
Barrier-free Facilitates
at the Station.
~ Platform Door ~

Urban Development Bureau
Tokyo Metropolitan Government
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Efforts to Promote Barrier Free System in Japan

Measures against Aging Society and toward Symbiotic Society

■ Measures against Aging Society

- Population Aging Rate: **23.3%** as of 2011

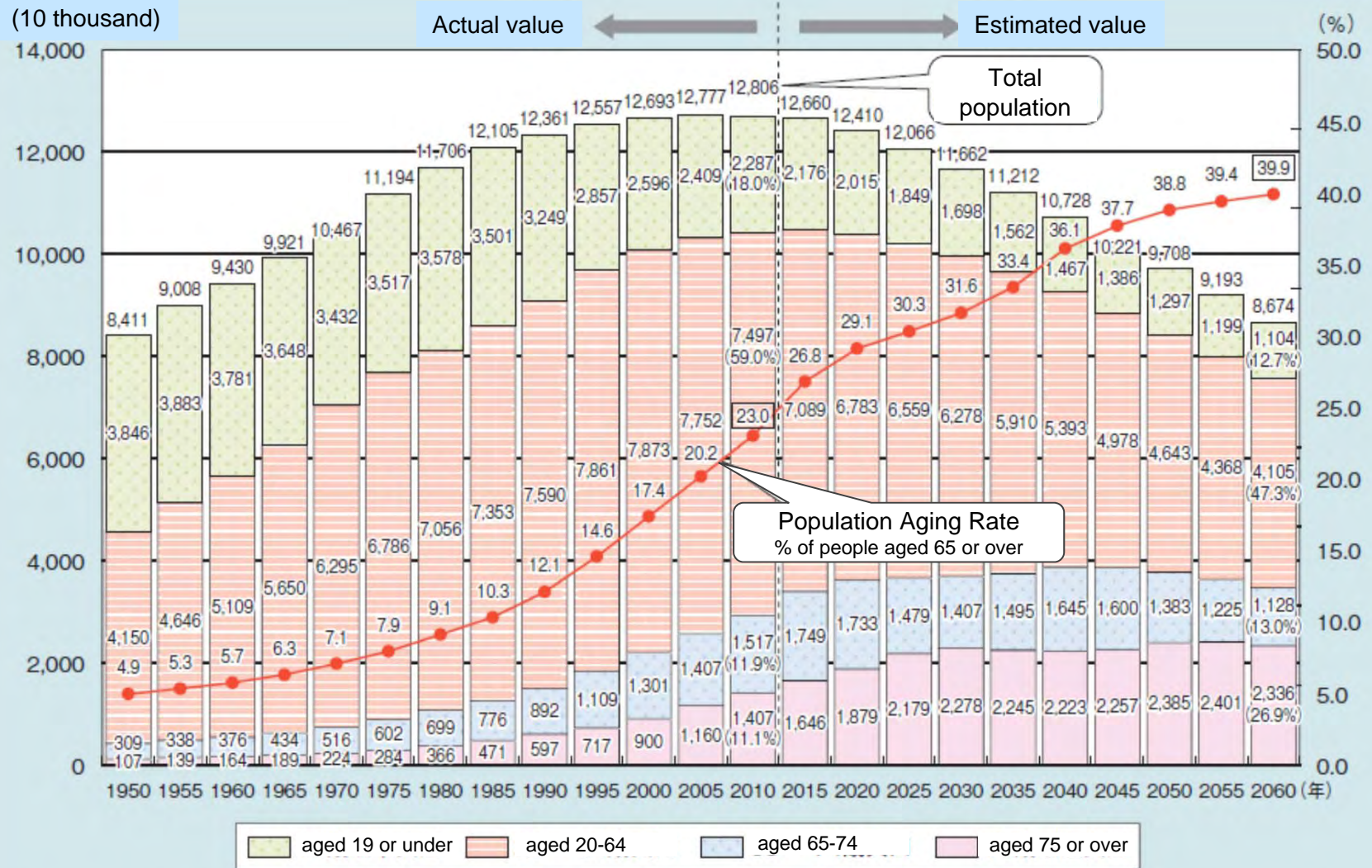
* Percentage of people aged 65 or over.

- Aging rate is expected to increase along with depopulation in future.
- People aged 65 or over will comprise 39.9%, or one in 2.5 people in 2060.

■ Realization of a Symbiotic Society

- In a Symbiotic Society, **people at any age or with any barrier** can live together with safety and security.

Measures against Aging Society and toward Symbiotic Society



資料：2010年までは総務省「国勢調査」、2015年以降は国立社会保障・人口問題研究所「日本の将来推計人口（平成24年1月推計）」の出生中位・死亡中位仮定による推計結果
 (注) 1950年～2010年の総数は年齢不詳を含む

Source: White Paper on Aging Society, 2002

Realizing a Universal Society

- Realization of barrier-free features based on the concept of universal design.
- The mindset of universal design is “free and easy access everywhere and for everybody.”
- The measures in both hard and soft aspects are being enhanced and the realization of a universal society is being worked out with that mindset.
 - The construction of barrier-free public transport and buildings
 - The construction of unified and continuous barrier-free routes between facilities

Realizing a Universal Society

- “Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.” (hereinafter referred to as the “New Barrier Free Law”) went into effect in 2006.
- New Barrier Free Law obligates conformity to transportation smoothing standards for building new passenger facilities, etc.

Realizing a Universal Society

Incorporation of barrier-free features into public transport facilities

As of March 31, 2008

○ Passenger facilities used by more than 5,000 passengers a day

	Total number of facilities	Facilities meeting the smooth transportation standards in terms of elimination of differences in floor levels *1	Percentage of total
Railway stations	2,816	2,007	71.3%
Bus stops	43	36	83.7%
Passenger ship terminals	8	7	87.5%
Airport passenger facilities	21	19	90.5%
			(100%)*2

Note1: "The elimination of differences in floor levels" has been evaluated in terms of compliance with Article 4 of the standard concerning the promotion of smooth transportation by public transport pursuant to the New barrier-free Act (including the width of passages, slopes, and the installation of elevators and escalators)

Note2: Airport passenger facilities have already met all the standards in terms of slopes, and the installation of elevators and escalators for the handicapped, as of the end of March 2001.

○ Vehicles

	Total number of vehicles, ships, and aircraft	Number of vehicles, ships and aircraft meeting the smooth transportation standards*	Percentage of total
Railway vehicle	52,225	21,570	41.3%
Bus	59,973		
Low-floor bus		25,038	41.7%
Non-step bus		13,822	23.0%
Welfare taxi vehicle	-	10,742	-
Passenger ship	906	149	16.4%
Aircraft	507	326	64.3%

Note: "The number of vehicles, ships and aircraft meeting the smooth transportation standards" has been evaluated in terms of compliance with the standard concerning the promotion of smooth transportation by public transport.

Source: Ministry of Land, Infrastructure, Transport and Tourism

Basic Policy based on New Barrier Free Law

- A target by 2010 to promote barrier free systems in various facilities already existed.
- A new target by the end of 2020 to promote higher-class barrier free systems was established.

- Target for Railway Station
 - Coverage: All stations with more than 5,000 of daily passengers.
↓
Target: 100% in principle
 - Coverage: All stations with more than 3,000 of daily passengers.
Target: 100% in principle

Basic policy based on New Barrier Free Law

- A target for Platform Doors (Platform door and automatic platform gate) was newly established.
 - It is required to develop platform doors at the prioritized station as much as possible, **with support of local government**, after consideration of various issues such as technical difficulty (standardization of doors of train-cars), impact on service level (increased stoppage time, etc.), huge investment cost, and so on.

Platform doors are also referred as a barrier-free system of public transportation.



Platform Doors

What is a Platform Door?

- Platform doors are installed at the edge of the platform to wall it from the rail tracks. Those doors are gated only when train arrives.
- It is expected to prevent passengers from falling onto the tracks, getting contact with trains, or entering into the tracks.
- Alternative facilities are fixed platform fences, which can be installed with lower cost.

What are a Platform Door?

- There are several types of platform doors as below.



Platform Door



Automatic Platform Gate

<参考>



Fixed Platform Fence

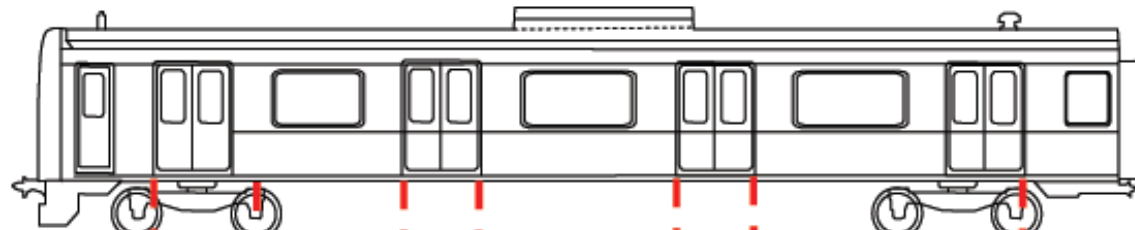
Issues to install Platform Doors

- Technical and financial issues to install platform doors and automatic platform gates
 - Diverse layout of doors of train cars.
 - Difficulty on the passengers' flux at the narrow part of the platform.
 - Higher accuracy of stopping trains.
 - Huge cost
 - Delay of railway operation due to the increased stoppage time.

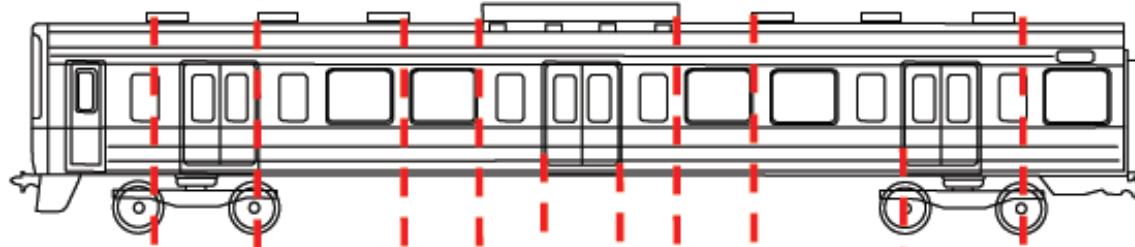
Issues to Install Platform Doors

- Diverse layout of doors of the train cars.
 - It is difficult to install platform doors into the lines where different types of train cars with diverse layout (the number of doors, location of doors) are operated.

Train with 4 doors



Train with 3 doors

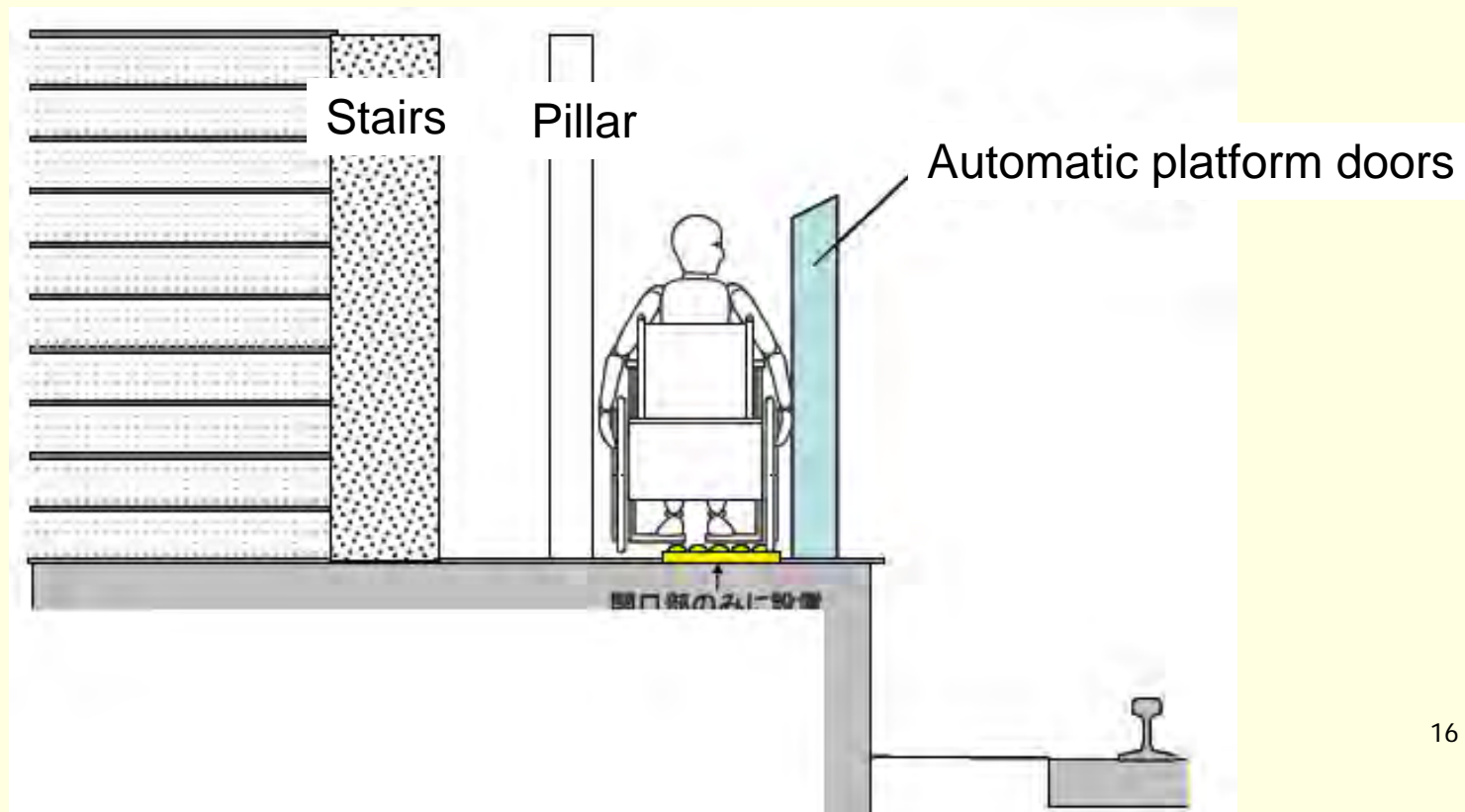


Potential location
to install doors



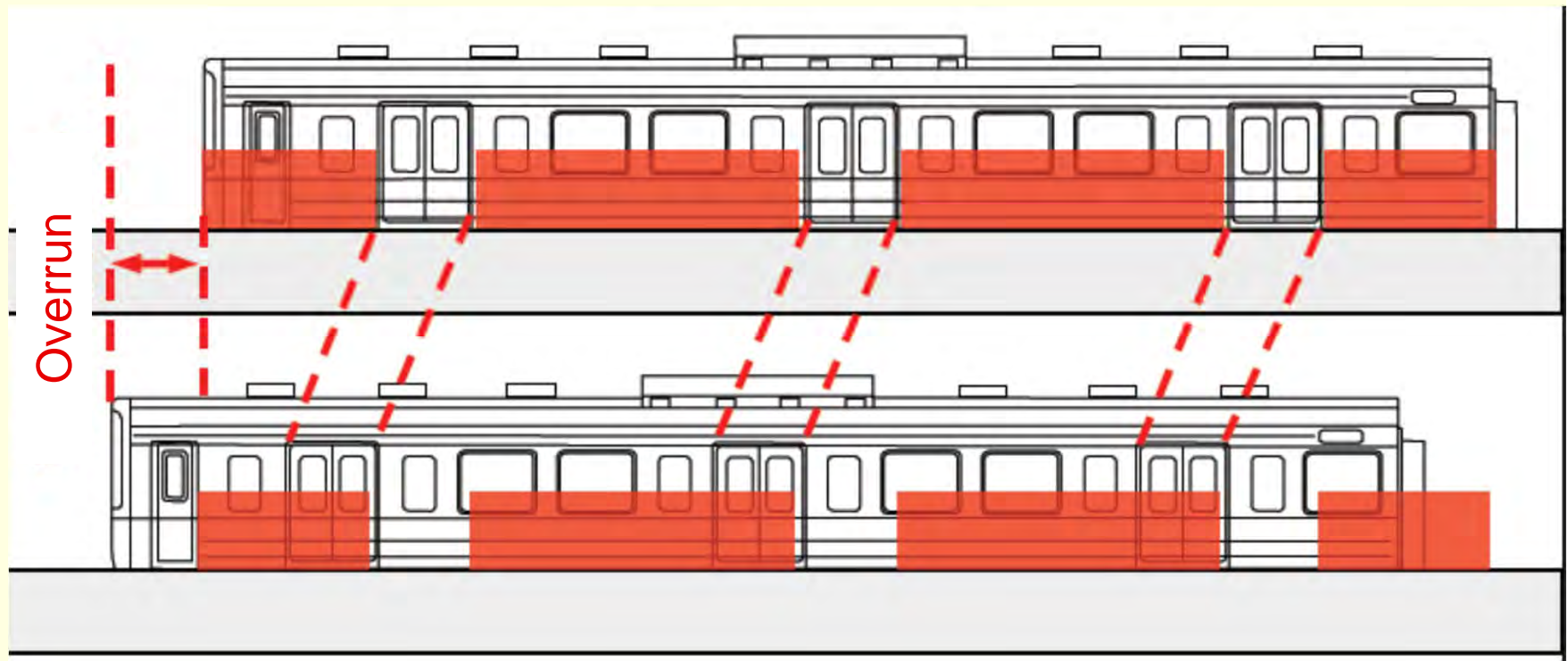
Issues to Install Platform Doors

- Difficulty on the passengers' flux at the narrow part of the platform.
 - It is hard to install platform doors at the narrow part of the platform, such as beside the stairs.



Issues to Install Platform Doors

- Higher accuracy of stopping trains.
 - Extremely higher accuracy is required to stop trains for the lines without ATO (Automatic Trains Operation)



Issues to Install Platform Doors

- Huge investment cost
 - Huge cost is required to install platform doors and reform train cars.
- Delay for railway operation due to the increased stoppage time
 - Opening and closing of the platform doors take a few seconds at each station
 - ➔ Railway operation time increase as a whole.
 - Operation of the congested section can be delayed.



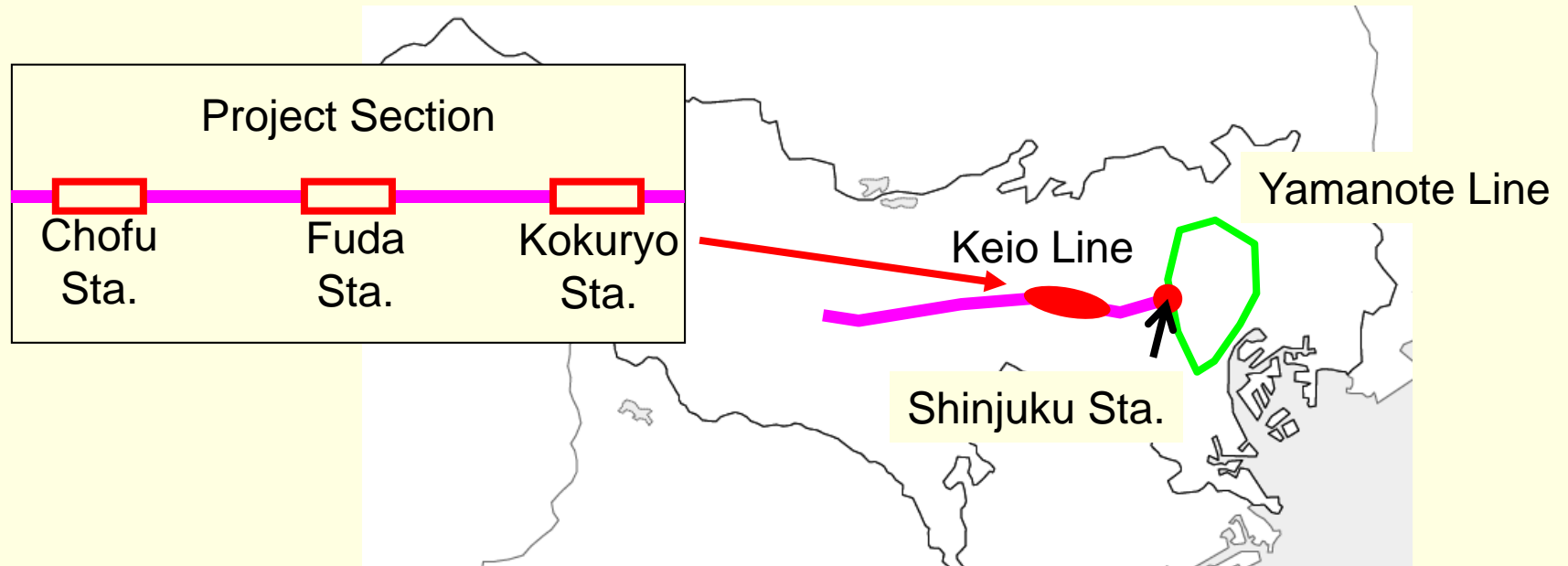
Platform Doors in Tokyo

Current Status of Platform Doors in Tokyo

- The percentage of stations* with platform doors is 24.4% as of March 2012
 - JR and private railway: 12.1%
 - Subway: 46.3%
- * Among all stations with more than 3,000 of daily passengers
- Timing to install the platform doors
 - By line: installed at all stations of one line.
 - By station: installed along with station reform project
 - Installed along with the barrier free promotion project
 - Installed along with other projects.

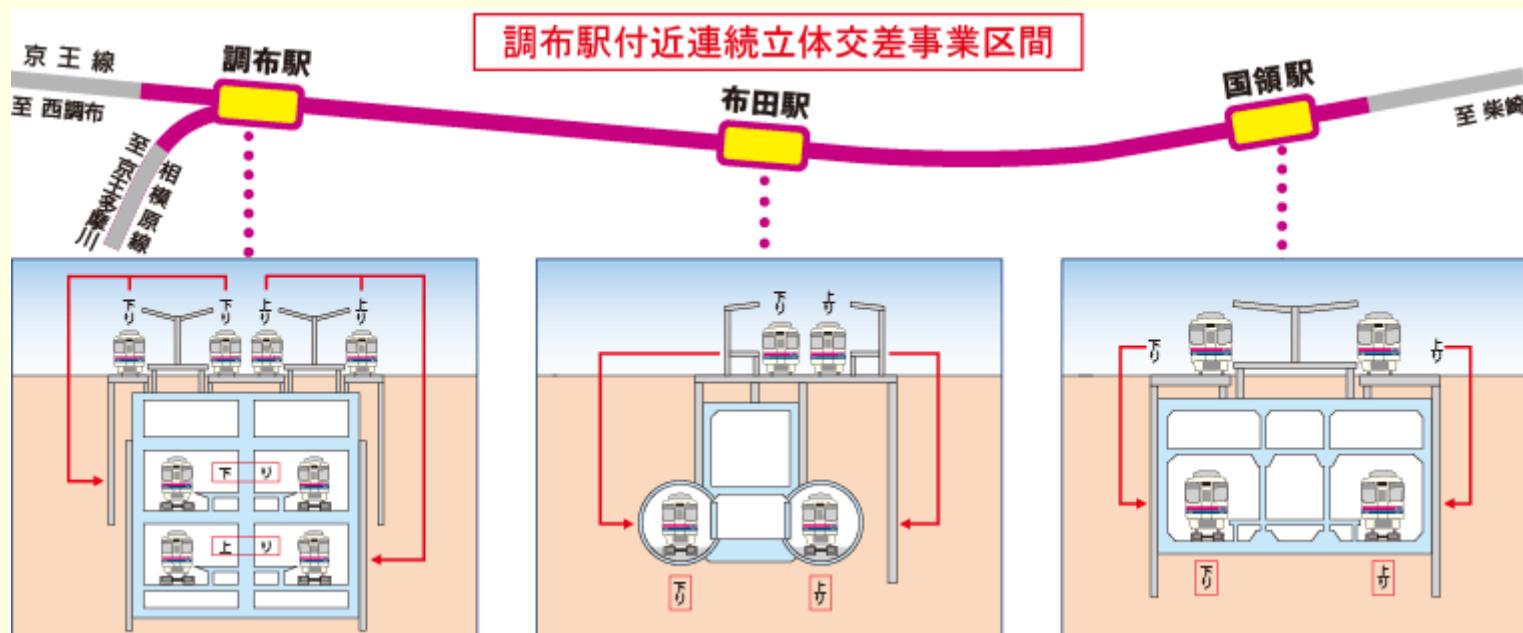
Cases Introduction: Keio Line

- Along the Keio Line, grade separation projects are being conducted in order to clear the grade crossings.



Cases Introduction: Keio Line

- Chofu, Fuda, and Kokuryo Station (on the ground at present) will be moved underground after the completion of the project.
- Platform doors will be installed at the new underground stations





Actions by Tokyo Metropolitan Government

Tokyo-specific Issues to Install Platform Doors

- Tokyo-specific issues to install platform doors need to be well considered in particular.
 - Railway stations with larger number of passengers in Tokyo may be affected more significantly by narrowing of platforms.
 - For the densely operated lines in Tokyo, small delay at each station can have significant impact on the railway operation as a whole.
 - Many lines are directly connected in Tokyo, which cause difficulty to integrate train cars, in terms of location of doors of train cars, and so on.

**Issues will be clarified
by Tokyo Metropolitan Gov.**

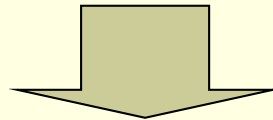
Promotion of Self-help by Railway Operators

- Railway operators are supposed to take safety measures at the railway stations, in principle.
- Tokyo Metropolitan Gov. provides opportunities and promotes self-help of railway operators to install platform doors.

Provision of Subsidy
to Install Platform Doors

Promotion of Self-help by Railway Operators

- Once platform doors are installed even at one station of a line, it is required to refine operation system, braking system, and so on. It can be an incentive for railway operators to install platform doors at all stations.
- Platform doors are visible to the customer. Once installed at several stations, other railway operators have little choice but to install them on their own.



- Subsidy to install platform doors have been provided (limited to 3 years) at the terminal stations of the major lines of 3 private railway firms as follows;
 - Ohi-machi Station, Tokyu Ohimachi Line
 - Shinjuku Station, Odakyu Line
 - Shunjuku Station, Keio Line

Others Actions

- At the conference on platform doors organized by railway operators, Tokyo Metropolitan Government obtains the current status of platform doors and makes an appeal to install them.
- Liaison Committee has been formulated with 18 railway operators to call for platform doors.

Conclusion

- As barrier free system has been promoted along with the aging society, elderly or disabled people can easily use railway, which has increased a risk for them to fall onto tracks from platforms.
- In principle, railway operators have to take safety measures on the platform. On the other hand, Tokyo Metropolitan Gov. should also take actions.

Tokyo Metropolitan Gov. will continuously promote “free and easy access everywhere and for everybody” in public transport systems.

Thank you for your kind attention.



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