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Mineta Transportation Institute Report

F-00-2

2025 Visioning Session

Silicon Valley

June 24, 2000

Co-Sponsored by:

The Commonwealth Club of California

and

The Mineta Transportation Institute

at

San José State University

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<p>16. Abstract</p> <p>United States Secretary of Transportation Rodney E. Slater, as part of his annual transportation tour for 2000, took part in a round table discussion regarding the transportation needs of the Silicon Valley. The event was co-sponsored by the California Commonwealth Club and the Mineta Transportation Institute on June 24, 2000. Secretary Slater was joined by a panel of local transportation leaders and stakeholders. This publication is a transcript of that forum, "2025 Visioning Session — Silicon Valley."</p> <p>Panelists included:</p> <ul style="list-style-type: none"> • United States Secretary of transportation Rodney E. Slater • Steve Berglund, President and CEO, Trimble Navigation • Larry Dahms, Executive Director of the Metropolitan Transportation Commission • Dr. John A. Dearien, CEO, CyberTran International • Rod Diridon, Executive Director, the Mineta Transportation Institute • Dr. Gloria C. Duffy, Ph.D, Chief Executive Officer, Commonwealth Club of California • David Esmaili, Director, Advanced Transportation Technologies, West Valley College • Neil Garcia-Sinclair, Vice President, CyberTran International • Larry Gerston, Professor, Political Science, San José State University • Abdelaziz Hanif, Manager, Realty and Regional Transportation Specialist, NASA-Ames Research Center • Dr. Kathryn Heatley, Director, Outreach, member SVMG • The Honorable Zoe Lofgren, 16th Congressional District of California • Bill Lynch, Director of Navigation Services, Lockheed Martin Corporation • Norm McCraim, Deputy Chief of Staff, U.S. Department of Transportation • Norman Y.Mineta, Senior Vice President, Lockheed Transportation Systems Division • Jeff Morales, Director, Caltrans • The Honorable James Oberstar, 8th Congressional District of Minnesota • Dr. Donald L. Paul, Vice President of Technology and Environmental Affairs, Chevron Corporation • Dr. Stephen Van Beek, Deputy Administrator, U.S.Department of Transportation, Research and Special Programs Administration • Craig Van Kessell, Transportation Coordinator, Altrans 			
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- Secretary of Transportation Rodney E. Slater
- Steve Berglund, President and CEO, Trimble Navigation Limited
- Larry Dahms, Executive Director of the Metropolitan Transportation Commission
- Dr. John Dearien, CEO, CyberTran International
- Rod Diridon, Executive Director, Mineta Transportation Institute
- Dr. Gloria C. Duffy, Ph.D, Chief Executive Officer, Commonwealth Club of California
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- Dr. Kathryn Heatley, Director, Outreach, member SVMG
- The Honorable Zoe Lofgren, U.S. House of Representatives, 16th District, California
- Bill Lynch, Director, Business Development, Lockheed Martin Co., Missiles and Space Operations
- Norm McCraim, Deputy Chief of Staff, U.S. Department of Transportation
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- The Honorable James Oberstar, U.S. House of Representatives, 8th District, Minnesota
- Dr. Don Paul, Vice President of Technology and Environmental Affairs, Chevron Corporation
- Dr. Stephen Van Beek, Deputy Administrator, U.S. Department of Transportation, Research and Special Programs Administration
- Craig Van Kessel, Transportation Coordinator, Altrans

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FOREWARD

It is my sincere pleasure to present this transcript of the proceedings of the 2025 Visioning Sessions featuring the Honorable Rodney Slater, Secretary, U.S. Department of Transportation, and several key stakeholders involved in the Silicon Valley transportation industry. The California Commonwealth Club, in association with the Mineta Transportation Institute hosted this event on June 24, 2000 in San Jose, California.

Secretary Slater has conducted transportation tours every year since 1994. The sessions are designed to assist both government and the private sector in identifying issues and trends in the complex transportation industry. This session included Secretary Slater, several political dignitaries and high-profile stakeholders working to improve the transportation system of the Bay Area.

The booming economy of the Bay Area, along with the desirable lifestyle that Silicon Valley represents, presents unique challenges to the transportation industry. Does today's technology hold a solution to the area's crowded highways and airports? What innovations are currently in place that have helped ease an ongoing transportation problem in this area?

One of Secretary Slater's goals during the 2000 coast-to-coast intermodal tour was to assemble a 2025 Transit Choices report which will include the best ideas and present them at an international transportation symposium, which will be hosted by the U.S. Department of Transportation in Washington, D.C. on October 9-13, 2000.

I would like to thank all of the individuals who attended the Silicon Valley Visioning Session and added greatly to the discussion. Special thanks, of course, to the Honorable Rodney Slater for taking the time during his coast-to-coast intermodal tour to meet with us for this most interesting, and hopeful, roundtable discussion.



Rod Diridon, Executive Director
The Mineta Transportation Institute,
June 2000

EXECUTIVE SUMMARY

As part of his coast-to-coast intermodal tour, U.S. Secretary of Transportation Rodney E. Slater took part in a roundtable discussion with several Silicon Valley transportation industry stakeholders and political dignitaries in attendance. The topic, 2025 Visioning Sessions, which was designed to highlight some of the best ideas in transportation and transportation technology, challenged the best and brightest of Silicon Valley transportation leaders to share their ideas for inclusion in the 2025 Transit Choices Report, which will be presented at an international transportation symposium later this year in Washington, D.C.

Dr. Gloria Duffy, CEO of the California Commonwealth Club introduced the Honorable Rodney E. Slater, and joined the panel of distinguished political and transportation industry individuals. Taking part in the roundtable discussion were:

- Secretary of Transportation Rodney E. Slater
- Steve Berglund, President and CEO, Trimble Navigation Limited
- Larry Dahms, Executive Director of the Metropolitan Transportation Commission
- Dr. John Dearien, CEO, CyberTran International
- Rod Diridon, Executive Director, Mineta Transportation Institute
- Dr. Gloria C. Duffy, Ph.D, Chief Executive Officer, Commonwealth Club of California/ Silicon Valley
- David Esmali, Director, Advanced Transportation Technologies, West Valley College
- Neil Garcia-Sinclair, Vice-President, CyberTran International
- Larry Gerston, Professor, Political Science, San José State University
- Abdelaiziz (Abdul) Hanif, Realty and Regional Transportation Specialist, NASA-Ames Research Center
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- The Honorable Jim Oberstar, U.S House of Representatives, 8th District, Minnesota

- Dr. Don Paul, Vice President of Technology and Environmental Affairs, Chevron Corporation
- Dr. Stephen Van Beek, Deputy Administrator, U.S. Department of Transportation, Research and Special Programs Administrator
- Craig Van Kessel, Transportation Coordinator, Altrans

Transportation issues are ranked as important as education and health care issues among Americans. In the Silicon Valley, as in every other major urban area, growth and the healthy economy have created transportation issues which require the attention of not only the area's technology brain trust, but also the potential consumers of that transportation system.

Secretary Slater has conducted transportation tours annually since 1994, and has used the series of 2025 Visioning Sessions to lay the groundwork for improving the quality of transportation choices and performance for the 21st century. The sessions, it is hoped, will lay a firm foundation in providing for transportation's future over the next 25 years.

Issues discussed during the forum included:

- Congestion in the Bay Area, including highway and airport congestion
- Development of innovative technologies
- A shift in Caltrans' focus from building of facilities to management of those facilities
- Resistance in development between modes of transportation
- Difficulties with current regulations
- Encouraging experimentation of new technologies
- Changing attitudes about public transportation and innovative programs
- Improvement in the air traffic control system over the past seven years

The transcript of the proceedings gives insight into what is on the horizon for the Silicon Valley regarding innovations—both planned and those currently in use.

INTRODUCTIONS

GLORIA DUFFY

Well, I think we probably should get started, just because I know Zoe Lofgren is going to have to leave and the Secretary also has items on his agenda after this meeting. He is prepared with full information and biographies of those who are here so he could just slip in when he gets here and start participating in the discussion. Many of you know me, Gloria Duffy, head of the Commonwealth Club of California, and I'd like to welcome everyone here on behalf of the Commonwealth Club, and also the Norman Y. Mineta International Institute for Surface Transportation Policy Studies at San José State University. I'd like to welcome you to the heart of Silicon Valley, which is downtown San Jose, and to the Tech Museum of Innovation which, as you know, educates people about the contributions of science and technology to our society.

I thought we'd get started because Secretary Slater is a little bit late, he's flying over from Oakland to San Jose utilizing the fastest mode of transportation I guess. He'll be able to come and join us as soon as he gets here. What I thought we could do is go around and introduce ourselves to one another. We have a number of very distinguished guests with us, as well as the Secretary.

Let me say just a word about the purpose of this meeting. In the Silicon Valley, as in virtually every other major urban area of the U.S., growth and the booming economy have caused transportation to rank in the top three issues which the polls say are of concern to Americans, typically on a par with education, and health care. The purpose of today's roundtable is to bring some of our area's best technology minds and policy leadership to bear in exploring ways in which technology can be better applied to address the challenges the U.S. transportation system faces.

I want to explain to you that we are recording this program for potential radio broadcast on the Commonwealth Club's radio network. We also have a special guest, Larry Gerston from San José State University, and other affiliations. Larry is going to be having a conversation with the Secretary a little bit later in the day. And in the process of describing what he is doing here in the Silicon Valley, he is shooting some background footage, not this whole meeting, but some background footage to this meeting to combine with his footage with the Secretary later in the day.

We have two distinguished members of Congress with us today. The Honorable Zoe Lofgren who represents San Jose, and is essentially the

Congresswoman from Silicon Valley and has been very up front in the Congress, out front in leadership in the Congress' ability to deal with technology issues particularly related to the Internet. We also have the Honorable Jim Oberstar from Minnesota, who is the ranking minority member of the House Transportation and Infrastructure Committee. And overlooking us all, we have the Honorable Norman Y. Mineta, former chair of that same committee, long-time representative of San Jose and the U.S. Congress, and now senior vice president at Lockheed in Washington D.C.

With those introductions what I'd like to ask everyone to do is to simply go around and introduce yourselves, list your main affiliation in the transportation field, and then go from there. Sir?

BILL LYNCH

My name is Bill Lynch and I am the Director of Navigation's Services for Lockheed Martin located in Santa Monica, and as you know the major providers of the data and the signals that you use for specific products that you are involved in with.

ABDUL HANIF

My name is Abdul Hanif, I'm with NASA-Ames Research Center in Mountain View. I'm responsible for managing their real estate and regional transportation issues.

CRAIG VAN KESSELL

I'm Craig Van Kessell; I'm with Altrans. We do commute alternatives for the colleges, including San José State and all the community colleges here in the area, plus work with kindergarten through 12th graders. Currently we are developing a GIS program where we can put people within a quarter mile of the nearest transit route. We do their whole planning for them.

DAVID ESMALI

I'm David Esmali; I'm the director of West Valley College's Advanced Transportation Technology Center.

LARRY DAHMS

And I'm Larry Dahms, the Executive Director of the Metropolitan Transportation Commission, which is the regional planning and you might say banking, organization for the San Francisco Bay Area.

STEVE BERGLUND

I'm Steve Berglund, President and CEO of Trimble Navigation, one of the

early pioneers in GPS.

LARRY GERSTON

As Gloria mentioned, I'm Larry Gerston, San José State. My specialty is public policy.

JOHN DEARIEN

John Dearien. I'm CEO of CyberTran International. We're developing a new lightweight, automated transit concept and we're testing the vehicle right now, a lot of its components are at Alameda at the former naval air station.

NEIL GARCIA-SINCLAIR

Neil Garcia-Sinclair, I'm vice president at CyberTran International.

DON PAUL

Don Paul, I'm Vice President of Technology and Environmental Affairs for Chevron, who of course provides energy on a world-wide basis.

JIM OBERSTAR

Congressman Jim Oberstar from Minnesota.

NORMAN MINETA

Norm Mineta.

ZOE LOFGREN

Zoe Lofgren, and welcome to my congressional district.

GLORIA DUFFY

Thank you all so much for being here. And what I'll do now, some of you know Secretary Slater very well, but what I'd like to do for those who don't, is give you a little bit of background about him. He is an Arkansas-an, a former executive assistant to President Clinton and I believe he's here, so I will continue my—isn't that great timing, I have to say. This is what we call great staff work. And I'll just pause and then introduce him once he comes into the room.

As I mentioned a moment ago, we are just delighted to have with us today Secretary of Transportation Rodney Slater. And I was about to tell you a little bit of background. I had managed to say that you were an Arkansas-an, if that's the right way to pronounce it, and had been an executive assistant actually to President Clinton when he was Governor of Arkansas, but just to go back a little further into your background, Secretary Slater was named

Secretary of Transportation on February 14, 1997. As you know, the Department of Transportation oversees the nation's airports, highways, railroads and mass transit and maritime resources. It has 100,000 employees and a budget of more than \$40 billion, which also includes, by the way, the United States Coast Guard. Under his leadership, the Department of Transportation developed a strategic plan that Congress rated as the best among all federal agencies. He also worked with Congress, and continues to work with Congress, to increase investments in infrastructure in the U.S.

Before becoming Secretary of Transportation, Rodney Slater was administrator of the Federal Highway Administration. He was a member of the Arkansas State Highway Commission prior to that, from 1987 to 1992, and served as its chairman in 1992. In addition to serving as executive assistant for Governor Clinton, he was the governor's special assistant for Community and Minority Affairs and Assistant Attorney General in Arkansas. He is a graduate of Eastern Michigan University, has a law degree from the University of Arkansas and an honorary doctorate from Eastern Michigan University. His other honors and degrees are too numerous to mention, but I should mention that he is married to Cassandra and has a daughter, Bridgette.

It's my great pleasure to welcome U.S. Secretary of Transportation Rodney Slater.

OPENING REMARKS

SECRETARY SLATER

First of all, let me say Dr. Duffy, I really appreciate the opportunity to be here in the company of these distinguished leaders of both the public and private sectors, many of whom I have met and worked with in direct ways over the years. It's a pleasure to be with all of you. We are looking forward to the discussion, so I'll just make a few comments to get into that. Let me also say, Congresswoman Lofgren, thank you for opening the doors of your district, and welcoming us. We've been talking about my coming to the district for awhile, and so I'm very pleased to be here, and for you to have your friends here. Clearly, we still speak of Norm as a member of the Congress, he likes hanging around the Congress yet still...

ZOE LOFGREN

And former mayor of San Jose...

SECRETARY SLATER

That's right, and former mayor of San Jose and all of that, and he's here with his good friends. Congressman Oberstar, a pleasure to see you, and we've been hearing a lot of news about good things that we'll talk about as we go forward. This is one of the most dynamic regions of the country and one of the most dynamic regions of the world. You are growing by leaps and bounds and you are pulling together the kind of team to really make good things happen. You've got quite a distinguished delegation in the Congress, your business leaders are leaders of renown, and not only here but across the globe. Just last week we were in Taiwan and clearly there were many businesses from this region there participating in the International IT Conference, and you just really have a lot going for you, but you also face a lot of challenges.

There's been many articles dealing with congestion in the region, many articles dealing with the power and the flow of the growth, and how do you manage that? How do you continue to keep a quality of life that really drew so many here early on? How do you maintain that in the years to come?

Those are the challenges being faced by communities across the country. You continue to add to your team, Jeff Morales just came in, Jeff comes to you, returns to you from Chicago by way of the Department of Transportation, and then before that, working on the hill with Senator Lautenberg. But I think that you have a wonderful partner in Jeff, and the leadership that he will bring to Caltrans, which will help you, I believe, will continue to use the great flexibility that exists in the law that governs our activities, currently TEA-21.

We build there on the wonderful piece of legislation that I had in coming into the Federal Highway Administration in 1993—ISTEA—which provided significant opportunity to flex dollars from highway to transit and vice versa, ended up flexing though \$5 billion to transit. With TEA-21, I remember with the leadership of your delegation, and also Congressman Oberstar and the encouragement of Congressman Mineta, the President could stand firm along with the VP in saying we will veto TEA-21 if we don't get record-level investment for transit and highways alike. So I think that all of these actions have been beneficial.

Also we have been fortunate enough over the past seven-and-a-half years to see an 86 percent increase in investment in transportation over the previous administration. We've had the total support of the Congress in that regard. But most of the measures that we've passed have been known as much as environmental bills or safety bills as transportation bills. I think that says a lot as to how we are starting to view transportation and I think it's very consistent with ways that you have demonstrated positive uses for transportation here in this region, and really throughout this state.

And so we gather then to discuss, to some degree, what we've done, but more importantly to focus on what we have yet the opportunity to do, as we look out across the horizon to the new century and the new millennium, as we stand at the threshold of this century and the millennium that beckons us forth. From our vantage point we have the fine work of the Mineta Institute to guide us along with that of the other university centers around the country. We have the fine products of the Institute that you are graduating, many of them I will see this evening, and also some of the great professors who have served the Institute. Here I mention Dr. Stephen Van Beek, who is now our head of intermodalism within the Department of Transportation and has served with distinction since joining the department.

Also Norm McCraim, I'd like to introduce Norm as our Deputy Chief of Staff who has been with me as we've traveled around the country over the last week to lift up, and to highlight, the best examples of innovation in transportation, and that's really where I'd like for us to begin the discussion. I'm thinking about the development of a climate of innovation in the transportation enterprise-community where we seek at every turn the perspective to view it from a different vantage point, and to seek to offer more choices and new insights as relates to the enterprise. We think that if we approach it that way, then at the end of the day we will naturally flow to the use of a new policy architecture for transportation decision making, and that we'll get more involvement and more collaboration when it comes to making transportation

decisions. Again I think some of the finest examples of that kind of effort are here in this region, and Larry and Mr. Diridon, we thank the two of you for your leadership in that regard.

But with that let us just think then about a couple of questions. I mean your businesses, your roles, cause you to think about issues at the cutting edge. So as we think about transportation in the coming century and millennium, how are certain trends driving the environment and creating different and sometimes difficult choices for us? The aging of America, the strong baby boom era that is now upon us that really outnumbers the baby boom era that we are a part of. The use of technology, nanotechnology, those kinds of technological advancements. How do they speak to the future as we harness the awesome power of technology, to enhance the capability—efficiency of the transportation system as we know it? Again your businesses are at the cutting edge of the new economy. What are to be the gains, and how do we have to respond in the transportation arena so as to facilitate those gains rather than, you know, find ourselves serving as barriers to those gains? Those are the kinds of just the general issues that we want to put out there.

I guarantee you, that as we end our discussion you will find a desire and a need to continue the discussion. It has happened at every turn. We were just today in Oakland, talking to individuals in the disability community and asking them how we might better partner with them to address some of their concerns. We were earlier in the week at the Franklin Institute in Philadelphia talking to high school students and the response was the same. Time was running out and we were there wanting to take more notes because the young people were offering insights that were frankly helpful to us. And so I'm certain the same thing will happen today, and that's why I wanted to say at the outset, view this as the beginning of a dialogue and one that will continue as we do a couple of things, and I will close with this.

One is to put together a "2025 Transit Choices" report that we will complete a little later this summer, where we will collect the good ideas and put them in a very good, and a hopefully usable document for years to come. And then secondly we will use the insights to help us hone our policy architecture issue, but also prepare for an international transportation symposium that we will host this fall in Washington, October 9 through 12, where we'll invite voices and leaders from around the world. We think that clearly, the insights we gain from you will be appropriate for consideration in that kind of an environment, because that's the circle you're in—the circle of international leaders in this enterprise. Also, the examples that you have put in place, the models that you represent with your transit and transportation projects, many of them will be

the kind of best practices that we lift up and show people as examples of the system of the coming century.

So that's how we will continue to use the information that you share with us, and again I just want to say thank you for giving us the opportunity to sit and visit with you. With that I'll just open it up and we can begin the process. Why don't we do this—as you offer comments, if you would just please identify yourself so we can get the right notes with the right individuals, but also for purposes of the media here gathered, and the fact that this is being recorded. I think that will prove beneficial as we go forward. And then speak into the microphone. Well, we'll all speak into the microphone as we move forward. But let's just get into it. Yes? Please.

DISCUSSION

NEIL GARCIA-SINCLAIR

Just from the standpoint of our development efforts, what we perceive is that there is congestion, which is becoming like an irresistible force in the sense that there's a political will to solve the problem. But there's an immovable object that is the structure of the transportation industry.

So our question is, what structures and processes exist that can encourage the development of innovative technologies that can somehow overcome this immovable object of existing industry?

SECRETARY SLATER

Okay. Okay very good. Thanks Neil. Well, clearly I can attempt to respond to that but others, I think, should offer comments. We have actually tried to reorganize the transportation enterprise at a couple of junctures. I know early on during the administration when there was a lot of talk about doing away with the Department of Transportation and other departments, and also at a time that we were seeking to reinvent government—and by the way, I think that effort has proven very successful and I think the vice-president has done a great job there. During the introduction you heard our performance plan and our strategic plan. Both have been recognized as the top in government.

Well it's everybody doing this, and it means that we are literally managing for results. And I think that is a positive outcome here. But we still have a modal structure within the Department of Transportation. One thing that we have sought to do, though, is to organize ourselves in ways that help us to deal with issues from a multi-modal or intermodal perspective. We have adopted a management philosophy that we call One-DOT. There again the objective is to get the collective minds of the department working through the office of intermodalism, through a great degree; to start to give us a much more dynamic consideration of issues and approach to the business we do. That's just one example of how we've done that.

A couple of points to underscore how important that has been: We got together in 1997 across the department for the regional administrators, and it was the first time that the regional administrators of the Department of Transportation had gotten together in the 30-year history of the department. Then, in 1998 I believe, we hosted the first national transportation safety conference, and it was the first time that we had brought all of our national partners together as a department. We have only produced one annual report as a department, like an annual report that deals with your performance. Now

that doesn't mean we haven't done annual reports, we've just done them by modes, but never across the department as a whole. We've done one now. We're going to do another at the end of this fiscal year, so at least we are trying to create some track record.

What happens is, when you look at things as a whole, you can really see the enterprise in its full character-nature, and it's much more dynamic. At the private sector and level—and Norm, I think others of you can really speak more to this—we have seen some reorganization as well. I think, actually, companies like UPS and Fed Ex have been very helpful because at the end of the day with those companies, no one is concerned about how it gets there—you just place the order and the next morning you expect it to be there. So I think that we're doing better here, but clearly we've got some challenges that we yet face. That's just a quick comment. I see Jeff, please.

JEFF MORALES

Jeff Morales, new Director of Caltrans. Mr. Secretary, I want to thank you for doing my job by pulling this group together, because this is a group I want to tap into—its expertise and resources.

You're talking about doing reorganization, and I think for us in California, for Caltrans as a department, it's a reorientation even more so than reorganization. Going from a shift, from a history going back 30, 40, 50 years, where the focus was almost exclusively on building new capacity, particularly on highways, to now a shift where our primary job is going to be managing that capacity. That's a very different job. This state is growing and is projected to grow by about a half-a-million people a year, which when you think about that, it's just incredible. We're adding Wyoming or South Dakota every year just coming to California, and at the same time there is very little ability to add whole new capacity, particularly in the freeway system and the road system. So the challenge becomes how do we utilize what's out there? How do we get mobility? That is where, I think, in Silicon Valley is the place to look in terms of both the need to deal with that problem, and the ability to deal with it in a way that blends what government has to do and what the private sector can do. Because tremendous growth has happened here in San Jose and throughout Silicon Valley, we have to be very mindful of what brought people here in the first place. It's going to change if we don't improve how people get around and how goods get around, and if congestion becomes too bad here, I daresay some of you will pick up and move somewhere else. We don't want to see that happen, so we have a real responsibility to sit down together and to focus on a very different way of operating our department in conjunction with what people need in the state.

NORMAN MINETA

I'm Norm Mineta, and I'd like to just ask, between Jeff and the Secretary, but I think that what Neil has brought up is a very interesting subject. The structure of the transportation industry itself sometimes prevents any kind of inclusiveness of transportation modes, so that as in the case of Caltrans, you've been building highways. Now the governor comes out with a budget that says we're now going to go 50-50 highways and transit. But I wonder whether there's not going to be a sort of clash of cultures, much less modes in terms of where we're going to go in the future. Congressman Oberstar has been strongly supportive of this whole issue, of highways, transit, bicycles, whatever it might be that interests you in terms of your own mode of transportation, whether it includes being a pedestrian, but sometimes I wonder whether or not there aren't forces that keep things from happening.

SECRETARY SLATER

Yes, this is a good question, let's see what we have. Identify yourself, the rules of the game.

JOHN DEARIEN

I'm John Dearien with CyberTrans. On the subject of resistance, one of the subjects is resistance between modes. But another resistance that we are seeing, the stage that we are in the development of our project is—we've been very fortunate in developing the technology up to a point where it's ready to commercialize—but what we see is a resistance, and to a point, it is written into the regulations. For example, if you have a new concept, if it flies, floats and costs nothing, if you tried to bid that into an existing project for transit in the city, one of the requirements generally in the bid process is it has to be in revenue service someplace. If ever there was a catch-22 to keep out any technology it's that one little thing. So you have to find a way around that, and the fact that present suppliers, nearly all the present suppliers are foreign suppliers, makes it very difficult for not only a new technology, but for an American technology to even get into the process because of that one little loop. It's a policy as much as the other. There's experience level and convenience and comfort level with the existing industry and the existing technologies, and that's true with anything. In transit, it's a particularly onerous situation that new technologies face. So there is a way around it, and that is a demonstration project, and that's one way that the government and local communities that want to help break this impasse can. Put a demonstration project in someplace and then that gets around the issue of "is it in revenue service?" Well yes, then you can go take a ride on it. But if you can't get a demo, then it's a very difficult situation.

SECRETARY SLATER

Okay, very good. Let me acknowledge Dr. Heatley who has joined us. What we're doing, Dr. Heatley, is just having a discussion about our individual visions regarding the challenges we'll face in 2025 and really in the interim, moving toward that point in time.

KATHRYN HEATLEY

Thank you.

DON PAUL

This is Don Paul, Chevron. I thought I would maybe just like to throw into the mix, maybe a view from kind of the "old economy" sitting here in the middle of Silicon Valley. I think it's, as I would agree with you Mr. Secretary, that you are kind of embarking on, perhaps, really a new curve. As you see in Silicon Valley, one of its great strengths has been an environment in which there are literally thousands of experiments going on, and work to find the right business that addresses the right market and goes forward.

I think one of the challenges that you have in this area is how do you create an environment where there's enough experimentation that you know what the answer is? That's one issue. The other issue, of course, is how do we proceed as we have for quite awhile, but basically continue the curve, toward cleaner, more efficient performance from the vast bulk of the existing transportation system which isn't going to disappear anytime soon? So I think you would need to do both of those things. I think the challenge on the innovation side, of course, is that here in Silicon Valley, the reason you have so much innovation is primarily a sort of unique combination of entrepreneurs and start-ups and a tidal wave of venture capital. One of the reasons you get investments is because the winners pay out enormously, and very high rates of return.

One of the challenges in this area is that any new transportation industry, we're getting back to the industry, the people who make things are certainly going to have to have much better rates of return than the existing manufacturers of transportation systems. Without mentioning names or getting into that, I was at a Bank of America security analyst meeting last week, and you can ask any security analyst what they think about that industry as a place to put investment money. So the challenge is how do you get enough experiments, which I think are necessary to create the right combinations of technology, and business and market because you can't have just one of those, you have to have all of those.

SECRETARY SLATER

Right.

DON PAUL

In a sector in which there is, it's not clear whether there's money to be made, because that is the big contradiction between the challenge we're looking at here and what goes on in Silicon Valley, sort of out of the air. So I guess that would be one of the perspectives that is a challenge to building infrastructure in the area.

SECRETARY SLATER

Those are good points. Let me just, before we proceed because there were points and questions raised, and also I think you know Norm was putting in a wonderful question to us as well, about the fact that the structures do present barriers and how do we get over and through that? We should come back to that, but I wanted to acknowledge it. But then Don, on your point, you know, what I find interesting is that I just don't think that we have a full appreciation of the value of transportation. We generally don't focus on it until there's a problem. Generally anytime we're in the news, like on a daily basis, I'm reading about problems for the most part. Seldom are we reading about issues.

Now one thing has happened of late which is very interesting. I think Congressman Oberstar, it has us thinking about issues and that's in the aviation realm as we deal with all of the posturing for mergers. We've also seen that to a lesser degree in the railroad industry, but there is the realignment that's going on. Also in the international context there's a lot that goes on that's really under the radar screen, but with this United-U.S. Airways proposal, even that has been thrust into the open—British Airways-KLM, some of the other alignments, especially in Europe. We have been visiting with analysts trying to figure out how we put the proper value on the enterprise, so that then as you seek to enhance the efficiency of the enterprise, you get into a question of whether there is some value, you know, in there to be tapped. You get into a question of the market of opportunity. Rather than just the market share, you get into the market of opportunity. We've just had a tough time even though you can point to the fact that one in seven jobs is transportation related, that 11 to 14 percent of the gross domestic product is transportation related, that probably second only to our housing you have the investment in transportation coming from family budgets. But we still haven't effectively put a price on it, which means that I don't think you can really value then, or put a clear value on what an innovation potentially represents.

Now I'm just stabbing at the question as you have raised it, because I think you have raised two very good questions. The first question dealing with experiments, I think that our laboratories could arguably be the states, and that maybe there we have to figure out how we bring a little more incentive to the process, because right now we basically provide funds through a formula. So you're basically what you've got, and we have very few dollars that we can use to stimulate competition. We may be able to look at that. You know, also on the innovation side, we may be able to put together a venture fund of some type, and I don't know exactly how we would fashion that, but we may be able to do something like that, and we may be able to do it in partnership with the private sector. We can think about that but I think the states themselves, and the communities, represent probably some of our best sort of laboratories for experiments, and one reason I've traveled around the country is to use the trip to lift up the best examples. But beyond that, even we have not figured some way of promoting that in a way that lifts it up that says to the broader public there are quality projects out there, these are the things you should seek to emulate. Jeff?

JEFF MORALES

I think that the question goes even a little deeper in terms of the environment. Again it gets back to what's here. It starts at the national policy level and then plays itself out throughout. If we want to build a new interchange or add a new lane, assuming we can get through environmental and other things, no one bats an eye at spending \$10 million. You know that will come right out of the formulas nobody will think twice about it. If we said we want to spend \$10 million on some experimental technology to move people around San Jose, everybody and their brother is going to want their hands in it, looking at the cost return, what's the revenue source, and things like that. And there's a fundamental difference in how investments are looked at that discourage innovation and experimentation at this point, that we have to figure out how to get over.

SECRETARY SLATER

Okay, very good. Yes?

CRAIG VAN KESSELL

I'm Craig Van Kessel with Altrans. I think you hit a point. Promotion is the basic thing. We've got to end the love affair that Americans, particularly Californians, have and do something. I was thinking of something like "Got Milk?" There was something that came from the food people and now it's part of American culture. We have to do something like that in transportation to

make it more attractive. Part of the work that I do with my company is we are now going with schools. We're going to the community colleges here in the area. We're going to San José State. We're going as low as kindergarten where we're putting together buddy groups where parents walk their kids to school, but we take their name and address. We put them into a system, a GIS system, and we tailor-make it. If they want a bicycle buddy we can do that.

With the students we actually found out that over 4,700 students live within a quarter-mile of the VTA systems at De Anza College. What we did was then take those names, put the route that was best suited to them, and actually mailed it to them and said, "did you know this was within a quarter-mile?" and it helped. I think we have to start them young and get the culture turned around, because you know we're all guilty of commuting all the time, and the carpool lane, so I think we have to make it attractive. Things we have done in the past—I've got a thing called "Dr. Traffic Jam," and it was "Doctor, Doctor give me the news; I've got the cure for the traffic-jam blues." Dressed up as a doctor and my staff was a bunch of nurses, and we worked with Intel and Hewlett-Packard. We met people at the Caltrain and handed them little gifts. One day we gave them a stress book made out of styrofoam; the next day we gave them a little first aid emergency commute kit which was a couple of pieces of candy. We were all dressed in hospital scrubs and they loved it. We had over 1,000 people who attended our fair. So I mean America wants to be entertained, if we can do it some way like that it would distinguish people. We've had the luck of working with the MTC and the Manufacturing Group. We're very lucky in this area to have people like this with us. But let's—I'm sorry—let's make it fun.

SECRETARY SLATER

Yeah

CRAIG VAN KESSELL

Let's make it happy and you can do it nation-wide. You know you can experiment with us; you can give me an electric car. I'll go everywhere. I'll paint that sucker. That's Minnesota talk.

JIM OBERSTAR

Jim Oberstar. I wrote down just before Craig began speaking, culture change and make some comments on other aspects later after others have spoken, but you are absolutely right about starting with youth. We have to change attitudes. This is the biggest challenge of transportation. As Jeff Morales said, it's easy to do another interchange and another lane. When I said to our governor, to our state legislators in my district, if you don't build the Northstar

70-mile commuter rail, don't look to me for another dime for highway mileage, because I'm not going to authorize it. You can choke on your own traffic, on your own pollution, on your own absorption of farmland. You've got to change the culture, and you've got to start with the young people, and we're going to do that in a few weeks with Secretary Slater; Secretary Riley, Secretary of Education; and Secretary of Health and Human Services Donna Shalala announcing a national Safe Route to School initiative in a suburban setting and an urban setting.

We have a culture with 24 percent of children under the age of 15 clinically obese as determined by the Center for Disease Control. Thirty percent of adults in America are clinically overweight. Children 9 to 15 take 75 percent of their trips by car or bus. They are transportation-challenged.

I thought this was a brilliant idea and I launched it with a group of bicycling organizations, and they said, "It's already been done—in England." I said, "it's still a good idea." The secretary said it was too. In three years in the UK with the "Safe Routes to School" laying out pathways, whether a raised curb or marked passageway, police patrol and parents participating, they transformed what was within two kilometers of the school—transformed habits so much so that last year more bicycles were sold in the UK than automobiles. In the Netherlands, nationwide 30 percent of all trips in the center city are by bicycle. In Delph it's over 50 percent; in many towns over 50 percent. You're looking for innovation, you have a start with the most flexible minds, the young people who haven't been formed yet, and work on them.

LARRY GERSTON

State my name, I'd better do that, Larry Gerston. The funny thing is that, Mr. Secretary, that this culture change idea, which I wholeheartedly agree with, can be done, and is done, on a limited basis despite the incredible pressure for us to value automobiles more than our children. A couple of years ago I did a study for the Manufacturing Group and the Valley Transportation Agency here on the worth of the light rail system, as it was going through areas that it had not gone through before. The perception was that light rail would be disruptive, that people would want to walk away from light rail, that they would view it as a negative to the community and that it would, in fact, lower the values of land. What did we learn, instead, out of that study, that people not only valued light rail who lived within a quarter mile of it, but they moved there for the light rail. They moved there for the light rail, not to get away from it. So that what we normally consider a negative, and intuitively something that's undesirable, in fact is quite desirable. We don't even have to look to experimentation. We've got products already showing that, and it's a

matter now of showing other people who are a little bit more doubtful that it is, in fact, it is the case.

SECRETARY SLATER

Good point, good point. Yes?

DAVID ESMAILI

David Esmaili, West Valley College. There's a recent study in Texas that showed that adding highways didn't improve traffic, it actually made it worse. Going back to perceptions that people have, people think, "Oh new lanes more space for me to drive," so what happened was there wasn't a standard code; there was a major increase in the number of people who put cars on those freeways.

SECRETARY SLATER

Those are very good points. You know, on that point, we basically think that we have to build a system to accommodate rush hour traffic. One problem there is that rush hour period is extending and we've followed that, but the point is we take those hot periods of the day and we try to build to that demand. You cannot keep up with that, and over the course of the day you've got all of this that's there, and there's very little use being made of it. The same with aviation. We try to press everything into a given period of time, and then over the course of the day you've got this system that's not being used. We're challenged in that regard as well, and it goes back to the question of management. How can you best manage or better manage what you have? I saw a few other hands.

CRAIG VAN KESSELL

I mean, we're in this area; we're innovative already. Craig Van Kessell with Altrans. Myself, Abdul, and Dave belong to the Association for Commuter Transportation. We have our headquarters in Washington, D.C. but we represent the northern chapter. There's a member that works with several groups, private industry such as Sun Microsystems. What she did is she went to one of the cities, got the bikes that are going to be thrown away or auctioned, and painted them all yellow. Now the employees, instead of getting into their car and going from one building to the next, now ride a bike. It's an honor system—they pick it up at one building they ride it over to the next and leave it the front in the bicycle rack. Now there's an employee that comes out and wants to go someplace they jump on the bike.

So there's a lot of things that are taking place in this valley, because we're very creative that way. What we need to do is get them all together, and work

on the national level and say, "Okay let's make it throughout the United States," because you're not going to have the same problem in Silicon Valley that you are in North Dakota or South Dakota. So I'm excited with this group, because from the ground up we can build something. Start them young, like you said.

SECRETARY SLATER

Yes, yes. And we're excited about this project by the way. This is going to be a good one. Okay, we've got some people we haven't heard from, so we want to get your voices, and then we're going to come back to Steve here. Yes, please.

ABDUL HANIF

My name is Abdul Hanif. I'm from NASA Aeronautic Field.

What we would like to offer the federal entity or agency here is to invite other organizations here to come and test, if they have any products or transportation stories that we can move traffic more efficiently, smoother in this area. With Highway 101 and 237 at one end and 101-85 toward the other end, we have a lot of potential to offer other regional organizations here, to see how we can implement ITS or ferry systems on the bay and see how we can move all this traffic more efficiently, provide in this area more public transit anyway. We have 70 percent of people driving solo. So we need to increase that number of people taking public transport.

I, at NASA, have a success story also. It took us over 21 years just to open a bike path. And we moved from 80 bicyclists a month to over 200 people coming to our center by bicycle. I did some study as to how much fuel we saved during this period, and it's just amazing. Same thing with our NASA shuttle. When we started it, we had very few people using it—now we have three buses and over 3,000 people a month just using it to go back from the Mountain View Caltrain station to our center. So just one person, myself, I ran this program and it has become very successful and I would like to request other companies that are in this area to take advantage of a federal agency in this area, and come to us and share your expertise with us so we can grow and develop more efficient transportation systems here.

SECRETARY SLATER

Very good. That's a great invitation. I think you're going to have some takers too.

JOHN DEARIEN

I tell you, we talked just before the meeting and this is a potential solution to this impasse that I mentioned, so there are opportunities if we can just get the right mix together, and we will be following up on it so we may be calling together at your office.

SECRETARY SLATER

Very good, that's very good. Why don't we just, yes Bill, Bill Lynch?

BILL LYNCH

Bill Lynch, Lockheed Martin. I would just like to elevate this discussion, possibly maybe about 40,000 feet, and address the issue associated with air traffic management. As you know we have three major airports within a 50-mile radius, probably where you are right now, and on your journey here, you did experience at least two of them I would suspect. I'd like to know your thoughts with regards to the congestion issue and what impediments that are perceived by the FAA under your organization to making air traffic management more efficient, such as laws.

SECRETARY SLATER

Yes, yes, yes. Well, clearly we've got our challenges there that we share frankly with you.

I think that on this score, Administrator Garvey has a pretty good handle on it. Basically what she's decided is that we would break down our bigger vision into more digestible chunks. I'll say it that way, with the ultimate objective of having the highest level of technology in use possible. A couple of our really tough areas of the country are clearly out west, on the coast and in the northeast, in particular, and really you could say throughout the east, but the northeast in particular. You know, I think that we have moved forward pretty aggressively on this. We actually used the Y2K challenge to move forward in a more expeditious fashion on some of our investments, the whole system and some of our other investments. We have gotten good resources from the Congress with the most recent reauthorization bill, and you know we're very thankful for that because we had gone for about three years without a reauthorization bill. We were basically going on an annual basis and you really need long-term resources to really play this out.

I think that we will continue to be challenged in the appropriations process. I know I'm focusing a lot on the money because I think, frankly, the technology is there; it's just a matter of getting it off the shelf and getting it to use, and you have got to have resources to do that. I think we have a good plan there

and I think she's put together a good team for dealing with it. It is imperative that we address this question forthrightly because we're moving about 650 million passengers now. At the time of deregulation, roughly twenty or so years ago we were moving about 240 million passengers a year. We are slated to move a billion annually in less than a decade. So we've just got to address this. Actually the E.U. has faced the same kind of challenge—the European community—and I do think that there may be some ways for us to coordinate our activities there. When you put our two markets together we probably account for actually...Congressman, I'm looking at you now, probably 60.

JIM OBERSTAR

About two-thirds of the world.

SECRETARY SLATER

Okay, yeah, well then even more of the travel, and so we mentioned the Europeans because we were recently in Prague, and this was a big discussion from their vantage point. They also have started to try to put in a plan for the summer dealing with delays because they had their worst year last year, as did we dealing with this question. So I think that we've got a lot of work to do there, but we've got great companies helping us and Lockheed Martin is one of them. There are others, Raytheon and clearly other companies out there. This is a big challenge, big challenge. Congressman...

JIM OBERSTAR

One of the big misconceptions is there's big bottlenecks in air transportation—that the FAA hasn't moved ahead, and every time there's a delay there it's FAA's problem. The fact is, that in the last seven years more progress has been made in modernization of the air traffic control system than in the history of aviation. Of the 57,000 pieces of technology that operate the air traffic control system, and are slated for modernization, 50,000 are in place. Most of that has happened in the last seven years. The FAA installed voice switching and control system, which is an automated digital ground to air radio communication system, over one weekend. A billion dollar system was done over one weekend without shutting down the air traffic control system for one second. That's the equivalent of changing the tire on your car at 60 miles an hour. The technology to manage air traffic at altitude, which is the 21 in-route centers—the display system replacement technology—is now virtually complete. There's just one last center, that is Chicago Center at Aurora, Illinois. That now has the capability with equipment that once occupied a room three times this size, all of it put together about the size of this table. Gives the controller the ability to know where every one of the 27

aircraft in his or her sector is at rush hour, to know where those aircraft are going to be 2 minutes, 5 minutes, 10 minutes, 20 minutes from now and be able to move aircraft around at the push of a button. That's an enormous improvement in safety, an ability to have closer intrail separation than in the past, because aircraft are more manageable.

The standard terminal automation replacement system for the TRACONS that manage aircraft on approach to airports—hardware is complete, the software is nearing its completion of the test and evaluation procedure. This billion dollar system, 1.3 million lines of computer code are installed and are going through their final test and evaluation and acceptance procedure, and that will mean the 584 TRACONS of this country will be able to have that equipment installed within the next year-and-a-half. The perfection of precision approach through the wider augmentation system, with satellites-ground correcting station system which has encountered a number of technological problems simply because we're trying, or this system's trying, to get technology so that aircraft can land within two centimeters of the center line of the runway. That has proven to be a little bit more difficult than private sector and FAA initially tested.

But I see that the challenges for aviation in the future to be redesigned, of the air traffic control system and the host of oceanic system that is managing air traffic over the Atlantic and the Pacific, deal with that first. Over the Atlantic, the United States, under international agreement is responsible for three million square miles of the Atlantic air space and 18 million square miles of the Pacific air space. The Atlantic is a \$28 billion market for the United States and the Pacific is now a \$22 billion market for the United States. So it's our responsibility to improve management of air traffic in those two air spaces.

The hardware has been developed for management of air traffic in those two sectors, but the software has proven more difficult to develop. We now have intrail, that is aircraft space up to a hundred miles over the Atlantic and as much over the Pacific. When this technology is completed, we will be able to have 50 miles of separation, or even less, depending on sizes of aircraft and atmosphere conditions. But the FAA is working on it, and under the Secretary's leadership, and under the President's leadership we put money into these programs to get there. The next thing that we have to do for aviation is to rebuild our air traffic control management system, which is still based on radio beacons developed in the 1930s and lighthouses which were the first air traffic control guidance systems. We still have zig-zags and we need to straighten the whole system out, and that will be the most painful thing that any future Secretary of Transportation, if it's not Secretary Slater, is going to

have to deal with, because that's going to mean uprooting thousands of jobs from members of Congress' districts, and that's going to add a lot of pain, but it has to be done and it's got to be started.

SECRETARY SLATER

Yes, okay. Please stand.

STEVE VAN BEEK

Steve Van Beek, D.O.T. I want to pose a question, sir, and just make a comment. I think this valley, with the projected growth rate it's going to have, despite billions of dollars that have been provided, has unmet large transportation needs, regardless of how many dollars D.O.T. provides as the lead. But one thing that this area has been very responsive to is that business has put money into transportation, if you look at the commuter rail over Altamont Pass for instance and the subsidies that are provided to riders. On our hand, D.O.T. has more, thanks to Congressman Oberstar, authorities in the area of innovative finance, and we have regulations now that get us out of the old world where we could not partner with the private sector.

So what I would just like to put on the table is given the unmet need we're going to have, given the willingness of people here to partner, and given our willingness to partner—what are some of the innovative programs that we can put in place in the valley and what should be our priorities to move forward in the innovative area to fund projects that won't be funded out of formula funds, but where we can put in some money and private industry can put in some money and share the responsibility?

JOHN DEARIEN

This goes to a possible solution to that, back to my initial statement that we need a process to bring about new technologies, and the reason I say that is this particular technology that we're working on is projected to be able to be built for between 25 and 50 percent of existing rail transit costs. So that hits as an opportunity in two areas. For instance, I think the latest numbers on the D.O.T. transit formula applications, there's about 300 on your desk, of which you probably have funding for 12 or so. That means about 288 are going to have to go home empty-handed. If you can cut the costs of these new systems down, you can either save money or you can finance three or four times as many. So there is a return, a leveraged return, if you have a policy for bringing this technology today. Right now we seem to be hamstrung in our ability to even take advantage of clear potential savings, so we continue spending because we have a formula for that. But we don't have a formula for

investing in something that could potentially save us literally billions of dollars.

JIM OBERSTAR

Let me just pick up on that point. We do have policy and we do have funding for it and we do have programs. It's not the Secretary's fault. The fault is with the appropriations committee in the Congress. The appropriations committee is insistent, both the House and particularly the Senate, on earmarking those dollars and designating them for specific projects in their districts that have nothing to do with the national policy. The Secretary's hands have been tied. He has not been able to do what the law, which we wrote in TEA-21, allows him to do—to designate those dollars to truly innovative initiatives like you're talking about. He has the authority, but he doesn't have the money, because it's been taken right out of his hands.

JOHN DEARIEN

I realize that in the TEA-21 bill there is that capability that somehow in the full circle of government we have not been able to implement that.

NORMAN MINETA

And that will change under Chairman Oberstar (Appreciative laughter follows).

STEVE VAN BEEK

Let me be clear about one thing. What we're talking about, there are cost-savings and efficiencies that can be made in the process and certainly from a national system point of view. Earmarking is bad on the allocation side. What I'm specifically talking about, though, is expanding the pool of money available for transportation. And we have enormous discretion there, as exemplified by where the Secretary was earlier this week on the Alameda Corridor—there we used a \$400 million loan guarantee to leverage a \$2.5 billion project, which is basically funded by a bonded \$30 tax on containers in the future to generate net value in the present. The question is in using tools of innovative finance and co-mixing public and private money for unmet transportation needs. What is it that we can do in the valley to add, in a sense, capacity and resources into this area and who should be our partners?

BILL LYNCH

Mr. Secretary, I was intrigued by your statement, and I think that it's extremely important when you're talking about massive infrastructure investments extending over decades looking forward. One of the things I think

that people who live in this area see on a day-to-day basis is that their whole concepts about the rate of change and what, or how, society adjusts to them is I think a particular challenge. Without designating an answer, 25 years looking forward at the currently exponentially growing rates of change is going to be a challenge. You're thinking about what has happened in the world as a network, nobody thinks anything about it now, but five years ago this network was nearly invisible.

I think it would perhaps be interesting, also, to draw insights from those people who actually, probably, envision a world whose sociology and infrastructure is so radically altered that some of the discussions we have, transportation will always be relevant, but they might have to be put into a context. I would certainly predict Silicon Valley will look absolutely nothing like it does today in 25 years. So I think the real challenge when you start trying to plot this trajectory, and I think it's human nature and every organization does it—they try to steer from where they are. When it comes to the world that's in front with respect to networks and biotech and all of these things, I'm not sure you're going to intercept the target.

NORMAN MINETA

Mr. Secretary, I'd like to ask if I might, Steve Berglund, is there a Moore's law as it relates to technology and transportation? Can we utilize technology to sort of take elements of Moore's law of doubling the capability of chips in a given period of time? Is there some way we can use technology in order to make some of these advancements in transportation that we ought to be making?

STEVE BERGLUND

Thank you Norm, you're a good director. I'm Steve Berglund from Trimble.

Listening to all of this, we're operating at Trimble at a slightly different level. We're operating at a micro-level. Our basic premise is that three things come together to create new solutions—position, which has a lot to do with transportation; wireless communication that enables a solution to be passed back and forth seamlessly; and then information technology, called a database accessible by the Web. Now this has profound implications for many people in this room in terms of tracking, whether it's Alzheimers patients, to individual delivery vans. I think dealing with Norm's premise here a little bit, is that looking at the next 25 years, there is a profound change coming for American industry that is not yet understood, which is if you look at either the number one cost or the number two cost for most American industrial

companies, new economy or old economy, what you see is the distribution channel consuming most of the costs of the company.

That is going to radically change in the next 20, 25 years. There's going to be the ability to rewire that entirely. Now it's going to be painful. It's going to be painful for manufacturers. It's going to be painful for the system of distribution channels, but it has to do with Web-enabled capabilities. Call it b-to-b, or whatever, but essentially whole channels are going to be wiped out and replaced. Now that is in one sense in cyberspace, but there's also going to be, I think, a profound change in terms of how goods are moved from place to place, where goods are produced, warehouses disappear to be replaced by something else. So there's, I think, a very profound change coming to the industry in what has to be transported from place to place. I think there is the ability here to not just look at adding infrastructure to absorb the growth, but looking at much more efficient manners to move those goods, and again I think that that's going to be information-enabled. But again I think from our perspective position, which enables a vehicle to be identified and directed to the right spot, realtime, that's going to be a very important element. So I think that whether it's as profound as Moore's law—I doubt if it is as profound as that—but I think that the enablement of vehicles both from an industrial standpoint in terms of rewiring the distribution channels that exist in this country, but then also just the day-to-day patterns of individual automobiles or individual commercial vehicles, knowing where they are, where the traffic difficulties are, this whole area of telematics becomes a factor of using the existing infrastructure much more intensively.

It would be our corporate view that there is a profound change available and that we can enable it through technology.

SECRETARY SLATER

Let me just say, I told you we would get to this point, we've got two hands. We're going to take them, were going to press the time just a little bit. But actually that whole discussion here is about collapsing time, and collapsing distance. Some would argue that really the more sustained power and application of the overlay of IT technology on the broader economy as we know it, may in fact be realized in your brick-and-mortar companies that become more efficient, and you probably cannot find a better enterprise that touches all of the industries more than probably this and communications. I would think that transportation and communications, both go to the whole question of logistics distribution and the like. Individuals in the transportation community don't talk like this. This is the new language that we have to start using. This is the new culture that we have to start producing. But we just put

a pin in that. Steve, thank you for getting us there. Okay, let's hear the two comments here.

KATHRYN HEATLEY

Good afternoon, Kathryn Heatley. I'm CEO of Outreach. We are a nonprofit provider of ADA transportation here in the valley. As well, I have one of your job access welfare-to-work grants. I'm honored to be next to Norm, who helped me get my original FTA grant several years ago.

We have a highly successful ITS project; it happens to be running Trimble equipment, a very highly reliable GPS. But what's really critically important, we are facing the largest age wave on the planet and right now this generation I serve, I'll do a million rides next year, has been very gracious with me. We are using ITS, we have documented findings on what we can save this next generation of you and I, who demand instantaneous answers. I am now looking at additional wireless communications to come into my system, and on my vehicles, and I'm a community provider.

What I have here in the valley is a willingness of companies to come and work with me. What I also have to match is I have to bring the county, I have to bring the VTA to the table then I have to look for you folks for some additional funding. Then what I really need is the timeliness of decisions, the flexibility. I'm kind of in the middle of the Oreo—I can do business with everybody in this room but I need flexibility. That is my piece. And this—that the growing ADA population and now with welfare-to-work, we have been up for a year, there's a tremendous demand now to find out how low-income poor children and children of welfare mothers, once they take the mom to work, are going to be picked up in the afternoon and taken somewhere else. So I have another grant in. These are huge problems facing the communities. Thank you for the opportunity to speak.

SECRETARY SLATER

Thank you. Yes?

JOHN DEARIEN

I wanted to add a little bit to Steve's vision on that. The one thing that I think, if you want to take a grand vision and look for transportation in the next 25 years, look at where it fits in a lot of other human endeavors and how they sit. The four main things that humans do is we eat, we live, we communicate, and we move. The first three of these in modern age have nearly become transparent, in other words, how they happen is just, we don't pay any attention to it. We don't participate actively in the food that we grow. We

don't build our houses out of logs and caves anymore. And when we communicate, for the most part, whether it's a landline or a cell telephone, we pick it up and push the button and we talk to someone literally anywhere in the world, and whether it goes by wire or cable or by satellite, we don't know and we don't care. But the transportation industry, practically every aspect of it, we are still very much involved in it, from the traffic jams to getting your tickets. So if you want a longer range of view what we should be striving for is how do we make the transportation aspect of our lives transparent? I want to go there, so somewhere I go push a button and sit back and read my paper or do whatever and I am there—that's transparency, and that's a goal that we can look toward.

SECRETARY SLATER

Good point, and I also liked your point about looking at transportation through the prism of your view about other things that you know are moving at a much faster rate. Then you can understand probably better how transportation interfaces with that, because it's really an enabling force. I mean that's basically what it is, and in the past we have talked about mobility but at its core, it's really a question of access. I mean the value is in the access, not necessarily in the movement. I think in the past that we have focused more on the value being in the movement itself, and that's why we've been able to say, oh that neighborhood and that neighborhood, the value is in the movement, their interest becomes secondary. I mean that's the way we've cut that decision for a long time and then we got to a place where we decided we weren't going to do any harm. I think that there is a place to go where we actually enhance the environment, and I think that we're getting there as we cut the waste out of the system that currently exists.

Any other thoughts? This is very good. Well, why don't we do this? Why don't we close off the conversation for the moment, but we would like for you to continue to think about what we have discussed here, and probably your own thoughts will become more crystallized as we go forward, and if your thoughts do become more crystallized, share those with us. Know that we really want to hear from you. I shared with the staff at the beginning of the year that I thought we could do as much this year as we've done the last three years combined. They kind of looked at me on that score, but I think that we're getting there, because my point has been it's not the individual things that we do that I think really captures the value of what we do. It's the process we put in place, or the processes that we put in place that help us get to better decisions, and frankly, I think you probably know a job best when you're moving to the next. Since we've got a few more months here, we're going to

make sure that we don't waste what we have learned over the last three years, doing things as we've done them over the last three years. We're going to try to see if we might use what we've learned through an interface with others to give us a better insight about doing things in the future. We will actually pass that information and understanding on to others, you see, who will continue to carry on the leadership process forward.

But this has been very, very good, and Jeff, you're the lucky one here, you're starting your experience with this kind of session and I think that all of you should take Jeff for what he said, with all sincerity. And that is, he's been wanting to have such a meeting as this one, and to do it so early in his tenure gives you an advantage too. This is someone you're going to know, and who is going to know you throughout his service. He could easily be with the contractors, or with any other traditional group, starting his experience, but he's here with you and I think that's something that's very, very good. So with that, I'll come back to you, Dr. Duffy, to say thank you again.

GLORIA DUFFY

Well, I'd like to thank you, Secretary Slater, for leading such a stimulating discussion, particularly on a Saturday. I thank you for being here with us in San Jose and Silicon Valley. I thank Congressman Mineta, Congressman Oberstar, Mr. Dahms, Mr. Morales, all of our industry representatives. We're particularly glad to see Steve Van Beek here who's a friend of ours, many of us here locally in San Jose. I want to flag the fact that we didn't quite answer his question about government industry partnerships, and just to put it to all of us to keep thinking about that and get back to our friends at D.O.T. about that. I'd like to thank our co-sponsors, the Mineta Transportation Institute. Rod Diridon is here, the director of that Institute. And thanks to the Tech Museum for hosting us in this lovely location; to our staff, Pat Compton and Jim Coplan for spending the day here on Saturday and getting this organized beforehand. So to all, thanks, and good day.

ABBREVIATIONS AND ACRONYMS

DOT	United States Department of Transportation
EU	European Union
FAA	Federal Aviation Administration
GIS	Geographical Information System
IHT	Institution of Highways and Transportation
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Information Technology Systems
MTC	Metropolitan Transportation Commission
One-DOT	Management strategy which encourages the operating administrations to work together
SVMG	Silicon Valley Manufacturing Group
T21	Transportation Equity Act for the 21 st Century
TRACONS	Terminal Radar Approach Control
VTA	Valley Transit Authority

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Prior to printing, this transcript was reviewed by Steven Van Beek, U.S. Department of Transportation; Executive Director Rod Diridon and Research Director Trixie Johnson, Mineta Transportation Institute; and Gloria Duffy, Chief Executive Officer, Commonwealth Club of California.

