

Development of road networks and hubs to support the flow of people and goods

- Connecting people and regions -

It is necessary to ensure the safe and smooth movement of people and goods throughout the country in order to respond to the creation of a multi-nuclear country and stable logistics by correcting the concentration in Tokyo. In order to build a national arterial road network that ensures speed and accessibility, we will work on the development and functional enhancement of high-standard roads. We will also promote measures to strengthen modal connect by developing transportation hubs, counter-congestion, and support logistics.

Express services between cities

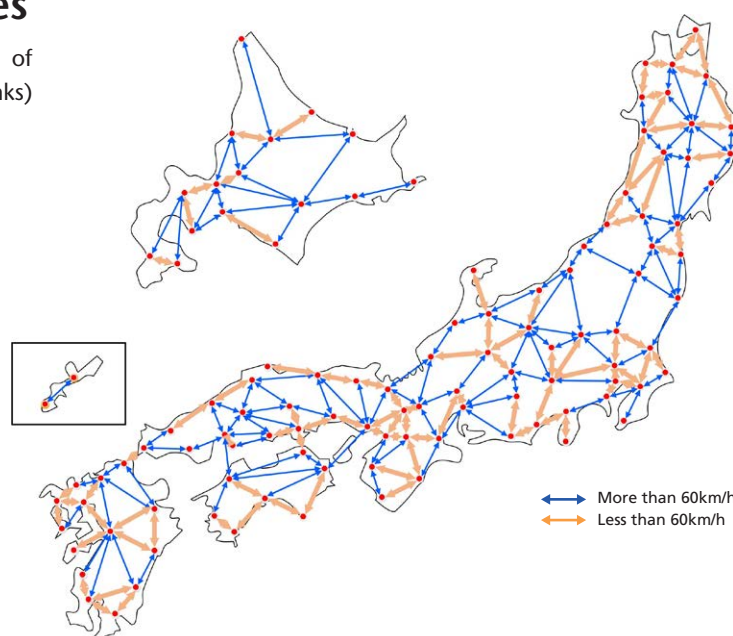
Japan is still lagging behind other countries in terms of inter-city speed, with about 40% intercity(90/208 links) still less than 60 km/h.

■ Status of inter-city travel speed

(Note) Method of calculating the speed of inter-city communication
Covers 113 cities and 208 links. Calculated using ETC2.0 (2020 small car) travel speed data

<Ref.> Average speed of inter-city communication in other countries

Japan	Germany	France	UK	China	Korea
62km/h	95km/h	96km/h	80km/h	79km/h	60km/h



Accessibility to airports and harbors

Airports and seaports are bases for the wide-area movement of people and logistics, but about 60% of them still require 10 minutes or more from high standard arterial roads (82/170).

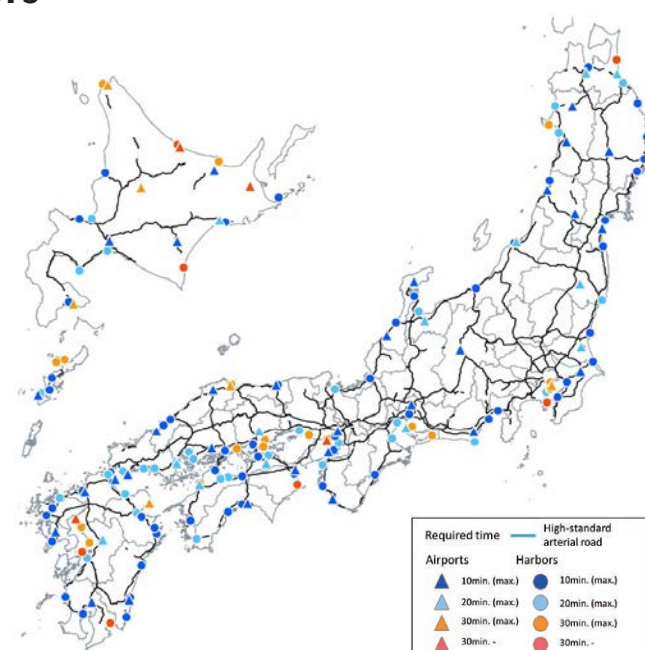
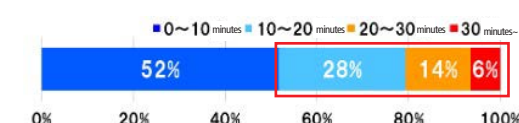
■ Access to major airports and harbors

* Main bases include base airports, jet airports, international strategic ports, and important ports.

* The time required was calculated from the ETC2.0 data for 12 hours in the daytime on weekdays in 2019.

Time required from IC

Approx. 50% requires more than 10 minutes



Construction and functional enhancement of the road network

- Development based on the new wide-area road transportation plan

In order to improve productivity and revitalize the region through the facilitation and revitalization of human flow and logistics, the road network will be surveyed and improved to strengthen its functions based on the "New wide-area road transport plan" formulated in each region.

Background / data

- The pandemic of COVID 19 has brought to light the risk of concentration in Tokyo, and it is necessary to promote the creation of dispersed national land use through new regional development.[Ref. 1]
- With a declining population, low birthrate, and aging society, the shortage of truck drivers, who are essential workers, is becoming apparent, and there is an urgent need to improve the productivity of logistics.
- The number of oversize and overweight vehicle permits for international marine container vehicles (40ft tall) increased by approximately 50% over the past five years (from approx. 310,000 units in 2008 to approx. 460,000 units in 2020).

From the high-standard roads that are positioned for the "New wide-area road transportation plan", planning was formulated based on current transportation issues and the future vision of the region. [Ref. 2]

- Promote functional enhancement by systematical survey and improvement of the road network.
- Additional designation as an "Important Logistics Road" [Ref. 3] will be made, and priority investments will be made with the help of individual subsidy programs.

- Rate of inter-city express delivery by road (2019→2025) : 57%→63%
- Development rate of ring roads in the three major cities (2020→2025) : 83%→89%

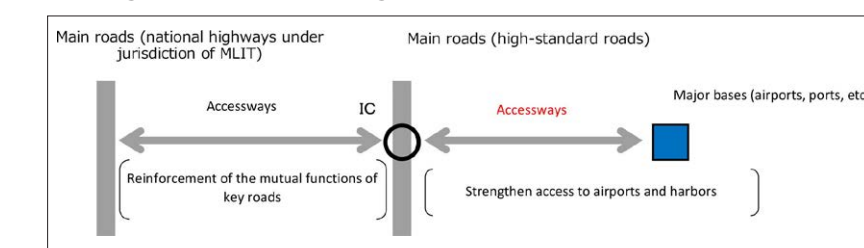
The number of sections where international marine container vehicles (40ft tall) do not require a special traffic permit has been gradually expanded in the sections of the Important Logistics Roads currently in service.

In order to cope with the increase in the size of trucks in the future, performance indicators for important logistics roads will be established, and based on the data, obstacles to traffic will be effectively and efficiently eliminated.

■ High-standard roads in the Tokyo metropolitan area



■ Image of Important Logistics Road



Ref. 1: Basic Policy for Economic and Fiscal Management and Reform 2021

Ref. 2: Versions for prefectures, ordinance-designated cities, and blocks (formulated by regional development bureaus) have been formulated by July, 2021. The plan consists of a wide area road network plan, a transportation and disaster prevention base plan, and an ICT transportation management plan.

Ref. 3: Approximately 35,600 km of roads in service have been designated (as of April 1, 2021).

Construction and functional enhancement of the road network

- Strengthening access to the network from transportation and logistics hubs

To improve accessibility from transportation and logistics hubs to expressways and other networks, we support the development of Smart IC and access roads.

To promote use of the Smart IC system (hereinafter referred to as Private Sector IC), which directly connects expressways and private facilities on the initiative and at the expense of the private sector.

Background / data

- The number of expressway interchanges in Japan is 1,519.*

*The number of IC's managed by expressway companies is included (including those under construction, excluding smart IC's). as of December 2021

- The average spacing between expressway interchanges in Japan is approx. 10 km, which is about twice that of free expressways in the flatlands of Western countries. (US: approx. 5km, Germany: approx. 7km, UK: approx. 4km)
- Access to major airports and seaports from high standard arterial road interchanges is 10 minutes or more in about half of cases.
- As of December 2021, 145 smart IC's are open and 52 are in operation nationwide..
- As Private Sector IC the Awaji-Kita Smart IC (Kobe-awaji-Naruto Expressway) opened in March, 2020, and the Taki-Vison Smart IC (Ise Expressway) opened in April 2021.

In order to promote more efficient logistics, regional revitalization, improved convenience, and enhanced disaster prevention functions, the need for Smart IC's will be examined in the region, and the development of Smart IC's will be promoted in locations where a consensus has been reached .

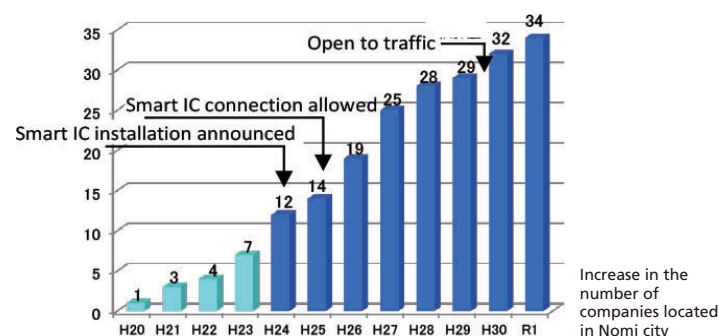
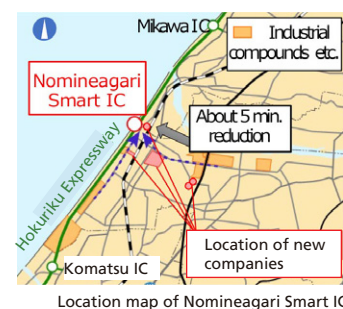
Focused support for the development of access roads in conjunction with the development of interchanges, ports,

airports through individual subsidies.

Promote the development of private-sector direct-connected Smart IC systems through the use of a system that provides interest-free loans to private-sector developers to cover part of the IC development costs, and through the exemption of registration and license taxes when private-sector developers acquire land.

■ Effect of Smart IC development (Nomineagari Smart IC)

- Smart Interchanges will improve accessibility to expressways and surrounding businesses.
- Companies are locating in the vicinity, creating approximately 2,000 new jobs.



■ Construction of an Private Sector (Awaji Kita Smart IC)



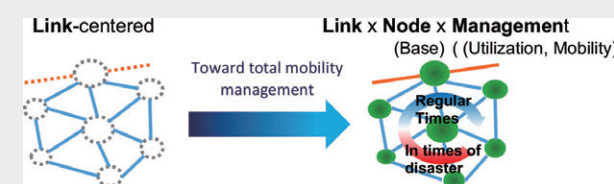
Strengthening the functions of transportation and disaster prevention centers

- Development based on the new wide-area road transportation plan

In addition to strengthening the link functions of the road network, we will promote efforts to strengthen the functions of nodes, such as transportation and disaster prevention centers, in order to respond to the introduction of diverse mobility and increasingly severe disasters.

Background / data

- From the era of link-centeredness to the era of link x node x management



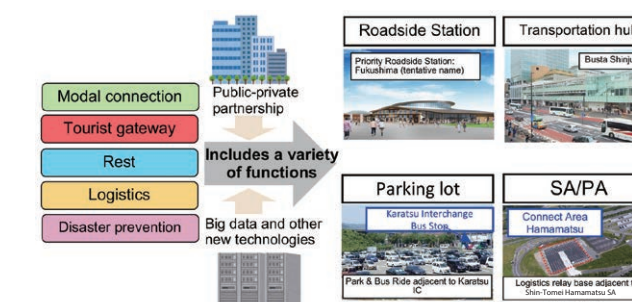
- Number of representative stations (all as of July 2021)
Roadside rest area (Michi-no-Eki): 1,193 stations (Disaster Prevention Roadside rest area (Michi-no-Eki): 39 stations, Priority Roadside rest area (Michi-no-Eki): 103 stations)
Bus terminals (Busta): 1 in service, 6 in operation
SA/PA: 883 (3 NEXCO companies, Metropolitan Expressway, Hanshin Expressway, Honshu Expressway)

Research and develop transportation and disaster prevention bases positioned in the new wide-area road transportation plan, and promote strengthening the functions of bases such as Busta and Roadside rest area (Michi-no-Eki), especially by strengthening connections between transportation modes (modal connect) and providing rest facilities.

Conduct a survey on public involvement in relay transportation bases and cargo handling spaces, based on trends in the logistics industry.

Promote the designation of specified vehicle stopping facilities [Ref. 1], "Disaster Prevention Base Parking Lots" [Ref. 2] as specified in the revised Road Act.

■ Functions and locations on the road network



■ Transportation hub for public transportation

Development of travel space for public transportation such as BRT, and connection and transfer points (mobility hubs)



BRT Oya-Kaigan Station, Miyagi Prefecture Kesennuma line maintained at Oya-Kaigan Roadside rest area BRT Otani Kaigan Station (Miyagi Prefecture)

■ Development of logistics relay bases

Promote the development of transportation bases that contribute to the practical application and spread of relay transportation.



A logistics relay base (Connect Area Hamamatsu) has been constructed adjacent to Shin-Tomei Hamamatsu SA.

Ref. 1: Under the revised Road Act of 2020, dedicated terminals for buses, taxis, trucks (specified vehicle stopping facilities) are positioned as road appendages.
Ref. 2: The system was established under the revised Road Act of 2021.

Efficient and effective traffic jam countermeasures

In order to maximize the functioning of the road network, big data such as ETC2.0 will be utilized to visualize traffic congestion and to efficiently and effectively implement detailed measures according to the causes of congestion and traffic characteristics.

Background / data

- Annual congestion loss per person is approx. 40 hours, which is equivalent to approx. 40% of the time spent driving/riding (approx. 100 hours).
- Tokyo and Osaka are the most congested cities in the developed world (G7). [Ref. 1]
- Approximately 9,000 major traffic congestion areas were identified by the traffic congestion countermeasures councils across the country. (as of November, 2020).

Continue to promote the development of the arterial road network in order to drastically improve areas where traffic congestion is severe.

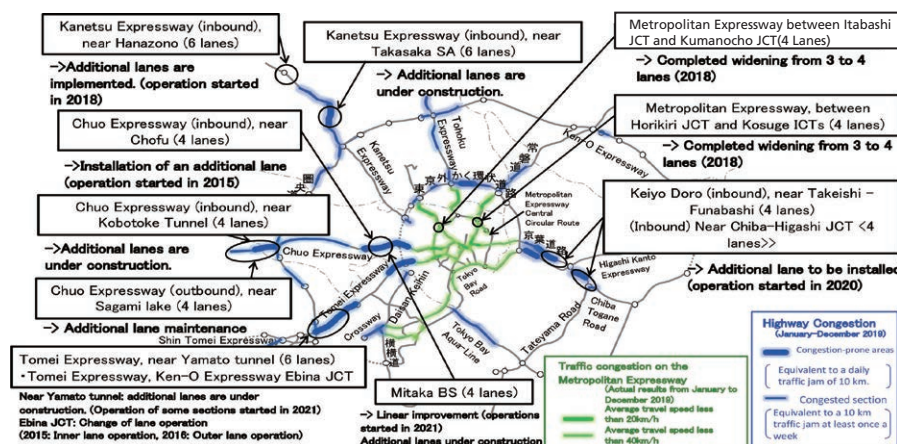
Flexibly implement pinpointing measures using ETC2.0 and other big data in order to achieve early effects of measures against traffic congestion and functional enhancement of expressways (12 locations in the project)

Strengthen cooperation between the Congestion

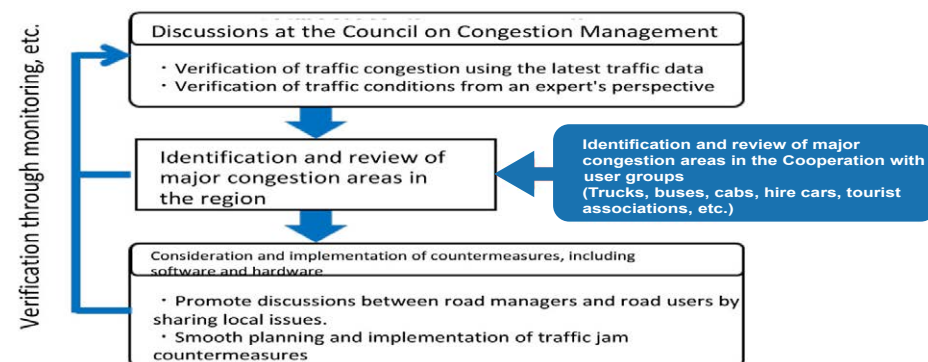
Management Council [Ref. 2] and user groups of trucks, buses and promote nationwide efforts to identify congested areas from the viewpoint of users and implement quick-response measures.

In order to ensure smooth traffic on important logistics roads, continue to require road traffic assessments [Ref. 3] to be conducted for facility sites along the roads, and promote monitoring through the Congestion Management Council and other organizations after the sites are located.

Major traffic concentration points and countermeasures on expressways in the Tokyo metropolitan area



Traffic jam countermeasure flow



Ref. 1: Source TOMTOM Traffic Index 2019 Ranking 2nd in Tokyo and 10th in Osaka among G7 (Japan, Canada, France, Germany, Italy, UK and US) cities
 Ref. 2: Road administrators, police, local governments, user groups in each prefecture, identify major traffic congestion areas in the region, and establish a council for traffic congestion countermeasures to study and implement countermeasures, both in software and hardware.
 Ref. 3: By predicting the impact on traffic in the vicinity prior to location and implementing appropriate measures in advance, the facility can be located without interfering with existing road traffic, and additional measures can be considered if traffic conditions deteriorate after the facility is positioned.

Introduction of tolling measures to optimize traffic flow

Based on the interim report of the Committee on National Arterial Road (Ref. 1), we will promote studies such as the introduction of a new toll system to build a sustainable expressway system.

In order to use expressways more wisely, we will consider the full-scale introduction of tolls based on congestion.

Background / data

Three wise principles of fees

- (1) A fair fee structure based on the level of usage
- (2) A simple and seamless toll system that transcends management entities
- (3) A strategic toll system to optimize traffic flow

Introduction of new expressway tolls in the Tokyo metropolitan area in April 2016

- (Result) Traffic will be diverted from passing through the city center to the outer ring road, and the use of the Ken-O Expressway will be promoted.

Introduction of new expressway tolls in the Kinki region in June, 2017

- (Result) The introduction of the fixed toll rate regardless of route will increase the share of traffic on the Moriguchi Line and alleviate congestion on the Higashi-Osaka Line, which was causing excessive traffic concentration.

Introduction of new expressway tolls in the Chukyo region in May, 2021

- (Policy) Organize and unify the toll system inside the Tokai Kanjo Expressway into a new toll system based on distance.

Revision of expressway tolls in the Tokyo metropolitan area (planned) for April, 2022

Continuation of measures to expand large-lot and multi-frequency discounts

We will continue the expansion of the large/multi-frequent discount for motor carriers using ETC2.0.

(Implemented until the end of March 2023 based on the supplementary budget for the fiscal year ended March 31, 2021.)

Main initiatives based on the interim report of the Committee on National Arterial Road

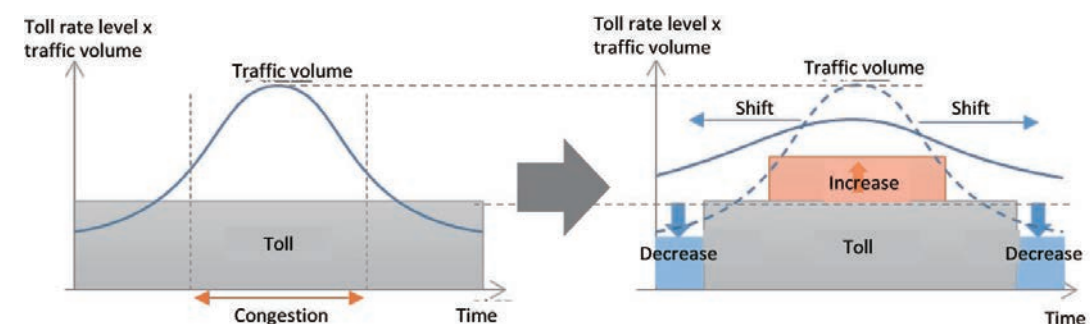
In order to ensure that renewal projects and evolution/improvement efforts (Ref. 2) are carried out, specific consideration will be given to extending the fee collection period based on user fees.

Consideration will be given to reviewing nationwide rate discounts in order to resolve the main current issues.

There will be full-scale introduction of congestion-based toll rates (discounts and surcharges) in metropolitan areas.

To eliminate chronic traffic congestion on expressways in major metropolitan areas, we will promote the introduction of distance-based tolling, in which the toll is proportional to the distance traveled.

Image of fees based on congestion



Ref. 1: Official announcement on August 4th, 2021

Ref. 2: Example measures: Converting tentative two-lane sections to four lanes, reinforcing earthquake resistance, providing space for automated driving, installing EV chargers and hydrogen STs.

