Creating a Compact City through Innovative Public Transportation Networks

New Urban Planning Strategies to Meet the Twin Challenges of Decreasing Populations and Aging Societies

Daisaku Saito, policy supervisor of Toyama City

LRT connection under the elevated Toyama Station (Artist’s rendering)
Outline of Toyama City

- Population: 421,953 people (Approx. 40% of Toyama Prefecture, 2010 census)
- Area: 1,241.85 square km (Approx. 30% of Toyama Prefecture)
- Topographical diversity: From sea level (Toyama Bay) to 2,986m (Suishodake.)

Aerial view of Toyama City

Toyama City Below Northern Japan Alps

New Shinkansen Station with Trams

Hokuriku Shinkansen (Spring 2015)
In addition to creating employment for the elderly through industrial development, it is important to create a city in which the elderly can lead a safe and comfortable life.
Toyama’s Unique Compact City Management Strategy

Economic Value
- Reduce administrative costs
- Increased tax revenue
- Industrial development
- Increase employment

Environmental Value
- Reducing Co2 emissions
- Environmental protection
- Revitalizing the city center

Social Value
- Nurturing social capital
  - Medicine
  - Nursing care
  - Safety and security

Creating a Compact City by Renovating Public Transport

Developing an Attractive High Quality City Life

Promoting Local Industry

Realizing a sustainable city management

Three pillars for this Strategy:

① Revitalizing public transport

② Encouraging residents to relocate to zones along public transport lines

③ Revitalizing the city center
Toyama’s public transport forms a radial network with Toyama Station at the center.

- **Four Railway Lines**
  - Japan Railways – 2 lines
  - Toyama Chiho Railways – 2 lines

- **Two Tram Lines**
  - Toyama Chitetsu City Tram Line
  - Toyama Light Rail Port Line

- **Extensive Bus Service**
  100+ routes operated by Toyama Chitetsu Ltd.
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 in which every city amenity is within walking distance.
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**

**New Service**

<table>
<thead>
<tr>
<th>Former Service</th>
<th>New Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation interval</td>
<td>15 min. (10 min. during rush hour)</td>
</tr>
<tr>
<td>First / Last Train</td>
<td>5-6 / 23-24:00</td>
</tr>
<tr>
<td>No. of stations</td>
<td>13</td>
</tr>
<tr>
<td>Vehicles</td>
<td>All super-low floor vehicles</td>
</tr>
</tbody>
</table>

*Fare is uniformly 200 yen.*

**Introduction of total design**

- **Light Rail Attendants**
- **Low floor cars/ barrier-free stations**
City Tram Loop Line Project - Centram

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

- Adoption of the first two-tiered system in Japan.
- Tram route construction was integrated with existing road space to create an attractive urban space.

**Outline**

Inaugural Day: December 23rd, 2009
Extended Distance: 0.9km
(Total Loop Line 3.4km)
No. of Stations: 3 new stations were added along the extended route.
Vehicle: 3 new low-floor cars were adopted.

**Introduction of total design for vehicles, stations, and roads**

Number of passengers:
- Weekdays: 1,959 daily
- Weekends: 2,805 daily
Views of the Loop Line Project and the City of Toyama

CENTRAM
Revitalizing the City Center  - Bicycle Sharing System for Toyama Citizens (Aville) -

A New Transport Option for Citizens Going Downtown without Automobiles

- Project Purpose:
  ① Reduce CO2 emissions
  ② Revitalize the city center and make it more convenient to move around

- Project Operator: Cyclocity Inc.

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

- No. of Bicycles: 150
Approx. 7,000 people including many surgeons came to attend from across the nation. Panel discussions, lectures, workshops, etc. were held at four venues including Toyama International Conference Hall. Aville was utilized as a means of transport between the venues.
The city tram fare is free when customers purchase a bouquet from a designated flowershop.

Something good happened that day so I bought flowers and rode the tram. Again something good happened.
Within Toyama City, citizens over the age of 65 receive a special public transportation discount fare of 100 yen (about .80 euro) to any destination from the city center. About 30% of senior citizens have this special pass and each day, on average, about 2500 people use it.

**Special Pass**
Citizens over 65 years old, ¥1,000

**How to use the pass**
① Hours of usage: 9:00 a.m. to 5:00 p.m.
② Pass can be used:
   - Anywhere between the city center and within Toyama City
   - Inside the city center area
   - Anywhere between Toyama Municipal Hospital and within Toyama City
Results of Compact City Policy - City Tram Usage

Until 2006, the number of the city tram passengers had steadily decreased. With the opening of the Toyama LRT in 2007 and then the Loop Line in 2011, the number of Tram passengers has now steadily increased.

City tram route map

Number of city tram passengers per day

(Passengers/Day)

16,000人/日
12,000人/日
8,000人/日
4,000人/日
0人/日

(year)


(Inauguration of Toyama LRT)

(Inauguration of the Loop Line)
Results 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 areas along the public transport lines subtracted by those moving out)

2012 marks a turning point at which people moving in outnumbered those moving out in the residentially promoted areas along the public transport lines.
External Assessment of Toyama’s Compact City Policy

Toyama’s compact city strategy of re-imagining and revitalizing public transport has been commended as a model both within and outside Japan.

Domestic evaluation

National Government of Japan Designated Eco-Friendly City of the Future
Toyama City was designated as one of the eleven eco-friendly cities of the future under Japan's new national growth strategy.

- Awards Ceremony with Prime Minister Noda (Prime Minister's Official Residence, January 18, 2012)

Overseas evaluation

OECD (Organization for Economic Co-operation and Development)
Toyama City was recognized, along with Melbourne, Paris, Vancouver, and Portland, as one of the five “advanced cities” in the 2012 report on “Compact Cities Policies.”

- OECD meeting (OECD Headquarters in Paris, June 13, 2012)
Toyama City Management – A Unique Compact City Strategy

Toyama’s Compact City Management Strategy

**Creation of Environmental Value**
- Reducing CO2 emissions
- Revitalizing the city center
- Circulation

**Creation of Economic Value**
- Reduction of administrative cost
- Creation of new industries
- Revitalization of rural communities
- Increased tax revenue
- Promotion of local industries
- Creation of employment

**Creation of Social Value**
- Nurturing social capital
- Regional medicine
- Nursing care
- Health
- Safety and social security

Toward a city open to the future through innovation in the environment, society, and economy

Realizing a sustainable society through the creation of highly desirable living conditions that achieve a harmony between quality of life and environmental concerns