TRANSPORT TICKETING NORTH AMERICA
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TAP2 RIDE

Capitol Corridor: Tap2Ride contactless payments pilot

Examining Year 1 of accepting passengers' bank cards onboard—a first for U.S. intercity passenger rail

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CALITP

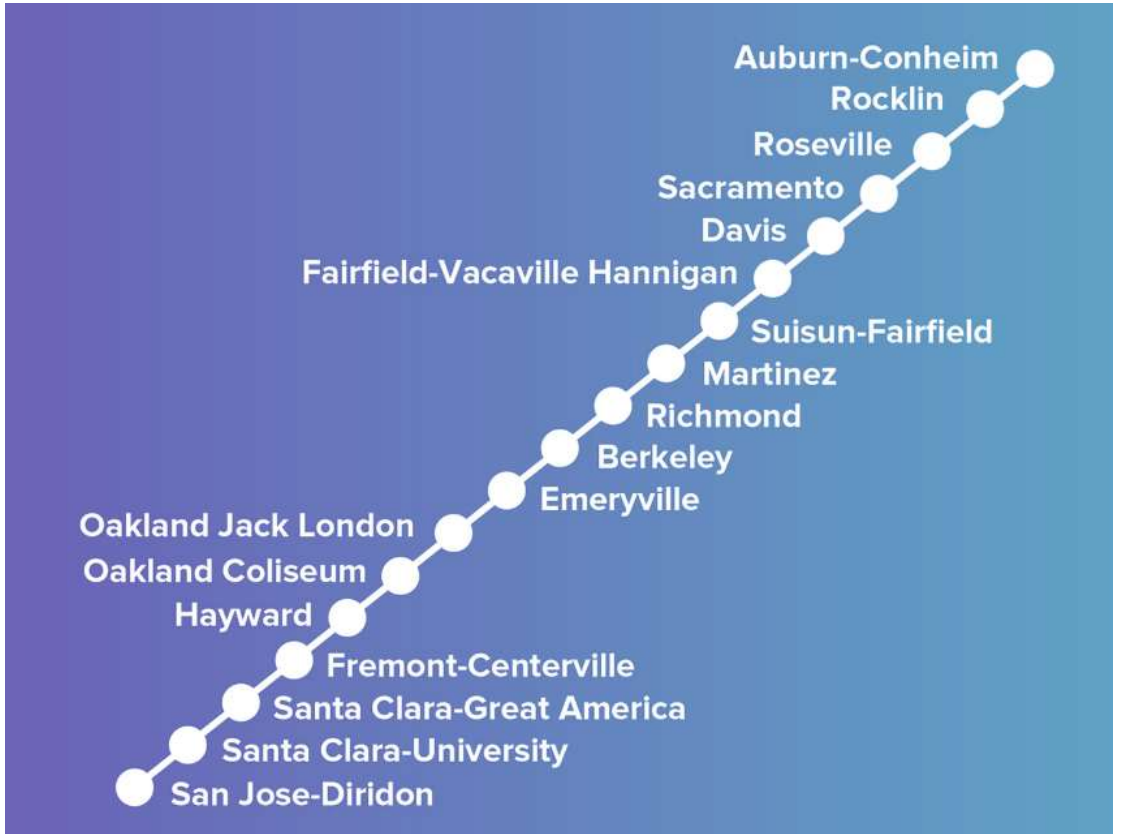
Caltrans

Capitol Corridor: Linking the San Francisco Bay Area to California's state capital

TAP2 RIDE

Managed by Capitol Corridor Joint Powers Authority (CCJPA) and operated by Amtrak, Capitol Corridor connects the Sacramento capital region to the San Francisco Bay Area—each with its own "closed-loop" regional fare card.

When commuters inquired about a contactless payment option—and more flexibility in choosing which train to ride, as Capitol Corridor offers open seating—CCJPA decided to pilot **onboard acceptance of contactless "open-loop" debit and credit cards**, meeting passengers' request to pay for transit rides the same way they do for other everyday purchases.



Where we are with our pilot—and how we got here

- **Registration** allows CCJPA to **control** the number of Tap2Riders, **connect** with them for feedback, and **generate a manifest list**.
- CCJPA learning the necessary internal processes to **operate a revenue collection system**—previously Amtrak was solely in charge of ticketing / fare collection—in a low-risk environment (limited group of users).
- **Nearly 330 initial Pilot Participants**, a mix of near-daily commuters + weekend riders.
- Proved that **contactless fare payment works on rail**—and that **riders like to tap to pay-as-they-go** instead of purchasing a ticket before boarding.

CA Secretary of Transportation Toks Omishakin taps to ride aboard Capitol Corridor.

Pilot participants tout flexibility, convenience

Commuter between multiple stations

The benefit for me using Tap2Ride is that while I frequently use Capitol Corridor, I am often not going to the same destinations. The 10-ride ticket is limiting as I really need to solidify being between two cities in a more commuter-oriented approach. For example, my commuting standard would be Richmond to Sacramento, but I sometimes head to Davis or Martinez. **Tap2Ride has allowed me to maximize the use of Capitol Corridor** without wasting my 10-ride ticket.

Ditching the car to run errands:

Biking to the train station and hopping on board the next Capitol Corridor has become second nature to me thanks to tapping. I check the schedule and to see which train is going to work best, then pedal over to grocery shop, run errands, and meet friends and family all over the East Bay.

It really is astonishing how easy the whole experience is and how quick and hassle-free it is compared to driving.

Cycling between transit and train:

As a semi-frequent rider of Capitol Corridor, I want to voice my support for Tap2Ride. This pilot has been a very cool way to experience Capitol Corridor and **adds flexibility to where I want to get off**—which is important for me, as I'm often transferring to other transit services.

The easiest example of this is the BART transfer at Richmond, which on weekends is very difficult to time to where you're not spending 20 to 30 minutes waiting for the next BART out. Since I bring my bike, I can also choose to get off at the Emeryville station and connect to West Oakland BART if I'm going to San Francisco, or Jack London to Lake Merritt if I'm going to South East Bay. Tap2Ride gives me the ability to make this decision last second.

Typically a solo rider:

We have taken the train once as a family and I was reminded of the **extreme convenience of tapping compared to my wife's ticketing ordeal**: having to go online and buy a ticket, get an email, find her ticket on her phone, call it up, etc.

Getting started: Tapping partners at the State of California and Caltrans' Cal-ITP

CCJPA is the fiscal sponsor of Caltrans' California Integrated Travel Project—Cal-ITP—a statewide initiative designed to support public transportation in CA with:

- *A common payment system:* debit/credit cards, just like passengers pay for a cup of coffee
- *Real-time transit data standard:* live train and bus locations on standard mobile phone journey-planning apps, such as Apple Maps and Google Maps
- *Seamless verification of eligibility for transit discounts,* such as older adults and students

Joining the open-loop fare payment ecosystem—with State of California contracts

TAP2RIDE

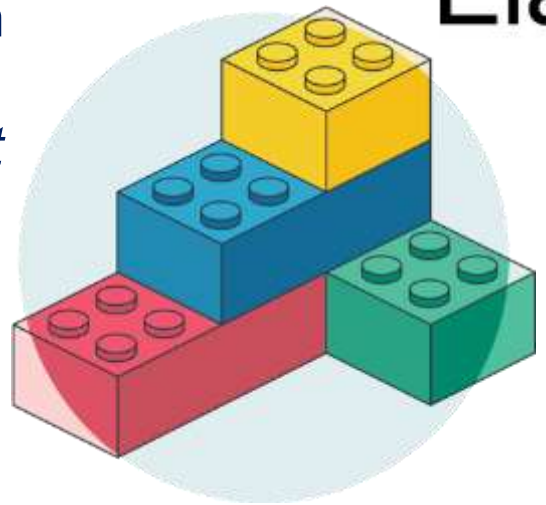
To accept riders' bank card payments just like a coffee shop, a public transportation agency needs 3 elements—which the State of California has contracts for, allowing a building-block approach to modernizing your fare collection system. From those contracts, CCJPA chose:

KUBA

Payment acceptance devices: Initially 4 payment readers on each of just our double-decker cab cars. *(CCJPA doesn't own any of its stations.)*

littlepay

Fare calculation software: Pilot participants tap in / tap out; "transit processor" software calculates distance-based fares.



Elavon

Electronic payment acceptance processor: The "acquirer" moves money between riders' accounts and CCJPA's.

See California's competitively awarded contracts—available to all public transportation providers across the U.S.:
camobilitymarketplace.org/contracts

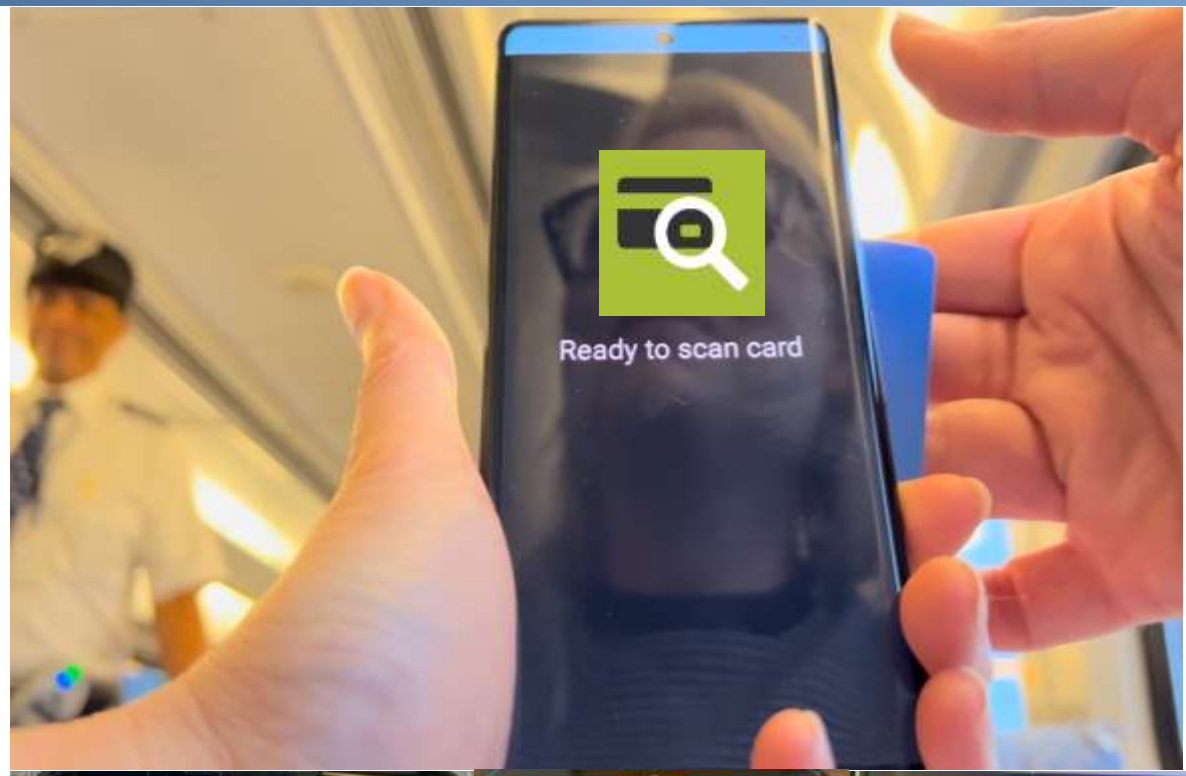
Distance-based fares are enforced by back-end system and Amtrak Conductors

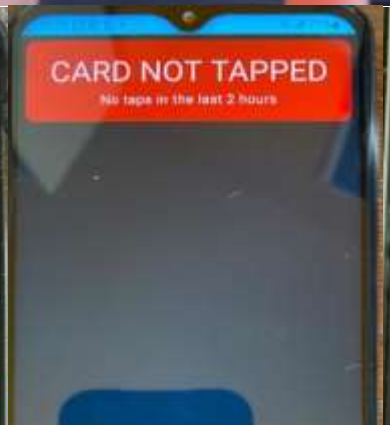
- **Pilot participants use their debit / credit card to Tap On** a Tap2Ride payment reader when they board **and Tap Off** before they disembark.

- **No tap out? An incomplete journey fare is assessed.** *(No penalty fares charged during pilot.)*

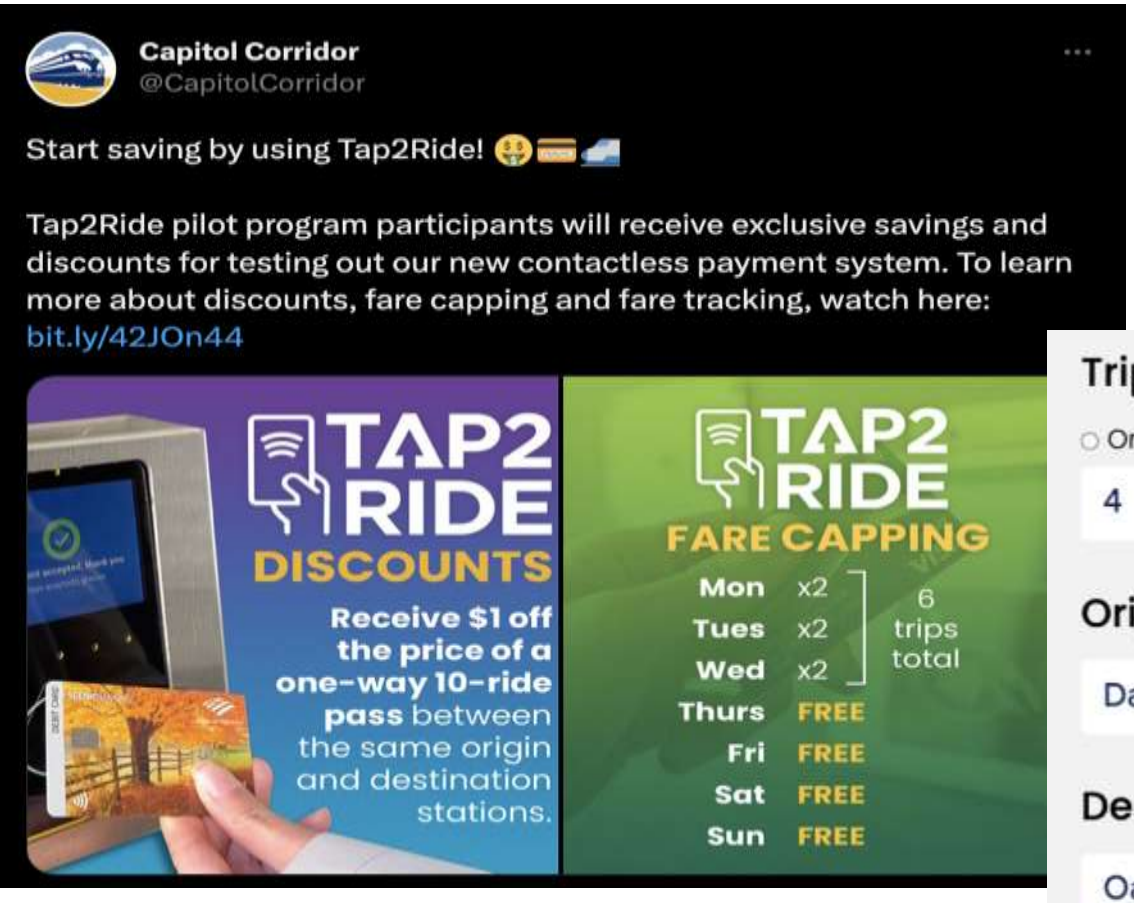
- **Amtrak conductors verify tapped fare payment** with Littlepay / Xentrans Android app.

- CCJPA learned that there are challenges with operating 2 revenue collection systems when it comes to fare payment verification:
  - In addition to their Amtrak e-ticketing device (an iPhone to scan tickets), conductors must carry and use a Tap2Ride device (an Android device that connects to train Wi-Fi and verifies that a pilot participant's card was tapped).
  - Apple iPhone iOS currently does not allow "inspection" of bank cards, thus the use of an Android device that does.



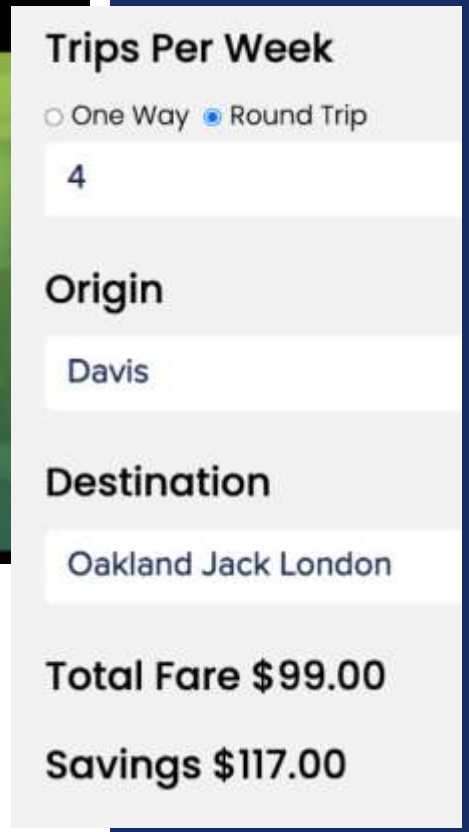


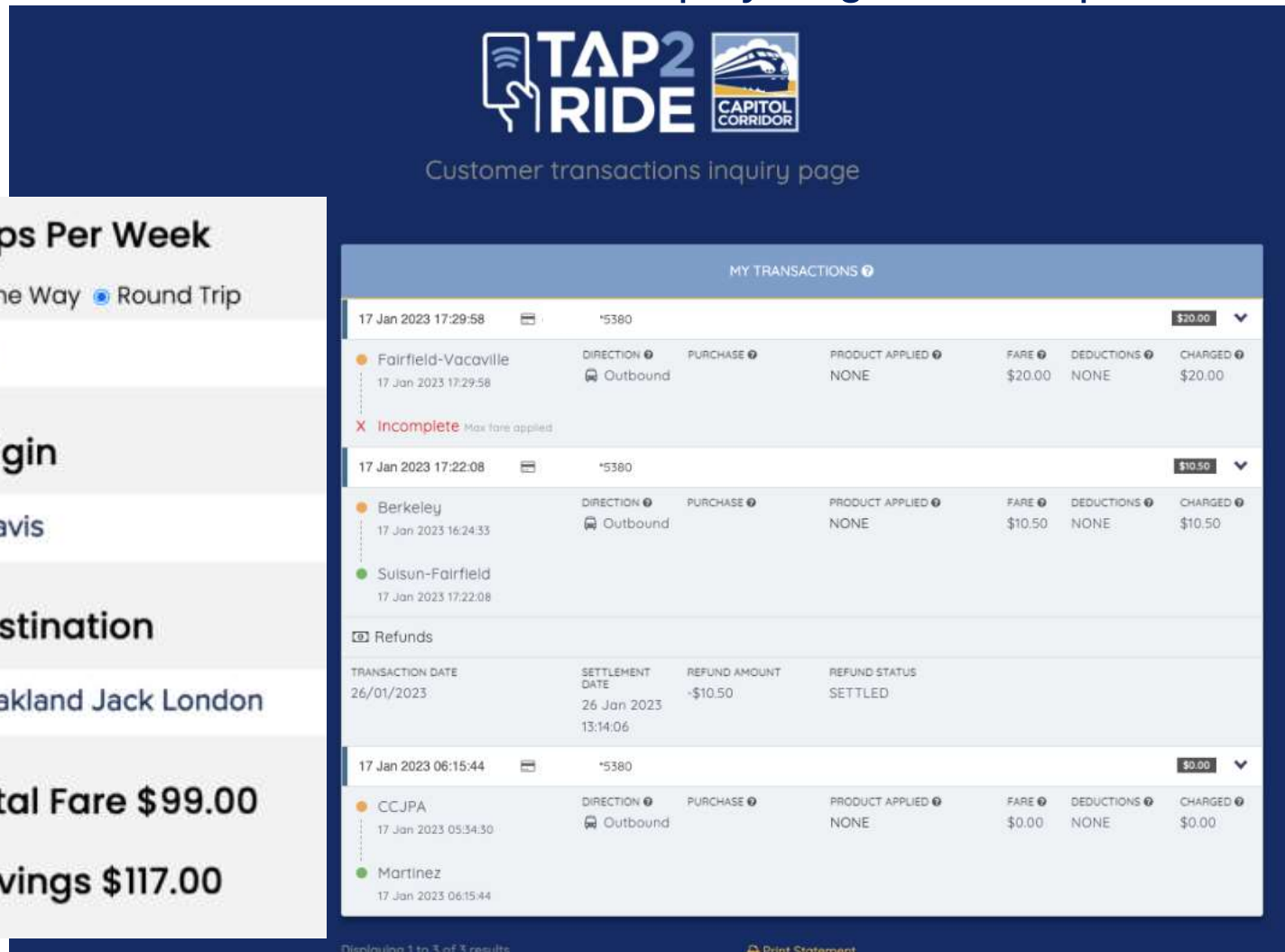
Fare capping lets pilot participants “Pay as You Go” for discounted Tap2Ride fares and free rides



Social posts—including videos—explain how to tap into savings

Web tools: Tap2Ride fare calculator + Customer Transactions Inquiry Page for receipts

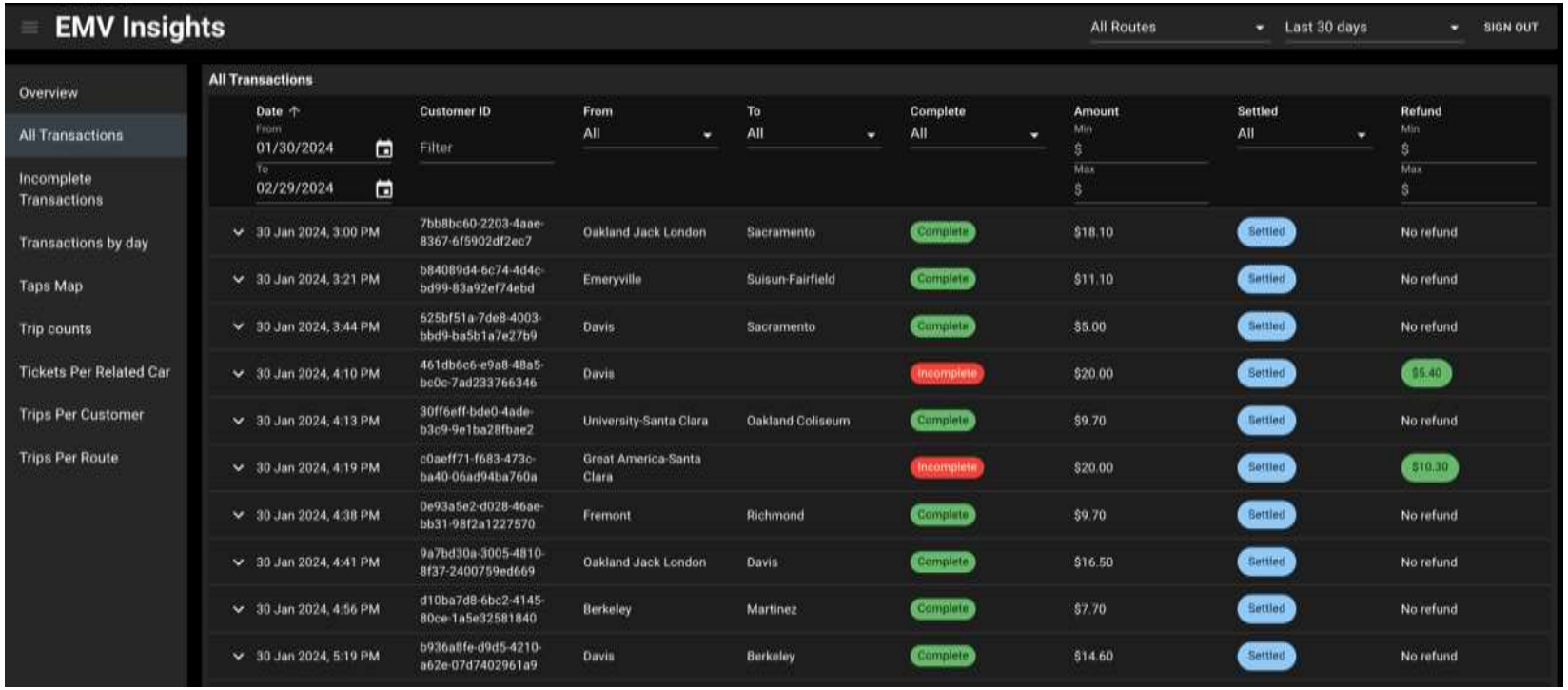




Organizational readiness requires cross-team collaboration

This is the first time CCJPA has collected its own revenue, independent of Amtrak ticketing.

New processes (such as Refund Requests and Approvals) are currently being established by the Finance and Customer Service teams, and CCJPA staff are adapting to these changes in their daily operations.



Good practice example:
CCJPA began with manual processes, noted learnings, then started to automate and build systems, including asking technical consultants Xentrans to customize an *Insights* dashboard—shown above—to aggregate and visualize contactless payment vendor APIs, enabling Customer Service to easily spot incomplete journeys and refund requests, then send them to Finance for refund approval and execution of adjustments.

Fare pricing and fare-capping products vs. different use of riders

With real-time train location info tied to each tapped payment via the General Transit Feed Specification (GTFS) Realtime open-data standard, CCJPA learned about travel patterns and how they match fare products.

For example, during the summer period, only a few riders hit our weekly fare cap.

CCJPA will keep tracking the numbers and re-examine which fares suit our objectives and our riders' travel patterns.

Customer Identifier	Complete Journey	Allowed/Denied	Touch In Location	Touch Out Location	Touch In Da
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Suisun-Fairfield	Emeryville	8/13/2023
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Emeryville	Suisun-Fairfield	8/13/2023
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Emeryville	Martinez	8/6/2023
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Suisun-Fairfield	Richmond	8/6/2023
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Berkeley	Martinez	8/5/2023
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Suisun-Fairfield	Richmond	8/4/2023
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Emeryville	Martinez	8/4/2023
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Suisun-Fairfield	Richmond	7/30/2023
9b16d177-ba62-4577-9651-9f8435183d6a	Complete	allowed	Emeryville	Martinez	7/29/2023
b7bd7d8f-42c2-4c4d-a519-5140e6abf0bc	Complete	allowed	Great America-Santa Clara	Emeryville	7/28/2023

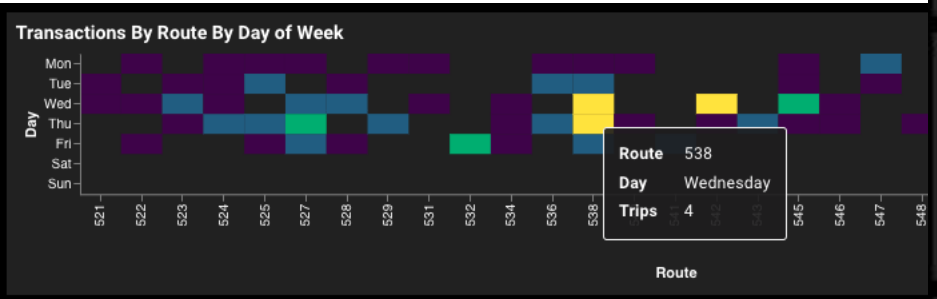
Microsoft Power BI insights on weekly cap usage

Our contactless payment system gives us access to new rider and operational info via *Insights* dashboard

Our customized EMV (another term for open-loop payments) *Insights* dashboard from Xentrans pulls in our vendor APIs to enable us to take macro and micro views on data, spotting both trends and issues.

Further possibilities include:

- A/B testing
- Device performance monitoring
- Customer Service measures
- Fare evasion analysis



Next steps: Expanding Tap2Ride

Rail/CCJPA

- **Add contactless payment readers to all train cars** *(installation began in December 2023)*, with **goal of expanding the pilot** to a larger list of Tap2Ride invitees in mid-2024
- **Continue to fine-tune fare inspection app** and explore development on iOS
- **Add Tap2Ride to Amtrak Thruway coaches** by spec'ing out adding payment readers and fare inspection devices
- **Explore options to satisfy intercity manifest requirements** (incident-based) via true open-loop processing (aka, not registering)
- **Expand to include mobile wallets**

State/Cal-ITP

- **Explore transfer agreements with adjacent agencies** that are adopting contactless open-loop debit/credit card fare payments
- **Work to serve more riders**. There are a few customer segments important to CCJPA that are not perfectly served by the current system:
  - Customers with bank cards other than Visa and Mastercard (the networks certified to transact via the contactless payment reader)—and customers “without bank cards”/cash
  - Employee benefit programs
  - Title VI/Eligibility discounts
  - Group travelers

CCJPA is working with Cal-ITP to find and standardize solutions that other public transportation providers—in California and beyond—can also benefit from