Fare Collection 101:
Fare Policy

APTA Fare Collection Workshop

San Diego, CA

March 29, 2010

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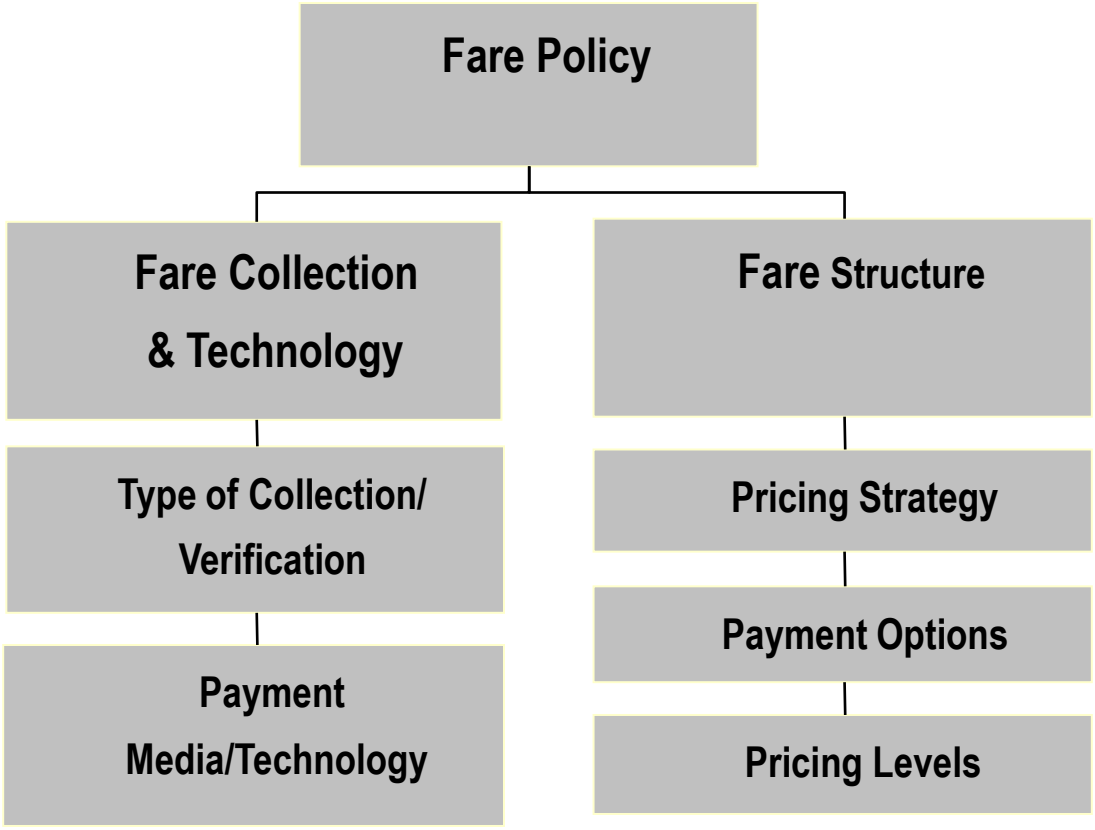
Fare System Parameters

- 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)
  - Transfer Policy: price and use parameters
  - Pricing Levels: actual fare amounts for each payment option
- 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

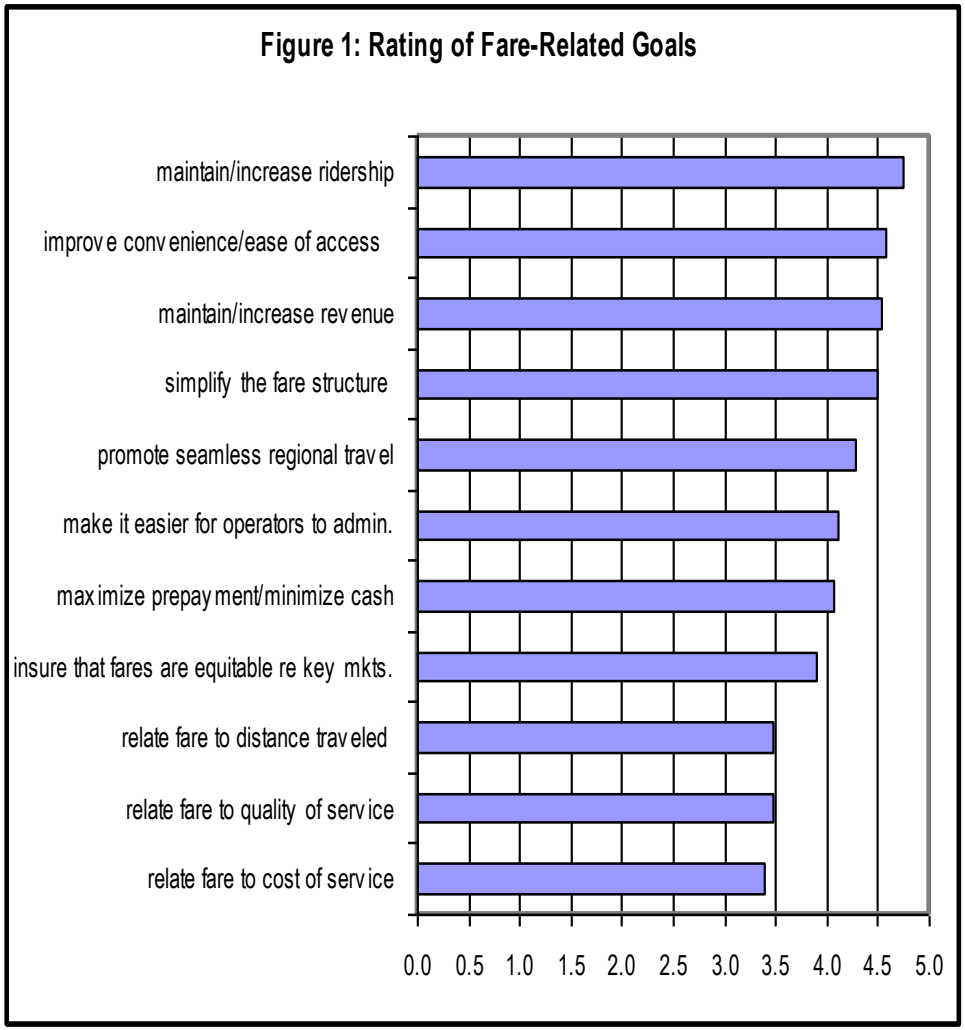
- Define & prioritize fare policy goals
- Review existing fare system
  - Fare policy/structure
  - Fare collection/verification
- Identify fare structure elements
  - Pricing strategy
  - Payment options
  - Transfer policy/pricing levels
- Develop alternative fare structure scenarios
- Develop fare 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

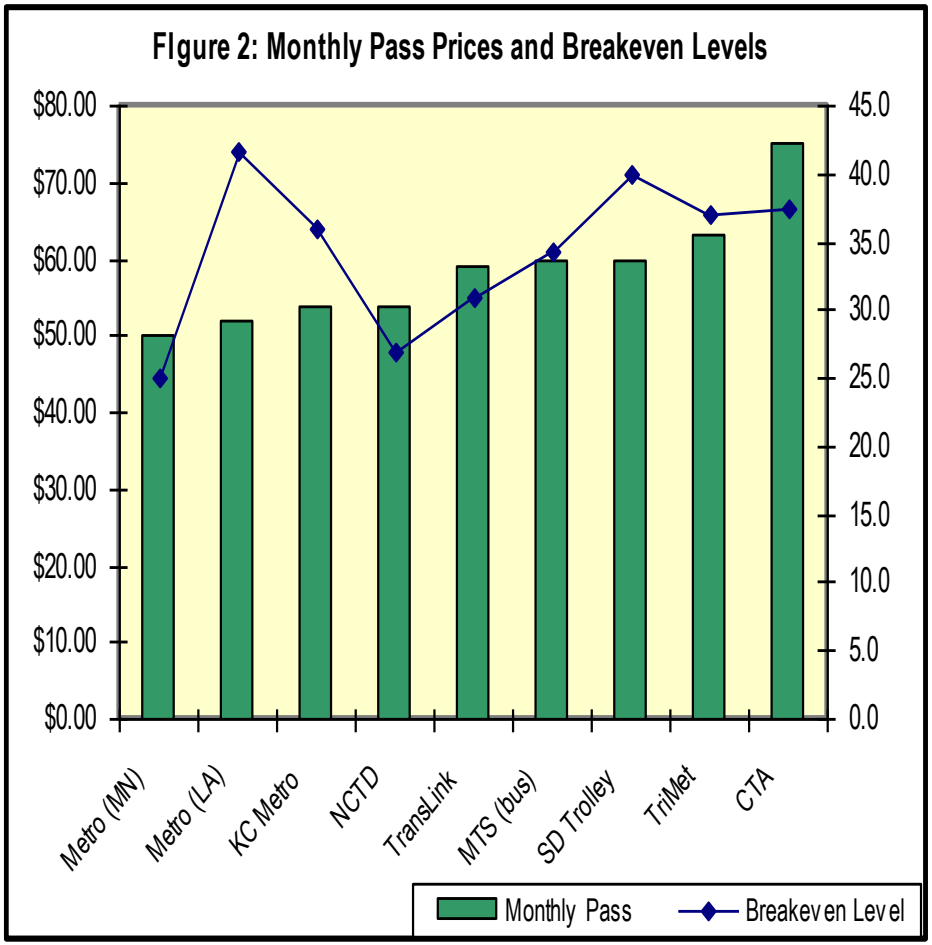
Define and Prioritize Fare Policy Goals

- 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



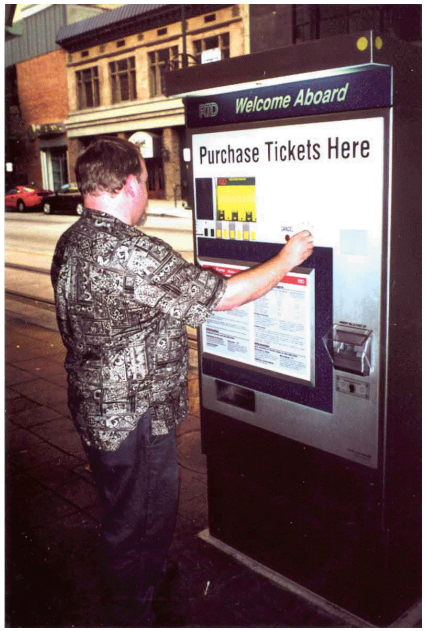
Review Existing Fare System: Fare Policy/Structure

- 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

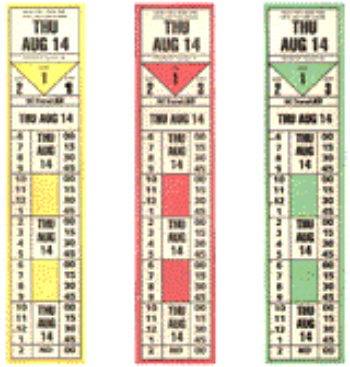
- Pricing strategy, flat vs. differentiated
  - Flat fare (same base fare throughout system)
  - Zone/distance-based fares
  - Time-of-day differential
  - Express or rail premium
- Most agencies (except commuter rail) have flat fares
  - Zone/distance: 30% of bus systems, 20% heavy rail, 27% LRT, 90% CR
  - Peak/off-peak: 4% of bus systems, 7% heavy rail, 14% LRT, 28% CR
  - Express premium: 23% of bus systems
- Use of differentiation declining; agencies increasingly deciding that disadvantages outweigh advantages

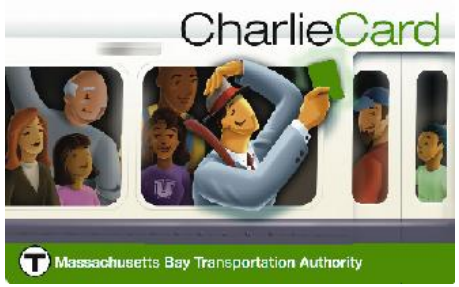
Identify Fare Structure Elements: Pricing Strategy (cont.)

- 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

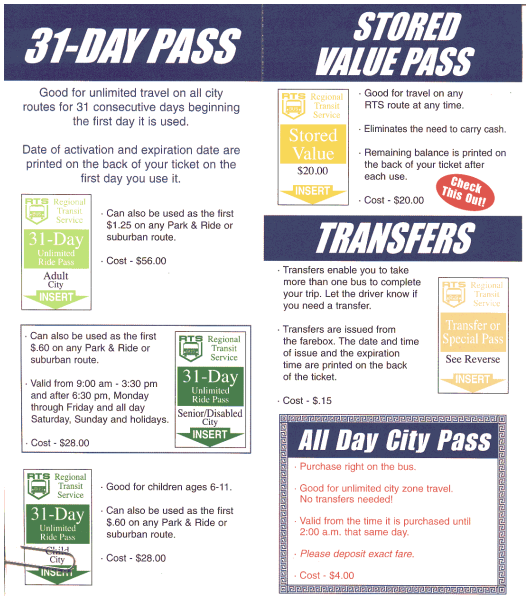
- Payment options
  - Single ride (cash, ticket, token)
  - Multi-ride (pack of tokens, book of tickets, stored value/ride farecard)
  - Unlimited-ride passes (1-day, 7-day, month, other)
- Payment media/technologies
  - Cash
  - Tokens
  - Paper tickets
  - Magnetic farecards
    - Read-only (to validate 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)





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



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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.
Flat Fare (single ride)					
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
Zone Fares (single ride)					
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	-	-
Transfer					
bus-bus (full/reduced)	$0.25/$0.15	$0.00	$0.00	-	$0.00
Monthly Pass					
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	-	-
Short-term Pass					
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	-
Stored Value					
price per trip	-	$1.30	$1.13	$1.19	-
% disc. or bonus	-	*13.3%*	*10.0%*	*5.0%*	-
Free Fare Zone					
current zone	free	free	$1.00	free	free
larger zone	-	free	$1.00	-	-
off-peak	free	$0.25	$1.00	free	free
Revenue Impact	-	***6.8%***	***-1.1%***	***1.6%***	***0.6%***
Ridership Impact	-	***-2.6%***	***0.0%***	***0.4%***	***0.6%***

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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

Table 3: Evaluation of Fare Structure Scenarios

Evaluation Criteria	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.
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
Total Score	**2**	**0**	**3**	**4**

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

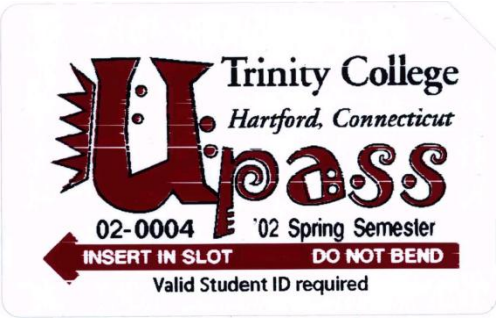
- Fare decision-making increasingly influenced by political or legal factors
  - Concern re equal treatment of all groups
  - Organized opposition or legal action against proposed fare increases
- Can define/limit fare structure changes
  - Consent Decree in LA
  - Free transfers, weekly pass in Boston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