

PORT CONTINUITY PLANNING

**Maintaining the Region's Economic Lifeblood
Proceedings of a Conference on Maritime Cargo Security**

**San Pedro, California
May 18, 2007**

Sponsored by

FuturePorts

**Sea Grant Program
Wrigley Institute for Environmental Studies
University of Southern California**

**Paul Hall Endowment for Marine Transportation
University of Southern California**

**James A. Fawcett
Editor**

Published by the Sea Grant Program, Wrigley Institute for Environmental Studies, University of Southern California, Los Angeles, California. September 30, 2007 (USCSG-TR-04-2007)

Copies are available from:

USC Sea Grant Program

Los Angeles, CA 90089-0373

213.740.1961

213.740.5936 Fax

email: seagrants@usc.edu

<http://www.usc.edu/go/seagrants>

This publication has been produced with support from the National Sea Grant College Program, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, under grant number NA 164RG2843. The views expressed herein do not necessarily reflect views of NOAA or any of its sub-agencies. The U.S. Government is authorized to reproduce and distribute copies for governmental purposes.

The National Sea Grant College Program is a network of 30 university-based programs in coastal and Great Lakes states involving more than 300 institutions nationwide in research, education and the transfer of technology regarding coastal, marine and Great Lakes issues. Sea Grant is supported by the National Oceanic and Atmospheric Administration, an agency of the U.S. Department of Commerce, in partnership with the states and private industry.

© 2007 University of Southern California

ACKNOWLEDGEMENTS

This conference is the second sponsored by USC Sea Grant on the issue of maritime cargo security. The meetings would not have been possible without the generous support of the NOAA Coastal Services Center, Margaret Davidson, Esq., Director.

Maritime cargo security is an especially important issue in southern California, home to the Ports of Los Angeles and Long Beach, the busiest marine cargo seaport in the United States. The conference on which this proceedings reports was, furthermore, made relevant by the diligent efforts of a wise and dedicated steering committee, whose members are noted below. FuturePorts, an organization advocating robust port and supporting infrastructure, a strong economy and green port technology, was instrumental in connecting the theme of the conference to the users of the ports. Elizabeth Warren, its Executive Director, served as an indispensable co-chair of the entire enterprise.

I want to also thank my colleagues in Sea Grant for their support and invaluable assistance in making the conference a success. Particular thanks go to Rick Hayduk, Ruth Dudas, Phyllis Grifman, Associate Director and Dr. Linda Duguay, Sea Grant Director.

STEERING COMMITTEE

Dr. Onur Bakur
USC Center for Risk and Economic
Analysis of Terrorism Events
(CREATE)

Lynda Bybee
Los Angeles County Metropolitan
Transportation Authority (METRO)

CAPT Mark Hamilton
Sector LA/LB
US Coast Guard

Fran Inman
Majestic Realty Co.

George Kieffer, Esq.
Manatt, Phelps & Phillips

Barbara Long
Long Beach Aquarium of the Pacific

Dr. Isaac Maya
USC Center for Risk and Economic
Analysis of Terrorism Events (CREATE)

James McCarthy
California Department of Transportation

Cosmo Perrone
Port of Long Beach

Marianne Venieris
California State University, Long Beach

Marlon Walker
Southern California Edison Co.

Finally, I want to thank our corporate sponsors who helped defer the costs of the meeting, advised us and actively participated in our discussions. By sharing their expertise and experience, we hope that this proceedings will be all the more relevant to those businesses and government agencies who want to know more and effectively plan for maintaining business continuity.

Burlington Northern Santa Fe Railway

The Dutra Group

Eagle Rock Aggregates

Moffatt & Nichol

Plains All American Pipeline, L.P.

The Port of Long Beach

The Port of Los Angeles

TransSystems

Union Pacific Railroad

Western States Petroleum Association

Weston Solutions, Inc.

James A. Fawcett
Los Angeles, California
September 30, 2007

CONTENTS

Acknowledgements.....	i
Conference Introduction and Welcome	1
Introduction of the Honorable Janice Hahn.....	3
Welcome: Councilwoman Janice Hahn.....	3
Introduction of the Keynote Speaker.....	7
Keynote Remarks: Richard Steinke, Executive Director, Port of Long Beach, California.....	9
“The Economic Costs of Business Interruption to the Supply Chain”	21
Introduction of the Panel Moderator	21
Matthew Bettenhausen, California Office Of Homeland Security	21
Paul Bingham, Global Insight	29
Russell Rowe, IBM	40
Joseph Sparano, Western States Petroleum Association	47
Questions to the Panel	56
“Planning For and Recovering From Supply Chain Disruption”	67
Introduction of the Panel Moderator	67
Gary LaGrange, Port of New Orleans, Louisiana	67
Steven Pasienski, Toyota Motor Sales, USA	82
Richard Ebel, Burlington Northern Santa Fe Railway	90
Questions to the Panel	98
Introduction to the Paul Hall Memorial Lecture	103
The Paul Hall Memorial Lecture.....	107

CONFERENCE INTRODUCTION AND WELCOME

**ELIZABETH WARREN, CONFERENCE CO-CHAIR, AND
EXECUTIVE DIRECTOR
FUTUREPORTS
LOS ANGELES, CALIFORNIA**

Good morning and welcome to San Pedro. My name is Elizabeth Warren, and I'm the Executive Director of FuturePorts. We're excited to have everyone here this morning and attending our conference. I just want to say welcome to my hometown and thank you all again for attending. Welcome to the first annual FuturePorts conference on maritime security.

FuturePorts represents businesses and other users of the port from throughout the region. We were founded about two years ago on the premise that there's a balance between growing our ports and greening our ports. We advocate for building and improving the port and surrounding infrastructure, to support our economic activity, which is the engine of our economy, that provides over 500,000 jobs. We believe this growth can be balanced, and with the need to protect our environment through the development and implementation of green technology. It's been said that quality of life begins with a job. I know you have probably heard that before, and we believe it. We believe that you can have both: good jobs and a clean environment. No one said it was going to be easy, but we're all working very hard every day toward that goal.

FuturePorts is honored to work with the Sea Grant program at the University of Southern California, to bring together experts from our ports, from high levels of government, from businesses that ship goods to the ports, and from the transportation industry, to discuss a topic that could threaten our economic engine, and our jobs. This topic is business continuity. Business continuity is the ability of the ports and businesses to continue operations in the event of a natural or man made disaster. Over the course of the past several years, we've seen tsunamis in Southeast Asia, hurricanes in the Gulf coast, and right here we've had our own version of disruption, with the management and labor unrest. And just within the last two

or three weeks, we've had a freeway interchange in Oakland that collapsed after a truck crashed, and caught on fire. And we've had a bomb threat to the Vincent Thomas Bridge. Our government, our ports and port police, and the US Coast Guard are doing a phenomenal job of keeping us safe and our cargo moving. But they cannot predict nor protect us from every threat. So we need to be ready to face any disaster, be it natural or man made, not if it occurs, but when.

**INTRODUCTION OF THE HONORABLE JANICE HAHN
COUNCILWOMAN, 15TH DISTRICT
CITY OF LOS ANGELES**

It is my pleasure to introduce someone who loves these ports and wants to protect these ports as much as anyone. Janice Hahn was elected to represent the 15th Council District of the City of Los Angeles in June of 2001. The 15th District encompasses the communities of Harbor City, Harbor Gateway, San Pedro, Watts and Wilmington. Councilwoman Hahn serves as the chair of the Trade, Commerce and Tourism Committee, which oversees the Port of Los Angeles, the Los Angeles International Airport, and the Convention and Visitors Bureau. She also serves as vice chair of the Education and Neighborhoods Committee, where she works closely with a citywide network of neighborhood councils to ensure that community stakeholders have a say in local issues. Additionally, she serves on the Information, Technology and General Services Committee, the ad hoc Committee on Gang Violence and Youth Development, and as chair of the Board of Referred Powers. She's also the chair of the Board of the Alameda Corridor Transportation Authority. Councilwoman Hahn is passionate about our ports, and about the communities surrounding them. She was a driving force when she led the efforts to initiate the successful Pier Pass Program. She's also a strong supporter of the joint ports Clean Air Action Plan, which is mitigating impacts to the community. And she's a very strong voice in the local community, supporting the San Pedro waterfront development. These are just a few of the initiatives that she has led as our councilwoman. We appreciate her taking the time to be with us today. It is my pleasure to invite her to officially welcome you to San Pedro and the 15th Council District.

**WELCOME
COUNCILWOMAN JANICE HAHN**

Thank you, Elizabeth, and good morning to everyone. And may I also add my welcome to mostly beautiful San Pedro. We used to have June gloom. Now we're having May gray. This is unusual weather this time of the year, but welcome anyway. We love San Pedro. We think we're a very interesting, unique, diverse community, and we've begun to discover our waterfront, our Port of Los Angeles, not just in terms of it being an economic engine, but we've begun to discover it in terms of a

waterfront property in the City of Los Angeles. And you just have to drive not too far from this hotel to see downtown development thriving. We're building lofts and apartments and condominiums all that will have a beautiful view of our main channel. So we have a new love affair with our port in terms of it adding to the quality of life of our downtown businesses.

I really want to congratulate USC and FuturePorts for putting together this conference and focusing on this important issue of how do we keep goods moving in case of any type of disaster at our ports. I understand that the director from the Port of New Orleans will be here speaking today, and talking about how they recovered from Hurricane Katrina. I think that's going to be a very valuable lesson for all of us to pay attention to. I've always believed that we really need to pay attention to what we can do to prevent a disaster from happening in our ports. And here in the San Pedro Bay area, between the ports of Long Beach and Los Angeles, I like to call us America's Port, because depending on the statistic that month, anywhere from 42 to 43 to 45 percent of all the trade that comes into this country comes through these ports. There are about 14 million containers that come in and out of these ports on an annual basis.

There was a recent study that was commissioned by the Alameda Corridor Transportation Authority, both cities and the chamber [of commerce], that talked about the impact of goods movement from America's Port, and it showed how every single state, every single congressional district, how they benefit from the trade that comes through these ports. And so we know that it's clear that if anything were to happen at these ports, it would not only cripple the local economy, it would cripple the national economy and it would cripple the global economy.

In 2002, we had our last, as you call it, labor unrest, and the West Coast ports were shut down for ten days. And these ports were shut down with people sort of guessing that they would probably shut down. There was enough information to say that there probably would be a work stoppage for that amount of time. So cargo was already being diverted on its own. And yet, every day that those ports were shut down, it was at a cost of about \$2 billion a day to our national economy. I was in

Asia at the time, and there were businesses over there on about the fifth day of the shutdown that were already seeing the impacts of what had happened. We've heard that there were a couple of businesses that never recovered, never recovered from a ten-day shutdown. So we know how important that is.

I know we have George Cummings here, who's our Director of Homeland Security at the Port of Los Angeles. We have tried to focus the nation's attention on port security being homeland security, and I'm really glad that Congress finally passed a bill that would appropriate serious dollars to protecting our ports, because I still feel like we're way behind in terms of port security. I think that America's Port still remains one of the most vulnerable entryways into this country. And as Elizabeth said, just recently we had a scare on the Vincent Thomas Bridge. Of all those containers, we're still inspecting maybe 4 percent of them on a regular basis. So, while we're doing more to protect, I also am very aware that if something were to happen at America's Port, it would be a huge disaster. It has been estimated that we would lose more lives than what we did on September 11th at the World Trade Center if something were to happen at America's Port. We have 5,000 men and women working on those docks on a daily basis. So I have actually asked our port to put together a recovery plan, and I was just speaking with George, and he says they are almost complete with it. They're looking at everything from how do we get our infrastructure back up and running, how do we get the workforce back up and running, how does each terminal operator get back up and running.

As chair of the Alameda Corridor [Transportation Authority], I think how important it is to get the trains up and running after a disaster. Almost 50 percent of that cargo that comes in here moves out across the country by rail. So what you're doing today is extremely, extremely important, and I think you have a huge challenge ahead of you. It's conferences like these, the first step for everyone in the supply chain, and everyone who has anything to do that touches good movement in any way, it's the first step in the awareness that we must make sure that we have a recovery plan in case something, or as Elizabeth says, *when* something happens to disrupt goods movement in this country. Have a great day. Thank you for inviting me to be here today.

INTRODUCTION OF THE KEYNOTE SPEAKER

**DR. MICHAEL WALTER
HARBOR COMMISSIONER
PORT OF LONG BEACH
LONG BEACH, CALIFORNIA**

Good morning everyone. I'm Mike Walter from the Port of Long Beach. Jim Hankla, our president, wanted to be here, planned to be here, but he has to give a talk in Los Angeles today to a group of professionals from England. It's my pleasure to introduce our speaker today. Now before I do that, however, I would like to thank the FuturePorts organization and USC's Sea Grant Program for putting this together. I think this is really important to bring professionals, who really know the maritime industry, know the problems with the logistics and other problems, and are concerned about continuity. I think it's wonderful to get everyone together. I think Blanchard wrote that, "None of us is smart as all of us together." Those ten words and that's right, and we really have the high power here today. I think this will be a really good conference. This is just a very important meeting, so thank you for putting this on.

All of us probably need to learn more about how to plan for any disruption. One cannot predict on a probability basis such things as the gasoline truck tipping over on the freeway and those things do happen. Accidents happen, and clearly in California, earthquakes happen, so there can be disruptions. They have to be addressed some way, and the best way to do that is to get scenario planning and to be prepared and be able to respond. This is certainly a professional group that's capable of doing that. I'm very proud to introduce the speaker today. Mr. Dick Steinke is the executive director of the Port of Long Beach, and he has held that position since 1997. And in addition to running the day-to-day operations of the Port of Long Beach, he directs our Green Port programs, which are a worldwide model for sustainable seaport management. The Board of Harbor Commissioners is solidly committed to improving the environment at our port, and we've just committed to that to the extent of several hundred million dollars. We're very serious about that. Occasionally I hear a joke, and unfortunately sometimes it's from-- what do I want

to say? Not a commissioner, but a council member, who says, “Well you’re not really serious about cleaning.” Let me tell you, we’re serious about it, and I think that all the terminal operators and all the shipping lines know we’re serious. I don’t want to get involved, and I never do, in the discussion, “Is pollution responsible for global warming?” I don’t get involved in that, but I can say that it’s the right thing to do, clean up the ports. That’s what we’re doing. And we have a wonderful relationship with the Port of Los Angeles. Professionally Mr. Steinke is very active. For example, he has served as chairman of the American Association of Port Authorities. He’s been president of the California Association of Port Authorities. He’s also on the board of the Alameda Corridor Transportation Authority, and he’s on several other boards. It is my pleasure to introduce Mr. Dick Steinke, who is the executive director of the Port of Long Beach.

KEYNOTE REMARKS
RICHARD STEINKE
EXECUTIVE DIRECTOR
PORT OF LONG BEACH, CALIFORNIA

Thank you, Dr. Walter, for that warm recognition, and Elizabeth, thank you for organizing this conference. Between the doctor and Elizabeth and the councilwoman, I don't have much to say. You've pretty much captured all the ideas that I was going to talk about.

I really think that this port complex is in need of a very comprehensive business continuity plan, and we have had challenges, as Elizabeth has said, in thinking about this. What we need to do as ports is to move goods efficiently and seamlessly and without delay. That's what our customers expect; that's what they deserve when they come into this port complex. We have the infrastructure to support it, but one of our greatest challenges is making sure that we continue to do that. As the councilwoman and Elizabeth said, in 2002 we had some challenges. We had the lockout that showed just how important this complex was. We fast forwarded to 2004 and we see things like rail shortages, railcar concerns that slowed cargo down, and it makes us, again, recognize how fragile our goods movement system is, and the importance of making sure that we have reliability and flexibility in the system. In 2006, something came up called the Dubai Ports World, and who would have thought that it would have brought the industry the recognition that it so sorely wanted for so many years, and we finally got it, for all the wrong reasons. But I think again, what happened there is that it showed that ports are significant players in the world economy. They're essential to the United States of America, and they're probably one of the most little known entities in the goods movement chain.

Then you look at things like air quality and congestion, and as Dr. Walter said, our concern about making sure that as we continue to move goods, we move them in an environmentally friendly way. You put all those challenges together, and you say, "Wow, that's a pretty daunting list," and then you start to talk about business continuity and that probably becomes one of the greatest challenges that we have as

ports, and as an industry in total. So that's one of the things that I want to talk about a little bit today, is what we're doing at the port of Long Beach, and what the other ports in the nation sorely need to do to make sure that goods continue to move as quickly and as efficiently as they do, and as Elizabeth said, not if, but when some kind of disaster hits.

I personally have always liked the use of USC football team's business continuity plan. I don't know if any of you are familiar with it, but every year when they prepare for the season, they also prepare for about half of their team being drafted early into the NFL, so all they do is they go out and recruit all the best football players out of high schools all around the nation, and that's their effective business continuity plan. So business continuity takes different meanings to different organizations.

Business continuity, this is the definition from the Disaster Recovery Institute International: "The ability of an organization to ensure continuity of service and support for its customers and to maintain its viability before, after and during an event." I think it pretty much sums up very well what business continuity means. Moreover, business continuity planning is a management process. It's proactive, not reactive. We're concerned with the consequences or the impact, not the cause of the interruption. It is a focus on organizational resiliency, identifying the critical business processes and incorporating them into planning, and it beyond disaster recovery, and I'll get into that a little bit more. The importance of business continuity planning is that it's preparation; it's a plan. It is not reactive; we can't wait until the disaster takes place. Instead we need to focus on the potential loss of facilities, infrastructure, employees, utilities, supplies, suppliers, technology, vendors and assets *before* an event happens. All of that goes into business continuity planning and so when we talk about it, it's a multi-faceted concept. Because of that we need to make sure that it is holistic and that we look at the big picture when we're talking about business continuity planning.

In the port context, we need to remember that it is also multi-jurisdictional. We are not alone at the Port of Long Beach. We have our neighbor, the Port of Los Angeles. We have several other entities, all our customers, suppliers, vendors, ev-

erybody in the supply chain that we need to work with. It's very important that we again include all of these people, because if we exclude any of the entities, and the suppliers, we're not going to have an effective plan. Being a landlord port I think presents a special challenge for us. We're not an operating port, and again, there's a significant difference. We basically turn these facilities over to marine terminal operators, or ocean going carriers, to operate those facilities. It's been our belief, and I think the Port of Los Angeles's belief, that they are the experts in those fields, and that we turn these facilities over for them to make the most of them using their expertise. And that has been a very successful model for many years. But when you're an operating port, I think you have a little bit more control. You'll be able to control the employees. You'll also be able to control much more effectively what happens within your terminals in the case of a disaster.

So one of the most important challenges that we face as landlord ports is: who is the ultimate authority? I know our director of security, Cosmo Perrone, and a number of the other people on our staff, have worked very hard to determine who that ultimate authority is, and have determined roles and responsibilities for all the jurisdictions, whether it's the City of Long Beach, the City of Los Angeles, the County of Los Angeles, law enforcement agencies, the Environmental Protection Agency, or the Department of Homeland Security. The question we ask is who works well, who works first, who's the ultimate decision maker when we're going through that process? We're concerned about the long-term disruption to the freight transport system from any cause including a terrorist attack on the container shipping system.

As Councilwoman Hahn said, 15.8 million containers moved through these ports in 2006. That is a lot of cargo. To the extent that we are affected by disaster all that cargo has to go someplace, and where does it go? We know that if we had a widespread diversion from the ports of LA and Long Beach, to ports in the Pacific Northwest, it would simply overwhelm their system. They don't have the infrastructure, they don't have the rail systems, they don't have the wharf, some of the ports don't have the water depth, so simply saying, "Well hey, the ports of LA and Long Beach go down so we'll move [the cargo] to Port Hueneme or Oakland or

Tacoma, Seattle, or Vancouver, or any place on the west coast of the United States,” just does not work. So that makes an effective business continuity plan even that much more critical. We need to get our port up and running as quickly as possible, making sure that those customers and vendors and ocean going carriers and railroads can depend on our port as they have in the past.

I want to talk a little bit about the trade impacts. I won't go into detail but that is the reason why these ports are so significant. We are really the straw that stirs the drink, so to speak, when it comes to containerized traffic into and out of the United States, and if something should happen, or when it does, we need to get our ports back up and running. These are the stakes. The economic consequences, I think you'll hear from Global Insight in the next presentation, just how big of an impact these ports have when something bad happens. You can see the numbers. I think these are probably in some cases understated. Pick your economist and pick your number, I think is pretty much what we found out after 2002, is that anybody who wanted to work with numbers could come up with a significant impact from what took place when the ports went down. That was only an 11-day lockout and it certainly had ripple effects on the entire economy.

I'd like to talk a little bit about what we see in the business continuity area. Whether we look at national, state or local initiatives, we're all talking about it, and I think that's one of the things that's encouraging, is that dialog is taking place. These are some of the areas where we have involvement with the Maritime Infrastructure Recovery Plan. In the current discussions, they're talking about restoration of passenger and cargo flow, specifically container cargo. [The plan] recommends diversion, and I don't think, as I said before, diversion is probably the answer. Diversion in a limited set of circumstances might work, but widespread diversion of cargo from the LA base into someplace else simply, in my opinion, will not work. But it does not address this in the plan: the Department of Homeland Security's Maritime Infrastructure Recovery Plan, does not address business resumption. It lacks in that area, and again, I know the ports of LA and Long Beach have been hammering on the federal government time and time again, whether it be Department of Homeland Security, or specifically the US Coast Guard, that we've got to have a business

continuity plan. We've got to make sure that that is part of the solution here. It's not just bringing back the facilities up, but it is making sure that that cargo flows through these facilities as it has been before.

The Area Maritime Security Committee (AMSC), here locally, is looking at it. The two ports jointly lead a subcommittee on continuity efforts, so that effort is taking place. The harbor safety committees around the United States, and specifically here in LA/Long Beach, are addressing emergency management and business continuity concepts locally and nationally, so that's in place. And the Maritime Sector Coordinating Council has a working relationship with the Department of Homeland Security and the US Coast Guard, and there is industry membership in that organization, and so again, the talking has started. Discussions have taken place, and that's very, very important. Also the American Association of Port Authorities-- and you might hear Gary LaGrange later in the day talk about the efforts that they did in the Port of New Orleans, and the work that came out of it through the American Association of Port Authorities, and looking at ports, and the fragility of ports, and what we need to do to get ourselves back up and running. In fact, the Port of Freeport developed a disaster recovery handbook that many ports can use. I don't know that it's in all cases applicable to huge load centers like LA/Long Beach, but for many of the smaller ports in the United States, that was a very welcome manual that can be a guidebook for ports when disaster takes place. Some of the state initiatives involve the California Maritime Security Council, the use of Proposition 1B funds for disaster recovery and business continuity plans. Specifically Initiative 5 [of the California Maritime Security Council] talks about regional and business government and continuity planning. I'd like to thank Cosmo Perrone. He's been very involved, along with our security division, in a number of discussions with the State of California, making sure that business continuity becomes part of the discussion, becomes part of the language they talk about when we talk about things like disaster recovery and recovery plans. It has to include business continuity. We go to the local initiatives, talk a little bit about continuity of operations, and talk about a federal government wide initiative. We're also working with the City of Los Angeles. We're working with the City of Long Beach, and we're working with

the LA County Metropolitan Transportation Authority that also have continuity of operation plans.

So one of the things that is key is making sure that as a widespread disaster takes place, we have various entities and various agencies that are working together. Again, the Port of Long Beach can have a very good business continuity plan and program in place, making sure that our tenants know what they're supposed to be doing, what all our staff is doing, but if it doesn't coordinate with the county, it doesn't coordinate with the Port of Los Angeles, it doesn't coordinate with the City of Long Beach, again, we're still in trouble. We need to have everybody on the same page, and that becomes one of the biggest challenges down the road that we needed to do. Specifically, Hurricane Katrina presented businesses and government with the challenges associated with absent employees and family priorities during crisis situations. They found out I think, and you'll probably hear from Gary later on, things that they never would have imagined they'd have to deal with. Does your port have enough money to pay employees? They won't work for free for a very long period of time. They need to have the basic staples in life and if they are able to commute from one area to another; they need to be able to be paid. We spent a little time last year in New Orleans at the American Association of Port Authorities annual convention. It was a very sobering experience to hear the Port of New Orleans, and also hear Tulane University talk about what took place and how they were able to have some semblance of order during the days right after Katrina. They did the best that they can, and I'm sure that they have significant lessons learned, and I'm sure that Gary will be able to provide some of those stories to you in his remarks later today.

Let's talk a bit about industry initiatives, and I think this is very, very important, because again, I think the private sector is probably a lot further ahead than the public sector when it comes to business continuity planning. Some specific customers, the likes of Wal-Mart, Home Depot, JC Penney, Mattel and aerospace industry have very mature business continuity plans. Many retailers and manufacturing industries have robust business continuity plans, and expect the ports to ensure that goods and movement remain uninterrupted. I know our staff gets calls inquiring,

“Hey, what’s going to happen if this scenario takes place? Do you have a plan?” Quite frankly, we are working on a plan right now. I’ll talk a little bit about how our planning process goes, but suffice to say, they expect the same thing from us that we will be expecting from other entities and probably other public sector agencies as we move along.

A perfect example is Wal-Mart. I don’t know if anybody in the room is from Wal-Mart, but they had a very comprehensive plan that was in place to deal with the range of disruptions to their operations. These plans were prepared and executed by the business continuity management team when Hurricane Katrina hit. It was forecasted. They looked at the swath, they looked at the area that was going to be affected, and they placed supplies just on the periphery of this. Where they knew it was going to be safe and out of the way of the hurricane, but close enough to the ravaged area to be able to get supplies and consumer goods and those types of things, to those areas very quickly. They were able to restock their stores with essential supplies more quickly than a lot of other retailers and were very effective in making sure that they had business continuity and they could provide those important consumer goods to those people affected by the hurricane.

A recent survey was done of Los Angeles companies that found that two-thirds of these companies have business continuity plans, but only 56 percent of those have updated their plans in the last 12 months. And just 38 percent have tested them during the same time period, during the 12 months. I think the important thing is that you have to realize, and what we’ve realized, that you have to plan your exercise and then exercise your plan. You can’t put it on the shelf. You can’t pick it up three years later and hope to think that it’s going to be an effective plan because things change so rapidly. I think the other important thing is that I recognize as an executive director that this is not an inexpensive proposition, but it’s an essential one if we’re going to be able to do the job we need to do when something bad happens.

Our focus and our resources at the Port of Long Beach have changed significantly over the last several years. We used to be seen as a port, as basically a real estate developer, as a typical landlord port that developed facilities and then turned them

over to marine terminal operators, or ocean going carriers or break bulk operators, or auto carriers, to make sure that they did their job, and we kind of take a look, and that's where we spent a lot of our resources. Any more now, we're looking at things like green port initiatives. We're looking at business continuity plans. We're looking at a whole different direction on what we need to do, and I would consider ourselves a mature port. We're pretty well built out. We're not going to be building another 400-acre landfill in the near future. We need to do much better with what we have, and make sure that as the port grows volumetrically, that we're able to handle [that volume], and that's something that is very important with business continuity planning.

So this is our approach. We want to engage all of our employees in the understanding of business continuity planning concepts. We've had meetings with key members of our staff. We are using a sophisticated planning tool, a software package that will require a significant amount of input. We have dedicated a team of employees at the Port of Long Beach to make sure that we gather the important information, so that the software works as effectively as possible. And then we will also coordinate with emergency response and disaster recovery efforts at multiple levels, and I talked a little bit about that before. First of all, we've got to get our plan perfected. We need to make sure that that plan is a good working document. We're working with an outside company to assist us in this effort. We need to make sure that then we coordinate with the City of Long Beach, make sure that our plan is consistent with their planning efforts and then we have to make sure that our plan is consistent with our next door neighbor, the Port of Los Angeles. As was mentioned before, we do have a very good working relationship with the Port of Los Angeles. Yes, we vie for market share, but on the bigger scale of things, things for the greater good, things like the environment, things like business continuity, we certainly want to work together. We're too important together to have different plans. I think this is a diagram that pretty much talks about what people see as segments of what is a business continuity plan. People will talk about emergency management. People will talk about crisis management. They'll talk about business resumption plans and they'll talk about disaster recovery plans. You can see all the elements that go into that. Really, all of these are part of a comprehensive

business continuity plan, and we think that this is a very good graphic that shows the whole picture, what it means when you're talking about business continuity. If there's one person that has convinced me, it's our director of security. Sometimes when he talks, my head hurts, but he's convinced me. I've become a believer, I've become a convert, and this is a very good slide that shows the importance of all of the elements that go into business continuity. It's not just recovery, it's not just disaster management; it's all of those components that go into business continuity, including emergency management people and facilities, crisis management, command and control, and the teams that we work with there. Business resumption is done with a plan, so make sure people, processes, vendors, suppliers, the assets are all a part of that continuity effort. Disaster recovery, then, is the information systems and the technology availability aspect of that planning process (Figure 1).

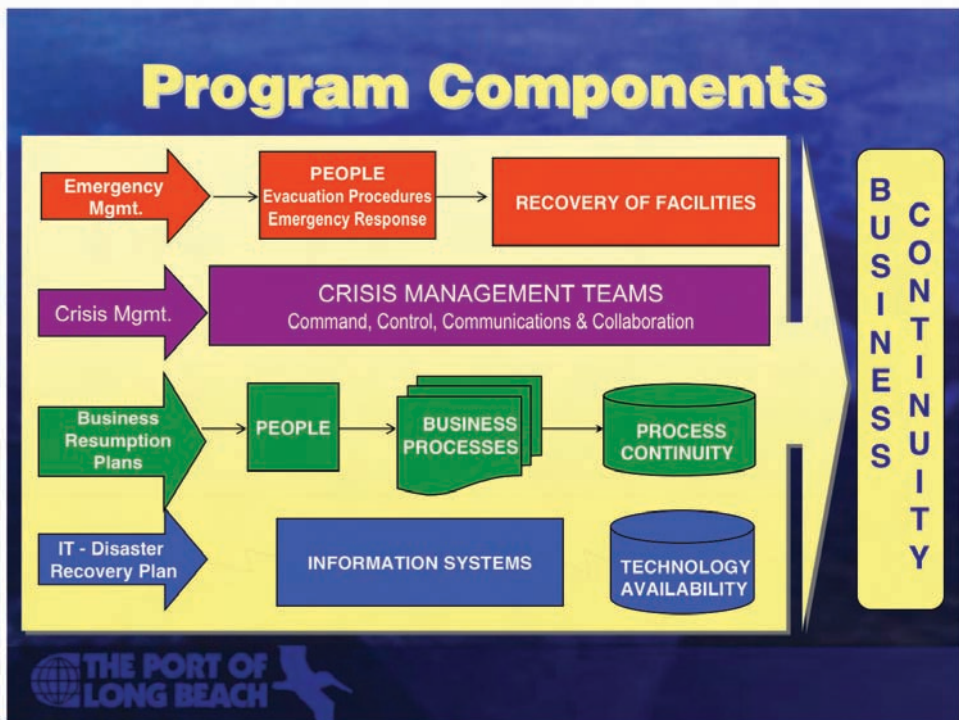


Figure 1

I think one of the things that they found out with the hurricane and other disasters is that you definitely have to have your computer systems safeguarded. You've got to

have offsite storage, you've got to have information readily available from offsite. A good example that we heard of, that was with Tulane University, when they had thousands and thousands of students that they needed to get in touch with and have families be contacted and everything else. It's the same thing with the port community. Can you imagine if we had a disaster, and we have, as the councilwoman said, at least 5,000 longshore workers and all the other associated people. They're going to want to know information very, very quickly, about where people are, how people are being taken care of. So I think it's a crucial element to make sure that the computer systems are up and running, irrespective of what kind of disaster takes place. I mentioned this before.

The first part is our own port administration. The next group we want to work with are our port tenants, and then we have to branch out into the broader harbor complex. These are the stakeholders that we are dedicated to working with. It becomes a very challenging exercise, I think, and I think we all realize that we need to brace ourselves, because it's not just turning over a few pieces of paper to an outside vendor and saying, "Hey, this is what we do, and you guys fix it for us." It's going to take a lot of dedicated work by our staff to analyze processes, what do we do in this situation, what do we do on a daily basis that we really don't even think about. We've got to break that down and make sure that we've communicated that, that it gets input to our software program, and that we know what we're doing when things take place.

We've talked about Katrina, we've seen the devastation of Katrina, but we need to talk about the Kobe earthquake. We tend to forget the significant impact that that had. I won't go through the numbers, but it's amazing to see what the impact and the long lasting impact of a major disaster has on a port, or any kind of community, or any kind of a business. The Port of Kobe simply just has not come back to the force that it was pre-earthquake. I know we had a number of people who visited Kobe after the earthquake, mostly engineers that went down to see the devastation that took place. One of the things that I specifically remember about the Kobe earthquake is the large earth moving tires that were manufactured in Japan. Those

had traditionally come on vessels, as needed, when needed, here in southern California. After the Kobe earthquake hit, they could not be exported out of Kobe any longer. And these are the huge tires, I think they're about \$25,000 apiece. What the manufacturer ended up doing then was shipping large, large quantities over to the United States in advance, and they basically warehoused those tires for months, and sometimes years on end, in the Port of Long Beach, because they didn't want to have to rely on the fragility of the goods movement system, and the unreliability that might result from another disaster in Japan. So they basically-- as soon as they got manufactured, they wouldn't ship them out of the Port of Kobe. They'd ship them out of another port in Japan, get them over here and let them sit in the warehouse, as opposed to having them manufactured just in time, or having them be over in Japan. It was a revenue producer for the Port of Long Beach. We were able to warehouse those tires, but it was a direct result of the Kobe earthquake, and some of the things that we saw, the ripple effect of the impacts that that earthquake had.

Another example was with the 1994 Northridge [California] earthquake. A number of the businesses that were affected by that earthquake basically closed up shop and went out of business completely. So we can't underestimate the significance of the impact of a disaster, and what we want to try and do at the Port of Long Beach, to the extent that we can, is make sure that those businesses that depend on the Port of Long Beach can move their products as quickly and as efficiently that we can get the terminals back up and running. We basically over designed our berths with respect to earthquake standards. These two ports I think have done a tremendous job of making sure that we are prepared as much as we can from a structural and infrastructure standpoint, when something like an earthquake takes place. But you can never be prepared as to what disaster might hit, and so when something happens that is maybe not a natural disaster—a terrorist attack for example—that's what we need to be as prepared for as anything else. As the councilwoman said, we firmly believe that these two ports are America's Ports. It's America's economy that we want to protect, and I think it's very, very important that we have this conference today. We'll begin to talk about it as a group. We'll work it together. We'll make sure that the business continuity plans that San Pedro Bay ports have

will benefit customers, will benefit the supply chain. I'd like to thank USC and I'd like to thank FuturePorts for putting this conference together. It's important that the dialog begin, and there's no better place to do it than in San Pedro Bay. Thank you very much.

“THE ECONOMIC COSTS OF BUSINESS INTERRUPTION TO THE SUPPLY CHAIN”

Introduction of the Panel Moderator

MATTHEW BETTENHAUSEN
DIRECTOR, CALIFORNIA OFFICE OF HOMELAND SECURITY
PANEL MODERATOR

Elizabeth Warren, Conference Co-Chair

Matt Bettenhausen was appointed on March 24, 2005 to serve as Homeland Security Advisor to Governor Arnold Schwarzenegger as the Director of the California Office of Homeland Security. Prior to his appointment in California, Mr. Bettenhausen served as the first director of state and territorial coordination with the U.S. Department of Homeland Security where he was responsible for coordinating the efforts of the department as they relate to state, territorial and tribal governments. He served on White House Senior Policy coordination committees and working groups concerning Homeland Security issues, including work on implementing Homeland Security Presidential directives. He was also a member of the department’s Emergency Response Group and the Interagency Incident Management Group. From January 2000 to January 2003, he served as the Deputy Governor of Illinois and its Homeland Security Director. Mr. Bettenhausen will chair this panel but we have asked him to present his own remarks to provide us with background on the California Office of Homeland Security. Please give a warm welcome to Matthew Bettenhausen.

Matthew Bettenhausen, California Office Of Homeland Security

Good morning everyone. I was asked to give some brief introductory remarks about the importance of business continuity and I wanted to do it in a little bit of a broader perspective in terms of the Governor’s philosophy in terms of Homeland Security and Emergency Management. One of the reasons I came out here to California was the Governor is a leader in this area, and that he really got it and gets it. He understands that for government the number one priority must be public safety.

We have a lot of priorities in government, from healthcare to education and they're all very important but public safety has to be the number one priority. Only government can provide law enforcement, incarceration, and some of the first responder services that the public depends on. So with that, his philosophy is also that when you look at the number one priority for government being public safety, the primary goal needs to be prevention. It's the old adage of an ounce of prevention is worth a pound of cure. It's a very old adage but I want to thank all of you on behalf of the Governor for coming here, because this really is about prevention, it is about being prepared in advance so that we can mitigate the potential consequences if something were to happen.

So I appreciate Elizabeth's introduction and the work of the FuturePorts and Jim Fawcett from USC's Sea Grant College. If you go further down my bio, you'll know—I appreciate Sea Grant because I came from a Land Grant College, the University of Illinois. It was in the middle of the prairies that Abraham Lincoln established the Land Grant Colleges back when he was president, having come from Illinois. Since we have the coast it makes sense that we have Sea Grant Universities out here, and it is a great thing that USC is working on programs such as this.

Within the Governor's philosophy of prevention, I want to talk a little bit about where you see, for example, what he's doing with the environmental initiatives, what he's been doing by working the legislature and bringing to the California public the bond package that was overwhelmingly passed last November. The idea here, and I think the question came from [a previous questioner from] San Francisco, and I think it's very appropriate: well where is the environment in this? At some point too, I also step back and what people often don't understand and what gets lost in the dialogue about some of the environmental and green movement and worrying about greenhouse gases and protecting the environment, some of the things get lost in terms of the Governor's philosophy about why that's also important. It's important for not only our environment and for future generations in protecting California but it's to preserve these assets for future generations. It's our stewardship that is required to do that. But underlying a lot of these investments and his whole philosophy is something that also gets lost. When we talk about alternative

fuels, it's not just only to improve the environment; it's the fact that we also have to become energy independent that we have to become more energy efficient. It is a national imperative and the Governor understands that. We cannot continue to fund billions of dollars to overseas nation states and have those billion dollars of both either nation states that do not like us, who are hell bent on destroying us, or the money being diverted to those who in terrorist organizations who want to do us harm. So when we talk about alternative fuels and worrying about global warming, one of the things that kind of gets lost in that conversation is that is a security imperative for this country and for California to be better prepared as we move forward. Being the largest state in the nation, and you've heard about America's ports here, it's critical and the Governor understands and that's one of the reasons why in the bond package there was a \$100 million to go in to an invest in the security of California's ports. It follows with his whole prevention philosophy again.

We saw what happened in [Hurricane] Katrina, we saw what happened when levies and water works fail, and there's \$4.5 billion that is in there to improve our levy systems throughout California, which are important not only for the health and welfare of our citizens, but also transportation issues, and with that \$4.5 billion, while [levee repairs are] primarily a federal responsibility, the Governor understands that we cannot wait. If they're not going to move we're not going to be in the situation Louisiana [found itself when the federal government said], "well yeah we kind of knew that those were a problem and I guess they really were a problem." Its move now, prevent it, get those things up to date, many of those levies were built hundreds of years ago to protect fields and agriculture. We've now built businesses and infrastructure and houses around those levies and it's very important that we protect them. Within the port security field, there is an understanding in America's Port here in L.A. and Long Beach, and the entire port system throughout California, these are critical assets.

Not to take anything away from Joe who's on the panel here, but I am continually impressed when I look at the ports, like L.A. and Long Beach with 43% of the container traffic for the United States going through here, some billion dollar multiple, \$156-\$256 billion in economic impact with it; 500,000 jobs both direct

and indirect that they're responsible for. They're also responsible for 17% of this region's gross regional product. These ports are the fuel that drives the engine of the national economy, not only for California but here, and it's not just the goods that move through here, it is the fuels and other important and vital commodities from food, consumer goods that go through our ports and the importance of protecting them. With that in mind, last year the Governor issued an executive order, and you heard a little bit about this from Dick in terms of the Area Maritime or the State Maritime Security Council that the Governor put together. The concept and the concern here of the Governor's was that we have to look at this as an entire integrated system wide approach to ensuring that we bring the baseline of security up on all of our ports. Some of the ports are not just necessarily containers; they're bulk issues that are important for us. In the Bay Area we've got a lot of refineries and things that we also have to worry about there, and also another large container port at Oakland. But we've looked at the great work that we've already done with the Coast Guard and all the partners that they've brought together in the Area Maritime Security Committees, and we have three of those; one in San Diego, one here in Los Angeles, and one in San Francisco. The idea—the statewide Maritime Security Committee is to look at this in a strategic way, but also dialing down into what are the tactical and strategic things being done at the individual ports, and it's to look from information sharing to infrastructure protection, to response, recovery issues, and the science and technology and new things with training and exercises that we need to do at our ports. I want to thank Dick [Steinke, Executive Director of the Port of Long Beach] and Cosmo [Perronne, Director of Security at the Port of Long Beach] and George [Cummings, Homeland Security Director at the Port of Los Angeles] who have been great partners and leaders in this area, and I see we've got some of our good Coast Guard partners here, which that is critical.

So as we bring together these strategic plans as part of the planning and putting the infrastructure in place, that's part of an overall layer of security that goes from the national level here and the Department of Homeland Security's philosophy as well as the Governor's philosophy that you must have layers of security. It is through the C-TPAT [Customs Trade Partnership Against Terrorism] where we work with industry in terms of trying to track and secure the supply chain from the point

of manufacturer overseas, and as those goods move to the ports, to require those shippers then to provide 24 hour advance notice of the manifest before anything is loaded on those ships. The whole point, when we talk about layers of security, is to make sure that the ports here in California are not the first line of defense. They need to be the last line of defense and that requires us to move our security and protective measures overseas. So not only do you have the containers with the 24 hours advance notice [prior to loading aboard US-bound ships overseas], we are putting radiation portal monitors and other inspection equipment overseas so that before those things are even loaded on the ships we have done the initial inspection. With the information that is provided, it goes to the national targeting center, so that we look at are these known shippers, what do we believe is in these containers so that we can look at for what should be suspect cargo. Is it coming from somebody who's participating, a shipper and producers, manufacturers who are in the C-TPAT Program, have they secured—help to secure the supply chain? Is it unknown shipper? Does it not make sense? All of this information before the ship even leaves the foreign port goes to the national targeting center where they look at it.

A great example of how that then works out is, is for example, there was a shipment of cod that was coming to the United States, and supposedly it—you know obviously frozen cod would require a refrigerated container, but matching the container with the supposed manifest of the shipment, there was no refrigerated container. That's a piece of suspect cargo that needs to be looked at, that's a trailer that you need to look at, and they looked at it and of course there wasn't frozen cod in there, there were weapons. There were guns. So it's that kind of philosophy that you're looking at and targeting potential suspect cargo before it even arrives here. Ninety-six hours before they're allowed to come into our ports [ships] have to report into the Coast Guard so that we can again assess the ship, the shippers, the people who are involved with that before they come in, and the Coast Guard has the ability to stop them out at sea before they even get close to our ports.

Once [ships] get into the ports you've got U.S. Customs and Border [Protection] playing a greater role with this. We now have 100% in terms of radiation portal monitors of the containers going out of our ports here, so that we do have truly

made our ports the last line of defense, but there are also things that we have to do here in terms of advancing the kind of screening equipment that we have. It's one of the things where technology hasn't caught up completely with the needs that we have here in California and in our ports, but to enhance the security that we have here. But even though we're taking all of these efforts to enhance security at our ports here in California, something could happen. All of these things, of course, don't take into account potential natural disasters such as an earthquake. You know and in this protective security business, this Homeland Security Business it's an enormous challenge. We've got people who are intent on doing us harm, who are tenacious, who take their time, who plan these things out, and they only have to succeed once. They only have to be right once before something terrible can happen. So it's not a matter of if we're going to be attacked again, it really is a question of when, and so that requires not us not only to work as the Governor wants us and has prioritized on prevention, protection, and preparedness, it also requires us to consider how well do we do with response and recovery? How are we going to work to make sure that we can restore services, save lives, protect property, restore services quickly for everybody, and that requires business continuity and continuing of operations planning so that we know in advance what we're going to need to do.

It requires part of this planning to be that we're getting to know each other so that we're not exchanging business cards at the time an incident happens and that is being done. It has already been done. Great progress has been made to the area of Maritime Security Committees as well as the statewide Maritime Security Council. When we look at business continuity and sort of the framing that it requires, when the Council and I next discuss this, I want the panel be aware of one of the things that struck me in considering what happened at the World Trade Center in New York. There were unfortunately lives lost in 1993 when the World Trade Center was attacked but there was something good that came out of that 1993 attack, and that was, if you'll recall, people were coming out of the World Trade Center towers and there was smoke on their faces and they realized that they had a lot of problems and they had not planned ahead at the towers in terms of how they would react to an emergency there. They realized that they had structural problems in their building

that was allowing smoke to get into their stairwells that should have been sealed, so that they were a safe and accessible way to get out of the building. They found that emergency exits were not clearly marked and were not—some of them were even blocked. They realized that they had to expand some of the—widen some of the staircases so that you could get out more easily. Lighting was a problem, too. There were not floor marshals on each floor in order to make sure people were prepared on the floor and helped to coordinate evacuations.

All of that had changed by 2001, and you also heard it emphasized here, not only do you have to have a plan but you got to exercise that plan, and they regularly exercised that plan and did regular evacuations at the Trade Towers. It was because of all of those things there is no doubt in my mind thousands and thousands of lives were saved on September 11. That being said though, there was another lesson to be learned from 2001.

But, there were also a lot of businesses who did not think about business continuity and some of the issues that would arise. Some had many executives—at times their entire leadership teams—in fact out of the country. They did not have means necessarily to be able to get in touch with them. They had not looked at the issues of backup for data and making sure that you're going to be able to restore services and do things if you lost a particular critical facility. They had not looked at the issues of in terms of what do they need in terms of processes to continue it? What they need to make sure that they can communicate with their people. It's an issue for all of us in terms of pandemic flu; if we were to have half—potentially half of the work force not showing up for work. How would you continue your operations? Who are your critical vendors? Who are your critical people? Who are your critical IT support, and how do you bring all of those things together? That's some of the issues that you have to be considering, you must be considering in terms of continuity of operations, what we call COCOG, Continuity of Operation and Continuity of Government. The Governor issued another executive order that requires all of our agencies—state agencies—to make sure that we have our COCOG plans in place. It's our business continuity plans; how do we deal with both the people issues of this as well as the capital issues? That's something that we have—it's the same

whether you're looking at international terrorism or you're looking at domestic terrorism, or if you're looking at a natural disaster. The threats are the same. The threats are to human, to our people, to our individuals.

I was talking yesterday with human resource personnel and security directors at a lot of major corporations in terms of the issues of workplace violence, which was a very timely conference after the unfortunate events at Virginia Tech on April 16th. But you have to be looking at these issues in terms of how do you protect your people? How do you protect your economic resources—the capital that you have? That requires advance planning; it requires you to think about it, and because the threat is to those two things. Al-Qaeda wants to kill lots of people and they want to destroy our way of life. A natural disaster isn't looking, does not have intent and capabilities per se, and we look at it in sort of the intel [intelligence] community, but these events nevertheless do have the capabilities to disrupt and so those are the kind of things that you need to look at, and we can go through some other examples.

But that kind of lays out the foundation of why business planning, business continuity, and continuity of operations is important for you, and we've put together a very impressive panel in terms of to look at and talk briefly, much more briefly than I have been; never give a lawyer a microphone. Some of the issues in terms of the potential impacts that we have and why it is critical—and why this is all makes sense and then we'll be opening it up to questions.

**PAUL BINGHAM
PRINCIPAL
GLOBAL INSIGHT, INC.
WASHINGTON, DC**

Matthew Bettenhausen, Panel Moderator

Our first presenter is Paul Bingham, who is a principal with the Global Trade and Transportation Practice of Global Insight, Incorporated. For 23 years he's been working on some of these management and economic issues and he's looked at, for example, when we had the lockout in the ports, looked at some of the economic impacts of this and some of the cascading effects. This is the challenge; this is why Wal-Mart comes to Dick and Cosmo and George, and says "what is your plan to make sure that our supplies are still coming in now that we're in a just in time inventory system?" But does Wal-Mart pay extra to make sure that that's going to be standing up there? No, they're—you're in a competitive environment where you're competing against other ports that you don't pay down for that, but you have to look. It's integrated, there's cascading effects, and so you have to look at not only what are your assets but what are your assets up and down the line, and Paul's going to talk about some of the economic impacts with that.

Paul Bingham, Global Insight

Thank you Matt. Thanks to all the sponsors for having this important event today. My role right now is to take us very quickly through the big picture in terms of an economist looking at what happens. Why is this important? Why does anybody care? It's—you know our individual lives can be affected by this, but fundamentally our way of life, our quality of life are affected by our economy. So I'm going to take us through here a couple of aspects of this. Starting with, I can't resist giving you a forecast, but this is actually important.

This graph I'm showing over the last 30 years the growing importance in international trade in our economy (Figure 2). So the real point to take away from this is the importance of a disruption to our society as a whole. This is true whether

you look at imports there in red or exports. Both of them have been increasing as a share of our overall economy for decades, and our forecast is that this is going to continue. This is no more than a reflection of globalization. But the real point is that every year a greater percentage of the jobs and a greater percentage of everything that goes on in our economy is tied to international trade, so any disruption of it every year has a bigger impact. So you know this role of supply chains in the economy are what really makes the trade happen. The supply chains are the interactions between the various business, and in some cases, public sector agencies that have a role in delivering those goods and making trade happen.

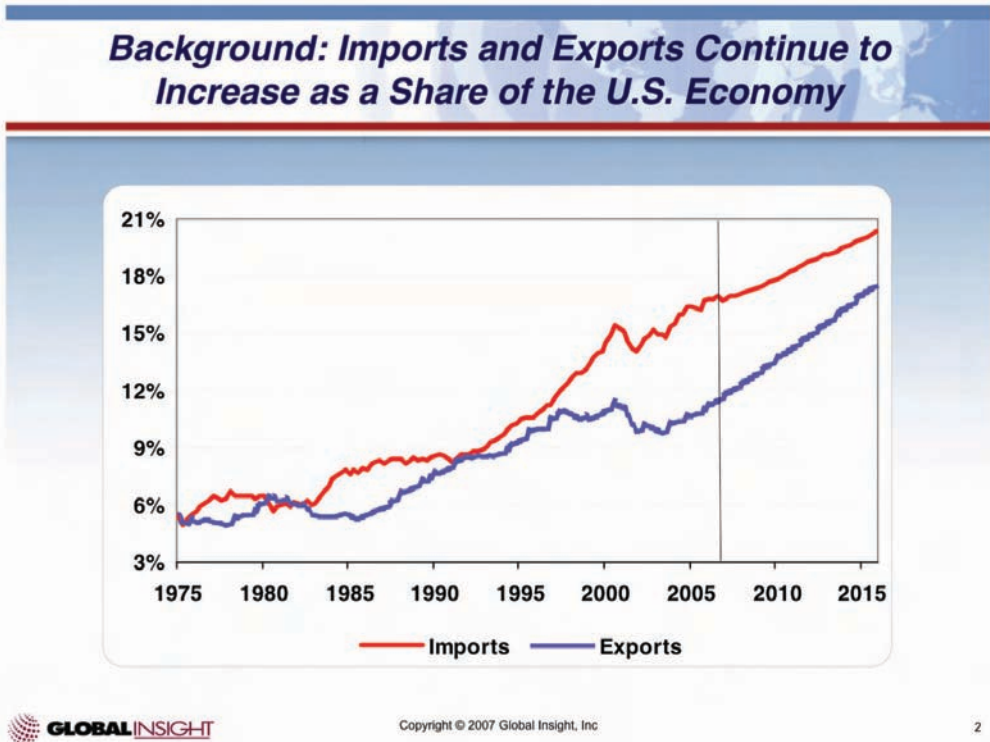


Figure 2

Now while the importance of trade in the economy increases, there's actually as a component of trade itself, some of parts of trade are more important than others, at least from the perspective of how they're growing and their relative importance. The example I've got here, is the relative importance of NAFTA (Figure 3). If we looked back say ten years ago when the North American Free Trade Agreement was put into place, Canada and Mexico were our one and two trade partners in terms

of rank. Today, Canada's still number one but Mexico has fallen to number two, and that's because of the relative faster growth of our Trans-Pacific trade with Asia, especially with China. So if we decompose trade, I showed you at the first, that sort of top level actually within that we actually have the Trans-Pacific Oceanic Trade growing in even greater importance to overall trade. There's another dimension to what's going on in the composition of trade that matters to disruptions to supply chains, and that's the trade into the lighter weight, higher value products are those that are growing faster, and those tend to be the goods that are moved in the same ocean containers such as through these ports.

The Role of Supply Chains in the U.S. Economy

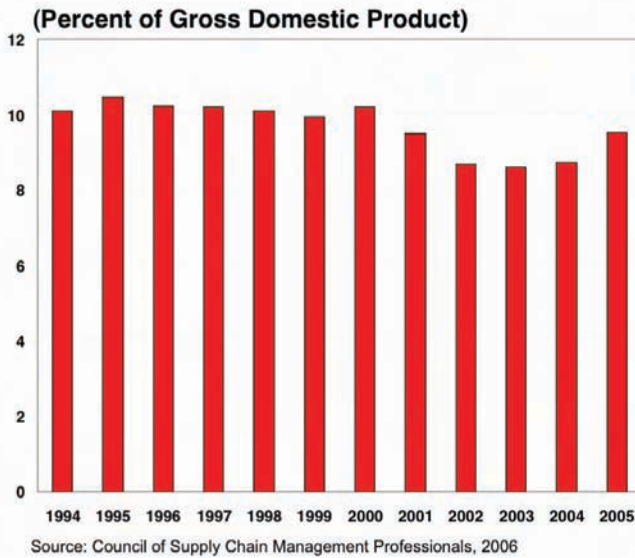
- ◆ **U.S. economic growth is predicated on continued trade growth**
 - ◆ **While, the importance of trade in the economy increases, the relative importance of components of U.S. trade vary**
 - **Example: the relative importance of NAFTA surface trade to the U.S. economy is diminishing in comparison with the growing importance of Asian seaborne containerized supply chains.**
 - ◆ **Trade in lighter weight, higher value products carried in containers continues to outpace trade growth in bulk commodity categories, increasing the relative importance of container ports to the economy**
 - ◆ **Efforts to benefit from economies of scale through use of larger container ships, cranes, and trains reduces the number of potential alternative ports quickly available in case of interruption**
- Consequently an interruption to supply chains using gateway container ports is increasingly significant to the U.S. economy**

Figure 3

There's a third factor that's at work that also makes the vulnerability to disruptions greater every year and that's this: efforts to benefit from economies of scale. The reason that's important is that we see the introduction of larger vessels, actually having bigger and bigger container ships put into place every year, longer train lengths, and other facilities expanding to try to take advantage of benefits from unit cost reduction as we expand their scale. But in doing so, we actually reduce the number of facilities and the ability of our infrastructure to have resiliency, we're ac-

tually reducing the number of ports or portions of the rail network can handle—that can handle these very large pieces of equipment, which means that the vulnerability of the big hub ports, like L.A./Long Beach is actually also increasing.

Total Logistics Costs Now Increasing as Share of GDP



Copyright © 2007 Global Insight, Inc

4

Figure 4

If we look at total logistics costs in the economy (Figure 4) we've actually seen a long term slow reduction through about just a few years ago, and this is showing percentage of gross domestic product tied to total logistics costs, and you can see that they actually declined through about 2003 and they've started to pick up recently. This is starting to show some of the resistance that's built into the economy from some of the problems we have with inadequate capacity growth. But if we look at the composition of those logistic costs, the single biggest element, by far here, the transportation costs, makes up 62% of total logistics costs. The reason to bring that to mind is that if we're trying to look at the economic costs of disruption, it's really concentrated still in the actual transportation. It's the facilities themselves, not so much the warehousing, for example, or depreciation or insurance, or

administrative factors that are important in total logistics, but from a perspective disruption are not nearly so significant.

So to characterize what an economist needs to understand, to quantify how important a particular interruption is, you can look at a couple of dimensions to problems that you can use to define what is a particular interruption. Those include the ability, as was mentioned by some previous speakers, the ability to anticipate the interruption such as the lockout that we saw in 2002, or even in cases the ability to look at weather forecasts to say we have a storm on the way, we can do something about it, as opposed to say, a terrorist attack, where we have no warning and no ability to do anything in advance to reduce the impacts. The duration matters very importantly in terms of the economic costs to the economy. This is from the perspective of permanent costs over the long run, not something that happens just for today and then I come back to work and work overtime the next day to make up for it. I've said here, a sort of technical terms here, but they are a non-linear function of time; very short duration interruptions are usually able to take advantage of enough slack in the system so that the impacts are rather small. But then as the length of disruptions increases we see a substantial escalation of those impacts through the economy that quickly become extraordinarily substantial as interruptions would continue on, as we saw in the case of Katrina. However, eventually you get to a point where the system adjusts that, even with the most severe disruption such as we saw with Katrina, eventually there are adjustments in the economy as a whole; mobile capital, mobile equipment, even individuals can move and be retrained, and you see that the impacts eventually begin to increase at diminishing rates.

There's another factor at work that we've looked at in the past in terms of the disruptions we saw in 2002, which is the seasonality. Sometimes it matters what time during the year the interruption occurs. For example, in the container business, we have a traditional seasonal peak in the fall in advance of the holidays. So a disruption of the same length, with all the other same characteristics, that happens in October will have a greater impact than one that happens in February during the slow season because there's less slack capacity available in those peak season periods.

Then lastly here, I've identified the economic geography. The scope of the interruption; is it at one terminal within a port, is it within an entire port complex, is it in a series of ports such as we saw in the West Coast port disruptions. That also, obviously, matters in terms of the scale and scope of the costs of disruption.

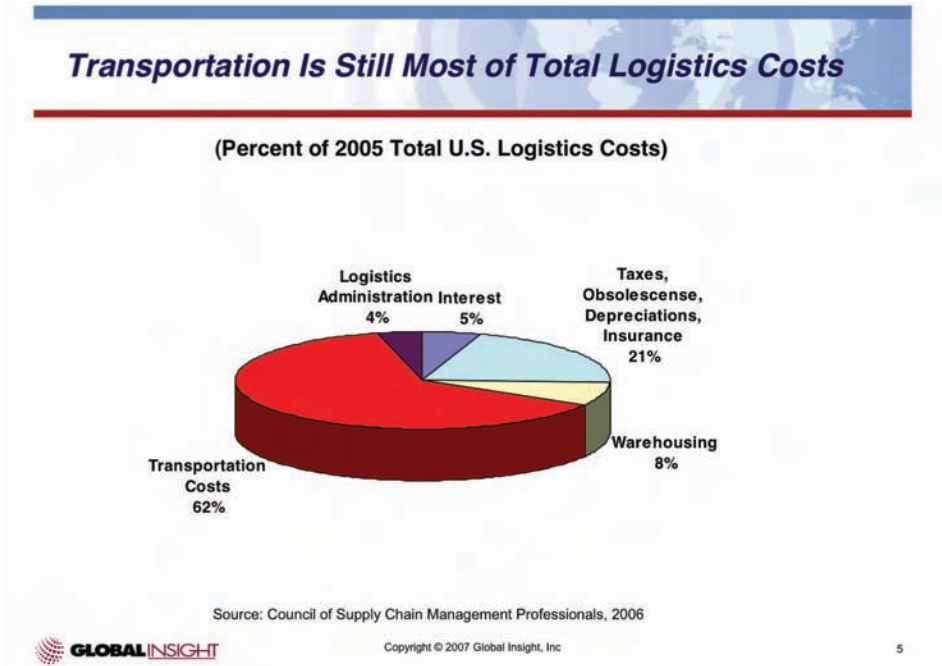


Figure 5

Now, as an economist you break up the elements of costs into two classes (Figure 5). The most immediate ones that we're most familiar with are the direct impacts. What happens to the people whose jobs are on the docks actually working the facility that's impacted by the interruption? But more significantly, and much more complicated is trying to quantify the indirect impacts; how those effects work their way through the rest of the entire economy, back through the supply chains to the suppliers, or on down the supply chains to the points of final distribution. Those include several elements that we can all attempt to quantify, including lost revenue from employment, from the associated industries, lost output from employment both to U.S. exports that would be interrupted also from cut offs of imports and the intermediate goods that are therefore disrupted. For example, when we had the lockout in 2002, we saw some auto plants close because they were unable to get parts to actually continue their production lines. There are also indirect impacts on

output and employment in all industries because of those indirect impacts. There are reductions in spending, and you can see the follow-on effects continue with multipliers through the entire economy. That continues through the macro economic kind of indicators that we use to characterize economic activity, like prices and spending, and then eventually gross domestic product.

Factors Affecting Supply Chain Interruption Costs

Fundamental to Size of Economic Impacts are:

- ◆ **Anticipation**
 - ◆ Interruptions that can be anticipated, even by hours / days (e.g. lock-out, strike, storm) may have costs reduced by advanced action
- ◆ **Duration**
 - ◆ Interruption impacts are a non-linear function of time. Initial costs of most few-hour disruptions are very low followed by substantially escalating impacts from days to a week to several months after which the overall system will adjust and further impacts will increase at diminishing rates
- ◆ **Seasonality**
 - ◆ Interruption in Peak Season (e.g. October) has greater impact than one of same length and scope in Slow Season (e.g. February)
- ◆ **Economic Geographic Scope**
 - ◆ Interruption impacts increase with share of system capacity affected

These factors are obviously interrelated


 Copyright © 2007 Global Insight, Inc. 6

Figure 6

So if we look at anticipated consequences from any interruption (Figure 6) we can look at, first of all, diversion or lower productivity, the velocity of international supply chains will slow if we see interruptions that cause diversion. And these will actually raise total delivered costs; so we start to look at the factors that are going to impact our economy because of the way the interruption affects all of the actors from an economic perspective. The costs inherently are going to increase when we have an interruption of any significant length. Importers can do things like realign their sourcing. Trying to minimize their costs, they can shift supply. In some cases you can substitute other products, but all of those have costs above what you would consider the optimal situation. The status quo implies the markets work to make decisions based on what was available and anything else is a subop-

timal higher cost option. Over the very long run, importers can make substantial changes in their practices of sourcing, and supply chains can shift substantially. But those changes are gradual, because in the very short run obviously, most all of the elements that make up [sourcing practices are] fixed, and that means the change happens progressively over time and the ability to try to recover from interruptions is something that takes time, and therefore the costs are front loaded. We face those costs immediately and then it's over the very long term that we're able to actually able to try to mitigate those and take steps to try to reduce the impacts. Then as far as who pays? At the end of the day those initial costs may be to the transportation providers and facility operators, but eventually it comes back to the consumers. If you reduce spending it will ultimately reduce economic performance and hurt the whole economy and we've seen that happen with other disruptions in the past.

Framework for Estimating Economic Impacts

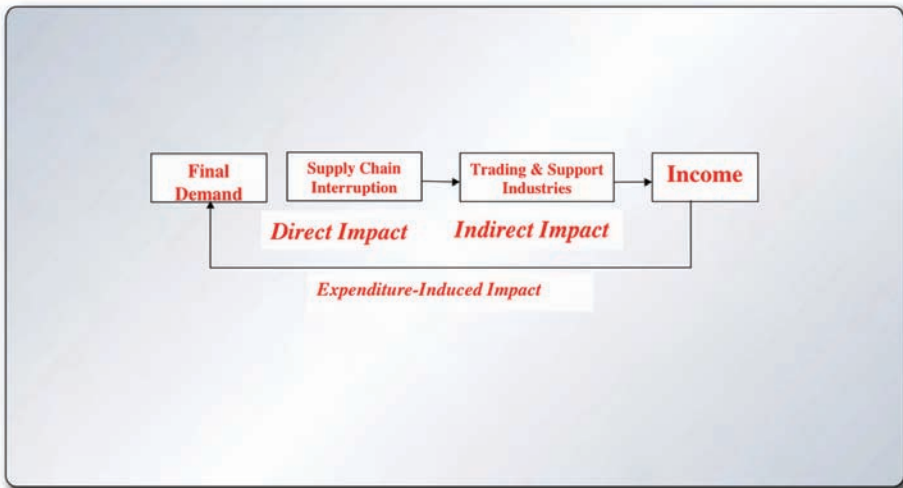


Figure 7

So if we try to put together how do this estimation of impacts (Figure 7), we look first at the extent to which activity represents a permanent economic loss to the

economy. When we look at disruptions in the past, unless you actually physically destroy the cargo, for example perishables that are going to decay and degrade on their own, it's not as if the vessels—say if they're delayed—are actually going to lose all of their cargo. Eventually you can offload it, perhaps as a depreciated value, but it's not a permanent loss of the entire value of the cargo of those ships. That's true. If we really look across all of the commodities that could be affected in terms of a disruption, a permanent loss is one where we need to look at what really is not recoverable afterwards and that includes those kinds of actions that you can take to reduce the impacts, like delaying shipments or maybe re-routing something differently, or perhaps even accelerating production following the end of an interruption. You can run a second shift in your plant when you've come back online following it to try to make up for that loss to get the products back onto the store shelves to try to get the economy working again.

As we mentioned already in the previous presentations, advance planning can help facilitate these loss-minimizing steps. If plans are in place, if they've been exercised and they actually know how they're going to work, obviously all of this falls into place, follows the plan automatically and then minimizes the cost. I've got a short schematic here for how we actually do this as an economist looking at the interruption and then seeing how that flows through the economy affecting income, both using those indirect and direct impacts. In effect, what we call final demand, which is the pseudonym for gross domestic product.

We've actually done an exercise on this; I'm pulling from some prior work we've done in the past, but these are example scenarios of an interruption during a first quarter to all U.S. ports of three different scenario durations (Figure 8). One, a five-day interruption, a ten day interruption such as we saw back in 2002, and a 20 day disruption. There are many other indicators that we've used to actually try to quantify that, but I picked out those that are most significant.

Example Estimate of Economic Impact of Interruptions

(3 sample duration interruptions in Q1 of U.S. West Coast container ports)

Interruption Duration	5-Day	10-Day	20-Day
FTE Jobs Lost	- 155,000	- 162,000	- 364,000
Personal Income	- \$0.6 Billion	- \$1.2 Billion	-\$7.3 Billion
U.S. Real GDP	< - \$1 Billion	- \$2.1 Billion	- \$15.6 Billion

Source: Global Insight, Inc.; Note: FTE is Full Time Equivalent job

Figure 8

The first one is what we call the full time equivalent, jobs lost. This is the loss of employment that's permanent. It's the work that somebody never got paid to do because it wasn't there and we couldn't recapture it afterwards. You can see, even in disruptions as short as ten days, there are over 162,000 jobs that were equivalent to being what was lost to the economy and that—you can see how that increases in only twenty extra days to 360,000. In terms of income, that was a loss of—in only five days—more than half a billion dollars, accelerating to \$1.2 billion at ten days, but then you can see that substantial jump as the costs start to really escalate as we get to a twenty day interruption, and a \$7.3 billion dollar personal income loss. From a perspective of the entire U.S. economy (as a U.S. real gross domestic product estimate) you can see the escalation, in permanent loses, from less than a billion for that first five day scenario where you are never able to make that back up; to where by twenty days we're at a loss of \$15.6 billion dollars, and that would escalate further if we were to take this out on into a greater duration.

Now there are other factors that can amplify or minimize some of those impacts in the limitations that exist in our system in terms of infrastructure. If we look at ports and maritime terminals today, we're operating them closer to capacity than we were in the distant past, so there's less slack capacity there to help us recover from a disruption. That's also true for the inland rail and truck infrastructure, and it's also true in terms of the very aggressive logistics practices we've been trying to adopt for the last 15 years to reduce those total logistics costs in the economy. It provides us with less insurance, there's less of a buffer there for our economy to be able to recover and to minimize the cost of disruption.

So trying to sum up here, what do we really see in terms of the impacts of costs? The gateways that serve the supply chains are vulnerable to interruption and they're increasingly important as we go forward. So the impacts on GDP as we go into the future are going to increase from any point that we look at them in a status quo context. The nature of interruption is critical to estimating its cost and that has to influence our planning decisions and the investments we make in terms of being able to mitigate those costs. Supply chain interruptions have the potential for significant permanent impacts on the economy in just a few weeks. That's the other take away from this: it doesn't take an interruption that lasts months to do significant permanent damage to the economy that we're never going to capture back. Understanding that point is what makes our emphasis on planning so compelling; to try and minimize the costs of these disruptions. If we focus solely in with a laser beam on total minimum costs in logistics, we're going to leave ourselves more vulnerable, essentially giving up some of the insurance of having that buffer capacity. So the bottom line, from the economist's perspective, is please do the planning. It can help reduce these economic costs of disruption.

**RUSSELL ROWE
BUSINESS CONTINUITY GROUP
IBM, INC.
PHOENIX, ARIZONA**

Matthew Bettenhausen, Panel Moderator

Russell Rowe is with the Business Continuity Group with IBM. I know for our office of Homeland Security, we've worked closely with IBM on a number of issues in terms of logistics planning. Brent Woodworth is another person at IBM; basically gives to the world community to work on emergency management issues and Russell's part of that great team that they have there that look at these very specific issues and provide guidance and counsel in terms of how do you strategically look at what your continuity plans needs to be? How do you respond to potential disasters and catastrophes and work to improve it, to help businesses do that kind of planning?

Russell Rowe, IBM

Thank you. Well I actually just got back Louisiana. I'm working on a project there for the State of Louisiana and I hadn't been there since Hurricane Katrina and drove around the Lower 9th Ward and it was very eerie; I got there right about dusk and drove around and it looked like Hiroshima had hit, so it kind of brought home the scale these disasters can actually have and the economic loss was just devastating. I had done work in New Orleans before and spent a lot of time down there, and it was very sobering to see that kind of thing.

Also, just a few notes before I start the slide presentation. I'm going to look at the company side of this. I write business continuity plans, disaster recovery plans for IBM and I noticed there are stats out there with companies that have business continuity plans; you know 40% somewhere like that number. What I found, in personal experience, is that they may have a plan in place but it's probably a template they may have loaded off the internet, it's probably not an actual plan. So, the theme here is that if you write a business continuity plan, and I know some other speakers have talked about it, you have to actually test the plan. There are a couple different

ways you can test a plan. You can do like a tabletop exercise where we kind of go through a scenario, we kind of do some play acting and we play different roles and assume that a disaster's happened. That's better than nothing but what we really push to do is what I call a "real" or a "lights out" plan, where you actually have a real scenario so you go to an alternate location, you shut down your IT and you go to an alternate location. You should actually exercise a plan; every time that we've been involved in this, and we help test plans, is we find that there's a significant problem with the plan and until you do an actual test you won't know what it is. If we find problems, we actually consider that a successful test because it's not something that we anticipated. We tell all our customers that the first time you do this you go through a test and plan, disaster recovery plan, business continuity plan, is you're probably going to find issues, but that's good because you can improve your plan and you continue to exercise that plan and actually use that to improve your operations. I can tell you that for companies in which we've done that, they sleep a lot better at night knowing that they've actually exercised the plan and they're pretty confident that they'll be able to recover from a disaster very quickly. So I think, kind of a no-brainer here is that the supply chain really touches all aspects, the company operations.

Again, I'm going to look at it from the company side. That's why it's important to ensure its continuity so you know every place in the supply chain, design, forecast, sourcing, production, the product warehouse, transporting the product, fulfilling orders and selling services, that whole supply chain, it really depends on business continuity. Simply, the supply chain is only as strong as its weakest link. We had a customer that makes Sea-Doos and those kinds of things (personal watercraft) and they had an issue with one of their supply chains. One small part actually shut down their production line for a couple weeks because they couldn't get it from the supplier, so they lost millions of dollars because of that supply chain and that vendor actually going under. So it's important [to remember] that it's only as strong as your weakest link.

So what are some of the key drivers around business continuity? I think everyone understands there are more potential disaster threats: for example, Hurricane

Katrina, that has been mentioned several times, tsunamis such as those in South Asia, the SARS flu outbreak, and there is still the possibility of an influenza pandemic affecting the U.S. Obviously the September 11th terrorist attacks, anthrax, London/Madrid bombings, ice storms and the 2003 blackout. Until then, business continuity plans really hadn't considered the effects of a regional blackout. A lot of companies had a location that was in the same area as their backup site, so when they had the disaster, not only was their main site down but also their disaster recovery site was down as well. Every time we have one of these disasters, people kind of rethink the scale of disaster can potentially happen. And then there's the current pandemic threat as well with the risk to human capital. There's more potential harm from any single disaster because of the globalization of business operations, insurance coverage limitations and critical facility consolidation. In the U.S., changing financial standards and new government regulations affect business continuity as well and we've done a lot of work on Sarbanes-Oxly and those kinds of things that have kind of changed the whole financial landscape of companies.

IBM
Business Continuity and Resiliency Services

What might cause a disaster?

<ul style="list-style-type: none"> A/C Failure Acid Leak Asbestos Bomb Threat Bomb Blast Brown Out Burst Pipe Cable Cut Chemical Spill CO Fire Condensation Construction Coolant Leak Cooling Tower Leak Corrupted Data Diesel Generator Earthquake Electrical Short Epidemic Erased Tapes 	<ul style="list-style-type: none"> Evacuation Explosion Fire Flood Fraud Frozen Pipes Hacker Hail Storm Halon Discharge Human Error Humidity Hurricane HVAC Failure H/W Error Ice Storm Insects Lighting Logic Bomb Lost Data 	<ul style="list-style-type: none"> Low Voltage Microwave Fade Network Failure PCB Contamination Plane Crash Power Outage Power Spike Power Surge Programmer Error Raw Sewage Relocation Delay Rodents Roof Cave In Sabotage Shotgun Blast Shredded Data Smoke Damage Snow Storm Sprinkler Discharge 	<ul style="list-style-type: none"> Static Electricity Strike Action S/W Error S/W Ransom Terrorism Theft Toilet Overflow Tornado Train Derailment Transformer Fire Tsunami UPS Failure Vandalism Vehicle Crash Virus Water (Various) Wind Storm Volcano
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

6
© Copyright IBM Corporation 2002

Figure 9

Departmental silos and brand reputation are at risk, too. So it's important from a business economy aspect to get your company up and running as quick as possible, but also so the company doesn't have to worry about brand reputation, goodwill, those kinds of things because there are competitors that their customers can go to for the same products and services.

What are some of the things that may cause a disaster (Figure 9)? Well some are pretty evident, but some aren't. Look at this list; we actually had a customer, a pharmaceutical company, that was shut down for an entire day because of rats in the ceiling. They have a big call center and they heard scurrying up in the suspended ceiling. They opened it up and the rats fell out and I can tell you most of the women didn't want to go back in that room. Another example—toilet overflows—we had a customer client that had a toilet overflow and it happened to be fairly close to their computer center, so that the overflow ruined a lot of equipment. So these are all different things that you think about that can cause a business continuity issue: fires, air-conditioning, all those kinds of things can really have an issue with the company. Without mitigation, threats can turn into real disasters.

IBM has business continuity recovery sites where they can recover IT for organizations. But, of companies experiencing disaster, 43% never reopen and 51% close within two years and only 6% of companies suffering a catastrophic loss survive. Those are some pretty sobering statistics.

Cargo crime is also a problem. In that case, the lost cargo is often impossible to locate and there's a big estimate here, but even between \$25 billion and \$120 billion a year in cargo crime and 80% of all business security loss are attributable to loss of product in transit. That presents a large area of vulnerability, too. It's estimated that between 80% and 85% of cargo thefts involve inside information. We've been talking about national disasters and those kinds of things, but typically risks that are suffered by companies are because of the internal risks, because of employees, because of inside information, those kinds of things. Companies have done a pretty good job kind of solidifying the exterior in a lot of cases, but the interior is still where there's a lot of vulnerability.


So what are some of the financial impacts to supply chain interruption? Well obviously interruption in cash flow, loss of market share, loss of sales, potential increase in insurance premiums, and increase administrative costs. Then also from an operational impact, damage to reputation; if you can't ship your product because your supply chain has an issue, you're going to have trouble with your customers and damage your relationship with customers and suppliers, increase staff frustration and lose brand image.

So this is kind of the road map that we look at; we talked about business continuity encompassing all aspects of the business process, so when we write a business continuity plan we start out by identifying your critical business processes regardless of whether they rely on IT, and IBM is seriously known as an IT company, but when we're doing business continuity programs we're looking at business processes regardless whether they have anything to do with IT. So we help companies determine what are their critical business processes, understand the need for continuity, and then do a risk assessment based on those business processes. Then, based on the business processes, how prepared are we? Can we meet our recovery time objectives with these business processes? Or do we need to beef up our plans? So, in planning for continuity, we develop the plan, then implement a business continuity program, as previous speakers have noted.

Often we see companies that have spent a lot of time and money putting a business continuity plan in place, but then they don't have a maintenance plan in place, so within six months to a year this plan is now stale. So it's important to put somebody in charge of the business continuity program that will keep the plan updated so that it's a real plan that can be exercised in event of disaster. The management lesson here is: don't just print out your document, put it on a shelf, and have it gathering dust. I've been in numerous companies where we say where's your business continuity plan and they walk over to a bookcase, they draw out a big binder, blow the dust off of it, and say here's it here, and it creaks open and moths come flying. So it's important to have a plan and if you're going to do it, do it right, and keep it updated.

I pulled a slide from IBM that we do to improve our supply chain internally. We train our employees on education and supply chain security. IBM updated its asset corporation standards, so how do we protect our assets? We did a risk assessment for our facilities, including empty trailer/container conveyance inspection, we put security seals on stuffed trailers, they have electronic door sensors, we actually did a program of global supply chain readiness assessments, so that we looked at our entire supply chain and asked where were our vulnerabilities? Do we have vendors that are supplying critical parts that are of a high risk? If they are, do we need to get alternate vendors? Do we have vendors that get their supplies from a different area, for example? We looked at the whole plan put together for that, and made sure there was supply chain security, including supplier contracts, so suppliers are required to maintain security and continuity programs if they're supplying vital parts to the supply chain. We included onsite security inspections of high-risk suppliers; so we actually went out and did onsite security assessments of suppliers and looked at security continuity making sure that we're working with the best partners that have plans in place for securing the supply chain.

The slide features a blue header with the text 'Business Continuity and Resiliency Services' and the IBM logo. The main title is 'Key Elements of Supply Chain Continuity'. Below the title is a list of five key elements, each with sub-points. The slide has a blue footer with the number '12', the date '| 20-May-07 |', and the copyright notice '© Copyright IBM Corporation 2002'.

Business Continuity and Resiliency Services 

Key Elements of Supply Chain Continuity

- Effective supply chain management program, door to door
 - By starting with focus on security, have infrastructure in place to influence or manage the entire process
- Effective Risk Assessment protocol to identify single points of failure, critical focus areas, and mitigation strategies
 - Understand context of risks / threats, local flavors, key relationships with internal groups or suppliers, and how those relationships can be affected by a crisis
- Senior Management and Business Group commitment
 - Corporate-level processes and coaching, but need each group to leverage their expertise and experience to their functional area
- Integrated response capability
 - All business groups engaged in crisis management planning
 - Key service groups linked to response and continuity efforts
- Drill, Drill, Drill

12 | 20-May-07 | © Copyright IBM Corporation 2002

Figure 10

Based on our own experience, what are some of the key elements of supply chain continuity (Figure 10)? Making sure you have an effective supply chain management program, focus on security, making sure that you have management of the entire process, have an effective risk assessment protocol to understand the single points of failure and supply chain, look at critical focus areas, mitigation strategies, make sure that there's senior management and business group commitment. That's key: that executive management really buys into this and that there's corporate level processes and buy in, and making sure that there is that leverage throughout the organization. Making sure that there are integrated response capabilities so that key service groups are linked so that if you have a disaster and it's communicated throughout the organization that people are ready throughout the organization to respond to that disaster. Finally, drill, drill, drill or test, test, test. You can't emphasize that enough; that you put a plan in place, make sure it's a valid plan and test it at least on an annual basis. We have customers that do it on a quarterly basis if they're in really high-risk industries, so it's important to do that. That's the end of my presentation; I'll be around most of the day if you have any questions, please come up. I love to talk about costs and the ways that companies can put business continuity plans in place. Thank you very much.

**JOE SPARANO
PRESIDENT
WESTERN STATES PETROLEUM ASSOCIATION
SACRAMENTO, CA**

Matthew Bettenhausen, Panel Moderator

Joseph is going to wrap us up with the fuel that drives not only the ports but the fuel that drives our cars and some of the issues that relate to the issues that we have with petroleum and natural resources. He's with the Western States Petroleum Association. He's been around, as he told me, a long time so don't talk about all the great things that he has done, but that he's here with great experience which he has, and he's also been another great partner for us with the Office of Homeland Security as well in terms of doing our protection prevention, response and recovery planning as we look at the different issues. Because the Governor realizes, and from an emergency management perspective, you're going to hear from somebody from Katrina—look when we go and we have disasters and catastrophes they're called that for a reason. Our focus though, in terms of government, and what we've got to be looking at is, is we've got to be looking to restore services quickly. We've learned that we need to have a greater focus on the poor and less fortunate who have not planned ahead and do not have necessarily the resources, but in terms of a major catastrophe happening, one of the most important things that we have to do is we've got to help our private sector partners get their services restored. Get the stores back open, the electricity up, the power there so those who have the money and resources who can buy these things, their lives will no longer be disrupted and we can focus on the hurt, the injured, and so that's why public/private partnerships are critical to the overall Homeland Security and Emergency Management Mission of the State of California. Of course fuel is one of those very important and Joe's been very helpful with us on that. So let me turn it over to Joe to give us perspective on planning in the energy sector.

Joseph Sparano, Western States Petroleum Association

Good morning. I want to thank Elizabeth Warren and Jim Fawcett for making it possible for me to be here. As they used to say on Monty Python (for those of you

old enough to remember) “and now for something entirely different.” This is a critically important subject and energy supply security is a piece of that. The goods and goods movement process includes, although we don’t often hear as much mention of it, movement also of liquid energy supplies that power our economy. We need to prevent economic disaster as well as physical and environmental disasters. I found it interesting that a couple of words that I’m familiar with didn’t get used a lot yet today. They may, after I’m done: fuel supplies and tankers. Those are integral parts of what goes on in the ports of Los Angeles, and Long Beach and around the State of California, and as I hope to show you there are some significant impacts, there are some volumes, some factual information that I think you ought to be familiar with and hopefully by sharing that we can create a dialogue that will get into some of the issues that surround the dynamics of today’s supply situation. I urge you to read these because I’m not going to talk about each number. I do want to highlight a few things for you.

California consumes 44 to 45 million gallons of gasoline a day (Figure 11), everyday and we consume a bunch of diesel. What does that mean? Well, a million gallons is about 25,000 barrels, and if you run that out over a year that’s 16 billion gallons of gasoline consumed in California. Some good news is our refineries make about that much gasoline in a year. Demand for transportation fuels has been on the increase for years according to the Energy Commission, up 50% over the last 20 years. Unfortunately, the number of refineries that produce the products that we use, including gasoline and diesel, and not mentioned here, but I think critically important to the Los Angeles/Long Beach area, is jet fuel. A lot of attention is paid to the first two but you don’t see that much information you see on jet imports, but it is a part of the puzzle.

But those refineries, we had 32 that made gasoline in the early 80’s now we have 14, that’s a result of regulations which are the cost of doing business, investments that were required to be made because of regulatory requirements. As a result, some of the smaller refiners were no longer able to compete. Just a fact for you, the last new refinery built in California was built in 1969 in Benicia in the [San Francisco] Bay Area. That’s 38 years between new factories. Perhaps the kicker,

as I call it, is that California, now with those 14 refineries operating perfectly and at virtually full capacity, still cannot provide all the gasoline that we require each day. We still import 3.5 million gallons of gasoline every single day. We can't get by without it, we can't meet demand without those imports, and those imports come through and are handled well in the ports of—predominantly in the ports of L.A. and Long Beach.

Western States Petroleum Association

California Supply and Demand

- California now consumes 44 to 45 million gallons of gasoline and 10 million gallons of diesel fuel per day
- Demand for transportation fuels increased nearly 50% in last 20 years
- Number of refineries producing gasoline in California dropped from 32 in mid-1980s to 14 today
- California now imports 3.5 million gallons of gasoline per day
- Transportation fuel infrastructure is inadequate and not keeping up with rapidly growing population and demand



Source: California Energy Commission

2



Figure 11

According to The California Energy Commission (this is not quite a quote, but it's close from their Integrated Energy Policy Report) California's transportation fuel infrastructure is inadequate. That doesn't mean it's falling down, it means it's at capacity. We are at the limit of what we can produce, bring in and send out through the infrastructure that exists, and we're not keeping up with rapidly growing population and energy demand. The Energy Commission is not bashful making forecasts. Its part of their job and according to the commission, conservation and new alternative fuels, many of which are coming to market, may reduce the demand for petroleum but that will not have an appreciable impact on crude oil imports. Why is that? Well, in part, because of the issue of imported products. Even if we have alternatives that displace some of the petroleum, we're still going to use the crude to make various refined products. If nothing else, we

need it to make up for the 3.5 million gallon daily shortfall that we currently have (and that's a 2005 number so the real number is probably higher now).

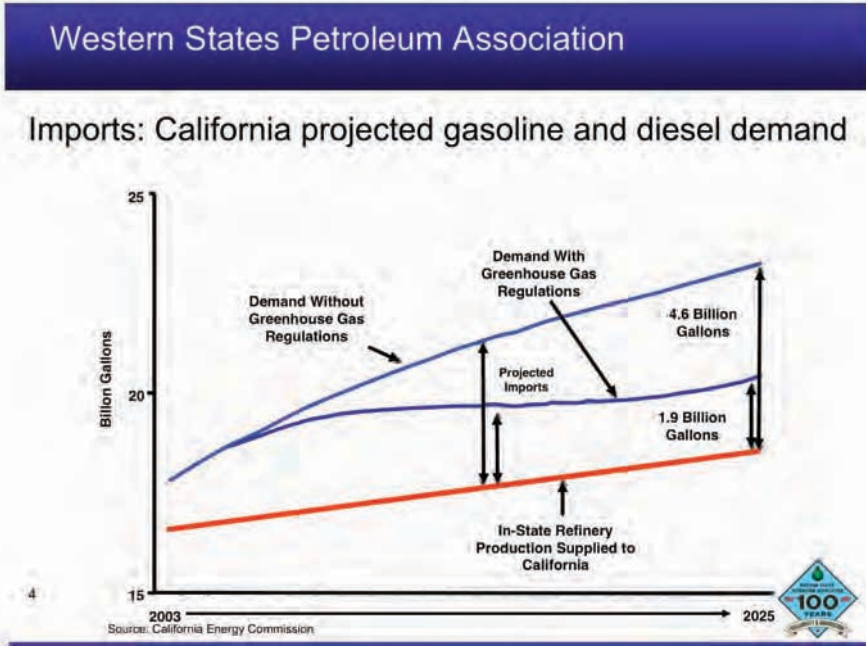


Figure 12

Our population, driving, and fuel consumption (except for the first quarter of this year, when it was about flat) keeps on going up and the forecasts, as you'll see in a minute, is for more. Let me go into what I affectionately refer to as the Gap Chart (Figure 12). I want to put those imports in some context, and first with products, the bottom line of that chart is the amount of production starting in 2003 and predicted out to 2025 by The Energy Commission from our instate refineries. It also includes 1.2 billion gallons a year (the 3.5 million gallons a day of gasoline imports). The top line is what I would describe as business as usual, that is, continued population growth, continued use, the same fuel efficiency roughly that we have now, and you can see that the gap gets to 4.6 billion gallons of diesel fuel and gasoline, more gasoline than diesel, by 2025. That's a lot. Remember today, its 1.2 billion, that's 4.6 billion more and it's not my number, it's the Energy Commission's.

The line in the middle is important. We have legislation that was drafted by California Assemblywoman Fran Pavley [41st District (Agoura Hills), 2001-2006], and passed the Pavley Bill AB1498, that requires limitations starting I think with the 2009 model year of CO₂ emissions out the tail pipe. Effectively, that improves engine fuel economy, so if the Pavley Bill is not rejected by the courts (and there's litigation right now), depending on how that turns out—but let's assume that the Pavley Bill is endorsed and supported by the legal system—then we still are looking at something around two billion gallons of gasoline and diesel that will still have to come through a certain part of California's infrastructure system, and that part would be the ports. Because guess what? There are zero product pipelines that enter California from anywhere. There are zero crude pipelines that enter California from anywhere, so the folks that run our ports and manage that business are doing a splendid job of making sure we continue having those imports come through on a reliable basis, and successfully reach their destinations, but the system is at capacity.

Looking at crude oil (Figure 13), I direct your attention to the shaded section in the middle, that's 7/10ths of a percent of distillation capacity growth and is the base case for The Energy Commission's forecast of the future. At the same time California crude production is declining. Right now we get about 37% of the crude that's run in California refineries from a California production operation, 37% of about two million barrels a day. We get 42% from foreign imports, and that is countries not part of the U.S., and we get 21% from the Alaskan North Slope, but they are imports as well because the 42% and the 21%, adding up to 63% comes by ship, all of it. So the Energy Commission's 2004 forecast was that we import 360 million barrels a year. The number for 2015 is 495 and the number for 2025 is something in the range of 560 million barrels a year. But just looking at the increment, the 130 million additional barrels, based on a historical rate of production decline, not the highest rate, that's another 356,000 barrels a day on top of what now comes through just the ports of L.A. and Long Beach, 560,000 barrels a day in 2006, according to The Energy Commission. That's almost a million barrels a day, and I want to share some numbers of what that means in terms of tanker traffic as we go forward.

California Energy Commission forecasts

Incremental S. Calif. Crude Oil Imports - Millions of Barrels				
Distillation Capacity Growth Rate	Low Rate of Crude Oil Decline - 3.1%		High Rate of Crude Oil Decline - 3.8%	
	2015	2025	2015	2025
0.41 Percent	59	106	66	118
0.70 Percent	69	130	77	142
0.98 Percent	80	155	88	166

5

Source: California Energy Commission



Figure 13

We have storage capacity in the ports; there was more a while ago (Figure 14). I think in the mid-70’s there was 7.5 or 8 million barrels more of storage. It’s a complicated issue as to why that storage is gone. Part of it is directly related to business and competition and having too much at one time, part of it results from more recent leasing and pipeline right-of-way policy decisions, and those are things that have to be taken into account as you look toward the future.

But you can see, according to the Energy Commission, the requirements are considerable and I believe right now in the port of L.A. there’s about four million barrels of bulk liquid storage. The base case there is if the Pavley Bill is upheld and engine efficiency goes up, so that assumes lower number of imports required. In that case, there’s about 3.5 million barrels of new storage, some of which is either under construction or planned, and I don’t know the breakdown of the two. In the alternate case, which is if there is no Pavley Bill, if the Courts strike that down in the “worst case” looking out to 2025, it could require more than 9 million new

barrels of storage to accommodate the expectations of The Energy Commission in terms of energy delivery.

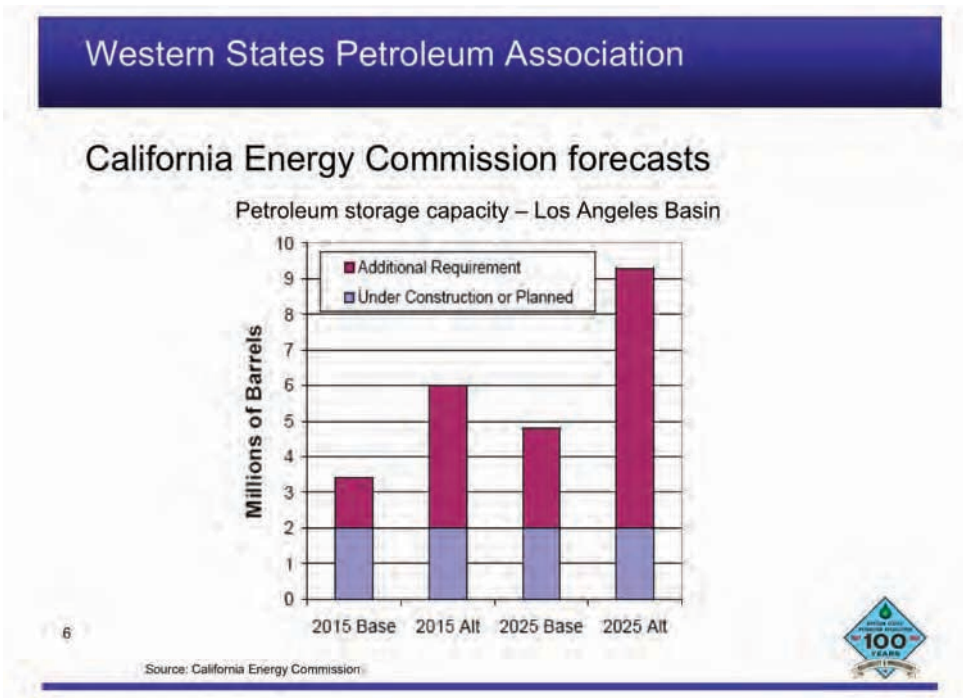


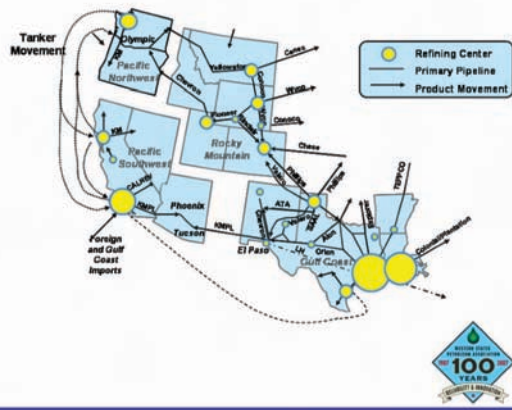
Figure 14

What will that impact be? Well the chart shows what The Energy Commission and we call the Energy Island Effect, both in California and on the West Coast. This gets back to my earlier comment, that there are no pipelines that come into the state. You can see the map yourself (Figure 15), there's a pipeline into Arizona, there's a pipeline into eastern Washington, and a pipeline into eastern Oregon, that's it. The interesting thing about the State of California and its refineries, those 14 not only supply everything we use, people in this room and our families, we also supply 60% of all the gasoline diesel used in Arizona, virtually 100% of everything that goes into Nevada and is used by a consumer, and 5 to 30% of what is uses in Oregon, and that sets up an interesting dynamic.

Impact on ports

In addition to today's vessels, by 2025 Southern California will need:

- 10 additional 150,000 dwt crude oil tankers per month
- 30 to 35 additional gasoline and diesel ships every month
- 14 EIRs pending at Port of Los Angeles



7

Source: California Energy Commission

Figure 15

When things happen on the other end of those supply chains, the draw in California is greater. But just looking at the forecast numbers that I gave you before, for 2025, if we are required to meet those needs, if those forecasts come true, we will need in terms that all of us can understand, ten additional 150,000 dead weight ton crude tankers per month into the ports of Long Beach and L.A. This is just the increment that The Energy Commission forecasts for Southern California ports. I picked that number, 150,000 because if you do the math, at about 7 barrels per ton, you get about a million barrels on each one of those vessels. So 10 million, 10 ships a month, for clean products—gasoline and diesel—whose imports are projected to go through the roof four times as much as what we take in today, those tankers are smaller, they typically run about 70,000 dead weight tons, so you only get about 300,000 barrels of product on them. That's 30 to 35 additional ships. Where are they going to go? Where are they going to drop off their product?

This is the Energy Commission; the stewards of energy supply. Their basic function, according to the State of California, is to insure that consumers have an adequate,

abundant, reliable, affordable supply of energy everyday. So they're looking at, what for them, is a challenge and I understand there are a number of EIRs pending at the port of Los Angeles. The information came from a report that the executive director issued. I don't know at what stage they're in, whether they're proceeding, whether they're not, but that suggests that there's a lot of interest in expanding the capacity to handle the types of energy supply needs we're looking at.

Where do we go from here? I don't have a crystal ball but things look a little misty. But from our perspective, the industry's perspective, it's going to take a combination of supply increases and conservation, decreases in consumption, efficiencies, continued use of petroleum fuels, but also any and all alternative and renewable fuels that we can together bring to market that are scientifically sound and technologically feasible. The short word for that is that they're ready for prime time and that they're cost effective. People won't buy an \$8.00 gallon of whatever if they can buy a \$3.00 gallon of gasoline. That's just the way the world works and so we need some economic balance in that as well. Thank you.

Questions to the Panel

QUESTION: Thanks to the panel for their insights. Joe, question for you—I don't know if I missed it or not, but at one time I heard that there was only like a three day supply of product for the refiners to refine here in Southern California which speaks to an issue of terrorist attack or some kind of a disaster. I remember several years ago when we had a small private plane that came down right in the entrance channel, and we had to find a way to get that out quickly so that the tankers could get to their berths because we were working with, you know, a couple day supply only. What numbers do you now have?

Joseph Sparano: I don't have precise numbers at the moment, but it's a good question. Normally, refiners that have a coastal location and therefore bring in the bulk of their materials by vessel to allow for an eight to ten day supply of raw material. Now, California—in the area of the world that we're in now, there's about a little over a million barrels of day of refining capacity, so I think it would not be unusual to have capacity—to have the storage of crude reach somewhere in the 8 to 10 million barrels range. I don't know what the current numbers are. The individual companies supply them to the Energy Commission, but there are things that affect that. Sometimes we do have a supply chain issue. Weather—something as simple as weather, which is we think really important that the ports look at and address the need for not just maintaining and allowing existing facilities and assets to stay in place and continue doing their job, and to be refurbished as they need to be, but also to entertain and maybe even speed up addressing projects like Pier 400. It's not a mystery to anyone that my buddy [David] Wright sitting out there in the audience, gasping, has taken three years, almost on year four of working on your EIR, that's a long time and to the extent those projects are not implemented, for whatever the reason, then we all risk having the plane in the channel, or worse yet a ship, some sort of situation that prevents access to the crude because there's equally modest amount of product storage. People have observed on that, well, gee, that's the reason that prices move up and down fast. “Just in time inventory” are words that were used earlier today to refer to most of our businesses, and we operate the same way. People don't sit on a ton inventory because it's expensive

and so those—I think you raise a great point, and that I think, together we have to address that to insure that we have the right level of inventories to support a situation like the one you described.

QUESTION: [Cosmo Perrone, Director of Security, Port of Long Beach: To Director Bettenhausen] We talked about this before so I would like to have a public answer on that. The ports are one point in a supply chain. We represent a major point in the supply chain, but certainly California's infrastructure is a critical element of that supply chain, so how is the California Office of Homeland Security or California as a whole, addressing the protection of the remainder of the infrastructure necessary to move the goods?

Matthew Bettenhausen: Well, again, recognizing that all of these systems and the inter-dependencies and cascading effects that you can have, it's all part of—for example, just even take the Governor's broader bond package. Part of that came about because we did the goods movement plan. We have to look at what is our infrastructure for transporting these goods. What is it, I mean the scope of the problem, in terms of not only just good movement, but what we face here in California? If you think about this, and one of the reasons why we project out to 2025, is you know we're 38 million people here today. By 2025, we're anticipating and fully expecting to have 50 million citizens here in California. To give you some perspective about that means we are going to grow another Illinois over the course of that period. Illinois is 11 million people, so we're going to be growing 12 million people, and that requires highways, rails, better, more efficient ways to move goods. Is it going to be specific corridors to move trucks and rails better in transportation with it? That's part of the whole planning process and part of the building to improve it. It's also improving mass transit in terms of the infrastructure that we have to hopefully get more people off of the highways and commute them more quickly. There's a billion dollars alone in the bond packages for mass transit safety and security. When we look at the international threat of terrorism—look, al-Qaeda goes to three things regularly: aviation, maritime, and mass transit and so that's one of the reasons—and mass transit presents probably some of our biggest challenges because they're open systems. They're intended to be open systems. They're not

like airports where you've got individual points of entry that you can do screening and do protective measures, but it is taking that holistic approach—you know it's also air cargo—so it's holistically looking at all of those transportation issues. It's also looking across our southern border in terms of ports of entry down there, making sure that we're screening what's coming in, keeping bad people and bad things out of the country. You know, so you've seen the Governor's Goods Movement Plan, we're trying to look forward to it, but 12 million additional people, you've got to think about you know the water, the highways, the roads, the schools, the hospitals, you know another Illinois over the course of that period and that requires thinking and doing now.

QUESTION: Isaac Maya, Homeland Security Center at USC; question for Russell Rowe please. What's your real experience with companies planning for terrorism attacks and the impact of terrorism? We hear a lot about disaster and natural disaster planning, but what's your experience with the—really is focusing on the terrorism, and the second part, if you could address how do they balance their own investments in defensive measures versus what they would expect governmental agency, whether state or federal, to do? So what's their role versus what they expect the government to do?

Russell Rowe: On the first question of terrorism my personal experience is that most companies aren't really planning for it. They're really expecting the government to handle that. I guess the exception to that would be companies that are more global in scale. They're more worried about people issues, those kinds of things, so some larger multi-national corporations are looking at that. They're looking at terrorism; you know the terrorism action that could happen. They're putting that in their continuity plans. Primarily they're looking at issues like if they had a terrorist act upon one of their plants in another country, where would they relocate? So they have relocation plans, they have plans for moving people to other areas, they have ways to get people paid, emergency provisions for getting capital and those kind of things. But that's typically the larger corporations, the Fortune 500 companies; the small to medium sized companies are putting crisis management plans in place that could be used in an event of a terrorist act, but they're not really addressing it

too much yet. They understand that terrorism can happen, but a lot of companies don't really think it's going to happen to them. As far as the government—how they're balancing what government's supposed to do—most corporations that I've talked to, if they think it's really important, they're going ahead and doing their own planning. They're not waiting on government; in a lot of cases they're going forward and putting plans in place. They're doing their own personal initiatives. They expect that government's going to improve things going on, but where it's critical that they have these kinds of plans in place and continuity, they're doing their own initiatives and expecting the government will be there at some point. But you know, frankly, some of the customers are frustrated that they want things to move more quickly, but they don't a lot of times understand the daunting task that it is to secure all these things.

Matthew Bettenhausen: I left out the fourth major area that al-Qaeda looks at, which is Joe's industry, the petroleum industry and that's what you've seen both in the maritime context: the ships that they have attacked, or some of them besides the USS Cole and the USS Sullivans, have been tankers; maritime oil transportation. The recently disrupted Saudi attacks were intended, again, to disrupt the oil supply and attack petroleum there, which is about, in the last year and a half, about the fourth attempt that they've made there, and of course a lot of things that we see in Iraq and then preventing us in getting them back up to capacity and production. It's one of their strategic goals.

QUESTION: Yes, David Wright and a friend of Joe's. This is kind of a loaded question, but aren't they all? We've been working on a project to diversify the import capability of crude oil into the port—into the San Pedro Bay Area—for about four years now, and this is just a little food for thought, and kind of a question directed to you, Matt. Today there's about 340,000 barrels a day going into Berth 121 in Long Beach of crude, and there's roughly another 80 to 100,000 barrels a day going into Long Beach's, what used to be Shell, now Tesoro's berth, so you have about almost a little over 400—maybe 430,000 barrels a day, which is about 45% of the crude oil coming into the L.A. Basin or supply in the L.A. Basin coming through Queens Gate, one small—you know about 400 or 500 foot opening.

What kind of plans and thoughts is the state working on to address these kinds of things?

Matthew Bettenhausen: Well, part of the problem and one of the challenges that fits both with your question and back to Cosmo's question, is that a challenge for government is that most of the infrastructure in the United States, and its true for California, most of it is owned and in private hands; about 85% of the critical infrastructure is owned by private industry. So that requires us, in terms of government, making sure that the private industry can build and keep that capacity up and going. Of course, a challenge here in California, as Joe was talking about and I think all of us, in terms of ports and trying to build and do things, and one of the Governor's frustrations and why with highways he's trying to do design-build things to speed up the process, but the regulatory processes that people have to go through in order to build new facilities really hinders and slows it down. It's not something that the Governor can just turn a switch on either.

We continue to press to try and change some of these laws because we don't have the time to be waiting to address some of these capacity and capability issues in terms of what we need to do to grow our infrastructure. It includes some of the issues, some of the pipeline issues as well, so that you have...resiliency and redundancy in your system, so that if the bad thing happens, you have the capacity to mitigate the damage and build back up. But from a business perspective model, it's hard to justify some of these [regulatory] costs. You know, hopefully, terrorism continues to be a low risk, high consequence event. Private industry looks at the low rate potentially of it and the high consequence and says, "well, you know what, we can't afford to invest to have that kind of redundant and resilient capacity, because it just doesn't fit the business model and it doesn't make sense."

It's one of the issues why we have it in healthcare. The industry has been encouraged by the market system and economics to drive excess capacity out of hospitals [and has encouraged them to] close up trauma centers. They are—even if they're non-profit organizations and hospitals and your for profit hospitals and non-profit also—they're not going to run those things at a loss. Your problem is that the incen-

tives are not there to build the excess capacity, and it is a challenge for us from the regulatory standpoint, but also then hopefully, trying to build incentives to build that extra capacity and the resiliency for this interconnected system.

I wanted to address the alerts and warnings issue that came up earlier. It continues to be a challenge with the Federal government in terms of sharing information. But 9/11 represented a sea change for the Federal government in terms of understanding that prior to 9/11 it was an exclusive responsibility of the Federal government to worry about terrorism. After 9/11, we understand, and we recognize, and we realize that terrorism is everybody's business. We need individual citizens who are riding mass transit systems, if they see something, to say something, and to be prepared, and do—to get your family prepared, have family plans, do these things and it's critical for information sharing. I can go into my long lecture about how important state and locals are, but if we're going to prevent terrorism it has to start from the bottom up.

You know the 19 hijackers didn't have interactions with the CIA, the NSA, the FBI, the whole alphabet soup for the intelligence agencies; they had interactions with the California Department of Motor Vehicles, they had interactions with local police departments. It is with the Torrance/Folsom Prison case that we had here where we clearly prevented terrorist acts here in the greater Los Angeles area; it was local law enforcement who intervened and did that. If you look at the Fort Dix case, again, Fort Dix was started with local law enforcement. It is our police and law enforcement who are on the street. They are the eyes, and the ears, and the trip wire in getting this information, and it's been difficult for the federal government to understand, not only do we as state and locals have information requirements, we are information producers, information producers of information that you need.

So part of our strategy here in California has been, and having lived through many of the bureaucratic fights back in Washington, D.C. I can report to you thankfully the farther you get away from the air of Washington the more cooperative and common sensical things get. We've gotten around a lot of those disputes of federal agencies. We've partnered with the FBI and our other federal agencies to look at an

information sharing environment that we want to have here in California. We're a huge state. If you lay California over the East Coast, we go from Maine to Georgia. We go halfway across to Pennsylvania. You've got major cities like Baltimore, Washington D.C., New York, Boston, all of that and we have that here, and that's why we have 38 million people, but we represent the entire coast here, so we're huge. One of the things that we did and the governor's vision with the information sharing is, "look we can't just have one single state fusion center." We've got to take a regional approach to this, drive this down, and we've got to have partnerships of federal agencies, state agencies, county agencies, and local law enforcement agencies, and plus the broader first responder community.

So in California we're divided in four U.S. districts. That means, therefore, we have four FBI field offices, four joint terrorism task forces, four FIGs [FBI Field Intelligence Groups], and also headquarters of a lot of the ATF [Alcohol, Tobacco & Firearms], customs and border [Customs and Border Protection], and INS [Immigration and Naturalization Service]. All that stuff is centered in those regions, so we've built four regional threat assessment centers throughout California. The first one opened up here in Los Angeles. You've probably heard about that regional threat assessment center—it's also known as the JRIC, the Joint Regional Information Center. The one in Sacramento opened up in January; San Diego and San Francisco are going to be opening up later this year. That brings together federal agencies, state, county, and local [including] representatives from the ports. It is so that we don't have additional filters in terms of information flow and information sharing. We're trying to build those capacities and bring more partners in. Hopefully we will continue pushing and pulling for information from the Federal government, and, as we build the capacities of these regional threat assessment centers, to make sure that the information is getting out there.

Then, of course, you've got to get into the specific issue of alerts and warnings. There is always a need to know on information, but there is a difference when something specifically is happening or there's a disruption. It's things like the systems that universities are having, and it was raised with Virginia Tech, what are

the systems that you want to use to be able to communicate with your customers? Be they students or be they port workers, or be they suppliers in terms of being able to have email notifications, web portals, text messaging, all of those things that Cosmo's also talked about that we need to have; those systems so that we can communicate quickly and in alternative environments. Not just cell phone technology, but IP technology and hard lines as well, because of the potential disruptions that are there.

QUESTION: Hi, name is Ron Thomason, I'm from TranSystems. I'll keep this brief; I know we're running over. To address your issue of the communications issue and the intelligence collection and dissemination, I think it's important to note that for the Maritime community, the Coast Guard does in fact have a web portal "Home Port" –

Matthew Bettenhausen: Home Port.

Ron Thomason: which is a tool that all the ports and all the port tenants should be plugged into, to not only to receive information—threat and notification information—but also to provide information as well. An organization that I belong to, The Maritime Security Council, is currently working with the Coast Guard to develop a MISAC, Maritime Information Sharing and Analysis Center, to extend that resource, that requirement, to the foreign ports and the foreign carriers because let's face it, the threats are coming from out there, not here, or presumably.... The idea being to create a mechanism that will allow us to, as was said earlier, to push back the boundary of identification, detection, deterrents, and response to the foreign ports of embarkation. Secondly, I wanted to ask you what the State of California is doing to develop a coordinated program to support the requirement outlined in the Safe Port legislation that was passed here in November, specifically the directive that [the federal Department of] Homeland Security come up with a plan to provide the tier three benefits, or the benefits for the tier three C-TAT [Customs-Trade Partnership Against Terrorism] certified companies, specifically the "green port" or the "Green Lane Initiative." The idea that once those C-TPAT certified producers

or carriers reach ports here in California that their goods will be routed through the ports in an expedited fashion, thereby increasing the capacity of the ports here.

Matthew Bettenhausen: Obviously, that's important for us but there's distinction that has to be made here, which is the difference between California Office of Homeland Security, and I work for Governor Schwarzenegger, no longer working for Secretary Chertoff, who I did once work for. The Safe Port is directed at the U.S. Department of Homeland Security and what they're supposed to be doing in terms of integrating C-TPAT and doing that so it—the question is more appropriately addressed to U.S. DHS [Department of Homeland Security]—what was beneficial for us in terms of the Safe Port Act was the commitment that there was the authorizing bill, and of course you've got to understand the difference between authorizing and appropriation. It's a huge difference. It's one thing to say hey we're going to invest a lot of money in a thing, it's another thing to then in the Jerry McGuire movie, "show me the money." But, fortunately, though yesterday the house Homeland Security Committee came out with their new numbers and did pass—it has \$400 million dollars, which is fully funding the Safe Port Act, which is money for both U.S. DHS, Customs and Border, Coast Guard in terms of addressing those port issues. And it's supposed to be funded, Safe Port Act is supposed to be funded at \$400 million a year for five years, which would make to two billion dollars. Of course, you know just getting it out of the House [of Representatives] is just part of the battle. You go to Senate, and then not only the Senate, you go into conference [committee] and then in conference, hopefully those numbers come back out the same way with U.S. DHS.

You are correct, in terms of Home Port, and that's the thing too that is useful with these threat assessment centers, is integrating the different agencies. Unfortunately, we have all of these legacy systems and ownership of the different systems that the bureau has, that ATF has, that we have in terms of corrections versus law enforcement, and a lot of those things are rules and regulations that are put in place to protect civil rights and civil liberties and protect the data and the information. But by bringing together all those players into one place, they have the access, the

ability to reach into their systems and then share that information more broadly with their partners there and that's with the Coast Guard and we also have the joint operation centers that are being built at our ports, such as here and JHOC [Joint Harbor Operations Center] down in San Diego [operated jointly by the US Coast Guard and US Navy].

“PLANNING FOR AND RECOVERING FROM SUPPLY CHAIN DISRUPTION”

Introduction of the Panel Moderator

**GARY LAGRANGE
PRESIDENT AND CEO
PORT OF NEW ORLEANS, LOUISIANA
PANEL MODERATOR**

Elizabeth Warren, Conference Co-Chair

We're ready to start our second panel titled "Planning for and Recovering from Supply Chain Disruption." I had some prepared comments but I'm going to skip over that because that's in your program agenda and I think that you can take a look and you would rather hear from our panel moderator. But the title explains it all: "Planning For and Recovering From Supply Chain Disruption." And there's a gentleman sitting here to my right that needs no introduction. I think we all know who he is and what he's going to be talking about. I would like to introduce Gary LaGrange, the President and CEO of the Port of New Orleans.

Gary LaGrange, Port of New Orleans, Louisiana

What an honorable lady. Good morning.

Ironically, for the last two hours I've been on the phone with my office, my staff and a lot of good people back in New Orleans in an attempt to avert an independent truckers' strike at the Napoleon Avenue Container Terminal. What could be more apropos than talking about interruption of the supply chain, so on and so forth?

It's my great pleasure to both have the opportunity of moderating and also to give you a brief scenario and a presentation chronologically speaking of one of the largest interruptions of the supply chain from a natural disaster that I think any of us have ever seen, perhaps in this country or certainly on the top three or four list. And, of course, we're talking about a scenario that occurred on August 29th, 2005

when Hurricane Katrina came ashore. And what I want to do is just give you a few of the facts and a few of the figures of the end result of Hurricane Katrina on the Mississippi Gulf Coast and on New Orleans and certainly the Port of New Orleans. Just imagine for a moment the loss within hours, within a few short hours of 98,000 square miles that were detrimentally affected. And I know that we all have our woes and our problems. We know about the fires here in California that are ongoing and raging and the ones in Florida. We all know about all of the many, many thousands of incidents that can or can't happen in the interruption of the supply chain from an international transportation logistics standpoint. A hundred and sixty-five square miles were totally lost and washed away into the Gulf of Mexico. Imagine 356,000 vehicles, automobiles and trucks, totally lost within a matter of a couple of hours. Imagine the total destruction and loss of 263,000 homes; eighty percent, out of all the homes in the innercity and metropolitan area of downtown Orleans Parish in New Orleans. Worse yet, imagine the loss of 3,346 lives. Imagine that here we are 20, 21 months later with 533 people still missing as a result of that tragedy. Now granted, I'm sure some of those people want to be missing. They just haven't reported back for duty. They're probably fugitives in somebody else's country or state somewhere now. But those are the facts and those are the figures that I've got to put forth right now in talking about what Katrina did.

The worldwide economy is hanging from the global supply chain. As the individual links in that transportation supply chain, we all have an obligation to make sure that the chain holds together. If it falls, then the worldwide economy basically is shattered, if not totally destroyed. I can remember in 2002 having come in from a very entertaining and a very business-like evening early on in Paris, France. It was about two or three o'clock in the morning. I think we had been to some fun place like the Moulin Rouge. Everybody's in a festive mood and I go back to my room and I hit the TV and I turn on the television and I couldn't imagine. I thought it was a hallucination. At two-thirty in the morning there was my very dear friend, Dick Steinke from the Port of Long Beach talking about the ILWU strike. And Dick, I remember very vividly, and I mean, I'm sitting there still bewildered that I'm seeing Dick in my hotel room at two-thirty in the morning in Paris, France. He's usu-

ally out drinking with me. “What are you doing here?” And Dick’s talking about, like, “a missing link in a chain.” Those were his exact words in the interview. And that’s exactly what it was, one link out of that chain caused by the ILWU strike.

The plane crash you had here not too many years ago that blocked the mouth or the inlet, the access and egress to your shipping lane and your channel, [yet was] a small plane crash. In 2003 (on the Mardi Gras weekend in New Orleans) we had two ships collide at the mouth of the Mississippi River resulting in five dead; [that] closed the Mississippi River down for four and a half days at a cost of \$800 million. In terms of the detrimental economic impact, it grew exponentially day by day by day according to our economist and other economists at the World Bank.

Post-Katrina, here’s today’s situation in the Port of New Orleans. It’s a day-in and day-out situation and scenario for us. Our largest carrier, in fact, a container carrier, shifted from one major terminal operator to another as of April 7th. That shift caused great chaos and it could be for any one of a number of reasons because of the inappropriate preparedness of the [terminal operator] that inherited the new shipper to get his software system at the gate up and running; at the start the system was not working properly. Or it could have been because of his inability to get the proper equipment, the top loaders, the RTG’s, the rubber-tire gantry cranes, and all of the other equipment in place. Or better yet, maybe his inability to get the manpower in place. These are all speculative notions. Nobody’s accusing anybody of anything. At any rate, it caused a tremendous slowdown in the transportation logistics system [and could cause] an independent truckers’ strike before the day’s over or by next week sometimes. It could be any one of a number of things. All of you know the scenarios that come into play.

The task of keeping that supply chain together is made more difficult because of the disruptions, and they’re all inevitable. They’re going to happen. The chain’s too long for everything to go exactly as planned. What we all fear and what we all must plan are for the huge disruptions that would eventually have the domino effect that we’ve all seen. In the case of the ship collision at the mouth of the Mississippi

River at Mardi Gras 2003, remember that the losses amounted to \$800 million in only four and a half days. The methods for averting these disasters are amazing.

In that one case, I'll tell you the story 'cause it's a really interesting story. If you can imagine the flow of the Mississippi River coming down from 33 different states, coming down with all of its tributaries, the Ohio, the Missouri, the Tennessee and so on and so forth, the Arkansas. They're all coming down to New Orleans. In central Louisiana, there is a structure built by the Army Corps of Engineers in 1954 called the "Old River Structure." In the middle of the night, the colonel with the Army Corps of Engineers got the great notion and got together with our Coast Guard, Captain of the Port, Captain Branch at that time, now retired Admiral Branch. And they determined that they were going to change the flow of the Mississippi River. When that structure was built in 1954, it was built to divert one third of the flow of the Mississippi River from Baton Rouge and from New Orleans down to the mouth, down to another area of Louisiana, down the Atchafalaya Basin in the Atchafalaya Floodway. What these gentleman did in the middle of the night was absolutely a stroke of genius. They diverted a greater flow down the Atchafalaya Floodway. They lessened the flow from the Mississippi River to allow the Coast Guard, and to allow others to go in and provide the search and rescue mission that they needed to provide because the bow of one of the vessels was still protruding above the water. And in that four and a half day period, there was a chance that those five lives still had adequate air in the hull of that ship. Unfortunately, the results were not good. They did not survive. But nevertheless, kudos to the Corps of Engineers and the Coast Guard for shifting the river and attempting to save the lives in four and a half days. That's the human side of the story.

The commercial side of the story is how many hundreds and hundreds and hundreds of millions of dollars, how much more would somebody in Chicago or St. Louis have had to pay for their tennis socks or their flat screen TV or their computer because of the law of supply and demand that was disrupted? And those are the issues that we're here talking about today. Those are the real-life scenarios and the real-life issues. We have two wonderful panelists today that I have the privilege

of introducing. [Conference Co-Chair] Jim [Fawcett], however, has asked me to take a few moments to go into the Katrina scenario which is a real-life scenario, and I certainly am very happy to do that and I'll do it as briefly and as quickly as I possibly can.

On Saturday afternoon, August 27th, 2005, being a native of South Louisiana and having been through some relatively tough hurricanes growing up (in fact, in 1964, my father lost all four of his five furniture and appliance stores due to Hurricane Hilda). He died five years later, no doubt a result of being inadequately insured. And those are the lives and those are the situations, no different than the forest fires out here or the earthquakes out here or any other natural disasters that can come into play. Those are the things that we all deal with on a day in and day out basis. My son who's career Army—apologies to the Coasties here today—career Army, called me that afternoon from Kuwait and asked me what the scenario was. He had seen the cone close in on New Orleans pretty much. As I sat in my office at the Port of New Orleans looking out over the river, the river, ladies and gentlemen, if you've ever been to New Orleans you know it's a coffee brown and it flows at seven to nine knots down river, obviously. That afternoon, the river was the most beautiful emerald green, like I was in the Caribbean, with whitecaps flowing up river in a backwards direction. This was almost 48 hours out from the storm's hit on landfall, making landfall on the Gulf Coast and on New Orleans.

And as I spoke to my son, I remember talking to him because he was young enough to have gone through Andrew with me in '92 and all of the scenarios at the port that I was at then. "What's it look like, Dad?" And I remember telling him quote unquote, "This is the mother lode. This is it." And there was no question about it and other people agreed with me and said similar stories. This was an interruption of something very huge and even at that moment, none of us realized how devastating it was going to be. Eventually we went through our normal hurricane preparedness plan. I got my major team, my senior staffers together at the New Orleans Riverfront Hilton Hotel adjacent to our office there, a tenant of ours, that was part of our plan. The hurricane hit. We were in our room and I can remember—by

the way, they wanted to upgrade me because we're the landlords, to the 29th floor penthouse. No way, man. I'm not carrying my big butt down 29 floors up and down without an elevator. There's no way. Anyway, we didn't do that, obviously. I did wind up on the 7th floor and all night long, that hotel creaked and moved like a ship at sea, like rocking chair noise. If you can imagine an old wooden rocking chair, the noise that it makes. And every 20 minutes, to the minute, without fail, "Ladies and gentlemen," (automated), "please do not go near the windows. Ladies and gentlemen, if you have fear for your life, please go to your bathroom or to the hallway outside. Ladies and gentlemen, please do not go to the windows." Two minutes later, "Ladies and gentlemen, this is the hotel manager. Please disregard that last statement." And that went on every 20 minutes all night long. So what are you going to do? You're going to go to the window. You're going to look out of the windows, Sodom and Gomorrah all over again, you know. What's outside of this window that I can't see? Anyway, that happened.

The hurricane subsequently hit at seven thirty the next morning and it was a sight unbelievable. Just amazing to see the waters rising, all of our public belt railroad tracks totally inundated by five and six feet of water, flags being ripped from the flagpoles, things flying around. You've seen the scene in movies or on the news and on weather stations. And it was a horrifying sight. We went out to perform a damage assessment. By the way, it was the longest hovering hurricane that I've ever seen in my lifetime. We went out to perform a damage assessment. The first part of it was okay upriver on 70 percent of the footprint of the port. But when we went down river to our MRGO (the Mississippi River Gulf Outlet on the Industrial Canal our tidewater part of the port), it was six and eight feet under water. Maersk Sealand was totally destroyed. New Orleans Cold Storage, the largest exporter of chickens, I used to say, "We have more chicken ships," but you gotta be careful how you say that, "poultry ships anywhere in the United States on the export side." And [it was] totally devastated. Two or three weeks after the storm, do you know what—anybody have any idea what 52 million pounds of rotting chicken smells like? If the wind's blowing in the wrong direction, you're in bad trouble.

Anyway, I called the next night after we did the damage assessment down river and we had six of our harbor police vessels, along with the Coast Guard, along with the Louisiana Wildlife and Fisheries and along with a lot of volunteers, thank God, that were basically taking these little 14, 18-footers up and down the streets full of six and eight feet of water, ten feet in some cases, and pulling people, 3,000 people, out of their attics, off of their roofs and out of trees. Many elderly and many young and the problem was when we got them to the St. Claude Street bridge as a triage area, we put them down and then the question was, what next? We had the greatest hurricane preparedness plan, everybody, not only us, the state, the city, in the world. But when we put the people down there were basically no clothes on their back, very little. If they had them, they were wet, they were soiled, and they were certainly contaminated. There was no food. There was no water. There were no blankets. There were no towels. There were no first-aid supplies. There was nothing.

So that night, I managed to borrow ('cause all communication lines were down, power lines were down) I borrowed a cell phone from the Maritime Administration, Beaumont, Texas office. And I was able to call and reach a good friend of mine who had formerly been the port director in Wayne County, Michigan, Port of Detroit, John Jamian, who was the head of—administrator—with the Maritime Administration at that time. I said, “John, you’ve got the *Cape Kennedy*, you’ve got the *Cape Notch*, you’ve got a couple of other ready-deployment vessels that you guys take supplies to and troops to Iraq and so on and so forth, is there any way I can access the first-aid supplies? We need water, we need food.” And I asked him that three times. And he kept saying—he was in a restaurant in Washington—“Gary, what do you need?” I said, “John, I just told you what I need. This is not an Abbott and Costello routine. I don’t really have time for that.” Finally he said, “Gary, damn it, what do you really need to get the fourth-largest port in the United States of America up and running? What do you really need to get the port that serves 62 percent of the consumer-spending public of the United States back up and running? What do you need to avoid a national disaster because of the interruption of the supply chain that would be caused by this?” And right away, I got it and I told him—‘cause everybody had scattered all over the United States. Nobody knew where anybody was. There were only a few of us left in the city at that point:

us and the looters. And I said, “I need manpower. I need electrical power and I need intermodal connectivity,” because of all the roads, major roads, highways and bridges had been washed out. All of the rail had been washed out.

So with that, we got the ball rolling. We were able to identify where a large portion of our dockworkers had gone to the Galveston-Houston area. And we were also able to get in touch with them to determine what we needed to get ships rolling again. God bless him, as a joke, Captain Frank Paskewich [US Coast Guard], a good friend of mine who’s going to be retiring in a couple of weeks, our captain of our port. Frank looked at me and laughed. He says, “You’re really in a bind. Your port’s not going to see--” “Wait a minute. My port? This is your port, too, Frank. You’re the captain of the port, man.” He says, “You’re not going to see a ship in here for six months,” of course he was yanking my chain and I didn’t realize it at the time. And I said, “Frank, in six months we’ll be at 70 percent.” I must confess, I pulled that right out of the sky just to have a number. What it did, it gave us a goal. It gave us something to shoot for. It gave us somewhere to go. And we began working from that point. Frank relocated temporarily with the Coast Guard and we were able to establish satellite offices in Atlanta and eventually back, 40 miles out of New Orleans. We maintained an office presence the whole time throughout and basically we were able to get some things going and some things happening.

All of that, now that you’ve got a—just a fundamental idea—the inland waterway system, as I said, you can see the market area from the Port of New Orleans. It’s the largest throughput port in the United States. Eighty percent of all cargo comes into New Orleans winds up somewhere else. Being the largest importer of steel, rubber, plywood and wood products, the largest importer of the London metal exchange, copper, lead, aluminum, zinc in the United States. Being the second largest coffee importer in the United States. It’s also the largest chicken—poultry exporter in the United States, and the fastest growing cruise port in the United States at the time that Katrina hit. There were a lot of things at stake. But you can see the people basically, Pittsburgh, Cincinnati, Louisville, Memphis, Little Rock, Chicago, Minneapolis and Tulsa, Oklahoma, totally served by the river and its tributaries. The Mississippi River, 14,500 miles long of navigable waterways, is second only to the

Amazon Basin worldwide and serves 33 states, three Canadian provinces, Mexico; all reached from the Port of New Orleans (Figure 16). Those are the customers at stake. Remember, the largest throughput port in the United States. Six trunk line railheads, more than any other major deep-draft port in the United States, that happened in the early part of last century. The rail basically followed the river and the water. There's a reason why the Port of New Orleans has the intermodal connectivity that it has. We just talked about those.



Figure 16

In the upper left-hand corner (Figure 17) here you can see that [USS] *Iwo Jima*, the helicopter carrier *Iwo Jima* which served as a command headquarters for now-Admiral Thad Allen, who moved on to bigger and better things from Katrina and now heads up the Coast Guard nationally and we truly appreciated his efforts throughout this entire storm. In the lower left-hand corner you're not looking at automobiles being offloaded from ships. You're obviously not looking at containers. Four days after the storm, the 82nd Airborne Division showed up along with a number of other National Guard troops and regular Army troops—the cavalry came in. And it's on

that fourth day that we could finally not have to go to work in the morning at six o'clock working basically 18, 20 hours a day. And not have to follow a convoy like we were in Bagdad or some war zone. The military showed up four days later.

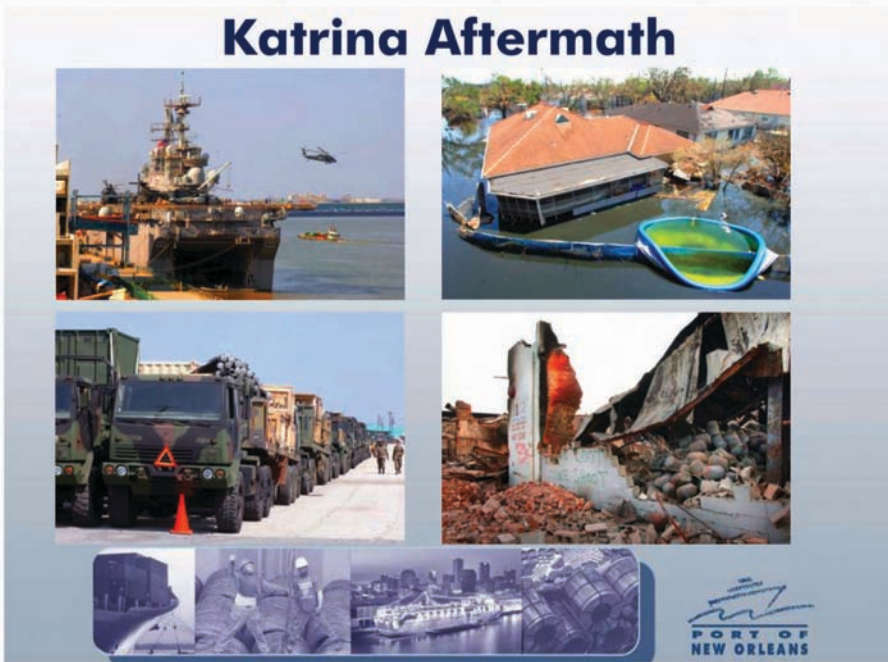


Figure 17

The other story that I wanted to mention was something very unprecedented happened, and every port needs to remember this in the future should something like this happen. John Jamian wound up telling me in that infamous telephone conversation that night, “I think we need to get some ready deployment Maritime Administration vessels to New Orleans. If you need manpower, you obviously have no housing, no food, no place for them to shower.” I said, “No.” So John ran it up the flagpole to [U.S.] Secretary [of Transportation, [Norman] Mineta who ran it up the flagpole to [U.S.] Secretary [of Defense, Donald] Rumsfeld. It took three or four days once it got to Rumsfeld: go figure. But anyway, all of that aside, it finally got to the President and by Friday a decision was made to deploy eight Maritime Administration ready deployment vessels from all over the United States to serve as floating dormitories for the workers that we were going to bring back in, a thousand workers to reopen the Port of New Orleans. A bunk, three square hot meals a day and a hot shower at night.

Upper right-hand corner you can see a regular neighborhood (Figure 17), anywhere in New Orleans, somebody's poor swimming pool, doesn't know what yard it belongs to anymore. Interesting story, the bottom right is a produce warehouse one quarter of a mile away from the [MV] *Cape Kennedy* that I lived on for four and a half months after the storm. You can see some little round things that look like charcoal briquettes. Those are not charcoal briquettes; those are propane canisters each about the size of a bowling ball. Three very happy guys with big smiles on their face that we saw the day after the storm, probably when they finished smoking whatever they were smoking that night, set the propane canisters on fire. At four o'clock in the morning there was a large explosion with the propane canisters going off in every direction imaginable. The fire burned down 16 houses in the Bywater neighborhood and it also burned down one of our largest transit sheds in the Port of New Orleans. Next stop after that transit shed would have been the Vieux Carre in the French Quarter. I didn't sleep for four nights 'til we finally got it out, needless to say.



Figure 18

Containers at the Maersk Sealand yards stacked like Legos on some child's playroom floor (Figure 18). There's the Mandeville terminal that burned down as a result of the hippies that set the propane canisters on fire. I say "hippies" in a friendly term 'cause I usually like them. You could see one of our access roadways to New Orleans Cold Storage, totally washed out and buckled; no way to get in and out by truck for sure. Moderate wind damage: this is a good part of the story in the bottom-right corner. Moderate wind damage at our 70 percent footprint of the port in the upriver area of the port. I testified before Senator Grassley's committee; Senator Grassley, I like him. He called me a young man. He said, "Young man, what you guys need to do is get away from that river." I said, "Senator, in all due respect, this is not Des Moines, Iowa in 2002. The safest place to be in New Orleans is on the river." That's the highest place in the city, 'cause the city's shaped like a bowl between the lake and the river. That's why the French Quarter was built where it was built. This is a triage area on the bridge that I was talking about. You can see one of our harbor policeman taking one of the kids out of a boat from the rooftop of his house along with other members. And the Coast Guard was right there alongside of us. We can never thank them enough. At the end of the day, the Coast Guard alone was responsible for saving almost 4,000 people in their search and rescue operations from rooftops with their helicopters. God bless 'em.

Twelve days, well, thirteen. Thirteen days [after the storm hit]—on September 12th, I found Frank Paskewich, Captain Frank Paskewich, and I said, "Frank, we're moving steel to the Hyundai plant in Alabama today." And Frank looked at me and he grunted and said, "How the hell are you doing that?" I said, "By barge." It was supposed to be trucked but 13 days after the hurricane, we were open for business. The very next day, using a shipboard crane because we didn't have electricity back yet, we worked the *Lykes Flyer* from Mexico, loaded down with Proctor and Gamble coffee beans for Folgers Coffee. And through the night we offloaded this entire ship. We were back in business on September the 13th. On September the 30th our first cruise ship returned: eight hundred German passengers on a worldwide tour. It was the first opportunity we had to get out and mix with people socially other than eating MRE's ["meals, ready to eat," i.e. military rations] and peanut butter. And I gotta tell you what, I didn't speak a word of German; they didn't speak a word of

English. But it's the best party I've ever been to in my life. On October 15th, 2006, over a year later, our first home-porting ship returned, the *Norwegian Sun*, the first of four to return along with two others that have been announced since then. We completed also, in the interim, our new \$38 million Erato Street Cruise Terminal, which is state of the art and has won three awards. Today, since February the 28th, 2006, we're over a hundred percent of pre-Katrina cargo, 2006 for the entire year we were plus four percent over the previous five-year average prior to Katrina. You can see our ships in the uptown wharves that were less affected. Angus Cooper, one of my commissioners, you can see Angus with all of his cell phones. One of the big stories, and bottom line stories: it's all about communications, ladies and gentlemen. If you don't have communications you don't have anything. We had to rely on borrowed cell phones from out of state that were not in affected areas, and all of us learned for the first time how to text message. For some reason text messaging is the only thing that worked.



Figure 19

You can see Admiral Allen right there in the bottom right-hand side (Figure 19), he would come over to our offices on a day in and day out basis. Right above that, every day, it's like Dr. Pepper. At noon, one and four, we had conference calls from our three satellite offices. This is one in my office where the river pilots came together, the Coast Guard, the Corps of Engineers, all of the stakeholders came together to speed up this recovery process. These were our homes.

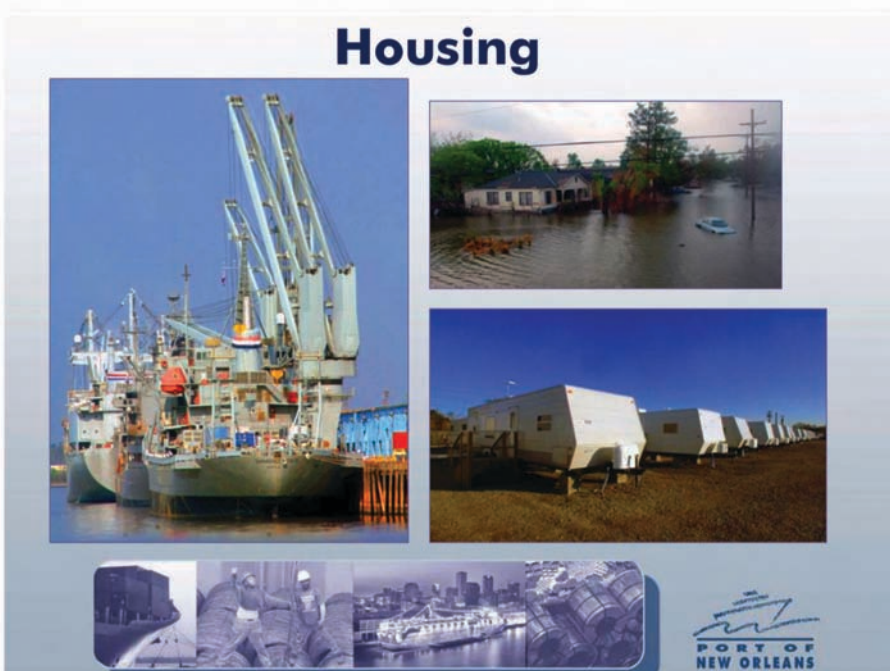


Figure 20

To the upper right, that was somebody's home (Figure 20). To the lower left are the Maritime Administration ready deployment vessels where a thousand people lived for five to six months. Three square hot meals a day, an opportunity to have a bunk to sleep on and a hot shower at night. We progressed to a longer term FEMA trailer and some of our people, many of our people, are still living in FEMA trailers. We're making a transition over the next six months to get finally out of the FEMA trailer situation and getting people back home.

Insurance



**Total Estimated Damages:
\$160 million**

**Recovered to date:
\$30 million**

**Katrina repairs
underway/complete:
\$20 million**

**Repairs to be bid in 2007:
\$15 million estimated**

**Repairs to be bid in 2008;
\$25 million estimated**



Figure 21

We have \$160 million in damage at the Port of New Orleans. Twenty-one months later we've collected \$30 million. It's an absolute farce. I don't know what else to tell you. And here you can see the Mandeville Street wharf that I talked about that caught fire (Figure 21). We're going to bring it back. We can always come back. This is America. And I think it's—as an old football coach of mine once said, “Never quit. Never quit. Success may just be around the next corner. Rest if you must but never quit.” And for a breakdown of the supply chain; that is certainly the message of the day.

**STEVEN PASIENSKI
CUSTOMS AND BUSINESS PROCESS MANAGER
TOYOTA MOTOR SALES USA
CARSON, CALIFORNIA**

Gary LaGrange, Panel Moderator

Now I'm going to transition into our next panelist and I think you're really going to enjoy Steve Pasienski. Steve will be speaking from the perspective of a large shipper, specifically Toyota. Steve is the customs business process manager at Toyota Motor Sales USA and is responsible for integrating, developing and maintaining process to support customs compliance, customs operations, duty planning, supply chain and logistics. Prior to joining Toyota in 2006, Steve was customs operation manager at the Nissan North American facility and was responsible for the company's automotive imports from Japan, Mexico and Canada. Prior to joining the automotive industry, he was with the brokerage operations division of a worldwide 3PL Company, Expeditors International. Steve is the co-chair of the Western Regional Committee of the American Association of Importers and Exporters where he works to further trade concerns and programs of special interest to Western Region members. He has served on the Customs and Border Protection Trade Support network since 2001 and is currently a member of the International Trade Data Systems Committee. A member of the Foreign Trade Association's Board of Directors, he is also an active member of the Business Alliance for Customs Modernization. Steve is a graduate of California State University Long Beach, and he's a licensed customs broker. Steve is going to tell us about a project that Toyota has with the rest of its supply chain partners and its plan for disruptions in the supply chain as it so often occurs and happens. I give you a very worthwhile presenter, Steve Pasienski.

Steven Pasienski, Toyota Motor Sales, USA

Thank you, Gary, very much. Thank you for having me here today. As he mentioned, I'm the business process manager in the customs department, and I'm actu-

ally just one member of a cross-functional team that is tasked with putting together the business continuity project for Toyota Motor Sales.

This project actually builds on our business recovery plans that have been in place for many years already. However, this project is going to be more focused on business resumption, where the business recovery plans that are in place focus more on dealing with the incident at the time that it's happening as opposed to getting back to normal operations. Just to mention C-TPAT [the Customs-Trade Partnership Against Terrorism], I know that on the earlier panel there was some mentions of C-TPAT, and Toyota is a member of this partnership with customs. Through that process, Toyota actually joined the program shortly after 9/11 when the program was announced and had to submit our supply chain security profiles and go through a validation process. The benefits of going through that is that we do have reduced cargo examinations, which helps with supply chain disruptions. And also we get preferential treatment as far as [permitting our cargo to move to the] front of line. We haven't seen that fully implemented yet, but we're told that it will be fully implemented in the near future.

So after we had our successful validation for C-TPAT, our executive management came to the customs department and asked, "Okay, that's great. We have that, but are we doing everything possible to alleviate supply-chain disruptions?" That question really served as the catalyst for us to launch our business continuity project that's underway. The focus of this project is on port and border closures since those are [what we experience as] major disruptions to the supply chain.

Just to talk a little bit about our business recovery plan first, this is what's been in place for a number of years. It contains a critical functions list, and I'm going to mention a couple of those functions that relate to supply-chain disruptions. It has to do with the clearance of our vehicles and clearance of our part shipments, which are our two major supply chains for Toyota. First is establishing the communication with our customs broker. That's always critical. One of the first things that we do is to get in contact with our account manager and find out the status of their operation and let them know what ours is. Depending on the condition of our

facilities after the event, whatever it might be, we need to discuss whether there's a need to move our operations to an alternate location. And it's broken down into a timeframe where between maybe one to three days there's no need for us to relocate anywhere. But if it does get beyond that, into three to seven days and beyond, then we shift into a plan where we set up a temporary location at our [customs] broker's office here in Los Angeles. If there's an issue with their facility as well, then we have another plan and we go out of state to another location.

In addition to contacting the broker, we also have alternate communication channels established. And that includes a very long list of home phone numbers, cell phone numbers and I heard the suggestion about text messaging and I think that's a good one. I'm going to take that back with me. At Toyota we rely heavily on data transmissions. We don't really use paper documents very much for our customs transmissions and dealings with customs. Our second step is to contact our I.S. [Information Systems] Department and that's to check our mainframe and data transmissions, to make sure every thing is operational, that the incoming transmissions of our invoices from our foreign affiliates are coming in and that our outgoing transmissions to our customs broker are still working. And if there's a problem, we need to get it fixed, in place immediately. There might also be the need to pull back-up data from a server tape. Third, we're going to get in contact with our accounts payable and our treasury department. The main reason to get in contact with them is to do with all of our ACH [automated clearing house (electronic payments and wire transfers from the bank)] payments that are scheduled on our customs entries with U.S. Customs just to make sure those are still operational. Fourth, we're going to make contact with our foreign shippers and also our foreign customers that we're exporting to so we can discuss the status of the shipments involved there. Lastly, and this is really an ongoing process, it has to do with treating our business recovery plan as a living document. And earlier it was mentioned, you know, having it sit on the shelf and collect dust and ours clearly doesn't do that. It includes an update history section and every time these updates are made (which are done at a minimum once a year), the next one is scheduled. So we're always monitoring that.

Now what?

- Business Recovery plan is in place.



However . . .

- Does the plan fully address business resumption?
- C-TPAT membership & benefits are good, but does that alleviate supply chain disruptions?
- How will C-TPAT benefits be satisfied when Customs is only one part of the supply chain process?
- Need key supply chain partners to work with us on a new plan.

Figure 22

Now our business recovery plan is in place (Figure 22) but, you know, the question is, “now what?” And that goes back to the question we received from executive management about, “what are we doing to make sure that we’re okay on our supply chain? Are we doing everything possible?” So at that point, we had to ask ourselves some questions and, you know, first off was, “Does our existing business recovery plan fully address business resumption?” And the answer was “no.” I mean it focused on [what to do] during the event but not necessarily getting back to normal operations. The C-TPAT membership and benefits are good but do those really alleviate the disruptions? And, again, the answer was “no.” The benefit that we get from C-TPAT is expedited customs clearance, but if we can’t get our freight out of the terminals, that really doesn’t do us much good. Customs is just one part of the supply-chain process; but after they’ve done their clearance, I mean, they’re really out of the process at that point.

So it was at that point that we knew that we needed to engage key supply-chain partners to assist us with developing a comprehensive plan. The strategy was to establish a team to start talking about the issue and start identifying unique sup-

ply-chain vulnerabilities. Our participation in C-TPAT did help to identify some of those areas so it was a worthwhile exercise. But we needed a plan that would address business continuity during and after port closures, after they reopened, that is. And at the end we'd like to have a best practices presentation that we can deliver to external partners and Department of Homeland Security. This is the purpose of our project and that's to guarantee our investment in C-TPAT and assure continuity of operations and collaboration with the International Customs Department at Toyota, business continuity and other key supply chain departments.

At the start of our process when we were launching it, we put together a couple of scenarios just to get people thinking outside the box a little bit. And this first one actually has to do with our vehicle supply chain. We asked, "Would there be enough space to discharge multiple vessels in a compressed timeframe?" You know, if the port was closed and they're stacking up as we've seen happen in the past. The answer was most likely "No." And so the question is what will we need to do to address that problem? Also, we needed to ask if an off-site yard would be necessary for staging overflow of vehicles. And that's really going to depend on how long the port is closed down and how many vessels we have stacked up behind the breakwater. What delivery arrangements need to be made? Obviously the normal delivery channels aren't going to help when we've got a huge backlog of freight that needs to come in. And we really focus on our customers and we want to minimize any negative impact to them. So always keeping that in mind, we have to think about it and see if maybe deliveries could be made in the middle of the night to dealerships.


We also need to look at the priority of shipments. Which ones are going to go first? Obviously, if there's a customer waiting on a vehicle, we need to get those shipments to the front of the line. So that's part of the prioritization. And we also have to think about our export shipments because they're going out at the same berths at which the imports are coming in, so do we have enough room to even stage those vehicles? Those are just a few of the questions that we asked just to get the conversations going.

The second scenario has to do with our parts-supply chain; for example, “What if an ocean container were to explode in the Port of Houston and customs immediately closed all ports of entry for one week?” Well, hopefully, we wouldn’t experience an all-ports closure that lasted a week. But that is clearly possible for a regional or maybe a single port. So we asked the question of how containers would be prioritized for delivery as well because we work in a JIT [just-in-time] environment, so we don’t really have a whole lot of inventory sitting in our warehouses; it moves through very rapidly. We also asked if there would be a need to increase the volume of air shipments. And clearly this is something that we want to avoid because of the high expense of doing that. This is something we actually had to do during the [2002] West Coast [labor dispute], and chartering freight planes is extremely expensive. So we want to try to mitigate that wherever possible. We also need to work with our parts center in Ontario, California, to see if they can accommodate all of the additional container deliveries in a compressed timeframe, and is there enough room on site to stage all these containers. And then we also, again, have to think about how we’re going to mitigate this impact to our customers and to our dealers, especially if there are vehicles that are off the road awaiting repairs.

The mission is to assure sustainability, the goal is business resiliency, and the tool is the business continuity program that we’re working on. And the focus is, of course, caring for our associates, restoring our facilities, our systems and our telecommunications and department recovery. And that hopefully will result in operations getting back to normal in a very short amount of time. Our project leadership team that was put together consists of our international customs department, business continuity, our Toyota logistics services group, and our North America parts organization. And we also have an external consultant working very closely with us named Disaster Survival Planning Network. Actually, Judy Bell is here today, and they’re a great company to work with if you’re looking for one.


The expected outcomes (Figure 23) of this project are to have workable plans that focus on process efficiencies and minimizing costs at the same time. So we also want to have a team that is actively engaged in the process otherwise we’re never

going to get through it. We want to improve the collaboration between internal supply chain partners and also have arrangements in place with our external supply chain partners to avoid scrambling during an incident. So if these outcomes are achieved, you know, the net result should be a high level of quality assistance and improved supply-chain resiliency.



Expected Outcomes

- Workable plans
 - Process efficiencies
 - Profit enhancements
- Agile key players
- Enhanced acceleration post-interruption
- Closer collaboration between internal supply chain partners
- Pre-positioned arrangements with external supply chain partners



NET RESULT? High level quality assurance & improved resiliency

Figure 23

So, we started with a gap analysis, and then we went into a series of planning assumptions. And first off, we looked at a scenario if all ports were closed and anticipating that would be a short amount of time. So on that plan, that assumption list, there is really no immediate plan for diverting any freight because there shouldn't be any need to. On the second one, we looked at regional port closures, so that would involve maybe northern border or western ports, southern border or east coast including Puerto Rico. And that list was more lengthy. We had about 28 different assumptions that we're working with on that one. And, again, the goal is to create a plan that covers the warning, response and recovery stages. When we're done with that we're going to go into a tabletop exercise to actually test the plan that we put together with a simulated incident. And at the end we want to put together

a best practices presentation that we can share with all of our external partners and with DHS. We're about halfway through the project, and we're looking forward to a successful completion on time. And once in place, we will be reviewing this plan on a regular basis, just as we do with our business recovery plans, to make necessary improvements and adjustments when necessary. That's the end of my presentation. I hope it gives you some ideas of how to plan for your supply-chain disruptions and recovery plan. Thank you.

**RICHARD EBEL
GENERAL MANAGER
BURLINGTON NORTHERN SANTA FE RAILWAY
LOS ANGELES, CALIFORNIA**

Gary LaGrange, Panel Moderator

Thank you, Steve. Steve talks about the tabletop exercises and going all the way through the first quarter of 2008, you could tell that none of this is happenstance. And, again, as in the case of any event, any supply-chain interruption, it's something that needs to be well thought out and well planned. Our next presenter is Dick Ebel, who will be speaking from the railroad perspective. He was named general manager for the L.A. division of the Burlington Northern Santa Fe Railway in July of 2006. This role is responsible for all railroad operations from the Hobart Yard in East L.A. to the ports of Los Angeles and Long Beach. Collectively, the Los Angeles basin area handled some 2.7 million units of intermodal volume last year. Prior to this assignment he was Assistant Vice President, Intermodal Automotive Operations, where his responsibilities included service design for intermodal and automotive day-to-day tactical interface from the service design plan to execution with the intermodal auto facilities and the transportation team, and modeling of line capacity to support short-term and long-term capital expenditure plans. Dick joined Burlington Northern Railroad, a predecessor company of BNSF in 1979 in the internal audit department. He relocated to the newly formed holding company in Seattle, Washington in 1981 to perform general accounting functions. In 1984 he returned to St. Paul, Minnesota and held a number of positions within the accounting and finance organization. In 1992, he moved to Fort Worth, Texas where he interfaced with the agriculture commodity group to manage waybill creation, freight charge application and accounts receivable collection functions. Since 1994, Dick has held a variety of positions within the intermodal automotive areas of BNSF. He earned his Bachelor of Science degree in accounting from the University of North Dakota in Grand Forks in 1979 and earned a Masters of Business Administration from Southern Methodist University 2001 and is a Certified Public Accountant. I give you our next presenter, Dick Ebel. I think we're going to hear some really, really creative words.

Richard Ebel, Burlington Northern Santa Fe Railway

Good morning, everyone. And I know I've got the dubious distinction of standing here between you and lunch. So hopefully you'll enjoy this. I'm very excited to be here on behalf of BNSF first of all. I'm relatively new to this Pacific Southwest basin, but we know how important this part of the network is to our entire infrastructure in terms of our franchise. And so what I'm going to talk about here this morning is how we go about preparing for service interruptions.

Our first objective is not to have them; but if we do, what do we do to get back in service? And those service interruptions can come from a whole host of different reasons. And so we're going to talk about some of those this morning. First of all, I always think it's important for you to have a picture of what we're talking about. And so what I'm going to show you is, this is a 10,000 foot-long stack train that came off the Port of Long Beach or Port of Los Angeles last Saturday (Figure 24). It's the largest stack train that we've ever operated out of this port infrastructure. It was 10,009 feet long, 9,300 tons, 379 containers, all going to one destination, Chicago, to our LPC [Logistics Park-Chicago] facility there.

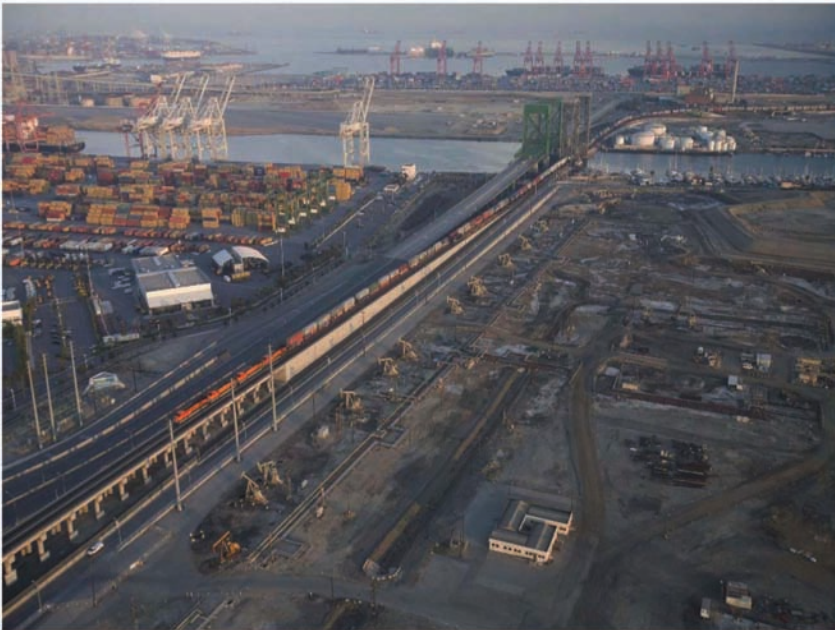


Figure 24

Multiply that by 20 and that's how much volume we generate off the basin here every day. We generate between eight and ten trains a day off the ports and another eight to ten trains a day off of our Hobart facility in East L.A. Likewise, we have a similar number of trains coming westbound. So if you get up on the middle portion of our railroad, up in the Belen, New Mexico area, we process the low 100's a day in terms of train volume through a location like Belen, New Mexico.

So why do I set that framework? Well, I set that framework because an interruption of as little as six to twelve hours quickly results in 50 to 60 trains being stopped and not being able to continue their journey on to destination.

A little bit about BNSF for those that may not know, we're a very large rail carrier in the United States. We share the western two thirds of the United States with Union Pacific. We operate in 28 states and two Canadian provinces. We have around 40,000-plus employees that provide our service product every day and we are the largest intermodal rail carrier in the world. Our four primary business segments are coal, agricultural commodities, industrial products and consumer products. Intermodal freight falls within that consumer products area.

First of all, the discussion earlier this morning talked about Homeland Security. The rail network, not just BNSF but the entire rail network, is very intricately linked to Homeland Security through the Association of American Railroads (AAR). Our web pages internal to BNSF have direct links to that Homeland Security website. That website helps all of us on the BNSF understand what level of alert we are in as a country and what level of alert we're in as a rail carrier. Underneath that website, we have a series of pages that identify the processes and procedures that we will implement depending on what level of security we're at. And I'm sure all of you know these from flying around the country and from the operations that you're responsible for. We have the normal day-to-day operations, which is level one. Heightened security awareness goes to level two. A credible threat of an attack on some infrastructure in the United States is a level three. And then level four where we have a confirmed threat of attack against infrastructure here. So those are all

levels that we're familiar with from flying around the country on the airlines and so forth.

Unplanned Events

- **High Winds**
- **Flash Floods**
- **High Water Detection**
- **Slide Detection**
- **Temperature Fluctuations**
- **Earthquakes**
- **Service Interruptions**



Figure 25

What other events do the rail carriers end up having to deal with on a day-to-day basis? Well, I've listed a group here (Figure 25). First of all, high winds, flash floods, high water, slides in terms of earth movement, temperature fluctuations and you probably don't think about that a lot living here in Southern California. I'll explain what that means. Earthquakes, which do happen here in the basin, and then service interruptions.

First of all, for high winds, BNSF is directly linked to Weather Data Incorporated and we get information from them about wind warnings. When do those wind warnings come up? Well, typically in the springtime and in the summertime it'll be related to severe thunderstorms that flow across the nation. There are other times, other geographic locations within the network that are prone to high wind, such as the Cajon Pass here in Southern California, and up in Washington State and Montana there are locations where we have high wind warnings. What happens when we get a warning that indicates the wind is going to be over 50 miles an hour? We

immediately notify our train crews that are operating trains that there's a high-wind event likely in their area. Those train crews have timetables and bulletins—track bulletins—that tell them what to do in the event of a high-wind warning. The first thing that we're going to do is we're going to have them get their train to a place that is safe and slow the train speed down so that the winds will not come in contact with the train and blow it off the rail. It's hard to believe, but a high wind can and will blow a loaded train off the railroad tracks. So our objective is to have our train crews put themselves in a safe position and wait for that weather front to pass before we continue operations. That train crew will be in direct contact with the dispatchers that allow them to tell that the weather condition has passed and they can then begin to start their operations back up.

Flash floods are another issue we're concerned about. I never thought I saw rain until I moved to the State of Texas. It rains and it fills up the gullies and canyons in a hurry and it's very prevalent on the desert areas that we traverse as well. And those heavy rains, in a very short period of time, can take a dry arroyo and turn it into a raging river. And so BNSF has gone out into those locations and we've identified where they are and, again, working with Weather Data, we identify when there's likely to be a flash-flood event. We, again, contact our train crews and advise them to slow down to 40 miles an hour so that they can be prepared to stop in the event that they do need to discontinue their trip. Those speed restrictions will remain in place until we physically have our maintenance way crews and engineering teams go out and inspect the infrastructure to make sure the railroad is still there in front of us.

We're also concerned with high-water detection because we've also got many locations on the network where we've got bridges that go over those arroyos and rivers and our detectors will go off if we have high water indications. In those cases, we will not let the train proceed across that bridge until it's been physically inspected to make sure that the footing is still there and the bridge is passable.

Slide detection is also an issue. This happens in areas where we have steep grade around those mountainous areas where there may be avalanches or cascading of

earth or snow conditions. And, again, we've got detectors out there: they're detector fences that will send a signal to our dispatching center if debris comes up against them. That will alert our signal system that stops the train from proceeding through the area until it can be fully inspected and the obstructions removed.

Temperature fluctuations can be a big problem for us. Our railroad is made out of ribbon-rail steel. You think about how it conducts heat and cold; in the wintertime the rail shrinks and it will pull apart. We have strings of rail that are a continuous welded rail and that rail will actually physically pull apart at a joint when there's a wide temperature fluctuation in terms of going colder. On a hot day when the temperature increases the rail expands and pushes itself out. And, again, if we're not careful on how that temperature swing happens, we'll end up with what we refer to as a "sunkink" in our rail or it'll actually push the track out of a straight alignment. So we watch for those wide temperature fluctuations to make sure that we're prepared and doing everything we can to prevent those wide swings in the temperature from causing a break in the rail network that we operate. And we've got some temperature thresholds out there depending on whether you're on the northern corridor or on the southern corridor in terms of how much temperature swing or how cold the temperatures need to be before we put operating restrictions in place. Again, all of those activities are labeled in our timetables and our track bulletins for our train crews and they know what to do when those conditions are present.

Earthquakes are obviously something that happens here in California as well as other areas. But here we have a link to the U.S. Geological Service. They're tied in directly with our operating center out in San Bernardino and depending on where that epicenter is, we will slow all of the trains down within 150 miles until that specific pinpoint can be determined as to where the earthquake originated. Once that epicenter is found and once we know how severe the earthquake is, we, again, have a series of things that we put in motion in terms of how far and how fast we'll operate our train network.

In terms of service interruptions, Gary talked about New Orleans. We didn't have a lot of infrastructure in the New Orleans area when the hurricane came. But we

did have a bridge across the bayou; a floating barge struck the bayou and knocked it out of alignment. That bridge was taken out of service for several days until we could get it reset and put back in place so that we could operate in and out of New Orleans. It's interesting that this many years later, we had an incident this week where a tugboat operation ran into that same bridge and knocked it further out of alignment this time than it was last time. That happened last Sunday. We will reopen that network tonight [the subsequent Friday].

Service Interruptions

- **Take care of employees**
- **Notify appropriate authorities**
- **Coordinate alternate route options**
- **Open the line for service ASAP**
- **Notify customers proactively**



Figure 26

So that just gives you an idea. It's not always weather related. Things happen that a lot of us don't control, that we have to be prepared to respond to (Figure 26). So from a service interruption point of view, our operation is not much different than what was described by previous speakers. Our first objective is always take care of our employees. Make sure they're healthy and safe wherever they are.

We also are in direct contact with the authorities to make sure that they're aware of the situation that we have and the authorities also know how to reach us and shut our railroad down if they're out there fighting a fire. And that happens frequently on our network when there's a forest fire. The firemen will be out there and they'll

have their hoses across the main lines and they'll contact our railroad operating centers and tell us where they are. And we will suspend operations so they can do what they need to do. We always look for the most direct route to get back in service as quickly as possible. If we have a service interruption, we want to get it back open to start moving those trains that are flowing through area as quickly as possible. If we don't have an alternate route, we are very good at coming back in and getting the line segment back open. About three weeks ago we had some vandals who burned a bridge down, right outside of Belen, New Mexico. That location is a double-track mainline, where we process a hundred trains a day over those two bridges. The fire burned the bridges completely to the ground, a 90-foot span with no other rail infrastructure in place. Less than 24 hours later, we built a temporary bridge and we were back in operation running trains across that 90-foot canyon.

And then we would never be successful if we didn't have direct linkage to our customers. When we have a service interruption you can imagine that we would multiply those 379 containers on one train by thousands in terms of how many customers we affect. So within two hours of a service interruption we are sending a message to our customers saying that, "We've got an outage, you can anticipate the outage lasting 12 to 24 to 36 to 48 hours and it may delay your freight arriving at destination by those timeframes." So it's very important for us to keep our customers up to date. We do that through electronic communication, messages that go to them. In the old days we used to do it by fax. Today it's all being driven by our internal computer application so that they can stay up to date and know what they need to do to prepare for that bubble of freight that's ultimately going to hit them at their destination. Thank you, very much.

Questions to the Panel

QUESTION: Yes, Mr. LaGrange. My name is Kathy Familetti and I'm a representative of the ILWU and I truly appreciate your presentation but I feel that I need to correct you on one point.

Gary LaGrange: Sure.

QUESTION (continued): The ILWU was not on strike in 2002. We have not been on strike for 36 years, since 1971. Our employer locked us out. So I need-- that's a really important point and I needed to clarify that.

Gary LaGrange: Thank you. You know, I went to the—USL's the acronym. It used to be the University of Southwestern Louisiana. A lot of people sometimes think of it as University of Slow Learners. So thanks for bringing me up to date and educating me on that. It was a work interruption, I guess, should have been a better choice of words. We have some more comments or questions? Yes, sir.

QUESTION: I'm going to direct this to Dick [Ebel]. Dick, most of the security that exists at ports seems to be directed at the water's edge that is incoming from overseas. And one of my concerns is that we do not look at landside security. You take containers out of the port but you also bring containers into the port and often-times these empties are stored wherever. Can you explain any process that you've applied to maintain the security for containers that come into the port?

Richard Ebel: Yeah, each of our facilities is operated in a way that when a shipper brings a container to us, they're the ones that are identifying the responsibility for the container. They will bring it into our gate and we will load it on a train and move it to the place that they've billed it through their bill of lading instruction. We will do random inspections of units coming in our facility with our research protection team. But we do not open every container and if there's a container that's got a load in it, we ask the driver tendering the load to open that load so that we do not put our service partners at risk when they're opening the doors.

QUESTION: I'm Ellen Johnck, San Francisco Bay Planning Coalition. Actually, just a real simple thing: the cell phones that you talk about that you borrowed, we talk of the value of communications, I mean this is really simple but how did you get them?

Gary LaGrange: We had people in other states and cities, in our case with the Maritime Administration, that had outside area codes. Rest assured in our hurricane recovery plan now which none of us ever had before, we have satellite offices located in extreme far away places like Shreveport, Louisiana that won't be affected by a hurricane. And we have Iowa, Missouri, Arkansas cell phone area codes, towers that won't be affected in the future by a hurricane. So-- but we borrowed 'em in the local area. Any others? Yes, sir, in the back.

QUESTION: How ya doin'? My name's Miguel Lopez. I'm with the International Brotherhood of Teamsters. I have two minor questions. One is I've read that at some point in history there was, like, a 30-mile natural habitat buffer in New Orleans that then reduced to nine miles—

Gary LaGrange: Correct.

QUESTION (continued):-- which really affected how Katrina hit. [Could you] give us some perspective on that? The second thing, if you could briefly mention-- you made reference to an independent contractor-driver strike. The drivers throughout—

Gary LaGrange: About the potential.

QUESTION (continued): Yeah, potential. Can you just give us a little background on that? We have that condition all over the country where you have drivers that are paid by the load and they're mostly immigrant workers. And very unstable workforce, which has some real serious security questions on how the whole system, the whole industry, has been dealing with it. We have some things happening

in L.A., Long Beach but I wanted you to give us a little more background on those drivers there, please.

Gary LaGrange: Sure: two excellent questions. I'll take the second one first if it's okay with you. The truckers, the independent truckers, by the way, we're having meetings on a three-time-a-week basis right now with them. And as soon as I get back Wednesday, we're going to have another meeting Wednesday morning. We have a good environment. They're very amicable. But by the same token, it's their livelihood. [The problem in our situation was that] it was a changeover of a terminal operator, from one terminal to another terminal, and simply put, the second terminal operator probably could have used another 30 to 45 days in preparation for that 10-day turnover. Ten days simply was not enough time for the terminal operator to get his gate—the people working the gates, to get all of his labor and all of his people into place, to get all of his equipment into place. So at the end of the day [there was also] a software package [problem] at the gate. We have optical character recognizers and as our trucks drive through, as you probably know, with transponders, and they drive through the gate roughly at five miles an hour, don't even stop now which is great for efficiencies of operation. But those efficiencies of operation were lacking. And the other part, the equipment and the manpower at the terminal operator site were probably lacking. I think we're going to have a resolution to it hopefully in short order. The second one is Louisiana was losing 56 square miles a year without Hurricane Katrina and prior to Hurricane Katrina through coastal erosion. That's been an ongoing situation. There are two major national frontiers, our national areas of significance, left in America as defined by the Environmental Protection Agency, and one is the Florida Everglades and the other one is coastal Louisiana. You're absolutely right in your numbers, and with that barrier being eroded away through a number of years, the surge of protection against any storm surge was eroded away through the years with it as well.

QUESTION: Gary, I understand your relationship with the Maritime Administration and the Coast Guard was a very productive one. My question is that in your recovery planning now and your ongoing planning, are you able to get assistance

from the federal government in developing your plans for any future incident, or are you more or less on your own working with the State of Louisiana?

Gary LaGrange: No, we're not on our own. I want to say and I want to dispel any myths. The federal government overall was fantastic in the recovery of New Orleans after Katrina. The Coast Guard, the Maritime Administration, and I don't want to lose sight of what NOAA did in terms of charting the channels, and also the-- naturally the Army Corps of Engineers. All four of those agencies were just absolutely wonderful and great to work with. We're having tabletops as Steve alluded to a little while ago. We're doing the tabletops on an every-other-week basis right now. We're two weeks out from Hurricane season, June 1st. So we have a full-court press on right now to make sure that [preparations are in place]. The Maritime Administration, as I said, that was very precedent setting to bring ships in. They're onboard not only for New Orleans but for any port that suffers from a terrorist act or natural disaster act in the future and they need to get workers back on the docks real quickly. Those ships are great floating dormitories. Coast Guard's great, every day, day in and day out working relationship. Army Corps of Engineers as well and, again, let's not lose sight of NOAA and their role in the whole effort. We've got a very good working relationship with them all.

INTRODUCTION TO THE PAUL HALL MEMORIAL LECTURE

DR. LINDA DUGUAY

UNIVERSITY OF SOUTHERN CALIFORNIA

James Fawcett, Conference Co-Chair

I would now like to introduce Dr. Linda Duguay, the Director of the USC Sea Grant Program, who will tell you about the Paul Hall Memorial Lectures. In addition to her role as the Director of Sea Grant, she is Research Associate Professor of Marine Environmental Biology, she's Deputy Director of The Wrigley Institute for Environmental Studies, and she's the Executive Director of the Tyler Prize for Environmental Excellence. She joined USC in 1999 after careers with The State University of New York and the University of Maryland, as well as with the National Science Foundation. Linda is a graduate of the University of Rhode Island and the University of Miami. It's really my pleasure to introduce my friend, Dr. Linda Duguay.

Linda Duguay

Well, thank you, Jim, it's really a pleasure to be here, and I want to add my thanks, particularly to Jim and Elizabeth for all the hard work they've done on this conference, and also to their committee. I know they've had a lot of people working with them, and to all of you for coming.

I'm an oceanographer by training, as you heard. But I think as we encounter more of this global climate change, that we may have more of the problems discussed here this morning, particularly in our seaports and adjacent coastal areas. After listening to you all, I think what you are doing is critically important.

I am particularly happy to be able to announce the resumption of the USC Series of Paul Hall Memorial Lectures. As some of you may know, Paul Hall was a legendary leader of the Seafarers International Union on the East Coast. He led the union for about 23 years. It was in 1957 that Paul Hall became President of the Seafarers International Union of North America and he succeeded the late Harry

Lundberg, a post that Paul Hall held until his death in 1980. In the same year that he became the head of the Seafarers International Union, he also became the head of the AFL-CIO Maritime Trades Department. When he took over that trades department, it was really a struggling organization, involving only six small unions. But, he built it into a very effective and active force in the trade union movement, and at his death, the Maritime Trades Department was composed of about 43 different national/international unions representing nearly 8 million American workers. He also established the Seafarers Harry Lundberg School of Seamanship in Piney Point, Maryland, in order to give young people the chance for a career at sea. It sits right on the Potomac River, an area that's susceptible to a lot of hazardous storms, and yet it's a really great place and is among the finest maritime training schools in the country. Thousands of SIU members have advanced their skills and thousands of young people as well, from underprivileged backgrounds have found employment through The Lundberg School, so it's a double pleasure for me to be associated with Paul Hall.

After Hall's death in 1980, a number of his admirers from all walks of the maritime industry sought to honor his memory in some permanent memorial. Because of his love of education and his interest in education, they thought that perhaps doing something at a university to endow support for marine research and education would be a really good fit as well as would be consistent with his own objectives. So in 1982, they proposed to establish The Paul Hall Endowment and Marine Transportation, and the University of Southern California agreed to host it. One of the first programs they sponsored was a really important one related to The Shipping Act of 1984. That Act markedly changed the maritime freight business, and shippers and carriers, and unions, sought to understand how the Act would affect them. The Act made changes in the shipping conference rules that exempted carriers from anti-trust statutes. So responding to the need for better information, the Federal Maritime Commission, along with the USC Sea Grant Program, and the Paul Hall Endowment developed and supported a conference on The Shipping Act, which was hosted in Long Beach just across the way on The Queen Mary.

In the years that followed, in addition to supporting research and education, the endowment supported an annual lecture series, and that lecture series was usually held in Washington, D.C., honoring various distinguished practitioners in the marine trades. The first lecture was in 1987 and the late Dr. Robert Friedheim, one of our former USC Sea Grant directors and a professor of international relations at USC, oversaw the series. His untimely death in 2000 ended the series for a number of years. So, in the spirit of the education interests of Paul Hall, and those that he so fondly supported, I'm very delighted to be able to reintroduce the series and will actually publish the text of this year's memorial lecture and we will provide you all with copies of that. At this point, I'd like to ask Jim to come back up and introduce our Paul Hall Memorial Lecture speaker.

THE PAUL HALL MEMORIAL LECTURE

**CAPTAIN JOHN M. HOLMES, USCG (Ret.)
DEPUTY EXECUTIVE DIRECTOR FOR OPERATIONS
PORT OF LOS ANGELES, CALIFORNIA**

James Fawcett, Conference Co-Chair

I am delighted to introduce a friend and colleague who will give the Paul Hall Lecture remarks today. He is Captain John M. Holmes. The former Coast Guard Captain of the Los Angeles/Long Beach Port complex, John Holmes is Deputy Executive Director for Operations at the Port of Los Angeles where he oversees the Los Angeles Port Pilots, Los Angeles Port Police, Wharfinger and Homeland Security Divisions at the busiest container port in the nation. Captain Holmes has 30 years of international management experience in a variety of positions that include a Chief Operating Officer, Fortune 500 executive, Senior Level Coast Guard Officer, and industry renowned Maritime Security Specialist. He most recently served as a Principal and Chief Operating Officer of the Marsec Group, a full service security consulting firm, specializing in supply chain security, technology and operations. Prior to forming the Marsec Group, Holmes was Vice President and Director of Business Development for Science Applications International Corporation where he assisted government and commercial customers in the development of technological solutions to Homeland Security challenges, with an emphasis on port, border, and military solutions. As the former Coast Guard Captain of this port complex, Holmes was at the helm on September 11, 2001, and has been credited with swift and decisive actions that ultimately led to the creation of a number of national security initiatives, including The Maritime Transportation Security Act, The Area Maritime Security Committee, and The National Sea Marshall Program. Please join me in welcoming Captain John Holmes to the podium to share his insights on business continuity and port recovery.

Captain John Holmes:

Well thank you very much. I want to thank you for indulging me up here for a few minutes and—but also for taking time out of your schedule to attend this important conference, which shines the spotlight on such a critical subject. I must say up front, again, I'm not the expert on that and as I look in the audience I can see, notwithstanding my former colleagues from the Coast Guard, George Cummings from our staff who has worked on this project here for The Port of Los Angeles and my other good friend, Cosmo [Perrone, Director of Security for the Port of Long Beach], who has a passion for this and has been one of the guys that has elevated the importance of this whole idea of port continuity throughout the country, so if you really want to talk to the experts those are the guys, but I'd like to give you some of our overall sort of port wide insights on what's going on.

I want to thank FuturePorts and USC Sea Grant for putting this event together for the benefit of all the stakeholders who are here, and who at the end of the day, represent the best interest of the public in terms of keeping our trade gateways open, both everyday and in times of crisis. Everyone here clearly recognizes that global trade drives a big portion of our economy and our ports drive global trade, and I think that that's evidenced by the recent statistic that 40.6% of all of the containers come into the United States come in through this giant economic engine, which is the San Pedro Bay Port Complex. When I'm in Long Beach I say the Long Beach/L.A. Port Complex and when I'm in L.A. I say the L.A./Long Beach Port Complex; that's the political correctness, so I've come to say San Pedro Bay. But this is a giant [economic] engine and that's how I describe it to people who have never seen it, and it's an amazing place.

But as the former Coast Guard Captain of this port complex, I have to tell you that people are always asking me what the biggest crisis here at the port would look like? Will it be the big tsunami everyone talks about, the big earthquake, does a dirty bomb keep me up at night? I have teenagers at home, so that's what really what keeps me up at night.

Of course, with so many containers, how will we ever stop the dirty bomb from arriving here? I get a lot of these questions but occasionally people unknowingly cut to the chase and simply ask, what's the biggest unknown? That question really goes to the heart of business continuity, because immediately after saving lives, putting out fires, evacuating workers, evacuating residents, and setting up a safety perimeter; immediately after doing all these things that we are rigorously trained and prepared to do in order to manage virtually any kind of crisis, we must turn and immediately start focusing our attention toward answering one key question. This question is how quickly will the port be open for business? It may be the mayor's office who calls, or the governor's office, or any one of our elected representatives in Sacramento or Washington, D.C. We can make bets on the usual suspects who may or may not call, but I can tell you for certain that our customers will be calling, and fast.

If we're looking at a landscape of mass destruction, it's going to be tough to pinpoint an accurate time frame for when the port will open back up. Keep in mind that business continuity reflects the individual efforts of each terminal operator here at the port, as they assess their damage and implement their business recovery actions. Port recovery, on the other hand, reflects our collective effort as businesses and city agencies working together to comprehensively assess, prioritize, and undertake tasks that will put this complex on track to reopening by a certain date. That's the goal, pinpointing the date, and as you know, dates can be elusive. Everyone here remembers that immediately after September 11th, many ports and all our airports were shut down out of an abundance of caution. But we all had a sense that the stand-down of the nation's ports and airports was a temporary event. So the ships en route from Asia didn't veer their course toward Canada or Mexico, or the Panama Canal.

Now juxtapose that incident with the ten day West Coast labor lockout a year later and you get a sense of how critically important it can be to ascertain an answer for the key question, when will the port be open for business? Because in the fall of 2002, we were in the thick of the peak shipping season, and as one day turned

to two, and two days turned to four, and four days turned to eight, the ships were still coming. We were all thinking, gosh this should blow over pretty soon, but it didn't for a week and a half. Because we didn't have an answer to the question of when our ports would reopen, most shippers and businesses could not craft a timely workaround strategy, and our just-in-time system sputtered at a cost to our national economy of more than a billion dollars a day. That's just the economic impact from the San Pedro Bay ports, not the rest of the West Coast ports.

The key point I want to make is that in the post 9/11 event, however tragic, we had a known variable in the equation. We got on the ball fast, we established inspection teams fast, and we had a set time that the ships were going to be delayed. Once we established that time frame, which was about six hours, and we told all the [ship] agents that you had to factor an additional six hours into your scheduling, within 24 hours we were business pretty much as usual. So after 24 hours you could see the ships waiting offshore and we had very few ships waiting offshore. If you look at the lockout I think at the maximum we had about 140 ships waiting offshore. We ran out of anchorages and we were at such an extent that we had people doing donuts in the ocean waiting for their chance to come in. But the big difference between the two events was the fact that we didn't know what the time frame was in the second, and we did have an idea what the time frame was in the first.

Incidents like these bring clarity to everything as we begin to recognize that yes, we are a port authority, and yes we are a government agency, but at the same time, our two ports are 24/7 businesses that employ nearly a million Californians and another two and a half million people elsewhere across the country. So at this point, at the Port of Los Angeles, a lot of our actions in the wake of a major incident will be driven by the need and responsibility we have to tell the world when the port will be open again for business, and our goal is to be able to answer that question fairly quickly so that our customers know whether they need to divert their ships en route. Within the Harbor Department, that means that we are refining business continuity protocols that take into consideration all the fine details and necessities we will need to restore operational continuity.

Some of those considerations are onsite. Last summer, for example, we conducted a series of preliminary exercises to stand up our emergency operation center within our headquarters two blocks from here. Our EOC at the port isn't the typical EOC; in it we include representatives from IT, engineering, construction, accounting, human relations, and communications, and if we can't utilize our Harbor Department headquarters we have remote locations where our systems can be switched back on. Our communications team can operate from virtually anywhere: their homes, the shoulder of the roadway, anywhere there is a wireless phone and internet signal. While our continuity steps are proceeding forward, our Homeland Security team is the conduit to not only the city EOC, but to the facility security officers, or FSO's at each of our major cargo terminals. So there's an immediate flow of information that helps us understand and feed site specific impacts to our team of engineers so they can dispatch teams to survey wharf damage and power outage points or to figure out how to best clear a damaged vessel or toppled crane. As I'm painting you the picture here, I hope you're seeing that the process we're wanting to facilitate is one that provides a seamless and expeditious transition from our internal housekeeping in the wake of crisis to the external related activities that we can spearhead on our customers' behalf in order to help them get their operations back online.

In a crisis situation, you'll see a full compliment of emergency responders, but you know what? When the smoke has cleared, and the people have been taken out of harm's way, and the hazard area contained, a team of bright eyed port engineers and construction personnel will be there to warm the hearts of our terminal operators. We will help survey, inventory, and report back the extent of damage to terminals and wharfs. We'll work with the Coast Guard and port pilots to survey the main channel so it can be reopened. We will dispatch ongoing communiqués to our customers overseas to help them make decisions about their cargo ships en route to our port. We'll post maps and terminal status updates on the internet crisis site. We'll basically do anything and everything we can to help our customers restore business continuity. When these efforts begin to take hold we'll then turn our collective attention to the final phase of port recovery, or more simply put, reopening the port for business.

Now, as a former captain of the port, I could spend another ten minutes summarizing that process detail by detail, but why spoil a nice lunch listening to me? I can tell you that I've been there twice and that the one thing I've learned is that reopening the port is an all hands evolution. So the one point I do want to make is that success in getting the port back in business in this final phase is predicated on knowing and working well with all the people in the room. To that end, we have an Area Maritime Security Committee that meets monthly; its membership comprises more than 20 local, state, and federal agencies. No one is a stranger in the room; everyone has a seat at the table, everyone understands the critical importance of putting this port back in business. I guess the best analogy I've heard is this: I used to say you don't want to meet somebody for the first time and ask them for a favor. But I was at another event, actually in Melbourne, Australia, and the guy says you always want to learn to dance before you get invited to the dance. So I think it's the one point that's been critical and very successful here, and a great credit to the folks at the Coast Guard, is the wonderful relationship [that exists] between all of the agencies, who, although we bicker a little bit within each other, the guys at the Coast Guard sector brought everybody together and we feel very well prepared if something happens, that at least we know who to talk to, and we know who to ask the favors of.

I could end by telling you we've got everything locked and loaded on the subject recovery and resumption, but the truth is, we never will. We'll always be assessing and reassessing our needs and capabilities based on terrorist acts and the related threats that surface, and we're learning from catastrophe scenarios like Hurricane Katrina. It's more of a continuous process than a project you complete, and a document and a manual that you hand out and then stick on your bookshelf. We only improve by testing our readiness and recovery capabilities. For example, later this year, for the first time in our port's hundred-year history, we'll be orchestrating a major crisis drill, complete with a terminal incident, emergency coordination, even a community evacuation component. Of course we're going to continue to conduct internal EOC stand ups and recovery resumption drills. In closing, I want to thank

you for your time today, and thanks again to the folks at FuturePorts and Sea Grant for bringing this all together, to share knowledge and experience on this important topic. Thank you very much.

