# Transit cards utilizing existing contactless EMV fare payment infrastructure

## Program Design and Procurement Considerations

# Table of Contents


*Context* ..... *3*

*What is a Transit Card? How can it be delivered as-a-service?* ..... *4*

Model 1: Prepaid Card Program ..... 4

Model 2: Fare Payment Platform ..... 4

Common Characteristics and Key Differences Between the Models ..... 5

*Case Study: Monterey-Salinas Transit's Transit Card Initiative* ..... *7*

Vision for fare collection ..... 7

Procurement Process ..... 7

Desired Solution Characteristics ..... 8

Key Learnings ..... 8

*Program and Procurement Design Considerations* ..... *9*

Define the Purpose and Scope of the Transit Card ..... 9

Design the Rider Experience ..... 9

Focus on Functional Requirements First ..... 10

Understand the Cost Structure ..... 10

Consider Future Mobility Integration ..... 6

## Context

Over the past decade, contactless EMV (cEMV) payments have become a widely adopted fare payment method across public transit systems around the world. By allowing riders to pay with contactless bank cards and mobile wallets, agencies can reduce reliance on agency-specific fare media while providing a familiar and convenient payment experience. Transit agencies across California are implementing cEMV fare payments with support from the California Integrated Travel Project (Cal-ITP), a program of the California Department of Transportation (Caltrans). Through statewide Master Service Agreements (MSAs), implementation support, technical guidance, and vendor partnerships, Cal-ITP has helped agencies deploy contactless fare payment systems using industry-standard payment technologies.

Today, California has a growing number of live cEMV transit implementations serving riders in both urban and rural communities. As these deployments mature, transit agencies seek to leverage their investments in cEMV infrastructure to serve more riders. Given the high cost and increased risk of collecting cash across transit systems, agencies seek to reduce or eliminate onboard cash collection while continuing to serve riders who use cash today. Can agencies simplify their fare payment offerings while maintaining equitable access for all riders?

To explore these questions, Cal-ITP examined examples where EMV standards are used not only for open-loop payments, but also for transit-specific payment products. Examples include Stockholm's contactless transit ecosystem, the Netherlands' nationwide OVpay program, and New York's OMNY system. These programs demonstrate how EMV technology can support a range of payment options for cash-paying customers while maintaining a modern, customer-friendly fare payment experience.

These examples also share an important characteristic: they were developed by large transit organizations with significant technical, operational, and system integration capabilities. This raises an important question for California transit agencies, particularly small and medium-sized operators: can similar capabilities be delivered as a service, allowing agencies to leverage existing cEMV infrastructure without developing and operating a complex payment ecosystem themselves?

One emerging approach is a transit-specific payment card that uses EMV payment technology while restricting usage to participating transit and mobility services. This document provides insights and lessons learned about program and procurement design based on Monterey-Salinas Transit's Transit Card-as-a-

Service initiative and explores the potential role of Transit Cards within California's evolving fare payment landscape.

## What is a Transit Card? How can it be delivered as-a-service?

For the purposes of this document, a **Transit Card** is a transit-specific payment card that are built on the same EMV standard used for contactless bank cards, while acceptance is restricted to participating transit and mobility services. The Transit Cards leverage globally recognized security and certification frameworks. These products have already been tested against a common standard and therefore, there is less dependence on vendor-specific testing and approval processes, which reduced implementation risk.

Like a contactless bank card issued by a bank or credit union, a Transit Card can be tapped on cEMV fare payment devices to pay transit fares. Unlike a traditional bank card, however, the card is configured specifically for transit use and can be loaded through channels such as agency customer service locations, online portals, mobile wallets, and retail cash reload networks.

Transit Cards are intended to complement open-loop payments by providing an additional payment option for riders who do not have, do not wish to use, or do not regularly rely on bank cards. In the market consultation run by Cal-ITP on behalf of MST, two main delivery approaches were identified.

### Model 1: Restricted Prepaid (Bank) Card

Under this model, the Transit Card functions as a merchant-restricted prepaid payment card issued by a bank. A program manager coordinates card issuance, fund management, customer accounts, regulatory compliance, and customer service, working with banking partners and retail reload networks. The transit agency has a contract with the program manager. The program manager contracts a bank for issuing the cards and managing the balance, and a retail network (e.g., InComm, Blackhawk Network, MoneyGram) for cash top-ups.

The card operates similarly to banking products but is configured so that funds can only be used at participating transit agencies and approved mobility providers. This approach fully leverages the banking ecosystem, including the cEMV standard.

### Model 2: Fare Payment Platform Service

Under this model, the Transit Card is officially issued by the transit agency as part of its fare payment program. Rather than operating as a prepaid financial

product, the cEMV card functions as a transit credential linked to value and fare products maintained within the agency's fare payment system.

The transit agency has a contract with its fare payment system vendor for rider account and balance management, transaction processing, reporting and other program functions. The fare payment vendor contracts a technology provider for issuing cards and provisioning digital card issuance to mobile wallets (e.g., Thales, Idemia) and a retail network (e.g. InComm, Blackhawk Network, MoneyGram) for cash top-ups. Some parties operating in this model leave customer service with the transit agencies.

This approach is often closely integrated with an agency's existing fare payment infrastructure, but can be offered as a service.

## Common Characteristics and Key Differences Between the Models

While the underlying operating models differ, both approaches provide a similar rider experience. Riders can obtain a physical or virtual Transit Card, load value using digital or cash-based channels, and use it to pay for transit services using existing cEMV payment acceptance devices. Both models also aim to help agencies leverage their existing cEMV infrastructure while expanding access to riders who may not use traditional bank-issued payment products and primarily rely on cash payments today. The primary difference between the two models is where the customer account and stored value are managed, interchange (fee paid by the agency to the card issuer), and ability to be used on other modes of transportation.

### Customer accounts and value

In the Prepaid Card Program model, the Transit Card operates within the financial services ecosystem. Rider funds are held by a bank and managed through a prepaid card program. The program manager is responsible for many functions typically associated with financial products, including regulatory compliance, account management, and customer service.

In the Fare Payment Platform model, rider funds are managed within the transit agency's fare payment system. The Transit Card serves as a credential that provides access to a transit account, and the agency retains greater control over fare products, customer policies, and the overall rider experience.

The two models also differ in how responsibilities are distributed. The Prepaid Card Program model relies more heavily on banking and payments industry suppliers, while the Fare Payment Platform model relies more heavily on transit fare collection vendors.

### Financial Structure

While both models have similar cost structures and fee models for items like: (implementation and setup fees, card issuance, cash reload network, platform management and processing, customer service), the prepaid card program model also includes interchange fee. This is because prepaid cards are bank-issued cards and are processed through payment schemes, like Visa and Mastercard. The interchange fee is paid by the transit agencies to the issuing bank.

### Multimodal Potential

Potential future acceptance across other mobility services is another difference between the two models. In many **Prepaid Card Program** models, the Transit Card is restricted to a single merchant but could, in the future, be opened up to other merchants or merchant categories like ride share, or bikeshare in close collaboration with the program manager's banking partner.

In the **Fare Payment Platform** model, rider funds are managed within the transit agency's fare payment system and so use of those funds by other mobility service providers would need to be specifically negotiated and require direct integrations.

## When Considering Expanding Beyond Transit

While Transit Cards are primarily designed to support public transit payments, agencies may wish to consider how the card could eventually be used to pay for other mobility services. The two models might have different limitations in the case of expanding the scope beyond transit. Any interested agency should consider the implications of expanding beyond transit use and discuss them with potential vendors:

- Acceptance at physical point of mobility related sales terminals (e.g. parking meters);
- Acceptance online and in-app (e.g. ride hailing apps);
- Combining funds on the same card (e.g. rider top-up + government benefits);
- Management of top-up cost (e.g., rider tops up card with cash and uses on ride hailing services, top-up fee is paid by the agency); and
- Regulatory implications (e.g. risk and money laundering regulations).

By considering broader mobility use cases early in program design, agencies can position their Transit Card programs to support evolving transportation networks and changing rider needs over time.

# Case Study: Monterey-Salinas Transit's Transit Payment Card Initiative

Monterey-Salinas Transit (MST) was one of the first California transit agencies to implement contactless EMV (cEMV) fare payments with the support of the California Integrated Travel Project (Cal-ITP). Riders can already pay fares using contactless bank cards and mobile wallets on MST vehicles since the summer of 2021.

As MST's cEMV deployment matured, the agency began exploring how to further leverage its investment in contactless payment infrastructure. A key economic driver was reducing the cost of cash collection onboard and processing cash payments. Required updates to those systems ranged in cost from $5-7 million dollars.  MST sought a solution that could support riders who rely on cash while creating a pathway toward reducing onboard cash collection and eventually removing cash fareboxes on board. This would allow MST to simplify its overall fare payment offering.

## Vision for fare collection

MST's long-term vision is for riders to use either a contactless bank card or a Transit Card (and their digital equivalent in mobile wallets) to access transit services. MST plans to eliminate acceptance of on onboard cash collection and legacy fare media while continuing to provide an inclusive option for riders who prefer or require cash-based payment methods. The agency plans to ensure all fare media support pay-as-you-go travel with fare capping and eventually will support additional fare products such as free-fare and reduced-fare programs.

## Procurement Process

To explore whether Transit Cards could be delivered as a service, Cal-ITP and MST conducted market research and engaged with card issuers, prepaid card program managers, fare payment vendors, and retail reload network providers. After learning that scale would be a factor in cost and market availability, MST brought together multiple transit agencies in the region that expressed their interest in a joint Transit Card solution. MST worked with Cal-ITP to develop requirements and conduct a technical review of proposals. An MST evaluation committee selected a vendor, and the resulting contract can also be utilized by other California transit agencies.

## Desired Solution Characteristics

Throughout the procurement process, several key desired characteristics consistently emerged from MST and its partner agencies:

- Offering both digital and physical Transit Cards;
- Can be obtained and used anonymously;
- Can be reloaded with cash and digital payment methods;
- Ability to support both stored value and fare products;
- Customer service and self-service account management tools;
- Compatibility with existing cEMV fare payment infrastructure;
- Regional interoperability across participating transit agencies; and
- Potential future acceptance across other mobility services.

These characteristics formed the basis the procurement requirements.

## Key Learnings

MST's procurement demonstrated that Transit Cards can be delivered using existing EMV technology and integrated with modern fare payment systems. However, it also highlighted several important considerations.

First, Transit Cards require an ecosystem of vendors rather than a single product provider. Key vendors in the ecosystem needed to deliver Transit Cards are: card issuer (a bank or a card issuer technology company), cash reload network and a program manager (prepaid card program manager or fare payment vendor).

Second, the market is evolving around two distinct service models: a prepaid card program model and a fare payment platform model. While both approaches can provide a similar rider experience, they differ in how customer accounts, stored value, and program responsibilities are managed.

Third, scale matters. Suppliers expressed greater interest in programs that have sufficient scale to support their business cases. MST's leadership realized that a program serving multiple agencies with a combined larger ridership can attract more vendors than in single small-agency deployments. This suggests that collaboration among agencies may help create stronger business cases and attract broader supplier participation.

Finally, Transit Cards – similar to credit and debit cards - can support more than stored value. If an agency already offers pay-as-you-go travel with fare capping, reduced-fare programs, or free-fare programs, they can continue offering these to Transit Card users as well. Offering these products to riders does not depend on the Transit Card model or the Transit Card service provider's capabilities.

MST's experience demonstrates that Transit Cards are feasible as a service offering and may provide agencies with a new, modular tool for expanding access, reducing cash dependence, and maximizing the value of their cEMV payment acceptance device investments.

## Program and Procurement Design

Transit agencies interested in implementing a Transit Card program should begin by defining the desired rider experience and program objectives before selecting a procurement approach or drafting functional requirements. The following considerations can help agencies develop Transit Card requirements that align with their operational goals, rider needs, and available market offerings.

### Define the Scope of the Transit Card

Agencies should first determine how the Transit Card will fit within their overall fare payment strategy and where it will be accepted. Potential objectives could include:

- Providing a payment option for riders who do not use bank-issued payment products;
- Supporting a transition away from onboard cash collection;
- Replacing legacy closed-loop fare cards;
- Simplifying the agency's fare payment offering; or
- Supporting regional interoperability.

Agencies should also consider whether the Transit Card will be accepted only within their own system, across multiple transit agencies, or by other mobility service providers.

### Design the Rider Experience

The rider experience should remain central to program design. Key questions include:

- Will the Transit Card be offered as a digital card, physical card, or both?
- Where can riders obtain a card?
- How can riders load value?
- How can riders check balances and transaction history?
- How can riders replace lost cards or access customer support?

Agencies seeking to reduce or eliminate onboard cash collection should pay particular attention to the availability and accessibility of cash reload options.

## Focus on Functional Requirements First

Agencies do not need to choose an operating model before going to market. Instead, agencies can define the desired rider experience and program requirements and allow suppliers to propose how those requirements should be delivered. Different suppliers may propose different technical and operational approaches while responding to a common set of functional requirements.

Examples of functional requirements may include:

- The ability to issue digital and physical Transit Cards;
- The ability to load value using both digital and cash-based channels;
- Acceptance on existing cEMV fare payment infrastructure;
- Customer self-service tools for balance inquiries and transaction history;
- Customer service support for lost cards and account management;
- Fraud management tools; and
- Potential future interoperability across multiple transit agencies.

By focusing on outcomes rather than a specific technical architecture, agencies can encourage innovation and allow suppliers to propose solutions that best leverage their existing products, partnerships, and expertise. It is important for agencies to consider the economics that this change provides, and understand, in detail, how much the total cost of ownership would be for the contract period.

## Understand the Cost Structure

Traditionally, Transit Cards were delivered as part of the service package of a full-stack fare payment vendor. Through this procurement process MST proved that the market can deliver Transit cards as a service and as a standalone product.

Agencies should expect costs to be distributed across multiple components. Common cost categories include:

- **Implementation costs**, such as system configuration, integrations, testing, digital wallet enablement, and retail network onboarding;
- **Card issuance costs**, including physical card production, digital card issuance, personalization, and fulfillment;
- **Platform and program management fees**, covering account management, reporting tools, customer portals, and administrative services;
- **Cash reload and distribution costs**, including retail commissions, reload transaction fees, and card sales channels;
- **Transaction processing costs**, which may include payment processing, settlement, interchange*, and refund-related fees; and

- **Customer service costs**, including call center support, lost card replacement, and dispute management.

Some of these costs are fixed or semi-fixed regardless of agency size. As a result, agencies may benefit from participating in regional deployments, shared procurements, or multi-agency programs that distribute costs across a larger rider base.

The Transit Card service is delivered by a combination of vendors, where the program manager or a fare payment vendor takes the lead (and holds the contract directly with the agency). They usually partner with a card issuer (bank or technology company) and a retail network. Some of the above-mentioned costs are pass-through costs that the program manager or fare payment vendor pays to the other parties.

* Note on interchange: interchange fees are only present (and paid by the transit agency via its acquiring contract, the same manner as contactless EMV payments) if the transit agency selects a supplier using the prepaid card model who has partnered with a bank as an issuer.