



Bay Area Metro Center
375 Beale Street
San Francisco, CA 94105

Meeting Agenda

Clipper Executive Board

Committee Members:

Denis Mulligan, Chair Edward D. Reiskin, Vice Chair

*Grace Crunican, Nuria Fernandez, Jim Hartnett,
Steve Heminger, Michael Hursh, Rick Ramacier,
Nina Rannells*

Monday, November 28, 2016

3:30 PM

**San Francisco Bay Area Rapid Transit District
344 20th Street, 3rd Floor
Oakland CA, 94612
BART Board Room**

This meeting will be recorded. Copies of recordings may be requested at the Metropolitan Transportation Commissioner (MTC) at nominal charge, or recordings may be listened to at MTC offices by appointment.

To access meeting location, please access through the Webster Street entrance between CVS Pharmacy and 24-Hour Fitness. Take the elevator to the 3rd floor and exit the elevator to your right where the agenda will be posted. Please enter the room through the double doors. For meeting location questions, please contact Angelica Dill-James at 510-464-6093.

1. Roll Call / Confirm Quorum

Quorum: A quorum of this committee shall be a majority of its regular voting members (5).

2. Consent Calendar

2a. [15-2043](#) Minutes of October 24, 2016 meeting

Action: Board Approval

Attachments: [2a CEB Minutes Oct 2016 v2.pdf](#)

2b. [15-2054](#) Clipper® Executive Board 2017 Calendar

Action: Board Approval

Presenter: Edward Meng

Attachments: [2b Clipper Executive Board 2017 Calendar.pdf](#)

3. Approval

- 3a. [15-2070](#) Contract Change Order Amendment - Clipper® Card Procurement:
Cubic Transportation Systems, Inc. (\$2,000,000)

Annual procurement of Clipper® cards.

Action: Board Approval

Presenter: Edward Meng

Attachments: [3a Clipper Card Procurement.pdf](#)

4. Information

- 4a. [15-2055](#) Next-Generation Clipper® (C2) Request for Proposals (RFP) Update

Update on the C2 RFP for Industry Review.

Action: Information

Presenter: Jason Weinstein

Attachments: [4a C2 RFP Update.pdf](#)
[4a Handout-ClipperExecCommitteeNov28_Raney](#)

- 4b. [15-2057](#) Next-Generation Clipper® (C2) System Integrator Request for Proposal
(RFP) Development: Proposed Minimum Qualifications

C2 System Integrator Proposer Minimum Qualifications.

Action: Information

Presenter: Edward Meng

Attachments: [4b C2 Proposed Minimum Qualifications.pdf](#)

- 4c. [15-2058](#) Hardware Purchase, Ownership, and Maintenance

Discussion on Purchase, Ownership, and Maintenance of
Next-Generation Clipper® Hardware and Systems.

Action: Information

Presenter: Edward Meng

Attachments: [4c C2 Hardware Purchase-Ownership-Maintenance.pdf](#)

5. Executive Director's Report – Kuester

- 5a. [15-2045](#)

Attachments: [5ai Fare Game SEPTA Article.pdf](#)
[5aii Ballot Measure Slides.pdf](#)

6. Public Comment / Other Business

7. Adjournment / Next Meeting

The next meeting of the Clipper® Executive Board will be December 19, 2016, 3:30 p.m. in the BART Board Room, 3rd Floor, 344 20th Street, Oakland, CA.

Public Comment: The public is encouraged to comment on agenda items at Committee meetings by completing a request-to-speak card (available from staff) and passing it to the Committee secretary. Public comment may be limited by any of the procedures set forth in Section 3.09 of MTC's Procedures Manual (Resolution No. 1058, Revised) if, in the chair's judgment, it is necessary to maintain the orderly flow of business.

Meeting Conduct: If this meeting is willfully interrupted or disrupted by one or more persons rendering orderly conduct of the meeting unfeasible, the Chair may order the removal of individuals who are willfully disrupting the meeting. Such individuals may be arrested. If order cannot be restored by such removal, the members of the Committee may direct that the meeting room be cleared (except for representatives of the press or other news media not participating in the disturbance), and the session may continue.

Record of Meeting: Committee meetings are recorded. Copies of recordings are available at a nominal charge, or recordings may be listened to at MTC offices by appointment. Audiocasts are maintained on MTC's Web site (mtc.ca.gov) for public review for at least one year.

Accessibility and Title VI: MTC provides services/accommodations upon request to persons with disabilities and individuals who are limited-English proficient who wish to address Commission matters. For accommodations or translations assistance, please call 415.778.6757 or 415.778.6769 for TDD/TTY. We require three working days' notice to accommodate your request.

可及性和法令第六章: MTC 根據要求向希望來委員會討論有關事宜的殘疾人士及英語有限者提供服務/方便。需要便利設施或翻譯協助者, 請致電 415.778.6757 或 415.778.6769 TDD / TTY。我們要求您在三個工作日前告知, 以滿足您的要求。

Acceso y el Titulo VI: La MTC puede proveer asistencia/facilitar la comunicación a las personas discapacitadas y los individuos con conocimiento limitado del inglés quienes quieran dirigirse a la Comisión. Para solicitar asistencia, por favor llame al número 415.778.6757 o al 415.778.6769 para TDD/TTY. Requerimos que solicite asistencia con tres días hábiles de anticipación para poderle proveer asistencia.

Attachments are sent to Committee members, key staff and others as appropriate. Copies will be available at the meeting.

All items on the agenda are subject to action and/or change by the Committee. Actions recommended by staff are subject to change by the Committee.



Metropolitan Transportation Commission

375 Beale Street, Suite 800
San Francisco, CA 94105

Legislation Details (With Text)

File #: 15-2043 **Version:** 1 **Name:**
Type: Minutes **Status:** Consent
File created: 10/18/2016 **In control:** Clipper Executive Board
On agenda: 11/28/2016 **Final action:**
Title: Minutes of October 24, 2016 meeting
Sponsors:
Indexes:
Code sections:
Attachments: [2a_CEB Minutes_Oct 2016_v2.pdf](#)

Date	Ver.	Action By	Action	Result
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Subject:
Minutes of October 24, 2016 meeting

Recommended Action:
Board Approval

Attachments



Agenda Item 2a

Bay Area Metro Center
375 Beale Street
San Francisco, CA 94105

Meeting Minutes - Draft

Clipper Executive Board

Committee Members:

Denis Mulligan, Chair Edward D. Reiskin, Vice Chair

*Grace Crunican, Nuria Fernandez, Jim Hartnett,
Steve Heminger, Michael Hursh, Rick Ramacier,
Nina Rannells*

Monday, October 24, 2016

3:30 PM

San Francisco Bay Area Rapid Transit District
344 20th Street, 3rd Floor
Oakland CA, 94612
BART Board Room

1. Roll Call / Confirm Quorum

Present: 8 - Rannells, Hursh, Ramacier, Chair Mulligan, Vice Chair Reiskin, Crunican, Heminger, and Hartnett

Absent: 1 - Fernandez

Ali Hudda acted as a non-voting alternate to the Board in place of Nuria Fernandez.

2. Consent Calendar

Upon the motion by Ramacier and second by Vice Chair Reiskin, the Consent Calendar was unanimously approved by the following vote:

Aye: 8 - Rannells, Hursh, Ramacier, Chair Mulligan, Vice Chair Reiskin, Crunican, Heminger and Hartnett

Absent: 1 - Fernandez

2a. [15-1947](#) Minutes of September 26, 2016 meeting

Action: Board Approval

Attachments: [2a CEB Minutes Sept 2016](#)

- 2b.** [15-1949](#) Clipper® Program Contract Actions
- i. Contract Change Order - Implementation of Sonoma-Marín Area Rail Transit District (SMART) 31-Day Pass: Cubic Transportation Systems, Inc. (\$175,000)
 - ii. Contract Amendment - Modification of SMART Ticket Vending Machines to support Vending of SMART 31-Day Pass: VenTek Transit, Inc. (\$125,000)

Action: Board Approval

Presenter: Derek Touns

Attachments: [2b Clipper® Program Contract Actions](#)

3. Approval

- 3a.** [15-2025](#) Clipper® Contract Change Order - Bus Device Installation Kits: Cubic Transportation Systems, Inc. (\$1,700,000)

Procurement of Clipper® on-board equipment to support transit operator fleet expansion and replacement.

Action: Board Approval

Presenter: Lynn Valdivia

Attachments: [3a Clipper® Contract Change Order – Bus Device Installation Kits](#)

Upon the motion by Hartnett and second by Hursh, the Clipper® Contract Change Order - Bus Device Installation Kits: Cubic Transportation Systems, Inc. (\$1,700,000) item was unanimously approved by the following vote:

Aye: 8 - Rannells, Hursh, Ramacier, Chair Mulligan, Vice Chair Reiskin, Crunican, Heminger and Hartnett

Absent: 1 - Fernandez

4. Information

- 4a.** [15-1967](#) Clipper® In-Person Customer Service Centers (IPCSCs)

Update on Clipper® In-Person Customer Service Strategy

Action: Information

Presenter: Lynn Valdivia

Attachments: [4a Clipper IPCSC](#)
[4a Handout-Clipper IPCSC TOT Sales Map](#)

4b. [15-1968](#) Comparison of Clipper® and FasTrak® Programs

Comparison of the Regional Clipper® and FasTrak® Programs.

Action: Information

Presenter: Andrew B. Fremier

Attachments: [4b Revised-Comparison of Clipper® and FasTrak® Programs](#)

4c. [15-2026](#) Next-Generation Clipper® (C2) System Integrator Request for Proposal (RFP) Development

Update on the progress of the C2 System Integrator RFP.

Action: Information

Presenter: Jason Weinstein

Attachments: [4c C2 RFP Development](#)

4d. [15-2027](#) Next-Generation Clipper® (C2) System Integrator Assumption of Clipper® Operations

Discussion of the benefits and risks of the C2 contractor assuming Clipper® operations.

Action: Information

Presenter: Carol Kuester

Attachments: [4d Revised-C2 System Integrator Assumption of Clipper® Operations](#)

5. Executive Director's Report - Kuester**5a. [15-1950](#)**

Action: Information

Attachments: [5a Handout-APTA Railvolution Comparison](#)

6. Public Comment / Other Business**7. Adjournment / Next Meeting**

The next meeting of the Clipper® Executive Board will be November 28, 2016, 4:00 p.m. in the BART Board Room, 3rd Floor, 344 20th Street, Oakland, CA.



Metropolitan Transportation Commission

375 Beale Street, Suite 800
San Francisco, CA 94105

Legislation Details (With Text)

File #: 15-2054 **Version:** 1 **Name:**
Type: Report **Status:** Committee Approval
File created: 10/31/2016 **In control:** Clipper Executive Board
On agenda: 11/28/2016 **Final action:**
Title: Clipper® Executive Board 2017 Calendar
Sponsors:
Indexes:
Code sections:
Attachments: [2b Clipper Executive Board 2017 Calendar.pdf](#)

Date	Ver.	Action By	Action	Result
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Subject:
Clipper® Executive Board 2017 Calendar

Presenter:
Edward Meng

Recommended Action:
Board Approval

Attachments



Agenda Item 2b

Bay Area Metro Center
375 Beale Street
San Francisco, CA 94105
TEL 415.778.6700
WEB www.mtc.ca.gov

TO: Clipper® Executive Board

DATE: November 21, 2016

FR: Carol Kuester

RE: Clipper® Executive Board 2017 Calendar

Per the Clipper Executive Board Procedures Manual adopted by the Board in February 2016, the Board adopts a regular board meeting calendar annually. The Procedures Manual also allows board members to appoint delegates to vote on their behalf in the event of an absence for up to two meetings per calendar year. These delegates also count towards a quorum. After a second absence, a board member may send an alternate in his or her place, but alternates cannot vote and do not count towards a quorum.

In order to maximize board member attendance in 2017, staff recommends that the Board meet on the third Monday of each calendar month, except when that day falls on a Holiday (in January and February). Staff recommends the Clipper® Executive Board's adoption of the 2017 meeting schedule shown in the calendar in Attachment A.

Carol Kuester

Attachments:

- Attachment A: Clipper Executive Board 2017 Calendar

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CLIPPER® EXECUTIVE BOARD MEETINGS 2017 CALENDAR YEAR



Bolded are anticipated meetings dates.

Blue highlighted dates Clipper Executive Board Meetings

Yellow highlighted dates MTC Holidays

January							February							March							April						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
1	2	3	4	5	6	7				1	2	3	4				1	2	3	4							1
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31					26	27	28					26	27	28	29	30	31		23	24	25	26	27	28	29
May							June							July							August						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
	1	2	3	4	5	6					1	2	3							1			1	2	3	4	5
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31				25	26	27	28	29	30		23	24	25	26	27	28	29	27	28	29	30	31		
September							October							November							December						
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
					1	2	1	2	3	4	5	6	7				1	2	3	4						1	2
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31					26	27	28	29	30			24	25	26	27	28	29	30



Metropolitan Transportation Commission

375 Beale Street, Suite 800
San Francisco, CA 94105

Legislation Details (With Text)

File #: 15-2070 **Version:** 1 **Name:**
Type: Contract **Status:** Committee Approval
File created: 11/3/2016 **In control:** Clipper Executive Board
On agenda: 11/28/2016 **Final action:**
Title: Contract Change Order Amendment - Clipper® Card Procurement: Cubic Transportation Systems, Inc. (\$2,000,000)

Annual procurement of Clipper® cards.

Sponsors:

Indexes:

Code sections:

Attachments: [3a Clipper Card Procurement.pdf](#)

Date	Ver.	Action By	Action	Result
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Subject:

Contract Change Order Amendment - Clipper® Card Procurement: Cubic Transportation Systems, Inc. (\$2,000,000)

Annual procurement of Clipper® cards.

Presenter:

Edward Meng

Recommended Action:

Board Approval

Attachments



Agenda Item 3a

Bay Area Metro Center
375 Beale Street
San Francisco, CA 94105
TEL 415.778.6700
WEB www.mtc.ca.gov

TO: Clipper® Executive Board

DATE: November 21, 2016

FR: Carol Kuester

RE: Contract Change Order Amendment – Clipper® Card Procurement: Cubic Transportation Systems, Inc. (\$2,000,000)

Background

Since its inception, the Clipper® program has issued nearly five million cards. Demand in 2015 and 2016 has remained steady, with the program issuing ~55,000 new adult cards each month. Increased institutional programs (e.g. Santa Clara Valley Transportation Authority's Eco Pass, San Francisco State University's Gator Pass, and UC Berkeley's Class Pass) are one of the factors driving demand for cards. The Clipper® program partially offsets the cost of cards by charging most adults a \$3 card acquisition fee. At the March 2016 Clipper® Executive Board meeting, the Board approved a change in policy to charge a \$3 card acquisition fee for adult cards issued through institutional programs (which had previously been provided to participating adults at no cost). This fee is waived for youths, seniors, Autoload customers, and RTC customers.

MTC does not recoup the cost of producing a card with the \$3 card fee. The actual cost of each card is approximately \$2, while the program cost of issuing each card is approximately \$1.85, which makes the total cost of issuing a new card around \$3.85. Funds from the \$3 card fee will primarily be used to fund this Change Order Amendment.

The schedule for the card procurement is defined in the Contract Change Order as 18 to 22 weeks after execution of a Task Order.

Recommendation

Staff recommends the Clipper® Executive Board's approval of one or more contract change order amendment(s) with Cubic Transportation Systems, Inc., in an amount not to exceed \$2,000,000 to produce Clipper® cards for distribution to customers.

Carol Kuester

REQUEST FOR BOARD APPROVAL

Summary of Contract Change Order Amendment

Contractor:	Cubic Transportation Systems, Inc. San Diego, CA
Work Project Title:	Clipper® Card Procurement
Purpose of Amendment:	Change Order Amendment, CO-145
Brief Scope of Work:	Under this Change Order, Cubic will purchase Clipper® cards as directed by MTC. This Amendment adds funds to an already existing Change Order.
Project Cost Not to Exceed:	<p>\$2,000,000 (this Change Order Amendment)</p> <p>Total contract value including amendments before this amendment = \$167,619,610</p> <p>Total contract amount with this amendment = \$169,619,610 (this total does not include other November 28, 2016 contract approval actions).</p>
Funding Source:	Clipper® cardholder administrative fees, STP, CMAQ, STA, STP Exchange, Regional Measure 2 Capital and Regional Measure 2 Operating
Fiscal Impact:	Funds available in the FY 2016-17 MTC agency budget.
Motion:	That the Contract Change Order Amendment with Cubic Transportation Systems, Inc., for the purposes described herein and in the Executive Director's memorandum dated November 21, 2016, is hereby approved by the Clipper® Executive Board.
Clipper® Executive Board:	<hr/> Denis Mulligan, Chair
Approved:	Date: November 28, 2016



Metropolitan Transportation Commission

375 Beale Street, Suite 800
San Francisco, CA 94105

Legislation Details (With Text)

File #: 15-2055 **Version:** 1 **Name:**
Type: Report **Status:** Informational
File created: 10/31/2016 **In control:** Clipper Executive Board
On agenda: 11/28/2016 **Final action:**
Title: Next-Generation Clipper® (C2) Request for Proposals (RFP) Update
Update on the C2 RFP for Industry Review.

Sponsors:

Indexes:

Code sections:

Attachments: [4a C2 RFP Update.pdf](#)
[4a Handout-ClipperExecCommitteeNov28_Raney](#)

Date	Ver.	Action By	Action	Result
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Subject:

Next-Generation Clipper® (C2) Request for Proposals (RFP) Update

Update on the C2 RFP for Industry Review.

Presenter:

Jason Weinstein

Recommended Action:

Information

Attachments



Agenda Item 4a
Bay Area Metro Center
375 Beale Street
San Francisco, CA 94105
TEL 415.778.6700
WEB www.mtc.ca.gov

TO: Clipper® Executive Board

DATE: November 21, 2016

FR: Carol Kuester

RE: Next-Generation Clipper® (C2) Request for Proposal (RFP) Update

This memo is intended to update the Clipper® Executive Board on the development of the C2 System Integrator RFP. We are currently on track to issue an RFP for Industry Review in early 2017, as indicated in previous C2 procurement schedules and shown in the high level schedule in Attachment A.

This month, the Executive Board will be briefed and asked to provide input and guidance on the purchase, ownership, and maintenance of the equipment for the C2 system.

In prior Clipper® Executive Board meetings, we've discussed topics related to an iterative design process with the C2 System Integrator, as well as the assumption of operations and maintenance the current Clipper® system (C1) by the C2 System Integrator.

Next month, the Executive Board will be informed on several key decision points, including but not limited to:

- Evaluation Criteria (with discussion on the design process and pricing structure);
- Contract Service Level Agreements (SLAs) and payment incentives and disincentives; and
- Public Outreach and Input.

Clipper staff will continue to work with and inform transit operator staff on the development of the RFP. We will share updates with the Clipper® Executive Board in advance of the planned release of the C2 RFP for Industry Review in early 2017.

Carol Kuester

Attachment:

- Attachment A: C2 RFP Update

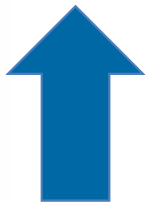
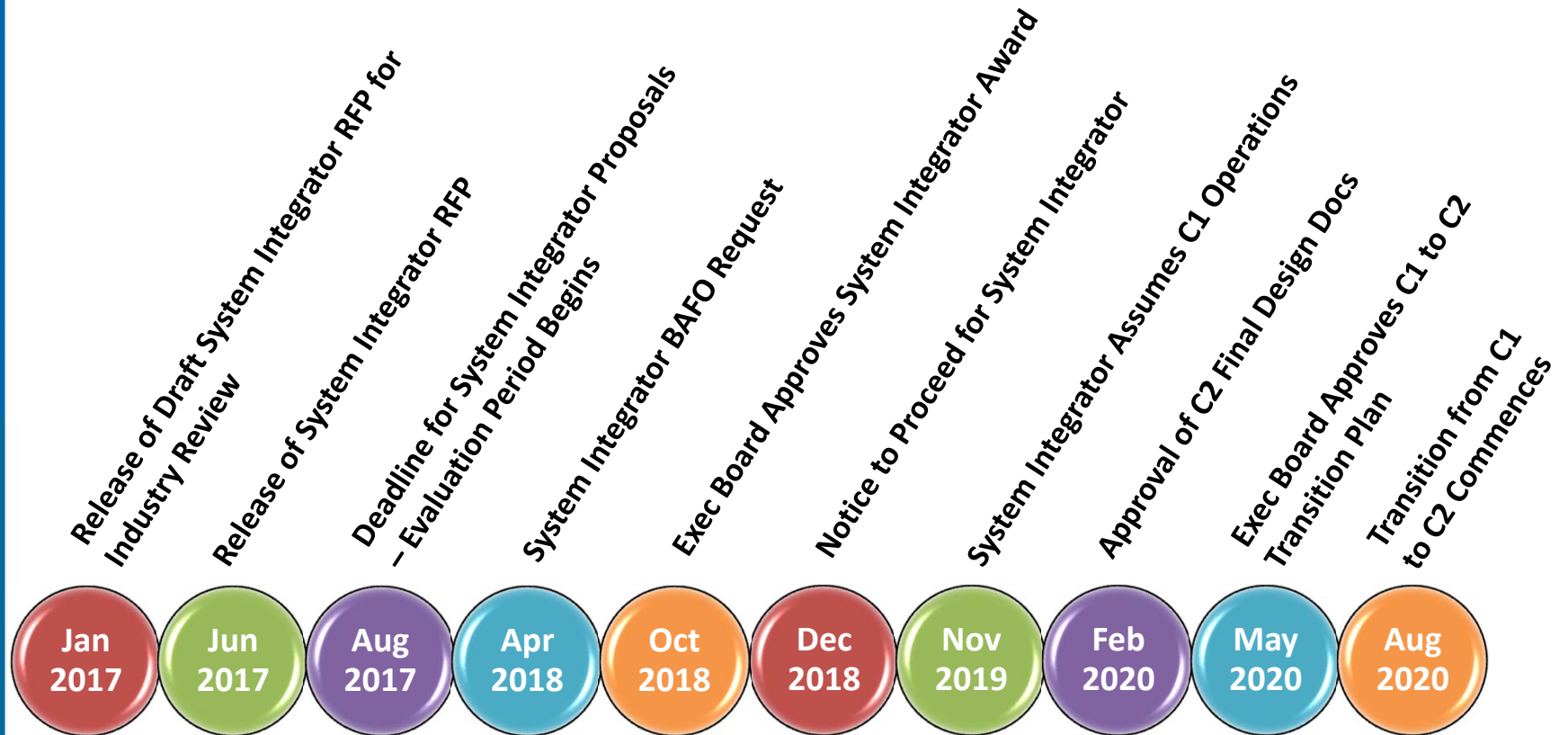


C2 RFP Update

Clipper Executive Board
November 21, 2016

Agenda Item 4a
Attachment A

C2 Procurement Timeline













































Current Phase: Development of Systems Integrator RFP for Industry Review



CLIPPER

MOU Goals and C2 Strategies

	C2 PROCUREMENT STRATEGIES					
MOU GOALS	C2 SI Assumes CI Ops	C2 SI Design Process	Hardware Ownership, Purchase, and Maintenance	Evaluation Criteria and Pricing	SLAs and Incentives	Public Outreach and Input
A) Customer Experience						
B) Customer Service						
C) Decision Process						
D) Govern Effectively						
E) Accurate Data						
F) Program Flexibility						
G) Operational Reliability						



November 28, 2016

To: Clipper Executive Board

From: Steve Raney, Principal Investigator, Bay Area Fair Value Commuting Project
Joint Venture Silicon Valley, 100 West San Fernando St, #310, San Jose, CA 95113

Re: Agenda #4A, Next-Generation Clipper® (C2) Request for Proposals (RFP) Update

Michael Dinning of the Volpe Center previously collaborated with MTC on Clipper 1.0. He is leading an incipient effort to bring about a regional transit payment breakthrough. MTC involvement will be impactful. The effort's tempo matches the timeline for Clipper 2.0 early 2017 industry input. A strawman schedule of events:

1. February workshop in Salt Lake City.
2. Smart Card Alliance Payments Summit, March 27-30, Orlando.
3. APTA Fare Collection/Revenue Management/TransITech Conference: April 2-5.
4. April webinar to report out conclusions.

The February workshop may follow the non-competitive Clipper 1.0 workshop where key stakeholders stated requirements and vendors provide a perspective on possibilities.

What might a regional payment bid breakthrough look like?

- Vix and Xerox team on providing the backend, using an open transit database schema. They alternate owning the data every year, porting ownership on a Sunday night from 11PM to 5AM. Access to fare gates is via an open standard API.
- Two Mobility Aggregation (MobAg) smartphone apps are part of the bid, using a single open standard API. The list of compatible MobAgs grows over time. NFC tap and pay is supported in all MobAgs via an open API. MobAgs work in any region of the country.
- Payment is made via standard, non-proprietary payment mechanisms {Apple/Google/Samsung pay, paypal, credit card} using tokenization.
- Changes to fare structure are made by agency staff via an administrative panel. There is no change order required.
- MobAg screen real-estate is provided for branding. Branding real-estate is controlled via an agency administrative panel.
- Seamless trips are made across MPO boundaries.

An editable, comment-able google drive working document with details: <http://bit.ly/seamlessMobility>



Metropolitan Transportation Commission

375 Beale Street, Suite 800
San Francisco, CA 94105

Legislation Details (With Text)

File #: 15-2057 **Version:** 1 **Name:**

Type: Report **Status:** Informational

File created: 10/31/2016 **In control:** Clipper Executive Board

On agenda: 11/28/2016 **Final action:**

Title: Next-Generation Clipper® (C2) System Integrator Request for Proposal (RFP) Development:
Proposed Minimum Qualifications

C2 System Integrator Proposer Minimum Qualifications.

Sponsors:

Indexes:

Code sections:

Attachments: [4b_C2_Proposed_Minimum_Qualifications.pdf](#)

Date	Ver.	Action By	Action	Result
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Subject:

Next-Generation Clipper® (C2) System Integrator Request for Proposal (RFP) Development:
Proposed Minimum Qualifications

C2 System Integrator Proposer Minimum Qualifications.

Presenter:

Edward Meng

Recommended Action:

Information

Attachments



Agenda Item 4b
Bay Area Metro Center
375 Beale Street
San Francisco, CA 94105
TEL 415.778.6700
WEB www.mtc.ca.gov

TO: Clipper® Executive Board

DATE: November 21, 2016

FR: Carol Kuester

RE: Next-Generation Clipper® (C2) System Integrator Request for Proposal (RFP) Development:
Proposed Minimum Qualifications

This memo is to update the Executive Board on C2 procurement team's proposal to include two pass/fail minimum qualifications in the C2 System Integrator RFP for industry review. The C2 procurement team, including outside legal counsel and technical advisors, recommends the following minimum qualifications, because we believe they will allow for the greatest number of competitive proposals, while limiting the pool to viable vendors and teams.

The first proposed minimum qualification requires that the System Integrator have experience delivering and integrating:

- A multi-operator transit fare collection system;
- A smart card technology project in North America; and
- A project that involves revenue sharing and apportionment.

The second proposed minimum qualification requires that the System Integrator have reached substantial completion of at least one project that involved design, implementation, operation and maintenance of a transit fare collection system using smart card technology. Substantial completion means that the system design and implementation has been accepted or completed and the system operations and maintenance is underway or concluded.

With respect to proposer eligibility, a potential System Integrator can meet these minimum qualifications as a single party or as collective joint venture.

During industry review, we expect to get feedback from prospective vendors, including whether they believe these minimum qualifications are unduly restrictiveness. We will reexamine the value of these minimum qualifications if the consensus from industry deems them too restrictive.

Carol Kuester



C2 Minimum Qualifications

November 21, 2016

Agenda Item 4b

Minimum Qualification 1

Experience delivering and integrating at least one **multi-operator** transit fare collection system using smart card technology in **North America** that involves the **sharing and apportionment of revenue** across operators.



Minimum Qualification 2

Have reached **substantial completion** on **at least one (1) project**, that involved design and implementation and operation and maintenance of a transit fare collection system using smart card technology.

“Substantial completion” means that the system design and implementation has been accepted and the **system operations and maintenance is underway**.

Bidder Eligibility

A Minimum Qualification may be met by **any party to a joint venture**, or as a total of projects among the firms in a joint venture.





Metropolitan Transportation Commission

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San Francisco, CA 94105

Legislation Details (With Text)

File #:	15-2058	Version:	1	Name:	
Type:	Report	Status:		Informational	
File created:	10/31/2016	In control:		Clipper Executive Board	
On agenda:	11/28/2016	Final action:			
Title:	Hardware Purchase, Ownership, and Maintenance				
	Discussion on Purchase, Ownership, and Maintenance of Next-Generation Clipper® Hardware and Systems.				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	4c_C2_Hardware_Purchase-Ownership-Maintenance.pdf				

Date	Ver.	Action By	Action	Result
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Subject:
Hardware Purchase, Ownership, and Maintenance

Discussion on Purchase, Ownership, and Maintenance of Next-Generation Clipper® Hardware and Systems.

Presenter:
Edward Meng

Recommended Action:
Information

Attachments



Agenda Item 4c
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TO: Clipper® Executive Board

DATE: November 21, 2016

FR: Carol Kuester

RE: Hardware Purchase, Ownership, and Maintenance

This memo is to update the Clipper Executive Board on an approach for hardware purchase, ownership, and maintenance under the system integrator procurement for the Next-Generation Clipper system (C2).

Under the current Clipper program, MTC purchases the equipment, maintains regional spare inventory, and provides maintenance through the current Clipper contractor, while operators are responsible for first-line maintenance. Operators request procurement and installation of equipment through MTC and if required, enter into a funding agreement with MTC. All parties agree that the current time between equipment request and device installation is too lengthy and that funding agreements between MTC and operators can be difficult to negotiate and manage.

For the next generation of Clipper, our current plan for equipment purchase and ownership would require the C2 system integrator to certify and provide devices from multiple manufacturers, to be priced during the RFP process. The Clipper program would also be responsible for the initial procurement and maintenance of the devices, while also maintaining a large spare stock for quick deployment. Through the C2 System Integrator contract, an operator's ability to directly procure equipment through the system integrator would be preserved. The discussion of who pays for equipment acquired will need to take place at a future Board meeting. This approach improves on the current process, but also brings a few challenges along with it.

The improvements over the current approach include:

- Eliminating the need for funding agreements (when purchasing party funds the purchase);
- Quicker deployment of devices due to larger spare pool and introduction of multiple device suppliers; and
- Ability for operator procurement of devices through the system integrator on their own schedule and budget.

If operators were to procure devices directly through the system integrator, there is the potential for added challenges. These challenges are likely to be:

- Additional demands on operator staff for timely device procurement to meet fleet orders as well as asset management of Clipper devices procured;
- System integrator management of multiple contractual relationships and lack of clear maintenance responsibilities for operator-procured devices; and
- Difficulty in crafting a single RFP that allows direct purchase by multiple operators with different contracting requirements.

During our meetings with System Integrators through the Request for Expressions of Interest (RFEI) process, industry vendors expressed their preference for dealing directly with one agency, rather than managing contractual relationships with the 22 participating Clipper agencies in the region. We believe the approach described above balances the concerns of MTC and operators. Staff will evaluate and monitor industry response to this approach during the Industry Review phase of the procurement and will share any updates and feedback with the Clipper Executive Board.



Carol Kuester

Attachment:

- Attachment A: Hardware Purchase, Ownership, and Maintenance

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Hardware Purchase, Ownership, and Maintenance

November 28, 2016

Agenda Item 4c
Attachment A

Current Process

- MTC (as contracting agency) purchases equipment, maintains regional spare inventory, and provides maintenance through contractor
- Operators request procurement and installation of equipment through MTC
- If required, operators and MTC enter into funding agreement



Concerns about Current Process

- Time between equipment request and deployment of equipment is too lengthy
- Current process goes through too many levels of bureaucracy
- Funding agreements between MTC and operators can be difficult to execute and manage

C2 Approach for Hardware

- System Integrator certifies and provides devices from more than one supplier
- Clipper program procures equipment for region while also maintaining a large regional spare pool
- Contracting agency responsible for regional asset management and maintenance
- Operator ability to procure equipment through C2 contract preserved

Improvements and Challenges

Improvements	Challenges
<ul style="list-style-type: none">• Eliminates need for funding agreements (when purchasing party funds the purchase)	<ul style="list-style-type: none">• Additional demands on operator staff for timely device procurement to meet fleet orders as well as asset management of Clipper devices procured
<ul style="list-style-type: none">• Quicker deployment of devices with larger spare pool and multiple device suppliers	<ul style="list-style-type: none">• System integrator management of multiple contractual relationships and lack of clear maintenance responsibilities for operator-procured devices
<ul style="list-style-type: none">• Operator ability to procure devices on their own schedule and budget	<ul style="list-style-type: none">• Different contracting requirements across region makes a single RFP difficult



Metropolitan Transportation Commission

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By
JAKE BLUMGART

FARE GAME

MOVING TO A HIGH-TECH PAYMENT SYSTEM IS HARDLY A TOKEN GESTURE. PHILADELPHIA IS FINDING OUT IT'S ACTUALLY IMMENSELY COMPLICATED.

WHEN IT COMES to transit fare payment systems, Philadelphia is stuck in the 19th century. When the hordes of delegates and journalists descended on the city for the Democratic National Convention this past summer, they were confronted with a system that ran much as its predecessors in the days of private mass transit did.

Philly's system doesn't even rely on paper tickets (of the kind that the Washington D.C. Metro phased out this year). Instead, the Southeastern Pennsylvania Transportation Authority still relies on tokens. It is the last major transit agency in the nation, perhaps the world, that still uses coins to pay for subway, trolley, and bus rides.

It wasn't supposed to be this way. For the past 10 years the agency has been attempting to develop and implement a contactless smart payment system that would allow riders to whisk their cards over the turnstile rather than dig around in their pockets or purses for a token.

The cards, in theory, could be recharged online and could be used—in the hazy future—to hop to one the region's other mass transit systems, the PATCO high-speed line that lances into southern New Jersey. The SEPTA Key, as it is called, is set up as an open system so it could even eventually connect with NJ Transit, a system that overlaps with its purview in the region.

By adopting such a system, SEPTA would leapfrog from the most out-of-date fare technology to a state-of-the-art system that would place it among first class cities like London, Paris, and Hong Kong.

"Similar to EZ Pass [for highway tolls],



SMART CARDS ELSEWHERE



OCTOPUS

Hong Kong

LAUNCHED 1997

Used for transportation, parking, at retail outlets, self-service machines, leisure facilities, schools, and online. Used for access control at a growing number of residential and commercial buildings.



OYSTER

London

LAUNCHED 2003

Used for transportation on the London Underground, buses, Dockland Light Rail, and London Overground. Visitors can add the London Pass, a sightseeing city card.



VENTRA

Chicago

LAUNCHED 2013

Used for fares on Chicago Transit Authority buses and trains and Pace (a suburban bus system). The Ventra app, launched in 2015, also allows payment for Metra (regional rail) fares.

passengers can set up autoloading or go online at home to load a pass or stored value on their electronic travel wallet," says Kristin Geiger, SEPTA's public information manager. "Open payment means that any NFC-compliant bank card, ID card, or device can be used to access the transit system." NFC stands for Near Field Communications, the wireless technology that allows the exchange of data between devices within centimeters of one another.

"Future SEPTA Key prepaid features allow someone to ride transit to work as well as pick up a coffee or groceries all on the same Key card. When fully implemented, customers will be able to use one card for everything," she says.

But the process has been haunted by delay after delay. At a 2008 press conference, it was announced that the contract for the implementation of the system would be awarded in 2009. That was delayed until 2011, then completion was slated for 2013. Then 2014. Then 2015. This summer an initial pilot of 10,000 cards finally launched, but only for weekly and monthly passes. By the time this magazine goes to press, the cards should finally be available to all and for general use. But Philadelphians can be forgiven for any skepticism they might have. After all, they've heard it all before.

Not alone

The antiquity of Philadelphia's fare system, and its delay-plagued attempt to escape it, is only the most extreme example of American cities playing catch-up when it comes to adopting the latest in mass transit fare payment technology.

"I think New York is in a similar position to SEPTA, even though New York switched to a fare card system in 1997," says Yonah Freemark, creator of the blog *The Transport Politic* and a doctoral student at MIT.

He notes that the Metropolitan Transit Authority has been talking about adopting contactless fare payment systems for even longer than SEPTA. "Transit agencies suffer from a sort of status quo paralysis. I think that's particularly true of older agencies. It's not a reflection of bad management, it's reflective about concerns about change because the existing system works."

In other corners of the world, contactless smart card systems began to be adopted in the mid-1990s. The pioneers were Hong Kong, with its Octopus card, which can be used for everything from shopping to riding the ferry, and London's ubiquitous Oyster card.

The ride hasn't always been smooth. As of 2008 there wasn't much evidence that these systems increased ridership and, while their technology was quite reliable, during the early implementation phases they were prone to buggy behavior that has mammoth consequences in the context of a big

city. On March 10, 2005, the Oyster card technology broke down for a few hours (the turnstiles didn't recognize cards) and the system lost \$3.8 million in a single morning.

But in this decade the adoption of these systems seems inevitable. Last year the largest region in France, Île-de-France (Paris is located there) adopted a universal and unlimited fare card, which gives holders access to all forms of transit in the huge metropolitan region. Such systems elsewhere include the OV-chipkaart in the Netherlands and the Combo Card in Mumbai, which can serve as a debit card as well—a common feature in many European and Asian cities.

Tech talk

The possibilities of NFC, or contactless, technology are vast. These type of technologies allow riders to wave the card, or even just their wallet containing one, over a turnstile without stopping to search for a fare card or token. That may not sound like much, but the act of simplifying and slightly speeding up the boarding process can actually pay great dividends in a variety of ways.

TIME SAVINGS. While swiping a plastic or paper fare card—or fumbling for a token—may only add up to a few seconds for each individual rider, compounded over dozens of people that process can result in significant delays.

UNIFIED NETWORKS. Many metropolitan regions contain multiple transit systems, requiring residents to carry two or three different forms of transit passes. Contactless technology could ease or eliminate this problem.

CONVENIENCE. It could also reduce the hassle of adding money to a depleted card, by making the account available online (again saving time for riders scrambling to board an arriving train).

MOBILE BANKING. Even more radical is the possibility of using these more robust fare payment mechanisms as a banking or identification card.

These advances aren't totally alien to American cities. But they are substantially less impressive in their reach than their counterparts abroad. Chicago's Ventra card is probably the most ambitious effort yet, but it was plagued with scandals and missteps from the beginning. Most egregious was an effort uncovered by the *Chicago Tribune* to hide numerous fees, crafted by the private contractor in charge of the rollout, that would hit those who used Ventra as a banking card. Ventra even ran into challenges at its most basic level, failing to register fare payments or grossly overcharging customers.



SEPTA has cited Chicago's experience as a reason it has taken so long for their smart card to come out. Washington, D.C., Metro's SmarTrip card debuted in 1999. But not only does the SmarTrip card lack any banking options, it cannot connect riders with adjoining transit systems like the MARC trains that provide commuter rail service to Baltimore.

There are successes too. In California the Transit Access Pass can be used on bike share in addition to buses, trains, and subways across the agencies that traverse Los Angeles County. But why, then, have so many American cities fallen so far behind? It isn't just Philadelphia that has struggled to adopt new systems.

The largest transit authority in the nation, the MTA in New York City, is also still using swipe cards despite a long-delayed mission to move to contactless payment technology. Other newer systems, like TriMet in Portland, are also moving toward such a system and thus far have not suffered the same kinds of delays. The newer American transit systems, however, are typically substantially smaller than their counterparts in the Northeast and have much newer infrastructure, which saves them the need for extensive repair and retrofit costs.

The problem, at its core, is a familiar one in the U.S. Hyperlocal payment and governance structures are undermining the ability of transit agencies to keep their technology and infrastructure up to date. (Public education, water infrastructure—you name


it—suffer from the same problem.) It is too easy for city residents with money to pull up stakes and move further out, depriving older cities and suburbs of their much-needed tax dollars. That leaves many cities with a disproportionate share of the deeply impoverished and recently arrived immigrants, and scant resources to fund essential city services—like public transit.

This tendency is exacerbated by race relations. In many other developed nations, these types of social dynamics, while by no means utopian, have generally not hardened into the rigid segregation that mars most American cities. As a result, funding mechanisms for public services are often broader, and the costs more equitably spread across the region, province, or nation.

"Comparing lessons from foreign cities is an apples and oranges thing," says Randy Vanderhoof, executive director of the Smart Card Alliance in an email to *Planning*. "[T]hat has everything to do with how nationally run systems in Europe and Asia differ from city and regional metropolitan systems supported by states and city funded agencies."

The situation was made worse by the Great Recession. Many U.S. transit systems were crippled by austerity just when people needed them most. An agency like SEPTA is funded by the city and the state, the first of which doesn't have enough money to adequately support it and the second of which hasn't historically had the political inclination to.

New York's Fulton Street station in Lower Manhattan when it opened in 2014, New York City still uses swipe cards.



Before a 2013 transportation funding bill was signed into law, SEPTA struggled along on a capital budget of \$308 million, a fourth of the size of neighboring NJ Transit. Even with current funding levels a couple hundred million dollars higher, the Philly agency's capital budget is still smaller than that of most of its counterparts.

"It is very costly and complex to change out the hardware and back-end systems to [implement] a fresh new fare system," writes Vanderhoof. "Transit agencies have huge infrastructure challenges and funding problems so investing in regional transit initiatives often take a backseat to keeping the core agency running."

As a result of this focus on the core mission, few transit agencies are capable of handling the complexities of implementing a contactless fare technology with the staff they have available to them. Although transit bureaucracies are often well staffed with mechanical engineers and urban planners, they rarely have the kind of people who can, say, build an accessible and easy-to-use website.

"Part of the problem we have is that the authorities who are acquiring the system do not have the in-house skill to identify what their own needs are," says Tony Jarvis, executive director of advisory services for Sequoia AFC Consultants Limited in Ireland, who has been involved in contactless fare card roll outs across Europe, Asia, and Australia. "They don't understand the pitfalls in the system they are buying relative to their needs."

That's why third-party contractors are brought in to design and implement these systems. In Philadelphia's case, this resulted in its share of delays as SEPTA courted different private-sector partners. In Chicago's case, this partnership resulted in what the *Chicago Tribune* described as a 14 percent increase in costs since the contract with Cubic Transportation Systems was first signed in 2011, largely as a result of the contractor's own mistakes.

These types of problems may be, in part, due to the lack of competition in the field of fare payment technology. "There are very few vendors of a size that would meet the requirements of a city such as Chicago. You can probably count those vendors on one hand," says Jarvis, in relation to the scandals and delays that plagued Chicago's Ventra card in its early days.

And then there's the expansiveness of the systems, which need to be brought up to date. In Philadelphia, 650 new turnstiles, 1,200 new off-station purchase locations, and 350 new vending machines were required, not to mention the huge web apparatus to support the new system. The entire process cost almost \$150 million.

Similarly, Chicago's Ventra card ended up running hundreds of millions of dollars over the estimated budget (and was still rising as of 2015). New York's contactless payment system is estimated to cost at least \$450 million.

TriMet and SEPTA, contrasted

These costs will be lower for newer, smaller systems, like those that have recently arisen in western cities like Seattle, Denver, and Portland, Oregon. The TriMet system announced in 2013 that it planned on implementing a contactless fare payment system, to be called Hop FastPass, that will stretch beyond the agency to include the Portland Streetcar (which is operated by TriMet but owned by the city and managed by a separate agency), and across the Columbia River to the bus system in Vancouver, Washington.

"Getting the technology right and making sure it's easy to use and secure and consistent and works—that's a huge undertaking," says Andrew Longeteig, communications coordinator for TriMet Public Affairs. "We feel like we are one of the technology leaders in the transit world. We aren't pioneering electronic fares, but maybe we will pioneer a system that works for the region."

The Hop FastPass will have a mobile app that riders can use to pay fares and manage their accounts. The vehicles of the three systems have already been equipped with the HOP FastPass readers. Apple Pay and Google Wallet will also be accepted as forms of payment. The system hopes to eliminate cash payments early in the next decade. The number of physical outlets where the cards can be recharged will be expanded from the 100 current fare stations to 500 across the region.

TriMet is smaller than its Northeast counterparts. Its capital budget is \$157.1 million and its system comprises five light-rail lines, 77 bus lines, one commuter rail line with five stops, and 809 vehicles overall. Even when one adds in the other regional systems Portland's fare payment technology will support, the transit effort is dwarfed by SEPTA. The Philadelphia agency's fiscal year 2017 capital budget is \$548.63 million and it has more buses alone than all the vehicles owned by the three Portland area transit systems combined.

The differing size of the challenge can also be seen in the cost of the new fare payment system: a mere \$30 million for TriMet. So far there have been no serious delays, and the new system is expected to be rolled out next year. The Philly transit agency finally received a much-needed funding infusion in 2013 but suffered budget shortfalls for decades prior to that. TriMet, by contrast, hasn't suffered long-term systemic divestment and will soon enjoy an increase in the regional payroll taxes that specifically fund its operations.

The endless delays that have dogged the rollout of the SEPTA Key have irritated and infuriated Philadelphians. But the issue is not a problem of arcane technology or government bureaucracy. The simple fact is that these agencies struggle to maintain their basic services due to inadequate funding structures. In 2015, PlanPhilly, a news website devoted to local development, housing, and transportation news, reported on SEPTA's delays by putting them in the context of other transit agencies failures: No other American agency had met its deadlines when it came to adopting contactless fare technology.

Without a larger role for the federal government, the spread of contactless fare card systems will be dictated by these kinds of regional political whims, and transit agencies will continue without the bandwidth to take on these kind of high-tech projects. In that context, American transit authorities will continue to lag behind their counterparts abroad. ■

Jake Blumgart is a reporter with WHYY's PlanPhilly.

Transportation Measures Passed in the Bay Area – November 2016

Measure	Description
BART - Measure RR	30-year bond to fund BART's system-renewal plan
AC Transit – Measure C1	20-year parcel tax extension to provide a steady source of operating funding for AC transit
Santa Clara – Measure B	30-year ½ cent sales tax to improve transit and fund other transportation investments

Potential Effects on Clipper program

- More vehicles, stations creates additional demand for devices
- More riders = more transactions, calls, web hits, cross-regional fares, throughput
- Program growth may mean greater demand for staffing resources (program management, fare inspection, etc.)

We are anticipating these needs and are planning to accommodate this growth.