



Creating a Compact City through Innovative Public Transportation Networks
~ New Urban Planning Strategies to Meet the Twin Challenges of
Decreasing Populations and Aging Societies ~

Toyama City

Toyama's Compact City Management Strategy

<Challenges of Toyama City>

① Reduced population and ultra-aged community

② Decay of public transportation due to extraordinary dependence on vehicles

③ City center lost its appeal

④ Relatively high administrative cost of the city

⑤ Adequate maintenance of social capital

⑥ Divergence between average and healthy life expectancy

By revitalizing public transport, including railway track lines, and by concentrating various city functions such as residential, commercial, business and cultural buildings along public transport lines, we can create a compact city.

<Concept Illustration> Targeted city structure - dumplings and skewers

Skewer: Public transport offering a higher level of service

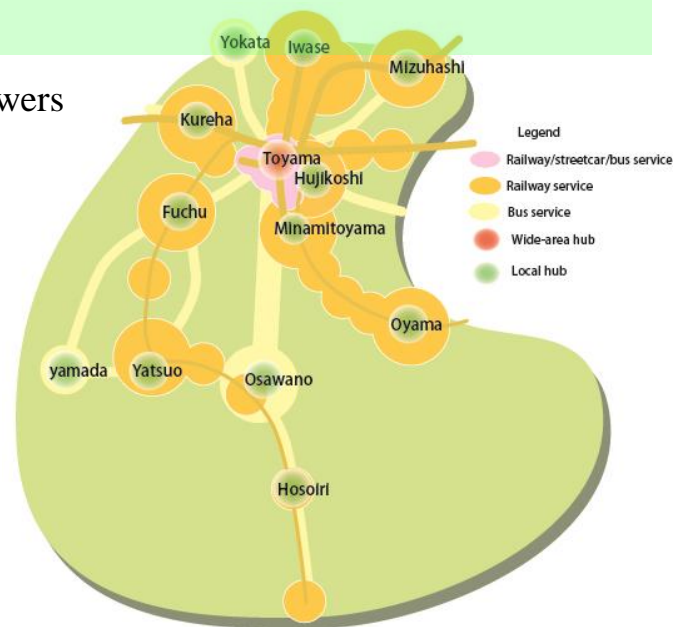
Dumplings: Population centers connected by the skewers, allowing pedestrian access to various city amenities

<Three pillars for the Strategy>

① Revitalizing public transport

② Revitalizing the city center

③ Encouraging residents to relocate to zones along public transport lines



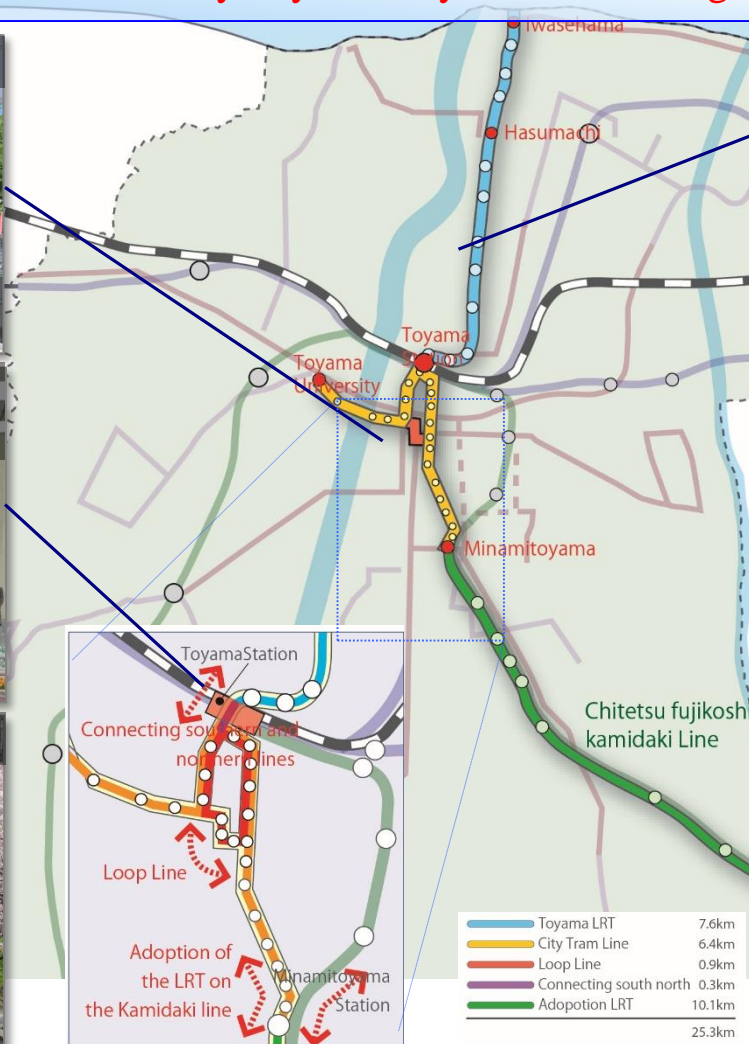
Concept Illustration

Revitalizing Public Transport - Formation of LRT Network

By creating the LRT network, we hope to modify the current life style of too much dependence on automobiles and realize **a town with every city amenity within walking distance.**



The Image of Tram going under the elevated Toyama Station



Design and Construction of Toyama's LRT

JR Toyama Port Line (a local line), which had been suffering from declining numbers of passengers, was revitalized as Japan's first complete LRT. This was achieved by adopting a two-tiered system in which the public sector constructs the track while the private sector operates the business.

Former JR Port Line



The New "Portram"



Former Service

New Service

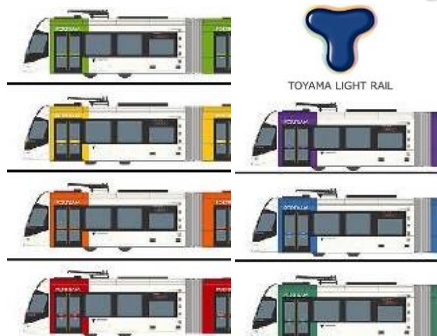
Operation interval	30 to 60 min.	→	15 min. (10 min. during rush hour)
First/ Last Train	5-6 / 21-22:00	→	5-6 / 23-24:00
No. of stations	9	→	13
Vehicles	Railroad vehicles	→	All super-low floor vehicles

*Fare is uniformly 200 yen.

❖ Light Rail Attendants



❖ Introduction of total design

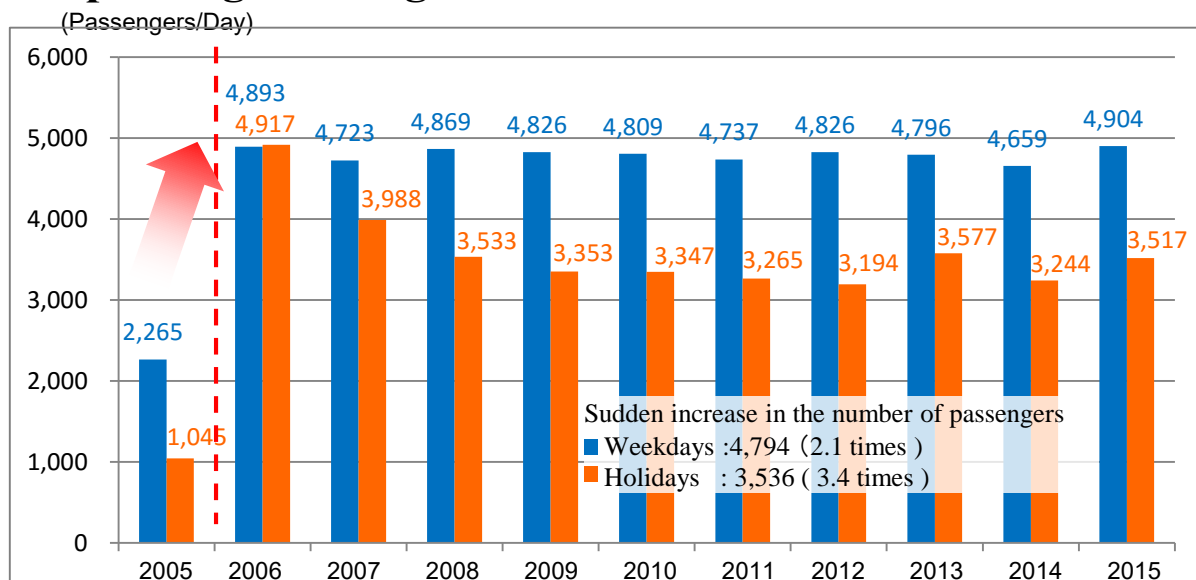


❖ Low floor cars/ barrier-free stations



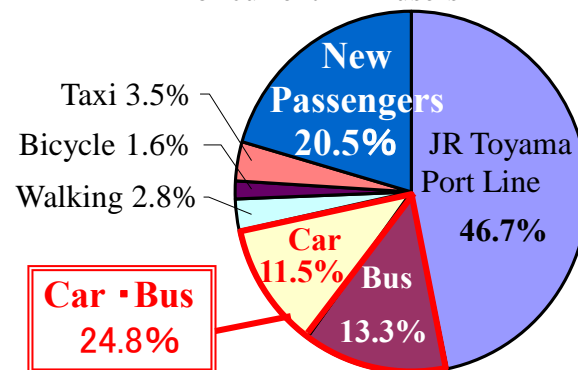
Results of Passenger Use for Toyama LRT

Weekdays: 2.1 times as many passengers as before; **Weekends: 3.4 times** as many passengers using the new service.



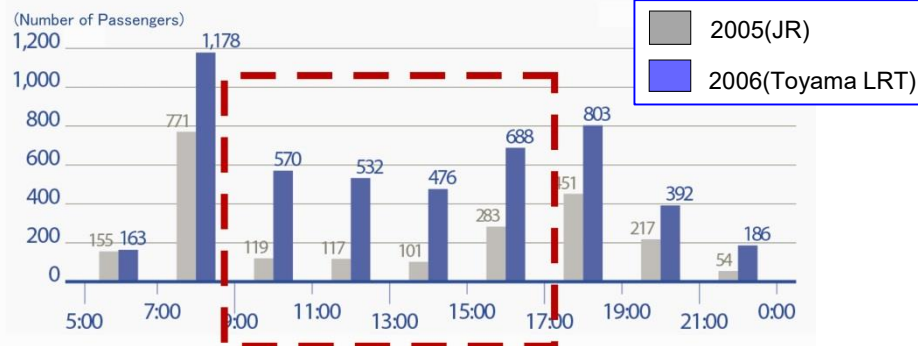
Reduced environmental load:

- method of transportation for current LRT users

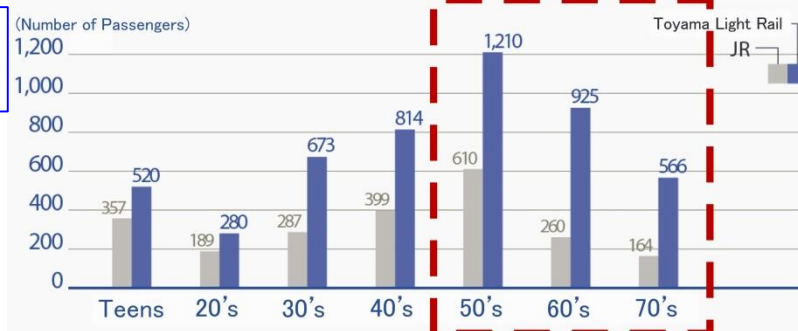


Increase in daytime use by senior citizens (Lifestyle Change)

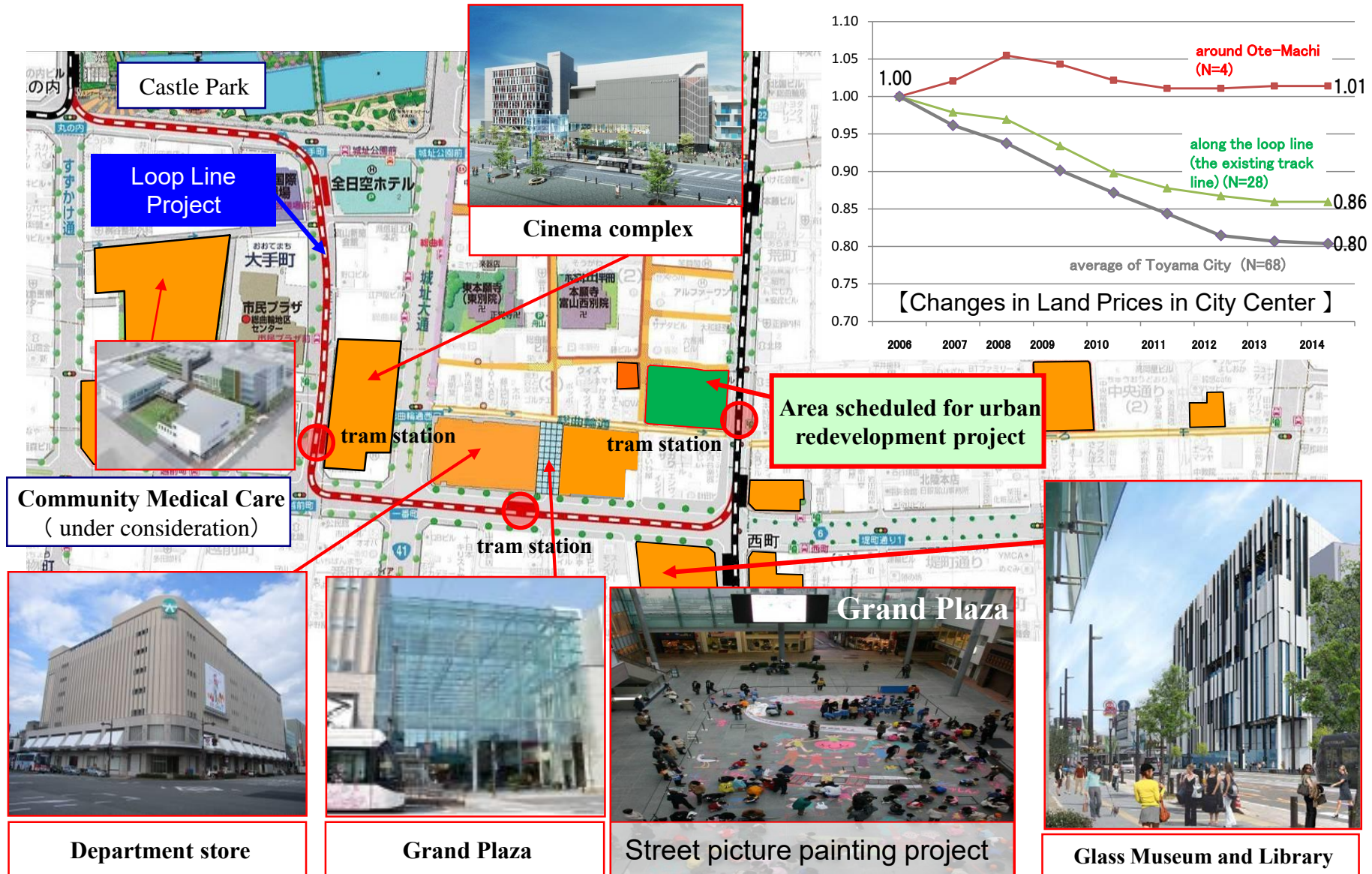
Per Day Changes in Ridership According to Time of the Day (Weekdays)



Per Day Ridership According to Age Bracket (Weekdays)

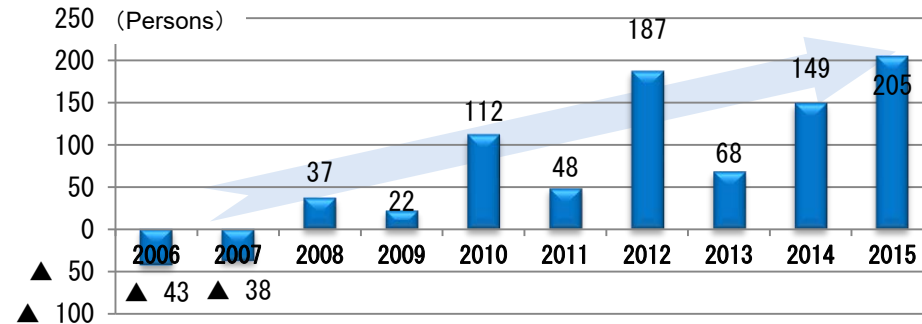


Attractive City Center with Comprehensive Ability

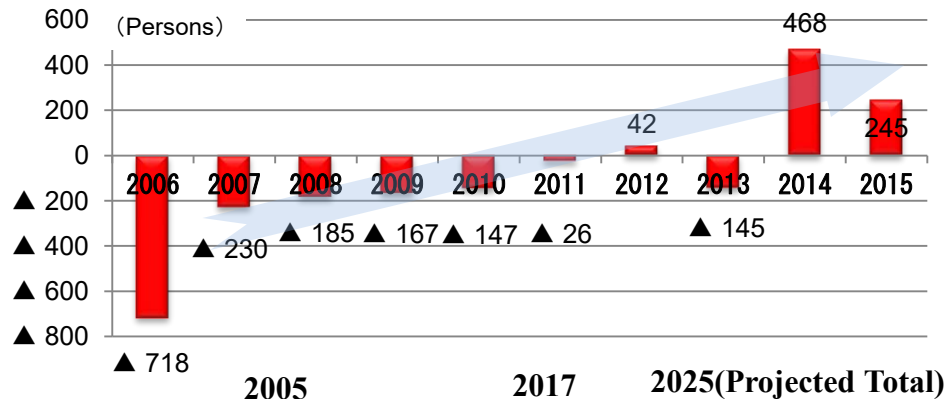


Encouraging residents to relocate to zones along public transport lines

[Transition of social change (moving-in - moving-out) in city center (inner city)]



[Transition of social change (moving-in - moving-out) in districts promoting dwelling along public transport lines]



2005

2017

2025(Projected Total)

(421,239 people)

(418,399 people)

(389,510 people)

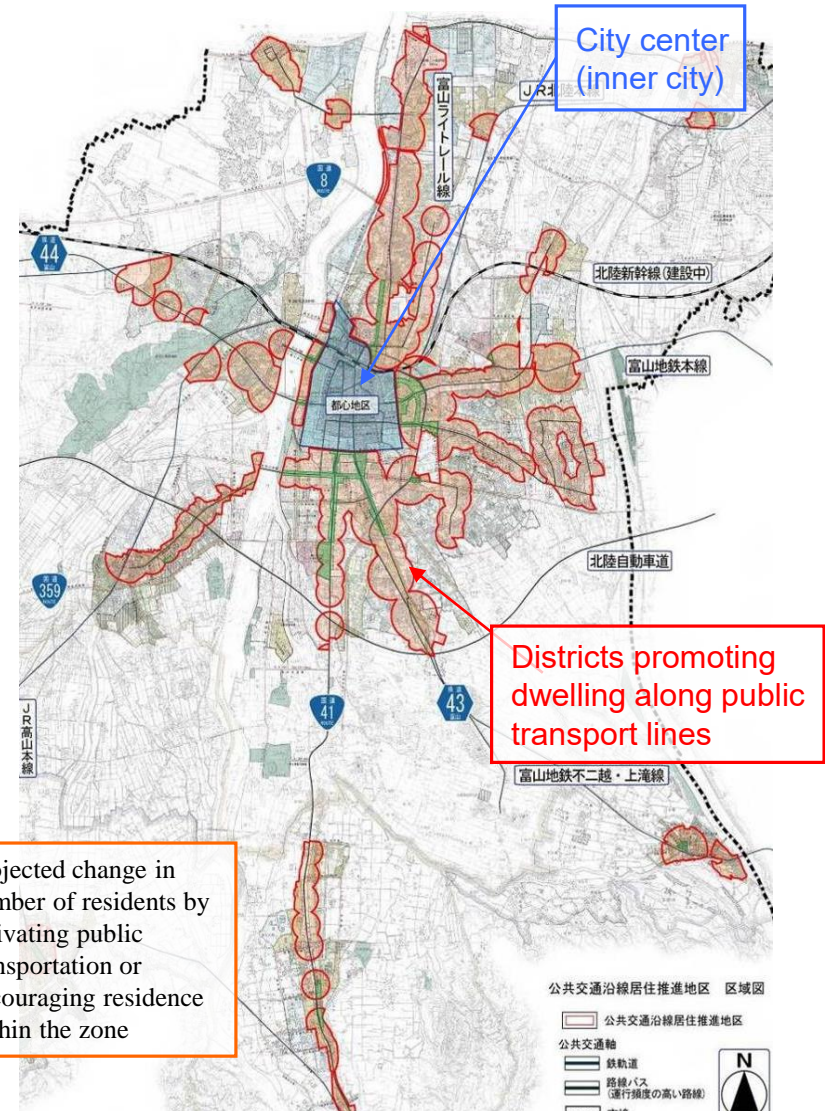
Number of residents in the zones along city center and public transportation lines

117,560 people
(About 28%)

154,668 people
(About 37%)

162,180 people
(About 42%)

Projected change in number of residents by activating public transportation or encouraging residence within the zone



Economic effect of Shinkansen (1)

■ Ripple Effect (Toyama prefecture) : \42.1 billion yen (\$37.6m)

(1) Increase in number of entry in one year after opening \15.4 billion (\$140M)

- 494 thousand people / y [Survey before opening: 240 thousand/y]

(2) Business investments and new employments triggered by Shinkansen
\26.7 billion (\$242M)

- Business investment \23.1billion (Excluding land acquisition cost)
- New employments 2,910 people

Source: Report by Toyama prefecture

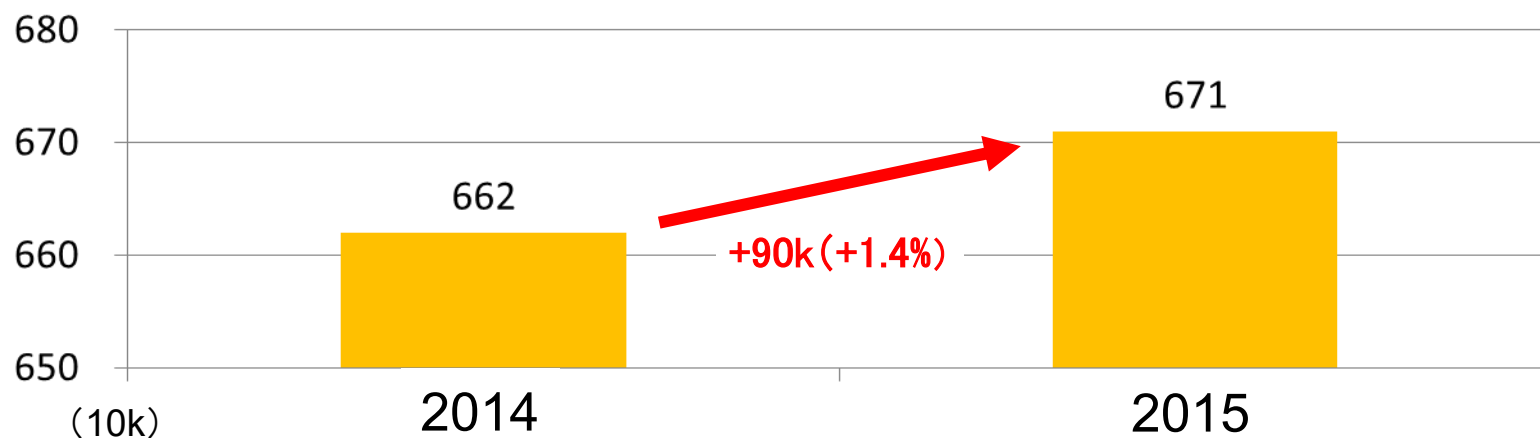
■ Industrial Location (Achievement of Toyama's grant system)

Three enterprises from the metropolitan area established 2 manufacturing bases and 1 call center

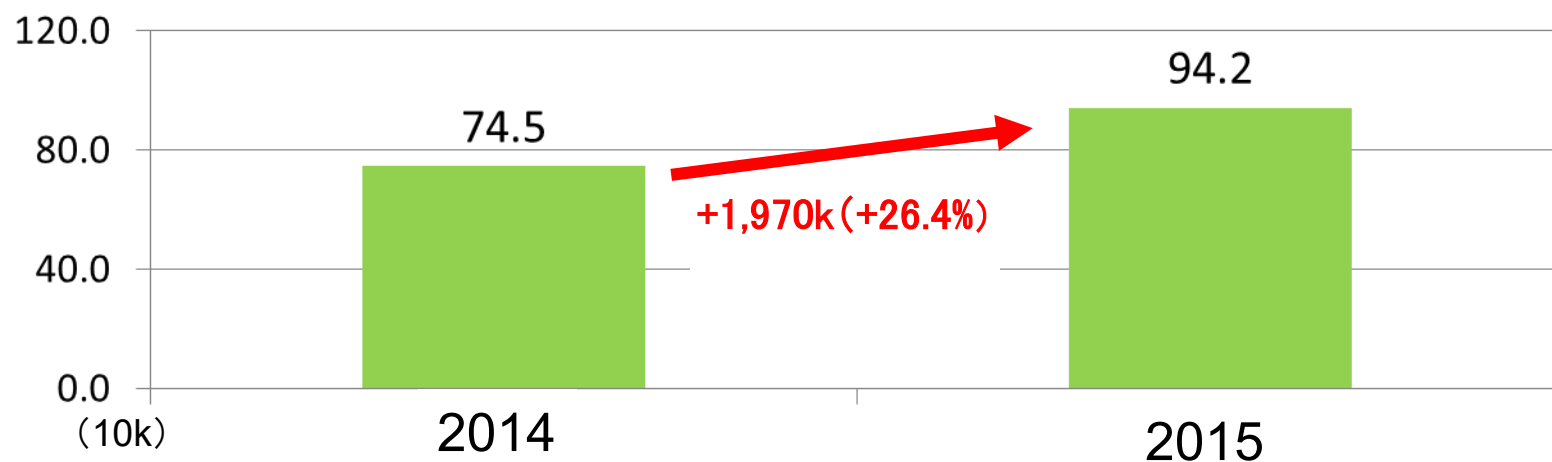
⇒ **The total investment is approx. \4.6 billion (\$46M), created 75 new employments**

Economic effect of Shinkansen (2)

■ Number of visitors



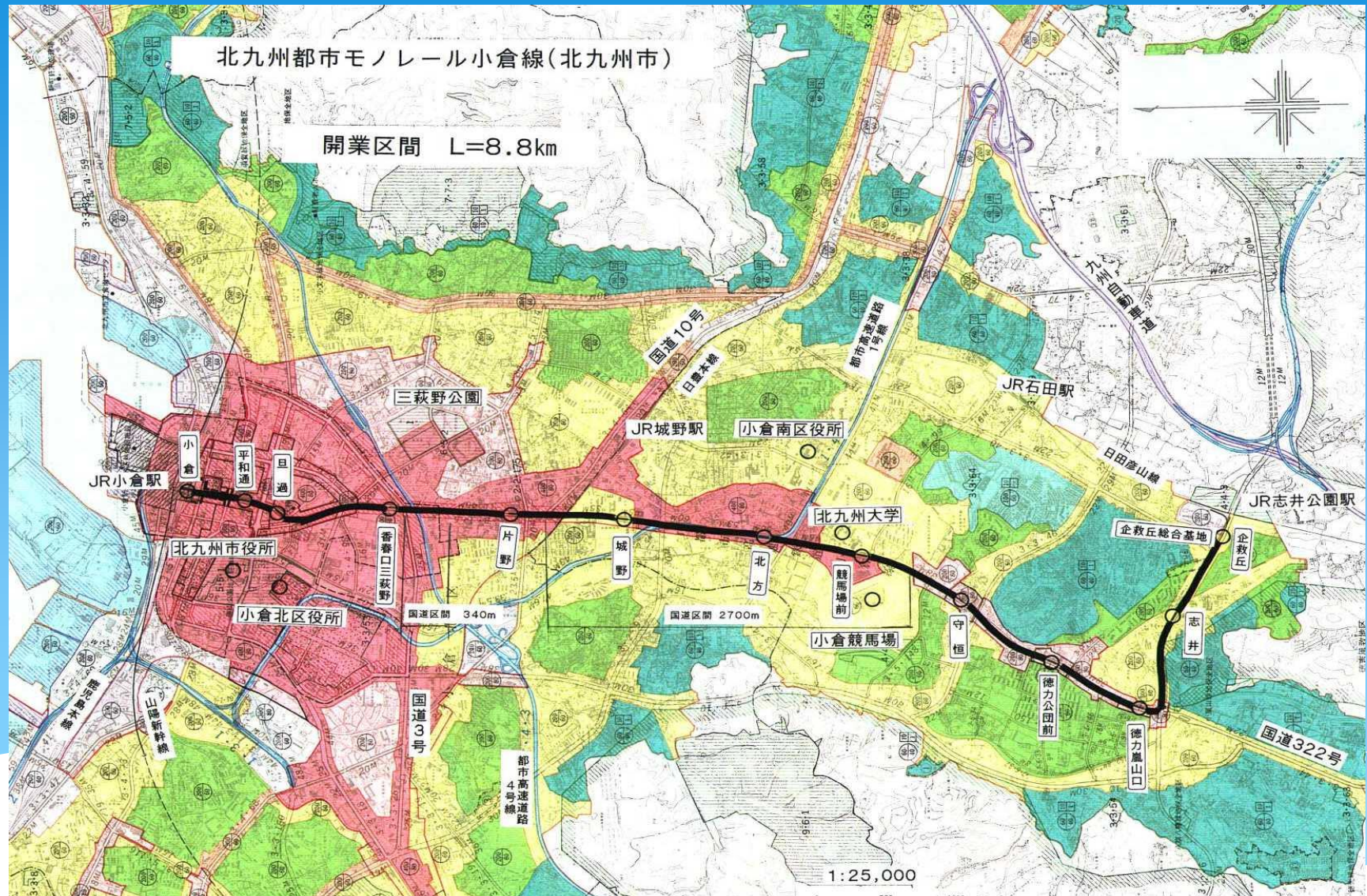
■ Number of main accommodation facilities users in Toyama city



Direction Connection of Urban Monorail Kokura Line to JR Kokura Station & Care and Maintenance of the Environs

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Map of Area along the Monorail Line



Road Conditions Before Construction of Monorail



●Urban Monorail Kokura Line



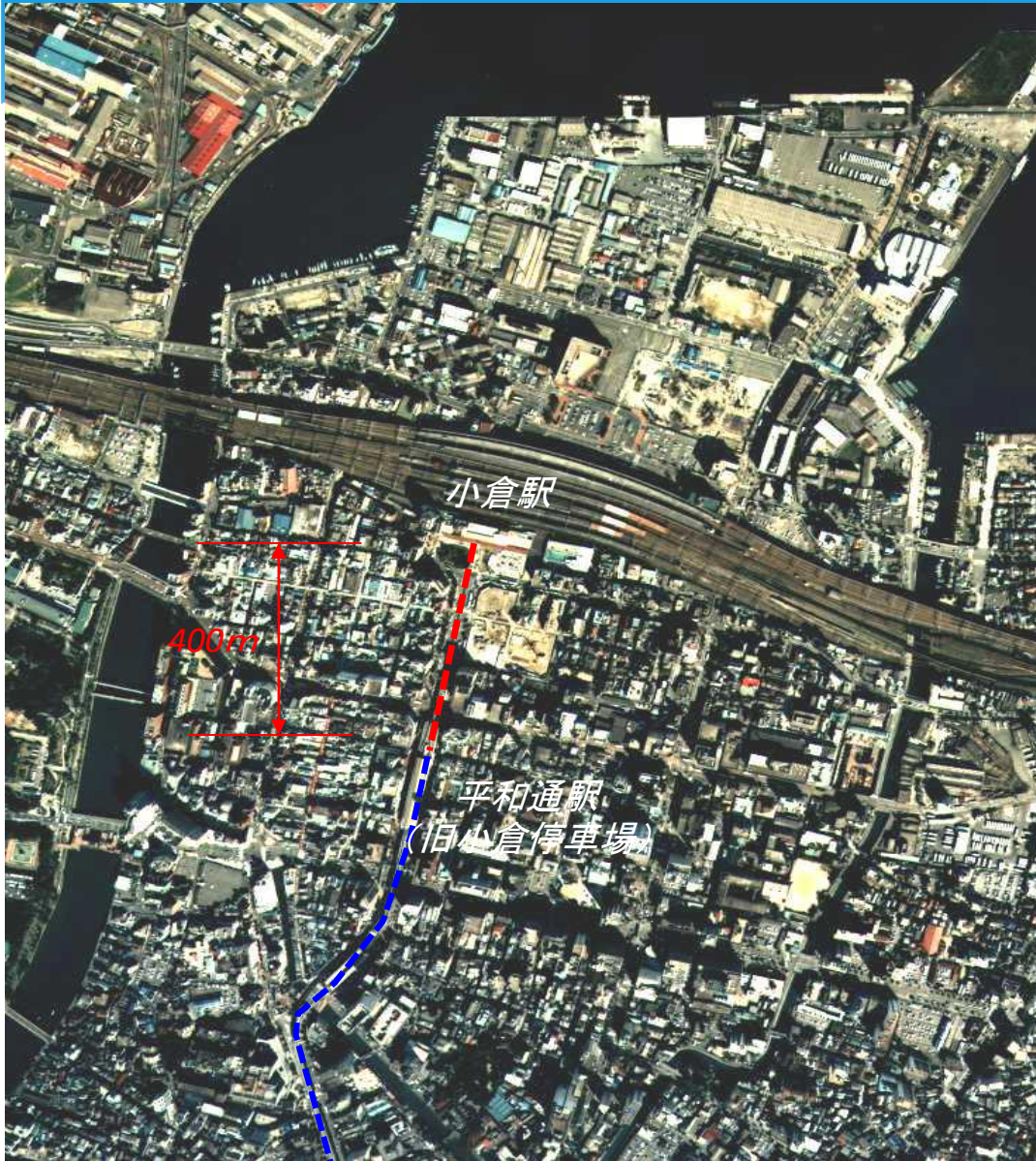
● Breakdown of Funding for Project Costs

I. Initial Project FY 1978 to FY 1984

Total project costs: JPY 68.1 billion

Municipal expenditure JPY 9.7 bil	Municipal expenditure	Capital	Municipal loans	Loans from Development Bank of Japan
National expenditure: JPY 20.8 bil				
	JPY 3 bil	JPY 2.2 bil	JPY 22.4 bil	JPY 10 bil

Eligible project costs	Non-eligible project costs
JPY 30.5 bil	JPY 3 bil
Infrastructure project cost JPY 33.5 bil	Project costs (other) JPY 34.6 bil



Urban Development Challenges

1. Strengthening nodules between public transportation modes
2. Improving pedestrian flowline
3. Improving landscape appropriate for a city center
4. Eliminating shortages of public space
5. Maintenance of elderly and handicap-friendly facilities

Measures to solve problems

- Expansion of urban monorail's Kokura line
- Improvement of plaza at the south exit of JR Kokura Station
- Improvement of public accessway to the north and south of Kokura Station
- Improvement of pedestrian deck at the north exit of JR Kokura Station

Monorail Terminal Station and Pedestrian Walkways



Location of Direct Connection Point to Kokura Station



3-Dimensional Road System

*Allows highways and buildings to be constructed in the same space



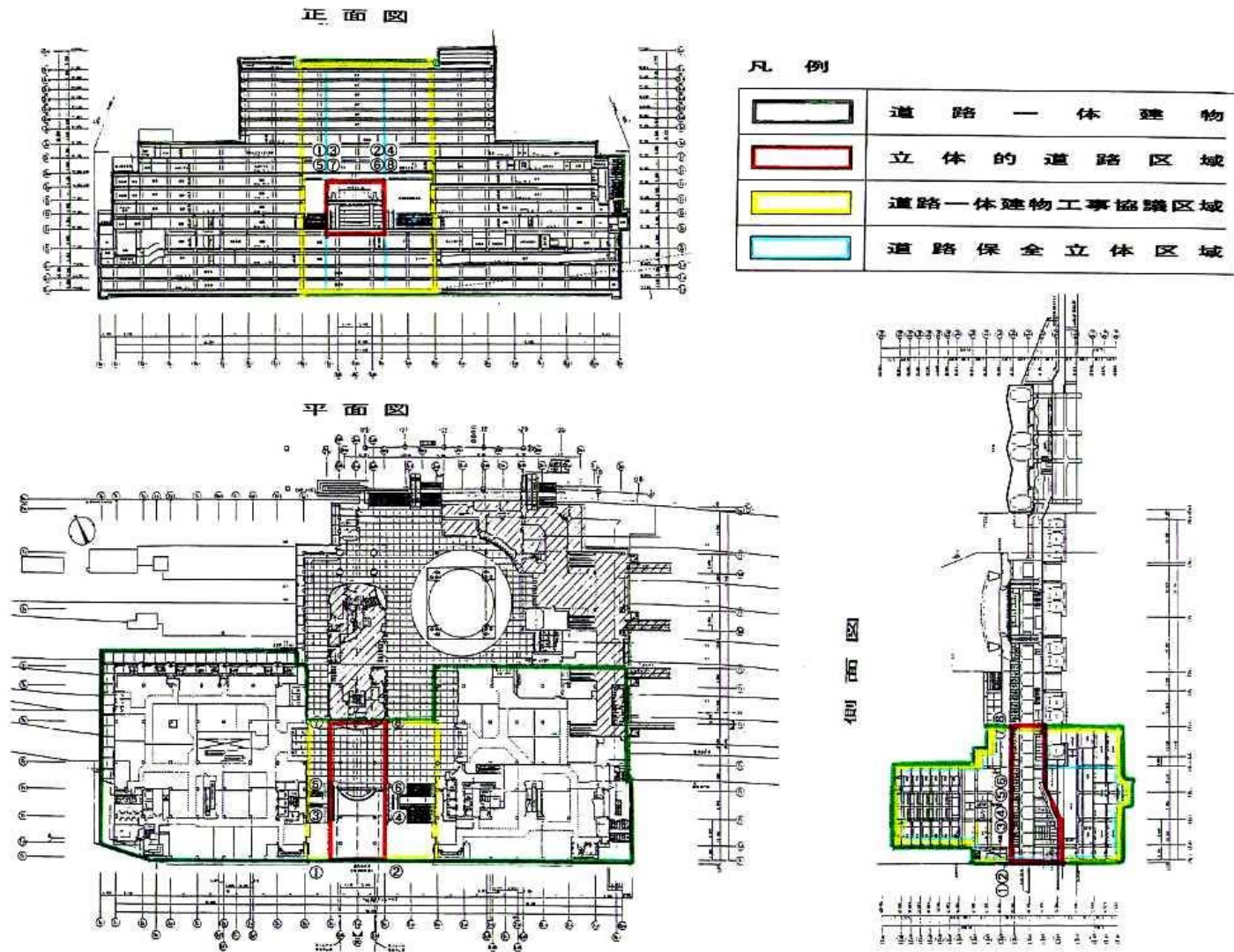
3-Dimensional Road System

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3-Dimensional Road System

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Breakdown of Funding for Project Costs

II. Extension project FY 1994-1997

April 1, 1998 Extended section opened

Kilometers in operation: 8.8 km

Total costs: JPY 13.5 bil

Municipal expenditures JPY 4 bil	Municipal expenditures JPY 2.5 bil	Capital JPY 1.8 bil	JRA subsidy JPY 1.2 bil
National expenditures JPY 4 bil			

Eligible project costs JPY 8 bil	Non-eligible project costs JPY 2.5 bil
Infrastructure project costs JPY 10.5 bil	Projects (other) JPY 3 bil

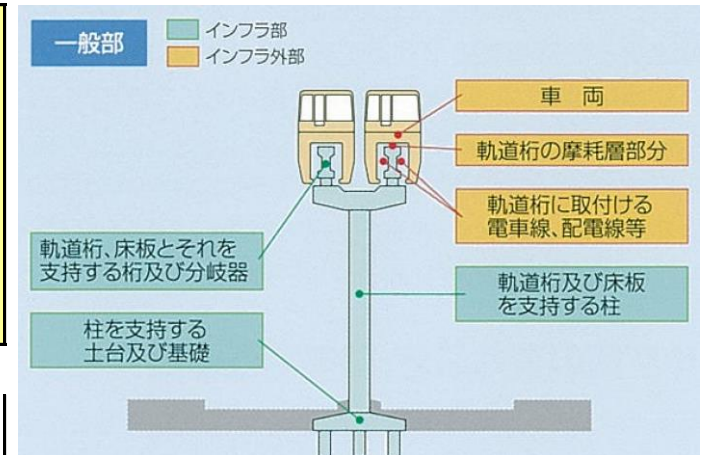
Related street development projects

Improvement of public accessway to the north and south of Kokura Station
Approx. JPY 8 bil

Improvement of plaza at the south exit of Kokura Station
Approx. JPY 3 bil

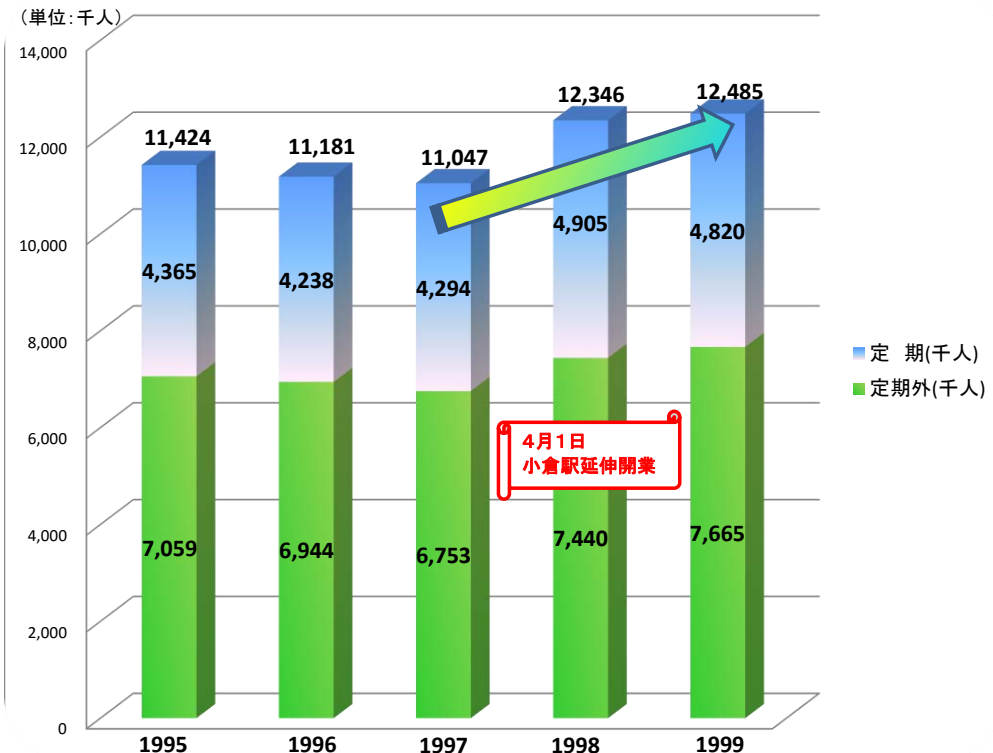
Improvement of pedestrian deck at north exit of Kokura Station
Approx. JPY 6 bil

Development of Kokura Station by JR Kyushu Approx. JPY 26 bil





Monorail After Extension



South Exit Before & After Improvement Project



小倉駅南口駅前広場（着工前）

Before

After



小倉駅南口駅前広場（完成）

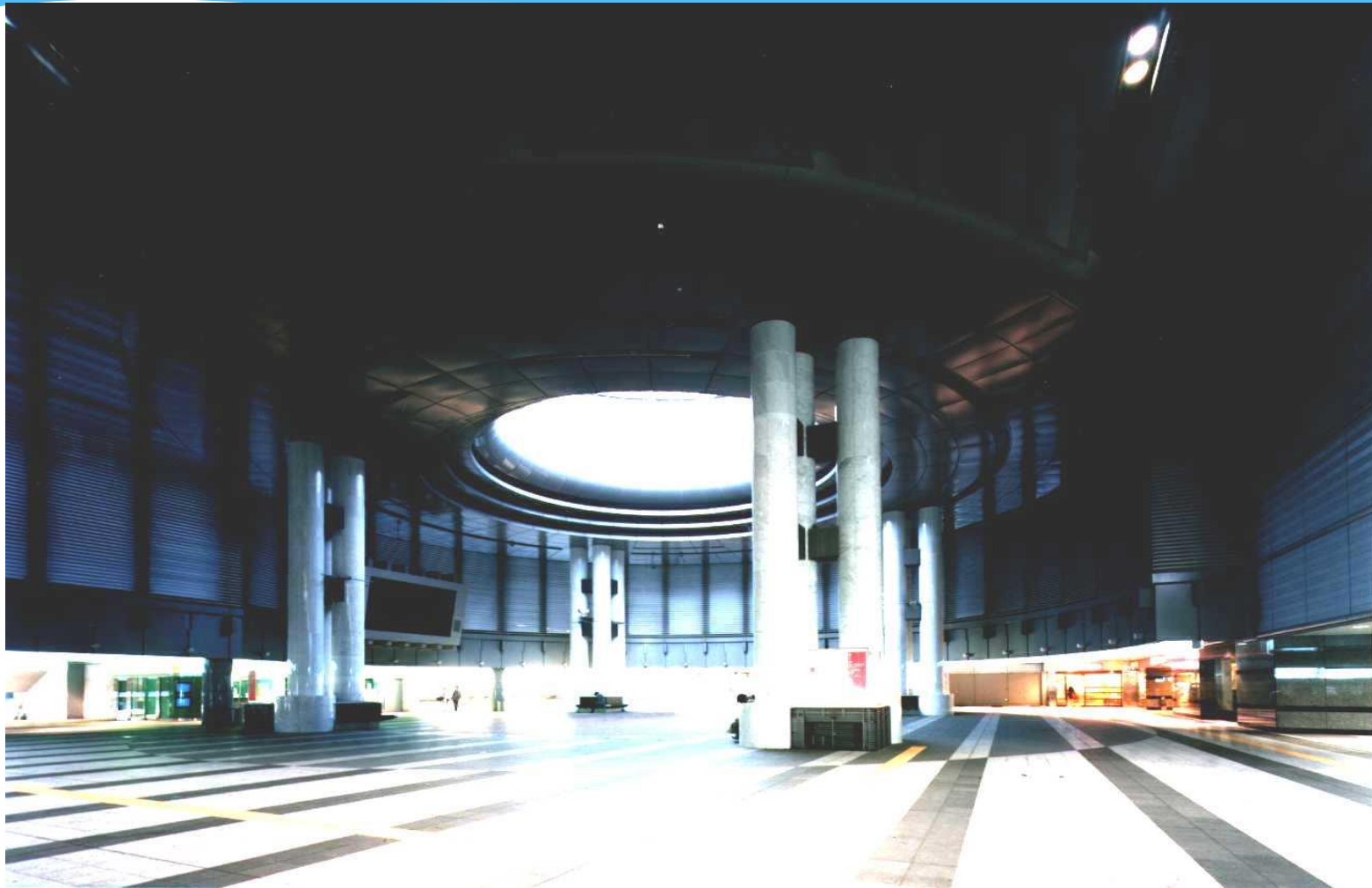
Existing North-South Public Accessway on Western Side of the Station



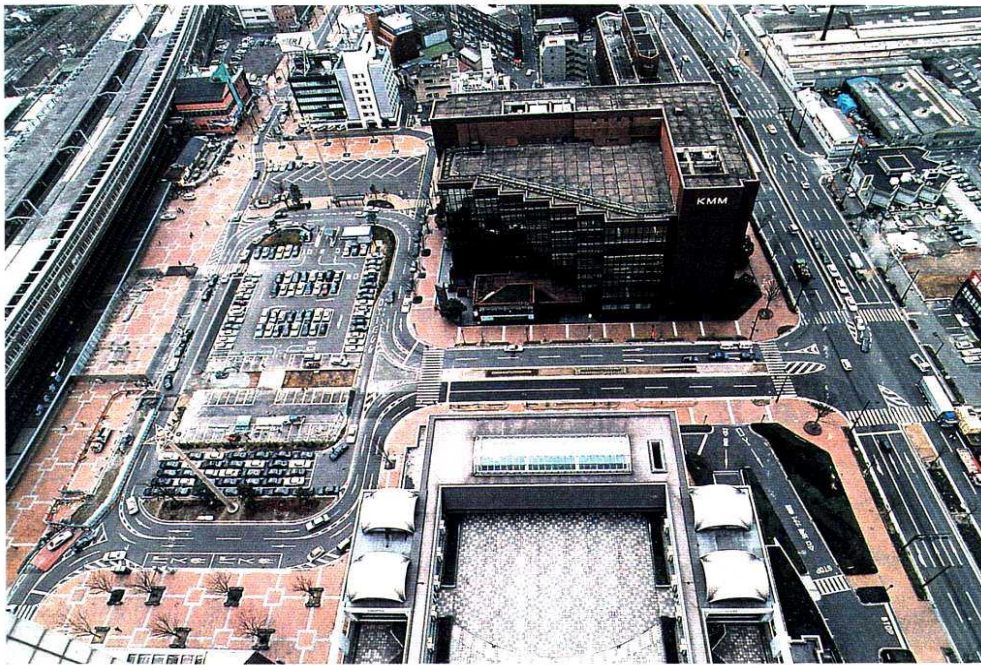
North-South Public Accessway



North-South Public Accessway (Event Space)



Pedestrian Deck at North Exit of Kokura Station Before & After Improvement Project



小倉駅北口デッキ（着工前）

Before construction

Completed project



小倉駅北口デッキ（完成）

Pedestrian Deck at North Exit of Kokura Station After Improvement Project





Thank you for your kind attention.