

Community Development and Local Public Transportation Systems

Shunsuke Kimura

Professor, Faculty of Law, Graduate School of Law, Hitotsubashi University

I Introduction

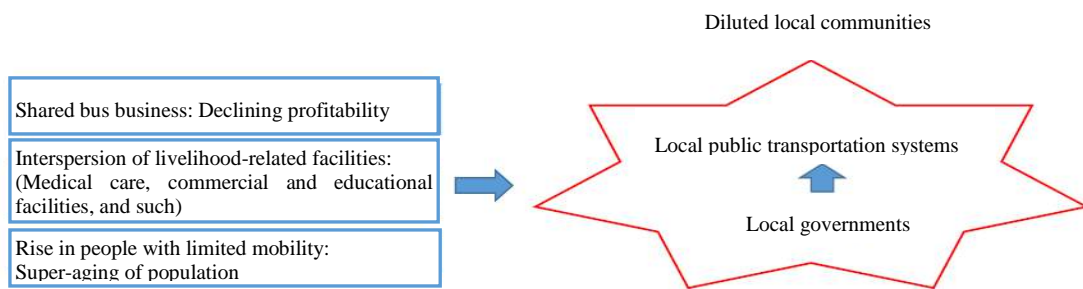
The term public transportation is generally used to mean “common carriers (businesses that offer their services to all people who request transportation)”¹, and local public transportation systems indicate buses and other means of public transportation provided for the daily movement of people within a region.

Local public transportation systems are an important area of local administration and it can be said that it is gaining further importance in recent years. Then, why are local governments getting involved in local public transportation systems? The reason has to do with the idea of “livelihood support.” It is essential for residents in leading their daily lives related to food, clothing and shelter, to move, including going shopping, medical care facilities and educational facilities. Particularly, for people who have difficulty in traveling by private vehicles (hereinafter referred to as “people with limited mobility”), local public transportation systems, such as vehicles and other means of transportation, are an essential element in their lives as residents. For these reasons, in order to respond to the administrative demand to secure the “means of transportation for livelihood,” local governments have, to date, played a part in local public transportation systems as a basic administration service to support residents’ livelihood.

It should be noted here that focusing on the vehicle transportation business, private bus operators account for the bulk (98%) of vehicle transportation operators in Japan because they can be operated with smaller capital investment than the railway business (Figure 13 shown below). However, the environment surrounding the bus business has changed significantly, such as markedly less use of buses associated with the rise of motorization since the 1970s, private bus operators’ withdrawals from unprofitable routes triggered by deregulation in 2002, and the rapid decrease in the population particularly from 2010. Thus, bus operators, regardless of whether they are under private or public management, have faced considerably severe conditions in terms of profitability, and the public sector is required to secure the supply of bus transportation in some way. Furthermore, facilities necessary for people’s livelihood, such as medical facilities, commercial facilities and educational facilities, have become interspersed, while there has been a remarkable

¹ Kenzo Takeuchi, *Kotsu Keizaigaku Nyumon (An Introduction to Transportation Economics)*, Yuhikaku Publishing, 2008, p. 37.

increase in the number of people with limited mobility who do not use owner-driven vehicles in association with the progress in the super-aging of the Japanese population. This transformation of the social conditions has brought change to the conventional structure of local communities, resulting in the phenomena of local communities being diluted around the country. Under these circumstances of local communities, the role of local governments as the provider of local public transportation systems, the means of transportation that supports local residents' livelihood, is gaining further importance (Figure 1).



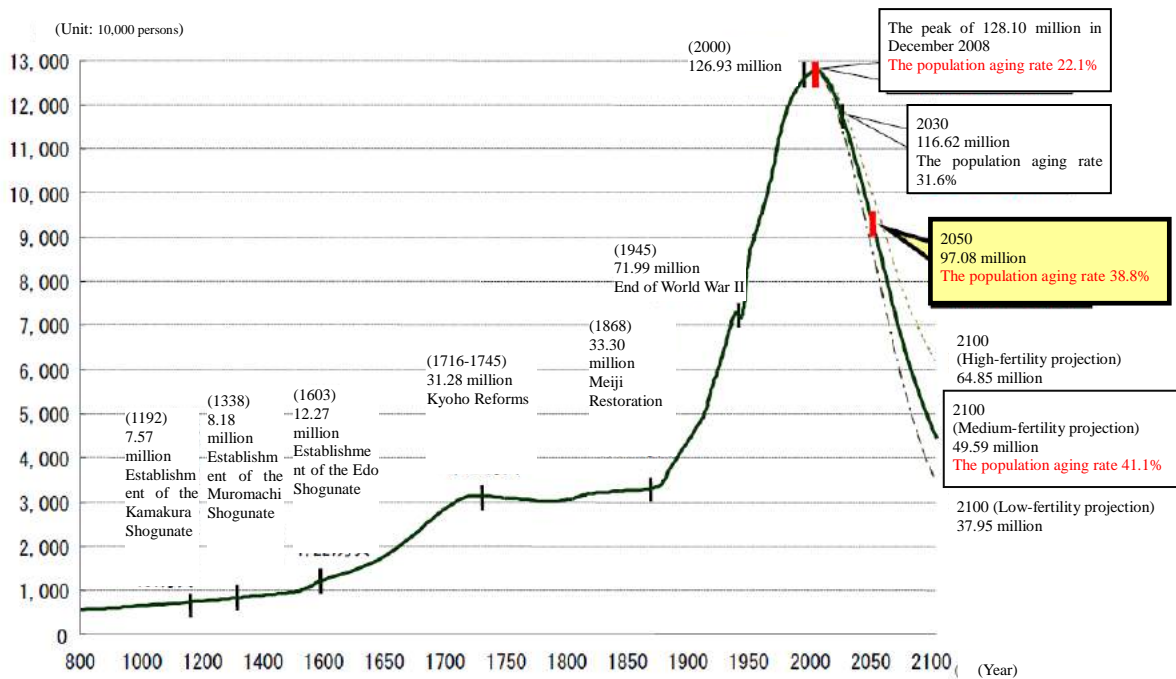
<Figure 1> The Situation Surrounding Local Public Transportation Systems

Source: Created by the author

This paper discusses the characteristics of local public transportation systems described above and then deals with the relationship between today's community development and local public transportation systems.

II The Decline in Japan's Population and Community Development

The total population of Japan had been on an unalterable uptrend through the postwar first baby boom (the 1940s) and the second baby boom (the 1970s), but it has been on a sharp decline after peaking at 128.08 million in 2008. According to the Population Projections for Japan by the National Institute of Population and Social Security Research (IPSS), the medium fertility variant projection assuming the total fertility rate (TFR) is approximately 1.35 shows that the Japanese population will fall below 100 million in 2050 and decline further below 50 million by 2100 (Figure 2).



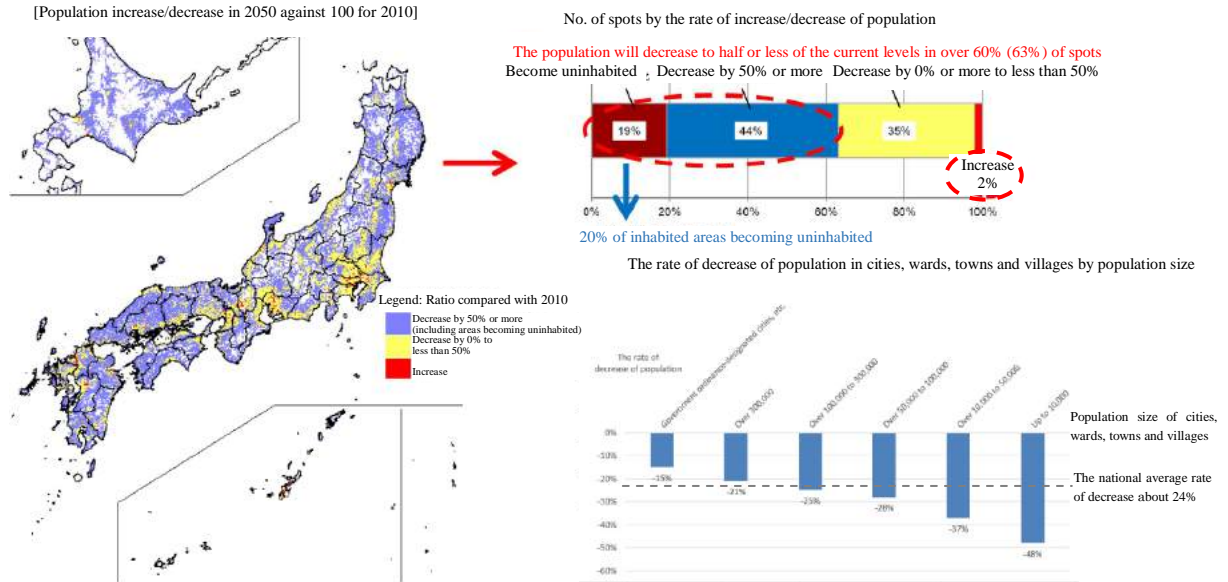
<Figure 2> Population Projections for Japan

Source: *The Interim Summary of the "Long-Term Vision for National Land"* (February 21, 2011, Long-Term Forecast Study Group, Policy Subcommittee, National Land Council)

There is also a forecast that due to the impact of the rapid population decline, 20% of inhabited areas will become uninhabited by 2050 (Figure 3).

Lower Density and Uneven Distribution of Population

- About 20% of currently inhabited areas will become uninhabited by 2050.
- Looking at Japan by “spots with an area of 1km² each,” the population will be halved in over 60% of currently inhabited areas



<Figure 3> Forecast for Uninhabited Areas

Source: 1st Meeting of the Subcommittee of Experts, 31st Local Government System Research Council (May 28, 2014)

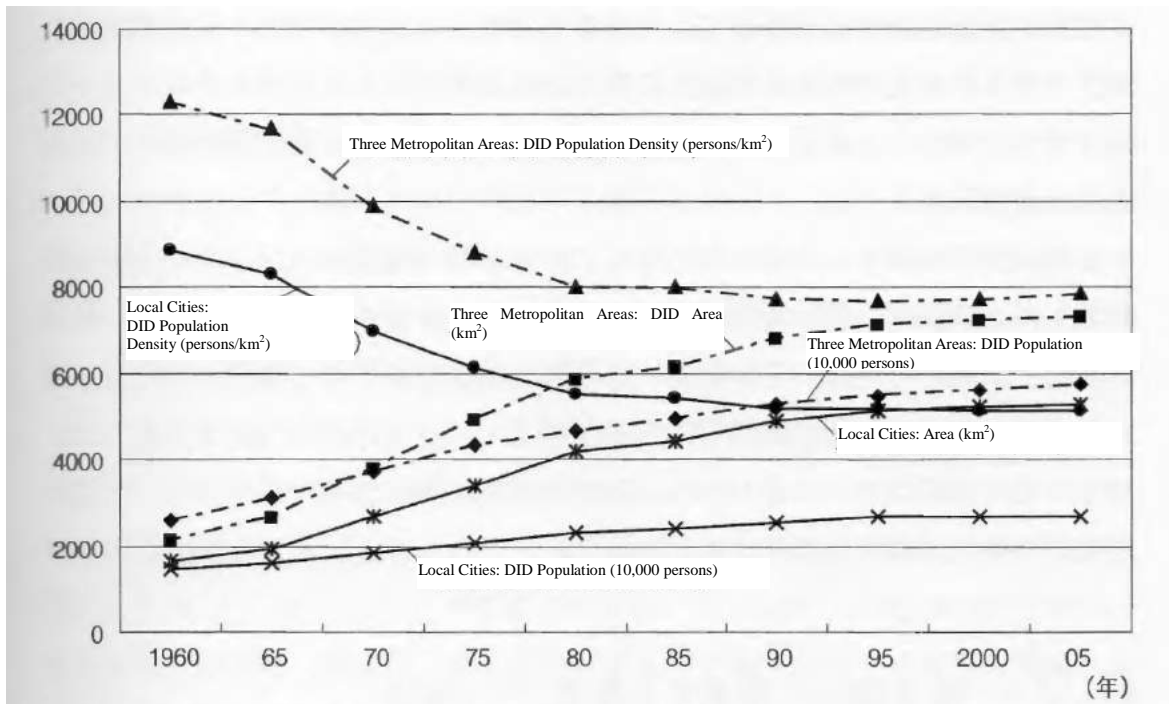
Under these circumstances, areas with no public transportation services within inhabitable areas (outside a range of 600 meters from bus stops and outside a range of one kilometer from railway stations) reached 36,433 km², an area equal to Kyushu Island. In addition, the inhabitation ratio in the areas with no public transportation services was higher for the elderly at 2.7% than for the total population at 1.9% (Table 1).

<Table 1> Areas with No Public Transportation Services

	Japan (Total area 377,915 km ²)	Areas with no public transportation services (Outside a range of 600 meters from bus stops and outside a range of one kilometer from railway stations)	Ratio of areas with no public transportation services
Inhabitable area	117,600 km ²	36,433 km ²	30.9% (9.6%)
Population	127,768,000 (1,086/km ²)	2,423,000 (67/km ²)	1.9%
Elderly population	27,470,000	731,000	2.7%

Source: Materials provided by the Ministry of Land, Infrastructure, Transport and Tourism (January 2013)

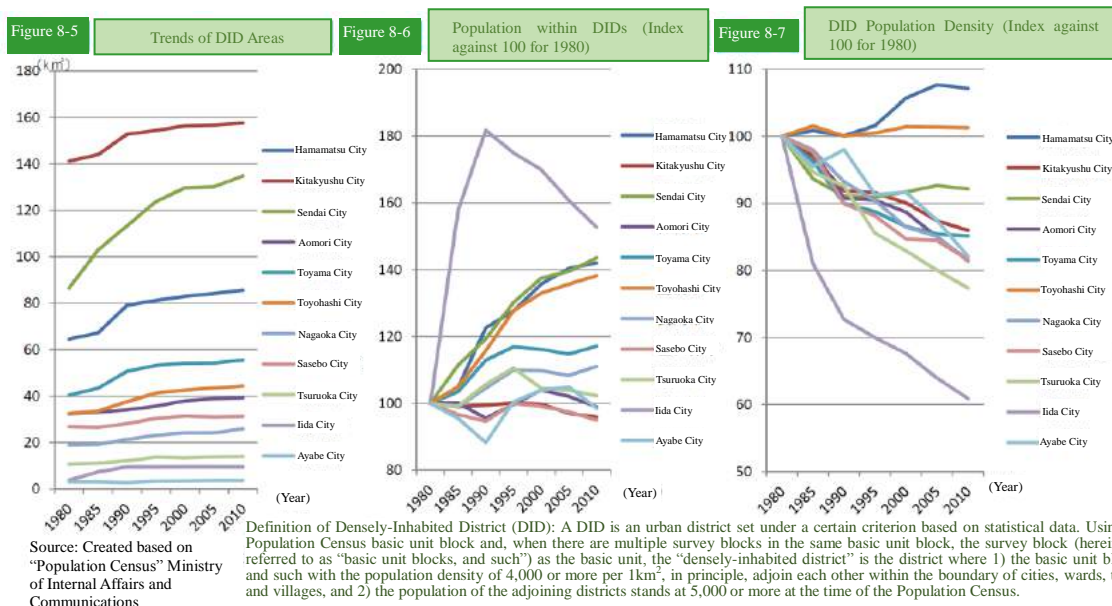
Next, looking at developments in metropolitan areas and local cities, for densely inhabited districts (hereinafter referred to as “DIDs”) where urban areas are deemed to have been formed, the DID population continued to increase gradually in the three major metropolitan areas (Tokyo, Osaka, and Nagoya) but the DID area has expanded faster than the DID population, and as a result, the population density has been on the decline. In local cities, on the other hand, the DID population has been largely flat, but as the DID area expanded, the population density dropped significantly (Figure 4).



<Figure 4> DID Trends in the Three Metropolitan Areas and Local Cities

Source: Mitsuhiro Kawakami, *Chiho Toshi no Saisei Senryaku (Local City Revival Strategy)*, 2013, p. 13.

Moreover, as shown in Figure 5, looking at developments in major local cities, while the area has tended to expand or stay flat in each city since 1980, the population has dropped or stayed broadly flat in all cities except for Sendai City, Hamamatsu City and some other cities.



<Figure 5> Trends of Densely-Inhabited Districts (DIDs)

Source: Development Bank of Japan, *Jinko Gensho Mondai Kenkyukai Saishu Hokokusho* (the Final Report of the Study Group on the Population Decline Problem), 2014, p. 49.

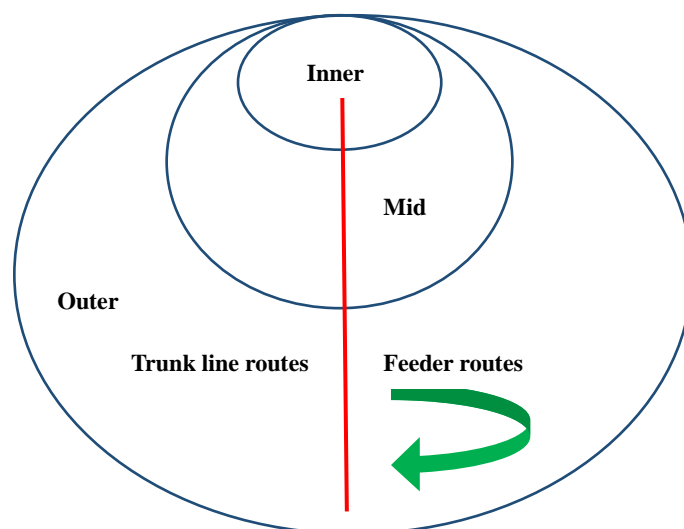
Consequently, the population density has declined markedly in all cities other than Hamamatsu City and Toyohashi City. With the Japanese population likely to continue to decline further going forward, the DID population density is expected to decrease further unless policy measures are taken to contract the DIDs. The decline in DID population density would give rise to concerns over the decline of convenience in social and livelihood activities, the decrease in regional dynamism and amplified inefficiency of administrative investment.

Local public transportation systems find themselves essentially in the same situation as above. From the beginning, urban areas of local cities expanded in thinly-populated areas with underdeveloped public transportation. If the population density there declines further on top of that situation, there are concerns that it would become all the more difficult to secure means of transportation in such regions. Therefore, particularly in local cities, it has become a pressing issue to realize an intensive urban structure by maintaining the constant population density and deploying the urban functions of medical care, welfare, educational, commercial and other facilities in a planned manner in order to provide residents with healthy and comfortable livelihood, maintain economic activities and ensure sustainable city management.

Amid these major changes in social circumstances, the community development and local public transportation systems require a comprehensive review across Japan. As the direction of that

review, the following two points can be pointed out broadly.

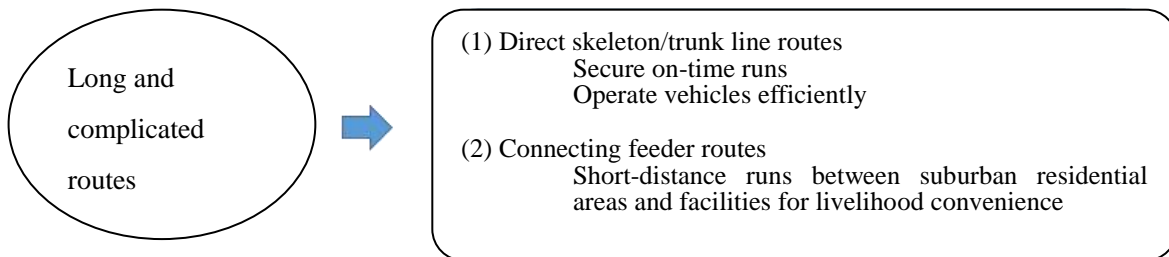
The first is the “restructuring of local public transportation systems corresponding to the compactification.” As the decline in the DID population density pushes up the cost of maintaining and upgrading the urban foundation, the compactification of cities (the downsizing of cities) is required. Today, in line with this thinking, various cities are striving to develop the compact communities, as represented by efforts by Aomori City and Toyama City. Meanwhile, local public transportation systems, regardless of whether they are motor vehicle or rail transportation systems, were previously required to cover the service area comprehensively and very frequently, inevitably resulting in long and complex routes. However, a revision of ideas is required to respond to the formation of compact urban districts, and it is necessary to clearly distinguish between trunk line routes going direct to major facilities (for example bus routes that connect to major railway stations, light rail transit (hereinafter referred to as “LRT”) and so on) and feeder routes (branch lines) making connections to these trunk line routes. In other words, the most important requirement for trunk line routes is to secure on-time runs and operate vehicles efficiently. On the other hand, for feeder routes with the purposes of connecting to trunk lines and moving to neighboring districts, the requirement would be to operate the transportation service with high frequency over the short distances from suburban residential areas to facilities for livelihood convenience and trunk line railway stations. In addition, in providing the public transportation services, it is extremely important to organize timetables that enable smooth connections between trunk line and feeder routes (Figure 6).



<Figure 6> Restructuring of Local Public Transportation Systems Corresponding to the Compactification

Source: Created by the author

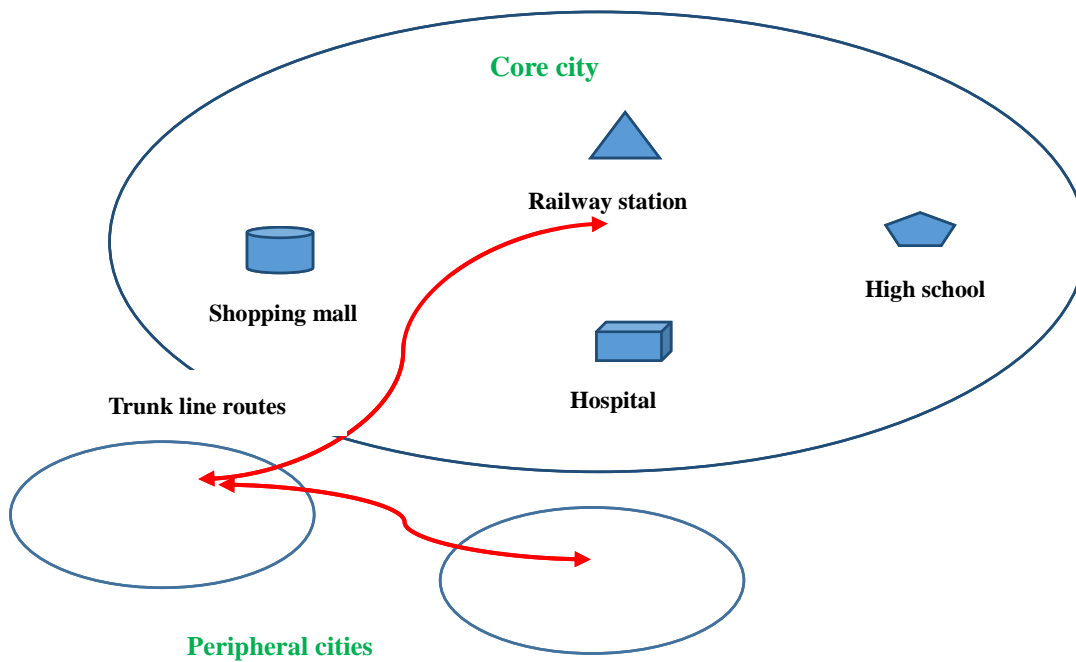
In this way, nowadays route management strategy of local public transportation systems is changed significantly (Figure 7).



<Figure 7> Route Management Strategy of Local Public Transportation Systems

Source: Created by the author

The second direction that can be pointed out is the “restructuring of local public transportation systems corresponding to wide-area partnership.” As shown in Figure 1, with livelihood-related facilities becoming interspersed in tandem with the shrinking population and the number of people with limited mobility, such as the elderly, increasing, the situation is under way where a number of local governments (in particular, the core city in an area and peripheral cities) must form partnerships to provide administrative services. Against this background, there is the pattern to sustain the operation of local public transportation systems with a number of local governments providing assistance, for example, the sustaining of trunk line route bus services under partnership agreements based on the concept of Autonomous Settlement Zones.



<Figure 8> Restructuring of Local Public Transportation Systems Corresponding to Wide-Area Partnership

Source: Created by the author

As seen above, in a diluted society where the compactification of cities and the interspersing of livelihood-related facilities become pronounced, the management approach to local public transportation systems is also required to change significantly.

III Framework of Legal Systems Related to Local Public Transportation Systems

1. Trends of Legal Systems

Since it is necessary to take heed of legal systems related to local public transportation systems in considering the relationship between community development and local public transportation systems, this chapter gives an overview of the institutional framework for local public transportation systems in Japan.

The trends of legal systems related to local public transportation systems in recent years are shown in Table 2.

<Table 2> Trends of Main Legal Systems Related to Local public transportation systems

Time	Trends of Main Legal Systems
February 2000	Deregulation of chartered bus business (the Road Transportation Act), domestic air transportation business (the Civil Aeronautics Act)
March 2000	Deregulation of domestic passenger railway business (the Railway Business Act)
October 2000	Deregulation of domestic passenger ship business (the Marine Transportation Act)
February 2002	Deregulation of bus business, taxi business (the Road Transportation Act)
October 2006	Establishment of the registration system for personal-use paid passenger transportation (the Road Transportation Act)
October 2007	Enforcement of the Act on Revitalization and Rehabilitation of Local Public Transportation Systems
December 2013	Enforcement of the Basic Act on Transportation Policy
December 2014	Enforcement of the amended Act on Revitalization and Rehabilitation of Local Public Transportation Systems

Source: Created by the author

2. Responses to Deregulation

Since the Road Transportation Act became effective in 1951, Japanese passenger vehicle transportation business has been maintained under the supply-demand adjustment regulation to prevent the degradation of services and safety through excessive competition on the basis of the license system for each route. However, the negative effects of the supply-demand adjustment regulation have long been pointed out, including (1) the preservation of inefficient business operators, (2) the deterrence of new services and the flexible setting of fares, and (3) the weakening of motivation for business operations by being saddled with money-losing routes under the weight of forced internal subsidization. Based on these problems, deregulation processes began for a

variety of businesses, including chartered bus business and passenger railway business since 2000. In 2002, the supply-demand adjustment regulation on bus business was lifted, and deregulation measures were introduced, with the license system for the entry into the business replaced by the permit system and the permit system for the exit from the business switched to the prior notification system (Table 3).

<Table 3> Deregulation of Bus Business

Time	Pre-deregulation	Post-deregulation (since 2002)
Entry into the bus business	License system (applicable to each route)	Permit system (applicable to bus business operators)
Exit from the bus business (Suspension/discontinuance of the business)	Permit system	Prior notification system (Notify the regional council six months prior to the exit from the business)
Fare/Charge	Approval system	Ceiling approval system Notification system for changes made under the ceiling
Business plan	Approval system: Operating plan	Approval system: Entry into a route Notification system: Operating plan

Source: Created by the author

These changes of legal systems had significant impacts on local public transportation systems. The entry of new business operators, as a direct impact, was limited, but as an indirect impact, the changes have brought benefits to users, including enhanced services, such as reductions in minimum fares and fare discounts for making connections. With some cases of the transfer of public transportation services to the private sector emerging, meanwhile, local public transportation systems are facing severer management conditions amid growing competition with private bus business operators. Under these circumstances, as seen in discussions about the division of roles between the public and private sectors, the point of view is coming to the fore much stronger than before in recent years that the work of providing direct services to residents should be turned over to the private sector (or should make use of the abilities of the private sector) as much as possible. Moreover, with increasing competition in the wake of deregulation and fiscal woes of local governments coming into the picture, pressures for a review of the business form and moves toward restoring the sound management are growing stronger.

3. Partial Amendment of the Road Transportation Act

In 2006, the Road Transportation Act was partially amended in order to respond to diversified demand of users in the road transportation sector, such as demand for community buses, shared taxis and municipal buses. The amendment gave the legal status to the shared transportation business for promotion of the wider use of community buses, and such. It also established the registration system to make possible fare-paying transportation services by private vehicles, such as municipal buses. The amended act also stipulates that a local public transportation council (organized by heads of the local public bodies, automobile transportation operator, local residents and passengers) established pursuant to the act, consults on fares and other matters.

4. Revitalization of Local Public Transportation Systems

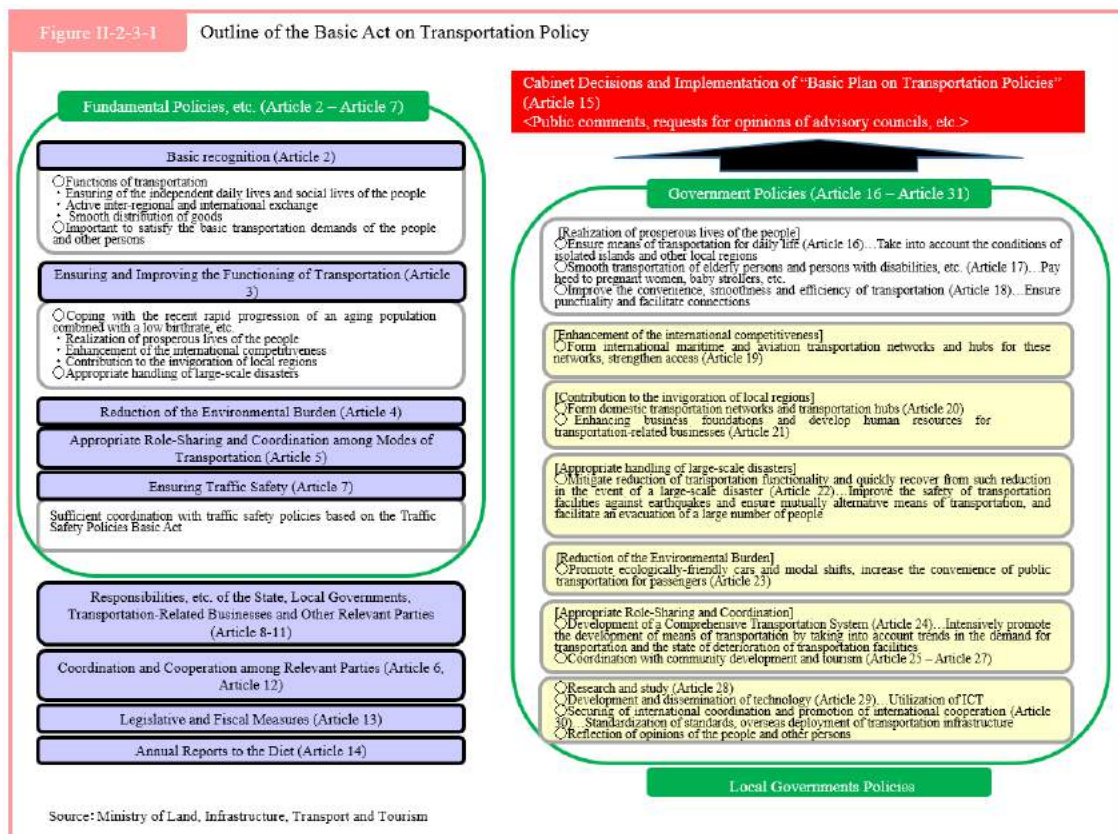
In 2007, given that the conditions surrounding local public transportation systems grew increasingly severe following the deregulation of entries into and exists from service routes, the Act on Revitalization and Rehabilitation of Local Public Transportation Systems (hereinafter referred to as “the Revitalization Act”) was enacted. Based on the Revitalization Act, the municipalities can prepare a comprehensive cooperation plan for local public transportation systems, after consultations with statutory councils comprising relevant public transportation operators, road administrators, public safety commissions and users, and such. Then, they submit the plan to the Ministry of Land, Infrastructure, Transport and Tourism. Of public transportation businesses positioned in the comprehensive cooperation plan certified by the ministry, preferential support measures under relevant laws are taken for businesses that are expected to be given priorities.

5. The Basic Act on Transportation Policy

As the environment surrounding local public transportation systems grows increasingly severe, it is necessary to support local public transportation businesses through partnership not only among business operating entities but also between local residents, governments and business operators. Partly against this background, the Basic Act on Transportation Policy was enacted in December 2013.

The Basic Act, under “the basic recognition that it is important to appropriately satisfy the basic transportation demands of the people and other persons,” sets out the fundamental principles of transportation policies, responsibilities of the state and local governments, responsibilities and roles of transportation-related businesses and the public in cooperating with transportation policies, and coordination and cooperation among relevant parties. The Basic Act further states that the Government must establish a basic plan on transportation policies, the Basic Plan on Transportation

Policy, which sets forth the basic direction of transportation policies, their targets and measures on transportation that the Government shall implement (Figure 9).



<Figure 9> Outline of the Basic Plan on Transportation Policy

Source: Materials provided by the Ministry of Land, Infrastructure, Transport and Tourism

6. Partial Amendment of the Revitalization Act

Amid the declining population and the progression of the aging population and dwindling birthrate, there are concerns over the business contraction and service degradation due to the falling number of passengers carried by public transportation systems particularly in rural regions. Since it is important to enhance local public transportation systems to maintain the dynamism of local communities under these circumstances, the Revitalization Act was partially amended in May 2014. In the amended Revitalization Act, the comprehensive cooperation plan is transformed into a local public transportation network formation plan, and cooperation with community development policies is positioned as one of items in the formation plan. In addition, under the plan, a plan to implement the reorganization of local public transportation systems can be prepared to set specific details of the surface restructuring of public transportation networks (for example, the review of existing routes and operating timetables and the introduction of new services), and the amendment

is designed to address the reorganization of public transportation systems and community development in an integrated manner.

As seen above, legal systems related to local public transportation systems have undergone major changes since the 2000s. The two significant characteristics of these changes are ① the legal positioning of local governments has become clear-cut and important, and ② the linkage between transportation policies and community development policies is called for in terms of legal systems as well.

In this case, the function of coordination (coordination among relevant parties) and the function of financial support local governments provide should not be expected unilaterally, and local governments should not be considered to passively fulfill their responsibilities for transportation policies. Instead, it should be considered that local governments are expected to make maximum use of their planning function related to transportation networks and community development as well as the coordination function to develop consensus among local residents, and play the role of drawing up a future map of local public transportation systems.

IV Development of Local Public Transportation Systems

This chapter takes up business operations of publicly-operated transportation businesses, community buses and LRT, which have been playing an important role among business methods of local public transportation systems.

1. Publicly-Operated Transportation Businesses

(1) The current status of publicly-operated transportation businesses

Transportation businesses operated by local governments are called publicly-operated transportation businesses. Japanese transportation businesses have been undertaken by private and public business operators, and publicly-operated transportation businesses have been playing an important part in Japan's local public transportation systems, beginning with streetcars in the later stage of the Meiji period, and then bus businesses in the later stage of the Taisho period and subway businesses in the early stage of the Showa period. An overview of the types and a breakdown of operations of publicly-operated transportation businesses are outlined below.

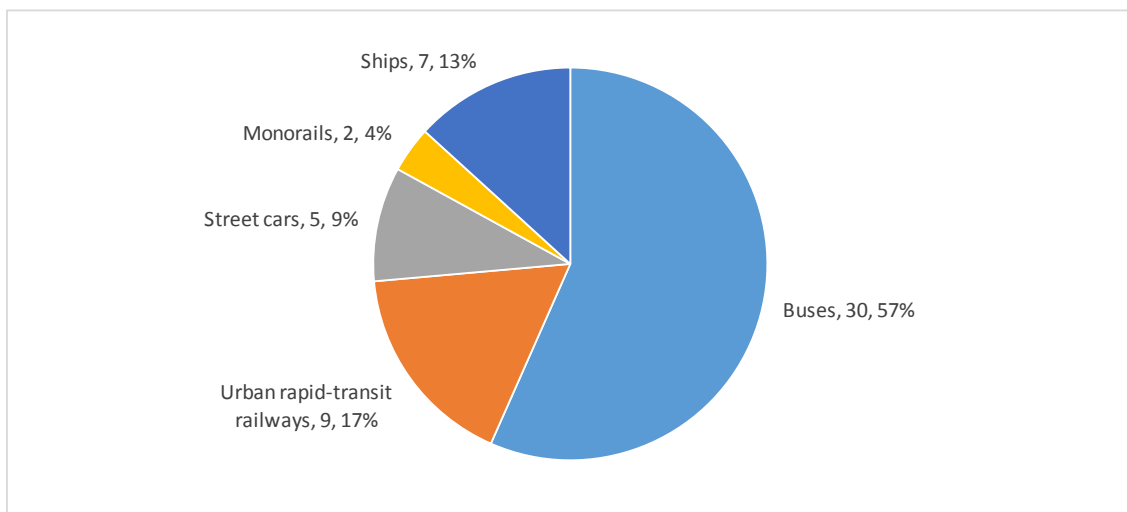
a. Types of publicly-operated transportation businesses

Publicly-operated transportation businesses operated by local governments are broadly classified into law-applicable businesses operated with the application of the Local Public Enterprise Act and non-law-applicable businesses to which the act is not applied. In the breakdown

by business segment, bus operations have the largest number of businesses, while urban rapid-transit railways have the largest number of employees, followed by bus operations (Table 4, Figure 10 and Figure 11).

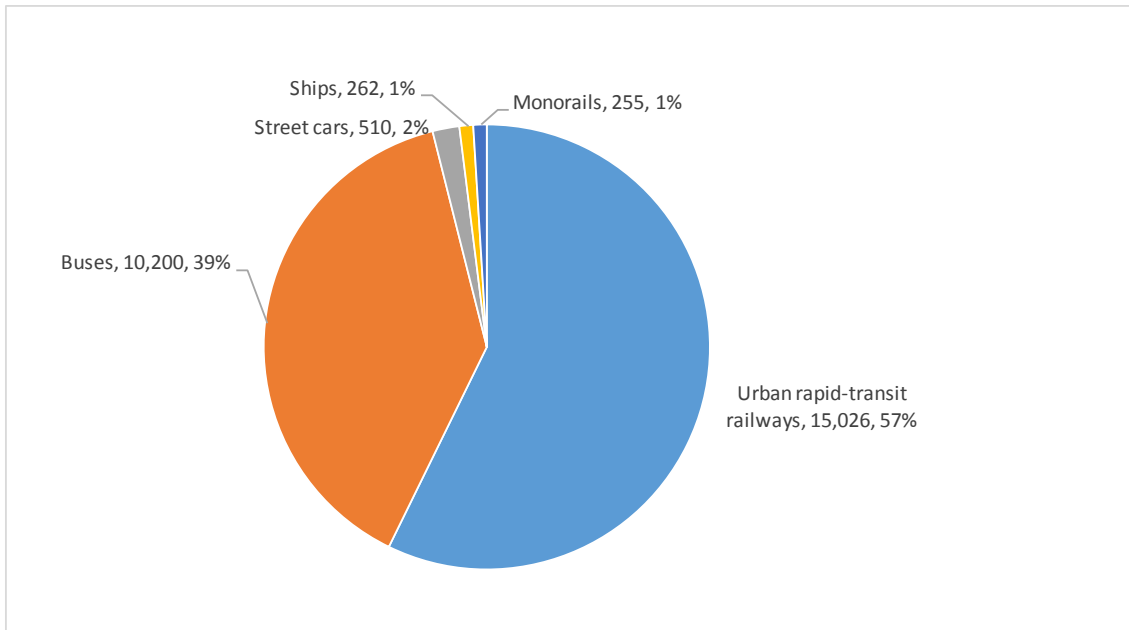
<Table 4> Types of Publicly-Operated Transportation Businesses (FY2013)

	Law-applicable businesses		Non-law-applicable businesses	
	Number of businesses	Number of employees	Number of businesses	Number of employees
Buses	30	10200	-	-
Urban rapid-transit railways	9	15026	-	-
Street cars	5	510	-	-
Monorails	2	255	-	-
Ships	7	262	38	488
Total	53	26253	38	488



<Figure 10> Breakdown of the Number of Businesses of Publicly-Operated Transportation Businesses (Law-applicable businesses: FY2013)

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

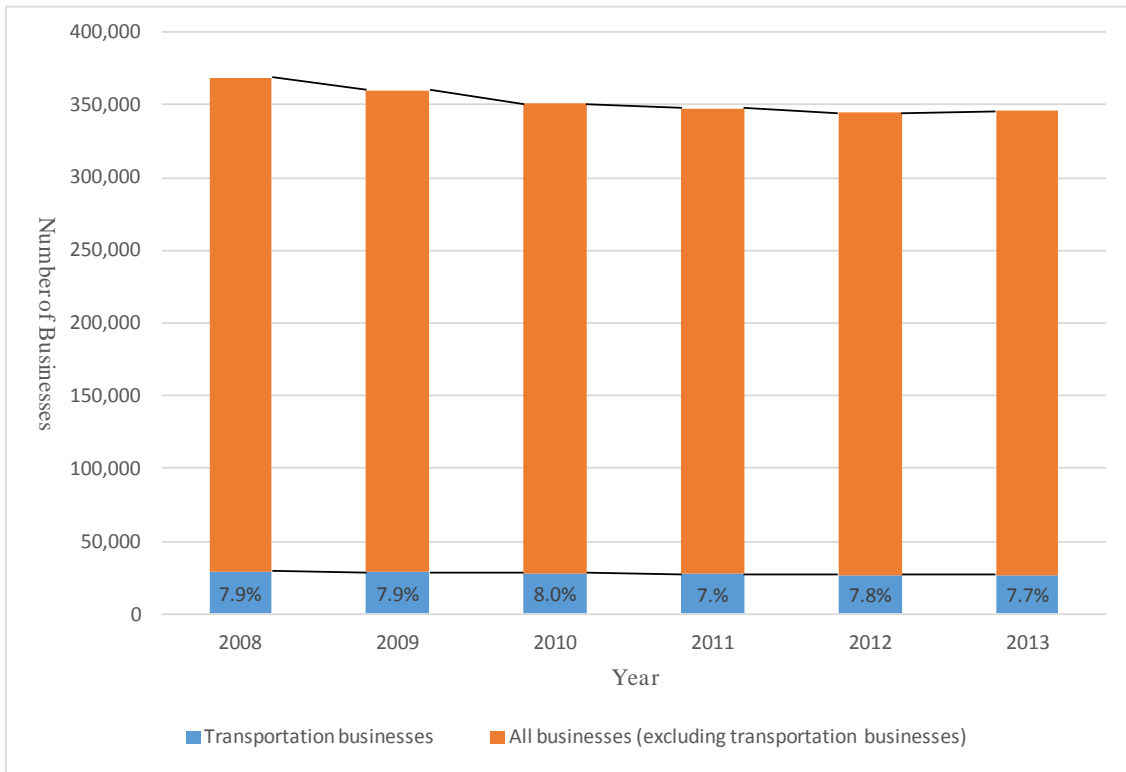


<Figure 11> Number of employees (Law-applicable businesses: FY2013)

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

b. The current status of publicly-operated transportation businesses

Next, looking at the trends of the total number of employees of local public enterprises (the sum of law-applicable and non-law-applicable businesses) and the number of employees of transportation businesses, both numbers of employees continue to drop slightly under the impact of the decline in the number of businesses. The number of employees of transportation businesses totals about 26,000 in FY2012, with the composition ratio standing virtually constant at approximately 7.7% in recent years. This shows that the number of employees of transportation businesses is relatively large when compared with the small number of businesses (91 businesses), and that transportation businesses occupy a major part among local public enterprises (Figure 12).



<Figure 12> Trends of the Number of Public Enterprise Employees

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

(2) Vehicle transportation businesses (publicly-operated bus businesses)

a. General discussions

Passenger vehicle transportation businesses operated by local governments and other public entities under the Road Transportation Act (hereinafter referred to as "publicly-operated bus businesses") play a major role in local public transportation systems. The specific breakdown includes (1) "publicly-operated bus businesses," which are operated by local governments as general shared passenger vehicle transportation businesses under Article 4 of the Road Transportation Act (hereinafter referred to as "the Act") and as law applicable businesses with the application of the Local Public Enterprise Act, (2) local independently-operated community buses, which local governments get involved in their operations through local public transportation councils under Article 4 of the Act, (3) municipal community buses and (4) welfare buses, which are operated by municipalities with private vehicles under Article 78 of the Act. (Table 5 below). This section covers the status of publicly-operated bus businesses that have been playing the role of

local public transportation systems in Japan since the 1920s.

b. Developments of publicly-operated bus businesses

Japan’s publicly-operated bus businesses commenced operations as the alternative means of transportation until the restoration of streetcar services after the 1924 Great Kanto Earthquake. Subsequently, their operating routes expanded in competition with private bus operators or through acquisitions. Since the 1970s, however, the concentration of population on urban areas and the spread of private cars created traffic jams that caused the decline in transportation efficiency and the loss of punctuality, helping accelerate an alienation from bus services. Since the 1990s, many bus operators saw their earnings deteriorate further in the wake of the collapse of the bubble economy. Since the 2000s in particular, some local governments discontinued publicly-operated bus businesses, while others have been forced to downsize their businesses or faced otherwise extremely severe operating conditions (Table 6).

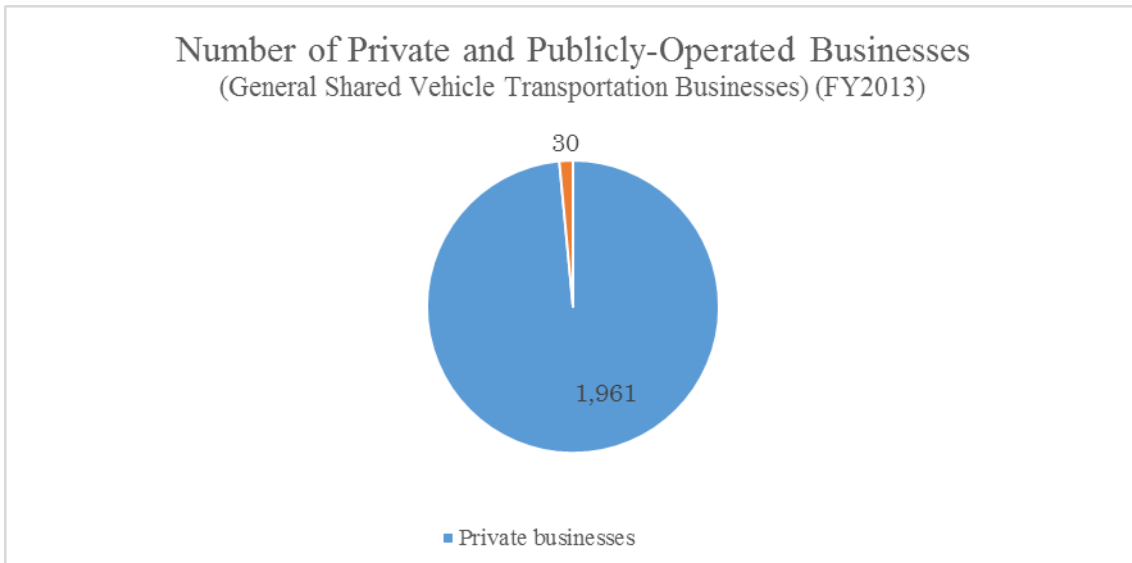
<Table 6> Publicly-Operated Bus Businesses Turned Over to Private Operators (Since FY2000)

2003	Hakodate City
2004	Sapporo City
2005	Gifu City, Arao City
2006	Akita City
2007	—
2008	Mihara City
2009	—
2010	—
2011	—
2012	Tomakomai City, Akashi City, Kure City
2013	Naruto City

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

c. The status of publicly-operated bus businesses in overall bus businesses

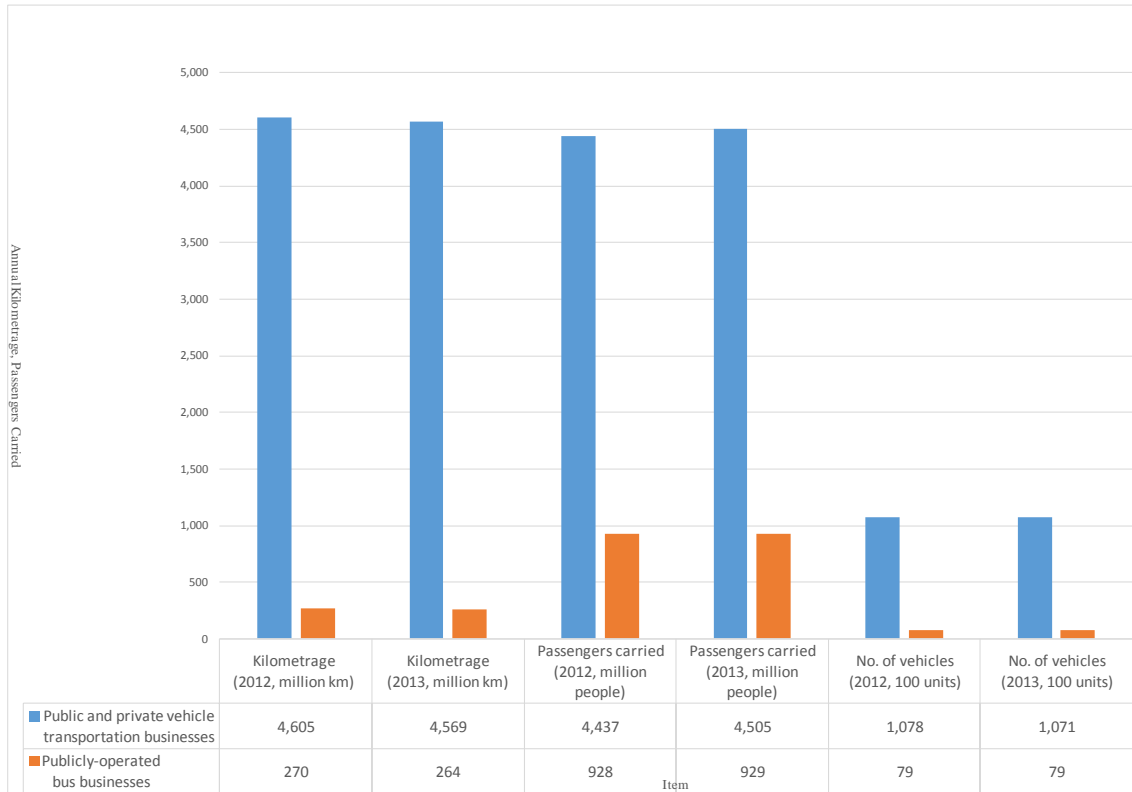
The number of publicly-operated bus businesses accounted for 30 businesses of the overall number of 1,991 bus businesses as of FY2013, with the composition ratio of only 1.5% (Figure 13).



<Figure 13> Number of Private Bus Businesses and Publicly-Operated Bus Businesses (General Shared Vehicle Transportation Businesses) (FY2013)

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

However, publicly-operated bus businesses had an annual kilometrage of 264 million kilometers, or 5.8% of the overall total, and an annual passengers carried of 929 million, or 20.6%, both with the large composition ratios relative to the number of businesses (Figure 14).



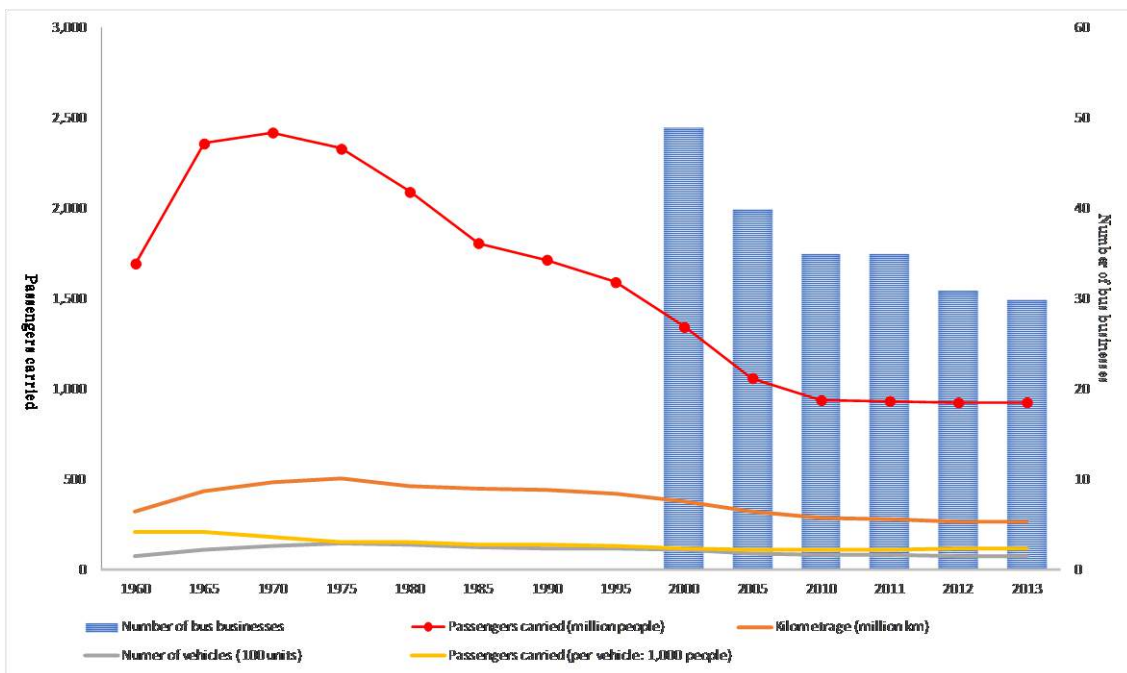
<Figure 14> Status of Publicly-Operated Bus Businesses in the Overall Public and Private Bus Businesses (FY2012, 2013)

Source: Japan Municipal Research Center ed., Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population), 2015.

While the number of publicly-operated bus businesses has continued to decline, two prefectures, nine government ordinance-designated municipalities, four municipalities hosting the prefectural government offices and other entities operate publicly-operated bus businesses, all with the relatively large transportation capacity as bus operators, as seen in the annual number of passengers carried.

d. Trends of the number of passengers carried

The number of passengers carried peaked out in FY1970 during Japan's high growth period (1954-1973), and has been on the rapid and consistent decline since the 1970s as the Japanese economy entered the period of stability and motorization progressed. The number of passengers carried in recent years has been less than half of the 1970 level. Amid this overall trend, however, the annual number of passengers carried in FY2013 reached 929 million, an increase of about 1 million over 928 million in the previous fiscal year (Figure 15).

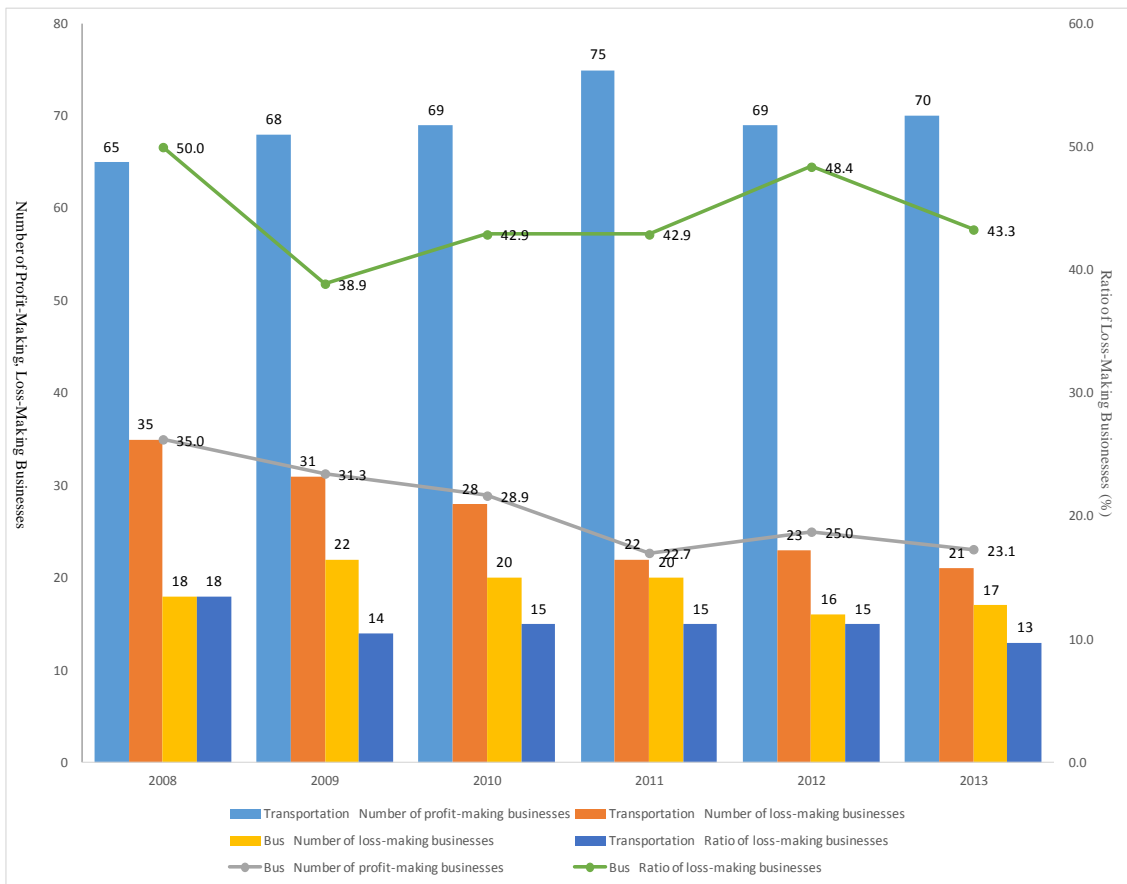


<Figure 15> Trends of Passengers Carried of Publicly-Operated Bus Businesses

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

e. Financial conditions

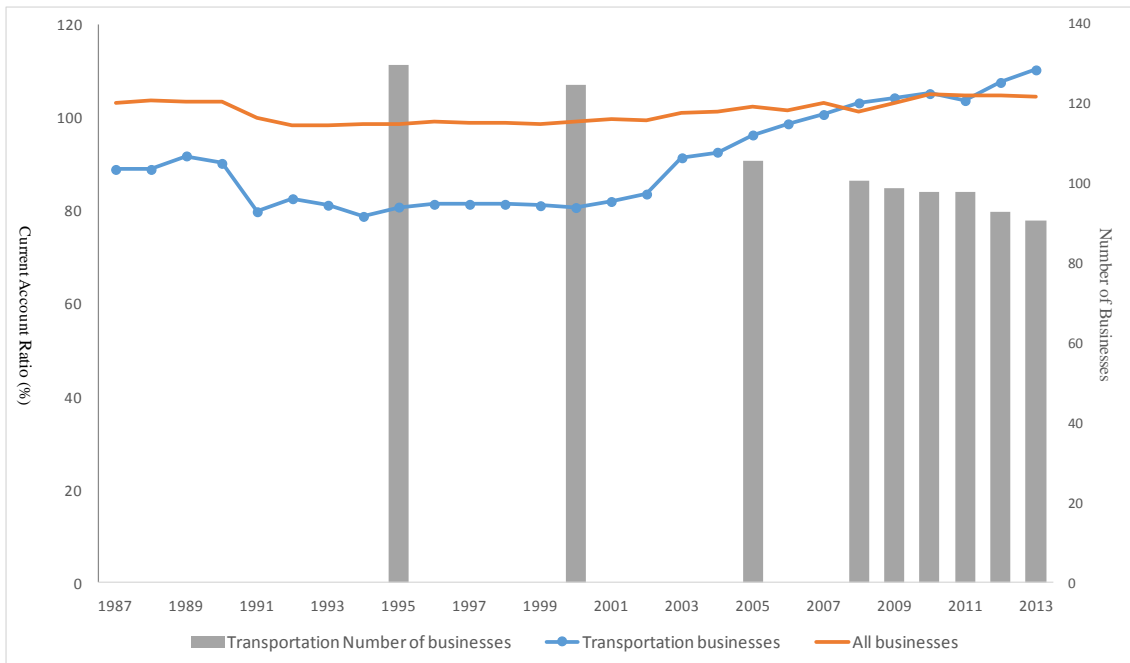
Looking at the trends of financial conditions of publicly-operated transportation businesses as a whole and publicly-operated bus businesses, the ratio of loss-making businesses was in the 20% range for transportation businesses as a whole and in the 40% range for bus businesses, underscoring particularly severe financial conditions for bus businesses. Moreover, as the number of businesses declined, the number of loss-making businesses also decreased, with this trend particularly conspicuous for bus businesses, pointing to the decreasing number of bus businesses against the backdrop of deteriorating profitability (Figure 16).



<Figure 16> Trends of the Number of Profit-Making and Loss-Making Transportation and Bus Businesses

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

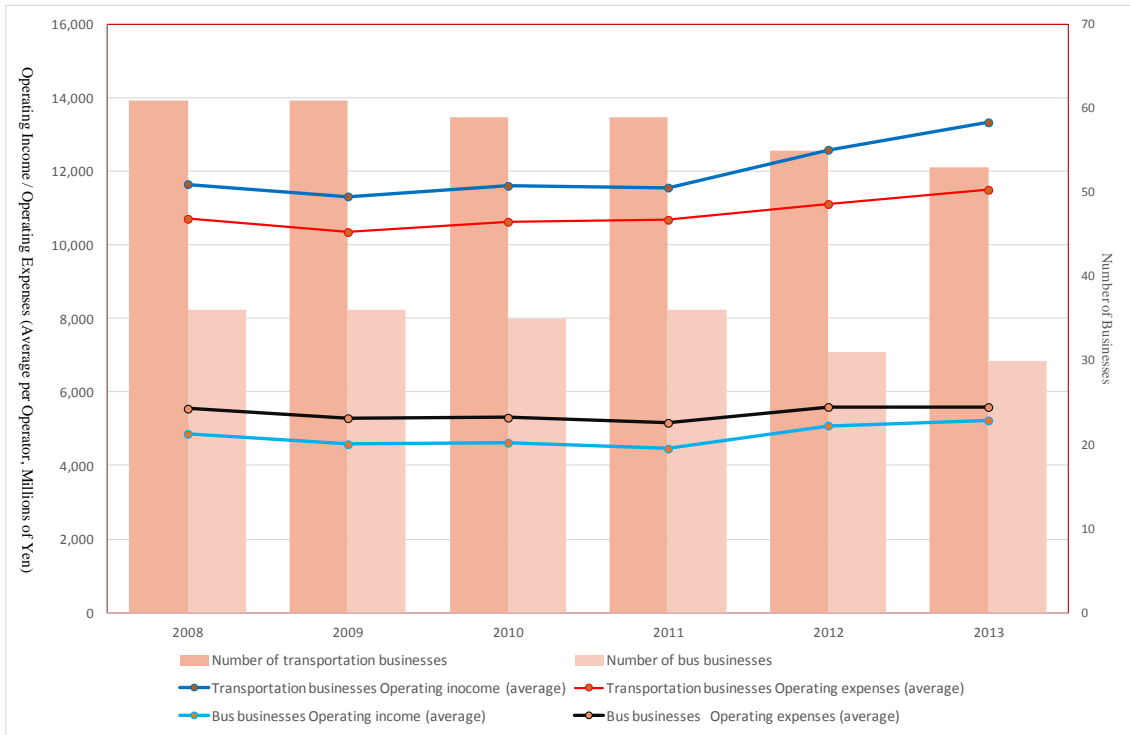
Looking at the ratio of current income to current expenses, or the current account ratio, of law-applicable enterprises, while the current account ratio of all businesses of public enterprises stayed largely flat, the current account ratio for publicly-operated transportation businesses increased in tandem with the drop in the number of businesses. In other words, this development shows that the financial conditions of publicly-operated transportation businesses as a whole are improving somewhat as a result of efforts to promote rehabilitation of transportation businesses, including the discontinuance of such businesses (Figure 17).



<Figure 17> Trends of the Current Account Ratio

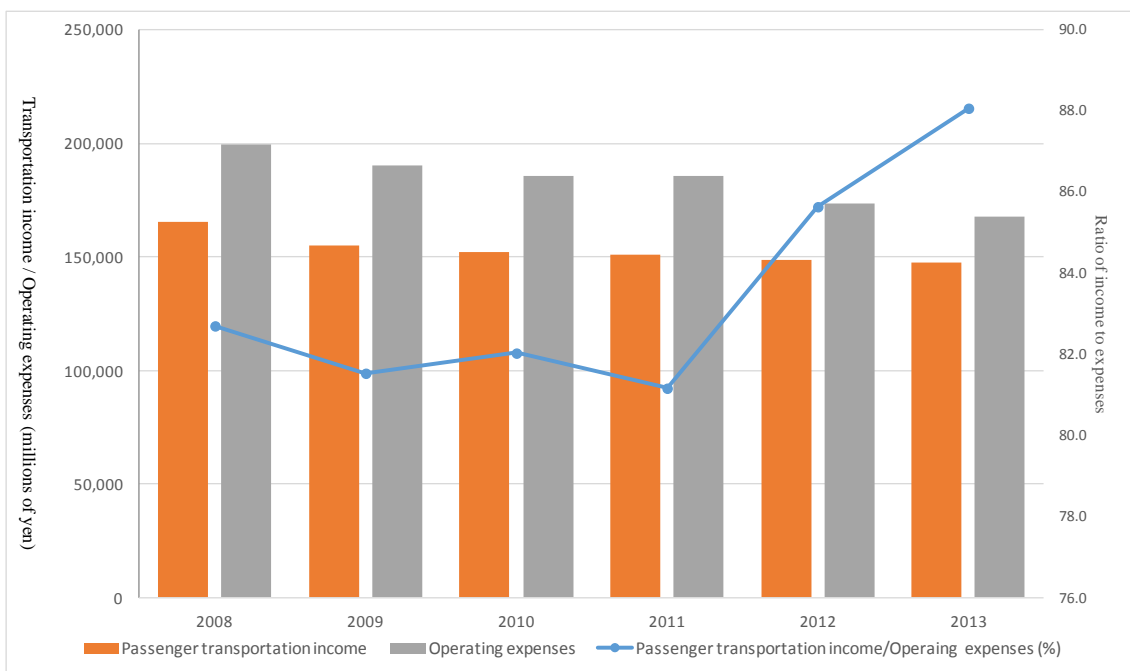
Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

Next, we look at trends of operating income and operating expenses of transportation businesses and bus businesses. While total operating income always exceeds operating expenses for transportation businesses, total operating expenses constantly exceed operating income for bus businesses, indicating structurally tough income conditions for bus businesses. In addition, particularly in bus businesses, as the number of businesses is gradually decreasing, operating income continues to decline slightly and operating expenses are curbed by a larger percentage, the income ratio (passenger transportation income/operating expenses) has been increasing since FY2012 (88.1% in FY2013) (Figure 18, Figure 19).



<Figure 18> Relationship between Passenger Transportation Income and Operating Expenses in Publicly-Operated Bus Businesses

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.



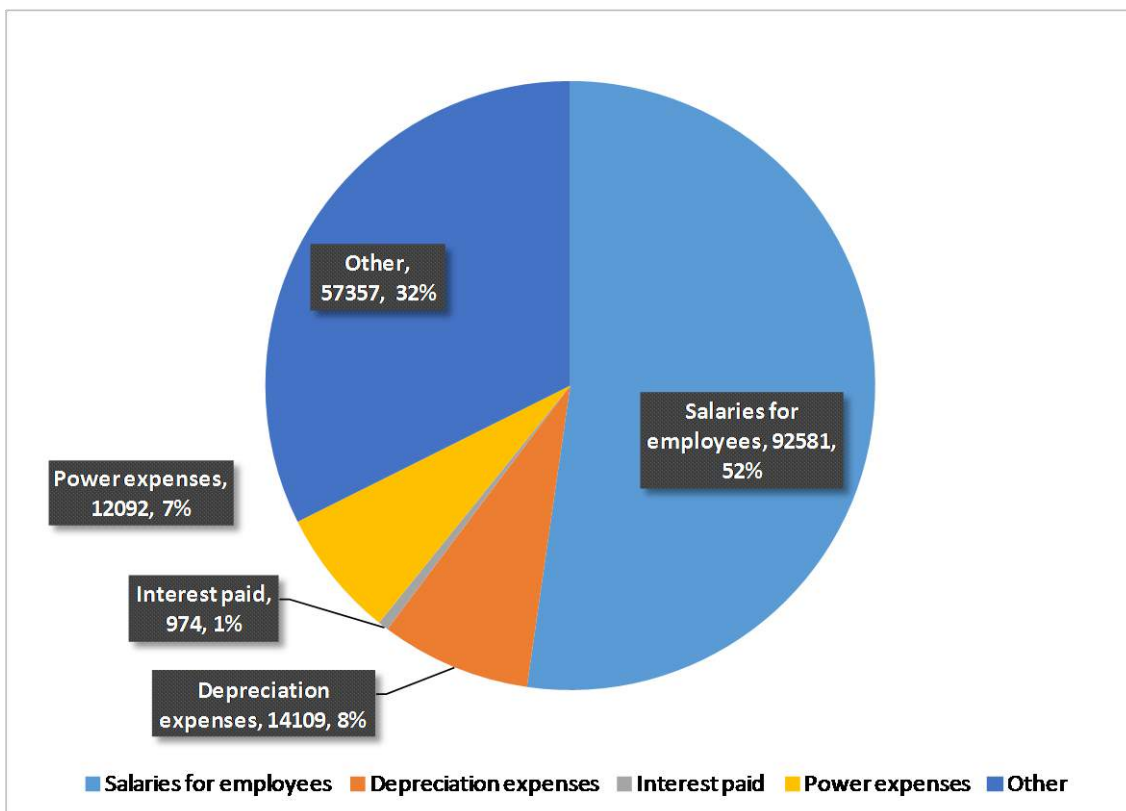
<Figure 19> Trends of Transportation Income and Operating Expenses in Publicly-Operated Bus Businesses

Source: Created by the author based on Local Public Finance Bureau, Ministry of Internal Affairs and Communications, ed., *Chiho Koei Kigyo Nenkan (Local Public Enterprise Yearbook)* (April 1, 2012-March 31, 2013) Volume 60.

As shown above, the balance of income and expenses has been improving for publicly-operated bus businesses as a whole as the number of businesses declined.

f. Expenses

Looking at the breakdown of expenses for publicly-operated bus businesses, depreciation expenses (8%) and interest paid (1%) were small as bus businesses do not require so large-scale assets as urban rapid-transit railways, while salaries for employees accounted for over half (52%) of the total expenses (Figure 20).



<Figure 20> Expenses of Publicly-Operated Bus Businesses (FY2012 Closing of Accounts)

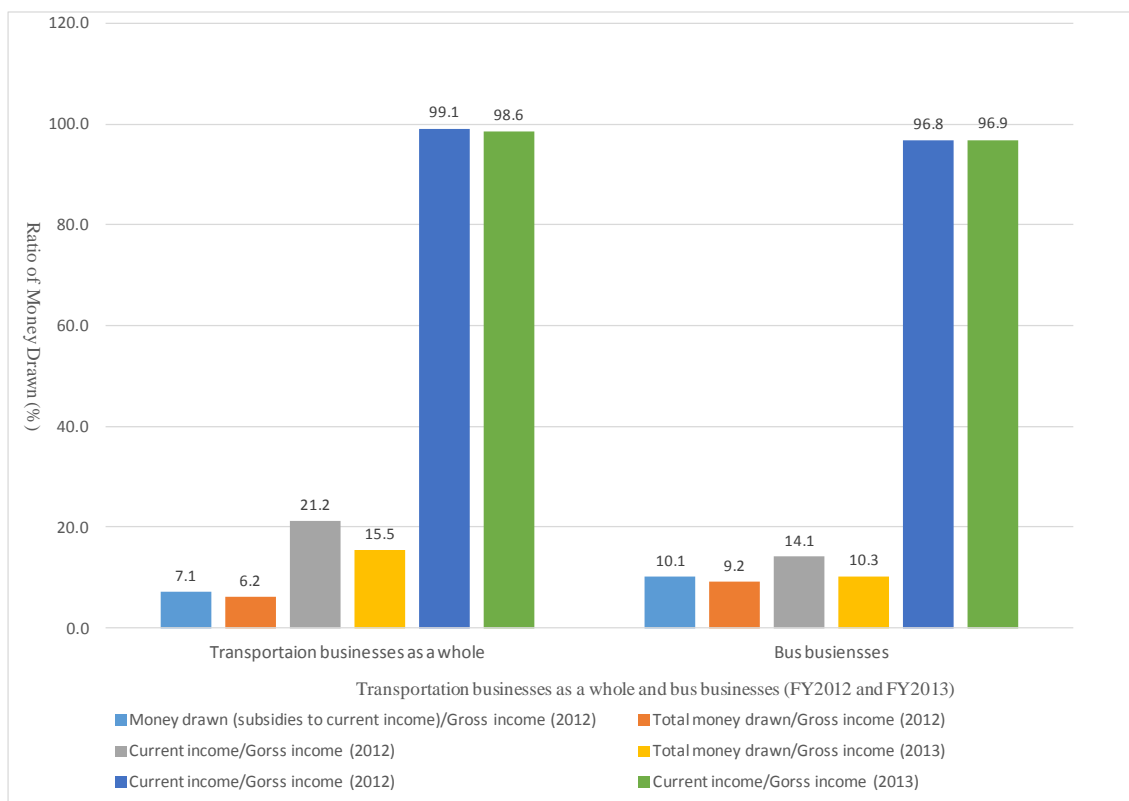
Source: Created by the author based on Local Public Finance Bureau, Ministry of Internal Affairs and Communications, ed., *Chiho Koei Kigyo Nenkan (Local Public Enterprise Yearbook)* (April 1, 2012-March 31, 2013) Volume 60.

Thus, the formation of efficient organizational structures becomes an important factor in

financial management.

g. Money drawn

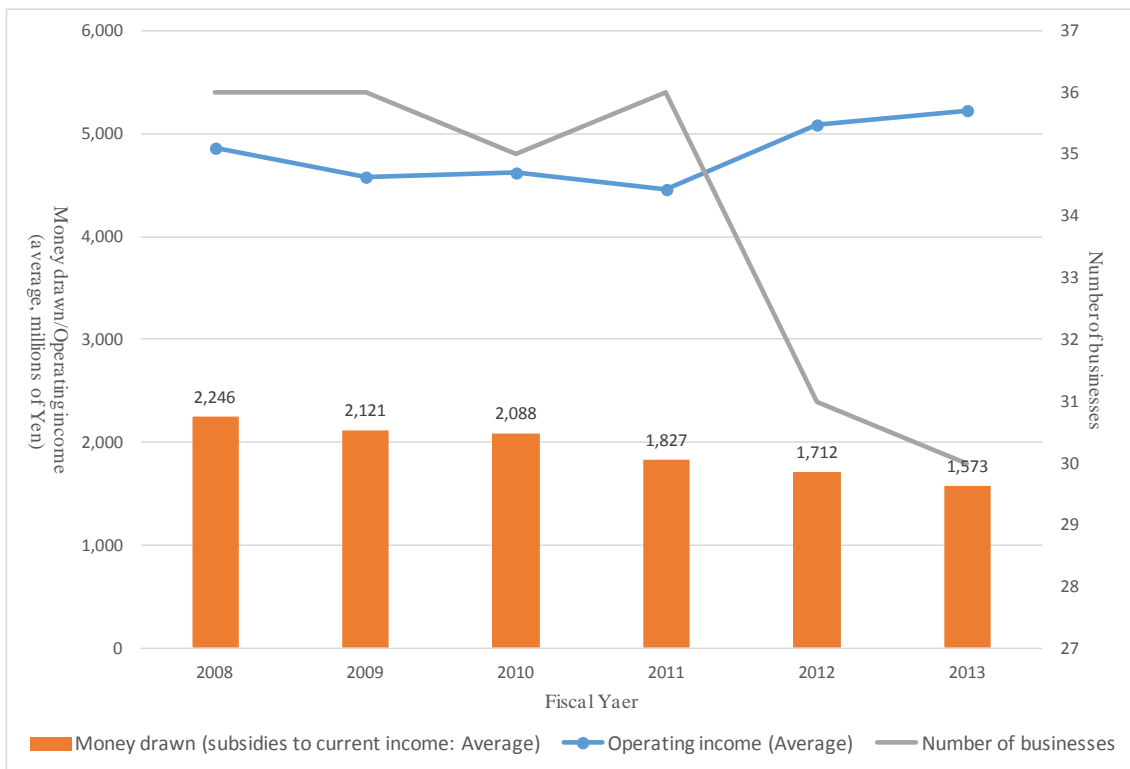
Funds paid out from general accounts to accounts for transportation businesses for the purposes of subsidization and/or loans are called money drawn. Comparison of money drawn between transportation businesses as a whole and bus businesses shows that the ratio of total money drawn to gross income for bus businesses, which do not require large-scale assets as do urban rapid-transit railway businesses, is smaller than that for transportation businesses as a whole (10.3% for bus businesses against 15.5% for transportation businesses as a whole in FY2013). However, as there are many cases where bus businesses require subsidies for operating expenses, money drawn as subsidies to current income is larger for bus businesses than for transportation businesses as a whole (9.2% for bus businesses against 6.2% for transportation businesses as a whole). As seen above, bus businesses, while they are not businesses that rely on large-scale assets in operating, are businesses that require a high level of financial assistance for operating expenses on a current account balance basis (Figure 21). In FY2013, the ratio of money drawn was lowered from the previous fiscal year as the ratio of current income to gross income increased.



<Figure 21> Money Drawn for Transportation Businesses as a Whole and Bus Businesses

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

Looking at the status of money drawn in recent years, money drawn as subsidies to current income has been held down since operating income (the average amount) has been increasing in tandem with the reduction in the number of businesses (Figure 22).



<Figure 22> Trends of Money Drawn for Transportation Businesses

Source: Japan Municipal Research Center ed., *Jinko Gensho Jidai ni Okeru Chiiki Kokyo Kotsu no Arikata (The Future of Local Public Transportation Systems in the Era of Declining Population)*, 2015.

As seen above, publicly-operated bus businesses, while keeping an important position in passenger vehicle transportation businesses, remain in severe financial conditions due to the significant decrease in passengers carried in recent years and are striving to improve management by reviewing their operations, including the discontinuation of businesses. In addition, since local governments that operate bus businesses also find themselves in tight fiscal conditions, money drawn as subsidies to current income has been held down in recent years, requiring publicly-operated bus businesses to manage to stay profitable.

2. Community Buses

(1) Appearance of community buses

Community buses are the means of transportation to secure transportation for communities in the form of shared transportation or private vehicle transportation for on-time, fixed route operations. There is no legal definition of community buses, but their characteristics can be summarized as follows:

- (1) Local governments are involved either directly or indirectly in the management of or

funding for their operations;

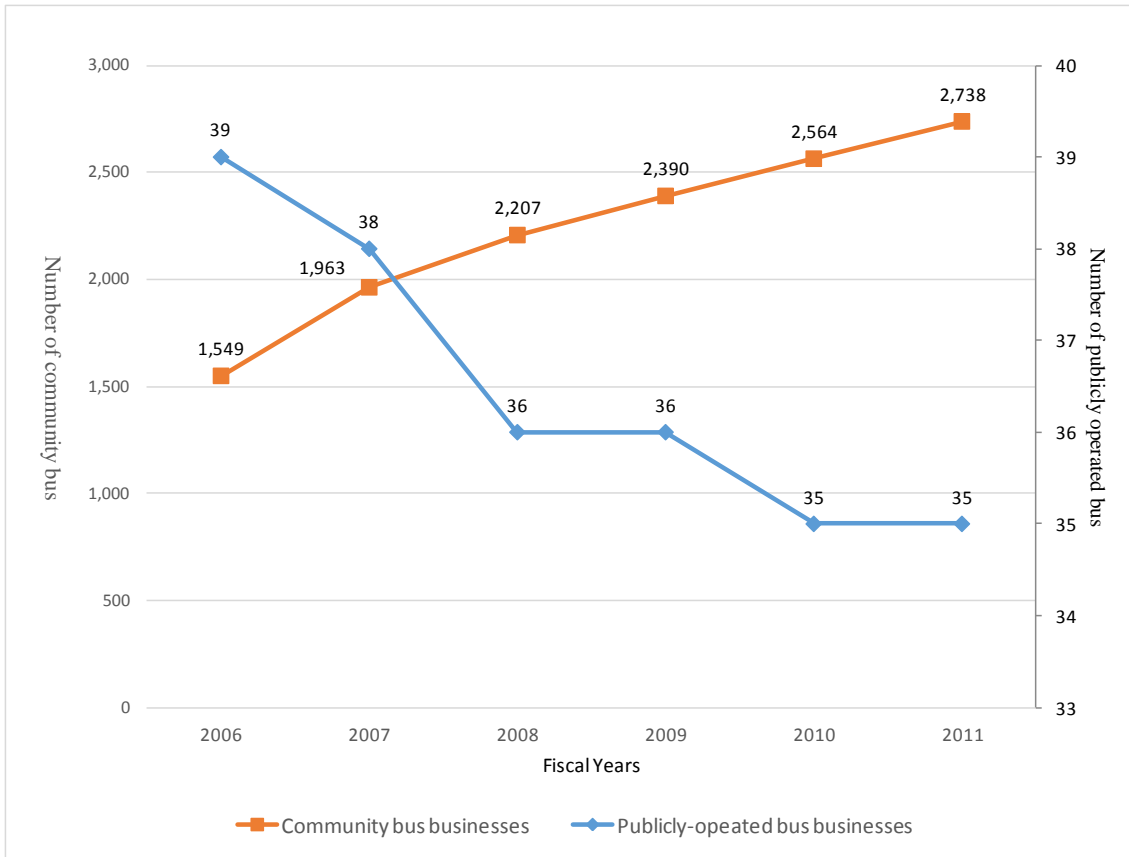
(2) They cover small-scale demand for transportation of communities that existing means of transportation cannot cover sufficiently;

(3) In many cases, fares are low and the source of funds are composed of fare revenues, subsidies by public funds and beneficiary charges; and

(4) They are granted positions (evaluation, image) as the public-interest means of transportation for communities.

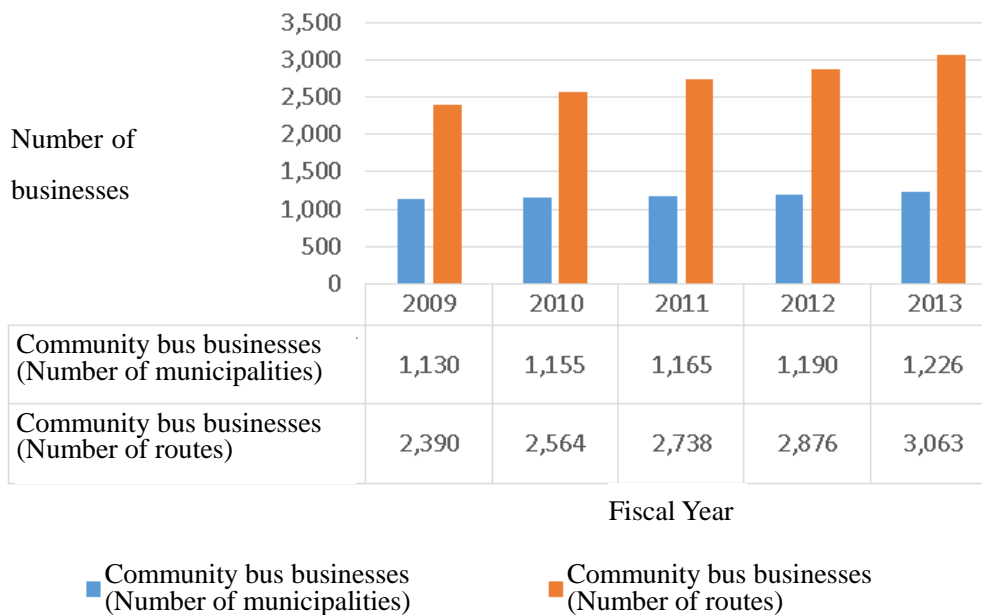
Mini buses introduced by Hino City in 1986 can be cited as the representative example of community buses in the initial stage of introduction. Mini buses were launched on the round-trip routes that cover the city offices, railway stations and residential areas, and attracted attention as the means of transportation covering areas with no public transportation services previously. Musashino City set the low and fixed fare of ¥100 for its "Mubus" introduced in 1995, and adopted the system under which the municipal government creates an operational plan and a shortfall of operating expenses of operators entrusted with bus operations is covered by public subsidies. This formula spread to other municipalities as a different way of getting local governments involved in both the planning and operations of public bus services than under a self-supporting system.

While the number of publicly-operated bus businesses has been on the gradual decline in recent years, the number of community bus businesses (the number of routes served) has continued to significantly increase from 1,549 businesses in 2006 to 3,063 businesses in 2013 (Figure 23). The number of municipalities where community buses are being operated has also increased consistently from 1,130 in 2009 to 1,226 in 2013 (Figure 24).



<Figure 23> Number of Publicly-Operated Bus Businesses (Law-Applicable) and Community Bus Businesses

Source: Created by the author based on materials of the Ministry of Land, Infrastructure, Transport and Tourism



<Figure 24> Trends of Numbers of Municipalities and Routes Covered by Community Bus Businesses

Source: Created by the author based on materials of the Ministry of Land, Infrastructure, Transport and Tourism

(2) Status under the Road Transportation Act

Under the Road Transportation Act, there are a number of ways to operate bus businesses in local communities. Prior to 2006, shared, chartered and private vehicle transportation forms were employed. However, the following significant changes have occurred in the environment surrounding local public transportation systems. Firstly, securing the means of transportation for livelihood emerged as a serious issue for local communities, with the declining population and the progress in deregulation prompting the withdrawals of route bus to create areas with no public transportation services. Secondly, demand for individual transportation services, which are different from route buses but have both punctuality (on-time operations in accordance with timetables) and fixed routing (operations based on systems), has been rapidly increasing from people with limited mobility, who find it difficult to use public transportation systems on their own due to the progress in the aging of population.

Under these circumstances, the following reviews were conducted under the partial amendment of the Road Transportation Act in 2006.

- (1) The scope of shared transportation businesses was expanded to include not only regularly-operated route runs but also irregular bus services on fixed routes, such as community buses, demand responsive transportation and shared taxis.

(2) An onerous passenger transportation system by private vehicles was created to pave the way for onerous transportation services by private automobiles operated by municipalities and non-profit organizations (NPOs), and school buses and other means of transportation necessary to ensure public welfare can be approved under the license system.

Bus businesses under the amended Road Transportation Act are first classified broadly into shared businesses and private vehicle transportation businesses, and are further classified into the four categories based on the form of operations: (1) publicly-operated bus businesses; (2) local independently-operated community bus businesses; (3) bus businesses operated by municipalities and NPOs pursuant to Item 2, Article 78 of the Road Transportation Act (hereinafter collectively referred to as “municipal community buses”); and (4) bus businesses operated for the purpose of securing public welfare pursuant to Item 2, Article 78 of the Road Transportation Act (hereinafter referred to as “public welfare buses”) (Table 5).

<Table 5> Classification of Bus Businesses under the Road Transportation Act (post-2006 amendment)

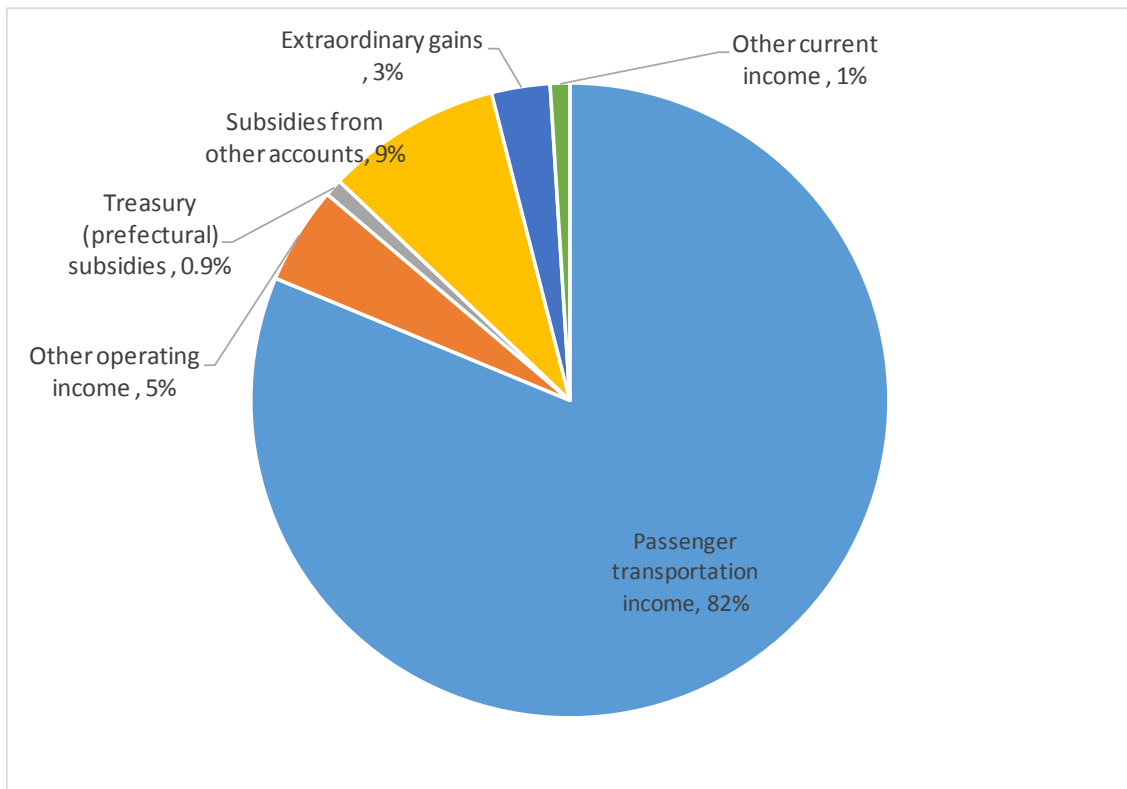
Type	Road Transportation Act, Article 4		Road Transportation Act, Article 78	
	Publicly-operated bus (in the form of public enterprise) Independently operated by the local government	Independently-operated community bus	Community buses operated by municipalities (Item 2, Article 78)	Public welfare bus Absolutely necessary to secure public welfare (for the limited areas and periods)(Item 3, Article 78)
Nature of project	Shared businesses		Private vehicles	
Operating entity (Specific project)	Local government	Community transportation operating council, and such Business operators, who are council members, operate community buses	<ul style="list-style-type: none"> · Municipalities or NPOs · Onerous transportation systems operated by municipalities (transportation in communities lacking means of transportation, welfare transportation by municipalities) · Onerous transportation in sparsely-populated areas · Welfare onerous transportation 	<ul style="list-style-type: none"> · Public welfare bus · School bus · Onerous transportation by visiting nursing-care workers
Operator	Local government	Business operators approved by the Minister of Land, Infrastructure, Transport and Tourism pursuant to Article 4 of the Act	Municipalities and NPOs registered with the Minister of Land, Infrastructure, Transport and Tourism	Operators approved by the Minister of Land, Infrastructure, Transport and Tourism pursuant to Item 3, Article 78 of the Act
Fare regulations	Set ceilings on fares, to be approved by the Minister of Land, Infrastructure, Transport and Tourism	When consensus exists among relevant parties in the community, the approval system is eased to the prior notification system	<ul style="list-style-type: none"> · Operators set fares, present them to the public · Within the limits of actual costs, and such · Local public transportation councils · Membership: local governments, district transport bureaus, experts, users, community residents, volunteer groups, relevant transportation operators, and such · Agreement on the need for onerous private vehicle transportation, consideration, and such 	

Source: Created by the author

As shown by the continuing uptrend in the number of community bus service routes, the diversification of business forms is expected to advance in both fields of shared businesses and private vehicle transportation businesses going forward.

(3) Composition of funds

Transportation businesses operated by public enterprises are operated on a stand-alone basis in principle, and fees form the core of operating revenues (Figure 25). Internal cross subsidization takes place, with profits of profit-making routes covering losses of loss-making routes, depending on profitability of each route. But room for such subsidization is shrinking because of declining profitability in recent years and the repeal of supply-demand adjustment regulations. As a result, trends in recent years of passenger transportation income and operating expenses of publicly-operated businesses show that the ratio of income to expenses stood at approximately 85% in FY2012, indicating that these businesses are not yet self-supporting (forecited Figure 19).



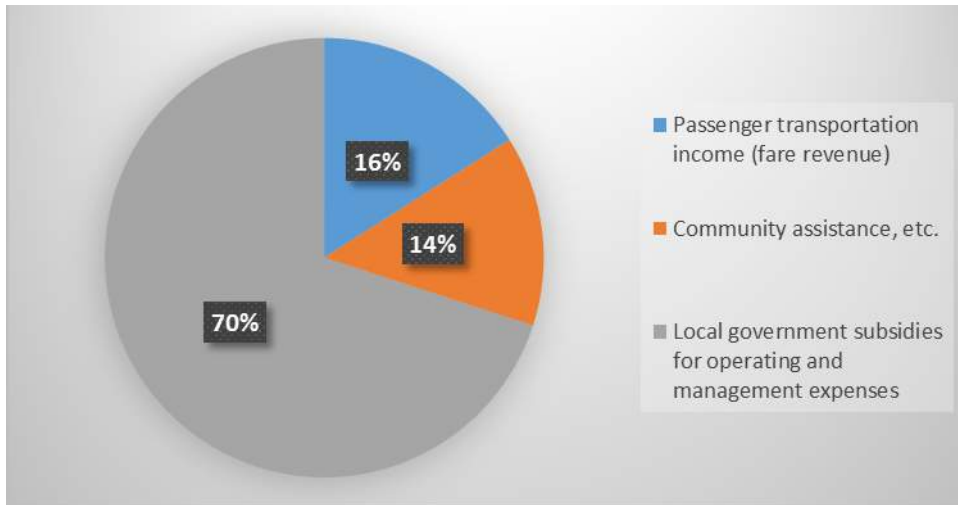
<Figure 25> Revenue Structure of Publicly-Operated Bus Businesses

(The Whole of Japan: FY2012 Closing of Accounts)

Source: Created by the author based on materials provided by Utsunomiya City

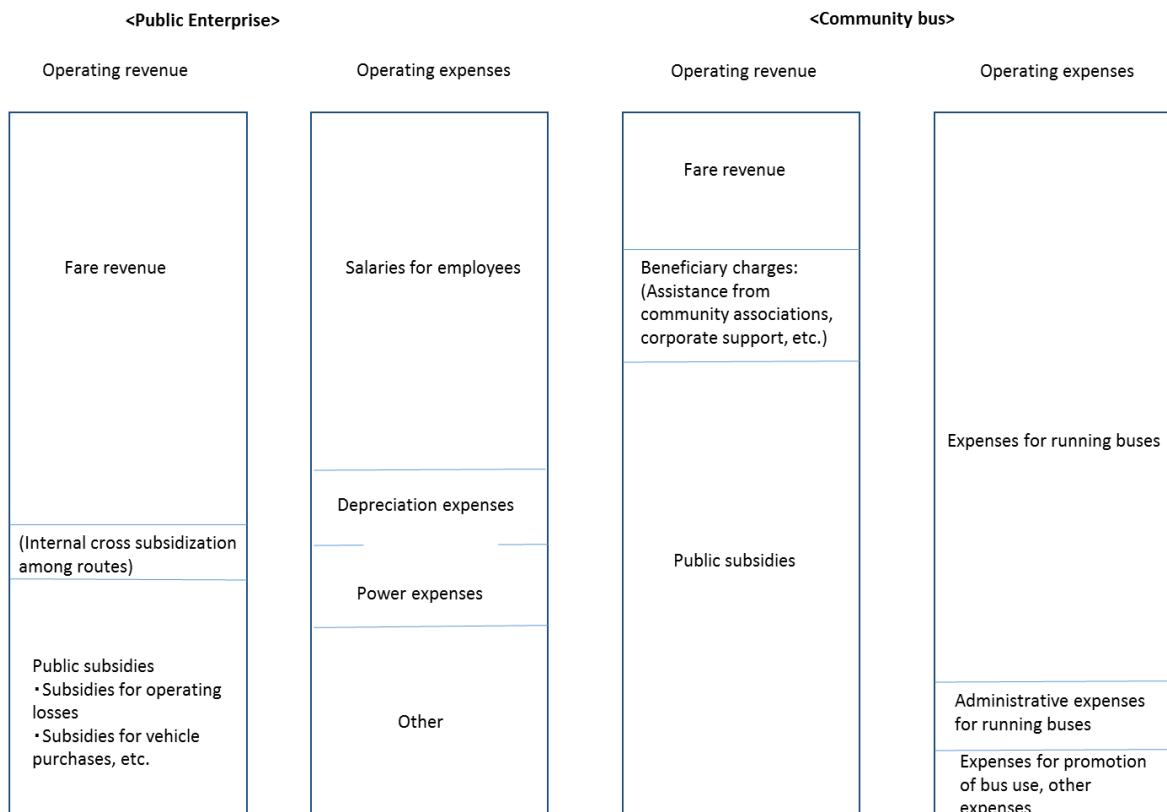
Thus, at present, publicly-operated bus businesses are trying to keep the balance between income and expenses by receiving public subsidies from other accounts of the national or local

governments in the form of financial aid for covering losses from money-losing routes or expenses to purchase vehicles.



<Figure 26> Revenue Structure of Community Bus Businesses (Utsunomiya City: FY2013 Closing of Accounts)

Source: Created by the author based on materials provided by Utsunomiya City



<Figure 27> Model Composition of Funds for Public Enterprises and Community Buses

Source: Created by the author

In the case of community buses, on the other hand, the formula in increasing use is to position assistance from community associations of areas where independently-operated community bus services are operated and supported by corporations as revenue sources in the category of beneficiary charges, and use them to seek the balance between income and expenses in combination with fare revenue and subsidies from local governments (Figure 26 shows an example of Utsunomiya City). Fares are considerations to be borne by users who receive the direct benefits of riding on community buses to move around, while beneficiary charges are burdens to be borne by individuals or corporations that receive the direct and indirect benefits from the means of mobility secured and public subsidies mean amounts of burdens to be paid by taxpayers. The combination of these revenue sources of different nature is designed to cover expenses of local public transportation services.

Figure 27 shows the composition of these revenue sources. As community buses have been increasing significantly in the number of businesses (forecited Figure 23), for publicly-operated bus businesses as a whole, not only businesses operated by public enterprises relying chiefly on fare revenues but also community bus businesses funded with fare revenues, beneficiary charges and public subsidies are increasing.

Then, what is the optimum combination of revenue sources for community bus businesses? As many community bus businesses adopt low and fixed fares (¥100 for all routes, for example) at the discretion of business operators, not based on the idea of total cost, the ratio of fare revenue to operating income differs considerably for each business. Furthermore, the extent to which beneficiary charges (assistance from community associations and support from corporations, and such) can be secured in operating revenues may be affected by social and economic circumstances in each community far more than fare revenue.

Considering these factors, it is self-apparent that the combination of revenue sources is rather diverse for each community and it is difficult to discuss the optimum combination of revenue sources indiscriminately. However, it is necessary to consider it together with what benefits individual publicly-operated bus businesses bring to communities they serve and to what extent local governments and local residents participate in their management.

3. LRT

(1) Overview

LRT (light rail transit) means the track-based transportation system that has remarkable characteristics in terms of the utilization of low-floor light rail vehicles (LRVs), easy boarding on

and exit from vehicles through improved tracks and stations, punctuality, swiftness and amenity. Based on the streetcar technology, LRT is attracting attention as a new medium-capacity transport system between mass transport systems and buses by improving services with the introduction of high-performance vehicles and exclusive track routes.

While the differences between LRT and streetcars are not necessarily clear in some respects, their respective characteristic features are compared in Table 7.

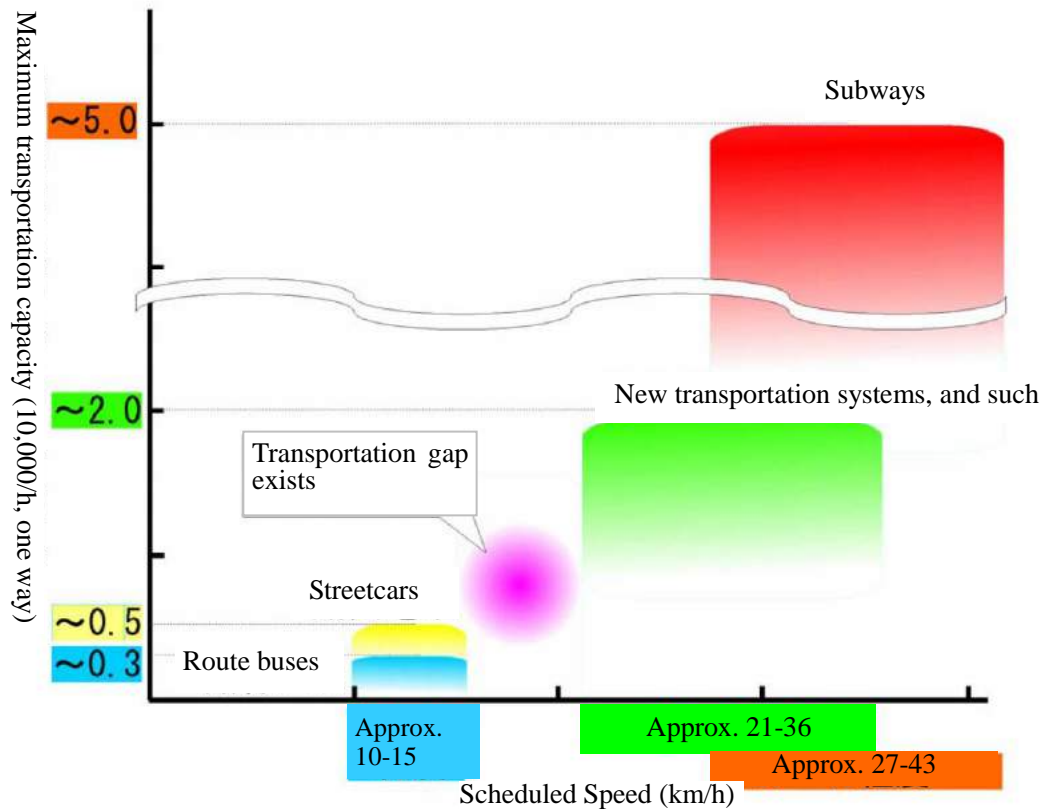
<Table 7> Comparison between Streetcars and LRT

	Streetcars	LRT
Transportation route	Operated on city streets, competing against public vehicles, in principle. Streetcars may be separated from other means of transportation by receiving preferential treatment or operating on exclusive tracks.	Operated on city streets, but basically operated on exclusive tracks separated from ordinary roads. LRT seeks efficient operations by partially going underground or operating on elevated tracks.
Operational characteristics	Punctuality and scheduled speed are significantly affected by driving conditions along the lines.	It is possible to secure punctuality and high scheduled speed by operating on exclusive tracks and using high-performance vehicles. The frequency of runs can be higher than streetcars.
Speed	Scheduled speed of approximately 15 km/h, and highest speed of approximately 40-60 km/h.	Scheduled speed of approximately 25 km/h, and highest speed of approximately 70-80 km/h (Some LRT has a highest speed of 100-125 km/h).
Vehicle formation	A vehicle has four to six axles and is 14 to 21 meters long. The passenger capacity is approximately 100-180 people, 20-40% of whom can sit on seats. The formation is basically one vehicle or two vehicles.	There are a variety of vehicles, with each vehicle having four to eight axles. Divided articulate vehicles are 20 to 30 meters long. The passenger capacity is approximately 110-250 people, 20-50% of whom can sit on seats.

Source: Created by the author

Japan's urban public transportation systems include railways, subways, urban monorails, new transit systems, streetcars and route buses, with each of them playing its part in the public transportation network. From the perspectives of maximum transportation capacity and scheduled speed, however, there exists a territory (the transportation gap) that does not necessarily require the

development of urban monorails or new transit systems but cannot be covered by route buses or streetcars either (Figure 28). LRT is counted on as the prospective new means of transportation that can fill the transportation gap.



<Figure 28> Transportation Gap

Source: City and Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism, *Machi Zukuri to Ittai to Natta LRT Donyu Keikaku Gaidansu (Guidance for LRT Introduction Plan Integrated with Community Development)*, October 2005 <http://www.mlit.go.jp/crd/tosiko/guidance/pdf/00all.pdf>

(2) Status of introduction

LRT is being utilized with many operators partially introducing LRT vehicles as part of their streetcar businesses. As of FY2012, out of 19 operators of streetcars in Japan, 13 operators have introduced LRT vehicles (Table 8).

<Table 8> Streetcar Operators and When They Introduced LRT Vehicles (As of FY2012)

Operator	Year of LRT Vehicle Introduction	Management Form
Kumamoto City Transportation Bureau	1997	Public
Tokyu Corp. Setagaya Line	1999	Private
Hiroshima Electric Railway	1999	Private
Hakodate City	2002	Public
Okayama Electric Tramway	2002	Private
Tosa Electric Railway	2002	Private
Iyo Railway	2002	Private
Kagoshima City Transportation Bureau	2002	Public
Manyo Line	2004	Third Sector
Nagasaki Electric Tramway	2004	Private
Toyohashi Railroad	2005	Private
Toyama Light Rail	2006	Third Sector
Fukui Railway	2006	Private
Sapporo City Transportation Bureau	—	Public
Tokyo Metropolitan Government Bureau of Transportation Arakawa Line	—	Public
Toyama Chiho Railway	—	Private
Keihan Electric Railway	—	Private
Keifuku Electric Railroad	—	Private
Hankai Tramway	—	Private

Source: Created by the author

(3) Characteristics of LRT

The following characteristics of LRT are drawing particular attention in urban transportation.

(1) Mainly operated on the road surface

As passengers can get on and off LRT from the road surface directly, it is easy to get on and off and highly barrier-free (physically accessible). And as LRT can also operate on the road surface like conventional streetcars, it is possible to cut back on construction costs compared with the new development of new transportation systems.

(2) Convenience that reflects new technology

Low-floor light rail vehicles have already been developed by substantially improving drawbacks of conventional streetcars and route buses such as “the difficulty in getting on and off due to high-floor entrances,” “too much noise” and “poor ride quality.” These vehicles are highly responsive to universalization, making it possible to get on and off in wheelchairs and raising in-vehicle mobility. In addition, enhanced power performance and the use of resilient wheels improved the ride quality and realized lower vibrations and noise.

(3) Flexible choice of track space

It is possible to choose from a variety of tracks in accordance with the conditions of urban areas, including partial multi-layerization, exclusive tracks separated from roads and through-services with suburban railways by making use of the characteristic trait of operating on steel wheels.

(4) Possibility of link-up with community development

LRT with excellent universality contributes to generating the liveliness of communities as an environment-friendly means of mobility and as the symbol of community with creative designs of vehicles and stations.

Given these characteristics, some cities are expected to newly introduce LRT as the means of public transportation for new community development.

(4) Conforming elements for community development in LRT

For example, in Utsunomiya City mentioned above, Japan Railways (JR) and Tobu Railway routes have been developed in the north-south direction, but no core railway tracks exist in the east-west direction. While bus routes are concentrated on the central urban area to the west of the station, an industrial park is located in the east. Such urban structure provide a backdrop for the development of a network-type compact city.

As seen above, diverse individual conditions exist behind the characteristics of each city. Given the characteristics of LRT as the means of medium-capacity transportation, LRT is considered to have the suitability for cities that have the following characteristics.

(1) There exists the potential pivot (transportation demand) that requires the new development of core transportation within a city (in the east-west direction, the north-south direction, and such);

(2) As automobile-related problems, such as traffic jams, are becoming serious, a city places importance on policies in favor of environmental amenity as well as policies oriented toward much less dependence on private vehicles, such as improvement of the environment for bicycles and walking;

(3) There exists prospective demand for medium-capacity transportation, such as the existence of a district of consumption above a certain level in the center of an urban area; and

(4) Citizens have relatively strong positive feelings on the external appearance of transportation facilities that is artistic, excellent in design and fit with the urban landscape.

In cities with these basic conditions, it is likely that demand for LRT as a means of transportation can be found going forward.

<Column> LRT Plan of Utsunomiya City and Haga Town

Utsunomiya City, under its “network-based compact city” scheme, is working to commence LRT operation in FY2016 by positioning it as the core public transportation system in the east-west direction.

Together with LRT development, Utsunomiya City is also holding consultations with bus business operators about the building of a network of public transportation systems to the east of JR Utsunomiya Station by linking LRT, buses and other community transportation systems.

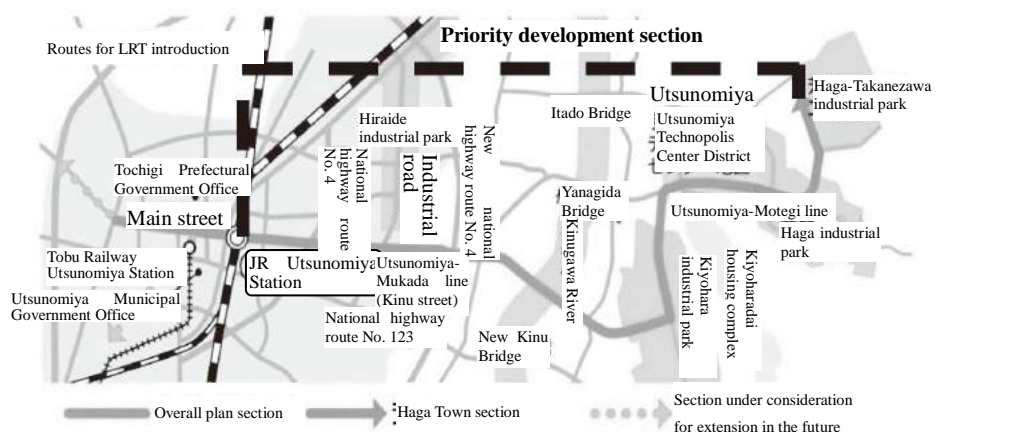


Figure 37: Planned Routes for LRT Introduction (East-West Core Public Transportation)

The proposed network plan zone is “around Sakura Dori Jumonji – Tobu Railway Utsunomiya

Station – JR Utsunomiya Station – Utsunomiya Technopolis Center District (for a length of about 15 kilometers),” which links the city center to the west of JR Utsunomiya Station to industrial parks and large-scale development districts on the left bank of Kinugawa River.

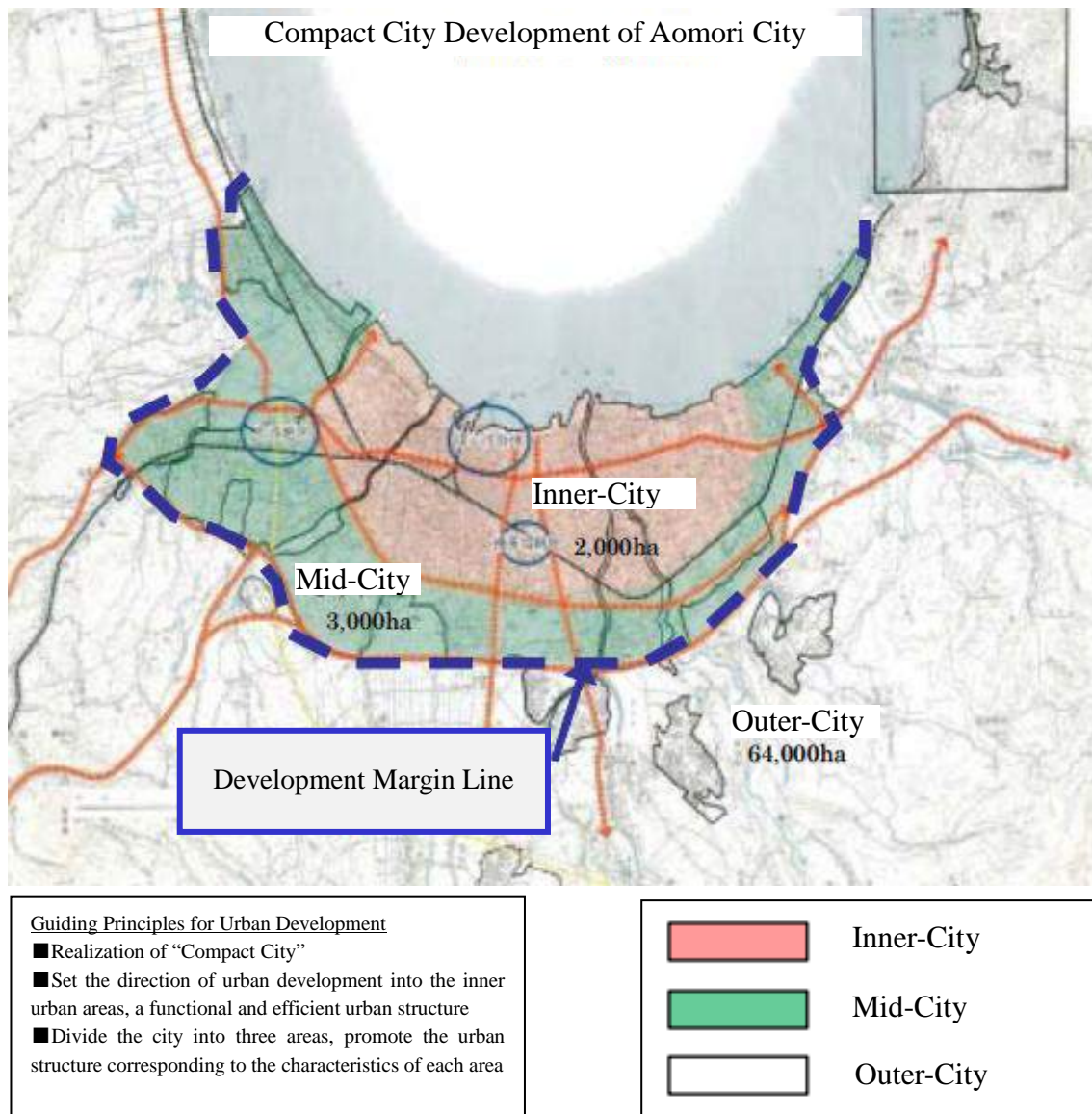
V Local Public Transportation Systems in Community Development

This chapter presents case examples where local public transportation systems are playing unique roles in community development.

1. Local Public Transportation Systems in Compact Cities (Aomori City, Toyama City)

(1) Aomori City

In Aomori City, the urban areas expanded in tandem with an increase in population, and the progress of motorization and the increased number of suburban commercial facilities came on top of this, causing the diffusion of urban areas and the hollowing-out of the city center. For this reason, Aomori City in 1999 adopted the “Aomori City Urban Master Plan,” centering around the ideas of restraining the disorderly expansion of urban areas and revitalizing the city center, and set forth the “formation of a compact city” as a guiding principle for next 20 years. As the basic idea of urban structure to form the compact city, the Aomori City Urban Master Plan mapped out three areas of “Inner,” “Mid” and “Outer” in a circular pattern from the city center, set forth land utilization layout plans corresponding to the characteristics of each area, and designed to promote the community development from the two perspectives of “restraints on the disorderly expansion of urban areas” and “downtown renewal (revitalization of the city center).”



<Figure 29> Compact City Development of Aomori City

Source: Aomori City Council on Comprehensive Urban Transportation and Aomori City, *Aomori-shi Sogo Toshi Kotsu Senryaku (Aomori City Comprehensive Urban Transportation Strategy)/Aomori-shi Chiiki Kotsu Sogo Renkei Keikaku (Aomori City Comprehensive Coordination Plan for Local Public Transportation Systems)*, October 2009, p. 9.

More specifically, the following development policy has been set for each area.

(1) Inner-City

- Includes urban areas existing since around 1970, aging dense urban areas and the city center.
- Areas of concentrated urban development where urban zones are to be restructured

(2) Mid-City

- Areas between Inner-City and Outer-City with low-rise residential districts, or prospective areas for supplying good-quality housing lots
- Concentrated urban zones with narrow community roads where there are many housing and commercial districts disorderly developed during the high growth period
- Implementation of land readjustment projects, which promote surface development with good living environment resistant to snow, and district plans and other methods of inducing desirable land use

(3) Outer-City

- Areas outside the outer circumferential line, which mainly coincide with the Aomori Expressway, where development is not allowed in principle, with efforts to be made to restrain urbanization and preserve the natural environment and the farming environment

Next, based on the basic policy for the development of transportation systems, policies have been set for the development of transportation systems for each area.

(1) Inner-City

- ◆ Seek to develop transportation systems, centering on public transportation systems
 - Seek to enhance the convenience of bus use through the review of existing routes and introduction of small loop-line buses.
 - Seek to enhance the convenience of railway use through the review of timetables and improvements to station facilities.
 - Seek to enhance the convenience of access on foot to public transportation systems as well as the convenience of bicycle transportation and vehicle transportation.
- ◆ In the city center, seek to enhance the convenience of coming to downtown by various means of transportation and develop the pedestrian and bicycle transportation environment for touring within the district.

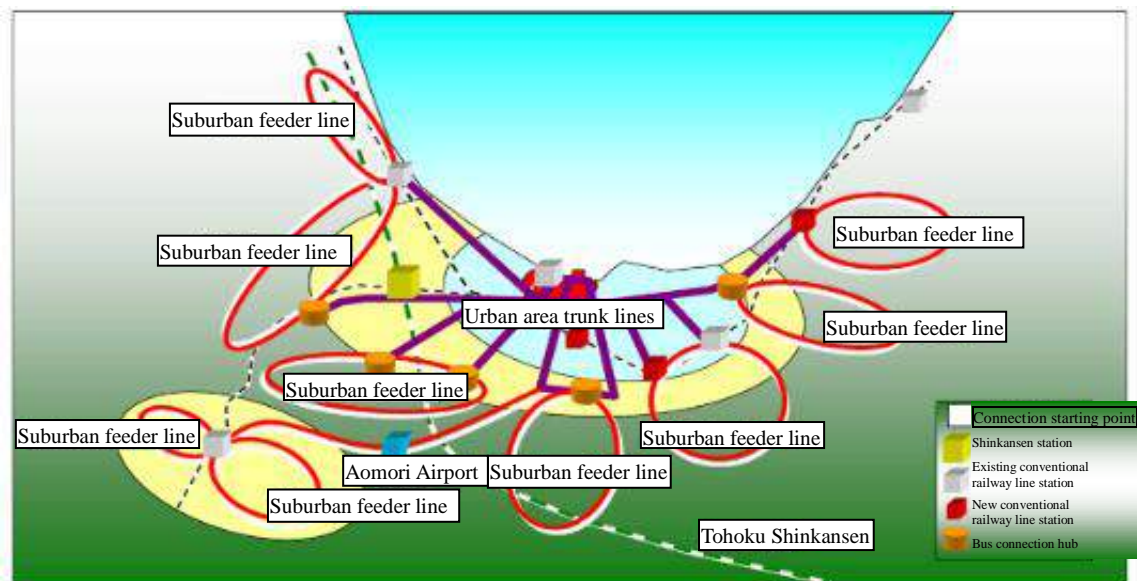
(2) Mid-City

- ◆ Seek to develop the transportation systems that promote the shift from private vehicle transportation to public transportation.
 - Seek to enhance the convenience of bus use in various districts by developing not only trunk line routes but also branch bus routes.
 - Seek to introduce a "cycle & bus ride system" by enhancing the convenience of access by bicycles to buses.
 - In areas surrounding railway stations, seek to utilize a "bus & ride system" by operating buses in linkage with railway services.

- Proceed with the development of skeletal roads, including an inner circumferential line under construction, for efficient bus operations.

(3) Outer-City

- ◆ Seek to develop the transportation systems that enhance the convenience of transferring between vehicle transportation and public transportation systems.
- Seek to utilize trunk line bus routes for major suburban spots (Aomori Airport, key housing complexes, and such).
- Seek to ensure the services of supplementary bus routes that connect to trunk line bus routes for other districts.
- Seek to utilize "park & ride systems" by making good use of existing parking spaces and developing new bus routes for districts where it is currently difficult to use buses.
- Proceed with the development of radial ring roads to seek the coexistence of vehicles and public transportation systems.



<Figure 30> Image of Local Public Transportation Systems of Aomori City

Source: Aomori City Council on Comprehensive Urban Transportation and Aomori City, *Aomori-shi Sogo Toshi Kotsu Senryaku (Aomori City Comprehensive Urban Transportation Strategy)/Aomori-shi Chiiki Kotsu Sogo Renkei Keikaku (Aomori City Comprehensive Coordination Plan for Local Public Transportation Systems)*, October 2009, p. 73.

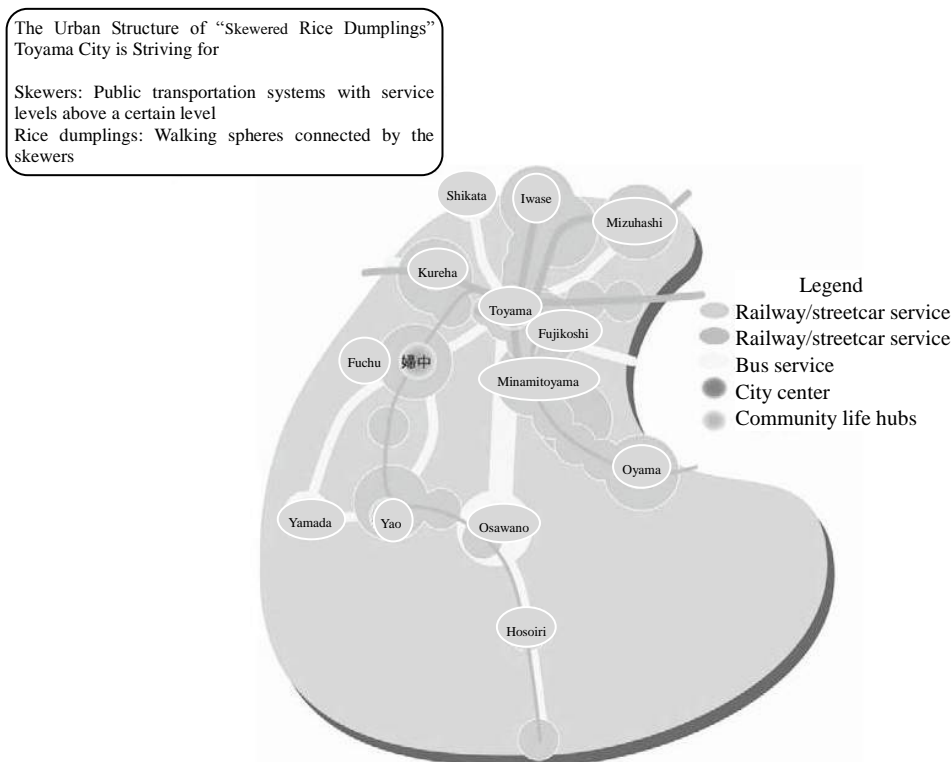
The Aomori City Urban Master Plan features the clear articulation of measures for local public transportation systems according to the characteristics of the three areas sectioned in line with the

compactification of city areas.

(2) Toyama City

In Toyama City, the population decline in the city center and the density decrease in urban areas are expected to progress going forward. On the other hand, the number of users of public transportation systems has been continuing to decrease, as the dependence on private vehicles remains high among citizens, with the ratio of private vehicles in the share of transportation standing at the highest level among Japan’s major urban areas.

Faced with these problems, Toyama City decided to seek to realize “the hub-centralized development of a compact city around public transportation by revitalizing railway tracks and other public transportation systems and concentrating a variety of urban functions, including residence and commerce, along the routes.” The guiding principles of this development policy is the idea of the “urban structure of skewered rice dumplings,” seeking to realize the urban life based on walking and public transportation systems via the clustered urban structure, with walking spheres described as “rice dumplings” and public transportation systems that connect the rice dumplings as “skewers.”



<Figure 31> Urban Structure of “Skewered Rice Dumplings” of Toyama City

Source: Toyama City, *Toyama-shi Kokyo Kotsu Kasseika Keikaku (Toyama City Public Transportation Revitalization Plan)*, March 2007, p. 35.

a. Portram

Toyama City launched the service of Toyama Light Rail in April 2006. The continuation of former JR Toyamako Line was endangered due to the falling number of users. The JR line's future was discussed in the course of development of areas around Toyama Station in association with the opening of Hokuriku Shinkansen, and then it was revived as LRT.

Toyama City decided to transform the Toyamako Line into a streetcar line. Subsequently, after considering its technological aspects, demand and financial balance prospects, the city set up a third sector entity, which launched the streetcar service as "Portram" in April 2006. While using tracks of the Toyamako Line as they were, Portram newly constructed 1.1 kilometers of tracks around Toyama Station and upgraded all vehicles, including the introduction of seven cars of new low-floor vehicles. Toyama Light Rail was established by the public sector and are operated by the private sector, with around ¥5.8 billion spent on the purchases of vehicles and development of tracks and stations subsidized by Toyama City, Toyama Prefecture and the State.

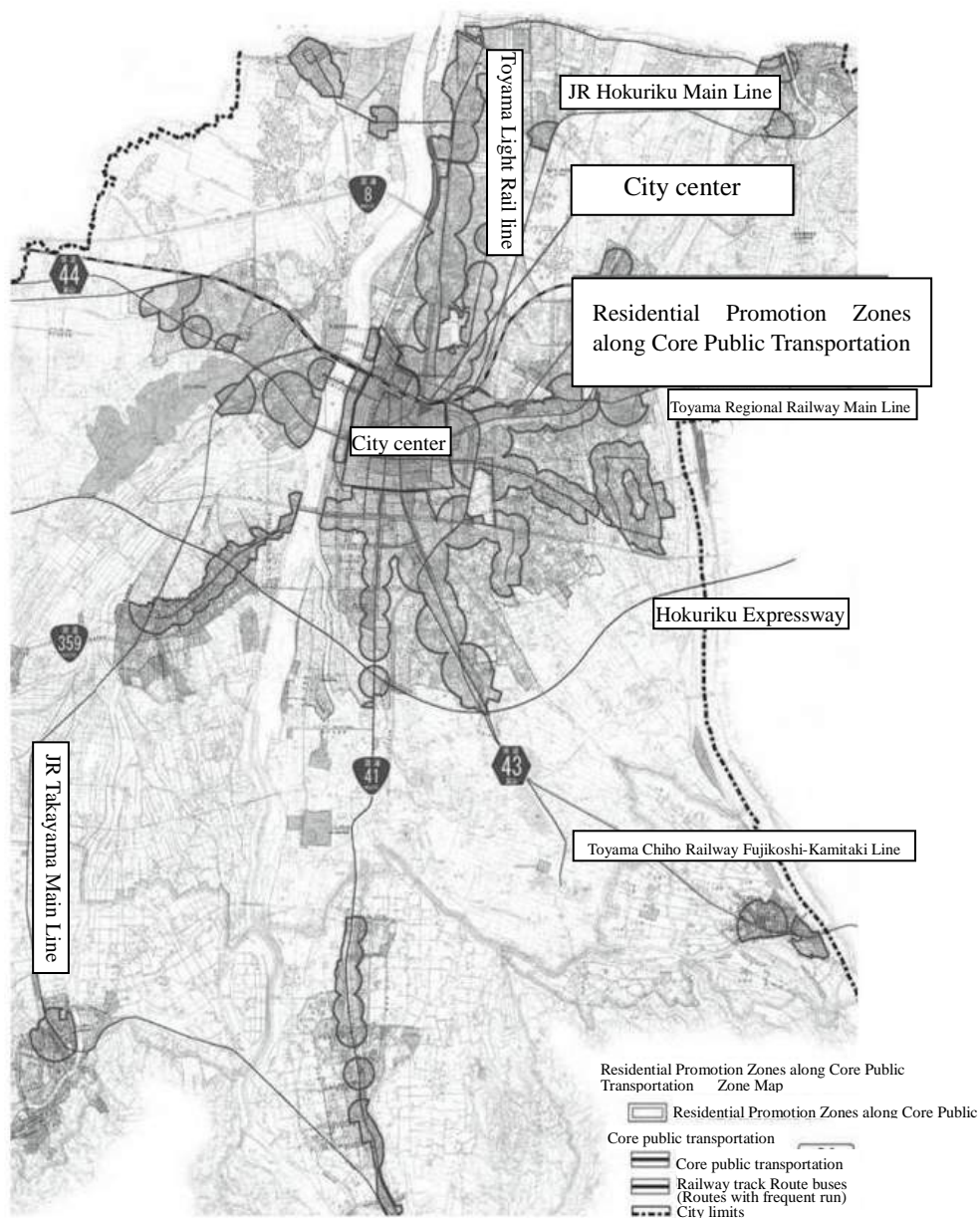
b. Centram

Toyama City extended and circularized part of intra-city track lines of Toyama Chiho Railway and began the service as a loop line, or "Centram," in December 2009.

As the number of passengers using the intra-city track lines had been declining year after year, Toyama City implemented projects to extend and circularize the intra-city track lines for the purposes of revitalizing the core urban areas and enhancing the accessibility of the city center. Centram created a new loop line of 3.4 kilometers by extending the existing tracks, and introduced three cars of new low-floor vehicles. Centram uses a two-tiered system for the first time in Japan under the 2007 Revitalization Act.

c. Promotion of residential housing

Toyama City has been promoting residential housing to realize the development of a compact city. In residential promotion zones along core public transportation systems, the city has been providing support to promote construction of apartments and housing acquisitions. In addition, it has been supporting and subsidizing housing construction, housing acquisitions and rents in the city center as "downtown residential housing promotion projects."



<Figure 32> Residential Promotion Zones along Core Public Transportation

Source: Materials provided by Toyama City



<Figure 33> Downtown Residential Housing Promotion Zone (Tsutsumi-cho Dori, Toyama City)

Photo: Japan Municipal Research Center

These projects are designed to promote residency in the city center and along local public transportation routes with public subsidies and their policy intentions are remarkably clear. Such projects may be affected by fiscal capabilities and other conditions, but are believed to present one direction in developing a compact city with maintaining the added value of urban areas.

2. Community Bus

As a case example of community bus businesses, the independently-operated bus service (the loop-line bus “Ayame-Go” in the Hoden District) in Ueda City, Nagano Prefecture, is presented in this section.



<Figure 34> Ueda City Hoden District Independently-Operated Bus “Ayame-Go”

Source: Excerpt from Support Center for Local Public Transportation Systems website, Ueda City Hoden District Independently-Operated Bus “Ayame-Go” (Case Example of Local Public Transportation Revitalization), <http://koutsu-shien-center.jp/jirei/index.php?act=pdfDownload&pdfNo=68>

(1) Background

In the Hoden district of Ueda City, there existed public transportation systems: the “Netsu Line” and “Hoden Line,” both the alternative bus services of abolished railway lines, and “Orange Bus” operated by the city. Since these bus services are operated on trunk line roads, there were many areas with long distances to bus stops, making the access to bus services difficult particularly for the elderly. Moreover, as a shopping mall and medical facilities are located in the Hoden district, there was strong demand for loop-line bus services that circulate within the district. Against this background, the Hoden District Development Association, a resident organization for the entire Hoden District, established the Loop-Line Bus Study Committee in April 2002.

(2) Deliberations

Since the Hoden District Development Association decided to establish the study committee in April 2002, a total of 26 meetings were held over the next three years. In the course of deliberations, the study committee conducted a number of surveys towards all households in the district to grasp a better understanding of their intentions about the need to introduce the bus service, the pros and cons and household burdens. As a result of these proceedings, the association reached the conclusion that the local loop-line bus service was necessary. In 2004 and again in 2005, questionnaire surveys were carried out to ask residents whether the loop-bus service was necessary even when the community had to bear burdens, and 68% of the residents replied the bus service

was necessary in the first survey and 76% did so in the second survey.

In the wake of these questionnaire survey results, the Hoden District launched trial bus runs in 2006. During the trial period, a questionnaire survey was conducted on the advisability of full-fledged operations, and based on the survey results, the association decided to commence the full-fledged bus service with each household contributing ¥1,000 annually. In implementing the full-fledged service, a revenue shortfall was covered by contributions from local corporations (about ¥800,000). The Ueda municipal government participated in the deliberations from the early stage as an observer and provided the association with information on similar cases in other areas.

(3) Services

The service operator is the Hoden District Loop-Line Bus Steering Committee, which entrusted existing transportation operators (taxi companies, and such) with operating a nine-seater jumbo taxi.

The bus service operates two days a week, for four runs a day, in accordance with the connecting Orange Bus service. Its fare is set at ¥200 per ride.

(4) Financial burdens

All households in the Hoden district (1,450 households in FY2011) contribute ¥1,000 a year, and these contributions cover 52% of operating expenses. In the questionnaire survey on the pros and cons of burdens on residents, “yes” respondents on the annual contribution of ¥1,000 were asked to sign the survey form in an effort to have the residents consider the issue as their own problem. All households that are members of the community association are required to make contributions, which collected as part of community association membership fees. When the households’ contributions and fare revenues are not enough to cover all the expenses, the shortfall is covered by “subsidies for operational expenses of local independently-operated buses, and such” created by Ueda City on the occasion of the introduction of this bus service. Ueda City pays out the subsidies to cover an equivalent amount of one-third of the bus operating expenses, up to ¥1 million, to livelihood-supporting transportation systems operated by communities independently.

(5) Outcome

The Hoden district loop-line bus service has seen the number of users gradually increase over the course of the trial and provisional operations to the full-fledged operations (Besides, the fare was raised from ¥100 to ¥200 per ride when the trial operations were upgraded to the full-fledged operations). The introduction of the livelihood-supporting means of transportation, which connects

to existing bus routes and covers areas finely, helped substantially reduce the zones without transportation and secured the means of transportation for people with limited mobility, such as the elderly and the physically-challenged. The residents have the very strong “sense of my bus,” and they are taking the initiative in activities to back up the bus service. For example, the “*Ayame-Go Dayori*,” a leaflet designed to make the bus service well-known and broaden the community’s understanding of the bus service, is being published by the federation of community associations, residents’ organization, and the Hoden District Loop-Line Bus Steering Committee.

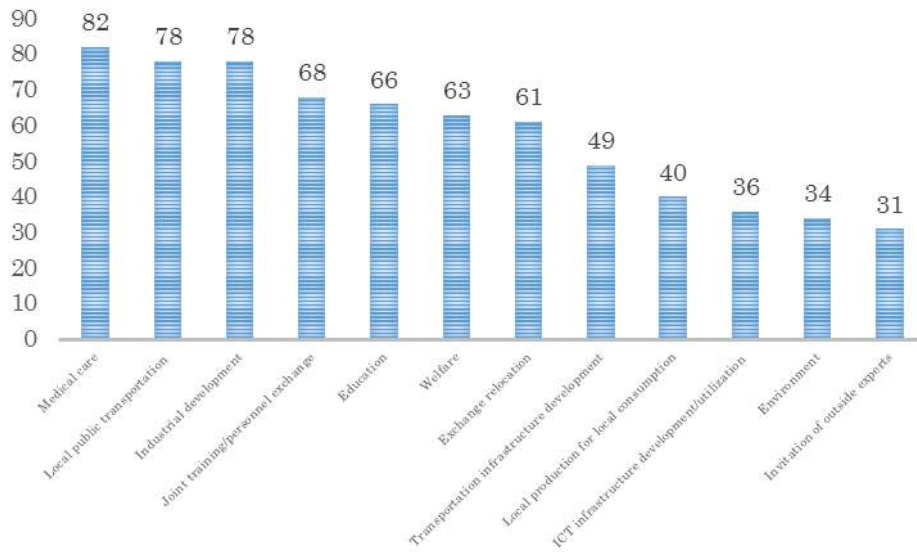
(6) Review

The Hoden district has had the Hoden District Development Association, a residents’ organization, for a long time, and the association functions as a forum to discuss issues of the community as a whole by going beyond the boundary of the community association. Through discussions at this forum, the Hoden district residents act proactively on whatever necessary for the community, and prior to the introduction of the loop-line bus service, they succeeded in inviting medical facilities and the shopping mall. The fact that the Hoden district had the residents’ organization that could have proactive discussions on the community’s issues at large and could proactively act to solve the issues, led by some residents with leadership quality is one of the factors that helped realize the introduction of the loop-line bus service that required contributions from local residents.

3. Community Development through Wide-Area Partnership

In 2008, the Ministry of Internal Affairs and Communications announced the Concept of Autonomous Settlement Zones. Under the recognition that in a society beset with declining population and the acceleration in the aging of population and dwindling birthrate, it is no longer possible to develop a full set of life functions, the vision seeks to develop an Autonomous Settlement Zone, with a core city and neighboring municipalities forming a regional zone, where the core city intensively develops urban functions necessary for the livelihood in the entire regional zone and forms partnership and exchanges with the neighboring communities.

Since 2009, the number of entities that started addressing the Concept of Autonomous Settlement Zones has increased significantly, and as of October 1, 2014, a total of 87 regional zones have been established under agreements on the formation of Autonomous Settlement Zones or as a result of the adoption of policies for Autonomous Settlement Zones. In such Autonomous Settlement Zones, local public transportation is positioned as a policy field to be addressed by many regional zones, next only to medical care (See Figure 35).

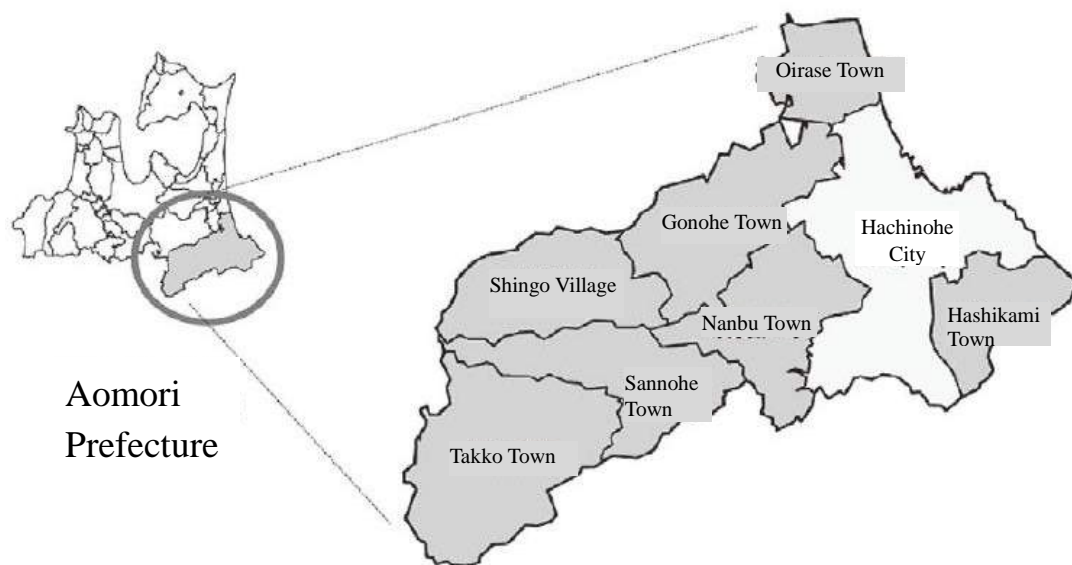


<Figure 35> Status of Work on the Concept of Autonomous Settlement Zones by Policy Field

Source: Created by the author based on materials of the Ministry of Internal Affairs and Communications

This signifies that the recognition has become widespread among local governments that attempts of a single local government have limitations in maintaining a transportation network amid the declining population and that efforts to maintain local public transportation systems through wide-area partnership policies have become conspicuous. The case of the Hachinohe regional zone is taken up below as a concrete example of such efforts.

The Autonomous Settlement Zone of Hachinohe Region is the regional zone that consists of eight municipalities, with Hachinohe City as the core city (the regional zone's population stands at 335,000). Regarding the links within the regional zone, of seven municipalities other than Hachinohe City, on average, over 20% of residents of four municipalities commute to Hachinohe City for work (the highest percentage is 57%), and the average ratio of inpatients who are citizens of the seven municipalities in Hachinohe City is over 30% (the highest percentage is 97%). Regarding consumption, six municipalities absorb over 50% of shopping goods (the highest percentage is 91%).



<Figure 36> Autonomous Settlement Zone of Hachinohe Region

Source: Excerpt from Ministry of Internal Affairs and Communications, *Zenkoku no Teiju Jiritsu Ken no Torikumi Jokyo ni Tsuite (Status of Work on the Autonomous Settlement Zones across Japan)*

On the basis of the strong links within the regional zone, in the field of local public transportation, the Hachinohe Regional Zone Public Transportation Plan Promotion Council was established. Also, in order to grasp demand for public transportation systems, a demonstration experiment was carried out on low-fare policies for wide-area route bus services encompassing a number of municipalities, resulting in the increase of users. Improvement of transferability between bus services has also become an important issue, and efforts are under way within the regional zone to set up signboards for smoother transfer (Table 9). The regional zone plans to continue these efforts in accordance with the Second Hachinohe Regional Zone Public Transportation Plan, adopted in March 2014.

<Table 9> Achievements of the Autonomous Settlement Zone of Hachinohe Region

[Achievements]

FY	Description
FY2010	<ul style="list-style-type: none"> ▪The Hachinohe Regional Zone Public Transportation Plan Promotion Council established ▪The planning and design of the scheme to rebuild the fare system carried out
FY2011	<ul style="list-style-type: none"> ▪The field survey on getting on and off carried out ▪The demonstration experiment launched on the cap fare of ¥500 for wide-area route bus services (Experiment period: October 2011-September 2013) ▪The demonstration experiment public relations project (flyers, bus body advertising, and such) carried out ▪The project to provide information on connection measures (development of connection guide boards, and such) carried out
FY2012	<ul style="list-style-type: none"> ▪The field survey on getting on and off carried out ▪Posters and mini-guides for the promotion of exchanges within the regional zone using public transportation prepared
FY2013	<ul style="list-style-type: none"> ▪The field survey on getting on and off carried out ▪Consideration of the continuation of the cap fares after completion of the demonstration experiment ▪Consideration of responses to the introduction of the consumption tax rate of 8% ▪Review of the Hachinohe Regional Zone Public Transportation Plan

Source: Hachinohe City, Second Autonomous Settlement Zone of Hachinohe Region Coexistence Vision, March 2014, p. 41.

Looking at the examples of efforts on local public transportation systems through wide-area partnership, it becomes clear that the wide-area partnership approach by local governments is effective in securing local public transportation particularly in the following points:

a. Wide-area policies for low fares

In many cases, high fares are cited as a key factor behind the declining use of buses in recent years. Many local governments are highly interested in low-fare measures to secure sufficient users for public transportation. It is difficult for a single local government to take effective steps regarding wide-area routes that cover a number of municipalities. However, it becomes possible to take full-fledged low fare measures if a number of municipalities cooperate in conducting a social

experiment on low fares.

b. Improvement of transferability

For bus businesses, improvement of transferability, such as the shortening of time required for transfer among bus services or between bus and train services and improving the display of signboards, is an important challenge. Improvements in connections among timetables and the display of unified signboards for transfer through wide-area partnerships can be very effective steps.

c. Establishment of the identity of local public transportation businesses

Another effective measure is to strive for the increase in users of local public transportation services by enhancing the name recognition of these services through unified logos for service routes and the holding of events via wide-area partnerships.

Going forward, it is hoped that efforts will be mounted in various areas about local public transportation systems through the Autonomous Settlement Zone and other wide-area partnership approaches.

IV Conclusion

In the Basic Policy for Overcoming Population Decline and Vitalizing Local Economy in Japan, adopted by a cabinet decision on June 30, 2015, “community development and regional partnerships” are positioned as one of the key policy measures. The Basic Policy provides that a variety of urban functions should be deployed so that they are accessible and highly convenient for residents and the "earning power" of communities should be enhanced by concentrating people and corporation in certain areas and realizing an "economy of density." It also states that, for that purpose, comprehensive efforts should be made to develop transportation networks with neighboring areas, including the compactification of cities and rebuilding of public transportation networks, in cooperation with relevant policy measures, such as the restructuring of public facilities, optimum use of state and public assets, medical care and welfare, and revitalization of city centers.

In seeking to develop compact cities, the policy is aimed to form transportation networks with neighboring communities, including the rebuilding of public transportation networks, and enhance the “economy of density” and the “earning power” by concentrating people and corporations in certain areas.

The social and economic conditions surrounding Japan's local public transportation systems are undergoing very rapid changes, including sharp population drops, deregulation, the increase in people with limited mobility associated with the aging of population and the increase in uninhabited areas. We must respond to these changes and consider to ensure sustainable means of transportation for communities as the ultimate challenges. To that end, we must pursue the two directions of the compactification of individual cities and wide-area partnerships with neighboring areas in accordance with individual community conditions.

In doing so, it is important to take heed of the following points:

(1) Given the diversification of business operators, find and foster diverse “supporters of local public transportation systems” in communities

In recent years, we are entering the era of diversifying operators of public bus services, such as publicly-operated bus services, independently-operated community bus services, community bus services operated by municipalities and public welfare bus services. In order to maintain local public transportation systems and ensure the means of transportation in communities under these circumstances, the framework of only local governments supporting them often faces difficulty in dealing with the situation. Thus, what is required is a framework that assumes a variety of business operators, not only local governments but also community councils, NPOs and other entities, and under such a framework, organizations of community residents, local corporations, NPOs, road transportation business operators and other entities should support local public transportation systems in such fields as business execution, planning and operations, public relations and fund contributions. It is therefore important to find and foster the supporters of this framework. To that end, it is effective for local governments to strive to revitalize community activities and make efforts to have relevant parties share the consensus about the need to secure the livelihood-supporting means of transportation in respective communities.

(2) Strengthen the linkage between community-development policies and transportation policies

It is of importance for local government to link city planning and community-revitalizing activities to transportation policies, instead of simply discharging their obligations passively. To that end, it is hoped that local governments will proactively and subjectively develop local public transportation services.

(3) Consider the appropriate composition of revenue sources according to business forms by

taking the new three elements of fare revenue, public subsidies and beneficiary charges into account

Regarding community bus services, it is often pointed out that these services include routes of little demand, in addition to the spreading patterns of low and fixed fares. In such cases, if operating losses from service routes with considerable low demand are automatically covered by public subsidies, it would give rise to the issue of “fairness within a community.” In order to eliminate such problem, it is of benefit to consider a combination of “fare revenue, beneficiary charges and public subsidies” as the composition of revenue sources. It is hoped that fairness within a community can be secured through a carefully developed formation of community bus routes by introducing beneficiary charges on top of fare revenue and public subsidies, thereby helping rouse the interest in bus operation policies among those paying beneficiary charges.

(4) Maintain transportation networks through effective use of the wide-area partnership approach evolving among local governments in recent years

As discussed earlier, there are expectations that wide-area low-fare policies, improvement of transferability and the establishment of community identities can be realized through the wide-area partnership approach.

It is hoped that the national and local governments, with the perspectives mentioned above, will establish a framework to support the “sustainable means of transportation for communities” by taking acute responses to changes that are taking place in the domain of local public transportation systems.

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[END TEXT]