# Chapter 2 Overview of Current Road Traffic Safety Measures

## 1 Improvement of Road Traffic Environment

### ○ Improvement of People-First Walking Spaces Offering Safety and Security

While gaining the cooperation of the local communities, traffic safety measures such as actively improving sidewalks in school routes, residential roads, and main roads in town areas were promoted from the standpoint of "people".

(1) In order to ensure the safety of passage for children and infants attending elementary schools, kindergarten, nurseries, and children's houses, the improvement of sidewalks along school routes were actively promoted.

In addition, improvement was devised for school and kindergarten routes through push-button traffic lights, improving pedestrian lighting and pedestrian overpass, and expanding and augmenting pedestrian crossing.

(2) In March 2009, Prefectural Public Safety Commissions and road administrations cooperated to implement comprehensive accident prevention measures such as pedestrian improvement in 582 residential and industrial areas with high rates of fatal and injury accidents of pedestrians and bicycles that were assigned as 'Safe Walking Areas'.

Additionally, on residential roads outside of such areas, Prefectural Public Safety Commissions and road administrators worked together to prevent speeding vehicles, to define the shape of roads, and to make clear the existence of intersections to drivers and traffic sections for pedestrians and drivers referring to the "Residential Road Accident Prevention Measure Manual". Policies for preventing traffic accidents were implemented to promote the initiative for creating secure road spaces that could be safely shared by both pedestrians and drivers.

(3) The improvement of sidewalks along school routes, in order to ensure the safety of pedestrians and bicycles, were promoted.

Furthermore, in order to ensure that elderly and disabled people can get around on their own, the roads connecting stations, government facilities, hospitals, etc. were improved by installing wide, flat sidewalks. These improvements are based on the new barrier-free laws.

In addition, electric pole clearance and reconstruction projects were also promoted along with the improvement of barrier-free traffic signals, pedestrian overpass with lifting and lowering devices, car parking lots, and car parking lots with parking grids for disabled persons. At the same time, LED lighting and higher brightness for road signs were promoted in order to devise the safety and smoothness of passage for elderly and disabled persons along with adapting to the increase of elderly drivers.

### ○ Application of the Intelligent Transport System

An intelligent transport system (ITS), which attempt to unify people, roads and cars systematically, to improve safety, transport efficiency and comfort, and to contribute greatly to environment conservation through smoothening traffic such as reducing traffic jams using cutting edge information technology, is promoted. For this reason, based on the entire ITS concept formulated in 1996, research and development, field tests, and the development of social infrastructure are to be promoted and improved with the cooperation of industry, government, and academia.

(1) The improvement of systems and the implementation of optical beacons which is key infrastructure of Universal Transport Management Systems (UTMS) were promoted on the basis of the conception of UTMS, that the advanced traffic control center, which plays the leading role, and other equipments attempt to secure the safety and to comfort of traffic, to provide drivers with the advanced traffic information, to control car traffic, to attach priority to public vehicles, to reduce traffic pollution, to support the safety of driving, and to ensure the safety of pedestrians through the use of optical beacons capable of two-way communication with cars and the active and comprehensive management of the flow and stream of traffic.

(2) ITS Spot service is being deployed to create a Smart Way that uses ITS technologies to connect people, cars, and roads by means of information, in order to achieve traffic safety, congestion measures and environmental measures. ITS Spot devices installed primarily on expressways from January through March 2011 are now being used to provide a diverse array of services nationwide. (Due to the Great East

Japan Earthquake, the start of service has been delayed in Tohoku and Kanto, the area covered by the East Nippon Expressway Company Limited, as well as Niigata.)

- **Comprehensive Improvement of a Bicycle Usage Environment**

While clarifying the role and position of bicycles as an urban transport that corresponds with the urban structure, there is a need to recognize bicycles as a transport method along with pedestrians and cars, ensure safety of bicycles and pedestrians by improving a safe and convenient bicycle path as a network, and to improve the general bicycle usage environment. As a result, in January 2008, bicycle paths and bicycle lanes were improved in "bicycle traffic environment model areas" specified by the Ministry of Land, Infrastructure, Transport and Tourism and National Police Agency in 98 districts nationwide, and deliberation is advancing for every issue and its improvement strategy.

Also, in order to correspond to the new needs for bicycle use, the introduction of community cycling was promoted whereby it is possible to freely loan out and return bicycles in cycle ports established in multiple areas within cities.

- **Development of road traffic environment to prepare for disaster**

In order to accurately and promptly perform traffic restriction regulations in accordance with the Disaster Countermeasures Basic Act (Act 223 A. 36), we have promoted the development of transportation information boards that provide information about the status of the disaster and traffic control

**Status of Activities of the Great East Japan Earthquake Regional Disaster Relief Teams**

Police Regional Disaster Relief Teams (traffic units) were engaged in activities in and around the affected areas, such as information gathering in order to secure the status of roads for victims as emergency traffic routes, and ensuring traffic regulation in emergency lanes.

## 2 Dissemination and Reinforcement of Traffic Safety

- **Promotion of Traffic Safety Education for the Elderly**

In order to elevate traffic safety awareness based on the mutual edification of elderly communities, the establishment of traffic safety divisions in seniors' clubs and retirement homes as well as the training of elderly traffic safety instructors (silver leaders) was promoted. Subsequently, voluntary traffic safety activities such as the creation of "*Close-call* maps" were implemented, and instruction and support was given so as to fulfill the leading role of traffic safety activities in local areas and households.

- **Promotion of the Safe Usage of Bicycles**

In order to demonstrate that the bicycle is a vehicle, thus its user need to respect the rules as vehicles and practice traffic etiquette when passing through a road, public awareness-raising activities that apply "5 Rules for Bicycle Safety Usage" shown in the Central Traffic Safety Policy Council Decision were promoted along with traffic safety education such as participatory/revelatory/hands-on bicycle classrooms that target wide bicycle user groups regarding the correct way to ride a bicycle taking into account pedestrians and other bicycles. Such education applies automobile area training courses, audiovisual aids, simulators, and the 'scared straight method' (an experiential educational method that faces fear by seeing accident being reproduced by a stuntman, and so on).

## 3 Ensuring Safe Driving

- **Augmentation for Better and More Effective Measures for Elderly Drivers**

Seminars for the elderly required for elderly drivers who are aged 70 and above carry out: practical

examinations by getting students to actually drive a vehicle, and testing that utilizes driving aptitude test devices. The aim is to make students self-aware of their own physical changes and giving advice and guidance based on these results. People who take this seminar will not need to attend the seminar when renewing their license. In 2010, senior citizens who attended the seminar added up to 2,040,428.

Furthermore, for seminars at the time of during license renewal, an elderly class was organized targeting people between the ages of 65 and 69 and efforts were made to carry out courses that covered the characteristics of elderly drivers and their traffic accidents.

- **Augmentation of Supervision for auto transport companies etc.**

Targeting " Zero drunk driving" and "Decreasing the Number of deaths and personal injuries in commercial vehicles accidents by half in the next 10 years," the various initiatives for efforts to reduce accidents of commercial vehicles are being promoted, based on the "Commercial Vehicles General Safety Plan 2009" established in March 2009.

Moreover, in order to reliably achieve the objectives of the Plan, regular and continuous checks along the PDCA cycle will be conducted, and the goal achievement and progress of the measures will be yearly confirmed among the concerned parties, while new measures will also be considered if necessary, based on factor analysis of traffic accidents.

## 4 Ensuring Vehicle Safety Measures

- **Promotion of Vehicle Safety Measures**

In order to facilitate the creation, advancement and dissemination of advanced safety vehicles (ASV) that uses progressive technology to support driving safety, the 4th phase of the advanced safety vehicle (ASV) project was initiated from 2006. With the collaboration of academic, business, and government circles, the initiative for the practical realization of genuine dissemination of ASV technology utilized up to now and communication-based safety driving support systems is being implemented. In addition, subsidies to fluctuating alarm and collision mitigation brake for heavy-duty vehicles have been implemented.

In order to prevent accidents resulting from incomplete check and maintenance, such as wheel loss of large-sized vehicle and bus catching fire, the government has continued to conduct intensive checks of large-sized vehicles, newly put into operation in 2007, in September, October, and November including "Promotional Campaign for Motor Vehicle Check and Maintenance" month and has informed about the cautionary items in the check and maintenance of large-sized vehicles such as trucks and buses.

In 2004 the government responded to the need to detect cover-ups and other illicit practices being made by automakers through initiating measures to prevent the recurrence of fraudulent recall-related activities by bolstering the various systems in combating unfavorable information gathering, auditing of defective vehicle-related businesses, and technical inspections, and steadily implemented measures in prevent any recurrence in 2010.

Furthermore, in order to assume the perspective of the user even better, the recall system have been carried out to strengthen the organizational structure that aims to strengthen the research and analysis and information gathering system.

## 5 Improvement of Rescue and Emergency Medical Systems

- **Promotion of the "Doctor-Helicopter Business"**

For the purpose of augmenting medical treatment during ambulance transport and on emergency sites, doctor-helicopters were in the process of being promoted based on "special law relating to ensuring emergency medical treatment using emergency medical helicopters" established and implemented on June 27, 2007. By the end of 2010, 26 doctor-helicopters had been deployed to 27 prefectural medical emergency centers in 24 prefectures (including code-share prefectures).

- **Augmentation of Fire Departments and Collaborative Systems for Medical Agencies**

In recent years the length of time since a call is made to 119 till an injured or ill person is brought to a hospital has been lengthening. Furthermore, these have been cases with the difficulty of selecting a health care facility that will accept the injured or ill person. Given such conditions, the Fire Service Law was amended in 2009, and the criteria (hereinafter referred to as "Performance Standards") related to the implementation of patient transport and acceptance was decided. Such criteria was decided in order for prefectures to swiftly and appropriately facilitate the transportation of sick or injured people and their acceptance into healthcare facilities as emergency operations through the fire department. Also, a committee is to be established to hold conferences regarding performance standards; the members will be the fire department and healthcare facilities. As of now, April 1st, 2011, the performance standards have been developed in 40 prefectures.

# Topics

## Efforts for Maximum Speed Limit on Residential Roads

### Occurrence status of traffic accidents on roads with carriageway width of less than 5.5 m in urban areas

Road traffic accidents on roads with carriageway width of less than 5.5 m in urban areas accounted for 18.2 percent of all accidents during the year 2010, while the fatal accidents accounted for 6.8% of all fatal accidents. Many of such kind of roads are roads that are called residential roads, used in daily life by local residents.

### Review of traffic regulatory standards on residential roads

In the National Police Agency, in 2009, a review of traffic control standards for residential roads was conducted according to the maximum speed limitation, “taking into account the conditions and circumstances of traffic accidents of vehicles and pedestrian traffic, thoroughly based on the opinions of residents, local public entities and road administrators, the roads for reducing the speed limit were selected, and the maximum speed on such roads to be set as 30km/h in principle" was determined.

### Speed limitation measures for residential roads in Kawaguchi, Saitama Prefecture

In Kawaguchi City, Saitama Prefecture there was an occurrence of an accident in which kindergarteners were victims in 2006 raising high concern for the safety of citizens on the residential roads, therefore active regulations for maximum speed on residential roads were reexamined and it was decided to take measures such as setting the maximum speed limit.

1) Managing the routes requested for speed limit regulations among the main roads of the city

In order to manage the residential roads that are considered necessary to set speed limit regulation of maximum speed of 30 km/h by the citizens in Kawaguchi city, the requested routes were organized by the council of all the districts of the city.

2) Survey of the requested route

Saitama Prefecture police conducted a survey regarding traffic flow, transport speed, and road conditions for the routes requested for speed limit, and selected the routes to implement the 30km/h maximum speed regulation.

3) Examination of concrete measures

Although it was decided to implement the traffic regulation of maximum speed limit30km/h on fixed intervals for the selected routes, it was decided to carry out the maximum speed limit throughout the area (regulations zone) in 2 districts (Shiba district, Nishi Kawaguchi district) where highways are surrounding and the selected routes are integrated.

In addition, in order to ensure the safety of pedestrians on roads implementing the regulations of 30km/h maximum speed, installation and widening of side-strips was decided to be implemented, and was conducted by wiping the center line on two-lane road.

Before the measures (with the center line)


After the measures (the center line erased, side strips installed, area regulations sign on a backboard installed)

# Topics

## Nationwide deployment of ITS Spot services

Beginning with the start of ITS Spot service on all lines of the Bayshore Route on January 31, 2011, from January throughout March of the same year, it became possible for the services to be received at approximately 1,600 locations, primarily on national highways. (It should be noted that the start of service has been postponed in Tohoku, Kanto (the area covered by the East Nippon Expressway Company Limited) and Niigata due to the Great East Japan Earthquake.)) For inter-city expressways, ITS spots are generally placed every 10 ~ 15km, including about 90 locations in front of junctions, for inner-city expressways they are located approximately every 4km.

In addition, since the compatible car navigation systems have been available from private companies since fall of 2009, it is now possible to receive a variety of services across the country.

The following three basic services are implemented at ITS spots:

(1) Dynamic route guidance (2) Safe driving support (3) Electronic Toll Collection (ETC)

(1) Dynamic route guidance is a service that enables drivers to select the fastest route according to the latest information at the time, by providing real-time road traffic information on national highways covering a wide area and various possible inter-city expressway routes, and finding the fastest route using the navigation system.

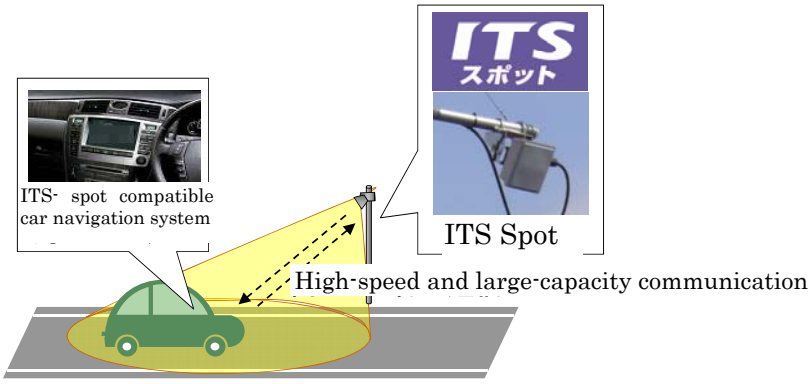
ITS spots provide the car navigation system with data on travel times for each road sector, for roads with a total length of up to 1,000 km. Through the use of this data, it is now possible for the car navigation to calculate the quickest route at any time and provide this information to the driver.

(2) The ITS Spots also provide safe driving support information in accordance with the traffic safety challenges of each road. For example, about 50,000 falling objects accidents occur on the Metropolitan Expressway each year (about 1 case every 10 minutes). Using ITS Spots to broadcast the information collected in the traffic control center to provide an appropriate amount of time in advance before the obstacle, reduction in the number of close calls while driving is expected.

In addition, warning drivers about traffic jams, etc., that cannot be seen around curves at high-accident locations, reduction in the number of rear-end collisions is expected. Further, at the Sangubashi curve, where accidents occur most frequently on the Metropolitan Expressway, accidents have been reduced by about 60% due to measures such as providing information through road information boards in addition to car navigation systems. Furthermore it is now possible to use images to inform drivers about the traffic conditions in tunnels, as well as about weather conditions such as snow or fog.

(3) ITS Spot services use the same communication technologies as ETC, making it also possible to receive conventional ETC services by using compatible car navigation systems.

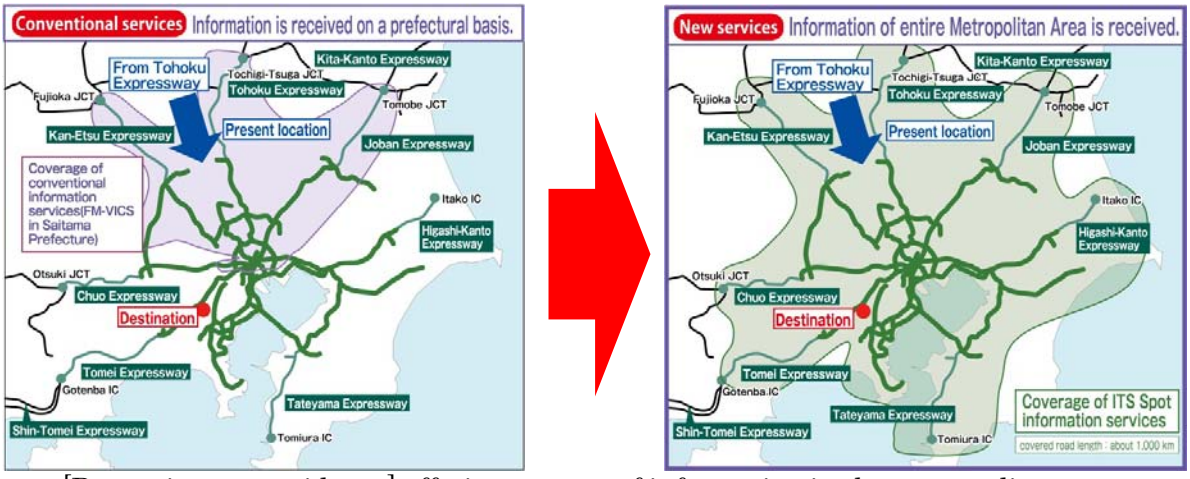
In addition, since the ITS Spot communication-compatible car navigation systems are manufactured in accordance with international standards, international expansion into Asia and other regions is also possible, and this is expected to contribute to industrial growth in Japan.




Overview of ITS Spots and ITS Spot compatible car navigation systems

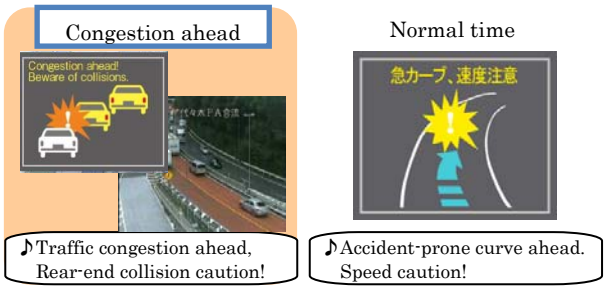
○ Data for all highways in the metropolitan area are available at ITS Spots at points of entry from the suburbs to the metropolitan area, making it possible for compatible car navigation system to determine the best route.

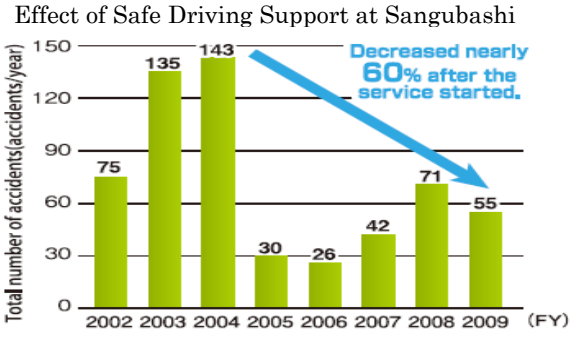
○ The route to avoid the congestion in the city can be selected from many routes, making it possible to use the entire road network effectively.




[Dynamic route guidance] offering a range of information in the metropolitan area

○ On Sangubashi curve, the worst accident hotspot on the Metropolitan Expressway, a rear-end collision warning is sent when congestion at the target curve is detected by the sensor.
→ The accident probability has decreased by 60%.


[Safe driving support] In advance warning alert during driving to reduce close-calls.

# Topics

## Field survey on European bicycle traffic and the results the national questionnaire

1) Survey Overview

In fiscal 2010, the Cabinet Office held a Survey Investigation Committee on measures to improve the overall safety of vehicle traffic, implemented case studies of the progressive efforts approaching bicycle traffic safety in European countries, and conducted a web questionnaire regarding the actual use of the bicycles by the public and the compliance with the rules. Implementation results are as follows.

2) Case studies pertaining to the progressive approach of bicycle traffic safety in European countries

Visits were made to the concerned bodies, such as the national and local governments of the Netherlands, Denmark, Germany, Finland, and France, the five countries, where bicycle traffic safety is high or where the progressive approach is being implemented, and hearings regarding national efforts were conducted.

<Examples of the major efforts in Europe>

The following may be mentioned as examples of research in Europe to comprehend the main efforts:

・A lifelong traffic safety education program

Based on recognizing that education from parents is the foundation, in preschool period, the traffic safety education is conducted for both parents and children. In addition, there are helpful materials and advice that can be obtained from experts and churches.

In addition, educational programs focusing on both understanding and obedience are often taught to 3rd-4th grades of elementary schools.

・Specifying clear cycling methods

In Denmark, bicycles basically have to run on bicycle-specified roads. Furthermore, on car roads, bicycles have to follow the same rules as vehicles. However, there is also space on the painted strips made on one-way streets that allows bicycles to run reverse.

・Space maintenance with consideration for the bicycle users safety

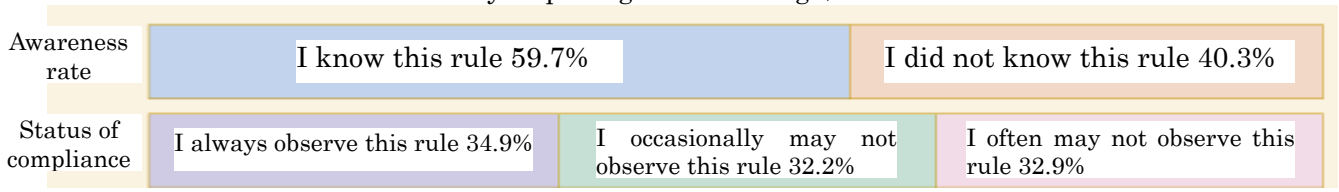
As highly effective efforts to prevent accidental entrapment at intersections, setting the number of meters as the stop line for bicycles before cars have been actively carried out in various places.(Photo shows the example in Denmark)

3) Web questionnaire[1] pertaining to the actual use of bicycles by the public and compliance with rules

Web questionnaire demonstrated the answers of 2,000 men and women aged 18 and over across the country (bicycle users: 1,500 persons, pedestrians or vehicle users: 500 persons), depending on the geographic distribution of population by age group.

<Examples of the main results of the national survey>

[Diagram] Awareness and compliance with the rules of bicycle use (As a general rule, do not cycle on the sidewalk unless there is a "bicycle passage allowed" sign)




4) Measures to improve the safety of bicycle traffic in Japan

Based on the results of the survey 2) and 3), the matters to be considered as measures to improve the safety of bicycle traffic in Japan are as follows:

・For parents, the provision of opportunities to participate in traffic safety education of children is effective to facilitate the iterative guidance to children by promoting the dissemination of teaching to preschoolers and students by their parents.

・To encourage compliance with traffic rules and manners, the usage of the Scared and Straight educational techniques is effective to recognize the risk of accidents during bicycle riding and is also necessary to increase further awareness regarding the five rules of safe bicycle use.

・It is important to promote voluntary participation of local residents, investigation of accidents in terms of regional and urban development, based on the actual bicycle use and low-risk riding methods and securing of bicycle traffic space.

[1] This questionnaire survey was conducted for the intended purpose to comprehend the broad trends in Japan and may not necessarily be held as a representative value of the actual situation in our country in terms of the statistical reliability of the number of samples and collection methods.