

# A study on the level of service for local public transport to secure basic daily life

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## 1. Background and objective

Maintaining public transport services is not an easy task for local community, especially in rural areas. Residents who are unable to use private cars feel difficulty in taking opportunities for the minimum activities necessary for daily life, such as commuting to work or school, visiting shops, and going to the hospital. Faced with financial constraints, a question of where and to what extent public transport services should be secured and maintained is a significant concern for those responsible for local transport policy.

To determine the level of service for public transport that should be secured, it is necessary to define an ideal state of the local community and clarify the role of transport to achieve it. However, no sufficient methodology to this end has been established.

Accordingly, this project was implemented to create a method for determining the level of service for public transport that a local community should secure and to develop a methodology by which to formulate a local public transport plan as the basis of these services.

## 2. Methodology and field study

### 2-1. Significance of local public transport planning and necessity of planning methodology

The number of users of public transport has decreased along with the progress of motorization, and public bus services are no longer profitable in regions where car usage has become widespread. The fact that services essential to society are not sufficiently provided when left to private businesses suggests that local public transport should be regarded as social infrastructure.

What changes when securing and maintaining local public transport are treated as improvements of social infrastructure? The change is the resulting necessity of planning. For example, planning is implemented when developing social infrastructure, such as river and road improvements. The reason for implementing this planning is to demonstrate that the scheduled improvement will be efficient and effective, and to build social consensus, because the improvement of social infrastructure will be carried out by a public entity and funded by taxes. In other words, this is planning with a public intent. However, while there are business plans for local public transport decided by companies, almost no transport

plans are decided as social infrastructure improvement plans. One possible reason for this is a lack of planning methodology. Herein lies the significance of constructing a planning methodology by which to establish the level of service for local public transport in this project.

### 2-2. Framework

When determining the level of service for public transport, the level that should be secured cannot be decided unilaterally. Stipulations such as operating a certain minimum number of buses per day are not meaningful per se. Instead, the basic index is the amount of opportunities for activities that can be secured via the operating buses. Furthermore, in the event that the municipality improves the public transport service, the improvements need to be based on the decision of residents as both taxpayers and users of public transport. The budget constraints of the municipality are limited according to the tax burden of the residents, and so the administration should determine the kind of public services that are necessary and the level of increase in tax burden that residents would permit in return, reflecting this in the budget. In this project, we established a review framework for the local public transport plan as shown in Fig. 1, recognizing the importance of the idea that residents select the combination of opportunities for activities to be secured and the associated tax burden.

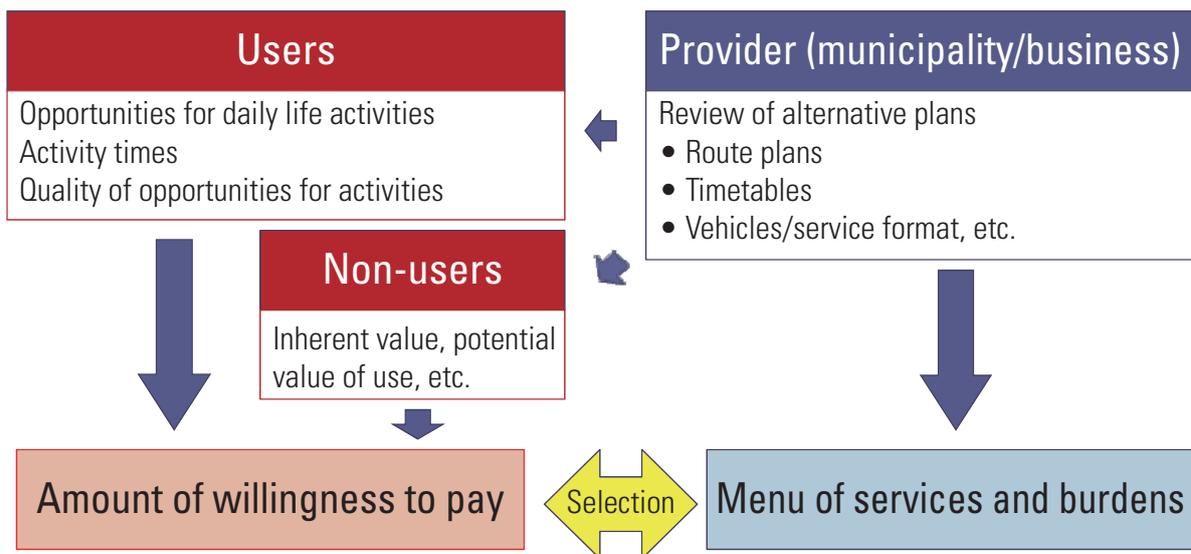


Figure 1. Review framework for the local public transport plan

### 2-3. Planning methodology for local public transport

#### (1) Overall structure

Local public transport planning is the selection and proposal of the most desirable public transport system for the region. To this end, three stages are necessary: (1) demonstrate the

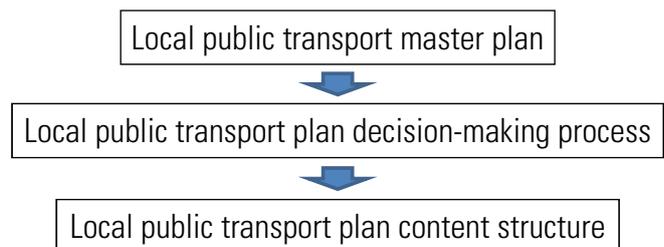


Figure 2. Overall structure of the local public transport plan

way of thinking by which the desired public transport system is selected, (2) select a desired public transport system, and (3) present the outcome of the selection. In this project, we proposed a planning system comprising the three elements shown in Fig. 2.

#### (2) Local public transport master plan

The local public transport master plan is the declaration of the intent to create a local public transport plan. Table 1 shows the necessity of planning and shows the stance of the municipality formulating and promoting the plan as policy.

#### (3) Decision-making process and structure of local public transport plan content

The process for deciding the local public transport plan is systematically organized so that all details that must be considered to formulate a better plan are presented. Here, it is necessary to list proposals for consideration in full and have the local residents select the best proposal according to the relationship between the benefit returned and the tax burden. The organization of the content of the local public transport plan (Table 2) presents a structure for when the results of the investigation carried out based on the decision-making process and the service provision plan selected are summarized as a local public transport plan. We therefore consider this to illustrate one of the standard forms of the local public transport plan.

**Table 1. Local public transport master plan**

1. Identification of the structure of exchanges among people in the local community
2. Image of a mobility plan for the people in the local community
3. Basic policy for securing public transport
4. Public body's declaration to promote public transport policy
5. Policy for the effective administration of public transport services
6. Appeal for the mobilization (cooperation) of local residents
7. Basic stance toward local public transport planning

**Table 2. Structure of public transport plan content**

1. Background to the plan
2. Verification of the local public transport master plan
3. Decision and zoning of service provision standards
  - 3.1 Framework of the plan
  - 3.2 Local characteristics
  - 3.3 Structure of the region and basic structure of the public transport network
  - 3.4 Opportunities for activities that should be secured
  - 3.5 Service provision standards for each zone
4. Service provision plan
  - 4.1 Transport services
  - 4.2 Form of services
  - 4.3 Route network plan
  - 4.4 Region-specific service plans
  - 4.5 Fare/local tax burden
  - 4.6 Service costs/improvement of efficiency
5. Public procurement plan
  - 5.1 Estimation and classification of profitable/unprofitable routes
  - 5.2 Selection of administration format
  - 5.3 Selection of transport operator
6. Public commitment

## 2-4. Field study

To verify whether the planning methodology proposed in this project is effective and suitable for practical application, and to identify issues and points for improvement, a field study was carried out in Hirakawa City, Aomori Prefecture. The research group provided expertise and gave technical advice to a

local colloquium, and the region offered progress and investigation results to the research group. At the colloquium, alternative plans were presented for the number of buses and the timetables necessary for daily life, the number of services operable within the limits of the subsidy, and the resulting passenger fares. A discussion was then held among the residents, who elected for a combination of a 200 yen fare and an increased number of services in comparison to the present 100 yen fare and 5 services. They went on to propose the scheduling of school buses and other such development.

In this way, the residents themselves were able to select the public transport services to provide opportunities for activities, confirming that the review framework was applicable, at least in this context. From the achievement of more favorable conditions for the residents than before and the greater ability of the municipality to provide public transport that meets the needs of the residents within the limits of financial constraints, the effectiveness of the review framework was also confirmed.

### **3. Conclusions**

In the event of the municipality participating in the provision of public transport services, the municipality cannot unilaterally determine the level of service that should be secured, and it is only possible to select the level of service by deciding a local transport plan. Through research, we proposed the construction of a methodology for local public transport planning and a method for selecting the level of service. It was then confirmed that these were effective and suitable for application in practice. Based on these results, the research team is compiling guidelines for local public transport planning.

After the Act on Revitalization and Rehabilitation of Local Public Transport Systems was enacted in October 2007, many municipalities began formulating public transport plans. Future tasks are improving the methodology proposed in this project through implementation and applying it broadly. It may also be necessary to go beyond the provision of public transport, and to consider a comprehensive support strategy that incorporates the policies of various administrative departments.