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TRANSPORTATION FOR THE ELDERLY AND DISABLED

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Abstract

The goal of our project was to assess the public transportation system of Hong Kong for the elderly and disabled. From a study of the infrastructures and regulations in Hong Kong and by comparing with five other major cities, it was concluded that the overall system in Hong Kong is quite friendly. Improvements are, however, recommended within the system interchanges and regulations could be strengthened.

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Authorship

We would like to state that as a group, we claim authorship of all sections of the document as a whole. We each contributed equal time and work on the outcomes of the project and each worked on the sections at various times.

Executive Summary

The elderly and disabled often encounter major obstacles in the use of public transportation, particularly in heavily populated cities such as Hong Kong where public transportation is the main means of travel. To meet international standards, such cities need to be as barrier-free, as is socially and economically feasible. The goal of our project was to examine public transportation, facilities, and regulations as they affect the elderly and disabled and provide recommendations for the improvement of services and facilities presently available in Hong Kong.

Hong Kong's various transportation modes were closely examined. This project focused on the services provided by the Mass Transit Railway (MTR), Kowloon-Canton Railway (KCR), Kowloon Motor Bus (KMB), Citybus, New World First Bus (NWFB), Star Ferry, and the taxi companies for people with visual, hearing, or walking impairments. Additionally, the Rehabus, a service provided solely for the disabled, and the recently formed Easy Access, a service for the elderly, were briefly studied. Also, for the sake of our study, we assumed that elderly people can be able bodied and use public transportation unless having a disability.

Our methodology was shaped by the need to answer a series of questions, addressing a variety of issues and concerns. The methods consisted of direct observations, interviews, and case studies of other cities' transportation systems. The questions were:

1) What is the current state of Hong Kong's public transportation system for the elderly and disabled?

2) How do Hong Kong's government and transportation officials address the issues of public transportation for the elderly and disabled and what legislation favours the elderly and disabled?

3) What are the opinions of the elderly and disabled (the users) regarding public transportation in Hong Kong in terms of providing for their specific needs?

4) What are the costs and benefits in providing modes of access for the elderly and disabled in the public transportation systems?

5) What are the current means of transportation accessibility provided for elderly and disabled persons internationally?

For example, in order to properly assess the public transportation systems and facilities, we interviewed disabled people as well as the transportation operators themselves. We also spoke with various organisations that represent elderly and disabled people such as the Rehabilitation Alliance Hong Kong and the Equal Opportunities Commission. To get the views of government officials we interviewed members of the Transport Department (TD).

Since the role of the government is key, we first present our findings with respect to its current regulations and plans. The TD plays the leading role in the Working Group, comprised of the transportation operators and representatives of organisations for the disabled. For some people, these meetings are helpful and informative; for others, they focus too much on minor issues. In response to various inputs the Department has formulated a "Transport For All" plan as part of a continuous effort to improve accessibility for the elderly and disabled. The Transport Department oversees the Hong Kong Society for Rehabilitation, which runs the Rehabus. We found that the Rehabus service is overbooked and indeed, one must schedule an appointment well in advance to use it.

Overall, the MTR and KCR have provided general accessories to help accommodate the elderly and disabled. Examples for the visually impaired include tactile guide paths, Braille route maps, colour contrasts in various areas and audio devices at the escalators. For the hearing

impaired, there are induction loops, communication cards, and visual LCD screens. Both systems offer ramps, internal and external lifts and wider ticket gates for those in wheelchairs.

The buses are in need of the most improvements. Although the NWFB, Citybus and especially KMB carry 40% of the commuters each day, accessibility is not universal. We found that only 31% of the combined fleets of the three companies are fully accessible.

An important factor discovered from our direct observations and interviews was that the interchanges between transportation systems are often overlooked. For example, it is difficult for a disabled person to exit an MTR station and then have to walk long distances to find the nearest bus stop. Also, signs that inform the disabled users where the station entrances with accessibility features, such as lifts, are absent. Issues such as these receive the least amount of attention and are often overlooked on behalf of all parties.

Another significant observation from our interviews was that people's attitudes towards disabled persons are rather poor in Hong Kong. Although there are signs in the MTR concourses that encourage the public to assist an elderly person, there are none to encourage the assistance of a disabled person. On the buses there are signs designating seats for the disabled that the public often ignores. Many people, including staff, are still not accustomed to wheelchair users using public transportation. Interviewees have commented on the looks on people's faces and the hurried feeling they get from the drivers.

Despite these shortcomings, Hong Kong generally meets international accessibility standards. However, our findings also point to attainable improvements. A few key recommendations are as follows:

- Transportation companies should encourage and emphasise assisting the disabled and increase public awareness and education for better treatment of the disabled.

- Better placement and implementation of signs so that disabled persons can find their way easily during the interchange between transportation modes.
- More readily available information should be dispensed or on display such as pamphlets, booklets and guides on accessibility for the disabled.
- Training programmes should be established to teach the elderly and disabled users how to travel and how to make use of the facilities and accessories available to them.

The needs of the elderly and disabled need to be addressed not only by the transportation operators but by the Hong Kong public as well. The elderly and disabled population is increasing with time and provisions for them need to be implemented. Although some requests and options are not feasible, much more can be done to help Hong Kong become "Asia's world city".

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Chapter 1. Introduction

There are many issues and obstacles the elderly and disabled face around the world. They tend to have reduced access to employment, medical, recreational, shopping and social opportunities. One of their main obstacles is being able to move around as freely as possible. This project, sponsored by Civic Exchange, a public policy think tank, is part of a continuous effort since the 1960s and 1970s on the part of government and Non Governmental Organisations to improve accessibility for the elderly and disabled in the public transportation systems and facilities of Hong Kong. An elderly or disabled person often has to rely on friends, relatives, or on the public transportation system, and if these services are inadequate, they can become "shut in". The goals of this project were to address the accessibility in Hong Kong's transportation systems and facilities regarding the elderly and disabled and make possible recommendations for various improvements so that transportation can move to the next level.

Through the 1960s and 1970s, the Hong Kong government did not fully address the needs and concerns of their disabled citizens (Ying, 2001). Since then, awareness has improved, but there is still much to be done. People such as Dr. Karen Ngai, Senior Lecturer at the Division of Social Studies at the City University of Hong Kong, continue to advocate for improvements in Hong Kong for people with disabilities (City University, 2002). Her goal is to help provide all people with the right to live independently and to be a part of the society in which they live.

> We want to unite all people with disabilities to work together and go forward. That, really, is independence. Our philosophy is to enjoy equal life, to have equal opportunities and full participation, like other people, in all aspects of life. We believe we should make our own choices. And we hope we are no longer passive

participants or just recipients of services. We should be the active organisers (Ngai, 2002).

As a result of the lack of concern for their needs, the elderly and disabled began to push the government for necessary services to promote independent living. In 1970, the Hong Kong Federation of Handicapped Youth was established (Ying, 2001). The Federation aimed at improving and promoting the rights and welfare of persons with disabilities. Eventually, new legislation was introduced in the 1980s to meet the needs of the elderly and disabled persons, but Hong Kong's infrastructure was still not favourable to them. The most influential regulation in this area which came in 1995 is the Disabilities Discrimination Ordinance (DDO). The DDO is primarily implemented by the Equal Opportunities Commission, and it states that persons with disabilities shall not be discriminated against in employment, social, recreational, and service opportunities. Among other things, this regulation recommends that transportation companies update their services to minimise problems for the disabled traveller.

In addition to the accessories provided to aid elderly or disabled persons in their journey, problems with the connections between transportation systems, due to the independent operation of the transportation companies, are oftentimes overlooked. This project also focused on the journey that an elderly or disabled person would take in travelling between transportation modes.

Transportation accessories, such as guidance strips, ramps, and visual aids, are devices that aid elderly or disabled persons in their travel. To help us uncover possible improvements to Hong Kong's public transportation, five other cities' facilities and accessories were studied and interviews of elderly and disabled people and of government officials were conducted. Also, many types of transportation in Hong Kong were closely observed, which entailed us visiting the main transportation companies. Understanding governmental regulations was also a key factor

that helped us assess what the elderly and disabled community can expect now and for the near future.

Overall, this project analysed Hong Kong's transportation facilities and systems as they affect and service the elderly and disabled. From this analysis, it was possible to make several suggestions, with cost in mind, to improve the current public transportation facilities and systems as a step towards full integration and participation in Hong Kong's society for the elderly and disabled. In addition to helping achieve sustainable development, the suggestions are a social obligation that should not be neglected as Hong Kong moves towards becoming "Asia's world city".

Chapter 2. Background

Obtaining preliminary information about Hong Kong, such as population statistics, laws and regulations concerning the disabled, organisations representing the disabled, and the public transportation system, was critical to this project. In addition, discovering what measures other cities have taken helped establish some direction. Prior to our data gathering, we acquired an understanding of the specific transportation systems and the involved operators. Each system was studied through the use of various resources that included books, websites, interviews and observations in Hong Kong.

2.1 Hong Kong Population: Relevant Statistics

Hong Kong is one of the most densely populated places in the world. Almost seven million people inhabit Hong Kong, averaging 5,990 people per square kilometre (Valent, 2002, p. 27). Because the city is so densely populated, virtually all of its residents rely heavily on public transportation. Eleven percent of the population is 65 years of age or older; of those, 312,033 are male and 379,055 are female (CIA World Fact book, 1998). Also, as a result of a decreasing birth rate and increasing life expectancy, the population has been aging steadily.

Hong Kong's population consists of many categories of residents, one major group being the disabled. A disability is defined as total or partial loss of a person's bodily or mental function; malfunction, malformation or disfigurement of a part of a person's body; or a disorder, illness, disease, or malfunction that results in a person learning differently from a person without the disorder or malfunction (Disability Discrimination Ordinance [DDO], 2002). The public transportation companies define a disabled person as being one who has a walking, hearing and/or visual impairment, which is why our project focused on these three types of disabilities.

These categories made the DDO's definition more specific, thus making improvements in accessibility more attainable.

In 1999, the distribution of Hong Kong's disabled population was as follows: autistic, 6860; hearing impaired, 39,902; mentally handicapped, 137,200; mentally ill, 92,455; physically handicapped, 71,613 (HKSAR, 2001). The total number of disabled persons was 423,492, which is a considerable number of people who need to be taken into consideration when providing appropriate transportation services. The elderly were also taken into consideration for this project; however, it was assumed that an elderly citizen could travel normally unless also having a disability.

2.2 Regulations & Organisations Supporting the Elderly & Disabled

The increase in the number of Hong Kong citizens over 65 has given a strong impetus for providing regulations and organisations to protect and serve these people. One of these major organisations is the Equal Opportunities Commission (EOC) which is a statutory body established in 1996 to implement the Disability Discrimination Ordinance (DDO). The Commission works towards the elimination of discrimination on the basis of sex, marital status, pregnancy, disability and family status (Equal Opportunities Commission, 2002). It also promotes equality of opportunity between men and women, between persons with and without a disability, and irrespective of family status. Furthermore, it aims to eliminate discrimination, harassment, and vilification on the grounds of disability. The protection provided by the DDO is against discrimination, harassment, or vilification in the provision of goods, services, and facilities, club and sporting activities as well as in areas of employment, education, and access to, disposal and management of premises.

Additionally, some public transportation companies have followed the specifications proposed by the Disabled Persons Transport Advisory Committee (DPTAC) of the United Kingdom. The DPTAC was established by Parliament under the Transport Act of 1985 solely to advise the British government on transportation policy as it affects the mobility of disabled people (DPTAC, 2003). The goal of the DPTAC is to ensure that all disabled people are free to go where everyone else goes just as easily and without any extra costs. The DPTAC does so by studying all means of transportation and suggesting certain specifications, such as the height of buses and the size of designated spaces, to be included in the design and manufacture of the trains, buses, and ferries, among other modes of transportation. In the United Kingdom, the DPTAC is reinforced by the Disability Discrimination Act of 1995. Although Hong Kong's transportation systems are not required to follow DPTAC standards, companies still attempt to implement them within their systems. The DPTAC specifications are assumed to be the standard for regulations, but non-governmental organisations in Hong Kong can still advise the transportation systems to improve even more in specific ways such as in policies and regulations. An example of such an organisation is the Rehabilitation Alliance Hong Kong.

The Rehabilitation Alliance Hong Kong (RAHK), formerly known as the Hong Kong Confederation of Associations of Handicapped, (reorganised and renamed in 1992), is concerned with all categories of disabled people such as the visually, hearing, and mobility impaired. The RAHK believes that only through coordinating the efforts of all people with disabilities can the goals of influencing rehabilitation policies be achieved. Its goal is to advocate for and encourage disabled people to fight for "full participation and equal opportunity in society" (RAHK, 2003). In achieving this goal, the RAHK participates in providing general rehabilitation service and

advocating policies, in addition to actively addressing the issues that directly and indirectly affect disabled people.

The Hong Kong Society for the Deaf, founded in 1968, is a non-profit organisation dedicated to promoting the well being of hearing impaired people (Hong Kong Society for the Deaf, 2003). The Society has three main objectives. First, to undertake projects involving publicity, education, recreation, counselling, clinical and medical services for the hearing impaired, and to assist any organisations or individuals to improve services for the visually impaired. Second, to work towards improving the educational standards for the hearing impaired as well as provide guidance for parents of hearing impaired children. Third, to inform the public about the problems and needs of the hearing impaired, and give the necessary information to hearing impaired persons and their families.

The Hong Kong Blind Union, established in 1964, was the first self-help voluntary agency formed and run by those who are visually impaired in Hong Kong. The charity receives 25% of its income from the government and the rest is from donations (The Hong Kong Blind Union, 2003). The Union has three main objectives: to encourage people with visual impairments to integrate into society comprehensively and to promote awareness of social integration; to strive for equal opportunities for the visually impaired in education, employment, welfare and social integration. The third is to promote the spirit of self-help and mutual help among the visually impaired.

Through the work of organisations like these and with more enlightened transportation planning, the public transportation systems have begun to adapt to the needs of the disabled.

2.3 Hong Kong's Public Transportation Systems

Hong Kong has many different forms of public transportation, some of which are more appealing to the elderly and disabled than others due to their increased accessibility. All of the systems have achieved some level of accessibility, as described in the following sections.

2.3.1 MTR

One commonly used transportation system in Hong Kong is the Mass Transit Railway (MTR), which consists of 6 lines with 49 stations in all, and runs from 0600 to 0100 hours (Valent, 2002, pp. 108, 109). The MTR provides many accessories to increase accessibility to the visually, hearing, and walking impaired (MTR, 2002). Tactile guide paths, audible escalator devices, and Braille maps are in place for the visually impaired. Induction loops, information display systems, and flashing active system maps are on the trains for hearing impaired passengers. For walking impaired passengers, bi-directional wide gates, lifts from ground level to platforms, and staff assistance are provided to make travelling safer and easier for the disabled passenger.

2.3.2 KCR

A large fraction of the population that uses the MTR also uses the KCR to travel to and from Kowloon and the New Territories. The Kowloon-Canton Railway (KCR) operates between Kowloon and the border with Mainland China at Lo Wu (Valent, 2002, p. 109), and runs from 0530 to 0100 every day of the week. All KCR stations are constantly being updated to accommodate elderly and disabled passengers (KCR, 2002).

The East Rail, the most commonly used line, has entrances/exits equipped with ramps and stair-lifts. Extra wide flap gates are currently being placed at the Lo Wu and Tai Wai stations for wheelchair passengers. Every train has wheelchair spaces, handrails and grab poles

inside for wheelchair users every third, sixth and ninth car (northbound trains) and every fourth, seventh and tenth car (southbound trains). All stations have lifts fitted with Braille buttons and ticket vending machines with Braille plates. The stations are also equipped with disabled toilet facilities, induction loops to facilitate communication, and electronic message boards with train announcements for the hearing impaired. For the visually impaired, the KCR has provided audible reversible gates, Braille plates, tactile routes, and Braille maps at the station entrances. Voice message functions in English and Cantonese will be installed in 2003 in all stations.

2.3.3 Kowloon Motor Bus Company

Another widely used mode of transportation is the Kowloon Motor Bus (KMB) Company, which has the largest fleet of buses in Hong Kong. The KMB has 4,384 buses running along 400 bus routes carrying 3.04 million passengers each day (KMB, 2002). Some buses are equipped with LED screens in both the front and rear, which display the name of the next stop. Handrails and no slip strips are on the stairs for safer access. The KMB is constantly updating its main terminals as well, implementing clearly labelled stations, bus route maps, lifts, and dropped kerbs.

2.3.4 New World First Bus Company

A company smaller than the KMB, but just as important, is New World First Bus Services Limited (NWFB). NWFB is Hong Kong's newest and fastest-growing bus company. It initially won the franchise to operate 88 routes until the end of July 2003 (New World First Bus, 2003). NWFB currently has a fleet of 762 buses that run mainly on Hong Kong Island. Of 762 buses, 572 are low floor buses. After increasing its franchise routes, the company now serves 99 routes daily and carried over 198 million passengers in 2002. The company's low floor buses

conform to the DPTAC standards. Also, on the newer buses, wheelchair access and wider spacing are standard.

2.3.5 Citybus Company

An additional company important to the entire bus system is the Citybus Company. Hong Kong's Citybus service is part of the Stagecoach group, a large multinational transport group with operations in the US, UK and in New Zealand (Citybus, 2002). Currently their fleet consists of 1100 buses, 200 of which are wheelchair accessible. There is ongoing refurbishing of the buses. Additional hand poles, bell pushes, electronic route display and improved lighting are being added.

2.3.6 Rehabus Service

Even though the public transportation companies have been improving accessibility to the disabled, the Rehabus continues to provide services for the elderly and disabled. The Rehabus service, which was started in 1978 by the Hong Kong Society for Rehabilitation, provides door-to-door service and is funded by the Transport Department (Rehabus, 2002). The majority of the Rehabus vehicles can accommodate 12 passengers or four wheelchair users (Transport Department, 2002). The Rehabus provides three main services for the elderly and disabled (H.K. Transport Department, 2000). A Scheduled Routes Service, which is similar to a normal bus route, runs Monday through Saturday (except holidays) from 0630 to 1000 and from 1500 to 1900. The Dial-a-Ride Service allows an elderly or disabled person to schedule a time to be picked up in advance. It is available between the hours of 0830 and 2230. The Feeder Service has two vehicles that travel on designated routes and can bring a disabled person to an MTR or KCR station. The only drawback to the Rehabus vehicles is that, due to explicit laws,

they are only allowed on certain roads and have limited access to certain places that an elderly or disabled person may need to go (Rehabus, 2002).

The Rehabus is an alternative service for those who are unable to use the other modes of public transportation (Luk, 2001, pp. 199-204). It was originally intended to be complementary or supplementary to the public transportation services. Yet the demand for this service exceeds supply by a factor of 1.3, which results in 10,000 missed passenger trips per month. It has become a major form of transportation for some disabled people to get to work, school, and various other places, which was not its primary purpose. The disabled were not meant to rely on only this type of transportation, but because of the lack of accessibility in the interchange between different systems the majority feels that this is their best, if not only option due to the direct routes of this service.

2.3.7 Taxis

Although taxis are one of the most widely used forms of transportation by the elderly and disabled, they are not specifically adapted for those in wheelchairs (H.K. Transport Department, 2000). The government encourages use of the taxi services by authorising the police to exercise discretion in allowing taxi drivers to pick up and drop off disabled passengers in restricted zones, which is why taxis are so commonly used by these passengers (Ying, 2001).

2.3.8 Ferries

The Star Ferry is a means of travelling across the harbour. It operates from 0700 to 0100 hours, and is free to all users over the age of 65. Wheelchair users are limited to the first deck due to the stairs in place to access the top deck (Valent, 2002, p. 28). A ramp is available and designated seating is clearly marked on the ferry.

2.3.9 Trams and Public Light Buses

Within Hong Kong, the trams and public light buses are smaller alternatives to the MTR, KCR, bus systems, and taxis. However, persons with minor walking disabilities can use the public light buses or trams only with assistance from the driver. Overall, these two types of transportation are not disabled friendly, particularly to those who are in a wheelchair. Therefore, this report will not focus its attention on these two types of transportation because in order for them to become accessible, extensive modifications would be necessary.

2.4 Transportation Accommodation for the Elderly and Disabled in Other Cities

Most major cities throughout the world that rely heavily on public transportation also encounter issues regarding access for every group of citizens. In the following sections we have described a few of those for which we readily obtained information on disabled accessibility: London, Mexico City, New York City, San Francisco, and Zurich.

2.4.1 London

London Underground's tube system is the oldest in the world. Transport for London (TfL) has been striving to achieve full accessibility within the system and at interchanges between the tube and buses. The DPTAC, established under the 1985 Transport Act, could only provide recommendations, but in 1995 the DDA was passed which created statutory rights and obligations, thus putting more weight behind the DPTAC. Proposals through the DPTAC recommendations and government regulations like the Disability Discrimination Act (DDA); the tube in London is continuously being improved to aid the elderly and disabled.

The DDA requires London Underground to make its stations and trains fully accessible. Clearly this cannot be achieved in a short period given the age and complexity of many of the stations, but London Underground is committed to improving access and has developed a 'Key

Network' strategy (London Underground, 2002). This strategy identifies 100 stations across the network, which covers all lines and major branches and provides good opportunities for accessible interchange both between lines and with other modes. Other stations will be linked to those on the Key Network by fully accessible bus services. London Underground is working closely with London Buses and with local authorities to ensure that bus stops are as close to station entrances as possible and that step-free pedestrian routes are available.

The London Underground has instituted "Unlocking London for all", which is a plan for improving the entire system by the year 2020. The main goal is to eliminate stairs or any stair access. Also, every station is always under consideration for an increase in size to accommodate the new larger wheelchairs.

London Buses is the organisation that supervises all the private companies that run the buses. More than 3500 of the 5000 low floor buses on 350+ routes are operated with wheelchair accessibility. TfL projects that this will increase to 100% by 2010. Low-floor buses have "kneeling" suspension and step-free access, making it easier for the elderly or those in wheelchairs to get on board. Newly franchised buses have retractable ramps, (at the rear door if the bus has a dual-doorway layout) so that a wheelchair-user can travel to the designated space within the vehicle. The high floor bus, which is an older vehicle that was designed to meet the DPTAC specifications, is still in use. Among other requirements, the DPTAC lays down minimum standards for step heights and requires the use of colour-contrasted handrails, "bus stopping" signs and palm-press bell pushes which can be reached from a seated position. Therefore, fully accessible buses that meet the DDA will replace all of the older buses by no later then 2017.

Dial-a-Ride, a door-to-door service for people not able to use mainstream public transportation, provides 1.2 million journeys a year (Transport for London, 2002). Dial-a-Ride is similar to Hong Kong's Rehabus system, utilising specially designed vehicles for transporting the elderly and disabled who cannot travel to railway or bus stations for social and recreational purposes but not for medical visits. Use of the service requires a membership.

2.4.2 Mexico City

Similarly to London, Mexico City has developed a new programme to improve upon its current public systems. The *Sistema de Transporte Colectivo* or Collective Transport System (STC) is Mexico City's metro railway, the third largest metro system in the world (Noble, 1998, p. 203). Like Hong Kong's MTR, Mexico City's STC is one of the systems designed to address existing environmental concerns while also providing mobility to Mexico City's residents. Considerable measures have been taken since 1998 to make the system more accessible for the elderly and disabled. The STC widened the entrance doors onto the train, added ramps and lifts, and equipped a fraction of the stations with wheelchair lifts (Gonzalez Garza, 2002).

For the visually impaired, signs and signals were also updated and enlarged for better visibility. In addition, Braille plaques describing the layout of the station and its facilities have been placed in a number of stations. The stairs leading into the station and onto the platform have been grooved for the convenience of a visually impaired commuter, and platform edge warning strips were added (Gonzalez Garza, 2002). As in Hong Kong, not all stations in Mexico City are equipped with accessibility features; out of 175 stations, only 30 are fully equipped. Consequently, it is no surprise that the distance between most of the equipped stations is not very accommodating to the elderly and disabled.

2.4.3 New York City

Another city which has a metro railway (known as a subway) as a fundamental element of the public transportation structure is New York. In New York City, the subway system is overseen by the Metropolitan Transit Authority, which also manages the commuter rail and bus system. Many of the services provided by the subway system were installed in response to the American with Disabilities Act (ADA). However, it has been claimed that the subway is not the most convenient way of travel for a commuter with a disability (Kalikow, 2002). Nevertheless, the MTA has outfitted 33 out of 469 stations to accommodate the needs of wheelchair-bound and visually impaired commuters; the explanation for such a low fraction is that only those stations that are most frequented and/or are major transfer points are considered to need immediate attention.

At these stations, the accommodations vary with regard to the needs of the visually impaired, the hearing impaired, and passengers in wheelchairs. The stations that are equipped have either lifts or ramps, and all ramps, including stairs, have handrails. In addition, there are accessible service entry gates at the subway stations. In the station, the booths and the Metrocard Vending Machines are accessible, specifically at convenient heights for wheelchair users. The telephones in the stations are also at an accessible height, and equipped with volume control and text capabilities. For the visually impaired, there are large print signs, as well as tactile Braille signs throughout the station. On the platforms, 61 cm - wide yellow edge warning strips are in place. In addition, platform gap modifications or bridge plates are in place at stations throughout the transit system, which reduce or eliminate the gap that may exist between the train and the platform, aiding wheelchair accessibility. New cars are being put into service, having a designated area for wheelchairs (Kalikow, 2002).

The Travel Training Program is provided by the New York City Transit System (a division within the Metropolitan Transit Authority) (Kalikow, 2002). It operates on a one-on-one basis and teaches a person with disabilities to use the subway and buses, and is essentially customised to meet the individual needs and goals of each traveller. The duration of the programme therefore differs from person to person. The skills that the programme hopes to teach are the ability to plan a trip, identify the correct bus stop, station, or point of transfer, correctly use mobility aids, such as wheelchairs, and use the appropriate sources of information and help.

Similar to Hong Kong, New York City's MTA also offers other services to the disabled and elderly riders. The MTA offers the elderly and disabled half fare and makes its service information available on Braille brochures and audiotapes at its booths, and online in a large print PDF document. Tactile Braille subway maps of the different boroughs of New York City are offered, but have to be ordered.

With respect to the commuter rail for which New York City serves as the hub, the accommodations provided are similar to those of the subway system. There are a few additional accommodations that the commuter railway provides for accessibility. One station has a talking kiosk with Braille and a large print map of the station, with a talking computer and large print screen. In addition, it can be located by its unique chirping sound. In the cars there is designated seating for the elderly and the disabled, as well as special wheelchair areas where the seats fold up to provide adequate space. Passengers are encouraged to notify the conductors if assistance is needed. The fares for an elderly or disabled person on the commuter rail are half the regular price, and a Personal Care Assistant (PCA) travels for free.

The bus system of New York City is perhaps the better means of transportation for people with disabilities and for senior residents. Virtually all of the more than 4,300 buses have

wheelchair lifts or possess the kneeling feature (Leas, 2002, p. 85). On these buses there is designated seating for the wheelchairs around the rear exit of the bus, and seats prioritised for people with disabilities and the elderly, located behind the driver. In addition, there is the personal attention that a rider can receive from the bus driver. Like the subway, the bus system also offers its disabled and elderly passengers reduced fares of half price.

Besides the bus service, the Access-A-Ride service is available for travellers who cannot use the train or regular bus system, and is specifically designed for wheelchair users and other people with disabilities, such as the visually and hearing impaired. Similar to the Rehabus, the utilised vehicle is specifically designed for its passengers. .

2.4.4 San Francisco

Besides New York City, San Francisco has been improving its public transportation systems. It has also implemented almost complete accessibility for the elderly and disabled within its bus system. The municipal railway system (MUNI) runs the largest system within the city, providing bus routes covering 49 square miles of the city using 454 diesel buses on 54 lines (MUNI, 2002). The entire fleet of buses is wheelchair accessible and all licensed drivers are fully trained to aid any elderly or disabled passenger in need of assistance. MUNI also provides a fleet of trolley buses to cover the suburbs outside of the city using 331 vehicles on 17 lines. These smaller buses are also wheelchair accessible; every bus has either a "kneeling" feature or lifts to raise wheelchairs to the bus floor level. All buses have Braille names and numbers on the sides of them.

The Golden Gate Bus Transit (GGT) service is based around the Golden Gate Bridge. All of the GGT's buses are lift-equipped. If an elderly or disabled person cannot travel to a bus terminal, GGT provides a paratransit service, required by the ADA, which runs door-to-door

using vans to help assist them. A senior citizen discount is granted that cuts the costs of all fares by 50%. In both San Francisco systems, the main goal is accessibility for anyone within the city - every vehicle is accessible to wheelchairs and the visually impaired. San Francisco has developed newer bus standards than other cities to improve elderly and disabled accessibility.

2.4.5 Zurich

Various aids for the visually impaired available in Zurich's railway system, through an extensive pilot project which was of particular interest to us. For example, near the platform entrances of the terminal stations and at all stair handrails, 250 small metal oblongs were placed, so that passengers can feel and identify platform numbers, platform sectors and station areas raised in Arabic numerals, letters and Braille (ECMC, p. 143). In addition the new low-level S-Bahn railway stations have platforms designed with strong, clear contrasts for the visually impaired. The edges of the platforms are made of light toothed granite, which is easily distinguished from the rest of the surfaces by touch. The light band above the platform that runs parallel to the edge provides a boundary line to the platform.

Another key factor is that at the stairways there are three protruding metal strips embedded across the platform floor that stops short of the edge. This helps someone who is visually impaired find the beginning of the stairs easily.

The last key element Zurich has adopted is the use of signal light posts in front of each escalator. When one touches the lights they radiate warmth so a visually impaired person can feel whether the red (upper) or green (lower) lamp is illuminated, and discover if the escalator is running and in what direction. Also, small metal oblongs are affixed below the lights so the platform and sector numbers and station areas can be felt.

2.5 Summary

Presenting specific features of these cities' municipal transportation systems provided an overview of provisions that are made to accommodate the elderly and disabled around the world. Several ideas suggested by this material might provide possible alternatives for Hong Kong's public transportation systems (see chapter 5, Recommendations). For example, London's "Unlocking London for All" increases accessibility according to a timeline. New York City helps integrate the elderly and disabled by having the Travel Training Program teach these citizens how to utilise the public transportation. San Francisco follows the lower fare standards in their bus system as well. These possibilities bring out questions about applicability in Hong Kong that need to be answered before final conclusions and recommendations can de drawn.

Chapter 3. Methodology

The purpose of this project is to determine the level of ease by which the disabled and elderly population have gained access to the public transportation systems of Hong Kong. In order to choose the appropriate methodologies for our project, the above goal was first broken down into specific tasks to be achieved and questions to be answered. One of the biggest tasks of the project was identifying the current status of Hong Kong's public transportation system for elderly and disabled access. The views of local government and public transportation officials about this issue were sought. Determining the attitudes and thoughts of the elderly and disabled about the current facilities provided by the transportation system was a major task and the cost and benefits of providing updated capabilities for the elderly and disabled had to be considered. Lastly, the status of Hong Kong and other cities that have exceptional features regarding elderly and disabled accessibility had to be assessed. The answers to these questions were attained through case studies, direct observations, and interviews. A detailed discussion of how each task was tackled is now presented.

1) What is the current state of Hong Kong's public transportation system for the elderly and disabled?

The first means of determining the response was through a case study of Hong Kong using a combination of websites and books (see references). In addition, there was input from contacts established in Hong Kong, such as Simon Ng, Researcher at the Centre for Urban Planning and Environmental Management (CUPEM) of the University of Hong Kong.

Most importantly, direct observations of the existing facilities and accommodations for the elderly and disabled in the railways, buses, ferry, and taxi system were carried out. By observing the subject and recording the data as faithfully as possible, this procedure gave us a

first hand view of what specific accessories and services, e.g., ramps at a railway station, were in place. The observations were recorded in tabular form, and photographs were a part of the observations for each mode of transportation.

The cars and stations of the railway system, which consisted of the Mass Transit Railway and the Kowloon-Canton Railway, were observed. They were examined for the presence of accessories through the use of the checklist found in Appendix E. This checklist is an example of what we used in observing all of the transportation systems. This data is found in Chapter 4; the Data and Analysis Chapter. The tabulations were continued for the remainder of the modes of transportation using the same checklist. Analysis of the bus systems consisted of acquiring data from the following bus companies: Kowloon Motor Bus (KMB), New World First Bus (NWFB), and Citybus. Direct observation of these companies was also accomplished through the completion of the checklists for selected buses. The Star Ferry Company and the LPG taxis were also assessed using this checklist.

2) What legislation favours the elderly and disabled?

We consulted the Equal Opportunities Commission and referred to the Disabilities Discrimination Ordinance. The DDO was compared with legislation in the United States (American with Disabilities Act) and in the UK (Disabled Persons Transport Advisory Committee). The DDO was specifically examined for the definition of a disability, and, if any, the presence of design standards and specifications to serve the disabled. This question was also discussed at the meetings with the transportation companies to learn of any regulations that they follow.

3) How do Hong Kong government and public transportation officials address the issues of public transportation for the elderly and disabled?

Answers to this question were acquired from interviews and company visits. The government interviewees were from a number of different organisations that were concerned with the elderly and disabled; Albert Su, Chief Transport Officer/Planning (Paratransit) and Cecilia Lai, Senior Transport Officer of the Ferry and Paratransit Division, of the Transport Department, and Esther Chan, Senior Equal Opportunities Officer of the Equal Opportunities Commission (EOC).

The executives and/or managers of the MTR, KCR, KMB and NWFB were each consulted to obtain data regarding the services provided for the elderly and disabled. We met with Wilson Wong, Operations Project Officer of the KCR; Graham Russell, Chief Engineer and Elaine Chan, Public Affairs Manager of the NWFB; Lai T.K., Building and Architectural Services Manager and Tam Pui Ming, Assistant Operations Support Manager of the MTR; and So Hing Shun, Assistant Principal Engineer (Operations) and Ho Kit Ying, Senior Manager of Bus Maintenance of the KMB. We were unable to meet with Citybus. During the visits, the group received informative presentations on the specific transportation system facilities for the elderly and disabled. Also, the group was given demonstrations of the companies' various accessories.

4) What are the opinions of the elderly and disabled (the users) regarding public transportation in Hong Kong in terms of providing for their specific needs?

A sample of the attitudes and opinions of the elderly and disabled in Hong Kong were obtained through interviews. Organisations were key resources for obtaining public opinion because of the groups that they represented. The individuals and organisations contacted were as

follows: Hong Kong Blind Union; Fred Leung of the Hong Kong Society for the Blind; Hong Kong Society for the Deaf; Hong Kong Federation of Handicapped Youth; Simon Wu, General Secretary of the Hong Kong Rehabilitation Alliance; and Rex Luk, Transport Manager, and Ursula Kay, Assistant Transport Manager of the Hong Kong Society for Rehabilitation, which oversees the Rehabus. However, the Hong Kong Blind Union and Hong Kong Federation of Handicapped Youth did not respond to us.

In addition, these organisations provided disabled interviewees. The following organisations provided us with further personal interviews: The Hong Kong Rehabilitation Alliance, Civic Exchange, and The Hong Kong Society for Rehabilitation. In order to obtain consistent data, a simple interview protocol was used. Generally, most questions were answered, and additional comments from the interviewee were recorded. The total number of interviews conducted was 14.

5) What are the costs and benefits of providing modes of access for the elderly and disabled in the public transportation system of Hong Kong?

The discussion of the costs and benefits of providing accessibility to the elderly and disabled was brought up during the visits to the transportation companies, the EOC and the Transport Department; specific topics included reduced fares for the disabled and the costs of installing certain features. Also, answers to the question were attained through the public transportation companies' annual reports by examining the expenses that went towards operations, maintenance, and construction. In addition, simply asking for estimates of what an accessory would cost, e.g. a power ramp.

6) What are the current means of public transportation accessibility provided for elderly and disabled persons internationally?

Current international accessibility for the elderly and disabled was discerned through the use of case studies for various cities around the world: Zurich, Mexico City, San Francisco, London, and New York City. Each of these cities present different and unique aspects of accessibility within each of its public transportation systems: Zurich has made exceptional provisions for the visually impaired on its railway system; Mexico City, which has more than twice the population of Hong Kong, uses an extensive bus and metro system that has begun to retrofit its bus fleet and metro system; San Francisco has a fully accessible bus system that caters to the elderly and disabled; London has the oldest metro system and has increased accessibility based on European standards. Lastly, New York City has implemented a "Travel Training Programme" to aid the elderly and disabled so that they know what is available to them within the city. Unfortunately, our information was limited due to the fact that we had access to limited resources. Additionally, to have a full perspective on a city, one must experience it first hand.

The case studies were completed by the use of websites, books, and resource personnel. The websites were mainly those of organisations that provide public transportation in the city of interest. We also used travel guides and resource people who had visited the city of interest in recent years. The information about each international city was then compiled as a list of possible recommendations that could be used to improve the accessibility in Hong Kong's public transportation system.

From the use of direct observation, interviews, case studies, and other methods, we have achieved the goal of collecting data about many aspects of Hong Kong's public transportation. Through the collection, a specific analysis was to assess the public transportation and provide critical recommendations to help advance the accessibility within these public systems. Our

methods supported all of our information gathered and provided a solid background for making these recommendations.

In retrospect, we also believe that improvements could have been made to the methods utilised in this study. First, a greater range of people could have been interviewed to further emphasise the views of the disabled and elderly. Due to time constraints, the contributions we received were limited. Perhaps, a survey or a focus group would have increased the validity of our conclusions. In addition, we would have liked to have talked with more organisations, like the Hong Kong Blind Union, Social Welfare Department, and the Health, Welfare & Food Bureau.

Chapter 4. Data and Analysis

In Chapter 3 we defined six questions that we wanted answered in this project. In this chapter, the data we have collected helped answer these questions and are organised in a similar manner to that in Chapter 2 for easier comprehension. The first issues considered were government regulations the first issues considered, in order to establish the requirements that the public transportation systems have to follow. Next, the needs of the disabled were taken into account. Sections 4.3- 4.5 were split into the various disabilities for each one and we went through each type of transportation explaining what is currently available and what could be improved. The reason for addressing these sections by disability as opposed to addressing them by each form of public transportation was to avoid repetition throughout the chapter. The majority of information in this chapter is from our interviews which are summarised in Appendices P-V. It was also important to analyse the costs of making improvements; this is done in section 4.7. Lastly, we also included examples of programmes and accessories other cities have implemented and an analysis of how they may be applicable in HKSAR.

4.1 Transport Department

The Transport Department (TD) has recognised that some of Hong Kong's citizens cannot move around as freely and easily as most. To integrate the elderly and disabled into the community, the Transport Department is committed to providing special facilities to enhance their mobility (HK Transport Department, 2002).

The Department is a public transportation regulator that ensures that the best possible services are available to the public in Hong Kong. We found that Transport Department uses the slogan, "Putting Our Hearts into It". This campaign is about doing their best in cooperation with

colleagues, customers, and partners. In regards to the elderly and disabled, the Transport Department plans for and provides special traffic facilities such as tickers at all cross walks, administers the Hong Kong Society for Rehabilitation which oversees the Rehabus and Easy Access Bus, and encourages the public transportation operators to provide barrier free transportation services. Most importantly, the Department plays the leading role in the Working Group, which meets every four months, on accessibility in public transportation for people with disabilities. The Working Group was established by the TD in 1993 and has since provided progress reports to a sub-committee of the TD. These reports cover the Working Group's achievements in improving accessibility and user-friendliness of public transportation and pedestrian facilities for people with disabilities. The membership of the Working Group can be found in Appendix D. The main roles of the Transport Department in terms of the Working Group are as follows (HK Transport Department, 2002):

- To review existing and planned transport facilities to assist people with disabilities in making further use of public transport
- In consultation with disabled groups to look into the feasibility of, and to make recommendations about further improvement of access to public transport by people with disabilities
- To monitor the implementation of facilities from other transportation companies in Hong Kong

We also discovered that a continuous effort to improve accessibility for the elderly and disabled, the Transport Department has formulated a "Transport for All" plan, which consists of five strategies for improvement (HK Transport Department, 2002).

1. Provide more accessible transport services for all, e.g., a new wheelchair accessible taxi is in the test phase
2. Provide a better public transport infrastructure with facilities for all
3. Provide better street and pedestrian areas for all, e.g., by 2004, all street crossings will have electronic audible traffic signals
4. Establish better planning standards, guidelines, and procedures, e.g., HKSAR establishing its own DPTAC standards
5. Establish a better partnership for actions and results; e.g., to consult other countries such as Singapore (already being consulted), England, Japan, and more.

Additionally, the "Transport for All" is a 10-year programme of improvement that also has yearly goals. An example of a yearly goal is that dropped street kerbs and tactile guide paths are expected to be installed at all street crossings by 2006. Therefore, the programme declares that more cooperative decisions among the organisations, transportation operators and the Transport Department need to be agreed upon so that accessibility can move to the next step.

4.2 Equal Opportunities Commission

The Equal Opportunities Commission (EOC) was established to assist the Transport Department follow government regulations. In our interview with the EOC, they provided insight into the current status of Hong Kong's public transportation systems and facilities for the disabled. The interview provided a view on behalf of those who are disabled and had a contrasting viewpoint from those of the transportation operators.

The EOC oversees the Disabilities Discrimination Ordinance (DDO); the latter is modelled on the DDO of Australia, rather than the Disabilities Discrimination Act (DDA) of the United Kingdom or the American with Disabilities Act (ADA) of the United States. The DDO

differs from the ADA and DDA in that it does not establish a timetable for transportation operators to provide adequate means of accessibility. Also, the definition of a disability in the DDO is much broader than that of the ADA or DDA. Nevertheless, the EOC pushes for a commitment from the transportation operators. In the meantime, companies can only be encouraged to provide a better means of accessibility. We found that if the companies were ordered to do this, the pressure for a fare increase could arise. A fare increase could disgruntle the mainstream population, whom might possibly blame people with disabilities. However, the transportation systems would probably not invoke a fare increase since the systems are already currently updating their facilities. Also, accessibility seems to be done for reason of good publicity. The transportation companies prefer to stay as independent as possible without government regulation. If the companies fall behind, then the government will have to establish regulations which the Transport Department is trying to stay away from.

An important aspect of the DDO is the difference between the Ordinance and the other two discrimination ordinances that the EOC addresses, which are the Sex Discrimination Ordinance (SDO) and the Family Status Discrimination Ordinance (FSDO). In this family of three anti-discrimination regulations, the DDO is the only one that protects against vilification, which is an indirect form of harassment. For example, vilification would be a person who publicly complains about the slowness of a disabled person. The other two categories, which also fall under the other two subsections of the EOC, are discrimination and harassment. These are more direct than vilification, which is why the majority of complaints filed are under these categories.

The EOC is composed of three branches: Complaint Handling, Advocacy Support, and Public Education. If a complaint is presented, it goes to Complaint Handling, which speaks with

the party filing the complaint and the party whom the complaint was made against. The final ruling on the complaint is made by the court, rather than by the EOC. The remaining two branches serve mainly to educate the disabled people of Hong Kong about the present regulations, and the rights they have.

Another interesting point the EOC made was explaining how the buses justify not upgrading their fleet promptly. The life expectancy, or for accounting purposes, depreciation value, of a bus, is 17 years. In 1998, new buses were put into service and franchised before the DDO came into full effect. Consequently, bus companies did not have to outfit their buses because they were already in service before the enactment of the law. At the time, the majority of the buses have only been in service for five years, therefore 12 years of use still remain. As a result, bus companies would not have to provide an entire fleet of accessible buses until 2015 and can therefore classify purchasing new buses as a hardship. We feel this timescale for full accessibility is too long. However, at this time, it is not possible for the EOC to try and implement timetables for the bus companies to have a certain number of low floor buses by a certain date due to lack of government support. For now, all the EOC can do is encourage the bus companies, specifically KMB, to change to low floor buses or retrofit their current ones.

4.3 Visual Impairment

According to the Transport Department, there are approximately 73,900 people with visual impairments. In response, the visually impaired have been provided a variety of facilities and services. It was found that facilities and services tend to be accessible for the visually impaired, but it was as a result of time and pressure for these services to be in place. In addition, we talked to Fred Leung, Division Head of Rehabilitation of the Hong Kong Society for the Blind, to gain his personal opinion.

Our observations found that the MTR provides tactile guide paths, tactile yellow lines, audible signals, Braille route map booklets, and Braille and tactile text. The tactile guide paths have been installed in all stations, ranging from the designated street entrance in the station to the stairs or escalator available in the concourse, and then continuing to the base of the stairs or escalators to the platform. We found that the tactile guide paths do not lead to lifts. The MTR reported that this is because the visually impaired specifically requested that the paths not do so; they prefer to take the same route as everyone else, hence trying to be as independent as possible. The tactile yellow lines, also known as platform edge warning strips, have been installed in all stations of the Kwun Tong Line, Tsuen Wan Line, and the Island Line, which are the three oldest lines of the MTR. The Tung Chung Line and Tseun Kwan O Line, are the newest lines and are completely accessible; the Airport Express is also completely outfitted. A map of these lines can be found in Appendix G.

We observed audible signals devices, which enable visually impaired passengers to locate the outgoing escalators, installed in some escalators on a platform in some stations. In our meeting with the MTR, they did not report having installed such a device in the outgoing escalators of a station concourse, nor on any escalators leading into the concourse or onto the platform; on the contrary, their website reports that audible signals have been installed on all the escalators.

The MTR has used Braille in a variety of ways. Route map booklets have been printed in Braille and are made available at the Customer Service Centres in all stations of the Kwun Tong, Tsuen Wan, and Island lines. Braille and tactile text have been placed on lift buttons and floor designation plates, as a result of input from special interest groups. The MTR has modified its stations by removing obstructions and placing special features in convenient areas. Obstructions,

such as trash bins, public payphones, fare maps, and information panels have been modified to make them more detectable to visually impaired users.

We also observed that visual bands have been applied to reduce glazing where necessary to warn of a potential hazard. In addition, the handrails in the trains are brightly coloured (red) for better visibility. Also, the train cars are connected in a continuous manner rather than the conventional method of car end to car end, where one has to exit the car to enter the adjacent one.

The KCR's means of accessibility are similar to those of the MTR. Tactile guide paths are also in place in every station, concourses, and platforms. The guide paths lead to the items of importance, such as customer service, and the entrance onto the train car. The KCR stated that its guide paths lead to only one car entrance because multiple paths could confuse a passenger, and the space on many platforms is too confined to have multiple paths. In addition, passengers with other disabilities, such as the wheelchair users, are concerned that it could obstruct their passage on the platform. Yellow warning strips are also in place, but the KCR has installed pairs of white warning strips at the edge of the platform.

Braille maps of the station layout have been placed near the entrance of every KCR station. They provide the users with detailed information of the station, such as the public toilet (note that MTR stations do not have public toilets). Audio signals at escalator landings have been installed. Unlike the MTR, the KCR has installed these signal devices with distinct tones or "clicking" sounds (the outgoing one having faster "clicks") in all escalators. These devices used by the KCR seem to be more effective than the MTR's single audio beeps at the escalators. The KCR also has Braille labels inside the train cars indicating the coach number and the position of the emergency button. As in the MTR, colour contrasting grab poles, of red colour, are in the

train cars. We were also told that by mid-2003, Ticket Vending Machines with Braille plates and voice message functions in English and Cantonese will be installed.

The bus companies - KMB, NWFB, and Citybus - have very similar vehicles with very few differences regarding accessibility for the visually impaired. Large display boards are on the front of the bus denoting the route number and destination, and the route number is in large print on the side and rear of the bus for people with poor vision. The KMB and Citybus are the only companies to have large LED displays inside their buses. The handrails and grabpoles in all of the buses are in contrasting colours to stand out for passengers with limited visibility. Out of the three franchises, the KMB and NWFB are currently the only ones that seem to place Braille plates inside their buses with the fleet or license number and the customer service hotline.

Some other substantial differences between the bus companies are such as; only the NWFB has provided Braille route maps and also has bus stop bell pushes, which can be activated with the palm rather than only a finger; the step edges inside the bus are colour contrasting with a "tiger saw" or "shark tooth" design (NWFB). The NWFB stated that the very design of the step edges is a matter that is continually being addressed, for example, the colour

We found out through interviews that the taxis are a convenient way to travel since they can drop off or pick up a person to take them door-to-door. The taxi service has made some minor improvements recently, although there is not much to be done. The biggest change has been the installation of a Braille and tactile text plate inside every taxi car providing the passenger with the vehicle registration number and hotline. As previously mentioned, the government does not order or command transportation companies to provide accommodations directly by law, but it still makes the taxi companies comply with the DDO. For example, in order for a taxi car to be licensed, it must fulfil the requirement of installing the Braille plates.

Taxis are not allowed to service prohibited zones and restricted traffic areas. However, if a taxi is picking up or setting down a passenger with a disability, a passenger can issue a "Certificate for Picking Up or Setting Down of Passengers with Disabilities in Restricted Zones" to the driver, with the information of the journey (date, time) and vehicle registration number. If the taxi is halted by a police officer, the certificate serves as evidence for stopping in the restricted zone.

The Star Ferry has done the least to provide accommodations for people with visual impairments. Handrails are present on ramps onto the ferry, and bells are used to notify passengers when to board. Our visit to the EOC informed us that colour contrast and lighting in the ferries is a concern that should be addressed. No tactile paths were found, nor have colour contrast methods been utilised for the visually impaired. This could very well be as a result of limited use of the entire ferry system, or simply that accessibility has not been a priority.

In our consultation with Fred Leung, Division Head of Rehabilitation for the Hong Kong Society for the Blind, we learned that the MTR is considered to have provided an adequate degree of accessibility, with a rating of six out of 10, while the KCR was rated five. The buses were rated between three and four. The MTR has installed a voice announcement system but much is still to be done. The ferry was rated satisfactory, but not up to desired standards.

4.4 Walking Impairment

Hong Kong is very much a walking city; therefore, people who have walking disabilities face one large walking barrier, the city itself. Since 103,500 people in Hong Kong have walking disabilities with numbers continuing to grow, the transportation operators and officials have been faced with the task of progressively improving and updating their existing facilities and systems to make them accessible to these people. In order to gain some personal opinions on traveling

around Hong Kong with a walking disability, Mathilda Frommer, Allan Man, Cindy Yip, and another interviewee who wishes to remain anonymous were interviewed.

We found out from the interviewees that the MTR is the most widely used by those with disabilities. (Currently accessible stations, which mean either with a lift (with out assistance) a wheelchair aid or a stair lift (with assistance) are listed in Table 1). There are either ramps or lifts to enter most stations. All concourses have a bi-directional wide gate entrance and all trains have designated spaces for those in wheelchairs. There are user-friendly intercoms at the designated entrances and all staff are trained to aid someone in need.

According to the interviewees, one major drawback with the MTR is that since it is so heavily used, it is often too crowded and compact for disabled people to use during rush hour and their journeys often have to be planned around busy time periods. On the contrary to our interview with the MTR, Mr. Man explained that in his opinion the MTR is not wheelchair friendly. The MTR does not have lifts or ramps at all of its stations and the staff are not always happy to assist him during rush hour times. Additionally, concerning the stations that have no lifts, Ms. Yip commented that the wheelchair aids were quite inconvenient as they can make a user feel uncomfortable for fear of falling and/or that it attracts much unwanted attention; it has been called the "Monster". Also used is the stair lift, which requires staff assistance and preparation, so a user has to call prior to arriving to the station generally a recommended 30 minutes before. In addition, it takes a considerable amount of time to travel in one direction, and it too attracts much attention. Concerning the stair lifts, the MTR reported that in March 2003, it will begin to install stair lift which will require no staff assistance.

Currently, there are three MTR lines that are not fully accessible without assistance to the walking impaired; Kwun Tong, Tsuen Wan, and the Island Line. Each of these lines and their

accessibility are shown in Table 1. The number and percentages of stations that are accessible without assistance from street to concourse and concourse to platform are given in this table. These stations provide either lifts or ramps that allow the walking impaired to get around without an MTR assistant.

Line	Stations	Street to Concourse	Concourse to Platform
Kwun Tong Line	15	9(60%)	15(100%)
Tsuen Wan Line	16	5(31%)	7(44%)
Island Line	14	7(50%)	8(57%)

Table 1. MTR station accessibility without assistance, April 2002

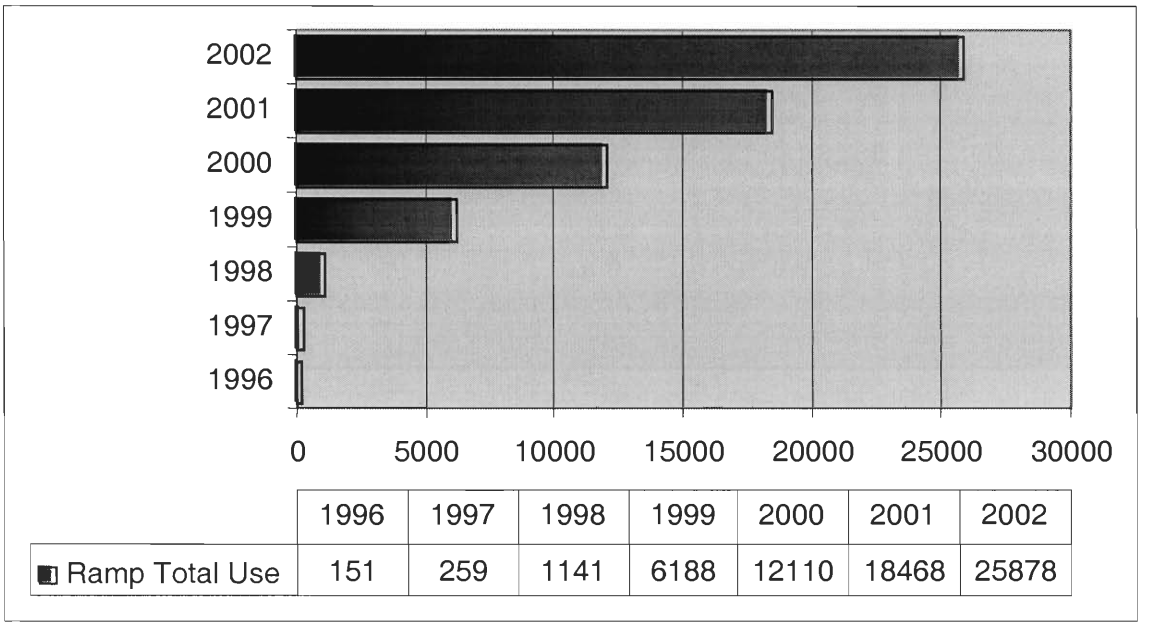
Ideally, if all the stations were accessible without assistance there would not be an issue of accessibility for the walking impaired. However, there are a number of reasons why this might not be possible. One reason is that it is not possible to install a lift in certain stations due to height restrictions, or the only possible way to install a lift would be in the middle of the street, which is not feasible. Also, if too many lifts have to be installed cost could become a factor. Nonetheless, all stations should be considered for lift instalment.

The MTR and KCR are very similar in accessibility features and services for people with walking impairments. Except for the Racecourse station, we found that the KCR East Rail provides ramps, stair lifts, and internal lifts inside its stations. In addition, wheelchair space is provided on each of their trains and there are directional signs on the platforms to guide a wheelchair passenger to the lifts. On the Light Rail of the KCR, ramps are available at all stops, and similar to the East Rail, there are reserved spaces in the trains. For three out of the 13 stations, there are gangplanks available for someone in a wheelchair due to the large gap, approximately 10-15 centimetres between the train and the platform. The gap is also a common concern for wheelchair users regarding the MTR. The MTR, however, has not fully addressed

the matter because the gap between the train and the platform often changes due to the structure and engineering of the hydraulics of the train.

The MTR's corporate policy differs from that of most transportation systems in Hong Kong. It proposes to adopt a fully accessible design approach for all future MTR railway extensions. For all of their existing stations and trains on the urban lines, the MTR states that it will progressively provide and maintain safe and effective step-free access for disabled persons by 2015.

Our observations have demonstrated that the franchised buses in Hong Kong also have a number of accessibility features offered to people who have walking disabilities. Currently, Citybus has an ongoing refurbishment of its 1,100 buses. They are adding additional hand poles, bell pushes, and improved lighting to all their buses to benefit those who have walking disabilities. The KMB has very similar accommodations as Citybus for its passengers with walking disabilities. In Figure 1, the number of wheelchair users that boarded KMB buses can be seen. It is shown that the number of users have been growing exponentially with time. Therefore the need for more accessible buses is apparent.



	1996	1997	1998	1999	2000	2001	2002
Ramp Total Use	151	259	1141	6188	12110	18468	25878

Figure 1. KMB ramp use 1996-2002

The NWFB does an exceptional job accommodating to the needs of someone with a walking disability. Out of their fleet of 762, 597 (77.6%) are low floor buses. In addition, all of their new buses and facilities conform to DPTAC standards since their new buses are purchased from Europe. Also, wheelchair access and spacing are all standard in their bus fleet. One unique thing the NWFB is testing is the use of global positioning systems (GPS) on some of their routes. Although the company sees the possible use of GPS as an aid for those who are disabled, the disabled organisations themselves do not agree. In their opinion, the GPS is unnecessary as something simpler would be much more appreciated by the disabled. Other drawbacks for someone who has a walking disability are that not all buses are wheelchair accessible. According to Mr. Man, the drivers are not always willing to help him board the bus, and busy traffic conditions deter wheelchair users from getting onto buses because it takes extra time and people are very often unwilling to wait the extra few minutes. The current number of accessible buses in each fleet that are accessible can be seen in Table 2.

Bus System	Total Number	Number Accessible	Percentage
KMB	4420	1202	27
NWFB	769	592	77
Citybus	957	84	9

Table 2. Number of accessible buses 2002

Besides the regular franchised buses, the Rehabus was found to be fully accessible. The drawbacks are that the service is quite busy and it can be hard to arrange an appointment to be picked up. Most of the time appointments must be made well in advance and there are few routes. Mr. Man uses this service to go to work everyday, but he commented that it is hard for new users to join the service because existing users already occupy the Rehabus.

Taxis provide good service to those who are disabled, since they can take a person door-to-door. However, the taxis can become expensive to use. Ms. Yip uses a taxi because of the convenience of its services and does not have to deal with changing between modes of transportation, even if taxis can be expensive.

We have also found that there is not much room for improvement within the ferry system since it is quite old. However, the ferry is relatively accessible for passengers with walking disabilities and even those who use a wheelchair. There are call bells at most of the entrances to the piers, and antiskid gangplanks and grooves on the landing ramps are provided to facilitate the movement of wheelchairs. On most ferries, there are wheelchair spaces available. One drawback is that the lower deck is more accessible than the upper deck because of the stairs involved in the travel to the upper deck. Although the ferry can be a rougher journey due to the movement of the vessels, adequate assistance is available. Mrs. Frommer mentioned that the ferry staff is very courteous in assisting her upon seeing her enter the pier. Mr. Man told us that he also uses the ferry when crossing the harbour.

Generally speaking about walking around Hong Kong, Mrs. Frommer and Mr. Man provided some additional insights. They both particularly mentioned that people's attitudes towards them were a concern. For example, when Mrs. Frommer uses the MTR, sometimes she may have to ask someone to give up their seat for her. Since it is not always happily given up, she proposes that the transportation companies enforce or implement designated seating for those with disabilities such as in the ferries where designated seating is absent. Most importantly, Mr. Man said that people's attitudes need to be improved, "Many people, both staff of transportation companies and ordinary citizens, have not yet accustomed to wheelchair users using the public transportation (People look at you strangely in the public transport; the driver gives you a feeling that he felt inconvenienced to help you entering the bus)". Mainly, Mrs. Frommer's journey is time consuming because she must go where escalators or lifts are available. Stairs pose the largest obstacle for Mrs. Frommer and other walking impaired persons. Most new buildings have ramps and lifts, but the older ones pose the largest obstacle for those who have walking disabilities, which also makes interchanges challenging. Mr. Man explained how the quality of the accessibility affects his social life because sometimes he avoids public transportation due to the hassles, so he will not go out. Also, it takes a lot of energy to move around the city, which could be used instead towards social and work activities. Due to the number of stairs and uneven surfaces in Hong Kong, it is crucial that public transportation cater to the needs of these people who cannot move around as freely as others.

4.5 Hearing Impairment

The last major disability we looked at were persons with hearing impairments. The MTR has provided many forms of technology available for the hearing impaired to help ease their travels throughout the public transportation system.

For the hearing impaired, the stations of the Kwun Tong, Tsuen Wan, and the Island Line have induction loops at its payphones and Customer Service Centres to benefit passengers who use hearing aids. They also offer communication cards, which allow the disabled users to communicate with the station staff at each station. Other accessories the MTR offers to its hearing impaired passengers are Flashing System Maps and Active Line Diagrams, which show the location and direction of the train. The Active Line Diagrams are provided in the Airport Express, where in-Train Information Panels are provided, displaying information on the next stop in English and Chinese. We found them to have a gate display, which allows a person to read how much money they have left on their Octopus card as they go through. These accessories are also useful for tourists and the general public, however, they serve the best use for the visually impaired.

The Passenger Information Display System provides visual and audible warning information on incidents occurring in each station. These are installed at the entrances of each underground station and its concourses and platforms. Drawbacks with this system were discussed at the interview with the EOC. There was an MTR accident within the past few months, which was a cause for emergency and was only announced verbally and not on these display screens. There were complaints by a number of hearing impaired persons: they did not know what was going on and were left to follow the crowd while having no idea why. This issue was also brought up by the Hong Kong Society for the Deaf. Situations like this make it hard for the hearing impaired to feel fully integrated into Hong Kong's society. The hearing impaired feel that the display screens in the MTR and KCR stations are very helpful, but should include emergency announcements.

In general, we observed that the KCR offers similar accessories to the hearing impaired as the MTR. It offers In-Train Information Panels for the hearing impaired to know what station they are stopping at. They, however, only have a map of the stations on each train as opposed to the MTR's Flashing System Maps. Overall, the MTR and KCR seem to be quite accessible to the hearing impaired.

The Hong Kong buses do not offer many accessories for the hearing impaired. It seems that the major thing they would need is a display letting the hearing impaired know which stop is next. Table 3 shows the percentage of buses from each company that offer the Bus Stop Announcement System.

Bus System	Number in Fleet	Number with Display Screens	Percentage %
KMB	4420	1771	41
NWFB	769	1	0.1
Citybus	957	61	6

Table 3. Number of buses with display screens, October 2002

As seen in Table 3, KMB offers the most Bus Stop Announcement Systems, in which the next stop is displayed in both English and Chinese. In an interview, NWFB said that they are still doing research on these GPS display screens and have installed one screen in a trial bus. LED screens are present in some of the buses; however they do not display the next stop, which could easily be implemented. Citybus has installed a small percentage of display screens in its buses. This, however, is not an acceptable amount and this issue needs to be addressed. The Hong Kong Society for the Deaf explained that it is hard for a hearing impaired passenger to know what stop they are at without these display screens. It is possible for the disabled passenger to ask another passenger or to ask the driver, but they would either have to write it down or hope that the person they ask is willing to help them.

The taxis do not have too much to offer for the hearing impaired other than the meter display. Otherwise, depending on the extent of the person's hearing impairment, it may be quite hard to communicate with the driver. A passenger could write down their destination for the driver, which would be fine for someone who can write Chinese, but if the passenger did not have any knowledge of Chinese and the driver did not know the passenger's language, there would be a problem. It would be ideal if the taxi drivers spoke and wrote English and Chinese, but this is not always the case.

Lastly, the ferries are only somewhat accessible for a hearing impaired person. They have a light that will turn red indicating not to board and green to board. Although, that is the only aid available on the ferry, the EOC told us that there were no complaints from the hearing impaired in regards to the ferry.

4.6 Interchanges

An issue that was brought up at the EOC was the fact that the transportation planners have not accounted for the full journey of a disabled user. It is quite difficult for a disabled person to get off of the MTR and have to walk a long distance to try to find a bus stop to reach their final destination. When MTR stations were built, the buses that would stop in that area, which are called the feeders to the MTR, were taken away. The transportation planners assumed that since there was an MTR station there, they did not need all the buses stopping in the same location. The KMB, however, informed us that many MTR entrances/exits are on small side streets which the buses cannot access. They also told us that, if at all possible, the bus stops are placed as close as physically possible to MTR stations. It was apparent the EOC believed that transportation planners need to consider accessibility for the elderly and disabled more carefully. Specifically, issues such as these should be addressed at the Working Group meetings, which

show that there should be more cooperation and communication between transportation companies and the disabled public.

The other main issue is the fact that there are not enough signs informing the disabled users which stations are accessible to them. There are already many signs in place informing users of where the closest MTR station is and generally, there are signs directly above the station entrances equipped with lifts. However, there are no signs along the streets informing a disabled user, especially a wheelchair user, where certain entrances to MTR stations are accessible to them.

4.7 Cost & Benefits of Accessibility for the Elderly and Disabled

After analysing the systems and facilities, it is important to take the costs and benefits of these accessories into account when making recommendations. The costs and benefits of providing modes of access for the elderly and disabled in the public transportation systems were obtained mostly from the transportation operators themselves and their annual reports, if provided. The elderly in Hong Kong (65 and over) can travel at half fare which is applicable for all modes of transportation. Although, this is not required by the government, a reduced fare rate is not granted for someone who is disabled. When we questioned the EOC about why there was not a reduced fare rate for those who are disabled, it was explained that it would be difficult to establish if a person was actually disabled and in need of the reduced fare or not. This problem is partly due to the definition of a disabled person. Since the DDO is non-discriminatory, its definition covers all types of disabilities. The main reason why transportation companies do not offer reduced fare rates is because people could claim to be disabled and/or fit into the definition since it is so broad.

The Transport Department's budgeted expenditures for transportation services for disabled persons are rather low compared to that of other programmes. As you can see in Figure 2, the money used towards people with disabilities is HK$28 million. This entire sum goes towards the Hong Kong Society for Rehabilitation, which runs and operates the Rehabus and Easy-Access Systems. This subsidy covers 80% of the Society's expenses; the remaining 20% comes from fares. As confirmed by the Society, the supply for the Rehabus is not meeting the demand. As stated in Chapter 2, 10,000 passenger trips are missed per month, or approximately 120,000 per year. This is a significant number of people that have yet to be fully considered by the Transport Department and the transportation operators.

The Rehabus and the Easy Access bus can be expensive for its passengers because they do not offer any reduced rates since they only serve the elderly and disabled. Also, on another note, the Rehabus was started as a result of the MTR donating a large sum of money to start the service in order to keep from providing the accessibility standards that are in place today. According to the EOC, when it pushes the MTR for more accessibility features, the MTR uses the Rehabus as a defense so they will not have to spend more on accessibility.

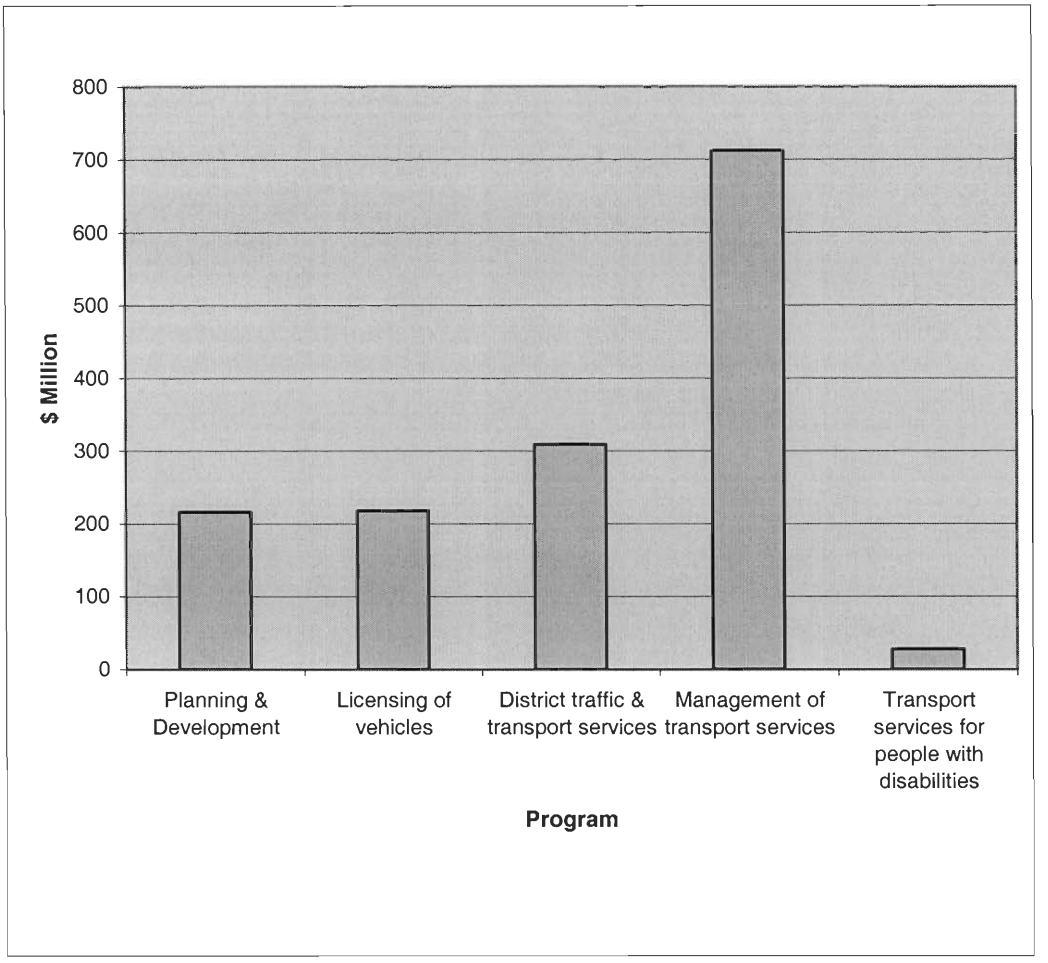


Figure 2. Transport Department expenditure 2000-2001

Although the transport operators only give some people reduced fares, they have budgets for updating or installing new facilities for disabled persons. According to NWFB, outfitting or refurbishing a bus requires 10% the cost of a new bus. A new bus is approximately HK$2 million thus the refurbishment is approximately around HK$200,000. The KMB reported that a new bus costs HK$2.5-3 million, and retrofitting costs around 15% of the total price. However, all new buses are already outfitted with accessibility features that an elderly or disabled person would need. These accessibility features account for 15% of the cost of a new bus. On the other hand, it is more expensive for the MTR to provide accessibility for the elderly and disabled. For example, a two-storey underground extension lift on a busy road is around

HK$14-20 million. A two-storey aboveground extension lift on a busy road is approximately HK$4-5 million. These costs are high because the MTR must purchase the land on which they build on. The complexity (and hence cost) depends on location and obviously the amount of underground work on the structures and utilities.

In Hong Kong, there are approximately 400,000 people that have hearing, visual, or walking impairments. If all these people were to travel in one day and were offered a reduced fare, then we can make a few calculations. For the buses, assuming that round trip costs around HK $8.00, then the total profit would be around HK$3.2 million. As for the MTR, presuming that a round trip costs HK$12.00, then the total profit would be approximately HK$4.8 million. Now a reduced fare of 50% would mean that the bus companies combined would lose around HK$1.6 million a day and the MTR approximately HK$2.4 million with 6 million people travelling each day. It is estimated that total, bus companies transport about 40% of the commuters each day, therefore 2.4 million people use the bus. Thus they would make approximately HK$19.2 million a day. The MTR carries approximately 30% of the daily commuters, so it would be about 1.8 million people; around HK$21.6 million a day. Nevertheless, this is only a fraction of what the companies earn in a day.

In all, costs to transportation operators for providing accessibility for those who are elderly or disabled are generally high. However, the profits of most companies are large enough so that these costs are not a major issue. Since there are no regulations in Hong Kong on what must be provided for the elderly and disabled, companies provide accessibility to appease the current demands of the disabled users. In addition, the accommodations are made for reasons of good publicity. This way, the transportation companies hope to keep standard government

regulations non-existent. Overall, it seems that the transportation companies generally spend adequate amounts of money on accessibility, especially since a law does not require them to.

4.8 How Hong Kong Stands Internationally

Hong Kong's transportation systems and facilities are in fact found to be comparable to those used internationally. Common features of accessibility that are found in each city and in Hong Kong, there are also significant differences (Table 4). They will aid us in making recommendations for improving accessibility in Hong Kong's public transportation systems. There are programmes and facilities in these other cities that have demonstrated to be successful, and could possibly be implemented in Hong Kong's system. Although the cities we chose are in ways better than Hong Kong systems and facilities, Table 4 shows that Hong Kong is in general as advanced as similar cities around the world.

Feature	Hong Kong	London	New York City	San Francisco	Mexico City	Zurich
Braille plaques	X	X	X	X	X	X
Tactile guide paths	X	X	X	X	X	X
Ramps	X	X	X	X	X	X
Induction loops	X	X	X	X		X
Low floor buses	X	X	X	X		X
Lifts (elevators)	X	X	X	X	X	X
Stair lifts	X	X	X	X	X	X
Metal oblongs						X
Escalator detection	X	X	X	X		
Fully accessible buses				X	X	
Fully accessible stations		X			X	
Training programme			X			

Table 4. Features around the world

As stated in Chapter 2, New York City offers a training programme for people with disabilities. Hong Kong, however, does not offer such a programme, with the exception that the Hong Kong Society for the Blind provides an Orientation & Mobility (O & M) programme. The

O & M programme teaches a person to use the facilities of public transportation to the best of their ability. In New York, it has been the case to motivate people with disabilities, and might also be applicable in Hong Kong, in a much larger scale.

4.9 Summary

Our findings highlighted some concerns which we would like to recap.

- Education and public awareness seem to be lacking, as our interviewees have stressed that the general public is often impatient and intimidating.
- Timetables have not been established because the HKSAR government have not been inclined towards obligating transportation companies to provide means of accessibility in a timely fashion.
- It is stipulated that the majority of the buses in HKSAR will not be fully accessible for the hearing, visually, and walking impaired until 2015.
- There are no street signs informing disabled users which entrances/exits to MTR or KCR stations are accessible.
- Organisations representing people with disabilities have had conflicting views on the timeliness to which means of accessibility are provided.
- Half fares are not offered for people with disabilities, only to elderly persons ages 65 years or older.
- Orientation & Mobility programmes are offered by the organisations rather than by the government or the transportation operators.

Chapter 5. Conclusions and Recommendations

We concluded that Hong Kong's public transportation system in general has taken steps to adequately service the elderly and disabled population. Ideally, every convenience should be added immediately, but money and space are major factors that must always be considered. Within the scope of this project, we talked to people with disabilities, organisations that represent these people, transportation operators, government officials, and we have consulted the DDO. After having studied what steps have been implemented around the world and in Hong Kong, we concluded that Hong Kong is in fact a moderately accessible city.

Our research has led us to propose a variety of recommendations for improved accessibility for the elderly and disabled. In general, the disabled who rely on public transportation have a minimal income; reduced fares would encourage the disabled to travel more as it would become more affordable. Another recommendation should be timetables to have all transportation companies provide the necessary and appropriate means of accessibility perhaps corporately, but nevertheless a commitment. Also, an Orientation & Mobility Programme would be a good measure to employ because this would encourage the elderly and disabled to use the system, to avoid being isolated, and to be aware of what has been provided. We also found that the interchanges between systems can be improved through an increased number of informative signs. Another interchange problem that we believe needs to be improved is the feeder bus service between residential areas and MTR and KCR stations. Public light buses are not accessible thus a fully accessible bus service is needed for these areas. Improving these provisions would make travelling to an MTR or KCR station more efficient and appealing to an elderly or disabled user.

Our results showed that the MTR is one of the most accessible means of transportation in Hong Kong. We urge the MTR to continue to strive for better accessibility through its ongoing efforts to listen to the voice of the organisations. The MTR should install additional stair lifts instead of wheelchair aids because stair lifts are much easier to control. These stair lifts are psychologically much easier on the user as well; the wheelchair aid is popularly known as the "Monster" for attracting much undesired attention. Also, Braille maps should be placed in all stations so that the visually impaired can be knowledgeable of the layout of the station. Audible Add Value Machines, if the technology is available, should be installed so that the visually impaired passengers can easily keep track of the amount of money remaining on their Octopus Card. In addition, the MTR should address the problem of platform gaps. We recommend that the MTR consider the measure taken by New York City's metro, which has installed gap-reducing platform plates to diminish the size of the gap. Additionally, consideration should be given to placing rubber ledges at the designated wheelchair entrances onto the train car to keep costs down.

Overall, Hong Kong's general public is seen as being unsympathetic; people have made rude comments towards the elderly and disabled. It is thus very important that the MTR and other transportation systems continue to educate the disabled users and the general public about all of the facilities provided. Currently, there are numerous posters in every station reminding people to be mindful of the needs of the elderly. A similar measure should be taken for the disabled.

The KCR has efficiently demonstrated efforts to provide facilities and services for the elderly and disabled. Aside from having provided audio devices, maps, and guide paths, the KCR should also address the problem of the platform gap. Currently, gangplanks are used, but like the

MTR, the KCR should also consider implementing gap-reducing platform plates. In theory, this measure would be more feasible for the KCR because the problem gap has been identified at only three out of the 13 stations. In addition, we recommend that the KCR install audible Add Value Machines for visually impaired users.

The bus companies are in need of substantially greater improvements, since they were generally rated as a more intimidating mode of transportation. For all three major bus companies - KMB, Citybus, and NWFB - powered access ramps should be installed instead of manual ramps. Powered ramps would allow buses to continue their journey with shorter interruptions and they attract less attention than the conventional manual ramp. Our findings also demonstrated that the available wheelchair space in buses is too small for a powered wheelchair; often passengers in a powered wheelchair cannot accommodate themselves easily and can be targets of rude remarks from other passengers.

There are other ideas that each individual bus company should take into consideration. For instance, the NWFB should look into installing display screens inside all of its buses. KMB has the most buses with the display screen option, however only 41% of their buses have it. In general, all three bus companies should install these screens in every bus. Citybus should improve the availability of its information, particularly on its website. Unlike the KMB and NWFB, Citybus has not provided any information regarding its services for the elderly and disabled, or even in general, perhaps because of its small fraction of accessible buses, and should strive to improve this. Therefore, we feel that each bus company should develop a timeline to ensure that each of their buses will be fully accessible by 2010. This will allow for all buses to be fully accessible five years before the life expectancy date of 2015. Newer buses can replace them when the costs are rational for the companies. Even though a cost issue can be argued to

counteract our recommendation, the population is growing with the elderly and disabled community rising.

The ferries and the taxis are modes of transportation that require small improvements. Taxis should have a talking meter installed, primarily in Cantonese, so that visually impaired riders can keep track of the price of the trip. The ferries should outfit their facilities with colour contrasting features and improved lighting for the visually impaired. These simple improvements would make the ferries and taxis more appealing for the elderly and disabled, thus improving use and elderly and disabled integration.

Our conclusions are all feasible in some way and have supporting evidence to reinforce the recommendations. Another large aspect to concluding our findings is our personal opinion as tourists using the public transportation systems. We feel that Hong Kong's public transportation is above international standards. There are possible improvements to be made but the ability for an elderly and disabled user to travel to most parts of Hong Kong is possible with some barriers. We feel that the companies are trying to achieve a "happy medium" with the users, the government, and the general public. Continuous improvements in accessibility are being made in the railways, buses, taxis, and ferries to make travel more efficient for all. Naturally, over time, these will help the elderly and disabled integrate and become more independent in Hong Kong's society.

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Appendix A. Civic Exchange

Civic Exchange was founded in October of 2000 by Christine Loh and Lisa Hopkinson. It was originally based out of home offices but they later rented out mail services and meeting space from the up-market The Executive Centre located at the Cheung Jong Centre. By March 2001, the organisation needed a facility of its own to present a reasonable, business oriented, thinking work space for its network of people, student interns, and volunteers. A space was found in the Hoseinee House, room 601 where, today Civic Exchange resides overlooking the Central Police Station.

When Ms. Loh and Ms. Hopkinson founded Civic Exchange, they intended for it to be a "Hong Kong-based public policy think tank .... registered as a charity in Hong Kong. Civic Exchange's mission is to: (1) Promote civic education amongst members of the community and for such purpose to conduct research and publicise the results so as to provide objective and balanced information to the public concerning economic, social and environmental issues; and (2) Undertake research on development of economic, social and political policies and practices to help shape the breadth and depth of public policy debate and so to provide well-founded and reasoned argument on the issues identified above" (Civic Exchange 2002). Today Civic Exchange has made a recognisable name for itself in the Hong Kong community. It has been invited to serve as a consulting firm for some large organisations which was not originally planned but has helped increase funds to generate fresh intellectual capital. Civic Exchange's philosophy is the ideas of intellectual capital and its inner workings.

"Every organisation needs a business concept. Civic Exchange's concept is to create a think tank that can add intellectual capital using cooperative structure." Meaning the goal of Civic Exchange is to meet social needs using research and networking people to achieve these common goals through an enterprise structure. The network is a growing combination of physical connections and virtual workers who can think and collaborate to accomplish goals to advance the social needs of Hong Kong individually and collectively.

Appendix B. What is an IQP and How Does Our Project Qualify as an IQP?

An IQP is one of the three major projects a WPI student must complete in order to graduate. This project is usually completed in a student's junior year and is the equivalent of 3 courses. As defined on the WPI website "The IQP challenges students to identify, investigate, and report on a topic examining how science or technology interacts with societal structures and values. The objective of the IQP is to enable WPI graduates to understand, as citizens and as professionals, how their careers will affect the larger society of which they are a part."

There are a few reasons why our project is considered to be an IQP. The main reason comes directly from WPI's definition of an IQP. We have to examine and research the transportation systems in Hong Kong for elderly and disabled accessibility. This is a major part of Hong Kong's technology and its society. The public transportation is one of the main ways to get around in Hong Kong. For this reason, it needs to accommodate all of its citizens, which it does not fully do. The elderly and disabled cannot take full use of some of the modes of transportation in this society, which is why this project needs to be done.

We will be working with the Civic Exchange in doing our research in Hong Kong. This will help us to learn how to work with people from all different types of backgrounds and cultures. This project will help prepare us for our careers in the future because you never know who you may be working with. We will learn how to work with others while carrying out a major project that affects the society of Hong Kong.

Lastly, we need to realize how technology affects society. Most engineers will eventually improve or design something that will affect people in society. Our project will eventually be improving some of the technological aspects of Hong Kong to better its society. These improvements will affect a lot of Hong Kong's society, hopefully for the better. Through doing this IQP we will gain knowledge on what it will be like to be a working engineer in the real world.

Appendix C. Glossary

ADA	American with Disabilities Act, United States
Designated entrance	An entrance or entrances to a station specifically designed for use by people with disabilities
DDO	Disability Discrimination Ordinance of 1995, Hong Kong
DPTAC	Disabled Persons Transport Advisory Committee, United Kingdom
Drop off area	A portion of the kerb dedicated for vehicles dropping-off people with disabilities and parking by Rehabus vehicles
Hearing impaired	Persons with varying degrees of difficulty in hearing
New Works	New lines or railway extensions including stations, trains and depots
Stair lift	A mechanical platform to provide access for level changes at fixed staircases
Step-free access	The barrier-free route or routes provided for the mobility impaired and the visually impaired.
Tactile guide path	An access route for the visually impaired delineated by floor tactile tiles
Urban lines	The railway line that include Island Line, Kwun Tong Line, Tsuen Wan Line and Yseung Kwan O Line
Visually impaired	People with varying degrees of difficulty in seeing
Walking impaired	Persons with varying degrees of difficulty in bodily movement. Apart from wheelchair users, this also includes the elderly, infirm, temporarily handicapped

Appendix D. Membership of the Working Group

Government Departments
Health, Welfare and Food Bureau
Environment, Transport and Works Bureau
Transport Department

Non-government Organisations
Alliance of Patients' Mutual Help Organisations
Direction Association for the Handicapped
Fu Hong Society
Hong Kong Association of the Deaf
Hong Kong Blind Union
Hong Kong Federation of Handicapped Youth
Hong Kong Rehabilitation Power
Hong Kong Society for the Deaf
New Life Psychiatric Rehabilitation Association
Rehabilitation Alliance Hong Kong
Retina Hong Kong
The Hong Kong Council of Social Service
The Hong Kong Society for Rehabilitation

Technical Advisor
Environmental Advisory Service

Public Transport Operators
Citybus Limited
G.M.B. Maxicab Operators General Association Ltd.
Hong Kong & Kowloon Ferry Ltd.
Hong Kong Tramways Ltd.
Kowloon-Canton Railway Corporation
Long Win Bus Ltd.
MTR Corporation Ltd.
New Lantao Bus Company (1973) Ltd.
New World First Bus Services Ltd.
New World First Ferry Services Ltd.
The Kowloon Motor Bus Company (1933) Ltd.
The Star Ferry Company Ltd.

Appendix E. Checklist

Date: Mode of Transport: Facility:

Ramps	☐		
Door Widths	☐		
Gaps	☐		
Handrails	☐		
Restrooms	☐		
Grooves on ramps	☐		
Guidance strips	☐		
Warning strips	☐		
Curbs with ramps	☐		
Lifts	☐		
Specific seating	☐		
Space provided	☐		
Signs	☐		
Large Print Signs	☐		
Sound/Automation	☐		
Assistance available	☐		
Well Lit	☐		
Colour Coded Signs	☐		
Braille	☐	_____	
Visual aids	☐	Brochures	☐
Kneeling Bus	☐	Other	☐

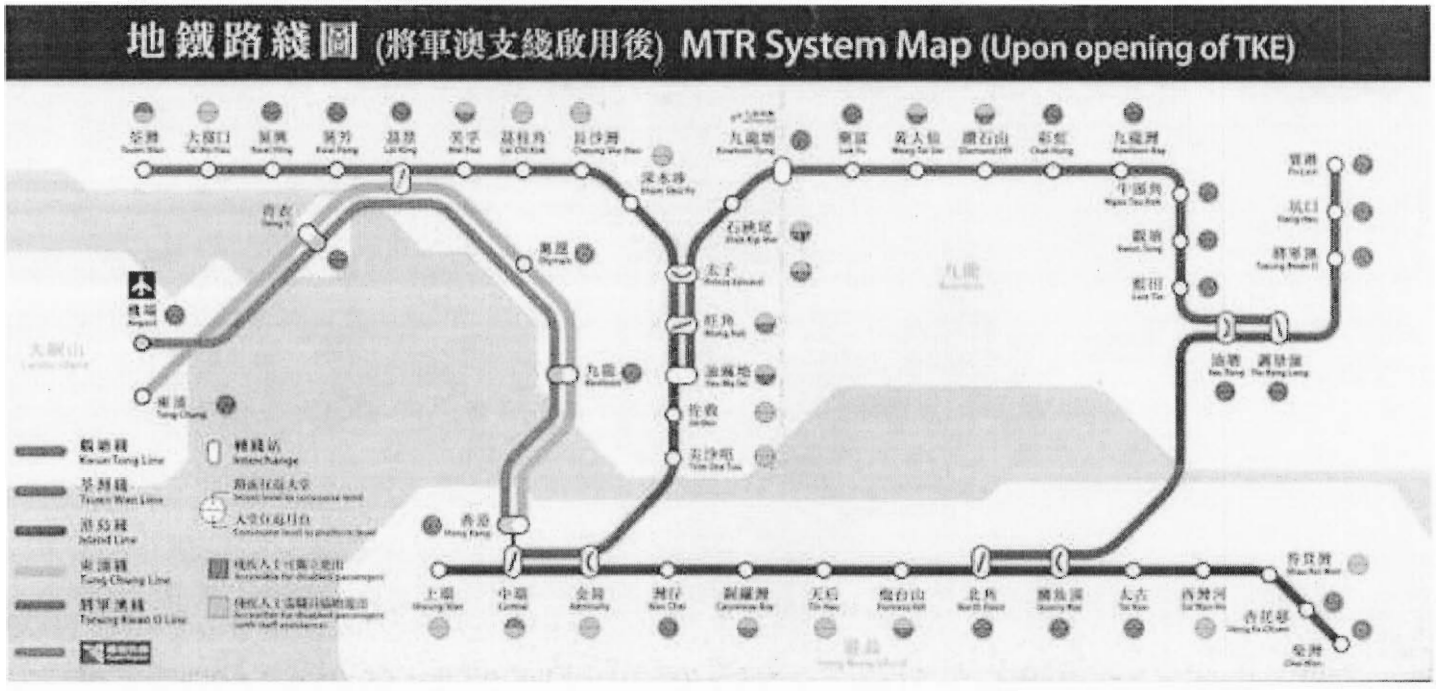
Appendix F. Americans with Disabilities Act

The Americans with Disabilities Act (ADA) was first established by the United States legislation in 1990. The purpose of the ADA is to prohibit discrimination on the basis of disability by public accommodations and requires places of public accommodation and commercial facilities to be designed, constructed, and altered in compliance with the accessibility standards established by this part (ADA, Subpart A, Sec. 36.101).

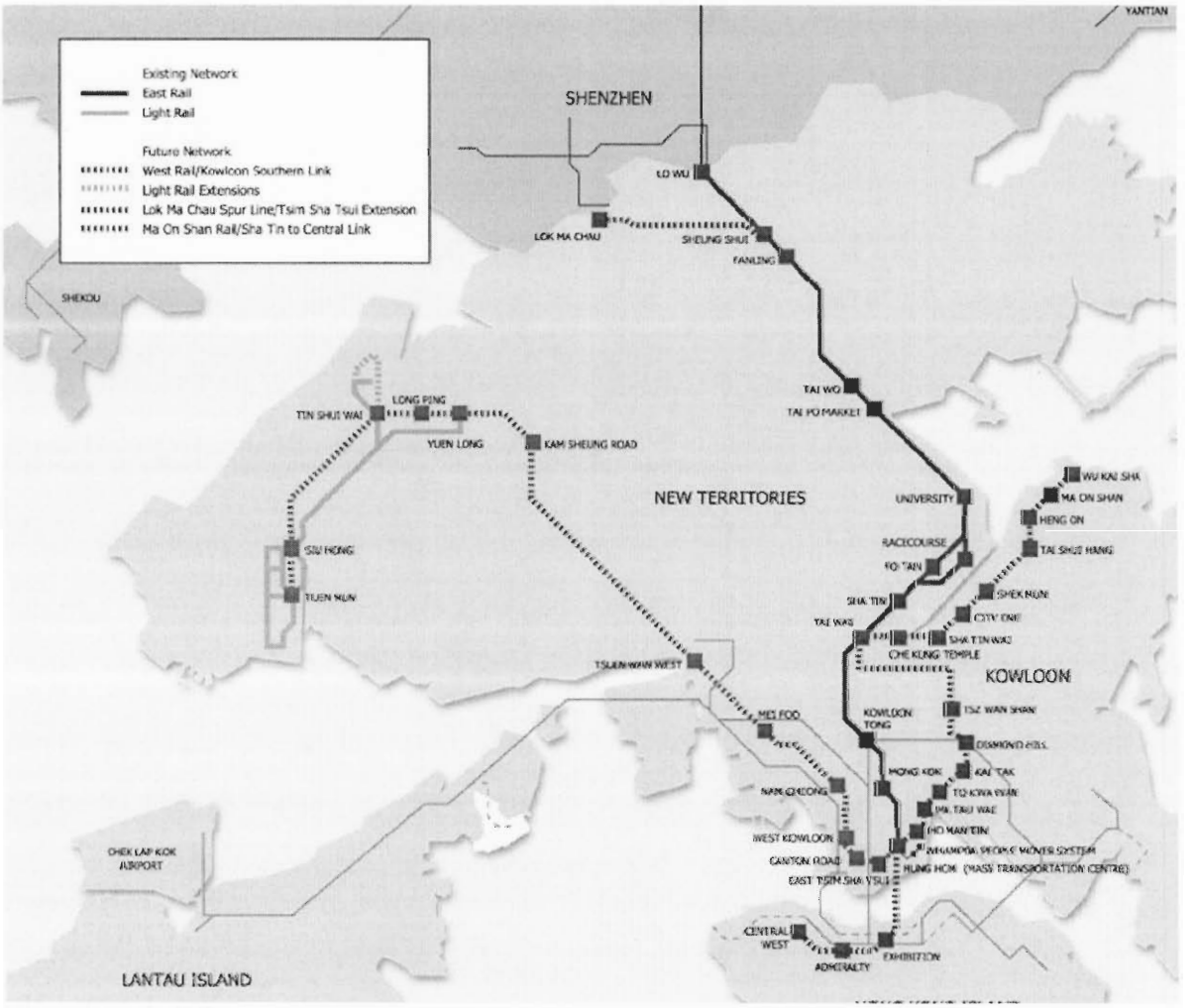
The ADA specifically documents the United States standards for all public accommodations and commercial facilities. All measurements must be to specification, including protruding objects, ground and floor surfaces, curb ramps, ramps, stairs, elevators, platform lifts (wheelchair lifts), entrances, toilet stalls, lavatories and mirrors, handrails, grab bars, controls and operating mechanisms, alarms, detectable warnings, and signage. The act also protects users in the case of a public place not being compliant with the national standards.

This document requires all facilities to be compliant with the minimum standards present and any new construction to be regulated by the newer national standards. The act also specifically states that it does not overrule any local, state, or federal laws and regulations which hold equivalent or greater protection for disabilities. The act defines all forms of a disability, public accommodation, threat, facility, punishment, legal action, and eligibility as a barrier to the disabled. It defines the types of discrimination against equality, i.e. denial of participation, participation in unequal benefit, and separate benefit, and how each of these could be enforced through the ADA's regulations.

Appendix G. MTR Station Map



Appendix H. KCR Station Map



Appendix I. Summary of the Interview with the MTR

The visit began with a briefing of the facilities at Shek Kip Mei Station by Tam Pui Ming, Assistant Operations Support Manager. He demonstrated various accessories in the station. This station was visited because it is one of the oldest stations on the MTR and also used as a test site for newer innovations in elderly and disabled accessibility.

Following the station visit, we returned to the corporate headquarters in Kowloon Bay. The meeting was run by Mr. T K Lai, Building and Architectural Services Manager. He presented a brief presentation regarding MTR's corporate policy and accessibility for the elderly and disabled. Mr. Lai showed us the design standards manual but we were not able to obtain a copy due to economic liability.

The company within the last five years started making drastic improvements in social concerns and millions have been spent. It is still hard for the company to improve the older stations due to extensive costs and overwhelming construction. Every six months the company has communication meetings with disabled groups. Also, they meet in the Working Group meetings for the Transport Department every four months. Mr. Lai specifically mentioned that he thinks the meeting with the Transport Department is "a waste of time" because the meetings are not utilised for their overall goal but rather for specific problems that individual users have with the systems. Also, he mentioned the views of too many groups, i.e. CEOs, disabled users, elderly users, managers, are represented which makes these meetings less efficient. One thing the MTR does to provide users with up to date information is by sending monthly emails to them regarding new implemented accessories, possible redirections, construction, or other issues that could effect the travellers' daily life.

The company follows Japanese, Australian, and British standards, however they will not be the first to implement new technology due to unexplained costs and shareholders views of the company's image. "The MTR will not be a guinea pig for new technology". Also, when Mr. Lai was asked regarding communication with the KCR, he mentioned that the KCR's design manual is completely copied from the MTR's. Mr. Lai thought the KCR had implemented some new ideas that were very good and more advanced but still in testing so the MTR has not implemented it.

Appendix J. Summary of Interview with the KCR

This meeting was conducted by Wong Wing Fai (Wilson), operations project officer for the Kowloon-Canton Railway Corporation. The meeting commenced at KCRC East Rail Division, KCRC house, No. 9 Lok King Street, Fo Tan, Sha Tin, New Territories, Hong Kong at 9:30 a.m. The entire Civic Exchange #1 group was present. The itinerary and content of the visit is presented below.

Wilson started the meeting by giving a brief PowerPoint presentation on the current features of accessibility of the KCRC system. The company is striving to achieve every possible aspect to help make their system accessible to the elderly and disabled. The only drawbacks they have received are concerning projects that would require more than retrofitting, such as rebuilding the platform edges so that gaps are reduced. Every other project is either in progress or scheduled to be implemented in the next 10 years. The KCRC also attends The Working Group every 4 months to discuss the concerns and requests of the elderly and disabled community, the other public transportation companies, and public organisations. Wilson was asked if the KCRC followed any government or other regulations when retrofitting and refurbishing the stations, trains, and interchanges and he responded saying the company follows the regulations encouraged by the government associations, disabled societies, and the other systems of Hong Kong. He also mentioned that elderly passengers receive a half price fare but disabled passengers have not received any benefit. The government is working with the systems to try and employ this idea.

Wilson took the CE #1 group to Fo Tan station to review the actual facilities provided and ask further questions. Wilson presented the system for three disabilities, walking impaired, hearing impaired, and visually impaired. Then the group traveled to University Station to view the similar facilities and witness first hand the use of the new gangplanks implemented at Mong Kok, University, and Kowloon Tong stations for the wider gaps. Wilson concluded stating that the company is always looking for ways to appeal to the elderly and disabled and any recommendations or concerns from the group would be greatly appreciated at any time during our stay in Hong Kong.

Appendix K. Summary of Interview with the KMB

We first met Ho Kit Ying, Senior Manager of Bus Maintenance, who gave us a synopsis about KMB such as the range of its services, the zones of service, the number of depots and the amount of buses and routes that are overseen by the company. We were given a demonstration of what is done to a bus as it comes back from finishing the route, such as refueling, dealing with the coinbox, and giving the bus a "shower." Also mentioned were the inspections performed on a bus. For example, a bus is inspected yearly, while on the tenth year a "Certificate of Fitness" is performed. Normally, the bus passes the inspection, and then on the 14th year it is inspected again. A bus is given another inspection at its 17th year, therefore the life expectancy of a bus is 17 years.

We then talked to So Hing Shun, Assistant Principal Engineer (Operations), about the features of accessibility inside buses. The KMB has introduced super low floor kneeling buses equipped with a power ramp. However, not all the accessible buses have power ramps as power ramps are susceptible to malfunctioning, thus a company preference for manual ramps. For the walking impaired, the non-skid gangway was reported to be slightly wider than in older buses. The bell pushes have been placed at different levels inside buses. For the visually impaired, there are large destination and route number display boards on the front of each bus. The buses also have guiding handrails inside the bus compartment with the Octopus card machine directly on it. Also, inside the buses are colour contrasting handrails and step edges.

The visit concluded with additional company information such as the guide dogs are now allowed onto the bus, 300 new buses are purchased yearly, and that due to new government regulations the width of a bus was increased from 2.50 metres to 2.55 metres. Lastly, they demonstrated the facilities inside the bus.

Appendix L. Summary of Interview with New World First Bus

The New World First Bus Company met with us in the afternoon of January 15, 2003. The presentation and tour consisted of two presentations followed by question and answer time. We were then shown a New World First Bus in their bus depot. In attendance were the New World First Bus Officials, Simon Ng, and the Officials from the Hong Kong Transport Department.

Ms. Elaine Chan, Public Affairs Manager, gave the first presentation. The presentation was basic background on the company and the basics behind their refurbishing the buses when they took over the China Motor Bus Company. Graham Russell, Chief Engineer, gave the second presentation. His presentation focused on the accessibility the company provides to those who are elderly and disabled.

Basic background information was helpful for our background part of the project. It was reported that in 2002 the average amount was 530,000 passengers a day. Some key information was that all the buses meet DTPAC standards. Some of the examples of the accessibility they explained to us were that the company has destination displays, manual ramps, support and warning bells, colour contrasts throughout the entire bus, warning lights, step edges, wheelchair spaces, Braille plates, and super low floor buses. One of the most interesting points Russell explained was that part of the Bus Captain's training is how to offer assistance to those who are disabled. Since the New Year has just started, the company had the most recent figures of 2002.

The New World First Bus sponsors free ride day, where anyone who is disabled can ride for free that day, half price to persons 60 and over, and other various charity events. The company is going to test GPS in a certain route as a possible implementation for the future of all the buses.

After the presentations, they took us down to their bus depot where we were able to examine one of their buses first hand. They demonstrated how a manual ramp would operate and how a wheelchair would board the bus (Ron was in a wheelchair). They also demonstrated how the bus lowers it self so if someone was not able to step into the bus, the bus would lower to them. Afterwards, an entire bus took just the 4 of us to the MTR station to conclude our visit.

Appendix M. Summary of Interview with Rehabus

We first met with Rex, Transport Manager of Rehabus, talking a little bit about the history of Rehabus and how it was started.

One main thing he went over that we had not found in our research was the Easy-Access Bus, which is an Elderly Transport Service (ETS) that has just started up over the past year. It is a membership only service, and persons must be 60 years of age or older to use this service. There are currently 24 of these buses, and they are painted bright colours for a more lively form of transportation, which is what the elderly wanted. This new system is also wheelchair accessible, but its intent is to provide services for only the elderly.

After his short presentation, he took us out side along with his assistant, Ursula, to show us a Rehabus and an Easy-Access Bus. They showed us how to use the lift, which is in the back of each bus. He demonstrated that you roll the wheelchair onto the lift, and then it lifts you to the height of the entrance of the bus and then rolled into the bus by an assistant. Ron and Joe actually got the opportunity to get in a wheelchair and go through the whole process of being loaded onto the Rehabus and being fastened into place. It was a bit time consuming, but safety is the number one issue, and all needs seemed to be taken into consideration. The roof of the Rehabus is made stronger than regular Public Light Buses in case of a roll over because those who cannot release themselves would be in greater danger in an accident.

We then looked at the Easy-Access bus, which is a bit bigger and roomier, and has the same wheelchair system as the Rehabus. The isles are wider so that the elderly can move freely down the isle. The new buses all have the wheelchair lift outside of the bus, stored underneath it. The older versions have the lift stored inside the vehicle, which restricted seating and is why it is changed in the newer versions.

We were then brought inside to see how their system works on scheduling bus routes and such. It was a bit confusing, but they all knew what they were doing. The Rehabus service is currently updating their system from paper to computer. The Easy-Access systems started off computer based. This concluded our visit with the Rehabus service. We took a picture in front of a bus, then Rex allowed us to take one of their wheelchairs for a week so we can get a first hand experience with it.

Appendix N. Summary of Interview with the Transport Department

We first met with Cecilia Lai, Senior Transport Officer, who presented "Transport Services and Traffic Facilities for People with Disabilities." The presentation began describing the demographics of Hong Kong, such as the total population being 6,865,000 people as of the year 2000. In addition, the number of visually impaired people was 73,900 (1.1%), with 69,700 (1%) as hearing impaired, and 103,500 (1.5%) as walking impaired. Additionally, the role of the Transport Department was explained to be the sole administrator of the Hong Kong Society for Rehabilitation, which runs and operators the Rehabus and Easy-Access services.

The presentation then individually discussed the accommodations for the visually impaired, hearing impaired, and walking impaired. For the walking impaired, the MTR and KCR was described to have external and internal lifts present at numerous stations, otherwise having wheelchair aids or stair lifts in station entrances where a lift was not present. In MTR stations, there are wide entrance/exit gates. The KCR provides ramps at its Light Rail platforms, and gangplanks at some stations. The bus companies, like the KMB, have implemented wheelchair accessible buses with ramps. As of October 2002, the KMB had 1202 accessible buses out of 4420 (27%), 592 out of 769 (77%) for the NWFB, and 84 out of 957 (9%) for Citybus. The accessible buses have a wheelchair parking space with safety belt. In the ferries, there are accessible call bells, special paths for wheelchair users, and a parking space on the ferry itself.

For the visually impaired, there are tactile guide paths at MTR and KCR stations, warning strips at station platforms, colour contrast grabpoles, a public announcement system of the next stop inside train compartments, and Braille plates on Octopus Add Value Machines. The MTR has platform screen doors and Braille route maps, while the KCR has audible devices at its escalators. The bus companies provide large route number and destination display panels on its buses, and a bus stop announcement feature inside bus compartments. Inside taxis, there is a Braille plaque informing the rider the registration number of the car and the customer service hotline.

For the hearing impaired, there are large LED display panels in MTR stations, Active Line Diagrams inside the train, which is also the same. Induction loops are present in KCR stations, and in some MTR stations.

Within the city, there are dropped kerbs and tactile guide paths. However, not all kerbs and sidewalks are outfitted with these features. There is also an audible device placed at street crossings.

The second presentation "Transport for All" was given by Albert Su, Chief Transport Officer/Planning (Paratransit) of the Ferry and Paratransit Division. The presentation described the governmental initiatives taken to provide accessibility for the disabled. Currently, the Working Group meetings have been established to address the concerns of people with disabilities while also being able to receive feedback from the transportation companies. Additionally, the HKSAR government has a Transport Advisory Committee, panels from the Legislative Council for transport and welfare services, and the Equal Opportunities Commission.

Also discussed in this presentation were the shortcomings that have plagued the efforts to improve accessibility. These have been no clear vision to facilitate the building of a common consensus among stakeholders, and that there has been a mismatch of expectation between all of the concerned parties.

Lastly, the presentation continued with the "Transport for All" plan which consists of five important strategies.

1. To provide better accessible transport services for all, such as have wheelchair accessible taxis be put into service.
2. To provide a better public transport infrastructure and facilities for all
3. To provide better street and pedestrian access for all, such as have electronic audible traffic signals at all street crossings by 2004
4. To provide better planning standards, guidelines, and procedures.
5. To provide a better partnership for actions and results, such as emphasise on the rights of people, and consult other countries such as England and Singapore for possible improvements.

The presentation ended with a brief question & answer session, after which we proceeded with Cecilia and Albert to the Hong Kong Society for Rehabilitation.

Appendix O. Summary of Interview with Equal Opportunities Commission

The meeting with Esther Chan, Senior Equal Opportunities Officer, began at 4:00 PM. We proceeded to describe our project, the goal and the methods that we are carrying out to complete it.

Esther then began to talk about the role of the EOC, and about the powers of the Disabilities Discrimination Ordinance. It came into effect in September of 1996, and it was based off of that of Australia. The DDO, unlike the ADA, has no time table to have transportation companies comply and retrofit the facilities and services. Yet, the DDO offers protection from the discrimination, harassment, and vilification. Discrimination was defined as exclusion from services, harassment as verbal or non-verbal conduct that would make a person with disabilities be offended, and vilification as a means to insight public hatred towards a person or group of people.

The EOC has three branches, Complaint Handling, Advocacy Support, and Public Education. When a complaint is presented, the EOC can only investigate the matter and listen to both sides. The final ruling is actually made by the court, and the ruling is not always guaranteed to be in favor of a person with disabilities. A transportation company can claim a "hardship," either justifiable or unjustifiable. Justifiable would be when an accommodation cannot be provided because of physical or space limitations. Unjustifiable would be that an accommodation can be made, but that has to be enforced by the court.

The EOC with the powers of the DDO can only encourage a company to provide accommodations. If a company is commanded, the fare amount would virtually become an instant issue. For example, the fare could increase, and then a person with no disabilities would complain, and consequently could result in the needs of people with disabilities versus the interest of everyone else.

Overall, the transportation companies could still provide additional services for people with disabilities. One concern has been talking meters in taxis for the visually impaired. It would require more collaboration between the EOC and the Transport Department, and currently, the Transport Department is trying to secure funding to subsidise taxi fare for people with disabilities. Also, a new taxi is being put into service to accommodate the wheelchair bound passengers, this time it should be a more permanent measure, unlike ten years ago when a similar service was considered. The MTR is considerably accessible, better than the KCR, and the buses are somewhat adequate. An important note about buses is that the franchise is done by routes, rather than by areas. In addition, the depreciation of a bus is 17 years, and bus companies can use this to avoid having to purchase any buses or retrofitting the current fleet of buses.

Lastly, there are no foreseen amendments to the DDO, which has a very wide definition for a disability. Yet, the EOC will collaborate with the Transport Department for the "Transport for All" programme, which was actually coined by the EOC, and not the Transport Department.

Appendix P. Summary of Interview with Mr. Fred Leung

Mr. Leung first introduced himself as the Division Head for Rehabilitation of the Hong Kong Society for the Blind. Mr. Leung is visually impaired himself.

Firstly, Mr. Leung described the society's role in the Transport Department's working group committee meetings every 4 months. He mentioned that he thought the meetings were helpful and the Transport Department is improving the structure of the meeting. He also mentioned that the expected cooperation for the MTR is decreasing and the response from the Bus systems is very poor. Mr. Leung then went on to say that his communication with some of the systems is better than others simply because he uses the MTR more than taxis or the ferry.

Mr. Leung then discussed the possible accessories that could be utilised within the systems. For the buses, the largest improvement would be to have voice announcements at each bus stop but this is claimed to be too advanced or difficult with the large number of bus routes through most of the stops. Mr. Leung also mentioned that some of the major cities in Mainland China have had voice announcements for almost 30 years. For the ferries, the accessibility is fair but definitely needs improvement for the visually impaired. For the MTR and KCR, Mr. Leung thought they had very adequate systems and is working with the associations to keep accessibility improving with the users. For the taxis, Mr. Leung said that the society was "sort of promised" to have Braille registration plates in the car. He said that the promise is being achieved through the Transport Departments requirement for license registration of taxi drivers.

Mr. Leung was then asked questions as a personal user. He first responded saying he resides on Hong Kong Island and travels using the MTR everyday. His journey is approximately 1 hour each direction daily. He mainly uses the MTR for all his travel. He mentioned that he had traveled to New York City and thought it was very accessible for the visually impaired. He said the idea of street numbering made public travel very simple. He also mentioned San Francisco's bus system, and the fact that their attempt at automated bus voice announcements was not matured. The technology was slow, inconsistent, and flawed. Mr. Leung said that the MTR had budgeted money to complete a similar system in their Shek Kip Mei Station but the funding was redirected to some other project. He said the Transport Department has a courtesy programme to teach the public how to be courteous to the elderly and disabled. Mr. Leung was asked regarding the KCR's assistance and he said he was assisted 9.5 times out of 10. Lastly, Mr. Leung said that providing everything for everyone is not practical and would run costs too high.

Mr. Leung rated Hong Kong's public transportation a 6 out of 10 (10 = best) for the MTR and KCR; and a 3-4 out of 10 for the buses.

Appendix Q. Summary of Interview with Mrs. Maureen Tam

The interview was conducted with Mrs. Maureen Tam, Division Head of Residential Services of the Hong Kong Society for the Blind (HKSB) on 7 February 2003. She first stated that as the head of residential services, she manages the 4 largest elderly homes in Hong Kong for the aging blind. She mentioned that these services were started in 1971. She then proceeded to talk more specifically about what the aging blind need in accessibility to live and travel using public transportation.

The elderly need handrails to maneuver within buildings and within transportation vehicles. Some of them need wheelchairs because they are so physically disabled. Mrs. Tam said that the HKSB is pushing for more low floor buses in routes near these elderly residential homes. She also mentioned that the buses need talking signs in more of the bus stops. The systems as a whole are not accessible to the aging blind because of poor hearing and no eyesight. She stated that she has not seen initiative from the public transportation companies and that they need more for the aging blind.

Mrs. Tam mentioned that even though some users can go travel on their own, most use an escort service for HK$45 – 55. The government in some cases possibly refunds this service. Mrs. Tam also mentioned that only about 30% leave the homes for recreation but the remaining aging blind stay in because of expenses.

She also stated that the most important aspect that she thinks needs to be addressed is educating the public about caring for the elderly and disabled. She then talked about the companies and what they have implemented. Citybus was the first bus company to provide accessibilities for the elderly and disabled. All the other companies shortly followed. The taxi service is generally too expensive for normal families. The most common complaint regarding the buses is the narrow path. It is too difficult to manoeuvre within the provided space for the wheelchair user. Mrs. Tam said that the Rehabus is a good service but the demand is too high for it to work efficiently. The easy access bus is also very helpful and some of the homes she manages has registered for the service.

Overall Mrs. Maureen Tam gave the public transportation 5-6 rating (10 = best). She said the MTR and KCR were the best systems because of audible devices and more initiative than the bus companies.

Appendix R. Summary of Interview with Mrs. Yip Lai Sin (Cindy)

Mrs. Yip was diagnosed with polio at 6 years old. She has lived in Hong Kong her entire life. She currently resides near Wang Hai Sin. Mrs. Yip expressed that she uses both a manual and a power wheelchair.

Mrs. Yip said that she mainly uses the taxi service in Hong Kong due to its point-to-point service. She said the prices are higher but still affordable since the other forms of transportation are not point-to-point. She mentioned that she uses the Rehabus frequently and the buses are very equipped, probably the best in the city, but the service is slow. It usually takes 3-6 months to schedule appointments. She said she could not rely on the Rehabus for service.

Mrs. Yip then discussed all the systems of Hong Kong. First, she considered the KCR to be the best equipped among the larger systems. The only issue she has ever encountered is the platform gaps. She said that she has not used the new gangplanks but her friends have and they help a lot. The MTR is very similar to the KCR but a large majority of the stations do not have lifts, making it hard to travel to places she wants to go. The robot to take wheelchairs up and down the stairs is called "the monster" among wheelchair users. Mrs. Yip said it attracted too much attention and made her feel very uncomfortable especially psychologically. The MTR also has the platform gap problem. The buses around Hong Kong are more point-to-point than the KCR or MTR but they have ramp and space problems. Most of the buses do not have ramps making a route with ramps harder to find. The manual ramps get stuck so it takes longer for the operator to get them open. Also, the operator will forget to "kneel" the bus so the angle is too steep for the wheelchairs. The designated space for the wheelchair is generally too small, making power wheelchairs hard to maneuver. The wheelchairs sticking out have been mentioned by other passengers, making the wheelchair user uncomfortable. Lastly, the bus area for wheelchairs is used for luggage so the space isn't even available. Mrs. Yip said the taxis are fine except that many operators won't serve to her because she is in a wheelchair.

Mrs. Yip made some comments on what the systems could improve.
KCR: platform gaps made smaller, MTR: platform gaps made smaller, lifts in every station, Buses: all buses should have ramps, power ramps are better (faster) and larger spaces for wheelchairs, Taxis: operators serving to all people, Ferry: the ferry is fine but needs bathrooms on longer trips and maybe designated separate areas for luggage and wheelchair users so luggage does not take the wheelchair spaces.

Mrs. Yip rated Hong Kong's public transportation with a 7 (10 being the best). She can easily travel any day of the week even though it might be tiresome. She said that at least she can go places unlike wheelchair users in other places of the world.

Appendix S. Summary of Interview with Mrs. Mathilda Frommer

Mathilda Frommer has a walking disability and has lived in Hong Kong for 10 years now. She explained to us that when she first got here, she had to learn from trial and error where the accessibility is in Hong Kong and that there was no information available to assist her journey that she knew of.

In an average day, Mrs. Frommer uses public transportation, mainly the buses and MTR and sometimes the trams. However, everyday she must plan out her journey according to her destination and where each accessibility feature is. This means extra time is spent revolving around each feature. For example, at Pacific Place, she uses the escalator, which means an extra 10 minutes of walking for her. Another key point she made was that she cannot travel during rush hour due to the hurried crowds around her. If she is not feeling well enough to travel on a given day, she has to cancel her appointments.

Another interesting note Mrs. Frommer made was how poor people's attitudes towards disabled people are. She said that people are unwilling to give up their seats on such systems as the MTR. Also, she said the ferries are generally good due to the assistance of the staff when she boards. She feels that the Rehabus is not for her since she is not disabled enough. Overall, she still has a good social life.

Her main problem in Hong Kong is the journey in between transportation systems dealing with the amount of stairs. Especially in the Mid-Levels where the escalators only run in one direction at a time, so therefore she sometimes has to plan her day around their schedule.

Possible changes she would like to see is the improvement in people's attitudes towards her and other disabled people. More awareness from the transportation companies about respect and helping those who are disabled should be emphasised. Also, when escalators are built, there should be sets instead of one just running one direction. Overall, she gave public transportation 6 out of 10.

Appendix T. Summary of Interview with Mr. Allan Man

The following responses were received by Mr. Allan Man via electronic mail.
1. Can you please describe your disability?
I am suffered from rheumatoid arthritis, which makes me have difficulties in walking. Though I can walk independently for a short distance, but most of the time I am a wheelchair user.

2. How often do you use public transportation? Can you describe the regular tasks for which you need transportation?
I do not use public transportation very often. And I do not have any regular tasks for which I need public transportation.

I use 'Rehabus' service back and forth from my workplace. Taxi is the public transportation that I used most frequently for social activities. Sometimes I use ferry to cross the harbour.
I seldom use public bus because: 1) not all buses are wheelchair accessible; 2) the bus drivers are not that helpful to assist wheelchair user getting on the bus; 3) the busy traffic conditions deter wheelchair user using the bus service (as wheelchair users need more time to get on the bus, people may complain they have slow down the traffic, and this bring pressure on the wheelchair user).
MTR is not wheelchair friendly because: 1) not all MTR stations have lifts or ramps to let wheelchair user access to the station; 2) MTR always designate a wheelchair entrance for each station, and which is usually the most remote one of that station; 3) MTR staff are not happy with wheelchair user using the MTR at peak hours.

3. Do you face any obstacles when traveling around Hong Kong? If yes, please describe.
The main obstacle for wheelchair users is the kerbs of the pavement.

Hong Kong island is pretty hilly and steep slopes are everywhere, and this is also a natural obstacle for wheelchair users.

4. What changes would you like to see with facilities at stations, bus stops, and with the buses and trains? If carried out, would it increase how often you use public transportation?
I would like to see all public buses are wheelchair accessible. MTR should provide more wheelchair entrances in each station.

But the most important thing is improvement on people attitude. Many people, both staff of transportation companies and ordinary citizens, have not yet accustomed to wheelchair users using the public transportation. (People looked at you strangely in the public transport; the driver gave you a feeling that he felt troublesome to help you entering the bus)

5. What do you think is already adequate and probably does not need to be improved?
I cannot see anything that is already adequate and with no room for improvement. On the contrary, I think HK public transportation, from hardware to staff attitude towards disabled users, in compare with foreign countries, there is a lot of room for improvement.

6. Is there a particular location where you think the facilities are worst?

I cannot think of a particular location where the transportation facilities are worst. But my experience tells me that many 'old' commercial buildings in area like Central, Mongkok, Wanchai have little disabled facilities. Stairs are often built at the front, with no ramps nor wheelchair lifting machines. It seems to me that they have never prepared to let wheelchair users enter the buildings.

7. Have you heard of Rehabus? Do you use it?
I am using the Rehabus service everyday. But the Rehabus service is very inadequate.
It is inadequate because newcomers hardly join the service as it is often fully occupied by the existing disabled users (the population of disabled is getting bigger and bigger, and the Rehabus service just cannot catch up with the growth of disabled population). For the Rehabus dial-a-ride service, one has to book the service several weeks before his/her trip. For the scheduled bus service (the one I am using to go to work), there are only a few bus routes, and they are always fully occupied by the existing users.

8. How does the quality/accessibility of transport services affect your a) desire to get a job; b) desire to do social activities; c) leisure activities; d) rehabilitation; e) general quality of life?
a) feel very frustrated when I find that even if I could get a job, everyday I have to face a lot of hassles before I could arrive my workplace.
b) & c) sometimes for avoiding those transportation hassles, I will choose not to do some unnecessary social activities and leisure activities.
d) In the past when I needed to do rehabilitation, the quality/accessibility of transport services did not hamper my determination to go out, as rehabilitation was important to me.
e) If the quality/accessibility of transport services could be better, my quality of life will definitely be improved, as I will spend more energy on my work or social activities, but not on overcoming the hassles created by the clumsy transportation system.

9. Overall, in your opinion, how easy/difficult is it getting around Hong Kong for you? Can you rate the transportation facilities/systems on a scale of 1-10?
In compare with other cities in the western countries, Hong Kong is less accessible for wheelchair user. I will rate that HK transportation facilities/systems only score 6 out of a 1 to 10 scale.

Appendix U. Summary of Interview with an Anonymous Interviewee

The following responses were received with the help of an interpreter.

1. Can you please describe you disability?

   Walking disability

2. How often do you use public transportation? Can you describe the regular tasks for which you need transportation?

   Uses transportation about twice a week for various activities and also depends if people are willing to bring her places.

3. Do you face any obstacles when traveling around Hong Kong? If yes, please describe.

   Main obstacles are going up or down stairs.

4. What changes would you like to see with facilities at stations, bus stops, and with the buses and trains? If carried out, would it increase how often you use public transportation?

   More seats on the platform should be put into place, more escalators and lifts at the MTR stations, and seats at the bus stops. Yes, she would use public transportation more if these ideas were carried out.

5. What do you think is already adequate and probably does not need to be improved?

   The Airport is the most adequate.

6. Is there a particular location where you think the facilities are the worst?
   At the ferries, getting on and off them are hard.

7. Have you heard of the Rehabus? Do you use it?

   Yes, she has but does not use it.

8. How does the quality/accessibility of transport services affect you're a) desire to get a job; b) desire to do social activities; c) leisure activities; d) rehabilitation; e) general quality of life?

   a) Not applicable.
   b) More convenient transportation= more shopping and able to go out more often.
   c) Same as above.

d) More transportation services or better transportation network would mean better rehabilitation opportunities
e) If transportation was improved, her quality of life would also improve because getting around would relieve some stress and time.

9. Overall, in your opinion, how easy/difficult is it getting around Hong Kong for you? Can you rate the transportation facilities/systems on a scale of 1-10?

   She gave the transportation a 7 because there is no one to assist you if you need help and the environments (attitudes of the people) are not good enough at the stops.

Appendix V. Summary of Interview with the Hong Kong Society for the Deaf

The following responses were received by the Hong Kong Society for the Deaf via electronic mail.

1. Can you please describe your disability?

Hearing impairment.

To many hearing impaired persons (particularly post lingual deaf persons), as affected by hearing difficulty, they rely on sign language, writing or lip reading in communication. But they do not lose their ability to speak, but clear speech is a result of hard and persistent training.

2. How often do you use public transportation? Can you describe the regular tasks for which you need transportation?

Not applicable.

3. Do you face any obstacles when traveling around Hong Kong? If yes, please describe.

Frankly speaking, our hearing impaired friends have no mobility problem in getting in or off transportation. But mostly they have problems when they want to ask for information, or about the route of transportation, or in time of emergency.

a. In Hong Kong, not all buses are equipped with LCD panel showing information of next bus stop. Therefore problems comes, one does not know when to get off or where one is traveling to, hearing impaired persons (those could not use speech in communication) may need to write down the questions and request other passengers for help.

b. Van or public light bus is a vehicle for 14 passengers. It can stop wherever the passenger wants to (but restricted by government's approved area). Passenger has to tell the driver (usually speak aloud) where to stop. Some vans have been equipped with "bell" but most are not equipped with bells. Thus hearing impaired persons need to write down the place first, and show it to drivers or ask others to tell the drivers.

c. To those hearing impaired persons who cannot write, they would experience difficulties in using bus or van.

d. The announcement of emergency in public transportation often depends on the drivers. Drivers may "explain" to passengers when there is a traffic accidents or other emergency. Most announcements are in "speech" or through loud speaker. To hearing impaired persons, they mostly don't understand what is going on and they can only ask other or follow other passengers. Although some transportation systems (subway, railway) are equipped with LCD panel, information of many urgent or special situations are not shown.

4. What changes would you like to see with facilities at stations, bus stops, and with the buses and trains? If carried out, would it increase how often you use public transportation?

Better information system in public transportation is important. Information includes the place of next stop, explanation of common accident or emergency.

5. What do you think is already adequate and probably does not need to be improved?

The LCD panel information at Mass Transit Railway should continue and more emergency information could be added;

The LOOP system for hearing aid user in the enquiry counter of MTR and KCR (Kowloon Canton Railway) is a good practice

6. Is there a particular location where you think the facilities are worst?

NA

7. Have you heard of Rehabus? Do you use it?

NA

8. How does the quality/accessibility of transport services affect your a) desire to get a job; b) desire to do social activities; c) leisure activities; d) rehabilitation; e) general quality of life?

In general, transportation would not hinder the accessibility of hearing impaired persons to a place.

9. Overall, in your opinion, how easy/difficult is it getting around Hong Kong for you? Can you rate the transportation facilities/systems on a scale of 1-10?

NA

Appendix W. Contact Information

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