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**PRESENTATION BY MICHAEL GALLIS TO THE FLORIDA
SEAPORT TRANSPORTATION AND ECONOMIC DEVELOPMENT
COUNCIL**

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Thank you, gentleman – is this microphone working well? As John mentioned, it's always a pleasure to be back in Florida. It's where I took my first job out of graduate school, down in the South Florida area. It's where years later I came back to be involved in the Orlando area. And it's always a pleasure to be back in the state. Before I came down today, I wanted to kind of look at some basic statistics to give you a picture of where Florida is today. And, of course, statistics are always years out of date. But it's interesting. The State is the fourth largest economy of the 50 states in the United States. That's a big number. But its per capita income remains below national per capita income. Three largest economic regions in the state, Miami, Tampa and Orlando, rank 11th, 21st and 30th; which are among the largest in the country. But Miami, at 11th, its per capita income ranks 326 out of 335. Tampa, at 21 per capital income ranks at 178. And Orlando, 30th largest, ranks at 256. So certainly the issue for Florida – it's not only the issue of jobs, but the question of the kind of jobs we are getting, and the delivery of high quality jobs.

To give this some context, and, of course, the role of infrastructure in the support of economic activity. Ever since we created a DOT in 1966, we developed a set of metrics for performance of transportation infrastructure, which was solely introverted and performed within the system. So we measured congestion, capacity, safety issues. But transportation used to be part of the Department of Commerce, Department of Agriculture, the Post Office, the Military. And in that, it was conceived as serving another purpose. And as a result, when we created DOT, we began to develop internalized metrics of performance. We lost the connectivity to the externalized condition for which it was set up to serve; which is the development of the economy, the patterns of urban growth, the development of agriculture, et cetera, which have all now been lost.

To give us some context on where we are today, I would like to speak about the fact that we are living in the midst of the greatest revolution in human history. We entered this period 16 years ago, and I call it The Greatest Revolution, because historians looking back at the early 19th Century referred to it not as an Industrial Period, or an Industrial Age, or an Industrial Stage, they called it the Industrial Revolution. And the reason they called it a revolution was not because the technology of the steam engine, but what it did to human society in terms of growth of cities, the economic behavior, international relationships, global trade patterns, et cetera. It completely transformed our way of life. And they said you couldn't describe it simply as an industrial age, it was a revolution.

Well, today I refer to this period as the Period of the Global Revolution, because it was formed by the collapse of the Soviet Union, sweeping political forces swept across the world, at the same time introduction of new technologies, which created – like the movie – the two big hurricanes that moved across the world producing waves of unimaginable size. When we look

at these changes – and you can read about them every day in the newspaper – we put them into three large categories.

One, the integration of the global network. That's the way we move people, goods and information around the world. And today we have this discussion about, you know, transportation is not just about moving people, it's about moving goods. I would say that when you think of the global network, you have to think of people, goods and information. But the way we have come to think about transportation is so much about the drive to work, that we forget that there is any other end kinds of movements taking place within that network. And, in fact, that there is only one transportation system, and it's the worldwide transportation system. When I spoke before the – I won't give you the long name – the short name, the Transportation Commission, it was just formed by the President to look at surface transportation in the country. And I said, you know, if you think the United States has a transportation system, you are making a fundamental mistake. What you have to realize, is the world has a transportation system, and the United States is a sub-component of that system.

And we are here to talk about surface transportation, but unless you talk about airports and seaports and how that whole network works, you will not see the United States, which is a sub-component of a global system. And if you invest in it as a sub component of a global system, you will do different things than if you think it's a system in and of itself. I would say that's also true for airports and seaports, the roads, rail, et cetera. If you look at them as things into themselves, you invest one way. If you see them as components of broader systems, you see them entirely in a different way.

So the first one, integration of the global network. Second one, a new global economic geography. We used to have an ideology about communist world, trade. Now we talk about trading blocks, economic regions defined as market space, not as political units – and we will talk more about that a bit later. The third one is the new economy. They used to talk about new economy and old economy. Now it's clear we are in a new economic age where the new economy and old economy are merged into something quite different than they every were before. How are we responding to this? Well, the private sector is having to respond to this, because if you don't respond, you are not going to be in business. But the public sector response has been very ad hoc, very situational, very opportunistic, and essentially incremental – very reactive, not proactive.

I am going to break for a minute to tell a story which I think will be germane to this presentation. I always ask the audience and the people at hand if anybody has heard the name Ch'ien Lung, if that's a familiar name to anybody. And then I ask has anybody heard of Genghis Khan, and everybody has heard of Genghis Khan. What's interesting, because Ch'ien Lung was the emperor of China when George Washington walked up the steps of the courthouse in Lower Manhattan to become the first President of the United States. And what most people don't realize is that China was the richest and most powerful country on earth when the United States was formed as a country. We have so come to think of China as kind of being a third world country, digging itself to second world status challenging us as the world's largest economy for the first time. So, surprising that we forgot that actually China was the largest, most powerful and richest country on earth.

It was Ch'ien Lung who didn't want to trade with the British, after all they brought cotton, and he had silk. And they brought wool, and he had cashmere, and he kept wondering what was all of this low quality junk, and he wouldn't buy any of it. He did like clocks, though, and he bought a few of those. But everybody knows, and Ch'ien Lung is known as one of the five or eight greatest emperors in Chinese history. They took a big dive after that and only now are recovering. But everybody knows Genghis Khan, and the germane part here is we think of Genghis Khan as a barbarian that devastated and killed so many people; created the biggest empire in the history of the world. But Montgomery, in writing his history of warfare, 20 chapters, half a chapter goes to Genghis Khan. And it's not about the lightning warfare, it's about something else. It's about, in the 13th century, Genghis Khan was the first general in history to send spies out hundreds of miles in front of his Army, months ahead of his movement. And he wanted to know, not only what the Army was, how big were they how were they armed; who are were their generals, et cetera; where were they located. He wanted to know everything about their civilization. He wanted to know about their cities, population, religion; the food they ate; what they worshiped. He wanted to know everything about them and their position. It's in military terms called long-range reconnaissance. And when it come down a lot to that about long-range reconnaissance, knowing the landscape that we are in. Not just knowing his own Army; how many soldiers he had; how they were armed. He wanted to know the entire landscape.

Now, what does it take to develop strategy? Well, you have to first know who you are. And many times, what we found in regions where we worked is that people don't know who they are. They think they know who they are. But they are working on old perceptions. And many times, the first thing we do is take inventory of what a region is with the people, and looking in 12 different systems; transportation, economic development, education, environment, et cetera. Because regions are just like the human body, they are made of systems. And so instead of skeletal, muscular, cardiovascular, you are talking transportation; you are talking infrastructure; you are talking economic education, all systems.

And systems affect each other. And so transportation is not just a system in and of itself, it's a system that affects all other systems. Now, when you know yourself, rarely do people in a community actually sit down and go, well, what's happening in transportation; what's in economic development, to really do that kind of inventory. Second of all, the question is how we got here. Today, in fact, we were talking about certain things we did a long the way that now lock us into what we are and where we are going. So it's important to know what we are, how we got here, and then the question is where are we going. And to most people, that's a strategic plan. But the other one is where is the world? How did it get here? Where is it going? And the question is, are we going the same place as the world, or is the gap getting wider or smaller? And the question of strategy is how to answer the question of where we want to go. But without knowing, like Genghis Khan, that landscape of the world, it's hard to know whether we are doing the right thing, the wrong thing, or what is happening here.

In the end, we have to define our niche. Because if there is one global network, there is one global market space, and each of us occupies a niche within that. And from real estate activity, you will quickly learn that sub-markets that understand their niche and invest in maximizing the potential of their niche do well. And those that try to be something other than what they are fail, and don't perform well. So knowing your niche, and understanding that you are a sub-market,

just as the U.S., as a nation, is a sub-market in the global economy, and that we are then sub-sub-markets, shall we say, within that, to help us define are we that.

Questions of leadership arise. Not only who is leading, we are developing new strategies, but who is involved; what kind of consensus have we built; and then ultimately what's our implementation strategy? If we don't have our strategy understood up front, how we are going to take action, then there is no point in starting. Now, today I am going to use the images heavily, because we like to use a visual language, and I am going to take you through various images from different projects we have had, I think, that kind of paint this picture. Now, the way we do these typically in projects, we would stop on each one and have a discussion. And since this is a small group, I encourage you, if you have a question, please raise a hand and we can stop or clarify any issue along the way. I want to point to the title here, Nations, States and Economic Regions – now, nations and states are political units. Economic regions are market-driven units. They are not defined by political boundaries. They are something else – and Ports in the Global Network. What's the whole of ports in these nations, states and regions?

Now, three basic questions arise as you begin any one of these discussions. Where is Florida in time? And that is where it is in its evolution? Is this just another year, another day, are we just – or are we at a point of change of thinking in Florida? The second is where does it exist in space? And that is where does it fit in the global network? If there is such a thing as I described, where are we in that? And then what is the role of the ports? And how do they affect the State economy?

Now, this was a project we did for the State of Connecticut and it illustrates basically those issues. We developed a visual language that's to describe the urban networks that have arisen in the late 20th Century. And you can see there Boston. You see there New York. You see Hartford/Springfield. Those are the yellow lines. You see little dotted lines we call connecting corridors that link together and have grown up across that geography. The dark area is the State of Connecticut. That was shaped in 1636 as a British colony. 150 years before the United States was created. That state is older than the United States. Now, look at the relationship between the political unit and the urban economic networks. And you see the fundamental problem we face today between what I call political space, defined by jurisdictions, where the issue is to cut me off from the next guy. I am elected by these people. They pay taxes. I represent them. And on the other side of that line, there is someone else elected to do that. And that's a dividing line that divides us. But look at those networks. They political units, then we lack the units and the description of the actual behavior of economy and economic space we need to be effective.

How does that unit in that dark area govern a chunk of New York, a piece of a network that goes into Massachusetts, another one that crosses the border into Rhode Island? So here we have two things; urban economic networks, political space, two different things. Which one are we making decisions in? In the political one, or in terms of urban economic networks. We talked about global revolution. What has changed? Integration of the network, new geography, new economy. I won't go back through that, but I will discuss this. In this new world – and I like this definition a lot. Did everybody read this one? Definition of insanity is doing the same thing over and over, and expecting different results. We created bureaucracies in the 20th Century, the American Century, and it was so successful. Now we are in the 21st Century, and we seem to be peddling the same boat in the same way, wondering why it isn't producing different of results.

Well, you can see, after 1990 we began to get evidence of this. GATT posed to create new world order. The first time we had world maps, and not just free world. You can say NAFTA, JAM, Mexican – we are talking about the trading block. Rise of India, trading block as a nation. Make room for a sea monster – remember that? That's the first 6,000 TEU ship, 1997, entering Charleston Harbor. We all thought that was unbelievable on the oceans. We know today ships twice that size within a decade moving cargo around the world. Then we see mergers. And I bring that up because the new economy we think of technology, but it's a globalization of the market space; the integration and merging of business units into super global corporations.

You have heard of the book *The World is Flat*, and you have talked about in sourcing and outsourcing. To me that's kind of nonsense. What we have transformed is something called factory earth. It is simply business doing activities around the world, looking for the best place according to resources, labor costs, market access, transportation hubs of where to do what on a global basis. Whether it's in or out of any specific country is really immaterial to these new global business units.

After the 2000 tech collapse and 9/11, we got things like this. Time to reassess. Redrawing the map. New trade routes emerge as globalization spreads. ULI on real estate and technology links. And that little one down there, Cisco System, e-hub concept of how they are distributing and sourcing globally in new configuration, and how that has affected that. Now, for globalization, just quickly. Most people understand it. They don't understand how long ago it started, when Alexander got to India, and Europeans, for the first time, saw silk, something grew up called the Silk Road. And you can see along that Silk Road there are yellow dots that where the key hubs and points, and some of them are port cities; because the Silk Road was not only a land route, but it was also a set of sea routes that hugged the coast. And when the Romans conquered Egypt, they took over the trade routes down the Red Sea. And can you imagine the sight of this, as many as 200 and 300 Roman ships used to go down the Red Sea, cross the Indian Ocean to India, some went as far as Indonesia in the search for silk and spices.

Now, what interested me was that it's called the Silk Road because that's what the west got from Asia. But what were on those Roman ships, because they weren't giving the stuff away for free, even in those days. Anybody have any idea what the west was trading to the east for silk and spices? It took a lot of research, because most of the books just talk about the silks that came in, et cetera. Well, it was primarily two things, metal. It was silver and gold. And it drained the Roman Empire. And one of the reasons for the collapse, the empire went bankrupt in the trade with the east, and we will see this again and again throughout history. Now, the importance here is that the Silk Road lasted all the way until Columbus' voyage, and Vasco da Gama, around the tip of Africa when oceans became the primary movement of goods in the world. Now, in this transition, there were huge shifts of wealth and power. And if we are living in one of those periods of transition, there is a shift of wealth and power going on around the world, and also inside the United States. And we will look at that now, does that affect our state?

Well, here you can see clearly, England, in the Silk Road days – I will go back to that – was a foggy little island at the end of the Silk Road, who wanted to go there? That was, you know, across the waves, it wasn't in the center of anything. But when the trading pattern of the world shifted, suddenly England is the gateway to the world trade. Now, what they did well is they understood that change and took advantage of it. And I call it the seven jewels in the British

crown. What are the seven key points that allowed the British to control world trade for 250 years and become the richest country on earth? Now, you look at it, London, Gibraltar, Cape Town, Bombay, Calcutta, Singapore and Hong Kong. With those seven key points, British could control the movements across Eurasia, and, in fact, dominate that trade. That gave way in what we called the Age of Steam, the Industrial Revolution, the first mechanized movement of railroads and steamships, time zones. Now, the coordination of time and space. The first new economy of steel and steam that created a worldwide linkage pattern.

Now, interesting little story here, St. Louis and Chicago. St. Louis, the biggest city in the big west. It was secure. It was on the Mississippi. The railroads were coming, they are noisy, they are smelly, and they are expensive. Who wants to waste money on that stuff? With Chicago desperate for transportation, it invested in the railroads. The rest is history. Chicago became the greatest city in the Midwest. St. Louis paid to catch up ever after; never did catch up. The question was, and it raised an interesting issue today on transportation investments. We have all kinds of formulas to show what is the benefit of transportation, we have cost benefit analysis, it shows we put this money in direct and indirect. But let me look at the issue of St. Louis and Chicago. How much was it worth to Chicago, at a period of global change, to have invested in railroad? Could it be measured in any formula about direct or indirect? Was it worth billions or trillions? Was it the aggregation of all the economic activity, cultural activity that flowed into Chicago as it became a transportation hub is immeasurable in dollars? The effects were so profound of creating an infrastructure that supported its economic development, and supported anchoring its location within the global network – and I would use the term positioning itself in the coming global network, not anchored in the past network. And the issue is, if it's changing, are we making the strategic investments to position ourselves as this monumental shift takes place in the network all around us?

The next big shift came with the internal combustion engine. We began to develop road and air networks. But the Soviet Union became a communist country, and the global network became divided into two pieces. And you can see the air routes over the poles through Anchorage, because you couldn't transfly to Soviet Union. And we get new cities, like Miami, LA, Atlanta, the Sunbelt cities start to rise to prominence. I call them the interstate, international airport cities that grew on that infrastructure. And then comes the age of high tech, we call it. It really should be called the age of the chip; which was really global communications and information processing by surface cable and satellites that allowed global management and global business activity. But China, Southeast Asia, Eastern Europe all became part of the communist world, the world that was even more divided. And I bring that up because it sets the stage for where we are today, the enormous shift. If the world was divided up until 1990, then the reintegration of the global network and then we created an abstract of global air routes, sea routes, roads, rails, telecommunications, what we call the global network.

And within this, you can see the bright yellow dots, the principal global hubs. And then you see the lighter dots, the secondary tertiary hubs within that. And you can see why, in this configuration, it's not only a question of the economy of nation, but the individual economy of regions, because they are directly connected to the global marketplace, and economic activity flows through those regions. And one of those in Florida being Miami – the three big hubs on the east coast, Miami, Atlanta, New York; the two big ones in the Midwest, Chicago, and Dallas, Houston competing with Dallas down there. On the west coast, clearly San Francisco and LA –

Seattle, we show it, but really is much smaller than the other two. When we talk about the new geography – the old geography was this.

And many Americans are still living in this diagram, where the U.S. is in the center of the world, New York is the financial capital, Washington the political capital, all trade routes converged on the U.S. And you can see here, Europe was coming in to the northeast. The Mediterranean trade which is minor, out of the Middle East, coming out of the northeast central states, and of course Florida benefitting, Latin American, Africa trade coming in from the south. Latin American trade on the west coast into LA, and you can see Australia, Japan, et cetera. We are flanked by communism. And when you realize this is the American Century, you say, thank God for communism, it was really good for us. We ended up in the middle of that map.

But when that fell, the world turned into a system of trading blocks that looked like this. And the fastest growing sea route in the world we know was called the Suez Express out of Southeast Asia, south China, across the Indian Ocean, up the Red Sea, across the Mediterranean, and that rotation bringing Asia goods directly into the east coast. We all know the growth of Charleston, Savannah, New York, has all been driven by direct deliver of Asia goods into those ports. And then a second route, called the all-water route that was Transpacific Seven, by Maresk, through the Panama Canal, delivering also into the Gulf and into the southeast.

So new trade patterns connecting these trading blocks. And when we look at this, are we clear about the market dimensions? Because in talking to – of the United States relative to the world – because in talking to the Transportation Commission, I said, look at this map. What do you notice? It's not England that's the island nation - it's the United States, North America, that is the island nation in a global economy. We are the ones separated from the rest of the world marketplace by two oceans. The only way you get there is by seaports and airport. And if your surface system doesn't integrate with your airports and seaports, you haven't got a functioning economy and every problem in there is a cost to a product or a service in the United States, whether you are stuck getting in traffic to an airport, or whether a truck is stuck in traffic and can't deliver, that's a cost to this country. And our infrastructure was created in a different age, for a different purpose, it was not set up for a global age. And we are not investing in it at a level we need to be competitive within the world, that is globally.

Now, let's look at what the real relationships are. If you took all the Americas together, North and South America, Central America, Caribbean, throw everything in, you are under a billion people, represents only 13.7 of world population. In fact, all of North America is under seven percent. The United States, by itself, under five percent. Where is the rest of the world? Where is the other 5,590,000,000 people? Eighty-six percent of the world is in Eurasia, which you can walk from end to end, from top to bottom, by road, by rail, and use sea and air to connect that. That's the dimension and importance of our ports and airports in reaching world market space. Now, here we showed the Pacific Rim, because people think the Pacific Rim is California, but we showed it from the west coast to Mexico, clear up to Prince Rupert on the west coast and Canada, and then you got three by air into Chicago, Detroit and Toronto, and then it starts by the sea up in Halifax, and wings its way all the way down to the Gulf Coast ports. The Pacific Rim is really a gigantic arc by which goods are delivered by sea and air to every edge of the United States. And so we got to begin to think of Florida as a Pacific Rim state. Do we think that way? Do we think we are a Pacific gateway ports; and that we are also Pacific gateway regions?

Well, the world in 2050 is going to look about the same. The world population is estimated to grow by 50 percent – let's hope – as much as 100 percent – it's going to be kind of devastating. But let's say at 50 percent – but the percentage and our market position will stay the same. We move the Pacific into the center of that map, rather than the Atlantic, because of economic relationships.

Now, what is the shape of the future? World Bank, okay, world economy to grow 33 percent between 2000 and 2010. Increasing from 30 to 40 trillion. Now, think of this, it took 2,000 years for the world economy to get to 30 trillion - 2,000 years. In 10 years, it's going to get to 40 trillion, and past 40 trillion in four years. The massive amounts of capital, and if you want an estimation – when I talk to environmental groups, I say, the real issue is not the deterioration of the environment as a treasure, it's really growth of global economy, because it can only take place in conversion of resources, conversion of energy, et cetera, to produce that economic wealth, how are we going to do it?

And while the world population may grow by 50 percent over the next – by 2050, it's probably going to grow 400 to 700 percent – we couldn't put 700 on there, because it's just too ridiculous when you look at the projections. But the growth rate that we have just experienced has been awesome and will continue. And the question is not that will the economy grow? The real question is what part will Florida have of that? And what part of that spectrum, because when you talk about markets, you not only talk about geography or location, you also talk about market sector. Are we going to have the high end of that market, or are we going to have the bottom end of that market? What part of that market are we going to have?

So the world economy between '90 and '99, you know, that kind of was that wonderful 10 years of bliss when everybody was going to retire a millionaire, our portfolio was all going up before the tech collapse. And the U.S., in '99, was the world's largest economy, and North America was the largest trading block. Those circles at the top show you the size of the trading block. So U.S. was dominant, North America dominant, followed by Europe, 29 percent; Asia 23 percent.

By 2004, European economy had passed the U.S., and was still slightly less than North American economy is now larger than the North American economy. The Americans wonder why the Europeans aren't going along with us on everything. They are actually a bigger economy. They have their own role in life, and see the world their own way. Asia got a little smaller, because Japan's implosion offset China's growth, and Asia really didn't grow as a trading block - that is now changing.

Economic projections. When I was talking to the Transportation Commission, I said, you know, what's your sense of imperative? You know, Chicago and St. Louis, what's your sense of imperative? You know, St. Louis was standing around until it became so obvious they had to do something. And by that time, it was so obvious, but it was too late. So if you wait until it's obvious, that means you are waiting too late. And here are the projections – these were done by Goldman Sachs. And people don't like doing long-range projections, well, they did this as kind of an academic exercise, and said, well, let's try it out to 2050. U.S. and E.U. China is the red line. They cross in 2041; China will be the world's largest economy.

But in 2005, China redid its economic analysis. They had a bureau called the Bureau of Economic Analysis. And like ours, it works on taxes. And since it was a communist country, they hadn't got a tax system in place. They weren't able to value all their economy. So in 2005, for the first time, they valued services. In one year they went from the seventh largest to the fourth largest world economy. That trajectory changed, and China could pass the U.S. as early as 2020, 2025. Now, the World Bank has a third number called PPP. And that's Purchasing Power Parity. And that number says, "What will a dollar buy in China versus what a dollar buys in the U.S.?" By PPP standards, China will probably pass the U.S. in 2011. So you are living in the last four years – and maybe three years – when the U.S. is the world's largest economy.

How is that going to change all the global market formulas? How imperative is it? Now, we know big scale infrastructure is 20 years. 20 years from the time you conceive of it. And if we knew what we were doing in this country, right now, and started, it would be 20 years, which by my simple math says 2027, which is already as many as two or seven years after China will have already passed us to build an efficient infrastructure. And on a PPP basis it's 17 years late. What have we been doing for the last 15 years? I call it the kind of fat and happy syndrome. You know, we are the biggest, so it's supposed to just be that way. You don't work to keep it that way. You don't think strategically. Real issues out there.

How is China doing it? You credit Ronald Regan with the collapse of the Soviet Union. They tried to outspend the United States, they couldn't do it -- they collapsed. You also should give them credit for a second thing, and that's this, China's modern economy; because the Chinese didn't try to spend their way out, they took the Genghis Khan approach, and they created this program called 863. In 1983 – and that's a three in that – four scientists wrote to Deng Chow Ping, and they said, if we don't -- in the face of Star Wars, if we don't develop a technology-based economy, we will not be part of the 21st Century. By '86 China had formulated a policy – Deng Chow Ping made it the number one in the Central Committee, and what did they do? They went out, divided technology into these eight areas and 30 subareas, and they did a study around the world. You know, when I was saying just knowing yourself is not enough. They studied around the world. How far was each of these technologies? Who were the scientists? Where were the laboratories? How much money was behind it? How fast was it advancing? And when they finished, they had a global technology map. And then they did two things. They said, what resources do we have, because even if this is happening, unless we have the scientists here, we can't link to it and make use of any of that. So we have to develop an internal program. And second of all, what are the private sector companies? What are the resources, internal resources of the country? And what are the military implications at every single one of those technologies?

So China's rise to world power has not been because there is a bunch of hard working, little busy beavers working for low wages. It is simply the best organized state policy framework that exists in the world today for economic development. And guess what, when you look at their infrastructure plans for roads, for rails, for air, for sea, they have one purpose in that statement, and it's not the ride to work. It is support the economy of the nation. Support the economy of the nation. Very clear what happened here.

MR. LACAPRA: Michael, is that their imperative?

MR. GALLIS: That is the imperative. And that's why it exists. And so when you look to 2050; Europe, which was over 30 percent of the world economy, will shrink to about 16 percent. U.S., which was itself almost a third, will be about 22 percent. We will be a big economy. We are not go ago way. Asia, India and China together will be 46. All of Asia will be more than half the world economy. And that's a look at the future. So when you look at population growth, those are the two lines at the bottom, the pink and red line, that shows 50 to 100 percent growth. Economy shows 400 to 700 percent growth, and what does that mean for freight flows? When you do traditional planning in transportation, you look at population growth issues. You know, the TAZ's, and all that they use. And that's all good stuff, but what does it mean that the world economy is going to grow by 400 percent? Do you know how much freight is going to be moving through the world network? That means the real issue is not a population issue, it's a global economic growth issue that is going to shove more freight.

And the world economy becoming more integrated means that more components and pieces will move through more parts of the network than ever before. And we all know that our big scale infrastructure is locked, not well connected to the surface system, not well connected to the other components, like airports to seaports, et cetera, in such a way that we have a highly eccentric system that has all kinds of costs at all steps within it. And that the two systems, the freight movement system, and the passenger system, are fundamentally in conflict with it, because freight was a small component, and when, on the same roads and rails that we run passengers on, and now with a dramatic growth in freight it is running interference with the passengers, and people are saying, what are all these trucks doing on the road? You got a big problem. And this is global infrastructure. And we put down on this map every place we could find European Union, China, India, Soviet Union, even the Soviet Union, Russian Federation, who was thinking on a trading block scale. And guess what, we don't have anything in the United States, because we don't even have a national policy, number one.

Number two, we have no relationship in infrastructure with Canada or Mexico. They are doing what they are doing. We have no coordination as a trading block. We left it blank. You know, we said we are one of the only trading blocks in the world. South America is in the same boat, little solace to us. But know we don't have a trading block point of view. We don't have a concept, because we don't even have a national idea of where we are going. This is energy. I just put this in, a lot of talk about energy. This is consumption. And again, by trading block at the top, 30 percent in – North America consumes 30 percent of global energy, produces about 17 percent, U.S. we produce under 50 percent.

But the real key issue is look at Asia. Look at Asia; 30 percent also, but produces less than 10 percent – less than a third of their energy. Wonder where the competition for energy is going to be in the future? The dramatic conflict and dramatic competition for energy will not be because we are too dependent. It's going to be because Asia is too dependent. Huge, huge issue. So what we are looking at in the future, on a global scale, it's going to be three big trading blocks.

This is for a project we did in Manhattan about world financial centers and office space, looking at where they were. But what you're going to see is three big trading blocks in the world, each one pursuing their own goals. And the best I heard was a gentleman – the Ambassador from New Zealand, who talked about what New Zealand did after it went broke back in '94, '95, I believe. He said, you know, we were the richest – one of the four wealthiest countries after World War II, along with Switzerland, United States and New Zealand. I didn't know that. He

was up in Maine and talking to people in Maine. And he said, you know, your problem is only you complain too much. He said that's what we did until we went bankrupt and we hit bottom. We couldn't complain about it anymore, we actually had to do something about it. He said we realized three fundamental things. Number one, no one was coming to help us. No one was coming to help us. Big realization. Two, we did it to ourselves. There is nobody to blame. And, three, we are the only ones who are going to get ourselves out of this problem. And so if we don't find a way out, there isn't a way out. He says your problem up here in Maine is you just complain too much. He says, wait until you hit bottom, then you will actually start doing something. And his comment was, you complain because you are isolated up here in Maine. We talk about Florida being – the Panhandle stuck out at the bottom here, the peninsula. He says, you know, our two primary customers North America and Europe are 12,000 and 10,000 miles away. We would love to be where you are; you are right in the market. Now, what are the issues that are going to shape the future?

Number one, put the changing patterns of global trade. Are we clear about that, our long-range? Second, energy, economy environment. Huge issues. We could talk about that the rest of the day. And institutional framework; ownership policies, regulations, investments, benefits, all – what is the framework that we operate in, it's certainly complicated. I want to go through a few here on North America. I want you to look at this map really closely. You know, I showed that first slide of Connecticut, I showed the networks. Look at this closely, and what you will see is bright dots of lights. Those are the economic regions. You can see South Florida, Central Florida. You can see Chicago, Minneapolis, New York, they are easy to see. But if you look at it, especially Dallas is a good example. Look at the corridors. You can see them clearly across that map. It's not random dots of lights. It's actually centers. Those are the economic regions, and then the corridors that come out from them.

Let me ask you something as you look at this. Where is the Canadian border? And I thought for sure the difference in development of Mexico and U.S. would show up. Where is the Mexican border? Where is the state line? Who cares where it is? That's not the pattern we live in. This is the pattern we live in. These are urban economic networks. This is the net work world that we operate in that we are connected to. When we look at what's taking place in the United States, we talk about the NAFTA corridor. For the first time, a vertical linkage pattern that goes from Montreal through Toronto down to Michigan, midwest into Mexico City. We did this diagram for a project in Detroit. And this was driven not by the transportation folks, but rather by the companies in Detroit that were looking, the big autos and the other companies, looking at infrastructure they needed to compete in the world economy. And we didn't have any blue lines coming out of Mexico representing seaports. And they said, no, you got to put those two blue lines there. I said, "Why? There is not enough activity there." And he said, "Look at the width of Mexico." He said, "If you have auto parts in Mexico City in Mexico, you could get to either, go all water Europe and all water Asia, and go North and South America, and the geometry of the new global economy, Mexico may end up as the auto parts depot of the world." I never looked at it that way, it changed market space. Suddenly you can see the importance of the Caribbean, the reactivation of the Panama Canal, how it's potentially going to reposition us within this entire network.

Now, when you look at population, distribution in the United States, you see 60 percent – these are the top 100 metropolitan areas, 82 percent of the U.S. population lives in them. Look at the big concentration. Canadian population, 70 percent of that up in the Toronto Montreal area, the

upper northeast. Look at the southeast, kind of scattered smaller, and then the huge concentration here in Florida. That's one of the reasons I say, you know, what a great asset, people come down here, how to build value in Florida. How to build value in Florida. It's a place that people love to come. People love to live here. How do you build value? And then, of course, west coast is Mexican population, of course, to the south. Very little population up to the north. It's kind of a big diagonal here. And this is the size of the metropolitan economies. These circles represent metropolitan economies. And yet we live in the southwest with this idea the Sunbelt, oh, my God, all of this growth, and it was great for real estate. That's why so much of the wealth in the southwest is in real estate, and how they exert such an influence in southeast states.

Look at this map again. Where is the largest concentration of economic power in the United States? It's still the northeast and upper Midwest. It's still – it was that half full, half empty phenomena. Everybody up there was a rustbelt. Remember it was all dying off. Look at the size of those economies, Boston to Washington, \$2 trillion, \$2 trillion economy. It's bigger than that today. The rest of the upper Midwest, a trillion and a half. You got almost three and half trillion in the largest metropolitan areas in the upper Midwest. And then look at Atlanta – you get to the Carolinas, and then you get to Atlanta. And then you get this concentration all in Florida, all in Florida. We are like an economic island into ourselves. And as we talk about that, the fourth largest state, large metropolitan economies, but low per capita incomes. Value creating value.

Now, in the face of globalization, an enormous change is taking place in North American infrastructure, U.S. infrastructure, by this map. You know, the U.S. in the 20th Century was set up as Midwest outbound. And the headhaul was outbound, and the backhaul was inbound. And that totally changed in the late '90s, where the headhaul was now inbound, and the backhaul was outbound, as the manufacturing shifted around the world, and suddenly we had an entirely different flow pattern. You know the number one issue I said was changing global trade patterns? So suddenly Chicago now is a throughput city. It's not manufacturing goods out. Now goods have to go through Chicago. They are talking about that great plan for the railroads, a billion six to connect the railroads, never had to do that before. Five billion dollars into O'Hair Airport. We are talking in Chicago alone somewhere around \$10 billion in just transportation to straighten the place out. And you notice that there were four big transportation Continental hubs initially. There was Chicago, St. Louis, Memphis and New Orleans, where the east and west coast systems joined.

Today we only show two diagrams. Two points -- Chicago and Memphis. And, of course, there is Atlanta and there is Dallas. There is actually three in the southeast that kind of work that way. So it's not only the growth of the ports, which have become extremely important now, because suddenly those that were the vast volume of global trade move. Air handles high value cargo, lightweight high value fragile. The sea moves everything else. And the huge importance of our seaports. Now, let's overlay those two diagrams. And what you see is an after corridor overlaid on to this new port structure, and suddenly you can see why the Gulf ports, especially Houston so well positioned to serve that NAFTA corridor, and to serve right up through that corridor. And suddenly the Gulf, which had – really had no traffic for the longest time. Suddenly the Gulf is starting to become an important point in the global trading networks.

Now, these are the kinds of maps that are standard used in transportation planning. These show congestion. This is highway congestion. That's the red spots, okay. And when you look at this – and then you have the one here is trucking congestion areas, all right. And then this is rail congestion areas. And the idea of transportation planning – and I daresay we don't have any transportation planning; what we have is engineering studies – if you follow the red, right. You follow the red. You know, wherever the red is, put some money on it.

And so, you know, we look for congestion, we look for safety, and we put the money on it. But will that solve this problem, the change flow in the global network and how it's affecting North America? If you just put the money on the congestion, you solve this -- which is when you take where the growth is going to be in containers. LA, 10 million, we know it's maxed. It's supposed to go to 40 million. What are they going to do with 40 million, dump them in the ocean? They are going to have to go someplace. And what it's going to do, it's going to flood the surface system. The railroads don't have enough lines to move those goods. The highways, there is not enough space to move those goods. And the inland distribution centers are not set up for that.

Now, in talking with Sealand Maresk with the Transportation Commission, looking at the big picture, they finally did bring the seaport people in, which was nice to think they brought the ocean shippers in. And they said, "What we do in America today is we don't work within the system, we work around the system." That's good news. The system doesn't work for us, so we have got to work around it instead of inside it. And so you look at this, and you say, "Where is the national policy," because it's not just responding to the red, it's responding to the changing configuration of the trade flows, and what's happening within the trade flows, and then becoming strategic with respect to where it's going. How do we respond to it? How do we capture it? How do we capture high value for Florida?

So I say this – when I was talking to Lisa Albanese, she's the director of Fed Ex solutions, they are the ones who work on supply chains with companies, et cetera. Her favorite phrase she uses in marketing is that is absent a plan, one will be created for you. Create one so you are not forced to deal with the one you did not create. This applies to a lot of scales, to us as a nation, and to our individual infrastructure and the regions. Are we creating the plans, or are we just responding to what others are doing, and we are trying to somehow react in the best way we can? So, what we got in the United States, we have all kinds of super regional groups coming together up in Atlanta, the Canadian provinces, northern New England. We have [pin one?], the Canadian provinces in the northwest states; the NAFTA corridor; the NASCO – the North American super corridor. We have individual groups all popping up trying to say, "Hey, let's find a solution because there is no national policy, and unless we take it ourselves in our hands, I am afraid it's not coming down from above."

And then of course the problem of public and private sector. How many entities there are, and you divide that network into individual states, and MPOs, and – well, it just, you know, we know what that is. These are some studies we did when doing the Orlando project, please forgive me, the folks in Pensacola. The question is how much of Florida should we put in and Orlando would still be clear. But this is population density. And we can certainly see the South Florida region. We see the Central Florida region. Talking about the heartland, you can see the growth in that corridor, Orlando over to Tampa. And you can see the Jacksonville hub up there, and

then we move out on to the Panhandle. But we can certainly see how that is taking shape in Florida. This is the size of the Florida economies.

We talk about – it's interesting the very way we do metrics, because in the MSAs, it's Miami/Ft. Lauderdale; what about Palm Beach? Last time I drove there, there was no wall, there was no green space. It looked like just one continuous drive to me. When we talk about Orlando and Tampa, we called it a double yoke edge. You see there is a little green space, the Green Swamp that comes across there that gives them the separation, you know, where the airplane is stuck in the ground. That's the way I remember it. Kind of the marker, you know, the border to Tampa and Orlando. And then we get Jacksonville at the top. But this is the distribution of the economies and the size of their growth. This was the network by air, sea, road and rail. When it's going off to the left, that's domestic passenger in slightly pink, and then in the air was the international. And you can see how Miami dominates the air. And the seaport, you can just barely see it. I don't know if you can see it, but we have the size of the ships coming in to the different ports to represent the size of the ports. And we do it because we wanted to put every mode on one diagram. We didn't want a transportation diagram for highways, and one to rails, and one for seaports, and one for airports. We wanted to look at that configuration.

And, of course, we have an interesting one, because in Miami, and in Tampa, and in Jacksonville, we have airports that are in close proximity to seaports, whereas in Orlando the airport is inland and Port Canaveral is further over on the coast, the Bee Line. The famous Bee Line. Boy, is that a straight road. You better have coffee before you get on that thing. And here we did ports by containers as diagrams. So we like to use language like this to show the size. And, of course, that's Savannah that up at the top. But at the time these statistics, you could see Miami, Port Everglades and Palm Beach together, but bigger than Savannah. And because we have individual metrics, not regional metrics, we tend to treat those as individual sizes versus what is serving that region.

Where are we now? Well, we talk about mid-century, the age of steam, the steam engine, national rail network, blah, blah, blah. After World War I, the 1920s, automobiles and airplanes – the Port Authority was created then. Then we get World War II, the high tech – a lot of things – interstates, containers, commercial passenger jets, et cetera. And that really set the stage for what transportation planning is. As we said, the Department of Transportation was created in '66. It was really in response to bigger volumes, higher speeds, which led to more capacity issues and safety issues, and they certainly dominated the last 50 years. But we are now in the 21st Century. The age of synthesis where we have new issues facing us in terms of the way we are going to have to plan our economies, our regions and our growth.

So I like to put this one in. Without changing our pattern of thoughts, we will not be able to solve the problems we created with our current patterns of thought. Imagine that. So the issue here is, are we still in the same way? Well, we say past for the future – this is the last section, you are so patient – projects to strategy. You know, we heard about all the earmarks. Everything turned into an earmark. There was no strategy. It was simply, "Did I get money for my project?" But did that add up to anything on a national or regional basis? We did improvements, but did they together get us anywhere?

The second one is, can we continue to simply be reactive, and do we have to become proactive? And then third, who should we be in partnership with? You can't do it alone. Who are the partners that need to be at the table? And I noticed today when John was talking about bringing in the Department of Commerce, Community Affairs, Agriculture, bringing in the other partners, because transportation is here not for itself but to serve other functions. Very key, who are the partners?

Now, thinking strategically, the New York regional plan, always been a model for us. In 1929 – and I want to show you what I mean by the term strategic, in my mind. This was the region. And they start with the geography, and you see the proximity rings. And then they created a diagram. Notice there is no geography there. There is a concept of how it's going to work. How you take all of these peninsulas and islands and turn them into one continuous grid, and create the linkage. And then they apply the diagram to the landscape. And that became the regional plan in New York. That's where the Triborough Bridge, the Lincoln Tunnel, George Washington, all of that was being built, guess what, during the depression. This plan was published in the summer of '29. How would you like to publish a massive regional plan in the summer of '29, while in October the whole economy falls apart? But you know what the whole value of it was? Because in the depression, New York was building that infrastructure. They were building the infrastructure in the worst economic days in the history of this country. And guess what happened after World War II? That was the infrastructure that set the rise of New York as the great trade center and economic center that it was there. It actually had overcapacity. Imagine that. Overcapacity.

By having a plan and a concept, they were able to move forward even in the days of scarcity, because they understood where they were going. But that abstract diagram of thinking through what is it we are trying to create. Not just a project, what do we need to do over here? Where is the red? And let's do something about the red.

Now, this was for Port of Houston, a coffee symposium. They asked us to come in and talk about coffee. I didn't know a thing about coffee. And so we did a few maps for them to kind of think – give them an overview, because they were talking about the port. And, of course, there, they are talking about warehouses and things like that. And so we were interested in something a little different. So here we were looking at coffee consuming countries. Where was it being consumed? Where did the U.S. fit into this pattern? And then we did coffee consuming by kilograms per person. It looks different. We produce a lot -- we consume a lot, but we don't consume a lot on a per capita basis, which says there is huge growth potential in that market. Then we looked at where are the producing countries? It's interesting, the consumers and producers aren't the same countries. And here we did overlay consuming and producing. And you can see the gap, where it's produced and consumed. We then looked at where the coffee was coming from in the world to the Port of Houston – we learned Miami is a big port in that. And where were the transshipment points? And one was that the Port of LA actually was shipping coffee into Houston. And then we could look at measures, like how much was in warehouses, et cetera, and the increase, decrease. And we saw that South Florida, New Orleans was decreasing, Houston was increasing, et cetera. So we can look at that. And so we did this one -- ports by coffee, imports by the size. And this way, it isn't looking at how much do we do in Houston, but who is doing it? How much is being done in every port in that commodity

in the United States to give us a picture, then, of where we sit in that bigger picture. And the same one here, total exchange, non-exchange functions.

Now, in developing a strategy, this is the Charlotte Douglas International Airport. When we started, we didn't know a thing about airports. And the director brought us in because we were doing metropolitan studies and growth studies, and he said, "I want to know how the airport fits into the metropolitan area." So we did an analysis of all modes. You notice there, there are two ports – one representing Charleston and one representing Wilmington. We put Wilmington on there because it's in the same state, but doesn't have much meaning to us. Charleston is the real port there. And what we show here, if you look at it, is the airplanes, and then you will see trucks, rails, and you see satellites, telecommunications, thinking of the airport as an integrated multimodal hub. Now, our ports are 150 miles away on the coast. So why would an airport be thinking about its seaports 150 miles away, and it's because of those diagrams we looked at and noticed, back in 1997, the growth of the Suez Express, and the delivery of Asia and goods into the east coast. And we said, that flood of containers is going to drive the need for inland distribution centers. The other one was to look at the traditional pattern. We sat down with Norfolk Southern and CSX and talked about the traditional pattern of delivery in the United States, the role of Atlanta and the northeast, and we weren't in the pattern. So we asked them, how could we get in the pattern, and discussed what is the role of our region within their national and global distribution networks.

We then came up with a plan by which rail, truck – which crossed at the airport – could be linked to the seaports, and by which we could move super heavy sea containers to it, and inland distribution center at an airport where we had access to truck to rail to air, so it could be broken up and moved out by any mode. So if it's ahead or behind schedule, we had a multimodal center for the break up of those containers. We then looked at the metropolitan area itself; looked at the distribution. You will see there the existing infrastructure of trucking, rail, ancillary services, customs scattered all over hell and gone.

And then we said, why don't we – if we consolidate it, we could pull those trucks off the road instead of dray across the metropolitan area, they could, in fact, move goods off public roads without having to flood the metropolitan grid. So suddenly, the airport becomes a central hub. And today, as you know, we are building the largest intermodal yard between Atlanta and the northeast at an airport. At an airport. Never would have thought of that traditionally.

And then here, the way we actually looked at the relation of where are the jobs downtown? You will see that pink center. And then Arrowwood Industrial Area, the airport, how they came together. Where are the poor areas of town? Where do people need jobs? It turns out, we were next to the largest area of unemployment, so this suddenly becomes a place where people can go buy public transportation, and even some walk and have a job. We plugged in the community college into this, and the school system, so they could have job training right at the site, so that it worked as an employment center and education center, and could offer some real answers to the problem of underemployment and unemployment in our metropolitan center. So we had to work with multiple dimensions.

And this, then, became the actual plan. I won't get into the third runway. You see the intermodal yards. You see the truck storage, et cetera. And the one benefit was container

storage, sharing storage areas between truck and rail off public area. And not only sets up an area for industrial use, but also for office use, because BellSouth came in, talking about wiring it up with high band width infrastructure, making it a super advanced communications center. Lots of redundancy that supports office users, so the air functions, the passenger functions, and the freight functions would both be supported at a simultaneous center.

So its global network moves people, goods and information. A plan must have an information layer, must have a passenger layer, must have a freight layer. It was very successfully presented to the people. We know all around the country these things don't get through the voters. We, in looking at transit, have not opposed roads, but said we want to create a more efficient network of transit – and I don't have time to go into that today – but transit and roads, and how we aligned our transit system and the metric was not ridership. The corridors we had for transit, none of them had enough riders to justify federal investment. How do we get it? Because we went around the country and looked at transit systems – where they produce the greatest amount of real estate investment. And what we found is when you parallel transit and interstates, you create corridors of high accessibility that create high density development.

So all of Charlotte's corridors are below Federal standards, all of them getting Federal money. And we are going to produce a more efficient network. And within that, then we position the airport as a global complex, putting it in front of the voters as not the problem of the runway, and discharges, and that which people hate, and the local community hates it, but you have to mobilize the whole region to get behind and support you. The problem is that we end up with strategies that aim at how do we answer the neighbors who hate us as opposed to how do we engage the region that benefits from us? And so our strategy was how to reach out to the region and get the economic interest in the region to realize the importance of the airport and its function to the economy to show up at the meeting, so it wasn't just the neighbors who hate the damn thing, it was the regional business community that realize the impact and power of what that meant to the future of our region. So there could at least be two voices at the meeting. Well, when they analyzed it, it was very clear. There are disbenefits to living near large infrastructure, but there are enormous benefits to what that infrastructure is. And so we have got to answer the disbenefit question at the same time we have to create these new goals.

In Detroit we did something similar. Again, you see road, rail, air and sea – yeah, lake ports – looking at what's the opportunity? What are the economic linkages, the business case – this is everything from auto manufacturing on this map to robotics to biotech. Where is it? How is it distributed in the metropolitan area? Analysis of, then, air, sea, road, rail. And then a question of how do you create a new strategy? And how do you create a strategic plan? We are back in Detroit today. You know what's been happening to their economy. They started this, 9/11 came along, part of it got finished, part of it didn't. Now they are coming back to say we have got to have infrastructure to support the new economy of Detroit. We can't go on with what we have. Again, it was a manufacturing, inbound outbound, it was not set up as crossroads.

Okay, this is, I think a fundamental issue – this is the next to the last slide here, guys, so bear with me. I wanted to put this up because so often we get to projects, everybody is, you know, let's come up with a project, and then we try to push the project. You know, I told that you that 1929 regional plan, published just months before the great depression started – and this was something called Plan to Reality, a report they did in 1933. This is the height of depression, '33,

'34, the bottom. But look what they talked about. Broad new conceptions which have gripped the imagination of the people may have more influence over future development of the community than completion of numerous specific projects. And I think too often we get so project oriented that we lose the broad conceptions which can grip people's imaginations. We could pass transit and roads; we can get airport complex passed because they were presented as conceptions of a better world; something that would deliver value to our communities. They weren't fought over, just simply, we want to extend a runway, we want to do this and the battles that ensue. It was rather, you are buying into the conception. And if you do that, these are the projects that you support, because this is the way to get there. Presenting strategies versus individual projects.

Now, I love to show this, especially in New York. This is the second to the last slide here, folks. And I say, "I looked around the world in regions for mission statements." You know, we were doing Orlando – we were doing different ones. And I wondered what are the missions of regions, do they have such things, and they do. The worst one was I found – and this was before Katrina – was New Orleans. That is, we want to be a tourism center. I said, "That's it?" They said, "That's it." I said, "Why is that it?" They said, "Well, we can't do anything else, all of the companies are leaving here. All we got left is tourism." I said, "So that's your mission statement?" They said, "Yes." I said, "That's like saying I want to be poor." Now, the other – the best one I found was this. Become the world center of finance trade and culture in New York in the 21st Century. And when I am in New York, I like to say, guys, you know, you have a mission statement. They go come on, Mike, this is New York, we are big boys, we know what we are doing. I say, well, okay, these guys do have a mission statement. Who is going to win in that battle? And what's wrong? We are Americans, we like to compete. It's not wrong if someone has got a big mission statement. The question is what do we have? Are we even competing? And I think the imperative is here, because the 20th Century is over. The question is, are we positioning America in the 21st Century global economy. And are we preparing fast enough, or are we going to be like St. Louis, the ones that got left behind?

Thank you very much.