

# Taipei Metro System



Green Design and The City

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Fall 2009

# Taipei Metro System: Metro, Buses, Bikes, Gondola

## ■ Taipei City: Brief Introduction

Located at northern part of Taiwan, Taipei City is the country's capital city. It is the country's biggest and busiest city. It is the center of politics, commercial, mass media, education, and pop culture. With an area of 104.9 square mile and population of 2.6 million (July, 2006) Taipei City is characterized by its high density and crowdedness.

## ■ Introduction of Taipei Metro System:

### Mission & Vision & Value

As in other international cities, the development of the Taipei Metropolitan Area, together with a corresponding rapid growth in population and vehicles, has given rise to many traffic issues in Taipei City. The construction and operation of a mass rapid transit system for Taipei has proved a good solution to its long-existing traffic problem, for it improves the flow of traffic lines, revitalizes the proper functioning of the city and promotes the re-development of inner city and satellite towns. The core mission of Taipei Metro is to provide a safe, reliable, comfortable, cordial, and high quality transport service to the mass population.

### Network and System

Since its operation in 1996, Taipei Metro now consists of nine lines with a total of 82 stations (including two major transfer stations) and 90.5 km operational length that run through the Taipei City (Taipei City and Taipei County). Based on varying levels of demand for transport in different areas either the medium-capacity (2 lines) or the high-capacity (7 lines) transit system was selected.

### Organization

Taipei Rapid Transit Corporation is a company founded jointly by Taipei City

Government, Ministry of Transportation and Communications, Taipei County Government, Tang Eng Iron Works Co. Ltd., Taipei Fubon Bank, Mega International Commercial Bank and Taiwan Cooperative Bank who pooled resources from the government and private sectors.

■ **Metro Guide:**

Metro Service

All lines run from 6am to midnight every day, including holidays. Average headway ranges from 3 to 8 minutes depending on the lines, times, and days.

Route Map



## Ticket Fares

Ranging from 20 NTD to 65 NTD / single trip.

## Metro Tickets

Easy Card: issued by EasyCard Corporation, it's an IC ticketing system for the Taipei Metro, buses, public parking lots, and certain intercity buses, etc. Passengers get different percentage of discount each trip according to the type of EasyCard they hold.

IC Single-Journey Ticket: good for one passenger, one journey and it's valid only on the day of issue. No discounted prices apply.

## ■ **MRT Stations: Features / Surrounding Areas / Toward Sustainability**

### Features/Characteristics

- a. Two main transfer stations that connect passengers to other lines of MRT and/or other means of transportation.
- b. Real-time reporting of trains and bus transit schedules.
- c. Four major languages voice-reporting at each station.
- d. Special waiting zones for women: a safe area for women waiting for MRT at night.
- e. Art galleries and "street of bookstores" at certain stations.
- f. Underground shopping streets at two stations.
- g. Soundproofing barriers: improve the quality of life of the residents living along the ground level tracks and the elevated tracks.
- h. Platform doors and track intrusion detection system: improve the safety of passengers waiting on the platform and do not interfere with air conditioning and fire fighting systems; track intrusion detection system is the first of its kind in the world which uses infrared detectors and Laser Measurement Sensors to detect movement in the track area along the platforms, the tracks around the

platform end doors, the gaps between train and platform end doors, and beyond the platform warning strips.

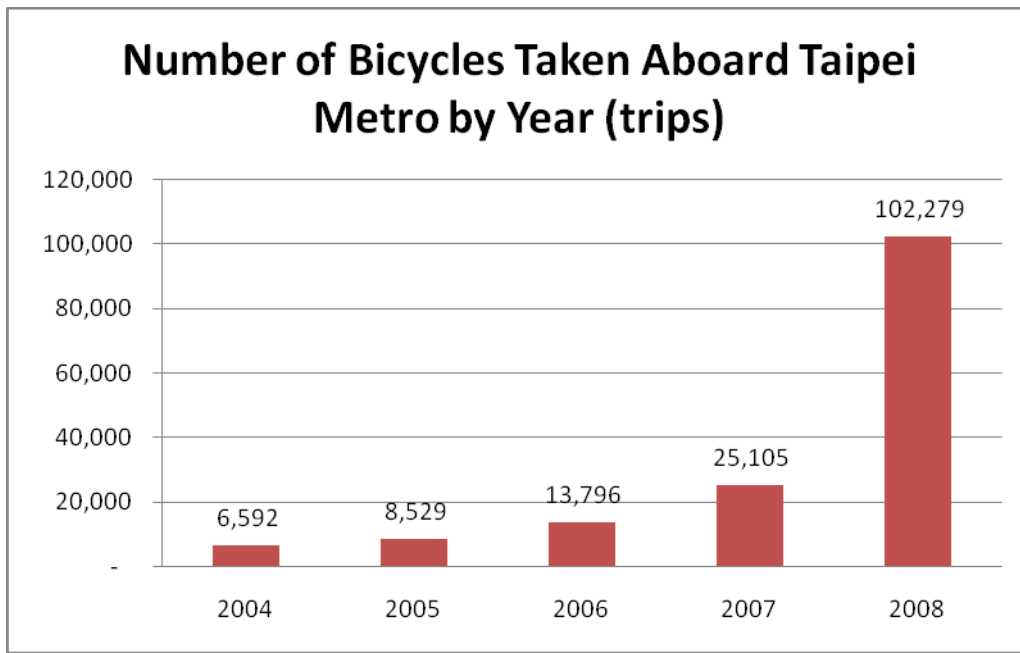
- i. One-ticket-for-all: EasyCard is used for Taipei Metro, buses, gondola, and coaches.
- j. Double-decker bicycle racks at selected stations.

#### Surrounding Areas

- a. Major stations are located around city center, business/economic activities, shopping malls, schools and major tourist sites/landmarks.
- b. Scenic views along elevated/ground sections of the route.
- c. Each MRT station has many lines of buses that run around hence making it convenient for passengers to transfer.
- d. MRT brings major developments and changes to its surrounding areas.

#### Toward Sustainability

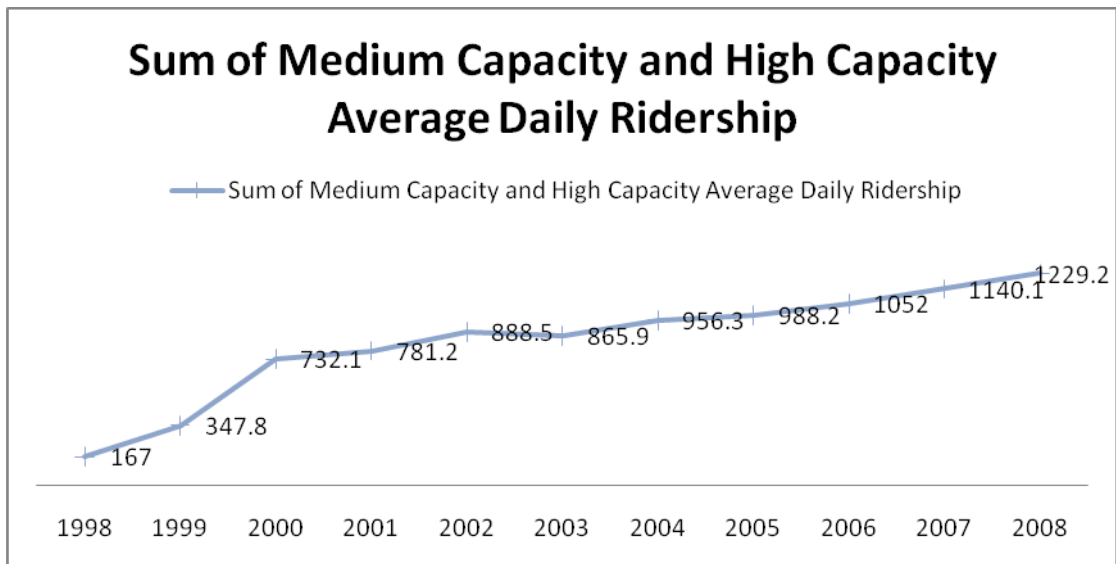
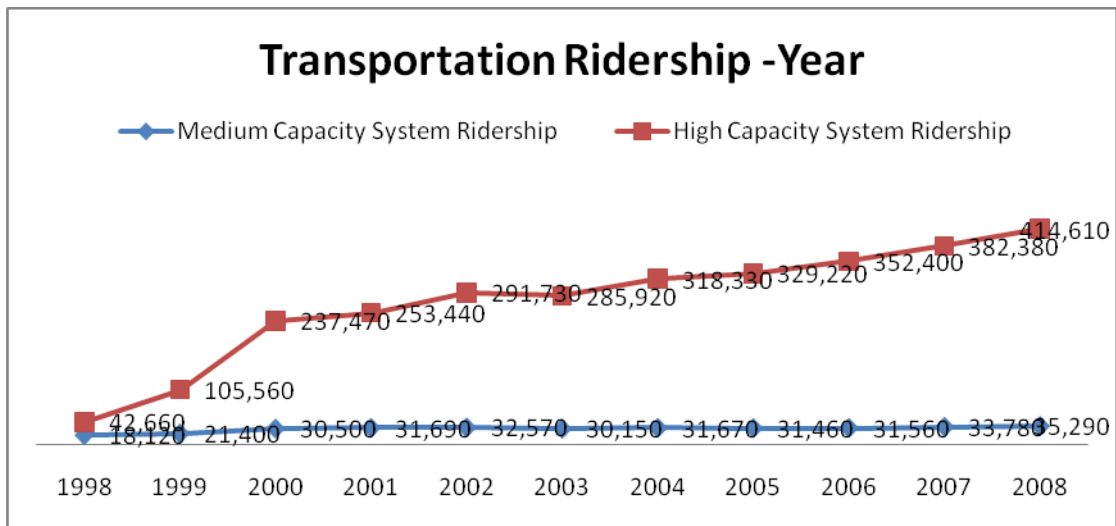
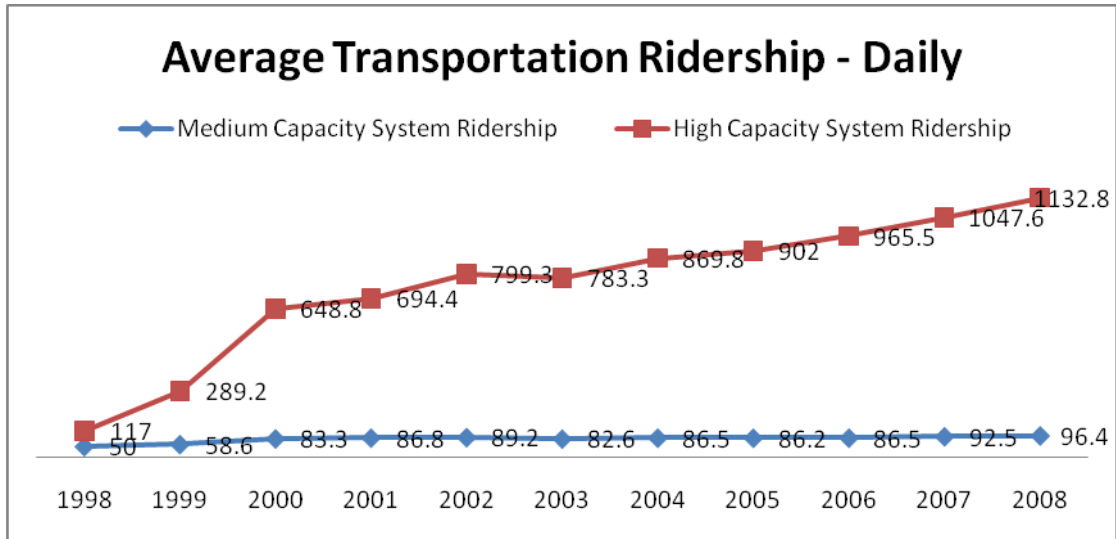
- a. Bikes on trains: on January 17, 2004, to encourage residents to use nonpolluting, green modes of transportation and promote healthy recreational activities, Taipei Metro became the first rapid transit system in Asia to allow bicycles on its trains. In 2007, bikes are allowed on MRT on weekends and holidays at 27 selected stations and the fee was further reduced to NT 80 (one ticket covering the bike and the passenger). Since bicycles were permitted on board in 2004, over 140,000 have been brought on the Taipei Metro. In 2008, a total of 102,279 trips were transported on the Metro, a more than three-fold increase over the 25,105 trips carried on the Metro in 2007.



- b. Energy Reduction Goal: Taipei Metro is actively implementing an internal energy reduction policy to decrease the environmental impact by adjusting the use of energy intensive equipment such as lighting, air conditioning systems, elevators, and escalators. According to the Taipei City Government's energy reduction targets, affiliated organizations and schools must reduce energy consumption by 1% each year beginning in 2007 for a total of 5% by 2011. In 2008, Taipei Metro reduced energy consumption by 15,210,778 kilowatt hours, saving 30 million NTD on the electricity bill. In addition to meeting the yearly target, Taipei Metro has already reached the 2009 target of 3% reduction.
- c. Improved Lighting: in 2007, entrance and exit signs in stations were replaced with more modern-looking solar-powered LED lights to make the exits easier to find and contribute to energy-saving and environmental sustainability.

#### ■ Related Statistics

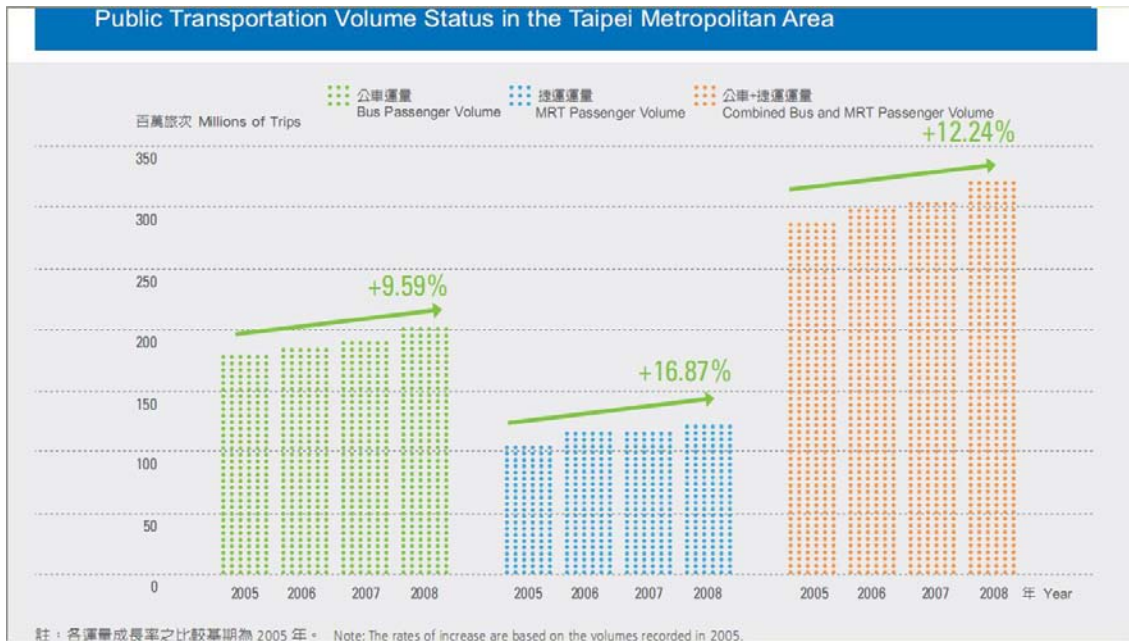
Ridership Counts (Unit: Ten Thousand Trips)



■ Taipei Metro System and Transit System

Metro ↔ Buses

Taipei Metro implemented discount measures for passengers transferring from the Metro to buses (and vice versa, beginning from year 2003). Within one hour of transferring time period, passengers who transfer from metro to buses (and vice versa) will get 8NTD (or vice versa, 16NTD) off for each trip.



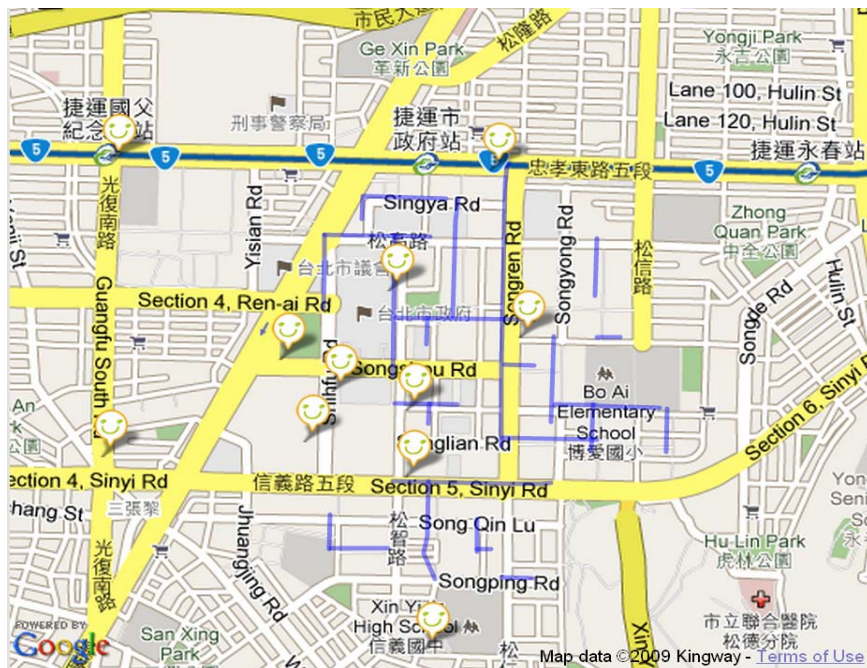
### Metro ↔ YouBike

To create a better and greener life in Taipei City, the Taipei City Government partnered with GIANT to set up the "YouBike" public commuter bicycle rental system. YouBike is located at the Xinyi District of Taipei, one of the most important districts of the city. There are 11 stations of YouBike (lending and returning stations) including two stations located at the Taipei MRT stations. Dedicated bike paths in the Xinyi District are also set up making it easier and safer for bike riders.

YouBike uses a completely automated electronic management system to allow bicycles to be rented and returned at any location. It is intended to span the "last mile" in public transportation systems. This will hopefully encourage more people to use public transport and forge a new Taipei commuter culture that is also

environmentally friendly and energy saving.

*YouBike Locations*



*YouBike Usage Rates*

	Short-Term Card	Long-Term Card
Rate	The first 30 minutes of each session is free then \$10 for each additional 15 minutes.	
Basic Rate	1 Day NTD 40 5 Days NTD 150	1 Month NTD 500 6 Months NTD1000 1 Year NTD 1500
Mean of Payment	Credit Card	No deposit needed (provide two forms of ID for photocopying)
Deposit	NTD 3000 (for authorization only, not charge)	NTD 0
Where to Apply	Information Service Kiosk	Register in person at Service Center

Metro ↔ Other means of transportation

Besides transferring to buses at each station, there are several other choices at

certain particular stations:

- a. Taipei Main Station: transfer to Taiwan High Speed Railway, Taiwan Railway, and coaches. (connect to other cities/counties)
- b. Taipei Zoo Station: transfer to Maokong Gondola (commissioned by Taipei Metro, mainly for tourist purpose).
- c. Many other stations also provide service of transferring to coaches that lead to other cities/counties.

### ■ Possible Improvements of Taipei MRT

- a. Signs: signs in Taipei Metro stations are in general too many and too complicated, especially at Taipei Main Station, the major transfer station. The signs often confuse the passengers, especially elder passengers. Thus it is important for Taipei Metro to improve sign design to make it easier and more user friendly for passengers.
- b. Platforms: due to the space limit at Taipei Metro, platforms, in general, get too crowded at peak hours. Crowded platforms bring inconvenience to passengers and often lead to unsmooth pathways.
- c. Space Management: better space management for trains, passengers, and securities. Improved space management will make the stations look nicer and more passenger-friendly.
- d. Bikes: bikes are only allowed on several stations, it will be more convenient to passengers if Taipei Metro increases the number of stations for bikes entrance over time.
- e. Service Hours: compare with other subway systems around the world, Taipei Metro's service hours ends quite early. Last trains leave at 12am. Taipei is also nicknamed as "a city without nights" many activities are going on in the city till very late at night or early in the morning. Thus, extending service hours may

provide more options for people.

## ■ SWOT Analysis of Taipei Metro

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>a. Faster, cheaper, more comfortable and more convenient mode of transportation</li> <li>b. Provide various services</li> <li>c. Create equity among people</li> <li>d. Brings changes and improvements to the city</li> <li>e. Easier for passengers to manage trips based on time control</li> </ul>	<ul style="list-style-type: none"> <li>a. Not very elderly-friendly: signs, escalators vs. elevators, space design, atmosphere</li> <li>b. The latest newly operating line is still experiencing some difficulties and challenges which may cause passengers to lose confidence and satisfaction</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>a. Increasing awareness of environmental sustainability</li> <li>b. Human conscious / changes in human behaviours</li> <li>c. Rises in oil prices</li> <li>d. Taipei City Government's efforts in building a more internationalized city:               <ul style="list-style-type: none"> <li>--2009 Deaflympics at Taipei</li> <li>--2010 Taipei International Flora Expo</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>a. Many buses are renewing thus may be seen as one of the main competitors for Taipei Metro since bus fares are lower.</li> <li>b. Elderly does not have to pay for bus fares while Taipei Metro gives a bigger amount of discount rather than for free.</li> <li>c. Varieties of bus lines that reach more places.</li> <li>d. Some view the Taipei Metro system as a way for Taipei City Government to manipulate and make parade of the government's achievements.</li> </ul>

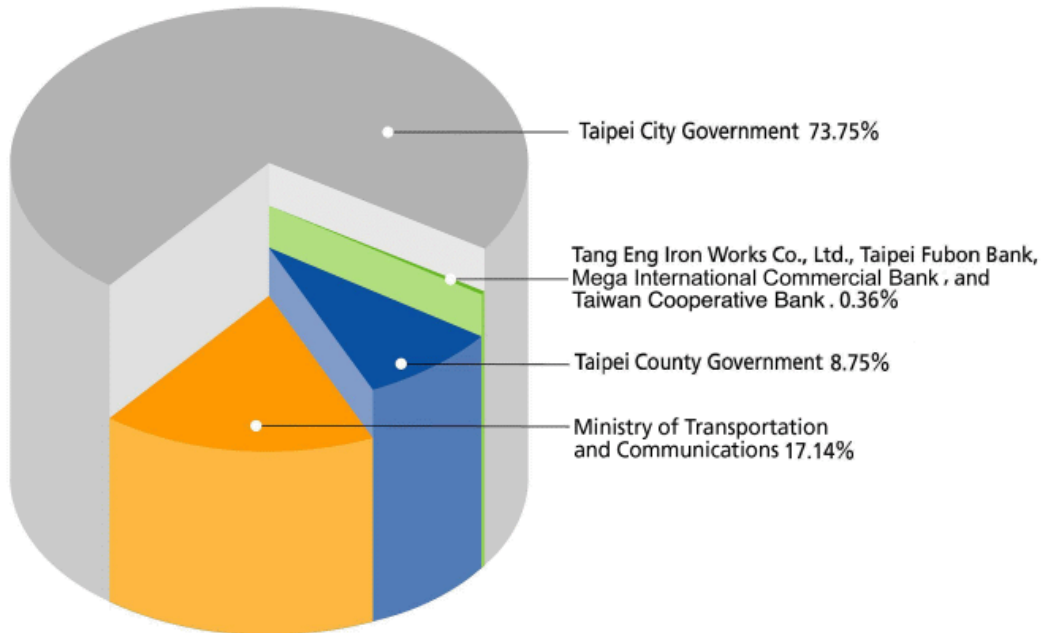
## ■ Conclusion & Personal Experience

As a citizen of Taipei City, I was born and raised in Taipei. Though tiny comparing with other international cities, Taipei City pretty much has what it takes to be an international and environmental friendly city. For me, one of the best things of living in Taipei is its public transportation system. Metros, buses, bikes, trains,

and other modes of transportation are just so convenient that they can bring you almost to everywhere you want. Prices are reasonable and travelling time is always in control with the schedule reporting. From the readings, I learned that good public transportation system can actually change people's way of living. This is very true to my family. Before my dad used to drive to his workplace and on his way to work he would drop me off at school. Since oil prices are rising and parking spaces in Taipei are getting harder and harder to find, my dad had decided to take MRT to work. This also means that I will have to take MRT to school as well. Though taking MRT may be a little longer than driving, it certainly has many advantages. For example, to me, it let me learn the importance of time managing. For my father, he saves the money for petroleum and also the money for parking. Also, it is a ten minutes walk from our place to the nearest MRT station. Walking also makes us healthier and gain more energy in the morning as we breathe in the fresh air. Until now, I still enjoy MRT a lot. It is fast, convenient, clean, and enjoyable. Knowing how to get on MRT, no one will have any troubles travelling and getting around in Taipei!

## ■ Appendix

### Organization: Taipei Rapid Transit Corporation: Capital Funding



### Tickets: EasyCard & IC Single-Journey Ticket



EasyCard



IC Single-Journey Ticket

#### *The discount of each type of EasyCard used in Taipei Metro*

Type	Eligibility	Discount
<b>Adult</b>	Ordinary passengers	20% discount on each trip
<b>Student</b>	Students, police and military personnel	20% discount on each trip
<b>Concessionaire</b>	Senior citizens aged over 65 or disabled people from other towns, or children with a height between 115cm and 145cm	20% discount on each trip

<b>Senior (Issued by Taipei City or County)</b>	<ol style="list-style-type: none"> <li>1. Taipei City or County residents aged over 65 years old</li> <li>2. Indigenous people aged over 55 years and registered in Taipei City</li> </ol>	60% discount on each trip
<b>Charity (Issued by Taipei City or County)</b>	Disabled residents of Taipei City or County	60% discount on each trip
<b>Escort (Issued by Taipei City or County)</b>	Passenger accompanying a disabled resident of Taipei City or County	<ol style="list-style-type: none"> <li>1. 60% discount on each trip (Only when the Escort Card is used right after a Charity Card)</li> <li>2. 20% discount on each trip if Escort Card is used alone</li> </ol>
<b>Other Types</b>	Applicants may refer to the requirements governing EasyCard issue and use drawn up by the EasyCard Corporation	20% discount on each trip



One Day Pass:

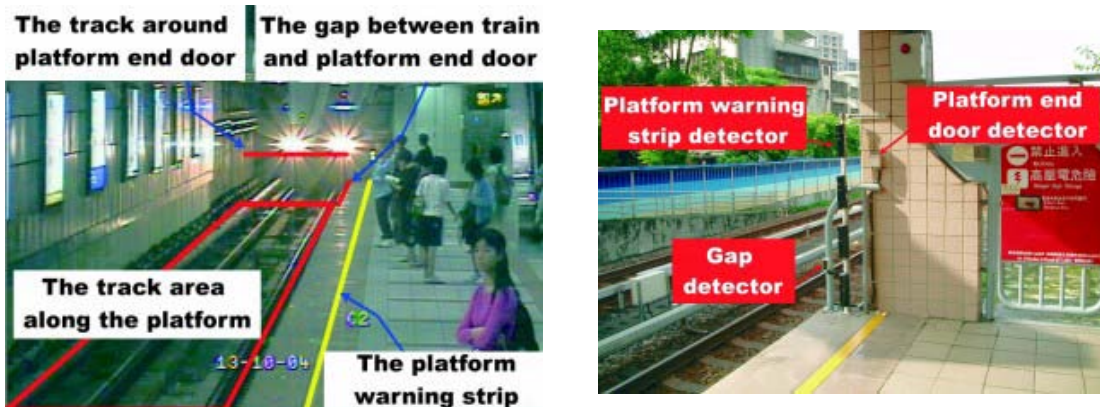
200 NTD for unlimited Taipei Metro rides within a day.

### Soundproofing Barriers



### Platform Doors & Track Intrusion Detecting System





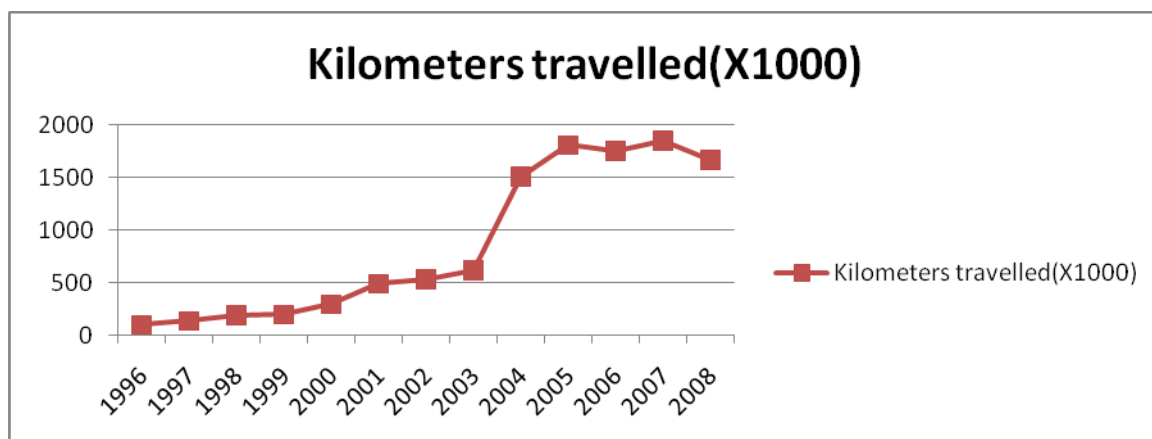
### LED Lighting



### International Awards

#### *Taipei Metro Reliability Ranked Number One for Four Years Running*

According to 2007 data from the Railway and Transport Strategy Center (RTSC) at Imperial College London's Nova/CoMET consortiums, Taipei Metro once again topped the 26 consortium members in system reliability. From 2004 to 2007, Taipei Metro has held on to the top spot, showing that it ranks among the best rapid transit system around the world.



Incident causing more than five minutes of delayed/avg. kilometers travelled

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