



# Toyama City's Policy Toward a Compact City

*~ the role it should take to implement sustainable city management in an eco-friendly context at a time of dwindling population ~*

**Toshiro KONO**

Director for Urban Transport Project Office,  
Urban Transport Facilities Division,  
City Bureau,  
Ministry of Land, Infrastructure, Transport, and  
Tourism (MLIT) of Japan

# Urban Transportation System in Japan

**Monorail** (Tama)



**AGT** (Nippori-Toneri)



**BRT** (Guideway Bus)  
(Shidami)



**LRT** (Hiroshima)



**LRT** (Toyama)

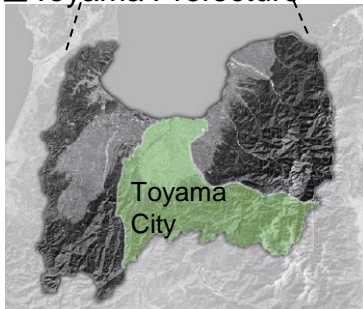
# 1. The outline of Toyama City

- Cities, towns, and villages were merged in April 1, 2005.
- Population: About 40% of Toyama Pref. (421,953) \*National Population Census in 2010
- Area: About 30% of Toyama Pref. (1,241.85 km<sup>2</sup>)
- Diverse geography - from sea level (0m) to 2,986 m at mountain top (Mt. Suisho)
- The general account budget of 157.3 billion yen in the fiscal year 2012

■ Japan



■ Toyama Prefecture



Bird's eye view of Toyama City

# Urban Character of Toyama City

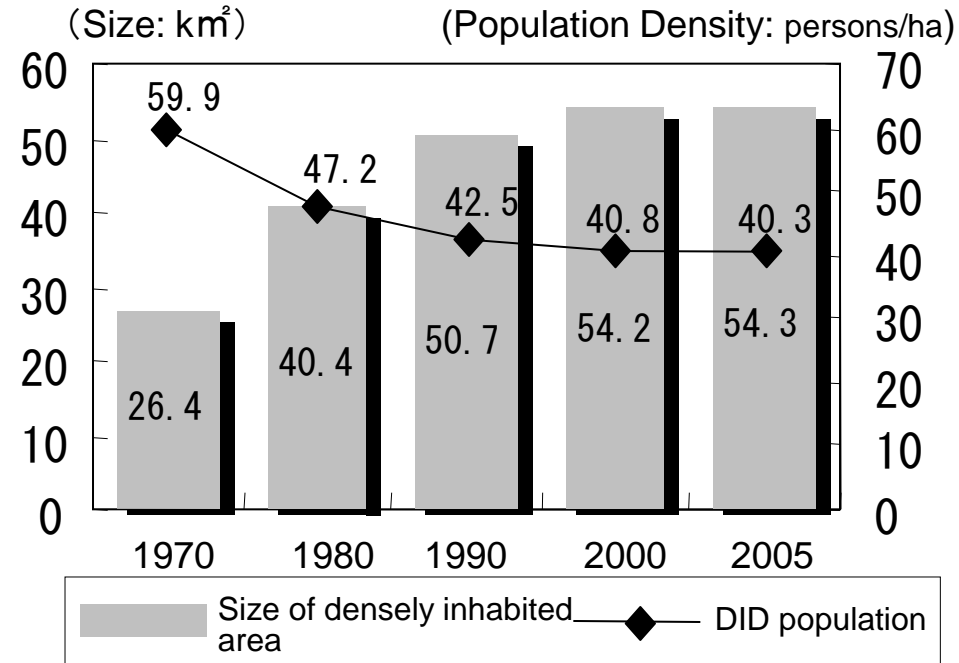
## Urban Area of Low-density

— Urban area becomes less dense

- Flat ground of the Toyama Plain
- Higher rate of the road maintenance and improvement  
74.6% of the road maintenance and improvement rate of Toyama is No. 1 in Japan  
(Source: Annual Report of Road Statistics: as of April 1, 2011)
- Highly single-family housing oriented  
Homeownership rate in Toyama: 77.5%  
No. 2 in Japan (Akita: 78.4%)  
(Statistical Research of Houses and Ground in 2008)
- Low land price in suburban areas

### ● Expansion of Urban Area and Change of Population Density of Toyama City

In the past 35 years  
the DID area became doubled, and the DID population density decreased to 2/3.



Source: National Population Census

Due to the extension of the urban area, the population density of the urban area is the lowest in Japan as a prefectural capita (40.3 persons/ha),

# 2. Toyama City Management

## -A Unique Compact City Strategy

### <Some problems confronting Toyama City>

- ① Dwindling population and an aging society
- ② Too much dependence on automobiles and declining public transport
- ③ Unattractive city with a hollowing city center
- ④ Higher administrative cost
- ⑤ Increasing carbon dioxide emissions

### ***Toyama City proposes some countermeasures against these problems.***

#### 1. Creation of a Compact City through the Renovation of Public Transport

- Revitalizing public transport,
- Concentrating city amenities in the city center or areas along public transport lines

#### 2. Creation of an Attractive and High Quality City Life

- Revitalizing the city center
- Concentrating the city amenities within walking distance
- Amassing social capital

#### 3. Promotion of Local Industry

- Making the most of the local pharmaceutical industry
- Tapping recyclable sources of energy
- Inviting companies into Toyama



***A sustainable city should attract people, making it a vibrant city.***

# The Basic Policy for the Creation of a Compact City

By revitalizing public transport such as railway track lines, and by concentrating various city functions such as residential, commercial, business and cultural buildings along the lines, we can achieve the goal of creating a compact city.

<An illustration of the concept >

Targeted city structure of the dumplings and the skewer penetrating them.

**The skewer :**

The public transport above a certain level

**The dumpling :**

Areas where people can have access to various city amenities on foot.

Each of the dumplings is connected by the skewer or public transport.

<Three pillars toward the goal >

① Revitalizing public transport

② Encouraging citizens to relocate to areas along public transport lines

③ Revitalizing the city center



# 3. ① Revitalizing Public Transport

## – Formation of LRT network –

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



# Toyama LRT – Outline –

JR Toyama Port line (a local line), which had been suffering from a constant decline in the number of passengers, was revitalized as **the nation's first full-fledged LRT**. This was achieved by adopting a **two-tiered concept** in which the public sector constructs the track while the private sector runs the business.

## Outline

Inaugural Day: April 29th, 2006  
 Extended Distance: Approx. 7.6km  
 No. of Stations: 13

• Former JR Toyama Port line



**Revitalized as the nation's first full-fledged LRT**

• Toyama LRT





# Toyama LRT – Operation and Service –

## ■ Operation

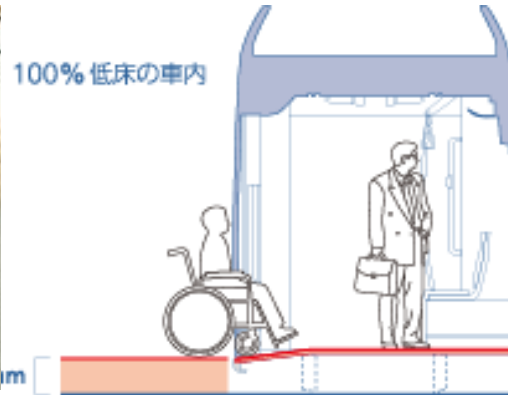
	Former service		New Service
Operation interval	30 to 60 min.	→	15 min. (10 min. during rush hour)
First / Last Train	5-6 / 21-22:00	→	5-6 / 23-24:00
No. of stations	9	→	13
Vehicles	Railroad vehicles	→	All super-low floor vehicles

\*Fare is uniformly 200 yen.

## ■ Adoption of IC card pass



## ■ Low floor cars and barrier-free stations



## ■ Light Rail attendants



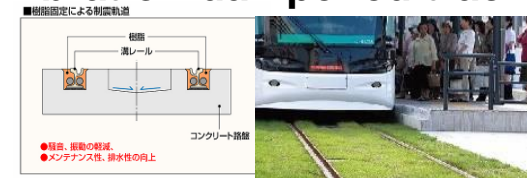
## ■ Introduction of total design



TOYAMA LIGHT RAIL



## ■ Vibration-dampened track

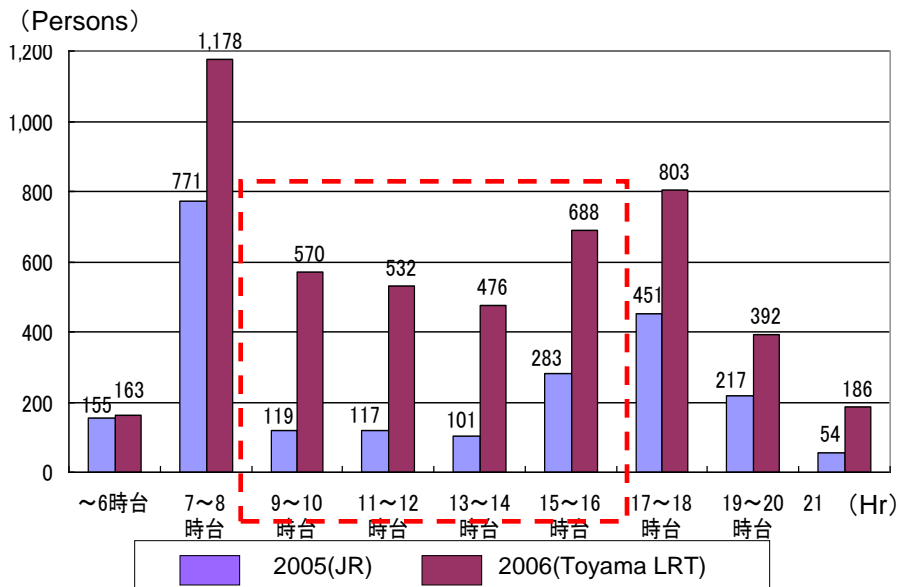


# Effect of Toyama LRT

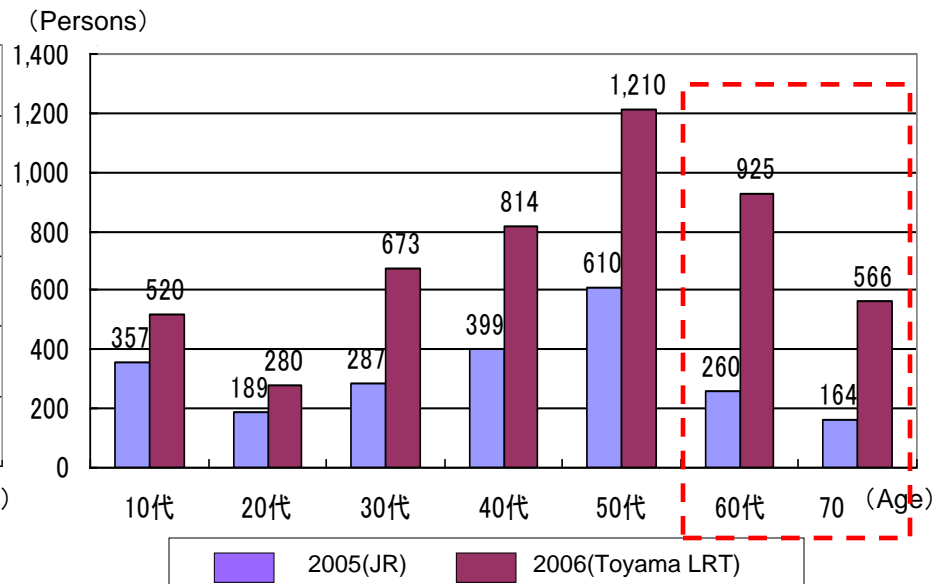
■ **On weekdays there are 2.1 times** as many passengers compared to before, and on **holidays there are 3.6 times** as many passengers using the new service.

■ **The number of senior citizens using** the new service has increased.  
(The change of their life style)

【Number of Passengers by Time Zone (Weekday)】



【Number of Passengers by Age (Weekday)】



# City Tram Loop Line Project

The extension of the tram line contributed to making the downtown area more appealing and easier for people to move around.

- Adoption of the first **two-tiered system** in Japan.
- Route construction was integrated with the road space and aimed at the creation of attractive **urban space**.

## ■ Outline

Inaugural Day: December 23rd, 2009

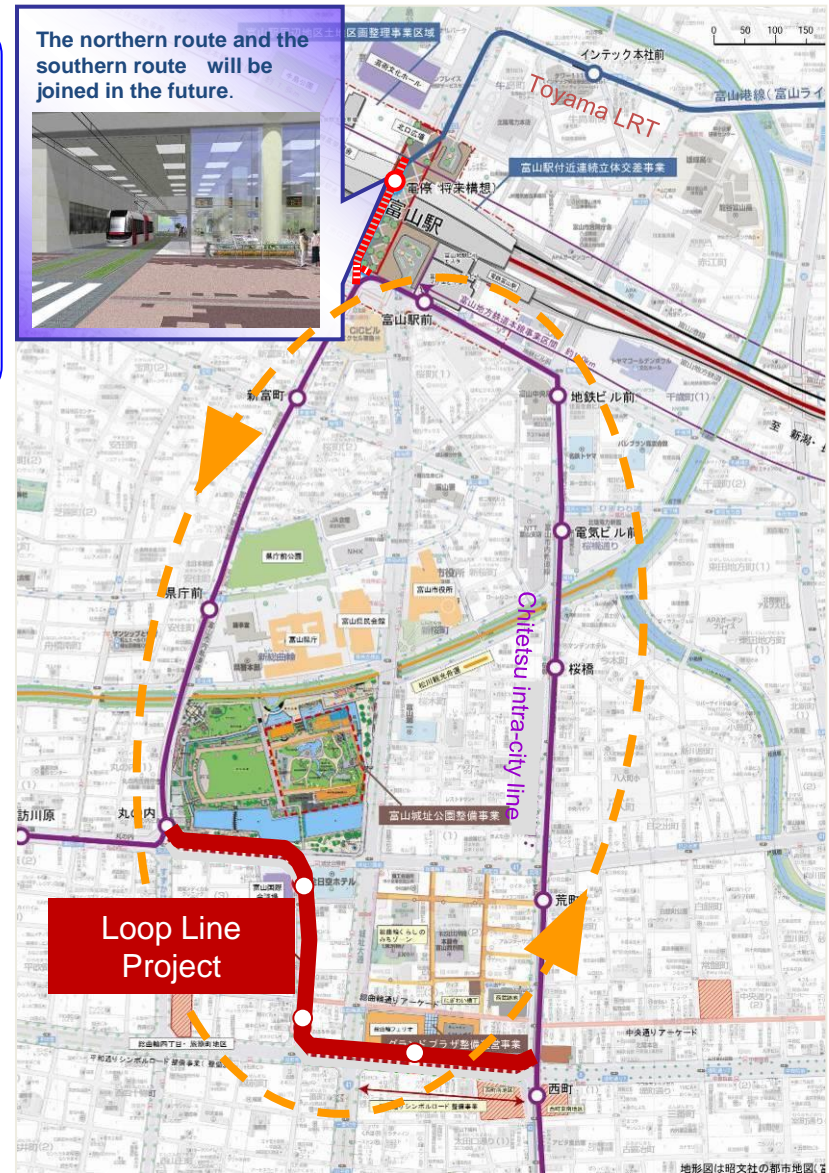
Extended Distance: Approx. 0.9km  
(Loop Line approx. 3.4km)

No. of Stations: 3 new stations were added along the extended route.

Vehicle: 3 new low-floor cars were adopted.



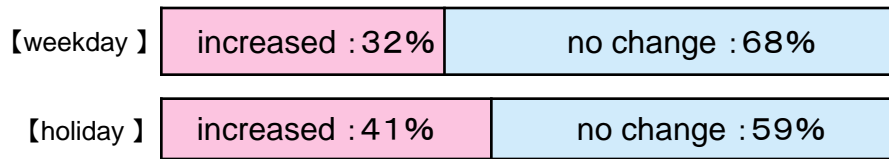
Loop Line



# Effect of City Tram Loop Line Project

- The average daily passengers are **2,236**. People use this line more on the **weekends/holidays** than on the weekdays.
- About half of the passengers **use it for shopping**, and **sightseeing** is also at a high rate.
- The project made the downtown **more appealing** and easier for people to move around.
- It contributed to the increase in the frequency of visiting the downtown and the length of stays.
- Visitors using the line spend more money than those coming by car, revitalizing the downtown .

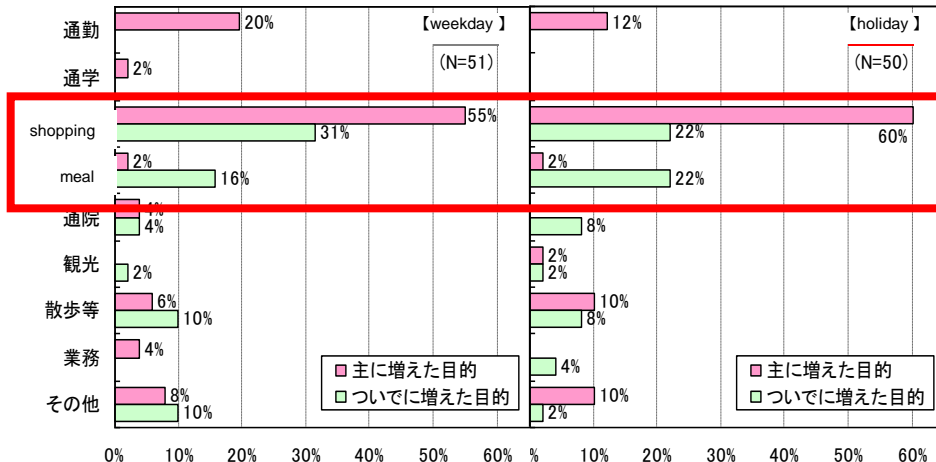
【Frequency of Visiting the Downtown】



【Average Length of Stays for Shopping/Meal】

weekday			holiday		
car	Loop Line		car	Loop Line	
2010	2010	2011	2010	2010	2011
96min	80min	101min	113min	97min	145min

【Purpose of Visit (increased)】



【Frequency of Visiting the Downtown and Amount of Consumption】  
Average Frequency of Shopping (times / month)

weekday			holiday		
car	Loop Line		car	Loop Line	
2010	2010	2011	2010	2010	2011
2.5times	5.6times	6.1times	1.8times	4.7times	6.4times

Average Amount of Consumption (yen / day・ person)

weekday			holiday		
car	Loop Line		car	Loop Line	
2010	2010	2011	2010	2010	2011
¥11,489	¥5,491	¥12,533	¥9,207	¥11,811	¥14,994

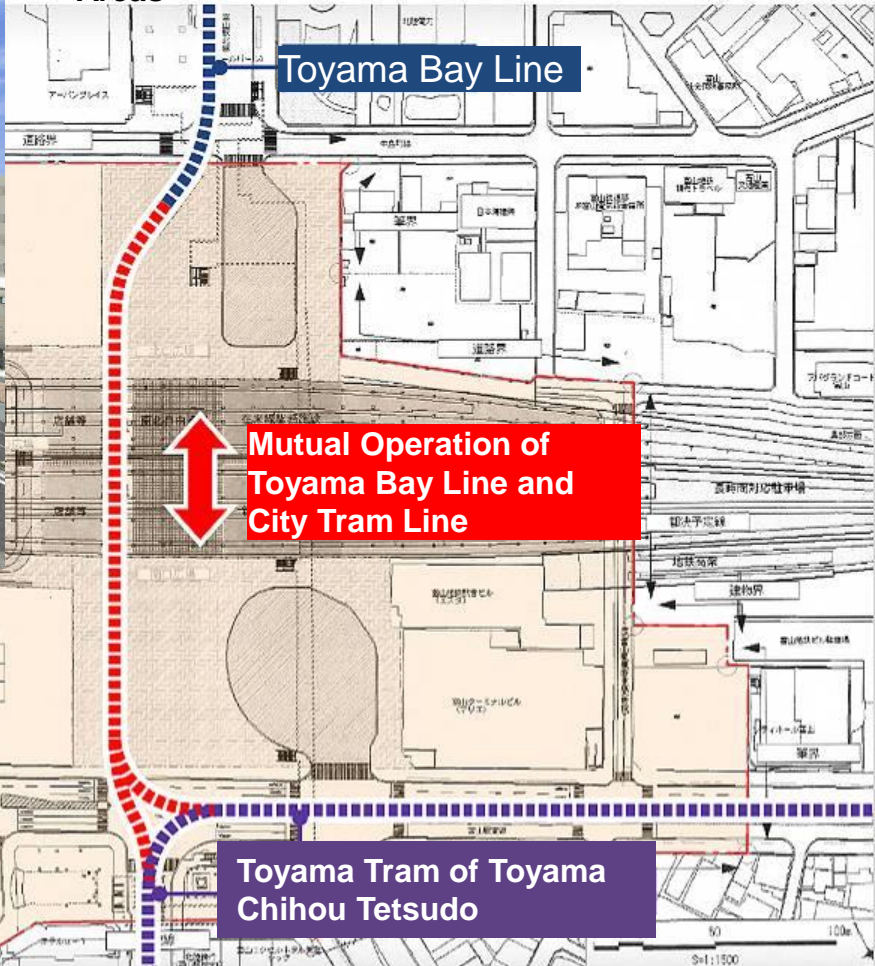
# Elevation of Railway Lines and Integration Plan of North and South Tram Lines

In time with the completion of the elevation project of the existing railway lines schedule in 2016, we plan to connect the lines of the Toyama Light Rail and those of the city tram located at the south of the station to establish the stops on the elevated center concourse.

Complete View of Station Square of Toyama Station South Exit



■ Outline Map of Improvement of Station Peripheral Areas



# Efforts for Revitalizing the JR Takayama main line

<Increase of service frequency and establishment of new stations  
 – Efforts as a part of urban development>

Toyama City promotes compact urban development of amenities concentrated by revitalizing public transport.

→ Because **revitalization of Takayama main line is essential for urban development of Toyama City as the axis of north-south public transport**, social experiments for revitalization were conducted mainly by increasing service frequency.

- Increase Service Frequency: Operation interval of about 30 minutes as target (Toyama City paid for increased operations)
- Build a New Station: **new station “Fuchu Usaka Station”** between Nishi Toyama Station and Hayahosi Station



Number of Services of JR Takayama main line

Section	Before Experiment	Phase 1	Phase 2
Toyama - Hayahosi	36	50	59
Toyama - Etchu Yatuso	34		
Toyama - Inotani	21	33	24



# 3. ② Encouraging citizens to relocate to areas along public transport lines – Operation of Dwelling Promotion in the City Center –

To promote to dwell in the city center, Toyama City subsidizes builders who provide good quality houses, and citizens who build/purchase a house or rent a house.

## Support for Builders

- ① Subsidize the construction cost of a multi-unit residential building [¥1 million/building]
- ② Subsidize the construction cost of a high-quality apartment building [¥500,000/house]
- ③ Subsidize the cost for remaking an office/commercial building to a residential complex [¥1 million/building]
- ④ Subsidize the improvement cost for shops, medical/welfare facilities to be established in a multi-unit residential building [¥20,000/m<sup>2</sup>]
- ⑤ Subsidize the improvement cost of disposer drainage system [¥50,000/house]

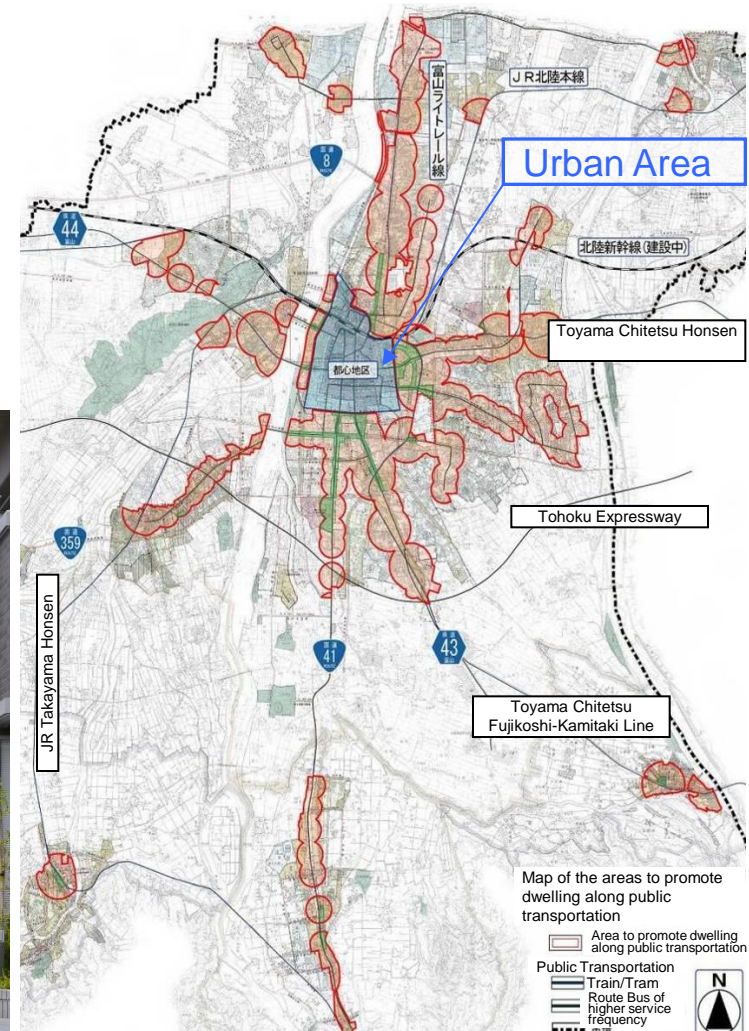
## Support for Citizens

- ① Subsidize loan for purchasing a single-family house, an apartment house, etc. [¥500,000/house]
- ② Subsidize the house rent due to moving to the urban area [¥10,000/month (for 3 years)]

## Achievement

(July 2005 – Mar. 2012)

**Total 492 cases 969 houses**



## 3.③ Revitalizing the city center – Grand Plaza

- It is an all-weather multipurpose square which can attract a lot of people even when it is cold and snowing outside.
- The square is glass roofed, equipped with a huge screen and an elevating stage.
- More than 100 events are held here annually.



**Project Operator:**  
Toyama City

**Construction Period:**  
Mar., 2006 to Aug., 2007



**Outline of the facility:**  
Size: approx. 1,400m<sup>2</sup>  
(65m x 21m)  
Height to the ceiling: approx. 19m  
Screen: approx. 277 inches



# Special Pass Project (since May, 2004)

## Senior Citizens' Public Transportation Fare Discount

Within Toyama City, citizens over 65 years old receive a special public transportation discount fare to any destination from the city center.

(route bus, street car and railroad: ¥100)

About 30% of senior citizens have the special pass and each day, on average, 2,370 people use it.



### Special Pass

For citizens over 65 years old

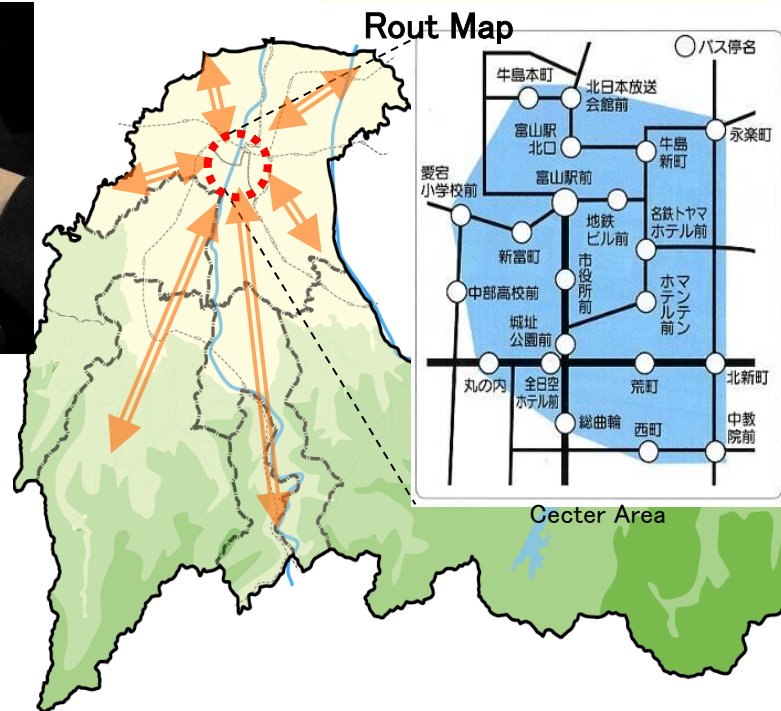
Price: ¥1,000

### How to use the pass:

① Hours of usage: 9:00 a.m. to 5:00 p.m.

② Where to use the pass:

- Anywhere between the city center and within Toyama City
- Inside the city center area
- Anywhere between Toyama Municipal Hospital and within Toyama City



# Aville – Bicycle Sharing System for Toyama Citizens

A new transportation option for citizens going to the downtown area, without the reliance on cars

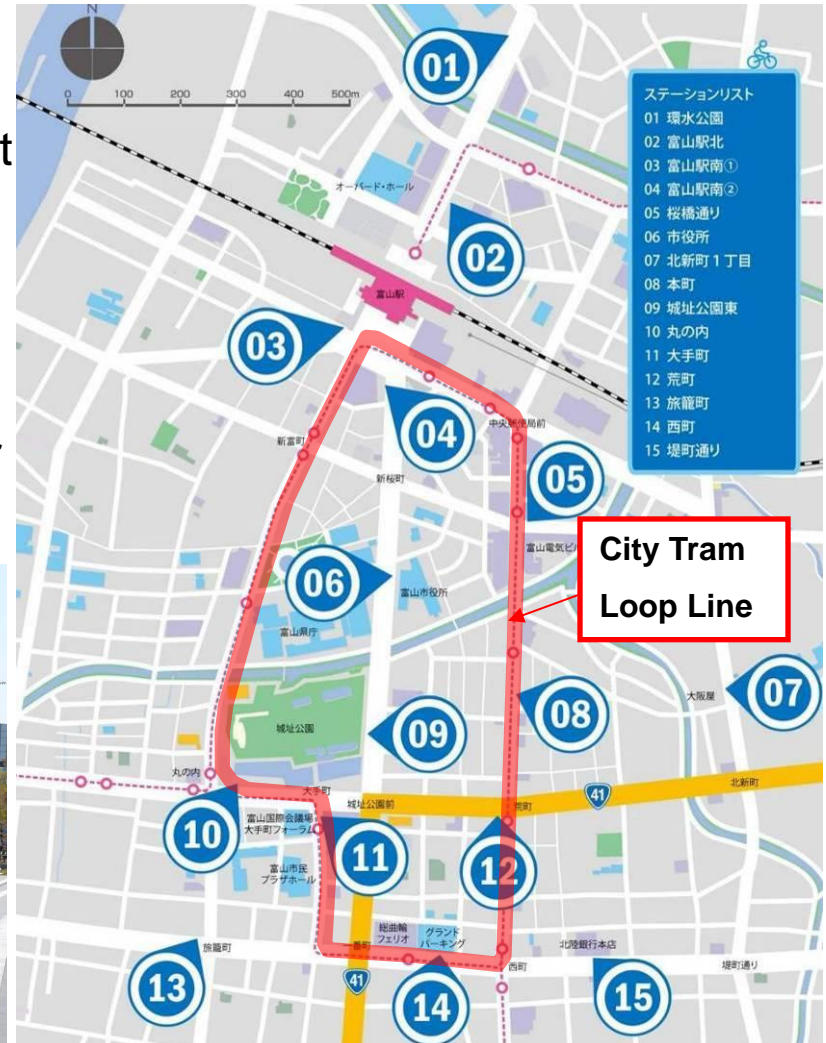
## ■ Project Purpose:

- ① Reducing CO2 Emissions
- ② Revitalizing the City Center and Making It More Convenient to Move Around

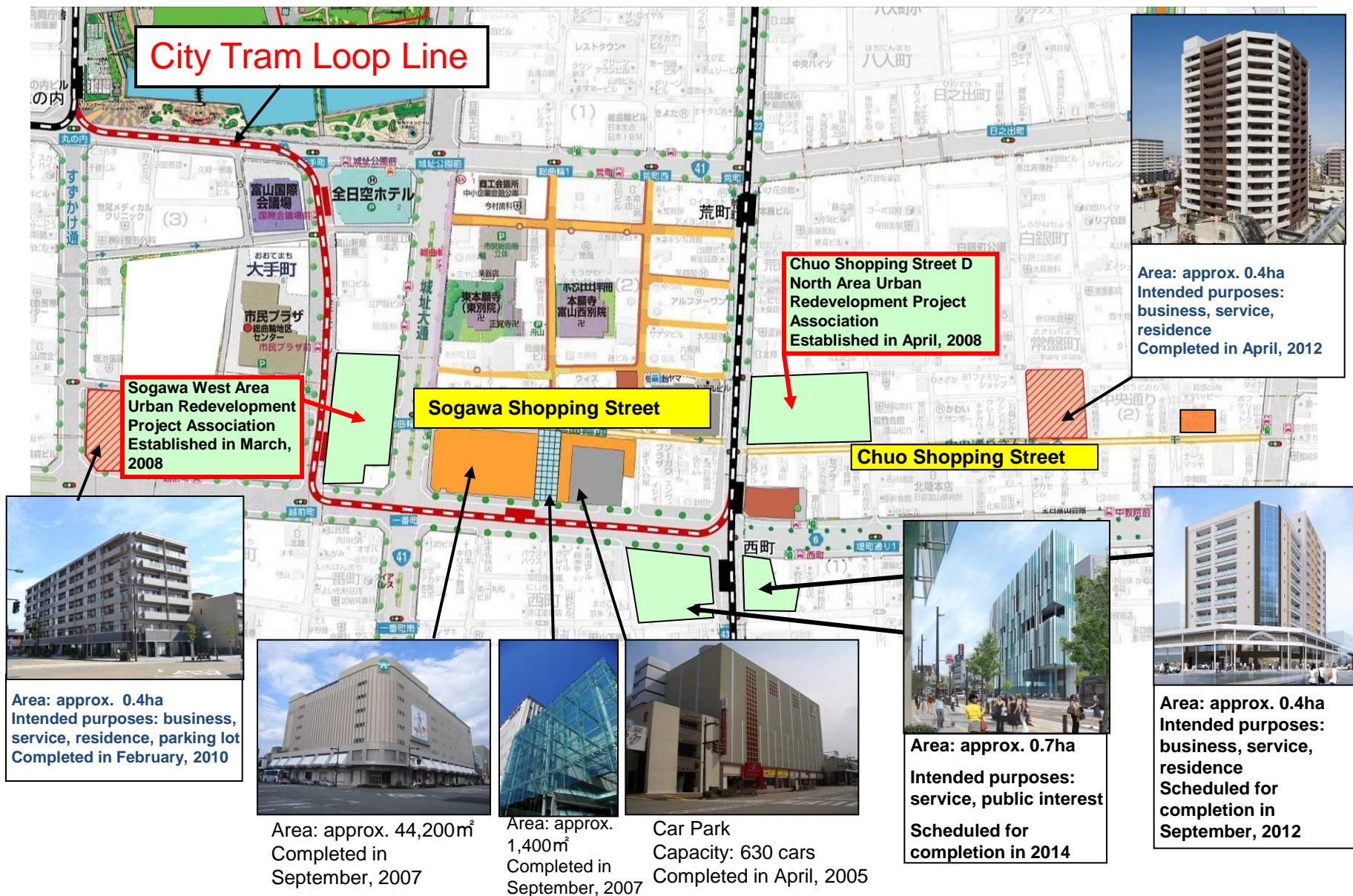
■ Project Operator: Cyclocity Inc.

■ No. of Bicycle Stations: 15 stations in the city center

■ No. of Bicycles: 150 bicycles in total



# 4. Effects of the Compact City – Activated private investment –



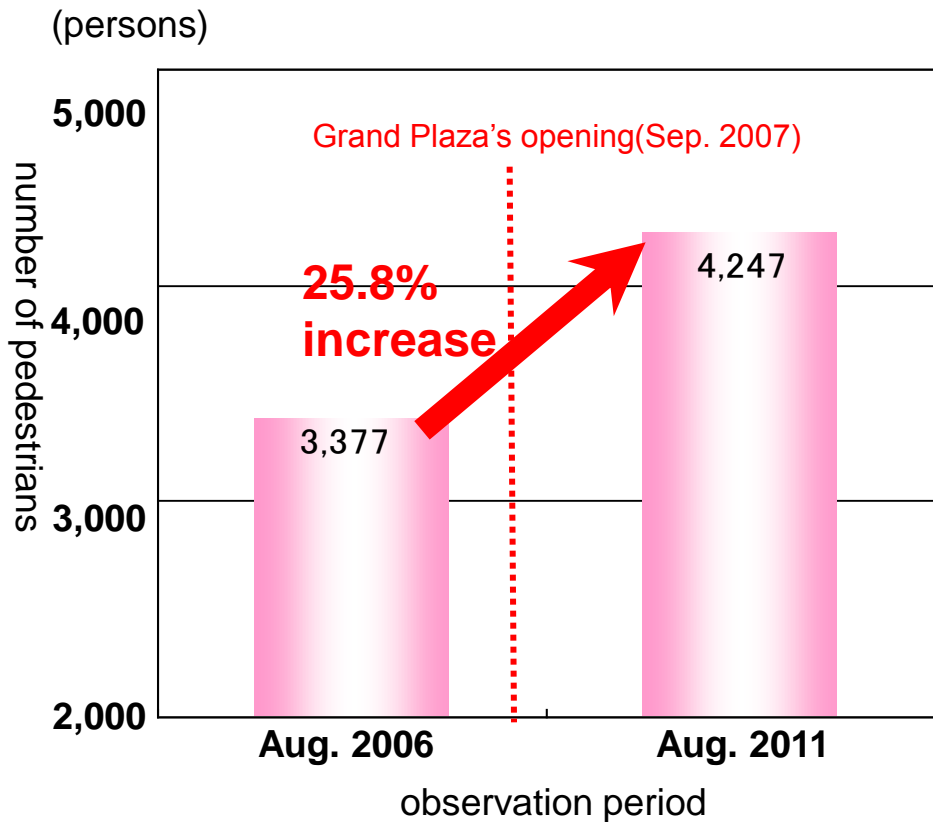
# Effects of Compact City Policy

## – The number of pedestrians and vacant stores in the city center

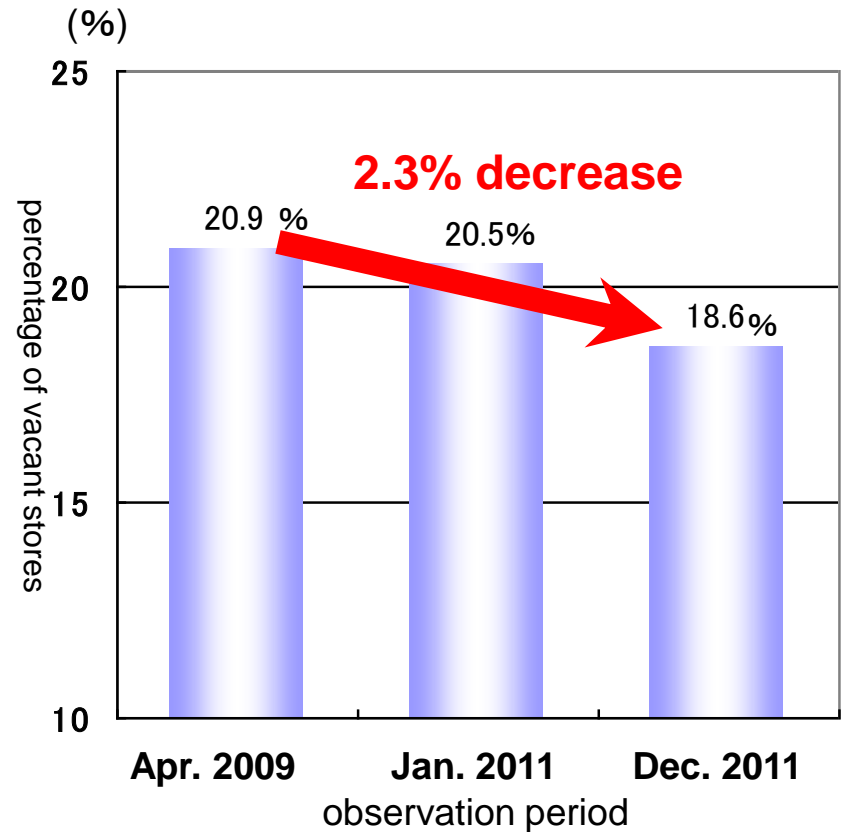
■ The number of **pedestrians in the city center steadily increased**, by 25.8% over the 2006-2011 period.

■ **Vacant stores in the city center decreased** by 2.3% over the 2009-2011 period.

【How the number of pedestrians shifted】



【How the percentage of vacant stores changed】

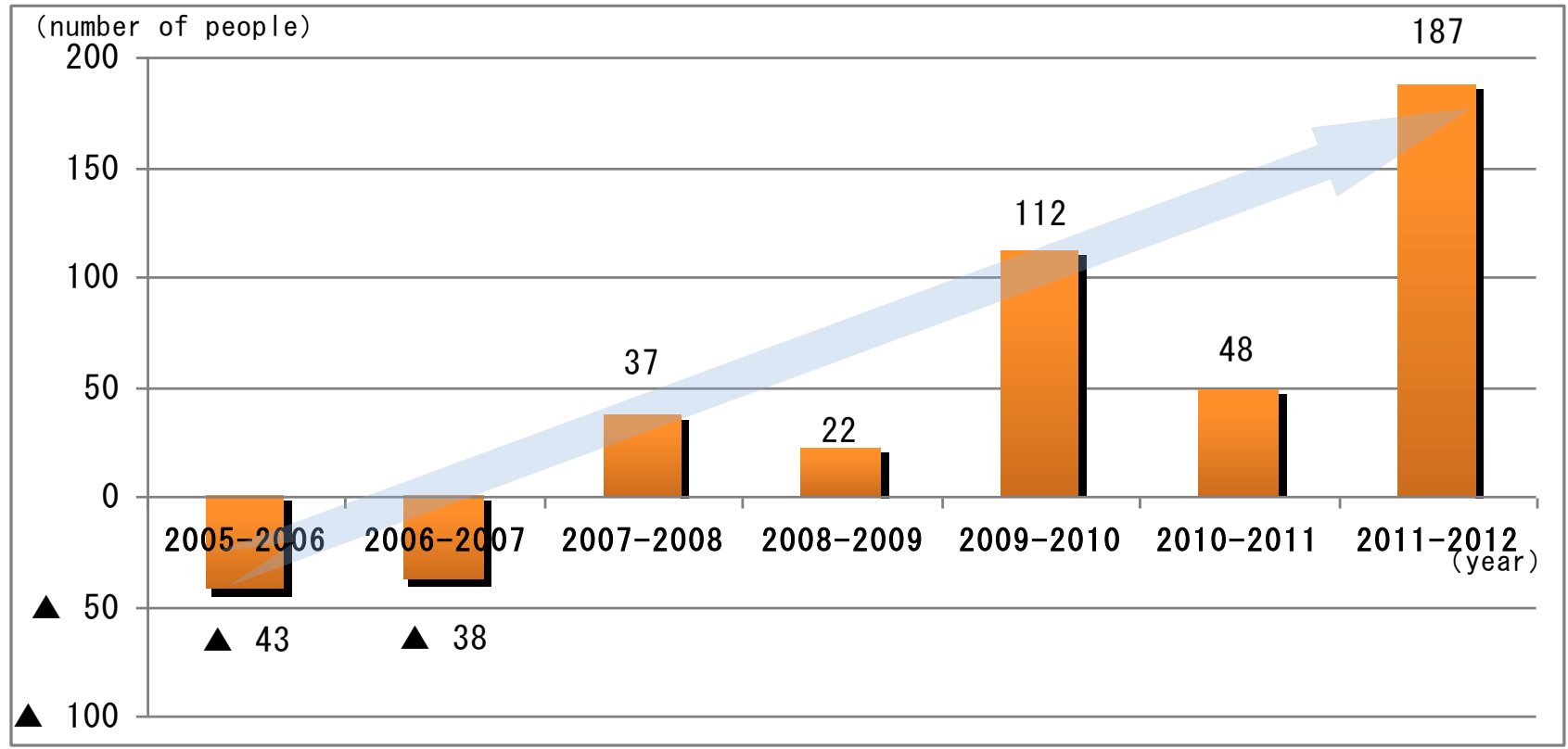


# Effects of Compact City Policy – Increase in incoming population –

■ Shift in population (figures representing the number of people moving into the city center subtracted by those moving out)

More people have moved into the city center than those who have moved out since 2007, averaging 81 people a year for the past five years.

【Shift in population (figures representing the number of people moving into the city center subtracted by those moving out)】



# 5. Key Points to Realize a Compact City

## 1. Examination of regional characteristics and problems confronting urban areas, including changes in social situations

- *Recognizing the decline as well as the aging of the population as an issue to address*
- *Taking advantage of the existing railroad network well established for a local city*

## 2. Clarifying and sharing a common vision of the future

- *Taking regional issues and characteristics into account to clarify the vision of the future relevant to the city*
- *Holding over 200 town meetings to share a common vision of the future with residents and local corporations*
- *Having the idea of a compact city clearly stated in other projects promoting environment, welfare, etc. to maintain the policy's consistency and integrity*

## 3. Comprehensive development of the policy and its speedy implementation

- *Comprehensive implementation of such projects as urban planning, welfare, education, environment, culture, etc. based on the compact city policy*
- *In the case of Toyama Light Rail, it was inaugurated only three years after it was discussed by recycling JR Toyama Port Line.*
- *Having active private investments induced by concentrated public investments*

## 4. Measuring the effect of the compact city policy

- *Measuring the positive effect of policy implementations and publicizing it to give citizens positive feedback*
- *Verifying the mid- to long-term relevance and effect of the compact city policy with the use of GIS*