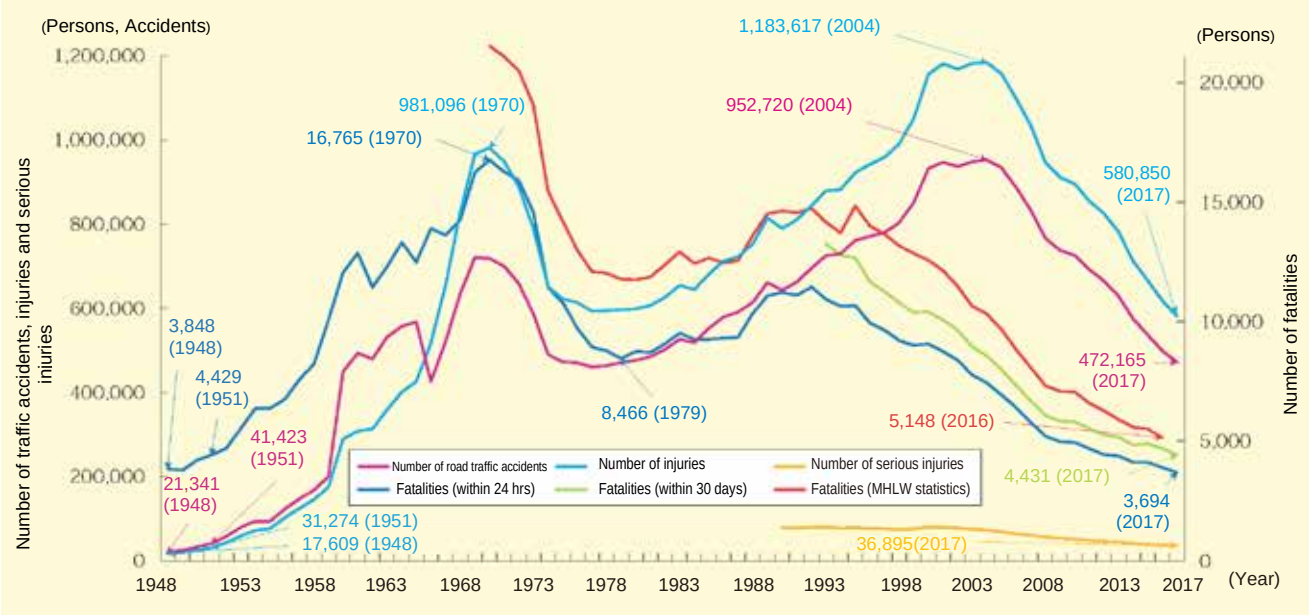
# Part 1 Road Transport

## Chapter 1 Road Traffic Accident Trends

### 1. Long-Term Change of Road Traffic Accidents

The number of traffic accident fatalities is the lowest since 1948 when the current traffic accident statistics were adopted

u Chart 1-1 Changed in the number of road traffic accidents, number of fatalities, number of injuries and number of serious injuries caused by road traffic accidents




Note:
1. Source: National Police Agency
2. Data for 1965 and all preceding years include property damage-only accidents. Data for 1971 and all preceding years do not cover Okinawa Prefecture.
3. "Fatalities (within 24 hrs)" means the number of persons who died due to a traffic accident within 24 hours after its occurrence.
4. "Fatalities (within 30 days)" means the number of persons who died due to a traffic accident within 30 days after its occurrence (counting the day of the traffic accident as the first day).
5. "Fatalities (MHLW statistics)" is prepared by the National Police Agency based on "Vital Statistics" by the Ministry of Health, Labour and Welfare and is the number of fatalities whose cause of death is traffic accident among the fatalities in the year (which excludes anyone who died later than a year after the accidents or due to an after-effect). Data for 1994 and all preceding years indicate the number of automobile fatalities, and data for 1995 and all following years indicate the number of traffic fatalities except those not to be considered due to traffic accidents on roads.

**[Changes in the number of fatalities (fatalities within 24 hours), accidents and injuries in traffic accidents]**

- The worst fatality record was registered in 1970 with 16,765.

The Traffic Safety Measures Basic Acts was established in 1970 and since then the Fundamental Traffic Safety Program was formulated every 5 years based on the Act.

- The number of fatalities fell to 8,466 in 1979 and started to increase again. Since 1992, however, the number started to decline again.
- The number of both traffic accidents and injuries registered the worst record of 952,720 and 1,183,617, respectively in 2004.
- The number of traffic accident fatalities was 3,694 in 2017, which is the lowest number since 1948 when the current traffic accident statistics were adopted. Both the number of traffic accidents and the number of injuries have decreased for 13 years in a row.

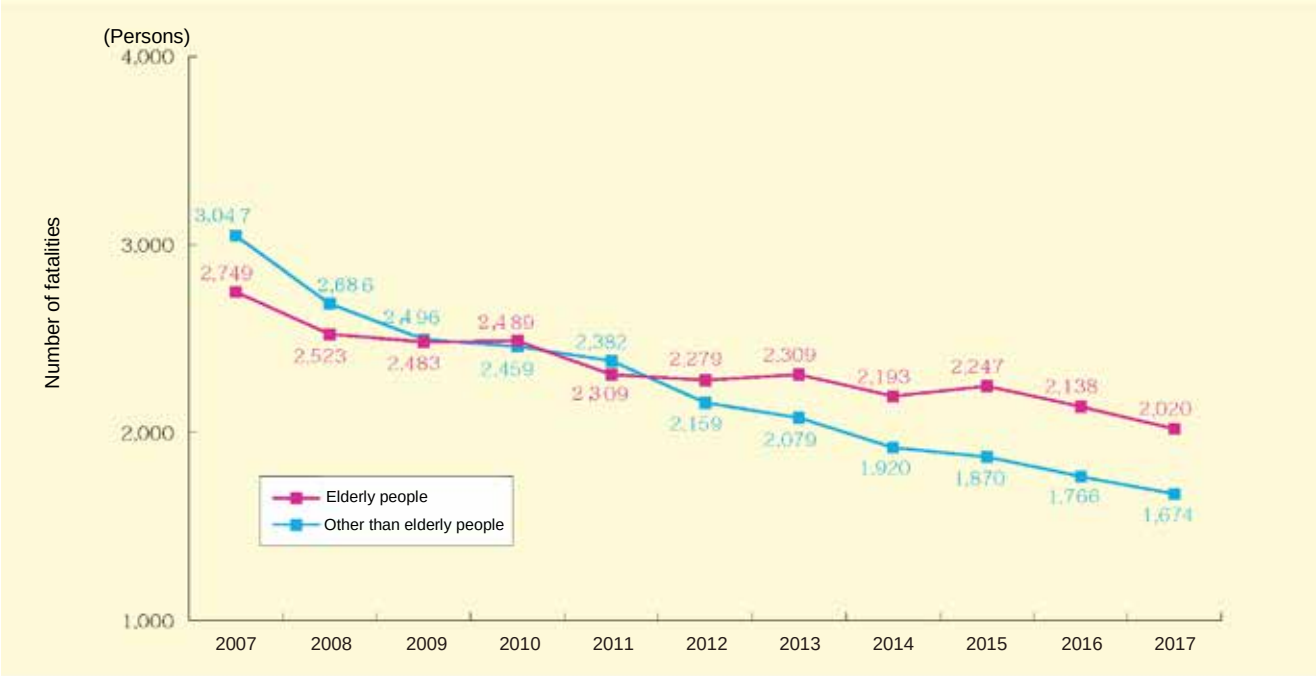
## 2. Road Traffic Accident Conditions during 2017

### l Overall Condition

| | | | |
|---|---|---|---|
| ™ | Number of accidents: | 472,165 | (- 27,036, - 5.4 % over the previous year) |
| ™ | Number of casualties: | 584,544 | (- 38,213, - 6.1 % over the previous year) |
| ™ | Number of injuries: | 580,850 | (- 38,003, - 6.1 % over the previous year) |
| ™ | Number of fatalities (within 24 hours): | 3,694 | (210, - 5.4 % over the previous year) |
| | (within 30 days): | 4,431 | (267, - 5.7 % over the previous year) |

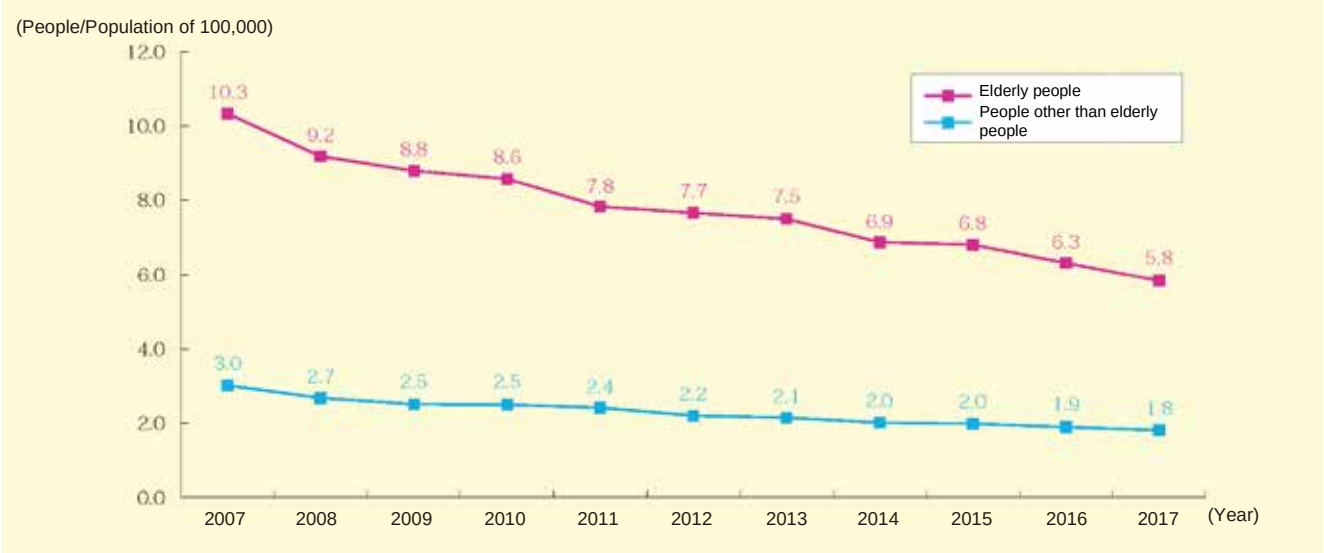
The number of traffic accidents and the number of injuries have decreased for 13 years in a row along with a decreasing trend in the number of people killed, recording the lowest number since 1948 when the current traffic accident statistics were adopted.
Although the number of traffic accident fatalities of elderly people of 65 years old and over (hereinafter referred to as “elderly people”) per a population of 100,000 has continued to decrease, the number of elderly people among people killed in traffic accidents was 2,020 accounting for 54.7% of the total fatalities (Charts 1-4 and 1-5).
In addition, the fatality rate has been in an increasing trend in recent years. This is due to the fact that while the population of elderly people whose fatality rate is about six times higher than that of other age groups, the population of other age groups has been in a decreasing trend (Chart 1-6).

u Chart 1-4 Changes in the number of traffic accident fatalities of elderly people and others



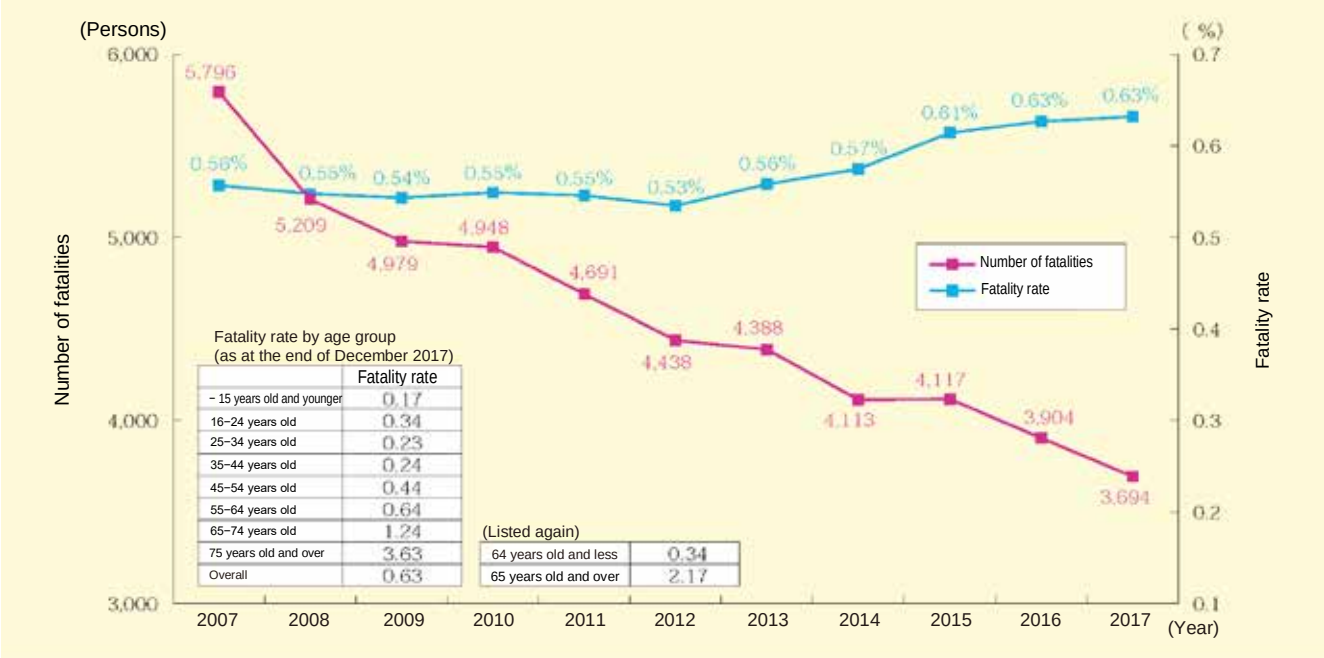

Note:
Source: National Police Agency

## u Chart 1-5 Changes in the number of fatalities of elderly people and others in traffic accidents per a population of 100,000




Note:
1. Source: National Police Agency
2. The population used for the calculation is that of the year previous to the subject year. The “population of the previous year” is s based on statistical data “Population Census” or “Population Estimate” (as of October 1st each year) of the Ministry of Internal Affairs and Communications.

## u Chart 1-6 Changes in the fatality rate and the number of fatalities



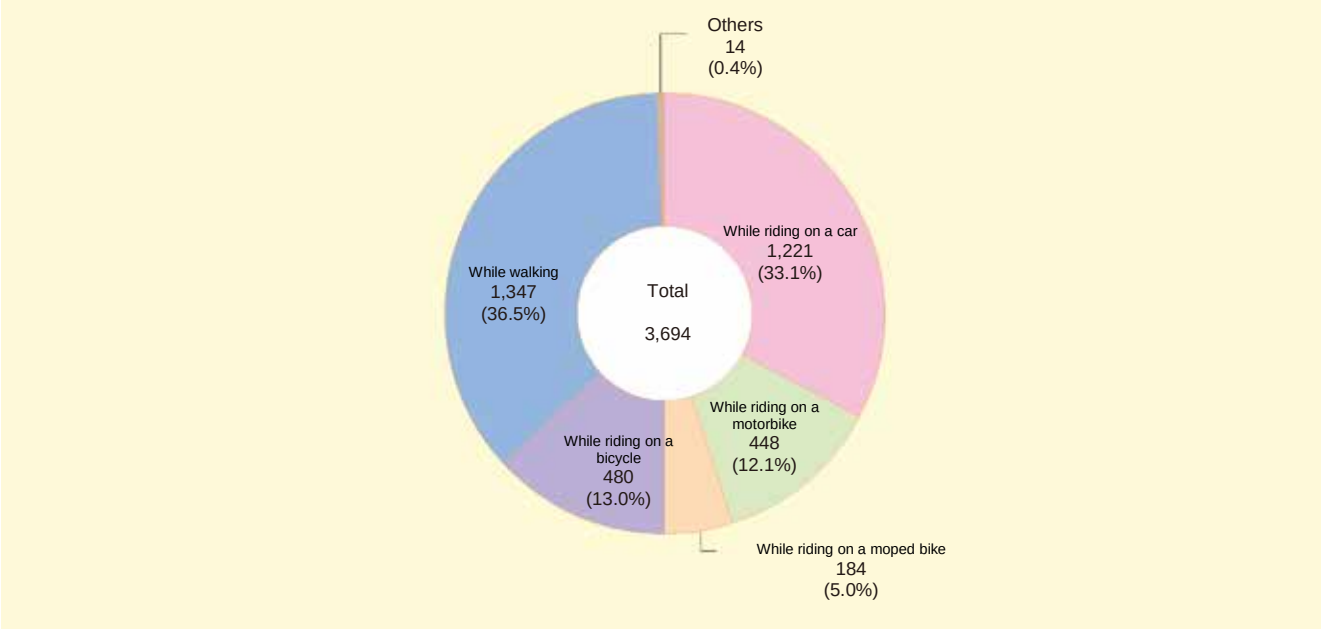

Note:
1. Source: National Police Agency
2. Fatality rate = number of fatalities/number of fatalities and injuries x 100

## Number of Fatalities and Injuries in Traffic Accidents by Road User Group

- The number of fatalities is the highest while walking (1,347 with the composition ratio of 36.5%) followed by while riding on a car (1,221 with the composition ratio of 33.1%) and the sum of both accounts for 69.5% of the total (Chart 1-11). If we look at the number of fatalities in traffic accidents (per a population of 100,000) in the past 10 years by road user group, the number of fatalities in traffic accidents while walking did not decrease when compared to others (Chart 1-12).

, The number of injured people is the highest while riding on a car (379,483 people, composition ratio of 65.3%) (Chart 1-13). If we look at the number of injuries in traffic accidents (per a population of 100,000) in the past 10 years by road user group, it has been in a decreasing trend in all groups, except the number of injured people while walking which has not decreased so much when compared with other groups (Chart 1-14).

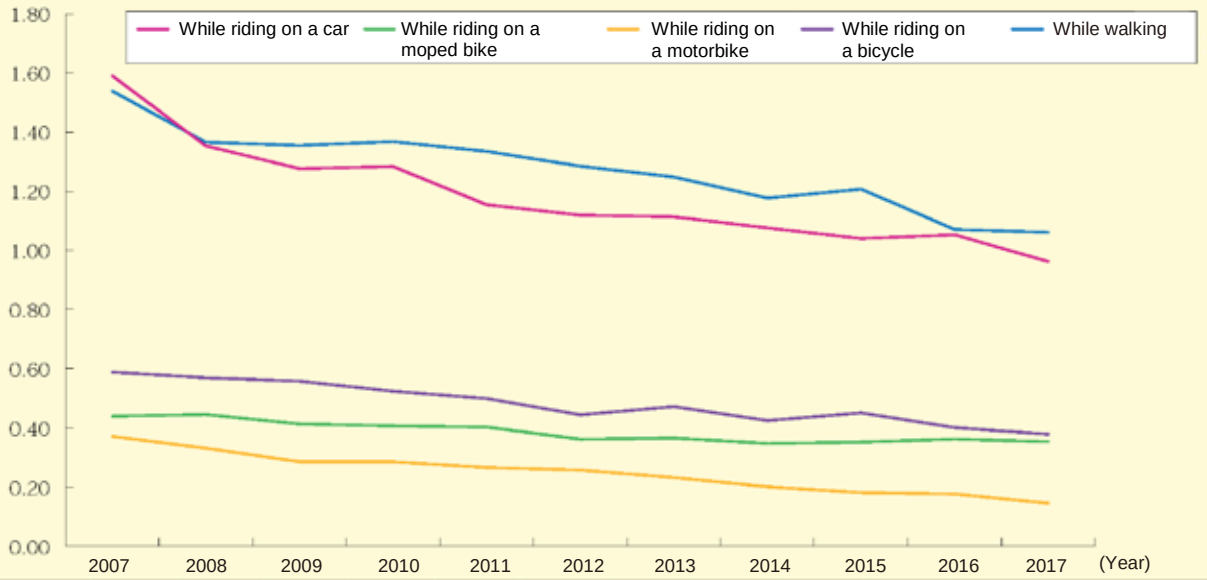
u Chart 1-11 Number of fatalities in traffic accidents by road user group (2017)




Note:
1. Source: National Police Agency
2. Figures in the brackets ( ) show the component rate.

## u Chart 1-12 Changes in the number of fatalities in traffic accidents by road user group per a population of 100,000

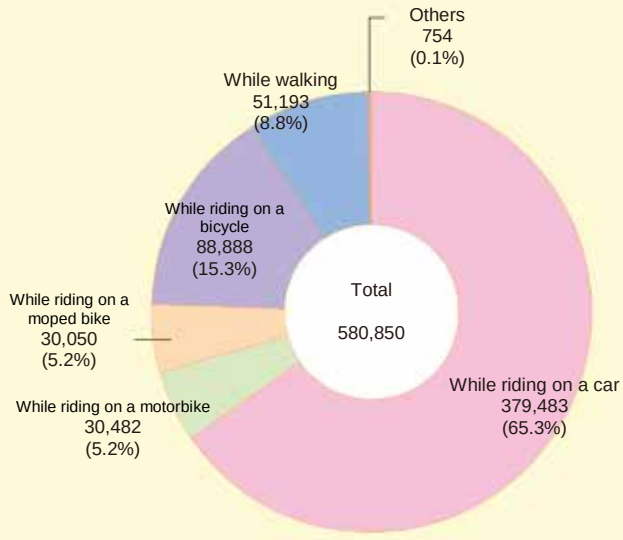
(Persons /Population of 100,000)




| (Persons /Population of 100,000) | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Rate of change (compared to 2007) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| While riding on a car | 1.59 | 1.35 | 1.28 | 1.28 | 1.15 | 1.12 | 1.11 | 1.08 | 1.04 | 1.05 | 0.96 | −39.5% |
| While riding on a moped bike | 0.44 | 0.44 | 0.41 | 0.41 | 0.40 | 0.36 | 0.37 | 0.35 | 0.35 | 0.36 | 0.35 | −19.6% |
| While riding on a motorbike | 0.37 | 0.33 | 0.29 | 0.28 | 0.27 | 0.26 | 0.23 | 0.20 | 0.18 | 0.18 | 0.14 | −60.9% |
| While riding on a bicycle | 0.59 | 0.57 | 0.56 | 0.52 | 0.50 | 0.44 | 0.47 | 0.42 | 0.45 | 0.40 | 0.38 | −35.7% |
| While walking | 1.54 | 1.37 | 1.35 | 1.37 | 1.33 | 1.28 | 1.25 | 1.18 | 1.21 | 1.07 | 1.06 | −31.0% |

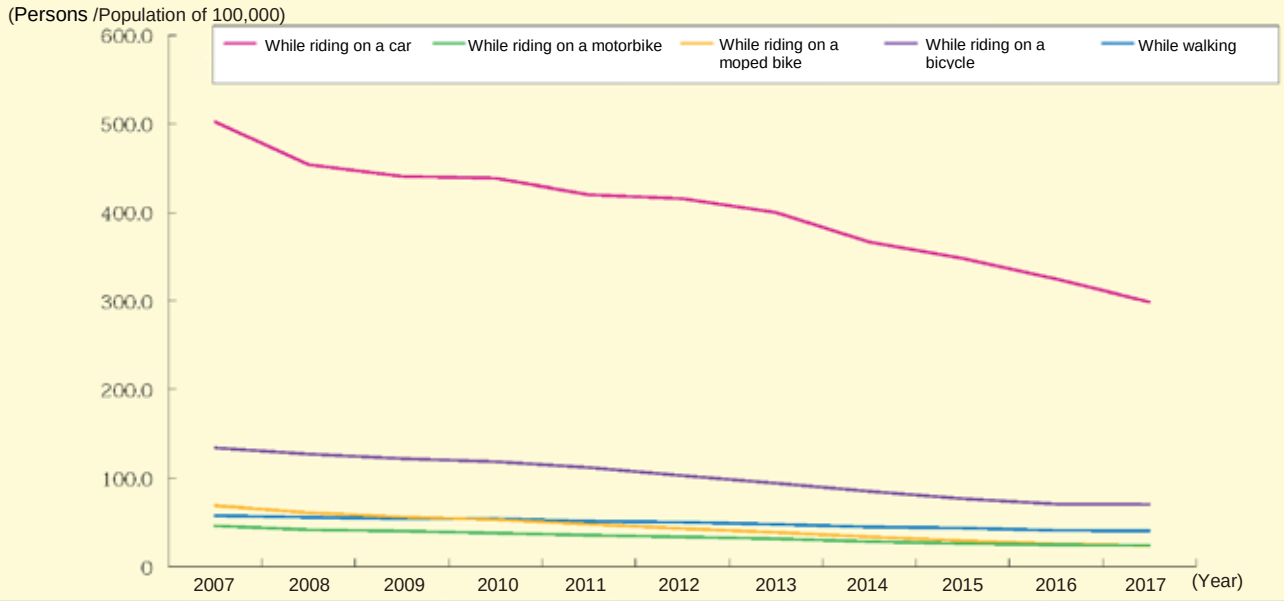
Note:
1. Source: National Police Agency except that “others” is omitted.
2. The population used for the calculation is that of the year previous to the subject year. The “population of the previous year” is based on statistical data “Population Census” or “Population Estimate” by the Ministry of Internal Affairs and Communications.
“Population Estimate” is that as of October 1st each year published by the Ministry of Internal Affairs and Communications every year and no adjustment has been made thereafter.

## u Chart 1-13 Number of injuries in traffic accidents by road user group (2017)




Note:
1. Source: National Police Agency
2. Figures in the brackets ( ) show the component rate.

u Chart 1-14 Changes in the number of injuries in traffic accidents by road user group per a population of 100,000 (2017)



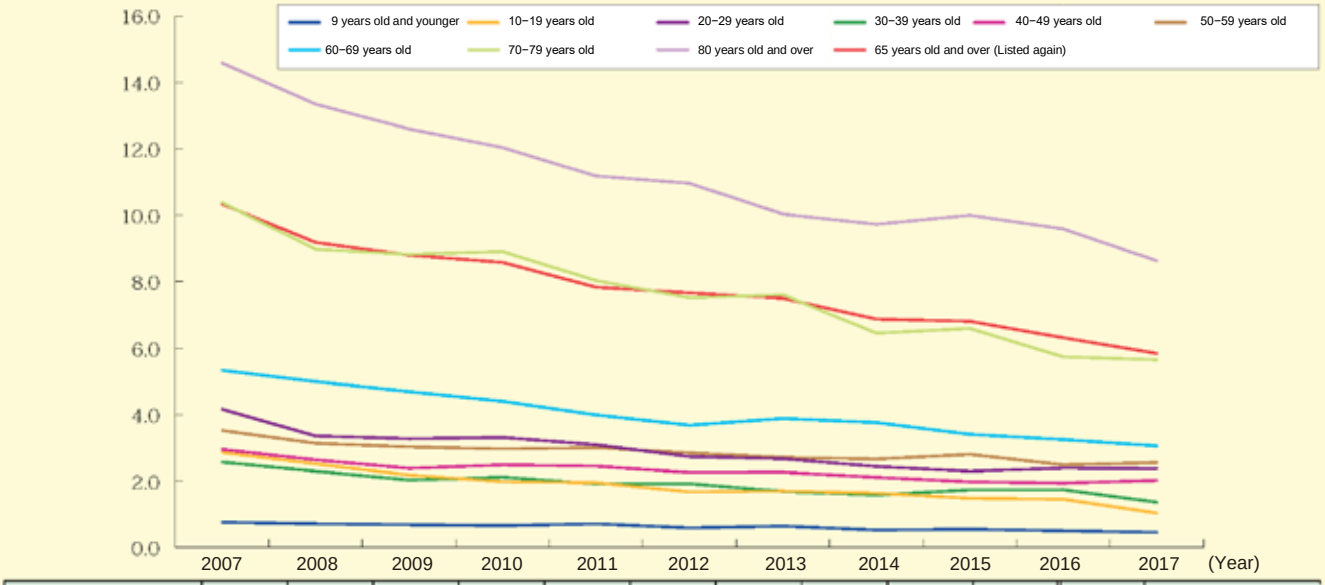

| (Persons /Population of 100,000) | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Rate of change (compared to 2007) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| While riding on a car | 502.4 | 454.0 | 440.6 | 438.6 | 420.1 | 415.7 | 400.1 | 366.7 | 348.1 | 324.8 | 299.0 | −40.5% |
| While riding on a motorbike | 46.1 | 41.7 | 40.2 | 37.9 | 35.5 | 33.5 | 31.5 | 28.3 | 26.0 | 24.5 | 24.0 | −47.9% |
| While riding on a moped bike | 68.9 | 61.0 | 56.1 | 53.2 | 48.0 | 43.1 | 38.7 | 33.6 | 29.3 | 25.7 | 23.7 | −65.6% |
| While riding on a bicycle | 134.1 | 127.1 | 121.9 | 118.4 | 111.8 | 102.7 | 94.1 | 84.8 | 76.5 | 70.5 | 70.0 | −47.8% |
| While walking | 57.6 | 55.8 | 54.1 | 54.2 | 51.3 | 50.2 | 47.8 | 44.9 | 43.6 | 40.9 | 40.3 | −30.0% |

Note:
1. Source: National Police Agency except that “others” is omitted.
2. The population used for the calculation is that of the year previous to the subject year. The “population of the previous year” is based on statistical data “Population Census” or “Population Estimate” by the Ministry of Internal Affairs and Communications.
“Population Estimate” is that as of October 1st each year published by the Ministry of Internal Affairs and Communications every year and no adjustment has been made thereafter.

## Number of Fatalities and the Number of Injuries in Traffic Accidents by Age Group

- The number of fatalities (per a population of 100,000) is the highest in people of 80 years old and over (8.6) followed by people of 70 to 79 years old (5.6) and people of 60 to 69 years old (3.1) (Chart 1-15), and the sum of the number of fatalities of these 3 age groups accounts for 60.8% of the total (Chart 1-16).
- Although the number of fatalities of elderly people of 65 years old and over per a population of 100,000 has continued to decrease (Chart 1-5), the number of elderly people accounts for 54.7% of the number of traffic accident fatalities. (Chart 1-16).
- If we look at the number of traffic accident fatalities (per a population of 100,000) by age groups in the past 10 years, even the age group of 50 to 59 years with the least decrease has decreased by about 30% compared with 2007. (Chart 1-15).
- The number of injured people (per a population of 100,000) is the highest in the age group of 20 to 29 years (780.0 people), followed by that of 30 to 39 (662.1 people) and that of 40 to 49 years (589.8 people) (Chart 1-17), and the total number of injured people in these three age groups account for 53.7% of the total. (Chart 1-18)
- If we look at the number of people injured in traffic accidents by age groups (per a population of 100,000) in the past 10 years that of the age group of 50 to 59 years has not decreased as much compared to other age groups. (Chart 1-17).

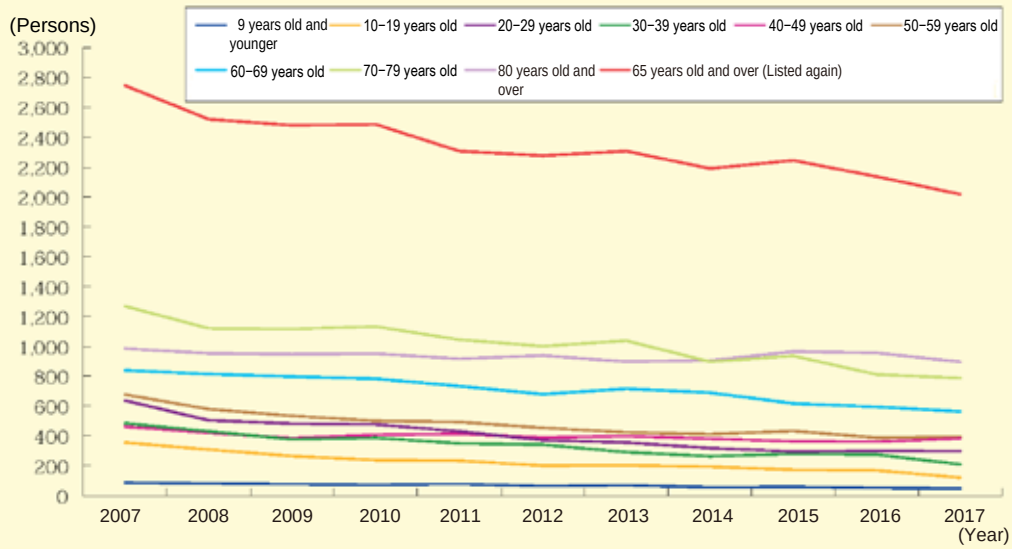
u Chart 1-15 Changes in the number of fatalities in traffic accidents by age group per a population of 100,000




| (Persons /Population of 100,000) | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Rate of change (compared to 2007) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 years old and younger | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.4 | −40.5% |
| 10–19 years old | 2.9 | 2.5 | 2.2 | 2.0 | 1.9 | 1.7 | 1.7 | 1.6 | 1.5 | 1.4 | 1.0 | −63.9% |
| 20–29 years old | 4.2 | 3.4 | 3.3 | 3.3 | 3.1 | 2.7 | 2.7 | 2.4 | 2.3 | 2.4 | 2.4 | −43.0% |
| 30–39 years old | 2.6 | 2.3 | 2.0 | 2.1 | 1.9 | 1.9 | 1.7 | 1.6 | 1.7 | 1.7 | 1.4 | −47.0% |
| 40–49 years old | 2.9 | 2.6 | 2.4 | 2.5 | 2.4 | 2.3 | 2.3 | 2.1 | 2.0 | 1.9 | 2.0 | −31.6% |
| 50–59 years old | 3.5 | 3.1 | 3.0 | 3.0 | 3.0 | 2.8 | 2.7 | 2.7 | 2.8 | 2.5 | 2.6 | −27.5% |
| 60–69 years old | 5.3 | 5.0 | 4.7 | 4.4 | 4.0 | 3.7 | 3.9 | 3.8 | 3.4 | 3.2 | 3.1 | −42.7% |
| 70–79 years old | 10.4 | 9.0 | 8.8 | 8.9 | 8.0 | 7.5 | 7.6 | 6.5 | 6.6 | 5.7 | 5.6 | −45.6% |
| 80 years old and over | 14.6 | 13.3 | 12.6 | 12.0 | 11.2 | 11.0 | 10.0 | 9.7 | 10.0 | 9.6 | 8.6 | −40.8% |
| 65 years old and over (Listed again) | 10.3 | 9.2 | 8.8 | 8.6 | 7.8 | 7.7 | 7.5 | 6.9 | 6.8 | 6.3 | 5.8 | −43.5% |
| All age groups | 4.5 | 4.1 | 3.9 | 3.9 | 3.7 | 3.5 | 3.4 | 3.2 | 3.2 | 3.1 | 2.9 | −35.8% |

Note:
1. Source: National Police Agency
2. The population used for the calculation is that of the year previous to the subject year. The “population of the previous year” is s based on statistical data “Population Census” or “Population Estimate” by the Ministry of Internal Affairs and Communications.
“Population Estimate” is that as of October 1st each year published by the Ministry of Internal Affairs and Communications every year and no adjustment has been made thereafter.

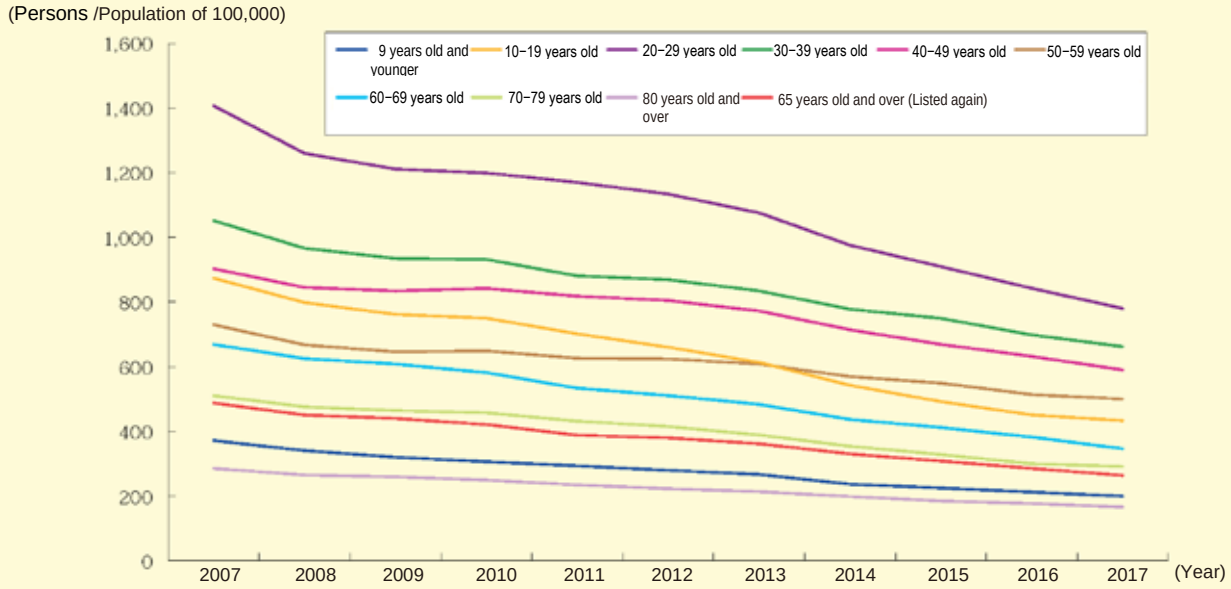
## u Chart 1-16 Changes in the number of fatalities in traffic accidents by age group




| | 2017 | |
|---|---|---|
| | Number of fatalities | Component rate |
| 9 years old and younger | 46 | 1.2% |
| 10–19 years old | 119 | 3.2% |
| 20–29 years old | 297 | 8.0% |
| 30–39 years old | 209 | 5.7% |
| 40–49 years old | 383 | 10.4% |
| 50–59 years old | 394 | 10.7% |
| 60–69 years old | 563 | 15.2% |
| 70–79 years old | 787 | 21.3% |
| 80 years old and over | 896 | 24.3% |
| 65 years old and over (Listed again) | 2,020 | 54.7% |

Note: Source: National Police Agency

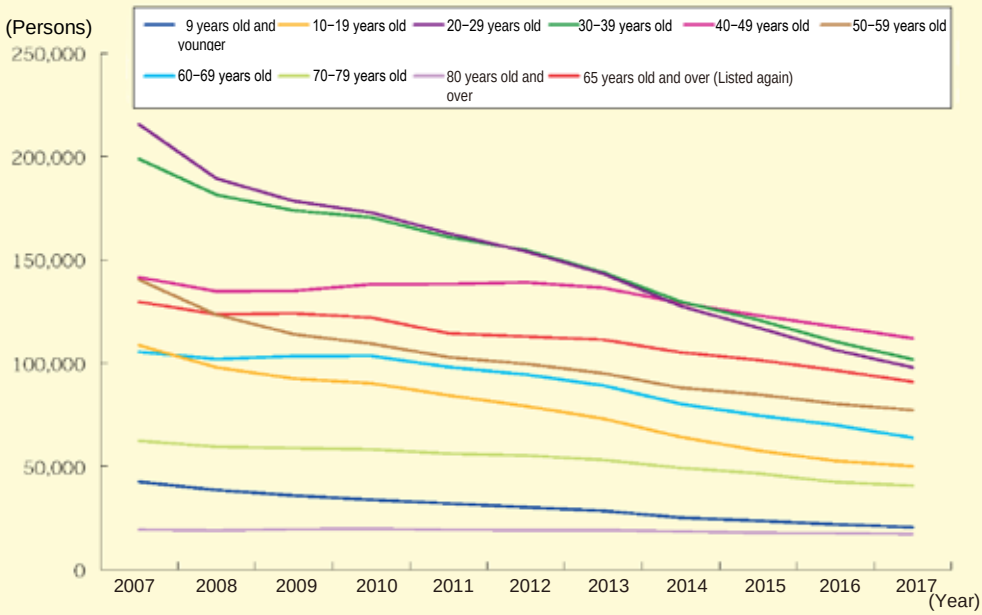
## u Chart 1-17 Changes in the number of injuries in traffic accidents by age group per a population of 100,000




| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Rate of change (compared to 2007) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 years old and younger | 371.4 | 340.0 | 319.7 | 305.4 | 292.9 | 279.1 | 266.0 | 236.2 | 224.1 | 211.8 | 198.9 | −46.4% |
| 10–19 years old | 873.8 | 798.2 | 761.6 | 750.0 | 701.5 | 660.1 | 613.1 | 542.2 | 491.7 | 450.5 | 433.1 | −50.4% |
| 20–29 years old | 1,407.3 | 1,260.0 | 1,211.3 | 1,199.4 | 1,170.2 | 1,134.0 | 1,075.9 | 975.7 | 909.4 | 842.2 | 780.0 | −44.6% |
| 30–39 years old | 1,051.6 | 966.3 | 934.9 | 931.8 | 880.6 | 869.1 | 834.3 | 777.7 | 749.4 | 698.1 | 662.1 | −37.0% |
| 40–49 years old | 902.9 | 844.9 | 834.1 | 841.9 | 818.0 | 804.6 | 772.2 | 714.1 | 668.8 | 631.7 | 589.8 | −34.7% |
| 50–59 years old | 729.4 | 667.5 | 645.5 | 648.3 | 626.1 | 624.0 | 608.1 | 569.1 | 549.0 | 513.6 | 499.7 | −31.5% |
| 60–69 years old | 668.7 | 625.0 | 608.0 | 581.4 | 533.3 | 510.6 | 483.1 | 436.7 | 411.5 | 382.0 | 346.0 | −48.3% |
| 70–79 years old | 510.1 | 475.7 | 464.0 | 457.1 | 431.4 | 414.5 | 388.6 | 353.8 | 327.8 | 299.3 | 291.0 | −42.9% |
| 80 years old and over | 285.1 | 264.2 | 258.8 | 248.9 | 233.8 | 222.0 | 213.2 | 198.0 | 184.0 | 176.3 | 165.6 | −41.9% |
| 65 years old and over (Listed again) | 487.4 | 450.1 | 439.8 | 420.6 | 388.0 | 379.4 | 361.5 | 329.7 | 307.6 | 284.9 | 262.9 | −46.1% |
| All age groups | 809.8 | 740.1 | 713.6 | 702.9 | 667.4 | 645.9 | 612.9 | 558.8 | 524.1 | 486.9 | 457.6 | −43.5% |

Note:
1. Source: National Police Agency
2. The population used for the calculation is that of the year previous to the subject year. The “population of the previous year” is s based on statistical data “Population Census” or “Population Estimate” by the Ministry of Internal Affairs and Communications.
“Population Estimate” is that as of October 1st each year published by the Ministry of Internal Affairs and Communications every year and no adjustment has been made thereafter.

## u Chart 1-18 Changes in the number of injuries in traffic accidents by age group



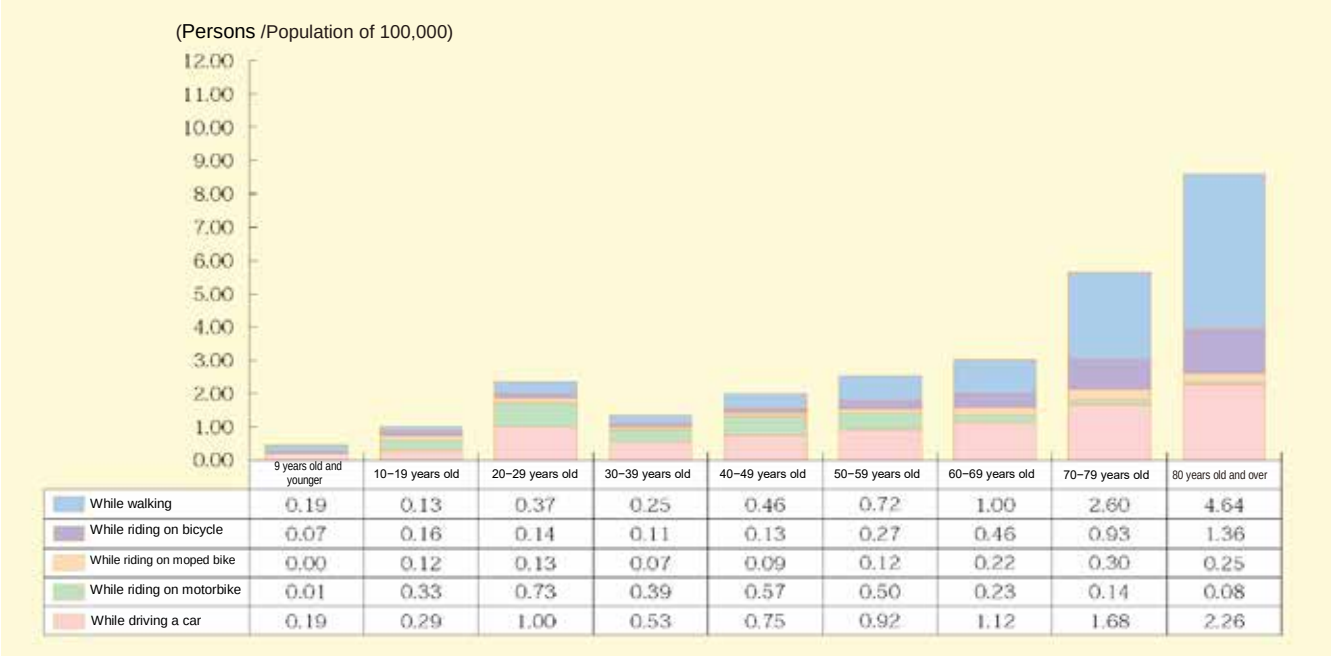

| | 2017 | |
|---|---|---|
| | Number of injuries | Component rate |
| 9 years old and younger | 20,419 | 3.5% |
| 10–19 years old | 50,045 | 8.6% |
| 20–29 years old | 97,831 | 16.8% |
| 30–39 years old | 101,791 | 17.5% |
| 40–49 years old | 112,022 | 19.3% |
| 50–59 years old | 77,202 | 13.3% |
| 60–69 years old | 63,801 | 11.0% |
| 70–79 years old | 40,543 | 7.0% |
| 80 years old and over | 17,196 | 3.0% |
| 65 years old and over (Listed again) | 90,932 | 15.7% |

Note: Source: National Police Agency

## Number of fatalities in traffic accidents by age group and by road user group per a population of 100,000

- If we look at changes in the number of traffic accident fatalities (per a population of 100,000) by road user group in the past 10 years, the number has been in a decreasing trend in all groups of while riding on a car, while riding on a motorbike, etc. (Chart 1-12).
- The number of pedestrians killed while walking in 2017 is numerous in elderly people, and, in particular, that of elderly people older than 80 years (4.64 people) is about four times higher than that of all age groups (1.06 people) (Charts 1-12 and 1-19).

u Chart 1-19 Number of fatalities in traffic accidents by age group and road user group per a population of 100,000 (2017)




| | 9 years old and younger | 10–19 years old | 20–29 years old | 30–39 years old | 40–49 years old | 50–59 years old | 60–69 years old | 70–79 years old | 80 years old and over |
|---|---|---|---|---|---|---|---|---|---|
| While walking | 0.19 | 0.13 | 0.37 | 0.25 | 0.46 | 0.72 | 1.00 | 2.60 | 4.64 |
| While riding on bicycle | 0.07 | 0.16 | 0.14 | 0.11 | 0.13 | 0.27 | 0.46 | 0.93 | 1.36 |
| While riding on moped bike | 0.00 | 0.12 | 0.13 | 0.07 | 0.09 | 0.12 | 0.22 | 0.30 | 0.25 |
| While riding on motorbike | 0.01 | 0.33 | 0.73 | 0.39 | 0.57 | 0.50 | 0.23 | 0.14 | 0.08 |
| While driving a car | 0.19 | 0.29 | 1.00 | 0.53 | 0.75 | 0.92 | 1.12 | 1.68 | 2.26 |

Note:
1. Source: National Police Agency
2. The population used for the calculation is based on statistical data “Population Estimate” (as of October 1st, 2016) by the Ministry of Internal Affairs and Communications.

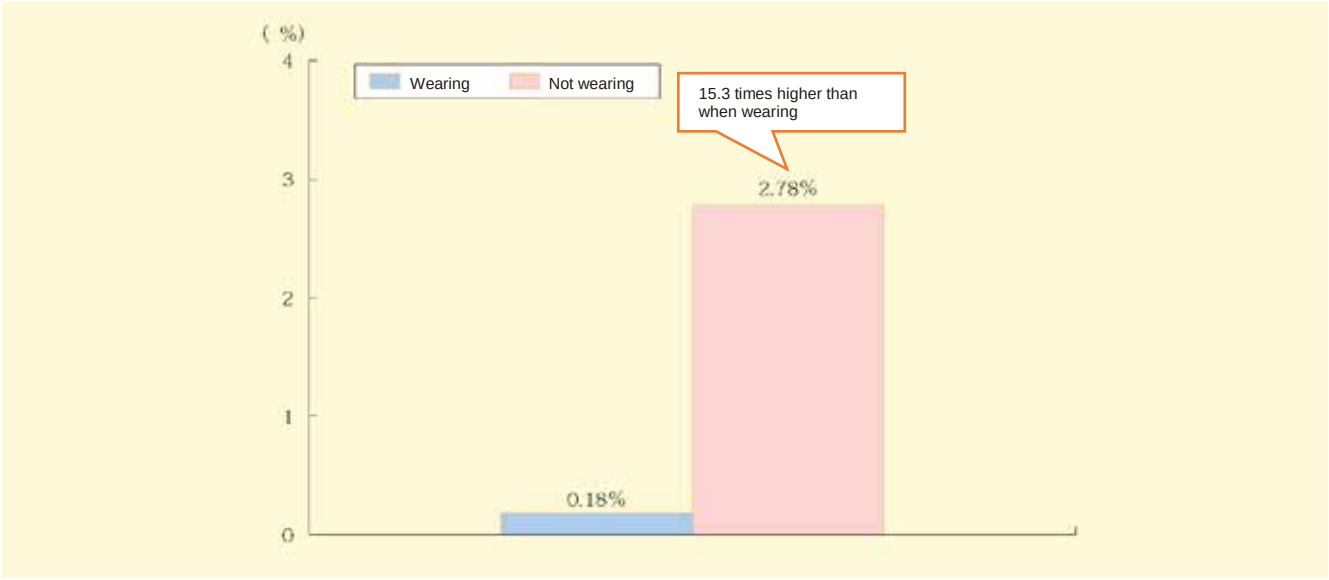
## Number of Fatalities with or without the Use of Seat belt

- If we look at the number of traffic accident fatalities while riding on a car in 2017 with or without the use of seat belts, the number of those without wearing them was 520 people, a decrease of 38 people compared to the previous year. (Chart 1-27).
- The fatality rate of people not wearing seat belt (percentage of fatalities over the number of casualties) is 15.3 times as high as that of people wearing them (Chart 1-29).

u Chart 1-27 Changes in the number of fatalities with or without the use of seat belt while riding on a car


Note:
1. Source: National Police Agency
2. The figure in the bracket ( ) shows the composition ratio.

u Chart 1-29 Fatality rate with or without the use of seat belt while riding on a car (2017)



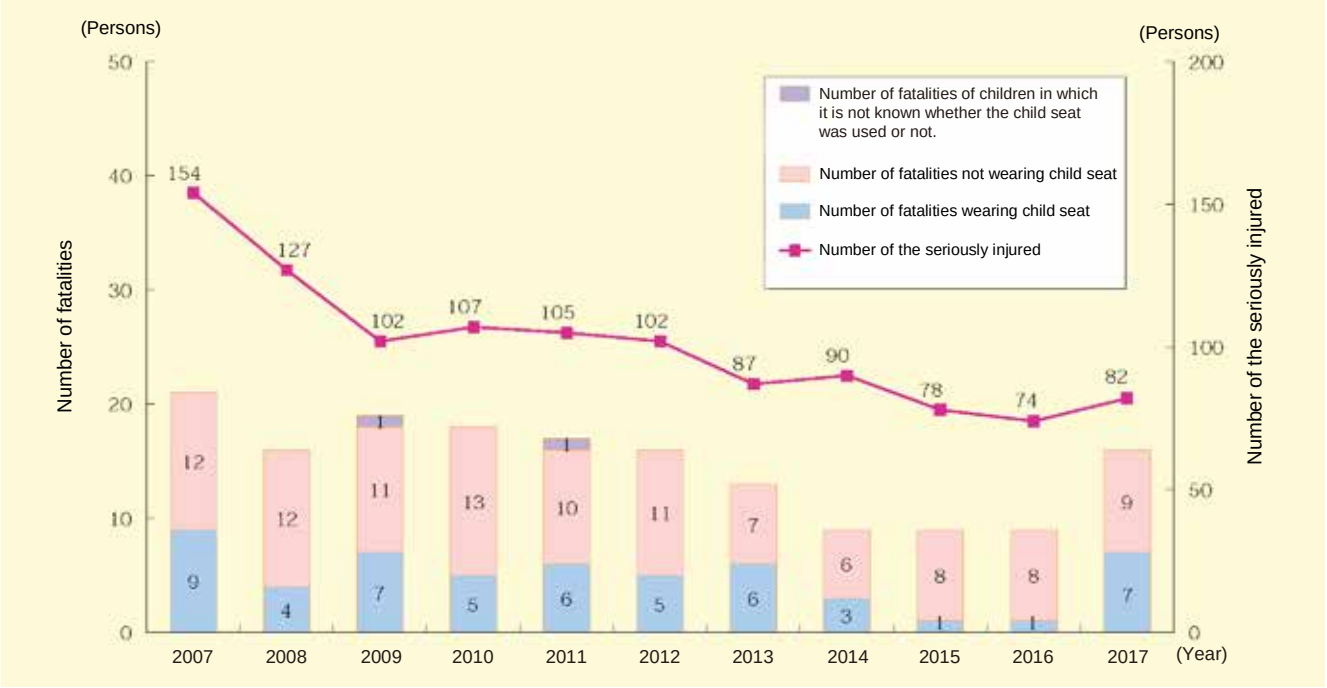

Note:
1. Source: National Police Agency
2. Fatality rate = number of fatalities (while riding on a car and with or without the use of seatbelts) / number of fatalities and injuries (while riding on a car and with or without the use of seatbelts) x 100

## Number of Fatalities with or without the Use of Child seats

- The number of children under 6 years old killed while riding together on a car was 16 children (7 of them were with the use of child-seats) and 82 children were seriously injured. (Chart 1-30).

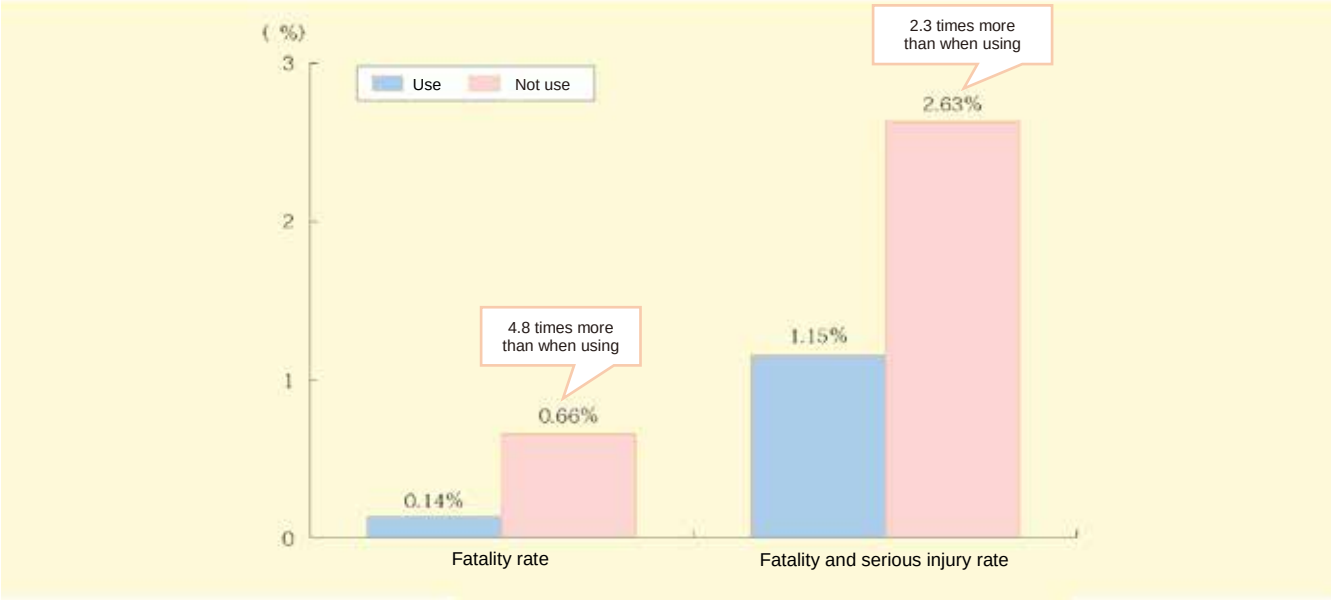
, If we look at the fatality and serious injury rate of children under 6 years old by using and by not using child-seat, not using child seat is 2.3 times higher than when using it, and, not using child seat is 4.8 times higher than when using it in the fatality rate (Chart 1-32).

u Chart 1-30 Changes in the number of fatalities of children under 6 years old with or without the use of child seat and seriously injured children while riding on a car




Note: Source: National Police Agency

u Chart 1-32 Fatality rate and fatality and serious injury rate of children under 6 years old while riding on a car with or without the use of child seat (2017)




Note:
1. Source: National Police Agency
2. Fatality rate = number of fatalities of children under 6 years old while riding on cars / number of fatalities and injuries of children under 6 years old while riding on cars x 100
3. Fatality and serious injury rate = number of fatalities and serious injuries of children under 6 years old while riding on cars / number of fatalities and injuries of children under 6 years old while riding on cars x 100

# Chapter 2 Overview of Current Road Traffic Safety Measures

## 1. Improvement of Road Traffic Environment

### Development in Pedestrian-First Walking Spaces Offering Safety and Security on Community Roads

With support from communities, traffic safety measures focused on people including the improvement of sidewalks were promoted on routes to schools, community roads, arterial roads in urban areas and others.

- The National Government, local governments and local residents, etc. adopted efforts in cooperation to deal with problems in areas with many traffic accidents, extracted based on scientific data and needs that have become evident in communities to thoroughly eliminate through-traffic and slow down the vehicle speed in order to ensure road space where children and elderly people can feel safe to pass through.

  Prefectural Public Safety Commissions promoted policies and measures aimed to combine traffic regulations, traffic control, and traffic guidance and crackdown. In order to secure the safe passage of pedestrians and bicycle users, low speed regulations such as the "Zone 30" (3,407 areas by the end of FY2017) in which a maximum speed of 30 kilometers per hour and other safety measures including those implemented in cooperation with road administrators were taken were introduced in areas of community roads. In the Zone 30 (2,490 areas) which had been developed by the end of FY2015, the occurrence status of traffic accidents between the year before the development and the year after development was compared and it was found that the number of traffic accidents and the number of accidents involving pedestrians and bicycles decreased (by 23.5% and by 18.6%, respectively), by which it was confirmed that these measures were effective in preventing traffic accidents and reducing through-traffic speed of vehicles within the Zone.

  In addition to the implementation of a variety of safety measures, including installation of high luminance light signs, change of traffic signals into LED lighting, installation and expansion of roadside bands, use of zone restrictions, etc., measures to achieve smooth traffic focused on peripheral arterial roads, such as improvement of traffic signals, provision of real time traffic information through infrared beacons and traffic information signs, etc. Moreover, installation of barrier-free compliant traffic signals was promoted based on the Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc. (hereinafter referred to as the "Barrier-Free Act," Act No.91 of 2006).

  Road administrators on their part did not only develop a walking space network in which people feel safe to move through development of sidewalks, but also implemented a variety of measures, including establishing zones to prioritize the traffic of pedestrians and bicycles through road structures to slow down vehicle speed such as speed hump, crank, etc., improving intersections for facilitating smooth traffic on peripheral arterial roads, restricting transit of through-vehicles with areas by installing speed humps and narrow fences at the entrance thereof, by strengthening coordination with traffic regulations and traffic control implemented by Prefectural Public Safety Commissions. In addition, road administrators promoted the elimination of potential danger zones utilizing big data in "community road areas" efficient and effectively in cooperation with the National Government, local governments and local residents, etc.

- In order to ensure traffic safety on school roads, not only we implemented regular joint checks and support continuous efforts on improvement and enhancement, but also promoted measures in terms of both hardware and software, in cooperation with relevant organizations, such as police, boards of education, schools, road administrators, etc., in accordance with actual road traffic conditions.

  In order to ensure traffic safety for high school students, junior high school students, and children attending elementary schools, kindergartens, nursery schools, certified center for early childhood education and care, child-welfare residential facilities, etc., we promoted actively the development of sidewalks such as school roads, installation of speed humps and narrow fences, color-paved road shoulders, installation of protection fences, development of bicycle paths, bike lanes, roads in which zones specific to bicycle transit are shown, etc., installation of push-button type traffic signals and pedestrian signals, installation of pedestrian bridges, etc.

  In addition, to guarantee traffic regulations on school roads, we promoted efforts towards the realization of the use of rising bollards based on review of the use thereof and results.

- In order to ensure the elderly and persons with disabilities live self-reliant life and daily life every day, we have developed measures such as wide sidewalks, and removed roadside utility poles, etc., in stations, government agencies facilities, hospitals, etc., based on the Barrier-Free Act, so that all people including the elderly and persons with disabilities feel safe to transit and pass through.

  In addition, we have promoted the installation of barrier-free compliant signals, escort zones, pedestrian bridges with elevators, facilities to allow pedestrians to rest, bicycle parking lots, automobile parking lots with spaces for persons with disabilities, etc., in addition of changing traffic signals into LED lighting,

installation of high luminance road signs, etc.

**Promotion of Traffic Safety Measures in Arterial Roads**

- In implementing road development projects with the aim of improving traffic safety, the "Traffic Accident Zero Plan (strategy for concentrated relief of accident prone sections)" targeted the eradication of traffic accidents. This effort was promoted in arterial roads in a focused and intensive manner based on the principles of "selection and concentration" and "community participation and community engagement" by scientifically checking the effects and applying the management cycle in an efficient and cost-effective manner.

, In January 2007, we have designated sections of arterial roads with a high accident occurrence rate and 3,125 potential hazardous zones which became evident by the use of big data as "hazardous place for accidents," and in cooperation with Prefectural Public Safety Commissions and road administrators, we promoted not only the establishment and improvement of traffic lights, development of pedestrian-vehicle separated (traffic) signals, adoption of high luminance road signs, etc., but also countermeasures for traffic accidents in an intensive manner, including the development of sidewalks, improvement of intersections, improvement of sight distance, additional of lanes, installation of central zones, installation of stopping lanes and protection fences in bus routes, development of lane markings, installation of road lighting and delineators, etc.

**Comprehensive Development of the Bicycle Usage Environment**

In order to develop a sustainable urban transport system with highly efficient clean energy, it is necessary to create an environment which allows safe and comfortable use of bicycles by clarifying the role played by the bicycles in the society. With this in mind, to promote the preparation of a bicycle network plan and development thereof, the Ministry of Land, Infrastructure, Transport and Tourism and the National Police Agency jointly revised the "Guidelines for Creating a Safe and Comfortable Environment for Bicycles" in July, 2016. In addition, efforts for creating a safe and comfortable environment for bicycles were promoted based on the Act on Promotion of the Use of Bicycles (Act No. 113 of 2016) enacted in May 2017.

**Use of Intelligent Transport Systems**

We are continually promoting the "Intelligent Transport Systems" (ITS) which is a new road transport system designed to build an integrated system consisting of people, road and vehicle by using the latest technologies. For this reason, based on the "Declaration to be the World's Most Advanced IT Nation and Basic Plan for the Advancement of Public and Private Sector Data Utilization" decided by the Cabinet in June, 2013 and revised in June, 2014, June 2015, May 2016, and May 2017, we did not only promote further R&D, field tests*, review for the development, diffusion and standardization of infrastructures, etc., through joint cooperation by industry, government and academia, but also promoted international cooperation actively, including international information exchange, international standardization, etc., at the ITS World Congress.

- In order to optimize traffic management by means of advanced information communication technologies etc., we promoted ITS in an attempt to realize a safe, smooth and comfortable traffic society with a low environmental burden through development and introduction of the Universal Traffic Management Systems (UTMS) in utilization of functions, such as sophisticated infrared beacons, etc., which include the Public Transportation Priority Systems (PTPS), Fast Emergency Vehicle Preemption Systems (FAST), and Driving Safety Support Systems (DSSS).

, A total of about 2.35 million units of vehicle-mounted ETC 2.0 which have been on sale on a full scale since August 2015 have been shipped out as of December 2017. The ETC 2.0 does not only support safety driving by providing information on areas with many accidents, alerting drivers of fallen objects on the road, etc., but also provides information to allow drivers to use the road wisely, including smart fees that reduce traffic congestion and accidents, smart logistics management with high productivity, etc., by utilizing a wide variety and diversity of detailed big data, such as collected data on speed, used route and time, etc.

* Field tests
Practical tests, outdoor tests and others

## 2. Dissemination and Reinforcement of Traffic Safety

### Promotion of stepwise and systematic road safety education

We conducted stepwise and systematic traffic safety education to infants and adults alike in accordance with their mental and physical development and life stages based on the Traffic Safety Education Guidelines (Notification No. 15 of 1998 by National Public Safety Commission). In particular, in the midst of progress in aging, we did not only improve safety traffic awareness on the part of elderly people, but also strengthened enlightenment guidance for people of other generations to understand the characteristics of elderly people, protect them and improve their awareness towards elderly people. Further, we provided education to pupils and students of elementary schools, junior highs and high schools with many opportunities to ride on a bicycle, as members of traffic society, on basic knowledge about road traffic for bicycle users and traffic safety awareness as well as traffic manners.

### Promotion of Traffic Safety Education for the Elderly

In addition to holding traffic safety classes for the elderly, etc., we provided traffic safety education utilizing social education activities and welfare activities for the elderly as well as a wide variety of opportunities such as various events. In particular, we implemented in collaboration with related organizations, transportation volunteers, hospitals, welfare facilities. Especially, we tried to ensure that safe movement of the elderly are performed by the community as a whole by providing individual guidance by visiting their homes and utilizing opportunities to be in touch with them daily such as watching activities with the focus on the elderly without opportunities so far to receive traffic safety education such those without driving license. In this case, we provided specific guidance in accordance with actual traffic accident conditions of the elderly bearing in mind the importance of their self-motivation. We also engaged in the promotion of diffusion of reflective materials, etc.

### Promotion of the Safe Use of Bicycles

To help bicycle users understand that a bicycle is a vehicle and that when transiting the road, they must abide by traffic rules and observe traffic manners, we promoted traffic safety education such as hands-on experience type bicycle classes in cooperation with related organizations and groups, including observance of traffic rules, correct way to ride on a bicycle in consideration of pedestrians and other vehicles, importance of protecting the head during a ride on a bicycle and of wearing a helmet, PR activities on the safe use of a bicycle to ride with two infants and wearing of seatbelts, traffic accident reconstruction at practice courses of driving schools, audiovisual teaching materials, simulator, scared-straight system (hands-on learning method to face fear squarely by reproducing a traffic accident with stunt person).

## 3. Ensuring Safe Driving

### Promotion of Measures for Elderly Drivers

The compulsory training courses for the elderly drivers aged are aimed at checking their driving aptitude, by asking them to drive by themselves, using equipment to test driving aptitude etc. so that they become conscious of changes in their physical functions, and proper advice and guidance are provided based on the checking results. It is provided that those who have attended these courses are not required to take other courses when renewing their driving licenses. A total of 2,442,811 elderly people attended the courses in 2017.

With respect to a short course for elderly people at the time of renewing their license, we set the duration of three hours for the course for people who were judged as the people who may have dementia or cognitive function impairment in cognitive function test, including individual guidance using images of their driving conditions recorded by the drive recorder, and the duration of two hours for other people, in accordance with the revision of the Road Traffic Act.

In addition, we tried to organize classrooms for the elderly between 65 and 69 years old at the short course for driving license renewal focused on driving characteristics of the elderly drivers and characteristics of traffic accidents.

### Promotion of safety measures based on the safety plan etc. of business vehicles

As a new plan to replace the “Comprehensive Safety Plan for Business Vehicles 2009,” we formulated the “Comprehensive Safety Plan for Business Vehicles 2020” in June 2017 to set a new goal for reducing the number of fatalities to 235 or less and the number of accidents to 23,100 or less due to accidents by business vehicles by 2032, and we are developing a variety of initiatives to that end.

In addition, in light of the Karuizawa ski bus accident occurred in January 2016, we have been steadily implementing the “comprehensive measures to realize safe and secure charter bus operations” ranging over 85 items wrapped up on June 3rd of the same year in order to prevent such a tragic accident from occurring again.

**Establishment of safety structure through transport safety management**

In accordance with the "transport safety management system" which was introduced in October 2006, the transportation companies build and improve the safety management system company-wide, and the government implement "The Transport Safety Management Audit" which is the system that the government checks the implementation status of The Transport Safety Management system of transportation companies.

In 2017, the government implemented this audit on 742 companies. In particular, in view of the report of the Transportation Council in July 2017, we implemented the assessment of transport safety management of 715 operators by 2017, of all operators subject to assessment by FY2033.

## 4. Ensuring Vehicle Safety Measures

**Promotion of the development and diffusion of advanced safety vehicles (ASV) including automated driving technologies that contribute to safety**

In order to promote the development, practical application and diffusion of advanced safety vehicles (ASV), we examined strategies to fully diffuse the ASV technologies that have been put into practical application under a joint cooperation of industry, government and academia with respect to advanced safety technologies required for realizing automated driving , as well as technical requirements, etc. of Emergency Driving Stop System, such as evacuation of a vehicle to road shoulder,, etc., in the 6th ASV Promotion Project started from FY2016.

In order to discuss safety standards for automated driving systems internationally, we led activities aimed at formulating security guidelines on automated driving and technical standards for automatic steering that allow automated driving on highways as co-chairs with England and Germany at the Working Party on Automatic Steering under WP.29 and at the expert meeting for automatic steering under the Working Party on Brake and Running Gear (GRRF) of WP.29, respectively. As a result, in the wake of the establishment of international standards on lane keeping support functions in the state in which the driver is in control of the steering of automatic steering in October 2017, we have introduced these standards into Japan.

## 5. Development of Rescue and Emergency Medical Systems

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

To progress medical treatment in the emergency site and on the way to hospital, the dissemination and promotion of helicopters for emergency medical treatment are currently conducted based on the "Act on Special Measures Concerning Securing of Emergency Medical Care Using Helicopters for Emergency Medical Care" (Act No. 103 of 2007) and as of March 2018, 42 doctor helicopters in 52 prefectures are deployed.

**Augmentation of Fire Department and Collaborative Systems for Medical Agencies**

In view of the situation that it is difficult to select emergency hospitals in emergency transport, the Fire Defense Agency jointly with the Ministry of Health, Labour and Welfare formulated the "standards for transport and reception of sick and wounded people" (hereinafter referred to as "performance standards") for the prefectures and revised the Fire Services Act for compulsory establishment of a council on the performance standards in 2009. The revised Fire Services Act was enacted on October 30 of the same year, and currently, the councils are in place in all prefectures and the performance standards have also been formulated.

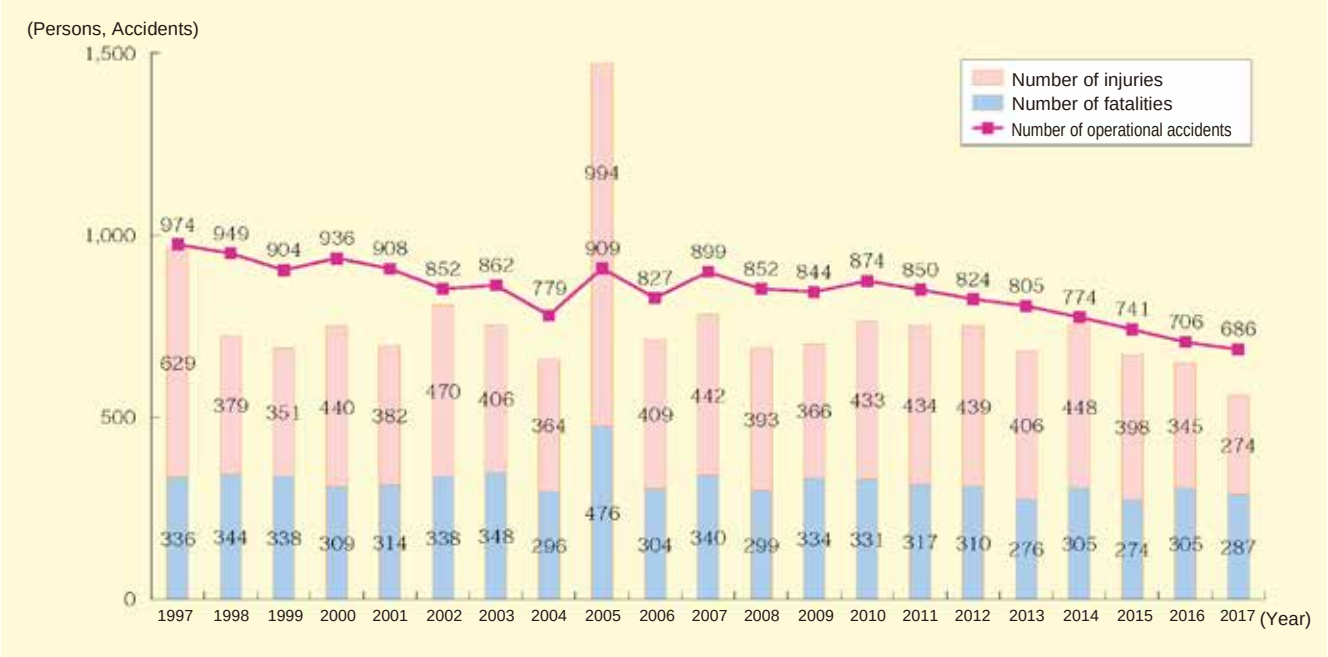
# Part 2 Railway Transport

## Chapter 1 Railway Traffic Accident Trends

### Operational Accidents over Recent Years

- The number of operational railway accidents* has been in a long-term decline. There were 974 accidents in 1997 and the number fell to 899 in 2007, 686 in 2017, a decrease of 2.8% compared to the previous year.
- The number of fatalities in operational accidents was 287, a decrease of 5.9% and the number of fatalities of passengers was none.
- Railroad crossing accidents* have been in a decreasing trend in the long run due to the development of safety facilities at railroad crossings, etc. There were 237 accidents in 2017, an increase of 3.5% compared to the previous year, while the number of fatalities due to railroad crossing accidents was 101, a decrease of 1.9% compared to the previous year.
- The number of accidents resulting in injury or death in 2017 was 381, a decrease of 9.3% compared to the previous year, while the number of fatalities was 186, a decrease of 7.9% compared to the previous year. The number of accidents resulting in injury or death by falling from the platform, or by being brought into contact with a train (platform accidents) was 178, a decrease by 1 (0.6%) compared to the previous year, while the number of fatalities in platform accidents was 30, an increase by 6people (25%) in 2017.
- At the first class railroad crossing road between the Sakamoto station and Haki station on the JR Kyushu's Hisatsu Line, there was a collision between a truck stuck at the railroad crossing and the passing train and 11 passengers and 2 crew members were wounded on November 3, 2017.

u Chart 1-44 Changes in the number of operational accidents and casualties

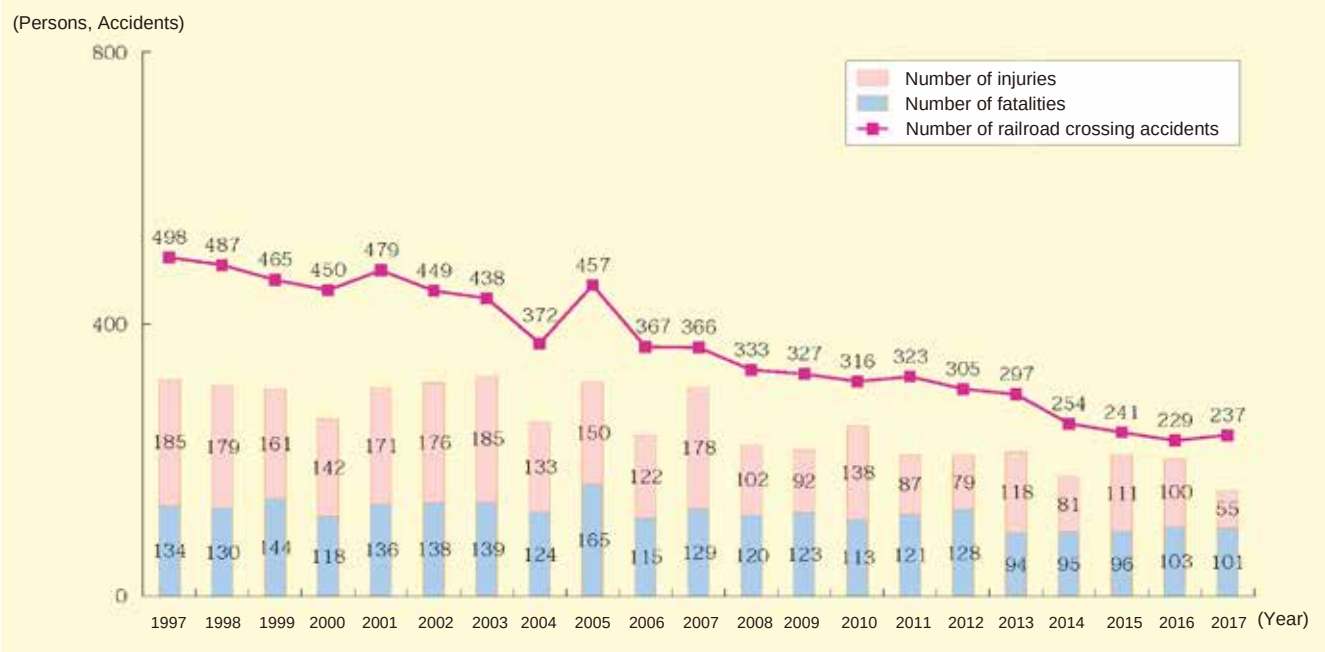



Note:
1. Source: Ministry of Land, Infrastructure, Transport and Tourism
2. The number of fatalities was registered within 24 hours after accidents.

* Operational accidents
Operational accidents include accidents caused by collision, derailment, fire, crossing obstruction, road obstruction causing injury or fatality and property damage. Incidentally, operational accidents on railway tracks are treated as operational railway accidents.

* Railroad crossing accidents
Railroad crossing accidents refer to the train accidents where a train or vehicle collide or make contact with a pedestrian or another vehicle at railway crossings and the accidents involving injuries that occur at railway crossings.

## u Chart 1-45 Changes in the number of railroad crossing accidents and the number of casualties




Note:
1. Source: Ministry of Land, Infrastructure, Transport and Tourism
2. The number of fatalities was registered within 24 hours after accidents.

## u Chart 1-46 Changes in the number of platform accidents and the number of casualties


Note:
1. Source: Ministry of Land, Infrastructure, Transport and Tourism
2. The number of fatalities was registered within 24 hours after accidents.

# Chapter 2 Overview of Current Railway Traffic Safety Measures

## 1. Improvement of Railway Environment

### Improving Operational Safety Devices

Limits were stipulated on the installation of ATS with the function to limit speed, emergency stop device, operation status recording device*, etc. by laws and regulations. As of June 2016, their installation was completed. We continue to promote the development of systems and devices without stipulation of limits.

### Strengthening of the Earthquake Resistance of Railway Structure

In preparation for large-scale earthquakes such as the Tokyo inland earthquake, the Nankai Trough earthquake, etc., we promoted measures against earthquakes at main stations and viaducts in order to ensure safety of railroad users and secure the function as temporary evacuation sites.

### Promotion of measures to improve safety at station platforms

We are promoting measures to prevent people from falling from a station platform in terms of both hardware and software in an integrate manner based on the interim report of “Review meeting for improvement of safety at station platforms” (December, 2016).

Specifically, we plan to accelerate the development of studded paving blocks with an inner line towards the platform doors as a hardware measure and to promote enhancement of guidance by station staff and alerting by passengers.

In July 2017, the Review Meeting held the 7th meeting to check the progress status of the railroad operators. In terms of hardware, the number of stations which have installed platform doors is 686 as of the end of FY2017 and a total of 882 stations are expected to be equipped with them by the end of FY2020. Therefore, it has been confirmed that the target of the Traffic Policy Basic Plan (about 800 stations in FY2020) will be achieved ahead of schedule. In terms of software, it was confirmed not only that the number of initiatives to conduct training with the participation of visually impaired people has been doubled, but also campaigns for greeting and watching held by the government as well as railroad operators are being developed in an enhanced manner.

## 2. Dissemination of Knowledge about the Safety of Rail Traffic

In addition to conducting campaigns to prevent accidents at railway crossings using posters and others, dissemination of knowledge and awareness-raising on the manner to safely cross railroad crossings and on the prevention of railway accidents were conducted for schools, residents along the railway tracks and road transport operators among others.

In addition, we urged railroad operators to take steps for preventing accidents by utilizing the guidance on safety use of railroads.

## 3. Ensuring the Safe Operation of Railways

### Retaining the Quality of Train Operators

To ensure the qualifications of train drivers, driving license tests were conducted in an appropriate manner. It was also instructed to operation administrators to adopt adequate measures for education to ensure the qualification of the crew.

### Sharing and Use of Trouble Information on Safety

We do not only hold a railroad safety liaison meeting with safety administrators of main railroad operators, but also share information on measures for prevention of accident recurrences. In addition, we collect information to share safety trouble information with related people to acquaint railroad operators with it. Moreover, we share safety trouble information which does not need to be reported to the government with railroad operators.

### Appropriate Response in Cases of Large-Scale Accident Occurrence

In order to cope with emergency situations such as a large accident or a disaster, procedures were taken to check and validate the emergency contact system at night and on a holiday which enables the establishment of contact with relevant persons in the government and railway operators in a quick and appropriate manner.

In addition, railway operators were instructed to provide appropriate information to railway users and establish systems to quickly restore services in case of accidents including transportation failure with a view to reducing

* Devices of line sections with the maximum number of services of 10 round trips or more per one hour, or vehicles traveling the line sections, or vehicles with an operating speed of 100km/h or more, or facilities of line sections in which the vehicles travel are obliged to be improved within 10 years.

social impact in major cities and trunk railway lines.
Furthermore, regarding measures of railroads against tsunami, we have developed a response guideline and specific examples to ensure safety of railroad passengers at the time of tsunami based on the basic stance of evacuating from the largest tsunami caused by a large-scale earthquake along the Nankai Trough (swift evacuation is the most effective and important response, etc.) and we have urged railroad operators to take steps to that end.

**Enhancement of Transport Safety Management System**

The evaluation of transport safety management whereby operators build and improve a safety management system in a concerted effort with all employees and the government checks its implementation status was conducted to 55 companies in 2017 in accordance with the "Transport Safety Management System" introduced in October, 2006.

## 4. Measures for Traffic Safety in Railroad Crossings

**Current status of measures for prevention of accidents at railroad crossings**

As regards improvement of railroad crossing roads, we are promoting a variety of measures, including grade separation of railroad crossing, structural improvement, development of pedestrian bridges and development of railroad security facilities based on the Act on Promotion of Railway Crossings (Act No. 195 of 1961) and the 10th Fundamental Traffic Safety Program.
In FY2017, we designated additional 237 railroad crossings to be improved based on the Act on Promotion of Railway Crossings. With the existing 587 places designated in FY2016, the total number of designated railroad crossing reached 824. Regarding the designated railroad crossings, we held meetings to improve regional railroad crossings sequentially and road administrators and railroad operators agreed to promote further measures for railroad crossings in accordance with regional conditions.
In addition, the number of railroad crossings which were improved in FY2016 including those designated in the past and those voluntarily improved by road administrators and railroad operators was 25 (grade separation), 245 (structural reform) and 47 (improvement in railroad crossing security facilities). Moreover, elimination and integration of railroad crossings were performed in conjunction with grade separation project, etc.

u Table 1-32 The number of railroad crossings improved from FY2012 to FY2016

(Unit: place)

| Type / FY | Grade separation | Structural reform | Improvement in railroad crossing security facilities |
|---|---|---|---|
| 2012 | 98 | 191 | 77 |
| 2013 | 34 | 204 | 57 |
| 2014 | 26 | 203 | 35 |
| 2015 | 40 | 230 | 40 |
| 2016 | 25 | 245 | 47 |

Note: Source: Ministry of Land, Infrastructure, Transport and Tourism