

FRANCIS SCOTT KEY BRIDGE COLLAPSE

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CONTENTS

PAGE 3

Francis Scott Key Bridge Collapse

PAGE 4

Port Baltimore Disrupts Equipment Supply

PAGE 6

**After Francis Scott Key Bridge Collapse—
What Are the Safety Implications?**

PAGE 7

Supply Chain Trend Wrap-up

PAGE 8

**How Maryland Fleets Are Faring
After the Baltimore Bridge Collapse**

PAGE 10

Road Safety and the Key Bridge Collapse

PAGE 12

**Key Bridge Collapse: How Will the Structural
Steel Industry Respond?**

PAGE 14

**The Baltimore Bridge Disaster,
Two Weeks On: What You Need to Know**

ON THE COVER: FRANCIS SCOTT KEY BRIDGE IN BALTIMORE, MARYLAND

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Francis Scott Key Bridge Collapse

EXPERTS FROM PUBLICATIONS WRITING ABOUT ROAD INFRASTRUCTURE, INDUSTRIAL SAFETY, manufacturing leadership, commercial trucking and construction equipment share insights into the tragedy in Baltimore.

A tragedy that unfolded in minutes will impact industry and shipping for months, perhaps years, and the families of six road crew members for the rest of their lives. The loss of Baltimore's Francis Scott Key Bridge again highlighted the challenges facing America's infrastructure and the fragility of the industrial supply chain.

In the days that followed the March 26, 2024, accident, several Endeavor Business Media publications gathered as much information as possible to share with people trying to make sense of the massive structure's rapid collapse. The following articles all come from experienced editorial staffs who examined issues from different perspectives.

Though the loss of life of bridge crew workers was the greatest tragedy of that day, damage to the supply chain, delays in shipping goods to the public and problems getting needed equipment for other construction projects will be with businesses for months and years to come. ▀

Robert Schoenberger

Editor-in-chief

IndustryWeek

Port Baltimore Disrupts Equipment Supply



Photo of Francis Scott Key bridge in Baltimore.

How the city and its port authority responded in the immediate aftermath of the bridge collapse.

By Rod Sutton, Editorial Director, Construction Equipment

IMPORTS OF CONSTRUCTION EQUIPMENT

and parts are being affected by the collapse of the Francis Scott Key Bridge in Baltimore. The extent of those delays depends on how quickly the Patapsco River can be opened for all commercial traffic.

On Tuesday, April 2, a second channel was opened as removal of the bridge continues. This cleared the way for the first commercial traffic movements through the area, according to the U.S. Coast Guard, and “is a significant milestone in our response efforts,” said U.S. Coast Guard Cmdr. Baxter Smoak, operations section chief of the Key Bridge

Response 2024. “Our number one priority remains the opening of the deep draft channel. We are simultaneously focused on opening additional routes of increased capacity as we move forward.”

In 2023, the Port of Baltimore handled a record 1.3 million tons of imported roll-on/roll-off cargo (Ro/Ro), which included construction equipment. Machines are driven on and off cargo vessels a piece at a time. Baltimore is the top U.S. port for Ro/Ro cargo, according to the Maryland Port Authority.

The Francis Scott Key bridge collapsed in the early morning hours of March 26,

sending vehicles and a road crew into the Patapsco River below. [Video recorded](#) the container ship Dali hitting a bridge pier causing a cascading collapse of the bridge’s spans.

Endeavor Business Media, the parent company of *Construction Equipment*, has several publications covering various aspects of the disaster. We’ve aggregated ongoing coverage below, including new information on the aftermath of the collapse.

Baltimore is ranked third for imports and exports of construction equipment, according to an analysis by Alexander Jones, Interact Analysis, citing U.S. Census figures. He said imports outpace exports on the equipment side fivefold.

According to the Port Authority, its proximity to Midwest construction equipment manufacturers has helped it become

CONSTRUCTION

the leading U.S. port for importing excavators and backhoes. It has nearly 200 acres of pavement at Dundalk Marine Terminal where it can handle more Ro/Ro equipment than competing ports, according to the Port Authority.

What construction equipment shipments are affected?

Port Baltimore is the closest East Coast port to the Midwest, home of several equipment manufacturers. In addition to whole goods, manufacturers import parts. Delivery times will lengthen as manufacturers seek other points of entry. Jones says that even as different ports pick up the slack, manufacturers will need to find temporary storage space and change on-road transportation routes.

Delays will also depend on equipment type, Jones said. Equipment manufactured in the United States, for example, should not be in short supply. The costs associated with the adjustments that manufacturers need to make to handle the chokepoint in Baltimore will likely result in short-term price increases for specific models of machine, Jones said.

Construction Equipment asked several manufacturers how the port closure is affecting their ability to import machines and parts. Not all have responded.

- **Komatsu:** The closure is impacting operations on both the export and import sides. “The company is working diligently to route products and parts to other ports to prevent delays from our customers,” said a spokesperson.
- **Kubota:** The Wall Street Journal reported that Kubota is redirecting shipments to the Port of Virginia and trucking to Baltimore, increasing its trucking costs.
- **Volvo Construction Equipment:** The impact is minimal, said a spokesperson. “Few” machines are stuck in port, but nothing significant.
- **Bobcat:** The closure has not had any

major impacts to imports or exports, said a spokesperson, but its logistics team is working closely with shipping partners to monitor future impacts.

- **John Deere:** No comment.
- **Caterpillar:** No comment.
- **Case Construction Equipment:** CNH Industrial does not use Port Baltimore, according to a spokesperson. “We do not expect it to have any material impact on our ability to serve our customers.” ▽

After Francis Scott Key Bridge Collapse— What are the Safety Implications?

American Road and Transportation Builders Association found that about one in three U.S bridges need to be replaced.

By EHS Today Staff

THE COLLAPSE OF BALTIMORE'S FRANCIS Scott Key bridge after it was stuck by a large container ship is tragic for its loss of life. A 948-foot cargo ship lost power and crashed into the bridge which had construction crews, as well as drivers, on it. Six people are still missing.

On March 27, 2024, Transportation Secretary Pete Buttigieg gave an update on the issues on ABC News and said that first responders, coast guards and divers worked tirelessly at the scene. He said the loss of life could have been worse if it weren't for their actions. After the mayday call, people were rescued and the bridge was closed. It was reported that the police had about 90 seconds to stop traffic.

Currently, the Coast Guard has boarded the vessel and is sending information to the NTSB to evaluate the situation. A report is expected in the next two to four weeks.

The issue of safety of this bridge, and others, comes into focus. According to CBS News, this bridge scored a six out of nine during its latest federal inspection. This is considered a "fair condition." In 2002, the bridge passed inspection, but there was a concern with one of the columns.



The cost to repair the bridges is estimated to be \$125 billion according to the American Society of Civil Engineers.

However, this fair condition is common, and most bridges in the U.S fall in this range, according to Ben Schafer, professor of civil and systems engineering at John Hopkins, according to CBS.

A recent analysis from the American Road and Transportation Builders Association found that about one in three U.S bridges need to be replaced. And over 43,000 are in poor condition and classified at "structurally" deficient. The cost to repair the bridges is estimated to be \$125 billion, according to the American Society of Civil Engineers.

According to an article on CNBC, each day about 167 million trips are taken across structurally deficient bridges.

With the average age of bridges being 44, the government is aiming to distribute \$27 billion over the next five years to fix or rebuild thousands of bridges. ▀



Supply Chain Trend Wrap-up

The collapse of Baltimore’s Francis Scott Key Bridge and other events that impacted the world’s supply chains in March.

By Supply Chain Connect Staff

MARCH WAS AN ACTIVE MONTH FOR THE supply chain sector, with the collapse of Baltimore’s Francis Scott Key Bridge clearly being one of the most newsworthy and tragic events to impact supply chains during that 30-day period. When the massive Dali cargo ship slammed into a piling on its way out of the Port of Baltimore, it took at least six lives and the elevated portion of the 1.6-mile span with it.

The recovery process and investigation were both still underway at press time, but experts have already weighed in on the potential impacts of the tragic event in terms of ocean-going freight, over-the-road trucking and the total financial impact of the collision. Within a few days it became clear that mechanical failure may have been to blame, and that the ship’s pilot and crew took steps to try to avoid the collision and alert authorities about the problem.

The longer-term impacts of the bridge collapse on the world’s supply chains remain to be seen, with Bloomberg pointing out that every day the Port of Baltimore is closed is “another \$217 million that’s not crossing its docks.” The port managed about \$80 billion in total bilateral trade in 2023.

First-Ever Global Supply Chain Forum Coming Soon

In March, UNCTAD announced the first-ever Global Supply Chain Forum,



which it developed as a platform where leaders and experts can discuss the changing landscape of international trade and logistics. The forum will be an in-person, four-day event that takes place May 21–24, 2024 in Bridgetown, Barbados.

In recent years, global trade has faced significant disruptions, from the COVID-19 pandemic to climate change and geopolitical tensions. UNCTAD said these challenges have tested global supply chains and highlighted the urgent need for resilience and sustainability, particularly for developing countries.

“Recognizing the disproportionate impact of supply chain disruptions on vulnerable economies far from the main lines of trade, especially small island developing states (SIDS) and landlocked developing countries (LLDCs),” UNCTAD said in a press release, “the forum will explore ways to strengthen resilience and sustainability

in global supply chains, ranging from trade facilitation reforms to digital innovations.”

Semiconductor Manufacturing Trends

In “Semiconductor Supply Chain: Political And Physical Challenges In 2024 And Beyond,” Markit paints a picture of an industry sector that’s posting double-digit growth this year. “Our forecast calls for industrial production of semiconductors to rise by 21% in the first quarter of 2024 due to a cyclical recovery, with the investment-driven growth only starting in 2026,” the company says.

Strategic rivalry between the U.S. and EU on one side and mainland China on the other has distorted supply chains for nearly a decade and is likely to continue to do so, according to Markit, which expects private investment in industrial facilities to increase by 85% this year (compared to 2019).

“The chip industry sits at the nexus of national security and economic development policies,” the company adds. “That has resulted in a race both in supporting national investments in the semiconductor sector as well as escalating restrictions against sharing technology.

It says that the U.S. CHIPS and Science Act has attracted investment in six major U.S. semiconductor plants (or “fabs”) so far, but adds that only a few funding awards have actually been made.

In fact, Markit says the act doesn’t address three challenges that may hold back the development of the nation’s supply chain ecosystem: vendor concentration; advanced packaging, testing and assembly; and cost increases. “The act also may be causing unintended consequences,” it says, “including reactions from allies and from competitors.”

How Maryland fleets are faring after the Baltimore bridge collapse



Freight movement around the Baltimore area is limited after the bridge collapse, while travel to and from the Port of Baltimore and surrounding area struggles with congestion and long detours.

By **Jeremy Wolfe**, Editor, FleetOwner

BALTIMORE'S FRANCIS SCOTT KEY BRIDGE collapse continues to impact nearby carriers' operations, leaving local trucks with fewer loads and longer transportation times.

The Patapsco River span collapsed on March 26 after a container ship crashed into the bridge, sending part of the structure and construction vehicles into the waterway. The collapse also blocked maritime access for the nearby Port of Baltimore.

The accident has caused traffic congestion and delays for local trucking operations.

The continued blockage of the Port of Baltimore also severely limits freight movement.

"I don't think anybody appreciates just how important that bridge was to so many segments of trucking," Louis Campion, president and CEO of the Maryland Motor Truck Association, told FleetOwner. "According to the Federal Highway Administration, it averaged about 4,800 trucks per day that crossed it."

Campion also cited recent data from the port administration that says that, to Mary-

land, the port's constrained operations cost the state about \$191 million every day.

Last week, Campion spoke with one of the association's member organizations that runs between 10 and 20 trucks. "The first comment out of the owner's mouth was: 'I'm trying to make sure that I still have a business in three weeks.' That's the fear right now amongst a lot of industries that serve the Port of Baltimore."

Impacts on freight movement

The bridge collapse has impeded cargo access to the Port of Baltimore, slowing local freight movement.

"The port has still been busy for the last week because there was cargo at the terminals that had been delivered before the collapse," Campion said. "There's been a lot of truck activity just clearing out cargo that was already on terminal, but within a day diversion was happening to locations like Norfolk to New York to New Jersey to Philadelphia. I'm even hearing some diversion to Delaware."

The collapse also significantly impacted local spot flatbed freight market data, as recent data from DAT Freight & Analytics show.

"Baltimore consistently ranks in the top 10 markets for spot flatbed freight in March," Dean Croke, principal analyst for DAT, said. "Last week's bridge collapse saw a 57% surge in spot flatbed loads moved from Baltimore and higher linehaul rates on critical lanes. The number of spot flatbed loads moved from Baltimore to Chicago increased by 117% compared to the previous week, and the average spot flatbed

OPERATIONS

jumped 25 cents to \$2.03 a mile.”

However, the collapse likely won't have as significant an impact on national markets.

“From a macroeconomic point of view, the impact of the Port of Baltimore's situation should be limited,” Allianz Trade told FleetOwner. “Container imports via the Port of Baltimore account for 2.1% of total U.S. port traffic. We therefore estimate that 1.5% of U.S. imports enter through the Port of Baltimore. ... In addition, potential diversions of maritime flows to neighboring ports should further mitigate the effects of shortages and delivery delays.”

Detours in and around Baltimore

To reach the harbor for routes that would typically cross the Francis Scott Key bridge, trucks now have to take one of three alternative routes: the Fort McHenry Tunnel on I-895, the Baltimore Harbor Tunnel on I-95, or around the Baltimore beltway on I-695.

Both tunnels have clearance restrictions that may limit some trucks from these routes. The Baltimore Harbor Tunnel limits vehicles to 162 inches tall and 96 inches wide. The Fort McHenry Tunnel limits vehicles to 174 inches tall and 132 inches wide. Both tunnels also prohibit hauling hazardous materials, including propane gas and bulk gasoline.

Freight vehicles that cannot use the tunnels should use the longer route around the Baltimore beltway instead.

“There's much longer transportation time having to take the alternate route,” Champion said. “Additionally, traffic congestion is much worse as a result of the many, many thousands of cars and trucks that traditionally would have used the Key Bridge.”

About 115 million vehicles cross the bridge each year. Now, they have to pass through one of the three alternative routes. Those alternatives are being pushed past their capacity, congesting roadways, and slowing local truck operations.



Container imports via the Port of Baltimore account for 2.1% of total U.S. port traffic. We therefore estimate that 1.5% of U.S. imports enter through the Port of Baltimore.”

Allianz Trade

One of MMA's members, Champion shared, saw significantly longer transit times in taking the beltway detour. “A particular route that they would take would have run them about two and a half hours, and it is running them 50% longer from a time standpoint to make that same delivery.”

Recovery efforts

“Until the shipping channel is open, there's a choke point; it's choking off economic activity,” Champion said. “It's why there's such a priority on trying to get the waterways open, because there is such a potential for extreme negative impact on these local businesses.”

Public officials are still working to recover bodies and debris from the Patapsco River to allow maritime access for the Port of Baltimore. Crews have already opened two temporary channels for smaller vessels and are working to open a third channel for larger vessels, according to ABC News. However, these channels will not help move much freight in the near future.

“There have been some modest openings, but those have really been more for emergency services associated with recovery efforts,” Champion said. “Those channels are not going to have anywhere near the berths that the port traditionally has had ... Right now, that is essentially still blockaded.”

Support for local carriers

Champion, on behalf of the Maryland Motor Truck Association, sent an open letter to the Maryland Department of Transportation asking for six regulatory waivers to support motor carriers.

Put broadly, the letter asks for:

- Extensions to permitted driver hours of service
- Exceptions to some operators' electronic logging device requirements
- Relief from some International Registration Plan requirements
- Changes to motor fuel haulers' route designations
- Financial assistance for local businesses
- Waivers for motor carriers without International Fuel Tax Agreement decals

The International Fuel Tax Agreement waiver has already been achieved, according to Champion.

“That has already been achieved, thanks to our comptroller's office, who really acted very quickly on that,” Champion said. “We think we are going to get some of those other requests in the near future.”

MMTA also worked with the governor's office and the Small Business Administration to help set up economic injury disaster loans so members could pursue financial assistance. On April 1, Baltimore opened two Business Recovery Centers to help business owners process disaster loan applications.

Maryland lawmakers are also working to pass legislation to provide economic relief grants to workers and small businesses impacted by the port's closure, according to The Baltimore Sun.

“We're optimistic that there may be some help to throw a life preserver to some of the businesses who might really be struggling through this,” Champion said. ▀

Road Safety and the Key Bridge Collapse



Roads & Bridges sits down with American Traffic Safety Services Association President and CEO Stacy Tetschner to talk about the road-travel impact of the tragedy in Baltimore.

By Gavin Jenkins, Senior Managing Editor, Roads & Bridges

WHILE THE BUSINESS WORLD FOCUSES ON supply chain issues and stranded materials in Baltimore, those in the road safety community are far more concerned with the loss of six construction workers on March 26, 2024, who died with the Francis Scott Key Bridge collapsed. The following is a lightly edited transcript of an interview conducted March 28, 2024. In it, you'll hear from Roads & Bridges Senior Managing Editor Gavin Jenkins and American Traffic Safety Services Association President and CEO Stacy Tetschner.

Gavin Jenkins: Let's talk about the collapse and the tragedy. Can you start by talking about your thoughts on the tragedy in general?

Stacy Tetschner: Let me start by saying that our hearts go out to the families of the roadway workers that were lost in this tragedy. As unique as this situation is, it's still a tragedy. These workers went to work that night to make our roads safer, to make some repairs to the roads, having no idea that such a tragic, tragic event was going to be ahead of them. But, that said, this

incident is a reminder of the risks that we all face on our roads every day, and as we make our way to work, home and even driving to work on these roads, in addition to working on these roads, it is always a risk that we're all taking.

We should all work to be as diligent as we can when making our way, but I also want to say we're thankful for the many individuals, the agencies and the first responders involved in the search, the rescue and the subsequent investigation, including our partners at Maryland Department of Transportation. Our heart is really going out to them as well because this is the second tragedy within a year for them.

Gavin Jenkins: On that note, a year ago, there were six people who died on in a work zone on the highway in the Baltimore region. Can you talk about what you would say to the workers in this region and what measures can be taken to protect them?

Stacy Tetschner: Again, I want to stress again our thoughts are with all the people assisting in this particular effort and for the especially for the families of these six – I think we're down to now four unaccounted-for construction workers and contractors – as well as any roadway worker that has lost their lives on a road nationwide.

This was an incredibly unique situation. I think the investigation the research will provide us the best recommendations on measures that could be taken in the future for something like this. That being said, I can't stress enough the importance of paying attention for everyone as you approach roadway workzones where anyone is working. Work to please remove distractions. Slow your vehicles. Get safely

CONSTRUCTION

through that work zone so you can save your life, that of your passengers, and those of the workers that are out there risking their own lives to make sure that the roads are safer. And just for context, in 2021, 956 people were killed in work zone crashes, most of them drivers, their passengers and pedestrians.

We at ATSSA, through our foundation, the ATS Foundation, we memorialize those people who lost their lives and works zones as well. ATSSA's a partner in a national campaign, National Work Zone Awareness Week, held at the start of construction season to raise awareness, encourage safe driving and driving through work zones. So, that's my message today. Certainly, this year participate April 15th through the 19th, which, aptly is being hosted by the Maryland Department of Transportation.

Originally, this was set up to recognize the tragedy that happened a year ago when we lost six roadway workers. But here we are again. We've just lost another six, and I couldn't imagine a more solemn event that's going to happen, but something that's a great reminder of we all need to pay attention and stay vigilant. ATSSA, the industry, public officials, everybody need to stay current in the industry with tools being introduced for work zone safety so that we can make these roadways safer.

Gavin Jenkins: I think one of the things that this tragedy highlights is that whether the work zone is on a rural road that's two lanes on a highway, that's six lanes or on a bridge, accidents happen big and small. Some of them are freak, tragic accidents. Some of them are just a driver looking at their phone and going into a coned off area. It doesn't matter the circumstances around the accidents. The accidents are happening and the workers in our industry are at risk. It's a dangerous job and the more support that organizations like ATSSA can get, the more awareness that we can spread from the media and from foundations and organi-

zations, the better for the people on the ground. For our readers and for everyone that's putting on a vest and a hard hat.

Stacy Tetschner: Absolutely. You know, we've got some great technology that's coming to help with that, and I don't care if it's an automated flagger or if it's something that's going to address speeding or whatever it happens to be at the end of the day. It's the driver that has to pay attention, and we all have to do our part as drivers. And as people that are managing drivers and even young drivers coming up to make sure that they're much more aware and not as distracted, as you said, as they approach these work zones. And again, this being a unique situation at the bridge, it wasn't about distracted drivers. Yet it's a loss. ▀

Key Bridge Collapse: How Will the Structural Steel Industry Respond?

Roads & Bridges sits down with American Institute of Steel Construction President and CEO Charlie Carter in the immediate aftermath of the bridge collapse.

By Gavin Jenkins, Senior Managing Editor, Roads & Bridges

WITHIN 72 HOURS OF THE FRANCIS SCOTT

Key Bridge's collapse in Baltimore, the steel industry responsible for rebuilding the span was already responding to the tragedy. The following is a lightly edited transcript of an interview conducted March 29, 2024, just days after the collapse. In it, you'll hear from Roads & Bridges Senior Managing Editor Gavin Jenkins and American Institute of Steel Construction President and CEO Charlie Carter.

Gavin Jenkins: What was your first reaction after learning about the key bridge collapse in Baltimore and what has the response been like from members of the AISC?

Charlie Carter: I learned about it the same way, just about everyone else that I woke up and turned on the news. It was, of course, all over the news and it happened hours before. Seeing the video, it's just shocking, even to someone you know who has an education on structures. It's shocking to see what happened, the ship impacting the pier, the pier appearing to be removed, and then of course we could see the entire bridge collapse as a result of the loss of support. Shocking, I do have to say, but with the pier removal, not surprising. If you remove the element that's supporting

the entire bridge, the entire bridge [comes] down as a result.

From an industry standpoint, the response to this has been broad. There are fabricators, who do the kind of work that built this bridge in the first place. My observation is, they immediately began talking with each other about what can they do to help. There are fabricators in the area, well connected, to the Department of Transportation that's responsible for that bridge.

We've seen this before. I imagine you remember the Hernando de Soto Bridge, which had a crack in a main element. And, it was the same way with that. There were fabricators, regionally close to the bridge. There were other fabricators and they started talking. What do you need? What can we do to help? And a fabricator engaged with the DoT to find the solution. And then material was repurposed from other projects to solve that problem immediately.

Now this one's a much bigger situation. The entire bridge is in the water. We're not talking about a repair here, but we are talking about a need to reestablish the port of Baltimore, very quickly reestablish the roadway. And I think that can be done quickly. It's something that can be done in an accelerated fashion with the DoT, the

bridge engineer, the general contractor and steel fabricator collaborating from day one. Pick the team now and start talking about how to do it quickly, economically and what the details should look like that that gets us the fastest bridge replacement. That, I think is already in progress thanks to the community coming together.

Gavin Jenkins: Maryland officials have stated that the structure was fully up to code and (Department of Transportation Secretary Pete) Buttigieg said that a cargo ship of that size would collapse any bridge that had been made in the 1970s, like the Key bridge had been. What do you think?

Charlie Carter: Well, this this was a bridge designed before ships of that size even existed. Those are newer than the bridge. The bridge is 50–some years old, having been designed probably starting in the 60s into the 70s, built in the 70s. I don't see anything from the video that tells me there was anything wrong with the bridge, and if not for that impact of the ship directly on the pier, that bridge would still be there today. It certainly wasn't designed for shipping impact cures in those days. It just wasn't a thing. Now, in the 80s, you had the Sunshine Skyway Bridge where a pier was impacted by a ship. And the damage caused collapse, and that began a conversation about designing for ship impact.

It's generally not the bridge, though, that gets designed – the pier itself. What you try to do is protect the pier, locate the pier in in a place where the ship wouldn't impact it. Or, if you can't do that, provide some kind of system that's going to stop or redirect

CONSTRUCTION

the ship to prevent the contact of the ship with the pier.

I think those statements are correct. This was not a case where you could expect that here to resist the impact of the ship, and in fact, we know what happened from the impact that the ship compromised the pier and either destroyed or disabled it from providing the vertical load. So, we know those statements to be true. Had this bridge been designed today, it's actually a requirement to consider impact and provide a system, and there are many approaches to that.

This ship was very large. I think that will become part of the conversation going forward. Every time something like this happens, we learn something and have an opportunity to do better in our standards, and it'll be interesting to see what those standards, how those standards evolve as a result of what we experienced in Baltimore.

Gavin Jenkins: How do you safeguard a steel bridge from such a tragic accident? You said that today's bridges have structures that are built for incidents like this. Can you elaborate a little bit more on that?

Charlie Carter: There's a variety of approaches that can be taken. One common one is called a dolphin system. It's essentially creating a system of obstacles that would stop a ship or redirect a ship away. A ship that size that would do very significant damage, and in fact the dolphin system isn't designed to look good after it gets hit. It's just designed to do its job. And then if it does its job, you don't have impact on the actual structure of the bridge.

There are other systems, fender systems, that have been used and in some cases. I know that the piers get located in places where the ship would actually run aground before contacting, so that the actual environment of the shipping lane could be the protection system that's used.

This bridge was a remarkable span for its day and for the structural configuration. One of the things they might consider is

that this is a busy shipping port, and they have the horrible thing that occurred – a horrible opportunity. If we think of it as an opportunity, they can reconfigure the bridge for today's shipping requirements involving much larger ships. I imagine they're going to look at widening the shipping lane. They're probably also going to look at an increase in the capacity of the roadway of the bridge because that roadway was also designed in in the 70s and traffic needs have changed since that time.

I'm guessing this will be a much more significant bridge, a longer span – a cable-stayed, steel-deck bridge solution would be very typical for something like this, and I imagine that is a direction that might be considered for the replacement bridge. It would also allow the piers to be located much further apart and probably have a zone that's easier to protect even with the increase in the size and that potential full force of a ship like we saw. ▀

The Baltimore Bridge Disaster, Two Weeks On: What You Need to Know



The good, the bad, and the new reality of the logistics landscape.

By Anna Smith, Editor, IndustryWeek

YOU DON'T NEED AN EXPERT TO TELL YOU that global supply chains have hit rough waters in the past year, literally. Attacks on vessels in the Red Sea, low water levels in the Panama Canal and now the closure of a crucial East Coast port. One maritime mess after another.

The Dali cargo ship's fatal collision with Baltimore's Francis Scott Key Bridge two weeks ago made headlines around the world, leaving the public and businesses baffled at how something like this could

happen and wondering how to stop it from happening again.

Among U.S. ports, the Port of Baltimore ranks ninth for total foreign cargo value, handling \$80.8 billion last year, according to Maryland Governor Wes Moore.

Manufacturing is closely intertwined with both global and domestic supply chains, and the ramifications of this port closure are still unfolding. Here's what we know two weeks later and how it may impact you.

Behind the Headlines: Not Just Finished Goods

On the business side, the biggest news is the expected repercussions on the auto industry. Port of Baltimore records indicate it has handled more cars and light trucks than any other domestic port for the past 13 years. Farm vehicles and machinery are other big areas of impact due to the port's roll on/roll off capabilities.

Less talked about is the collision's impact on other types of shipments.

"One of the things that I haven't seen covered as much is that there are impacts in terms of raw materials," says Brandon Daniels, CEO of AI supply chain management company Exiger.

Daniels noted that both cane and beet sugar are large staples of the port's imports. The disruption of such commodities has experts speculating about future price increases or shortages.

"In addition to that, there's a large amount of unwrought aluminum that comes through the port," he says. Any disruption to these types of products can create a domino effect downstream in the manufacturing process.

"Major manufacturing of buildings, major manufacturing of construction machinery, major manufacturing of sub-assemblies, major manufacturing in basically any large-scale aluminum-based products would be impacted by this port disruption," Daniels says.

The Port of Baltimore is also a key hub for gypsum. "Gypsum is a mineral used in a wide variety of goods including fertilizer, toothpaste, shampoo and even side-

walk chalk. Interruptions to the supply of gypsum could have ripple effects in multiple industries, but the most concerning is the construction industry,” according to a project44 data report. “Gypsum is a key ingredient in drywall, plasters, ceiling tiles, building blocks and multiple other construction materials.”

Other disrupted imports affecting construction timelines are “things like plaster, plywood, veneered panels, laminated wood, poly vinyl goods, plastics, sheets, films ... Those are mostly home construction or building construction goods that are subject to the same constraint,” Daniels says. The news isn’t all bad, however.

“It’s an immediate impact, and then it starts to lessen or ameliorate very quickly because of the fact that we can ship into multiple ports,” he says. “Those are goods that can come through Georgia, South Carolina, New York, New Jersey ports. It’s not something where the port itself is critical to those raw materials coming in.”

Shipments Rerouted

Many shipments have been diverted to large East Coast ports. “Shipments originally destined for Baltimore are now being rerouted primarily to New York (41%), Norfolk (30%) and Newark-Elizabeth (10%),” according to the aforementioned project44 report.

“Having the Baltimore port out of commission for this period of time is going to have a fairly limited effect. It’s only 4% of total trade volume on the U.S. East Coast,” says Daniels. “The ports of New York and New Jersey, by comparison, are about 38% of the East Coast volume, so they can absorb a lot of the spillover from the Baltimore port. So, from a long-term perspective, I think that these immediate impacts are lessened as shipments get rerouted and as other ports are utilized.”

Even though port congestion may not be a major issue, other challenges exist, such as increased processing fees and con-



The ports of New York and New Jersey, by comparison, are about 38% of the East Coast volume, so they can absorb a lot of the spillover from the Baltimore port.”

Brandon Daniels, CEO, Exiger

tainer prices, as well as ground logistics. A strain on the land logistics side will impact transportation to some major hubs and manufacturers in the Mid-Atlantic region, says Daniels.

With an increase of ground traffic congestion, “the U.S. supply chain will experience delays in cargo deliveries and perhaps temporary increased costs for trucking, but only in the short term,” says Siddharth Priyesh, vice president and head of Americas and Caribbean at CrimsonLogic.

Although the Baltimore region will likely see the most significant and long-lasting impacts, manufacturers in other areas are not in the clear.

“It is going to be more focused on the East Coast and Midwest, but the global supply chain is an interconnected network of goods and services that are delivered by intermediary and final goods manufacturers. So, when you have issues like this come up, it affects all logistics pricing, it affects all goods prices,” says Daniels. “From a supply chain and manufacturing perspective, it does have a systemic ripple effect when it first occurs,” Daniels says.

A Lesson to be Learned

Although most of the country won’t be radically impacted by the Port of Baltimore disaster, it leaves us with one question: How do we avoid something like this in the future?

“The most significant impact long term is going to be the transformation that will need to happen in major ports and in major shipping lanes from a logistics perspective,” says Daniels. “We need to invest in our

infrastructure such as bridges, because we can’t have bottlenecks like this that disable our ability to transport.”

Ever since the initial shock of the bridge collapse left businesses scrambling, experts have emphasized one message: visibility and flexibility are key. The seemingly endless bombardment of supply chain issues of the past five years marks a new reality in the logistics landscape.

“These are systemic impacts of an increasingly strained global supply chain,” he says. “One of the things that we should be talking about is the fact that organizations that are going to succeed and thrive for the next 20 years are going to be the ones that understand that this is not episodic. This is interconnected, and they have to be more proactive about understanding and monitoring their supply chains and having redundancy.”