



Urban Transport and Energy Supply Projects of Utsunomiya

住めば
愉快だ
宇都宮

UTSUNOMIYA

Tatsuo ARAKAWA

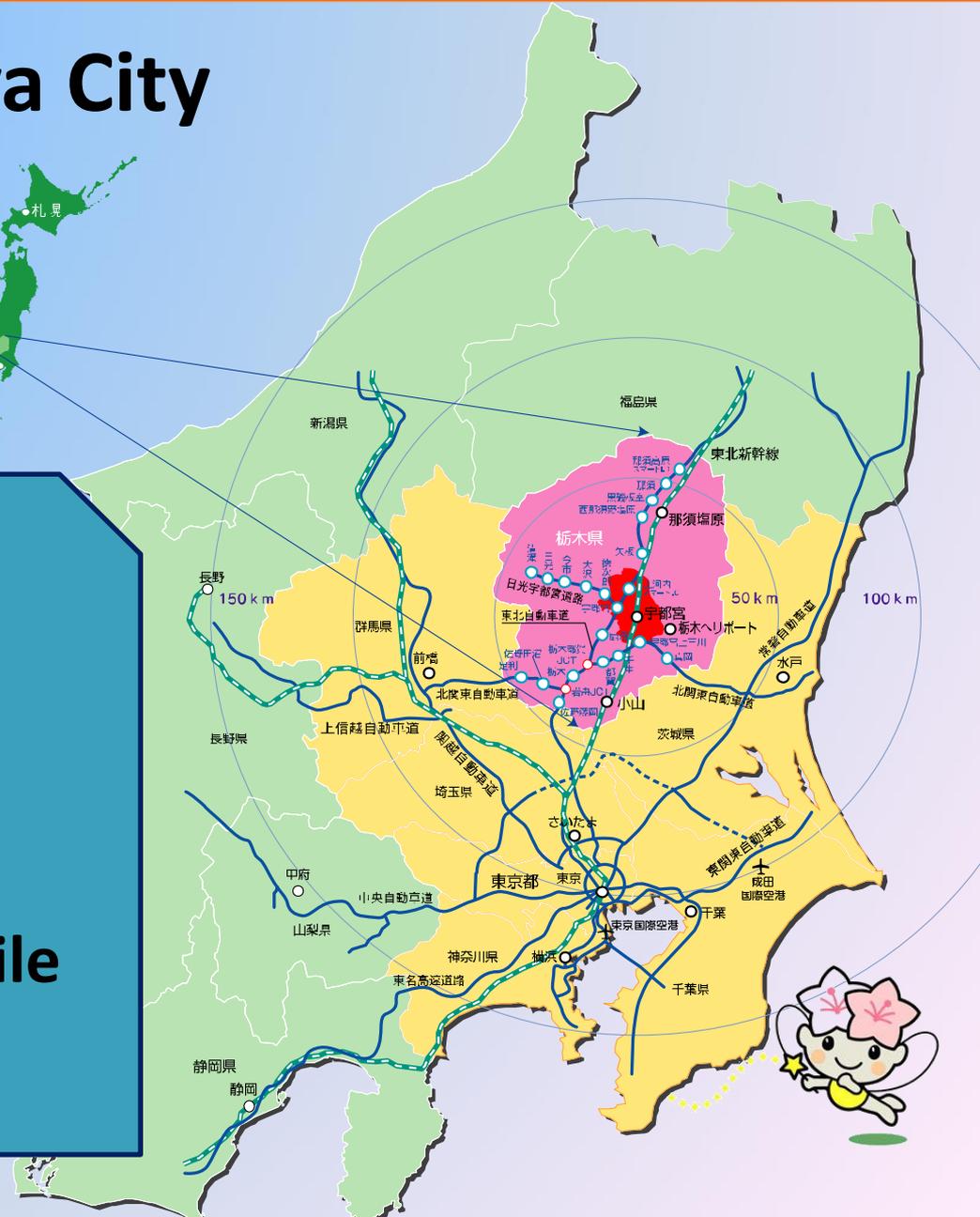
Vice Mayor of Utsunomiya city

Geographical Location of Utsunomiya

Location of Utsunomiya City

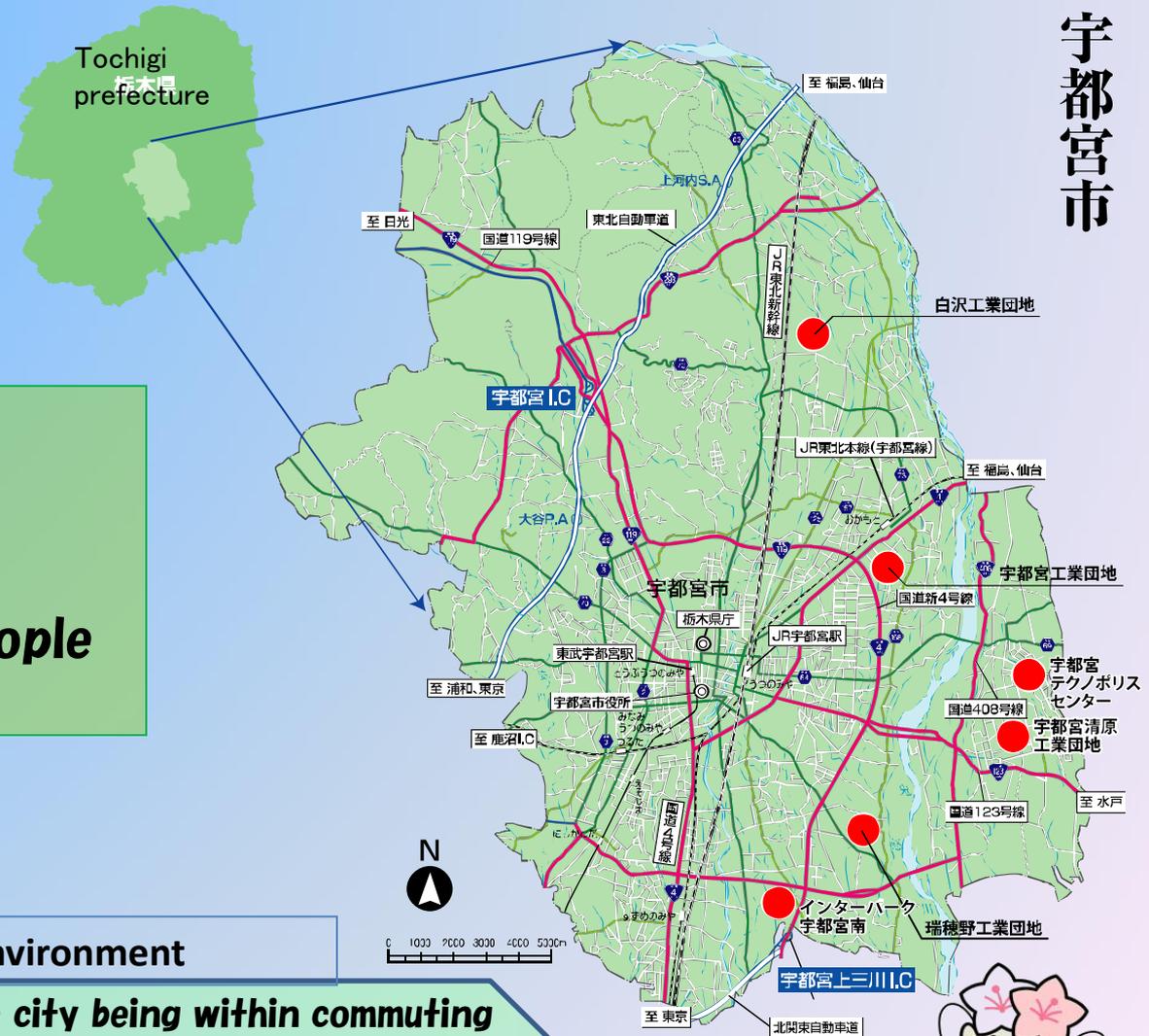
**Utsunomiya city is located
108 km north of Tokyo**

**Access from Tokyo
48 minutes by railway
62 minutes by automobile**



Living Environment of Utsunomiya

宇都宮市



The largest city in the Northern Kanto Region

- **Area: 416.85 km²**
- **Population: 518,767 people**
(as of October 1, 2015)

Comfortable and Laid-back Living Environment

Homes are affordable despite the city being within commuting distance of Tokyo.

There are plenty of medical, educational and welfare institutions.



History of Utsunomiya



Utsunomiya first thrived as a temple town protected by Futaarayama Shrine and then as a castle town of the Utsunomiya Clan, which was founded by FUJIWARA Soen who accompanied MINAMOTO Yoriyoshi to Utsunomiya from Kyoto around the middle of the 11th century.



Economic Profile of Utsunomiya

Economic Characteristics

The city's indices of agricultural production, industrial production and merchandise sales substantially exceed the median value (100) for 42 designated core cities.

The economy of Utsunomiya is well-balanced.

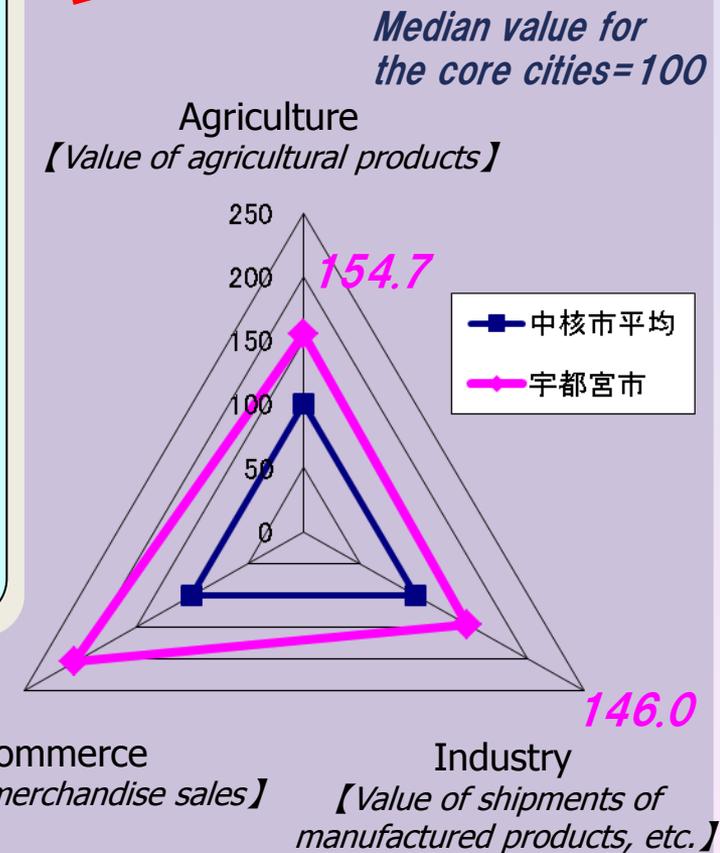
Value of agricultural products for 2006 (unit: 100 million yen): Approx. 185
Ranked 6th among 39 core cities (median value: 128)

Value of shipments of manufactured products, etc. for 2012 (unit: 100 million yen): Approx. 14,971
Ranked 7th among 42 core cities (median value: 10,260)

Merchandise sales for 2012 (unit: 100 million yen): Approx. 22,979
Ranked 2nd among 42 core cities (median value: 11,234)

The Kiyohara Industrial Park is the largest inland industrial park in the country and accounts for more than 60% of the city's total value of shipments.

City with a Well-balanced Industrial Structure



Profile of Utsunomiya

大谷石 Oya stone



宇都宮餃子 Gyoza



Profile of Utsunomiya



Profile of Utsunomiya “The Japan Cup Cycle Road Race”



The concept of network-type compact City

◇ The current situation in Utsunomiya traffic

- The ratio of vehicle ownership per person in Tochigi prefecture including Utsunomiya is second place in Japan.
- While CO2 emissions in Utsunomiya have been gradually going down year by year, CO2 emissions in the transportation sector have been increasing recently.



- The number of citizens using cars has been rising.
- On the other hand, the number of people taking public transportation such as trains and buses has been decreasing, and the number of shuttle buses has reduced by almost half.

The concept of network-type compact City

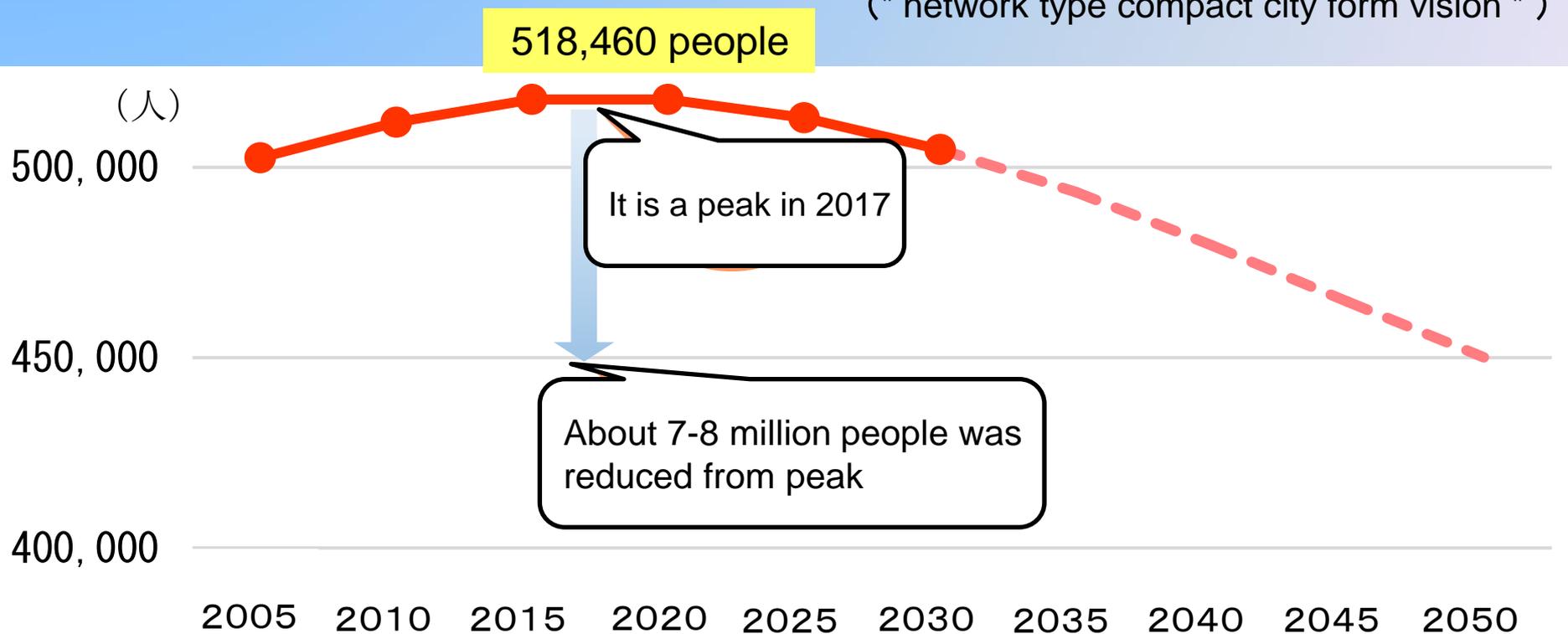
➤ Arrival of population decline and the low birthrate and super-aged society

In Utsunomiya city, the population is expected to reach its peak in 2017, and then enter into the era of population decline.

Utsunomiya Overview

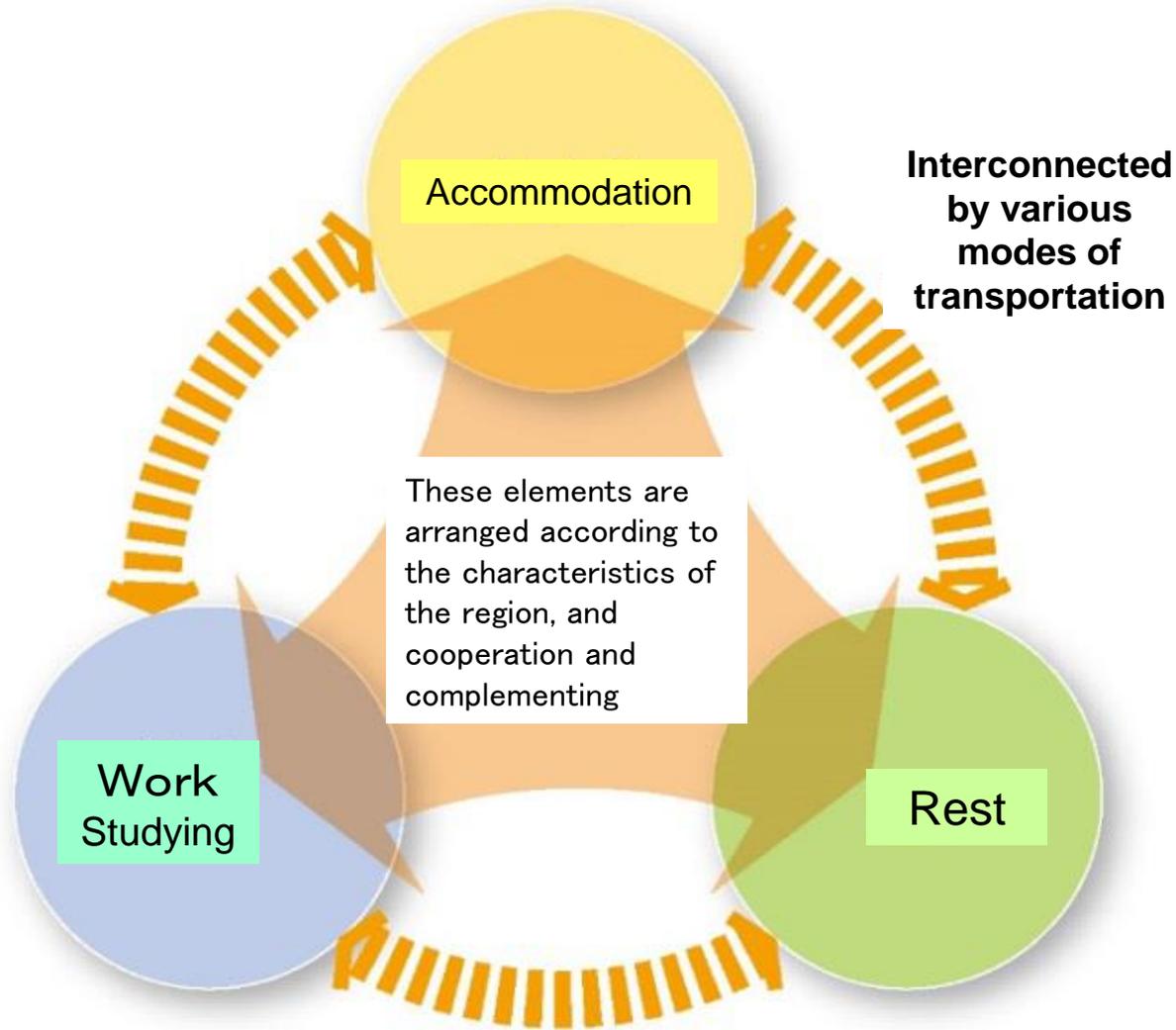
◆ Changes in the future of the total population

(" network type compact city form vision ")



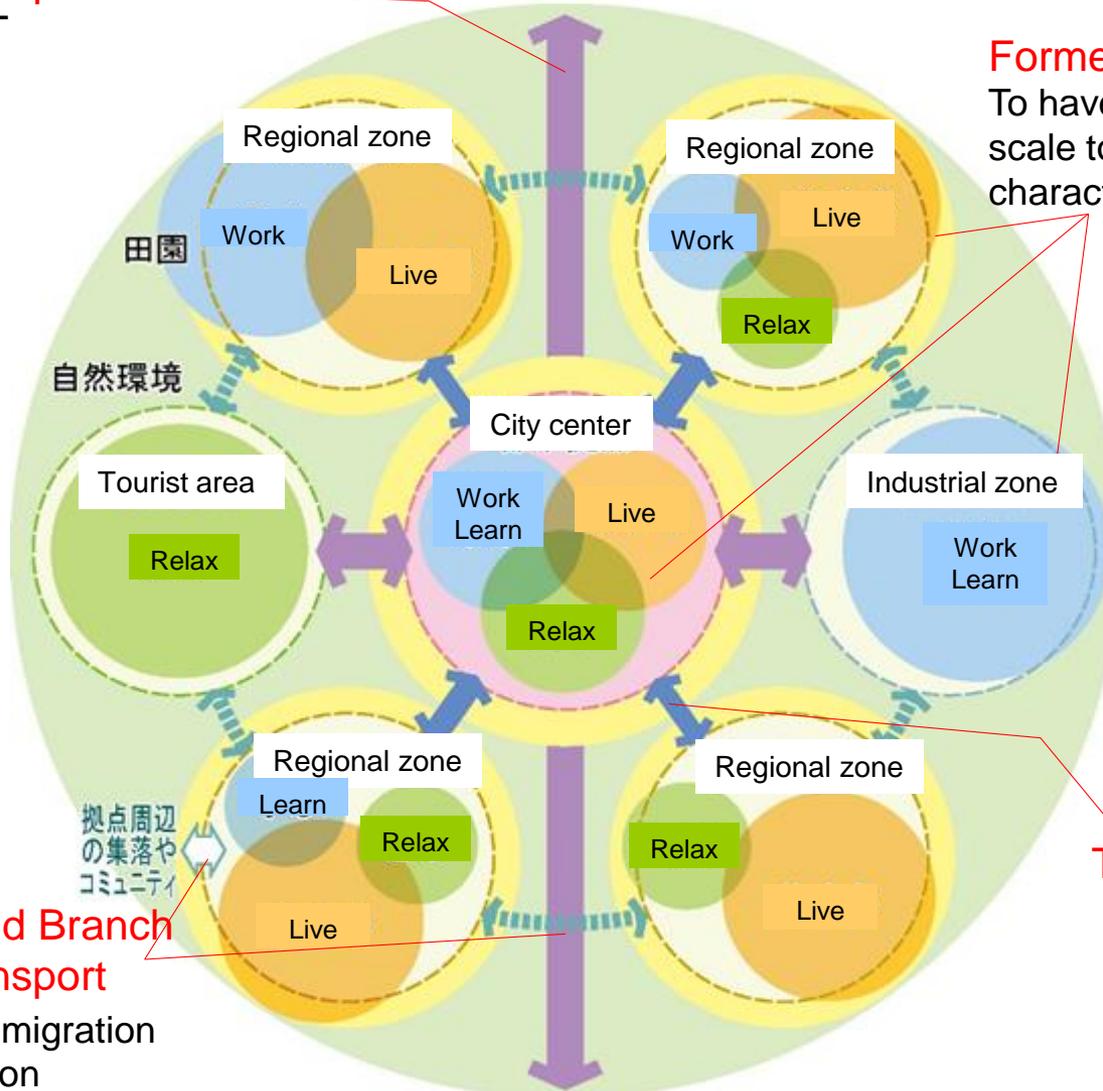
The concept of network-type compact City

Roles of Urban Planning



The concept of network-type compact City

Key public transport
Railroad, LRT



Formed a base in each region
To have a width in the features and scale to each zone by the characteristics of the region

Area traffic and Branch line public transport

To ensure the migration within the region

Trunk public transport

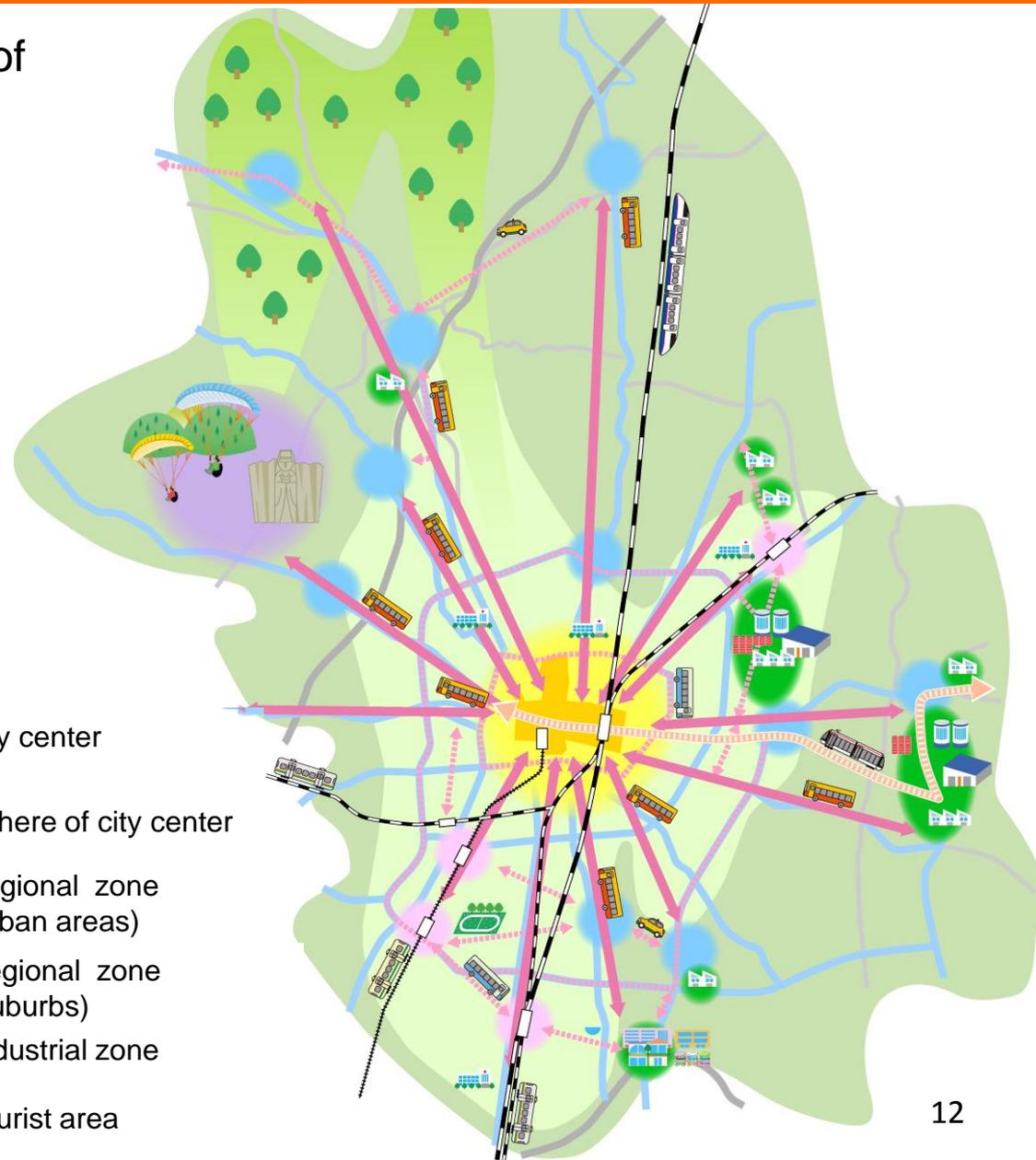
Bus routes connecting the city center and regional zones

The concept of network-type compact City

◆ Image of the urban structure of the future of Utsunomiya

- 【explanatory notes】
[Transportation Network]
- Railroad
 - LRT
 - Bus
 - Bus, Area traffic
 - Highway
 - Road network

- [zone]
- City center
 - Sphere of city center
 - Regional zone (urban areas)
 - Regional zone (suburbs)
 - Industrial zone
 - Tourist area



Situation of Utsunomiya traffic

◇ Current state of the Utsunomiya area involved in the traffic

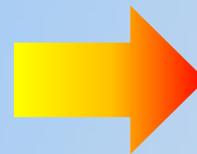
It is divided into east and west by Kinugawa River.

Industrial area is located on the east side of the river.

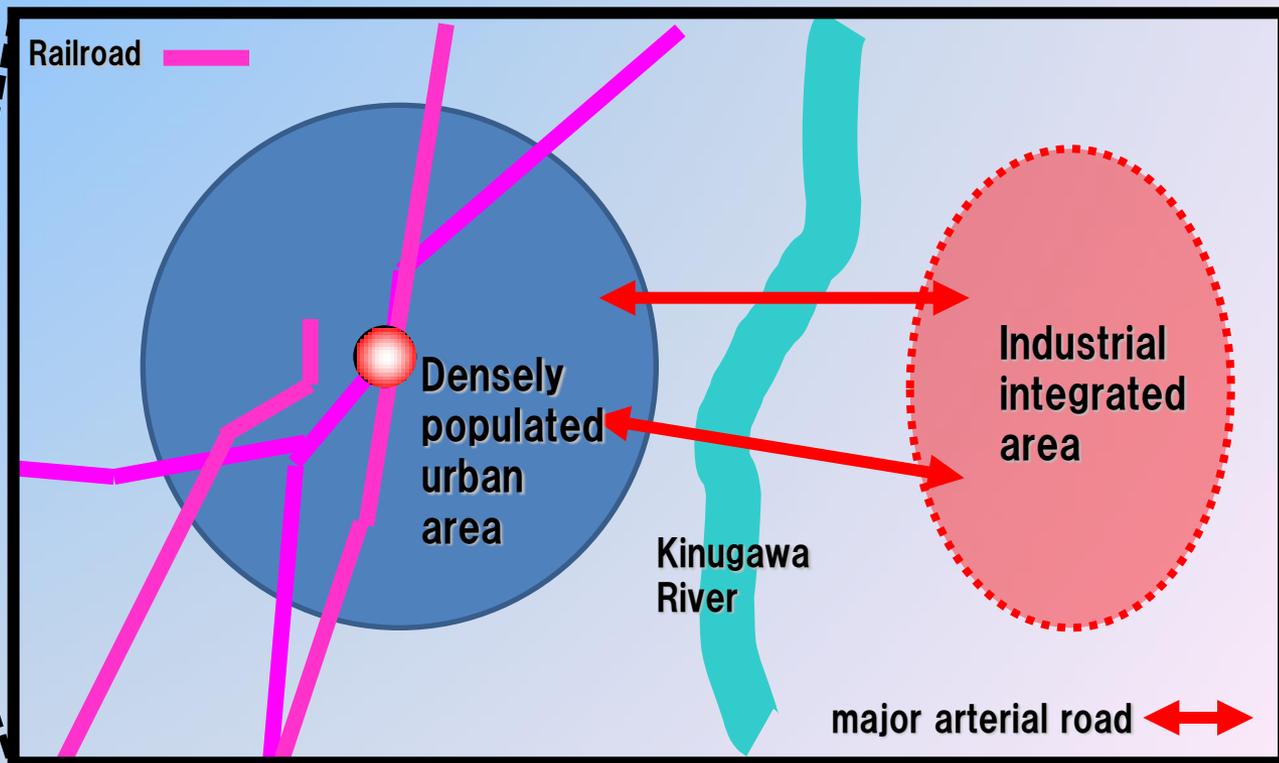
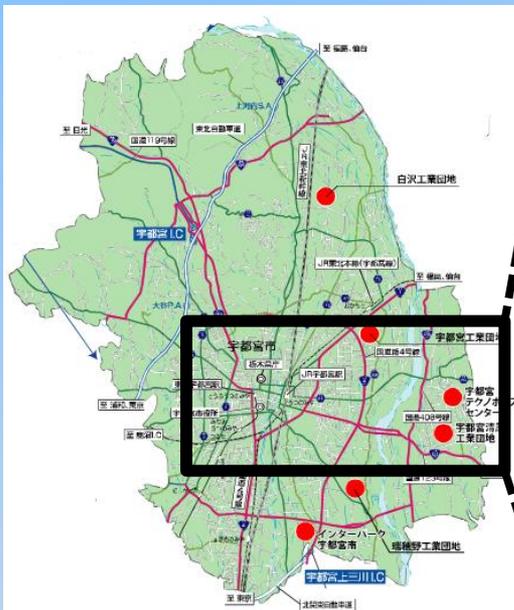
Urban areas densely populated is located on the west side of the river.

Public transport is vulnerable to cross the river.

There is not enough number of bridge.



The heavy traffic jam caused by commuter cars every morning and evening .



Situation of Utsunomiya traffic

Situation of the bridge over the Kinugawa River
(weekday mornings)



Situation of Utsunomiya traffic

Situation of east side of JR Utsunomiya Station (weekday mornings)



Overview of the LRT project

◆ Planning section

“Sakuradori Jyumonji” intersection **A** — Haga-Takanezawa Industrial park **C** About 18km

◆ Section to priority development

JR Utsunomiya Station East **B** — Haga-Takanezawa Industrial park **C** About 15km
(Utsunomiya area : About 12km Haga area : About 3km)



Overview of the LRT project

Facilities in the LRT wayside (1) Kiyohara Industrial Park

Area : 387.6ha
Total number of employees : 11,000people

Companies	Number of employees
Canon Inc. Utsunomiya Optical Products Plant	1,885people
Canon Inc. Utsunomiya Plant	1,778people
Canon Inc. Optics R&D Center	1,006people
Calbee Inc. New Utsunomiya Factory	825people
Chugai Pharma Manufacturing Co., Ltd Utsunomiya Plant	462people



Canon

掘りだそう、自然の力。



Calbee



CHUGAI

Overview of the LRT project

Facilities in the LRT wayside (2)

Baseball stadium, soccer ground



Kiyohara baseball stadium have a seating capacity of approximately 30,000 people. Professional baseball game was held this year.

It belongs to the current J2 League
Tochigi SC home ground.



Overview of the LRT project

Facilities in the LRT wayside (3)

Haga-Takanezawa Industrial Park



Area : 475ha
Total number of employees : **21,000people**



Overview of the LRT project

◇ Demand forecast in the commute, etc. purpose

Number of users per day of LRT

	Person trip survey Randomly selected 110,000 households from 420,000 in Utsunomiya and seven adjacent municipalities, and conducted a survey on demand for LRT.	
	【Minimum demand Case】	【Maximum demand Case】
Maximum speed	[Road section] 40km/h [Overpass section] 40km/h	[Road section] 50km/h [Overpass section] 70km/h
attendance	Peak time 6 minutes During off-peak hours 10 minutes	Peak time 4 minutes(with rapid service) During off-peak hours 10 minutes
Commuter	12, 757 people	20, 276 people
School commuter	1, 278 people	1, 392 people
for business	220 people	310 people
for leisure	974 people	1, 222 people
Total	15, 229 people	23, 200 people

The relationship between the parking lot and offices in a large city block

Kiyohara Industrial Park

Area 387.6ha
Total number of employees 11,000people

Canon R&D center

Parking



Overview of the LRT project

Images of the vehicle to be introduced
FUKUI RAILWAY (F1 000 series)



Overview of the LRT project

○Distance to develop About 15km[Double track]

○The number of stop 19 places

○Business system

Separation of infrastructure and operations

○Vehicles scheduled for introduction

Low-floor type vehicle 18sets of vehicles

(Length 30m, Capacity 155people[Maximum 232people])

○Service interval

Assuming a diamond that Noritsugeru from the first train of the Shinkansen to the end point.

○Time required About 41 minutes

Rapid about 31 minutes

○Development period 4 years(2015~2019)

○Project cost

Utsunomiya section 40 billion yen (330 million USD)

Haga section 5 billion yen (40 million USD) It does not include consumption tax

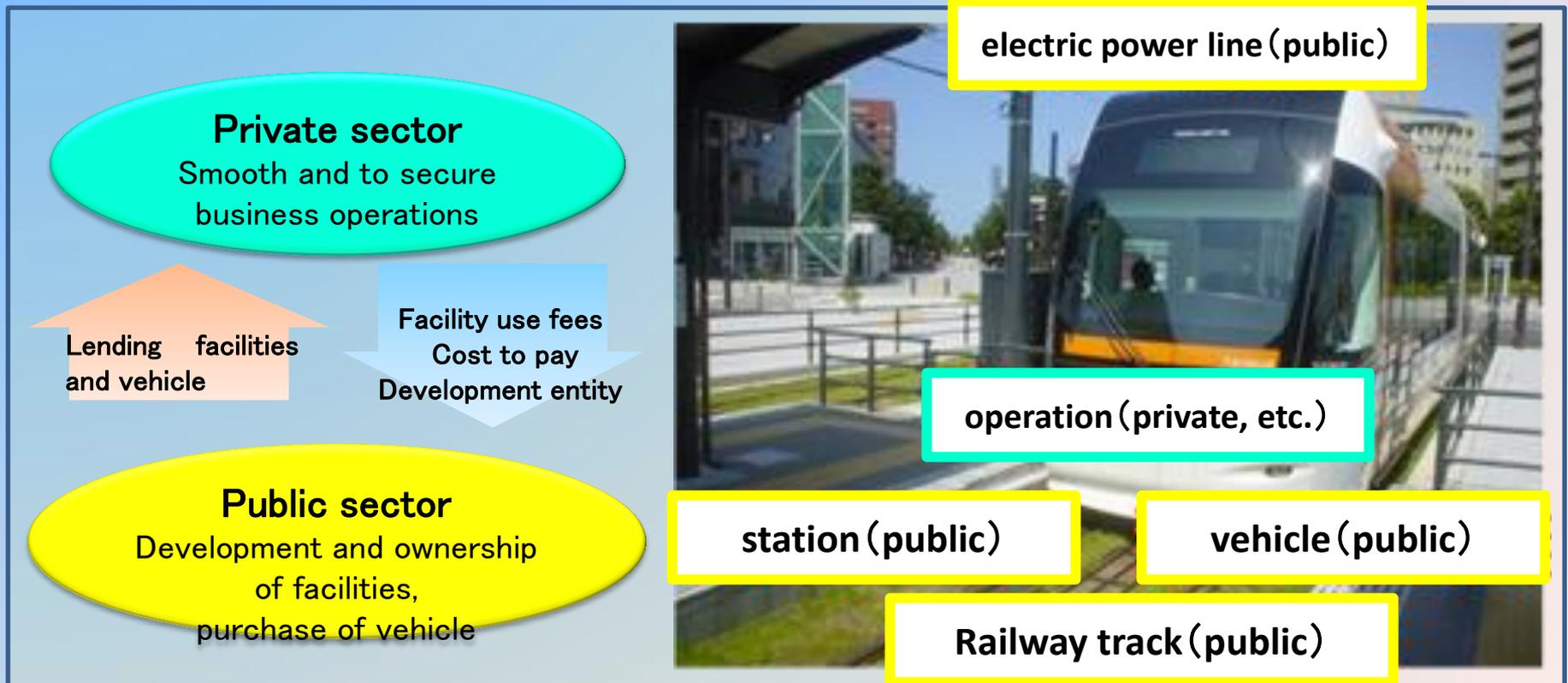


Kagoshima city
(The greening trajectory)

Overview of the LRT project

◆ Scheme of separating infrastructure and operation

- In the past, mainly to perform the operation has been improving and maintain facilities.
- Public is responsible for the Development and ownership of the facility by the new law, has enabled the Development by another entity (private, etc.) makes the business operations "public type scheme of separating infrastructure and operation".



Overview of the LRT project

◇ Profitability prospects of management

Compared income prospects and operating costs estimated by PT survey.

Demand Case	Revenue	Spending (Operating costs)
【Minimum demand Case】	965 million yen + α 8 million USD + α	715 ~ 976 million yen 6 ~ 8 million USD
【Maximum demand Case】	1.53 billion yen + α 13 million USD + α	832million ~ 1.1 billion yen 7 ~ 9 million USD

“ α ” is because it can be expected and holiday wayside facility users.

Profitability of operations is likely to expected

Overview of the LRT project

◆ The tax revenue in the industrial park of the wayside area

■ Utsunomiya city (Millions of Yen)							
City Tax revenues							Total
2007	2008	2009	2010	2011	2012		
Kiyohara Industrial Park	11,468	8,787	5,994	6,451	6,241	6,005	44,946
	95 million USD	73 million USD	50 million USD	54 million USD	52 million USD	50 million USD	374 million USD
■ Haga town (Millions of Yen)							
Town tax revenues							Total
2007	2008	2009	2010	2011	2012		
Haga-Takanezawa Industrial Park	3,577	4,114	3,804	2,925	2,431	2,521	19,372
	30 million USD	34 million USD	32 million USD	24 million USD	20 million USD	21 million USD	161 million USD
■ Tochigi prefecture (Millions of Yen)							
Prefecture tax revenues							Total
2007	2008	2009	2010	2011	2012		
Kiyohara Industrial Park	17,079	10,789	4,217	5,794	5,461	5,740	49,080
Haga-Takanezawa Industrial Park	8,334	7,812	1,891	1,318	1,561	1,419	22,335
Total	25,413	18,601	6,108	7,112	7,022	7,159	71,415
	212 million USD	155 million USD	51 million USD	59 million USD	58 million USD	60 million USD	595 million USD

Overview of the LRT project

◆ Estimates of tax revenue effect due to the increase of employees

《Prerequisite》

Furthermore, in neighboring local industrial areas, it is projected that employees will increase by 1,000. We can expect the tax yield to increase by 450 million yen every year if 70% of those employees move to Utsunomiya. With this increased tax yield, we are expected to be able to repay the initial LRT investment.

【Tax revenues it is assumed】

City tax	The tax yield		Notes
	Single year	20 years	
Municipal tax	130 million yen 1 million USD	2.6 billion yen 22 million USD	
Corporate tax	320 million yen 2.6 million USD	6.4 billion yen 53 million USD	
The others	Fixed assets tax , City planning tax . etc (α)		
Total	450 million yen+ α 3.7 million USD+ α	9 billion yen+ α 75 million USD+ α	

Overview of the LRT project

◆ Schedule

- 2015** Established a new company with public and private sector investment.
Receive authorization of LRT.
Urban planning decisions.
- 2016** Construction enforcement obtain approval.
Embark on construction work.



- 2019** **Start the LRT operation.**

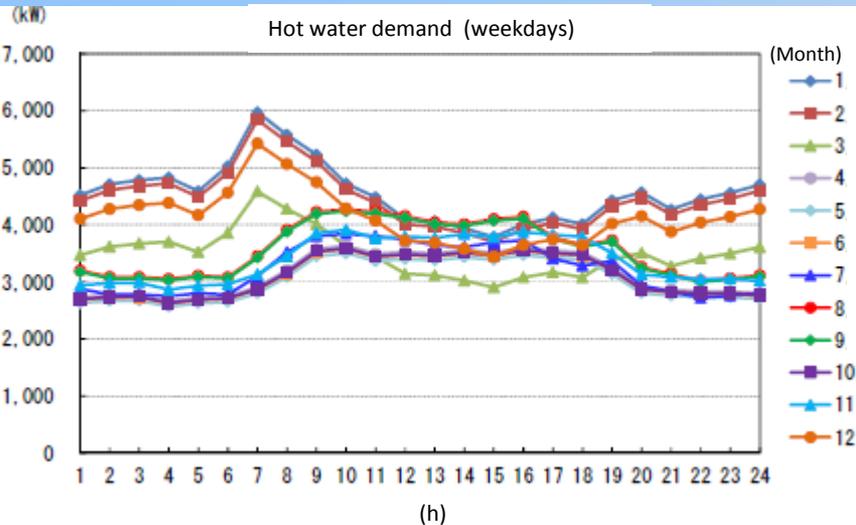
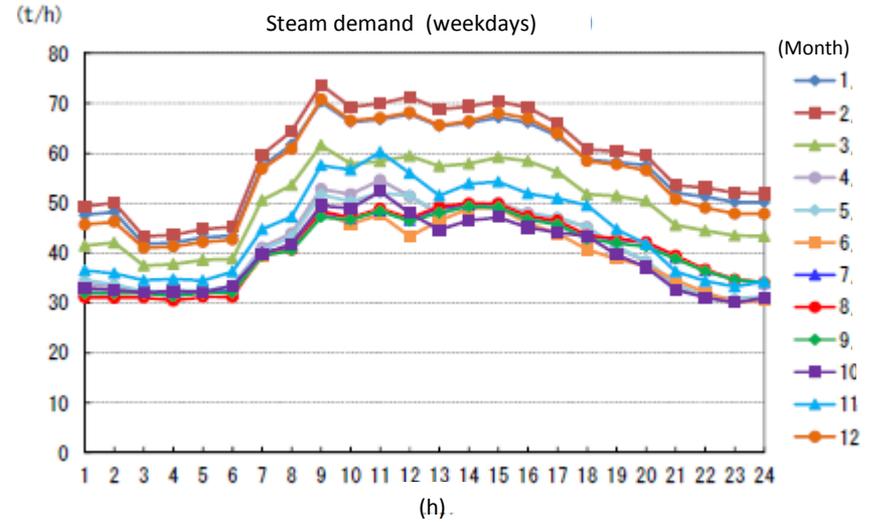
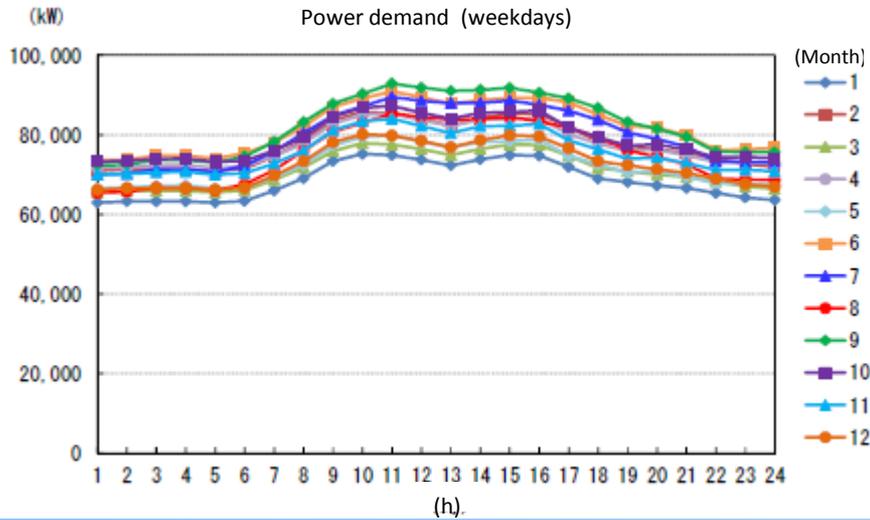
Overview of the LRT project

◆ Image Perth LRT introduction (In Kiyohara Industrial Park)



Overview of regional energy supply projects

◆ Situation of the office of energy demand in the industrial Kiyohara



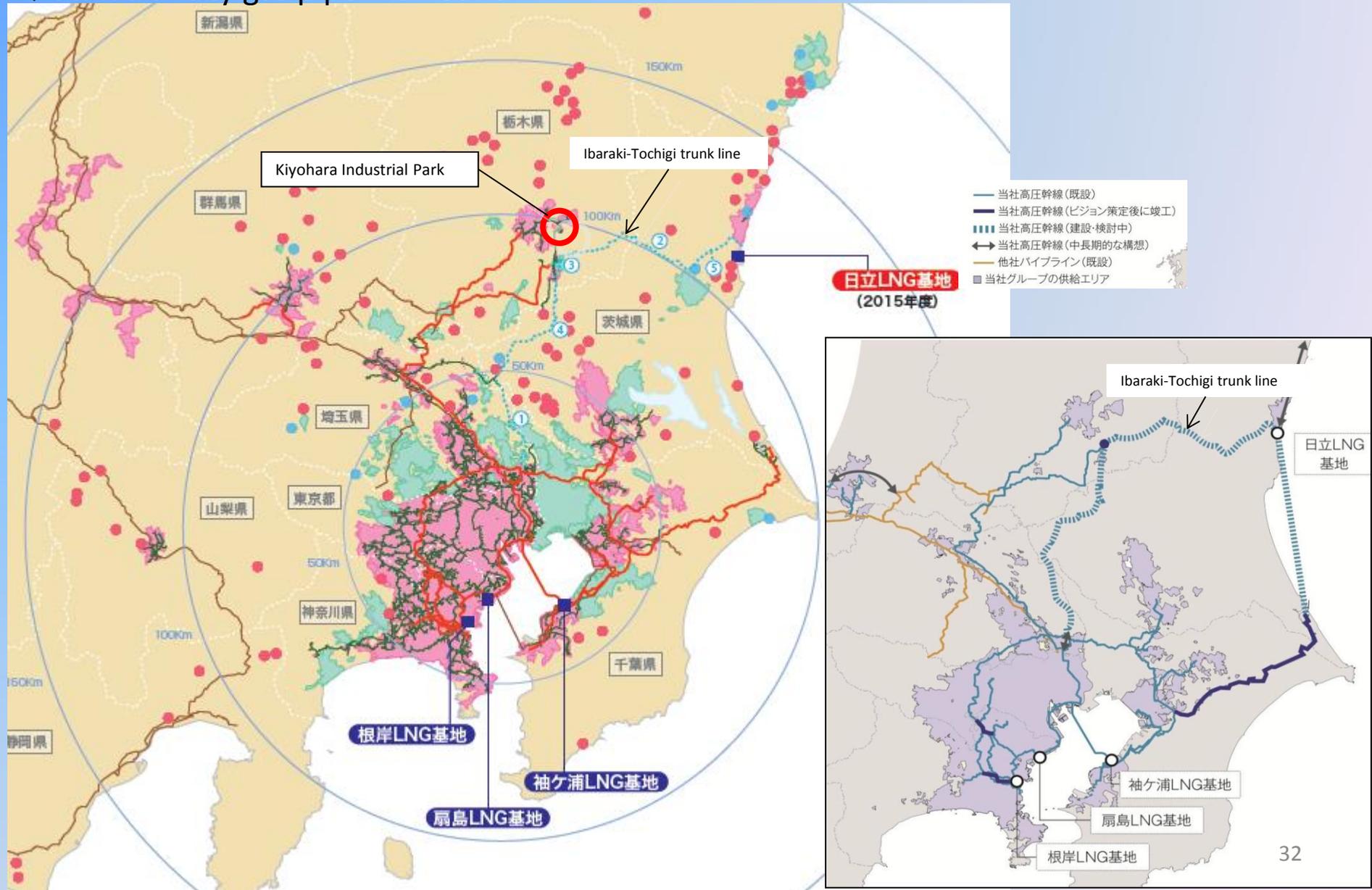
Overview of regional energy supply projects

◆ Target area of the project



Overview of regional energy supply projects

◆ Status of city gas pipeline network



Overview of regional energy supply projects

◆ Study of distributed energy center introduction

- In order to supply a stable energy at low cost, to build a regional energy center in the one-field of industrial park, and plans to supply to the operators in the electricity and heat industrial park by the natural gas cogeneration.

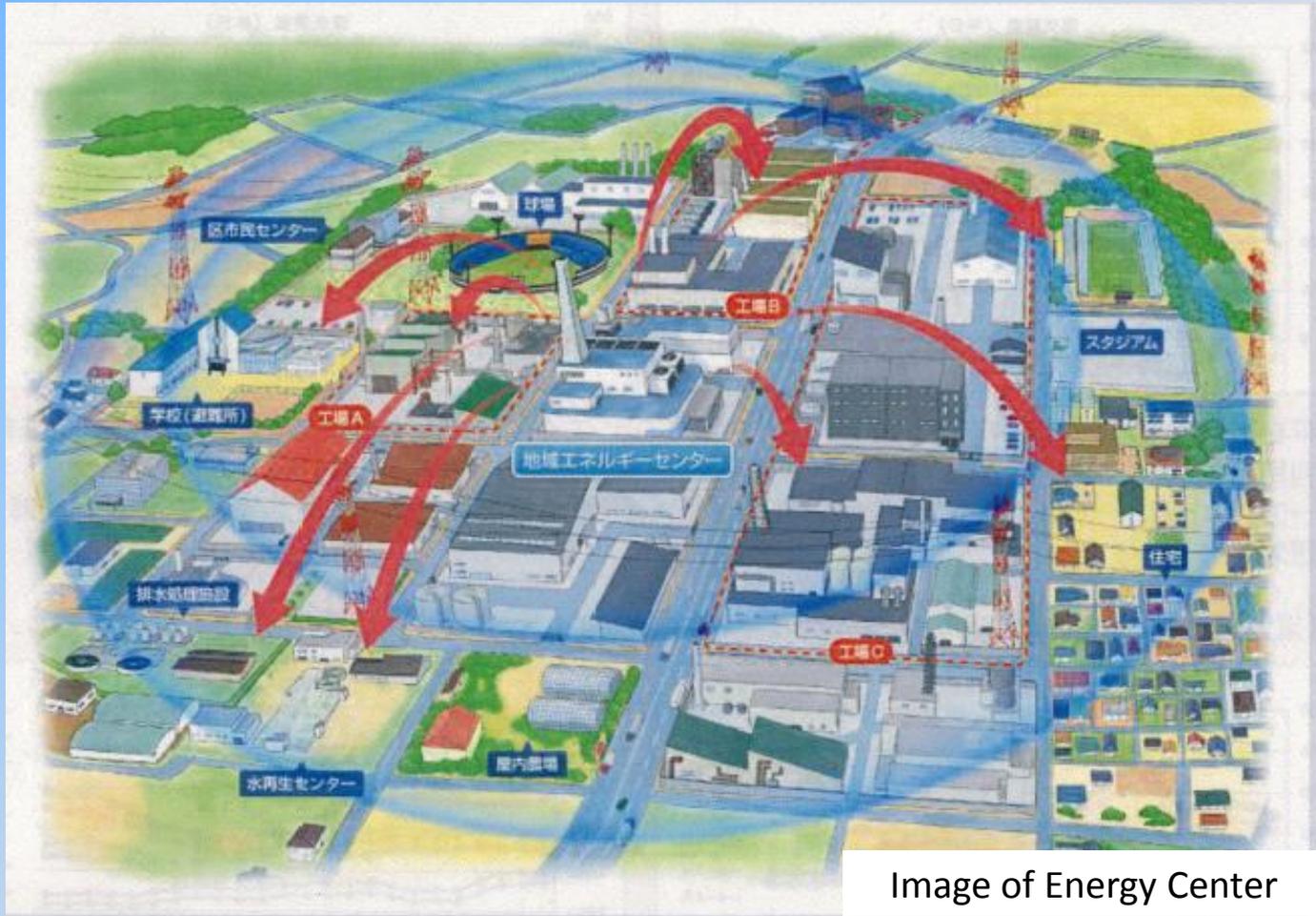


Image of Energy Center

**Thank you for your attention.
If you get the opportunity, to come to Utsunomiya,
please enjoy the charm of our city.**



UTSUNOMIYA PRIDE

宇都宮プライド 100年先も誇れるまちを、みんなで。