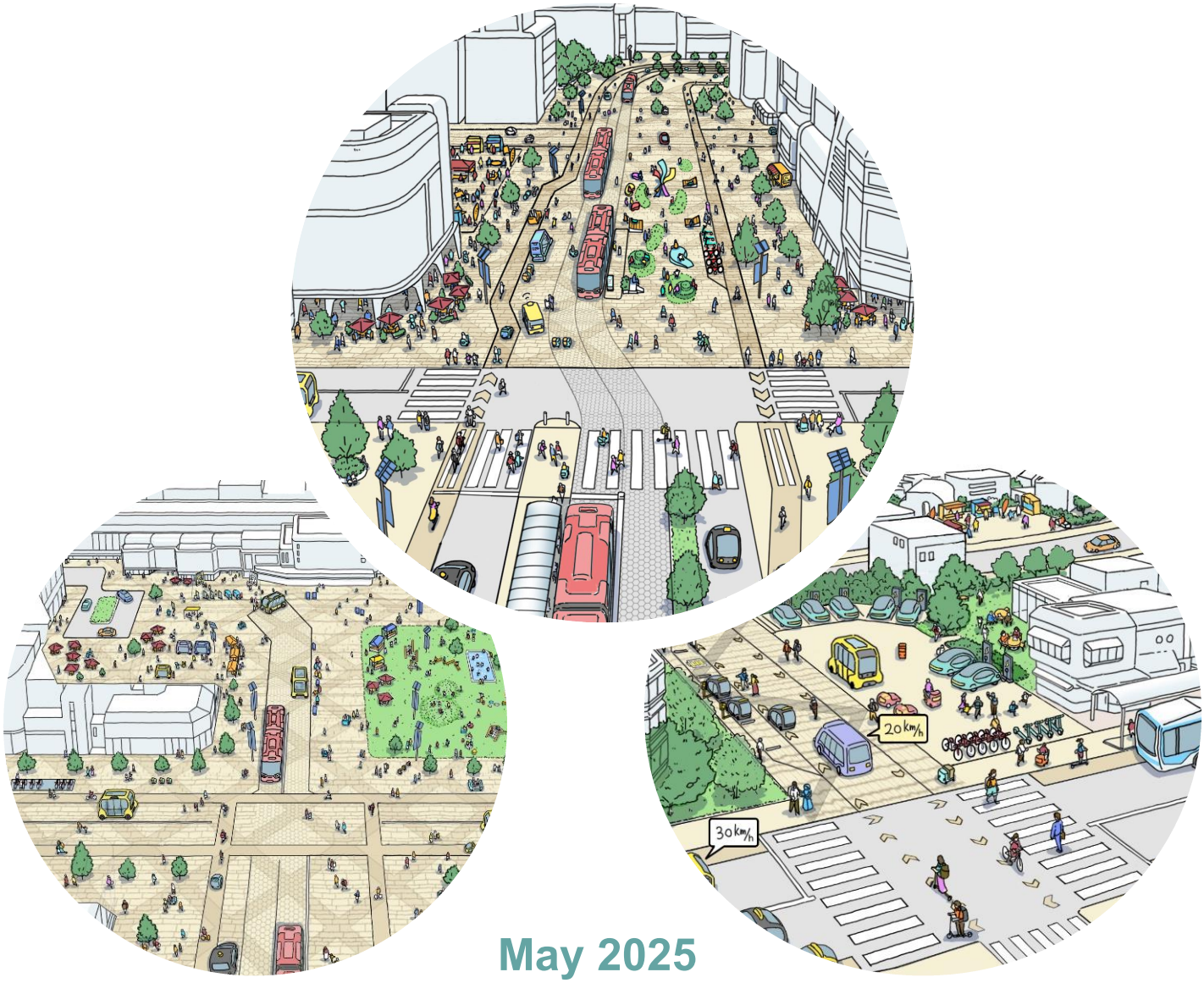
Summary version

Key Points for the Utilization of Automated Driving Technology in Urban Spaces

~New Ideas for Urban Planning and Development~

(Version 1.0)



May 2025

City Bureau, Ministry of Land, Infrastructure, Transport and Tourism

Introduction

In recent years, the technology and industry surrounding automated driving have been advancing rapidly, and it is expected that automated driving technology will become more and more widespread in the future. The widespread use of automated driving technology is expected to have a big impact on people's daily lives and urban planning, as it will increase people's freedom of movement, while solving the current problems of driver shortages in public transportation systems and traffic congestion. Therefore, it is assumed that automated driving technology will become an important element in future city planning. In doing so, it is necessary not to think passively about the introduction of automated driving technology into the city, but to actively utilize it to create a better space for solving urban issues, and to incorporate it in a planned manner .

On the other hand, the progress of automated driving technology is difficult to foresee, and there may be cases where it is difficult to make up-front investments to advance it, such as in infrastructure development. In order to respond to current social issues, it is assumed that it will be necessary to first incorporate what is feasible and make preparation for the arrival of the era in which automated driving technology will be fully implemented in society.

For this reason, the City formed the "Study Group on Measures to Use Automated Driving Technology in Urban Transportation" in FY 2017 to identify and organize the potential impact of automated driving technology on cities and to discuss the desirable use of automated driving technology for cities in preparation for the future use of automated driving technology. This committee has been discussing the desirable use of automated driving technology in urban transportation and has compiled a list of key points resulting from these discussions.

In this collection of points, we have assumed that automated driving technology will be introduced first in service vehicles such as public transport, and that for the time being it will be introduced in a limited area while mixed with manually operated vehicles. We have described the points to consider during the period of mixed use, as well as the policy directions and measures that should be taken to achieve the goal of utilizing automated driving technology in conjunction with city planning. We have also included some points to keep in mind in anticipation of the arrival of a fully automated driving society. Furthermore, even if the initiatives do not directly relate to automated driving technology at present, we have decided to include a wide range of content, such as utilization of ICT technology that we believe will lead to city planning with automated driving technology in the future from the above perspective.

This collection of points is intended mainly for those involved in city development, such as local government officials interested in automated driving who are engaged in demonstration tests of automated driving, etc. However, we hope that a wide range of other people will also read this collection of points to stimulate discussion on city development using automated driving in the future, and to contribute to sustainable city development throughout Japan.

* This collection of points is intended to provide examples of initiatives that can be assumed at local points when utilizing automated technology. Each point is not described as a mandatory initiative, but rather as a reference for administrators/installers to make decisions as necessary.
* We believe that this collection of points needs to be updated as necessary, taking into account trends in the development of automated driving technologies, institutional development, case studies and the like. Such trends are being addressed by the relevant government ministries and agencies as a single unit (e.g., the Digital Agency's “Mobility Roadmap,” the Cabinet Office's SIP “Construction of a Smart Mobility Platform,” and the Ministry of Economy, Trade and Industry's “Road to L4”). Updates should also reflect findings on what an automated driving society would be like in the logistics sector or in the event of a large-scale disaster.

(1) Anticipated benefits of the spread of automated driving technology

■ Anticipated benefits of automated driving society

Improvement in the level of public transport services

- The introduction of automated driving vehicles into public transport will reduce the number of drivers who need to be qualified, leading to a reduction in labor costs related to public transport operations and a solution to the driver shortage. As a result, there is the possibility of improving services, such as maintaining or increasing the frequency of operations.

Reduction in road congestion

- By switching from private car use to public transport use, the volume of car traffic will decrease, and it is hoped that this will reduce congestion on major trunk roads and roads in city centers.
- It is hoped that this will alleviate congestion by ensuring an appropriate distance between vehicles and preventing sudden acceleration and deceleration.

Expansion of road traffic capacity

- There is the possibility that road traffic capacity will expand by reducing and keeping the distance between vehicles.
- By introducing automated driving technology while coordinating with existing public transportation, it may be possible to reorganize and efficiently utilize street space.

Reduction in traffic accidents

- Accidents caused by driver error could be prevented, and a reduction in traffic accidents is expected.

Reduction in parking demand

- Parking demand may be reduced through the equalization of parking lot use and car sharing, and there is the possibility that parking lots can be used as pick up and drop off spaces .

Securing a means of transportation

- The spread of automated vehicles will improve the convenience of door-to-door transportation, and this will offer a means of transportation for people with restricted mobility.

(2) Points to consider as automated driving technology becomes more widespread

■ Points to consider in an automated driving society

Possibility of road congestion

- With the spread of automated vehicles, there is a possibility that people who do not have a driver’s license or who have not used a car before will switch from walking, cycling or public transport to using cars. There is also a possibility that the overall amount of travel volume will increase as people go out more.
- If automated vehicles become widespread only among private owners, there is a possibility that the distance traveled by vehicles will increase.
- The spread of autonomous vehicles and autonomous car sharing services may reduce the total number of vehicles and average travel times, but in urban areas with high population density in particular, the increase in car travel may lead to an increase in traffic volume and congestion.

Impact on residential location choice

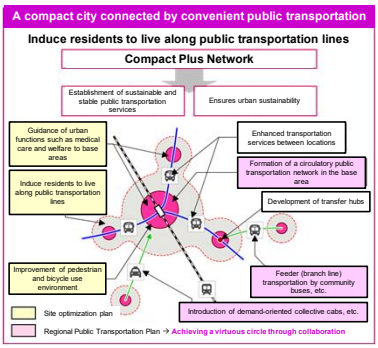
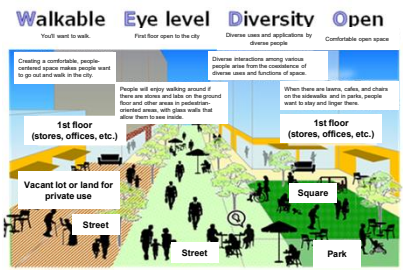
- There is also a study that autonomous vehicles reduce the resistance to increased travel times, as they allow people to spend their time freely—such as for reading—while traveling, without having to drive, and this may affect people's choice of transportation, and in turn, their choice of residential location, and even the structure of cities.

(3) Toward the realization of a desirable vision of the city

As the population and birthrate continue to decline, and the population ages, it is necessary—especially in regional cities—to promote compact city planning in cooperation with regional public transportation (compact plus network) to maintain the vitality of the region, secure daily life functions such as medical care, welfare, and commerce, and enable the elderly to live in safety and comfort. In the "city center," which is the core of the compact plus network, the public and private sectors should work together to create spaces where people can interact and stay, and promote the creation of spaces that are comfortable and inviting to walk around (walkable spaces).

Even if the era of full-scale social implementation of automated driving technology arrives in the future, there will be no change in the social background of declining population, falling birthrate, and aging population. In order to cope with these challenges as improving the efficiency of urban management, revitalizing the local economy, preventing disasters, and protecting the environment, it is important to avoid an excessive shift from public transportation to private cars due to increased freedom of movement. It is needed to manage that such a shift would not conflict with the desired urban vision of creating a compact plus network and a walkable space.

Therefore, it is necessary to link various urban planning and transportation strategy initiatives, such as urban master plans, location optimization plans, and comprehensive urban and regional transportation strategies, with the use of automated driving technology, and to firmly manage the city with both wheels working in tandem.

Issues toward the realization of a desirable vision of the city	Potential of automated driving technology	Desired urban image
● Lack of drivers for public transportation ● Decline in the level of public transportation service ● Traffic congestion due to concentration of cars in urban areas	● Automated (unmanned) public transportation* *Operators and other staff are required. ● Service improvement through automation ● Inflow control by connected cars, etc.	
● Lack of last mile transportation ● Taking action to serve the increasing number of elderly and other people ● Insufficient space for boarding/exiting and waiting at the station square	● Service improvement through automation (reiterated) ● Providing safe transportation ● Optimal use of station square space, etc., with increased flexibility in the location of waiting spaces, etc.	
● Car-prioritized street spaces such as driveways and parking lots ● Various mobility illusions ● Lack of space for walking and bustling	● Efficient space utilization and increased traffic capacity by reducing the distance between vehicles, decreasing on-street parking, etc. ● Increased flexibility in parking (waiting) locations, efficient use of space by leveling parking lot usage, etc.	
● Lack of transportation to encourage people to go out in the neighborhood ● Lack of space and services for interaction	● Actively employing gait-assist robots and other devices that support mobility and activities ● Increased flexibility in parking (waiting) locations, efficient use of space by leveling parking lot usage, etc. (reiterated)	

Consideration of the issues that may arise due to the spread of automated driving technology, and systematic introduction through various urban planning and transportation strategies

- Risk of congestion due to increased travel volume
- Impact on residential location choices and urban structure, etc.

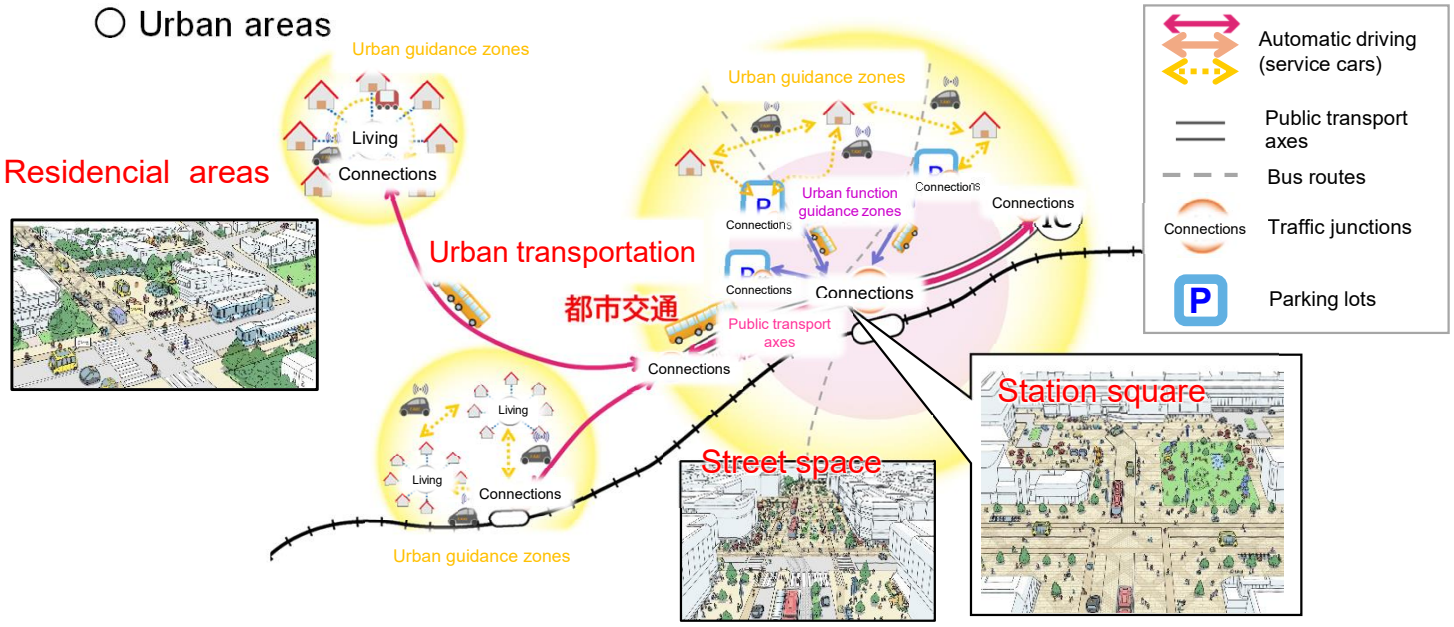
(1) Premise

The target year for the city master plan is generally around 20 years ahead. Based on this planning span for city development, this collection of points **focuses on the appearance of cities** in the era when fully automated driving society has arrived. The points are arranged based on the assumption that automated driving technology will be introduced first in service vehicles such as public transport, and that and **automated driving vehicles will be introduced in a limited areas, while coexisting with manually operated vehicles**.

(2) Target Area

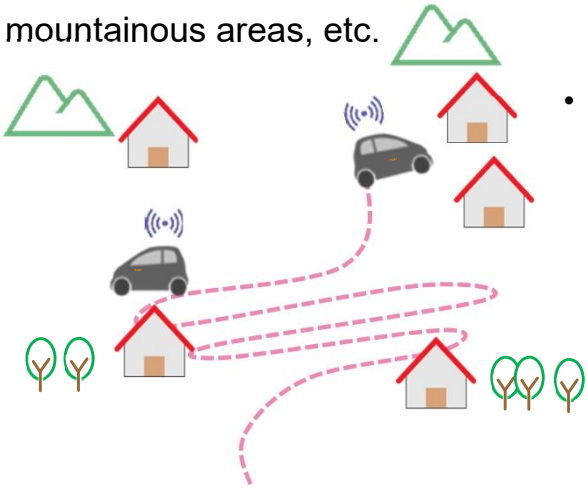
In order to realize an urban image of intensive development through the promotion of the Compact Plus Network, we will set out areas where we would like to prioritize the resolution of issues and **make use of automated driving technology where it is most appropriate**. Specifically, in order to realize the desired urban image of the Compact Plus Network and walkability, we will focus on limited areas **such as street spaces and nodes that serve as public transport axes in urban areas, as well as urban function guidance areas and residential guidance areas (including public transport axes that connect them)**.

○ Urban areas



- Forming public transport axes through increased frequency of operation
- Securing last-mile transport options
- Securing walkable spaces through control of vehicle inflow

○ Suburban mountainous areas, etc.

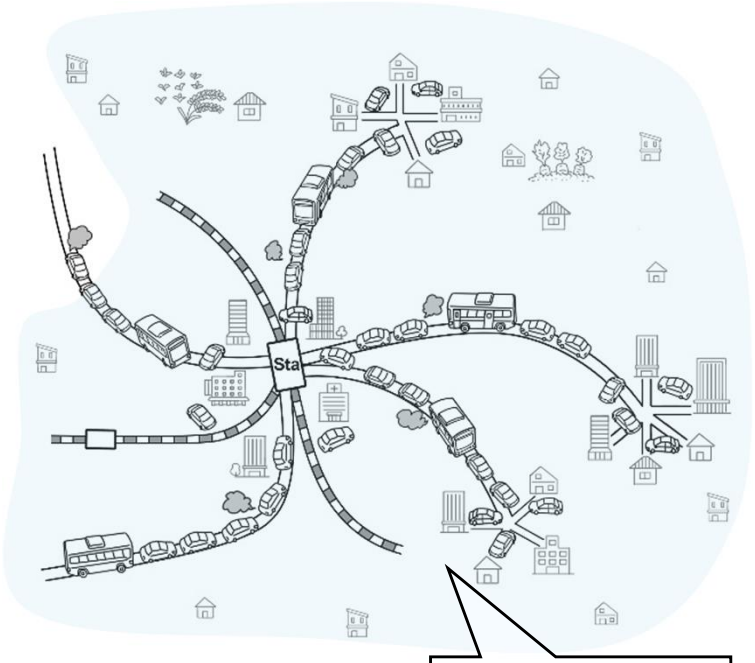


- Covering “transportation voids” with automated vehicles

*This collection of points mainly covers urban areas, but it also includes examples that can be used as a reference when introducing them in suburban mountainous areas, etc.

Countermeasure Points for Utilization of Automated Driving Technology (1)

Present



○Subject Space Issues and Desired Urban Image

Current issues

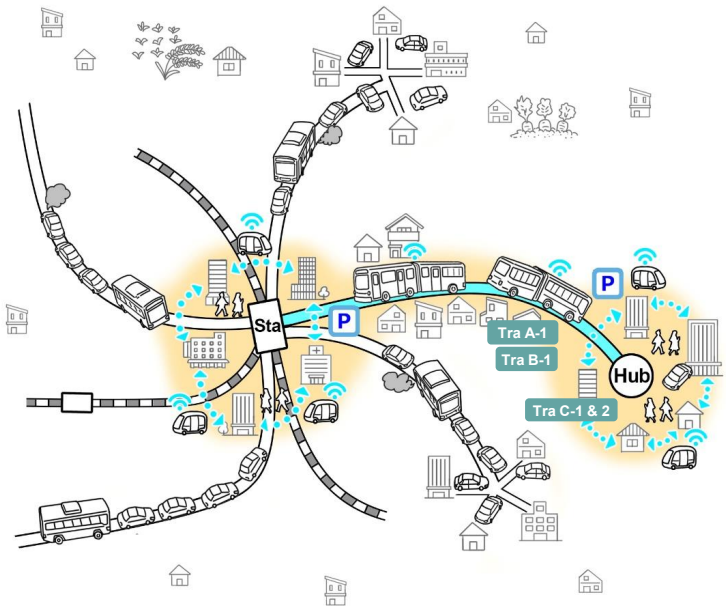
- Decline in the level of public transportation service and shrinking of the network due to driver shortages and other factors.
- The mutual "transfer convenience" of each means of transportation is inconvenient, accelerating the shift away from public transportation.

Desired image of the city

I. The environment is being developed to prioritize public transportation.
II. A public transportation network of trunk lines and feeders has been established.
III. Accessibility to each district by public transportation and convenient transit connections between modes of transportation.

*The assumption here is that the urban transportation system is operated automatically.

Partially automated phase (limited areas, mixed with manually operated vehicles)



Tra A Optimal guidance of traffic flow

Tra A-1 Setting up areas and routes where you want public transportation to run with priority

Tra A-2 Reducing the flow of automobiles into areas where public transportation is prioritized

Tra A-3 Leveling of travel time based on traffic volume forecasts using AI technology, etc.

Tra B Providing public transportation services tailored to the area

Tra B-1 Providing trunk line transportation with high capacity and punctuality on public transportation axes

Tra B-2 Providing feeder transportation to connect mainline public transportation to area travel

Tra B-3 Utilization of sharing mobility, etc. according to decentralized movement within an area

Tra C Development of mobility hubs tailored to the area

Tra C-1 Development of mobility hubs linked to bus stops, etc.

Tra C-2 Development of mobility hubs and fringe parking in the vicinity of destinations (departure points)

Tra D Improvement of the public transportation environment

Tra D-1 MaaS simplifies reservations and payments

○Measures to achieve a desirable city image

Key points of the countermeasures

□ Transportation A: Optimal guidance of traffic flow

The widespread use of automated vehicles will increase the freedom of human mobility, and there is a possibility that this will affect people's choices of where to live and even urban structure. Therefore, in order to optimally control traffic flow, it is necessary to properly manage other forms of transportation while focusing on public transportation.

□ Transportation B: Provision of public transportation services tailored to the area

In order to create regional communities that can develop independently—even in a society with a declining population, aging population and low birthrate—it is important to secure a transportation network that includes both wide-area and local transport. It is also necessary to appropriately arrange trunk transport with high transport capacity and punctuality and feeder transport to provide access to trunk transport.

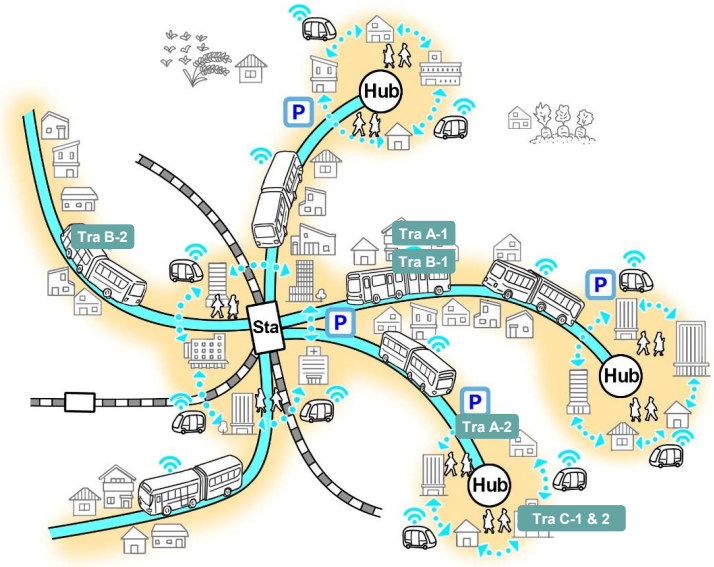
□ Transport C: Development of mobility hubs tailored to the area

They will be used as transfer spots from main transport routes to feeder transport routes, etc., and in a society where automated vehicles are more widely used, it is expected that mobility hubs will also be used as spots for pick up and drop off in city and as places for vehicles to wait.

□ Transportation D: Improving the environment for using public transport

In addition to developing mobility hubs as transfer spots for various modes of transport, it is envisaged that there will be software initiatives such as simplifying the reservation and payment process for shared mobility using MaaS.

Fully automated phase (non-limited areas, without manually operated vehicles)



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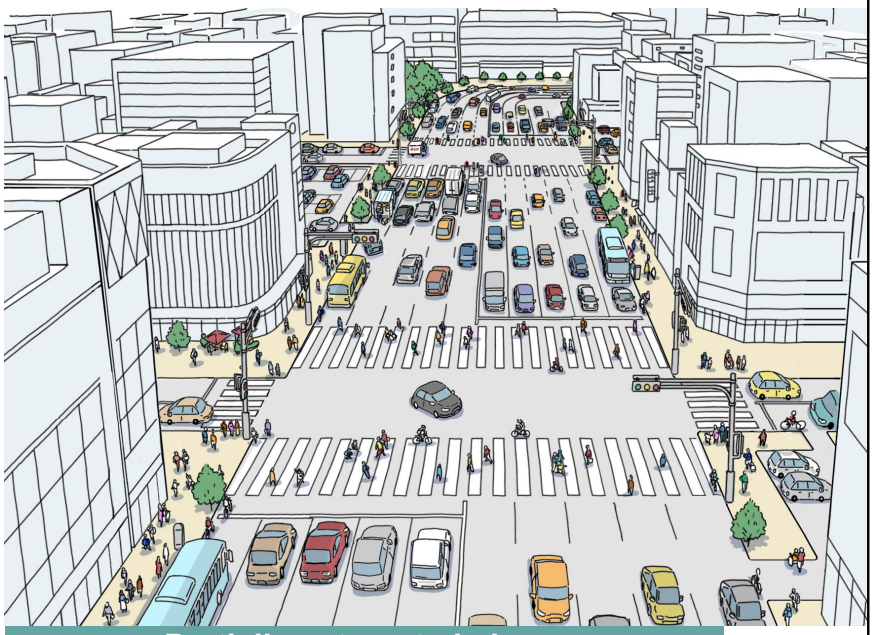
Countermeasure Points for Utilization of Automated Driving Technology (2)

Present

○Subject Space Issues and Desired Urban Image



Current issues

- Traffic congestion occurs due to concentration of demand by private vehicles, etc.
- On-street parking exists for roadside use and cargo handling.
- The priority is given to automobiles, and there is a lack of space for walking and bustling activity.

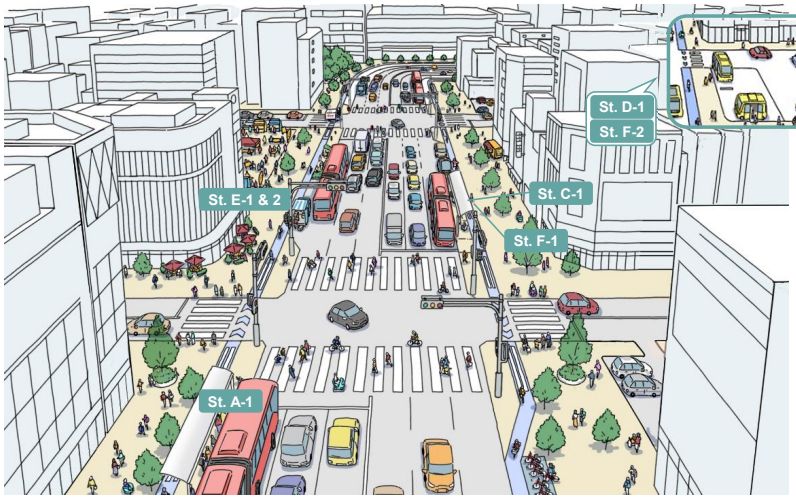
Desired image of the city

I. The roadway has priority for public transportation and the level of service is ensured.

II. Parking and stopping areas are appropriately located both of off-street and on-street to fulfill the roadway function.

III. Shoulders and sidewalks have optimal space utilization according to the land use along the roadway.

Partially automated phase (limited areas, mixed with manually operated vehicles)



St. E Consideration of curbside use that responds to the diversification of roadside needs

- **St. E-1** Selection of routes that make the curbside multi-functional
- **St. E-2** Curbside design
- **St. E3** Flexible operation in response to time of day, roadside usage purpose, etc.

St. F Development of a nodal space that is integrated with the "city"

- **St. F-1** Development of bus stop environments that take into account connectivity and unity with pedestrian spaces, etc.
- **St. F-2** Development of boarding and alighting environments that make use of existing infrastructure such as parking lots of public and commercial facilities

St. A Ensure a driving environment that prioritizes public transportation by reconstructing street spaces

- **St. A-1** Planning and development of dedicated and priority corridors for public transportation adapted for autonomous driving.

St. B Building an environment for smooth and effective use of automated operations

- **St. B-1** Development of infrastructure, etc. to support automated driving as needed
- **St. B-2** Providing information on the road (signal information, presence of pedestrians, etc.) to vehicles as needed

St. C Development of a transit environment that is accessible to all

- **St. C-1** Shape of bus stops and other facilities that allow boarding and exiting without steps or clearances

St. D Ensure a parking environment that supports the smooth operation of public transportation

- **St. D-1** Parking management in the area, including placement of parking in fringe areas

St. G Spatial redistribution to accommodate new mobility solutions

- **St. G-1** Ensure driving space for low-speed mobility
- **St. G-2** Diverse applications of autonomous mobile robots on sidewalks, including mobility assistance, delivery, monitoring, and advertising.

*These are examples of initiatives that are envisioned at the local point in utilizing automated technology, and are intended for each administrator/installation to determine as necessary.
*The initiatives indicated in gray are those assumed to be undertaken from areas where conditions are favorable.

○Measures to achieve a desirable city image

Key points of the countermeasures

□ Street A: Securing a driving environment that prioritizes public transport by reconstructing street space

When introducing automated driving technology for public transport, it is desirable to secure dedicated or priority space, taking into account the status of technological development, etc.

□ Street B: Creating an environment that can smoothly and effectively utilize automated driving

It is possible to create a system that facilitates coordination between relevant parties when developing urban facilities and urban infrastructure, while also developing infrastructure that supports automated driving vehicles as necessary.

□ Street C: Creating a transfer environment that is easy for everyone to use

If service vehicles are to be fully automated, safe and easy-to-use boarding and alighting environments will be needed. It is desirable to work on improving the boarding and alighting environments for both urban facilities such as bus stops and bus vehicles.

□ Street D: Securing a parking environment that supports the smooth operation of public transport

It may be possible to manage the situation by minimizing the influx of owner-driven cars as much as possible, and carrying out parking management including appropriate parking lot layout and pricing.

□ Street E: Considering the use of curbside areas to respond to the diversification of roadside needs

For the time being, loading and unloading areas for delivery vehicles, taxi stands, and curbside spaces for pedestrians are being considered for use, and in the future, it is hoped that they will be used as stops for automated buses and taxis.

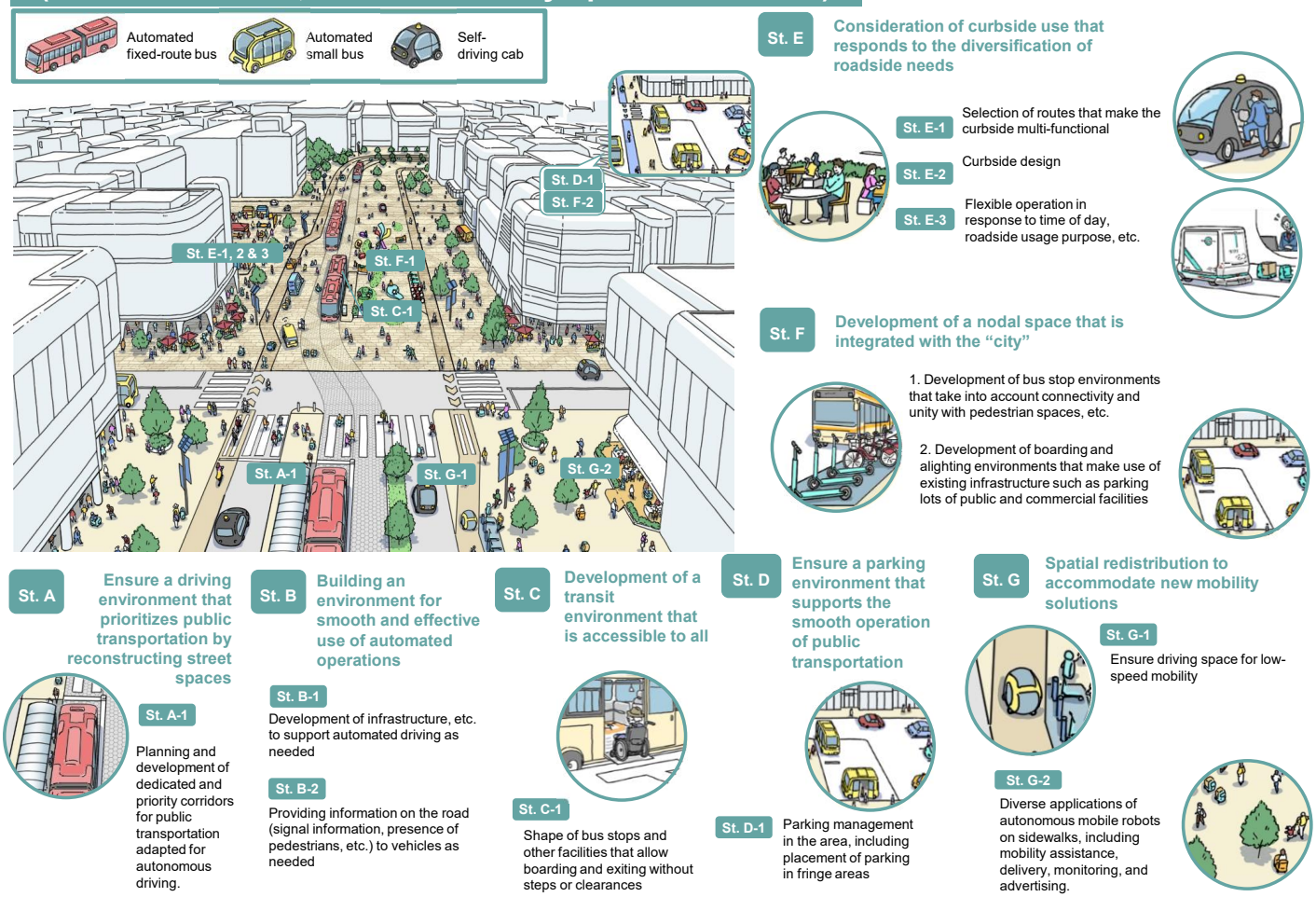
□ Street F: Development of a nodal space that is integrated with the city

As the main public transport nodes are used by many passengers and there is a lot of pedestrian traffic, it is desirable that they be an environment that is easy to use and is continuous with the surrounding pedestrian spaces.

□ Street G: Reallocation of space to accommodate new forms of mobility

For the time being, it will be used as a space for low-speed mobility such as bicycles and electric kickboards, but in the future, it could also be used as a space for low-speed automated vehicles when they become more widespread.

Fully automated phase (non-limited areas, without manually operated vehicles)



Countermeasure Points for Utilization of Automated Driving Technology (3)

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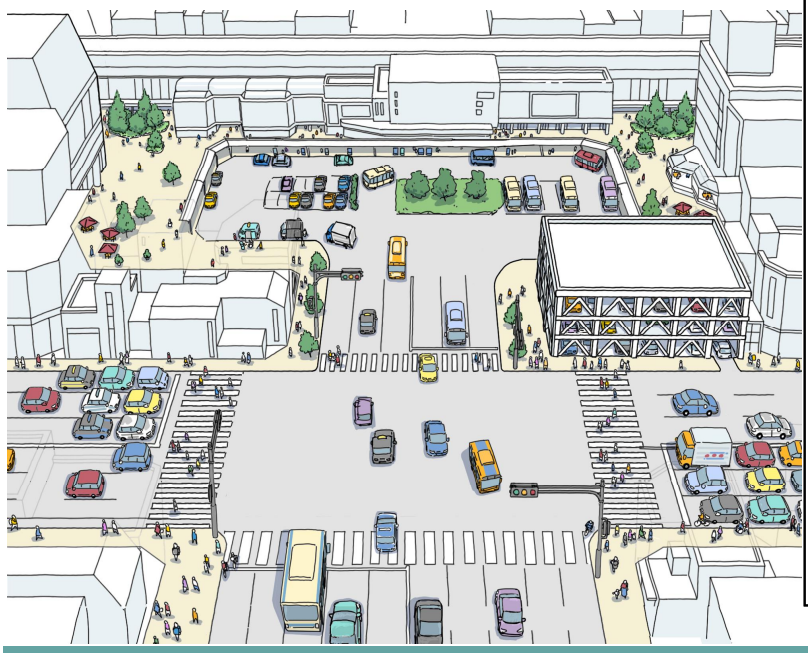


○Subject space issues and desired urban image

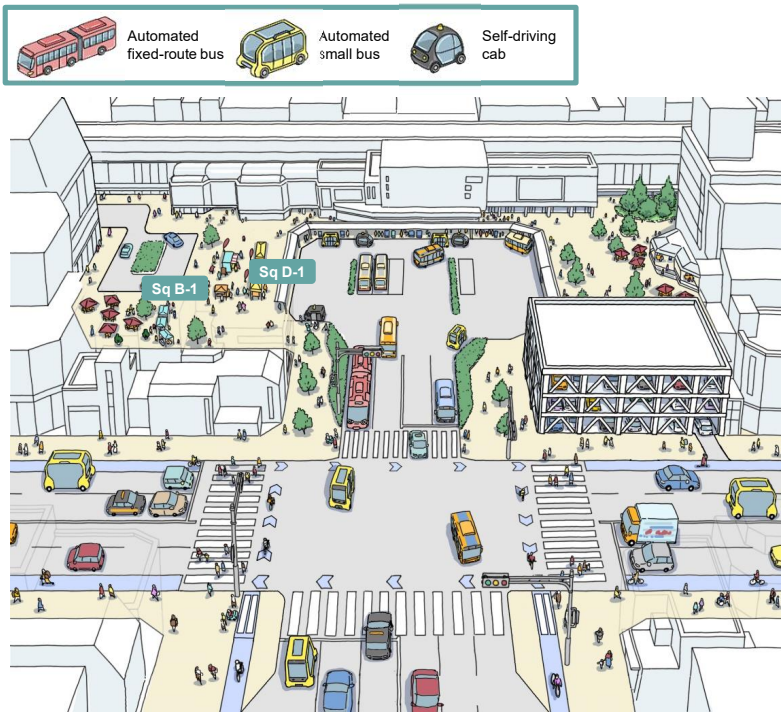
Current issues

- Lack of space for spending time and liveliness.
- There are transfer-related challenges such as complex travel routes, payment procedures, and other inconveniences.

Desired image of the city

I. The station and the surrounding city are integrated to form a comfortable space and attractive landscape for people.
II. Smooth moving and transit spaces are created where public transportation is prioritized.
III. An environment for pick up and drop off that allows appropriate use of private cars and other vehicles is in place.

Partially automated phase
(limited areas, mixed with manually operated vehicles)



Sq C Traffic Control

Sq C-1
Control of vehicles entering the station square (public transportation priority)

Sq D Provide one-stop mobility services

Sq D-1
Simplification of reservations and payments through MaaS
*Refer to Traffic D-1.

Sq D-2
Provision of services that flexibly combine various modes of transportation, such as on-demand transportation

Sq A Creation of square space overflowing with diverse people and activities

Sq A-1
Rationalization of boarding and exiting space and conversion to square space using automated driving technology

Sq B Providing a universal mobility environment with less resistance

Sq B-1
Improvement of the environment to allow people with limited mobility to move more freely and easily, such as barrier-free space design

Sq B-2
Assistance by AI robots and mobility support by personal mobility
*Refer to Street G-2.

Sq E Promoting integrated development of transportation nodes and surrounding urban areas

Sq E-1
Ensuring convenient parking space for various traffic needs to avoid unregulated parking

*These are examples of initiatives that are envisioned at the local point in utilizing automated technology, and are intended for each administrator/installation to determine as necessary.
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○Measures to achieve a desirable city image

Key points of the countermeasures

□ Square A: Creation of square space overflowing with diverse people and activities

For the time being, securing waiting areas in remote locations and consolidating berths will create open spaces, and when service cars become fully automated, more effective use of space is expected.

□ Square B: Providing a universal mobility environment with less resistance

It is necessary to design spaces that are barrier-free and easy for everyone to move around, such as by creating boarding environments that allow people to get on and off the bus without needing assistance.

□ Square C: Traffic Control

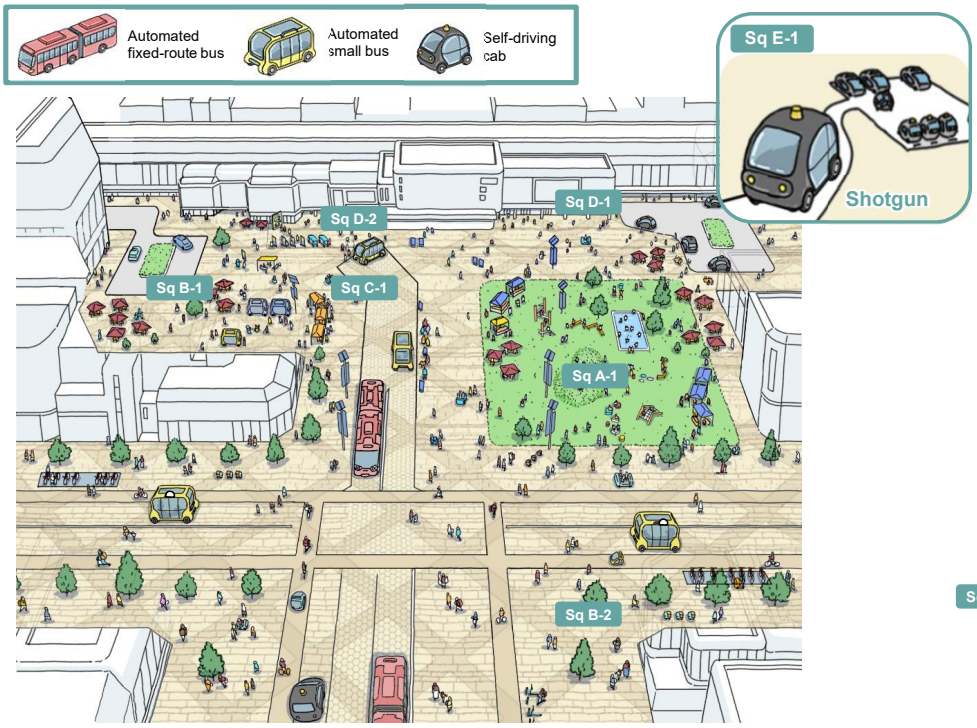
Due to the increased freedom of movement for people resulting from the spread of automated vehicles, in particular, traffic congestion is expected to occur due to the concentration of traffic around stations. In areas that currently have issues such as traffic congestion, it is desirable to appropriately manage other forms of transport while focusing on public transport in order to optimally control traffic flow.

□ Square D: Provide one-stop mobility services *Refer to Traffic D.

□ Square E: Promoting integrated development of transportation nodes and surrounding urban areas

For the time being, parking lots and vacant spaces in the surrounding urban areas will be secured and utilized as places for owners to drop off and pick up their cars and taxis to wait, and when automated driving of service cars progresses, it is expected that they will be utilized as places for automated driving buses and taxis to wait.

Fully automated phase (non-limited areas, without manually operated vehicles)



Sq C Traffic Control

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Sq D Provide one-stop mobility services

Sq D-1
Simplification of reservations and payments through MaaS

*Refer to Traffic D-1.

Sq D-2
Provision of services that flexibly combine various modes of transportation, such as on-demand transportation

Sq A Creation of square space overflowing with diverse people and activities

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Rationalization of boarding and exiting space and conversion to square space using automated driving technology

Sq B Providing a universal mobility environment with less resistance

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Improvement of the environment to allow people with limited mobility to move more freely and easily, such as barrier-free space design

Sq B-2
Assistance by AI robots and mobility support by personal mobility

*Refer to Street G-2.

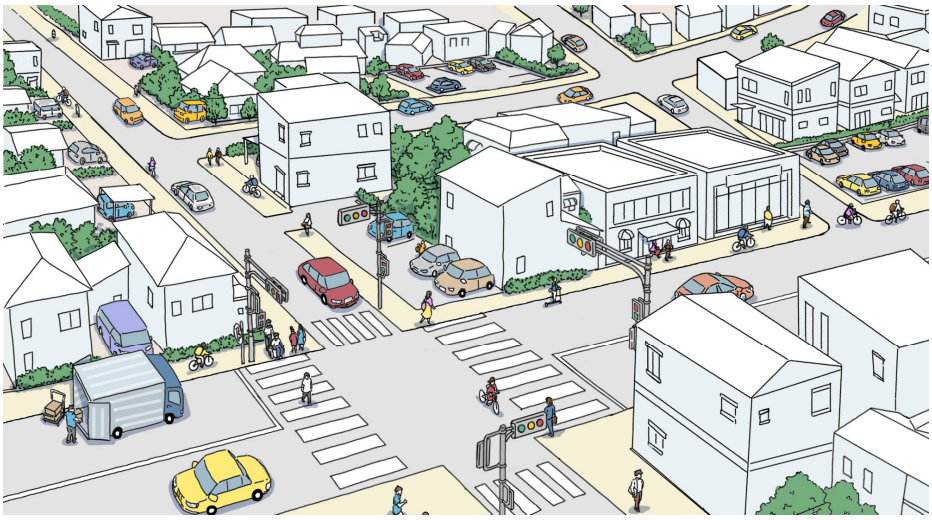
Sq E Promoting integrated development of transportation nodes and surrounding urban areas

Sq E-1
Ensuring convenient parking space for various traffic needs to avoid unregulated parking

Countermeasure Points for Utilization of Automated Driving Technology (4)

Present

○Subject space issues and desired urban image



Current issues

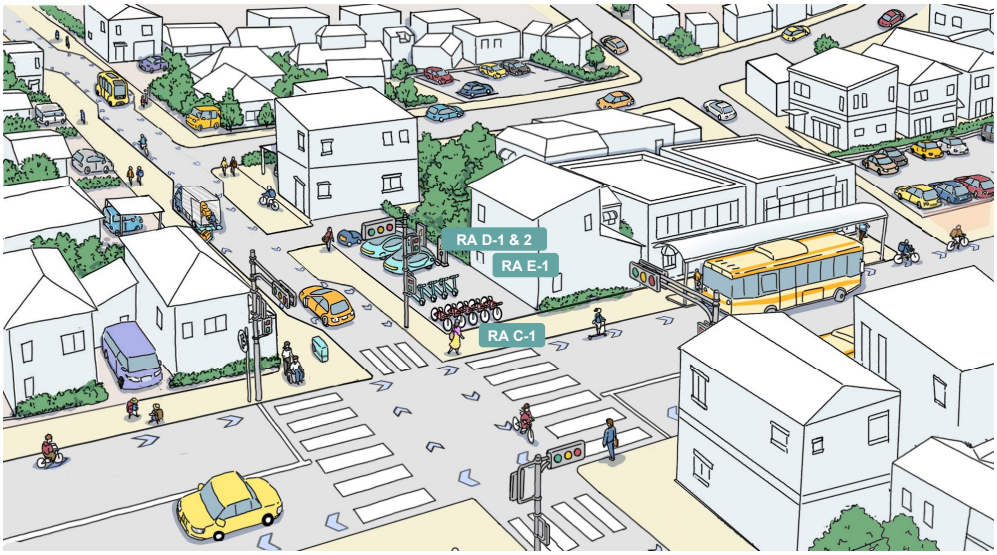
- Pedestrian safety is not ensured due to vehicles driving through residential areas as a loophole, speeding vehicles, etc.
- Lack of transportation for the elderly and other vulnerable groups.

Desired image of the city

I. Safe pedestrian spaces in residential settings where pedestrians are a priority.
II. Provision of means of transportation that do not rely on private vehicles.
III. A well-developed environment for smooth transfers to public transportation hubs.

Partially automated phase (limited areas, mixed with manually operated vehicles)


Automated small bus

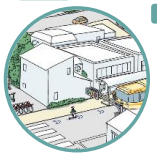


RA C Introduction of sharing mobility

RA C-1
Utilization of shared mobility services to support decentralized movement within the area.
*Refer to Traffic B-3.

RA C-2
Devise a sharing service structure in the area that generates public transportation use, in anticipation of the development of MaaS to simplify reservations and payments, and to guide usage.

RA D Installation of mobility hubs



RA D-1
Development of mobility hubs linked to bus stops, etc.
*Refer to Traffic C-1.

RA D-2
Development of mobility hubs and fringe parking in the vicinity of destinations (departure points)
*Refer to Traffic C-2

RA A Ensure comfortable walking space

RA A-1
Configuration of spaces according to the width and configuration of the street to provide appropriate separation and mixing of pedestrian and other traffic.

RA A-2
Ensure driving space for low-speed mobility
*Refer to Street G-1.

RA B Introduction of Mobility for Walking Assistance

RA B-1
Various uses of autonomous mobile robots, etc. on sidewalks (mobility assistance, home delivery, monitoring, advertising, etc.)
*Refer to Street G-2.

RA E Flexible use of parking spaces

RA E-1
Optimal allocation of cars to shared pocket parking

RA E-2
Use as a mobility hub

*These are examples of initiatives that are envisioned at the local point in utilizing automated technology, and are intended for each administrator/installation to determine as necessary.
*The initiatives indicated in gray are those assumed to be undertaken from areas where conditions are favorable.

○Measures to achieve a desirable city image

Key points of the countermeasures

☐ Residencial A: Ensuring comfortable walking space
For the time being, physical space design and the installation of devices will be used to create an environment that prioritizes pedestrians. In the future, these spaces are also expected to become part of the driving space for low-speed service vehicles, etc. that are automated.

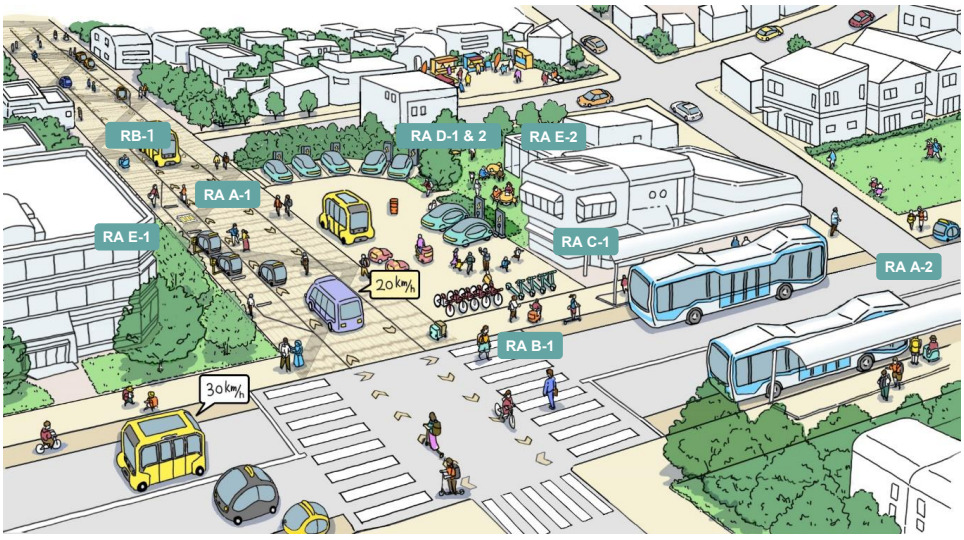
☐ Residencial B: Introduction of walking assistive mobility *Refer to G.

☐ Residencial C: Introduction of shared mobility
In addition to assuming the sharing of various modes of transport, it is also possible to consider the creation of a new system that takes into account the development of MaaS and other services in the future, and that creates new ways of encouraging the use of public transport.

☐ Residencial D: Establishment of mobility hub * Refer to C.

☐ Residencial E: Flexible use of parking spaces
While the introduction of various sharing mobility services is attracting attention as a last-mile mobility solution, it is expected to be flexibly utilized, such as by utilizing existing parking lots and using them as transfer spaces for public transportation.

Fully automated phase (non-limited areas, without manually operated vehicles)



RA C Introduction of sharing mobility

RA C-1 Utilization of shared mobility services to support decentralized movement within the area.
*Refer to Traffic B-3.

RA C-2 Devise a sharing service structure in the area that generates public transportation use, in anticipation of the development of MaaS to simplify reservations and payments, and to guide usage.

RA D Installation of mobility hubs

RA D-1 Development of mobility hubs linked to bus stops, etc.
*Refer to Traffic C-1.

RA D-2 Development of mobility hubs and fringe parking in the vicinity of destinations (departure points)
*Refer to Traffic C-2

RA A Ensure comfortable walking space

RA A-1 Configuration of spaces according to the width and configuration of the street to provide appropriate separation and mixing of pedestrian and other traffic.

RA A-2 Ensure driving space for low-speed mobility
*Refer to Street G-1.

RA B Introduction of Mobility for Walking Assistance

RA B-1 Various uses of autonomous mobile robots, etc. on sidewalks (mobility assistance, home delivery, monitoring, advertising, etc.)
*Refer to Street G-2

RA E Flexible use of parking spaces

RA E-1 Optimal allocation of cars to shared pocket parking

RA E-2 Use as a mobility hub

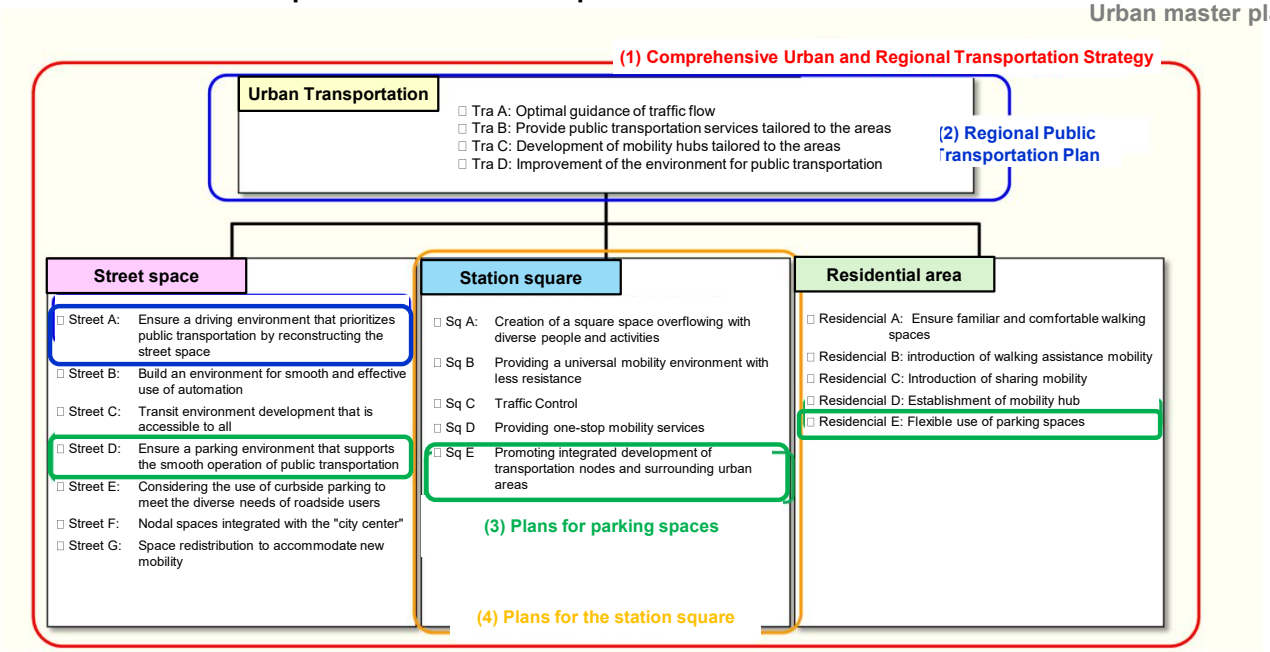
Chapter 3: Reflecting on Planning for the Use of Automated Transportation Technology to Achieve the Desired Urban Vision

(1) Reflecting on Planning for the Use of Automated Transportation Technology

Currently, automated driving is being tested and implemented from a variety of perspectives, including roads, traffic, and DX. To effectively utilize automated driving technology to realize the desired urban vision of each municipality, it is necessary for all parties concerned to share the same goals and clearly define their respective roles, to achieve this, it is important to position automated driving in city planning, and it is necessary to work on this in collaboration with the city planning department.

Measure points for the use of automated driving technology toward the realization of a desirable urban vision and the relationship between the various plans.

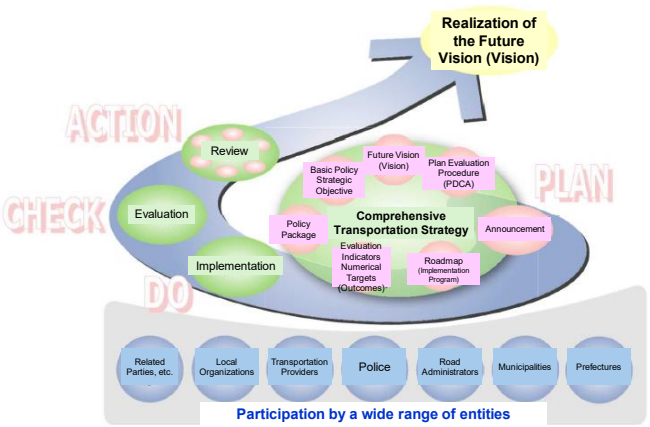
Urban master plan



(2) Reflecting in urban and regional transport strategies

In order to realize the ideal urban and regional image that utilizes automated driving technology, it is first necessary to position the key points of initiatives for utilizing automated driving technology in the "Urban and Regional Comprehensive Transport Strategy," which promotes comprehensive and strategic transport measures. The main points that should be included in the Urban and Regional Comprehensive Transport Strategy in order to utilize automated driving technology are as follows.

(Image of the Comprehensive Transportation Strategy)



(Content to be defined in the Comprehensive Transportation Strategy)

- (1) Current status and issues in cities
- (2) Future vision of the city
- (3) Comprehensive transportation strategy area
- (4) Goals of the comprehensive transportation strategy
- (5) Measures and projects necessary to achieve the goals
- (6) Implementation program based on the division of roles among the parties involved
- (7) Promotion system
- (8) Other necessary matters

Source: Recommendations for Comprehensive Urban and Regional Transportation Strategies: A Guide to Developing Comprehensive Transportation Strategies (revised 2022).

Advanced Cases Related to Automated Driving

Advanced cases of initiatives by local governments to introduce automated driving technology

Field	Direction of the initiative	Case Studies	Relevance to the use of automated driving technology
Urban Transportation	Tra B-1 Providing trunk line transportation with high capacity and punctuality on public transportation axes	Case study of the introduction of BRT, which uses disused railway lines to create a limited space (Hitachi City, Ibaraki Prefecture)	Contributes to the early implementation of automated driving (currently undergoing automated driving verification)
	Tra B-2 Providing feeder transportation to connect mainline public transportation to area travel	Case study of the introduction of an on-demand bus service using AI (Shiojiri City, Nagano Prefecture)	Improves transportation services by resolving the shortage of drivers
	Tra C-1 Development of mobility hubs linked to bus stops, etc.	Case study of the introduction of a shared multi-mobility service (Saitama City, Saitama Prefecture)	Diversifies last-mile transportation options
Street space	St. A-1 Planning and development of dedicated and priority corridors for public transportation adapted for autonomous driving.	Study into the introduction of automated BRT (Higashihiroshima City, Hiroshima Prefecture)	Contributes to the early implementation of automated driving (currently undergoing automated driving verification)
		Development of lanes for exclusive use by public transport (Kanazawa City, Ishikawa Prefecture)	Contributes to the development of limited spaces
	St. E-3 Flexible operation according to time of day, purpose of roadside use, etc.	Utilization of road space according to time of day (Sapporo City, Hokkaido)	Used as a boarding area for service vehicles
	St. G-1 Ensure driving space for low-speed mobility	Securing traffic space with the aim of introducing next-generation mobility (Yokkaichi City, Mie Prefecture)	Used as a travel space for low-speed automated driving vehicles
Station square	Sq C-1 Control of vehicles entering the station square (public transportation priority)	Transit mall around the station (Himeji City, Hyogo Prefecture)	Reduces the number of owner vehicles entering the station square
	Sq E-1 Ensuring convenient parking space for various traffic needs to avoid unregulated parking	Securing parking and stopping space using remote areas (Kyoto City, Kyoto Prefecture)	Used as a waiting area for service vehicles
Residential area	RA A-1 Configuration of spaces according to the width and configuration of the street to provide appropriate separation and mixing of pedestrian and other traffic.	Area-based traffic safety measures using ETC2.0 probe data, etc. (Niigata City, Niigata Prefecture)	Creates a traffic environment that prioritizes pedestrians
	RA C-2 Devise a sharing service structure in the area that generates public transportation use, in anticipation of the development of MaaS to simplify reservations and payments, and to guide usage.	Demonstration experiment for making traffic junctions smarter using MaaS, etc. (Kasugai City, Aichi Prefecture)	Contributing to the sharing of various modes of transport
	RA D-2 Development of mobility hubs and fringe parking in the vicinity of destinations (departure points)	Development of mobility hubs in conjunction with the revitalization of local communities (Musashino City, Tokyo)	Creation of local communities and mobility hubs

Advanced examples of automated driving being incorporated into various plans

Types of plans	Name of Plan	Descriptions related to automated driving
Comprehensive Urban and Regional Transportation Strategy (*including plans created in conjunction with regional public transportation plans)	Higashihiroshima City Urban Transportation Plan (June 2024)	・Positioning “autonomous driving and platooning BRT” as the next-generation transportation system, the plan breaks down BRT (Bus Rapid Transit) as transportation that promotes urban vitality and autonomous driving and platooning as sustainable transportation.
	Gifu City Comprehensive Transportation Plan (March 2024)	・Organization within the framework of utilizing new technology ・Specific assumptions such as positioning in relation to future visions, utilization in central loop buses, utilization in suburban areas and the “last mile”
	Minato Ward Comprehensive Transportation Plan (March 2023)	・Organizing within the framework of utilizing new technology
	Nagoya City Nagoya Transportation Plan 2030 (March 2023)	・Positioning automated driving as a means of maintaining and ensuring the level of public transportation services
Regional Public Transportation Plans	Kamishihorocho City Regional Public Transportation Plan (June 2024)	・Positioning automated buses as one of the options for public transportation ・Specific plans for using automated buses for sightseeing and local transportation
	Sakai City Regional Public Transportation Plan (June 2024)	・Organized in terms of improving convenience through the use of new technology and services
	Komatsu City Komatsu Regional Transportation Plan (April 2021)	・Positioning the introduction of autonomous driving as part of forming a core regional public transport network linking stations and airports
	Maebashi City Regional Public Transportation Plan (June 2021)	・Organized in terms of upgrading the transport environment through the use of new technology