

# Fare Collection 101: *Fare Policy*

**APTA 2012 Fare Collection Workshop**  
Ft. Worth, TX

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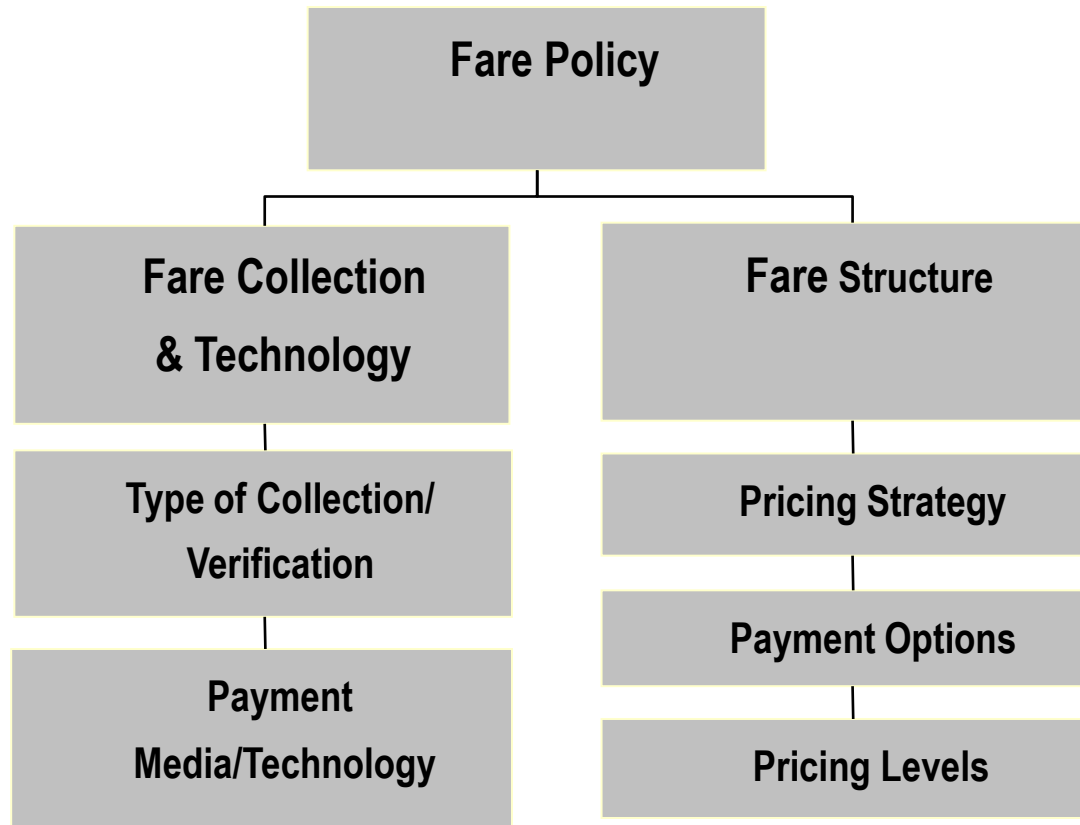
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**TranSystems**

The logo for TranSystems features the word "Tran" in white bold font on a dark red rectangular background. To its right, the word "Systems" is written in a light blue, outlined font, with the letters appearing to be inside a white-outlined arrow shape that points to the right.

**Tran** Systems

# Fare System Parameters

- Fare Policy: principles, goals and constraints that guide and restrict a transit agency in setting and collecting fares



# Fare System Parameters (cont.)

- Fare Structure
  - Pricing Strategy: general approach (e.g., flat fare vs. fare differentials)
  - Payment Options: forms of fare payment (e.g., cash, passes, multi-ride tickets, stored value)
  - Pricing Levels: actual amounts for each fare option
  - Transfer Policy: price and use parameters
- Fare Collection and Technology
  - Type of Collection/Verification: how fares are paid and inspected (e.g., barrier, self-service/POP, pay on board)
  - Payment Media/Technology: type of payment media and equipment (e.g., magnetic, smart card)



# Importance of Fare Policy

- Fare policy affects all aspects of transit system
  - Administration – fare changes tend to be publicly scrutinized & debated
  - Finance – fares are important source of revenue
  - Customer Service -- fare payment is first aspect of transit a customer encounters; complexity and ease of access to prepaid options important customer service factors
  - Marketing – fares affect perception of transit system in the community; fare change or new technology need to be marketed effectively, and offer key general marketing opportunities
  - Operations – fare structure affects ridership levels and thus amount of service needed; fare structure/technology also affect boarding/dwell times and thus service reliability
  - Planning – fare structure/technology affect accuracy of fare data

# Role of Fare Policy in Decision-Making

- Some agencies have comprehensive fare policy statements; these may include:
  - Long-term goals (e.g., maximize ridership, maximize revenue, maximize social equity)
  - Short-term objectives (e.g., recovery ratio or ridership target)
  - Guidelines for reviewing/changing fares (e.g., review annually, tie fares to inflation)
- More common impetus for fare structure/pricing change: response to particular issue or problem (e.g., revenue shortfall)
- Few agencies make fare changes on regularly-scheduled basis

# Decision-Making Scenarios

- Policy-driven: agency makes fare structure changes to address specific goals (e.g., simplify, insure equity, increase ridership or revenue)
- Technology-driven: agency makes fare structure changes to take advantage of new technology (e.g., smart card)
- Service-driven: agency makes fare structure changes to accommodate new mode or service (e.g., LRT, express bus)



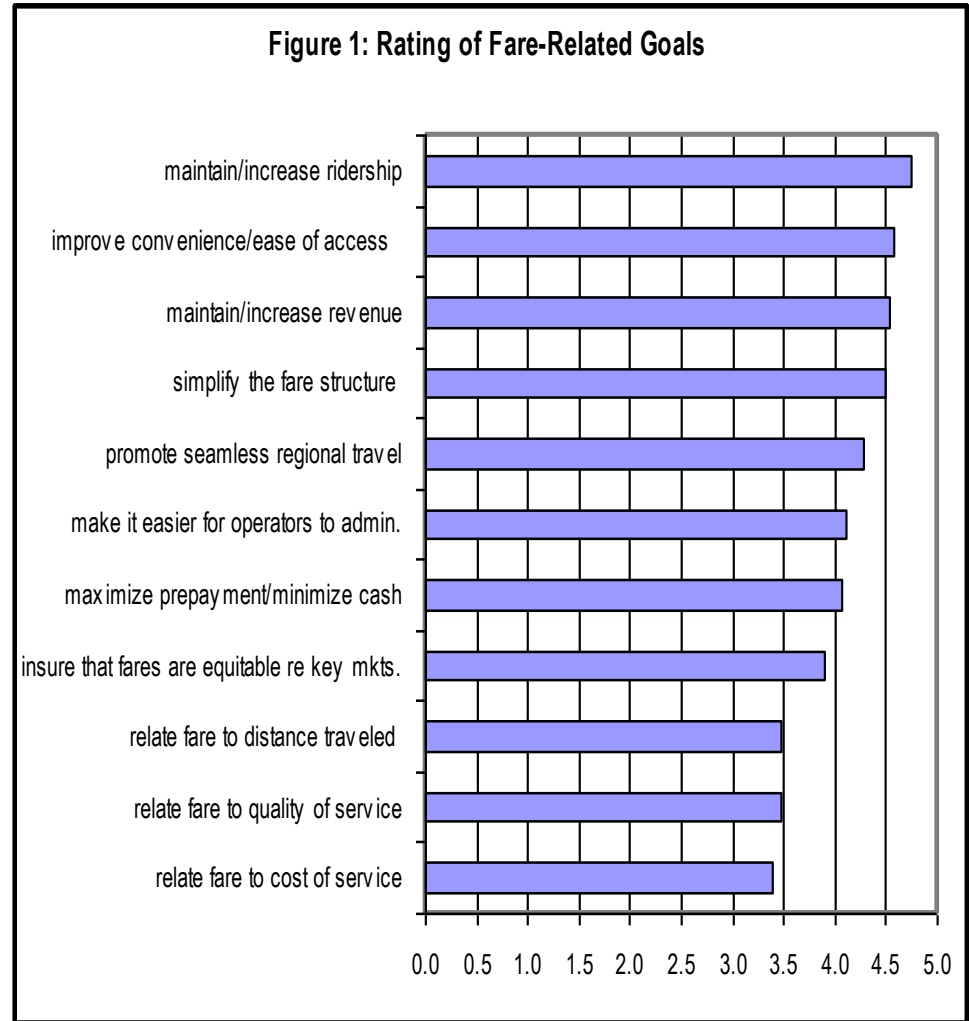
# Fare Policy/Structure Development Process

- Define & prioritize fare policy goals
- Review existing fare system
  - Fare policy/structure
  - Fare collection/verification
- Identify fare structure elements
  - Pricing strategy
  - Payment options
  - Transfer policy/pricing levels
- Develop alternative fare structure scenarios
- Develop fare model and evaluation criteria
- Evaluate scenarios and develop recommendations

Table 1: Evaluation Criteria -- Decision Guidelines		
Evaluation Criteria	Measures/Guidelines	Comments
Maintain or increase revenue	-1= 0.5% -- 2% decrease 0= 0.5% decrease -- 0.5% increase 1= 0.5% -- 2% increase	from Fare Model
Maintain or increase ridership	-1= 0.5% -- 2% decrease 0= 0.5% decrease -- 0.5% increase 1= 0.5% -- 2% increase	from Fare Model
Provide seamless fare system	-1=no transfers (and no day pass) 0=no change from current 1=free transfers or day pass	related to ease of transfer between local and regional service
Simplify fare structure and reduce problems associated with fare structure	-1=retention of zones 0=reduced no. of zones 1=elimination of zones, no pk/off-pk	relates to ease of rider use and operation/administration; "0" if no zones but pk/off-pk
Reduce fare collection operating & admin. costs	-1=lower prepayment discounts 0=no change from current 1=increased prepayment discounts	increased prepayment results in less cash to handle; relates to pass and st. value/multi-ride discounts
Maximize public acceptability	-1=large cash increase 0=small change in cash fare 1=no change in cash fare	reflects public opposition or acceptance; "1" if small cash change and deeper discount; "-1" if fare > \$1.35

# Define and Prioritize Fare Policy Goals

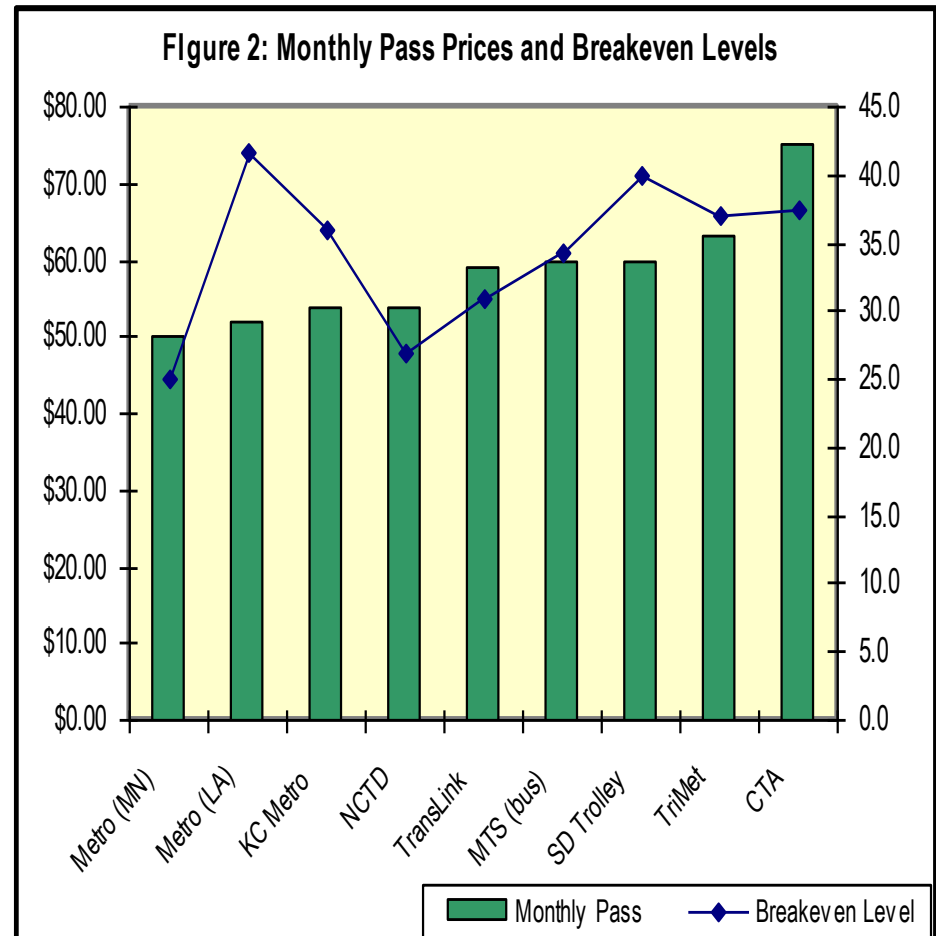
- Identify goals
  - Customer-related (e.g., ridership, ease of use, complexity, equity)
  - Financial (e.g., revenue, fare abuse, fare collection costs)
  - Management-related (e.g., data collection, modal integration)
  - Political (e.g., political acceptability)
- Prioritize -- need to balance competing goals
  - Maximize ridership vs. maximize revenue
  - Simplify fare structure vs. insure equity of fare structure





# Review Existing Fare System: Fare Policy/Structure

- Review existing fare policy and structure
  - Obtain staff/stakeholder input
  - Review ridership/revenue trends
  - Review revenue needs/fare recovery target
- Review plans for new modes or types of service
  - Identify fare structure requirements
- Review peer system practices
  - Compare practices to those of peer regions/agencies
  - Review industry trends/practices



# Review Existing Fare System: Fare Collection/Verification

- Identify existing type of collection
  - Pay on boarding
  - Barrier
  - Self-service/barrier-free (proof-of-payment)
  - Conductor
- Identify plans for introduction of new fare technology/equipment (e.g., electronic payment)
- Type of collection and technology affects fare structure decisions
  - Identify fare structure limitations
  - Identify opportunities for new pay options



# Identify Fare Structure Elements: Pricing Strategy

- Pricing strategy, flat vs. differentiated
  - Flat fare (same base fare throughout system)
  - Zone/distance-based fares
  - Time-of-day differential
  - Express or rail premium
- Most agencies (except commuter rail) have flat fares
  - Zone/distance: 15% of bus systems, 23% heavy rail, 20% LRT, 70% CR
  - Peak/off-peak: 4% of bus systems, 8% heavy rail, 8% LRT, 20% CR
  - Express premium: 25% of bus systems
  - Rail premium: 20% of systems with bus and rail
- Use of differentiation declining; agencies increasingly deciding that disadvantages outweigh advantages

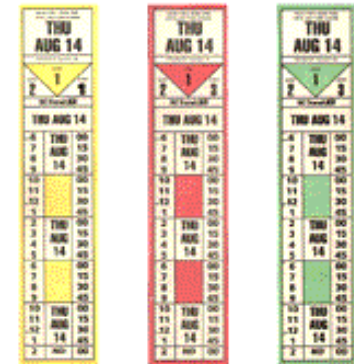


# Identify Fare Structure Elements: Pricing Strategy (cont.)

- Trade-offs, flat vs. differentiated
  - Differentiation advantages include more equitable (fare reflects cost of providing service), potential for higher revenue
  - Flat fare advantages include simpler, easier to administer, potential for higher ridership
- Type of fare collection and technology a factor
  - Distance and time-based differentiation difficult to administer/enforce without electronic payment
  - Zonal/distance-based works best if farecard swiped/tagged on entry and exit (i.e., “tag on/tag off”) on bus and LRT; required on heavy rail
  - Peak/off-peak differential not well-suited to POP system even with electronic payment

# Identify Fare Structure Elements: Payment Options

- Payment options
  - Single ride (cash, ticket, token)
  - Multi-ride (pack of tokens, book of tickets, stored value/ride farecard)
  - Unlimited-ride passes (1-day, 7-day, month, other)
- Payment media/technologies
  - Cash
  - Tokens
  - Paper tickets
  - Magnetic farecards
    - Read-only (to validate passes)
    - Read-write (for stored-value and other options)
  - Smart cards
    - Transit agency-issued contactless cards
    - Third party-issued cards (e.g., contactless credit/debit cards/"open payments")



# Identify Fare Structure Elements: Payment Options (cont.)

- Basic electronic payment options
  - Stored value/rides – often include some form of bonus/discount
  - Rolling/activate on first use passes
- Emerging electronic payment options
  - Lower fare, reduced price transfers only with farecard/smart card
  - Guaranteed last ride/negative balance
  - Account-based/autoload
- Other options to consider
  - Frequency-based bonus/discount
  - Guaranteed lowest fare
  - Post payment

### 31-DAY PASS

Good for unlimited travel on all city routes for 31 consecutive days beginning the first day it is used.

Date of activation and expiration date are printed on the back of your ticket on the first day you use it.

Regional Transit Service

31-Day Unlimited Ride Pass

Adult City

INSERT

- Can also be used as the first \$1.25 on any Park & Ride or suburban route.
- Cost - \$56.00

Regional Transit Service

31-Day Unlimited Ride Pass

Senior/Disabled City

INSERT

- Can also be used as the first \$.60 on any Park & Ride or suburban route.
- Valid from 9:00 am - 3:30 pm and after 6:30 pm, Monday through Friday and all day Saturday, Sunday and holidays.
- Cost - \$28.00

Regional Transit Service

31-Day Unlimited Ride Pass

Child City

INSERT

- Good for children ages 6-11.
- Can also be used as the first \$.60 on any Park & Ride or suburban route.
- Cost - \$28.00

### STORED VALUE PASS

Good for travel on any FTS route at any time.

- Eliminates the need to carry cash.
- Remaining balance is printed on the back of your ticket after each use.
- Cost - \$20.00

Regional Transit Service

Stored Value

\$20.00

INSERT

Check This Out!

### TRANSFERS

Transfers enable you to take more than one bus to complete your trip. Let the driver know if you need a transfer.

Regional Transit Service

Transfer or Special Pass

INSERT

- Transfers are issued from the farebox. The date and time of issue and the expiration time are printed on the back of the ticket.
- Cost - \$15

### All Day City Pass

- Purchase right on the bus.
- Good for unlimited city zone travel. No transfers needed!
- Valid from the time it is purchased until 2:00 a.m. that same day.
- Please deposit exact fare.
- Cost - \$4.00



# Identify Fare Structure Elements: Transfer Policy & Pricing Levels

- Transfer policy/pricing
  - Most agencies offer free or reduced price transfers
  - Recent trend is to eliminate transfers & introduce day pass, or sell shorter periods of time (with no directional or other use restrictions)
- Base fare level
  - Cash, stored value – charge lower fare w/ smart card?
  - Multi-ride – offer discount/bonus?
- Fare categories -- full fare, reduced fare (senior, disabled, youth, etc.)
- Pass parameters – price/breakeven level/availability period
  - Average breakeven levels: bus 30-32, LRT 36, heavy rail 44
  - Calendar vs. rolling (e.g., month vs. 30-day)

# Develop Alternative Fare Structure Scenarios

- Vary cash fare, pass prices, discounts
  - Raise all fares
  - Raise cash fare, keep passes the same
  - Eliminate multi-ride discount
- Modify use of fare differentiation
  - Introduce express premium for new commuter routes
  - Introduce off-peak or weekend discount
  - Reduce or eliminate fare zones
- Introduce new payment options
  - Eliminate free transfers and introduce day pass (sold on-board)
  - Introduce 1-week pass
  - Introduce stored value/rides farecard

**Table 2: Alternative Fare Scenarios**

Fare Element	Current Structure	9f: flat, high cash inc., 1-wk pass, high discount	10: same zones, small pass inc., moderate discount	11: flat high pass, no xfer, day pass, low discount	13a: flat, small inc., no stored value, mod. token disc.
<b>Flat Fare (single ride)</b>					
local (full/reduced), pk	-	\$1.50/\$0.75	-	\$1.25/\$0.60	\$1.35/\$0.60
local (full/reduced), off-pk	-	\$1.50/\$0.75	-	\$1.25/\$0.60	\$1.35/\$0.60
<b>Zone Fares (single ride)</b>					
zone 1 (full/reduced)	\$1.25/\$0.55	-	\$1.25/\$0.55	-	-
zone 2 (full/reduced)	\$1.45/\$0.65	-	\$1.45/\$0.65	-	-
zone 3 (full/reduced)	\$1.65/\$0.75	-	\$1.65/\$0.75	-	-
<b>Transfer</b>					
bus-bus (full/reduced)	\$0.25/\$0.15	\$0.00	\$0.00	-	\$0.00
<b>Monthly Pass</b>					
local (full) - 1 zone	\$44.00	\$53.00	\$45.00	\$50.00	\$48.00
local (full) - all zone	\$53.00	-	\$55.00	-	-
local (red.) - 1 zone	\$22.00	\$26.50	\$25.00	\$25.00	\$24.00
local (red.) - all zone	\$26.50	-	\$30.00	-	-
<b>Short-term Pass</b>					
2-week (full/red.) - 1 zone	-	-	-	-	-
2-week (full/red.) - all zone	-	1 wk: \$15	-	1 wk: \$13	-
1-day (full/red.) - 1 zone	-	-	-	-	-
1-day (full/red.) - all zone	-	-	-	\$2.75	-
<b>Stored Value</b>					
price per trip	-	\$1.30	\$1.13	\$1.19	-
% disc. or bonus	-	13.3%	10.0%	5.0%	-
<b>Free Fare Zone</b>					
current zone	free	free	\$1.00	free	free
larger zone	-	free	\$1.00	-	-
off-peak	free	\$0.25	\$1.00	free	free
<b>Revenue Impact</b>	-	<b>6.8%</b>	<b>-1.1%</b>	<b>1.6%</b>	<b>0.6%</b>
<b>Ridership Impact</b>	-	<b>-2.6%</b>	<b>0.0%</b>	<b>0.4%</b>	<b>0.6%</b>



# Develop Fare Model and Evaluation Criteria

- Develop elasticity-based ridership/revenue model
  - Separate existing riders into market segments
  - Identify elasticities (based on previous fare changes, surveys or elasticities used by agencies with comparable rider base)
  - Enter new scenarios to determine ridership and revenue impacts
- Identify evaluation criteria
  - Quantitative criteria: results from Fare Model
  - Qualitative criteria: based on fare goals (e.g., simplifies fare structure, increases convenience of fare payment, facilitates seamless travel)
  - Consider applying relative weights, based on prioritization of goals

# Evaluate Scenarios and Develop Recommendations

- Evaluate scenarios
  - Apply Fare Model results
  - Apply evaluation criteria
- Develop short list of promising scenarios
- Modify individual fare structure elements, run new scenarios in Fare Model
- Identify preferred scenario
- Present recommendation to Board of Directors

<b>Table 3: Evaluation of Fare Structure Scenarios</b>				
<b>Evaluation Criteria</b>	<b>9f: flat, high cash inc., 1-wk pass, high discount</b>	<b>10: same zones, small pass inc., moderate discount</b>	<b>11: flat high pass, no xfer, day pass, low discount</b>	<b>13a: flat, small inc., no stored value, mod. token disc.</b>
Revenue impact	6.8%	-1.1%	1.6%	0.6%
Ridership impact	-2.6%	0.0%	0.4%	0.6%
Maintain or increase revenue	2	-1	1	1
Maintain or increase ridership	-2	0	0	1
Provide seamless fare system	1	1	1	1
Simplify fare structure/reduce problems	1	-1	1	1
Reduce fare collection oper. and admin. costs	1	0	-1	0
Maximize public acceptability	-1	1	1	0
<b>Total Score</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>4</b>

# Emerging Factors and Issues Affecting Fare Policy

- Equity/environmental justice concerns
- Focus on providing “seamless” travel in a region (i.e., multi-agency integration)
- New programs/partnership opportunities
  - University, employer subsidy programs
  - Multiapplication (other transportation and non-transportation)
  - Use of bank cards and cell phones



# Equity and Environmental Justice Issues

- Fare decision-making increasingly influenced by political or legal factors
  - Concern re equal treatment of all groups
  - Organized opposition or legal action against proposed fare increases
- Can define/limit fare structure changes
  - Consent Decree in LA
  - Free transfers, weekly pass in Boston
  - Very deep discount in Philadelphia

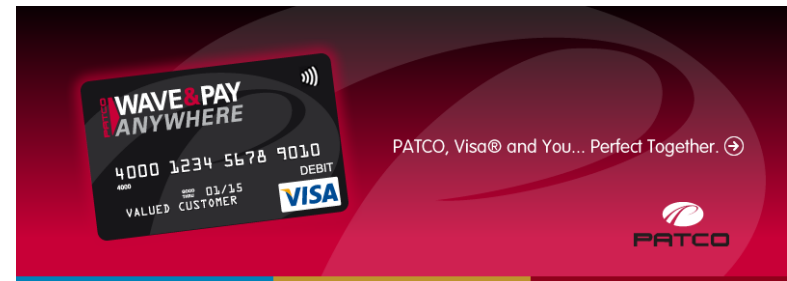
# Regional Payment Integration

- Growing emphasis on multi-agency payment integration
- Fare policy/structure strategies
  - Develop common fare structure elements (e.g., regional passes, free or reduced interagency transfers) OR
  - Allow each agency to retain own fare structure; all agencies accept common stored value
- Emerging programs all involve smart cards
- Examples: Atlanta, SF Bay Area, LA, SD, Ventura Co., Washington-Baltimore, Seattle



# New Programs & Partnership Opportunities

- New programs/partnership opportunities
  - University programs
  - Employer benefits programs
  - Access to jobs programs
- Multiapplication arrangements -- other transportation modes
  - Parking
  - Electronic toll
- Multiapplication arrangements -- non-transportation applications
  - Banks (e.g., direct use of contactless credit/debit cards)
  - Mobile commerce (e.g., use of cell phones)
  - ID, access, security



# Summary

- Fare policy affects all aspects of transit system: administration, finance, customer service, marketing, operations, planning
- Fare policy needs to balance competing goals (e.g., ridership vs. revenue, simplicity vs. equity)
- Increase in use of electronic fare media has facilitated new payment options and has influenced fare structure
- Broader context for fare policy in recent years
  - Increase in equity concerns/complaints
  - Focus on seamless regional travel
  - New partnership opportunities

