

# Railroad Improvement in Tokyo Metro

March 4, 2015



Tokyo Metro Co., Ltd.  
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# Topics for Today

1. Overview of Tokyo Metro
2. Railroad Improvement History
3. Railroad Maintenance and Development Along the Track

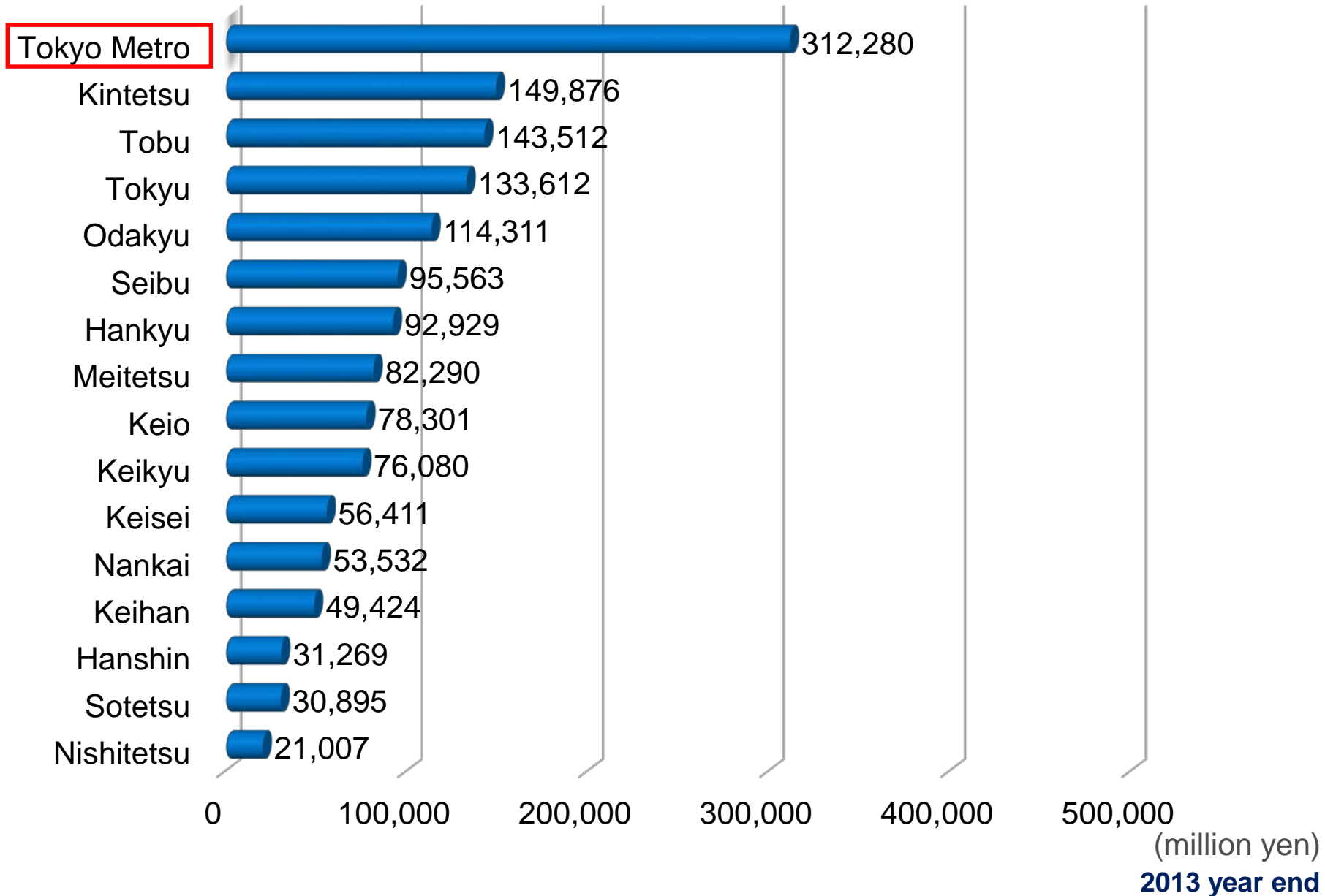
# 1. Overview of Tokyo Metro

<b>Name</b>	<b>Tokyo Metro Co., Ltd.</b> <b>(Formerly, Teito Rapid Transit Authority “TRTA”, 1941-2004)</b>
<b>Date of Establishment</b>	<b>April 1, 2004</b>
<b>Business Activities</b>	<b>1. Operate a subway business focusing on the 23 wards of Tokyo</b> <b>2. Other activities related therein</b>
<b>Capital</b>	<b>58.1 billion yen (Japanese Government 31 billion yen, Tokyo Government 27.1 billion yen)</b>
<b>Business conditions</b>	<b>Revenue 393.9 billion yen, expenditure 294 billion yen</b>
<b>Operating Lines</b>	<b>9 lines, 195.1km</b>
<b>Number of Stations</b>	<b>179 stations</b>
<b>Number of rolling stock</b>	<b>2,705 cars</b>
<b>Transportation performance</b>	<b>Average passenger amount per day 6,730,000</b> <b>Average passenger revenue per day 856,000,000 yen</b> <b>Average fare per passenger 127.21 yen</b> <b>Average travel distance per passenger 8.1km</b> <b>Ride efficiency 50%</b>
<b>Number or Staff</b>	<b>9,158</b>

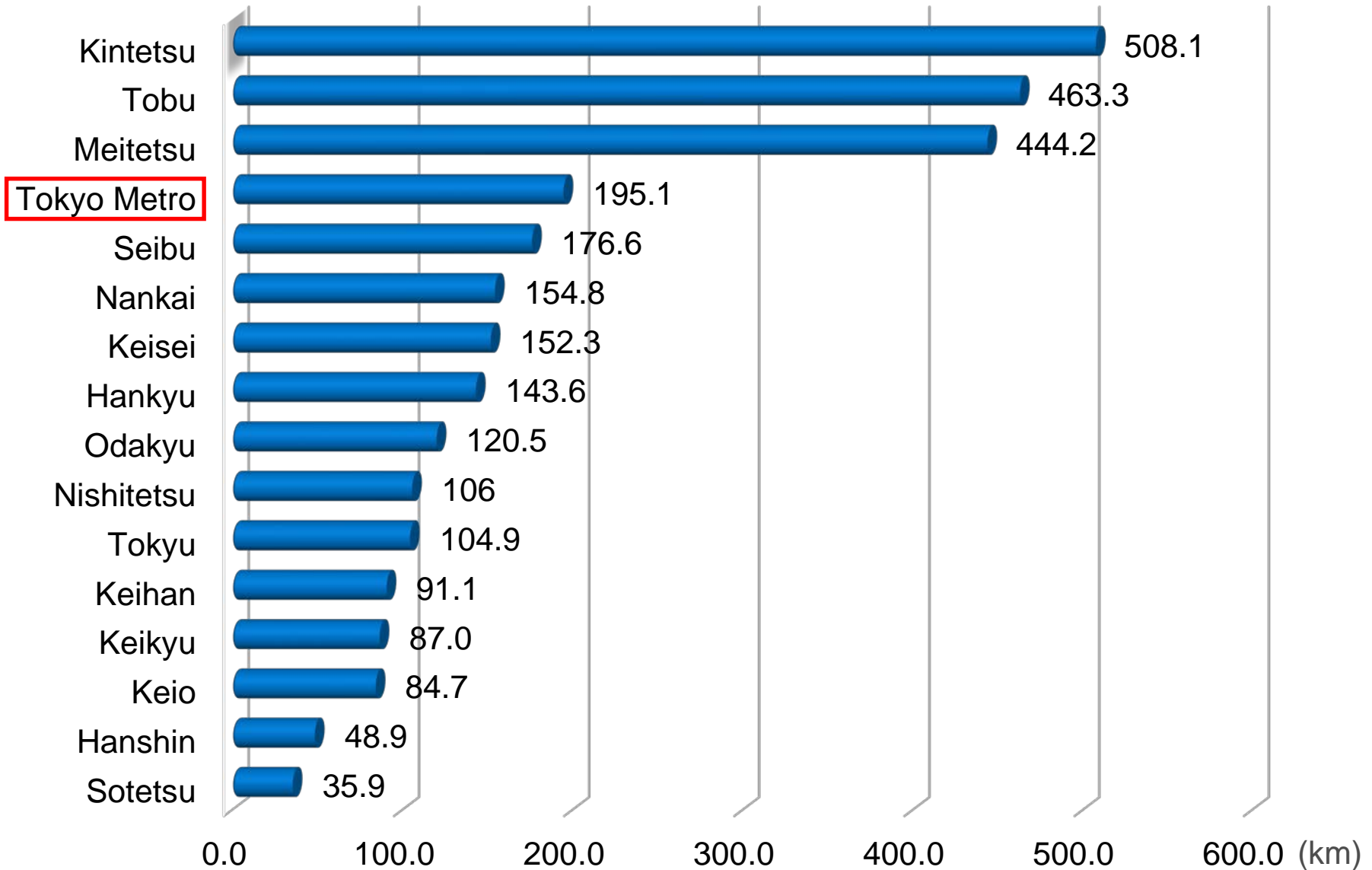
**(Based on data of year 2013)**



# Railway Sector Passenger Revenue



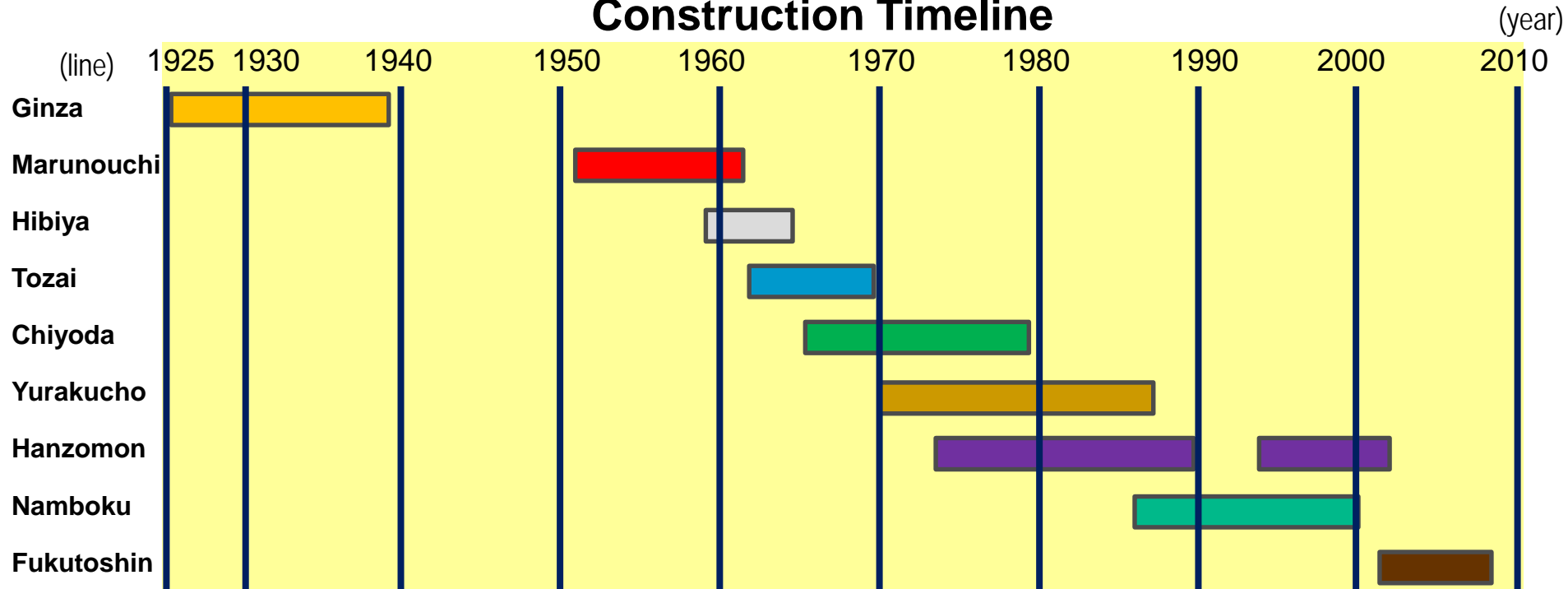
# Operating Distance



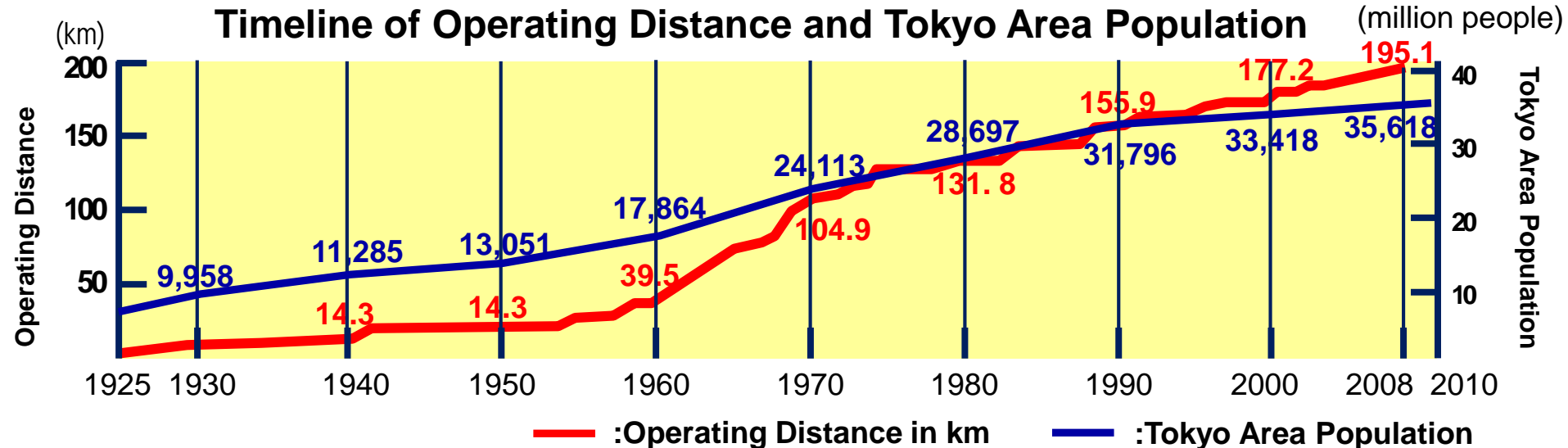
2013 year end

# Teito Rapid Transit Authority History of New Line Construction

## Construction Timeline



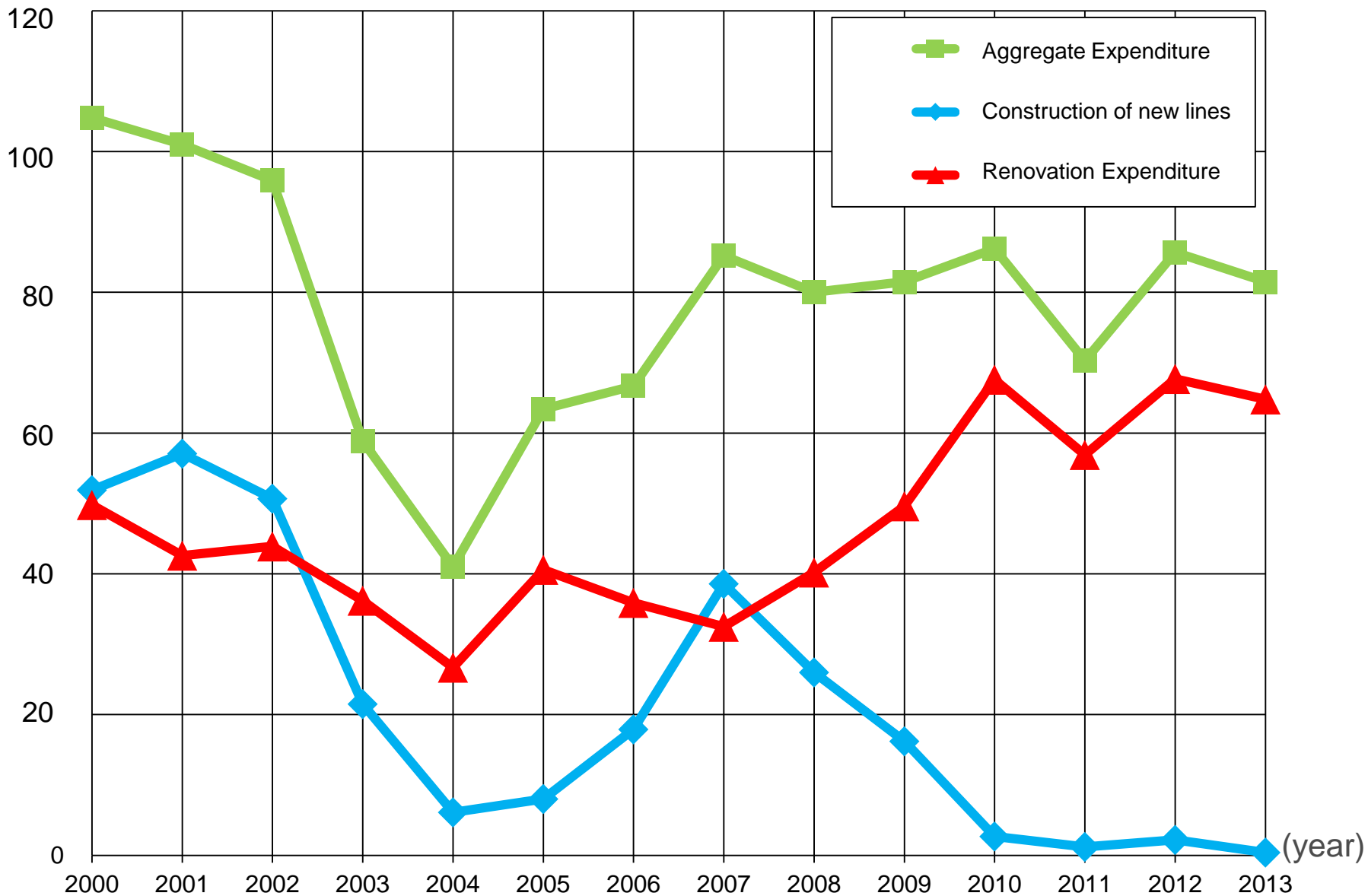
## Timeline of Operating Distance and Tokyo Area Population



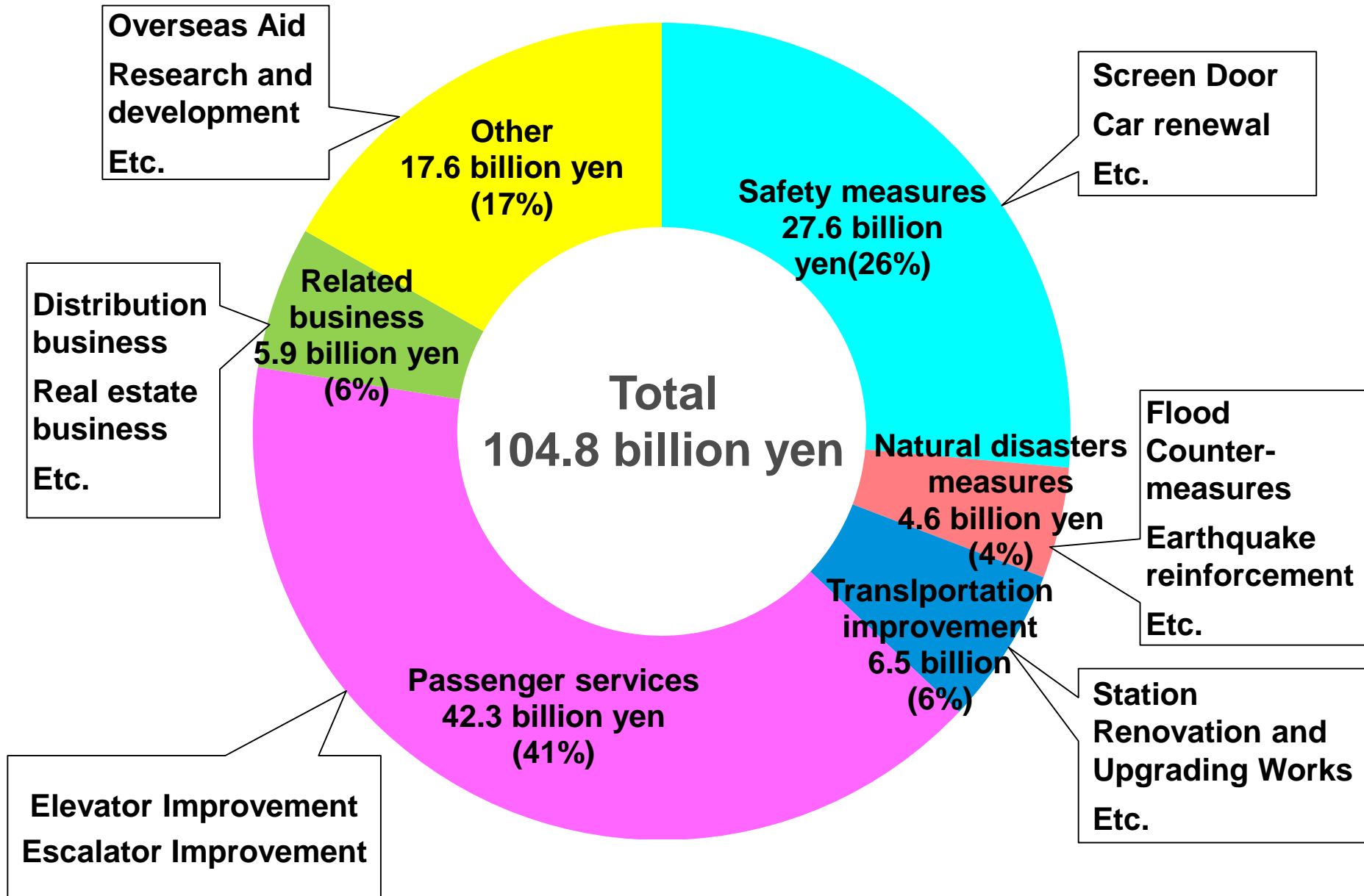


# Timeline of Capital Expenditures (2000~2013)

Expenditures (billion yen)



# Capital Expenditures in 2014



## **2. Railroad Improvement History**

# Railway Improvement Phase 1 (Railway Network Improvement, etc.)

## 【Background and Challenges】

1. Population concentrating in Tokyo metropolitan area due to rapid economic growth
2. Shortage of and increasing public demand of transport network, etc.



## 【Counter Measures】

1. Construction of new lines as an urban transport agency
2. Expanding the network in the central Tokyo and the surrounding areas
3. Respond to the need for increased carrying power and to relieve congestion  
(Adding cars to trains, lengthening and expanding platforms)
4. Making facilities improvement in accordance with the revision of applicable laws  
(Fire prevention, Barrier Free improvements, Earthquake reinforcement, etc.)

# Example of Construction of New Line

**【During Construction】**  
Railway development to  
agricultural area



**【After Construction】**  
Development alongside  
the railway



# Railway Improvement Phase 2

## (Urban rebirth, Renewal of railway facilities, etc.)

### 【Background and Challenges】

1. Localized overpopulation associated with urban redevelopment
2. Congestion becoming striking and chronic (station congestion, carriage congestion)
3. Increase in train delays due to congestion
4. The 2020 Olympics and Paralympics will be held in Tokyo

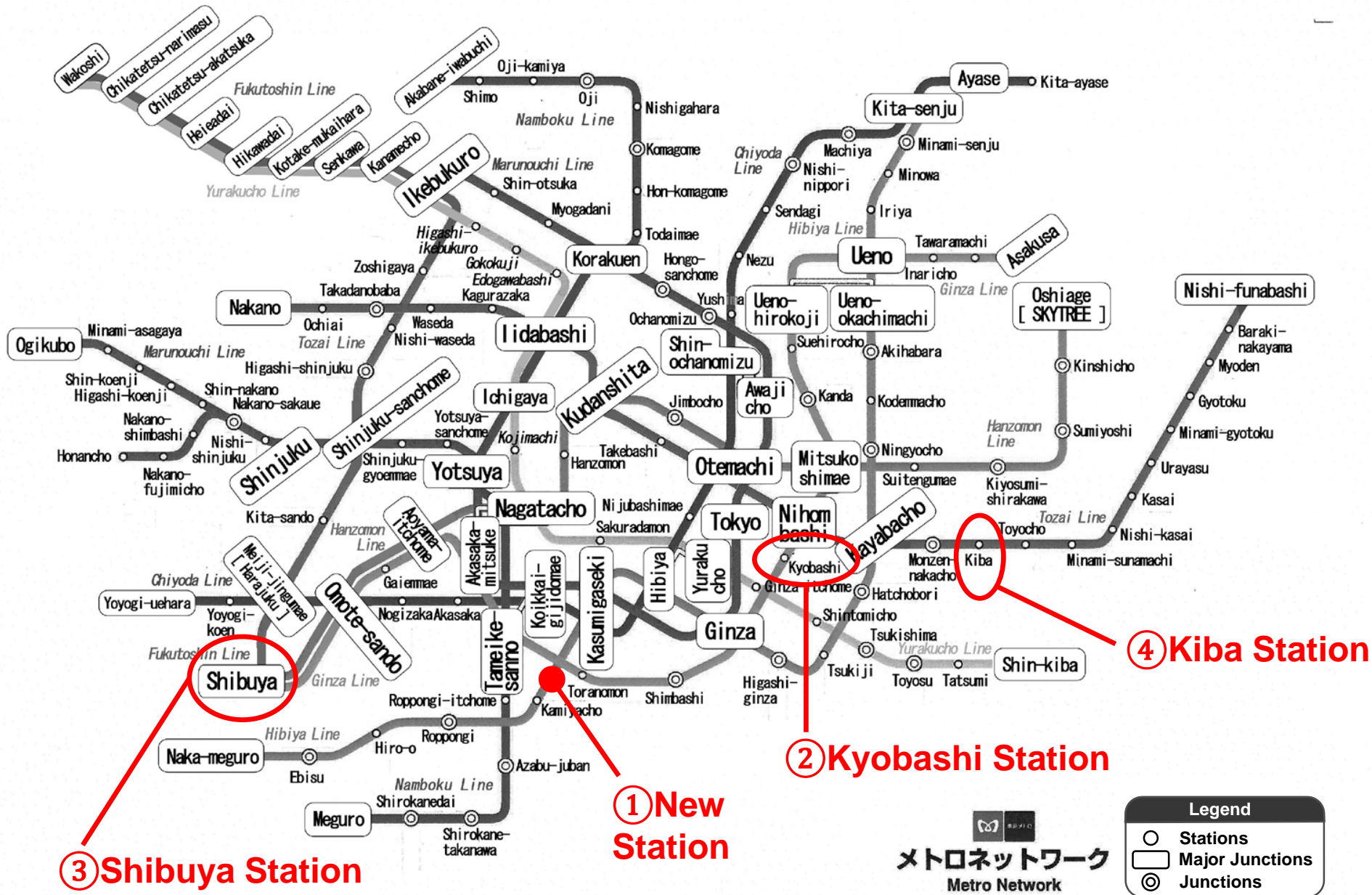


### 【Counter Measures】

1. Station improvements and new stations created in step with development alongside the railway
2. Respond to the need for increased carrying power, congestion relief , and schedule delays  
(Platform extension and widening, eliminate locations of overcrowding, etc.)
3. Improve facilities to meet the needs of customers from overseas  
(Further promotion of Barrier Free improvements, platform screen doors, etc.)

**3 . Railroad Improvement and  
Development Along the Track  
(Railroad Improvement Part II)**

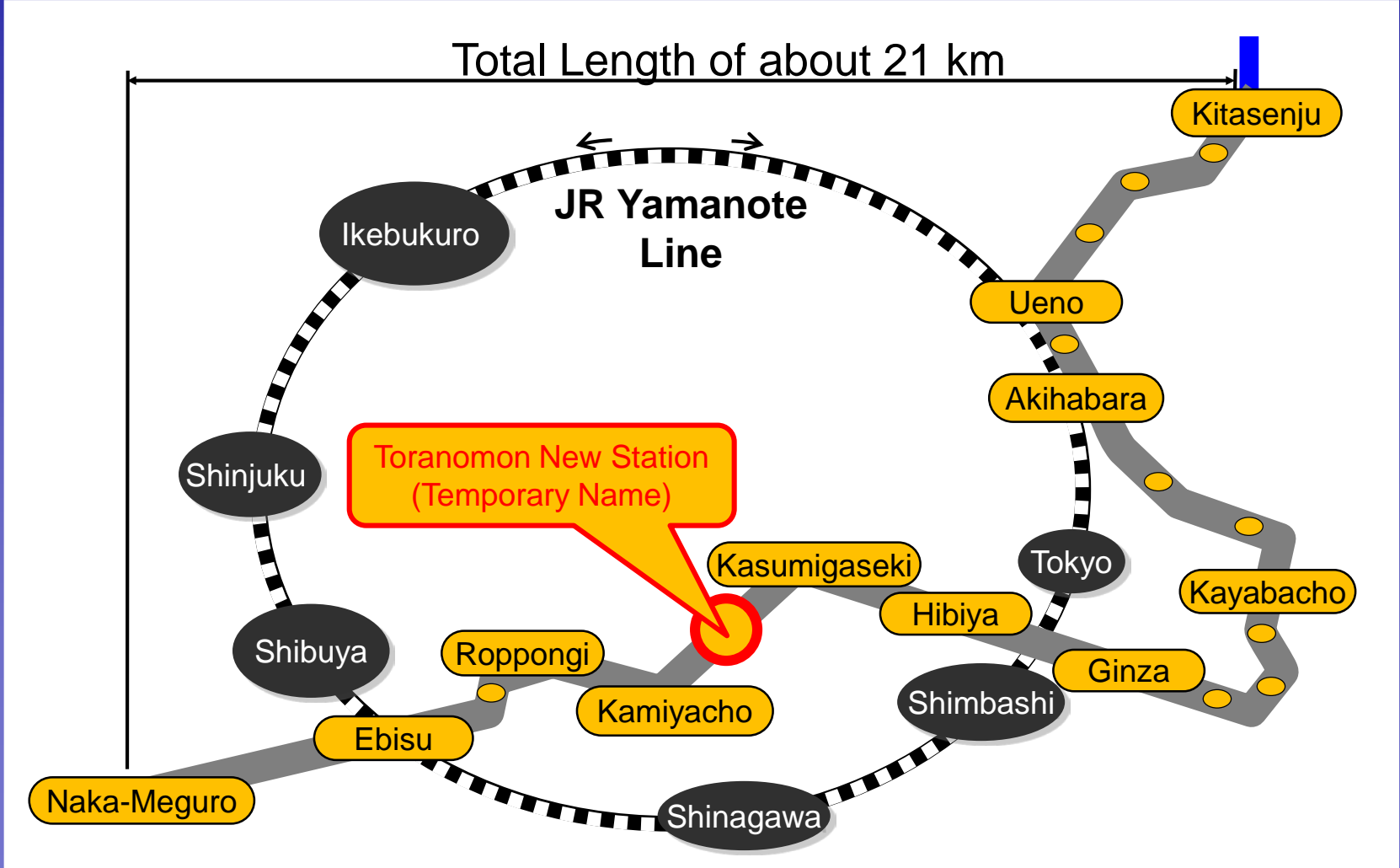
# Focus Stations for Today





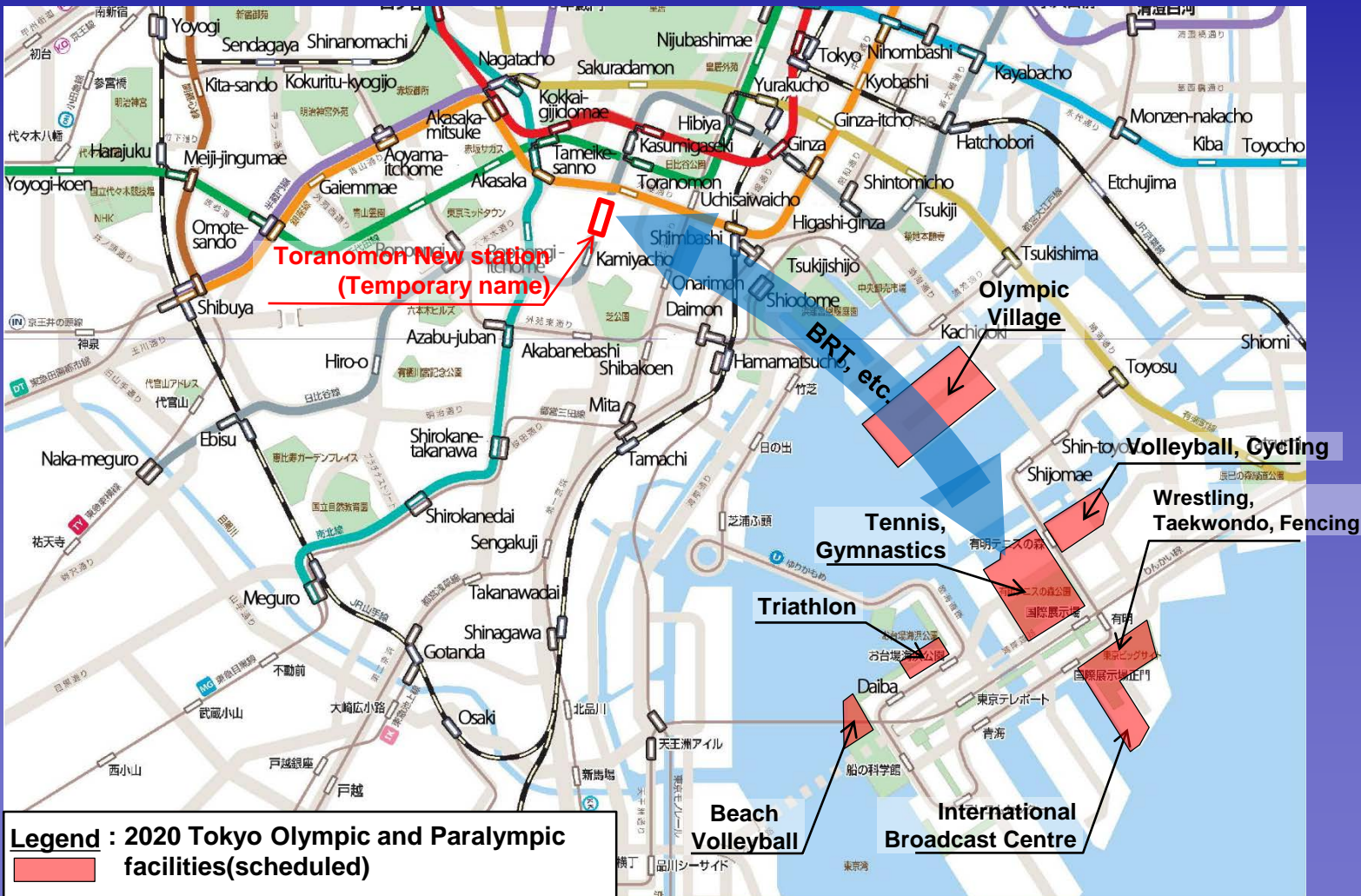
# ➤ New Stations

- 1. The construction of new stations as contributions towards international business and exchange, and the functional enhancement of traffic in the central Tokyo area.
- 2. Hub stations function with mid-scale transportation facilities (BRT, etc.) to connect central Tokyo with competition facilities and the Olympic Village during the 2020 Olympics and Paralympics.



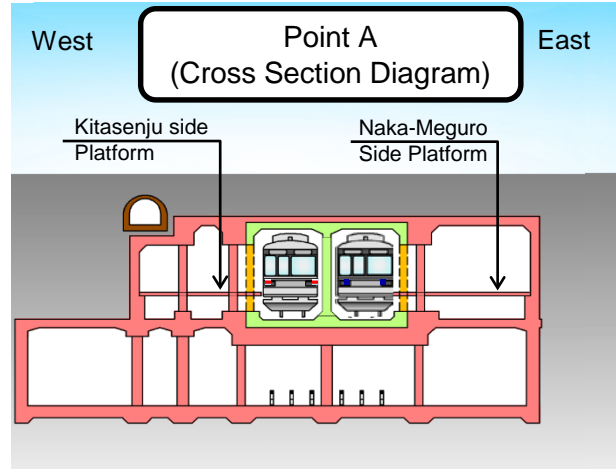
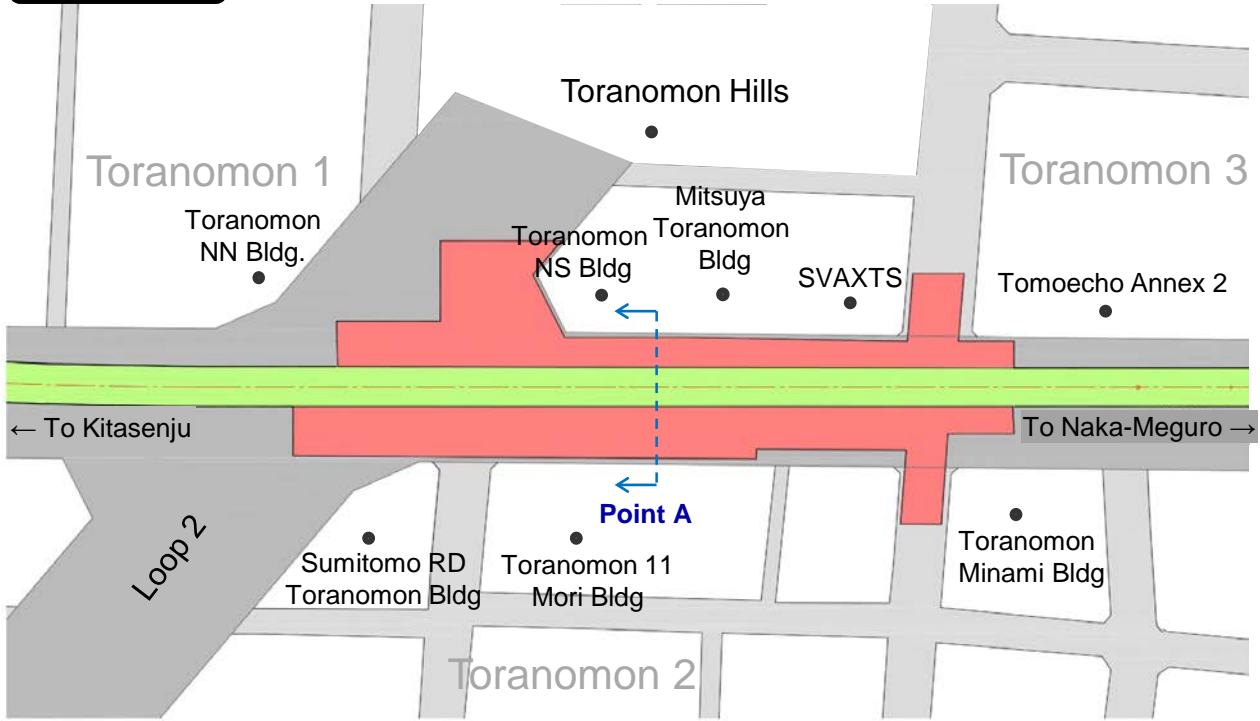
# Map of the new station and Olympic and Paralympic venues

1. Transportation facilities that connect central Tokyo with the event venues and the Olympic Village will be born via the improvements made for the 2020 Olympics and Paralympics, such as a new station and BRT.

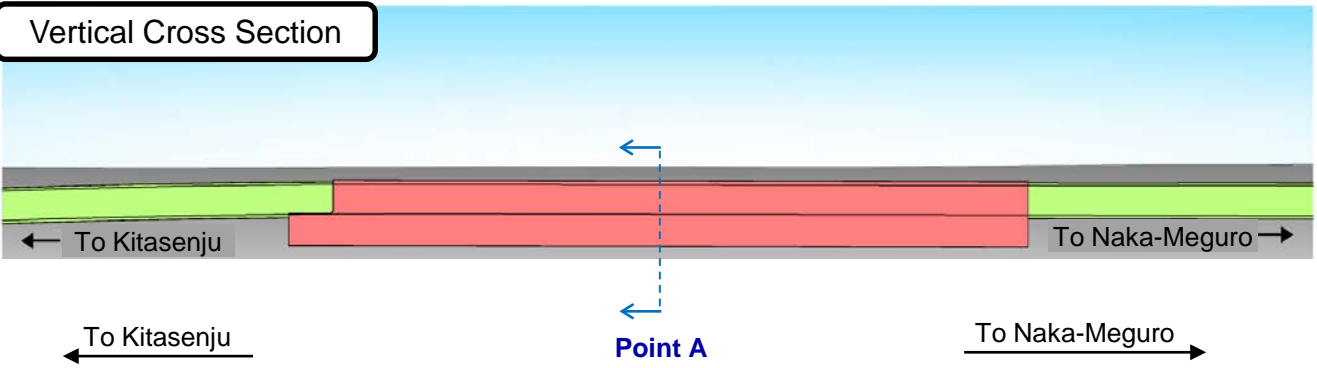


# New station development works

Plan



Vertical Cross Section



# ➤ Improvement of Kyobashi Station, Ginza Line

1. Install Barrier-Free facilities in coordination with development in the surrounding area.
2. Modify the station to handle increasing passengers in the future.

## Issue

- Inadequate Barrier-Free facilities (Absence of elevators from train platform to fare gates)
- Existing elevators and escalators are insufficient
- Narrow locations in several locations in stations

## Counter-measures

- Improve Barrier-Free facilities
  - Install elevator, 1 unit (platform to fare gates)
  - Install escalator, 2 units (platform to fare gates)
- Relocation and increase of stairs
- Increase of fare gates
- Change of station layout

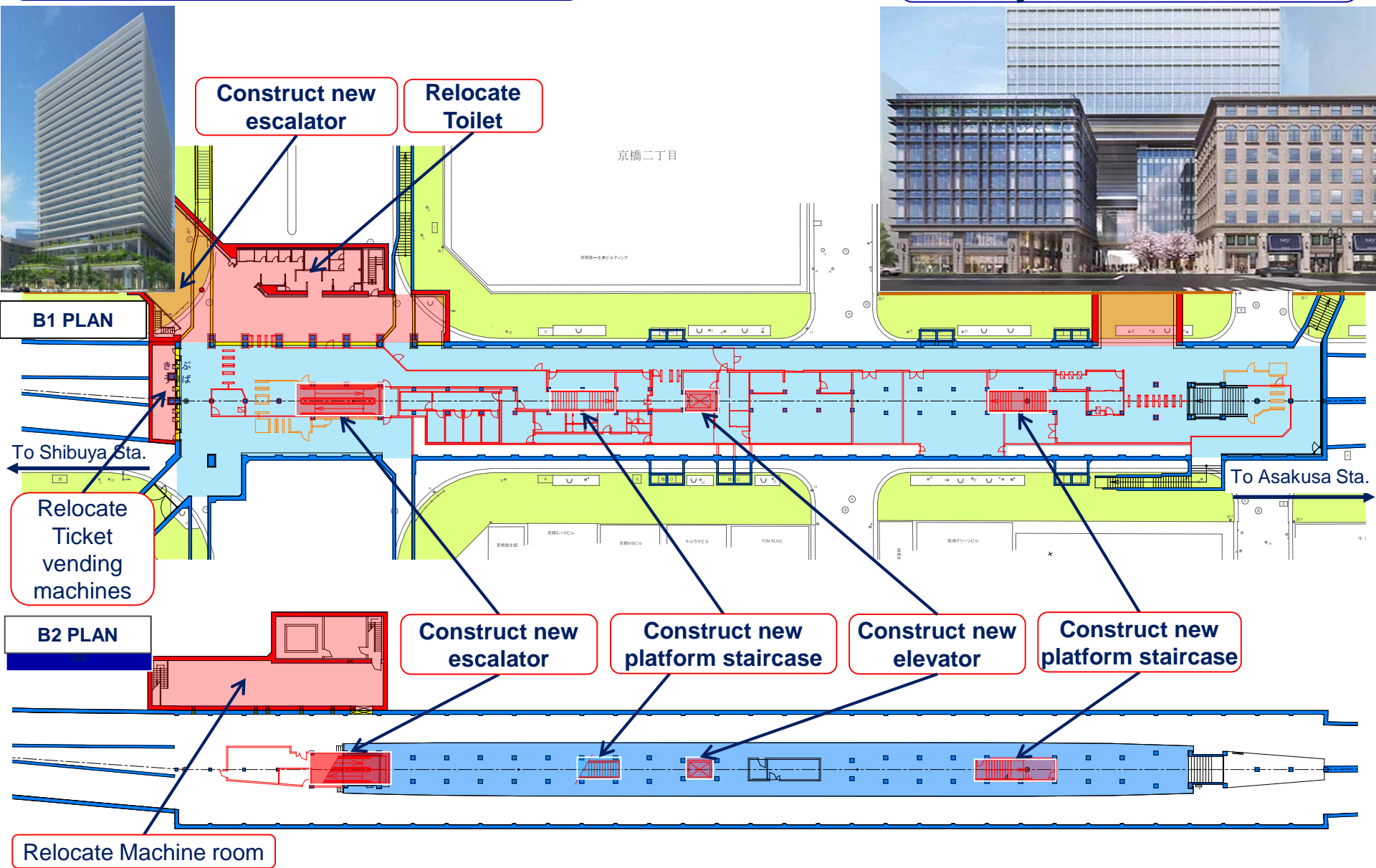
## Result

- A station that is in accordance with the Traffic Barrier-Free Act.
- A station that is able to serve greater numbers of passengers in the future via an increase in elevators and escalators.

# ➤ Improvement of Kyobashi Station, Ginza Line

**Tokyo Square Garden  
(24 floors high, 4 floors underground)**

**Redeveloped Buildings in  
Kyobashi 2-chome**



# ➤ Relocation of Shibuya Station (Integrated improvement of urban development and the train station)

1. Partnership of the government and private sector will implement the integrated functional renewal and reorganization of the station, the reorganization and expansion of public facilities such as the station square, roads, and the redevelopment of the station building.

## Issues

- Aging station facilities
- Congestion from a lack of walkways
- Automobile traffic congestion and complications

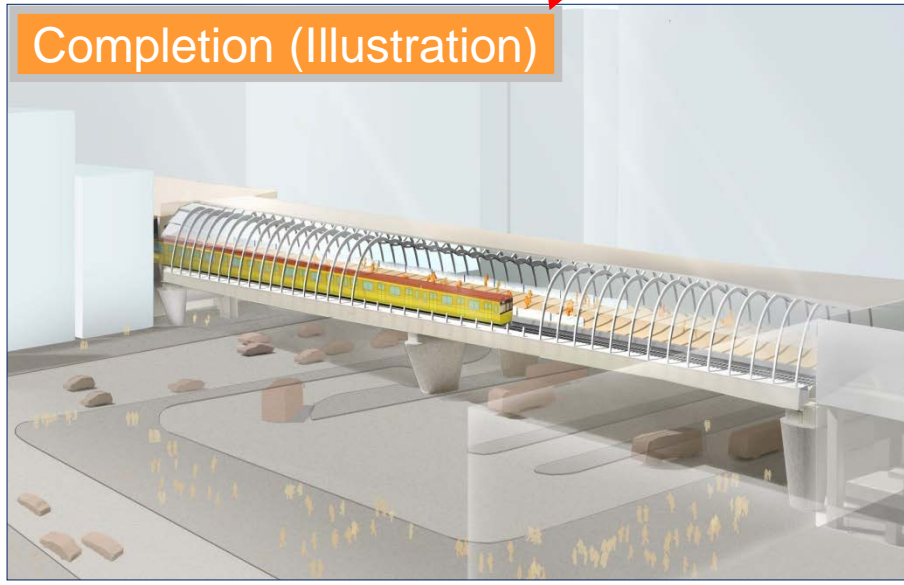
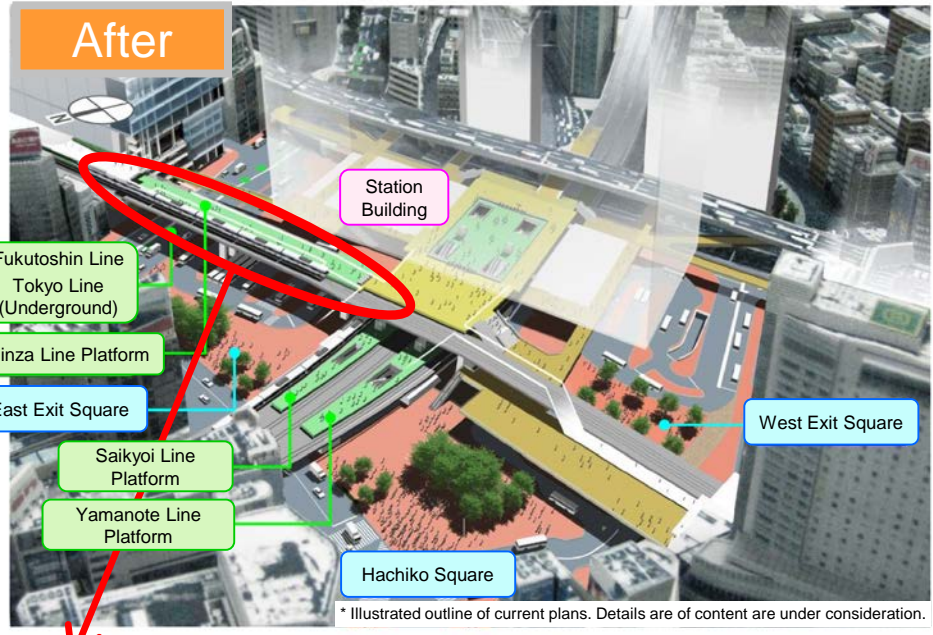
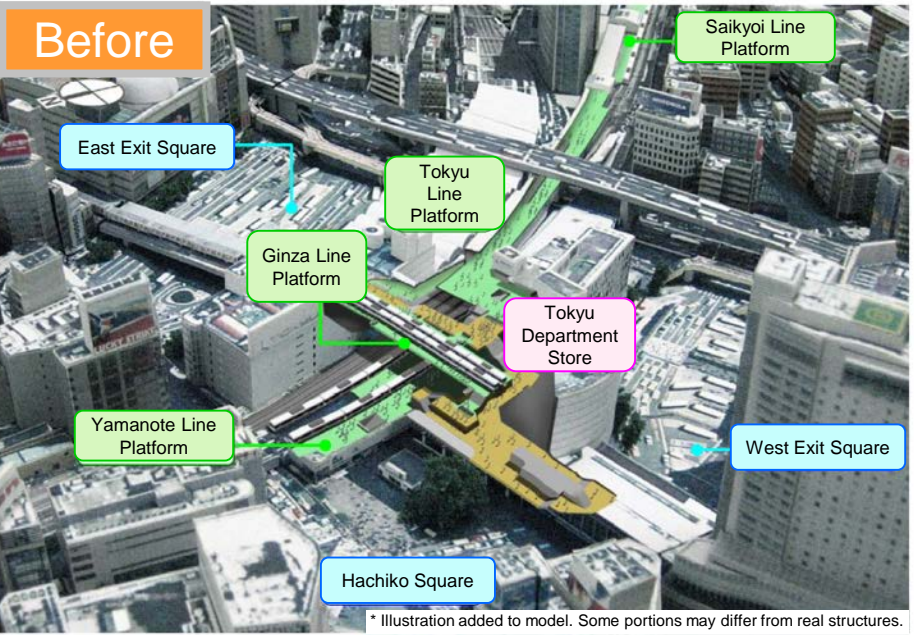
## Counter-measures

- **Improvement of railway facilities**
  - **Relocation Ginza Line platform**
  - Parallelization of Saikyo Line Platform
  - Expansion of transfer concourse
- **Improvement of public facilities**
  - Improvement of station square and underground square
- **Renovation of Station Building**
  - Expansion of pathways and open areas

## Results

- In addition to increasing the convenience of the transfer area, the station space becomes comfortable and easily understandable
- The now-safe open areas become more comfortable
- Traffic congestion relief and increased safety by arranging automobile lanes

# ➤ Relocation of Shibuya Station, Ginza Line



• Source: Overview from "Shibuya Station Block Basic Improvement Urban Planning Revisions"

# ➤ Ginza Line Shibuya Station, Relocation works

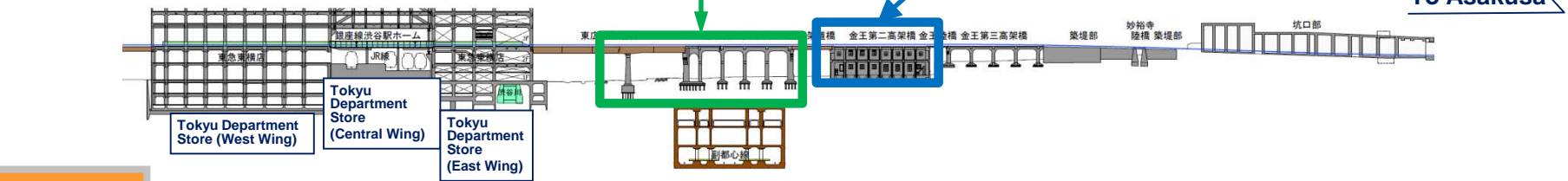
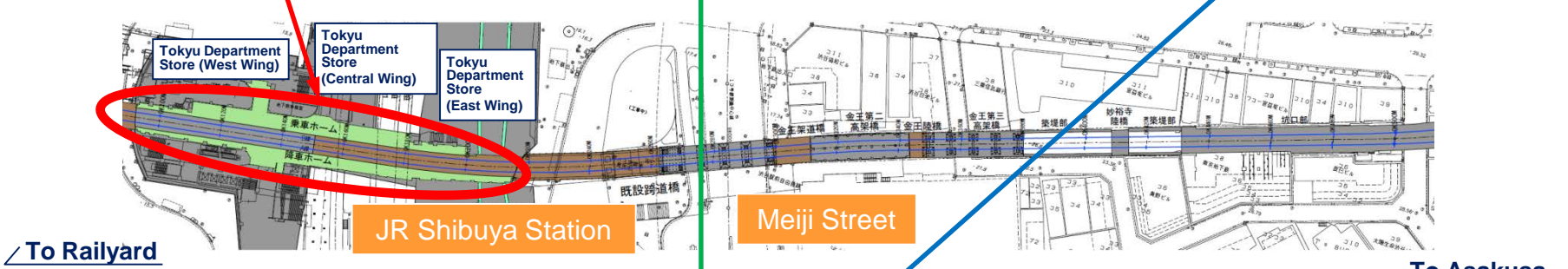
Before

Platform Relocation

Via modifications to the elevated bridge

- Road widening
- Creation of Station Square

Integration of Station facilities and high-rise buildings

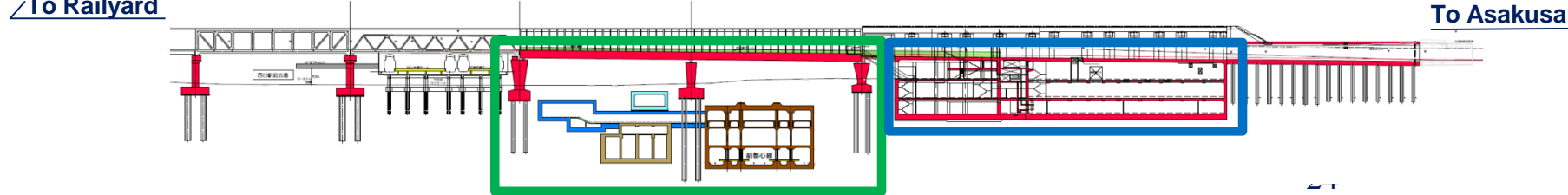
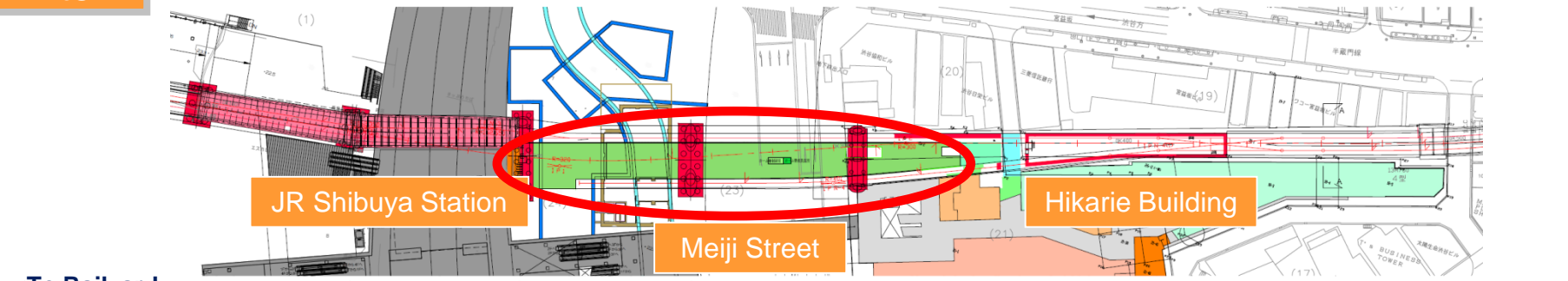


After

JR Shibuya Station

Meiji Street

Hikarie Building





# ➤ Improvements to Kiba Station, Tozai Line

1. Station improvement will be implemented to handle the increasing passengers from redevelopment around the station.

## Issues

- Due to redevelopment around the station, there is a sudden increase in passengers getting on and off
- During rush hour, chronic stagnation occurs
- As there the platform has little space, there is a risk of coming in contact with the train

## Counter-measures

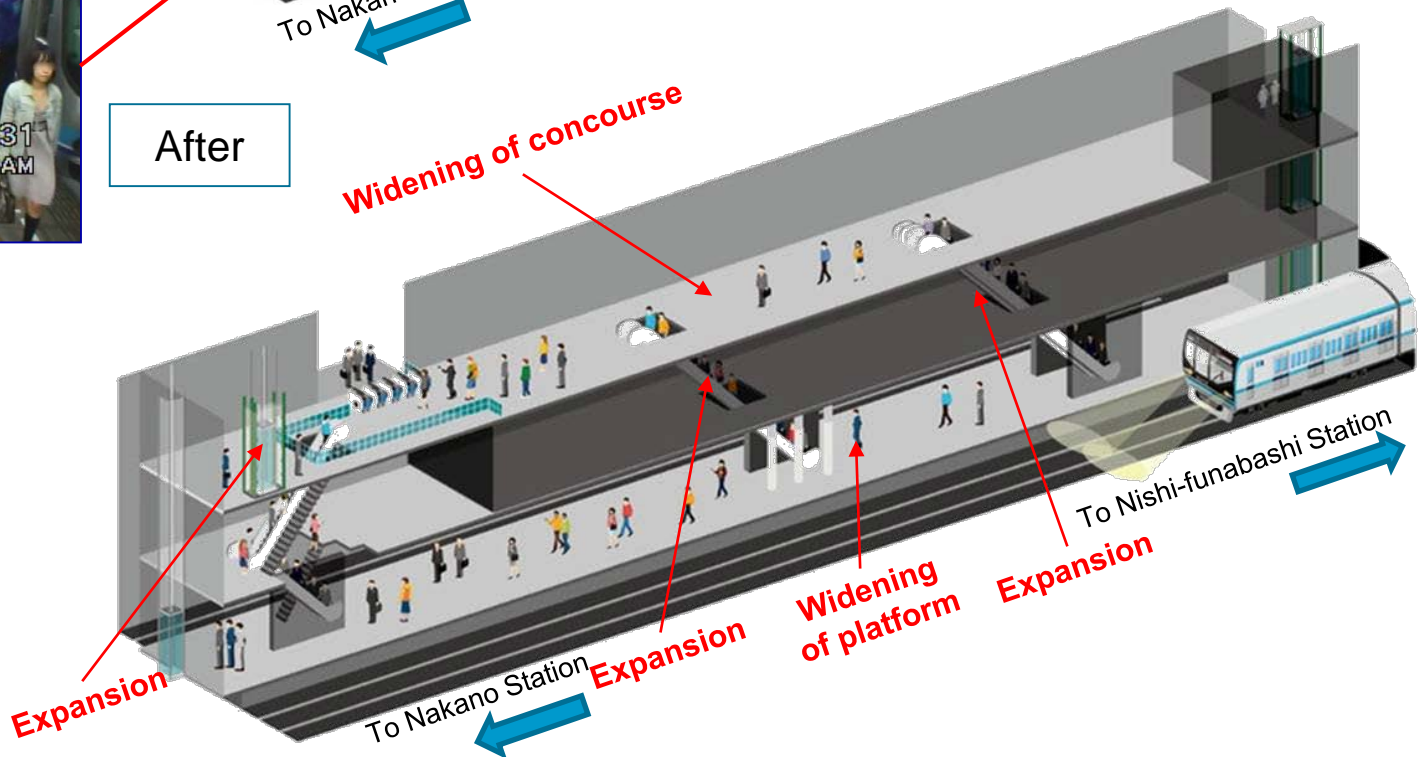
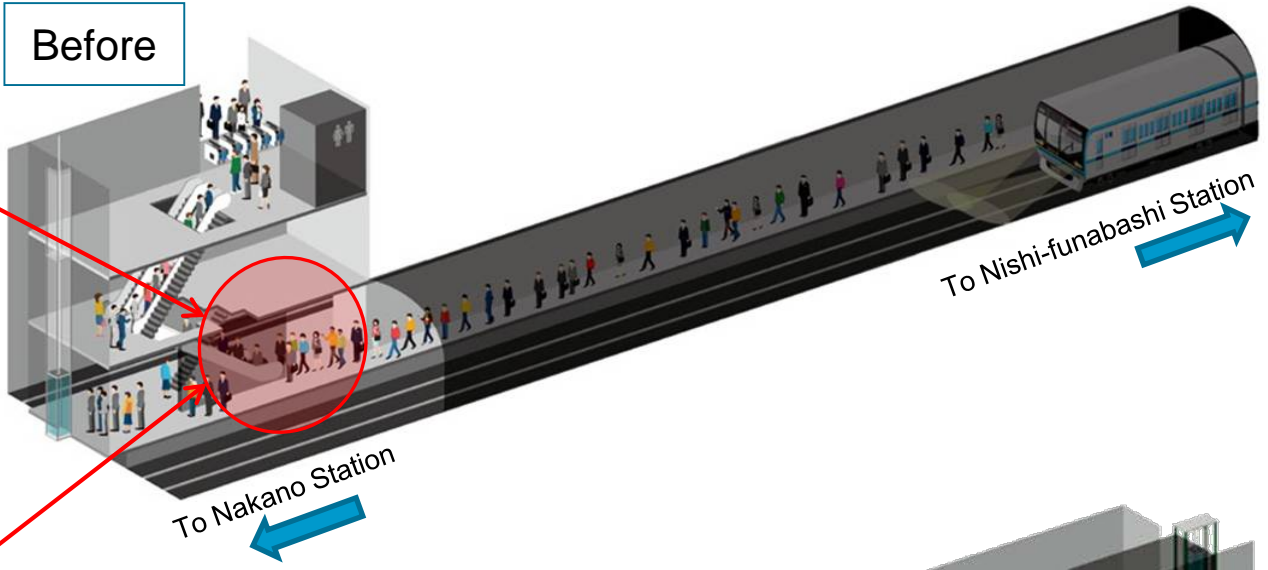
- **Widen the platform and the concourse**  
(Width to increase: 68.5m)
- New construction of entrance/exits and fare gates
- New construction of escalators
- New construction of elevators
- Countermeasures against wind from trains
- Change various things in station layout

## Results

- Noticeable improvement of passenger flow distribution, elimination of stagnation on platform and fare gate floor, safety, and convenience.

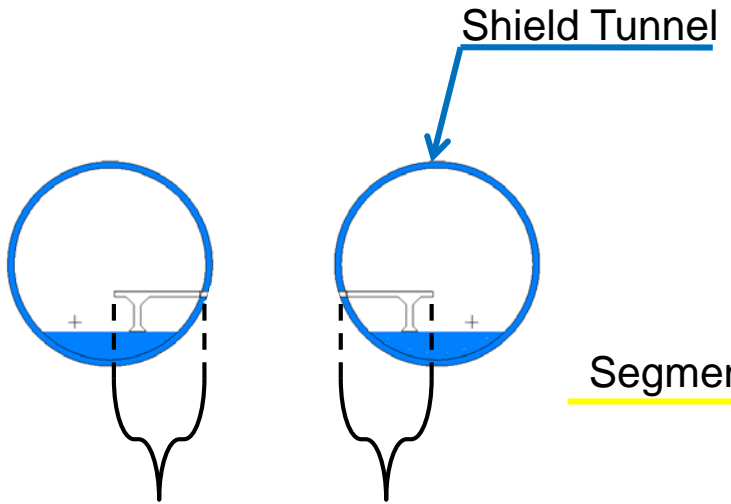
# ➤ Improvements to Kiba Station, Tozai Line

## 【Rush Hour Congestion】



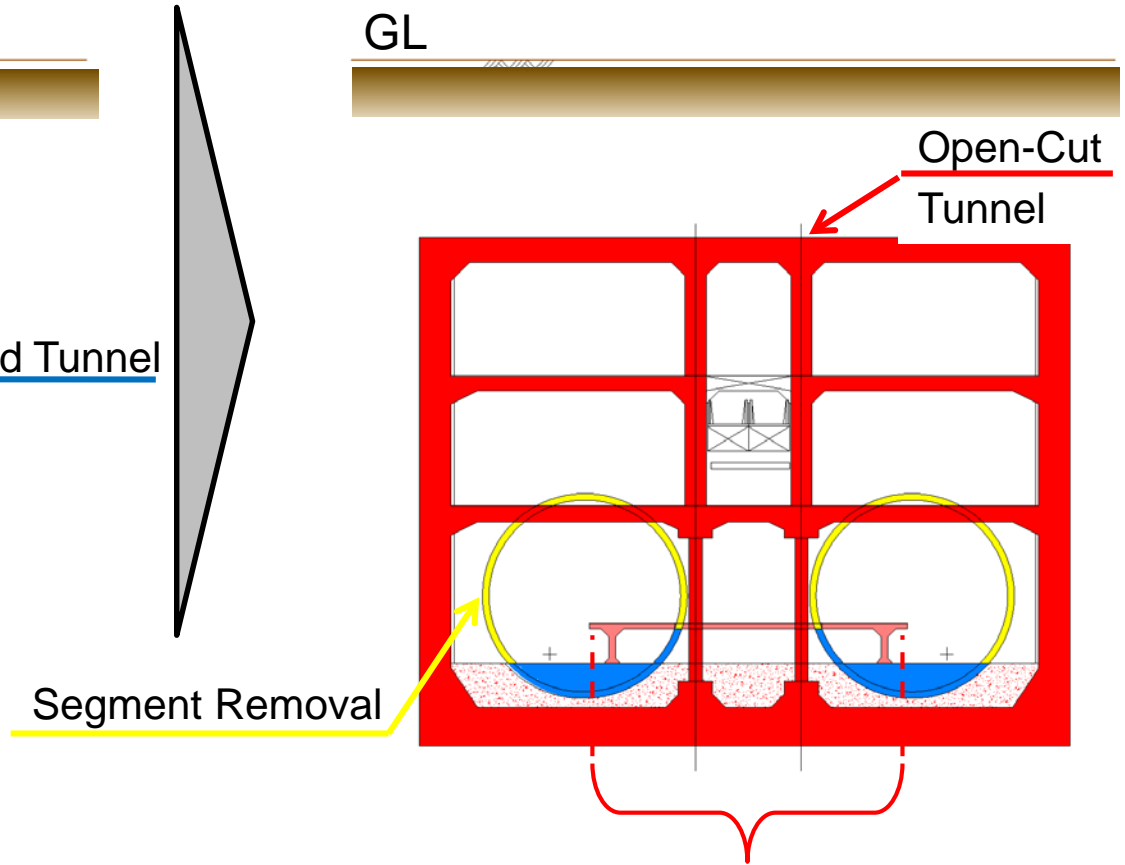
# ➤ Improvements to Kiba Station, Tozai Line

Before



Narrow width platform

After



Widening of platform