

How California is Re-inventing the Future with Autonomous Technology

As climate change, casualties and congestion remains the top challenges for the infrastructure transportation industry, a California county, Contra Costa, is on a quest for a better world.

Executive Director of the Contra Costa Transportation Authority, Randy Iwasaki lays out his vision for reducing emissions, enhancing mobility and providing new opportunities for under-served citizens.

Dreaming of a Better World



Randy Iwasaki is a man with a mission. As Executive Director of the Contra Costa Transportation Authority, it's his job to bring mobility, safety and a healthy environment to more than one million citizens in California. To do so, he is working locally with a wide variety of city and business stakeholders, and globally with innovative front-runners in the area of transportation technology.

" We are 30 miles from Silicon Valley and 20 miles from San Francisco and our county is a suburban area for major technological hubs. We've seen heavy congestion as a consequence of commuting and we are always looking for new ways to solve this challenge through innovative projects. One of these solutions could very well be automated vehicles – specifically shared autonomous vehicles", Iwasaki explains.

"What you often see in relation to congestion is build-out of roads and transport systems, but that does not solve the first-and-last-mile problem; getting people short distances between transit hubs and bus stops, when commuting or going out. This is not simply a US problem, but an international issue, which we are addressing together with several partners in the industry from Switzerland to Australia and we have signed a Memorandum of Understanding with the "Sustainability and Safety in ITS Focus Group" which is a new initiative and a forum for sharing practices and experiences in ITS on a global scale. Members include European, Asian, African and US ITS organizations and stakeholders. says Iwasaki.

Legislation and Innovation

One of the ways to make innovation come to life and prosper is collaboration across borders, but also across public and private businesses and the legislative sector. Iwasaki explains:

"I remember going to a meeting at an old naval base in Concord, California. We discussed how to transform the place into a living research laboratory for autonomous and connected vehicle technology, and in a short time we got several stakeholders onboard and created the largest secure testing facility on this issue in the US. We managed to bring together thought leaders from the auto industry, communications and technology companies, as well as public agencies under one umbrella. GoMentum Station was the result of this collaboration, and here we are currently producing valuable research and development to the benefit of both private companies and the public transportation sector".

"One of the key features about this location is that we can replicate real life topography and traffic patterns, which has brought us very close to implementation of this game changing technology", says Iwasaki. "We received authorization through California Assembly Bill 1592 to conduct a pilot project for testing of autonomous vehicles that *do not have a driver seated in the driver's seat and are not equipped with a steering wheel, a brake pedal, or an accelerator*, as it was defined".

"Advancing to the third phase of testing – which includes operating on public roads within the business park – entails obtaining permission from both the National Highway Traffic Safety Administration (NHTSA) and the California Department of Motor Vehicles (DMV). Fortunately, we got NHTSA's permission in early October, and staff are in active discussions with the DMV to provide the information required by state statute and secure permission for this next phase of activity on the pilot program.

During the third phase of testing, members of the general public will not be able to ride the shared autonomous vehicles on public streets. Only predetermined testers and evaluators chosen from employees from various employers within Bishop Ranch will be able to ride the vehicles as they traverse public streets within the Bishop Ranch business park."

3 Major Issues to Solve

California and specifically Los Angeles and San Francisco are constantly on the top 5 of the most congested places in the United States, which probably translates to one of the world's most congested places with terrible commuting times. "Our challenge in Contra Costa is to bring down the commuting time and at the same time prevent traffic from increasing and emissions to skyrocket. We have basically three major challenges in front of us: Safety, mobility and the environment. And I believe we can solve these through technology", Iwasaki says.

"I spent 27 years at Caltrans, working as a civil engineer and then on international research collaboration and intelligent transportation. After that, I worked for 7 years in a public agency with the task of securing the best possible infrastructure and the best possible travel experience for our constituents, while lowering emissions. That is why I can safely say that the combination of more intelligent vehicles, fewer traffic disruptions and electrification will meet our challenges. When you gaze into the future, there is an urgent need to take these factors into account when

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producing long term transportation plans. For example, if you can remove the human reaction time from traffic, you can fit in perhaps 30% more vehicles on the same road, because cars can drive closer together. This translates to billions of dollars in savings if we can reduce the need for building out our transportation infrastructure", says Iwasaki. "Who knows - we might not even need the roads and bridges we have today 20 years from now".

So congestion can be helped, it seems, but how about mobility and transport of goods?

"What we want is to help the underserved in our community, including the elderly, poor, and disabled. With autonomous vehicles, they can have the ability to visit family or commute to work with less effort or expense. In the long run, I can imagine trucks being automated too, as we actually are in need of more truck drivers in America – and because trucking accidents often are very dangerous. Environmentally, intelligent driving, combined with new technology, including electrification, is definitely the future and I expect much from automated and connected vehicles", Iwasaki underlines.

Randy Iwasaki is the Key Note Speaker at the Danish Road Forum Conference 2017 in December.

Randell H. Iwasaki, P.E.

Randy Iwasaki is Chief Executive of Contra Costa and responsible for the overall management of the Authority, including its projects, programs, policies and procedures.

Prior to this he was Director of the California Department of Transportation (Caltrans). He has a bachelor's degree in Engineering from California Polytechnic State University, San Luis Obispo, and a Master's in Engineering from California State University, Fresno.



The Contra Costa Transportation Authority (CCTA) is a public agency formed by Contra Costa voters in 1988 to manage the county's transportation sales tax program and oversee countywide transportation planning efforts. With a staff of twenty people managing a multi-billion dollar suite of projects and programs, CCTA is responsible for planning, funding and delivering critical transportation infrastructure projects and programs that connect our communities, foster a strong economy, increase sustainability, and safely and efficiently get people where they need to go. CCTA also serves as the county's designated Congestion Management Agency, responsible for putting programs in place to keep traffic levels manageable. More information about CCTA is available at ccta.net.

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"I expect that our solution will be replicated by many urban and suburban communities. Shared, electric, autonomous vehicles will also dramatically reduce the need for parking, total vehicle miles traveled, and overall greenhouse gas emissions".



Now in its third testing phase, Easy Mile is an autonomous vehicle that is set out to solve the so-called "first-and-last-mile" challenge of helping people connect to their respective transit centers and their destinations.