themselves are pumping over $600 billion over the past 30 years to track improvements, so I think through this broader lens of what is happening on the passenger rail side of things, what is happening on the freight rail -- among all these different stakeholders beyond DC, public and private -- how are we going to address these larger safety concerns ultimately to produce the kind of that economic growth that we need following the recession.

Jason Fordney: So obviously safety, economic growth, a reliable system---very dependent on each other, go hand in hand. You mentioned energy products. I'd like to discuss that a little bit sort of in terms of what we're seeing right now. Oil prices dropped quite a bit, which has led to a decline in rail traffic, but as far as where we are with current traffic levels, I wanted to direct that to Beth. What are you seeing right now in terms of crude traffic in the system?

Elisabeth Treseder: Sure. Well, crude traffic depends on the number of factors including alternative transportation modes, the unloading infrastructure that currently exists at refineries, existing contractual commitments, and of course price. When we're talking about price, it's more about the price differential between domestic crude and imported crude WTI and Brent that it would be about the overall cost, because that will help determine whether refineries want a rail crude from the Bakken, for example, or import it from overseas. So using the Bakken as an example, in 2013, about over 70 percent of crude oil from North Dakota was railed primarily to the East and the West Coast refineries. And that was when there was a significant differential between WTI costs and Brent. And since then, those price differentials have collapsed, and now what we're seeing, since there's that price collapse in that differential, we're seeing a lot more of the crude by rail dropping. So in May, it was at 52 percent. This is again, specifically for the Bakken. And then in June, it was down to 47 percent of Bakken moving by rail.

So we've seen that decrease significantly, and I think we've increased pipeline capacity _____ [00:12:52] from North Dakota and production levelling off. We'll likely continue to see that crude by rail movement drop.

Another thing to keep in mind is refineries on the East and West Coast have invested in this infrastructure. They might own fleets. They might have built unloading terminals. Also, they'll have contractual requirements. So those will all lead them to potentially continue to invest in crude by rail, continue to use crude by rail even if those prices --

even if that price differential lowers. So I think we'll continue to see a dropping in crude traffic by rail.

Jason Fordney: Does that dropping -- these questions are open to anybody -- does the drop in profits affect investment? And could that have a negative impact on safety especially since passenger rail and freight obviously share the same lines a lot of times? Any thoughts, Beth?

Elisabeth Treseder: Sure. Well, I think the rails have committed to it. In terms of the investment in the actual rail infrastructure, I think the railroads have committed to a significant amount of rail infrastructure investment. And despite the fluctuations in which commodities they're carrying that investment will ultimately continue, I imagine. So I don't know if that will have as much of an impact on the actual infrastructure investment. In terms of the loading and unloading infrastructure -- on the West Coast, there are several projects that have been proposed. That's more of an issue of getting those projects permitted at this point. I think -- obviously if those refineries are looking at options between bringing domestic crude from the Bakken or importing it via barge, they're going to go most likely with the cheaper transport options, so yes, I think that could potentially affect their invests in the unloading infrastructure.

David Friedman: Let me also add that some of the refineries in the East Coast should be -- for example, in Philadelphia refineries, which may actually not even be operating if it weren't for some of the Bakken crude -- they were, in the past, taking crude from the Nigerian sources which was the light sweet, and the replacement of Bakken from a political point of view was easier as well as the cost point of view. So as Beth pointed out correctly, these refineries have made an investment in unloading and in their cars, and we anticipate that they would continue to likely move by rail for the near future.

David Willauer: Yeah. The other reason, I think, we'll continue to see rail in the picture is that it's got some flexibilities that pipelines don't have and the investment, in the rail lines -- the rail lines already connect to these refineries around the country -- this oversupply of shale oil is causing some interesting challenges, because all of our gulf coast refineries are set up for the heavy crude oil, and they can only make so much of it with the light oil from the Bakken. So we are exporting some of the lightest oils to compensate to Canada, and that's coming back to us through the pipelines as a diluent. We're now, I just learned last week, exporting some light oil to Mexico in exchange for the heavy oil in the Gulf of Mexico for the gulf coast refineries. And so there are some gulf coast movements of the different kinds of oil that are significant and the rail connects to those facilities of oil.

Sean Jean Gail: Getting back to Jason's question, I mean from a passenger perspective, crude by rail is more of a performance issue rather than safety issue. We haven't seen any incidents per se between AMTRAK trains and the crude oil by rail, but we have seen on time performance upon it and the delays have been like an hour or two, big eight-, ten-, twelve-hour delays which has really hurt ridership out in the areas where they transport these tank cars. So we're looking at, are the freight railroads going to invest in a

sufficient level that they're ready for the next surge and the passengers aren't hurt as they were this time around because it kind of caught everyone by surprise _____ [00:17:12].

Jason Fordney: Of course, the railroads, when they started losing one commodity, they'll just move to another one. Right now, it's grain and agriculture they're moving towards, so even with the crude traffic drops, could we see it replaced? I mean they'll probably keep running the same amount of trains if they can, right?

Sean Jean Gail: Well, you actually had, I mean, grain in silos rotting and you had senators come in, Senator Thune, and hold hearings on it. This is time sensitive cargo, and we have to get it to market. What are you going to do? And so there was mass -- that was affecting mainly the BNSF customers, and so there is a massive reallocation of workers and also freight cars. So they were budding up against the ceiling capacity so I do expect a decent _____ [00:18:15].

Jason Fordney: Okay. Good. The Surface Transportation Board is actually meeting later this month in Kansas City to talk about grain cars and the upcoming harvest. It's a very cyclical business obviously when the harvest comes in, you have a lot of product to move. And as you mentioned, there's political pressure, because when farmers have to store their grain and can be counted as an asset, so it's very costly to them, and agriculture, of course, being such an important industry for us.

You mentioned John Thune, he has been one of the proponents of extending the deadline on Positive Train Control. Just to set that up real quickly, this is the law that was mandated by congress in 2008 with the deadline at the end of this year to implement the system. As I said, it's a $9 billion system. Then every class one has told congress there's no way we're going to make it. CSX has said we're not going to be there until 2020. And then you have the Federal Railroad Administration who's promised to start fining the railroads, and it creates all kinds of problems if they are out of compliance with this_____ [00:19:29]. So as far as the PTC extension, can anybody comment on the implications of that, whether -- if anyone has an opinion as to whether it should be extended or shouldn't – can they hold their feet to the fire on that deadline?

Sean Jean Gail: I mean from our perspective focusing on _____ [00:19:51] commuters and that's estimated at only 30 percent of commuter system will be in _____ [00:19:56] compliance, and there is -- yeah, by the deadline, it's not a question of if it's extended but how. And so we have -- working with the operators in the freight railroads discussing the problems, we recognize the need for an extension, but we think it should not be a blanket five-year extension. It should be case-by-case handled by the FRA, and there should be benchmarks involved in order to ensure that the work is being done. I think three years is a good compromise, and it's been floating out there and certainly with what happened in Philadelphia with an AMTRAK train, there is a greater understanding among the public that this is a _____ [00:20:48] technology that's time has come.

Jason Fordney: Yeah. It's been interesting to see PTC brought into the public eye. We're seeing an editorial in The Washington Post on it, so it's really becoming a political

issue especially National Transportation and Safety Board has had this on their list of recommendations since the late '60s, I think. So the railroads have not been very quick to jump on that and there's various reasons for that.

As far as FRA, can anybody speak about the conflict that would be set up -- a railroad is going to have to choose between moving freight or possibly being liable for penalties and fines if they continue to run trains after that deadline. Is that going to affect freight traffic, passenger traffic if it seems like something that could cause some chaos?

Sean Jean Gail: Well, we've heard that at least from the commuter side, and I think from the freight side, that they're going to look at -- I mean commuters specifically are across the board required, and they're going to start looking at notifying their customers about discontinuance of service if there's no extension passed around October. [00:22:14] There's a federal requirement that there is some lead up time time to give people some notice and a heads up. The FRA has quoted them, but that was in PRIYA 2008, $15,000 to $25,000 per locomotive not in compliance per day. If you look at the commuter railroads, they don't have that kind of margin. They can't afford that, so the FRA has said, "We're going to follow the law, and institute these fines, I don't see how commuter railroads have any choice in the matter. They can't make money. The sad part would be it would -- let's say the extension doesn't get passed, you would have commuters shifted on to the highway, which is a much less safe mode in terms of deaths per passenger mile. And you would also, from a freight perspective, have some toxic materials kicked out onto the highway from US railroad network, where again it's much safer, so I would expect an extension if I was a betting man [00:23:23].

Joseph Kane: I would add that -- I mean we're talking about rail here, but it's also in conjunction with all of our other transportation assets across different regions, right? So I mean if there's a supply and a demand, it's going to have to move at some capacity. And so I mean if FRA is going to have a pretty stringent approach to this, suppliers demand timely shipments that's not going to stop, so they'll probably ship it through trucks, right, or through other modes wherever that capacity is going to actually address the issue. So I think as we talk about sort of the rail safety issues, it seems very small and targeted, but it really, I think, ripples throughout the larger system in the months ahead.

Jason Fordney: Yes. And there's been some interesting exchanges from Sarah Feinberg before congress, and they're giving her a hard time about enforcing the deadline and just saying, "Well, it's your deadline. You created this deadline." So that's an interesting political thing to watch there.

It was mentioned, right now our infrastructure has a grade of C+. Does anybody have ideas as ways to improve on that? You know if it's about profits, railroads could need to make adequate profits in order to do that. But are there ways to drive investment that we have not really discussed or tackled?

Joseph Kane: I would just say, again everyone looks at it as sort of there's this massive problem at hand that there's going to be like the silver bullet solution, right? And this is

true for all types of infrastructure almost this cartoonish problems that's just so out of proportion that we need a huge solution to solve it, but it's going to come down to really targeting the investments precisely at a local level. Where are the pinch points? Whether it be Chicago or elsewhere or in the middle of an intermodal transport facility somewhere. Where are we going to target these investments, and then how are we going to govern that adequately at a federal, state, and local level between again the public and private sector getting all of these stakeholders together to kind of really address the issues or even quantify them. I mean we don't really have the data on it yet really beyond this kind of these top level measures. We have a gap of "x" amount of dollars, and a grade of C+. What does that really mean on a day-to-day basis? So I think there are efforts under way certainly in DC and at a state level, a lot of good rail plans and efforts to sort of address these issues, but there's clearly a lot more work ahead to sort of drive the investments which I mean again in turn could lead to those safety improvements, I think, we're looking for in terms of tracks and signals and so on.

David Willauer: We can see some of that taking place already, because what railroads will do in situations where track improvements need to be made, but can't be made in a certain timeframe, is they'll drop the speeds. And so when you see speeds drop nationwide in the railroad network; that has an impact on a little bit of everything as well. So even though it's a short-term measure, it is one way to gauge areas where more infrastructure improvements are needed. And when you have those speeds dropping. The new rules call for across board with reduction of speed for high-hazard flammable trains, and that's also been recognized by the railroads as a bit of a setback for them, because they already have other ways to govern speed, in terms of geometry, and urban density, and condition of the track that they already apply pretty rigorously. And so because track conditions are so important, I think you'll see railroads making those investments, because that's really the foundation of the railroad system. There are not as many attributes pointing at things like brake failures that lead to these accidents. That's a very, very small proportion, but it's track improvements and human behavior that have higher percentages in terms of these rail incidents. And with those track improvements come bridges. Some of the bridges that have failed in recent years were as old as—one rail bridge was built in 1874, and that's still in service today. And that tells you a little bit about the age of our railroad construction.

Elisabeth Treseder: Or at least anecdotally, in the winter seasons and so one of the things that we're working on continually is as more crude is being transported by rail, engaging our pipeline companies and our pipeline investors with the rail industry to see whether there are areas where we can share information, or best practices, or technologies to identify areas where there are similar improvements that can be made given the similarities in the types of infrastructure. So that's something where it's not a regulation or it's not coming from the regulatory side, but definitely in terms of sharing information between industries, we see a lot of potential there.

David Friedman: and just to add, Beth mentioned on the mainline movements in the east and west making sure that rail inspections are not only just done, but done plus one or

you know to go the extra effort on these lines that are running significantly back and forth [00:28:56].

Jason Frodney: The infrastructure big issue, we'd recently had a, just the past couple of weeks, I think it was a Union Pacific, not to put them on the spot, one of their bridges collapsed half hour after a train had just run over it. So we are seeing -- as you mentioned, it's an old system -- depending on the railroad, there was a lot of investment going on. Hopefully, that will change things.

We talked a little bit about data. The Surface Transportation Board has required a lot more data from railroads about their movements. The railroads are not pleased about that. They've been fighting it. There's more and more data that they want train speed, goal times -- it's considered industry protecting information. On the petroleum side, is that obviously something that's beneficial to shippers? The more you know, the better it is.

David Willauer: Well, I think everyone's interested in the data. I think even the public is more interested than ever before in the types of rail traffic. And some of it's pretty obvious. When we see the unit train come through your town, it's a pretty big event, right? And so people are aware of it, but they want to know how much is going to happen? How frequently it's going to happen? And there's a lot of public appetite for that information. At the first responder level, they usually can get this data and have been working closely for the railroads already. I'm happy to say that some of our recent examples include West Virginia, where the Mount Carbon incident that you mentioned was a good example of a town that saw these trains coming through about this time last year, and they started saying, "We need to do something about this." So they started the CSX. They did some proactive exercises over last winter. And so when that derailment occurred in February of this year in the middle of a blizzard, they knew what to do. They're trained in CSX, and they have had some experience firsthand. So there are examples of first responders taking the initiative to learn about railroad protocols and railroad responses to these incidents and being prepared. Even though they had to pretty much let the fire burn, they weren't prepared to put out a fire of that magnitude. That's the other part that I think firefighters are facing today. We've seen crude oil for years. We've not seen crude oil with natural gas liquid mixed in like propane and butane shipped at these volumes before. That's the game changer. The volume and the type of product is a great shift. That's what's sending firefighters into training sessions to reevaluate how they're going to deal with it.

Elisabeth Treseder: One thing I would add to that, while we haven't seen -- crude oil has definitely increased in volume in terms of the number of shipments due to the domestic energy renaissance especially out of North Dakota when this boom started to happen in 2011 and 2012. There's a lack of pipeline infrastructure and so there was movement towards building rail infrastructure. While that's taking place, flammable liquids have been shipped by rail for decades, so while the specific commodity might change, overall, our first responders are prepared for flammable liquid events. You respond to a flammable liquid event whether it's a Packing Group I Class 3 Hazmat or a Packing

Group II Class 3 Hazmat in the exact same way. Typically, given the number of resources, sometimes that will involve, like David said, letting a fire burn out which can be an alternative to a spill and so even if something -- there are different options the firefighters have, but what we've actually done at API is work with the railroads on a crude by rail educational course that we've been rolling out across the country to help educate first responders so that they know more information about this product, how it's similar to other flammable liquids, and to be prepared in case of an incident.

Jason Fordney: Another dynamic there, as more information is given to first responders, the public wants it. Maryland recently won a court case where some journalist had put a FOIA request in for the crude containing data and the railroad sued to try and stop that. Does anybody have a position on that issue? I mean are the railroads just being a little bit overprotective of their information here, or I mean it's obviously going to increase safety, the more information that we have.

Elisabeth Treseder: I would say it's always a balancing act. We need to be aware of potential concerns that come out of divulging too much information, so I think we need to tread carefully when it comes to information dissemination.

Jason Fordney: Right. Terrorism… --

David Willauer: Yeah, we do the same thing with hazmat preparedness, helping first responders know what's going through their backyard. They need to know that, but you don't want that information to get into the wrong hands either in terms of the movement of chemicals and so forth. The other part about the rail system in this country is geographic. I think it's important to know that rail systems connect our cities, we know that, because we built them that way. But the other factor is that rail systems follow river corridors for the most part, and so they're going to be susceptible to the kinds of flooding and events that happen with reference to these washouts. And there are situations that happen along rivers, so that when you have a rail incident, you're also going to have environmental incident as well when you have railroads fall in river corridors which is pretty common, and so that's another factor.

Jason Fordney: Yeah. And on the first responder issue, it's an evolving relationship here. Recently some first responders sued a railroad, because they weren't given enough information about the toxic inhalants that were burning. They say they suffered from that. So that seems to be another issue that's coming into play. Sort of an emergency commander in one area, as you mentioned, we need more preparedness here where another region might not think about it until we have an incident, so it's something to follow there.

I was wondering, on the passenger rail side, what are some of the bigger challenges that you think in terms of the system? Is it just capacity that is your main focus?

Sean Jean Gail: It's capacity, but also the state of the infrastructure, which is poor. When we say C+ rail infrastructure, I kind of wonder if the passenger side is bringing

down that grade a little bit. I mean when you look at the Northeast Corridor alone just to get it to a state of good repair, it's $52 billion, and that's a few years old that estimate is probably higher in actuality, and that doesn't address the Baltimore Tunnel that runs under Baltimore on the Northeast Corridor. That should go through -- if you got the New York City, which dates back to the Civil War. It doesn't talk about building a new set of rail tunnels between New York and New Jersey under the Hudson River. And those are all going to be needed to expand capacity. And in regards to the Gateway project, it's going to be needed just to maintain fluent movement on the corridor because those tunnels are going to fail. We know they're going to fail. Because in a decade if the AMTRAK has to shut down one of the pair of the rail tunnels, that's 75 percent capacity between New Jersey and New York City. And that tunnel alone carries 400,000 people a day. So I mean what we saw post hurricane Sandy where there was lot of -- there was like a fleet of buses across the river and a lot of people walking, that would be a situation we'd be looking at for ten years or something, and it's going to be some town on the New Jersey side of that river that's going to be a boom town if that ever happens. So I think the solution is predictable that they get the funding, and we know we need to do it. I think there's a lot of ideas floating about how to pay for it, but no one has solidified behind a single one. So I think Joseph's right, it's about targeting and looking at bringing as many options to the table as possible. So it's a little bit of both, but I would focus more on finding a rail trust fund and getting it into out of the appropriation cycle.

Joseph Kane: I would add, when it comes to our passenger rail network, it's a national network providing really this geographic equity across the country, but there is a tremendous concentration of traffic along those short line corridors particularly the Northeast Corridor along the West Coast, parts of the Midwest. And what we are seeing in lieu of kind of this federal leadership on the issue that where is the money coming from. A lot of states have stepped up over time -- Virginia, North Carolina, Maine with the Downeaster -- several individual routes have shown great performance in their ridership and they're operating finances. So perhaps in lieu of kind of this broader federal solution which may come someday -- but we need to kind of look at what are individual regions, particularly states, doing on their passenger rail issues to really cater to those commuters and travelers. It's not just a tourism issue, but it's actually catering particularly along the Northeast Corridor. I mean you're going to take a train from DC to New York versus a plane in most cases, so it's really a fundamental sort of business issue to a lot of people. So I would just say we're looking at this with these broader infrastructure concerns and we're sort of looking to target them. We need to see where the stresses are happening most frequently at least on passenger rail along those short line corridors.

Sean Jean Gail: Yeah. We've also seen privately led short line corridors being developed, one Florida between Orlando and Miami and one in Texas between Houston and Dallas. They all have unique properties that allow private sectors to lead. Florida is as much a real estate development project as it is a transportation project, because FEC industries happen to own a giant parcel of undeveloped land in Miami and said, we can develop this. So there are opportunities for P3, but I do think there has to be a strong

government leadership, and it's probably going to be federal, I mean if you look at how will other national networks have been built, it's the federal government that's led.

Jason Fordney: And then the states obviously seen this far behind a lot of other countries in rail development infrastructure, once again politics. Any thoughts on some of the hostility in congress towards AMTRAK? There's a congressman that wanted to cut the funding, privatize it, obviously something you wouldn't be in favor of.

Sean Jean Gail. Yeah. No, we would not. The voices of the de-evolution have kind of won on the passenger rail front. They're in a stalemate at the highway side of things, but we saw with PRIYA 2008 a shifting of operating responsibility for everyone under 750 miles which means except for the Northreast Corridor, which is still federal and AMTRAK. And they're kind of trying to freeze the long-distance routes in Amber and say whatever you have now is what you're going to have for perpetuity, which when you look at the ridership, it's a real shame, because there's room for growth there, and as we have 80 to 100 million people between now and 2050, we're going to need more capacity. I don't think there's this -- unfortunately congress is not going to operate in good order so there's no single vote that you can point to. They tried their best to create a solid line when they voted to slash funding for AMTRAK the day after the Philadelphia accident. But it's more, I think apathy, and what I keep hearing as I go along around to different offices is the highway trust fund is a sinking ship, do you guys really want to get on it? And we do, because look, we're already in the North Atlantic fighting on like a door and a sinking ship seems better than what we're at right now. But they've already spent almost twice as much in general funds, shoring up the highway trust fund in the last 17 years than they have on AMTRAK history itself. They'll find a way to save the HTF. I don't think we could keep going year to year in appropriations battle and expect a good outcome for AMTRAK in the long term.

Jason Fordney: Transportation in general -- just to stay in passengers for a little bit, we recently saw a foiled terrorist attack on a train running between Amsterdam and Paris. Is that something that is getting more attention, the risk of terrorism? But I guess that would apply on the freight side, too. Are you seeing a need for more attention to that?

Sean Jean Gail: Well, I know that the Transportation Security Administration and Homeland Security are going to have an event actually staged today at two o'clock, so I just learned about that last night. They may be proposing some sort of initiative. We're a membership based group, and our members are really against the TSA edification of rail travel. It's not feasible. If you look at the 500 plus AMTRAK stations across the country. You cannot seal it off. When you've seen TSA tried to impose themselves on the AMTRAK stations, they kind of bundled the job. There was an incident three or four years ago in Savannah, Georgia where they actually were screening passengers who were coming off the train. And it's just -- I don't think we need more TSA in our lives. There are other ways they can help AMTRAK police make trains more safe. The FCC is talking about giving more radio frequency to railroad police so that they can communicate better with these stations along the line in service communities. I think there's a role for TSA teams if they want to be a little bit more intelligent in how they

apply, but we don't want to have that blanket airport security for trains, at least out group does not.

Jason Fordney: Yeah. Hopefully, we won't have to just take our shoes off to get on a train.

So the new tank car rules that were issued in May have created some controversy. On the petroleum side, how do you see the tank car standard? Do you think there are changes that should be made? Or did they hit the mark on the regulation that's currently out?

David Friedman: Well, a couple of things and I want to go back a second, because you mentioned Lac-Megantic, which really drove tank car rules. And just to point out that when the Canadian Transportation Research Board, similar to the NTSB, came out with the analysis. There are 18 factors that they felt led to the tragedy. Seventeen of them had nothing to do with tank cars. It had to do with safety culture, safety practices, track issues, et cetera. The tank cars was only one of all 18, and yet the focus really for the last two years has been on tank cars.

Elisabeth Treseder: David said the past few years that there's been a significant focus on that, but ultimately, tank cars could potentially lessen the effects of a derailment, but it's not going to prevent a derailment. And so from our perspective, I think we need to -- if our ultimate goal is to help prevent these incidents, we really need to focus on the root causes.

Jason Fordney: Other than tank car standards, what would you like side on the regulatory side? Is it training? All of the above?

David Friedman: I think it's a matter of if it's all the above, it's better. But that pointed out, you can mitigate a problem, but if you prevent it in the first place, you don't have to mitigate. And so it's a matter of looking at track integrity. It's a matter of looking at human factors, which those two are the biggest causes of derailments. And so there needs to be a focus -- we have always talked about this holistic approach, and we need to look at all pieces. We need to look at -- we mitigate. We do need to look at mitigation, and we need to look at prevention. We also need to look to the spot. So all three of those, we really have to be on. We have to properly classify so that the first responders know what's being moved and what equipment do we use to move it. We need to have better track integrity and then obviously to have safer tank cars as well.

Jason Fordney: Are there any areas that are unexplored right now? Comment on the passenger or, Joseph, you might have something to say, that has not really been a focus? And as David mentioned, there's a lot of focus on equipment, when you look at the risk factors in derailments, are there areas that are not being addressed?

Joseph Kane: Yeah. I mean I think we kind of focus on the transportation side of things naturally, right, so talk about rail, but I mean a lot of the work that I do deals with the economic development, right, and that angle of individual regions. And there's a lot of

interest. I can kind of go back to the data side of things having this geographic granulator you get, how much are you moving both in terms of passengers and goods, what does it mean for our residents, our industries on the terms of really feeling that growth that we need. And it's highly varied across the country, right, from the North East to the West to the Midwest. And I think a lot of the safety sort of improvements in terms of technology or just track up rails or so on sort of fit into that larger frame, I think, that a lot of regions are looking for. And I think it comes down to a lot of the federal issues right there at play. But regardless of whatever the government does or does not do the following month, because they got a lot on their plate beyond even just rail, regions are going to be looking for more of that certainty of how do they fit in to this larger network, how can they maybe tackle this challenges themselves.

Jason Fordney: And it's also a matter of funding, right? Is there adequate funding on the federal side for safety innovations?

Joseph Kane: I can't speak as much to particular safety spending, but I mean I think we look across the board, right, in terms of just all infrastructure, right, in terms of having trust fund, in terms of passenger rail, freight rail. We don't even know where to spend the money in those cases. It's kind of this peanut butter approach where we just sort of spread it throughout the country until it rains down on different places, and it's good for them. They could just put them wherever they want. They want flexibility. But I think more importantly, they want the certainty rather than keep going from one deadline to the next. I think that's true for rail and all the types of infrastructure.

Jason Fordney: And certainty for not being a real benefit these days on the transportation side, for instance, they can't get contracting done on highways because of the highway trust fund lapses, things like that. So are there any specific technologies -- I don't know if anyone is an expert on this type of thing, but we were seeing a lot of changes in other industries where railroads are not seen as the most progressive investors, is there anything that would make a big difference in terms of protecting the health of the rail system? Does anybody have any -- or maybe might be involved in that side of things but technologies that we have not seen yet?

Elisabeth Treseder: One of the initiatives that we've undertaken since there are many similarities between pipeline infrastructure and railroad infrastructure is trying to evaluate -- get the industries together to share information about where there might be -- where we can identify technologies and best practices, so these conversations are ongoing, but I think we've -- having started the conversation to share that information could potentially lead to those kinds of innovations. So I think we're sort of in the education and information sharing phase at this point, getting the right people talking and the right stakeholders engaged, but that's something that I think we hope to make progress on.

David Willauer: This thing -- states are also putting pressure on the federal government to improve track inspections. Because they're doing it locally, some states are taking the initiative to increase track inspection and to put more inspectors on the tracks. But I think one of the challenges of the rail infrastructure inspection program is that we often

can't see by looking at it whether that track is going to withstand the weight of a uni-train that particular day and bridges are in the same kind of category. So I think one of the innovations that we'll be seeing more of is more advanced inspection capabilities and types of calibrated instruments that can really tell about stress fractures and other parts of the infrastructure that could become vulnerable and to deal with it before it becomes too bad.

Sean Jean Gail: Yeah. We saw a presentation where it's creating unmanned, autonomous rail inspection vehicles on rails, and they're trying to equip some of those sensors you're talking about, sensor railings on these drones and help them in the track inspection but also run ahead of the train. I guess that is kind of a first warning. So they're very much on the development process but I expect the technology will start to play a larger role in the future.

Jason Fordney: True, the BNSF I think is actually starting to use drones. They can right now only use them in the line of sight, but we can get permission to fly them ourselves. It's probably something we'll be seeing more of. On the passenger side specifically, what do you think is the most important safety initiative that you would like to see? Would it be PTC?

Sean Jean Gail: Yeah. I mean the Federal Railroad Administration has identified PTC as the most important safety investment for the national network. And if you look at very black swan incidents that have happened since 2008 is Chatsworth, California, 25 dead and 25 injured. That was a Metro North, Thanksgiving 2013 just four dead, 61 injured. And then Philadelphia to this day that 200 plus injured and so those are all PTC preventable. It's 45 years that NTSB has been asking for it and it's not become but the less glamorous program is the section on the rail crossing. It's much more frequent and usually a person getting hurt is the passenger, the locomotive engineer, but a pedestrian who's trespassing or a driver who wasn't paying attention and trying to beat the train. But when you separate road ways from railways, the network as a whole is safer and something that's state DOT planners don't choose to spend the money on their own, so it is important to have this set aside.

Jason Fordney: Sure. Yeah, I think -- I'm sorry. You said your view on the PTC extension is you do not like to see a blanket extension but more of a short --

Sean Jean Gail: Yeah, short term, three year, case-by-case with benchmarks that the railroads need to demonstrate that they are reaching at any -- in between time, so it's not like the next three years they'll go off and do something. I think in that situation you might just find yourself in the exact same scenario where they're facing that deadline they can't meet. I really want to make sure that the steps are there's a realistic plan to meet that deadline, and I think it's achievable.

Jason Fordney: Would a lot of fines and penalties really wreak havoc on the passengers' side, do you think?

Sean Jean Gail: Yeah. Again, some of these commuter authorities, they don't get any federal assistance for operating this. It's local, city, MTOs, state government that cover anything that's not covered by ticket revenue and so it needs resources over to that and they have to plan out these budgets sometimes one to two years in advance, because they don't meet that often. So I expect it would in fact solve the discrepancy of concerns that they'll have $15,000 fine per day is to be implemented. And again, that makes Americans less safe.

Jason Fordney: On the crude-by-rail side, what do you -- in terms of the PTC extension, what are the implications in the railroad's going out of compliance as far as shipping crude?

Elisabeth Treseder: You know it's not something that we've looked into extensively, so I, at this point, don't have any comments .David?

David Friedman: No, I don't think I have any.

Jason Fordney: Sure. Yeah, I think that the railroad have certain arguments about the impacts that's going to have on the system, and we'll see if congress steps up and extends that. You know we did mention how America's behind other countries on our infrastructure. Can anybody comment on sort of the reasons for that on a broader philosophical sense? Is it just our anti-federalism in America? Or why is this the case? I mean rails are intrinsic to the economy, safety transportation. Any broad comments on that just on a more higher level thought?

Joseph Kane: I would just I mean we have a leader at this phase years ago, right, and I would say probably in the past few decades in particular, there's kind of been this growing gap in the investments needs, right, not just the age of a lot of our infrastructure and that what we're actually putting into it. There's a lot of other spending priorities particularly at federal level. We're talking about the aging population. There's a lot of other needs in the budget itself where we're not coming up with the needed money to cover some of these infrastructure upgrades. So I think nationally, there's kind of this big infrastructure challenge that a lot of other countries have taken more of a coordinated approach. They're looking at their rail upgrades in terms of better highway upgrade, in terms of their maritime upgrade, a sort of a cohesive kind of approach so that then channel those investments appropriately. Whereas, we are really taking sort of a scatter shot, I think, prospectively in a lot of cases where it's rail is over here, passenger rail is over here, freight rail is over here, highways are over here. But I think hopefully in the months to come and hopefully in the years to come, nationally federal leaders will take more of that coordinated approach.

Sean Jean Gail: I've thought about it, because as I've traveled around the country to the states as part of our advocacy work, and I have been told multiple times and I don't - but I think the president certainly, President Obama kind of inflected investment in rail for a while, and that's slowly fading away and we've seen that with recent vote counts in the House, in the Senate where it's probably less polarized. Certainly, Republicans are more

likely to resist investment in passenger trains. But I think we are moving the deal in a positive direction. And since I don't know whether it's just a brief moment or speaks to a larger movement.

David Willauer: Well, I think another factor is our aging population. We've got the baby boomer generation entering retirement, and we're going to see I think the people wanting some changes and passenger rail provide a different experience. We found that in the Downeastern revitalization in Maine. The ridership of the beginning private bus company is expected to go down when rail service is reestablished to support Maine and it didn't. The ridership actually went up for both the rail and the bus because people had more choices. And I think as our aging population decides to rely less on their automobile, they will look for other choices. But I think we'll still continue to see rail investments in those areas where population can sustain it. It's the long distance cost benefit more than the free spending are going to be suffering.

Sean Jean Gail: Yeah. Well, I've seen demographic breakdowns of the different business lines. It's interesting because North East corridor jumping by 40 business travelers. This is expensive state corridors, Chicago, Seattle. It's younger and under 30 demographic and then the longest experience are dominated by senior citizens. And it's going to be one of those things where -- I mean not to take a longer journey, but we're going to have to ask ourselves if we want to provide an equal level of mobility across the entire nation. And I don't think we can answer that question, but it is -- I mean as far as the national level goes, the long distance routes have been ridden -- the ridership has been rising along the rest of the business lines. But there has been a crisis someone suggests in taking all of the funding so I don't know how long that can keep going.

Jason Fordney: In terms -- I'm sorry, go ahead.

Elisabeth Treseder: One thing I was going to mention, I know that this is an issue for both fuel oil and the rail industries, it's speaking of demographics. In terms of getting qualified engineers who can actually do the work and improvements, that's a significant issue in terms of getting that skilled workforce. And I think the industries are facing a large group going into retirement and so bringing in that skilled workforce, we can actually do the work and take on the improvements is also an issue that many industries are facing.

Jason Fordney: Yeah, there's a recent report that came out, said, I was interested in the age of rail workers and they're older. Five percent are under age 25 and something like 50 percent in their 50s. Is that going to be a big problem, because it's same with trucks. Young people don't want to drive trucks. It's just not an attractive job these days. They also don't want to get out -- work on the rail line at five in the morning. Can anyone speak to the worker issue?

Joseph Kane: It's a huge challenge across all infrastructure, right, even think of our transit systems. A lot of bus drivers, subway operators, I think it's -- I believe DOT just came out with a report saying that when one and a half of all of our transportation

infrastructure workers are over the age of 45. So I mean it's clearly sort of a crisis reaching ahead in the years to come. But I think the larger thing that can happen, too, is the barriers to enter actually into these jobs are quite low in terms of educational requirements, and so we're thinking of ways to extend opportunities. What are jobs that are providing good sustainable wages? Entry level with low barriers to entry across workers for all skill levels and these jobs, I think, fill that hole.

Jason Fordney: Great. And rail something like 273,000 workers in the rail industry compared to 2 million in the trucking industry, so rail has a fairly small chunk of the workforce, but obviously it's a problem that's going to face rail and truck industry.

Shane Skelton: So I'd like to give some of the press for the opportunity for Q&A if you guys have a couple of minutes.

Jason Fordney: Sure.

Shane Skelton: And can you just identify yourself?

Kelly: Hi, I'm Kelly Mejdrich with CQ. I've got a question about transit, but it was really helpful that Sean mentioned the gateway project Hudson River tunnels, because to me this is a great example of our transit kind of collides with a more popular subject we talk about infrastructure which is commercial movement of goods, freight movement -- so can you talk about whether there needs to be more holistic focus on how transit plays in the transportation network? And is there a commercial benefit to that? And I'm obviously interested in Sean's answer here, but I also like to hear from some other petroleum and chemical folks if possible, Beth, David -- so is there a commercial benefit to aligning these movements and can you provide some examples of how you're working on that now? Or is there a consequence to not getting some?

Elisabeth Treseder: Yeah. Absolutely. So obviously congestion is an issue as you have certain commodities booming in certain areas. There are more trains that are going to movie that commodity and therefore displace others so congestion is always a significant issue I believe for the railroads. One thing -- there's of course the negative side, but the positive side is that you invested on this infrastructure and it benefits not only -- if you invest, for example, in a route that carries crude oil, you're obviously also investing in that same route that carries passenger rail and grain and ultimately the more investment you put into that rail network the more commodities are going to benefit alleviate some of that congestion, prevent derailments. So I think the upside is that the positive effects then ripple out towards all the commodities and passengers as well. So I think passenger and freight both run on the same tracks, and I think ultimately if you invest in it, you're going to make everybody safer, so I think that's the upside.

David Friedman: Let me add one other thing and it's sort of congestion, which is the issue. We talked about early about speed. Because I wear two hats, I represent the refining industry, but I also represent the petrochemical side, the speed issue and as Beth mentioned, the congestion issue is an important one, because if you're having congested

areas and you're having these lower speeds, then the petrochemical guys aren't getting -- and the grain guys, and everybody else aren't getting their products out. And so there's this ripple effect. And the railroads have pointed out their sort of efficiency problems when you go from let's say a 40-mile an hour to 30-mile an hour speed, and that's a huge ripple effect on efficiency and getting the products out. And so that grain which is already sitting in silos may sit even longer, and that may become very problematic.

Kelly: Are you talking about speed restrictions as a consequence of the new train?

David Friedman: I'm just generally talking about the speed issue that the speed issue comes into play although with what I've been told by the rail folks is that they aren't always meeting those speeds anyway, so if it was reduced to 40 miles an hour, they have told us that they're only getting 40 miles an hour in certain routes anyway, so it may not -- the fact that it may not even matter. I'm really talking about congestion and speed and the impact over all the impact that it has on moving traffic overall.

Kelly: Okay.

David Willauer: Time of day is a factor, too. So in the East Coast, refineries, for example, they are now relying on crude-by-rail from the Bakken oil field, maybe 40 percent to 60 percent of it. We're seeing unit trains coming into Philadelphia, Delaware region on a daily basis, but they're coming at night. So when they're on the Northeast Corridor, they're operating on off peaks periods and so there's a time of day issue that can also be adjusted as the passenger and freight rail occupy the same space.

Kelly: Can I ask one follow-up? Does the Hudson River Tunnel Project have an impact for petroleum movement or not? Is that not something that's too much on your radar because you use different routes?

David Friedman: Beth, I don't know this. I'm assuming that there are no crude trains running. No. No.

Kelly: So it'll only be secondary impact as you guys are not certain.

David Willauer: We don't have any findings there.

Kelly: Yeah.

Jason Fordney: Do we have another question all the way in the back?

Nicole Merlin: Hi. I'm Nicole Merlin from Investor USA the EB5 immigrant investor program so I am coming out of my guess in different perspective of a private investor. There are mostly 85 projects that have invested infrastructure and rail projects including one that Sean mentioned from Orland to Miami. There's commuter projects also from Minneapolis to Rochester. It's like I was wondering what different obstacles there were P3 cooperation between private investors and local, state, federal government like in what

ways can we -- and is it easier to facilitate that relationship? I guess what my questions is what obstacles are there to having private investment in building rail and et cetera infrastructure.

Sean Jean Gail: Well, I mean I'd be interested in any -- there's a number of different ways we look at this and that is the actual operations of the trains themselves, the building of the infrastructure, the maintenance of the infrastructure which is a whole separate category and then some of the services provided on board. The infrastructure is the most important one, because it's the first thing that has to happen if we're going to run a train efficiently. It's also the hardest. The only country that really has had a infrastructure management firm make money is, to my knowledge, is Japan Railway East. And the way they did that was they gave them land parcels and said you can go and build, develop office, residential space around your stations and use that real estate revenue to fining its operations on this transportation corridor. It's kind of what FEC in all of Florida are doing. There are opportunities in a lot of these corridors but it's going to take -- I think it would take more political will than currently exists. I mean if you think about the Hudson Yards real estate development that's happening right above Penn Station. It's the biggest private real estate development going on in the world right now.

Nicole Merlin: Funded by EB5.

Sean Jean Gail: Oh, yeah. Okay. And there's -- it wouldn't work without the Hudson River Tunnels. It wouldn't work without Penn Station. How are you going to get people in and how to have -- there's a lot of commercial real estate and office space that is going to be relying on transportation, but they're not really paying anything into maintenance of the transportation network other than corporate tax rates. So those are the restrictions on that front. I think there's going to be a lot more -- let's say California. If the state of California takes care of that little help and builds the infrastructure, they're going to at least have a private company. They're going to do it across 20-, 30-year leases, and that will be a revenue stream. You've seen that model produced. And in terms of on-board amenities, we're seeing -- yeah, maybe you could talk about the down eastern experience and how rather than going through AMTRAK to provide food to customers or provide Wi-Fi to customers, they went to other vendors. Now, we've seen something happened in Indianapolis recently with rail simply taking over the state. It'll be interesting to see whether how much money they can make, whether they can make that work, but as this urban corridors get more dense and there's more ridership, it's going to be little ridership and I think people are looking into it and it just requires some flexibility from AMTRAK to let them come in.

David Willauer: In Maine they used a private vendor that brought in signature food stuffs that fit the state model, clam chowder, for example on the train going to Maine, that's pretty good thing and it's a different experience for those passengers. You're right, the private investment is also happening on the highway side. Most of the roads that we're building today are to build tollways and on the railway side, you're talking about California for high speed rail. That's a whole ton of discussion that's impacting several growth areas from Atlanta all the way to DC. North Carolina is different in a way. They

have a stake on the railroad that both states don't have. But there's a section that needs to be part of the high speed rail, so that means that the partnership of the private rail company needs to happen before that can be effective. So it takes a real champion in the state to move forward all the way for them to have a vision for something you want to accomplish then people can support that kind of vision.

Sean Jean Gail: Another obstacle that you might not think about is five provisions and one project because they had financing from I think the Chinese. They're an Ex-Im bank of their own to try to find markets for Chinese technology, and they have said we can do it cheaper than an American based company. But for -- it was the Las Vegas to Southern California line and they said, "If you want a federal loan," it wasn't even a grant but like a brief loan and you had a Buy American provisions so they said we're not -- shove this project from execution.

Jason Fordney: How about you up front?

Blake Sobczak: Oh, yeah, Blake Sobczak, Energy Wire I said a question on a crude-by-rail freight. I know Cynthia Quaterman before she left kind of emphasized that the tank car was only the beginning and the regulators are going to continue to look at all their options, et cetera. Was that just rhetoric? Or what do you see on the menu for future regulations on hazardous materials, safety regulations come out of PHMSA or FRA?

David Friedman: Well, there's a two year study that they're doing right now on stabilization, so I think that stabilization of characteristics there is it's going to be a big issue probably in the next two years. Beth?

Elisabeth Treseder: Yeah. One thing I would add to that is it's a study, so we're not -- as we've said and we've done multiple studies as has the AFPM, looking at crude oil as we've said it's properly characterized as flammable liquid, so we don't -- right now, I think it's important that we let that research be done before talking about any regulations in that arena, but separate and apart from that, there's also a regulation that we're anticipating in NPRM coming out of DOT on oil spill response for rails, so that's in the pipeline, I guess. And then, aside from that, I don't know of any that we're anticipating.

Jason Fordney: Yes?

Rachelle: Rachelle Levan from Bloomberg BNA. I have two questions, sorry. The first one is focusing on that workforce issue that I believe Beth mentioned and I'm more focused on kind of the HazMat transportation side of it. Where are you seeing those workforce kind of vacancies or future vacancies? Is it more on the engineering side? Or are these more remedial roles? How does that affect kind of innovation that's a potential for moving forward in developing safer and more environmentally friendly routes or technologies for transportation? And then the second question is kind of related to the data that David is talking about. The government obviously already collects a lot of data and one thing we hear consistently from industry and others is that they're not adequately using the data that they have, and so I was wondering on the hazardous materials

transportation about what type of data is the most useful that the government has that it's not already adequately using? And where is the room for growth for the government to collect meaningful data that it's not already collecting? So that's a lot probably.

Elisabeth Treseder: I'm happy to talk on the first one on -- sorry, could you restate it? Oh, yes, the workforce.

Rachelle: That's right.

Elisabeth Treseder: You know I think primarily, I think, what we're seeing is the lack of, for example, skilled welders and more on that engineering side. What a lot of the railroad seemed to have done is since there aren't that many skilled engineers or skilled welders or whatever the role is, they've taken the training in-house to make sure that their folks are properly trained and develop those skills internally within the companies. So I think that there's a huge disparity in that skill force.

David Friedman: And we are -- all industries have the same problem. Welders, for example, the number I've heard is the average age of welder is 55, so there's a -- and there's a great need for welding for our contractors working in refineries, petrochemical facilities, chemical plants for that matter.

Elisabeth Treseder: And welders are a critical workforce for all of our industries making sure that the welds are properly done on a rail can literally make or break the rail. So that's -- I think a critical element is something that all of the workforce -- I think there are a lot of efforts by all of the different industries and companies to engage people early on. You know you have your workforce and also reach out to different groups, for example, women, to get a more diverse workforce engaged, but I anticipate it'll become a larger issue than it even is now.

David Willauer: On your second question about data and what data is available and already available to first responders, what's useful about it or not useful -- in this country, we have state emergency response commissions that are statewide or committees of state representatives and that every county or a group of counties have a local emergency planning committee or LEPC. So most LEPC in this country follow county boundaries and they're made up of representatives from industry and local government, first responders, fire officials, schools, even the media are represented at what local emergency planning committees, and they get tier 2 data from industry on a regular basis, so they know about industry data in terms of stored volume of hazardous material at that industry. The problem is that only is one piece of the equation. One set of the industry is different than how it gets there, and it's the rail, the truck, the pipeline, and barge movements from suppliers to these industries that is harder to get. That kind of data is typically proprietary, because suppliers use different carriers, and they're very competitive, and they want to try to get the product where it needs to go. First responders to get that data sometimes have to work more closely with industry to get it and that just requires more time, because it means calling multiple -- the HazMat personnel industry, for example, won't know about volumes and the best information for first responders to

know the volume transported to their community, right? But the HazMat guy in that community is not going to know and that industry is not going to know the volume. That's the sales person. And then we talk to the sales person of that industry, they're going to say, "Have you talked to Legal yet?" And Legal have said -- so you get into an industry discussion. We've been able to do that as a company because we serve as a liaison between industry and government so we could sometimes get that information. But in order to make it useful you have to aggregate it together with -- by chemical and that's what makes it not proprietary. For example, if you take one chemical and you get all the ways that chemical's shipped to that state by all these different sources then it's no longer proprietary. It's the aggregate total. So annual volumes are a way that we try to help the first responders know what's going through their town and rail companies would provide annual volumes if you ask them. They provide it to first responders and to county for years on a local case-by-case basis. It's not like this broader interest in all these national volumes that costing a lot consternation, I think for the rail companies. On a case-by-case basis, we work very closely with first responders and that West Virginia example I gave you is a good case in point. They already knew what was going through their town, because they've done their homework. So you can get the information, it just takes time, and that's why I think first responders are struggling with. It's getting information and timely fashion.

Rachelle: Can I just ask one follow-up question to add? There is in the rule that I just have discussed and on HTF trains - there is a section that they reverted back to their safety advisory.

David Willauer: State Emergency Response Commissions now have to request the data instead of the railroads providing the data. It's actually both. Both are still in effect. The Emergency Order from 2009, 2014 is still in effect. Railroads still need to notify those states through which a million gallons of oil of Bakken crude is transported.

Rachelle: Right. But the idea of that is to identify the correct person, right? So seemingly, that should take out a lot of the hassle and kind of difficulties that first responders have been having, right? To identify the correct person that they can contact and so then it's just a discussion between two people rather than -- and do you think that that is the solution? Is that going to work? Or is that working?

David Willauer: That's, actually, always been the case. That's always been in place. If the railroads have had a designated person to be able to supply local first responders with those types of requests, it really hasn't changed.

Shane Skelton: I hope you all really enjoyed what I thought was a very thoughtful and informative discussion. One of the things that we're excited about is something that came up in the middle of the discussion about what technologies are either out there right now or being worked on out there than can really help improve rail safety whether it's automated track inspection or different kinds of sensors. So we're going to continue to look at that moving forward, and we're excited about that. And finally, thank you so much for the panelists and for Jason for taking time out of their busy schedules to provide

us all with the valuable insight on rail safety from a number of different perspectives. I think it should be helpful to get the passenger and the freight and some of the more technical aspects and response sort of stuff. So at this point, we're going to wrap it up. If anyone would like to speak to Brigham or myself about AII, we're certainly available for as long as you need us. I don't want to volunteer the panels individually. I'm not sure what their schedules are like, but I guess I would grab them by the arm on a case-by-case basis if you would, if you could talk to them. So thank you all so much, and we'll wrap it up for you.

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