ACCESSIBILITY IMPROVEMENTS IN TOKYO'S COMMUTER RAILWAYS: THE JAPANESE NATIONAL RAILWAYS TO EAST JAPAN RAILWAYS

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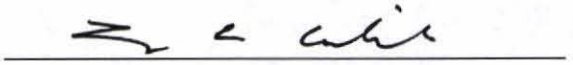

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LIST OF ABBREVIATIONS

2000 Transportation Barrier-Free Law—the Law for Promoting Easily Accessible Public Transportation Infrastructure for the Aged and Disabled (2000)

ADA—Americans with Disabilities Act

Heart Building Law— the Act on Buildings Accessible and Usable by the Elderly and Physically Disabled (2003)

JNR—The Japanese National Railways

JR East—East Japan Railways

JR Group—The Japan Railways Group

MITI—Ministry of International Trade and Industry

MLIT—Ministry of Land, Infrastructure, and Transportation

MNC—Multi-National Corporation

MOT—Ministry of Transportation

TDM—Traffic Demand Management

TOD—Transit Oriented Development

TMG—Tokyo Metropolitan Government

TMR—Tokyo Metropolitan Region (sometimes referred to as the TMA, Tokyo Metropolitan Area)

UD—Universal Design

CHAPTER 1
INTRODUCTION

In November 2000, Japanese policymakers passed the 2000 Transportation Barrier-Free Law, a law designed to create a more equal society through the improved accessibility of the built environment. The 30 year path to this law was fraught with changing cultural values, demographic shifts, and domestic pressures stemming from international movements. In response to these pressures, the government realized that the urban transportation network ostensibly designed to provide mobility was in fact a major obstacle. Improving the accessibility of the transportation infrastructure was the key to creating a society that treated all individuals equally regardless of age or health. This thesis asks how the law arose, how private industry and the state differed in their approach to the law, and how railway travel is changing today for persons with mobility handicaps and the aged in Tokyo. To answer these questions, this thesis reviews legal and policy changes during the two decades since the government first attempted to improve accessibility, as shown in Figure 1. The case includes a history of conflict between the interests of private industry and the interests of the government that preceded the current forms of accessibility regulation and funding in Tokyo's commuter rail system. Finally, the study ends with my own observations of the ways the 2000 Transportation Barrier-Free Law is moving Japan closer to its goals.

New Accessibility Needs in Japan

Nearly twenty-five years ago the Japanese government recognized that Japan's demographic makeup was radically changing (Tokyo Metropolitan Government, 1983). The birthrate was already dropping rapidly while the number of those approaching retirement age was growing. This year, 2007, marks the beginning of the retirement rush. In fact, 2005 was the first year since the turn of the twentieth century that the population of Japan shrank (Statistics Bureau, 2007). While this contraction was still relatively small, the emerging population structure is becoming an upside down pyramid (see Figures 2 and 3). This aging and shrinking society is placing a financial burden on the national healthcare, welfare, and pension systems. It is also causing a major headache for Japanese public policy makers as they strive to mitigate emerging economic impacts stemming from these changes. Concerns over the work force have created a real need to expand the boundaries of the traditional Japanese work force—an able[1], male dominated arena. The government is focusing primarily on two groups to meet future employment demands—the retired population and women (Rebick, 2005).

Another social change over the past several decades has been a growing interest in the rights and social position of the handicapped (Akiyama, 2001 and Nitta, 2005). The government has taken up the charge of the handicapped rights movement as one means to solve looming employment problems from the shrinking workforce. Thus the handicapped population has become a third source of employees to solve the problem.

[1] Throughout this thesis I will refer to non-disabled persons as able. While this term is inaccurate in a variety of ways, it is necessary to differentiate between those with and without recognized physical, mental, or emotional handicaps, for purposes of understanding the needs of different populations. It in no way will be used to distinguish age or gender.

As disabilities are blind to gender and age[2], this third group overlaps and expands the main focus groups of the employment expansion, essentially bringing all members of society into the mix.

Policy makers are actively encouraging a higher level of labor force participation through incentives and penalties. General laws, such as equal employment acts, create opportunities for all workers in Japan, thus improving the social environment.[3] The "Promotion of Independence and Social Participation for Persons with Disabilities Law" (2006) is the culmination of public policy in terms of promoting a specific group. Yet obstacles to full integration still remain in the physical environment. In response to this set of problems, both private industry and the public sector have made great strides over the past two decades. As the government responds to the social, economic, and political changes created by demographic change, they are also building a new relationship between the citizenry and their built environment—a space in which all Japanese citizens, regardless of physical, emotional, or mental health can participate equally.

To improve accessibility the barriers in the physical environment of the transportation infrastructure need to be overcome. Transportation is more than just the movement of people and goods; it is a network of methods involving public welfare, education, and industry, as well as policy regulation and profit (Kamioka, 2003). Thus mass transit even in well developed Tokyo is facing a new era of accessibility challenges. Mass transit is the foundation of transportation in Tokyo and it provides the primary framework for urban development patterns (Sorensen, 2002). Government policies that

[2] While some handicaps and disabilities are more likely to occur in one sex than the other, or at different stages of life, the idea that no one group is totally free from any one type of disability is the key to this idea. In some ways of thinking, all individuals are handicapped in one form or another

[3] Law for Employment Promotion, etc. of the Disabled Persons, 1960 (partially revised 2002)

actively encourage mass transit growth and use have created this transit centered metropolis. Subway and commuter rail are used for 86% of trips in the Tokyo Metropolitan Region (TMR) (Bureau of Urban Development, 2007). Traffic Demand Management (TDM) policies that depress the use of automobiles through measures such as parking restrictions[4] have also served to improve the environment for transit oriented development (TOD). While TDM is designed to reduce traffic and improve the environment of the city, it also realizes the potential of mass transit. In some ways, however, these policies can be seen as discriminatory as they restrict options for those with special mobility needs. Accessible mass transit is an essential issue given Tokyo's aging population.[5] This thesis addresses some of the questions involved in this problem.

What were the steps involved in the policy innovations toward barrier-free transit improvements in Tokyo? How did these take place within the course of the privatization of the former National Railways? What were the areas of contention between transit providers and the state? What was the regulatory and fiscal role of the state in the improvements? Finally, what is the quality of barrier-free improvements from the point of view of users with mobility problems?

Geography and Disability

Disability's place and function in the built environment and the relationship of these two has changed drastically over the last fifty years. Although changes are still

[4] One example of how restrictive parking can be is Shiodome, with its Mori Trust building at 37 stories having only 435 parking spots, the Royal Park Shiodome Tower having only 180 spaces for 490 rooms, and the Shiodome City Center and former Shimbashi Station (museum) having a combined total of 540 spaces. For these six locations, there are just over one thousand spaces for the thousands of employees, residents, and visitors to this redevelopment area. This not only exemplifies the mass transit focus of Tokyo's city planners, but also the city's dependence on its mass transit system. (Tokyo Date Navi, 2007)

[5] See Schaie (2000) and Stunkel (1997) for the relationship between transit and aging populations

taking place, the study of disability in conjunction with geography is a relatively new concept. Until now, studies have been unconsciously based on what has been termed Ableism. Ableism is the idea that we live and move in an environment designed by and for able-bodied people (Anderson, 2002). In other words, the built environment is there to serve the majority and exclude the minority. Space is more than just physical, though, it is also social and political.

This exclusion ultimately devalues the individual and creates disability. In order to revalue the individual, changes in the physical environment need to be made in order to effect changes in the social environment. While laws can be made to mitigate spatial and social exclusion, such as anti-discrimination laws in the case of employment, only changes in the built environment can secure equality. Socially determined disability is what is now defined through 'enabling geography.' Enabling geography recognizes how society, not medical definition, creates disability; thus through changing society, as well as through medical procedure, can disability be eliminated (Anderson, 2002).

A related study of the relationship between health and geography furthers this point. While some of the relationships between health and location may seem obvious, such as poorer nations having lower levels of healthcare, others are not. For example, even within developed nations the difference between health care in rural areas and urban areas can be quite large. This is primarily due to the higher cost of servicing sparse and isolated populations in rural areas, and the limited number of available health resources there. However, the critical connection between health and geography has to do with patterns of relationships, physical structures, and the processes by which the system recreates itself (Curtis, 2004).

The system in question here is the healthcare system within the urban setting. Modernization, industrialization, urbanization, and the associated social, economic, and political changes historically create and vary these systems among different regions. These developments create what Curtis calls spaces of risk. Spaces of risk determine whether one geographic location creates healthy or unhealthy lifestyles through the combination of the groups that reside there and the types of spaces those groups inhabit. Although urban environments of developed nations tend to have higher levels of healthcare, there is also what can be called the urban penalty, a subcategory of spaces of risk. That is, rapid urbanization, in the case of developing nations, and urban ills, in the case of developed nations, mitigate the benefits achieved by higher levels of healthcare. Most importantly, one's location within and access to the urban environment determines one's level of health (Curtis, 2004).

Related to the idea of society creating disability is the concept of how both the physical (places and objects) and intellectual (ideas and information) realms play a role in the level of access to society. Observations of the physical environment clearly show where there are problems. With a brute force approach these problems can be fixed. While physical access is more easily observed, intellectual access is no less important. Problems on the information side revolve around the organization and understanding of information (Jaeger, 2005). Information is amorphous and there are different ways in which individuals have access to it. Furthermore, the quality and availability of information one has is a major determinate in one's role in society; furthermore, the availability of information plays a major role in the level of access to society persons have as a whole.

There are three ways in which access can be limited or denied. The first is a failure in product design. The second is policies that exclude certain groups. And the third is the value disabled persons have in a given society. These three determine the level of access to both the physical and intellectual fields (Jaeger, 2005). Furthermore, if a society values disabled people, it will naturally provide them with more access. On the other hand, if they are not valued by society, society will deny them that access.

Determining what a disability is and who has a disability, in other words, labeling, though, comes from a different source entirely. While there are several factors involved in labeling, culture and power relations within society play a major role in this process. Definitions, however, can affect people in different ways depending on how the individual decides to interpret that label. Once labels have been created, the culture of that society is then manifested in the built environment, which in turn expresses that society's affinity for, or aversion to, disabilities—more barriers imply lower value. Furthermore, the structure of the modern city, the built environment under question in this thesis, is highly influenced by capitalism. Barriers in capitalist societies and cultures can be seen as a byproduct of that economic process (Gesler, 2002).

The primary force in this is the role of capital and its support or opposition of access legislation (Gleeson, 1999). Capital development sometimes sees access legislation, laws requiring physical structures to be handicap accessible, as a danger to its existence. For example, developers may see higher costs due to such measures as a negative when trying to find investors. Even in the US, the Americans with Disabilities Act (ADA), has been challenged as a violation of Fifth Amendment rights on the grounds

that these laws are unnecessary restrictions on private property. Furthermore, legislation is also weakened by lack of funding (Gleeson, 1999).

But space is more than just physical, it is a manifestation of social organization, in this case, the city. Both physiological and sociological disabilities can be seen as products of the built environment. In this way, city planners and state policy makers are the source of inaccessible environments, and thus the source of disability. This situation arises because urban planning and social policy are separate, which leads in turn to uninformed planners or contradictory policy. But more than this, it is the capitalist value of profit over social objectives, such as profit over inclusive design, that furthers the existence of inaccessible environments in societies that devalue their disabled. Deregulation and local growth politics reinforce this set of capitalist values (Gleeson, 1999).

This can be taken a step further by looking at the interactions of structures, institutions, and contextual conditions in geographical regions to detect variation in different societies (Gleeson, 1999). This brings the theory back to the beginning—where one lives determines the quality and level of ones lifestyle as well as the quality and level of available services. Thus it is important to consider disability in a geographical as well as in a public policy context. In other words, differing public policies in disparate geographical regions create variations in the level and quality of accessibility (Imrie, 2000).

Furthermore, the culturally created spaces that disabled persons exist within, such as special schools, institutions, or even different entrances to buildings, create different sets of values for disabled persons. That said, space has no inherent causal qualities.

Space only becomes effective when society gives it definition. Furthermore, space is only one constituent of social-political processes, and is neither an empty container nor a determining force. However, until recently, studies of disabled people have been aspatial and lacked geographical context. This non-contextual approach has left out many critical factors; one being that space and the actors within that space are essential in determining how that space is defined. Thus, geography and disability studies must be combined to truly understand the role of disabled persons in society and why the spaces of different societies treat them differently (Imrie, 2000).

In this way, in order to understand this complex relationship, we must understand the interrelationships of all potential actors within the state or local political arena. Contrasts in outcomes can be the result of differences in three areas—demographics, socio-economic values, and priorities of dominant groups. This relates back to the power relationships discussed earlier in that different groups jockey for the ability to determine other groups' place in society. But it has also been stressed that the level of activity and organization of disabled persons, a typically weak group, is critical to their level of inclusion in society (Imrie, 2000).

But again, stress needs to be placed on the idea that it is society that creates the built environment, so barriers in the built environment are direct products of society. Thus, laws aimed at eliminating physical barriers only mitigate the symptoms, not the source (Gleeson, 1999). From this, it is possible to see that in order to improve access, laws focused on the social underpinnings of barriers need to be implemented, along with laws designed to fix the physical environment. But as was stated earlier, capitalist goals undermine access laws. While this relates to space and disability, it also relates to

geography and disability in that structures are related to socio-political factors. Socio-political factors along with the existence of specific issues and the observance of laws differ depending on location (Gleeson, 1999). Furthermore, it is the regulation of these spaces and society that institutionalizes the built environment. However, this is not static, and it has been changing in Japan through regulatory reform.

Regulatory Reform

The relationship between geography and disability means that different societies will regulate accessible spaces differently. Japan developed a more inclusive social attitude toward disabled citizens at the same time it was privatizing its national railways, meaning that the new geography would be negotiated between the state and private firms. Thus, the next step is to understand Japan's approach to regulation reform as another analytical lens to describe the shift in question. Regulatory reform is basically the use of deregulation to create new markets, stimulate competition, and allow market forces to determine economic results (Carlile, 1998). In fact, a deregulatory framework explains well the economic atmosphere of the era that this thesis covers. And as deregulation, or re-regulation and legislation, has influenced railway development during this period, it is important to understand.

There are two basic opinions on the topic of deregulation. The first of these is that deregulation is taking place in Japan in the same way that it has in other countries. The commonly accepted viewpoint is that the US insisted Japan liberalize its economy. Specifically, this was done through pressure on the Ministry of International Trade and Industry (MITI) to change its economic policies. However, deregulation of railways,

which MITI had little control over, necessarily had to come from somewhere other than foreign pressure.

In this alternate view, the pressure to deregulate comes from Multi-National Corporations (MNC) working with local economic power holders, rather than from foreign pressure on the government to open its markets (Encarnation, 1990). There is no reason the US would care about regulation of local passenger railways that are not subject to foreign competition. In this alternative version of deregulation, MNCs and local economic power holders work together to replace state regulation. Encarnation explains that State opposition to deregulation forced local economic power holders to work together with MNCs either to avoid or to dismantle state regulatory policy (Encarnation, 1990). In other words, when these domestic business groups felt their economic environment restricted, they fought regulation. But at other times these same groups actually put pressure on the government to increase regulatory practices that protected their interests from foreign competition. In this way, if railways felt that regulation was restricting their economic activities, they could seek outside help to force the government to deregulate them.

The next approach to deregulation in Japan comes in two forms. The first of these is slightly cynical in that it refutes the idea that deregulation is taking place at all. That is, deregulation in general does not occur, rather, the focus of regulations shift from one area to another. Fujita describes this in terms of the urban development of the Tokyo Metropolitan Region (TMR). In her work on Tokyo's modern urban form, she argues against the idea that growth controlled by regulatory institutions in Tokyo is being replaced by growth based on finance market regimes (Fujita, 2003). This latter view is

again a standard view based on globalization as a process of deregulation and homogenization. Instead she states there are three factors that characterize the growth of Tokyo.

The first of these three is that there is no history of liberalism in the economy; globalization has had little or no effect on Japan's regulatory regime. The second is that state policy and politics has had a far larger impact on the economy than market forces. And the final characteristic is that local conditions and Tokyo's position in East Asia have shaped urban development policy. Furthermore, Japan can be considered a capital investment state rather than a social-welfare state. That is, full employment, rather than social policy, is seen as a means of achieving social justice. Concretely, while deregulation seems to be occurring in older industries, this is only taking place because these industries are in decline in Japan. On the other hand, capital and regulations shift to technological development, which is a source of new jobs (Fujita, 2003).

Thus, regions of Tokyo that are ripe for technological development become the focus of urban development or redevelopment and Tokyo, as the center of the Japanese economy, has a lot of pull in getting needed money from the state for development. As far as this thesis is concerned, though, the point to note here is that the Tokyo Metropolitan Government (TMG) sees more concentration of high-tech industry and greater centralization as a way to stave off the effects of the aging society (Fujita, 2003). In other words, the TMG sees high employment rates through more job concentration as a way to achieve social justice. This last concept plays a major role in the course of barrier-free improvements. For example, if the government deems it necessary to have an

accessible transportation system in order to maintain high levels of employment, it will build one.

Fujita also focuses on Japan as a developmental state, which means that the state guides and supports economic development and restricts competition to do so. On the other hand, liberalization, which she says did not exist in the first place, is the entrustment of consumer (social) welfare to the market (Carlile, 1998). In this way, deregulatory moves that seek to improve social welfare, in Fujita's view, do not exist in Japan. Instead, if deregulation of the railway industry were to take place, it would not be for social welfare motivations, but some other state rationale.

In this same vein, Taylor also sees a change in the regulatory state rather than an end to it. However, Taylor sees this as a shift not in the focus of regulations, but rather as a shift in the means of regulation. Taylor terms this re-regulation, or a replacement of regulation by law. In her work on competition law (anti-trust law), she states that enforcement of these types of laws typically relies on market mechanisms, and that these market mechanisms enhance deregulation. In this way, the courts are becoming the central watch-dog for deregulation (Amyx, 2003).

The court's entrance into this realm of the economy has several implications. One of which is that a third party is able to intervene in market deregulation. Furthermore, court enforced competition in the economy is changing the future business environment of Japan (Amyx, 2003). In other words, there is a shift in how business is regulated—via legislation rather than ministerial regulation. A second implication is that enforcement and creation of regulation have been divorced and the enforcer is now a disinterested third party, the court.

In the context of this thesis, laws regarding improved accessibility are now enforced by the courts not the ministries. Prior to this shift, the Ministry of Transportation (MOT), specifically, set a series of guidelines for the railways to follow. Now that the regulations have been replaced by law, railways are forced to comply for fear of legal repercussions rather than bureaucratic repercussions. Firms may also address their own grievances to the court if they feel a law is unfair. But as is clear from this, the railways are still subject to decisions made by the government more strongly than they are to market demands.

To show how this all relates to the railways more specifically, Button and Keeler bring up two points that are critical to this thesis. The first is that market performance helps unregulated transport to function. In the past, regulation was seen as necessary to maintain high standards of service and safety in public transportation. Without some sort of regulation in place as a minimum, governments feared that cost cutting measures would somehow diminish safety levels. In contrast to these fears, Button goes on to say that there has been no change in the level of safety in deregulated systems while efficiency has increased (Button, 1993). This is because deregulation subjects mass transportation to market forces, competition specifically, so transit providers are forced to improve service and safety levels to survive.

On the other hand, there is a question over the true level of competitiveness in the Japanese economy. As Taylor describes in her work, laws, rather than regulation, now restrict or support competition. If laws still restrict competition, then can market forces really be hoped for as a means to improve service levels? Fujita, too, agrees with this in saying that regulations have simply shifted from one area to another. So it is critical to

determine whether old regulations on the railways have just been replaced by new, but different ones. The example of the airline industry, too, is applicable here. While the airlines have been deregulated, Alexander notes several occasions where the MOT has stepped in to prohibit certain changes; a further example of how restricted the Japanese market may still be (Alexander, 2002).

Deregulation of the railways in Japan took place simultaneously with the privatization of JNR. Furthermore, in this case, privatization can be considered an extreme form of deregulation. Deregulation of JNR, as is clearly stated in the reasons for its privatization, was carried out to make the railway more responsive to market demands and improve the quality of management. This was a shift away from operating JNR as a means to serve the greater welfare of the country (Ishikawa, 1998). In this way, the deregulation of JNR and the other railways was carried out to free them from requirements that hurt their operations. In turn, the railway's improved economic functioning would, in theory, lead to social improvements.

There were three major deregulatory arenas for JNR. The first was to allow the railways to abandon unprofitable rural lines. A second was to free up their fare setting ability. A third major change that occurred at this time was the division of railways into three categories: Class I, railways that operate on their own infrastructure; Class II, railways that operate on leased infrastructure; and Class III, railways that build infrastructure for lease or sale, but do not operate railways (Ishikawa, 1998). What this deregulation did was to allow railways to more easily compete with other forms of transportation, mainly the private automobile. Loosened restrictions allowed each railway to determine the best form for its operations and to enter into profit making

activities that were formerly forbidden. This latter change was mainly the case with the new JR Group.

Analytic Application

The project of this thesis, to explain how accessibility became the focus of policy during a period of railway deregulation and some of the results of that policy, draws on both these bodies of thought. The two approaches reviewed here are not mutually exclusive. In fact, they are intimately tied. Deregulation enforces spatially constructed disability because it frees economic actors to ignore unprofitable demands in the market. On the other hand, if a society values its disabled population, that society will make strong demands on economic actors through legal, civil, and economic action. While the market allows for this possibility, if the voice of the disabled is weak, then the government will be forced to step in. This was the case in Japan. Deregulation provided an opportunity for the railways to ignore the small voice of the handicapped. Deregulation failed to work for all citizens at the same time the Japanese government was placing more value on previously undervalued groups—retirees, handicapped persons, and women.

While this section discussed some of the physical and social aspects of the problem, the physical, as it is most easily observable, will take precedence in this thesis. However, the underlying social constructs that created the problem in the first place—lack of value for the handicapped—must be kept in mind at all times. Without this understanding, the high level of resistance found to these laws and policies will be

difficult to comprehend. Furthermore, the very existence of access policy in Tokyo stems from changes in these same social conditions, creating an even more complex task.

Contention between private industry and public social policy can be viewed through both lenses of disability and geography and regulatory reform. These show us the place the disabled and the elderly occupy within the consciousness of the government and the transit providers. Furthermore, consciousness and changes in this consciousness determiness the actions and value judgments of these two actors. While the role of the disabled themselves plays some part in this process, their voice has been too small up to this point. The elderly, however, have a much larger voice, but the state and the firms are still overpowering. The need for accessibility policy has led to re- regulation as opposed to deregulation on the part of the government in order to rectify the problem.

Methodology

I conducted the majority of my research during 2006-07 while at Sophia University in Tokyo as an exchange graduate student from the University of Hawai'i. The Sophia University Library was essential in collecting the secondary sources and many of the primary sources I used at this point. Prior to this portion of my research, during 2005-06, I conducted background studies on urban planning in Japan and Japan's aging society. As I carried out this research I formed the core question of this thesis and began collecting materials and outlining my course of research before reaching Japan.

I used two major methods to write this thesis, the first was a qualitative historical review and the second was direct observation. For the historical review, I surveyed the major events related to accessibility and placed them on a timeline. As the starting point

of this timeline, I picked the period when the Japanese National Railways became unprofitable. I recorded on the timeline two actors, JR East, formerly the Japanese National Railways, and the National Government. As JR East is the largest transit provider in the Tokyo Metropolitan Area, I used its stations as the physical environment in question and the primary location of contestation.

I surveyed many events from this point on that eventually led to the passage of the 2000 Transportation Barrier-Free Law through a close reading of the available works. Once I had surveyed the events that had taken place during this thirty-six years of history, I reviewed my research to see how these events were linked. By looking at the relationship between chronologically linked events I inferred a pattern of cause and effect. My focus on only two actors, though, limited the comprehensiveness of my research. Omission of the impacts of other private railways and other organizations, such as civil groups, during the course of this evolution, bracketed the research results.

My second method was to observe accessibility of JR East stations directly. My personal experiences traveling the mass transit system, both JR East and other transit providers, forced me to view the historical policy research more personally. In Chapter 7 I present those experiences to both bring to light the difficulty of the retrofitting in question, and bring a sense of the personal impact these changes are having to this rather academic topic. I include a photo-essay of one station in Chapter 7. My purpose is to explain visually where flaws in planning and design lie and to show why it is important to plan comprehensively with oversight. While this is simply one example, it is of a major station in the Tokyo area, a hub for several railways in an area with a high population of elderly. This photo essay and my personal experiences as a participant observer of train

trips with young handicapped people bring to light what the barrier-free policy has achieved. They illustrate some of the changes taking place today and show where all of the efforts of government and private industry have left the user wanting. My two methods, historical and field observations, combine to show how accessibility policy in Tokyo's mass transit system came to be and where improvements stand today.

Sources

I first gathered sources on the topic of the railways that dealt primarily with either JR East or the National Government. These sources include secondary works and publications by both private and public institutions. The secondary works focusing on JR East look at the company from three perspectives. The first is over the privatization of JNR and the success, or failure (depending on the author's view) of privatization over the past twenty years. The second set of sources dealing with JR East deal with the structure of the company. As JR East only came into existence after 1986 many of these sources detail the evolution of the company over the past twenty years, in some cases ignoring its relationship to the older JNR entirely. In some cases, though, they show how the two are still very much related. The third set of sources dealing with JR East is articles published by either JR East, journalists, or researchers. The three sets of sources together create a detailed history of the company and the approaches that the company is taking and plans to take on current issues, although not always explicitly. Because these works focus almost exclusively on the railway, or the railway industry, they mention the barrier-free efforts of the government only in passing if at all.

Secondly, I gathered sources concerning the 2000 Transportation Barrier-Free Law. These secondary sources primarily approach the problem in two ways. The first is to deal directly with the law. These sources tend to analyze the law and the motivations behind the law. They detail how the law came into being, its implementation, its enforcement, and ultimately whether the law has been successful or not. The second set of sources deal directly with the problem of accessibility and discuss the law in this context. These sources focus on the social costs of a barrier ridden society and show what needs to be done in order to mitigate the effects of these barriers. In this way, they look at both private and public efforts to improve accessibility, as well as citizen participation in the project. They further discuss how the 2000 Transportation Barrier-Free Law plays a role in developing the industry-citizen-government relationship. While these works only discuss individual transit providers in passing, they do discuss the role of mass transit in general.

The documents published by the government and the railways provided both a check on the statistics presented in the above two sets of works, as well as a bridge to connect their content. JR East, as a privatized company, is now obligated to disclose its financial standing as well as its corporate policy to investors. Much of this is available to the public on the Internet. While many of these publications are clearly public relations statements, other publications are much more detailed and support and reveal public statements of intention. Government documents, unlike JR East's publications, are related directly to the accessibility laws, statistical work, or analysis made of the accessibility situation in Japan.

The Ministry of Land, Infrastructure, and Technology publishes all of its policies on-line as well as much of the data it has collected on the subject at hand. The contents of all of the projects it is currently involved in, as well as its stance on many issues, are clearly stated. Other on-line sources included railway associations, articles written by JR East employees, and research being conducted by universities across the country. Finally, numerous news reports, TV programs, and discussions of my topic with private citizens gave me an idea of the general attitude on the accessibility situation in Japan, a topic that is almost unavoidable today.

CHAPTER 2
Changing Awareness of Handicaps and JNR

The first era of railways and accessibility in Japan this thesis will examine is the pre-privatization period of what is today the Japan Railways Group (JR Group). While the Japanese National Railways (JNR) era ranges from the dawn of Japanese railways in 1872 until 1987,[6] this chapter will focus on the period from about 1970. This was the time when accessibility first arose as an issue in Japan; very little had been done in the way of accessibility improvement before the 1970s. This was in part true because prior to the end of the National Railways Era, JNR had much larger concerns. So did the government.

The socio-political atmosphere of Japan during this period was focused primarily on economic growth, leading to environmental disasters and the second largest economy in the world. In this period of high-speed economic expansion the concerns of civil society were left behind (Sorensen, 2002). In the 1970s, on the other hand, civil movements and changing world opinion on social issues created a new impetus for accessibility improvements by JNR and the government. Even given this change, though, the flag was not taken up for several reasons.

In contrast to the current structure of the privatized JR Group of six passenger railway companies, one freight carrier, and numerous sub-companies ranging from real estate development to day care (Mori, 2000), the original JNR was a single massive organization. Its rails spanned the nation, from the Northern tip of Hokkaido (*Wakkanai*

[6] JNR actually came into being after World War II, in 1949, but from the outset of railway building in Japan, the Japanese government owned and operated the majority of the railway infrastructure. In other words, JNR was simply a new creation designed to take over the old government run system.

Station) to the Southern tip of Kyushu (*Nishi-Ōshima* Station). Along with passenger operations, the railway operated freight transport over the majority of its 12,500 miles of rail and employed some 307,000 people (Tachiyama, 1989). Its bulk and position as a state-run corporation, however, hobbled its ability and desire to operate profitably.

While the day-to-day operations of each of the rail lines within the system were under the control of regional divisions, these divisions were mainly in place to carry out the policies of a centralized railway authority (Mori, 2000).[7] This centralization of authority led to a lack of responsiveness to local demand and confusion in decision-making. Furthermore, as the railway was operated by the state, national as well as local politics played a major role in operational decisions. In some ways, the ability of the government to guide JNR brings up the possibility that growing social consciousness in the government would have filtered into the railway. As with public facilities today, which are required by the Heart Building Law to be barrier free, one might have expected changing views within political circles to have effected changes in the state-run railway.

Following this logic, growing social awareness should have led to improved accessibility in this era. This was not the case, however, for three main reasons—JNR's position as a national enterprise, its unresponsiveness to market forces, and political interference. The railway failed even to see barrier-free measures as a way to improve service for its major customer base in spite of growing competition from private railways and automobiles.

[7] A quote by Takeda, President of Nippon Restaurant Enterprises, a subsidy of JR East, shows one perspective of the views employees of JNR held towards JNR's home office. He says, "I can say this now, but during the National Railways Era, all employees watched the main office while they did their jobs, especially the third floor where the personnel department was." He goes on to say that dealing with the unions wore the management out and distracted them from coming up with new ideas.

It would be irrational to assume that the railway was completely unaware of the need for greater accessibility of its facilities before 1987. Equal rights movements in other developed nations, such as the United States,[8] and civil movements in Japan could not have been missed by the management. Furthermore, in 1983 the Ministry of Transportation created a guideline to implement barrier-free measures in mass-transit facilities, primarily rail stations. On the other hand, however, Japan's institutionalization of the handicapped had removed them from the physical society of Japan, and thus its awareness (Chikada, 1985).

In this cultural context, it would not be a stretch to say that the handicapped and the elderly were not seen as riders of the railways. At worst, they were invisible all together. If this is the case, they would have been irrelevant when company officials considered capital improvements to the physical railway infrastructure, even given the guidelines. Why offer a service to a group that is not going to take advantage of it? Although this cultural take on age and disability has changed dramatically since the 1960s and 1970s, it reversed only in the 1980s with the realization of the economic impacts of Japan's aging society (Long, 2000).[9] In this way, one could argue that JNR did become aware of the need for accessible facilities in the late 1970s or early 1980s.

During the years of high-speed economic growth when JNR was expanding its infrastructure to meet the needs of an urbanizing country, improving accessibility was far from the minds of its decision makers. When the economy slowed after the oil shocks

[8] Disability Civil Rights movements date back as far as the early 1960s in the United States, one of the most famous being the admission of Ed Roberts to University of California, Berkeley in 1962 (US Society and Values, 1999). While early movements in the US may have been overlooked by Japan, recognition of disability rights by the UN, prompted in part by these movements, could not have been missed.

[9] Campbell describes views on aging in Japan as changing over three periods. The first was from the 1950s to the 1960s when the aging problem was about securing pensions for post retirement life. The second period, the 1970s, was about medical care and poverty among the elderly. The third period, starting in the 1980s, finally recognized the aging society's economic impacts (Long, 2000).

and Japan's demographic changes were coming to the fore along with the growth in civil movements, the railway, as a national enterprise, must have been aware of accessibility needs. From the 1980s, social concerns started to gain in importance and regulatory reform would free JNR to reevaluate their business structure. But without social pressure coupled with economic changes, nothing would happen.

International and Domestic Recognition of the Handicapped

Events on the international platform showed a general change in attitude towards the handicapped members of society. The United Nations declared the year 1981 to be the "International Year of Disabled Persons". The "United Nations Decade for Disabled Persons" followed in 1983. As a member of the United Nations, the Japanese government was obligated to address this issue among its own populace. As one of its first actions, the government set up a body in the Prime Minister's Office in 1982 to improve the situation of disabled persons (Headquarters, 2007). Moreover, the Japanese government, partly in response to this movement, began to reverse its neglect of the handicapped.

The government began taking a larger role in the care of handicapped individuals by moving the burden of welfare from the home environment to public institutions (Chikada, 1985). The early 1980s were also the years in which Japan first became aware of the dangers of its aging demographics, and at this time the government began to take more control of elderly care as well (Long, 2000). Even given these changes in international awareness coupled with domestic demographic shifts, JNR continued to operate as if it were above these problems. In fact, internal JNR policy toward customers

with handicaps contradicted even the government's growing interest in disabled persons at this time (Chikada, 1985).

While international changes date to the early 1980s, sources of domestic change in Japan go back some thirty years (Nitta, 2005). Furthermore, by the early 1980s civil groups demanding better conditions for the handicapped were both vocal and outspoken. In at least one case, these groups brought their demands directly to the attention of JNR. Furthermore, as *Eki to Kurumaisu (The Station and the Wheelchair)* (Chikada, 1985) shows, it would have been impossible for JNR to be unaware of the needs of these groups. To be fair, however, even though one is aware of a situation, conditional problems can mitigate one's ability to act.

While it is clear that the government was making changes for the better, their transit system was not. Even given the early domestic and international pressure on Japan and its national railway to change their policy towards the handicapped population, there were strong reasons why JNR openly refused to take accessibility improving measures. JNR was unable to act as it pleased.

JNR Fails to Respond to Increasing Awareness

The first reason JNR failed to respond to changing views on disabilities was, ironically, that the railway was a national enterprise. As a branch of the government, the railway was not subject to the same market forces as private industry. In this respect, the railway could literally ignore profitability and simply submit to the varied demands of the government. During unprofitable years the government paid the difference, amounting to 37 trillion yen (260 billion US dollars in 1987) in subsidies between 1964, when the

railway dropped into the red for the first time, and 1987, when it was privatized. Furthermore, the reasons it dropped into the red also show where the railway's interests were at this time (Ministry of Interior, 1993).

JNR was subject more to the demands of politics than to the needs of its ridership. In many cases, these demands revolved around public works projects, the three primary examples of which are the *Seikan* Tunnel, the *Seto* Bridge, and the *Shinkansen* (bullet train) extensions. These three projects were massive, with costs running into the trillions of yen. Even though the demands for these projects came from the government and not from the railway's planning board, the cost of construction was undertaken by the railway. In order to fund these largely unprofitable, high-speed railways and tunnel and bridge projects of debatable necessity, JNR was forced to borrow large amounts of money and ignore infrastructure improvements that would have served greater numbers of riders (Tateyama, 1989). Some argue that the polarization of urban and rural Japan was being mitigated by these projects (Sorensen, 2992), but this alone does not justify the debt that eventually led to JNR's breakup. Furthermore, rail extensions have had little, if not a negative effect on this polarization. The railway's breakup shows just how unresponsive the railway was to market forces. Had the railway been more responsive, perhaps it could have answered accessibility demands without government urging.

My own analysis of the comparative cost-effectiveness of the various projects supports this conclusion. JNR attached little economic importance to numerically small groups within the railway's greater ridership while it devoted enormous economic resources to the aforementioned public works projects. The cost of a single mile of *Shinkansen* track for the Tōhoku and Jōetsu lines was 5,600-6,300 million yen per mile

(Ministry of Land, 2002) when built in the 1980s (Tateyama, 1989), yet station elevators at an average cost of 300 million yen remained unbuilt (Tokyo-to Assembly, 2002).

The *Seikan* Tunnel served just over 990,000 passengers during its 2003 operating year (Hokkaido, 2006), while the total handicapped population of Japan in 2001 was 5.2 million, 3.2 million of whom were physically handicapped (Nitta, 2005). If the railway had been made fully accessible instead of building the tunnel, many of these riders might have generated more than the 990,000 trips serviced by the tunnel. Large projects were "do-able" because they were regionally focused, technically demanding of many construction firms, and located in remote spots that made construction easier to manage than upgrading thousands of railway stations across the nation.

In many ways, JNR's unresponsiveness to government and civil demand is more a question of the company's corporate culture as a national enterprise than whether it really balanced the cost of accessibility improvements against their benefits. This is further evidenced by the lack of response to the 1983 guidelines. On the other hand, even the government was not fully invested yet; the 1983 guidelines were written as though they were an afterthought. This is not to say, however, that the railway was going to remain aloof forever.

It is possible, and quite reasonable, to assume that even had the railway remained a national enterprise, that the government would have eventually demanded similar accessibility improvements as the state became more invested. In fact, given the close relationship between JNR and the government, the government would have been more able to pressure the railway because JNR was thoroughly subject to political whims. But the internal situation of the railway, if not improved, threatened to prevent any movement

even if it had still been under governmental control. This point leads to the second reason JNR failed to take action—the internal situation of the railway.

Structural Weakness and Political Maneuverings

In the previous section I discussed some of the political and situational difficulties that prevented JNR from making business decisions that would have led to improved accessibility. These same political maneuverings and organizational considerations also prevented it from improving its profit and organizational structure. It is possible that had the discussion over privatization taken place ten years later, the outcome of these challenges would have been quite different. On the other hand, the nature of the railway as a government enterprise and decades of uneconomic external demands led to four basic problems that had created an atmosphere in which privatization of the railway itself became a political tool. What is important about the resolution of these problems through the use of privatization, however, is that it gave the successor JR Group the incentive and the ability to take on accessibility improvements.

The four imperatives presented to the Prime Minister's Office in 1983 by the JNR Reconstruction Supervisory Committee (Kokutetsu-saiken-kanri-iinkai) were 1) to improve the profitability of the railway, 2) to manage the 37 trillion yen debt of the railway, 3) to normalize the relationship between management and employees, and 4) to revitalize the operations of the railway (Tateyama, 1989). From these four problems, it is clear that profitability was a major concern of the Committee. One critic of JNR's privatization is Tachiyama Manabu. According to Tachiyama, prior to 1986 the railway had been operating in the red for nearly three decades, but he shows that the railway was

actually profitable in its last few years of existence in terms of pure operation. While it may have been true that the railway was only presented as a money losing operation in order to break it up, the organization of the railway in relation to its debt, employment structure, and operational standards also created real problems. While Tachiyama shows that the operations of the railway were profitable if its debt was removed, the last three problems still remained (Tateyama, 1989).

The most trying of the three remaining problems was the railway's debt, which had been growing since 1964 when operations first dropped into the red. The reasons why the railway failed to make a profit after 1964 are complex, but construction of the *Shinkansen* lines, pensions, and top heavy personnel costs were the three main issues. These problems eventually led to drops in service levels, and the railway began hemorrhaging riders, a boon for the smaller private railways as they were able to pick up the demand. Prior to 1964, JNR moved the majority of all person trips in the country; by 1987 this proportion had dropped drastically. On top of this, the railway was spending massive amounts of money on infrastructure improvements to reduce crowding, to build high-speed railways, and to construct bridges and tunnels.

The second problem and a major part of the cost of operations was an overabundance of employees. One of the historical reasons for this large number of employees, over three-hundred thousand, was that after World War II thousands of overseas railway workers, mainly those of the South Manchurian Railway, returned to Japan (Otani, 1997). The railway was forced to absorb all of these returnees as part of a government policy to stave off unemployment after the war.

The beginnings of JNR's employment problems are rooted in this historical relationship with the government, and it is simply one more example of the difficulty the railway had in dealing with the government's demands (Ishikawa, 1998). This early absorption of returnees also exacerbated the pension problem. While the pension problem is less complex, it was expensive. Later disagreements with the unions required the railway to hire unnecessary workers and made it nearly impossible to fire them even when their positions became obsolete. The power struggle with the unions over personnel issues caused crippling strikes. In the later years of JNR, the railway was successful in reducing the number of employees to some extent through voluntary early retirement, but on the eve of privatization, there were still some sixty thousand workers over the set limit (Tateyama, 1989). The number of workers necessary to operate the railways was set by the government's Reconstruction Supervisory Committee, which JNR was required to achieve.

Tachiyama places this battle with the unions as the number one reason the government wanted to privatize the railway; privatization would normalize the relationship between workers and management allowing management to negotiate with workers over wages. As a national enterprise, workers were technically civil servants, and thus their wages were set by the government. By removing wage setting powers from the government, the Committee hoped to improve the productivity and stimulate the cost consciousness of workers (Tachiyama, 1989).[10] Struggles with the unions were also blamed for dropping service levels and quality.

[10] Tachiyama emphasizes that the problem was over the company's position as a publicly operated enterprise. The government essentially set workers' wages, which were often lower than market levels, leading to little incentive to work hard. Furthermore, as public employees, there were the usual problems of waste and lack of motivation due to formulized promotion structures and wage increases.

Privatization would subject the railway to regular market forces, which, in theory, would improve the productivity of the railway while reducing its costs, the final problem. Furthermore, once privatized, the railway would have to follow the same rules and regulations as other private railways, and so, technology being equal, service levels would have to rise in order to meet those of its competitors.[11] JNR had also been plagued with accidents, which were blamed primarily on the weakness of its financial situation. These accidents damaged both its actual quality of service and its reputation. In this way, the government also saw privatization as the answer to improving the poor image the public held of the railway.

Tachiyama continues his argument that comparisons between JNR and the JR Group are misleading in that the bubble economy of the 1980s brought good fortune to the railway. Furthermore, even given its massive debt and labor problems, JNR had already managed to bring its operating income into the black and the number of JNR trains per day was higher than before with fewer accidents. The railroad also managed to bring back some of its ridership via improvements in service levels. Yet there was still the general impression that the railway provided poor service and was dangerous (Tachiyama, 1989).

Whatever the impact of these pseudo-political and pseudo-economic problems on JNR's actual operations, they still strangled the railway's ability to act and react to the changing needs of its riders. Furthermore, the government was looking to justify the existence of the railway in the eyes of the Japanese public and trying to effectively

[11] The Ministry of Internal Affairs report also explicitly states this as one of the goals of privatization. In the introduction the report states that they hoped privatization would force the railway to better meet the needs of its customers. Implicit in this statement, and made clear later in the report, was the hope for improved accessibility.

eliminate the massive debt JNR had incurred without inviting the anger of that public. In other words, the government turned JNR into a pawn to deal with problems directly related to the railway, in the case of the debt, and indirectly related, in terms of political support from the countryside.

In this setting, the railway was simply too concerned with internal problems to recognize the need for accessibility improvements. When it did recognize this need, government pressure restricted its financial freedom and will power to carry out the necessary changes. Finally, the railway's reaction to these problems shows that it was far more responsive to the will of the government than that of its ridership. Out of all the concerns that led the railway to ignore accessibility issues, government pressure to undertake massive public works projects was probably the greatest. JNR's behemoth size placed further stresses on its infrastructure, and its operational ability as a transportation provider floundered. By 1987, the government had turned the company's seemingly inept management structure into a scapegoat for the government's own mishandling of the railway.

Privatization was the cure-all for the railway's ills and on March 31st, 1987, Japan National Railways ceased to exist. On one hand, this measure was taken in order to save the railway from being crushed by these problems and make government officials look like heroes for preventing further growth of the 37 trillion yen debt. On the other hand, this move would also place the six successor passenger companies in a position to take the initiative on more profitable, as well as broader operations that would eventually start the move towards greater accessibility.

In my interpretation, regardless of the political maneuverings that were going on behind the scenes, privatization was an essential step in achieving more accessible, barrier-free mass transportation in Japan. In the following section, however, I will show that privatization was only partly responsible for this change. While it is true that the successor railways are now more subject to market forces, and thus must respond to changing markets and the need to make a profit to satisfy investors, it is clear that this alone was not enough.

An old actor with a new role was necessary to lead the massive investments in accessibility that are taking place today. The actions of the government during the 1990s, made in response to the private measures taken by the privatized JR Group and other private transit providers, will show this to be true. Because the national railway was broken up into regional carriers, each operating completely independently from the others, the historical case study of this thesis will focus solely on JR East, the operator of the majority of Tokyo's commuter lines and intercity lines in the Northeastern portion of the main island, as shown in Figure 4.

CHAPTER 3
THE EARLY YEARS FOLLOWING PRIVATIZATION

On April 1st, 1987 JR East began operations over JNR's former Northeastern lines. In total kilometers and size the company was a fraction of the size of its predecessor, but as a transportation provider in the TMR[12] it was still the major player. Overnight, the railway was mostly freed of its debt burden, the unions had been weakened, and it was operating with a shortage of employees. Furthermore, it had inherited a physical infrastructure that would allow it to operate one of the most efficient and highest volume commuter railway operations in the world. As luck would have it, the railway also started operations during the middle of Japan's bubble economy; thus from its very first day the railway was operating in the black.

Even given the seemingly overnight transformation of the railway, the question under consideration here is not whether privatization was a success. Rather, it is over whether the railway's new position as a private company freed it to make any move towards greater accessibility and greater equality of service. The answer to this revolves around two points—the first being that the railway inherited an infrastructure riddled with barriers and the second being that it inherited a poor image.

In contrast to its newly gained freedom of operations, the railway was starting off at the bottom of a steep hill. If it were building all new infrastructure, architects and planners could simply have incorporated barrier-free design techniques into all of its facilities. As this was not the case, the reconstruction of JR East's infrastructure was

[12] The Tokyo Metropolitan Region (TMR) in the context of this thesis is the 50 kilometer radius commuter shed that surrounds Tokyo station. This region is actually larger than the officially recognized TMR, and stretches to prefectures that are typically considered outside the metropolitan area.

going to be unbearably expensive and complex. Along with the superior infrastructure and facilities JR East inherited, the new railway faced the task of emerging from the poor image of the now defunct JNR. From the outset, JR East understood that without improving those areas that customers most often complained about, competition from the private carriers and from growing automobile usage would quickly destroy its new found profitability. Since its financial situation was more or less secure at this point JR East had the freedom to take on new projects.

All six of the new railways embarked on public relations campaigns and educated their employees on the service standards of the private service sector. However, JR East primarily focused on improving the service attitude of its employees, providing service with a smile, and cleaning its bathrooms—JNR had been notorious for the dinginess of its bathrooms, which had become somewhat of a joke among its riders (Tachiyama, 1989).[13] But among their many image improving campaigns, JR East also saw improving the accessibility of its facilities as another way to draw back riders lost during the previous decades; the private railways had already been undertaking this challenge for several years (see figures 6, 9, and 10)(Ishi, 1995). In this way, JR East was a relative latecomer to the idea that improved accessibility benefits all riders (Chikada, 1985). JR East also had to struggle to improve its service, not just operations, in order to compete successfully.

One of the hopes of the architects of JNR's breakup had been that once involved in competition, the railway's level and quality of service would improve (Tachiyama, 1989). In some ways this was a legitimate hope and at first JR East seemed to be fulfilling these expectations. JR East saw improved service levels as the best way to

[13] JNR toilets were referred to as the 4 Ks (*kusai, kitanai, kurai, kowai*) (smelly, dirty, dark, scary).

compete with the private railways and these efforts eventually brought JR East's performance levels in line with the private railways and cheaply (Otani, 1997). However, if one looks at the goals of JR East at this time, the reasoning for accessibility improvements is quite different from the goals of barrier-free measures.

For the most part, accessibility improvements taken by JR East can be seen simply as a means to regain lost ridership and compete with private railways. Given this view, barrier-free improvements would be for the purpose of easing the burden of station use of present ridership, or the lost ridership of the 1980s. Thus, it is clear that designs for these improvements would be made with commuters in mind. In this way, it is questionable how this translates into improved accessibility for the elderly and handicapped individuals who rarely used the trains to begin with. This also brings into question the quality of facilities from the viewpoint of the elderly and handicapped.

Another way to evaluate the goal of accessibility improvements in these years is to look at what kinds of station improvements were being made. During the early years of JR East, elevators and escalators were the focus of the company's efforts. Accessible toilets, the removal of small elevation changes, and wider wickets—accessibility improvements aimed at wheelchair users, for example—only seem to have made their appearance much later. If one looks at JR East's efforts to improve its restroom facilities, this is clear. Cleaning restroom facilities made them more acceptable to those who could already use them, but without upgrading those facilities to be accessible for all riders, the needs of handicapped individuals were not met. The Ministry of Interior Report also shows this to be true (Ministry of Interior, 1992). This is further evidence that JR East was simply making the most obvious physical changes without trying to meet the real

needs of handicapped or disabled individuals. Simply adding an elevator makes the station easier to use, it does not necessarily make the entire station accessible.

Given time, however, as ridership levels begin to drop due to a shrinking and aging population, it is possible to imagine that JR East would have broadened its vision to more successfully compete in a shrinking market. But even when the railway surpassed its previous ridership levels (Tachiyama, 1989) (see figure 5) and was functioning profitably, it does not seem to have addressed this issue. But what is clear is that the goals of the government, in this case the Ministry of Interior in its report to the Ministry of Transportation, and the goals of JR East were different.

When JR East was part of JNR, profit was not necessarily the primary concern of the railway, as discussed previously. However, once privatized and forced into competition with the private railways, profit, especially if the railway were to be listed on the stock exchange, was a major issue the railway needed to manage. Furthermore, being listed on the stock exchange would allow it to gather the capital necessary to complete a variety of projects and to cover debts left unsettled at the end of the JNR period and from the purchase of the *Shinkansen* lines. Thus unprofitable investments, such as barrier-free improvements, regardless of how small a portion of their budget, would have been far from their mind. This was the case when an accident elicited the following comment by a JR East spokesman, "Up to now we have placed the repayment of bonds left over from the JNR era first and didn't consider capital investment a priority. From here on, though, we will take on the necessary investments to operate safely (Asahi.com, 2006)."[14] While

[14] "これまでは旧国鉄時代の債務返済を優先させ、設備投資は緊急の課題ではなかった。今後は安全運行に必要な設備を充実させ、足元を固めたい"

this comment is in reference to the safety of the system, the comment reveals that even such a fundamental function had been set aside in favor of financial concerns.

The railway's sluggish response to government concerns over social equality in the transportation system also suggests that the railway was more enthusiastic about economics than social justice. Further evidence of this lies in the number of facilities JR East had constructed and the unmet goals JR had laid out even for itself. In 1997, JR East had about 400 escalators in use throughout its system. This was still during the early stages of accessibility improvement, but by 2002 the company had planned to have all stations in the 23 ward area of Tokyo upgraded with escalators (Shiibashi, 1999). While this statement might have been bold, it unfortunately has not played out. Today, there are several major stations in the 23 ward area that do not have a single escalator, elevator, or alternative measure for overcoming elevation changes. With several hospitals in the area, Ochanomizu Station is one of the most noticeable among them.

The government, however, was already seeing its role in an aging society in a different light; it was beginning to understand that government direction was critical if Japan was going to weather the coming changes. Many studies on Japan's aging society have shown the massive financial, social, and employment impacts that this change will effect; and by the late 1980s, the government was clearly concerned about what these effects would be (Campbell, 1992). While the government may not have wanted to burden the newly privatized railway with yet another project—although the government did not seem to have any problem burdening the JR Group by removing the freeze on high-speed rail line construction—it began to see potential problems with the direction JR East was taking. The Ministry of Interior report is clear that the barrier-free and

accessibility improvement measures that JR East had undertaken thus far were not enough, as shown in figure 6 (Ministry of Interior, 1993). If this was the thinking of the Ministry of Internal Affairs, though, it is clear that at least one governmental institution was concerned with the inaction of Japan's railways in light of looming employment problems. In 1993, MOT issued the Guidelines on Improving Facilities for the Elderly and the Disabled at Public Transportation Terminals, a revision of the 1983 guideline. This only expanded the scope of the 1983 guideline; it was still unenforceable without any funding.

One proposed general solution to these looming problems was to extend the working life of employees and integrate all members of Japanese society into the work force. This integration was to include previously excluded groups, such as the retired and the handicapped. Discussions of eliminating the mandatory retirement age[15], age 60 as of 2006, (JCER Staff Report, 2006) in order to broaden the working base of the nation had taken place as early as the 1980s. But in order to do this the infrastructure of the nation had to be fully accessible to smooth the flow of workers. The Ministry of Interior report above is clear on the government's opinion of this situation and at this point recommended that the MOT intervene more strongly in the issue. In other words, because the goals of the private railways differed from those of the government, the government found itself in a position where it needed to direct the removal of barriers from the transportation infrastructure.

The early regulations the government put in place to realize these goals had been relatively weak. This is clearly seen if one looks at the number of elevators and

[15] Actual retirement ages are set by individual companies under national legislation that determines at what age national retirement benefits may be received. Mandatory retirement ages are primarily adopted by larger companies, but new legislation is seeking to increase the set age to 65.

escalators built between 1987, when the railway was privatized, and the number built in 2000, when the 2000 Transportation Barrier-Free Law was enacted. During this period improvement was relatively steady, but slow. In other words, even given government intervention over the post-privatization decade, pressure amounted to little more than light pushes in the right direction. The 1983 and 1993 guidelines are two examples.

While the private railways had been actively following the 1993, and earlier 1983, guidelines, JR East was slow to follow (Ishi, 1997). But even the private railways had made little progress. In 1987, there were only a total of 35 stations with elevators and 116 with escalators. By 2000 that number had only increased to 175 stations with elevators and 353 with escalators out of about 6300 stations (Association of Private Railways, 2007). In the end, neither of these guidelines was particularly effective. While Ishi does not give reasons for this observation, it is true that the number of facility improvements that JR East made before 2000 placed it far behind the other private railways in accessibility improvements, as figures 9 and 10 show (Ministry of Interior, 1993).

However, even if one looks at the total number of elderly in Tokyo at present in comparison to the total ridership of JR East, the economic feasibility of this project is still questionable (Bureau of Urban Development, Heart Building Law, 2007). Even given the large number of elderly and handicapped, a total of about 3 million individuals, or about 25% of the population, the railway still serves 14 million riders a day and is financially successful. Furthermore, as Mori claims, there is unlikely to be any sudden drop in ridership, which will give the railway time to make adjustments as necessary, as figures 7 and 8 show in their comparison of ridership levels and revenue between 1987

and 1998 (Mori, 2000). In comparison to the 1980s and 1990s when Tokyo's population was much younger, it is clear that there was even less incentive at that time. This also raises the question of the true impact that aging will have on the railways.

The TMG estimates that 24% of the population in Tokyo will be over the age of 65 by 2030 (Bureau of Urban Development, Heart Building Law, 2007). This is an increase of five percentage points, but the impact of this increase is still unclear. For example, while increasing gasoline prices and other economic factors could be a major determinate in automobile usage, will this cost increase eliminate the automobile as an alternative means of transportation for elderly? Thus, even if barrier-free measures taken today are sufficient, it is unclear whether the elderly population, given the choice, would choose railways over automobiles. In this same manner, from the perspective of JR East it is difficult to say that this population will become an important source of its income, especially since JR East is now free to engage in other non-transport related economic activity.[16] Although the government had recognized the social importance of providing alternatives at this point, especially for those who depend on mass transit to survive, JR East still had a different perspective.

[16] Prior to privatization, JNR was prohibited by law from participating in non-transport related businesses, such as operating resorts and real estate development. Mori discusses JR East's efforts since privatization in great detail in his work on the subject and says that in 1987, however, this changed and the company has aggressively poured capital into these areas. Thus, if the railway wished, today, to serve the elderly population in order to make a profit, they have the option of investing in non-transport related industries and services that would be more attractive to this demographic.

CHAPTER 4
LEAD UP TO THE 2000 TRANSPORTATION BARRIER-FREE LAW

Up to this point I have discussed some of the problems with accessibility measures being left in the hands of private industry. While this has not been a detailed look at the specific efforts JR East made, nor is the case of JR East necessarily typical of private railways in Japan, it is the single most important mode of transportation in the Tokyo area. Thus the quality of the railway's efforts is critical to the nature of accessibility in Tokyo's transportation system. In this way, one can say that the railway's sluggishness in taking on accessibility improvements of its own accord had serious implications for the course of accessibility improvements in Tokyo. The government could no longer assume that competition among the railways would naturally lead to service improvements that included barrier-free planning; direction from the government was necessary.

Incremental Steps to Government Direction

As Japan's developmental approach to running the nation has often been accused of putting the economy before social concerns, this late-coming shift from private to public impetus is not surprising. For example, if one considers the government's insistence on building the high-speed railways in comparison to its hands-off approach to accessibility improvements, the lateness of this shift simply reinforces this view. Although the government clearly states that improved economic activity is one desired outcome of accessibility improvements (Nitta, 2005), accessibility improvements are

primarily seen as social projects, not economic ones. In this way, the government seems to be framing the shift in terms that it understands. In other words, if accessibility improvements were seen as more economically beneficial, the Japanese government may have taken over the project sooner. As discussed earlier, though, a change in thinking over the last 30 years has shown a clear change in thinking of the government towards the handicapped population, one that is moving towards normalization (Japanese Society, 1997).

Accessibility issues coupled with the growing population of elderly in Japan, has led the Japanese government to recognize that it must lead an integrated approach to preparing its society for these changes, including taking barrier-free and universal design measures (Japan Transportation Law Society, 2001). Furthermore, barrier-free is no longer simply the removal of steps or the building of elevators to overcome elevation changes; it is now seen as the smooth flow of movement from origin to destination. But as the 30 or so related laws implemented before 1993 show, as in the partial list from figure 1, this change was slow in coming.

As mentioned earlier, by 1983 the government had created a series of guidelines to help improve the accessibility of the transportation system. The first of these laws was the 'Guideline on Improving Facilities for the Disabled at Public Transportation Terminals' (Ishi, 1995). This guideline focused on the physical station building and, as the guideline's name suggests, was designed mainly with the handicapped in mind, not the aged. In this way, it is possible to say that even in 1983, the government was still not fully aware of what was required to improve the accessibility of transportation facilities

for this group. However, the guideline does show that the government was responding, at least on the surface, to changes in thinking towards the handicapped.

The second major guideline related to transportation was implemented in 1993 and basically expanded the scope of the first law. The name of this guideline includes the term aged as well as handicapped and expands the area of improvement from 'facilities' to 'facilities and fixtures'. In other words, the accessibility of the station alone was not the issue, but the ability of all to use the entire station equally—from bathrooms to platforms—was being taken into account. Furthermore, the guideline specified the areas to which accessibility improvements needed to be made—approach to the station, ticket machines, wickets, access to the platform, boarding and unloading of trains, toilets, telephones, and information (Ishi, 1995). This guideline also expanded the scope of the measures to include busses, airports, and boat terminals.

While the 1993 guideline details which areas needed to be improved and sets out guidelines on how to do that, it lacked any sort of financial support to aid railways and it lacked any strength to enforce its provisions. In many ways, this guideline was the predecessor of the 2000 Barrier-Free Transportation law; the two cover the same basic areas and the 2000 law uses many of the requirements and language of the earlier guidelines to determine which facilities need to be upgraded—namely stations with 5000 or more users per day and more than 5 meters between floors, for example. It appears, however, that the lack of strength these earlier guidelines had in backing up their requirements resulted in a further delay in accessibility improvements. The guidelines also leave the planning of these improvements up to the discretion of the transit provider.

The government had assumed the role of setting a standard, but it still depended on the railways to make their own decisions when it came to implementation.

A further example of the weakness of these guidelines is the former Japanese Ministry of Transport's 1999 guidelines on the installation of escalators and elevators. Some of the exemptions allowed when determining if an escalator or elevator was to be built include: if there is insufficient space to install an escalator or elevator, if it would be too difficult to install an escalator or elevator for other important reasons, or if the local government determines one is not necessary due to usage patterns (Japan Railway and Transport Review, #20, 1999). Not only do these guidelines lack the ability to enforce implementation, but they also provide a series of loopholes that allow railways to avoid following the guideline in the first place.

Furthermore, these guidelines lacked strength in their vagueness over urgency for their goals. While they urged railways to make their best effort and work as quickly as possible, they failed to set a concrete deadline. Furthermore, the creation of a more equal, integrated society is not included as a goal. Social equality and integration is the ultimate goal of current thinking, and as all of the authors on this subject state, in order to realize a truly equal society, entrance into that society must be both safe and carry as little burden as possible.

Seventeen years after the first regulatory attempt to improve the accessibility of mass transit facilities in Japan, however, the government finally implemented the 2000 Transportation Barrier-Free Law, a comprehensive law that set out specifically to create a more equal society through the improved accessibility of the transportation system as a whole, not just the mass transit system. Both of the earlier guidelines use the word public

transportation[17] in the title, but the new law leaves the word public out and simply refers to transportation and transportation facilities. Moreover, leadership for the implementation of the law's provisions was to be taken over by the public sphere and the private transit operators in Japan were to be relegated to partners, at best. The following section will explain the details of this law and its mechanisms, but the main point to recognize here is that the government, not the private railways, was now in control of accessibility improvements.

A New Outlook for Legislation

The target date set by the 2000 Transportation Barrier-Free Law is 2010. By that year, all major facilities that meet the requirements of the law—stations that serve at least 5000 passengers per day, and have a height difference between the platform and the concourse of at least 5 meters, or facilities that serve a large number of either elderly or handicapped passengers—must be made barrier-free. The setting of a target date is the first of three major changes that truly sets this law apart from the previous laws. It marks a deadline for planners on the government's side and implementers on the transit provider's side. Without this deadline, the process of creating a barrier-free transportation system, even with tools in place to enforce the law's provisions, would drag on indefinitely. Furthermore, it would be subject more to the economic state of transit providers and local governments than to the needs of the population. While there

[17] In Japanese, the term public transit and mass transit are synonymous, *koukyoukoutsuu*. While the word used in Japanese refers to public control, as public transit does in English, the mass transit system is primarily in the hands of the private sector. With the privatization of the two subway companies in Tokyo, the majority of the public transit system will be privately owned and operated. Tokyo Metro was semi-privatized in 2004 while the City operated subway is still a municipal enterprise. In this way, public refers to the people, or masses, and thus public transit in Japan really means mass transit.

is no mention of consequences if the overall project fails to meet this deadline, there are penalties for non-compliance with the law in general.

The second difference, related to where the burden of cost lies, is in funding. Until 2000, there was little to no money available for private transit providers to make improvements to their facilities. While guidelines laid out how and what was to be done, there were neither tools in place to enforce them nor incentives available for industry to carry out these changes. The 2000 law, in contrast, provides funding for these projects along with tools to enforce the law.[18] Along with the deadline, the availability of public funding is critical. It helps resolve one of the problems mentioned in the opening of this thesis; the question over investment in non-profit yielding improvements versus capital investment is dealt with to some extent through these public funding sources.

While public funding for these projects covers less than one hundred percent—33% is paid for by the national government in one form or another, 33% is paid for by the local authority (town, village, city, or district), and 33% is paid for by the transit provider—the cost is drastically reduced for the railways. But the expansion of the law's scope, the third major difference, is the greatest achievement of the law and the single most important reason why this project was placed in the hands of the government. This expansion of scope first requires a discussion of the change in thinking from barrier-free design to universal design.

[18] Transit Facility Barrier-free Equipment Maintenance Grant (3.2 billion yen, 2005), Comprehensive Station Upgrade Project Grant (City Integration Type) (2.1 billion yen, 2005), are just two of the larger ones. http://www.mlit.go.jp/sogoseisaku/ns/sien/hojo/hojo.htm

Barrier-Free Design to Universal Design

Barrier-free improvements are the simple removal of any obstacle in the physical environment that impedes movement over a surface. Some obvious barriers in rail stations include staircases, steps, narrow wickets, and gaps between the platform and the train. Barrier-free measures remove these obstacles by supplementing staircases with escalators or elevators, eliminating steps by either raising the level of one surface to meet another surface or through the use of ramps, opening narrow passages for wheelchairs by placing wider wickets at entrances, and by closing gaps between the platform and train by using replaceable bridges or straightening the platform itself. The point to note here, though, is that each barrier is looked at individually. This approach fails to look at the bigger picture as it ignores the relationship between barriers, or looks at barriers from the perspective of only one type of handicap—for example, mobility impairment or visual impairment—without considering how the barrier is perceived by others.

Without understanding the flow of movement from one space to another, however, barrier-free design can actually create new barriers. For example, by failing to see that raising one surface creates a step somewhere else along the line of travel, the barrier is simply shifted from one location to another. Another problem is that barrier-free measures designed to remove a problem for one group of individuals can create a barrier for another. This problem arises because designers fail to see how different handicaps interpret different types of surfaces. For example, when a step is removed to improve wheelchair access to an area, the removal of that step creates difficulties for visually impaired persons as they now have one less landmark by which to navigate. On the reverse side, guide blocks for visually impaired individuals can cause difficulty for those

in wheelchairs as the grooves make it hard for wheelchairs to maneuver (Japan Transportation Law Society, 2001).

But perhaps the most critical problem is that this approach fails to understand the reasons these barriers exist in the first place. Barrier-free design tends to focus on the physical and ignores the social. In other words, it attempts to place bandages on fundamentally flawed systems. While larger areas are recognized to some extent in the 1993 guidelines, it still focuses on the physical—approach to the station, ticket purchase, wickets—but mentions nothing about educating station staff on how to deal with handicapped passengers with special needs or on the social importance of accessibility (Ishis, 1995).

Taking the issue into larger account, though, the most obvious and critical flaw for simple barrier-free measures is their lack of comprehensiveness. In short, because they only look at the micro, that is, the barrier immediately at hand, they fail to recognize that the obstacle in question is just one barrier along a pathway from origin to destination. This refers to both physical and social barriers. If even one barrier obstructing mobility along that pathway exists, it trumps all of the barrier-free measures put in place elsewhere. For example, even if every step lying between the residence of a visually and physically impaired individual and the train station is removed, if they are prevented from reaching the station because a crossing light does not have audible cues, then all of the efforts expended elsewhere have been for naught.

This realization is important in that it recognizes that pathways should be the focus of barrier-free measures, not individual locations. As pathways cross all boundaries, from home to transit provider to business, an institution that can organize

seemingly unrelated groups becomes necessary. Thus, with barrier-free measures left in the hands of private industry, it would have been impossible to develop the kind of comprehensive thinking necessary to realize the goals of the 2000 Transportation Barrier-Free Law. Universal design (UD), the next step, requires a change in design approach and in the ability to implement measures regardless of location.

While the first two points are important—goals and funding—it is this last point—the change in perspective—that led to the next revolution in accessibility, which is what the 2000 Transportation Barrier-Free Law was designed to carry out. The shift from barrier-free design to universal design is the final step in this process. While the name of the law still aspires to a barrier-free goal, what the law is really attempting is universal design. Universal design fulfills two goals. The first of these two, though, is slightly different from the above mentioned problem in terms of scope.

The above mentioned problem is over pathways versus independent locations. However, universal design is geared not towards a single group of handicapped, but towards all users of the facility or product. In other words, it looks at how a product (in this case the station or railway facility) can be designed in order to serve all users in the same manner regardless of the physical or intellectual limitations and conditions of the user. Universal design takes into account all of these different groups, or sub-groups, and attempts to provide the same level of functionality for all through rigorous testing under a variety of circumstances; once implemented, organizations with investigative powers continue to evaluate the functionality of the good or service and adjust the good or service in order to continue providing the highest possible level of service.

The second goal of universal design, and the one that is most relevant to this thesis and to the 2000 Transportation Barrier-Free Law, is to achieve a greater level of comprehensibility. As discussed above, universal design takes into account the route of travel rather than the barriers along that route. In other words, it recognizes the interrelationship between different regions along a route and evaluates the level of accessibility by looking at how mobility varies along the entire route. As with product design, it also continues to adjust measures along the route until the highest level of mobility is provided throughout. In concrete terms, as long as the private railways and JR East were working independently on the project, barriers would continue to exist between the two realms of authority (Goto, 2004).

It is clear that individual private railways are primarily interested in the accessibility of their own stations. They are unconcerned with accessibility problems of the surrounding areas or connections with other railway stations. Furthermore, as spaces that lie beyond their immediate control fall outside their ability to make investments, there is little they can do even if they were concerned with improving total access to their facilities. But as I discussed earlier, the railways were loathe to make improvements even within their own sphere of control, so there was little hope that they would pay for the improvements of rival railways or publicly managed facilities, such as roads and pedestrian bridges. Furthermore, as the private railways compete with each other on several different levels, creating barriers between rail lines, even at transfer stations, worked to their interest. After all, transfer barriers would serve to force riders to avoid transfers, and thus to use one rail line for as many of their trips as possible.

The best solution to the problem of lack of comprehensibility was to create a new system that would incorporate the railways as one piece of a much larger project. The project would rely on the local authorities, the ward level in the case of Tokyo, for leadership; the local population for input and evaluation;[19] and the transit providers for consultation and implementation. In the end, a greater vision for the entire region, centered on the transit facility, would be drawn up and overlaid on the existing built environment. Thus the scope of the project moved from the accessibility of the transportation system, to the accessibility of the entire built environment. In this way, the 2000 Transportation Barrier-Free Law is somewhat of a misnomer. The law looks to improve not just the accessibility of the transportation system, but of all the approaches to that system and all of the facilities to which the system provides access, especially facilities serving the handicapped population. While the official outlook of this law is comprehensive and an improvement over earlier laws, there are still problems.

In 2006, the 2000 Transportation Barrier-Free Law was updated (the updated version of the law is basically a combination of the 2000 Transportation Barrier-free Law, and the Heart Building Law). These changes will be critical to the future accessibility of the transportation system in Japan and the transportation system's further integration into the built environment; but, however important these changes are to improving the situation as it stands today, the changes made to the law are too new to evaluate in the context of this thesis. In short, though, the main goal of this newer law is to bring the project of accessibility improvement under the aegis of a single piece of legislation. In fact, there are only minor changes in the provisions, so this new law is basically an effort

[19] There are at least two major works that focus on the participation of civil society in this project, Akiyama's work on universal design (2005, chp 4.4) and Nitta's work on participatory city planning (2001, 1.2, 2, 3.2, etc).

to streamline the process and bring the entire built environment under one umbrella. It also attempts to improve the level of input from civil groups and the level of sustainability of the project (Transportation Barrier-Free News, 2006).

CHAPTER 5
ISSUES OF THE 2000 TRANSPORTATION BARRIER-FREE LAW

The vision that the 2000 Transportation Barrier-Free Law laid out for the transportation infrastructure of Japan is one that approaches a social revolution. As discussed earlier, this was to be done in part through the improved accessibility of public spaces, focusing on transportation, and in part through the improved participation of all actors in the project. While this aspiration may seem lofty, the law was clear on the steps needed to achieve this, and on how improved accessibility would help to realize these goals. Some research has been conducted on the relationship between transportation accessibility and the economic standing of the individual (Hanson, 2004). In the case of Japan, however, the economic situation of the individual is secondary to the economic situation of the nation; even this law stresses how equality of mobility in terms of both the physical and social environment will improve Japan's economic foundation.

Furthermore, in Tokyo, mass transit is by far the cheapest mode of transportation over distances too great to be traveled on foot or bicycle. The mass transit system is the choice mode for all but the highest income classes; the alternative, the automobile, has been made prohibitively expensive as discussed earlier. So in this sense, as the mass transit system provides the highest level of access to resources necessary for daily life in Tokyo and as it is the cheapest mode of intra-city travel, the railways are a major focus of the 2000 Transportation Barrier-Free Law. This fact also makes accessibility to the transportation system equal to accessibility for all, and essential for survival.

As mentioned above, however, improving access to the railway system and other modes of transportation is not the end goal of this law. Instead, it is simply a step, or a tool as it may be, in creating a more equal society. In other words, improved access to the transportation system serves to realize the ability of all individuals to take advantage of their latent potential. This law will allow individuals previously cut out of the work force because of an inability to reach places of business to take their skills and abilities into the market place. That said, while the law attempts to provide equal access to all, it is clear that the elderly and the physically handicapped are the two groups the authors of the law had in mind.

As I discussed earlier, these two groups will play a greater role in Japanese society and the economy as the population begins to age and shrink; this is primarily do to the fact that they will begin to comprise a larger percentage of the population with each passing year. In this way, the motives of the government are primarily focused on economic stability and securing a work force for the future. While these motives may lack vision, the results of the 2000 Transportation Barrier-Free Law may still be beneficial to disabled individuals in general. In either case, though, a more accessible transportation system will serve both the goals of the government and the city dwellers. It will do this by allowing the Japanese population to work longer even as their physical capabilities decline, as well as by allowing handicapped individuals to participate in society by providing these individuals with the access they need to the services that the urban environment of Tokyo provides. Eventually, the quality of life of all individuals will approach a more balanced level and all members of society, regardless of physical

condition, will be able to maximize their potential. When this is achieved, the law will have fulfilled its goal of creating a more equal society.

A further goal of the law is the improved economic activity (Nitta, 2005) of local areas through better access to goods, services, and employment. As more individuals work, they will accumulate more money, which will in turn allow them to increase spending on further goods and services. This will create more domestic demand and the economy will continue to grow, or at least remain stable. This is an argument that needs to be debated by economists in that it requires a greater understanding of both micro- and macro-economic concepts. But there are at least four questions that will need to be debated before an evaluation of these effects can be made.

The first of these questions is whether improved access to transportation will truly create a demand for work, or only relieve latent demand for mass transit (Japan Transportation Law Society, 2001). For example, will a shift from automobile usage to railway usage occur, relieving latent demand, and/or will new jobs be created that increase the demand for both modes of transportation. If the changes fail to even relieve latent demand, then one must determine where latent demand exists and the reasons why the law did not address this; contrary to the designs of the government, it is possible that the hopes of improved accessibility will be undermined by this simple lack of latent demand.

Related to this is the question over where demand lies. For example, the government is looking at improved accessibility to help secure a work force, while users may be looking to more accessible transportation to improve their post-retirement

lifestyles. In other words, while the goals of transit providers and the government may differ, the goals of the riders might yet again be something else.

The second problem of this law is that it applies almost entirely to the urban landscape. I specifically say urban landscape here because in the case of mass transit, at least, the law limits the facilities that are to be upgraded to highly urbanized areas. Since the minimum passenger traffic at any given station subject to the law is 5000 riders per day, this goal tends to be equivalent to railway stations in major cities. Furthermore, the majority of JR East's stations that meet these basic criteria tend to be in Tokyo, which has led to the majority of stations outside of the metropolis being largely ignored.[20] In this way, while the law is creating a more equal society, because of these requirements, that society tends to exist only within the cities' commuter sheds. In some ways, this may even further the disparity between the countryside and the cities discussed earlier.

A third problem is that the law gives the power to determine what needs to be done and where primarily in the hands of local authorities. Although these local authorities work together with citizen groups, transit providers, and other related groups, such as businesses, they have the final say. Thus, as in the JNR period, local politics and local budgets can be limiting factors. The authority creates a master plan that focuses on the railway station or transit hub as the center, with a starburst of pathways leading out from the station and winding their way to public facilities, such as hospitals, city offices, and other facilities often visited by physically impaired individuals, as in figure 11. The original goal of the law was to make the entire city barrier-free, but this focus on

[20] Simple observation confirms this. Stations in rural area are often badly in needed of basic maintenance let alone accessibility improvements. But even outlying stations in Tokyo's commuter shed receive some attention.

pathways rather than on the entire city was changed to meet the 2010 deadline set down by the law itself (Nitta, 2005).

This approach, however, ends up ignoring everything off of these pathways (Nitta, 2005). In this way, while the transit system is well connected to facilities used extensively by the elderly, for example, there is no guarantee that the elderly live along these same pathways. In turn, the shift to *UD* has been compromised as barrier-free designs no longer cover origin to destination pathways, only facility to facility pathways linked by transit. While this approach makes sense, as Shimizu pointed out, there is still a question over how the needs of those outside of improved areas will be met. Furthermore, these improvements must not impair the mobility of others, a danger since the law's focus is on the handicapped and the elderly.

The last of these problems is financial. While the law provides public monies through a variety of routes, this money covers only up to two-thirds of the total cost, with the remaining third covered by the transit provider. If one looks at the scale of the project that JR East is dealing with, the financial question becomes clear. JR East is required to upgrade nearly 500 facilities by 2010. At an average pace, that is 50 stations per year since the law came into effect (Kamioka, 2003 and JR East Financial Highlights, 2006). With so many facilities to cover, cutting down the cost even slightly for each individual project would add up significantly. Even though the cost of these improvements only amounts to a fraction of its net income, any investment in non-profit improvements can threaten JR East's often narrow profit margins. This cost was discussed earlier, but it is important to reiterate that this creates an incentive to carry out projects as cheaply as possible. Furthermore, all of these improvements must be made while the system is in

operation. With as many as three quarters of a million people using a single station each day (JR East 2005), it is impossible to take any station off-line even for a short period of time. Thus there is also an operational incentive to work quickly since any construction project disrupts normal operations to some extent.

JR East, being the major transportation provider throughout the TMR, is part of almost every regional plan. This makes it a critical player in fulfilling barrier-free improvements in Tokyo and effectively puts it in control of the mass-transit portion of the project. The authority invested by the law in local governments to first designate areas necessary for improvement and then to see these projects through seems to have been hobbled by three further factors. The first is that while local governments can designate a station as one in need of upgrading, the transportation provider is free to carry out these improvements as they see fit as long as they meet the minimum requirements of the law within the designated time frame. In other words, the pace at which JR East carries out these improvements, and the quality of these improvements, is ultimately determined by JR East, not the public officials who drew up the master plan.

This is where the second problem that the law leaves unaddressed comes into play. The law, unfortunately, does not require transit providers or the local authorities in charge of designing these projects to evaluate how improvements are used or the efficiency of improvements after completion. In other words, initial compliance with the law is all that is required. For example, as long as a transit provider places an elevator in a station where it is required, this fulfills the letter of the law, but not necessarily the spirit. The way in which this elevator is used after it is in place, or if the elevator is in a location that is easily accessible to those in need, are some of the factors left out of the equation. This

lack of oversight power gives the transit provider the opportunity to take the simplest route, rather than the one that is going to provide the highest level of accessibility.[21] As this is too often the case, one could interpret from this that mass transit providers are not as interested in accessibility improvements as the government (Nitta, 2005). This gap threatens to limit the success of the 2000 Transportation Barrier-Free Law in that less than full compliance with the spirit of the law could fail to remove all of the barriers from trip origin to trip destination (Akiyama, 2001).

The law also provides no tools to evaluate projects while they are under construction. That is, some projects, especially major station improvements that can take years to complete, are only evaluated during the planning stage, as in figures 12 and 13.[22] While construction is taking place, however, changes in technology and need may occur. Some of these changes include a better understanding of how accessibility is improved or hindered through the observations of improvements at other rail stations, or through a better understanding of the needs of society as those come about through civil movements and research. As there are no tools in place to check current projects against these changes, it is possible that the finished project will not serve the needs of its users.

In some cases, technical issues have been used as an excuse for limiting or ignoring accessibility needs. But there is no evidence for these technical limitations on accessibility given by third-parties; evidence only comes from the railways. In other

[21] Some of the problems with this lack of oversight include—elevators placed at station entrances that are only operational during certain periods of the day, escalators covering only flights of stairs to an exit but not the platform, narrow passages along the platform that prevent a wheelchair from reaching the elevator, overuse of barrier-free facilities by fit passengers, barrier-free toilets placed at exits without elevators or escalators, up-only or down-only escalators that require station personnel to change direction, elevators that require station personnel to operate, etc.

[22] There are differences between the plans used by the Taito Ward master plan for Ueno station and the actual station layout. This seems to have arisen because the station layout used by Taito Ward when creating the master plan was not the latest station plan.

words, the technical ability of the railways to improve the accessibility of their stations is not limited by scientific advancement, but by either value engineering, in the case of determining which improvements will serve riders best, or financial considerations, if budgets are restrictive. Because there is no organization in place to determine the effectiveness and value of improvements after completion, this shows that the law is not fully compliant with UD concepts. UD requires products to be continually evaluated against the needs of their users; this is clearly not the case here. Regardless of how well the law meets physical UD requirements, failing to figure in future social changes is another example of the short-sightedness of the law.

The third and final problem, related to decision-making by state mandate and not by the railways, is that the law sets a deadline on the project, which I previously discussed as a positive aspect of the law. This end-date, however, puts pressure on transit providers and planners to meet a deadline that might be unreasonable and which might account for some of the limitations on accessibility improvements mentioned above; this deadline could even erode the overall level of quality of the project in the end. Simply put, the railways are being required to do too much in too short a time. At first, JR East established a goal of upgrading all of its facilities in the 23 ward area of the city by 2002, (Shiibashi, 1999) but today there are still many stations without a single elevator or escalator.[23] Although this decision was made long before the 2000 Transportation Barrier-free Law was enacted, JR East failed here, and even under legal pressure to meet the 2010 deadline, there seems to be little hope of success.

[23] Two stations on the Yamanote line include Shin-Okubo and Otsuka, and one on the Chuo line includes Ochanomizu. These are three examples of heavily used stations that in 2007 still have no improvements and construction has yet to begin.

But more than this, the real question is over what happens after 2010. What happens after the project is completed? At present, the law is set up to deal with accessibility problems as they exist today; it is attempting to address the issues of an aging society and a society that is more inclusive. But there is nothing in the law that provides for future accessibility needs. It assumes that once the transportation system is fully accessible for today's society, there will be no need to reevaluate it in the future (Akiyama, 2001).

While these questions over the quality and future of accessibility projects may seem to be academic, the scope and goal of the project raises need for answers. If the law is truly geared towards creating a more equal society, it has to evaluate how services and products that are provided for society are changing to meet the needs of that society as it changes. If the two do not match up, new barriers could arise, or existing barriers that the law directly addresses may simply change form.

JR East is under the same pressure to follow this law as are the other transit providers in Tokyo and throughout the country. It is difficult to say, though, exactly if they have done a better or worse job than any other company. What is clear from the problems with the law, however, is that there is a lack of understanding on the part of policy makers as well as a lack of desire on the part of the transit providers. The project is quickly approaching its deadline, but there is still a long way for both the government and the transit providers to go. The following chapter will give two accounts of what these loopholes have created, but also some of the improvements the law has brought.

CHAPTER 6
EVALUATING IMPROVEMENTS: PARTICIPANT OBSERVATION CASE STUDIES AND PHOTO-ESSAY

After the years of legal and physical changes reviewed in this thesis, what is the experience of travel for disabled persons on JR rail lines in Tokyo today? My volunteer activities while conducting research at Sophia University afford me this view. During this time I participated in an organization whose goal was to help prepare mentally disabled individuals for independent living. My involvement with the group influenced my thinking on the subject of accessibility and provided me with a first hand opportunity to experience the mass transit system through the eyes of Tokyo's disabled. The organization has existed for nearly 30 years and the specific subgroup that I was associated with has been around for nearly 20 years. I have been involved with the group on and off for 10 years.

On weekdays the disabled members of the group (referred to simply as members) leave their homes one day a week to stay at a private house rented by the organization. On Saturdays, all of the members gather and travel with volunteers as a group to museums, parks, shopping malls, and other places for the day. On occasion they rent a car if there is no public transit available, but the majority of their movements take place on trains, subways, or buses. Over the course of the year I was at Sophia University, I participated in 35 such outings. However, as we encountered the same problems nearly everywhere we went, I have chosen two examples that I feel are representative of our experiences.

The two examples illustrate both the improvements that the 2000 Transportation Barrier-Free Law has brought about and its shortcomings. They bring to life the current standing of accessibility in Tokyo's mass transit system and show how difficult that system can be to maneuver. My photos further illustrate this point and show what these journeys looked like to us.

These case-studies, while showing typical problems on the system, only reveal a portion of the problem. These studies were not specifically planned or conducted in a scientific manner. They are simply a review of the personal experiences I had while living in Tokyo. The names of all individuals have been omitted to protect their privacy.

Participant Observation 1: Ueno Station to Hamamatsucho Station, October 14th, 2006

On October 14th we gathered at Ueno Station in downtown Tokyo. Ueno station was built after the great Kanto Earthquake in 1923 and has gone through several renovations in the past decade. When I first visited the station in 1997, reconstruction was just beginning and there was not a single escalator or elevator in the three story complex, except one to the *Shinkansen* line in the basement. When I visited the station again two years later, in 1999, construction was in full swing. Elevators were being built on each platform and escalators and elevators were being built even on the walkways leading to the station. Six years later, the majority of these improvements, along with a massive renovation of the main concourse, had been completed. Our group on this day consisted of seven handicapped members, one in a wheel chair, eight volunteers, and two

employees. And as a group, on October 14th, we began our journey on the third floor concourse and moved smoothly through the gates of the station to the platform.

Previously, when we had used Ueno station, four volunteers, or station attendants if available, had to lift our wheelchair bound members by hand up and down the stairs to the platform. This time we were able to use the elevator. Although it was small and we had to wait, the elevator saved valuable time and energy. Volunteering with handicapped adults is an energy consuming activity, so any easement of our work is greatly appreciated. The only comment of dismay at this point is that a perfectly fit individual crammed on the tiny elevator with the two volunteers and one wheelchair member, which made for a close ride. We were also lucky that it was not rush hour when the platform immediately outside the elevator can be too crowded to exit. However, glass doors allow other passengers to see who is trying to exit the elevator and move when necessary.

Once on the platform, there was a significant gap, about 8 or 9 inches, between the platform and the rail car, and again, if the rail car had been crowded, there would have been problems getting on the train. Luckily for us it was Saturday at about 10 in the morning, so the train was relatively empty. On the rail car there was a spot where the seats had been removed so that a wheelchair would fit nicely without blocking the aisles. This was convenient, but we were also lucky in that we happened to get on the train near one of these spots. Only some cars are fashioned in this way, and as far as I was aware, there was no signage indicating where these cars were on the eleven car train. Some stations do have markings on the platform, but on this trip, JR Ueno had no clearly visible markings. The ride was smooth, and for our members who have difficulty with balance, this made the ride easy and safe. Thus we reached Hamamatsucho without issue.

Hamamatsucho Station is another heavily used stop along the Yamanote loop line. It is a transfer point to the monorail to Haneda airport, the busiest domestic airport in Japan, and has connections to several subways. Again, being Saturday morning, the station was not terribly busy, but for us another problem awaited. There are two exits from Hamatsucho Station, North and South. As we gathered, I looked for the elevator, and sure enough, there was one. Unfortunately, it was at the North exit and we needed to use the South exit. The train platforms in Japan can be more than two-hundred and fifty meters, so this can be a significant distance. Although the member in the wheelchair and I could have exited from the North exit and swung around to meet up with the rest of the group, it would have cost time we did not have.

Even though there was no elevator at the South exit, there was a wheelchair lift. There was only one lift, though, which is moved between the two platforms as needed. It happened to be attached to the railing of the other platform at the time, which meant we had to call a station attendant (even if it had been attached to our platform, we would have needed to call an attendant). However, because time was not on our side we opted for the fastest route and four volunteers lifted the wheelchair to carry it down the stairs. As this is a situation we often encounter, we were emotionally prepared, but had to count ourselves lucky that there were enough free, strong hands to manage the situation.

Once we left the ticket gate, though, we ran into another set of three short steps down to the street. We were now in a crowded area that made lifting and moving the wheelchair difficult. I looked around for a slope and eventually found it off to one side. The slope made getting the wheelchair to street level easy, but again, a lack of signage made finding the slope difficult in the first place. Finally, once on street level, the

sidewalk was full of potholes, sharply sloped areas, and debris. The entire area was under construction. Although the situation may have been temporary, there were still no temporary measures in place to mitigate these problems.

(See Figure 15 for Participant Observation 1 Summary)

Participant Observation 2: Iriya Station to Kasairinkai-Koen Station, January 13th, 2007

On January 13th, 2007 we traveled between two stations, Iriya and Kasairinkai-koen. This trip was a little more complex in that it involved a transfer between two railways, the Hibiya Subway Line and JR East, at Hacchobori Station. The handicapped member that I was working with had a mental disability which limited his ability to read and make decisions, but which also made his personality difficult to deal with at times. In this way it was difficult for him to express what it was that he was having trouble with, such as stairways, and often became confused and upset when movement became a problem. This was exacerbated by his physical size, over 120kg, and the damage that his weight had done to his legs. In this way, he is a good example of both the physical and mental difficulties that train stations can cause handicapped individuals.

The mental stress that physical barriers cause, especially to those unable to fully understand their surroundings, can be just as harmful as physical stress. This applies not only to mentally handicapped individuals, but also to elderly with declining mental capacities and first time users of a station. In this case, the long walk between the two stations at the transfer point and a short flight of steps in the middle where one station ended and the other began were the two major obstacles. Moreover, by the time we

reached the transfer station, the mental frustration that the member was already feeling was making it difficult for him to walk the distance between the two stations. He was unable to determine how much further he had to walk, and the fatigue he was feeling was making him nervous. Because of the physical burden this distance caused, the member stopped often to rest and time became a major factor. It probably took him three to four times as long to navigate the station as a fit individual.

While the Hibiya line subway had an escalator in and out of its station, the escalator was located not at the transfer exit, but to the ground level exit of the station at the opposite end of the platform. In the same way, the exit from the JR East station was more or less barrier free, but there was a short stairway in the transfer corridor. Another problem that I noticed was that after the short stairway in the transfer corridor, there was a wheelchair slope. This seemed to be almost an absurdity in that if someone alone in a wheelchair came down the slope they would have no way to climb the stairs on the other side. In the reverse, if they came from the other direction, they would have had no way to get down the stairs to get to the slope.

Our destination, Kasairinkai-koen, was easier to use because of a much more clearly marked elevator on the platform. However, the park that the station serves is popular among families, and so there were many children in strollers and families waiting for the single elevator. While we could have used the escalators, the member was already tired and getting on and off escalators is sometimes difficult for him. At this point we decided to wait for the elevator. We had to wait for it to come and go three times, and as the platform is at least 10 meters above the gates, it took several minutes for the elevator to make a round trip.

While the first elevator's location was clear, the second elevator, from the gates to the ground level, another two stories below us, was not. There were two volunteers with the member, and even though we both scanned the area for an elevator, we did not see it and ended up walking down the stairs; there was no escalator here either. Furthermore, we had been concentrating on the member to make sure he was okay, so we were distracted from the signage. The member himself was already frustrated and hungry and just wanted to get to the park. So he headed immediately to the most obvious exit from the station, which was the stairs. Even though this was the most difficult exit, it did not seem to matter to him at this point. Although we knew what we were going to encounter on the return trip, it was just as difficult because of fatigue and the fact that the stairs we had descended were now stairs that we had to ascend. Only after reaching the wickets, though, did I finally find the elevator. But this was after climbing the staircase again. Perhaps had we left from a different gate we would have seen it.

While these are only two examples, they do illustrate some of the difficulties. Furthermore, they illustrate the importance of understanding trip-origin-to-trip-destination pathways. They also show the frustration that barriers can cause. Barriers do not simply prevent movement, they cause mental and emotional stress, which in extreme cases leads to avoidance. As with the member in the second case-study, physical barriers manifested themselves as emotional barriers. Had he been able to comprehend his surroundings better, perhaps he would have been less frustrated. But without volunteers, it would have been impossible for him to use the stations alone, even though he is relatively high functioning.

(See Figure 16 for Participant Observation 2 Summary)

The following photo-essay adds the visual element necessary to understand some of the problems described above. Ueno Station is the subject of the photos, and one pathway, from entrance to platform, is described.

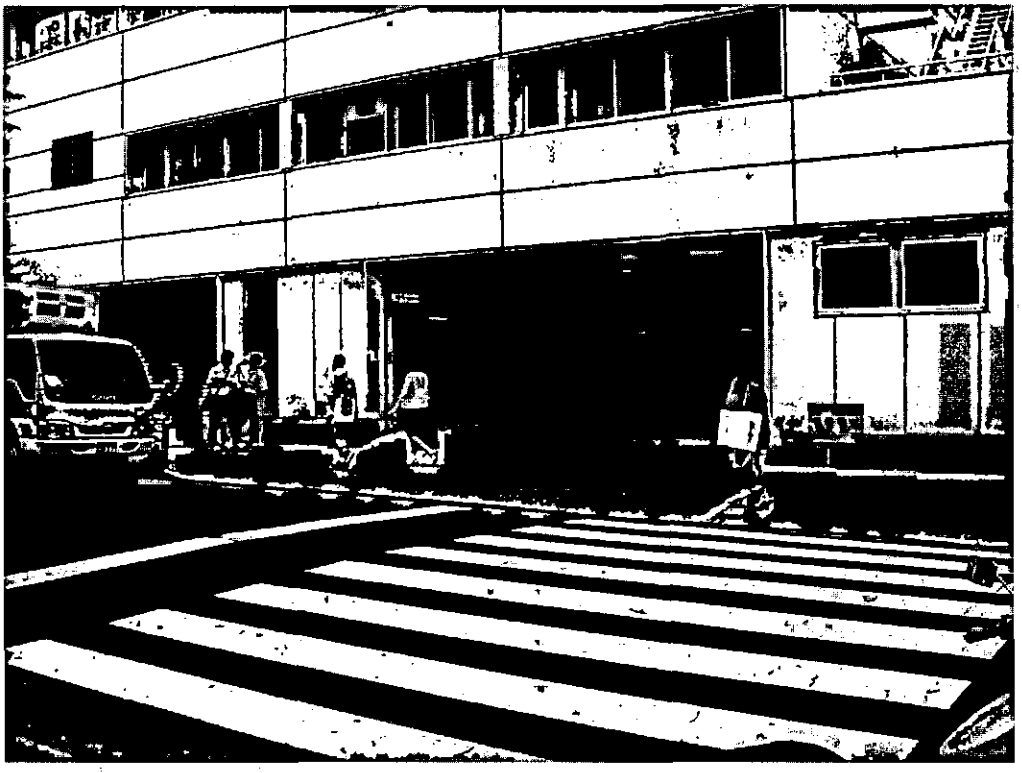


Photo 1 Crossing the street to the Iriya entrance of Ueno Station. The sidewalk on the opposite side of the street slopes gently to meet the road.

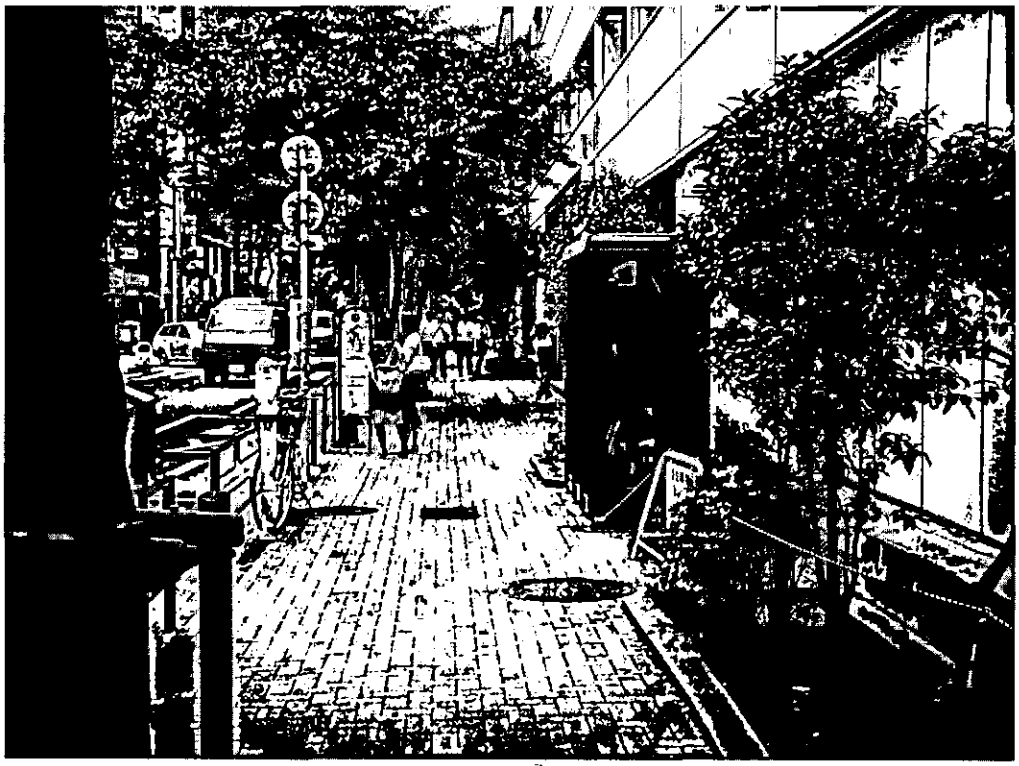


Photo 2 Walking down the street towards the Iriya entrance of Ueno Station. The sidewalk is narrow around the tree, but there is still room to maneuver.

Photo 3 Iriya entrance. There are two steps leading from street level to the station beyond.

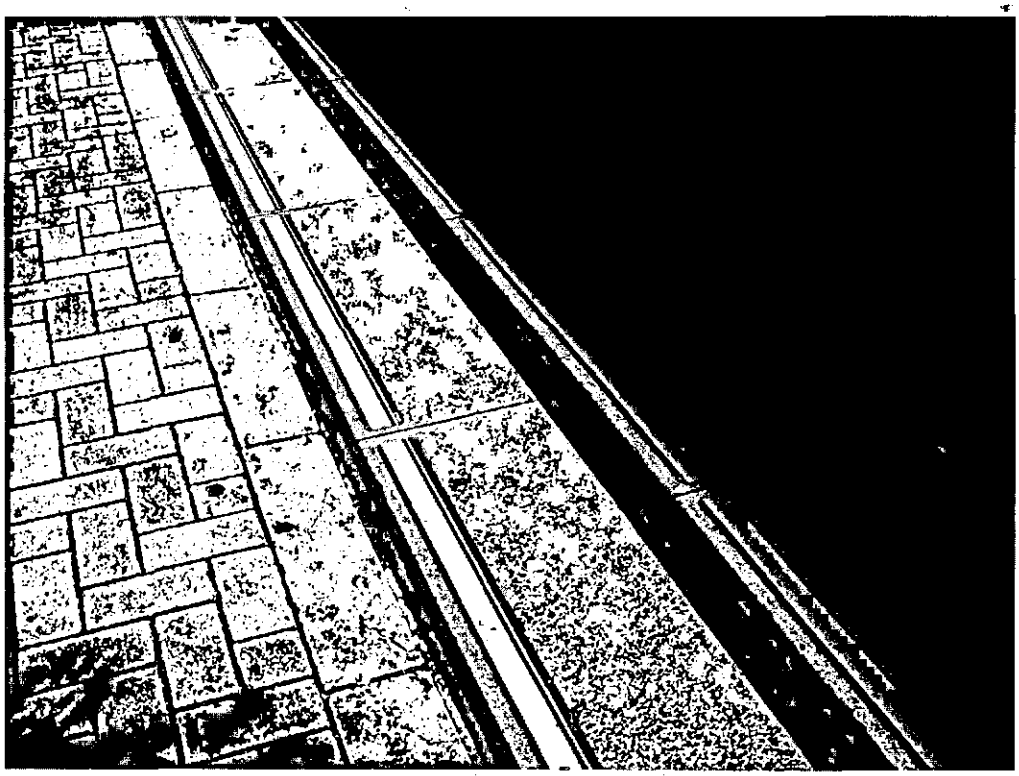


Photo 4 Another view of the steps leading from the street to the station.

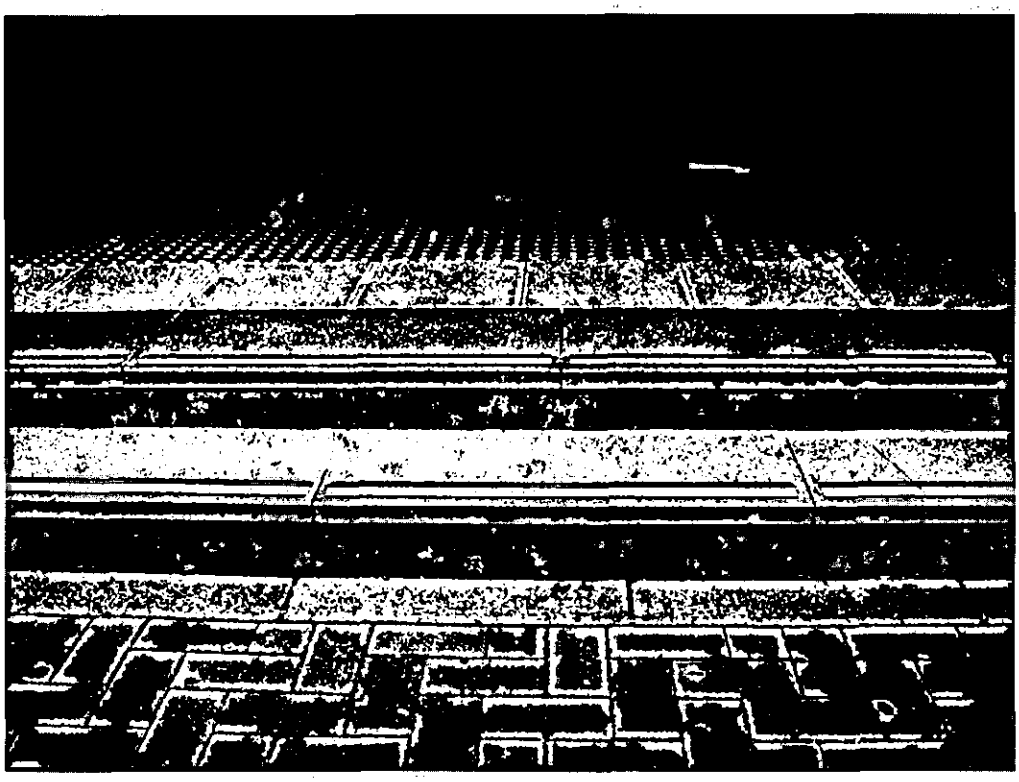


Photo 5 Another picture of the steps leading from street level to the station.

Photo 6 Iriya Gate is located on the third floor of the station. There is only an up escalator at the first set of steps leading to the third floor.

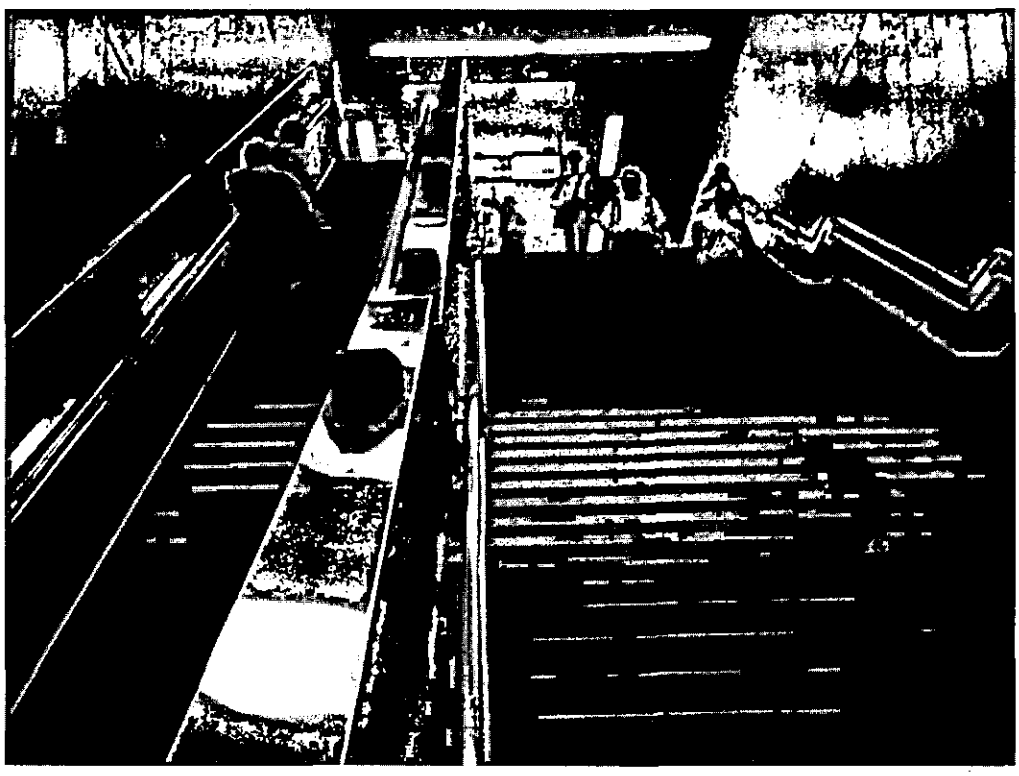


Photo 7 This is another vantage of the steps leading to the third floor.

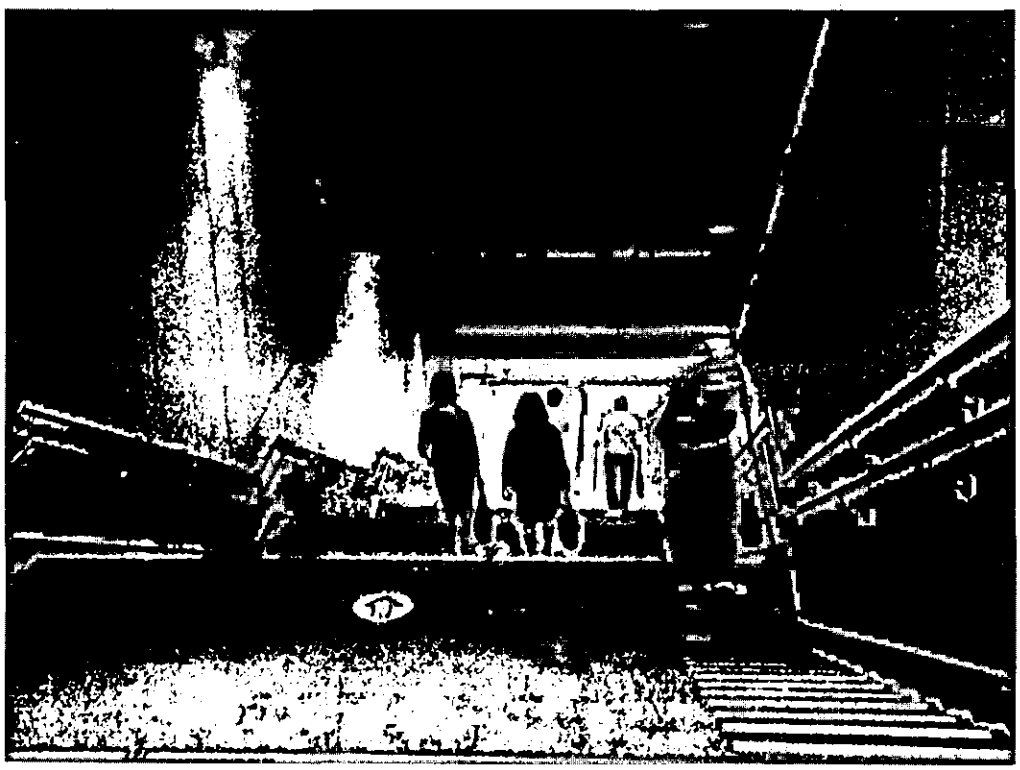


Photo 8 Looking from the top of the steps down. From this vantage one gets a good idea of how difficult it would be to walk down if one had mobility problems.

Photo 9 Hallway leading from the first set of steps to Iriya Gate. The yellow line running down the center is made of guide blocks for visually impaired passengers.

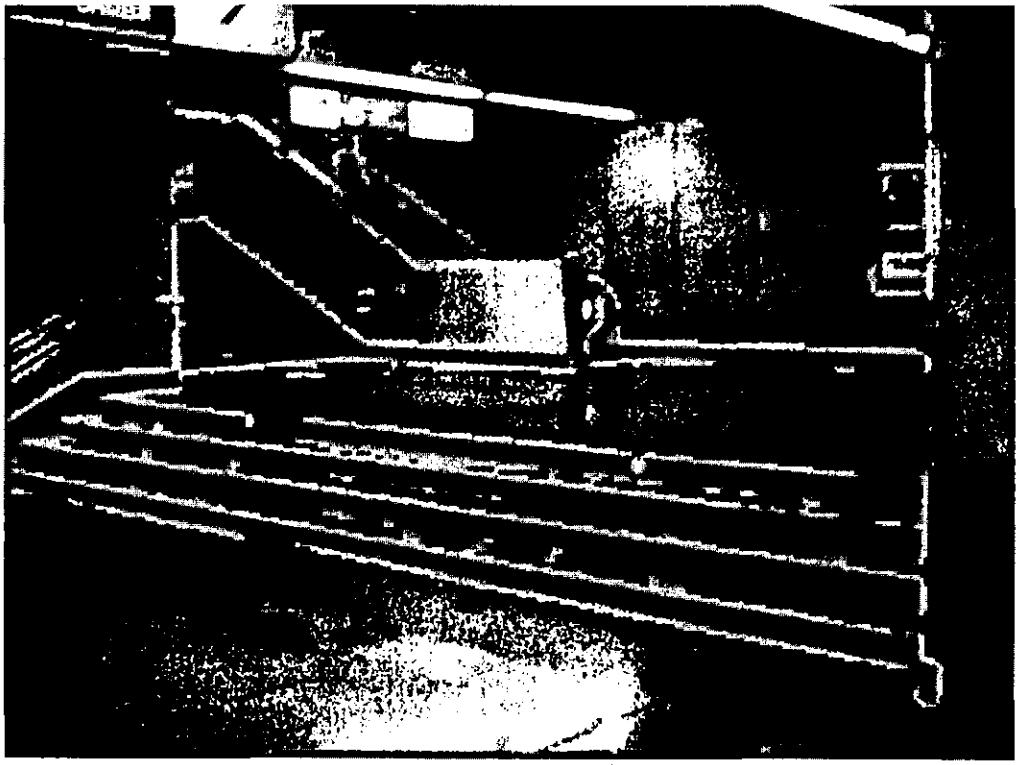


Photo 10 There are four steps here leading up to the escalator that finally leads to Iriya Gate. Note the guide blocks do not go to the escalator, but to the stairs.

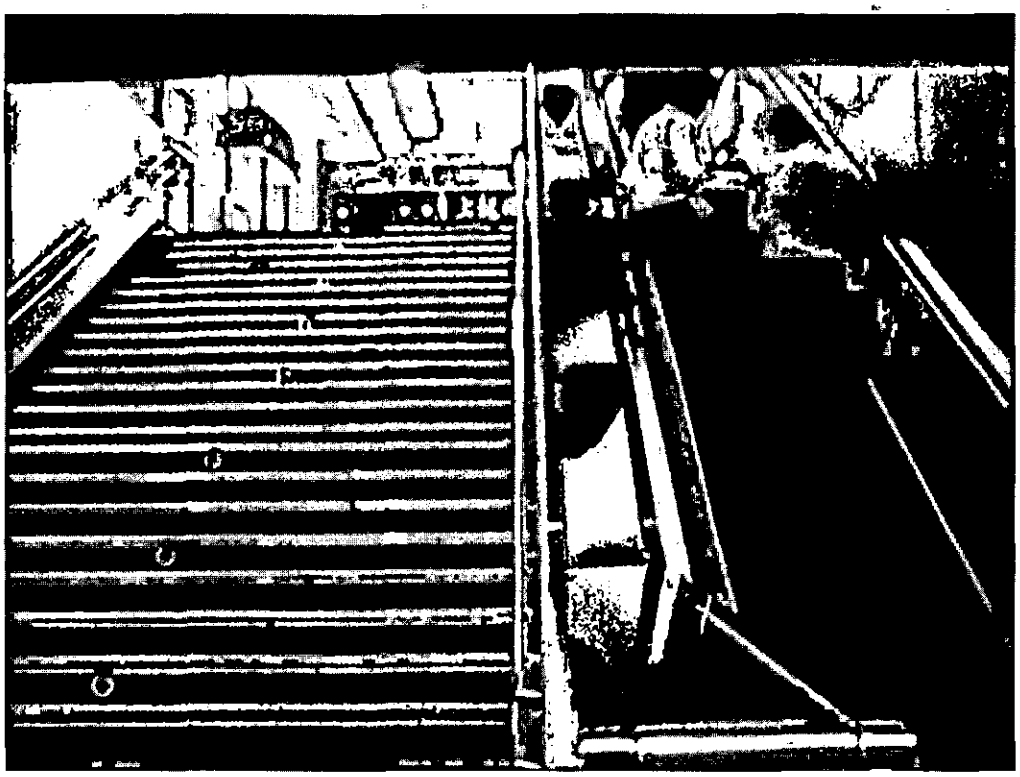


Photo 11 A view from the bottom of the escalator. This set of stairs is not as long, but there is still only an up escalator.

Photo 12 View from the top of the stairs. Again, the guide blocks only lead from the stairs to the ticket machines to the left.

Photo 13 Iriya Gate. The wheel chair entrance is on the far right where the guide blocks lead.

Photo 14 To the right are the four steps leading to the elevator. Straight ahead are the elevator and the ramp that circumvent this barrier.

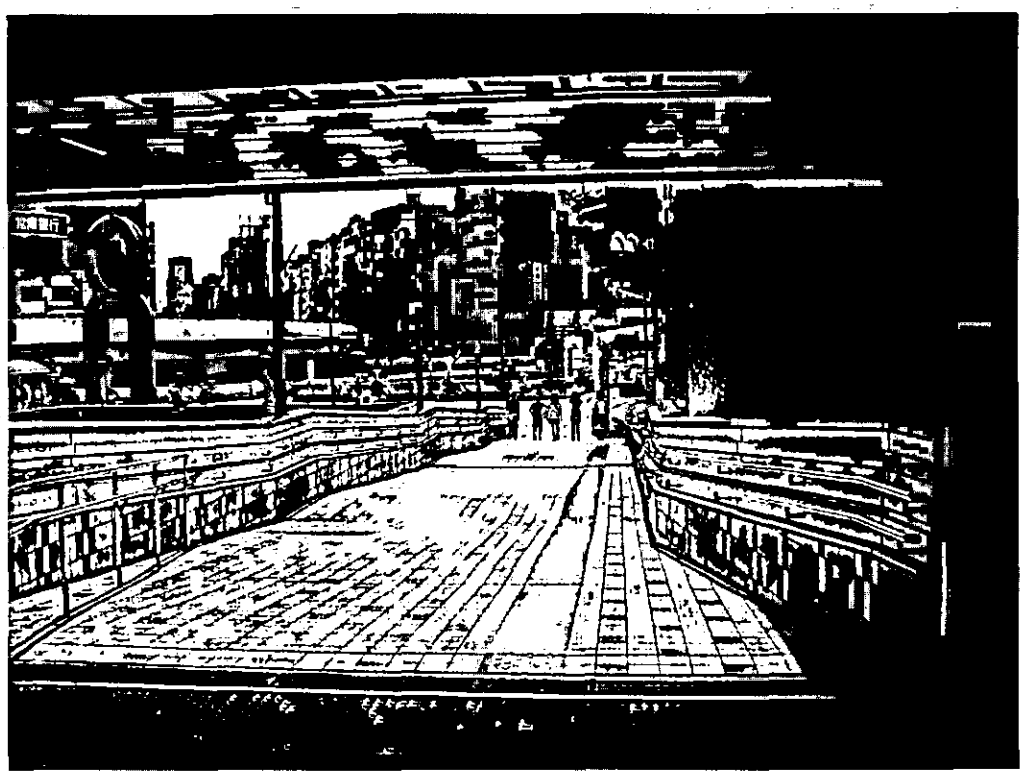


Photo 15 Ramp leading down to the elevated walkways in front of the station. This pathway is uncovered, exposing those who cannot use the stairs to the elements.

Photo 16 Elevator to the third floor. There is no sign indicating the elevators location on this level of the station.

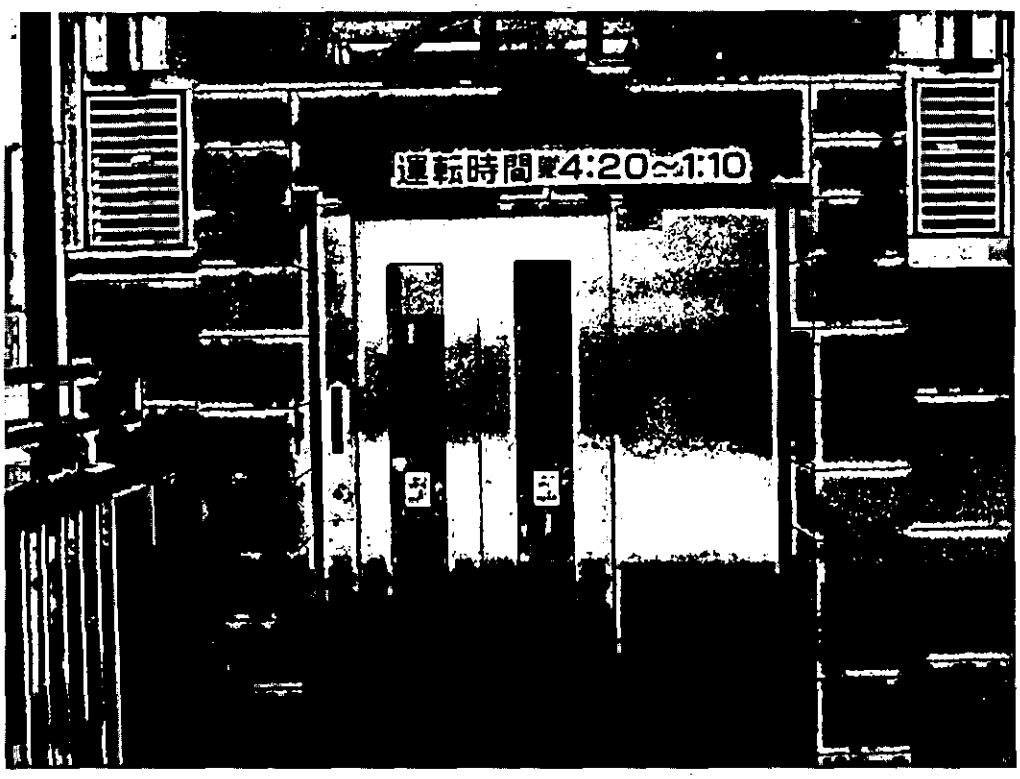


Photo 17 Third floor elevator entrance. The times of operation are from 4:20 am until 1:10 am.

Photo 18 If one takes the ramp, one must use this escalator or the adjacent stairs to reach Iriya Gate.

Photo 19 This is the third floor plaza leading to Iriya Gate. Both the escalator and the elevator lead passengers to this point.

Photo 20 Iriya Gate from the view point of the plaza. If one follows the guide blocks, they reach the ticket machines or the wheel chair entrance from photo 13.

Photo 21 The first sign one encounters after passing through the ticket gates. Platform numbers are large, but for first time users the sign can be difficult to understand.

Photo 22 Looking down the concourse at noon.

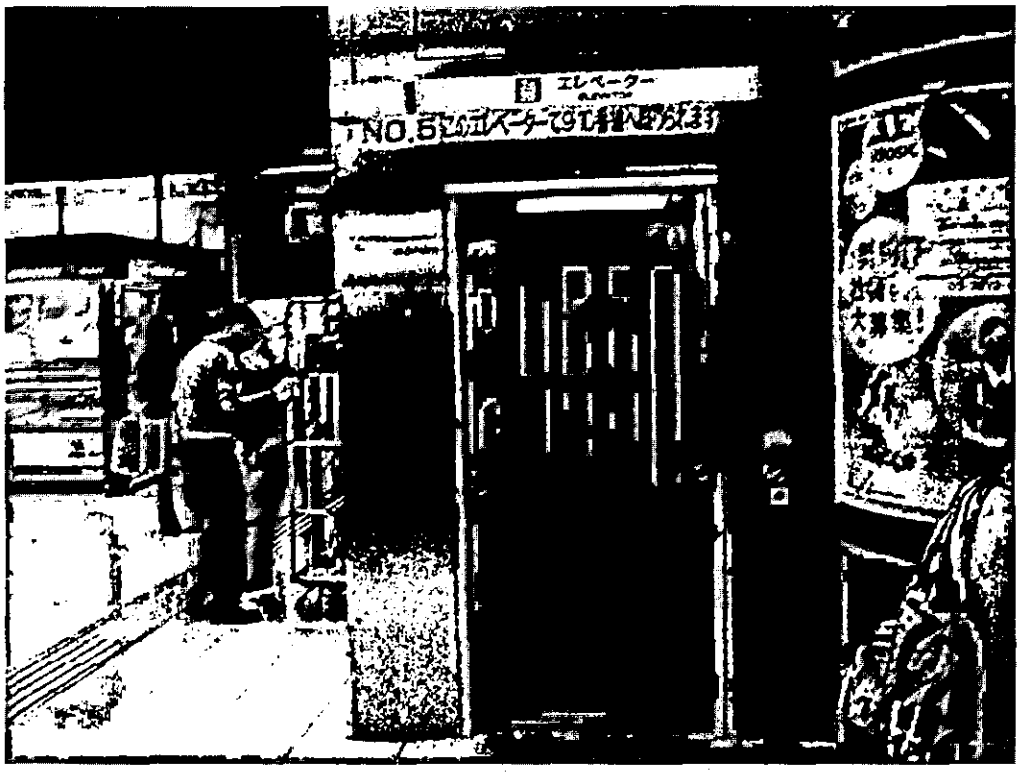


Photo 23 An elevator leading down to the platform. This is designed to hold 11 people, but is quickly filled by a single wheelchair or baby carriage.

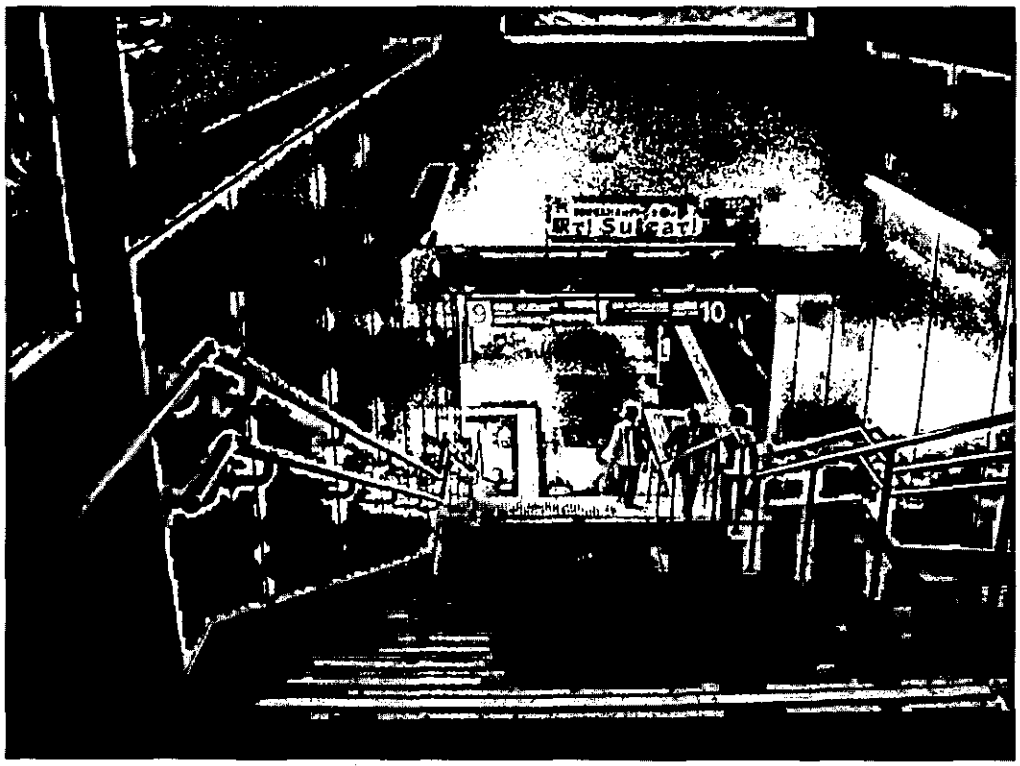


Photo 24 Stairs leading down to a platform. The yellow lines ate the edge of the steps are to help people who have difficulty with depth perception know where the steps are.

Photo 25 Steps leading down to the same platform on the other side of the concourse. Neither set has an escalator, but the elevator is nearby.

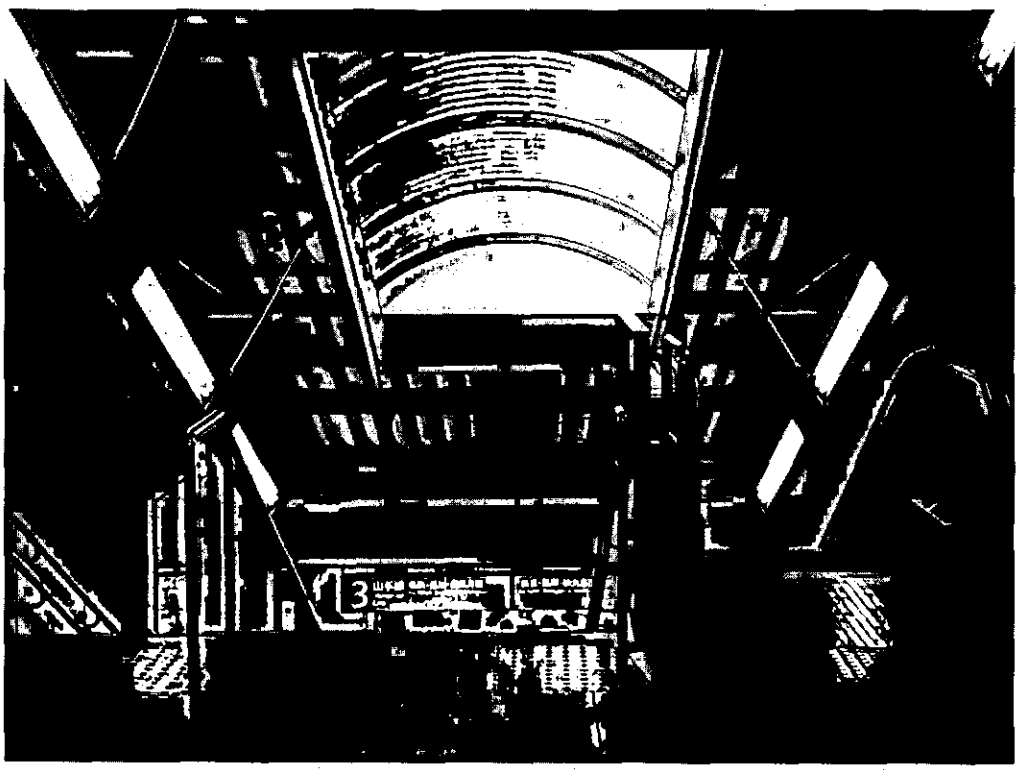


Photo 26 Up escalator from the platform to the concourse. Again, there is no down escalator but the elevator is immediately at the top of these stairs.

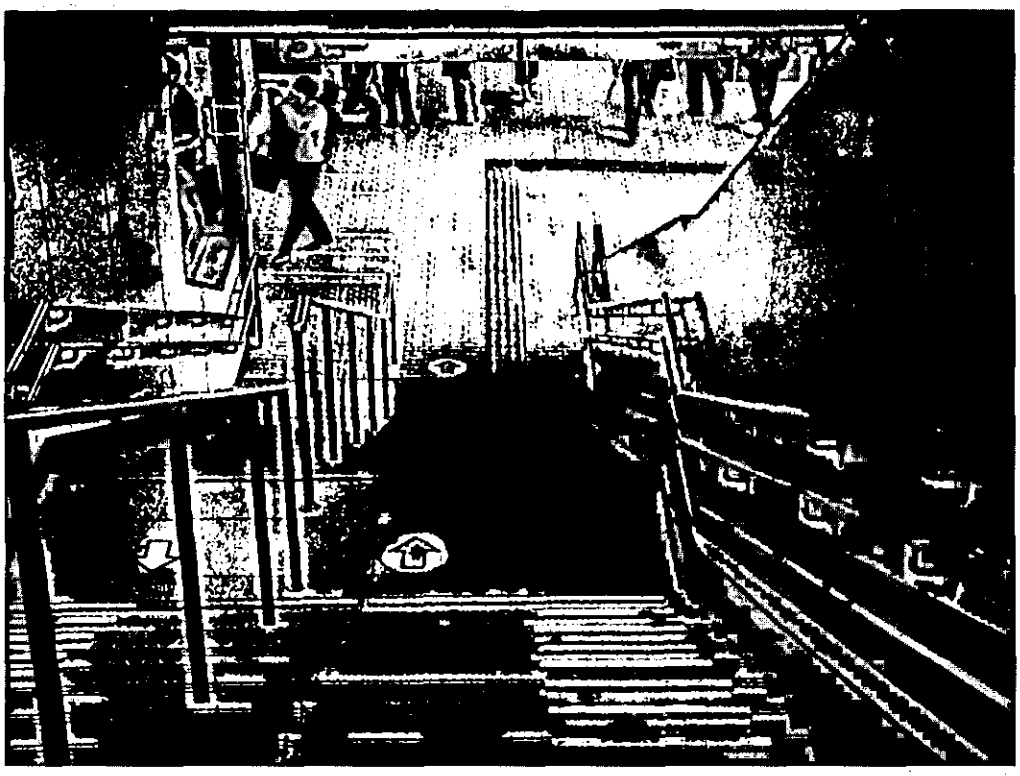


Photo 27 The escalator to the right takes up about a third of the width of the stairs. This makes for difficult maneuvering during rush hour. Also note the guide blocks start at the base of the stairs. They do not lead to the escalator.

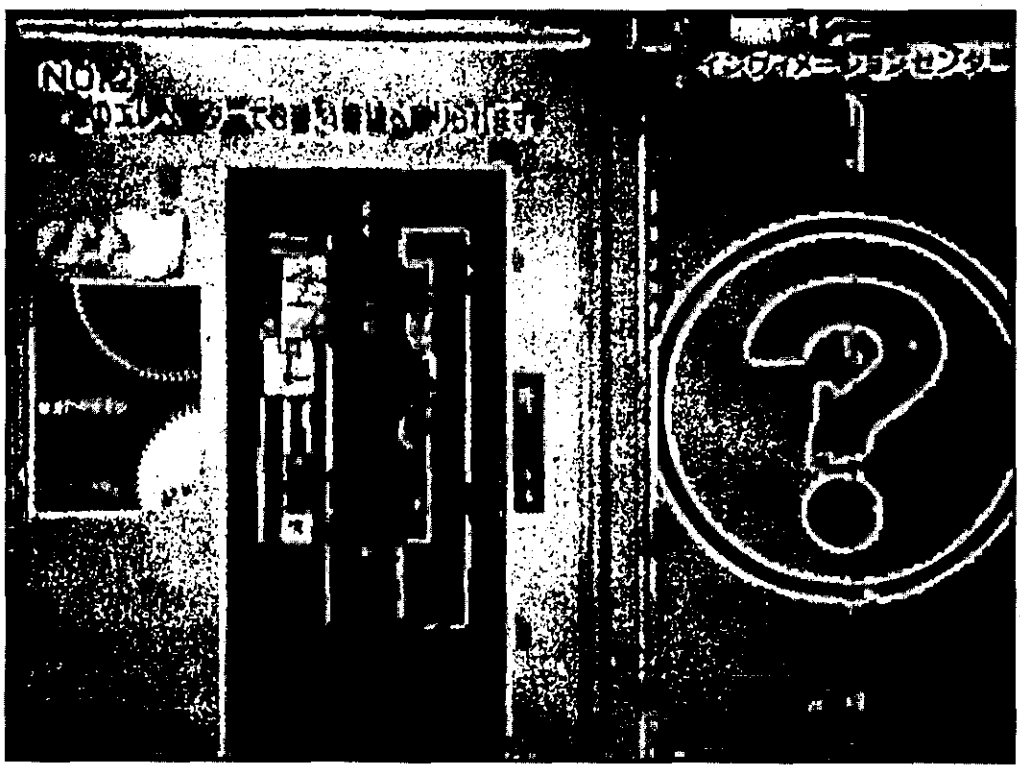


Photo 28 Another elevator to the platforms.

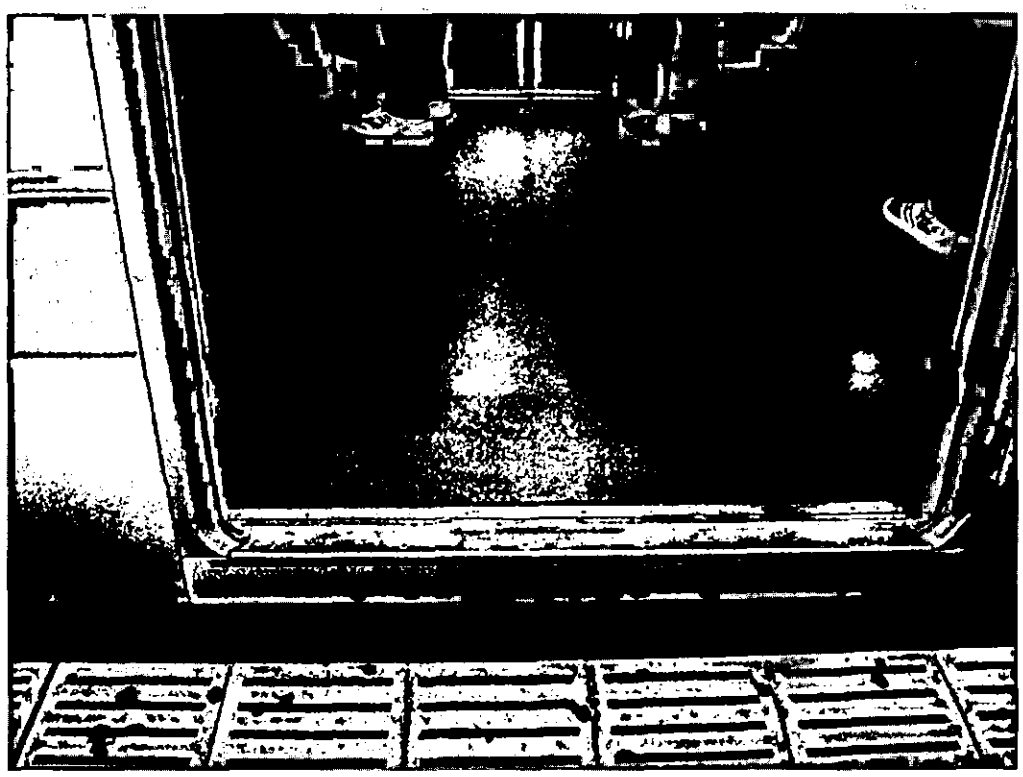


Photo 29 Announcements tell you to be aware of the gap between the train and the platform. But the step up to the train can be just as much of a problem.

Photo 30 Even this new model train leaves a gap between the car and the platform and requires one to step up to the railcar.

Photo 31 Steps at the head of the platform. If one is unlucky enough to ride the first car of the train, there is no elevator or escalator here.

Photo 32 This inaccessible bathroom is at the top of the steps from photo 31.

Photo 33 This is the accessible bathroom on the third floor concourse. It is far off to one side, away from all of the platforms.

Photo 34 Sign pointing out the accessible bathroom.

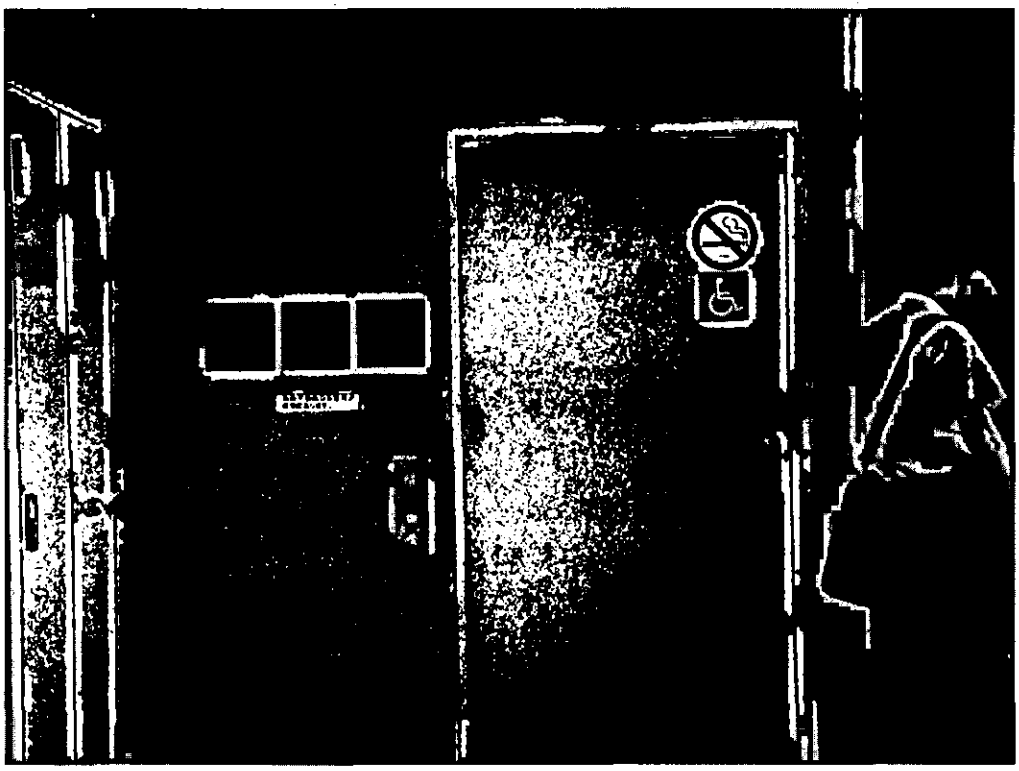


Photo 35 Door to the accessible bathroom. Large buttons are used to open and close the door.

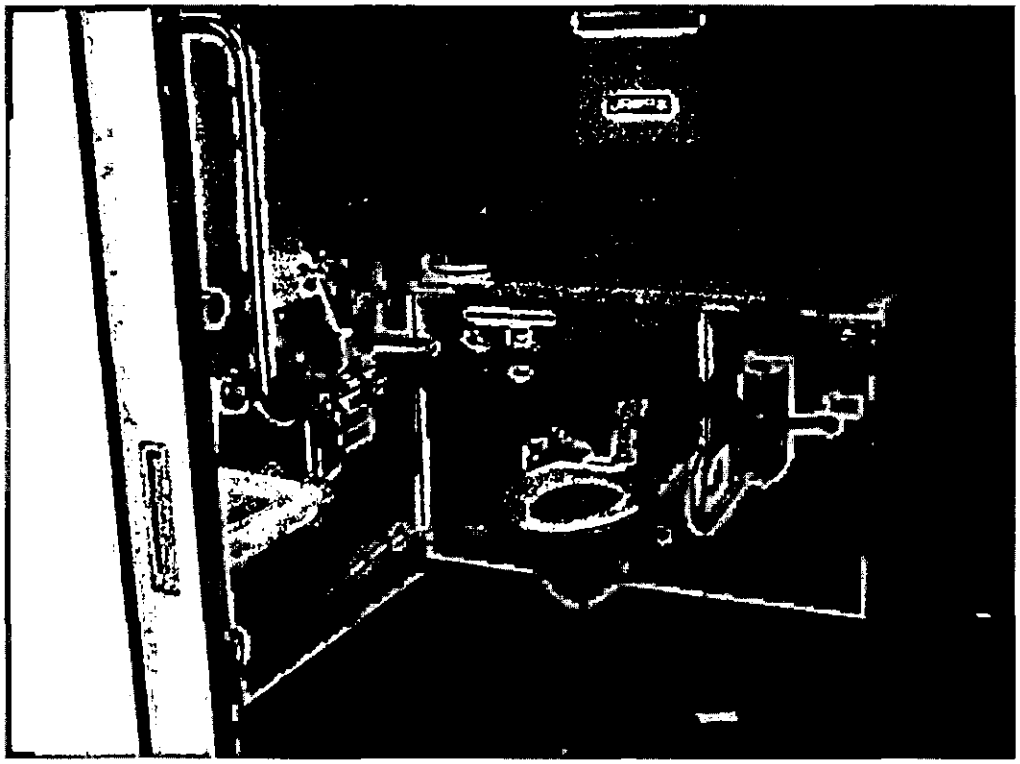


Photo 36 Interior of the accessible bathroom.

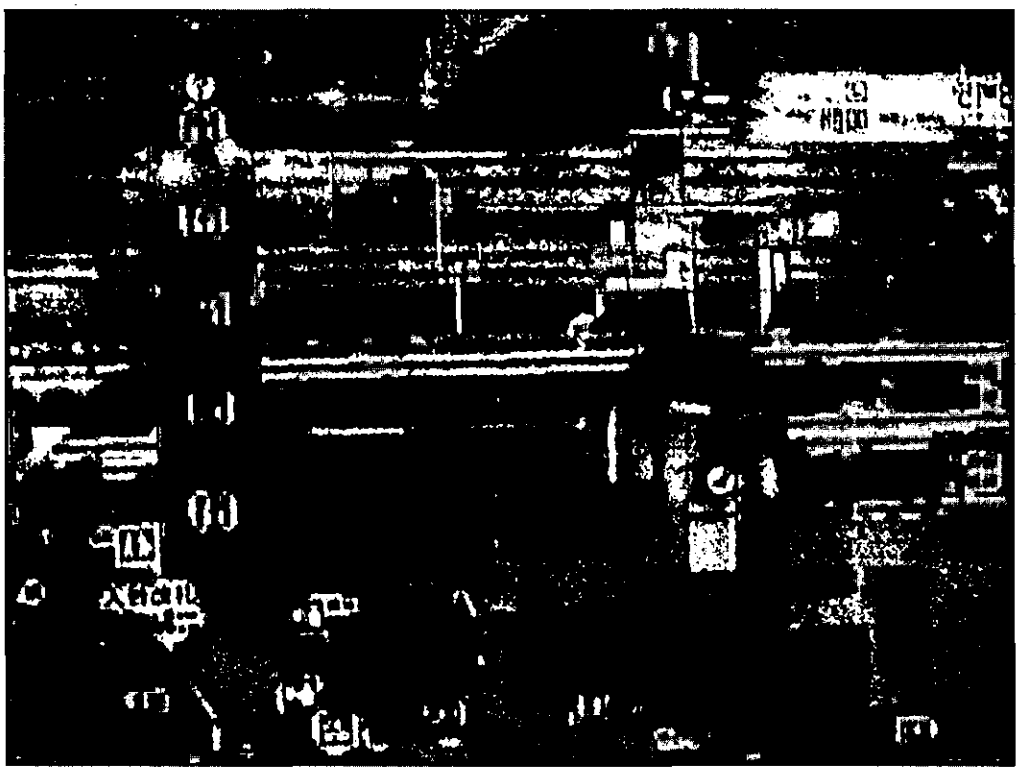


Photo 37 Map of the third floor concourse. Note the accessible bathroom at the center bottom away from the platforms and the inaccessible bathroom at the top right at the head of the platforms.

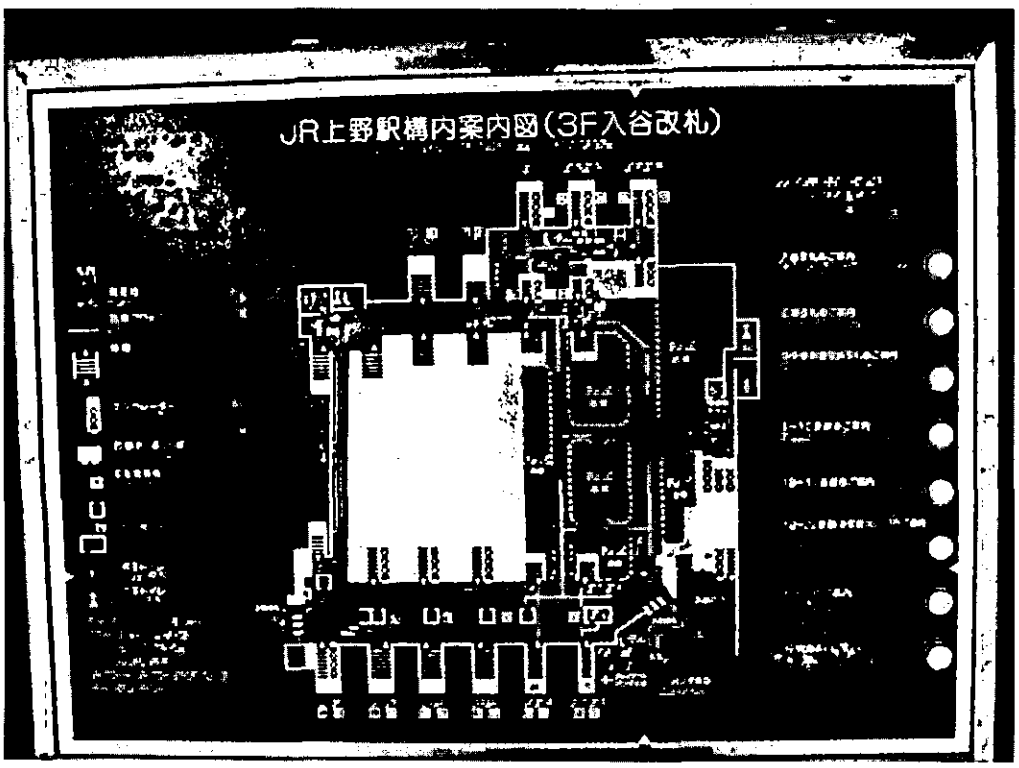


Photo 38 Braille station map. This map also uses recorded instructions for direction.

Photo 39 This elevator takes one from the bottom of the steps at the right, to the top of the steps. This is a cost enigma.

CHAPTER 7
CONCLUSION

In this thesis I have attempted to show that accessibility improvements to Tokyo's railway infrastructure have taken place in step with a change in the view of the handicapped and the elderly's place in society. One focus of my study was JR East, whose ability to respond to these changes was hobbled first by structural problems during the National Railways Era, and then by economic and operational concerns in the post-privatization years. A second focus of my study was the National Government as it began to feel pressure to respond to both its citizens' demands and looming economic problems with projects for improved accessibility. This disconnect, between the private rail firm's goals and the state's goals, eventually led to a government takeover of the project to plan and fund accessibility improvements. My chapters have presented a historical reconstruction of events and my observations of today's improvements for handicapped travel on Tokyo rail lines have given this history a face.

I have given several reasons why both the private and public sector reacted as they did to these changes, but unfortunately, as the problem is complex and there is no simple answer, these factors are only one piece of a larger puzzle. The geography and disability discussion of Chapter 1 outlined the analytical approach to these reasons. Changes in the view of disabilities in the 1970s and 1980s led to changes in corporate and public policy. Unfortunately, as described in Chapter 2, JNR was distracted by more immediate concerns and unable to respond effectively to these changes. However, the government was making some moves, albeit still cursory at this point. Chapter 3 then outlined the post-privatization JR East and its approach to these problems. Again,

though, its concerns were mainly over ridding itself of JNR's poor image and improving its profitability. Eventually, as shown in Chapter 4, the government realized that neither private industry's actions nor its own were enough. In order to better answer the needs of its changing population and awareness, the government implemented the 2000 Transportation Barrier-Free Law. As with all laws, though, there were still problems. Chapter 5 discussed some of these such as compliance and oversight, but also showed that at present many of these problems still exist. Chapter 6 looked at some of the positive results of this law and some of its shortcomings through case studies and a photo-essay about accessibility in rail travel in Tokyo.

One key problem that still remains is exactly how changes in the view of the handicapped and the elderly in Japan have affected public policy and corporate action in general. A large volume of research exists on the shifting image of the handicapped and the elderly in Japanese society. This research is convincing in showing some honest desire on the part of the government to further incorporate these groups into Japanese society for humanitarian reasons. However, from my research, I believe the fear of a workforce shortage was the motivating factor for accessibility improvements. This seems to have been a far greater motivator than international changes in the view of disabled persons or domestic pressure from civil rights groups.

The geography and disability literature shows us that the more the disabled and elderly are valued by society, the better their level of access. But it does not say whether their value needs to be social or economic. Regardless of the impetus, however, the impacts of these changes on the level of accessibility in Japan have been positive, if late in coming. The early stages of this change focused on the physical infrastructure of

the system, under administrative guidelines the railways should follow. Chapters 2 and 3 described how these early improvements took place in an era where the government felt implementation by the private sector would be more effective. Chapter 4 showed that Japan's shift took place through directive power in the hands of the government. Policy momentum transformed the project from one that improved the mass transit infrastructure to one that is improving the social fabric of Japan. The theme of "access" also expanded the decision-making process to include all facets of that society.

The railway system in Tokyo has made great progress in improving the accessibility of its infrastructure as a result. Only the later efforts, however, expanded the removal of barriers from the concrete and steel of the built environment to the social hurdles that blocked the free movement of all peoples in the Japanese society. This only occurred after greater awareness of the problem filtered into the government, as described in Chapters 2 and 4. While these barriers once blocked entry into the workforce, they have now been partially removed to allow these groups to enter the public mainstream. This change shows an increase in regulation in direct relation to the increased value of the handicapped and the elderly in the eyes of the government. Furthermore, changing views of handicapped and elderly in Japan, as well as a new awareness of their importance to the future of the Japanese society and economy, speeded up shifts in public policy towards regulation of accessibility measures.

Re-regulation, or legislation in this case, is creating a more accessible environment in Tokyo. This may contradict Fujita's view that Japan only regulates for economic purposes. However, if one considers the government's desire to secure a workforce for the future, perhaps she is correct after all. Through deregulation, however,

the JR Group was allowed to abandon unprofitable lines in the countryside, which led to plummeting service levels in rural areas. This is in strong contrast to the notion of social-welfare through improved economics. This disparity between the city and the countryside harkens back to the geography and disability lens, and suggests further research questions on the theme of access.

Local differences in values placed on handicapped individuals in Tokyo and the economic goals of the national government created specific outcomes. The power-plays between the state and private industry, as well as between local developmental policies and private industry profit motives, are some of the major underlying factors involved in the outcome of the accessibility improvement process in Japan.

One could say that accessibility improvements are the result of changes in handicapped and elderly awareness, as was discussed in Chapter 1. Improved awareness of these groups has led to a higher level of responsiveness to their needs from the government. While mass transit does not seem to have responded in kind, changes in government regulation have had a major impact on the actions of mass transit providers. On one hand, initial deregulation created an environment in which Ministry of Transport (MOT) guidelines held even less power while freeing up the railways to pursue more profitable operations. On the other hand, deregulation subjected the railways to market forces which might have required them to take barrier-free measures to compete. Although this was the theory, markets apparently did not stimulate barrier-free improvements and if the government stripped itself of the authority to control the railways, then deregulation was a no-edged sword. That is, no one, neither the markets nor the government, was mandating barrier-free improvements.

When this problem was recognized, the government began to re-regulate. Thus, it is also possible to say that the legislation of older pre-privatization regulations resulted in higher levels of accessibility. In some ways, legislation of regulations allowed for even greater control in improving accessibility. This approach explains the current legal emphasis on accessibility improvements.

In the end, however, it was the government's realization that neither total control by the central government nor complete reliance on market forces would succeed in improving accessibility in Tokyo. Through a three-sided approach, detailed by the 2000 Transportation Barrier-Free Law, the needs of suppliers and users are brought to the fore, with the government acting as a catalyst. This all takes place in a common arena for discussion. This structure improves the responsiveness of the law since local authorities have a better understanding of their citizens' needs, and it allows riders and transit providers to voice their concerns as well.

Although great strides have been made by all actors, problems still exist. Chapter 5 looked at some of these problems, and showed where policy makers had either fallen short of their goals, or misinterpreted the problem. A revised version of the law, the "Promotion of Independence and Social Participation for Persons with Disabilities Law" implemented in 2006, combines two major laws, the 2000 Transportation Barrier-free Law and the Heart Building Law. It will take time for the effects of these changes to make themselves manifest. But if the progress over the six years since the 2000 Transportation Barrier-Free Law is any sign, there is hope for the future of accessibility in Tokyo's urban environment.

As Tokyo relies heavily on its mass transit system, the accessibility question also incorporates a great deal of discussion over the relationship between land use and the transportation system. While this relationship falls outside the scope of this thesis, what is important to recognize is that once these connections are better understood further changes to the built and social environments will be required to maintain high levels of accessibility. As this relationship becomes clear and is utilized, patterns of movement will change. Once steel is erected and concrete poured, however, it is difficult to undo what has been done. Thus it is critical to more actively implement Universal Design.

Another unresolved issue related to this is over post-implementation management. Transportation researchers may still question the value of these improvements in the first place. It is clear that many unseen barriers in the social world still exist which prevent these improvements from realizing their full potential. Through better management practices and evaluation systems, improvements can be made more effective and lessons can be learned from older measures. This will make new improvements more efficient and of higher quality, the goal of UD. It is still unclear at this point, however, whether any of these efforts are truly allowing for a more integrated society, or are simply making life easier for current users of the system.

In this way, non-mass transit options may become even more attractive if automobiles or vans continue to provide a higher level of mobility for the elderly, especially given that Japan's shrinking population will reduce crowding on the roads. To fight this, JR East is running a series of campaigns to call back its elderly customers and to improve its operations to serve the needs of riders who fall outside of its traditional commuting base. These are important efforts given the problems of an aged society that

is already finding automobiles more convenient than mass-transportation. Further research into comparing the levels of mobility and accessibility provided by railways and automobiles will help to answer these questions.

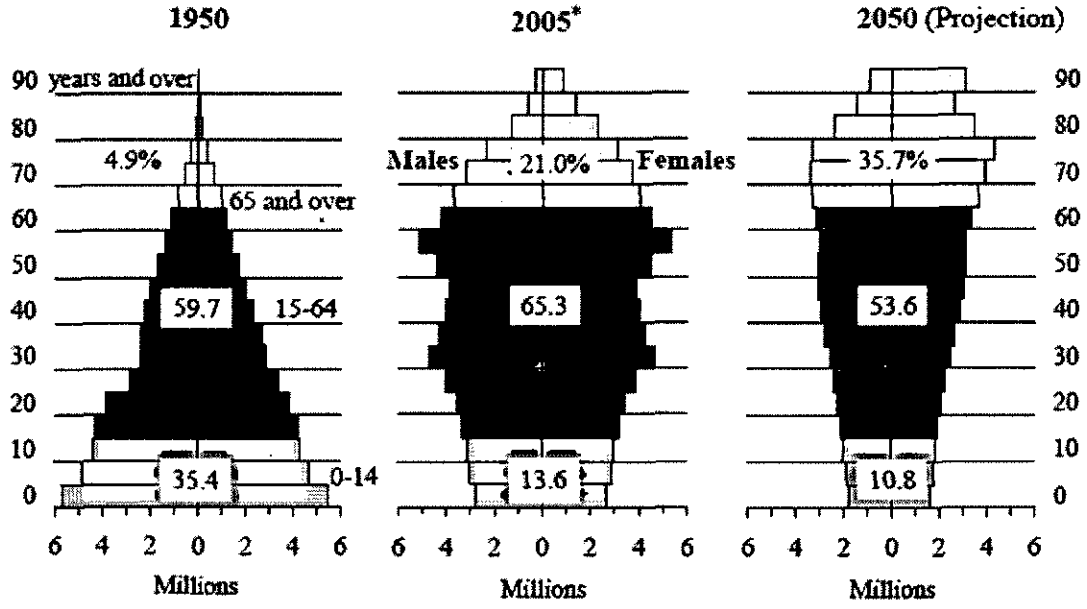
In short, although there are problems, nothing would have happened without increased awareness of the issue. Once awareness of the issue brought the needs of the handicapped and the elderly to the fore, there needed to be a shift in the way government and private industry interacted. This was the legislation of regulation revolving around the place the handicapped and the elderly. The place these two groups hold in this contest has been critical in understanding the motivations of the state and firms as they took different paths to greater accessibility. Finally, this shift led to a cooperative relationship between the two main actors that did not exist previously. This thesis has described this process between the National Government and JR East, with its facilities as the location of contestation. If I have been successful, these two actors' paths to accessibility improvements, analyzed through changing views of the disabled and regulatory reform, should be clear.

APPENDIX: CHARTS AND GRAPHS

Figure 1 List of laws and guidelines related to barrier-free measures for railway stations

表2-2 **ターミナル関連の施策** (Figure 2-2 Terminal Related Policy)
西暦ターミナル関連の施策 (Date, Terminal Related Policy)
1981 運輸政策審議会答申
(1981 Transport Policy Committee Report)
1982 肢体不自由者・視覚障害者用公共交通機関ガイドブック
(1982 Public Transit Facility Guide Blocks for Physically Disabled and Visually Impaired Persons)
1983 公共交通ターミナル(鉄道)における身体障害者用施設整備ガイドライン
(1983 Guideline for Facilities in Public Transportation Terminals (railway) for Physically Disabled Persons)
1983 国鉄点字ブロックの設置義務化
(1983 Mandatory Installation of Guide Blocks in JNR Facilities)
1991 鉄道駅におけるエスカレーター整備指針(1993改訂)
(1991 Guidelines for Escalator Installation in Railway Station (revised in 1993))
1993 鉄道駅におけるエレベーター整備指針
(1993 Guidelines for Elevator Installation in Railway Stations)
1993 日本開発銀行による垂直移動施設整備に対する低利融資(政策金融)
(1993 Japan Development Bank Low-interest Loans for Vertical Movement Facilities (Policy Funding)
1994 公共交通ターミナルにおける高齢者・障害者等のための施設整備ガイド
(1994 Guideline of Facilities for Elderly and Disabled Persons in Public Transit Terminals)
1999 鉄道駅におけるエレベーター及びエスカレーターの整備指針
(1999 Guidelines on Installation of Elevators and Escalators in Railway Stations)
2000 交通バリアフリー法及び移動円滑化のために必要な旅客施設及び車両等の構造及び設備に関する基準
(2000 Barrier-free Transit Law and Basics on the Installations and Structures Necessary for the Easement of Movement in Passenger Facilities and Carriages, etc.
2001 ターミナルのガイドライン(仮称)(発行予定)
(2001 Terminal Guidelines (temporary name)(in planning))
2006 Barrier-free Transit Law and Basics on the Installations and Structures Necessary for the Easement of Movement in Passenger Facilities and Carriages, etc (revised).

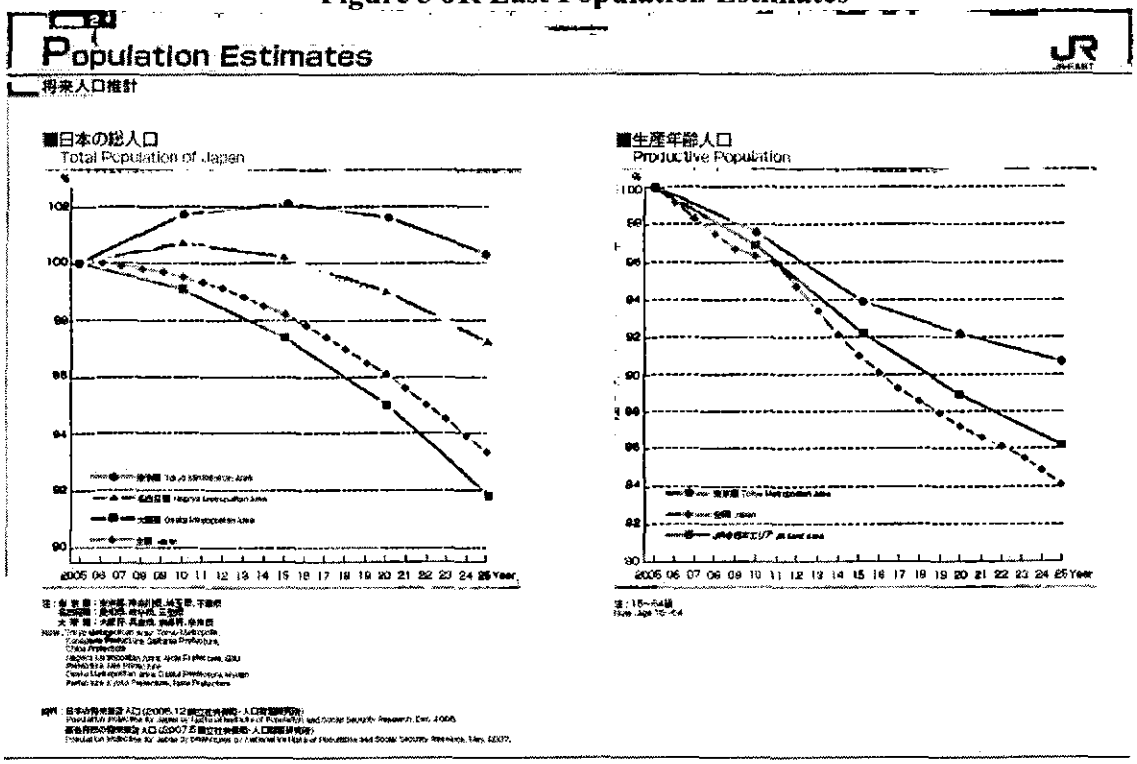
Figure 2 Changes in Japan's population between 1950 and 2005, and population projection for 2050



Source: Statistics Bureau, MIC; Ministry of Health, Labour and Welfare.

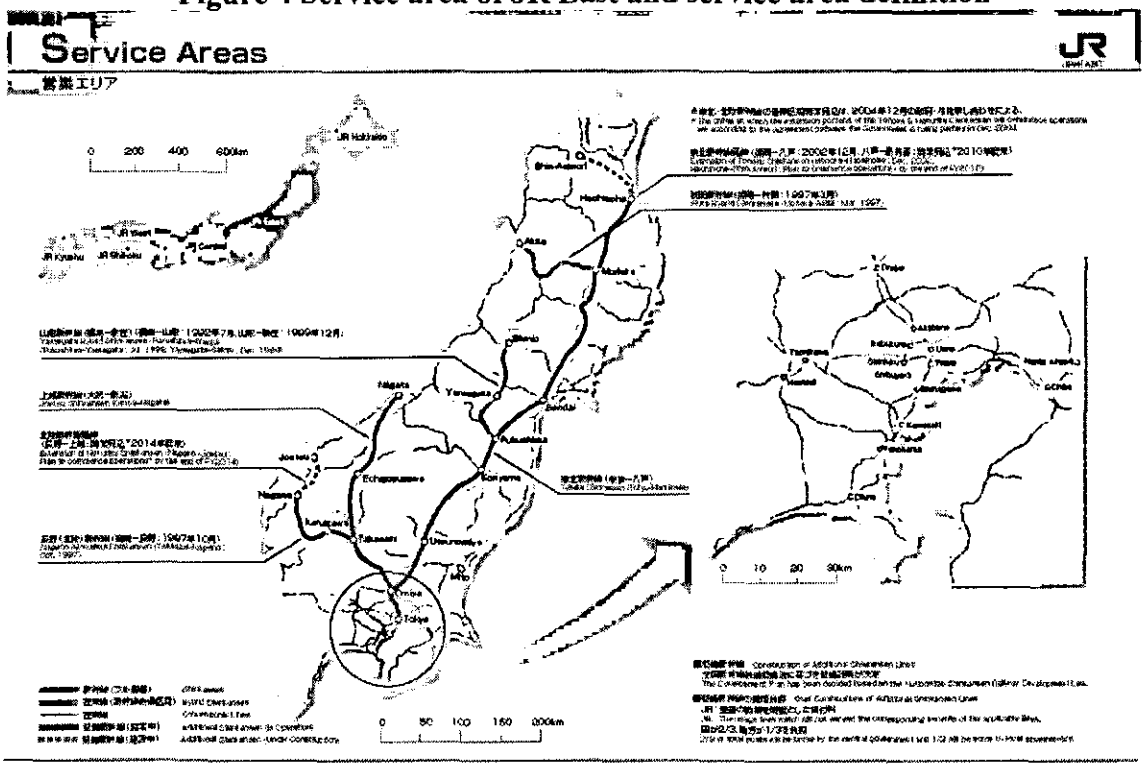
Source: Statistics Bureau & Statistical Research and Training Institute, Ministry of Internal Affairs and Communications

Figure 3 JR East Population Estimates



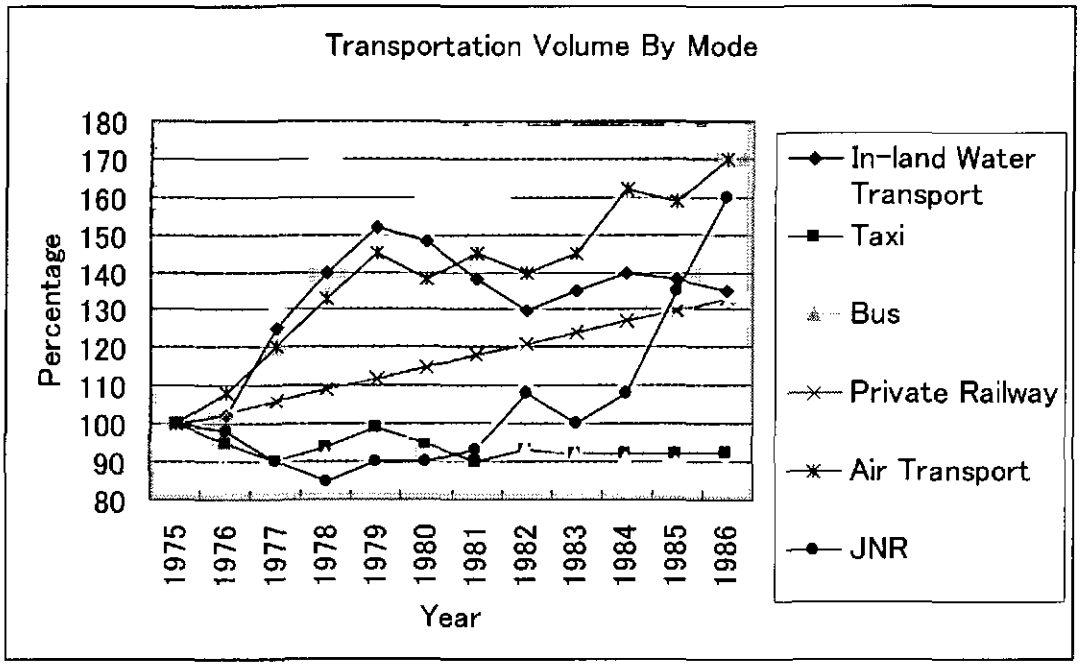
Source: JR East, 2007

Figure 4 Service area of JR East and service area definition



Source: JR East, 2007

Figure 5 Changes in transport volume by transport type between 1975-1986 (1975=100)



Source: JR Light and Shadow, Tachiyama, 1989

Figure 6 Accessible facilities in JR Group and private railway stations

Standing of the JR Railway Group's Facilities for Users (1989 Year End)

Company Name	Total Number of Stations	Station Facilities (Station)		Station Facilities for Disabled Persons						
		Escalators	Elevators	Slopes	Wheel Chair Passages	Braille Ticket Machines	Guide Blocks	Chimes	Platform Barriers	Accessible Toilets
JR Hokkaido	500	3	4	7	0	13	75	0	0	33
JR East	1702	99	50	54	0	363	530	50	0	97
JR Central	403	20	15	7	0	21	129	5	0	38
JR West	1251	35	28	66	0	225	429	21	0	80
JR Shikoku	255	2	0	9	0	0	132	0	0	8
JR Kyushu	557	2	7	22	0	25	190	1	0	26
Total	4668	161	104	165	0	647	1485	77	0	282
Percentage of Stations with Facilities		3.4	2.2	3.5	0	13.8	31.8	1.6	0	6

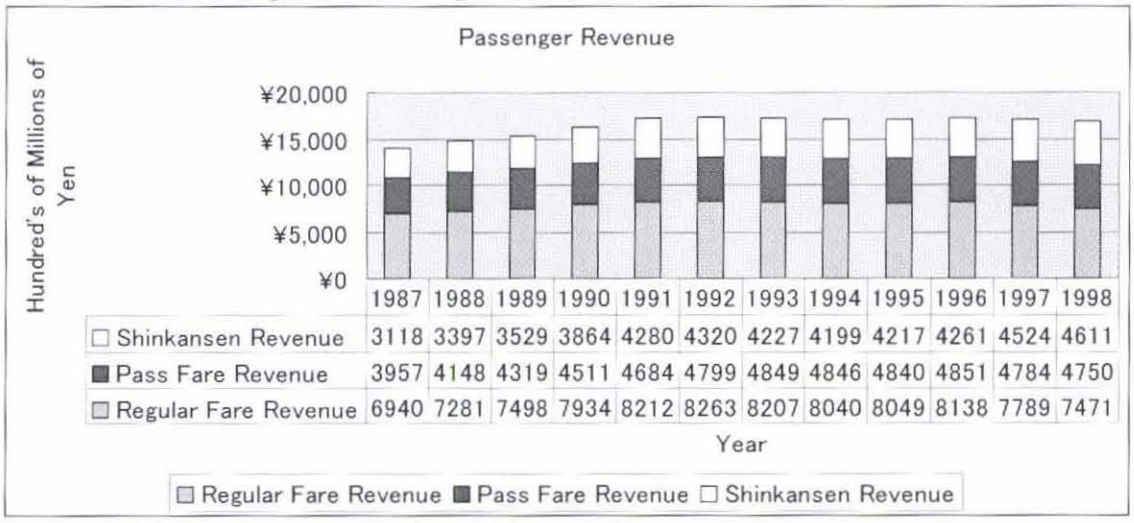
From the Home Ministry Report on the Japan Railways Group

Standing of 14 Private Railway's Facilities for Users (1989 Year End)

14 Railways Combined	Total Number of Stations	Station Facilities (Station)		Station Facilities for Disabled Persons						
		Escalators	Elevators	Slopes	Wheel Chair Passages	Braille Ticket Machines	Guide Blocks	Chimes	Platform Barriers	Accessible Toilets
	1740	164	54	352	1222	1262	1205	106	900	427
Percentage of Stations with Facilities		9.4	3.1	20.2	70.2	72.5	69.3	6.1	51.7	24.5

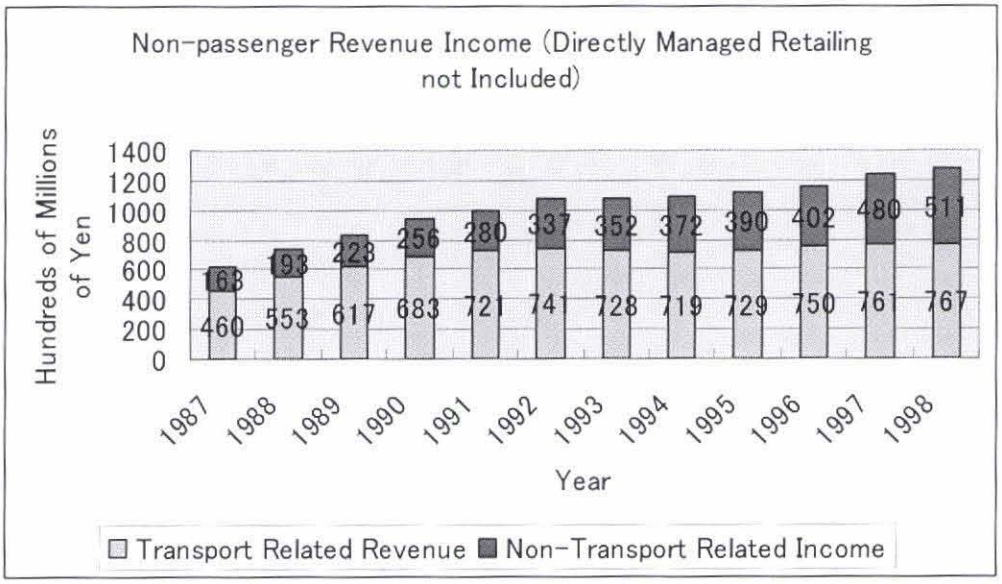
Source: Ministry of Interior Report on the Japan Railways Group, 1993

Figure 7 Passenger revenue of JR East, 1987-1998



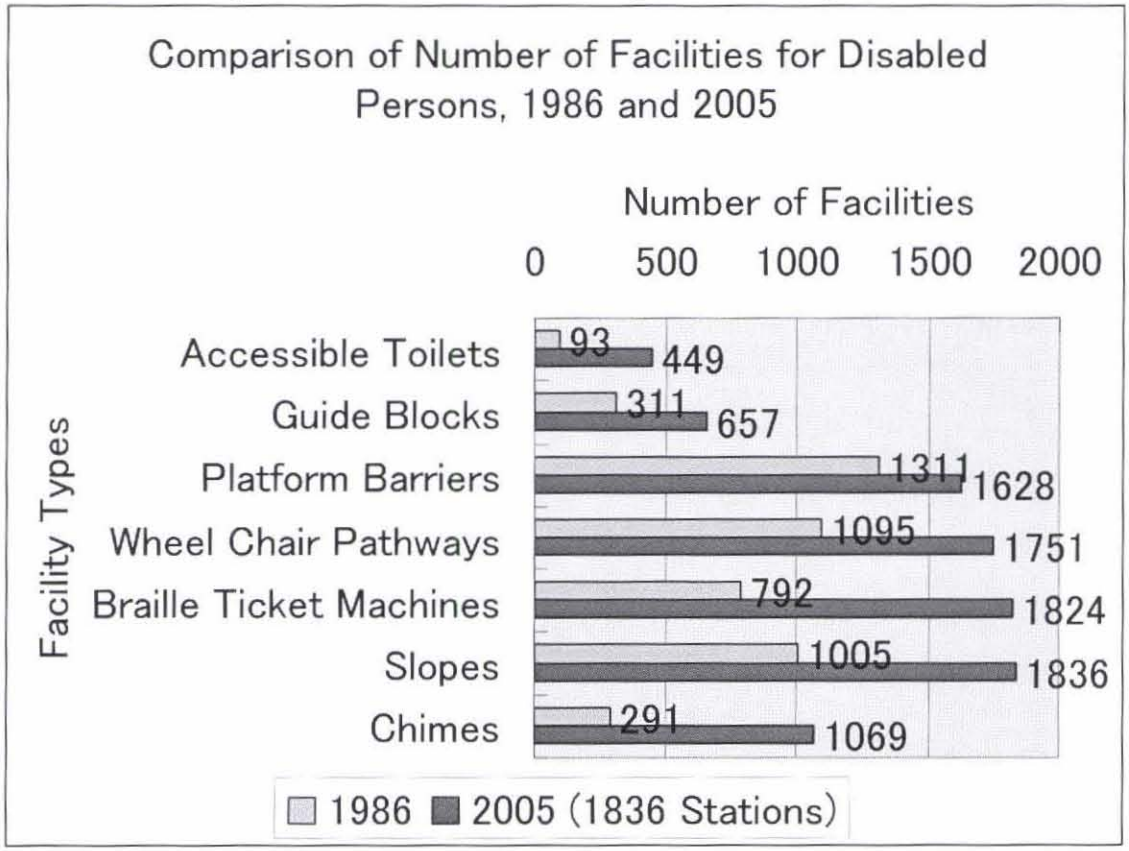
Source: JR East Creative Business, Mori, 2000

Figure 8 Non-passenger related revenue



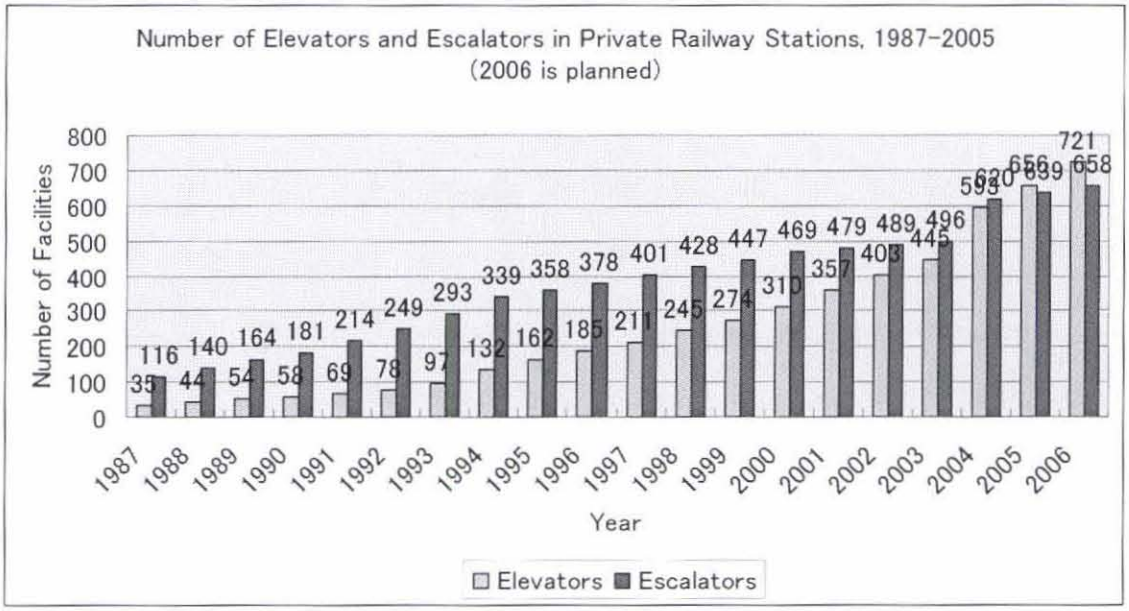
Source: JR East Creative Business, Mori, 2000

Figure 9 Accessible facilities in private railway stations



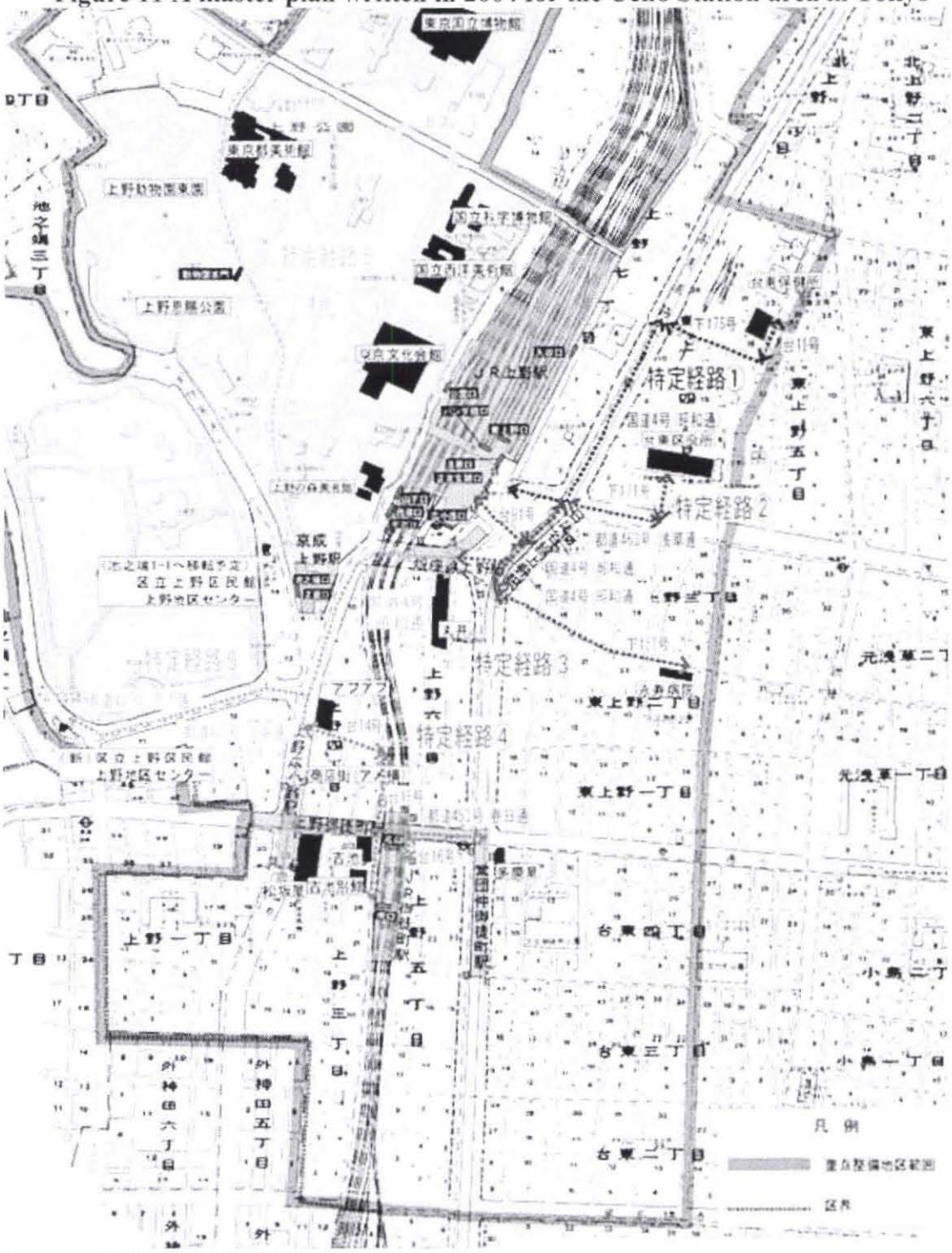
Source: Association for Private Railways. 2007

Figure 10 Accessible facilities in private railway stations



Source: Association for Private Railways, 2007

Figure 11 A master plan written in 2004 for the Ueno Station area in Tokyo*



Source: Taito Ward. 2004

* Colored lines indicate pathways from the station to public facilities, such as City Hall, hospitals and health centers.

Figure 12 Station master plan for JR East Ueno Station, 2004

（1）－1　事業主体：東日本旅客鉄道株式会社

①ＪＲ上野駅

●移動円滑化経路の考え方

現状：JR 上野駅は中央改札を基点として全ホームへ至る経路において、エレベーター設置による移動円滑化経路が整備されています。

対策：視覚障害者の誘導用案内設備の整備等により既設の移動円滑化経路の利便性向上を図ります。なお、移動円滑化経路以外の全経路において下記のバリアフリー整備を図ります。

●特定事業計画

項　目		特定事業計画	短期	中期	長期
移動		視覚障害者の誘導案内用設備を整備します ・誘導ブロック等の不備、破損箇所の改修 ・階段踏面の端部における視認性確保	■	■	■
案内情報		視覚障害者の誘導案内用設備を整備します ・音響案内設備の整備（ホーム階段上り口、トイレ入口など）	■	■	■
設備	券売機	車いす対応の蹴込み付き券売機を導入します（※）		■	
その他		駅員のお客さま対応については引き続き指導します 設備の不備、破損等については随時改修します	■	■	■

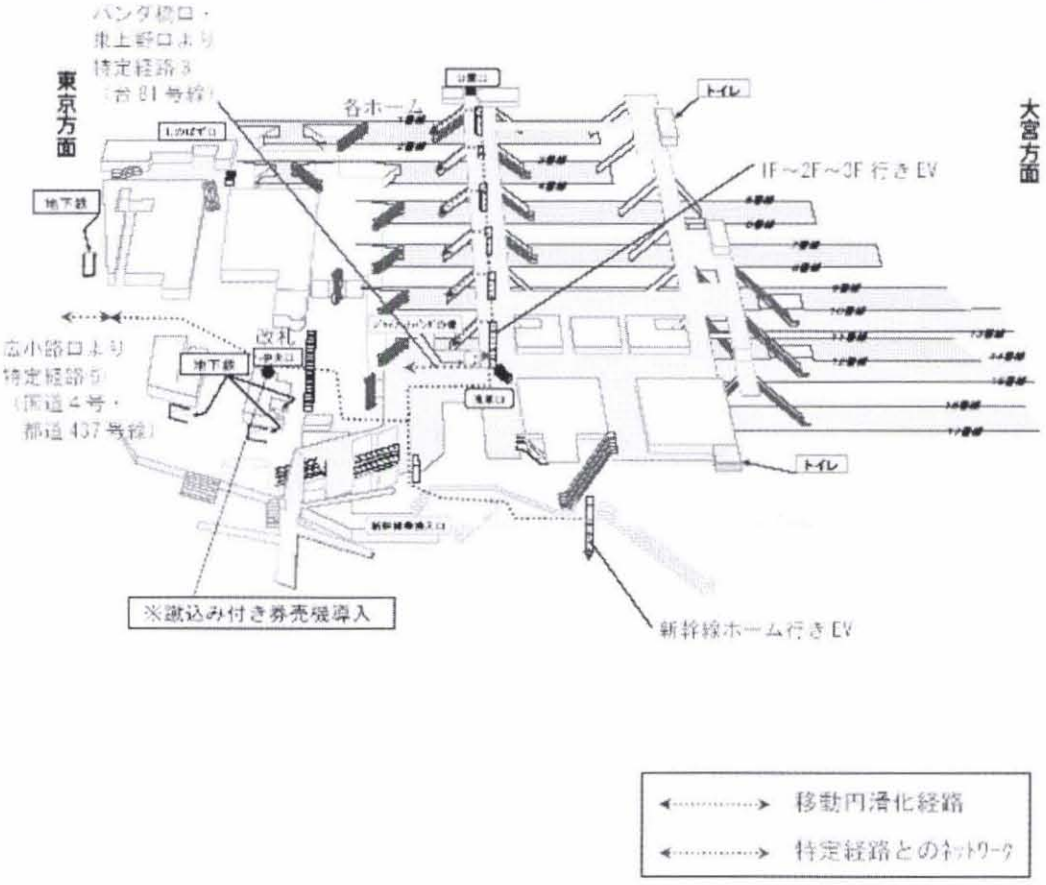
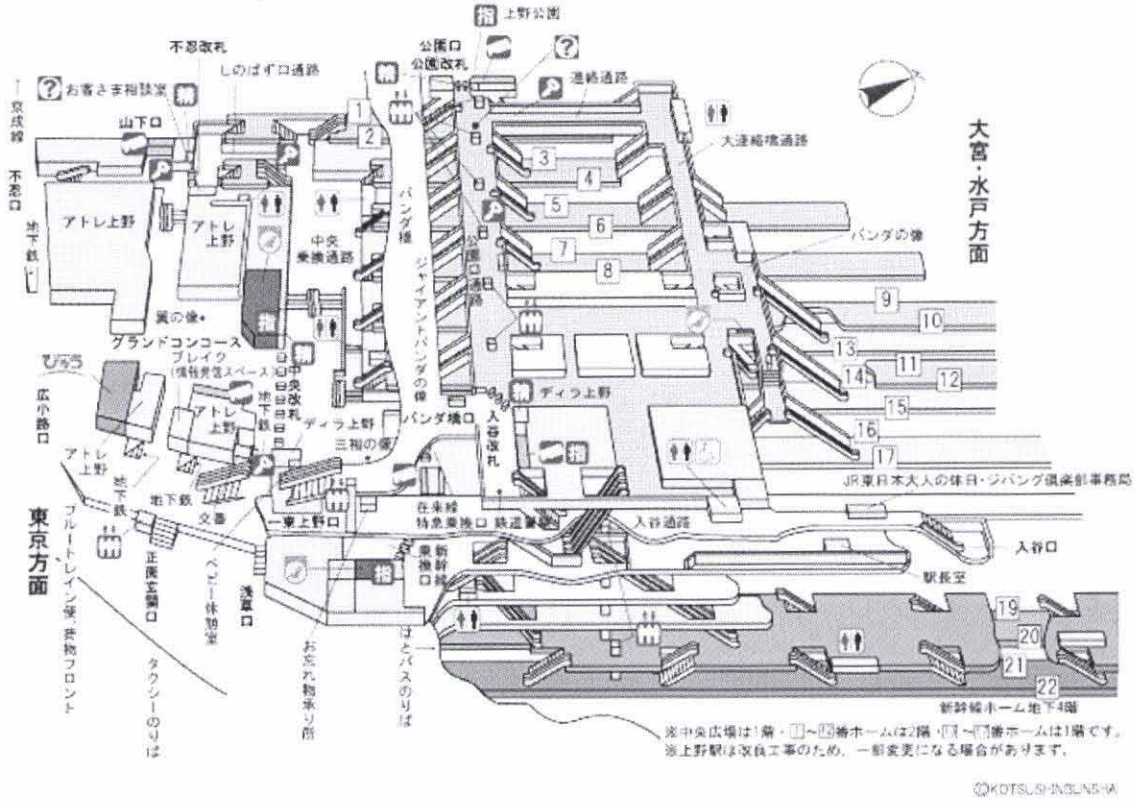


図 4-6　JR 上野駅における移動円滑化経路および計画箇所

Source: Taito Ward, 2004

Figure 13 Most recent station layout of Ueno Statio*



Source: East Japan Railways, 2007

* Areas missing from the plan used by Taito Ward include Iriya Exit.

Figure 14: Timeline of railway history and social/regulatory history

Railway History		Social/Regulatory History	
1872	First railway opened in Japan		
1906	Japan nationalized private railways		
1945	All railway employees returning from overseas are absorbed by JNR		
1947	JNR is set up as a national enterprise		
1964	JNR falls into the red for the first time First *Shinkansen* line opens	1962	Ed Roberts Admitted to University of California, Berkeley, beginning the disabled rights movement
1960s 1970s	JNR service levels continue to decline	1970s	Civil groups demanding rights for disabled persons appear in Japan
1983	JNR Reconstruction Supervisory Committee presents reasons for JNR's poor performance to the Prime Minister's Office	1980s	Realization of aging society and civil groups begin demanding action
1987	Privatization of JNR Ridership reaches 160% of 1976 levels	1981	United Nations "International Year of Disabled Persons
1988	*Seikan* Tunnel opens between the islands of *Honshu* and *Hokkaido*	1982	Prime Minister's Office sets up body to improve situation of disabled person5
2004	*Fukuchiyama* and *Uetsu* line accidents spark questions over rail safety in Japan	1983	United Nations "International Decade of Disabled Persons
		1983	First Guideline for railway stations regarding disabled persons
		1993	Second Guideline for railway stations
		1999	Revision of the 1993 Guideline
		2000	2000 Transportation Barrier-Free Law enacted
		2005	Population declines for the first time since the turn of the 20th century
		2006	Promotion of Independence and Social Participation for Persons with Disabilities Law enacted
		2006	2000 Transportation Barrier-Free Law revised

Figure 15: Participant Observation 1 Summary

Station Name	Improvements	Remaining Barriers
Ueno	• Up escalators and elevators on platforms (used) • One wider wicket (used) • *Guide blocks* • Accessible Toilets (used) • Clear signage for platforms	• Gap between railcar and platform • Poor signage outside of station • Lack of signage for wheelchair areas on railcars • No down escalators
Hamamatsucho	• Elevator at North Exit only • Wheelchair lift at South exit • *Guide blocks* • Slope from entrance to street level (used) • One wider wicket (used)	• Assistance required for wheelchair at South exit • Poor signage • No temporary measures for barriers caused by construction

Figure 16: Participant Observation 2 Summary

Station Name	Improvements	Remaining Barriers
Hacchobori	• Up and down escalators (used) • Accessible toilet (used) • Guide blocks • One wider wicket (used)	• Stairway at transfer point • No elevator
Kasairinkai-koen	• Elevator from platform to concourse (used) • Accessible toilet (used) • Guide blocks • One wider wicket (used) • Elevator to ground level	• Poorly marked elevators • No escalator to ground level • Only one elevator for many users

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