

Project name: Strategic Innovation Program (SIP) Phase 3: Construction of a Smart Mobility Platform /
Examination of the Welfare Effects of Mobility Support on Community Building and Activities

FY2024 Annual Report

April 2024



Trustee name:

Japan Automobile Research Institute (JARI)

Institute for Health Economics and Policy (IHEP) ,

Association for Health Economics Research and Social Insurance and Welfare

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Reduction in services that support livelihoods and dependence on private vehicles

- Depopulation makes it difficult to secure a certain scale of demand necessary to maintain daily life services, etc., forcing governments and businesses to expand their coverage areas.
- As a result, the reliance on the private vehicles will accelerate as costs increase and services are withdrawn due to the growth in travel time, making it difficult to maintain the area.

Decline in sustainability of community activities

- Declining population makes it difficult to continue activities in traditional units.
- They are required to cooperate in a wider range of activities, but the aging of the population makes it difficult for them to move around.
- Depopulation can cause destinations to disappear from the region and the purpose of travel itself to be lost.



Need to **restructure public transportation including community development**

Purpose of Research and Development

◆ For the re-design of the region

→ Realization of smart mobility services that are close to local activities and lifestyles

◆ Visualization of the value of mobility

→ Visualization of the value of means of transportation (=mobility) not only in terms of the “amount of travel” but also in terms of welfare factors



The project will be horizontally expanded to regions that are considering the introduction of new welfare and mobility services in the future by identifying **environmental factors and methods for introducing efficient and continuous mobility that achieves the well-being of residents.**

I-3. Overall overview of research and development

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Research and Development Theme: "Verification of the Welfare Effects of Mobility Support on Community Building and Activities"

Solving social issues such as medical care, declining birthrate, and aging population in the region, realizing well-being to maintain and promote people's health, including preventing frailty, etc.

Achieving well-being requires both mobility and creating a purpose for moving.

Realization of mobility considering local needs

- Restructuring of regional transportation
- Continuity of operations



Creating a purpose for moving

- Small base (consolidation of facilities and functions)
- Building a sustainable regional structure

R&D item "⑥ Practice of Tactical Mobility Re-Design"

Areas where community building and community activities are in progress

Yabu City:
Creating a small base
Niyodogawa Town:
Frailty prevention Activity: "Hatsurats"



Means of transportation to support community activities.

- Demand transportation
- Means of transportation by resident mutual aid, etc.
- Restructuring of public transportation

Knowledge Sharing and Collaboration

R&D item "⑱ Practical research (action research) to classify and identify areas utilizing local mobility resources and activities to disseminate and develop them.

Areas where mobility is not well utilized

- Community bus
- Demand transportation
- Transportation by Resident mutual aid
- Welfare transportation, etc.



Creating the purpose and location of the outing

- Frail prevention and physical fitness
- Creation of new opportunities to experience new things (eating together, watching movies, listening to music, playing musical instruments, etc.)
- Creating opportunities to connect in the community and beyond the community, etc.

- Restructuring of public transportation
- **Community Re-Design**
 - Two-base life
 - Building small bases
- **Establishment of a method for quantifying and qualifying the effects of ensuring mobility**

Demonstration in each field

- Effects of welfare measures, etc.
- **Quantitative effectiveness analysis** (analysis of data on nursing care needs and surveys on the actual status of daily living)
- **Qualitative effectiveness analysis** (interviews with community support coordinators, etc.)

The project will be expanded horizontally to regions that are considering the introduction of new welfare and mobility services in the future by identifying environmental factors and methods for introducing efficient and continuous mobility that achieves the well-being of residents.

Summarization and classification of requirements for mobility and community building based on regional characteristics

I-4. Surveyed area

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List of surveyed areas

Yabu City, Hyogo Prefecture (depopulated area type)

Population: 22,129 (as of March 31, 2022)
Area: 422.19 km²



The "Small Base" project is underway.

Niyodogawa Town, Kochi Prefecture (mountainous area type)

Population: 4,685
(as of the end of February 2023)
Area: 333.00 km²



Resident-led flail prevention activities underway.

Ikeda Town, Hokkaido (depopulated area type)

Population: 6,037 (as of September 30, 2023)
Area: 371.9 km² (371.9 square kilometers)



Shared-ride taxis and community buses
are in operation.

Matsudo City, Chiba Prefecture (metropolitan area type)

Population: 497,525 (as of September 2023)
Area: 61.38 km²



Green-slow mobility is operated by town
and neighborhood associations.

Kannami Town, Shizuoka Prefecture (regional city type)

Population: 36,702 (as of October 2023)
Area: 65.16 km²



Elderly welfare transportation system in
operation

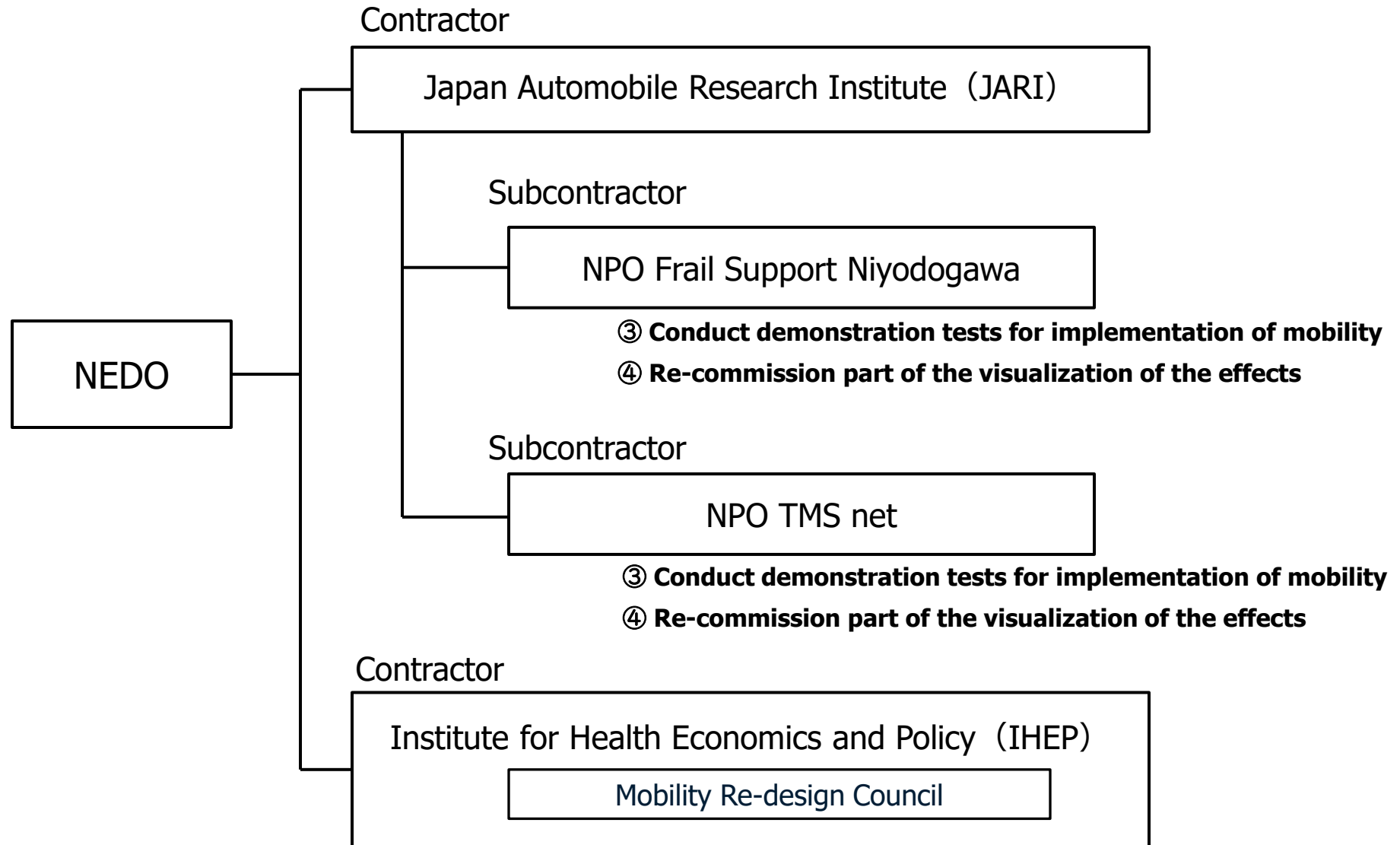
Fujieda City, Shizuoka Prefecture (regional city type)

Population: 141,497 (as of August 31, 2023)
Area: 194.06 km²

Outing support system, etc., in operation



Maps of each area are from Map-It (c)



JARI Activities

Ensure access to a "small base"
※ Part of the project was implemented as a co-creation project (second year following last year).

- ◆ **Exchange of opinions with residents on the necessity of traffic reorganization in the Sekinomiya area.**
 - Promote understanding of the need for conversion to demand transportation based on the current state of public transportation and other factors, and share an image of the functions and services of transit hubs (mobility hubs).
- ◆ **Construction of a reservation and reception system for demand transportation.**
 - Establish a reception system using LINE to test the feasibility of using ICT in areas with a large elderly population.
- ◆ **Collection of basic data for the implementation of demand transportation.**
 - Conduct two types of questionnaires, post-ride (users) and after-the-fact (distributed to all households), to collect data on fee structure, meeting point settings, etc. for future social implementation.



□ Output at Stage Gate

"Building a Model for Sustainability" based on the results of the Demand Transportation Demonstration Experiment.

- ✓ Business model (operating parent company and costs)
- ✓ Systematization (study of systems commensurate with the number of users and revenues)
- ✓ Functions and services of transit hubs (requirements study of mobility hub)
- ✓ Integration with other transportation services **such as school buses**

❑ Background

- Need for a means of transportation that can fully function as a "small base" and contribute to improving the well-being of local residents.

❑ Objective

- Improve convenience and continuity by restructuring public transportation around "small base".

❑ Details of implementation

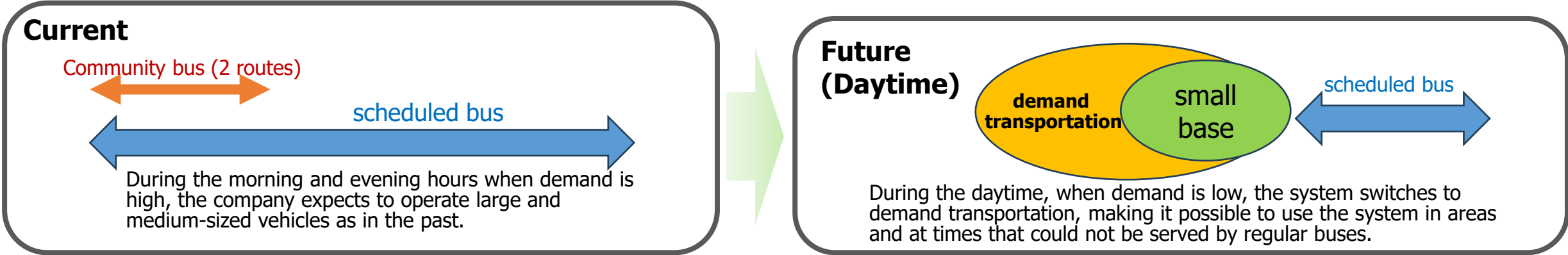
- Explanation of demand transportation to residents and implementation of demonstration experiments.

- (2023)
- ✓ Conducted a 2-week demonstration run to promote awareness and understanding of demand transportation.
 - ✓ Established boarding and alighting locations in consultation with local residents to create momentum for discussion of new transportation systems.

- (2024)
- ✓ Conducted **a one-month demonstration run for** daily use.
 - ✓ Promoting understanding of the need for conversion to demand transportation, and sharing the image of the functions and services of transit hubs.
 - ✓ **Constructing a reception system using LINE** and examining the possibility of using ICT in areas with a large elderly population.
 - ✓ Consideration of elements required for a "small base" to serve as a transfer point.



Image of a transfer/waiting room at a "small base"



□ **Demonstration Experiment of Demand Transportation**

- Dates: 10/26 - 12/1 (36 days in total)
- Number of vehicles: 2 (8-seater & 4-seater)
- Total number of reservations: 113 (via Line: 22)
- Total number of users: 233 (= approx. 6.5 persons/day)

※ Reference

Average 5 persons/day users for the 2 community bus routes in Sekinomiya area.
(R5 fiscal year, excluding elementary and junior high school students using commuter passes)



Users consulting in the waiting area



Kei-car is also used for narrow roads.



Briefing session for residents

□ **Characteristic Behaviors Observed in the Demonstration Experiment**

- There were multiple occasions when the system was used not only for daily use such as shopping, hospitals, financial institutions, etc. but also for **outings with friends**.

- 11/18: Participants of a petit salon held at the Otani School District Neighborhood Association used the service.
- 11/23: Hike from Sekinomiya School District to Hachi Plateau (4 people x 2 times)
- 11/30: Hike from Otani School District to Hachi Plateau (7 people x 2 times), etc.



Not only an essential means of transportation for daily life, but also for **creating outings** and promoting **interaction between communities**.

□ **Summary of This Year's Demonstration Experiment**

- As a result of JARI, the city, and transportation operators working together to engage in dialogue with residents' self-governing bodies, a deeper understanding of the difficulties in maintaining public transportation was grown, and a relationship was established in which each party was convinced to consider demand-oriented transportation.
- Further discussion is needed on fares and transit use.

□ **Upcoming Events**

- Summer and winter paid experimentation (verification of fares, transit, and operational structure for implementation)
- Re-examine boarding and alighting locations (discuss safety, comfort, and convenience with residents' organizations)

***Progress of "small base"**

Reviewed with the City and transit operators regarding the transit function of the small base, and requested the designer to do so.
→ It is expected to realize a stop that is separated from regular vehicles, allowing both passenger cars and large buses to enter at the same time.

**Allocate
transportation
to support
community
activities**

◆ **Human Resource Development/Ensuring Continuity**

- By continuing to support community activities, the perception of "transportation is something that is provided" changes to "I want to do what I can do as well."
(Passive → **Voluntary**, Public assistance → **Mutual assistance**)

◆ **Measuring qualitative effects, such as changes in lifestyle due to outings**

- Interviews with event participants to measure qualitative effects such as changes in frequency of outings, places to go, etc.

□ **Output at stage gate**

- Cooperation with community activities (events, etc.) and welfare programs in Otani School District and outside the Otani School District.
 - ✓ **Establish a sustainable mechanism for** providing transportation to support community activities.
 - ✓ **Proactively create opportunities for outings in** collaboration with the Yabu city social prescription promotion division, medical care providers, etc.
 - Creation of opportunities to go out by devising and supporting means of transportation and **cooperation with community and frailty prevention activities.**
 - ✓ **Measuring the effects of mobility use on health outcomes** (in collaboration with JMAR).

◆ Trial of “Demand Transportation with a specific purpose” that combines purpose and means of transportation

□ Transportation to “Petit Salon Mando”, a Gathering Place Organized by Residents’ Self-governing Body

- Once a month, “**Demand transportation with a specific purpose**” to attend the salon held by the community.
- Persons who wish to participate in the salon make reservations by phone to the Otani School District Council, and the Council sends the number of passengers to Zentan Bus.
- Mobile vending shop comes to the salon venue and the attendee buy something at the shop.

□ Change in Participants

- In the early days, participants were clustered by settlement.
→ **Currently sitting apart and conversing (interaction activated).**
- There was no habit of making reservations by phone, etc.
→ **Started to make a reservation phone call to friends or the district council to attend the salon.**
- In some districts, a representative will contact the council on behalf of multiple people.
→ **Started inviting each other to attend the salon.**

□ Horizontal Expansion to Other Districts

- Mountainous areas such as the Kumatsugi district have many narrow roads and relatively large differences in elevation within the region.
- Difficult to maintain activities in each village due to the decrease in the number of residents.
- Consider implementing frail prevention activities in a wider area in cooperation with **the city, the Yabu city silver human resource center, and residents' self-governing bodies.**
- **Horizontal expansion of the experience** practiced in the Otani School District and **trial of a set of purposes and means of transportation.**
- Conducting an all-inclusive survey to **measure the effects of mobility use on health outcomes** in collaboration with JMAR.



After the salon, users return home on one trip.
(Waves to the persons who see off)



Shopping in a mobile vending van coming
to the salon venue

Study of opportunity creations to go out and the feasibility of introducing short-distance transportation in the town

- Study on means of transportation to support opportunity creations to go out and participation in community activities.
- Study on the feasibility of introducing GSM (Green-Slow Mobility), etc. for short-distance transportation in the town and mutual assistance mechanisms by residents.
- Study of qualitative and quantitative evaluation methods.

Coordination and collaboration with Niyodogawa Town's "Transportation and Community Development Policies"

- Study of requirements for the construction of a "small-small base".
- Drafting of a concept incorporating the perspective of a "community-based comprehensive care system".
- Cooperation in the formulation of the Niyodogawa Town Transportation Plan and establishment of a system for future.

□ Output at stage gate

- Modeling the creation of motivation to go out through frailty prevention and development of human resources for community building (mutual aid).
- Demonstration and proposal for sustainable community development.
 - ✓ Verification of the effects of the prior establishment of "small-small bases".
 - ✓ Proposal for a center concept incorporating a "comprehensive care system" perspective.
- Verification of effectiveness of mobility allowance to improve residents' well-being and local revitalization (in collaboration with JMAR).

- ❑ Currently, private cars and ridesharing between neighbors are used to participate in frailty prevention activities organized by NPOs and other volunteer groups.
 - As one of the mechanisms to “never give up going out,” we are now supporting **outings using an electric Kei-car.**
 - **People who loves going out becomes increased** because they feel **“Excitement”** when riding in a wrapped EV and it lowers the psychological hurdle of going out to play with others even in an older age!



(Successful Case Studies)

[In the case of Mr. A, a very elderly 92-year-old man.]

- Mr. A was trying his best to drive, not wanting to inconvenience others. When his best friend, who had been attending Haturats with him, became ill and it became difficult for him to attend Haturats, Ms. A was feeling down. So, when the NPO asked him to cooperate in the “experiment of riding Sakura to Haturats, he accepted, saying **“It’s OK because of Sakura-chan”**. As a result, **he was able to attend for three months**. During that time, his best friend passed away, and he was very depressed. But he continued to contact his friends who lived nearby and picked them up and dropped them off. Currently, a younger man who lives in the same area picks him up to attend Haturats. **Without the transportation by Sakura, the driving would have been physically demanding for him and he would have tended to absent Haturats.**



[In the case of Mrs. B, an 82-year-old woman living alone.]

- Ms. B had never driven a car. After her husband passed away, for daily moving, she relied on her daughter who lives in Kochi City. She was a vivacious person originally, but **after her husband’s death four years ago, she became stay-at-home**. She had assumed that she could not go out of town without transportation from her family, but **after experiencing outings in combination with JR with her friends, she was able to visit her daughter’s family in Kochi City by herself, using the bus and JR**. She said that she was glad to get the confidence and peace of mind about “If push comes to shove, I can go out by myself using public transportation!”



(JARI's portion) **II-7. Resident-led Short-distance Transportation (Ikegawa area, Niyodogawa Town)**5

□ Background

- Even though daily mobility and opportunities for social participation are important for preventing frailty in aging and depopulated areas, it is difficult to provide all such mobility by public transportation. Therefore, we decided to **study the possibility of introducing a mobility support service based on mutual assistance by residents**, in which a portion of short-distance travel is maintained by volunteers and community support.

□ Verification Details

- Accumulation of knowledge on resident-oriented means of transportation and confirmation of the convenience and acceptability of GSM.

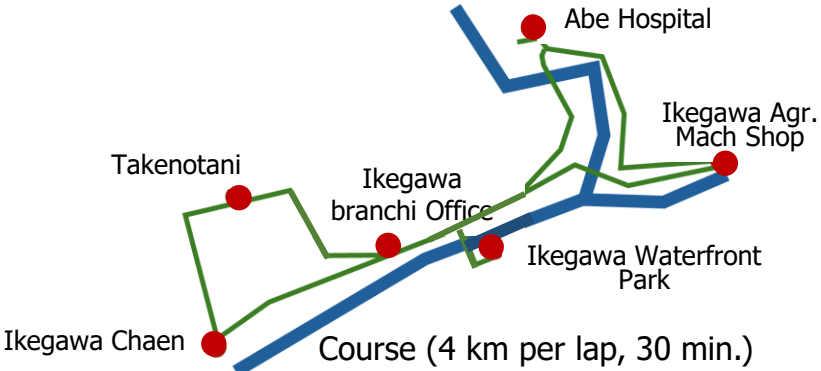
□ GSM Vehicle (YAMAHA AR-07)

Ease of getting on and off

- ✓ Low steps make it easy for the elderly to get in and out of the car.

Impact of weather

- ✓ The liberating structure of GSM makes it easy for occupants to communicate with each other and with people outside the vehicle, and the negative aspects of being susceptible to cold and rain are more than compensated for.



□ Operation Procedures

- Operated by a 2-person team of 1 driver and 1 attendant.
 - ✓ Given that the elderly take on the role of driver, an attendant rides in the car to ensure safety.
 - ✓ The attendant checks for safety while driving, ensures the safety of passengers getting in and out of the vehicle, and records passenger attributes, etc.



GSM run on the last day

□ Results

Number of trips	User Attributes			Total amount	Number of passengers per trip
	Inside Ikegawa Town	Inside Niyodogawa Town	Outside Niyodogawa Town		
201	485 persons	92 people	112 people	689 persons	3.4 persons

Residents' (users') voices

- Glad to go to a place I haven't been in decades.
- Looks like a cruise ship.
- I'm going out for a walk more extensively now.
- It helps to go shopping at the supermarket on a rainy day.

□ Study of requirements for the construction of a “small-small base”

Background

- ✓ In depopulated and aging communities, it is expected that communities will be maintained through the creation of "small centers" that consolidate daily living services and community activities, etc., based on units such as elementary school districts. However, as the population continues to decline further, it will become difficult to secure the scale of demand necessary to maintain daily living services and community activities, etc., and the service coverage area will have to expand.
- ✓ Increased costs associated with the growth in travel time and the withdrawal of services in some areas will make it difficult to sustain the region.

Considering Creating Smaller Bases than the Existing “Small Base” Concept

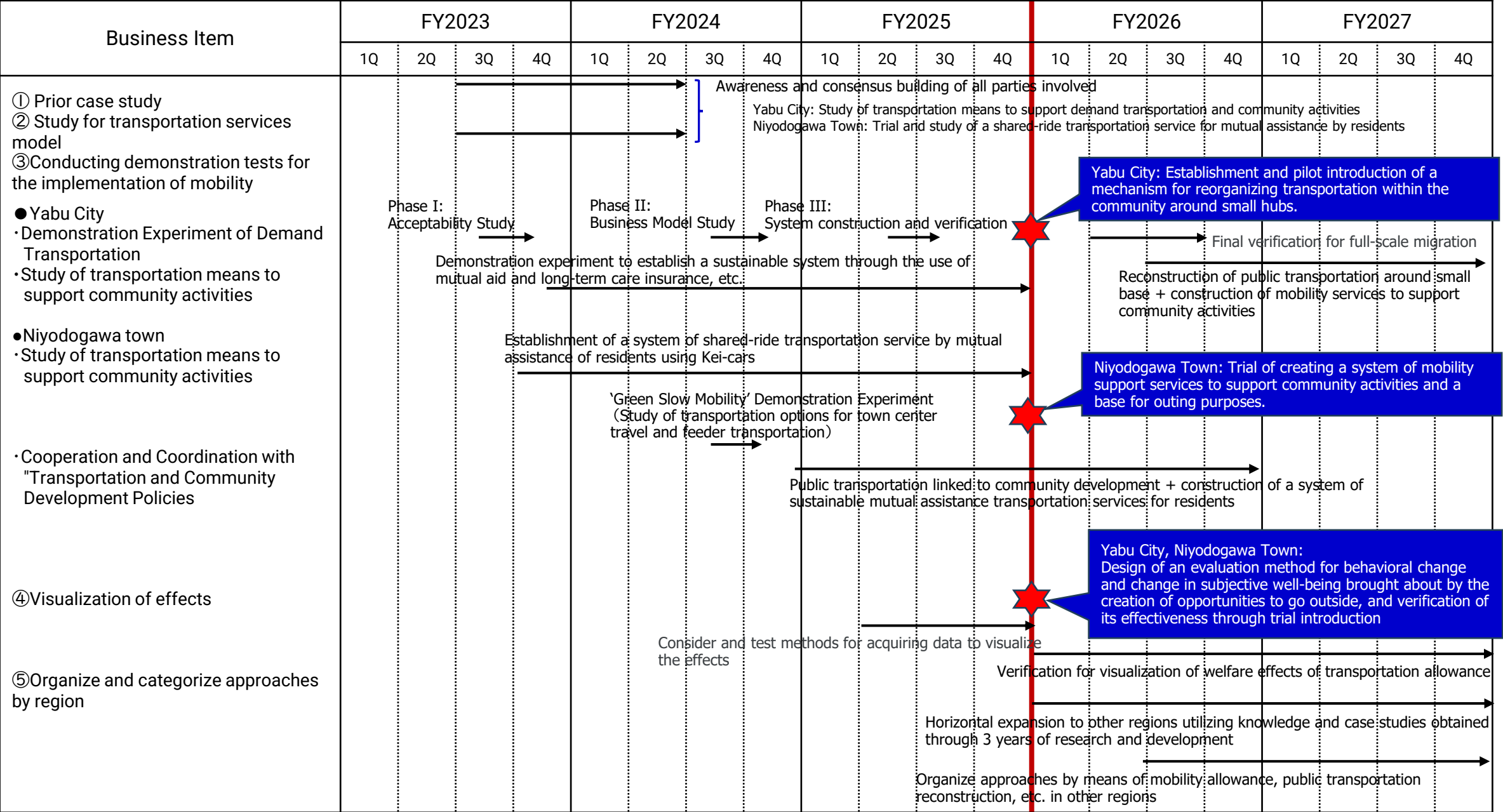
- ✓ **Build new places for “neighbors” to meet**, instead of building hardware. → Residents bring in homemade side dishes / Kitchen cars come to the area / “Mobile health center” for health concerns travels around the community, etc.
- ✓ The project will ensure transportation to enable participation in activities at other regional sites and promote inter-regional exchanges.
→ Started using a home as a “small-small base (salon)”.
- **Discovering “joys and benefits” of continuing to live in the community, both for those who provide a home and those who go there!**

□ Drafting of a Conceptual Plan Incorporating the Perspective of a “Community-Based Comprehensive Care System

- Niyodogawa Town plans to formulate **a new "Niyodogawa Town Community Development Plan"** in the next fiscal year.
- ✓ JARI proposed a vision for the future of Niyodogawa Town, in which three bases incorporating the perspective of a **comprehensive regional care system** would be **located in locations that take advantage of the geographical conditions and characteristics of each region**, and would be operated in a way that creates a sense of unity by allowing people to travel between these bases by means of transportation.

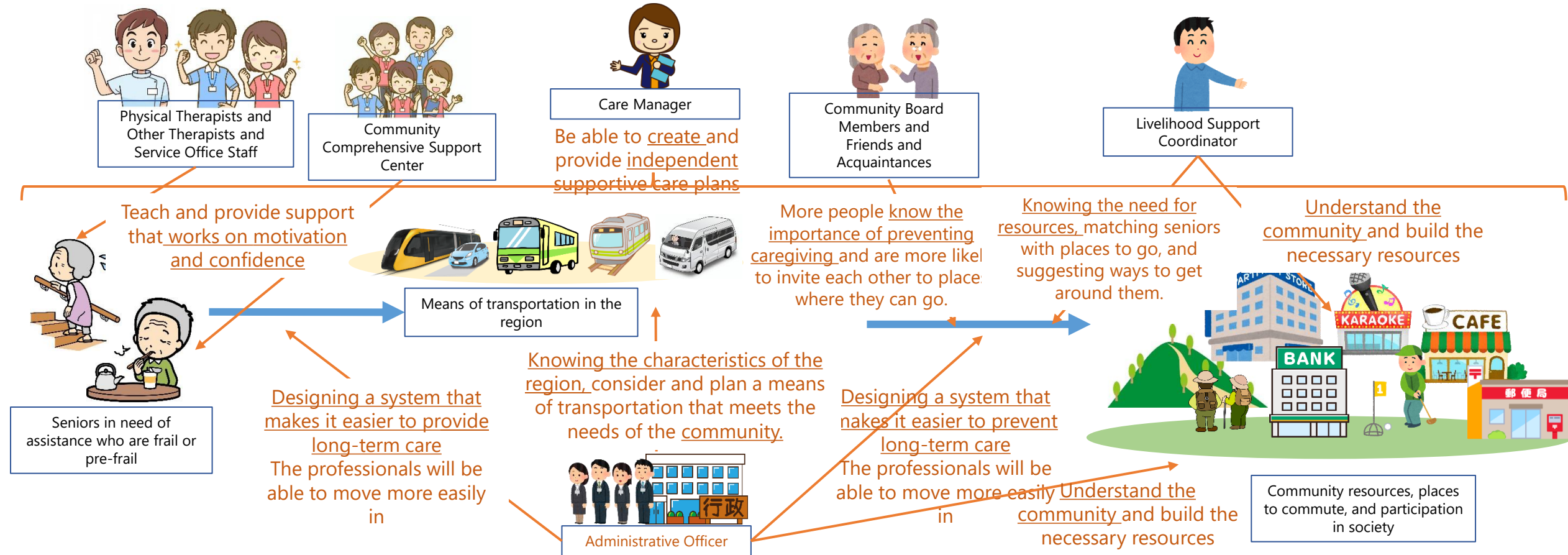
□ Cooperation in Development of the Niyodogawa Town Transportation Plan and Establishment of a system for future

- JARI participated as an observer in the "Public Transportation Revitalization Council" established to study the "Niyodogawa Town Regional Public Transportation Plan" to be developed in FY2024.
- ✓ The SIP project will be coordinated in support of the measures set forth in the plan, and advice will be provided on how to proceed with the planning process.



IHEP Activities

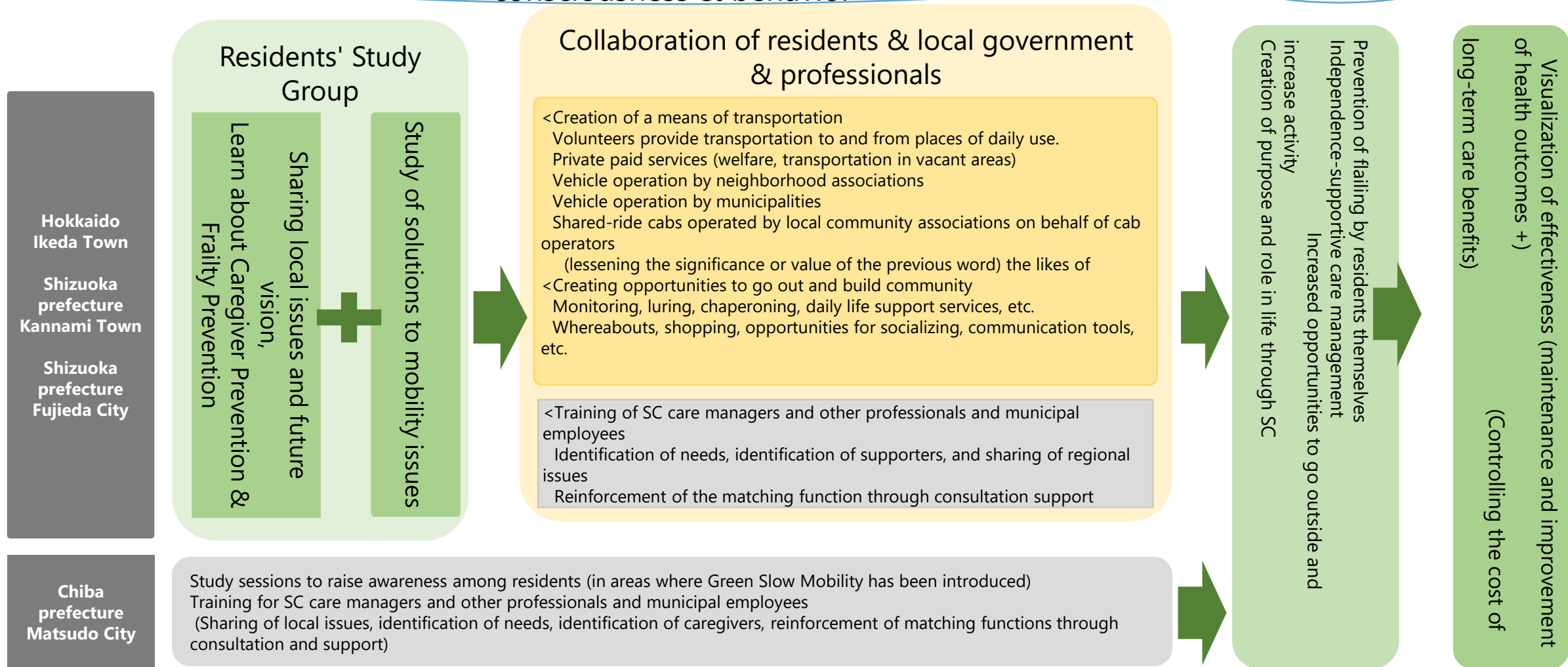
Create a system that works to support older adults to live their own lives for as long as possible, encompassing people, communities, and lifestyles.



In order to help older adults who are frail or pre-frail (those who are eligible for projects or need support in terms of long-term care insurance) return to their former lives, a large number of professionals, local residents, and a wide variety of support measures are required. Our organization provides not partial, but total support (underlined part) to visualize the effectiveness of mobility in enabling older adults to live well in the community.

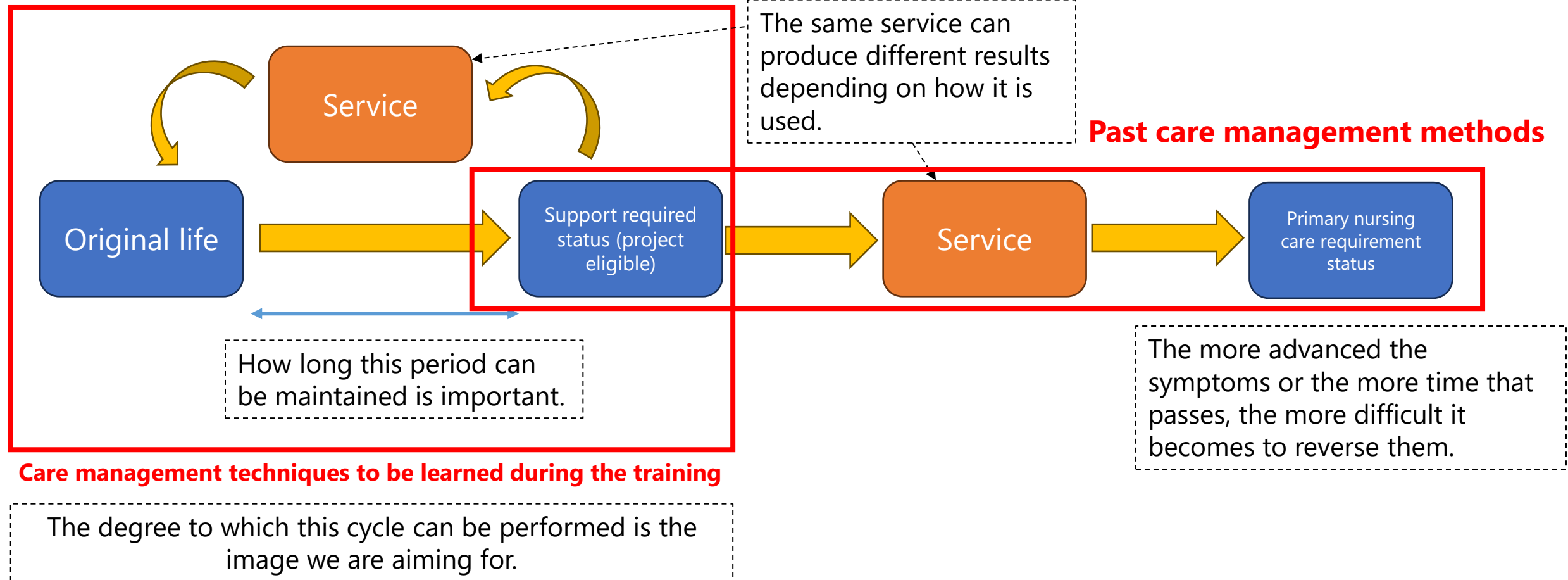
An approach that leads to a change in
consciousness & behavior

Practice

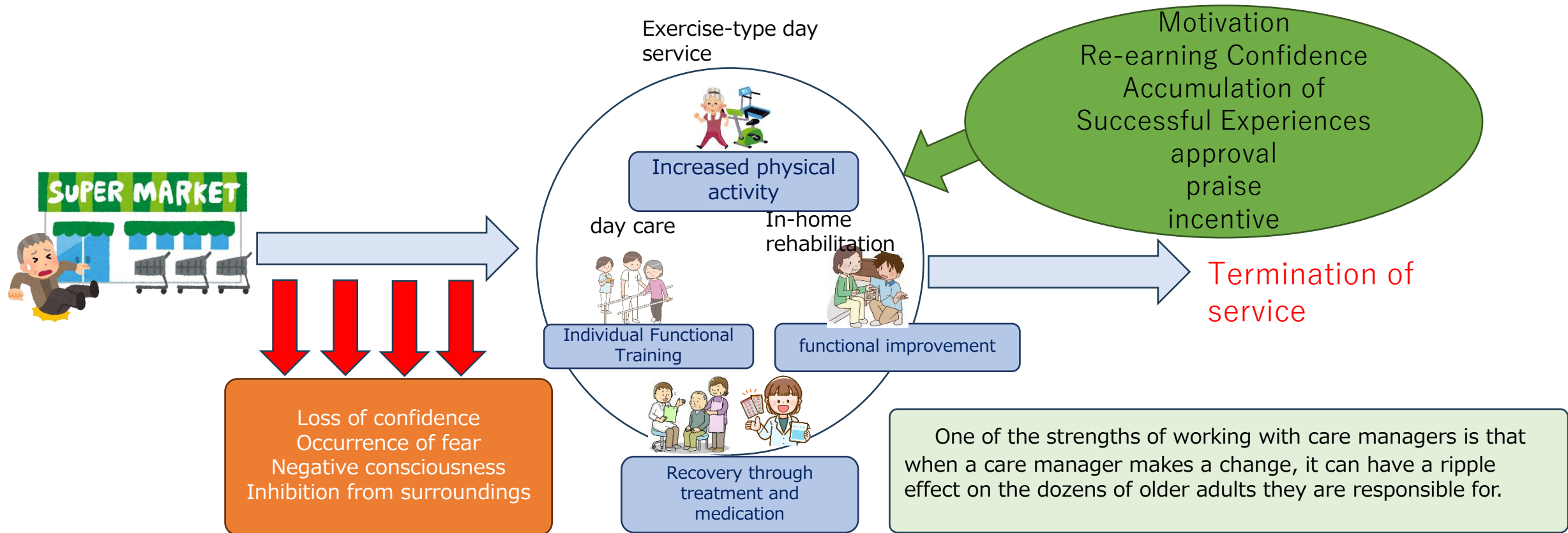


SC = Lifestyle Support Coordinator

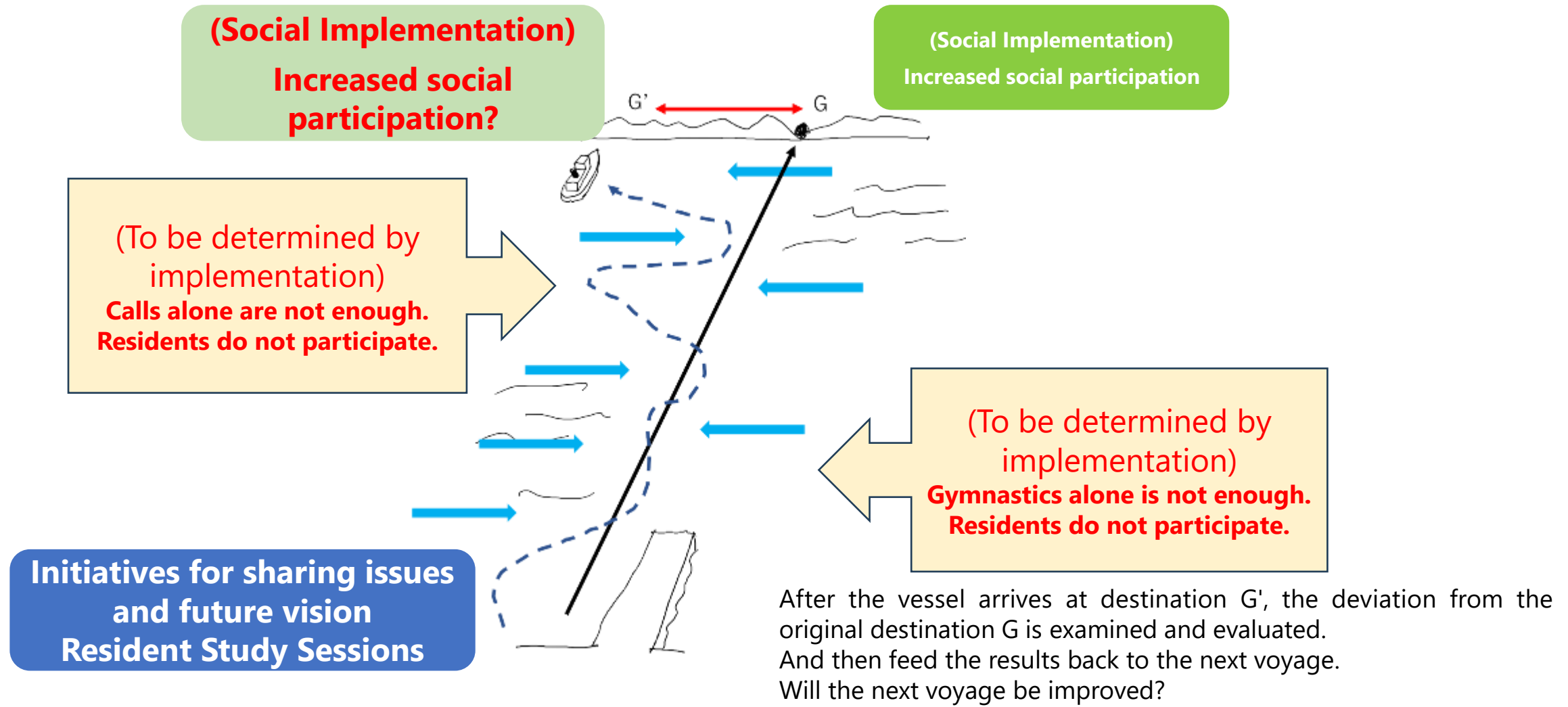
	Hokkaido Ikeda Town	Chiba prefecture Matsudo City	Shizuoka prefecture Fujieda City	Shizuoka prefecture Kannami Town
(1) Increased purpose of going out	Under consideration	Under consideration	Study Session for CSW	Training for SC
(2) Promotion of independence-supportive care plans	Training for Care Managers	Training for Care Managers (review)	Training for Care Managers	Training for Care Managers Training for Professionals
(iii) Spreading the word about frailty prevention	Lecture for residents Frail Supporter Training	Study Sessions for Residents (under consideration)	Study Session for Residents	Study Session for Residents
(4) Provide a means of transportation	All areas Health class transportation Luncheon pick-up and drop-off Transportation to and from senior citizen club meetings Community bus (Aibusu)	All areas Grislos (fixed-time, fixed-route, free to hop on and off, residents decide where to go) Other means of transportation will be considered	Nishimashizu Hospital Visit Support Team Outing support team (Regular) Adjacent to the hot spring (hot spring) Cab Consignment (Onsen) Inaba Adjacent to the hot spring (hot spring) Cab Consignment (Onsen) Qingdao: Adjustment in progress. Fujieda mobi (R6 demonstration operation planned)	Pasadena area Pasadena (operated by the residents' association, route decided by the association, and the riders are also members of the association) Dialand District, Emerald District, Shiroyama District, and Pasadena area to be considered as a model
Expected Effects	(i) Increase in the frequency of going out (activity level), social participation, and social interaction (ii) Decreased use of services, increased frequency of outings (activity level), social participation, and social interaction (iii) Decrease in frailty (4) Increase in frequency of going out (activity level), social participation, and social interaction → Decrease in the rate of nursing care needs certification, reduction in nursing care benefits, improvement in subjective sense of health and mental health, and increased sense of purpose in life and happiness			



By providing training in independence-supportive care management, care managers will learn about the purpose of services to help people return to their original lives, rather than the use of services that cause flailing.

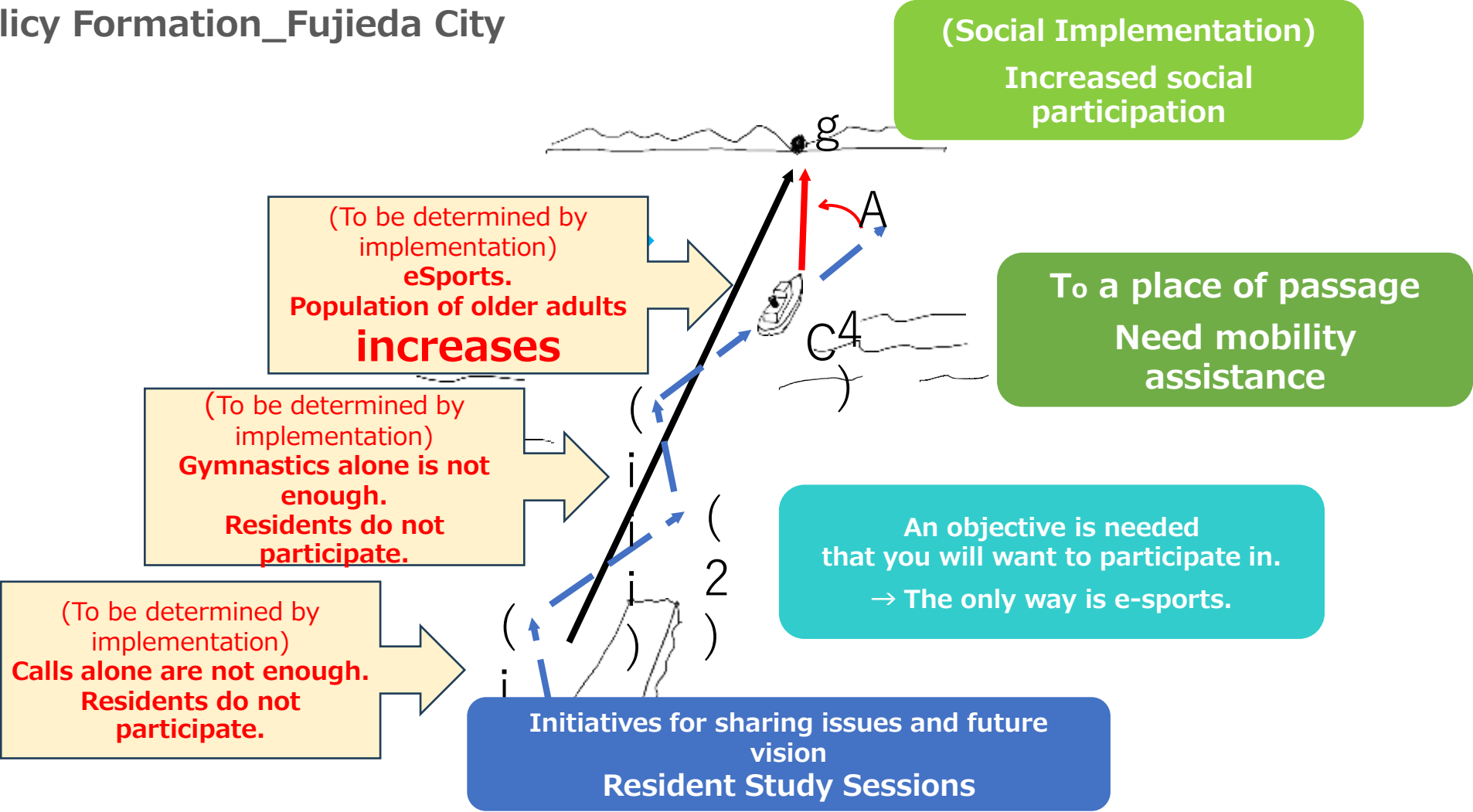


Trained care managers will no longer simply create care plans in which a helper does the shopping or cleaning for you, or in which you exercise or take a bath at a day service. The care plan will be changed to one that aims for reablement (reacquirement).

Policy formation to date

Source: Partially modified based on data from the 27th Policy Evaluation Council Meeting (jointly with the 30th Policy Evaluation System Subcommittee) (held on March 7, 2022) by Akira Morita, Member of the Committee, Ministry of Internal Affairs and Communications.

Agile Policy Formation_Fujieda City

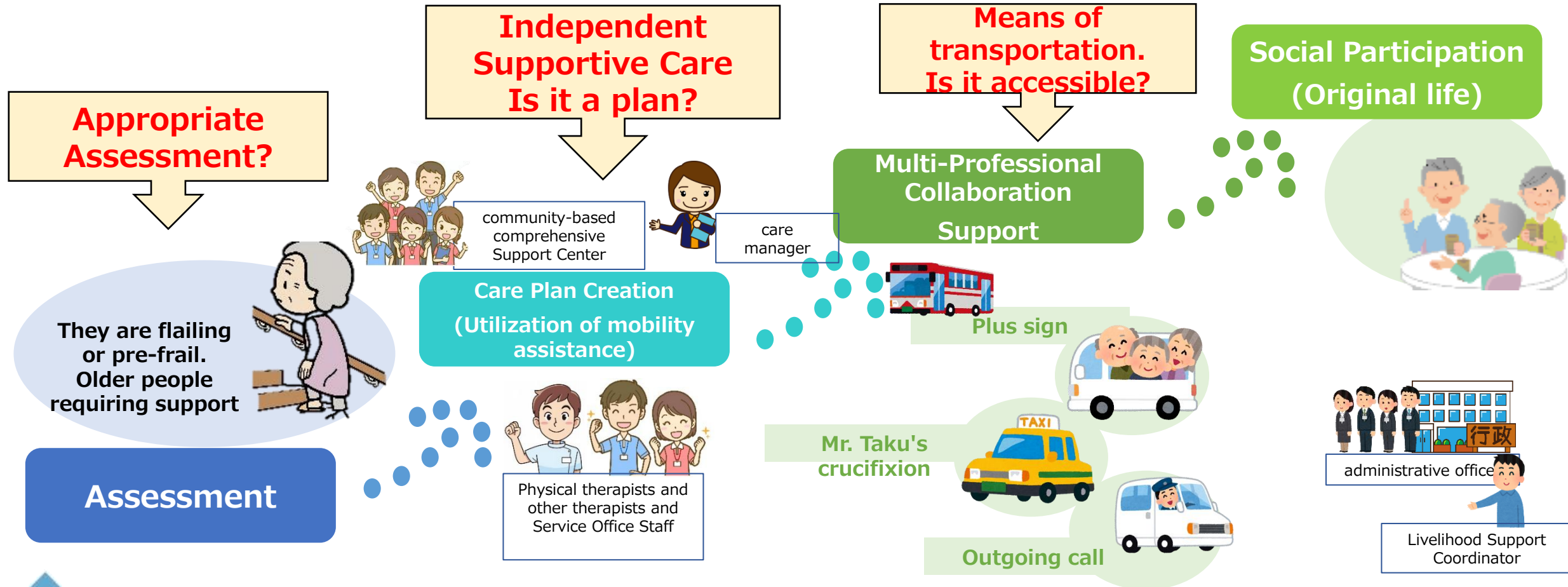


When heading to destination G according to "P", by increasing the frequency of position measurement and course correction "C" as much as possible, the deviation from the planned route is reduced "A", and the destination is reached in a shorter time and over a shorter distance.

Source: Partially modified based on data from the 27th Policy Evaluation Council Meeting (jointly with the 30th Policy Evaluation System Subcommittee) (held on March 7, 2022) by Akira Morita, Member of the Committee, Ministry of Internal Affairs and Communications.

- From now on, we will implement the PDCA cycle in an agile manner by conducting case-by-case evaluations.
- In an agile evaluation process, we will not only improve the way we support multiple professions, but also take concrete actions when policy measures are needed.

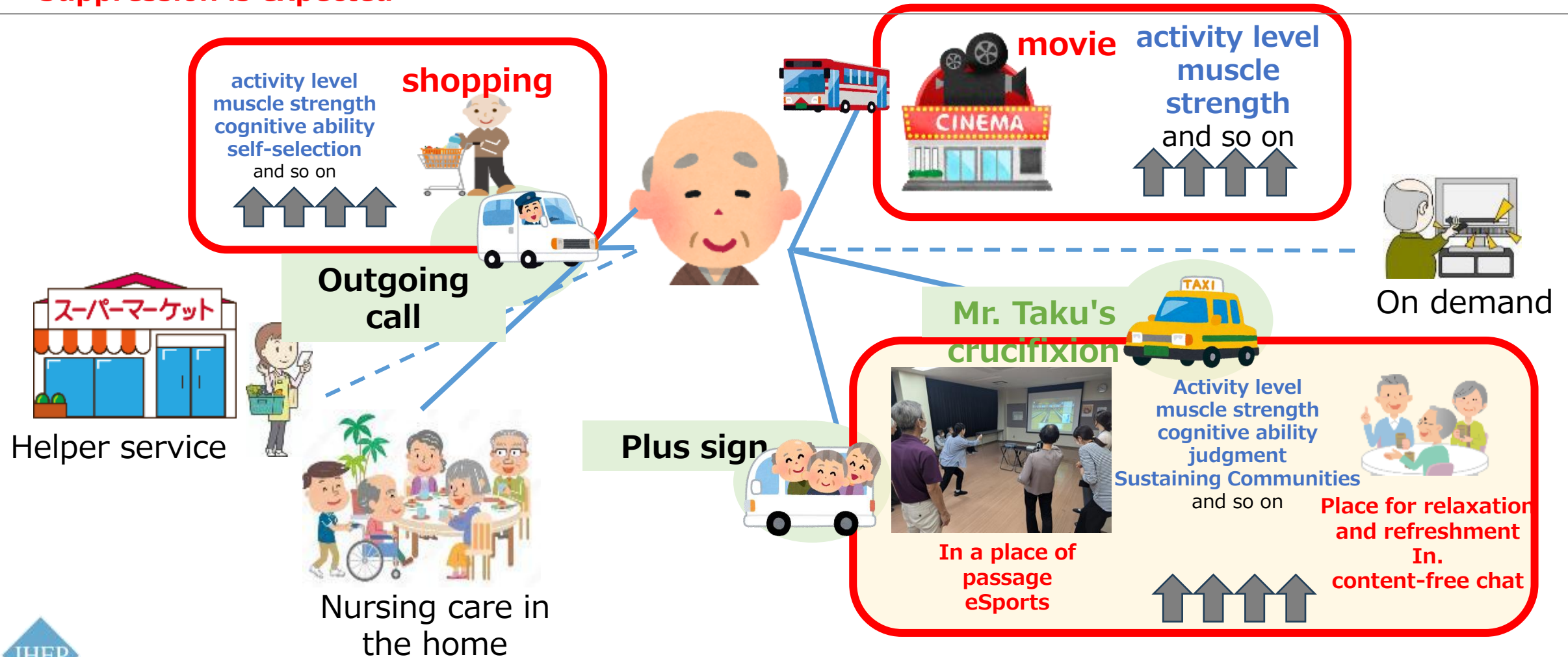
Improve mobility aids, especially if they are lacking or difficult to use



○Expected to expand the options for social participation for subjects in the intervention area, and to improve their activity level, muscle strength, cognitive function, etc., as well as to maintain their own community.

○**The survey will be conducted 6 months after the survey, and the results will be used to improve the health outcomes and nursing care benefit costs.**

Suppression is expected



Fujieda City OutlineArea: 194.06 km²

Population: 140,979 (as of December 31, 2023)

Aging rate: approx. 31.3

Administrative Districts: 10

Setoya, Inaba, Okabe, Hanashi

Hirohata, Fujieda, Aoshima, Nishimashizu,

Takasu, Ozu

Takasu, Ozu

Neighboring Cities: Yaizu City, Shimada City, Shizuoka City

Public Transportation Status**Railroad**

JR Fujieda Station (5 stops from Shizuoka Station, approx. 20 minutes)

Bus routes, etc.

Private bus 8 routes

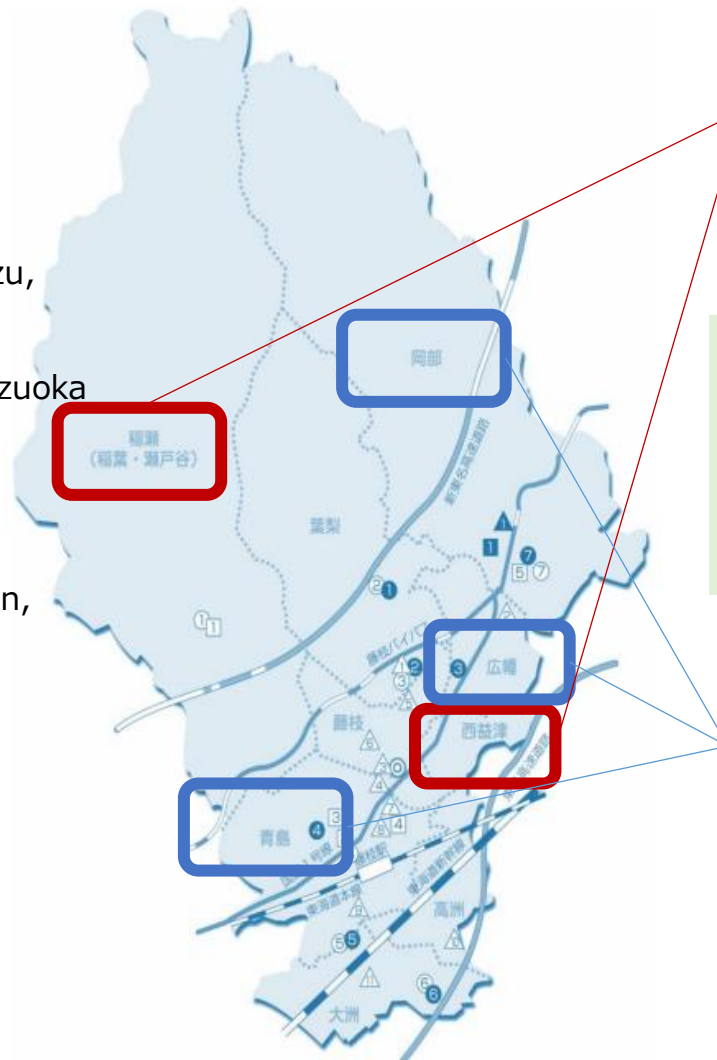
Voluntarily operated buses 5 routes

Shared Ride Taxis 4 zones

Wide-area bus routes 3 routes

Cab

4 cab operators with offices in the city

**<Intervention Area****Inaba District****Nishimashizu District****■ December 2024-.
Intervention:****Targeted survey in two districts****start of inclusion****<Control area****Okabe District****Hirohata District****Qingdao District**

■ December 2024-.

Intervention: Start of subject survey incorporation in **two** districts.

District Name	Date of Incorporation	Investigators	Consent to Survey
Nishimashidu (tip, point, extremity, etc.)	12/13	6 subjects	1 person did not give consent; 5 surveys collected.
Inaba	12/24	2 subjects	2 surveys collected

Care prevention care management or care prevention support has been provided to the 7 individuals whose consent to the survey was obtained.

=In a post-evaluation after 6 months, the goal is to increase social participation and activity through the use of mobile means.

