

# Fares

Citizens' Task Force for the Lummi Island Ferry

Lummi Island Grange

April 18, 2011

# Reviewing Our Progress

$$.55 * \left( \begin{array}{c} \text{Operating} \\ \text{Costs} \end{array} \right) = \left( \begin{array}{c} \text{Target} \\ \text{Fare Box} \\ \text{Receipts} \end{array} \right) \lesssim \left( \text{Ticket Sales} \right) * \left( \text{Fares} \right)$$

- We have:
  - Validated costs
  - Reviewed ridership
- We are:
  - Reviewing operational efficiencies
- We now turn to fares

# Agenda

- Defining the fares question
- History and comparisons of ferry fares
- Conceiving, parameterizing, and assessing options

# Fares and the Revenue Constraint

$$.55 * \left( \begin{array}{c} \text{Operating} \\ \text{Costs} \end{array} \right) = \left( \begin{array}{c} \text{Target} \\ \text{Fare Box} \\ \text{Receipts} \end{array} \right) \leq \left( \text{Ticket Sales} \right) * \left( \text{Fares} \right)$$

$$\left( \begin{array}{c} \$ \\ \text{Target} \end{array} \right) = \left( \begin{array}{c} \# \text{ pedestrian tickets} + \\ \# \text{ vehicle tickets} + \\ \# \text{ truck tickets} + \dots, \end{array} \right) * \left( \begin{array}{c} \text{price} \\ \text{of} \\ \text{each} \end{array} \right) = \sim \$$$

In 2010, the number of tickets of each class times the ticket price of each class, equalled

\$1,031,559

# Simplification: A First Step to Fares

Given any Target Fare Box Receipts:

The task is to propose a set of fares (fare schedule) that:

- Induces ticket sales sufficient to
- Approximately equal revenue target

*Predicting what fares will induce people to switch from one class to another (such as choosing to carpool and pay a pedestrian fare instead of driving) is difficult and depends on other factors such as the general economy.*

What we can do is to hold ticket sales fixed,

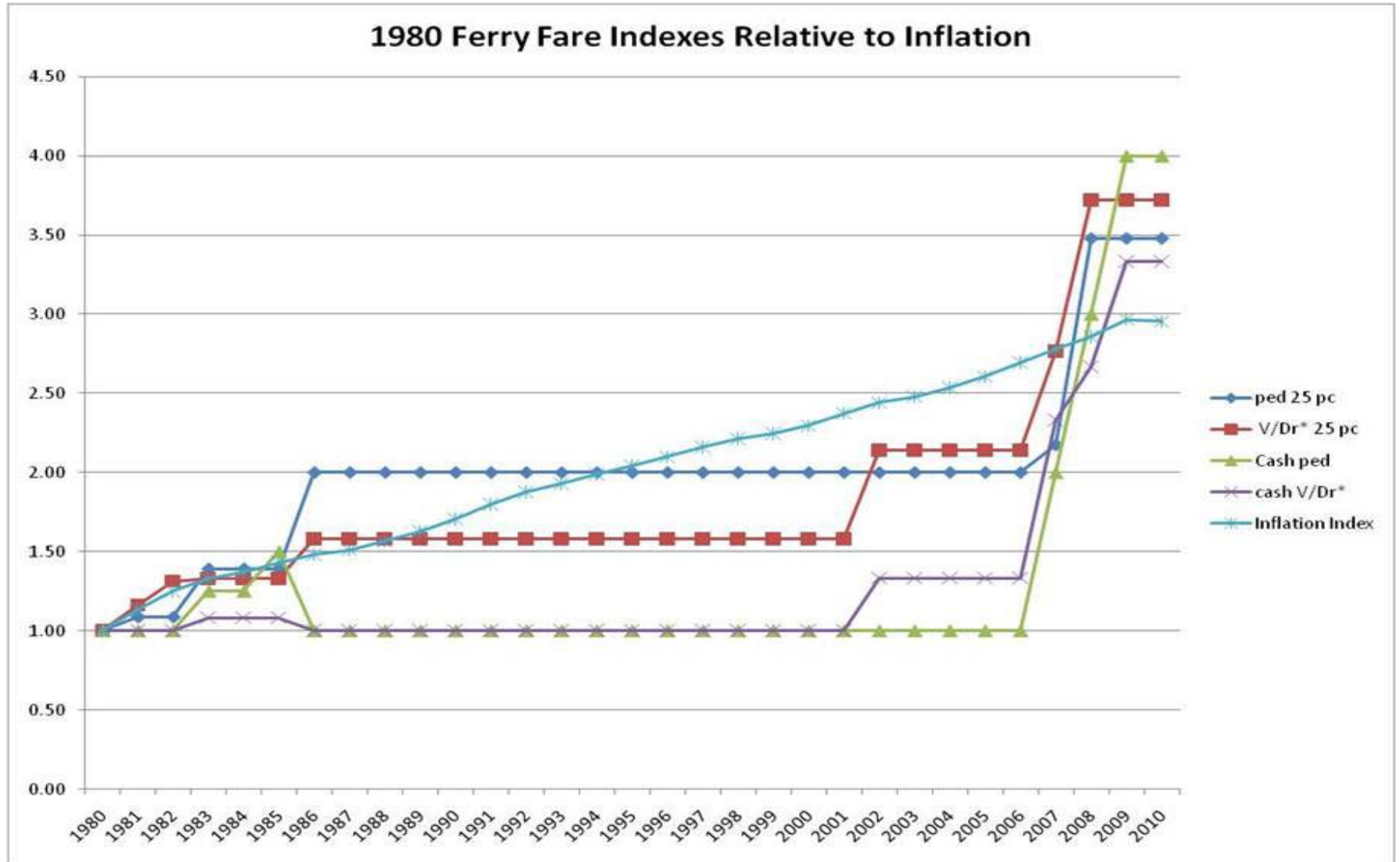
Then we can choose any set of fares that yields our target revenue.

**Question: What sets of fares will meet the target, and what sets of fares are preferable?**

# Agenda

- Defining the fares question
- History and comparisons of ferry fares
- Developing and assessing options

# What have our fares done?



## Different Ways of Dividing Kinds of Trips and Different Definitions

### Whatcom Fare Classes

Total Number of Different Fares **27**

### Skagit Fare Classes

Total Number of Different Fares **34**

### Pierce Fare Classes

Total Number of Different Fares **20**

### Single Trip Fares With No Discounts

Pedestrian w/o Multi-trip ticket	Adult Passenger (ages 18 and older)	Adults (Ages 19 & older)
Bicycle/Driver	Adult w/ Bicycle	Bicycle (Included with passenger fare)
Motorcycle/Driver	Vehicle/Driver 20 ft & under (including overhang)	Vehicle/Driver up to and including 20 ft length
Vehicle/Driver < 8001 lbs	Motorcycle/Driver	Motorcycle/stowage (includes driver)
	Motorcycle with trailer	3-wheel Vehicle
Trailer < 16	Vehicle over 20 ft to less than 25 ft	20 feet to under 30 feet
Trailer 16-30	Vehicle over 25 ft to less than 30 ft	30 feet to under 40 feet
Trailer > 30	Vehicle over 30 ft to less than 35 ft	40 feet to under 50 feet
Small Truck/Driver 8k-20 k lbs	Vehicle over 35 ft to less than 40 ft	50 feet to under 60 feet
Medium Truck/Driver 20k-35k lbs	Vehicle over 40 ft to less than 45 ft	60 feet to under 70 feet
Large Truck/Driver 36k-50k lbs	Vehicle over 45 ft to less than 50 ft	70 feet to under 80 feet
Overwidth vehicle or trailer	Vehicle over 50 ft to less than 55 ft	80 feet to under 90 feet
Special Trip	Vehicle over 55 ft to less than 60 ft	90 feet and greater
	Vehicle over 60 ft to less than 65 ft	
	Each 5 ft increment over 65 ft	
	Overwidth (over 8 ft, 6 in)	
	Extended Run (1 run at end of day)	
	Guemes Special (crew call out)	



## Quantity Discounts and Status Discounts - and Categories Vary

Whatcom Fare Classes	# of trips	Skagit Fare Classes	# of trips	Pierce Fare Classes	# of trips
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### Discounts Based on Multi-Trip Quantity

<i>DOES NOT EXPIRE until fare change</i>		<i>MONTHLY PASS - non-transferable</i>		<i>VALID for 40 days after purchase</i>	
Multi-trip Pedestrian	25	Monthly Passenger	23	Commuter Passenger	5
Multi-trip Pedestrian	10	Monthly Motorcycle/Driver	23	Motorcycle/Driver Commuter	5
Multi-trip Motorcycle/Driver	25	Monthly Vehicle/Driver	23	Commuter Vehicle/Driver (up to 20 ft)	5
Vehicle/Driver < 8k lbs	10				
Monthly Vehicle/Driver <8k lbs	25	<i>VALID for Calendar Year Purchased</i>			
Small Truck/Driver 8k-20 k lbs	10	Multi-trip Vehicle/Driver (up to 20')	10		
Medium Truck/Driver 20k-35k lbs	10	Multi-trip Motorcycle/Driver	10		
Large Truck/Driver 36k-50k lbs	10	Multi-Trip Passenger Adult	25		

### Single Trip Discount Fares Based on Status of Passenger

Children under 12 with parent	free	Age 5 and under	free	Children (Under Age 5)	free
Children under 12 w/o parent with signed waiver		Youth ( 6-17 yrs )	1	Children (Ages 5 - 18)	1
Resident School Child 12 - 18, from 9/1/ to 6/30	free	Youth or Senior with bicycle	1	Passenger Senior/Disabled	1
		Passenger Senior (65+ )/Disabled	1	Vehicle/Driver Senior/disabled (up to 20')	1
		Vehicle (up to 20') &-Senior/Disabled	1		
		Motorcycle, Senior/Disabled	1		
		Motorcycle with trailer, Senior/Disabled	1		

### Combined Multi-Trip Quantity and Status Discount Fares

Multi-trip Resident SchoolChild 12 - 18, from 7/1/ to 8/31	25	Multi-trip Youth (6-17yrs)	25
Multi-trip Post High School full time student	25	Multi-trip Passenger Senior / Disabled	25
Multi-trip Need Based Pedestrian	25	Multi-trip Veh&Driver - Senior/Disabled	10
Multi-trip Need Based Vehicle/Driver < 8,001 lbs	10	Multi-trip Motorcycle - Senior/Disabled	10

# Fare Classes Have Different Discounts from Cash Pedestrian Fares

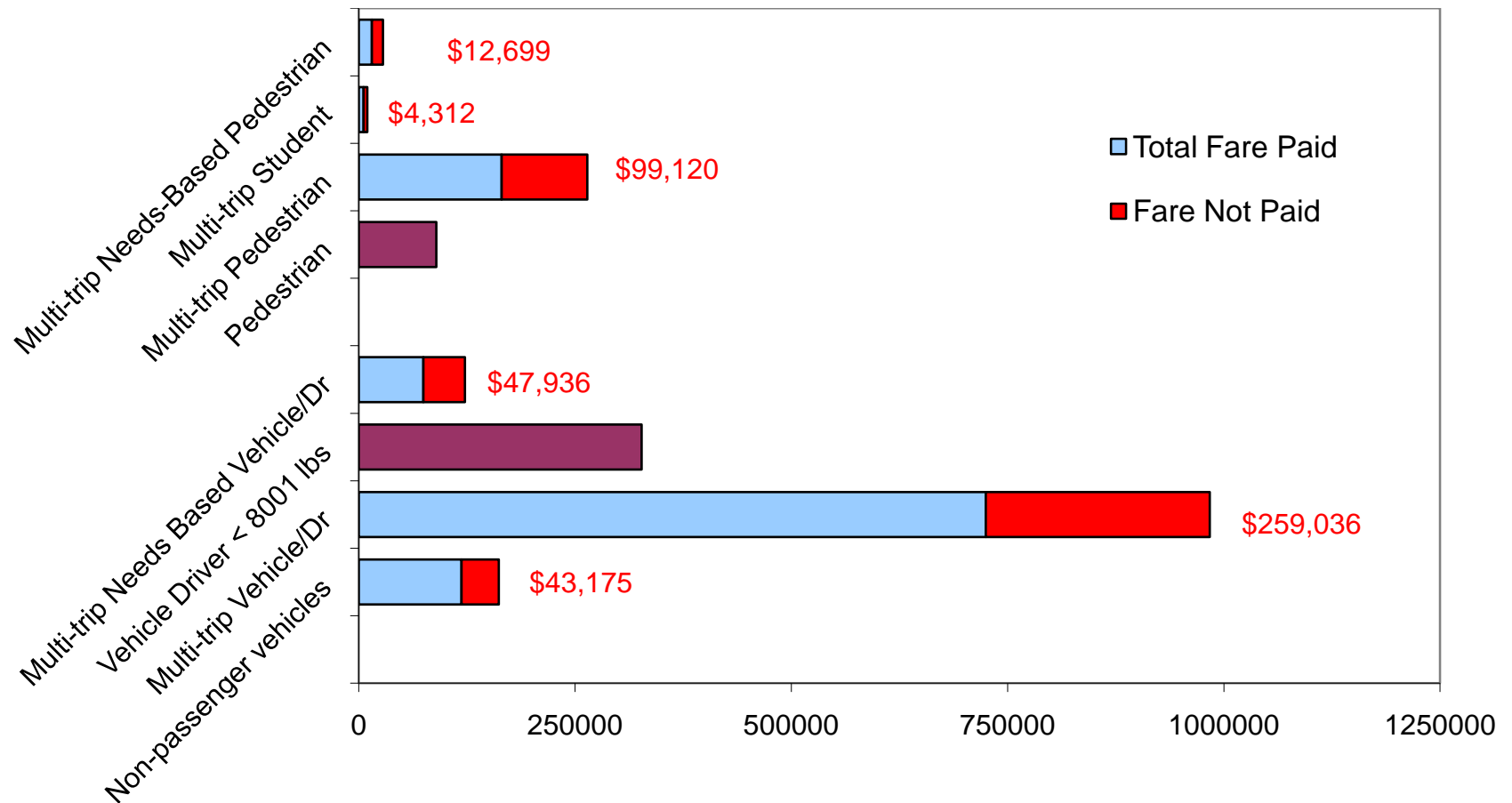
- The multi-ride discount from the cash fare is largest in size and significance
- There are three different ways to qualify for a needs-based multi-ride ticket. Depending on age, property ownership, and number of people in the household, the maximum income for these punch-cards ranges from \$10,000 to \$40,000.
  1. \$35,000 for those over 61 who own property.
  2. \$10,000 for a one person household, ranging to \$40,000 for a four person household, as established by Whatcom County Council
  3. Federal/State Medicaid income limits depend on the program, and are generally a few thousand dollars different from the County limits.

The various income limits of these needs-based tickets means that people very close to each other in income will pay different fares, and that people with sizable assets may obtain the lower fares in some cases.

- A full-time student resident multi-ride pedestrian discount is available, but it is unclear if it is only for those 12-18 to use in July and August when they do not have free passage, or for college students all year.

# Total Revenue Impact of Discounts

## 2010 Fare Revenue and Fare Discount



## Many Different Ideas on Who Should Get Discounts

Current Whatcom County Discounts	Who Gets Discount
<b>Vehicle exempt license tag</b>	Free passage for vehicle and passengers for fire, police, county, state licenses, and ambulances
<b>Ferry Crew Status</b>	Free passage for current and former ferry crew members and families in non-business vehicles
<b>Age, Residence, and School Status</b>	Free passage under 12 with parent Free passage from 9/1 thru 6/30 for those island residents aged 12 – 18 Discount punchcard for island residents 12 – 18 from 7/1 to 8/31 Discount punchcard for resident full time students No discount on single fare purchase so non-residents aged 12 – 18 must pay full adult pedestrian fare
<b>Needs Based Status</b>	Households that meet Council definition of low income as determined by Treasurer's office Anyone over 61 qualifying for property tax relief based on low income Households who qualify for Medicaid services (based on low income)

### Other Options for Discounts Exist

<b>No discounts</b>	Everyone pays regular fare.
<b>Under 5 ride free.</b>	Everyone over 5 pays fare
<b>Under 18 ride free</b>	Only for pedestrian fares
<b>Discounts for those over 75</b>	Everyone under 75 pays fare
<b>Discounts for the Medicaid Eligible</b>	Anyone who meets Medicaid low income and asset restrictions (as determined by social service agency)
<b>Discounts for those over 65</b>	Anyone with Medicare card or other ID showing age.

# Agenda

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## Both Method of Changing Fares and Fare Classes Can Change

Option C: fewer fare classes		2010 trips	2010 Fare per Trip	2011 Raise fares by equal dollar amount	143% Example A Raise Each Fare Class by equal %	Example B: New Ratio & Pick and Choose (40% off for quantity purchase, \$4 for peds, etc.)	
2011 Fare Classes	# trips	180,849					
Pedestrian	1	26,750	\$4	\$7	\$6	22%	\$4
Pedestrian	25	41,300	\$1.60	\$4.60	\$2	6%	<b>\$1</b>
Children (summer) & Post HS	25	1,400	\$0.92	\$3.92	\$1	6%	\$1
Needs Based PED	25	3,825	\$0.68	\$3.68	\$1	6%	\$1
Bicycle w/driver	1	372	\$4.00	\$7	\$6	22%	\$4
<b>C. All Passengers (not drivers)</b>		<b>73,647</b>	<b>\$2.42</b>	\$5.42	\$3.47		\$2
Vehicle w/driver <8000 lbs	1	23,662	\$10	\$13	\$14	<b>100%</b>	\$18
Vehicle w/driver <8000 lbs	10	2,320	\$7.20	\$10.20	\$10	60%	\$10.80
Vehicle w/driver <8000 lbs	25	70,150	\$6.40	\$9.40	\$9	60%	\$10.80
Needs Based or Student vehicle w/driver	10	7,490	\$3.60	\$6.60	\$5		\$7.20
Motorcycle w/driver	1	418	\$5	\$8	\$7	33%	\$6.00
Motorcycle w/driver	25	450	\$3	\$6.20	\$5	20%	\$3.60
<b>C. All Passenger Vehicles &amp; Drivers</b>		<b>104,490</b>	<b>\$7.01</b>	\$10.01	\$10.03		\$12
Trailer under 16 feet	1	346	\$15	\$18	\$21	100%	\$18
Trailer 16 - 30 feet	1	257	\$31	\$34	\$44	200%	\$36
Trailer over 30 feet	1	16	\$60	\$63	\$86	300%	\$54
V/D 8-20k (Truck)	1	568	\$29	\$32	\$41	200%	\$36
V/D 20-36k (Truck)	1	174	\$65	\$68	\$93	300%	\$54
V/D 36-50k (Truck)	1	85	\$130	\$133	\$186	500%	\$90
V/D 8-20k (Truck)	10	530	\$21	\$23.70	\$30	120%	\$22
V/D 20-36k (Truck)	10	410	\$49	\$52.40	\$71	180%	\$32
V/D 36-50k (Truck)	10	320	\$104	\$107.00	\$149	240%	\$43
<b>C. All Trucks and Trailers</b>		<b>2,706</b>	<b>\$43.41</b>	\$46.41	\$62.07		\$34.14

# What Fare Structure and Fares to Recommend

## Questions That Must Be Answered:

- ◆ Do all pedestrians (i.e., non-drivers) pay the same amount? If not, how do we define different types of pedestrians (fare classes)?
- ◆ Do all vehicles pay the same amount? If not, how do we define different types of vehicles (fare classes)?
- ◆ What about motorcycles and bicycles?
- ◆ Is there a quantity discount? How big a quantity?
- ◆ Is there a seasonal or time of day discount?

## How our current fare structure implicitly answers these questions:

- ◆ Frequent ferry users should pay less than visitors
- ◆ Families with children up to age 18 should have incentives to live on and visit the island. However, vehicles driven by those under 18 should not have incentives
- ◆ Low income households should have incentives to live on the island (but not just visit)
- ◆ Full time students should have incentives to live on the island (but not just visit) but only as passengers or pedestrians.
- ◆ Ferry crew and retired crew should have incentives to live on and visit the island
- ◆ Lummi Nation members should have incentives to visit the island on official business, but in no other situation.
- ◆ Adults should not have incentives to live on the island just because of age or disability
- ◆ Commercial vehicle fares should be charged based upon weight
- ◆ Except trailers and motor homes should be charged based on length
- ◆ Sheriff, Fire District, and emergency vehicles should not pay, and County vehicles should pay via internal bookkeeping arrangements.
- ◆ There should be no difference in fare based on season or time of day.

# Fare Structure Objectives

- Proposed fares must:
  - *Satisfy* Target Fare Box Recovery
- Fare structure should:
  - Be *Simple* for crew to implement and passengers to understand
  - Be *Efficient* traffic management tool
  - Offer *Flexibility* for passengers with different needs
  - *Equitably* distribute costs across fare classes and passengers



# Testing Fare Changes: Interactive Exercise

## Assumptions

-12.1%	2011 %Change Veh/Driver PCTraffic
-1.8%	2011 %Change Other Traffic
55.0%	Fare Box Recovery Rate
\$2,682,326	2011 Projected Operating Costs

## Simulation Outcomes

\$1,475,279	Fare Box Revenue Target
\$1,475,072	<i>What if?</i> Fare Revenue
-\$207	Projected Shortfall or Surplus

Fare Class	Passage Multiple	2011 trip sales (projected)	Fare per ride			<i>What if?</i> Punchcard Price	What if Revenue
			2010 Fares	2011 Fares	<i>What if?</i> Fares		
Pedestrian	1	26274	\$4	\$7	\$7		\$183,919
Pedestrian (25)	25	40565	\$1.60	\$4.60	\$4.60	\$115	\$186,600
NBPedestrian (25)	25	3757	\$0.68	\$3.68	\$3.68	\$92	\$13,826
School Child (25)	25	1375	\$0.92	\$3.92	\$3.92	\$98	\$5,390
Bicycle	1	365	\$4	\$7	\$7		\$2,558
Motorcycle	1	297	\$5	\$8	\$8		\$2,373
Motorcycle (25)	25	442	\$3.20	\$6.20	\$6.20	\$155	\$2,740
NBVehicle (10)	10	7357	\$3.60	\$6.60	\$6.60	\$66	\$48,555
Vehicle	1	23241	\$10	\$13	\$13		\$302,134
Vehicle (10)	10	2039	\$7.20	\$10.20	\$10.20	\$102	\$20,794
Vehicle (25)	25	61642	\$6.40	\$9.40	\$9.40	\$235	\$579,439
Sm Truck	1	558	\$29	\$32	\$32		\$17,853
Sm Truck (10)	10	521	\$20.70	\$23.70	\$23.70	\$237	\$12,338
Med Truck	1	171	\$65	\$68	\$68		\$11,622
Med Truck (10)	10	403	\$49.40	\$52.40	\$52.40	\$524	\$21,102
Large Truck	1	83	\$130	\$133	\$133		\$11,104
Large Truck (10)	10	314	\$104	\$107	\$107	\$1,070	\$33,631
Trailer < 16	1	340	\$15	\$18	\$18		\$6,117
Trailer 16-30	1	252	\$31	\$34	\$34		\$8,583
Trailer > 30	1	16	\$60	\$63	\$63		\$990
Special Trip	1	6	\$575	\$578	\$578		\$3,406
Crew	1		\$0.00	\$0.00	\$0.00		\$0
Schoolchild	1		\$0.00	\$0.00	\$0.00		\$0
County Employee	1	914	\$0.00	\$0.00	\$0.00		\$0
County Vehicle	1		\$0.00	\$0.00	\$0.00		\$0