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Intermodal Passenger Transport in Japan

"Road authorities' approach to delivering integrated transport services to customers - Our experience and lessons learned – "

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MLIT
Ministry of Land, Infrastructure, Transport and Tourism

Outline

1. Background
   - ✓ Modal share of passenger transport
   - ✓ Demographics

2. Road authorities approaches

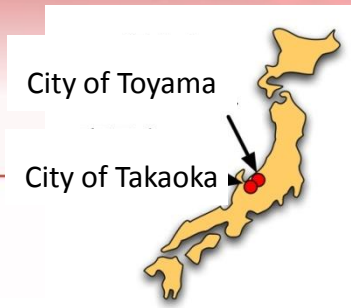
3. Lessons learned and future direction

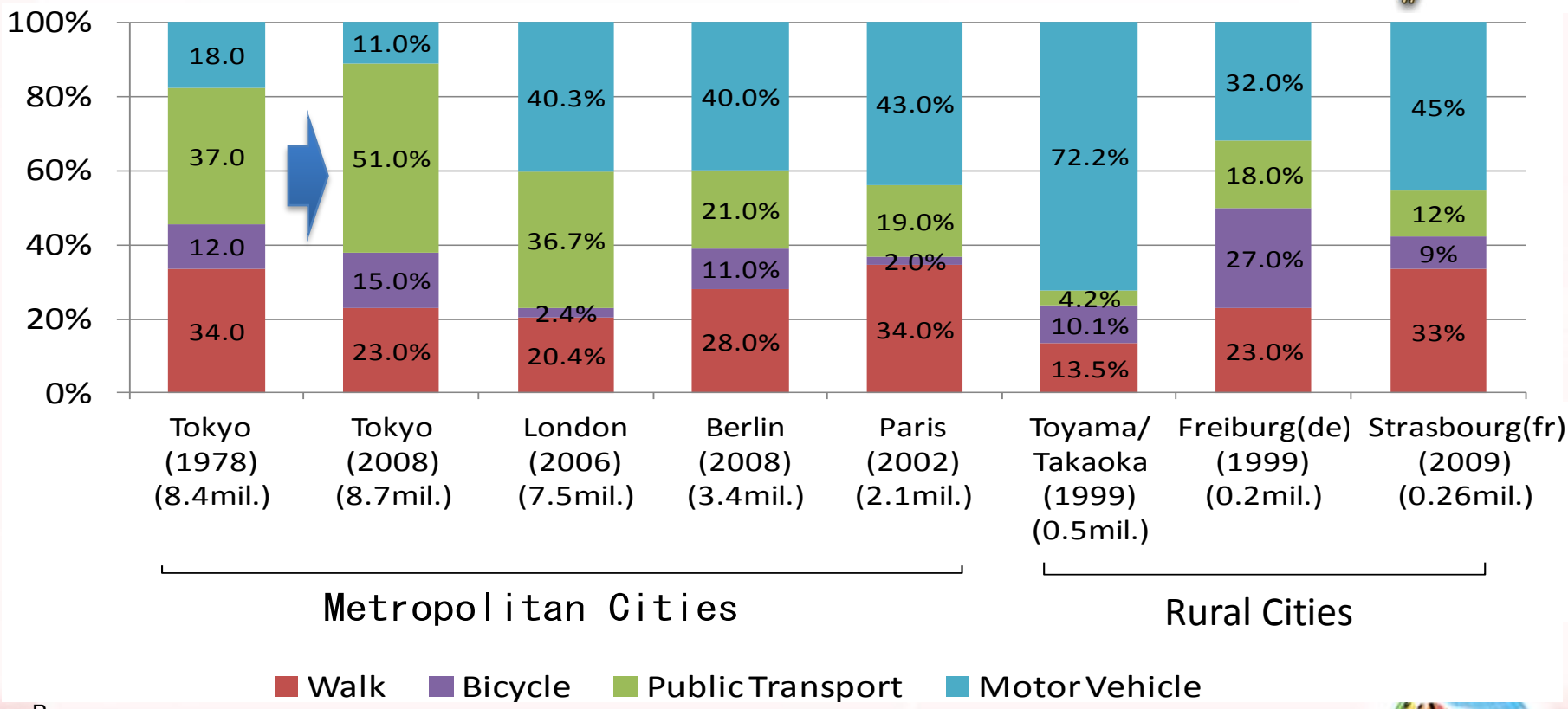
1. Background – Modal Share(passenger transport)

Predominant mode;

Metropolitan areas: Public transport

Rural areas: Automobile



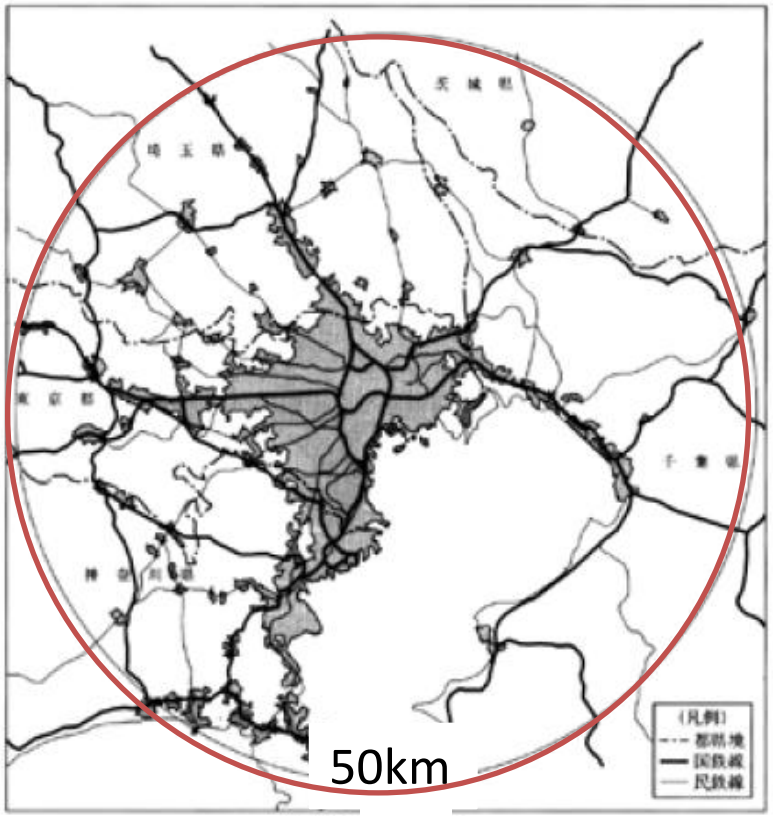


Resource:
London) London Travel Report 2006
German cities) Technische Universität Dresden, Sonderauswertung zur Verkehrserhebung 'Mobilität in Städten – SrV', 2003 und 2008
French cities) CERTU

Fig. Comparison of Modal Share in Cities (Based on Trip)

1. Background – Demographics(metropolitan areas)

➢ Concentration of population along railway network



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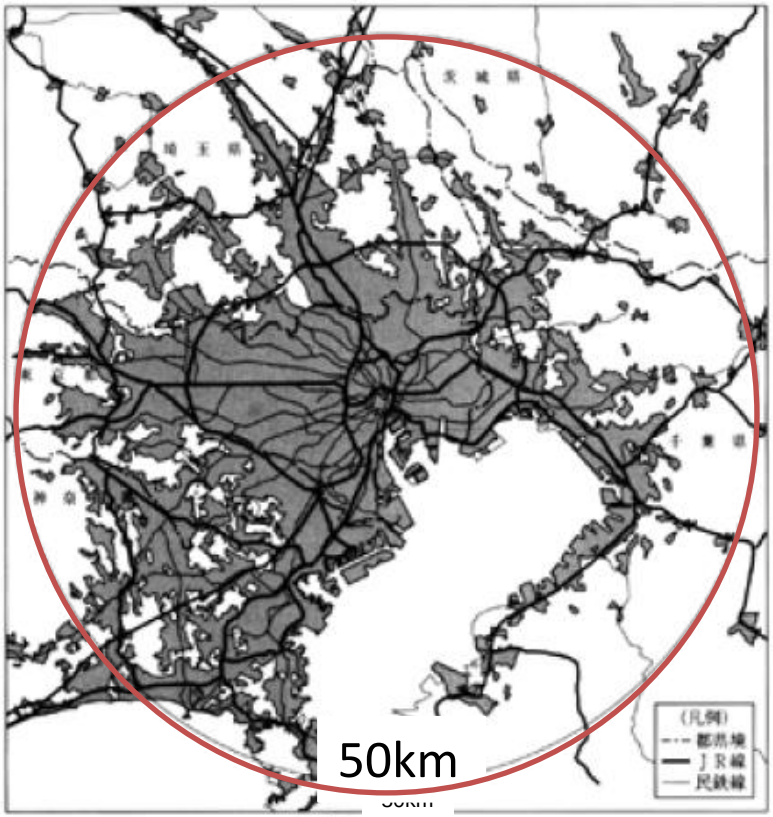


1985

Resource: Annual Report of Developing Metropolitan Area, 1999

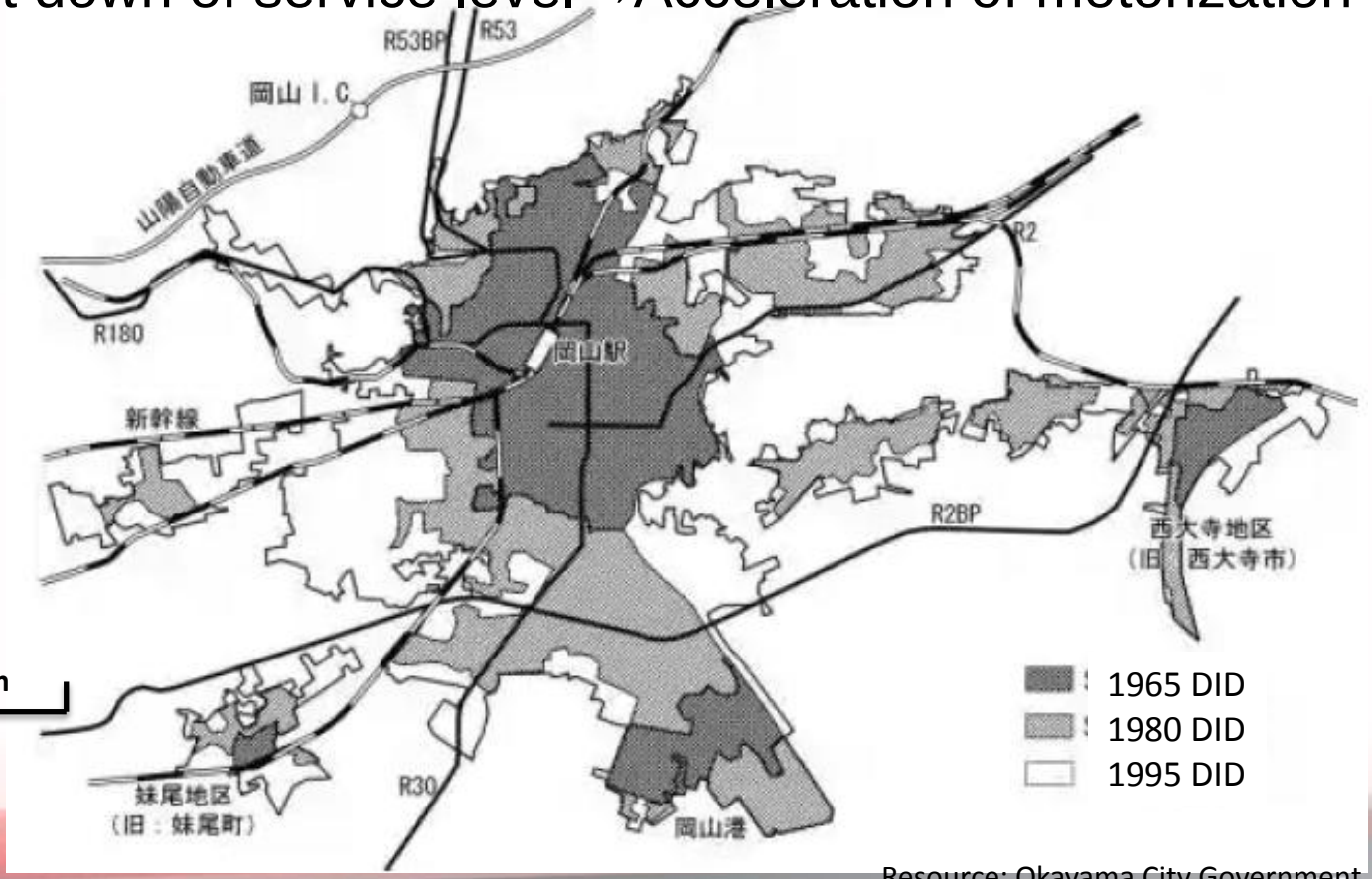
*DID (Densely Inhabited District) is defined as the area which is more than 5000 population, and contiguous with cities that hold more than 4000 pop./km square

Fig. Expansion of Urban Areas and Railway Network in Tokyo Metropolitan Area

1. Background – Demographics(rural areas)

- Sparsely inhabited areas, not suitable for public transport
- Road network expansion to cope with increasing travel demand
- Sprawl of urban districts along road network
- Less convenient public transport→Decline of ridership
  →Cut down of service level→Acceleration of motorization

Okayama City
Pop: 700 thousand



Resource: Okayama City Government

Fig. Map of Spread of Urban Districts in Okayama City, Okayama

2. Road authorities approaches to intermodal transport

i)Tranfer squares adjacent to major rail stations

- Seamless transfer among various modes such as train, bus, taxi, cars, and bicycle
- Rail station connected with bus and taxi stops and bicycle parking lots by pedestrian routes

Example: Kokura Station(City of Kitakyusyu)

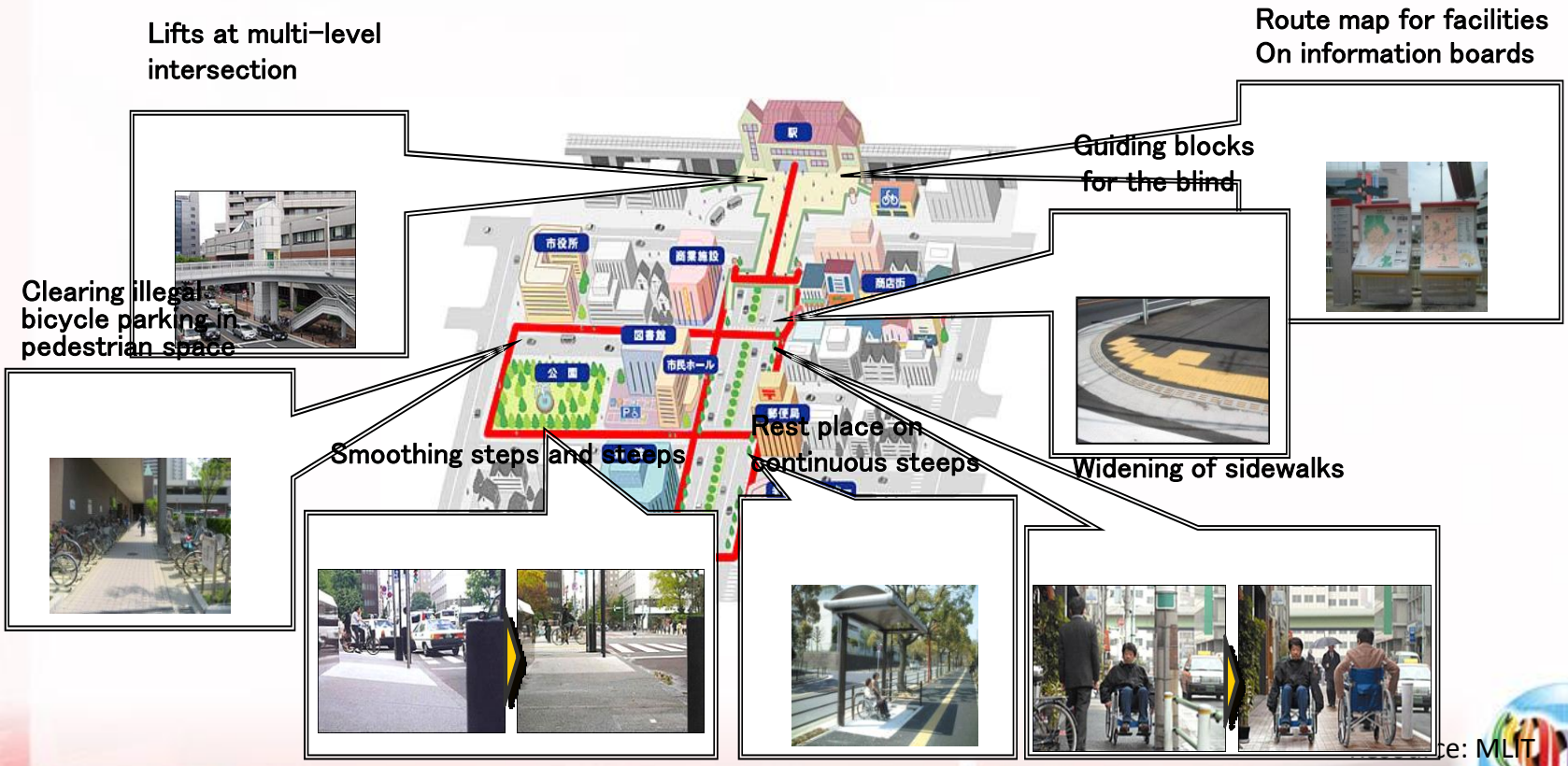
- Monorail extention to the rail station and a pedestrian deck connection to the buildings.
- Road funds subsidised the project.

Fig. Kokura Station before the reconstruction

Fig. Kokura Station after the reconstruction

2. Road authorities approaches to intermodal transport
ii)Improvement of pedestrian routes around the station

- Many facilities concentrate within walking distance from railway station
- Improving the accessibility and safety of pedestrians



Source: MLIT

Fig. Examples of Measures for Smoothing the Movements in the Designed Area

2. Road authorities approaches to intermodal transport

iii)Bus lane, PTPS to improve the bus operation

PTPS; Public Transport Priority System

- Interactive communication between on-board unit and roadside beacons
- Control of traffic signals, warn illegal vehicles in bus lanes, and estimate arrival time on bus stops
- Set up on 151 sections of 701km,and 2,188 intersections(by 2008)

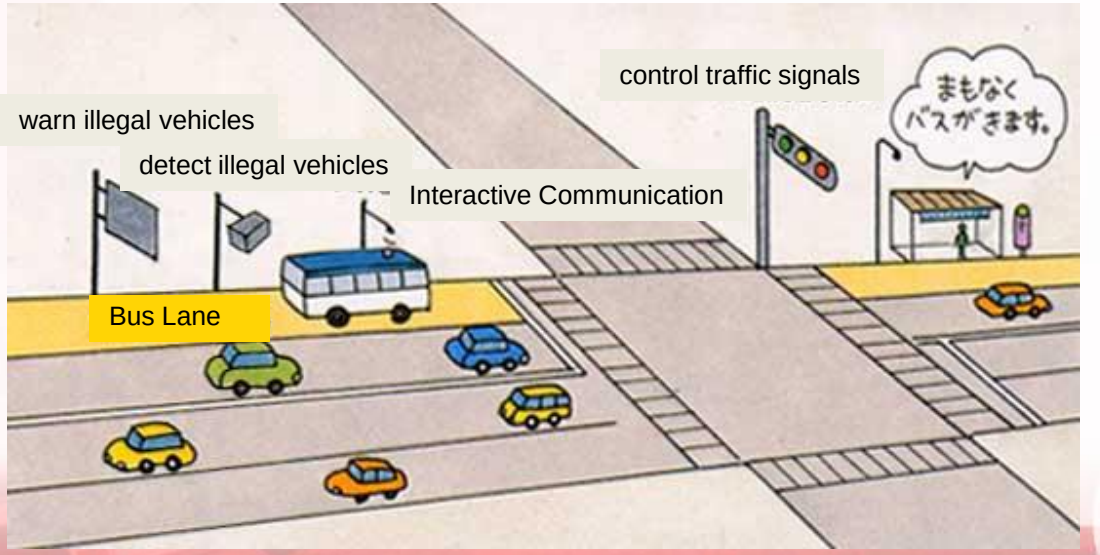
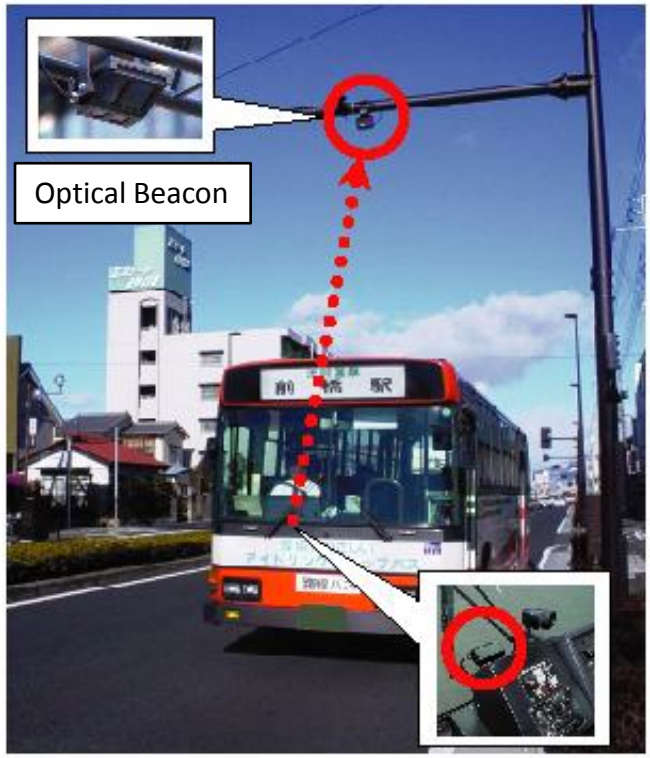


Fig. Concept of PTPS



Resource: Police White paper, 2007
MLIT

2. Road authorities approaches to intermodal transport

iv)Park & Ride

- Objective;

  Shifting commuters from car to rail

  Mitigating congestion in city center
- Many pilot projects tried
- Most ended in poor performance

P&R, Example of City of Sapporo

In Sapporo, P&R parking lots were installed at 29 stations of railways, which provides 3000 parking spaces in total.

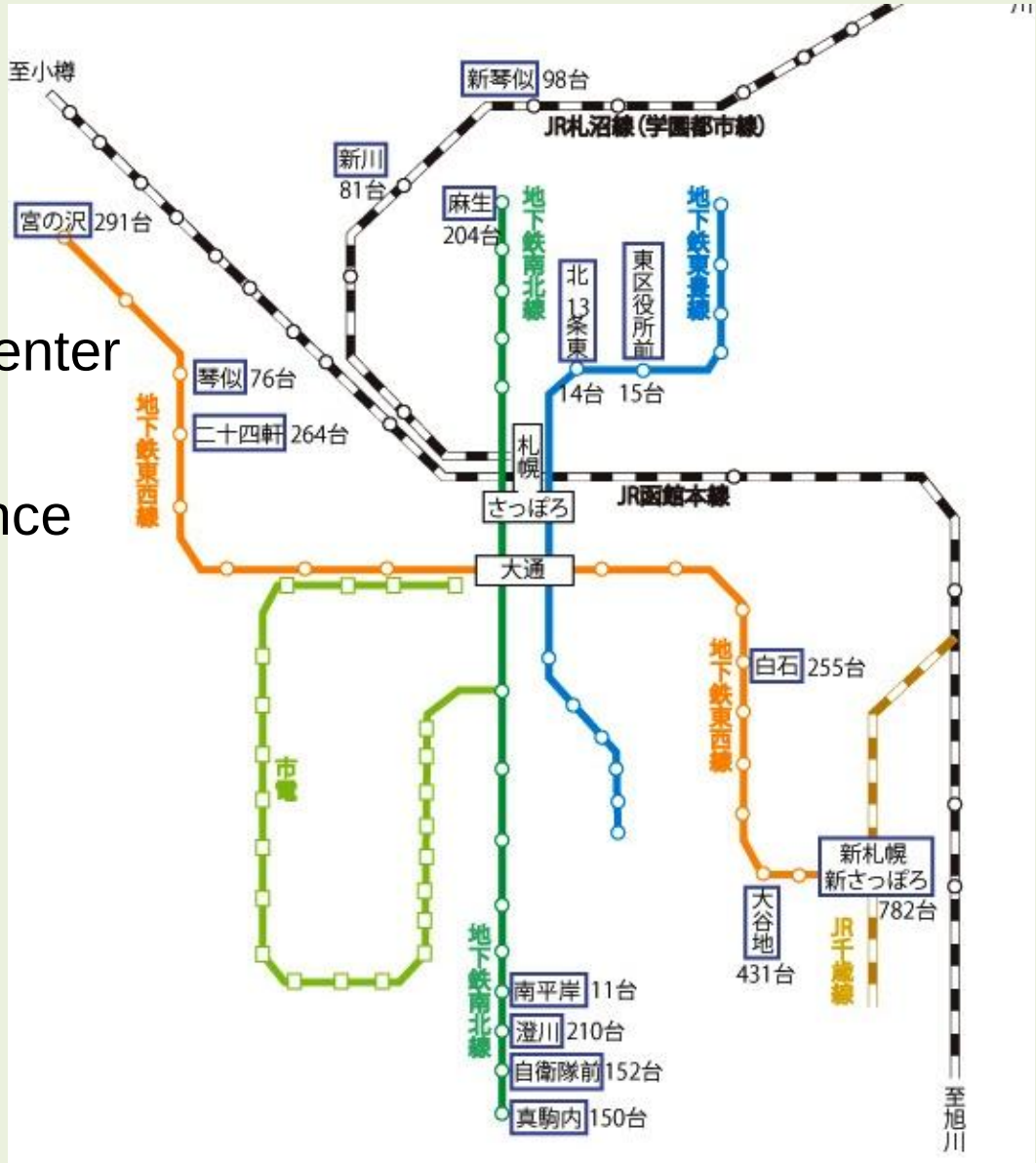


Figure P&R parking in Sapporo

2. Road authorities approaches to intermodal transport

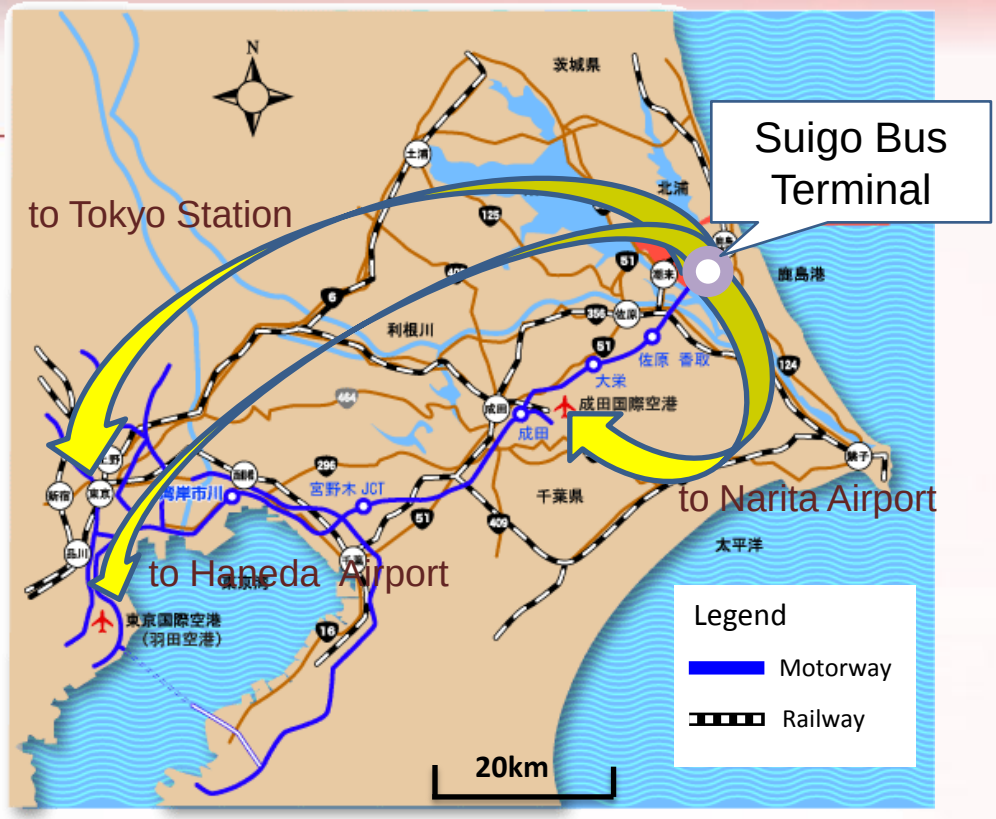
Reasons for P&R poor performance

- Limited P&R parking lots available near rail stations
  - Neighborhood around rail station stations in Japan is relatively highly-developed areas, not suitable for parking facilities in the light of land value.
  - With limited parking lots available, only few people may change a mode of transport from cars to trains.
- Convenience of automobile in rural areas
  - Driving to destination directly take less time.
  - More expensive for users to use public transport compared to individual cars
  - Difficult to change behavior of commuters from passenger cars to rail

2. Road authorities approaches to intermodal transport

v)Park & Bus Ride(Itako city)

- P& BR parking constructed at Suigo Bus Terminal adjacent to the interchange of expressway.
- Expressway buses operated to the destinations such as Downtown Tokyo and International airports



Parking spaces	Parking fee
236 (of which 2 are for the disabled)	JPY500 (for 24 hours) (Free within 60 minutes)

Resource: Itako city

Destinations	Number of Service (per day)
Tokyo Station	101
Nartia Airport	9
Haneda Airport	6
Odaiba	11

2. Road authorities approaches to intermodal transport

vi)Integration of land use planning and transport planning(Case of a Compact City Plan: Toyama City)

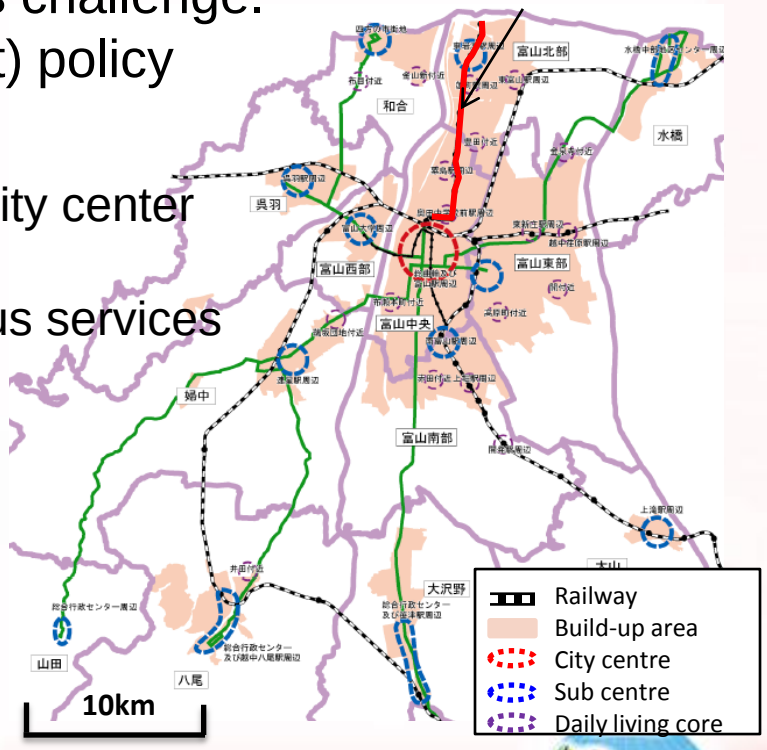
- As the city sprawled, the maintenance of infrastructure became costly and inefficient.
- Mobility for transportation-poor people was challenge.
- Set up TOD(Transit Oriented Development) policy focused on public transport

  -Concentration of the urban functions to the city center and sub centers

  -Connect these centers with LRT lines and bus services

> LRT passengers increased

- Weekdays 2.2 times, Weekends 5.3 times
- Passengers in their 60s increased most. (Weekdays 3.5 times, Weekends 7.4 times)



Resource: Research on LRT project of Toyamakou-line, Toyama City, MLIT

Resource: Comprehensive Transport Plan, Toyama City

3. New approaches

vii)From mass transit to demand responsive transport service

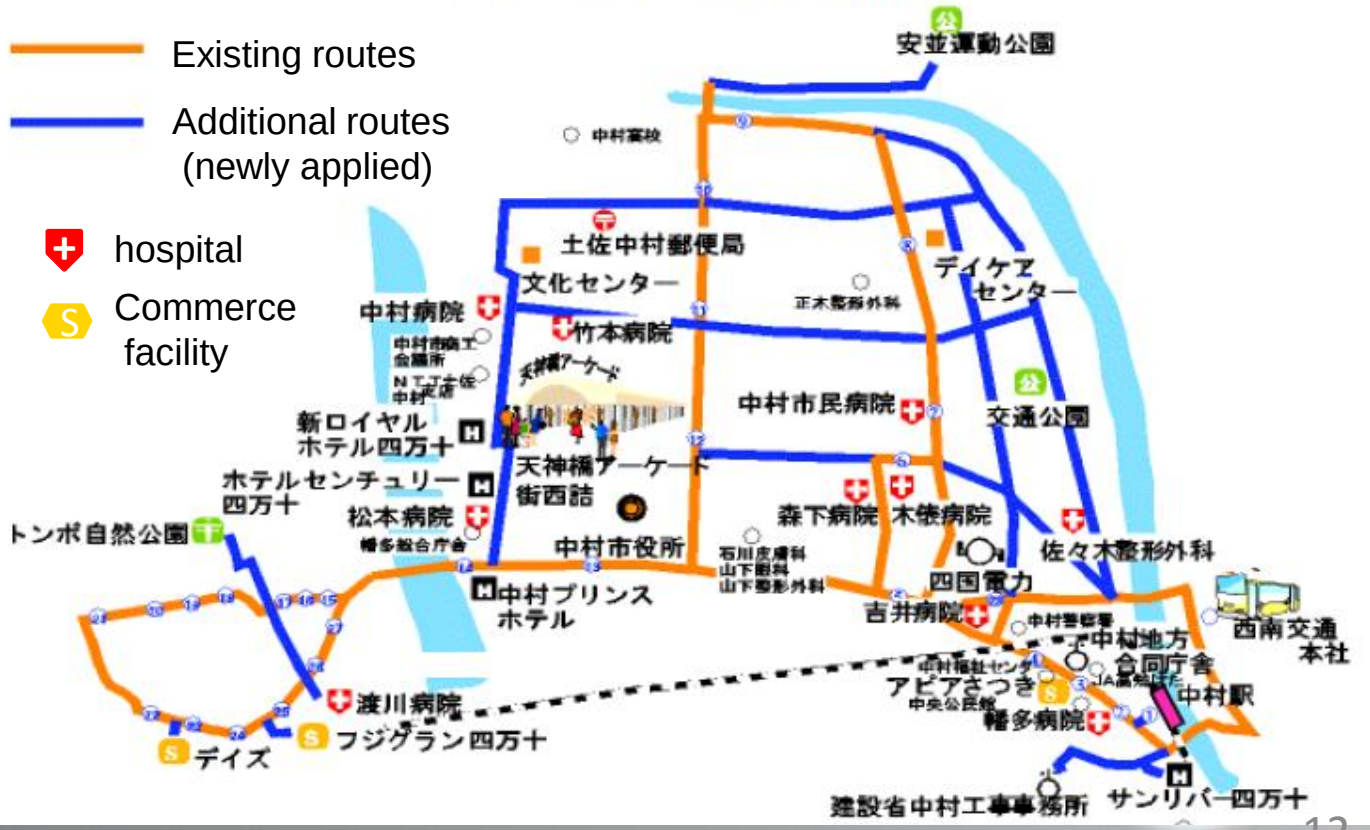
Case: On-demand bus in Nakamura City, Kochi

【Features】

> More bus-stops (57 bus stops incl. hospitals)
> Flexible routes and schedules (Passengers can book last minute)

【Effects】

> Passengers increased by 4-5 times
> 26% of them shifted from bikes, cars and walks



4. Lessons learned and future direction

i) Building a social consensus and campaigning to users

- ✓ Intermodal measures such as P&R require changes of users behavior and social consensus
- ✓ Indispensable to design systems beneficial to them and to campaign to them

ii) Allocation of road funds, Sectionalism

- ✓ Road network extension v.s Intermodal programs
- ✓ Constraint of dedicated funds for road
- ✓ Mode-based organization(road, rail, port, air, etc)
- ✓ Little flexibility in having perspective of total transport policy

iii)Integration of transport planning with other polices

- ✓ e.g. Land use planning, welfare policy, etc