

2040 Vision for Roads in Japan

- To shape a better future for people -

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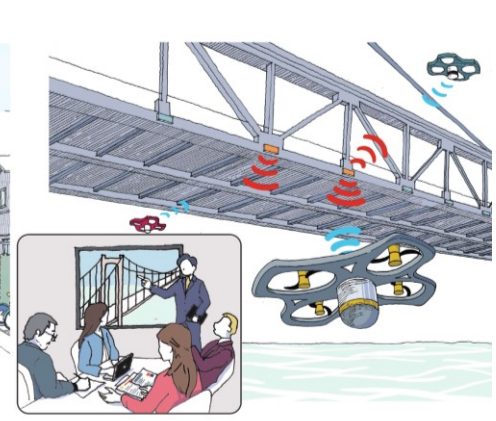
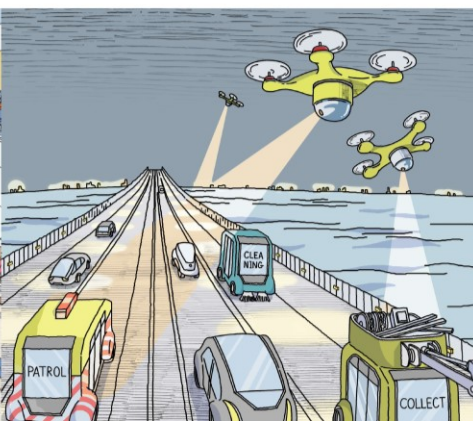
- To shape a better future for people -

(Summary)

To find out more about “2040 Vision for Roads in Japan”
please visit our website.



<https://www.mlit.go.jp/road/vision/index.html>



2040 Vision for Roads in Japan

- To shape a better future for people -

◆ Backgrounds and purpose

New Normal
Post-Covid-19

Declining -
population
society

Digital
transformation
(DX)

Disasters and
climate change
Aging
infrastructure



We propose a vision that creates a Sustainable Society in 2040 and Policy Directions achieved through our road administration.

◆ Basic concept

- “SDGs” and “Society 5.0” aim for a “human-centered society”
 - ➡ **The starting point of road policy is “achieving people's happiness”**
- Social issues such as efficiency, safety, and environmental impact of travel
 - ➡ **Full use of digital technology to “evolve” roads and solve problems**
- Since ancient times, roads have been a place where people interact, where they chat, and where children play
 - ➡ **“Restore” the function of roads as communication spaces**

<Related Sustainable Development Goals (SDGs)>



◆ Changing scenery - Five images for the future -

1. Rush-hour commuting disappears

- The prevalence of telework dramatically reduces mandatory trips such as job commuting
- More people will migrate to and live in the countryside as restrictions due to distance from residence to work disappears

2. Many people on park-like roads

- More leisure trips and visits such as discretionary travel and pedestrian strolls
- Roads fulfill their potential as amenity spaces

3. Movement of people and goods automated and unmanned

- Automated driving services make the car-owning lifestyle a thing of the past
- The penetration of e-commerce leads to the increase of small-lot distribution and the spread of unmanned logistics

4. Cities keep changing as shops keep moving

- In response to customer demand, restaurants, supermarkets etc. locate along the roads
- In hilly and mountainous areas, Michi-no-Eki stations and small mobile shops provide services to residents

5. From "Road to be Affected" to "Road to Relief"

- Disaster-resistance road networks ensure uninterrupted traffic, communication and power, helping to save lives and restore affected areas



Park-like roads



Mobility services to get around conveniently and safely without owning a car

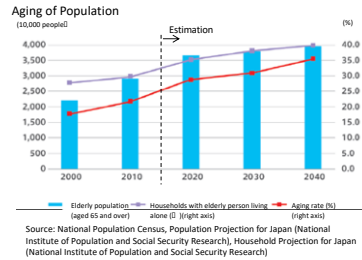
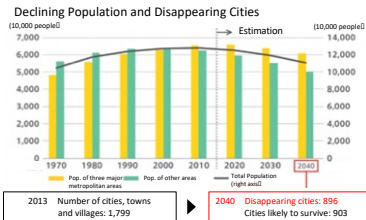


Mobile shops

◆ “Sustainable Society” and “Policy Directions” aimed for by road administrations

<Backgrounds & Issues >

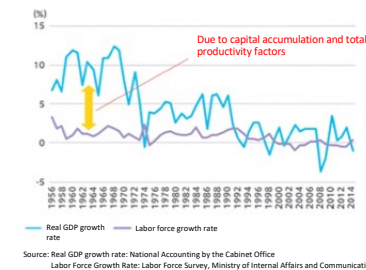
Although the populations of both urban and mountainous areas will decrease in the future, it is necessary to create local communities where residents' lives and livelihoods are sustainable. The goal should be to build a society where, by using new technologies to enhance services, everyone can move around freely without worrying about modes of transport or traffic accidents, where they can interact and participate in society, and where they can experience happiness.



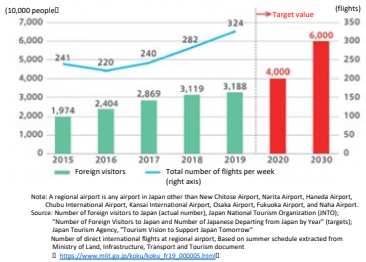
Source: National Population Census, Population Projection for Japan (National Institute of Population and Social Security Research), On the nature of the National Land Transport Strategy for the "Era of Regional Annihilation" (Hiroya Masuda)

Economic growth is essential to enhance the sustainability of society. Economic vitality must be generated by attracting people and goods from abroad to the domestic market, as well as by having Japan actively promote the flow of people and goods overseas. A vibrant society where people and goods are exchanged globally should be built by transforming the services provided by roads and contributing to increased productivity.

Real GDP Growth Rate and Labor Force Growth Rate

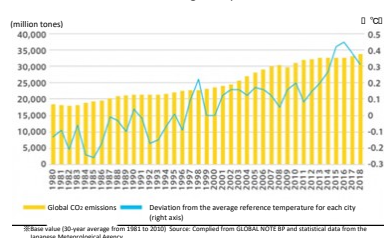


Number of Foreign Visitors to Japan and Number of Direct International Flights at Regional Airports

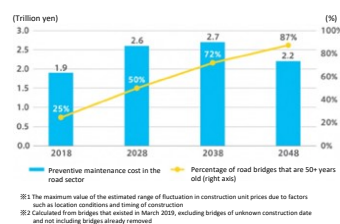


Note: A regional airport is any airport in Japan other than New Chitose Airport, Narita Airport, Haneda Airport, Chubu International Airport, Kansai International Airport, Osaka Airport, Fukuoka Airport, and Naha Airport. Source: Number of foreign visitors to Japan (actual number), Japan National Tourism Organization (JNTO), "Number of Foreign Visitors to Japan and Number of Japanese Departing from Japan by Year" (Targets); Japan Tourism Agency, "Tourism Vision to Support Japan's Tourism"; Number of direct international flights at regional airports, Based on summer schedule extracted from Ministry of Land, Infrastructure, Transport and Tourism document

CO₂ Emissions and Global Average Temperature Deviations



Predicted Road Maintenance Cost through Preventive Maintenance



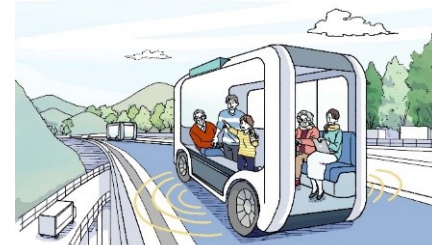
(B) The maximum value of the estimated range of fluctuation in construction unit prices due to factors such as location conditions and timing of construction
(C) Calculated from bridges that existed in March 2018, excluding bridges of unknown construction date and not including bridges already removed

1 A society where everyone can move, interact and participate in society freely, no matter where they are located in Japan

1. Road energizes the land, people utilize the road

The arterial roads network across the country and advanced traffic management enable people to live, move and work freely everywhere in Japan

- Road network for automated-driving
- Cashless toll system



Dedicated paths for automated-driving cars on the arterial road network

2. Get around conveniently without a privately-owned car

Mobility as a service (MaaS) provides a convenient way for everyone to get around without a privately-owned car

- Mobility hub
- Unmanned, automated ride sharing services at Michi-no-Eki stations



Connection and transit hubs for various transportation modes (mobility hubs)

3. Zero road accidents

Universal-design roads that allow people and vehicles to share space safely and comfortably, creating a living space free of road accidents

- Rising bollards restricting access to community roads
- Roads where pedestrians and cars coexist



Safe and comfortable community road

4. Roads where people want to go and linger

Main streets in towns will be reborn as beautiful spaces that make people want to go and linger, creating lively community spaces

- Main streets and Michi-no-Eki stations that serve as regional cores
- Road design reform: Removing utility poles, lighting in harmony with roadside buildings, etc.



Michi-no-Eki stations supporting life in hilly and mountainous regions

2 A society energized by the interaction of people, goods, and services that can be enjoyed around the world

5. Attractive international cities

Road spaces for excellent mobility and public interaction significantly enhance the investment attractiveness as international cities

- Urban transportation systems that are adapted for automated driving and MaaS
- Road shoulders that change functions depending on the time of day



A user friendly urban transportation terminal that supports MaaS and automated driving

6. Sustainable logistics systems

Trunk-route haulage by automated-driving trucks, and autonomous and labor-saving logistics through robot delivery etc. in the last mile can function as a sustainable system both in normal times and during disasters

- Haulage by automated trucks
- Last-mile unmanned transportation by robots and drones



Automated and labor-saving last-mile transportation through robot delivery

7. Attracting tourists from around the world

The Japan Scenic Byways, National Cycle Routes, and Michi-no-Eki stations, etc., will be tourist destinations for domestic and foreign visitors, and sophisticated services such as multilingual road guidance will improve convenience and satisfaction for international visitors and foreign residents

- Going cashless
- Multi-lingual road guidance using smartphone applications, etc.



Multi-lingual street and city information through digital devices and smartphone applications

3 A society where everyone can live safely and securely, eliminating vulnerability to disaster and ageing infrastructure

8. Roads that protect people's lives and property from disasters

In the face of increasingly severe and widespread disasters, a disaster-resistance road network will ensure uninterrupted flow of people and goods to the affected areas, minimizing loss of life and economic losses

- Expressways in disaster mode
- Making Michi-no-Eki stations and SA/PAs disaster prevention centers



An arterial road network with enhanced disaster resistance

9. Low-carbon road transport

Low-carbon road transport systems, comprising the best mix of electric vehicles, fuel cell vehicles, public transport and bicycles, will contribute to curbing global warming

- Contactless power supply system
- Shared cycle system

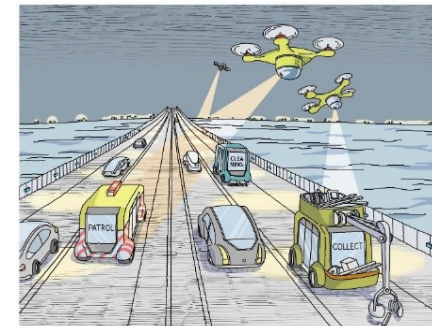


A low-carbon transportation system centered on BRT (Bus Rapid Transit) and bicycles, etc.

10. Extending the life of the road network

The road network is operated sustainably through more efficient and sophisticated preventive maintenance due to the introduction of new technologies

- Automation and labor-saving methods for inspection and diagnosis using AI and measurement/monitoring technologies
- Automation of maintenance work such as snow removal and cleaning



Automated maintenance tasks such as street cleaning and debris collection