

# Current State of and Challenges in Support Policies for Activities by Local Residents, Etc. to Remove Snow from Roads

(Research period: FY2019–FY2021)

Construction Economics Division, Research Center for Infrastructure Management

Senior Researcher HARANO Takashi (Ph.D. Engineering) Head OMATA Motoyoshi

*(Keywords) road snow removal, resident participation, administration support*

## 1. Introduction

While the way snow falls has changed in recent years, with extremely heavy snowfalls occurring with greater concentration and for longer, the environment surrounding snow removal work has become more difficult for local construction companies and others responsible for removing snow from roads, such as through the deterioration of snow removal machinery and the aging of highly skilled operators. The MLIT-established Committee on Considering Measures to Secure Winter Road Transportation<sup>1)</sup> offered an opinion on mechanisms allowing local communities and private-sector groups to actively participate in snow removal (May 2018). For this reason, NILIM is investigating methods to encourage resident participation in winter road measures with the aim of building mechanisms allowing local communities and private-sector groups to actively cooperate in snow removal from roads.

In this study, we surveyed support measures for road snow removal activities by residents, etc. in regions with heavy snowfall, with the objective of providing information to local governments, local residents, and others as fundamental materials for investigating and encouraging such policies.

## 2. Surveying support policies for activities by residents, etc. to remove snow from roads

We conducted a survey on the current state of activities by residents and others to remove snow from roads and support policies by administrations. First, we identified 161 municipalities and 231 projects where we could confirm from the website of the relevant local government, existing literature, and other sources that the local government is providing support for local residents, etc. to remove snow from roads,

based on the survey results of the “Basic Survey of Heavy Snowfall Areas” (MLIT, conducted in 2020) covering local government areas designated as heavy snowfall areas or special heavy snowfall areas under the Act on Special Measures Concerning Countermeasures for Heavy Snowfall Areas (532 municipalities, as of April 1, 2021). We also investigated the weather conditions in the 161 municipalities from Japan Meteorological Agency observation data and the socioeconomic conditions, such as population, age structure, and financial situation, from materials from the Statistics Bureau in the Ministry of Internal Affairs and Communications and other sources, and summarized the relationships between the provision of support for resident snow removal activities and these weather and social data.

### (1) Provision of support by municipalities

Municipalities providing support for road snow removal activities by residents and others account for 30% in heavy snowfall areas (161 of 532 municipalities), and within these, 25% in special heavy snowfall areas (50 of 201 municipalities) and 34% in municipalities designated as heavy snowfall areas but not as special heavy snowfall areas (“non-special heavy snowfall areas”; 111 of 331 municipalities) (fig. 1).

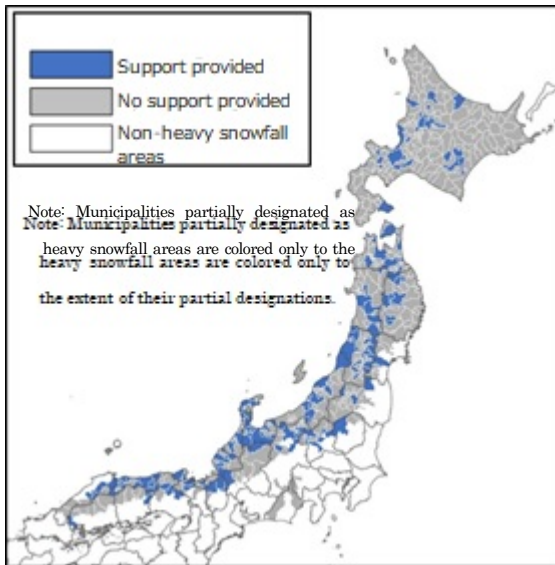


Fig. 1. Provision of support for road snow removal activities

Looking at the provision of support measures by prefecture, among the 14 prefectures that have at least 10 municipalities designated as heavy snowfall areas, Tottori (79%), Toyama (73%), Ishikawa (63%), Fukui (53%), and Yamagata (51%) have the greatest proportion of municipalities that provide support.

### (2) Content of support measures

The content of support for road snow removal activities by residents and others in heavy snowfall areas is most commonly “lending snowplows” at 16%, followed by “assisting with activity costs” (14%) and “support for snowplow purchases” (10%). Conversely, looking only at special heavy snowfall areas, “assisting with activity costs” is most common at 17%, followed by “lending snowplows” (12%) and “support for snowplow purchases” (5%) (fig. 2). We observed many cases in regions where residents do not own snowplows where lending machinery made it possible for resident participation to supplement the labor, and many cases in regions where residents do own snowplows where support is provided through aid for actual costs or supplying fuel.

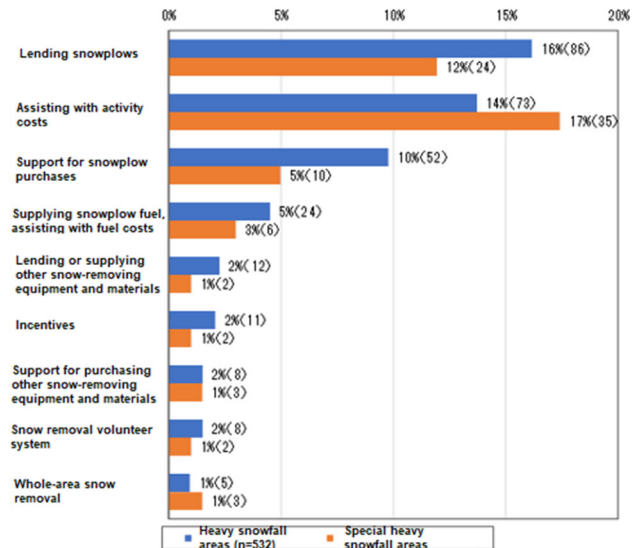


Fig. 2. Content of support for activities by residents to remove snow from roads

### 3. Relationship between support measures and social conditions

When we summarized the relationship with social conditions in the 532 municipalities in heavy snowfall areas and the 161 municipalities among them that provide support, we observed certain trends. Some of these are shown below.

#### (1) Population size in the local government area

Municipalities with larger populations have a higher proportion of support (fig. 3). As a factor, we observed cases where municipalities merged and the support system in a former municipality before the merger was inherited by the local government after the merger.

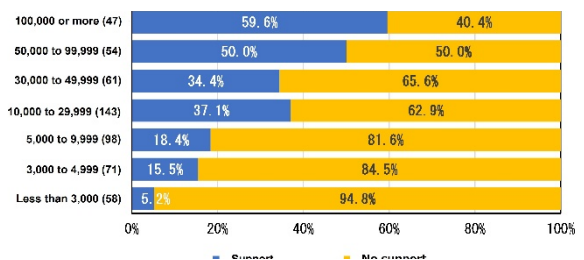


Fig. 3. Provision of support measures (by population) (2) Population structure in the local government area

Municipalities with a large population of working age, i.e., between 15 and 65, have a higher proportion of support (fig. 4). This suggests that support is provided for road snow removal activities in municipalities with many residents in the working-age generations, as they can take charge of resident snow removal.

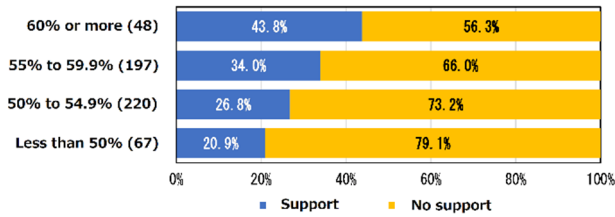


Fig. 4. Proportion of population of working age  
(3) Length of managed roads

Municipalities with greater lengths of road under their management have a higher proportion of support (fig. 5). In this situation, snow removal by residents and others supplements the parts that road administrators are not capable of clearing, and the administration provides support for that.

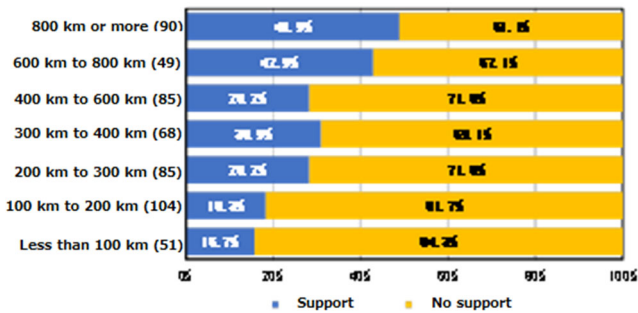


Fig. 5. Length of managed roads

#### 4. Conclusion

As a result of mergers of many of the municipalities that were designated as heavy snowfall areas or special heavy snowfall areas in the Heavy Snowfall Areas Special Measures Act, a number of local government areas have mixtures of designated and nondesignated areas and of heavy snowfall areas and special heavy snowfall areas. This leads to difficulty in accurately gaining information in the Basic Survey of Heavy Snowfall Areas, which is conducted according to the current municipalities, but we believe we have grasped certain trends. The support systems in each local government area are based on regional characteristics and historical practice, and it is possible to see settings where the need for review has arisen due to changes in social circumstances. We intend to organize the results of this survey as a technical note in order to create materials to contribute to this examination.

☞ See here for detailed information

1) MLIT: Committee on Considering Measures to Secure Winter Road Transportation