

Chennai City Auto Rickshaw Fares Revision, 2010

Stakeholders' Consultation Paper

Auto Passengers, Drivers, Public
Owners, Lenders, Manufacturers, Mechanics
Police, Regulators

Office of
The Transport Commissioner
Chennai

XX Month 2010

Transport Department

The Transport Commissioner
Chepauk, Chennai

- 1 Auto fares were revised in 2006 after a consultation process. Still passengers experience trip refusal and negotiated rates.
- 2 The Government is continuing the effort to introduce a fare model that is scientific and satisfies all the stakeholders. This model defines the linkages between various costs accurately and transparently. This will help accommodate any changes in cost such as increase in petrol costs.
- 3 A major change this time is the introduction of “Duration Fare”. Autos driving through traffic incur the fixed cost—hence including duration as a factor should compensate drivers realistically and reduce distance fare. Duration fare makes trips attractive to drivers., A “dead running” of 75 Km per day has been included to help seek out trips —50 Km for seeking rides and 25 Km to return to shed.
- 4 If passengers expect well-mannered drivers, the fare has to be remunerative enough to attract such drivers. This plan aims for an equivalent monthly income of Rs 9,000. A driver will take home more than Rs 560 a day if he accepts all trips, does not “return to stand”, do at least 20 trips and 100 revenue Km per day.
- 5 Fares cannot be compared directly with another city. The cost of the service depends on the utilisation of the vehicle. The average running per day in a city like Delhi may be 200 Km while in Madurai it may be only 50 Km. Capital cost has to be amortised over running. Hence, rates cannot be directly compared.
- 6 The Chief Minister’s initiative on health insurance will reduce the burden of healthcare for drivers. Studies show that the single highest reason for drivers falling into a debt trap is medical expenses of immediate family.

The Government now seeks a consensus on key aspects of this method, its application and the implementation.

Transport Commissioner
Chennai

1.0 Summary

1.1 Base Costs of Inputs: All in ₹

Auto Price	Petrol+ Oil	LPG+Oil	Auto Rent	Maint, FC, etc
1,50,000	70 / litre	40 / Kg	150 / day	10,000/ yr

1.2 Traffic Pattern:

	Shift	Trip/shift	Trips km	Free run	Busy period
Day Shift	7a –7p	15 - 20	90	70 Km	7 hours
Night Shift	7p – 7a	10 - 15	70	70 Km	7 hours

1.3 Costs of Operation: All in ₹

	Auto Rent	Petrol cost	Driver income	Incidental expenses	Total revenue
Day Shift	150	375	560	40	1125
Night Shift	100	285	560	40	985

1.4 Fare Structure

	Per Km	Per 5 min	Per trip	Surcharge	Total income	Tips
Current	₹ 6	0	2	0	Max ₹ 580	?
Demand	₹ 10	0	0	0	Max ₹ 900	?
Proposed	Fare	Structure	5-5-5			
Day Shift	5	5	5	50	₹ 970	
Night Shift	5	5 +5 (10pm- 5am)	5	30	₹ 950	

2.0 Determination of the Day time fare structure: The present tariff is based only on distance. So drivers are not compensated when in traffic or driving through crowded areas. Also, the minimum fare does not compensate sufficiently for trip overheads (excise).

		Per day	Present Tariff		Expected Demand Tariff		Alt A:		Alt B:		Alt C:	
			Rate	Income	Rate	Income	Rate	Income	Rate	Income	Rate	Income
2.1	Per Km	90 Km	6	540	10	900	5	450	4	360	4	400
2.2	5 min	420 min	0	0	0	0	5	420	6	505	1	420
2.3	Per Trip	20 Trips	2	40		0	5	100	5	100	10	200
2.4	SC	For 5 Trips	0	0	0	0	5	25	5	25	5	25
2.5	Tips	☺						100		100		100
2.6	Per day shift	Rs		580		900		1095		1090		1145

2.7 In all 3 alternatives, the income to the driver is same. The distance fare can vary from Rs 4 to Rs 6 if compensated by the minimum fare. Rate A encourages long trips. Rate B encourages crowded traffic. Rate C encourages short trips (drop fare Rs 10).

2.8 Km rate (Distance fare): If this is high, drivers will seek long trips. If this is low, drivers will refuse long trips. If high, passengers will shy away from long trips. Passengers will take long trips if this is low.

2.9 Per Minute (Duration Fare): If this is absent, drivers will demand additional money during peak hours and for through crowded streets. If this is reasonable, drivers will drive steadily.

2.10 Minimum Fare (Drop): If this includes full travel, drivers will refuse short trips. This compensates for the cost of searching for a passenger.

2.11 Surcharges (Discern fare): This encourages drivers to accept special trips such as to railway station, theatres which are one way trips. When a passenger steps off a train in the morning, if he wants an auto, the auto must drive to the station empty. The same applies when he drops a passenger at night or at movie theaters and music concerts.

3.0 Night fare structure: Night service is usually at a higher rate. The choice is to recover the night cost from passengers who use the service most, say between 11 pm and 6 am. The surcharge can be on the portion of fare between 11 pm to 5 am. To encourage safe driving at night, the surcharge must be only on the duration fare.

			Present Tariff		Demanded Tariff		Alt A: 10pm – 5am		Alt B: + 20%		Alt C: Trip Add	
			Rate	Income	Rate	Income	Rate	Income	Rate	Income	Rate	Income
3.1	Per Km	50 Km	6	300	10	500	5	250	5	250	5	250
3.2	Per 5 min	420 min	0	0	0	0	5	420	6	505	1	420
3.3	Per Trip	10 Trips	2	20		0	5	50	5	50	5	50
3.4	SC	For 5 Trips	0		0	0	5	25	5	25	5	25
3.5	Night charge Dist											
3.6	Night Charge +5 for 5 min	180 min					5	180				
3.7	Night Charge trip	10									10	50
3.8	Tips	☺						100		100		100
3.9	Night shift	Rs		320		500		1025		930		895

4.0 (Vacant)

5 The following questions need to be answered in addition to any other relevant issues that may be raised in the meeting.

- 5.1 The above analysis is based on costs today. Are they fair and equitable? If not, why? What should be changed?
- 5.2 The number of earning days in a year has been worked to 250 days. This allows for holidays, festivals, vehicle breakdown, fitness certification, personal inconvenience, family requirements, and a vacation. Is this acceptable? If not, what should be this figure?
- 5.3 The price of petrol is Rs 56 today. Oil is Rs 170 per litre. One litre of petrol takes 20 ml of oil for an auto in good condition. In this calculation, we have taken the petrol mixture at Rs 70 so that the fare will hold valid for some time. If the petrol prices go up by Rs 5 per litre, the total fuel cost for the day increases by Rs 30. The Km rate increases by 30 paise. Or a Petrol Surcharge of Rs 2 per trip (para 6.12) will cover the expense. Which is preferred?
- 5.4 The fare allows for a 50% average return distance. Together with search cruising, the fare allows for 65% return and paid Km. Is this fair assumption to not demand return charge from passengers?
- 5.5 By this proposal, a driver is estimated to earn Rs 144,000 per year. After an annual festival bonus, social security, asset building, health insurance, etc. the monthly take home is approximately Rs 9000. With the new plan, a driver can do more trips and earn more. Are these figures acceptable? If not, what should be the amount?
- 5.6 This fare can be applied only in electronic meters. A transition period of six months is proposed. During this period, the meter can charge at the distance rate. Duration fare can be charged from any wrist watch. After six months, passengers will be allowed to deduct Rs 5 as inconvenience benefit.
- 5.7 Are there any aspects of fares left out in this analysis?
- 5.8 Many newspapers have pointed out the hazards of accommodating too many children in school trips. The Government appreciates the good work done by autos in transportation of children. But it must be done in safety. What should be the allowable number of children in an auto? Should the restriction be by age or by height?
- 5.9 Should autos be used as a commercial goods carrier? What is the safe load that should be allowed? How can the safety of the public be ensured? Should there be separate carriers for goods and to replace fish carts?

- 5.10 After this revision, the public expects drivers to accept any trip and ply by the meter. They also expect non-tampered meters and polite behaviour. How can the associations assure the government that drivers will adhere to these expectations? How can the authorities check or enforce? What is the feeling on these expectations?
- 5.11 Sometimes autos ply for day rates or negotiated fares. How can the authorities be assured that a particular trip is genuinely negotiated under these conditions and not abuse?
- 5.12 Should it be acceptable to charge below these fares? If a driver chooses to charge less, should it be allowed?
- 5.13 How do we ensure that meters are not tampered? How to make meters non-tamperable? Is there a simple method for police and public to verify if a meter is tampered?
- 5.14 What is the transition time to change meters to the new fare? How should fare be enforced during this period? How can the public be assured that they are not paying higher fares on tampered meters?
- 5.15 It is in the interests of all concerned that stolen autos or autos without insurance or proper permits or papers must be impounded. How should this checking be done? What are the documents that should be checked? What should be the action taken?
- 5.16 How should papers be checked in autos? Other than during an infarction or accident, how often should they be checked?
- 5.17 How can organisations here assure that drivers will be well behaved and conform to laws? What internal mechanisms do your union/ organisation have to check wayward members? How many drivers have been taken action against in the last five years?
- 5.18 As much as the trade needs to improve, passengers and the public have to change their attitudes. What steps can passenger and consumer groups take to improve the situation?
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6 Analysis of Costs

6.1 Working days: Holidays witness a reduced demand. For the safety of passengers and the public drivers need rest and recuperation. The analysis reflects the reasonably number of working days in a year.

	Total Days per year	Days	365		
6.1.1	Weekly day off		52		
6.1.2	Festival Holidays		13		
6.1.3	Service, Breakdowns		12		
6.1.4	Fitness Certification		10		
6.1.5	Possible Working Days		278		
6.1.6	Driver Sick leave/ Casual		12		
6.1.7	Earned Leave		15		
6.1.8	Entwining Sundays		-5		
6.1.9	Total Revenue Days		256	Say	250 days

6.2 Working hours: For the safety of the public and health of drivers, working hours must be limited to healthy numbers. The home to home time is 12 hours and the busy driving time is perhaps 7 hours.

6.2 Daytime Hours		Hours	Work time	Revenue hrs
6.2.1	Peak Hours:	8.30-10.30	2	2
6.2.2	Afternoon	4.30-6.30	2	2
6.2.3	Busy hours		4	2
6.2.4	Normal hours		4	1
6.2.5	Hours per day shift		12	7
6.2.6 Night working Hours		Hours	Work hrs	Revenue hrs
6.2.7	Entertainment, train time	8-11 pm	3	3
6.2.8	Night shows	11- 2 am	4	2
6.2.9	Lean time	2 – 5 am	3	0
	Morning trains	5- 7 am	2	2
6.2.10	Hours per night shift		12	7

6.2.11	Revenue hours between 11 pm and 6 am		7 hrs	Est 3 hrs
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6.3 Running Per Shift (Utilisation): Studies show that at the current traffic speed and demand, an auto can run about 90 km per day shift. For passengers to be able to get an auto when they want and where they want, autos have to be driving around free. To ensure that drivers are not put into a hardship of empty return and passengers are not left without a service, the fare includes a return distance of 35 Km. So that passengers may get an auto near to where they want and drivers may have an incentive to cruise around looking for a fare, a search distance of 25 Km has been added into the fare basis. To accommodate for a possible empty return to shed, a generous 10 Km allowance has been given.

In the night shift, for the present year, 70 revenue Km is assumed with a generous 60 Km for empty return and cruising.

6.3	Utilisation		Day	Night		
6.3.1	Trips per Shift	Trip	15- 20	5 - 10		
6.3.2	Revenue Km	Km	90	70		
6.3.3	Empty Returns	Km	35	35		
6.3.4	Search Cruising	Km	25	25		
6.3.5	Empty return to Shed	Km	10	10		
6.3.6	Total Run per shift	Km	160	140		

6.4 Fixed Costs (Amortisation): The capital required for a new auto on road is taken as Rs 150,000. A 5-year life is assumed, after which maintenance increases. It is also that safety and emission requirements may be in doubt in older vehicles. To protect drivers who have invested in permits earlier, a sum of Rs 50,000 has been amortised over 5 years. This cost is divided over 250 working days a year. This corresponds to the daily rental of Rs 130- 150 per day.

6.4	Capital Cost	Rs	Rs per day	
6.4.1	Cost of Auto: Rs 150,000	150,000		
6.4.2	Residual value- 5 years	30,000		
6.4.3	Rs 150,000 at 18%, 5 yrs loan payment		180	
6.4.4	Permit, Misc fully amortised	50,000	60	240

6.4.5	For Auto on Rent— Day shift rent			150
6.4.6	Auto on rent Night shift			100

6.5 Fuel Cost: The present price of Petrol is 57. Oil is Rs 17 per 100 ml. LPG is Rs 32 per Kg.

Fuel prices change frequently. To accommodate for immediate changes, the amount used here for calculation is Rs 70 per litre of petrol/oil mixture and Rs 40 per Kg LPG and oil.

A new auto gives 35 Km per litre. Gradually, it reduces to 25 Km per litre. LPG vehicles give 20 – 24 Km per Kg. Since a new vehicle has been taken for cost, the fuel consumption is also that of a new vehicle.

Revenue Km is 90 and extra Km is 70. During night shift, the revenue km is assumed at 70 Km and extra Km at 70.

6.5	Fuel Costs		Petrol	LPG
6.5.1	Fuel/ Oil per L /Kg	Rs	70	40
6.5.2	Consumption	Kmpl	30	20
6.5.3	Fuel cost per running Km	Rs	2.35	2.00
6.5.4	Fuel Cost for day shift 90 Km		210	180
6.5.5	Fuel Cost for day shift Extra 70 Km		165	165
6.5.6	Total Fuel cost for day shift		375	345
6.5.7	Cost of fuel per revenue Km (including return, search, and return to shed) during day shift	Rs	4.20	3.75
6.5.8	Fuel Cost for night shift 70 Km		120	100
6.5.9	Fuel Cost for night shift Extra 70 Km		165	140
6.5.10	Total Fuel cost for night shift		285	240
6.5.11	Fuel Cost for night shift	Rs	4.10	3.40

6.6 Maintenance: Costs has been taken as a block of Rs 10,000 per year. Although tyres, tubes, and engine work are direct variable costs, for purposes of convenience they have been accommodated here. In a well maintained vehicle, fitness certification costs should be lower than this estimate.

6.6	Maintenance	Rs pa		
6.6.1	Tyres, Tubes, Battery		2500	
6.6.2	Engine work 2 years		750	
6.6.3	FC Preparation		5000	
6.6.4	Insurance, Taxes		1750	
6.6.5	Total Maintenance per year	Rs pa	10,000	
6.6.6	Total Per day at 250 days per year	Rs	40	40

6.7 Driver Income: A government driver draws more than Rs 10,000 per month. If the public want responsible drivers, the income has to attract better quality drivers. An auto driver is also an entrepreneur. An equivalent income of Rs 9,000 is taken. A driver who is polite and pleasant will earn more in tips.

6.7	Driver Earnings			
6.7.1	Earning per month	Rs	9,000	
6.7.2	PF Saving 1 month equivalent		750	
6.7.3	Medical Protection--		750	
6.7.4	Festival Bonus 1 month		750	
6.7.5	Gratuity/ Asset Building		750	
6.7.6	Total per month	Rs	12,000	
6.7.7	Income /day at 256 days pa	Rs	560	

6.8 Earning per shift: This is the total amount an auto needs to earn to ensure an acceptable living to drivers, return on capital, and cover all costs. An incidental out of pocket expense for refreshment is included.

6.8	Total Cost per Shift		Day	Night
6.8.1	Rent/ Asset cost	Rs	150	100
6.8.2	Maintenance		40	40
6.8.3	Fuel Cost Revenue Km		210	120
6.8.4	Fuel for returns, search, Shed run		165	165
6.8.5	Driver Earning		560	560

6.8.6	Incidental		25	25
6.8.7	Revenue /shift	Rs	1150	1010
6.8.8	Fixed Cost per Shift	Rs	750	700
6.8.9	Semi variable cost per shift		165	165
6.8.10	Variable Cost per Shift	Rs	235	120

6.9 Waiting Charge/ Change-over Speed: The Bureau of Indian Standards (BIS 2747:1990) provide for meters to charge by duration below a certain speed called the changeover speed. Above the changeover speed, the meter charges by distance. The charging by time is to compensate for slow traffic. Electronic meters do not have this limitation and can charge multiple factors based on a programme.

Change over speed: $\frac{\text{Time tariff}}{\text{Distance tariff}}$

The waiting charge is actually the time cost of the auto. The fixed cost of the auto is amortised over the shift time, the auto be running or waiting.

6.9 Cost of Time			Day	Night
6.9.1	Fixed costs per shift	Rs	750	700
6.9.2	Revenue hours	Hours	7	7
6.9.3	Approx Cost per hour waiting	Rs	110	100
6.9.4	Waiting Charge per minute	Rs	1.80	1.70

6.10 Surcharges: Surcharges can influence behavior of all stake holders. Peak hour surcharges smoothen demand from peak time to other times so that autos are engaged more evenly. This also reduces traffic congestion.

6.10.1 Surcharges and premiums widen economic choice and thereby subsidise the other strata. For example, a surcharge for a third passenger or luggage will keep general rates lower.

6.10.2 Surcharges to the station and movie theaters ensure a steady stream of vehicles when autos are needed most.

6.10.3 The number of surcharges per trip may be kept at a maximum of two. Otherwise short distance fares get distorted.

6.10.4 The public need transportation even on holidays. A reasonable number of drivers will operate on holidays for their own reasons. However, it is in public interest to offer drivers an incentive. This will also wean away auto traffic from other days to holidays.

6.10 Surcharges: Limit two per trip			
6.10.5	Peak Hour Surcharge	Rs	5
6.10.6	Station/ theatre Surcharge		5
6.10.7	Third pass/ Luggage Surcharge		5
6.10.8	Holiday Surcharge		5

6.11 Night Service: Night service imposes high strain on drivers and risk to person and auto. However, a society needs transport at night for many reasons including social reasons. The demand is reduced at night time. So the cost of operation is higher.

6.12 Fuel price Adjustment: When petrol price increases, a fuel adjustment formula reduces conflict between passengers and drivers. The adjustment can be a percentage of distance fare or a fixed surcharge. This will cover the additional expense.

6.12 Fuel price Increases		Day shift	Night Shift
6.12.1	Price per Litre Petrol/Oil mixture	Rs 70	
6.12.2	Fuel Cost per day of 160 Km/ 90 revenue Km	375	325
6.12.3	At Rs 75 per Litre cost of petrol for full shift	400	350
6.12.4	Increase in petrol cost per shift	Rs 25	Rs 25
6.12.5	Increase in petrol cost per Revenue Km	30 paise	40 paise
6.12.6	Surcharge per trip for Rs 5 Increase in petrol cost and 20 trips per day/ 10 per night	Rs 1.25	Rs 2.50

6.13 Negotiated Trips: Autos are sometimes hired for the whole day or for extended trips or for regular trips such as school drops. These trips have a negotiated rate and will not require switching on the meter. For trips beyond two hours, negotiated rates may be permitted. To avoid unnecessary inconvenience to the passengers and drivers, autos running under a negotiated rate will display a board "Contract" in front.

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