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Clara County," Alaniz said. "It's all a part of the transit service redesign."

Initially they talked about implementing the redesign in July, and they may start running some of the service, but until the BART system comes in, it won't be fully integrated, she explained.

From extensive outreach and research they've done, they found what mattered to people most was more time with family. Alaniz said above environmental concerns or saving money, people want the option that gives them the most time with their family and this redesign will offer more frequent service.

At the Forefront of Innovation

Technology is born in the Silicon Valley and Fernandez said they have a responsibility for driving that technology being so close to the heart of it. She said, "If we're this close and we can't even test these things or at least get a sense of working with the tech companies as to where this technology is going, we have missed that opportunity."

VTA has formed partnerships with a number of the tech companies and is working with them to advance technology. The Innovation Center at VTA has modular pieces of the system, including the integral parts of the bus system and rail system, so that technology can be tested there, or they can be tested in mobile units.

Chief Technology Officer Gary Miskell explained the Innovation Center is more of a concept, but it's a physical space, as well. "The idea was, you can say you're being innovative, but we ground it with a physical place.

"We try to create an environment where those who have ideas about transit technology or transportation technology can come and meet," Fernandez said.

When the Innovation Center was first getting started in 2014, Miskell said they spent a lot of time going out and talking with customers, trying to better understand where the technology issues were and what capabilities customers were looking for.

It's an ongoing learning process and while some projects may not initially go as planned, but there's always something learned. VTA ran a pilot Flex program, where they were serving an area using an on-demand-type service, similar to a transportation network company. While they found running a pure on-demand service may not be the right operation, Miskell said it taught them enough that a variance could be utilized.

This summer, he said they are working with RideCell to continue the Flex capabilities and apply it to their paratransit service so that instead of calling ahead, it could be on demand.

They are also looking to use that Flex capability with other technology to incorporate in other ways. As Miskell described it, they are looking for ways to give riders more control over their environments.

The Smart Stop was an idea they created and found a vendor — CHK America — willing to build it. The stop and bus can communicate with each other. If it's cold and dark, the person at the stop has the ability to put in a stop request. The bus could let people at the stop know if the bike rack is full or empty or how many wheelchairs are on board. The Smart Stop allows riders to plan trips with access to all of the tables and schedules.

Incorporating this with their experience from Flex, they are looking to have Smart Stops at a local community center where there are three major bus stops about a mile in each direction that today people have to walk to. With the Smart Stop, the person could walk to the stop and signal to get picked up. "The Smart Stop can be built in to a whole situation," explained Miskell.

VTA is looking to some of the larger companies near stops to sponsor these Smart Stops. "They would pay enough to sponsor one at that location and one where we want to put it, where you couldn't get a sponsorship," Miskell said.

VTA AND the project team relocating a large diameter water pipeline owned by the Santa Clara Valley Water District for the BART Silicon Valley Extension. Project Fact sheet at **MassTransitmag.com/12296322**

CHK America

THE SMART stop allows the bus to "talk" to the stop and make it more of an interactive conversation with the passengers.

He shared a variety of other projects that VTA has underway, as well, including utilizing artificial intelligence and collision avoidance technology.

VTA is working with Rosco and they have four buses with Mobileye collision avoidance installed on them. Miskell said, "It's in the early stage and we're trying to make it better and better." While not quite ready for "prime time," he said, they anticipate purchasing that capability on future vehicles as they do replacements.

The National Science Foundation (NSF) awarded a 3-year grant to UC Santa Cruz to fund a research project aimed at helping passengers that are visually impaired to navigate VTA. IBM Research was the principal industrial partner for the project that relies on beacons — manufactured by Kontakt.io — on the vehicles and at the bus stops, which navigates the route for the passenger. RouteMe2 software tells the person where they need to turn, whether or not the vehicle pulling up is their bus or train, and whether or not they're at the front door.