

Intergovernmental Agreement between the City of Portland and TriMet

Related To an Electronic Fare Collection System

This Intergovernmental agreement ("Agreement") dated _____, is by and between the City of Portland, a municipal corporation of the state of Oregon ("City") and the Tri-County Metropolitan Transportation District of Oregon ("TriMet") (collectively the "Parties" or "Party" as context dictates).

Recitals

Whereas, the Parties signed a Memorandum of Understanding ("MOU") effective on January 25, 2013, which outlined the "e-fare Preliminary Concept of Operations" in Exhibit A of the MOU, said MOU remaining in effect until the Parties execute subsequent binding agreements that expressly replace the MOU; and

Whereas, on June 18, 2013, TriMet provided Portland Streetcar Inc ("PSI") a letter ("Option Letter"), the terms which granted PSI an option to participate in the Electronic Fare Collection System (e-fare system) at its sole discretion and without adversely impacting the current e-fare schedule; and

Whereas, in the Option Letter, the Parties agreed to continue to discuss and develop further analysis and agreements necessary for the effective implementation of a regional e-fare system, and

Whereas, TriMet and the City executed a Master Agreement on Streetcar on August 8, 2013, and Section III, A, 5 which states that "Fare policy, structures, and instruments must be transparent and seamless to transit users, and additionally, Exhibit A of said Master Agreement contemplated future development of an e-fare system for transit services providing for seamless electronic fare payment between TriMet transit services and the Portland Streetcar system; and

Whereas, TriMet, with City's input, issued a Request for Proposals for a e-fare Systems Integrator Services on October 3, 2013 ("RFP"); and

Whereas TriMet issued a Request for Best and Final Offer to the System Integrator Contract proposers that were within the competitive range and TriMet awarded the Contract to INIT (also referred to as "Systems Integrator"), with Notice to Proceed on April 1, 2014; and

Whereas, the contract with INIT contemplates the award by TriMet of additional contracts; and

Whereas, the Parties appreciate that there are limited resources available to the City and TriMet and both Parties must constantly balance the allocation of those resources against the many competing needs for funding. With that understanding and recognition both Parties will strive to create the best possible e-fare system value with the resources available to the Parties; and

Whereas, TriMet shall require the Systems Integrator to produce and share with the City a Conceptual Design Review as well as updated cost estimates for capital equipment, approximately 45 days prior to the October 9, 2014 deadline for the City to execute this IGA and exercise its option with INIT.

Whereas, this Agreement sets forth the respective roles and responsibilities of the Parties and anticipates that the Parties will continue to work cooperatively on a range of items necessary to establish the effective implementation of the e-fare system and sets forth a Glossary and abbreviations in Exhibit D, which strengthens the Parties' understanding of the e-fare system.

NOW, THEREFORE, in consideration of the following terms and conditions, the Parties agree to the following:

Agreement

1. Purpose

This Agreement establishes a general framework for fare collection and allocation of revenue, distribution of funds, and a methodology for regional cost sharing for administrative, operational, and "back office" expenses, necessary to facilitate transaction processing of fare payments, and will also include device monitoring, maintenance management, customer relationship and financial management modules (all generally referred to as e-fare).

2. Professional Services

TriMet has retained CH2M HILL to provide professional services related to e-fare including system design, procurement and implementation services.

3. Fare Collections, Allocation, Distribution and Cost Sharing

a. With this Agreement, the Parties agree upon the following elements:

1. The duties of the Parties and an e-fare systems payment flow, such as electronic fare payments, collection and management of funds. The e-fare systems payment flow is more particularly shown in attached Exhibit C.
2. Fare collection and Policy, institutional based fares, and fare allocation.
3. Distribution of revenue and account settlement.
4. Methodology to determine regional cost sharing for capital, operating, fare sharing administration and "back office" costs.

b. The Parties agree that all information set forth in this Agreement will be fully auditable, and provide end-to-end tracking and reconciliation of all e-fare revenue by the participating agencies. Settlement of revenue between the Parties will be based on actual fare payment transactions (taps) at each validators

4. Roles and Responsibilities of the Parties

a. TriMet Responsibilities

- i. TriMet awarded a Systems Integrator contract to INIT.
- ii. TriMet shall serve as the host agency for the e-fare system back office (e.g. system administration, fare distribution, deposits, fiscal and accounting controls and reconciliation, etc.). TriMet will be the fiscal agent for all transactions through the e-fare systems back office system. TriMet will also issue a total of four revenue disbursements per month to each participating agency based on e-fare taps and revenue collected. Of the four disbursements, one will be a full calendar month reconciliation and settlement occurring within 15 days after month end.
- iii. TriMet serves as the e-fare contracts administrator, including but not limited to, the System Integrator contract, technical services consulting contract, retail network provider contract, contactless media contract, data security contracts, such as annual PCI DSS certification, mobile app developer contract, banking contracts, payment processor contract, a transit store Point of Sale contract or in-house support, and a customer service contract, if awarded. A cellular service contract, ticket vending machine contracts, and platform validator civil engineering and construction contracts may be awarded to each agency independent of this agreement and other contracts TriMet may determine as necessary for administration of the e-fare system.
- iv. TriMet will award future e-fare contracts to avoid schedule delays.
 - a) The Parties agree that all communication to and from the selected e-fare Systems Integrator and other parties regarding the contract award to INIT, including but not limited to requests for information, public records disclosures to the extent provided by law, and administrative appeals or protests shall be conducted by and through TriMet.
 - b) The Parties agree, in the event a protest is filed on future e-fare contract proposals that TriMet administers, TriMet shall be responsible for all administrative and legal actions necessary to respond to such protest. In the event that a third party files or commences a protest or a review of a protest, including legal review, the Parties to this Agreement shall cooperate as necessary to respond and defend against such protest.

- v. TriMet will offer no-interest financing to the City for capital equipment and non-recurring engineering costs up to \$1.3M, with proportional repayment occurring annually over three years through the City's Fare Allocation, as described in Appendix A-2.
- b. City Responsibilities
 - i. Once a contract is awarded to the Systems Integrator, the City shall exercise its option before completion of the Preliminary Design Review phase of the Systems Integrator contract in order to avoid schedule delays. Current schedule requires the City to exercise its option for Portland Streetcar by or before October 9, 2014.
 - ii. City shall notify TriMet's Project Manager in writing of its decision to exercise the option by October 9, 2014.
 - iii. Should the City not execute this IGA and exercise its Contract option with INIT by October 9, 2014, the City understands that subsequent participation in the e-fare systems is at sole discretion of TriMet and may result in higher cost to the City, and a delayed implementation. Should Portland Streetcar exercise its option by October 9, 2014, the City's cost for capital equipment and non-recurring engineering shall not exceed its proportional share as illustrated in Exhibit A-1. Should the Tram wish to participate in the e-fare system at a later date, the City and TriMet must agree on the direct capital equipment costs and programming required for the addition of the Tram to the system.
 - iv. City must elect, prior to October 9, 2014, to utilize the no-interest financing offered by TriMet or develop its own financing strategy.
- c. Individual Responsibilities for Each Party. The following paragraphs represent a general conceptual allocation of responsibility, recognizing that more detailed agreements may be necessary to more clearly set forth these responsibilities.
- d. Title and Risk of Loss to Equipment. With respect to the City, title to and risk of loss to the equipment shall pass to the City when the City has possession of the fare collection equipment. Each agency is responsible for the operation and maintenance of its own onboard or platform equipment and non-affiliated retail sales equipment.
- e. Direct Capital Equipment Costs. These costs will be charged to the City based on equipment needs, including but not limited to:
 - Electronic validators
 - Vehicle inspection
 - Handheld fare inspection devices

Retail sales devices
 Mounting equipment
 Contactless card costs
 Installation costs
 Site preparation, if applicable

- f. Allocated Capital Equipment Costs. These costs will be allocated to the City based on equipment needs, including but not limited to:

Back Office hardware, software and licenses
 Test environment hardware, software & licenses, if applicable
 Training costs, if applicable
 Documentation costs (O&M manuals, training guides, DVDS, etc

- g. Capital Non-recurring Engineering Costs. These costs will be allocated based on each agency's Ridership Allocation as described in Exhibit A-1 including but not limited to:

Technical services consulting (currently awarded to CH2M HILL)
 Transaction processor
 Device monitoring system
 Maintenance management system
 Financial clearing & settlement system
 Customer Relationship Management (CRM) system
 Data warehouse
 Reporting system
 Retail device software
 Validator software
 Handheld device software
 Applicable system integration costs, project management
 Testing and documentation
 Installation costs
 Training costs

- h. Ongoing Operating Responsibilities and Costs: The e-fare Operating Responsibilities are set forth in Exhibit B-1. With respect to costs, the following regionally shared operating costs, but for the e-fare project, will be paid to TriMet on a monthly basis from each participating agencies Fare Allocation, as described in Appendix A-2, using the Tap Allocations as a baseline for the calculation, as described in Exhibit A-3. This allocation shall be updated annually. The Parties agree that any Systems Upgrades will be allocated proportionally based on the Tap Allocation funded through the Fare Allocation.

These costs include, but are not limited to:

Regional program coordination and personnel
 Financial management: audit, reporting and budgeting
 Security and PCI DSS audits
 Regional marketing and customer service materials
 Customer service calls and email routing
 Records maintenance and public disclosure
 Program insurance
 Legal Services
 Fiscal Agent fees
 Banking fees
 Contract administration
 Technical consulting services and contract management
 Emergency preparedness and response
 Software escrow
 Monitoring of regional services
 Configuration data administration
 Regional distribution and inventory center
 Clearinghouse services
 Network management
 Retail network provider
 Card procurement
 Back office configuration
 Production hardware cluster
 Production software and licenses
 Test environment hardware
 Test software and licenses
 Software maintenance agreement (Section 13.3 of RFP)
 Back office hosting

The Parties agree that after two years of e-fare operations, the Parties will review Tap Allocation versus Ridership Allocation as the appropriate calculation for sharing Operating Costs.

5. Fare Policies and Allocations

- a. The Fare Allocation as described in Exhibit A-2 shall be reconciled after each calendar month, and within 15 days of the following month. This reconciliation will result in the final monthly settlement payment.
- b. TriMet will complete reconciliation and direct monthly fund transfers to the City based on the Fare Allocation as described in Exhibit A-2, minus monthly capital and operating cost allocations. During development of the e-fare system, the parties will work together to develop and mutually approve detailed financial reports to meet their respective financial reporting requirements.

- c. The Fare Allocation in Exhibit A-2 illustrates the following example, assuming an Electronic Fare customer transfers between Streetcar and TriMet within the approved transfer time: \$1.00 Streetcar e-fare payment transaction and a \$2.50 TriMet e-fare payment transaction will result in 28.57% revenue to Streetcar and 71.43% revenue to TriMet ($\$1.00 + \$2.50 = \$3.50$. $\$1.00/\$3.50 = 28.57\%$. Thus, the City's share of a joint Streetcar/TriMet trip equals 28.57% of \$2.50 or \$.71. Exhibit A-5 from ECONorthwest provides additional principles and examples for how revenue sharing will occur.
- d. An Electronic Fare customer that transfers between Streetcar and TriMet that is not within the approved transfer time will be charged the price of each service, up to the daily cap. If an Electronic Fare customer rides a single trip on Streetcar only without transferring, for example, the City receives the \$1.00 fare, minus capital and operating cost allocations.
- e. The Fare Allocation in Exhibit A-4 demonstrates the allocation formulas with a fare capping policy. Exhibit A-4 assumes an Electronic Fare customer frequently rides Streetcar and TriMet, hitting various thresholds, such as a 1-Day Cap and 1-Month Cap using the following values: \$1.00 Streetcar e-fare payment transaction and a \$2.50 TriMet e-fare payment transaction, including a regional \$5.00 1-Day Cap and \$100 1-Month Cap. This exhibit demonstrates 47 rides on TriMet at \$2.50 each and 47 rides on Streetcar at \$1.00, including free rides after hitting various caps, resulting in \$71.43 in revenue allocation to TriMet and \$28.57 in revenue allocation to Streetcar. Exhibit A-5 from ECONorthwest provides additional principles and examples for how fare capping will occur.
- f. Should state law change regarding unclaimed property, the parties shall update their fare allocation policies and practices as required complying with applicable changes.
- g. Portland Streetcar's Annual, Employer or Institutional, or discounted or promotional programs are not to be accepted on TriMet unless TriMet agrees to revenue sharing arrangements.
- h. Regional programs may be implemented at participating agencies that have agreed to the terms and conditions of Annual, Employer or Institutional, or other regional discounted or promotional programs.
- i. Fare Policy considerations were included during initial design, and shall continue to inform the e-fare system project as long as the e-fare system is operational.
- j. Each agency will continue to set its own fare and fare policies provided they are supported within the entire e-fare system architecture (software and hardware) and with the provisions and practices set forth in this agreement or subsequent agreed upon business practices.

- k. The City will provide TriMet an accounting of non-e-fare fare revenue collected, which will not be incorporated into the Fare Allocation calculation in Exhibit A-2.
- l. Notification of agency fare changes will be communicated in writing to all participating agencies at least 45 days prior to the change. The originator should communicate consideration of proposed fare changes to all participating agencies as soon as possible.
- m. Fare Enforcement and Customer Security
 - i. Fare enforcement policies are at the participating agencies discretion.
 - ii. The e-fare system will continue to comply with applicable laws regarding customer security and privacy.

6. Revenue Collection

Each agency is responsible for its own cash revenue collection, processing and fiscal controls. All participating agency's e-fare revenue, including but not limited to transit stores, shall be included within the Fare Allocation described in Exhibit A-2, except fares collected from non-e-fare systems shall not be subject to distribution as defined by this agreement. Non-e-fare systems include but are not limited to cash fares on bus or Streetcar that do not include transfer privileges to other participating agencies.

7. Bank Fees

Bank fees associated to e-fare in excess of interest income will be proportionately allocated to each participating agency based on the Tap Allocation as described in Exhibit A-3. If the interest income exceeds bank fees, the surplus will be proportionately allocated to the participating agencies based on the Tap Allocation as described in Exhibit A-3.

8. Privacy & Security

- a. Each agency will fully cooperate and comply with any and all applicable security and privacy standards, including PCI DSS, wireless network encryption, network monitoring tools, or other security reviews.
- b. Each agency shall restrict physical access to areas that house back office systems, data acquisition computers, and inventory of hardware to only those individuals whose job responsibilities require access. Access must be restricted using keys or access cards.
- c. TriMet will host annual certification of access control, requiring participation of each participating agency.

- d. Security access permissions will be set up so that individuals have different access capabilities (e.g. security administrator cannot have fiscal administration responsibilities).

9. Automated Clearinghouse

Each agency will establish an automated clearinghouse (ACH) authorization with its own bank to allow the transfer of funds from the e-fare settlement account to each agency's settlement account.

10. Project Managers

The Project Managers, as set forth in Paragraph 17, shall be responsible and committed to the coordination of the e-fare systems Project and will seek to resolve technical details, process issues, and policy questions to the degree possible. Any notification of change in Project Managers must be made in writing to the other Party.

11. Decision-Making

Notwithstanding the need for consensus, the TriMet e-fare Project Manager is responsible for all aspects of the e-fare systems project, paid for by TriMet. The City's e-fare project manager is responsible for coordinating all aspects of the City's part of e-fare and the equipment paid for by the City pursuant to its option. Whenever any of the Project Managers requests for or makes a decision, determination, approval, or consent ("decision") with respect to the e-fare systems Project, including promptly resolving disputes, they will exercise judgment and make a decision in a reasonable and expeditious manner.

12. Intellectual Property

Both TriMet and the City shall take reasonable measures to the extent required by the Systems Integrator Contract (See Contract Sections 1.19 Work Product, and 2.19 Confidentiality), as well as any other project related contracts to be executed, to protect any Intellectual Property and IP material from unauthorized third parties.

13. Risk of Loss

Any risk of loss, beyond the System Integrators bond payout that result from the System Integrator contract will be proportionally shared by participating agencies, based on the Ridership Allocation as described in Exhibit A-1

14. Cooperation, Commitment, & System Upgrades

To successfully complete the e-fare project, the Parties recognize that the e-fare project will require considerable attention and effort to fully integrate and develop the transit vehicles, equipment, facilities, marketing strategy, customer communication, outreach, system testing, system alert monitoring, and other amenities that the e-fare project requires. The Parties also agree that any Systems Upgrades will be necessary to maintain a fully operational system.

15. Mutual Indemnification

Subject to the limits of applicable state law, each of the Parties shall defend, indemnify, and hold harmless the other Party and its officers, employees, agents from and against all claims, demands, penalties, and causes of actions of any kind or character arising out of this Agreement.

16. No Third Party Beneficiaries

The Parties agree that the rights, obligations, and covenants in this Agreement shall be exclusively enforceable by the Parties. There are no third party beneficiaries to this Agreement either express or implied.

17. Project Managers & Notice

All notices and other communications concerning this contract shall be written in English. Notices and other communications may be delivered personally, facsimile, or by regular, certified or registered mail. A notice to TriMet or the City will be effective only if it is delivered to that person designated in writing pursuant to this Agreement.

The designated Project Managers for Notification Purposes are:

TRIMET Project Manager

Chris Tucker
Director, Revenue Operations
Harrison Square
1800 SW First Avenue, Ste 300
Portland, OR 97201

Legal:

Liz Goebel
Legal Department
Harrison Square
1800 SW First Avenue, Ste 300
Portland, OR 97201

City Of PortlandLegal

Kathryn Levine
 Portland Bureau of Transportation
 City of Portland
 1120 S.W. 5th Avenue, Ste 800
 Portland, Oregon 97204

Mark Moline
 Deputy City Attorney
 1200 S.W. 4th Avenue
 Room 430
 Portland, Oregon 97204

18. Public Disclosure

Each Party will be responsible for responding to public disclosures requests to the specific agency in accordance with applicable state law. The regional e-fare parties to this agreement may establish future procedures and each party must comply with applicable law.

19. Integration and Modification

This contract includes the entire agreement of the parties and supersedes any prior discussions or agreements regarding the same subject. Amendments or modifications to this Agreement, which do not require City Council action, may be made via Letter of Agreement between TriMet's Executive Director, Finance and Administration and the PBOT Director to the extent that those amendments are generally in keeping with the intentions behind this Agreement.

20. Severability/Survivability

If a court of law or arbitrator holds any of the provisions contained in this Agreement to be illegal, invalid or unenforceable, the enforceability of the remaining provisions shall not be impaired, and the parties shall negotiate an equitable adjustment of this contract so that the purposes of this contract are affected. All provisions concerning indemnity survive the termination or expiration of this contract for any cause.

21. Waiver and Nonwaiver

A waiver by one party of a right to a remedy for breach of this contract by the other party shall not be deemed to waive the right to a remedy for a subsequent breach by the other party.

22. Interpretation of Agreement

This Agreement shall not be construed for or against any Party by reason of authorship of any provision.

23. Terminations and Material Breach

- a. This Agreement shall terminate if both parties sign a written agreement terminating this Agreement.

- b. This Agreement may be terminated by a Party as a result of a material breach of an obligation of the other Party to this Agreement as provided by law or equity. Prior to such a termination, the terminating Party must provide the other Party sixty (60) calendar days written notice of the material breach, including a detailed explanation of the breach, during which period of time the breaching Party may cure or materially commence, as set forth below, cure the material breach ("Cure Period"). If at the end of the Cure Period the breaching Party has not cured or materially commenced, as set forth below, cure of the default; the terminating Party may terminate this Agreement for default. If the breach is one that, despite reasonable efforts the breaching Party is unable to cure within the Cure Period, such obligation shall be met if the breaching Party begins to take action to cure the breach during the Cure Period and thereafter continues to cure the breach in a reasonable time.

24. Termination for Convenience

TriMet or the City may terminate this contract at the end of any calendar month by providing the other party at least 60 days written notice of a termination for convenience. If terminated for convenience by the City, the City shall pay all remaining financed costs to TriMet before the termination date. All outstanding recognized revenue due to the City will be paid to the City within 30 days of termination. Any City share of outstanding institutional program receivables will be paid to the City within 30 days of the receivable being paid to TriMet. At the close of the termination date all "Unearned Revenue" will be retained by TriMet. The City will have no claim to any Unearned Revenue after the termination date.

25. Compliance with Laws and Regulations

The Parties will adhere to all applicable federal, state, and local laws, regulations, and ordinances applicable to work.

IN WITNESS WHEREOF, the signatures of the Parties' authorized representatives are provided below:

City of Portland

TRIMET

By: _____

By: _____

Date: _____

Date: _____

APPROVED AS TO FORM:

Mark Molise

APPROVED AS TO FORM:

Exhibit A-1

Ridership Allocation

Agency	FY13 *Ridership	Share of regional costs
TriMet	100,368,630	90.29%
C-TRAN	6,713,021	6.04%
Streetcar	4,078,639	3.67%
Total	111,160,290	100.00%

*Actual ridership. Aerial Tram not factored in yet.

Note: Used to allocate engineering costs by agency

Exhibit A-2

Fare Sharing Allocation

Agency	Base Adult Fare	# of taps	Time of Day	*Day Cap	Fare Paid	% Allocation	\$ Allocation
TriMet	\$2.50	1	8:00am	No	\$2.50	35.71%	\$1.79
Streetcar	\$2.00	1	12:00pm	No	\$2.00	28.57%	\$1.43
C-TRAN	\$2.50	1	5:00pm	Yes	\$0.50	35.71%	\$1.79
Total	\$7.00	3			\$5.00	100.00%	\$5.00

* \$5.00 Regional Day Cap

Note: Used for fare allocation/reciprocity

Exhibit A-3

Tap Allocation

Agency	FY 14 *Revenue Boardings	Share of regional costs
TriMet	79,000,000	90.54%
C-TRAN	6,250,000	7.16%
Streetcar	2,000,000	2.29%
Total	87,250,000	100.00%

*Revenue Boarding defined as the each agency's total number of eFare revenue boardings involving a fare payment transaction, divided by the total of all eFare revenue boardings by all agencies.

The Revenue Boardings above are an estimate for illustrative

Note: Used to allocate operating costs by agency

Exhibit A-4

Fare Allocation – 1-Day and 1-Month Caps

A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Day of Week	Day	Customer Load	Fare Paid	Customer Balance	Customer Total Paid	TriMet Base Fare	TriMet Fides	TriMet Fare Value	Streetcar Base Fare	Streetcar Fides	Streetcar Fare Value	1-Day Cap
2	Sun	1	\$100.00	\$0.00	\$100.00	\$0.00	\$0.00						
3	Mon	2	\$0.00	\$5.00	\$95.00	\$5.00	\$2.50	2	\$5.00	\$1.00	2	\$2.00	\$5.00
4	Tue	3	\$0.00	\$5.00	\$90.00	\$10.00	\$2.50	2	\$5.00	\$1.00	2	\$2.00	\$5.00
5	Wed	4	\$0.00	\$5.00	\$85.00	\$15.00	\$2.50	2	\$5.00	\$1.00	2	\$2.00	\$5.00
6	Thu	5	\$0.00	\$5.00	\$80.00	\$20.00	\$2.50	2	\$5.00	\$1.00	1	\$1.00	\$5.00
7	Fri	6	\$0.00	\$5.00	\$75.00	\$25.00	\$2.50	2	\$5.00	\$1.00		\$0.00	\$5.00
8	Sat	7	\$0.00	\$0.00	\$75.00	\$25.00	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
9	Sun	8	\$0.00	\$0.00	\$75.00	\$25.00	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
10	Mon	9	\$0.00	\$5.00	\$70.00	\$30.00	\$2.50	2	\$5.00	\$1.00	3	\$3.00	\$5.00
11	Tue	10	\$0.00	\$5.00	\$65.00	\$35.00	\$2.50	2	\$5.00	\$1.00	3	\$3.00	\$5.00
12	Wed	11	\$0.00	\$5.00	\$60.00	\$40.00	\$2.50	2	\$5.00	\$1.00	4	\$4.00	\$5.00
13	Thu	12	\$0.00	\$5.00	\$55.00	\$45.00	\$2.50	2	\$5.00	\$1.00	2	\$2.00	\$5.00
14	Fri	13	\$0.00	\$5.00	\$50.00	\$50.00	\$2.50	2	\$5.00	\$1.00	2	\$2.00	\$5.00
15	Sat	14	\$0.00	\$0.00	\$50.00	\$50.00	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
16	Sun	15	\$0.00	\$0.00	\$50.00	\$50.00	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
17	Mon	16	\$0.00	\$5.00	\$45.00	\$55.00	\$2.50	3	\$7.50	\$1.00	2	\$2.00	\$5.00
18	Tue	17	\$0.00	\$5.00	\$40.00	\$60.00	\$2.50	2	\$5.00	\$1.00	2	\$2.00	\$5.00
19	Wed	18	\$0.00	\$5.00	\$35.00	\$65.00	\$2.50	2	\$5.00	\$1.00	1	\$1.00	\$5.00
20	Thu	19	\$0.00	\$5.00	\$30.00	\$70.00	\$2.50	2	\$5.00	\$1.00	2	\$2.00	\$5.00
21	Fri	20	\$0.00	\$5.00	\$25.00	\$75.00	\$2.50	1	\$2.50	\$1.00	3	\$3.00	\$5.00
22	Sat	21	\$0.00	\$0.00	\$25.00	\$75.00	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
23	Sun	22	\$0.00	\$0.00	\$25.00	\$75.00	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
24	Mon	23	\$0.00	\$5.00	\$20.00	\$80.00	\$2.50	3	\$7.50	\$1.00	2	\$2.00	\$5.00
25	Tue	24	\$0.00	\$5.00	\$15.00	\$85.00	\$2.50	2	\$5.00	\$1.00	3	\$3.00	\$5.00
26	Wed	25	\$0.00	\$5.00	\$10.00	\$90.00	\$2.50	3	\$7.50	\$1.00	3	\$3.00	\$5.00
27	Thu	26	\$0.00	\$5.00	\$5.00	\$95.00	\$2.50	3	\$7.50	\$1.00	3	\$3.00	\$5.00
28	Fri	27	\$0.00	\$5.00	\$0.00	\$100.00	\$2.50	2	\$5.00	\$1.00	3	\$3.00	\$5.00
29	Sat	28	\$0.00	\$0.00	\$0.00	\$100.00	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
30	Sun	29	\$0.00	\$0.00	\$0.00	\$100.00	\$0.00		\$0.00	\$0.00		\$0.00	\$0.00
31	Mon	30	\$0.00	free	free	\$100.00	\$2.50	2	\$5.00	\$1.00	1	\$1.00	free
32	Tue	31	\$0.00	free	free	\$100.00	\$2.50	2	\$5.00	\$1.00	1	\$1.00	free
33	Total			\$100.00	\$0.00	\$100.00		47	\$117.50		47	\$47.00	
34													
36	Fare Reciprocity Allocation	#	%	Column C Formulas									
37	TriMet Fare Value	\$117.50	71.43%	B4									
38	Streetcar Fare Value	\$47.00	28.57%	M34									
39	Total Fare Value	\$164.50	100%	C37+C38									
40	TriMet Allocation \$	\$ 71.43	71.43%	E34*D40									
41	Streetcar Allocation \$	\$ 28.57	28.57%	E34*D41									

Exhibit A-5

ECONorthwest

ECONOMICS • FINANCE • PLANNING

DATE: April 30, 2014

ECO Project #: 21709

TO: TriMet, C-TRAN, and Portland Streetcar FROM:
Casey Davidson, Erin Haswell, and Carl

Batten

SUBJECT: GENERAL PRINCIPLES AND EXAMPLES FOR REVENUE SHARING

Introduction

As part of ECONorthwest's work in assisting TriMet develop business rules for implementing electronic fares, we will need to define business rules that control the revenue sharing between local transit agencies as eFare users transfer between services provided by different agencies. This memorandum provides a description of some general principles that, if agreed to, could guide how revenue sharing between the agencies would work. It also provides some simple examples to demonstrate the principles being proposed.

Revenue Sharing

Basic Framework

Collected revenue would be shared in proportion to each agency's share of the base (unadjusted) fares for all boarding rides taken by an eFare user in a month. At the end of each month, for each user, the value of base fares for boarding rides with each agency would be added up and each agency's share of the total determined. The collected revenue would be shared in proportion to those shares. All boarding rides taken would be counted individually to determine this proportion. In simple cases, the collected revenue and sum of basic fares are equal. For example, if an adult rider took three boarding rides on the first three days of the month on the Portland Streetcar (at a base fare of \$2.00¹) and four boarding rides on the last four days of the month on TriMet (at a base fare of \$2.50 per ride), then the \$16.00 (equal to \$2.00 times 3 plus \$2.50 times 4) in revenue from this rider would be shared between TriMet and the Portland Streetcar, with \$10.00 going to TriMet, and \$6.00 going to Portland Streetcar.

If the collected revenue for a rider is lower than the total the base fares because he or she transferred within the allotted time or has hit a daily, weekly, or monthly cap, then this lower revenue is still shared in proportion to the base fares that would have been incurred. For example, if a rider takes 40 TriMet fixed route and 10 Portland Streetcar boarding rides in a month, he or she would hit the TriMet \$100 monthly cap. The total revenue from the rider is \$100, but the base fares incurred include TriMet's base fares of \$100 (\$2.50 times 40) plus Portland Streetcar's base fares of \$20 (\$2.00 times 10) for total base fares of \$120. The \$100 in revenue would be shared 83.33% (100/120) of the \$100, or \$83.33, to TriMet and 16.67% (20/120) of the \$100, or \$16.67, to Portland Streetcar.

¹ Revenue sharing examples use agencies' expected September 2014 fares. Portland Streetcar plans to increase the Adult base fare from \$1.00 to \$2.00 in September 2014.
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Exhibit B-1

e-fare Operating Responsibilities

Function	TriMet	City	Contract Managed by TriMet	Contract Managed by City
Back Office Configuration	x			
Back Office Monitoring	x			
Device Monitoring	x	x		
Front End Device Maintenance	x	x		
Back Office Equipment Maintenance	x			
Cash Revenue Collection	x	x		
E-fare Fiscal Agent	x			
Financial Settlement			x	
Customer Service	x	x	x	
Card Fulfillment	x	x	x	
Reporting	x	x		
Cellular Service Provider			x	x
Software Maintenance	x		x	
Marketing and Communications	x	x	x	

Exhibit C

e-fare Open Payment Flow diagram

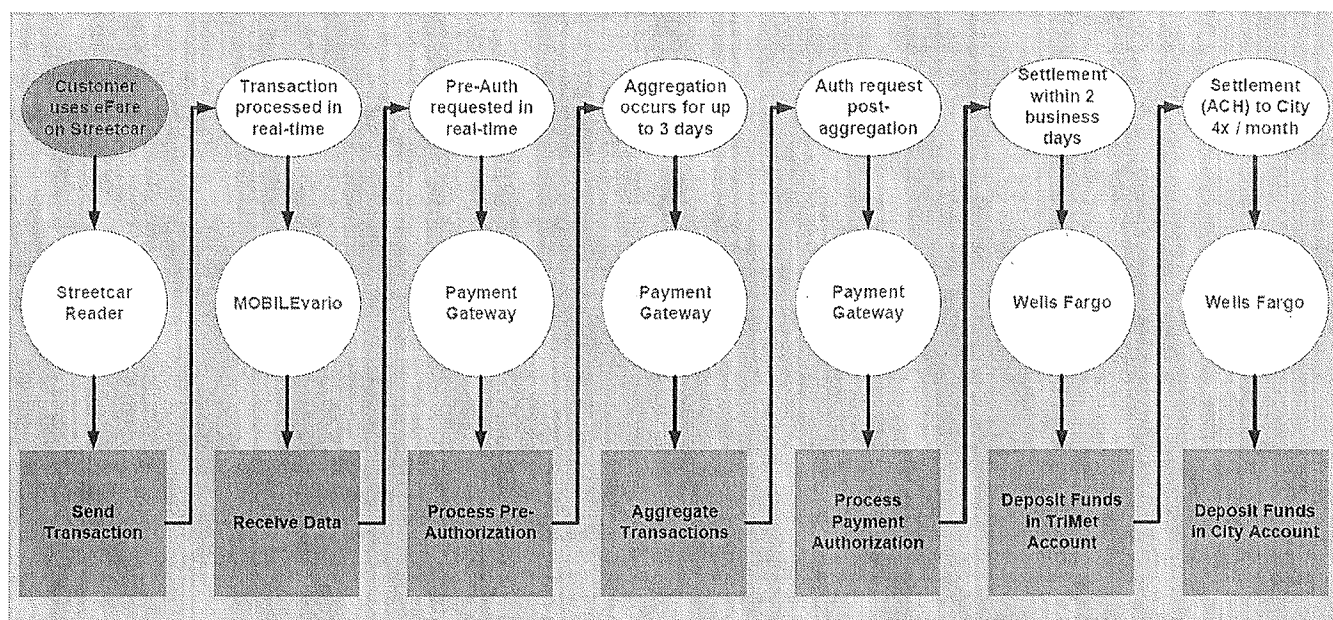


Exhibit D

Acronyms, Abbreviations & Glossary

The following acronyms and abbreviations may appear in this document:

ACH – Automated Clearing House
 ADA – Americans with Disabilities Act
 ADAAG – ADA Accessibility Guidelines
 AMPS – Account Management and Processing System
 ANSI – American National Standards Institute
 API – Application Programming Interface
 AR – Accounts Receivable
 CAD – Computer-aided Design
 CAD/AVL – Computer-aided Dispatch/Automatic Vehicle Location system
 CDMA – Code Division Multiple Access
 COTS – Commercial-off-the-Shelf equipment
 CRM – Customer Relationship Management System
 CSC – Card Security Code
 ECR – Engineering Change Request
 EDP – Electronic Data Processing
 E-FARE – Electronic Fare
 EFT – Electric Funds Transfer
 EMI – Electromagnetic Interference
 EMV – Europay, MasterCard, Visa
 FACI – First Article Configuration Inspection
 FAT – First Article Testing
 FCSS – Financial Clearing and Settlement System
 FDR – Final Design Review
 FMI – Field Modification Instructions
 FRT – Failure Review Team
 GSM – Global System for Mobile communications
 HHV – Handheld Validator
 IIN – Issuer Identification Number
 iOS – Operating System for Apple products
 IVR – Interactive Voice Response system
 IP – Internet Protocol
 IP – Intellectual Property
 ISO – International Standards Organization
 LCD – Liquid Crystal Display
 LLRC – Lowest Level Replaceable Component
 LLRU – Lowest Level Replaceable Unit
 MAX – Metropolitan Area Express
 MOU – Memorandum of Understanding
 MDT – Mobile Data Terminal
 MIL-STD – U.S. Military Standard
 MMIS – Maintenance Management Information System
 NEC – National Electric Code
 NFC – Near Field Communication
 NTP – Notice to Proceed
 O&M – Operate and Maintain

OEM – Original Equipment Manufacturer
OHSU – Oregon Health and Science University
PAN – Primary Account Number
PCI-DSS – Payment Card Industry – Data Security Standard
PDR – Preliminary Design Review
PII – Personally Identifiable Information
POS – Point of Sale system
PSI – Portland Streetcar, Inc.
RFI – Radio Frequency Interference
RFP – Request for Proposal
RST – Retail Sales Terminals
SAE – Society of Automotive Engineers
SAM – Secure Access Modules
SAV – Stand-alone Validator
SLA – Service Level Agreement
SQL – Structured Query Language
SSL – Secure Socket Layer
TDEA – Triple Data Encryption Algorithm
TVM – Ticket Vending Machine
UL – Underwriter Laboratories
USB – Universal Serial Bus
VPN – Virtual Private Network
WES – Westside Express Service

Glossary	
Account-based system	System where account details are stored at a central server, as opposed to a card-based system, where account information resides on the fare media.
Americans with Disabilities Act (ADA)	Federal law that prohibits discrimination or reduced service based on disability. In a transit application, disabled patrons must have full and unrestricted access to all station features and transportation options, as well as be offered discounted fares under certain guidelines.
Application Programming Interface (API)	A set of protocols that define interaction between software packages. APIs can be proprietary or open source, but are required for data exchange between software systems.
Autoload	Process where value is loaded automatically to a transit account when the account balance reaches a certain threshold, or at a specified time interval.
Bankcard authorization	Step during a credit or debit payment transaction when the card and account is verified by the card issuing bank and payment is committed. Usually is processed by a credit card processor, and often requires real-time communication link.
Base fare	The cash fare paid at a farebox or TVM for a single adult boarding.
Business rules	The rules and guidelines that govern an agreement between parties. In an electronic fare system, the business rules define how the system will enforce the agency fare policies.
Canned reports	Pre-built reports that provide fundamental data in a database-driven operation.
Closed-loop system	A system where data processing is constrained within system.
Commercial-Off-The-Shelf (COTS) equipment	Term for products that are available for purchase in the open marketplace by the general public. COTS goods are generally widely available at lower cost than privately developed products.
Computer-Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system	System that provides vehicle dispatch, scheduling, location, and maintenance services within a centralized dispatch center. CAD/AVL systems typically require operator login, which can be integrated with fare collection

	equipment.
Contactless bank card	Bank-issued credit or debit card that supports contactless payment through an ISO 14443 communication interface.
Contactless reader	Hardware component that supports a contactless communication protocol such as ISO 14443, and is embedded into contactless fare collection equipment.
C-TRAN	Clark County Public Transportation Benefit Area, a public transit agency serving Clark County, Washington, and surrounding areas including Portland, Oregon.
Customer Relationship Management System (CRM)	Enterprise software system used to manage customer relationships including customer support information, sales data, and IT support. Usually managed through customized software portal developed to the requirements of managing organization.
Data warehouse	Central database used as primary system for reporting and data analysis.
Europay, MasterCard, Visa (EMV)	A global standard for inter-operation of integrated circuit cards ("chip cards") and point-of-sale (POS) terminals and automated teller machines (ATMs), for authenticating credit and debit card transactions
Handheld Validator (HHV)	Handheld device used to validate fare payment by inspectors. Has the capability to read fare media and query transit accounts, and often the capability to transmit inspection data for reporting purposes.
Institutional programs	Special programs administered by transit agencies for institutions outside of the transit-riding public. Can include business, educational, social service, and government entities that have special public transportation needs.
ISO 14443	International standard that defines contactless proximity cards, including physical layer definition and transmission protocols. Used for many identification and transportation purposes.
Issuer Identification Number (IIN)	The first six digits of a credit or debit card number Primary Account Number that identifies the institution (e.g., bank) that issued the card to the cardholder.
Interactive Voice Response (IVR) system	An automated telephone system that allows customers to receive information and initiate

	actions through the use of voice commands or touchtone input.
Internet Protocol (IP)	The communications protocol of the public Internet, many wide area networks (WANs), and most local area networks (LANs). The Internet Protocol (IP) is part of the TCP/IP protocol suite, and the terms "IP network" and "TCP/IP network" are synonymous.
Linked trip	An origin to destination trip on a transit system, inclusive of all transfers.
Metropolitan Area Express (MAX)	Light rail service operated by TriMet, serving the Portland metropolitan area.
MIFARE	Family of contactless chips manufactured by NXP corporation for use in contactless smart cards. Several variants of MIFARE chips are widely used by U.S. transit agencies.
Near Field Communication (NFC)	Wireless communication standard that defines communications between mobile devices such as smartphones, and includes the use of secure memory to store sensitive data on devices. Based on existing communications standards, including ISO 14443 and ISO 18092.
Portland Aerial Tram	Portland Aerial Tram connecting the Oregon Health and Science University (OHSU) to the South Waterfront district in Portland.
Primary Account Number (PAN)	The account number used to access a bank-administered credit or debit account. This number is embossed on the front of the customer's bank card, and is usually the number transmitted when a contactless bank card is used for payment.
Open architecture	A system architecture where data exchange and format is based on published standards allowing for interoperability between equipment from different vendors. Contrary to closed architecture, where the interfaces are proprietary.
Open payments	Payment model where payments are made using industry standard bank cards.
Open source	Software development model that uses publicly available source code in effort to encourage collaboration and interoperability. Use, modification and distribution are usually governed by open source licenses.
Open-loop system	A system that includes interfaces to external systems for data processing based on open standards. In transit, this usually refers to a

	system that allows the payment of fares using bank-issued credit and debit cards through an interface to an external payment processor.
Original Equipment Manufacturer (OEM)	Manufacturer that produces products sold by another company, usually under that company's brand or model. It is common for the manufacture to provide warranty support for the product.
Paratransit	Transportation service that services disabled patrons or those with special access needs.
Participant	Member of a business partnership or entity governed by an agreement that serves a common goal and set of business rules.
Payment Card Industry-Data Security Standard (PCI-DSS)	Standard that defines security requirements for vendors accepting bank cards for payment.
Payment credential	An instrument that provides proof of qualification to make a payment, usually associated with a credit card company or closed-loop card issuer.
Personally Identifiable Information (PII)	Information that can be used to uniquely identify an individual. Usually subject to stringent security and data transmission rules and regulations.
Point of Sale (POS) system	Manned terminal used for the sale fare media and loading of transit value. Most commonly used at in-person customer service centers.
Portland Streetcar	Streetcar system that serves downtown Portland, Oregon, and is owned and operated by the City of Portland in partnership with TriMet.
Proof-of-payment	Fare collection concept where access to transit service is not restricted, and patrons are required to show valid fare media to authorities when inspected. Failure to present valid fare media usually results in a fine.
Request for Proposal (RFP)	An RFP outlines the proposal process and contract terms, and provides guidance on how the proposal should be formatted and presented.
Stand-alone Validator (SAV)	Physical device used to accept fare payment. Usually installed at the entrance to the paid area of a transit station.
Ticket Vending Machine (TVM)	Self-service fare media vending device where patrons can purchase, reload, or inspect fare media. Can have many physical forms, but usually designed to operate in outdoor environment.
Tokenization	Process to secure sensitive data elements during

	processing and transmission by replacing the data with a proxy, or token, and storing the original data, which can be accessed using the proxy, in a secure location.
Transit account	In an account-based electronic fare system, the back office account that stores the value loaded by the customer and used to pay fares.
TriMet	Tri-County Metropolitan Transportation District of Oregon, a public transit agency serving the Portland metropolitan area in three counties. Operates bus, light rail, commuter rail, and paratransit services.
Unearned Revenue	Unearned Revenue is defined as revenue that has not been earned because services have not yet been provided, and is recorded on TriMet's Statement of Net Position as a liability. The revenue is recognized once the customer uses transit services, and is recorded consistent with fares currently in effect at the time of service.
Virtual Private Network (VPN)	The extension of a private network through a public domain using encryption and other security measures. Allows access to private network from remote location or device.
Westside Express Service (WES)	Commuter rail line between Beaverton and Wilsonville, Oregon operated and managed by TriMet.