ISSUE 15
KOTI Knowledge Sharing Report
KOREA'S BEST PRACTICES
IN THE TRANSPORT SECTOR

Korea's 95% Reduction in Child Traffic Fatalities: Policies and Achievements

Edited by SUL Jaehoon

THE KOREA TRANSPORT INSTITUTE

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KOTI Knowledge Sharing Report: Korea's Best Practices in the Transport Sector

Issue 15: Korea's 95% Reduction in Child Traffic Fatalities: Policies and Achievements

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• Preface

All around the world nations are putting great effort into reducing traffic accidents among children. They are pursuing road safety for kids as one of the most important goals related to transportation safety. However, financial difficulties leave most countries restricted in their capacity to support relevant projects in budget and manpower. Therefore, it is very important for each nation to implement a policy that can ensure the most effective use of limited resources.

The number of children killed in road traffic accidents in Korea went down by more than 95% from the peak of 1,766 in 1988 to 83 in 2012. In 2012, children accounted for 1.5% of a total of 5,392 road traffic fatalities nationwide.

To reduce traffic accidents involving children, Korea has implemented various policy measures. They included programs to improve school zones, ensure the safe operation of school buses for children, initiate road safety education for children, foster civic groups specializing in road safety, and strengthen a pertinent legal framework.

This report presents a summary of policies that enabled Korea to cut its child traffic fatalities by more than 95% between 1988 and 2012. Korea needs to share its experience implementing such policies with other countries and increase international cooperation regarding child traffic safety issues.

This report aims to facilitate the sharing of such experience, thereby helping various other countries effectively reduce traffic accidents involving children. It is also designed to promote international cooperation concerning endeavors to ensure road safety for children.

In a related move, Korea is pursuing various international cooperative projects. The nation plans to invite foreign experts to implement road safety education programs in Korea as well as to send Korean experts abroad for dissemination of pertinent Korean policies. In addition, plans are afoot to hold international seminars on road safety for children under the auspices of the World Bank and the Asian Development Bank.

Kim Gyeng Chul
President
The Korea Transport Institute

CHAPTER 1

Introduction

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Senior Research Fellow
The Korea Transport Institute


STOP

01
Background and Purpose

Background

Road safety for children is one of the most important issues for countries concerned about traffic safety. These countries are exerting great effort into reducing the number of child deaths from road traffic accidents. The effort includes research on effective policy measures that can drastically lower road collisions involving children.

In Korea, the number of child deaths from traffic accidents fell 95% from 1,766 deaths in 1988 to 83 deaths in 2012. Few other countries have made such a remarkable improvement in such a short period of time. It is therefore worthwhile for Korea to share its experience with other countries with regard to the successful effort in decreasing these deaths.

Purpose

The purpose of this report is to help various countries learn from Korea's experience in reducing traffic accidents involving children. It also aims to

intensify relevant international cooperation. The main objectives of this report can be summarized as follows:

- Facilitate the sharing of information between Korea and other countries with regard to efforts in reducing children's road traffic accidents
- Ensure effective transfer of relevant policies from Korea to other countries
- Suggest measures to increase pertinent international cooperation
- Build a relevant international cooperation network

Major Contents

This report is composed of the following chapters designed to facilitate the sharing of experience between Korea and other countries.

Chapter 1 offers an introduction to the report, explaining its background and purpose.

Chapter 2 introduces Korea's achievements since 1988 made toward decreasing road accidents involving children. It also compares Korea with major advanced countries in terms of child road fatality rates.

Chapter 3 deals with road safety regulations for children. It introduces the major contents of the laws enacted to reduce traffic accidents involving children such as the Road Traffic Act and the Transportation Safety Act.

Chapter 4 encompasses road safety education for children by introducing the curricula and contents of traffic safety education administered from kindergartens to high schools in Korea.

Chapter 5 focuses on school zone improvement projects, explaining the designation of child safety zones around schools and the implementation of relevant road facility improvement projects.

Chapter 6 is on the operation of school buses for children. It introduces the regulations of school bus safety and the vehicles themselves. It also explains the characteristics of collisions involving school buses.

Chapter 7 introduces various civic groups involved in activities for child road

Figure 1.1 A traffic safety campaign for children in Gunsan City

safety such as the Korea Green Mother Society and Citizen Coalition for Safety.

Chapter 8 is devoted to the discussion of child road accident reduction targets and future policy directions. It introduces the child traffic accident reduction goals as prescribed in the 7th National Transportation Safety Master Plan, which is a statutory plan formulated in accordance with the Transportation Safety Act. This chapter also provides main policy guidelines for realizing the reduction goals.

02
Decrease of Road Traffic Accidents Involving Children

Child Traffic Accidents on Downward Trend

The number of child deaths from traffic accidents in Korea, which continued

to increase until 1988, began to drop from 1989. In 1970, 914 children were killed in road crashes in the nation. Two years prior the number was nearly double that at 1,766.

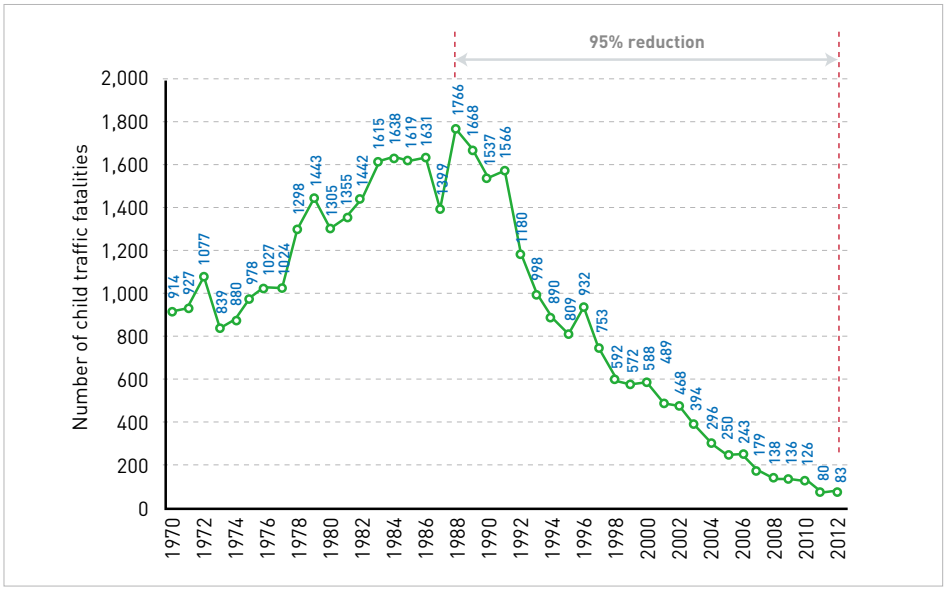
The situation began to improve from 1989 as a result of the implementation of active road traffic safety measures for children. In 2012, children killed in road crashes numbered 83. It represented a reduction of over 95% compared with the peak recorded in 1988.

It must be noted that the age definition of a child has changed which can skew the relevant statistics. In Korea, the legal definition of a child was aged 14 or under until 2004. The next year, the nation adopted new criteria as stipulated in the Road Traffic Act, which defines children as those under the age of 13.

The criteria differs from international standards of which up through 14 year olds are regarded as children. Therefore, the number of child fatalities in Korea is slightly smaller than it would be under international standards.

However, this should not discredit the achievement made by Korea in reducing the child road deaths by over 95% during the 24-year period of 1988 to 2012. Such a remarkable improvement can hardly be witnessed

Figure 1.2 Trend of child traffic fatalities in Korea (1970-2012)



elsewhere in the world.

The total number of road traffic deaths in Korea rose from 3,069 in 1970 to the peak of 13,429 in 1991. It then began to decline, dwindling to 5,392 in 2012. These figures show that the total number of people killed in road crashes in Korea has dropped to 40% of the peak. The number of child fatalities went down to a mere 5% of the peak. In 2012, child road deaths in Korea numbered 83, accounting for 1.5% of the nation's total number of people killed in road traffic accidents.

International Comparison

Korea's road fatality rate per 100,000 children (through age 14) stood at 2.0 as of 2010, according to an OECD statistical report issued in December 2012. The rate matches that of the United States and is similar to Greece and Israels 1.9. However, it was still much higher than 0.4 of the United Kingdom, 0.6 of the Netherlands, 0.7 of Sweden and Japan, and 0.8 of Germany.

Figure 1.3 Children safety education at a traffic park in Daegu City

As of 2011, children aged up to 14 accounted for 1.9% of the total road traffic accident deaths in Korea. The percentage is much lower than 4.8% of Australia, 4.2% of Norway, 3.7% of the United States, and 3.3% of France and the Netherlands. It is similar to 2.2% of the United Kingdom, 2.1% of Germany and 2.0% of Japan.

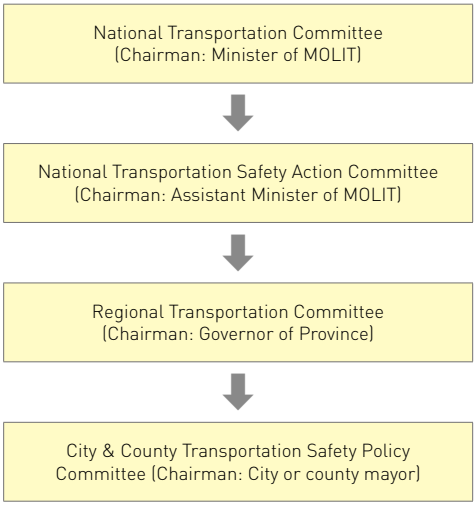
These statistics demonstrate that the percentage of children among the total road traffic deaths is relatively low in Korea compared to major advanced nations. However, Korea still has a relatively high rate of road traffic deaths per 100,000 children. This indicates the need to intensify efforts to further reduce traffic accidents involving children.

03
Nationwide System for the Road Safety of Children

National Administrative Framework for Road Safety

The National Transportation Committee, chaired by the Minister of Land, Infrastructure and Transport, is the organization responsible for road safety policies in Korea. Based on the National Transportation System Efficiency Act, the committee deliberates on major traffic safety policies and the National Transportation Safety Master Plan. It has been entrusted with the authority to review the major policies and plans pursuant

Figure 1.4 Overview of the transportation safety administrative system in Korea



to the Transportation Safety Act. The committee is made up of a maximum 30 members, including the chairman and the deputy chairman. The Minister of Land, Infrastructure and Transport serves as the committee chairman, while the vice minister assumes the deputy chairmanship. The chairman appoints committee members from among vice ministers of the central government, including vice minister-level officials and those with extensive professional knowledge and rich experience of transport safety affairs at public organizations.

Under the Action Committee, there are provincial-level transportation committees headed by provincial governors, and city or county level transportation safety policy committee headed by city mayors and county governors. Affairs related to child road safety are handled within the above-mentioned administrative framework.

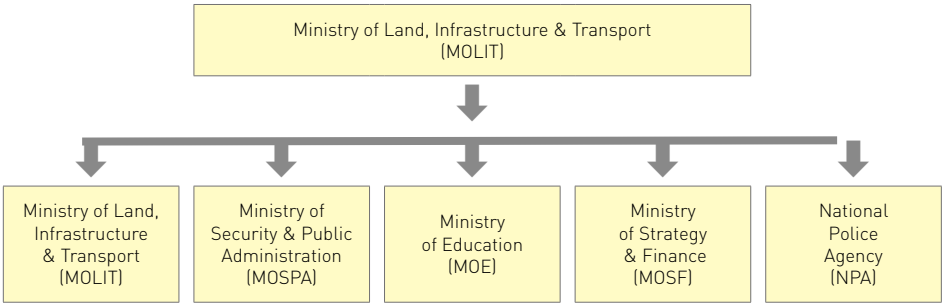
Government Ministries Playing Key Roles in Road Safety for Children

Pursuant to the Transportation Safety Act, 12 central-government ministries handle affairs related to national traffic safety. They include the Ministry of Land, Infrastructure and Transport (MOLIT), the Ministry of Security and Public Administration (MOSPA), and the National Police Agency (NPA).

MOLIT is responsible for the maintenance of expressways and national highways. It also coordinates traffic safety-related policies of the relevant ministries and agencies. The ministry renews the National Transportation Safety Master Plan every five years in order to ensure road safety for children. Additionally, it formulates the structural criteria for school buses and implements programs to support the families of children killed in traffic accidents.

MOSPA is responsible for safety on provincial and city/county roads. It carries out road safety measures in cooperation with relevant local governments. In order to improve road safety for children, the ministry implements various projects designed to improve school zones and traffic

Figure 1.5 Primary ministries responsible for children's road safety



accident black-spots.

The Ministry of Education (MOE) is in charge of traffic safety education for children. The Ministry of Strategy & Finance (MOSF) deals with budget-related affairs with regard to children's road safety.

The NPA is responsible for traffic law enforcement, the issuance of driver's licenses, road accident investigation, and the collection and maintenance of traffic accident data. Pursuant to the Road Traffic Act, the agency imposes double fines for violations within school zones, violations on roads containing school buses, and in accordance with the Traffic Accident Management Act pursues criminal charges against drivers involved in traffic accidents within school zones.

Other Organizations Related to Road Safety for Children

Various other organizations are engaged in activities designed to enhance road safety for children.

Korea Transportation Safety Authority (KOTSA)

KOTSA is a public authority under MOLIT. KOTSA deals with the examination of vehicles, including school buses. Under KOTSA is the Korea Automobile Testing and Research Institute (KATRI), which implements the New Car Assessment Program (NCAP) and safety-related automobile testing.

Korea Road Traffic Authority (KoROAD)

KoROAD is a public authority under the NPA. It is responsible for driver education and publicity of school zone guidelines. Under KoROAD are the Traffic Science Institute (TSI) and Traffic Accident Analysis Center (TAAC). TSI conducts research on traffic law enforcement, driver's license, traffic safety facilities and other police activities. TAAC analyzes road accident data obtained from the police and re-investigates large and significant accidents.

The Korea Transport Institute (KOTI)

KOTI is a research institute under the Prime Minister's Office. It conducts research on state policies related to road, rail, air and sea transport as well as logistics. KOTI also carries out research on road safety for children.

A number of other organizations conduct education and civic awareness activities related to road safety for children. They include the Korea Occupational Safety & Health Agency, the General Insurance Association of Korea and the Citizens Coalition for Safety.

Figure 1.6 Central government meeting on public safety

04
Major Road Traffic Safety Policies for Children

Major Policies Implemented for Children's Road Safety

Korea has implemented various policies designed to reduce traffic accidents involving children. Road safety policies are related to the aspects of 3E: engineering, education and enforcement.

In terms of engineering, the most prominent measure was the introduction of the school zone system in 1995. It led to the designation of safety areas for children around kindergartens and elementary schools as well as the reinforcement of road safety facilities.

As for education, in 1996 the Ministry of Education required kindergartens and elementary schools to conduct road safety education for their students. Since then, all children have been given compulsory education on how to protect themselves on the road.

In terms of enforcement, the government introduced the school bus protection system in 1997. Beginning in 2011, it implemented a new penalty system under which drivers violating traffic rules in school zones are punished with double fines.

In addition, various other measures have been implemented in relation to children s road safety as outlined below in the following timeline:

- 1971: A non-profit organization called Korea Green Mother Society was inaugurated. Its members began activities protecting children going to and from school.
- 1995: The school zone system was introduced through amendment of the Road Traffic Act.
- 1996: The Ministry of Education requires annual road safety education for kindergartens and elementary schools for a minimum 30 hours and 23 hours, respectively.

- 1996: Children Traffic Safety Institute, a private research organization, was established.
- 1997: The Road Traffic Act was amended to include provisions for the protection of children on school buses.
- 2001: Safe Kids Korea was founded with assistance from the U.S. Safe Kids.
- 2001: The Road Traffic Act was amended, making it mandatory for children to wear helmets while riding bicycles.
- 2003: Under directions from the Prime Minister's Office, an advisory commission was launched to implement road safety publicity campaigns through cooperation between the public and private sectors.
- 2007: Act on Special Cases Concerning the Settlement of Traffic Accidents was revised, introducing a provision that makes it mandatory to pursue criminal punishment against drivers causing accidents in school zones regardless of auto insurance status.
- 2008: The Children Welfare Act was amended, making it mandatory to annually provide a minimum of 10 hours of road safety education for.
- 2011: The Road Traffic Act was amended, introducing an additional punishment system under which drivers violating traffic regulations in school zones are subject to pay fines twice as heavy.
- 2011: The 7th National Transportation Safety Master Plan (2012-2016) was formulated, setting the goal for reducing the number of child deaths from road traffic accidents.
- 2012: It became mandatory for school bus drivers to receive road safety education.
- 2014: The government introduced a mandatory vehicle registration scheme

Figure 1.7 Korea Green Mother Society activities in front of an elementary school

for school buses and strengthened the relevant safety standards.

Through the above-mentioned various policies, Korea has significantly reduced the number of fatal traffic accidents involving children. Detailed contents of the policies implemented in Korea in relation to road safety for children are presented in the following chapters.

Budget Investment for the Road Safety of Children

Korea has consistently made investments in projects to improve school zones, conduct safety education, hold publicity activities, and create traffic safety parks. The largest portion of the investments goes to school zone improvement projects. The costs for these projects are paid by the Ministry of Security and Public Administration and relevant local governments by a 50/50 matching fund system.

School zone improvement projects were implemented at 9,021 locations over the decade spanning 2003 to 2012. They cost a total of 1,456.6 billion won, with an average of 160 million won for each school zone.

Table 1.1 Number and cost of school zone improvement projects by year

Classification	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Number of locations	487	753	847	982	1,024	1,239	1,119	900	962	705	9,021
Project cost (billion won)	77.6	126.8	144.4	141.2	182.2	181.7	167.0	194.0	157.5	84.2	1,456.6

Source: National Police Agency, *White Paper on Road Traffic Safety*, 2013.

For traffic safety education and related publicity programs, the National Police Agency spent 3.2 billion won in 2012. In addition, about seven billion won was spent for that purpose out of the budget of the Korea Road Traffic Authority under the NPA. Part of the spending went to projects for education and civic awareness programs for children's road safety. The Ministry of Education uses its own budget to develop and produce materials for road

safety education for children. The traffic safety parks for children are being built with investments from local governments.

Figure 1.8 A school zone improvement project

The Korea Transportation Safety Authority, an organization under the MOLIT, provides a budget for children's helmets and car seat rental projects as well as publicity programs to promote kids bicycling safety.

05 International Cooperation and Knowledge Sharing

Needs for Knowledge Sharing

Various efforts are being made throughout the world to reduce road traffic accidents involving children. However, many governments face limitations in terms of budget and manpower. Under these circumstances, it is essential to formulate policies to most effectively use the available budget and manpower. In this regard, it is necessary to promote international information exchanges in various areas such as the enactment of laws related to road safety for children, the formulation and execution of relevant policies, and the effective use of the government budget.

Korea cut its child traffic deaths by 95% between 1988 and 2012. As such, it has much to offer to the rest of the world in terms of policy information and experience. There is a need to promote the exchange of

information among nations concerning efforts to reduce road accidents involving children. Designed to meet this need and publicize Korea's related experience worldwide, this report aims to serve as reference material for a number of countries promoting road safety policies.

Korea's Role

This report will present Korea's experience in implementing policies that led to a reduction of over 95% in the number of child deaths over a 24-year period (1988-2012). Korea can support the following international projects in promoting road safety for children:

Figure 1.9 ADB knowledge sharing workshop in Korea (2013)

- Invite foreign transport experts to Korea, and provide them with opportunities to receive education on road safety for children;
- Publicize Korea's road safety policies abroad through Korean road safety experts invited by foreign countries;
- Hold international seminars on road safety for children under the auspices of international organizations like the World Bank and the ADB;
- Implement joint research projects in collaboration with advanced or developing countries regarding child road safety policies;
- Promote other international cooperation projects designed to reduce road accidents involving children.

CHAPTER 2

Decrease in Traffic Accidents Involving Children

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STOP

01
Introduction

The Korean National Police Agency issues the annual Traffic Accident Statistics pursuant to Article 8 of the Statistics Act enacted in 1976. The disclosed information is used as a basic material for comprehensively and systematically analyzing road traffic accidents, formulating road safety measures, and conducting relevant academic research. The statistics are compiled based on police investigated traffic accidents. In addition, the Korea Road Traffic Authority conducts annual statistical analysis of traffic accidents. The analysis is based on data from law enforcement, insurance companies and mutual aid associations. Table 2.1 shows changes that have taken place since 1980 in the nation's traffic conditions and traffic accidents. Table 2.2 illustrates population changes in terms of age distribution. In 1980, Korea's gross domestic product (GDP) amounted to just 37 trillion won. Over the next 30 years the GDP expanded by nearly 34 times eventually exceeding 1,100 trillion won. During that period Korea achieved economic growth at a faster rate than any other nation in the world. The economic growth led to an increase in the number of automobiles as a convenient means of transport. Amid such expansion, Korea made continuous efforts to reduce road traffic accidents involving children. As a result, the number of child road deaths has

been declining since the 1990s. This chapter presents child traffic accident statistics compiled since 2000.

Table 2.1 Main transport indicators

	Population (thousands)		Registered vehicles		Licensed drivers		Total road length (km)		GDP (billion won)		Traffic accidents					
											Accidents		Killed		Injured	
		Index		Index		Index		Index		Index		Index		Index		Index
1980	38,124	100	527,729	100	1,860,654	100	46,950	100	37,789	100	120,182	100	5,608	100	111,641	100
1985	40,806	107	1,113,430	211	4,088,521	220	52,264	111	81,312	215	146,836	122	7,522	134	184,420	165
1990	42,869	112	3,394,803	643	8,543,903	459	56,715	121	178,797	473	255,303	212	12,325	220	324,229	290
1995	45,093	118	8,468,901	1,605	16,403,759	882	74,237	158	409,654	1,084	248,865	207	10,323	184	331,747	297
2000	47,008	123	12,059,276	2,285	18,697,346	1,005	88,775	189	603,236	1,596	290,481	242	10,236	183	426,984	382
2005	48,294	127	15,396,715	2,918	23,497,650	1,263	102,293	218	865,241	2,290	214,171	178	6,376	114	342,233	307
2010	49,410	128	17,941,356	3,400	26,402,364	1,419	105,565	225	1,173,275	3,105	226,878	189	5,505	98	352,458	316
2012	50,004	131	18,870,533	3,576	28,263,317	1,519	105,703	225	1,272,460	3,367	223,656	186	5,392	96	344,565	309
Average annual growth rates	0.9%		11.8%		8.9%		2.6%		11.6%		2.0%		-0.1%		3.6%	

Note: 1) Two-wheeled vehicles and construction and agricultural machinery are not included in registered vehicles.
2) Licensed drivers statistics. filed since 1990, are based on people who actually hold driver's licenses, regardless of license types.
3) The average annual growth rates were calculated based on the yearly growth rates from 1980 through 2012.
Source: 1) National Police Agency, [2013 edition of Road Traffic Accidents], 2013.
2) The Bank of Korea's economic statistics system [http://ecos.bok.or.kr], 2013.6.

Table 2.2 Changes in population age and household size

	Total	Under 14 years old	15 - 64 years old	65 years old and above	Number of households		
						Population/ Household	Car/ Household
1980	38,123,775	12,950,775	23,716,967	1,456,033	8,739,270	4.4	6.0
1985	40,805,744	12,304,542	26,759,353	1,741,849	9,788,261	4.2	11.4
1990	42,869,283	10,973,592	29,700,607	2,195,084	11,357,160	3.8	29.9
1995	45,092,991	10,536,828	31,899,511	2,656,652	14,234,515	3.2	59.5
2000	47,008,111	9,911,229	33,701,986	3,394,896	15,765,275	3.0	76.5
2005	48,294,143	9,240,017	34,670,970	4,383,156	17,857,511	2.7	86.2
2010	49,410,366	7,975,374	35,982,502	5,452,490	19,865,179	2.5	90.3
2012	50,004,441	7,559,063	36,555,703	5,889,675	20,211,770	2.5	93.4
Average annual growth rate	0.9%	-1.7%	1.4%	4.5%	2.7%	-1.8%	8.9%

Note: 1) Household statistics for years before 1993 were based on the number of families. From 1993, they were based on the number of registered households.
2) Data for 2006 and the following years were revised based on the 2010 national census.
Source: Statistics Korea [http://www.kosis.kr], May 2013.

02
Glossary of Terms

The main terms used in this report can be defined as follows based on the Road Traffic Act:

- Traffic accident: Under Article 2 of the Road Traffic Act, a traffic accident refers to an collision that causes damage to people or property due to vehicular traffic on the road. However this chapter does not deal with property damage.

- Traffic accidents involving children: Traffic accidents that led to casualties involving children under the age of 13

- Classification of traffic accidents
  - Total traffic accidents: The entire number of traffic accidents that occur in Korea. Relevant statistics are compiled based on the integrated data collected from the police, insurance companies and mutual aid associations. Statistics have been compiled since 2007.
  - Police investigated accidents: Traffic accidents investigated and reported by police. Statistics have been compiled since 1970.

- Injury severity
  - Killed: Any person who died on the scene or who died within 30 days as a result of the accident (72 hours until 1999)
  - Serious injury: Injuries that require medical treatment for more than 3 weeks
  - Slightly injury: Injuries that require medical treatment for less than 3 weeks but more than 5 days
  - Minor injury: Injuries that require medical treatment for less than 5 days

- Parties in an accident
  - The first party: The person(s) most responsible for the collision
  - The order of the parties other than the first party is determined based on the degree of their involvement

- Types of accidents
  - Depending on the collision type and the accident relevant vehicles and persons, traffic accidents are classified into vehicle-to-person, vehicle-to-vehicle, single-vehicle, and vehicle-to-train
  - A vehicle-to-person accident refers to a collision in which a pedestrian is the first or second party
  - A vehicle-to-vehicle accident refers to a collision in which the first and second parties are vehicles
  - A single-vehicle accident refers to a collision in which there is only the first party is involved without other vehicles or persons. This can include a crash, rollover, run-off-road collision, etc. It may also refer to an incident that involves a second party which is a parked vehicle, an object or a road facility.

- Vehicle type
  - Road vehicle: under Article 2 of the Road Traffic Act, road vehicles refer to motor vehicles, construction machinery, motorcycles, bicycles, and other vehicles running on the road by the power of humans or cattle or other motor power
  - Motor vehicle: Article 3 of the Motor Vehicle Management Act classifies motor vehicles into passenger cars, buses, trucks, special-purpose cars, and two-wheeled vehicles
  - Construction machinery: machinery stipulated in Article 73 of the Enforcement Decree of the Construction Machinery Management Act (dump trucks, asphalt spreaders, road ballasts, concrete mixer trucks, concrete pumps, drilling machines)
  - Cultivator: power cultivators and agricultural tractors are among the

agricultural machinery stipulated in the Agricultural Mechanization Promotion Act

- Motorcycle: under Article 3 of the Motor Vehicle Management Act, a motorcycle is a two-wheeled vehicle with an engine of 125cc or less, or a vehicle equipped with a motor less than 50cc (in case the vehicle is powered by electricity, less than 0.59 KW of rate power).

- Road type
  - Pursuant to Article 11 of the Road Act, roads are classified as follows:
    Expressway: a road exclusively for motor vehicles as stipulated in the Road Act
    Highway: a national road connecting major cities, ports, tourist attractions, etc.
    Metropolitan city road: a road under the control of a metropolitan city
    Provincial road: a province artery road connecting major facilities within a province to upper-level roads
    City road: A road under city management
    District road: A road under district management

- Pedestrian
  - A person not in a vehicle and could be walking, working, playing, standing, lying down, riding or pushing a wheelchair, riding a bicycle or tricycle, or pushing a vehicle along a road

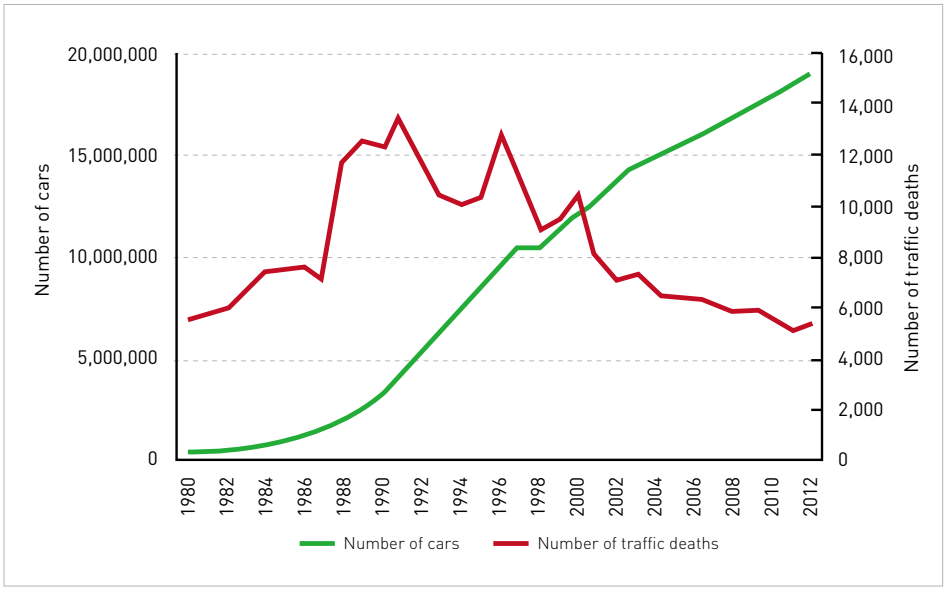
- School zone
  - A designated protective street area for children near a kindergarten or a school. The school zone scheme was first nationally introduced in 1995 pursuant to the Road Traffic Act. In that year, the government enacted Regulations on the Designation and Management of School Zones.

- The last digit of a number
  - The last digit of a number is rounded, hence the numerical total may not match the actual total

03
Korea's Main Road Safety Indicators

Sales of Korea's first domestically produced cars in the late 1970s led to steady growth in the number of registered automobiles in the nation, which exceeded the 10 million mark in 1997. In particular, the number has increased by an annual average of 32% since 1987. With expansion in car ownership, road traffic accidents and casualties rose as well. However, they began to decrease in the 1990s as the nation suffered from a financial crisis and a global recession. The government also played a crucial role by intensifying its efforts to reduce the number of road collisions and casualties from 1995.

Figure 2.1 Relationship between the number of cars and traffic deaths



Around 2000, a shift began to occur from the car-centric road system to a pedestrian-oriented road network scheme, contributing to a steady reduction of road accidents and related deaths and injuries.

Since the 1980s, Korea's population has been growing at an average annual rate of less than 1%. The child population has been steadily declining, while the number of people aged 15 and above has been increasing. Those aged 65 and above have been showing a particularly high rate of growth, an indication that Korea is becoming an aged society. In a sign that represents the phenomenon of nuclear families in Korean society, the number of households has continued to increase while the average number of people per household continued to decrease.

04
Analysis of Trends in Road Traffic Accidents Involving Children

Yearly Statistics of Child Deaths from Road Traffic Accidents Since 1988

The number of children killed in road traffic accidents in Korea drastically went down from around 1,800 in 1988 to less than 100 in 2012. This means that the fatal road accidents involving children were cut by more than 95% over roughly 20 years. The nation achieved such remarkable progress by actively implementing various measures aimed at reducing road accidents involving children beginning in 1995. They included the designation of school zones, reinforcement of traffic safety regulations, introduction of various relevant laws and institutions, and the enhancement of safety awareness among both drivers and pedestrians.

The total number of traffic accidents decreased from about 290,000 in 2000 to 220,000 in 2011. Traffic deaths also showed a declining trend. For road accidents involving children, the number of occurrences as well as the number of

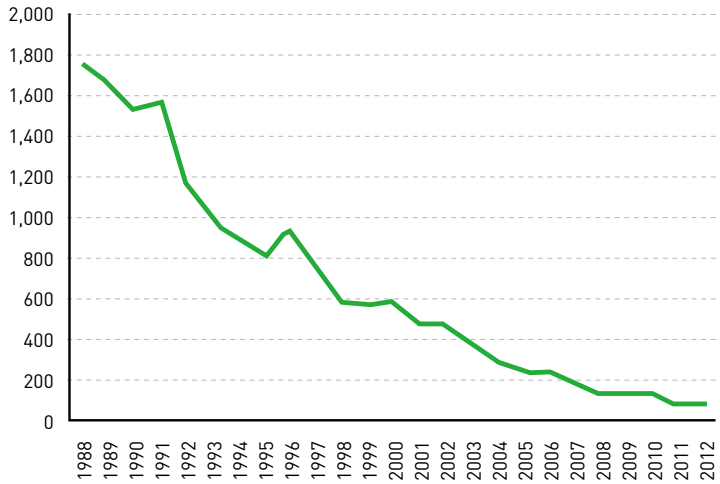
deaths rapidly decreased. Between 2000 and 2011, the child population shrank by an estimated 3.1%, while the number of child road deaths dropped by 14.6%. This demonstrates a real reduction in child road deaths.

Table 2.3 Occurrence of traffic accidents and related injuries and deaths

Categories	Overall traffic accidents			Traffic accidents involving children							Estimated child population
				Accidents		Killed			Injured		
	Accidents	Killed	Injured		Ratio %		Ratio %	Per 100,000 children		Ratio %	
2000	290,481	10236	426,984	26,072	9.0%	518	5.1%	6.7	29,523	6.9%	7,786,973
2005	214,171	6376	342,233	18,000	8.4%	250	3.9%	3.2	22,051	6.4%	7,887,227
2006	213,745	6327	340,229	16,542	7.7%	243	3.8%	3.2	20,300	6.0%	7,595,257
2007	211,662	6166	335,906	15,642	7.4%	179	2.9%	2.4	19,167	5.7%	7,321,824
2008	215,822	5870	338,962	14,930	6.9%	138	2.4%	1.9	18,404	5.4%	7,096,089
2009	231,990	5838	367,875	14,980	6.5%	136	2.3%	2.0	18,370	5.1%	6,860,105
2010	226,878	5505	352,458	14,095	6.2%	126	2.3%	1.9	17,178	4.9%	6,636,785
2011	221,711	5229	341,391	13,323	6.0%	80	1.5%	1.2	16,323	4.8%	6,475,840
Average annual growth rate	0.6%	-2.4%	0.1%	-5.1%	-	-14.6%	-	-	-4.9%	-	-3.1%

Source: Statistics Korea

Figure 2.2 Number of children killed in traffic accidents in Korea



Source: Statistics Korea

Trend in Accidents by Month

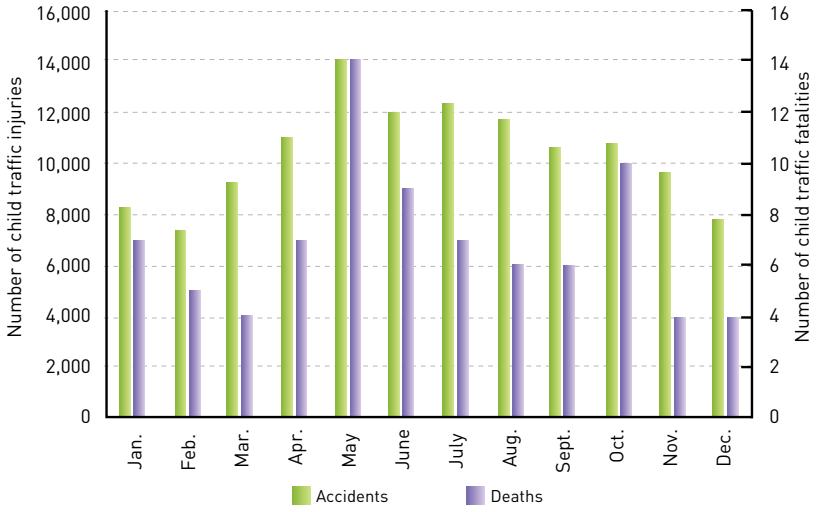
Statistics show that more children are killed in road crashes during seasons other than winter. This may be related to the fact that children normally engage in more outdoor activities in warmer seasons. In particular, the statistics reveal conspicuous concentration of fatal accidents involving children in May, the month known for numerous events and holidays for children. August it accounted for a relatively low percentage (7.2%) of deaths but a high share (9.8%) of injuries.

Table 2.4 Child traffic injuries and fatalities by month

		Total	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2012	Accidents	12,497	828	737	929	1,096	1,410	1,201	1,237	1,173	1,066	1,075	960	785
	Ratio	100.0%	6.6%	5.9%	7.4%	8.8%	11.3%	9.6%	9.9%	9.4%	8.5%	8.6%	7.7%	6.3%
	Killed	83	7	5	4	7	14	9	7	6	6	10	4	4
	Ratio	100.0%	8.4%	6.0%	4.8%	8.4%	16.9%	10.8%	8.4%	7.2%	7.2%	12.0%	4.8%	4.8%
	Injured	15,485	1,083	934	1,108	1,331	1,692	1,428	1,506	1,524	1,301	1,335	1,198	1,045
	Ratio	100.0%	7.0%	6.0%	7.2%	8.6%	10.9%	9.2%	9.7%	9.8%	8.4%	8.6%	7.7%	6.7%

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Figure 2.3 Child traffic injuries and fatalities by month



Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Trend in Accidents by Day of the Week

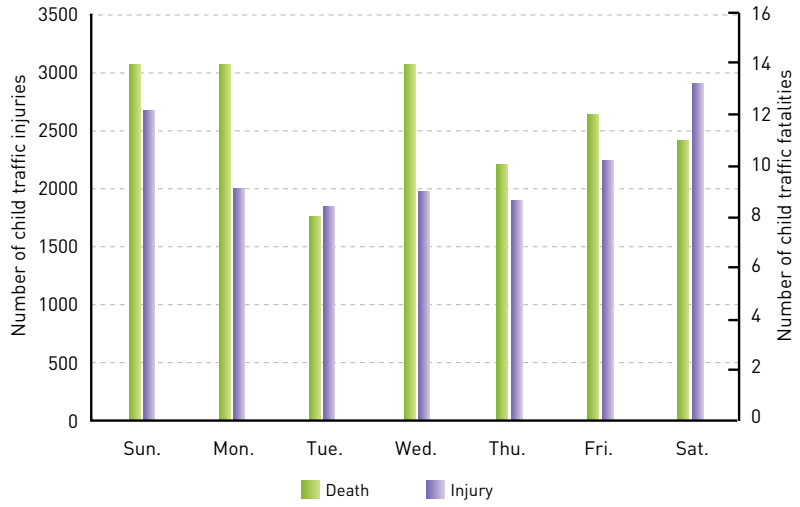
Statistically more child casualties occur during the weekend and on Mondays and Fridays than on other days of the week. This may be partially explained by the implementation of the five-day work week system, which led to increases in weekend outings and the corresponding volume of traffic.

Table 2.5 Child traffic injuries and fatalities by day of the week

		Total	Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
2012	Killed	83	14	14	8	14	10	12	11
	Ratio	100.0%	16.9%	16.9%	9.6%	16.9%	12.0%	14.5%	13.3%
	Injured	15,485	2,665	1,999	1,860	1,963	1,883	2,223	2,892
	Ratio	100.0%	17.2%	12.9%	12.0%	12.7%	12.2%	14.4%	18.7%

Source: Traffic Accident Statistics

Figure 2.4 Child traffic injuries and fatalities by day of the week



Source: Traffic Accident Statistics, Traffic Accident Data Analysis.

Trend in Accidents by Time of Day

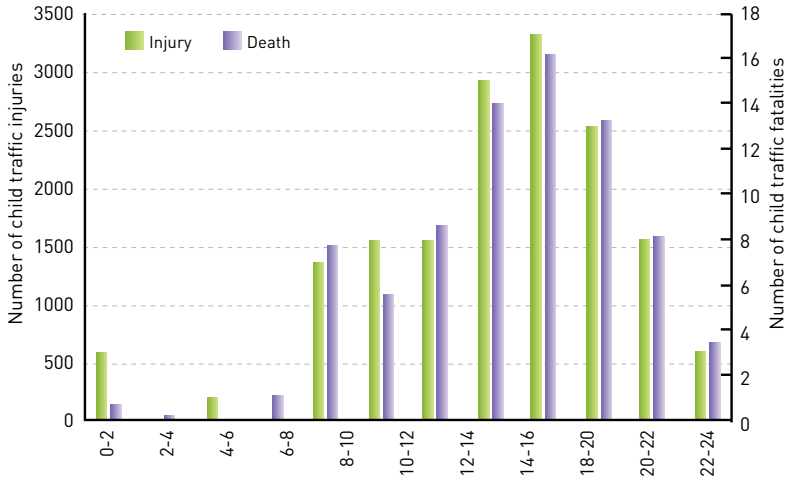
Child traffic casualties that take place in the morning are concentrated in school commute hours. In the afternoon, however, they are more widely distributed through the day. As for fatal road accidents, they usually occur during afternoon commute and evening hours between noon and 8 PM, taking place most often between 4 PM and 6 PM.

Table 2.6 Child traffic injuries and fatalities by time of day

		Total	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
2012	Killed	83	3	0	1	0	7	8	8	15	17	13	8	3
		100.0%	3.6%	0.0%	1.2%	0.0%	8.4%	9.6%	9.6%	18.1%	20.5%	15.7%	9.6%	3.6%
	Injured	15,485	140	50	42	233	1,499	1,100	1,686	2,737	3,160	2,576	1,596	666
		100.0%	0.9%	0.3%	0.3%	1.5%	9.7%	7.1%	10.9%	17.7%	20.4%	16.6%	10.3%	4.3%

Source: Traffic Accident Statistics

Figure 2.5 Child traffic injuries and fatalities by time of day



Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Trend in Accidents by City and Province

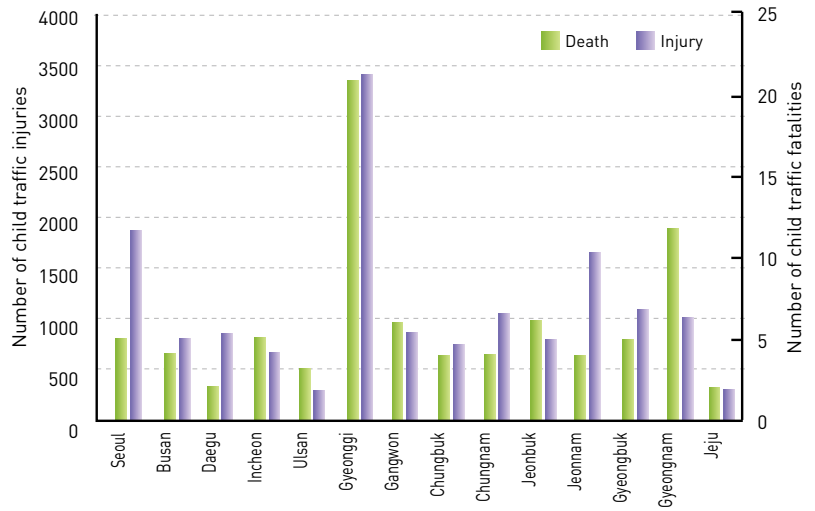
Of the nation's metropolitan cities and provinces, Gyeonggi Province recorded the highest number of road accidents involving children. It also accounted for the largest percentage in terms of child road deaths. Provinces showed relatively higher fatality rates compared with metropolitan cities.

Table 2.7 Child traffic injuries and fatalities by major city and province

		Total	Seoul	Busan	Daegu	Incheon	Ulsan	Gyeonggi	Gangwon
2012	Killed	83	5	4	2	5	3	21	6
	Ratio	100.0%	6.0%	4.8%	2.4%	6.0%	3.6%	25.3%	7.2%
	Injured	15,485	1,879	786	866	687	304	3,422	872
	Ratio	100.0%	12.1%	5.1%	5.6%	4.4%	2.0%	22.1%	5.6%
		Chungbuk	Chungnam	Jeonbuk	Jeonnam	Gyeongbuk	Gyeongnam	Jeju	Average
2012	Killed	4	4	6	4	5	12	2	5.93
	Ratio	4.8%	4.8%	7.2%	4.8%	6.0%	14.5%	2.4%	7.13%
	Injured	747	1,052	794	1,655	1,088	1,014	319	1,106.07
	Ratio	4.8%	6.8%	5.1%	10.7%	7.0%	6.5%	2.1%	7.14%

Source: Traffic Accident Statistics.

Figure 2.6 Child traffic injuries and fatalities by city and province



Source: Traffic Accident Statistics, Traffic Accident Data Analysis.

Causes of Accidents

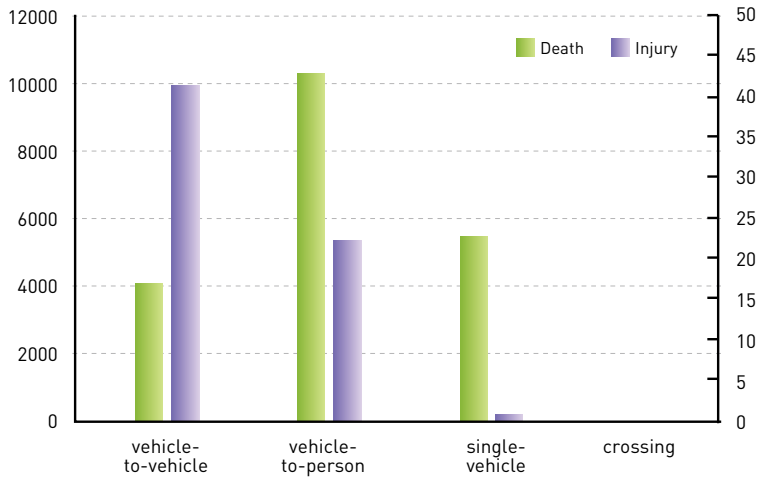
Single-vehicle and vehicle-to-person accidents showed higher fatality rates than other types of accidents. Relevant statistics indicate that vehicle-to-person and single-vehicle accidents, such as run-off-road collisions and rollover crashes frequently caused by speeding, have a relatively high probability of resulting in a fatality.

Table 2.8 Types of road traffic accidents involving children

		Total	Vehicle-to-vehicle	Vehicle-to-person	Single-vehicle	Crossing
2012	Killed	83	17	43	23	0
	Ratio	100.0%	20.5%	53.1%	26.5%	0.0%
	Injured	15,485	9,914	5,312	258	1
	Ratio	100.0%	64.0%	34.3%	1.7%	0.0%

Source: Traffic Accident Statistics

Figure 2.7 Types of road traffic accidents involving children



Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Casualties by Road User Type

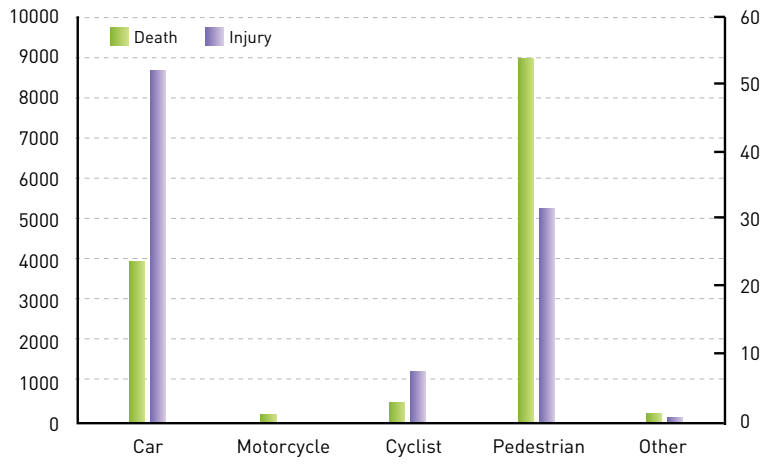
Statistics found that 65.1% of children killed in road crashes were pedestrians. Of the rest, 28.9% were riding in a car when the accident occurred, while 3.6% were bicycling. These findings demonstrate the need to intensify road safety education for children, particularly with regard to traveling on foot.

Table 2.9 Child traffic injuries and fatalities by vehicle type

		Total	Car	Motorcycle	Cyclist	Pedestrian	Other
2012	Killed	83	24	1	3	54	1
	Ratio	100.0%	28.9%	1.2%	3.6%	65.1%	1.2%
	Injured	15,485	8,655	68	1,247	5,347	168
	Ratio	100.0%	55.9%	0.4%	8.1%	34.5%	1.1%

Source: Traffic Accident Statistics

Figure 2.8 Child traffic injuries and fatalities by vehicle type



Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Accidents by Road Type

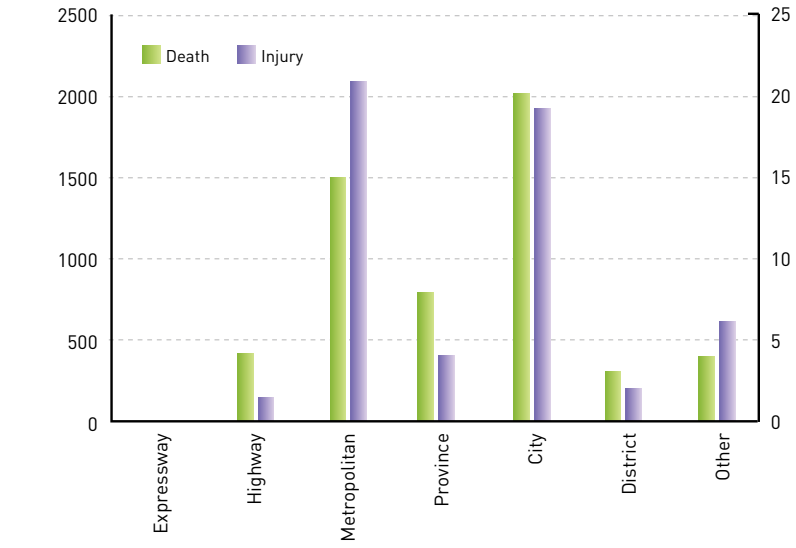
Of the child deaths from road traffic accidents, 64.8% occurred on roads in cities or metropolises. The relatively high rate is believed to be related to the heavy volume of child traffic in these cities.

Table 2.10 Child traffic injuries and fatalities by road type

		Total	Expressway	Highway	Metropolitan	Province	City	District	Other
2012	Killed	83	0	4	15	8	20	3	4
	Ratio	100.0%	0.0%	7.4%	27.8%	14.8%	37.0%	5.6%	7.4%
	Injured	15,485	2	145	2,080	403	1,910	205	602
	Ratio	100.0%	0.0%	2.7%	38.9%	7.5%	35.7%	3.8%	11.3%

Source: Traffic Accident Statistics

Figure 2.9 Child traffic injuries and fatalities by road type



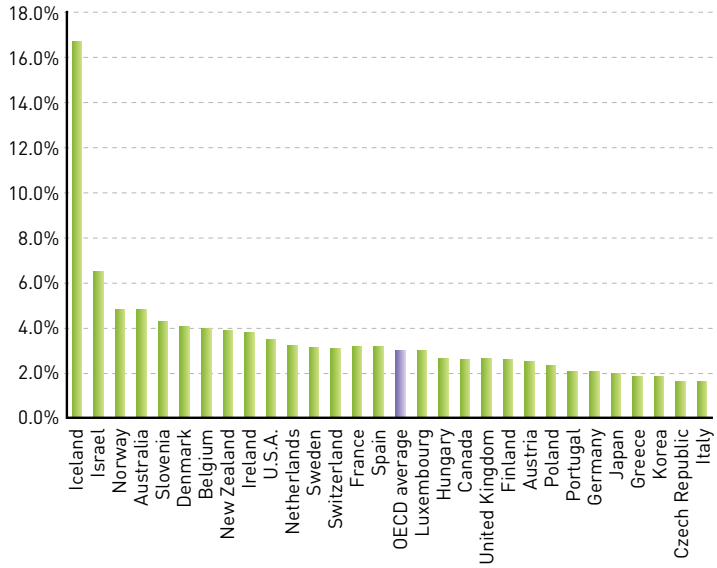
Source: Traffic Accident Statistics, Traffic Accident Data Analysis

05
International Comparisons of Road Traffic Accidents Involving Children

The Czech Republic and Italy had the lowest rate of child road fatalities among OECD member countries in terms of the proportion of children (under the age of 15) in overall traffic deaths at 1.6%. Iceland showed the highest rate at 16.7%. In Korea, the child road deaths numbered 101, which accounted for 1.9% of the overall fatalities from road accidents. It was below the OECD average of 3.0%.

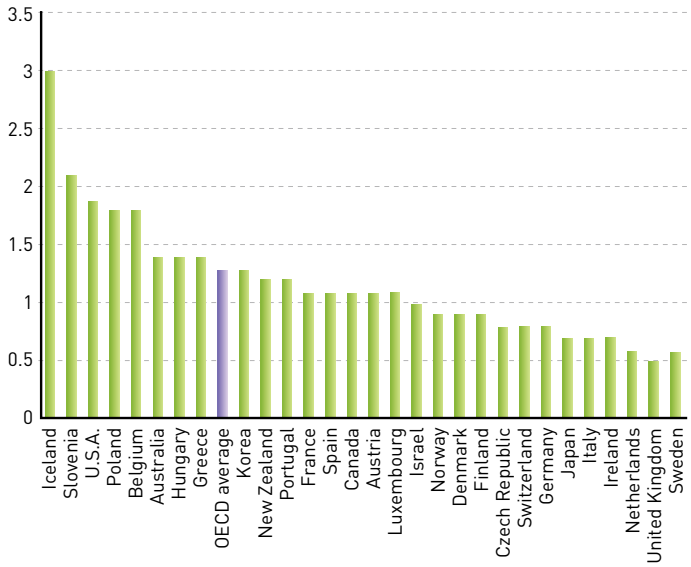
For road deaths per 100,000 children, the United Kingdom recorded the lowest ratio of 0.5. Iceland had the highest of 3.0. Korea recorded 1.3, almost the same as the OECD average. While Korea recorded a lower rate than major industrialized countries in terms of child deaths as a percentage

Figure 2.10 Proportion of children (under age 15) in road traffic accident deaths in OECD member countries



Source: http://internationaltransportforum.org/IRTADUsers,13-7

Figure 2.11 Deaths per 100,000 children in OECD member countries



Source: http://internationaltransportforum.org/IRTADUsers,13-7A

of overall road accident fatalities, it still needs to do more in the category of fatalities per 100,000 child population, where the nation hangs around the OECD average.

As explained thus far, Korea has significantly cut the number of child traffic deaths by implementing various relevant measures. It still needs to make endeavors to tackle various problems such as the high rate of child pedestrians killed on the roads, who account for over 60% of the overall child deaths from road traffic accidents.

CHAPTER 3

Road Safety Regulations for Children

KANG Dong Su
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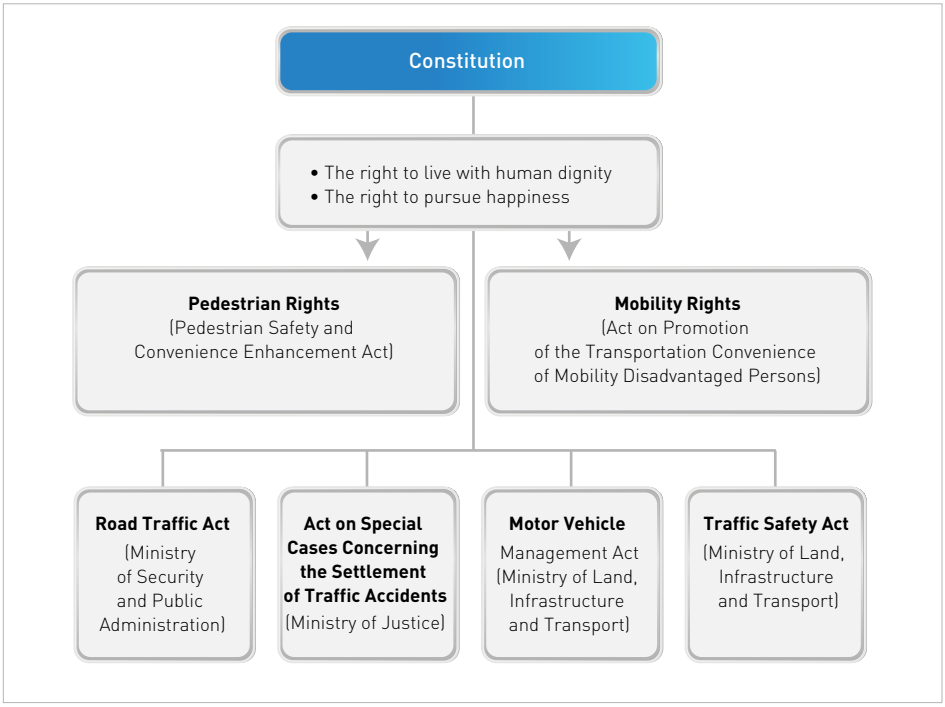
STOP

01
Introduction

Children should be able to freely walk and play anytime and anywhere, while adults have the duty to protect children no matter what transport mode they use. In Korea, regulations aimed at protecting children from traffic accidents have been strengthened continuously. The concepts of children's pedestrian rights and mobility rights have been established through the Act on Promotion of the Transportation Convenience of Mobility Disadvantaged Persons and the Pedestrian Safety and Convenience Enhancement Act. In addition, amendment of the Road Traffic Act and the Act on Special Cases Concerning the Settlement of Traffic Accidents have ensured the way for further improving road safety for children by stipulating more rigorous legal and administrative penalties for relevant traffic offenses.

In particular, the concepts of pedestrian rights and mobility rights have been developed with regard to children who primarily walk as their main mode. Pedestrians refer to all humans except for drivers and passengers of motor vehicles. Pedestrian rights are based on a comprehensive concept that encompasses more than just walking or crossing a road. This concept covers a broader scope than relevant provisions in the Act on Special Cases Concerning the Settlement of Traffic Accidents, particularly those regarding

Figure 3.1 Pedestrian and mobility rights under the Constitution



the obligation to protect pedestrians on crosswalks and sidewalks.

Consequently, children are entitled to protection regardless of whether they utilize a mode of transport or not. They should also be protected even when they are located in pedestrian spaces other than crosswalks and sidewalks. Korea's legal system related to road transport has placed the utmost importance on protecting children. Consequently, the nation achieved remarkable progress in its effort to secure road safety for children, as can be seen in the number of child road deaths per annum, which stood at 1,766 in 1988 and later fell 95% to 83 in 2012.

This chapter reviews the nation's legal framework concerning road safety for children as well as the strengthening of relevant regulations and its achievements.

02
Constitutional Grounds for Protecting Children and Relevant Rights

Constitutional Grounds

Article 10 of The Constitution of the Republic of Korea stipulates that "All citizens shall be assured of human worth and dignity, and have the right to pursue happiness."

In general, the right to pursue happiness means behavioral freedom, freedom of personality, and the right to life. Thus, it implies that people should be able to eat when they want to eat, play and dress as they desire, design their own life, and live in accordance with the concept of happiness they pursue. It also includes the right to live in a residential space worthy of a human being. Those who should enjoy the right to pursue happiness are natural persons, including children. The constitutional right to pursue happiness should be guaranteed by the state. It should not be infringed upon by any human being, not to mention state organizations.

In addition, the right to live a "life worthy of human beings," as stipulated in Article 34-① of the Constitution, is guaranteed through enactment of relevant laws. This article has specific provisions concerning the protection of historically socially disadvantaged peoples, such as women (clause 3), seniors and the young (clause 4), and those with physical disabilities (clause 5).

Mobility-impaired individuals have difficulty securing practical conditions for exercising their rights to freedom on their own. So, it should be emphasized that the state ought to foster and maintain conditions that can allow mobility impaired people to exercise such rights practically.

As users, children are granted the right to pursue happiness and to live with human dignity. In this regard, their rights should be guaranteed through legislation and adults have obligation to protect them.

Pedestrian Rights

The Pedestrian Safety and Convenience Enhancement Act was enacted in February 2012, firmly establishing a legal basis for pedestrian rights. Previously, pedestrian mobility had been perceived as just a desire for movement rather than as a human right. Under the law, the state and local governments have a duty to fully guarantee and promote people's right to walk safely and conveniently in a comfortable environment. They should implement measures to safeguard the right as long as it does not undermine public safety, order or welfare.

The law requires the policies to safeguard and increase pedestrian rights should be pursued under the following four principles: First, in case there are worries that various projects and systems might cause bodily harm to pedestrians, pedestrian safety must be placed ahead of benefits from such projects and systems. Second, unless there are special circumstances, there should not be serious differences in pedestrian conditions between areas with similar road width and vehicle and pedestrian traffic volumes. Third, pedestrian policies should be pursued based on consideration of pedestrian safety, convenience in gaining access to destinations, and the comfort and aesthetics of living spaces. Fourth, organizations implementing projects to improve pedestrian rights and conditions ought to build an organic cooperation system so that they can foster, maintain and manage safe pedestrian conditions in a systematic and rational manner, thus helping to ensure the right to lead a life worthy of human beings.

Even before this law was enacted, some local governments had ordinances on pedestrian rights. Remedies for violation of pedestrian rights cannot be based on such ordinances. However, they carry significance as an indication that local governments are trying to formulate plans to improve pedestrian conditions and secure pedestrian rights on their own.

Mobility Rights

Article 3 of the Act on Promotion of the Transportation Convenience of Mobility Disadvantaged Persons stipulates that a disabled or otherwise mobility-impaired person shall be entitled to safe and convenient travel, free of discrimination, by any transport mode, with access to passenger facilities and roads. With such actions, such person's human dignity and right to the pursuit of happiness may be ensured. The law defines a "mobility-impaired person" as any person who is a child, disabled, elderly, pregnant, accompanied by toddlers, or otherwise has difficulties in transport mobility.

Pursuant to the law, the central government (MOLIT) and local governments shall develop and implement such policies as necessary to facilitate the use of means of transport and passenger facilities and improve the pedestrian environment so that the mobility impaired may travel in a safe and convenient manner. In addition, the central and local governments should secure and operate low-floor buses and provide traffic information services that can be conveniently used by the mobility-impaired. This law is based on Article 10 of the Constitution that stipulates the right to pursue happiness.

03
A Legal and Institutional Framework for the Protection of Children

Road Traffic Act

Concerning the rights of children to be protected from transport modes including vehicles and traffic facilities, Article 11 of the Road Traffic Act separately stipulates the duties for children's caregivers and police officers. Under this law, caregivers of children should not allow any child in their care to play on a road with a high volume of traffic. In addition, toddlers should

not be allowed to walk alone on a road that carries a significant amount of vehicle traffic. Caregivers are also required to ensure that any child in their care wear use safety equipment when riding a bike or engaging in any other activity which could result in injury. Police officers have the obligation to take appropriate measures to ensure the safety of children found playing or walking alone on a road with a high volume of traffic.

Road Traffic Act

Article 11 Protection of Children, etc.

① Caregivers of children shall not allow any child in their care to play on a road with a high volume of traffic, and caregivers of toddlers (referring to persons who are under the age of six; hereinafter the same shall apply) shall not allow any toddler in their care to walk alone on a road that carries a significant amount of vehicle traffic.
② (Omitted)
③ Caregivers shall ensure that any child in their care use safety equipment when using bicycles on a road or rides other movement vehicles defined as considerably dangerous by a Ministry of Security and Public Administration ordinance, in order to ensure the safety of said child.
④ (Omitted)
⑤ When police officers find any of the following persons, they shall take appropriate measures to ensure that person's safety:
1. A child playing on a road on which traffic is frequent;
2. A toddler walking a road without their caregiver;
3. - 4. (Omitted)

Article 49 Matters to Be Observed by Every Driver

① Every motor vehicle driver shall observe the following matters:
1. (Omitted)
2. In any of the following events, a motor vehicle driver shall temporarily stop his/her motor vehicle:
A. When a driver finds children facing risks of traffic accidents as they cross a road unaccompanied by their caregivers, or sit, stand or play on the road, etc.
(Omitted below)

Within school zones, the maximum travel speed is restricted to 30 km/h. Violators are subject to punitive measures which are taken in four categories.

They are slapped with fines that range from a minimum 40,000 won to a maximum 160,000 won, depending their extent of speed limit violation: excess of over 60 km/h, excess of 40-60 km/h, excess of 20-40 km/h and excess of less than 20 km/h. In general, a driver is fined 30,000 won for speeding on an ordinary road. However, the driver has to pay twice as much in fine if caught driving at speeds between 31 km/h and 50 km/h in a school zone. The driver of a bus caught driving at a speed of 90 km/h or above is slapped with a fine of 160,000 won and 120 penalty points as well as a 120-day license suspension.

Table 3.1 Speeding ticket prices per vehicle type and location

Location	Over the speed limit	Traffic fine			Penalty points
		Bus & truck	Passenger car	Motorcycle	
School zone	Excess of 60 km/h over	160,000 won (170,000 won)	150,000 won (160,000 won)	100,000 won (110,000 won)	120 points (license suspension)
	40-60 km/h over	130,000 won (140,000 won)	120,000 won (130,000 won)	80,000 won (90,000 won)	60 points (license suspension)
	20-40 km/h over	100,000 won (110,000 won)	90,000 won (100,000 won)	60,000 won (70,000 won	30 points
	Under 20 km/h over	60,000 won (70,000 won)	60,000 won (70,000 won)	40,000 won (50,000 won)	15 points
Standard road	Excess of 60 km/h over	130,000 won (140,000 won)	120,000 won (130,000 won)	80,000 won (90,000 won)	60 points (license suspension)
	40-60 km/h over	100,000 won (110,000 won)	90,000 won (100,000 won)	60,000 won (70,000 won)	30 points
	20-40 km/h over	70,000 won (80,000 won)	60,000 won (70,000 won)	40,000 won (50,000 won)	15 points
	Under 20 km/h over	30,000 won) (40,000 won)	30,000 won (40,000 won)	20,000 won (30,000 won)	-

Note: Fines written within ( ) are charged to the owner of the vehicle when the violator (driver) is unidentified.

Traffic signal violations and other infringements within school zones are subject to additional punishments than those committed on standard roads. A signal violation on standard roads carries a fine of 70,000 won. The fine goes up to 130,000 won when it occurs within a school zone. Parking and stopping violations are normally subject to a fine of 50,000 won but increases to 90,000 won in school zones.

Table 3.2 Traffic violations and corresponding fines

Offenses	Vehicle types and fines
• Signal violation • Obstructing movement of pedestrians in crosswalks	• Van: 130,000 won • Passenger car: 120,000 won • Motorcycle: 80,000 won • Bicycle: 60,000 won
• Violation of curfew or other restrictions • Impeding pedestrians or not abiding by pedestrian protection regulations • Parking/stopping violations	• Van: 90,000 won • Passenger car: 80,000 won • Motorcycle: 60,000 won • Bicycle: 40,000 won

The Road Traffic Act provides special protection for school buses traveling with children. The law stipulates that when any school bus stops and operates its warning lights, drivers of motor vehicle driving in the same lane or the lane beside it, should temporarily stop before reaching the bus and drive the motor vehicle slowly after checking for children. The driver of any motor vehicle is prohibited from overtaking a school bus traveling along a road while indicating children are aboard the bus.

The driver of a children's school bus should operate the warning lights only when children enter or exit the bus. The driver is also required to indicate children are aboard the bus when children are actually on board.

Road Traffic Act

Article 51 Special Protection of School Buses for Children

① When any children's school bus stops on a road and operates its safety devices such as warning lights to indicate children are boarding or exiting, drivers of motor vehicles in the same lane and drivers of motor vehicles in the next lane shall temporarily stop before reaching the school bus and then drive slowly after checking for children.

② In case of paragraph ①, the driver of any motor vehicle driving in the opposite direction which no median line is marked or along a two-lane road shall temporarily stop their vehicle before reaching the school bus and then proceed slowly after checking for children.

③ The driver of any motor vehicle shall be prohibited from overtaking a children's school bus on a road while the bus indicates children are aboard.

Article 53 Duties of Drivers and Operators of School Buses for Children

① A person who drives a school bus for children shall operate the warning lights, etc. stipulated in Article 51-① only when children board or exit the bus, and shall make the indication stipulated in Article 51-③ only when said school bus is traveling with children on board.

② A person who drives a school bus shall start driving the vehicle after confirming, despite Article 50 ②, that all children have fastened their seat belts (belts that can be properly adjusted according to body structure of children. This requirement concerning seat belts shall also apply to Article 156-① and Article 160-②-4). When children exit a bus, the driver shall start driving the vehicle after checking that children have arrived at a safe location such as the sidewalk and the roadside area. However, this provision shall not apply to cases where children have trouble wearing seat belts due to health issues, etc. or where there are pertinent reasons for not wearing seat belts as prescribed by Ordinance of the Ministry of Security and Public Administration.

③ An operator of a school bus for children shall arrange for a guardian who falls under any of the following subparagraphs to board a school bus for children with children aboard. When children board or exit the school bus, the guardian shall get out of the bus and confirm whether the children have safely boarded or exited the vehicle. While the bus is moving on a road, the guardian shall make sure that the children are seated, wearing their seat belts, and take other appropriate measures necessary for their protection.

1. A teacher of any kindergarten provided for in the Early Childhood Education Act and any elementary school or special school provided for in the Elementary and Secondary Education Act;
2. A nursery teacher provided for in Article-5 of the Infant Care Act;
3. An instructor provided for in Article 13-① of the Act on the Establishment and Operation of Private Teaching Institutes and Extracurricular Lessons;
4. A person who works for any sports facilities provided for in the Installation and Utilization of Sports Facilities Act;
5. A person nominated by the operator of any school bus for children.

Article 53-2 Obligations of Drivers of School Buses That Have No Guardians on Board

A driver of any school bus for children without any guardian aboard shall get out of the vehicle when the children board or exit the bus, and confirm whether they have safely boarded or exited the vehicle.

Act on Special Cases Concerning the Settlement of Traffic Accidents

The Act on Special Cases Concerning the Settlement of Traffic Accidents was enacted to facilitate a prompt recovery of damage caused by traffic accidents by providing for special cases on criminal punishment of drivers involved in traffic accidents caused by gross negligence.

Under this law, a driver who causes an injury of another by gross negligence cannot be prosecuted against the express will of the victim. However, this does not apply when the driver commits such an offense because of an act that falls under any of the following 11 types of serious violations: ① signal violation ② violation of crossing the median line of a road or crossing, making U-turns or driving backwards on expressways (includes motorways) ③ speed limit violation (in excess of the limit by 20 km/h or more) ④ violation of the duty to protect pedestrians on a crosswalk ⑤ driving without a driver's license ⑥ drunk driving ⑦ passing violation ⑧ moving violation over railroad crossing ⑨ driving on a sidewalk or stopping on a crosswalk ⑩ violation of the driver's obligation to prevent passengers from falling out of a vehicle ⑪ drive without complying with safety measures or paying attention to the safety of children within children protective areas.

A driver cannot be prosecuted for a traffic accident that does not belong to any of the above-mentioned 11 categories, in case the vehicle that caused an accident is covered by insurance or mutual aid in accordance with the Insurance Business Act, the Passenger Transport Service Act, or the Trucking Transport Business Act. However, the driver faces criminal punishment if there exists a life-threatening danger, an injured party dies, is disabled, or such an injury is incurable or difficult to cure. The driver is also subject to criminal punishment in case the obligation of an insurance company, a mutual association or a mutual aid manager to pay insurance money or deducted amount no longer exists due to nullification or early termination of an insurance contract or a mutual aid contract, or an exception clause in the contract concerned. In other words, if a child is killed or seriously

injured from a traffic accident, the driver causing the accident faces criminal punishment regardless of insurance or mutual aid coverage. Even when the child is not killed or seriously injured, the driver is subject to criminal punishment in case he/she has violated the obligation to operate a vehicle by complying with measures under Article 12-1 of the Road Traffic Act by paying attention to the safety of children within school zones. A driver committing these offenses shall be punished by imprisonment without prison labor for a maximum of five years or a fine not exceeding 20 million won, as stipulated in Article 268 of the Criminal Act.

Act on Special Cases Concerning the Settlement of Traffic Accidents

Article 3 Special Cases for Punishment

① A driver of a vehicle who commits a crime stipulated in Article 268 of the Criminal Act shall be punished by imprisonment without prison labor a maximum of five years or a fine not exceeding 20 million won.

② When handling crimes related to accidents mentioned in Paragraph ①, a driver who commits a crime of causing the injury of another by occupational or gross negligence or crimes stipulated in Article 151 of the Road Traffic Act shall not be prosecuted against the express will of the victim; Provided that this shall not apply to the following cases:

- In case a driver of a vehicle inflicts bodily injury by gross negligence and flees the scene of the accident without taking appropriate measures, including measures necessary for rendering aid to a victim, as stipulated in Article 54-① of the Road Traffic Act;
- In case a driver flees after moving an injured victim to another location and abandons him/her there;
- In case the driver refuses to take a sobriety test in violation of Article 44- of the Road Traffic Act (excluding a case where the driver requests for or agrees to a blood test); and,
- In case the driver commits such crimes falling under any of the following subparagraphs:

1. - 10. (Omitted)

11. In cases of causing bodily harm to children in violation of the obligation to operate a vehicle by complying with measures under Article 12-① of the Road Traffic Act and paying attention to the safety of children within protective areas for children under Article 12-③ of the same Act.

Article 4 Special Cases for Insurance Coverage

① In the case where a vehicle that caused a traffic accident is covered by insurance or mutual

aid in accordance with the provisions of Articles 4 and 126 through 128 of the Insurance Business Act, Articles 60 and 61 of the Passenger Transport Service Act, or Article 51 of the Trucking Transport Business Act, the driver who commits offenses stipulated in the main sentence of Article 3-② shall not be prosecuted; Provided that this shall not apply to any of the following cases:

1. In cases of falling under the provision of Article 3-②;
2. In cases where a life-threatening danger exists, an injury party is disabled, or the injury is incurable or difficult to cure;
3. In cases where the obligation of an insurance company, a mutual association or a mutual aid manager to pay insurance money or deducted amount does not exist any longer due to the nullification or early termination of an insurance contract or a mutual aid contract, an exception clause of the contract concerned, etc.

Motor Vehicle Management Act

The Motor Vehicle Management Act was enacted to manage motor vehicles efficiently and to secure the performance and safety of motor vehicles by determining matters concerning the registration, safety standards, certification, correction of manufacturing defects, inspection, maintenance, test of motor vehicles, motor vehicle management business, etc.

Pursuant to Article 29 of the Act, motor vehicles should not be operated if their structures or devices prescribed by Presidential Decree fail to meet the performance and standards necessary for safe operation. The article also stipulates that parts, devices or safety equipment installed in or used for motor vehicles should comply with the performance and standards required for safe operation. Safety standards for motor vehicles and motor vehicle parts are determined by Regulations on Motor Vehicle Safety Standards, a MOLIT ordinance.

Under this ordinance, any seat on a bus designed for carrying children should be at least 27 cm both horizontally and vertically while the distance between the back of the front seat and the front of the seat behind it should not be less than 46 cm. When installing folding seats, the seats should be

operable from the outside and seat belts should be adjustable to suit the form of the child's body.

Passenger cars must be equipped with car seat attachments in a way that meets the following standards: 1) such devices should be installed on two or more seats with at least one installed on a second row seat; 2) such devices should be usable without any other equipment; and, 3) there should be markings that easily assist in confirming the installation of such devices and their locations.

Regulations on Motor Vehicle Safety Standards

Article 25 Size of the Passenger Seat

① (Omitted)

② Any seat for children on a bus for transporting children shall be at least 27 cm long both horizontally and vertically, and the distance between the back of the front seat and the front of the seat directly behind it shall be not less than 46 cm.

③ - ④ (Omitted)

Article 25-2 Folding Seat

① Folding aisle seats shall be allowed only for buses with a seating capacity of not more than 30; Provided that folding seats for guides shall be allowed for buses with a capacity of 31 or more.

② In installing folding seats on a bus for transportation of children pursuant to Clause of this paragraph, the seats shall be operable from the outside.

③ (Omitted)

Article 27 Seat Belt

① - ⑤ (Omitted)

⑥ Seat belts installed on a bus for transporting children shall be able to be adjusted to suit the structure of the child's body.

Article 27-2 Car Seat

Passenger cars shall be equipped with protective child seat attachment devices in a way that suits any of the following standards; Provided that this shall not apply in cases where there is only one row of passenger seats.

1. Protective child car seats shall be installed on two or more seats, and at least one shall be installed on a second-row seat.

2. Protective child car seats shall be usable without any other equipment.
3. There shall be markings that can help easily confirm the installation of protective child seat attachment devices and find their locations; Provided that this shall not apply to upper attachment devices and lower devices that can be confirmed in the direction of 30 degrees up from the vehicle's lengthwise horizon that passes through the center of the devices.

Article 29 Entrance

① Passenger cars shall be equipped with an entrance that fits each of the following standards:
1. The effective width shall be 60 cm or more, and the effective height shall be at least 160 cm (180 cm for large buses); Provided that this shall not apply to cars whose effective passenger cavity height is less than 120 cm, vehicles with a seating capacity of 15 or less, and vehicles for transporting children.
2. - 3. (Omitted)
4. Entrances of buses for transporting children shall conform to all of the following standards:
   A. The height of the first step shall be 30 cm or lower, and the width of the step shall horizontally cover 80% or more of the effective width of the entrance, and 20 cm or longer vertically;
   B. The second or upper step shall be 20 cm or lower in height; Provided that the height shall be 25 cm or lower for vehicles with a seating capacity of 15 or less. To conform to height standards, the use of sturdily built auxiliary steps shall be allowed for each step (including the first step. Hereinafter the same);
   C. The auxiliary step, a projection-type stair that operates only for passenger boarding and alighting, shall have a curvature radius of 20 mm or more in the corner portions where two edges meet when seen from above. The remaining portion of each edge shall be rounded to have a curvature radius of at least 2.5 mm. The edges shall be finished with soft materials like rubber;
   D. The auxiliary step shall not inflict bodily harm on children while being protruded for operation;
   E. The tread of each step shall have a rough surface or be finished with materials that can prevent slips.

When not using a car seat, the extent of head injuries of a child increases about 10 times according to a test conducted by the Korea Transportation Safety Authority in May 2012. Recognizing the importance of car seats, the Road Traffic Act stipulates that cars should be equipped with car seats when

Figure 3.2 Bus safety features

Bus stop sign


Wide-angle side-view mirror


Rear video camera

youth below six years of age are on board.

In a move to promote the use of car seats and to reduce the burden on low-income families, the Korea Transportation Safety Authority distributed 34,200 car seats free of charge between 2005 and 2013. Consequently, the percentage of cars equipped with car seats rose by 1.48%p from the previous year to 37.42% in 2011. Compared with 2004, the ratio improved by more than three times.

In a related move, Korea prepared new regulatory requirements in February 2014 for the prevention of traffic accidents involving children. Under the regulations, school buses for children should be equipped with stop signs and rear video cameras. The government also decided on performance and installation standards for the event data recorder (EDR), a device necessary for analysis of vehicle accidents. When these regulations go into effect, a stop sign arm ought to be mounted on the driver's side of the school bus body. The sign should automatically swing out to an outstretched position while the door is open for the entering and exiting of children, warning approaching traffic of the presence of the school bus and children. In order to prevent back-up accidents involving children, school buses for children are required to be equipped with a rear camera or a back-up alarm. Additionally, the wide-angle side- view mirrors must be installed on the left and right side of the bus in order to eliminate the driver's blind spots.

Traffic Safety Act

The Traffic Safety Act has a provision on education facilities for children to experience traffic safety. It stipulates that the state and local governments should disseminate knowledge on traffic safety and enhance public awareness by promoting traffic safety education at schools and other educational institutions, launching publicity campaigns, and implementing other necessary measures. Under the law, the state and local governments may install education facilities for children to experience traffic safety. In this case, the head of the transportation administrative agency who intends to install such educational facilities should consult with the heads of the related administrative agencies. The government may provide financial support in order to help build such facilities for children to experience traffic safety.

Figure 3.3 Children traffic safety educational sites

These facilities should be equipped with video and other devices that can reenact dangerous situations so that children can learn accident prevention methods. They should also be equipped with systems through which children can learn safe bicycle riding methods. Relevant provisions also require installations of crosswalks and sidewalks arranged according to relevant laws and regulations so that children can understand the operation of traffic facilities. Traffic signs installed within such educational facilities should also match the standards stipulated in pertinent laws. The provisions stipulate that matters related to the installation and operation of such educational facilities should be decided by the ordinance of pertinent local governments.

Local governments have shown increasing interest in building educational facilities for children to experience traffic safety at community parks or other relevant places. They are constructing such facilities not just for traffic safety education but for comprehensive education linked to nearby sports facilities and theme parks. They are also used as local cultural facilities, being leased for various activities.

Traffic Safety Act

Article 23 Dissemination of Knowledge on Traffic Safety

① – ② (Omitted)

③ The Government may install education facilities for children to experience traffic safety. In this case, the head of the traffic administrative agency who intends to install such an education facility shall consult with the heads of the related administrative agencies.

④ The Government may, in order to support the installation of education facilities for children to experience transportation safety, provide financial support within the scope of budget.

⑤ (Omitted)

Enforcement Decree of the Traffic Safety Act

Article 19-2 Standards on Establishing Education Facilities for Children to Experience Transport Safety

① The state and city mayors/provincial governors shall follow the following standards and

methods when establishing education facilities for children to experience traffic safety, pursuant to Article 23-3 of the Act:

1. The facilities shall be equipped with video and other devices that can reenact dangerous situations so that children can learn accident prevention methods;
2. The facilities shall be equipped with systems through which children can learn safe bicycle riding methods;
3. Installations such as crosswalks and sidewalks shall be arranged according to relevant laws and regulations so that children can understand the operation system of various traffic facilities;
4. Traffic signs installed within road safety experience facilities for children shall match standards stipulated in relevant laws.

② Matters related to the establishment and operation of such education facilities for children shall be determined by the ordinances of pertinent local governments.

04
Development and Achievements of Traffic Safety Regulations for Children

Implementation of Major Regulations and Their Expansion

Between 1983 and 1990, Korea saw a rapid increase in car ownership, which led to a sharp rise in deaths from traffic accidents. Korea's first domestically produced cars went on sale in early 1978; seven years later the number of vehicles nationwide reached one million. The number of registered vehicles continued to rise eventually exceeding 10 million in 1997. Since 1987, the number of cars has increased by an annual average of 32 percent. In 1991, the nation set a disgraceful record of 13,000 people killed in traffic accidents. After that, the number of fatal traffic accidents began to drop as the nation suffered from a financial crisis and other economic difficulties related to oil price hikes and a global recession.

Figure 3.4 Trends in traffic accidents by year and implementation of relevant policies

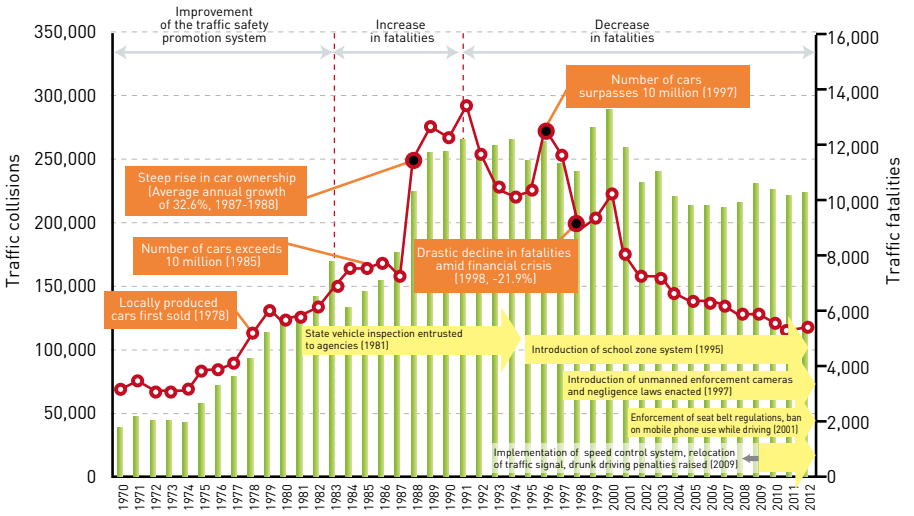


Figure 3.5 Traffic safety policies 1995 - 2000

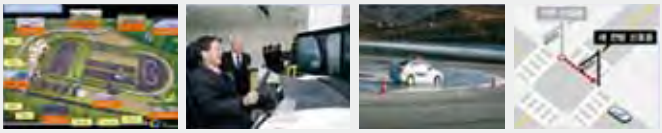
1995	• Implementation of the school zone system 
1997	• Introduction of unmanned enforcement cameras • Implementation of a negligence penalty system for violators • Number of registered car exceed 10 million 
1998	• Traffic deaths drop 21.9% as a result of IMF bailout measures 
1999-2000	• Implementation of vehicle safety evaluation system (1999) • Traffic Safety Improvement Team launched under the Minister's Office (2000)

In order to reduce traffic fatalities, the government introduced the school zone program in 1995. Two years later, when registered vehicles surpassed 10 million, law enforcement began to use unmanned traffic enforcement cameras in an effort to prevent collisions and crashes caused by speeding or intersection signal violations. Amid a financial crisis, the nation saw a drastic fall in its road traffic volume in 1998, which led to a 21% reduction in the number of traffic fatalities.

Figure 3.6 Traffic safety policies 2001 - 2008

2001	• Introduction of a reward system for reporting traffic violations • Seat belt wearing campaigns and rigorous enforcement • Ban on phone use while driving • Extension of licence cancellation period for drunk drivers (from 1 to years)  
2002	• Formulation of the 5th National Transportation Safety Master Plan • Traffic fines established for drivers not operating tachographs or leaving broken-down cars unattended
2003-2005	• Implementation of the amended Automobile Special Accounting Act (investment of traffic fines and negligence penalties into traffic safety projects) • Campaign launched for reducing road child deaths by half • Distribution of protective infant car seats free of charge (2005)  
2007	• Formulation of the 6th National Transportation Safety Master Plan
2008	• Introduction of a section speed control system • 24-hour crackdowns on drunk driving • Introduction of a road safety evaluation system   

Figure 3.7 Traffic safety policies 2009 - 2012

2009	• Opening of a center for experiential education for traffic safety • Adjustment of intersection traffic signal locations 
2010	• Expansion of the traffic signal enforcement system • Expanded enforcement of 30 km/h zones in residential districts 
2011	• All vehicle occupant required to wear seat belts on motorways • Ban on DMB watching while driving • Mandatory installation of DTG on all commercial vehicles 
2012-	• Formulation of the 7th National Transportation Safety Master Plan • Improvement of car insurance system, introduction of hourly operation system for commercial vehicles • Opening more experiential traffic safety education centers

In 2000, the government implemented safety evaluation tests for newly released vehicles and set up a dedicated traffic safety organization under the Prime Minister's Office. The next year, amid controversy that flared up in many countries over the use of mobile phones during driving, Korea adopted a policy to ban such a practice. It also began to rigorously enforce seat belt rules. Additionally, the government implemented a reward system for reporting violations of traffic laws. The system was abolished a year and half later due to negative effects related to "carparazzi," (car paparazzi) who professionally take pictures of vehicles breaking traffic laws. The government also extended the license nullification period to two years for drivers caught for drunk driving. In 2002, it became mandatory for commercial vehicles to be equipped with driving logging devices.

Around 2005, the government started an education and publicity campaign as well as rigorous crackdowns on relevant offenses, calling for

efforts to halve the number of child deaths from traffic accidents. As part of the campaign, car seats were distributed free of charge. In 2009, the police authorities introduced an automated section speed enforcement system which deduces the average speed the car drives through a designated area. This was a departure from the previous practice of relying on spot speed enforcement. Drunk driving crackdowns, which had been usually conducted in the middle of the night, began to be implemented 24 hours a day. In addition, a road safety evaluation system was introduced as part of efforts to identify road risk factors. Intersection signals were relocated toward the vehicle limit lines which helped to reduce signal violations and vehicles getting stuck in intersections after the light has changed.

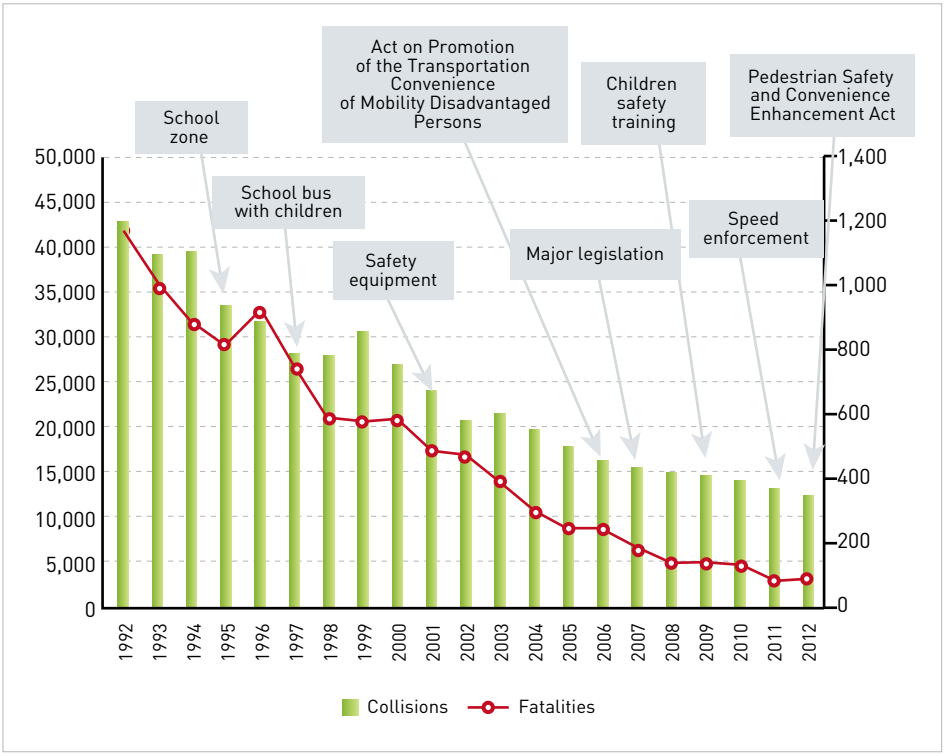
Around 2010, a diversity of safety devices began to be installed in vehicles. Meanwhile, a change in the nation's road policy occurred shifting focus from a car-centric system to a pedestrian-centric system. The unmanned signal enforcement system was expanded to cover the entire nation and the speed limit for residential streets used mostly by pedestrians was restricted to 30 km/h. In 2011, the government introduced various measures aimed at reducing road traffic fatalities: requirements for all passengers to wear seat belts on motorways, ban on DMB watching while driving, mandatory installation of digital vehicle recorders on all commercial cars.

Changes and Achievements of Traffic Safety Regulations for Children

Traffic safety regulations for children have been continuously intensified. Due to an amendment of the Road Traffic Act (Jan. 5, 1995) the school zone system was started. Road traffic accidents involving children have dwindled since 1997, when school zones began to be implemented. Also in 1997, the government introduced a school bus system for children, relevant facility and equipment standards, and special protection regulations.

In the 2000s, safety regulations for children were further strengthened. In

Figure 3.8 Trends in traffic accidents involving children by year and relevant policies



2001, relevant laws were revised to require that caregivers of children should ensure children in their care should use safety equipment when riding bicycles or other modes of transport play on the road. The laws also stipulated the obligation of police officers to ensure the safety of children playing or walking on roads. Following the enactment of the Act on Promotion of the Transportation Convenience of Mobility Disadvantaged Persons in 2006, the government began to designate pedestrian-priority zones and provide financial assistance to introduce low-floor buses. In 2007, the Act on Special Cases Concerning the Settlement of Traffic Accidents was amended, paving the way to punish drivers whose driving causes bodily harm to children regardless of whether they are covered by insurance or mutual aid. In 2011, the Road Traffic Act was amended to stipulate heavier fines and penalty points for speeding within school zones. The law permits increased penalties

for those driving in excess of 20 km/h above the speed limit in school zones.

In 2012, the Pedestrian Safety and Convenience Enhancement Act was enacted, further strengthening an institutional framework to protect the safety of all pedestrians, including children.

The number of traffic fatalities of children went down below 1,000 in 1993 after peaking in 1988. After the school zone system was implemented in 1995, the number decreased to 932 in 1996, declining further to 753 in 1997 and to below 600 the following year. In 2001, the regulations on wearing bike safety equipment went into effect, contributing to a drastic reduction in fatalities. The number of child traffic fatalities hovered above 500 before dropping to 468 in 2002, 394 in 2003, and 296 in 2004. The 2007 amendment of the Act on Special Cases Concerning the Settlement of Traffic Accidents had an impact on reducing traffic accidents resulting in the number of child fatalities dipping below 200. It dramatically went down to just over 80 in 2011 when the government began to give heavier fines and penalty points to those speeding in school zones.

CHAPTER 4

Road Safety Education for Children

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STOP

01
Introduction

Children and teenagers are in the process of growing up, so it is difficult to expect them to display the same capacity as adults in coping with various traffic situations. Due to this they are vulnerable to traffic accidents. But to protect them children cannot be banned from traveling or using various modes of transport because transportation is essential in modern society. Therefore, the best way to ensure road safety for children is to improve relevant government policies and facilities while strengthening safety education for children.

Under the current curriculum, there is not a good method in teaching road safety education as a separate subject. So it is necessary to conduct road safety training in connection with existing curriculum, student counseling and various school activities. Care should be given to ensure that contents are consistent with local conditions and the level of students.

In Korea, beginning in the early 1980s when the number of traffic accident deaths rose significantly amid rapid economic growth and a steep rise in car ownership, various relevant organizations called for implementation of traffic safety education at schools. Such organizations played a leading role in developing and distributing relevant education materials, while training

children in road safety skills.

It was not until the early 1990s that the need for state-level traffic safety education was earnestly sought. In 1992, when the Reduce Traffic Accidents campaign was launched, the government required the kindergarten curriculum to include 40 hours of traffic safety education annually. Elementary, middle and high schools were required to allot 20 hours for traffic safety education. Each school appointed a teacher to lead traffic safety education. District education offices implemented pilot safety education programs at selected elementary and secondary schools so that they can serve as examples to others.

In a related development, the 7th National Education Curriculum, which went into effect in 2000, reflected the need to systematically conduct safety education at schools. Accordingly, textbooks were revised according to the new curriculum and had three years to prepare for the 2000 deadline. Safety training was strengthened for first and second graders as they are particularly susceptible to road traffic accidents traveling to and from school.

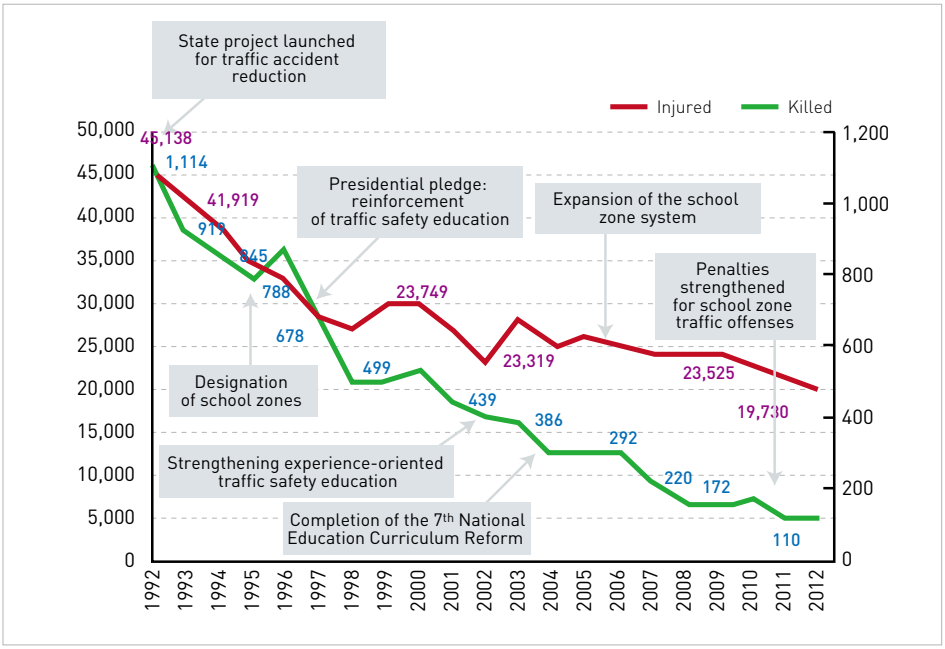
As a result of the safety education implementation as other protective measures, the number of child road deaths began to decline considerably in 1992, continuing its downward trend to this day.

02
Impact of Education on Reducing Child Road Deaths

Trends in Child Casualties in Traffic Accidents and Relevant Educational Policies

The number of child road fatalities began to decline in 1992, when the government set a vision for traffic accident reduction and formulated a five-year action plan. In 1990, 1,537 children below the age of 14 were killed in

Figure 4.1 Child road casualties and relevant policies (1992-2012)



traffic accidents in Korea. Launching the accident reduction project in 1992, the educational sector originally set the initial goal of cutting the number by 41, or 3%. The results far exceeded its expectations. The number of children reported killed on roads in 1992 went down to 1,114, down by more than 400 from 1990. It was a remarkable success.

The major government policies taken since 1992 to further reduce road traffic accidents involving children are as follows:

- 1993: Distribution of traffic safety education materials developed by the Ministry of Education
  - In conjunction with the Road Traffic Authority, the Ministry of Education developed two levels of road safety education materials for elementary school students by age group, distributing them nationwide.
- 1995: Introduction of new school zone provisions in the Road Traffic Act
  - The Road Traffic Act was amended to include provisions for the designation of protective areas for children around elementary schools.

Consequently, school zones were established in areas around 2,162 elementary schools in 1996.

- 1996: Ministry of Education issues guidelines for strengthening road safety education
  - Safety Education Guidelines and the 1996 Safety Education Implementation Plan aim at strengthening road safety education at school
  - Kindergartens were required to conduct road safety education for a minimum 30 hours a year. Elementary, middle and high schools were told to allot 21 to 23 hours a year for road safety education.
- 1997: Presidential pledge for "strengthening road safety education"
  - In accordance with presidential instructions, relevant government ministries jointly devised measures for reinforcing road safety education and encouraged schools to include safety training in their curricula.
  - Following the public notice of the 7th National Education Curriculum Reform issued in December, 1997, schools' traffic safety education curricula were gradually revised.
- 2002: Hands-on Road Safety Education was included in the 5th National Transportation Safety Master Plan
  - Hands-on Road Safety Education was included among the specific goals of the 5th National Transportation Safety Master Plan (2002-2006). Pursuant to the plan, the central and local governments began to set up road safety educational facilities for children, such as traffic parks.
- 2004: Completion of the 7th National Education Curriculum Reform reflected the need for strengthened road safety education
  - Revision of school textbooks, including those for high schools, was completed after starting in 2000.
- 2006: Expansion of the scope for designating school zones in an amendment of the Road Traffic Act
  - Previously, only kindergartens and elementary schools had school zones. With the amendment, the scope was expanded to cover special

schools and day care facilities with enrollment of 100 or more

- 2011: Penalties raised for offenses within school zones in an amendment of the Road Traffic Act
  - In 2010, the government prepared Measures for Improvement of Road Safety in School Zones, under which the Ministry of Public Administration and Security, the National Police Agency and local government bodies launched activities to prevent road accidents involving children, in cooperation with civic groups such as the Korea Green Mothers Society.
  - 2011: Amendment of the Road Traffic Act paved the way for imposing heavier penalties on drivers committing offenses within school zones (ex: signal violation, speeding, illegal parking/stopping, violation of the duty to protect pedestrians, violation of streets with travel ban/restrictions).
- 2013: Reinforcement of safety management of school buses for children (Ministry of Education, Ministry of Public Administration and Security, Ministry of Land, Infrastructure and Transport, Ministry of Culture, Sports and Tourism, Ministry of Health and Welfare, and National Police Agency)
  - Following a series of accidents involving school buses, relevant government ministries announced measures to ensure the safety of school buses (May 2013)
  - Moves are underway to amend the relevant laws by introducing obligatory measures such as notification of school bus operation to the competent authorities, strengthening safety education, and installation of safety apparatuses (wide-angle side-view mirrors on both sides of the vehicle, back video cameras or beeping sound for reversing of vehicle).

The Role of the Central Government

In the 1970s, Korea saw a significant rise in the number of traffic casualties

amid rapid economic growth and a steep increase in car ownership. To address this problem, the government in the early 1980s enacted the Traffic Safety Act and instructed the Transport Ministry to formulate a National Transportation Safety Master Plan that would be renewed every five years. Pursuing a goal to advance the nation's transport culture and drastically reduce traffic accidents ahead of the 1988 Seoul Olympics, Korea implemented the first National Transportation Safety Master Plan from 1983 through 1986. Now, the 7th plan (2012-2016) is under implementation.

When the execution of the plan did not lead to reduction in traffic casualties, the President in 1987 ordered the Prime Minister's Office to develop and implement interministerial policy measures to increase traffic safety. However, it did not have an impact on reducing traffic accidents. So, in 1992, the government declared a state project to slash traffic accidents. Under the leadership of the Prime Minister's Office, relevant ministries formulated a five-year traffic accident reduction plan, which included various programs to be carried out over the next five years.

When the number of road accidents began to decline afterwards, the Prime Minister's Office delegated its authority concerning the implementation of traffic safety policies to individual ministries, including the Ministry of Land, Infrastructure and Transport. Ahead of the 2002 FIFA World Cup, a team dedicated to improving road safety conditions was established under the Prime Minister's Office in September 2000. The team was in charge of coordinating various government safety policies until after the World Cup soccer tournament was over.

Having pursued various traffic safety measures since the 1980s, the government realized the need to ensure organic cooperation and integrated coordination among the government ministries and to foster a specialized private organization dedicated to road safety.

Consequently, the government strengthened the functions of the Road Traffic Authority, an organization founded under the National Police Agency in 1954 for educational and PR activities. In 1980, it also launched the Korea Transportation Safety Authority under the Ministry of Land, Infrastructure

and Transport. In 1987, it established the Korea Transport Institute, a think tank for the development of state transport policies. These measures helped facilitate various activities related to education, publicity, research and policy development in the fields of transportation and traffic safety.

The Role of Systematic Road Safety Education for Children

Road safety education emphasizes practical behavioral education rather than knowledge education. As such, it should be implemented throughout overall educational activities over a sufficient period of time. However, it usually falls behind other educational subjects in terms of priority as no regular class hours were dedicated for traffic safety education.

Therefore, it is necessary to determine a principle over whether to create a separate curriculum subject on road traffic safety or to conduct relevant education through various related subjects. If the government adopts a principle for implementing road safety education as part of various subjects, it would still be necessary to solve problems related to the allocation of classroom hours and contents in order to ensure that it would be conducted in an integrated and systematic manner. Doing so would require the establishment of educational goals and contents of road safety education.

Training in road safety skills should not be regarded as just part of general safety education. Regarding this matter, the following conclusions reached during the Road Safety Education for Children and Teenagers at the 3rd Joint Conference ECMT/Council of Europe (December 1980) concerning safety education for children and teenagers could serve as useful reference materials:

- It is important to accurately mimic the behavioral patterns of children and teenagers through mock situations in which realistic practices and tests can be conducted. Relevant research needs to be based on mutual cooperation between parents and, if possible, police officers who have received specialized training;

- Road safety education ought to be a firmly established subject of school education. Specialized training should be provided through road safety education, which can be dealt with as an independent subject or through other subjects. In addition, specific levels must focus on certain essential elements.
- Teachers who have not received relevant training or are not familiar with road safety education must receive accreditation through specialized complementary training courses.

In Korea, the level of road safety education for various school subjects was determined only after the 7th National Educational Curriculum Reform was completed. In 1997, the President promised to reinforce education on road safety. To implement the presidential pledge, the Ministry of Education requested cooperation from the Road Traffic Authority, an organization specializing in traffic safety training, in developing the contents to be reflected in the new national educational curriculum (Road Safety Education Committee Meeting, Dec. 11, 1997). At the ministry's request, suggestions were presented regarding the contents of road safety education at school between 1998 and 2000. The suggestions were reflected in the 7th National Education Curriculum. Based on the curriculum, textbooks were revised: first and second grades in 2000, third, fourth and seventh grades in 2001, fifth, sixth, eighth and 10th grades in 2002, ninth and 11th grades in 2003, and 12th grade in 2004.

In road safety education, practice is more important than theory. So, it is important to strengthen field-based education and practical activities. Field-based practical road safety education began to be promoted in earnest as the government implemented the 7th National Transportation

Figure 4.2 Road Traffic Authority road safety publications for school distribution

Safety Master Plan (2002-2006). Field education was actively promoted as part of the strategy to "firmly establish public awareness of road safety and an advanced transportation culture." During the sixth plan period (2007-2011), emphasis was also placed on conducting road safety education and expanding experiential programs for preschoolers and first graders.

03

Establishment of Government Affiliated Road Safety Organizations and Their Educational Activities (1980-)

Road Traffic Authority

Pursuant to Article 120 of the Road Traffic Act, the Road Traffic Authority was founded in 1954 under the National Police Agency for the purpose of establishing order and enhancing safety on roads and preventing dangers and obstacles related to road traffic. Initially, it was called the Korean Traffic Safety Association. In May 1980, it changed its name to the Road Traffic Safety Association, assuming additional functions such as education, publicity and research. Beginning in 1997, it launched traffic broadcasting services in various regions, thereby intensifying its training and PR activities.

With further expansion in its functions, the organization was renamed Road Traffic Safety & Management Authority in 1999. It changed its name again to Road Traffic Authority in 2008. In 2011 it took responsibility of administering the driver's license test.

The authority's business can be classified into the following categories: safety technology support, traffic safety education, traffic broadcasting services, driver's license management, and R&D. In traffic safety education, the organization implements safety education for traffic violators and drivers caught for causing accidents as well as education for children, schoolteachers

and senior citizens. In relation to road safety for children, it conducts the following activities: road safety education for children and adolescents, implementation of training for teachers in charge of road safety education at school, selection of mothers to serve as honorary teachers, production and distribution of road safety teaching materials, and the operation of traffic parks for children. Table 4.1 shows the number of teachers who received road safety training.

Table 4.1 Number of teachers who received road safety-related training

Categories \ Year	Total	2008	2009	2010	2011	2012
Total	36,090	6,643	6,585	8,870	6,237	7,735
Kindergarten teachers	13,003	289	6,465	310	5,862	77
Elementary school teachers	13,093	3,482	120	4,608	150	4,733
Middle and high school teachers	9,994	2,872	-	3,952	225	2,945

Note: Conducted every two years since 2002 (kindergarten teachers: odd-numbered years, elementary, middle and high school teachers: even-numbered years)
Source: Road Traffic Authority

Korea Transportation Safety Authority

The Transportation Safety Authority Act was enacted in 1979. Pursuant to the law, the Transportation Safety Authority was founded in 1981 as an organization affiliated with the Ministry of Land, Infrastructure and Transport. In 1987, the Automobile Testing and Research Institute was established under the authority. In 1995, its name was changed to Korea Transportation Safety Authority. In order to intensify its traffic safety functions, the authority set up the Transportation Safety Research Institute in 2005 and the Transportation Safety Training Center in 2008.

The authority implements transportation safety projects in the following categories: vehicle inspection, railroad and aviation safety, safety management for transportation companies, research on automobile performance, research on transportation safety, training, and public relations.

As part of its effort to increase public awareness of transportation safety, the authority holds a road accident prevention awards ceremony and a public contest of transport safety-related user-created contents and print ads. It also stages transport safety campaigns in various regions. In addition, the authority distributes various safety equipment for children, including bike helmets with reflective materials, thereby contributing to reducing road accidents involving children.

The Korea Transport Institute

The Korea Transport Institute was inaugurated in August 1987 for the purpose of contributing to the advancement of transportation in Korea through policy research and technology development as well as analysis and distribution of domestic and international information related to transport policies. Founded as a government-invested organization pursuant to Article 24 of the Urban Transport Promotion Act, the institute was originally called the Transport Development Institute.

In 1999, the institute became affiliated with the National Research Council for Economics, Humanities and Social Sciences under the Prime Minister's Office, pursuant to Article 8 of the Act on the Establishment, Operation and Fosterage of Government-invested Research Institutions. In 2005, it was renamed the Korea Transport Institute.

The institute's main activities are: implementation of research for the formulation and development of transportation policies, systematic collection, analysis, management and distribution of transport information, implementation of studies on transport safety and relevant environmental policies, execution of research aimed at improving managerial conditions of various transportation businesses as well as facilitating their growth, and development of leading-edge transport technologies and provision of necessary technological support.

Since the 1990s, the institute has conducted various research projects on

road safety education for children, thereby contributing to the development of relevant government policies.

04
Establishment of Road Safety Education at School (1990-)

Support Activities Led by Organizations Related to Road Safety

Private organizations established in the 1980s played important roles in publicizing the seriousness of road traffic accidents involving children and urging the government to take relevant measures. In particular, these organizations implemented research on child fatalities caused by road crashes, and produced and distributed road safety-related teaching materials to schools. Their activities helped enhance the awareness of the need for road safety education at school, ultimately leading to a government policy to reflect road safety education in the school curriculum in the 1990s. The following are the major activities conducted by such organizations in relation to road safety education for children:

- Road Traffic Authority
  - Production and distribution of educational materials for kindergarten, elementary, middle and high school students and teachers
  - Hosting meetings, contests for children, and photo exhibitions related to road traffic safety
  - Provides equipment and training for civic groups like the Korea Green Mothers Society and Korea Best Driver Association
  - Conducting road safety classes for children
  - Opening a 1,100 m^2 information center for experience-oriented road safety education for children, the first of its kind in Korea, in 1990

- Korea Transportation Safety Authority
  - Production and distribution of various education materials such as a guide on road safety education for preschoolers, teaching guides and reference materials for kindergarten and elementary school teachers, and a report on suggestions for improving road safety education for kids
  - Training kindergarten and elementary school teachers on teaching safety guidelines and provides traffic safety signs and other relevant materials to kindergartens and elementary schools
- The Korea Transport Institute
  - Publication of A Guide for Elementary School Teachers Concerning Safety Education for Children (1996) and implementation of policy research for road traffic safety for children

Legal Basis Secured for School Road Safety Education

As part of the road accident reduction campaign launched in 1992, the government recommended that the 7th National Education Curriculum provide a minimum 40 hours and 20 hours of road safety education at kindergartens and elementary schools, respectively. Following the recommendation, a number of schools began to include road safety education in their curricula.

In 1996, the Ministry of Education instructed the nation's schools to intensify road safety education for students, providing them with specific action programs to be executed. The ministry gave instructions that kindergartens allot at least 30 hours annually to road safety education. Elementary, middle and high schools were told to conduct road safety education for 21 to 23 hours a year.

In order to secure a legal basis for conducting compulsory safety education, the government sought to amend the School Health Act and the Child Welfare Act. The School Health Act was amended in 1998, two

years after Korea joined the OECD. Through the amendment, a new article was established concerning students' safety. The article stipulated that in order to prevent students from being harmed in any accident, the head of a school should check out and improve facilities and equipment and provide safety education to students. Additionally, an article on children's health and safety was newly established in the Child Welfare Act amended in 2000 (Jan. 12, 2000). In the same year, the enforcement decree of the law was also amended to include an article on the duty of the heads of kindergartens and elementary, middle and high schools to conduct safety education (July 27, 2000). Amid implementation of such policies and enactment of laws, a law-based framework was firmly established for provision of safety education with regard to road transport and other matters of concern.

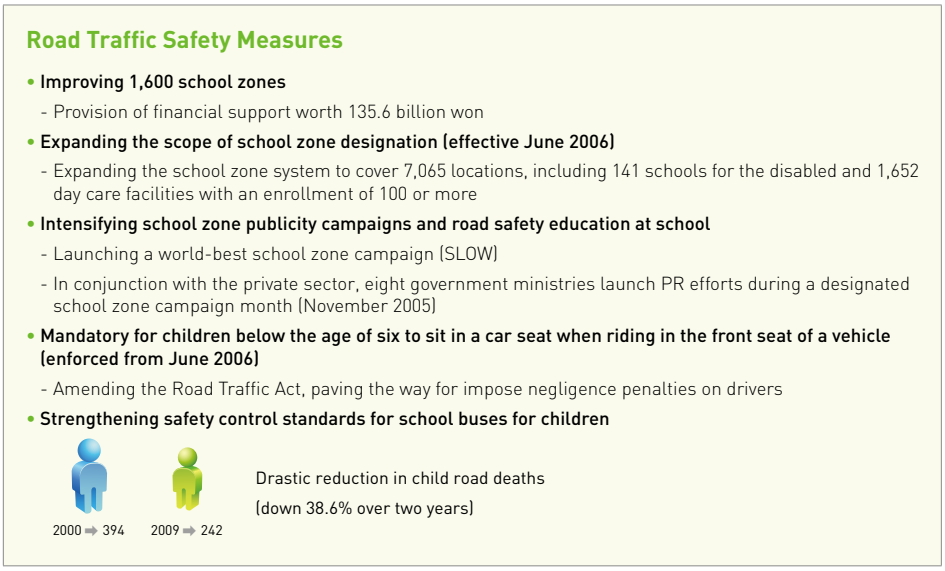
The government inaugurated in February 2003 placed promotion of child safety high on its list of state administrative goals. Its list of comprehensive safety measures for children was finalized in a cabinet meeting held in July of that year. At the meeting, Cabinet members also checked safety measures developed by each ministry. The major directions of the measures approved of in the meeting are as follows:

- Promotion of comprehensive safety measures for children
  - The comprehensive measures were aimed at improving all relevant systems and environments to ensure that children can grow up safely. They were developed following President Roh Moo-hyun's declaration of 2003 as the "first year of children's safety" on the 81st Children's Day (May 5, 2003). The comprehensive measures included 76 action programs in 12 are as to be implemented by 13 ministries and a number of private organizations. Formulating the measures, the government set the goal of reducing the number of children killed in accidents in Korea by 10% annually over a five-year period beginning in 2003. It envisioned slashing the number of child fatalities by half from 1,269 in 2003 to 635 in 2007, thereby climbing to amid-range position from bottom level among the OECD countries in the category of child deaths caused by accidents. To achieve this goal,

the government said it would focus on building an environment and establish systems necessary for ensuring the safety of children.

- Strengthening safety education at school
  - Safety education at school is aimed at helping students systematically learn knowledge, functions, attitudes and measures related to safety, eventually contributing to prevention of various accidents that can happen not only at schools but at homes, factories and various other sectors of society.
- Laying the institutional basis for safety management of schools and provision of safety education
  - The enactment of School Accident Prevention and Compensation Act (Law No. 8267, proclaimed on Jan. 26, 2007 and enforced from Sept. 1, 2007) laid the institutional groundwork for preventing accidents at schools and implementing a mutual aid program designed to make swift and proper compensations for damages inflicted on students, teachers, administrative staff and participants in educational activities.

Figure 4.3 Road safety-related contents included in 2003 Comprehensive Measures for Children's Safety



Strengthen Safety Education for Children and Promote Safety Culture Throughout Society

- **Revising education curriculum to intensify safety education for all elementary school grades**
  - Designating the 4th day of every month as Safety Inspection Day
  - Securing sufficient safety education hours for elementary school kids (21-23 hours)
  - Circular education using a vehicle for experiential programs related to safety
  - Implementing a one police officer-per-school system (5,995 policemen for 5,350 schools)
  - Implementing a one fire officer-per-school system (8,802 schools)
- **Enhancing the capacity of road safety education staff**
  - Provision of safety-related training for teachers and students' parents
- **Holding various experience-oriented programs related to safety**
  - Safety camp for children, public safety experience center, expanded operation of children's traffic parks

According to operation plans reported by city and provincial boards of education, all schools provide safety education for 21 to 23 hours a year since 2008 and devoting a minimum of 12 hours to road safety training. In 2007, the number of schools allotting 21 hours or more to safety education was 6,812, or 61%. Schools providing a minimum 11 hours of safety education numbered 2,675, accounting for 24% of schools. The education boards have been emphasizing at least four hours of experience-based road safety education for younger elementary school students.

Currently, road safety education at school is conducted based on the School Health Act, the Child Welfare Act, the Enforcement Decree of the Child Welfare Act, and the School Accident Prevention and Compensation Act and its enforcement decree. In particular, under provisions in Annex Table 3 of Article 28 of the Enforcement Decree of the Child Welfare Act, kindergartens and elementary, middle and high schools are required to implement road safety education for a minimum 10 hours a year and at least once every two months. The related laws are as follows:

School Health Act

Article 12 Control of Safety of Students

In order to prevent students from being harmed in any safety accident, the head of a school shall check out and improve facilities and equipment in the school, provide safety education to students, and take other necessary measures. [This Article Newly Established, Dec. 31, 1998].

Child Welfare Act

Article 31 Education for Safety of Children

① The head of a child welfare facility, the head of a day care facility as stipulated in the Infant Care Act, the head of a kindergarten as stipulated in the Early Childhood Education Act, and the head of a school as stipulated in the Elementary and Secondary Education Act, shall conduct education on each of the following matters every year after establishing teaching plans: [This Article Newly Established, Jan. 12, 2000].

1. Prevention of sexual violence and child abuse
2. Prevention of disappearances and abductions
3. Prevention of drug abuse and misuse
4. Safety against disasters
5. Road traffic safety

② The head of a child welfare facility and the head of a day care facility as stipulated in the Infant Care Act shall report the educational plans and the results of education, as prescribed in Paragraph ①, to the head of a city, a county or a district office once a year.

③ The head of a kindergarten as stipulated in the Early Childhood Education Act and the head of a school as stipulated in the Elementary and Secondary Education Act shall report the educational plans and the results of education, as prescribed in Paragraph ①, to the superintendent of education with administrative jurisdiction over their facilities once a year, pursuant to the relevant Presidential Decree.

Enforcement Decree of the Child Welfare Act

Article 28 Education for Safety of Children

① The head of a child welfare facility, the head of a day care facility as stipulated in the Infant Care Act, the head of a kindergarten as stipulated in the Early Childhood Education Act, and the head of a school as stipulated in the Elementary and Secondary Education Act, shall follow the standards as presented in Annex Table 3 when formulating an education plan and conducting education pursuant to Article 31-1 of the Act.

② The head of a kindergarten as stipulated in the Early Childhood Education Act and the head of a school as stipulated in the Elementary and Secondary Education Act shall

report the educational plans and the results of education, as prescribed in Paragraph ① pursuant to Article 31-1 of the Act, to the superintendent of education with administrative jurisdiction over their facilities by the end of March every year.

③ The head of a child welfare facility shall have the option of not conducting education stipulated in Article 31-1 of the Act for any child in the facility in case the child has received education concerning the matters prescribed in Article 31-1 of the Act at a day care facility as stipulated in the in the Infant Care Act, a kindergarten as stipulated in the Early Childhood Education Act, or a school as stipulated in the Elementary and Secondary Education Act.

Road safety education standards in Annex Table 3

Kindergartens	Elementary schools	Middle and high schools
1. Understanding the functions of roadways, sidewalks and signals 2. How to cross a road safely 3. How to use a school bus safely 4. Weather and pedestrian safety 5. Walking hand in hand with an adult	1. Knowing safe school routes 2. How to walk safely according to circumstances 3. How to use wheeled vehicles safely 4. How to use various means of transport safely 5. Understanding traffic rules	1. Safe usage and checking of bicycles 2. Physical characteristics of two-wheeled vehicles and automobiles 3. Human limitations and hazard perception 4. Traffic rules and social responsibility 5. Traffic accidents and prevention measures

Prevention of Accidents at School and Compensation Act

Article 8 Implementation of School Safety Education

① To prevent safety accidents at school, the head of a school shall conduct education concerning prevention of safety accidents (hereinafter referred to as "safety education") for students, teachers and administrative staff, pursuant to the Ministry of Education Decree. [Amended on Feb. 29, 2008, March 23, 2013]

② The head of a school may conduct safety education for participants in educational activities, if deemed necessary.

③ The Education Minister and the Superintendent of Education shall provide necessary support, such as the development of texts and materials needed for safety education and the recruitment of safety education instructors. [Amended on Feb. 29, 2008, March 23, 2013]

④ The head of a school may allow faculty members or educational activity participants to be in charge of safety education. [Amended on Jan. 26, 2012]

Enforcement Regulations of the Prevention of Accidents at School and Compensation Act

Article 2 Implementation of School Safety Education

① The principal of a school (hereinafter referred to as the "principal") shall, pursuant to Article 8-1 of the School Accident Prevention and Compensation Act (hereinafter referred to as the "Act"), shall conduct education concerning each of the following matters for students through class hours as well as hours for discretionary and extracurricular activities. In this case, the frequency, hours and instructor selection shall be determined according to school and regional conditions.

1. Road safety education, education to prevent drug abuse and misuse, and safety education to ensure disaster preparedness, pursuant to Article 31 of the Child Welfare Act;
2. Education on school violence prevention, pursuant to Article 15 of the Act on the Prevention of and Countermeasures Against Violence in Schools;
3. Education necessary for the prevention of sexual violence, pursuant to Article 5 of the Act on the Prevention of Sexual Assault and Protection of Victims Thereof;
4. Education for the prevention of sexual traffic, pursuant to Article 4 of the Act on the Prevention of Sexual Traffic and Protection of Victims Thereof;
5. Accident prevention education in relation to the operation of experience-oriented educational activities as prescribed by Article 23-1 of the Elementary and Secondary Education Act;
6. Safety education pursuant to other laws related to safety accidents.

② The principal shall conduct education as prescribed in Paragraph ①, but he/she may entrust the education to external experts from the Korea Transportation Safety Authority, pursuant to the Korea Transportation Safety Authority Act, or from the Korea Fire Safety Association, pursuant to Article 40 of the Framework Act on Fire Services.

③ In order for the principal to effectively conduct safety education as prescribed in Paragraph ①, the education minister shall develop relevant educational materials, expand experiential facilities, and provide information on the use of related facilities, by accommodating views from the experts in related areas.

Road Safety in School Subjects

The 7th National Education Curriculum is a curriculum amended for the seventh time since the inauguration of the Education Ministry.[1] The most conspicuous change is the systematic inclusion of contents related to road

safety in various subjects. As for elementary school curriculum, road safety-related contents were included in 12 chapters of eight subjects. Such contents are reflected in first and second grade subjects in a particularly extensive manner, based on recommendations from the Road Traffic Authority and the National Police Agency.

The emphasis on road safety education in the 7th Education Curriculum was related to the presidential pledge to reinforce traffic safety education. The guidelines given in the 7th Education Curriculum concerning road safety education are as follows:

- Implementation of safety education mainly through discretionary activities in an integrated manner to ensure that it is related to various school subjects as well as extracurricular and other school activities
- Emphasis in kindergarten safety education placed on repetitive training related to everyday activities
  - Focus on prevention of accidents that occur while walking, which account for 70% of the total accidents involving preschool kids
  - Emphasis on teaching kids ways to safely use various modes of transport safely as well as the need to observe pedestrian safety regulations, while conducting classes on traffic rules in relation to the healthy lifestyle section included in the kindergarten curriculum
  - Devising an implementation plan in such a way that training related to lifestyle-related topics such as modes of transport, healthy body and mind and traffic safety can be conducted in a repeated manner throughout the year
  - Yearly on-site education at traffic parks, exemplary schools, etc.
- Road safety education through relevant subjects at elementary, middle and high schools
  - Instructions through various subjects such as ethics, Korean language,

1) An educational curriculum posted on the Ministry of Education notice No. 1997-15 on Dec. 30, 1997. It was implemented beginning in 2000. It includes a common basic curriculum for first through tenth grade, which is comprised of subjects, discretionary activity, and extracurricular activity.

social studies, physical education, fine art, and life science, courteous, and leading a smart life. In particular, walking and street crossing can be reflected in physical education

- Road safety education in relation to extracurricular and discretionary activities
  - Holding various events related to road safety, such as writing, speeches, slogan and poster drawing contests, and photo exhibitions
  - Field trips to traffic parks, exemplary schools selected for road safety education, etc.
- Inclusion of experience-oriented safety education and disaster preparedness training in extracurricular activity programs

Intensifying Guidance to Ensure Safe Routes to School

Until the late 1980s, when the nation saw a steep rise in the number of road traffic accidents, the majority of child traffic casualties occurred on routes to school. To address this problem, the government and schools began to reinforce measures in the 1990s to ensure safe routes to school.

Elementary schools formed groups of children and parents to serve as traffic guards during school commute hours. At the same time, the government expanded the school zone system, thereby helping to ensure that the student can travel to and from school in safer environments.

In 2010, the Ministry of Security and Public Administration introduced the Walking School Bus system. After pilot implementation at some schools, it is now being expanded to cover a growing number of schools. A Walking School Bus is a form of transport in which children walk to school, chaperoned by helpers, along fixed routes according to predetermined schedules, in much the same way a school bus would take children to and from school. Currently, the Walking School Bus system is in use at around 600 schools. The helpers are selected from among retired teachers and police officers, volunteer workers, among others who have received relevant training

through local community job programs.

Important activities designed to ensure safe routes to school are as follows:

- Strengthening traffic control in school zones during school commute hours
  - Increasing the number of traffic officers in school zones during school commute hours
  - Extensive crackdowns on traffic offenses within school zones and violations of school bus regulation throughout the year
  - Production and distribution of "school route hazards maps" that contain information on possible dangers along routes to school
  - On-site publicity campaigns
- Guidance through notices sent to students' parents or pop-up windows on the school homepage
- Installation of more automated enforcement camera systems at accident prone areas around routes to school
- Reinforcement of accident prevention training for children
  - Training for younger student to obtain a pedestrian license
  - Administering the license test after conducting education for kids, upon their entering schools, on safe pedestrian rules ex: road crossing, walking along sidewalks

Road Safety Teacher Training and Operation of Model Schools

In conducting road safety education at school, top priority is for teachers to be equipped with relevant knowledge and capacity to teach students in a way that suits their developmental stages. With regard to this, metropolitan and provincial boards of education are recommending that each school appoint teachers dedicated to the task of providing safety guidance to students.

The boards are implementing training programs designed to help the

safety guidance teachers acquire appropriate teaching methods in relation to road safety. Every year, about 7,000 teachers from kindergartens, elementary, middle and high schools receive training at the Road Traffic Authority or other specialized institutions. The safety guidance teachers formulate road safety enhancement programs, including plans to protect students from accidents on their routes to school and develop a manual on road safety training.

Additionally, safety-related contents are included in various teacher training programs administered by metropolitan and provincial education boards in order to help teachers to develop their capacity to properly teach students about safety.

In an effort to promote traffic safety awareness among children, education boards are appointing various exemplary schools for pilot implementation of a diversity of road safety-related programs like the Walking School Bus scheme. These schools are playing crucial roles in developing and distributing road safety-related programs, devising teaching and learning materials, finding prominent examples of schools effectively conducting safety education, and propagating road safety culture to nearby schools. Best practices implemented at these schools as well as relevant educational materials are posted on the board's websites so that they can be used as reference materials by teachers, students and parents. The following is information related to the operation of such exemplary schools appointed by education boards:

- Appointment exemplary schools: Each education office the 16 administrative areas spread over the metropolitan cities and provinces, are required to select at least one school for each level of educational institutions
- Installation of learning and practice facilities, and provision of opportunities to make field trips to nearby schools
- Provision of relevant information to other schools: instruction methods, materials, etc.

Active Implementation of Experience-Oriented Field Training and Cyber Education

With the implementation of the 5th National Transportation Safety Master Plan (2002-2006), the government began to actively promote "field-oriented practical training" in relation to road safety education. A prominent example is training conducted at outdoor education facilities for kindergarten and elementary school children. Such facilities are usually called traffic parks or various other names such as road safety experience centers, road safety education centers, and traffic safety halls. Depending on the operators, such facilities may be classified largely into three categories: specialized training facilities run by the state and related institutions, education halls operated by private companies, and traffic parks operated by local governments.

Figure 4.4 Child road safety education at a traffic park in Gwangmyeong City

Source: http://humayu.tistory.com/169

As of December 2007, there were 64 experience-oriented road safety training centers in Korea, including those being built by the National Police Agency with financial support from the state. By size, those with an area of 3,300 m^2 or less account for 57.8% of the total, as shown in Table 4.2.

The number exceeds 100 when the training centers under construction in seven areas – Busan, Daejeon, Yeoncheon in Gyeonggi Province, Jecheon in Chungbuk, Jeonju in Jeonbuk, Suncheon in Jeonnam, and Jeju, as well as traffic parks built by individual districts are included in the count. The national police have built large-scale road safety training facilities with an area of 3,000 m^2 or more with financial assistance from local governments. As of 2014, there are such facilities in 17 regions.

Table 4.2 Number of traffic parks and experience-oriented training facilities by size

	Below 165 m²	165 - 330 m²	330 - 1,650 m²	1,650 - 3,300 m²	3,300 - 9,900 m²	9,900 - 16,500 m²	16,500 - 33,000 m²	33,000 m² or above	Total
Total	1	1	28	7	13	6	4	4	64

Source: National Police Agency, Road Traffic Authority, *Evaluation Report on the Construction of Road Safety Training Facilities*, 2008.

Table 4.3 Major internet sites related to road safety education for children

Site name	Address	Contents	Operating organization
Kids' Police Agency	http://kid.police.go.kr/index.jsp	• Education materials, fairy tales, games	National Police Agency
Cyber School for Road Safety Education	http://cyedu.koroad.or.kr	• Thematic learning materials, games, videos, education materials	Road Traffic Authority
Road Safety Research Institute for Children	www.go119.org	• Games, fairy tales, children's songs, traffic park reservation service, education texts	Citizens' Coalition for Safety
Road Safety for Children	http://kid.ts2020.kr/main.jsp	• Games, animations, fairy tales	Korea Transportation Safety Authority
Safe Kids Korea	www.safekids.or.kr	• Teaching materials and animations, teaching guides, fairy tales, games	Safe Kids Korea
Child Safety Net	www.isafe.go.kr	• Prevention of accidents involving children • Safety issues related to transportation, home, school, play, etc. • Safety-related news and news about parents	Korea Consumer Agency
Korea Child Safety Foundation	www.childsafe.or.kr	• Accident examples • Safety rules • Children safety for buses	Korea Child Safety Foundation
Safety Education Center for Children	www.isafeschool.com	• Safety for children, safety related to transport, playing in water, fall, fire, playground, and home, accident photo exhibition	Seoul Songpa District Office (operation entrusted to Korea Child Safety Foundation)
Korea Life Safety Associates	www.safia.org	• Construction of safety information and materials site, operation of safety experience site for children	Korea Life Safety Associates

The operation of the existing traffic parks is controlled by operational stakeholders and those responsible for facility management. Involved in their operation are various organizations, including local governments and relevant organizations, law enforcement, and the Road Traffic Authority. Training services are provided by law enforcement, instructors from specialized educational institutions, or volunteer workers.

Not only schools and traffic parks, but various other organizations offer

services to ensure accessibility to road safety education for children. Relevant information can be obtained through the individual internet homepages. Major internet sites related to road safety education for children are presented in Table 4.3.

05
The Role of Local Governments and Communities

Road traffic safety is affected not only by state systems and policies, but by numerous other factors such as road traffic conditions of local communities and the community members' awareness of traffic order and safety. This is why large differences exist in the number of traffic accidents and casualties among various regions. This also represents the need for local governments and communities to assume greater responsibility and play larger roles regarding road safety.

Additionally, there are numerous industries and companies that can and should play an important role in securing road traffic safety; car manufacturers, insurance companies, road construction companies, safety equipment producing companies, driving schools, and taxi, bus, and trucking companies. All of these companies carry out business directly or indirectly related to road safety. Many other companies also have to share responsibility for problems with safety on roads as their employees drive to conduct business.

In the 1990s, the central government and transport-related public organizations played a central role in promoting road safety education for children. In the 2000s, however, local communities assumed considerably greater roles based on established institutional framework.

Safe City Campaign and Promotion of Safety Awareness in Communities

In the 2000s, local governments in Korea began to take interest in the Safe City Campaign, a global movement that started in 1989. As a result, effects are been made to ensure road safety, which is one of the core tasks of the Safe City Campaign.

The Safe City Campaign is based on the premise that all residents of a community have the right to live in a healthy and safe environment. In pursuing the idea of realizing safe cities, the movement is not seeking to create new organizations. It rather emphasizes that the existing institutions and organizations interested in the prevention of accidents or damages should pool their capacities and play a leading role.

In 2000, Suwon City in Gyeonggi Province became the first Korean city to gain WHO certification as an international safe city. It was followed by Jeju Province, Seoul's Songpa District, and Wonju City in Gangwon Province, which were certified as international safe cities in 2007, 2008 and 2009, respectively. A number of other Korean cities have also obtained the certification or are seeking to get certified as safe cities.

In this process, some schools affiliated with local governments were certified as international safe schools. A number of other schools are applying for the certification. The following seven requirements are the criteria for international safe school certification:

- To build a foundation based on partnership and cooperation among the three parties responsible for safety enhancement at school – students, teachers, staff, and parents
- To develop safe school-related policies by reflecting the views of the operating committee, which, along with experts, has the authority to enact and execute school policies
- To formulate sustainable and practical long-term school programs that can encompass the age, gender, environment and circumstance of all school members

- To operate a prevention program targeting school objects and environments with the highest risk of accidents
- To continually evaluate school safety policies and relevant programs so that the effects of their changes can be measured
- To continually participate in international safe school networks and share their experience

The following can be cited as major examples of activities implemented to improve road safety for children as part of the Safe City Campaign: establishment of a injury monitoring system for children, improvement of routes to school, improvement of road conditions along school routes, implementation of related safety education, distribution of child safety products such as t-shirts with reflective materials and safety vests, production and distribution of safety journals, operation of experience-oriented safety classes that can help foster preparedness against emergencies.

Private Voluntary Organizations Conducting Road Safety Activities

Promoting public traffic awareness and safety requires the expansion of civic organizations engaged in voluntary campaigns for road safety. Currently, various groups are implementing road safety training and guidance activities for children. They include the Korea Green Mothers Society, Korea Best Drivers Association, Citizens' Coalition for Safety, Korea Life Safety Associates, and Safe Kids Korea. The General Insurance Association of Korea, car insurance and manufacturing companies, and Korea Expressway Corporation are also joining in such voluntary activities.

Launched in March 1972, the Korea Green Mothers Society originally assisted at elementary, middle and high schools in the nation's six largest cities; Seoul, Busan, Daegu, Incheon, Gwangju and Daejeon. In 1990, it was expanded to cover kindergartens as well, in accordance with comprehensive

Figure 4.5 Korea Green Mothers serving as crossing guards near a school

Source: http://ggvc1365.tistory.com/827

Figure 4.6 Korea Best Drivers participating in a road safety campaign

Source: www.koreabestdriver.or.kr

road safety measures formulated by the Prime Minister's Office. The association has eventually become a nationwide organization with branches at individual schools. In 2006, it was registered with the National Police Agency as a non-profit organization, gaining legal status as stipulated in Article 32 of the Civil Act.

The association plays a pivotal role in securing road safety as it provides crossing guard services along routes to school and implements road safety education training programs for children. It has approximately 50,000 members throughout the nation.

The Korea Best Drivers Association was formed December 1972 based on National Police Agency guidelines on the selection of exemplary commercial vehicle drivers. It has since developed into a voluntary service organization in the field of transportation. It currently has about 30,000 members nationwide.

Association members participate in road safety campaigns, contributing to ensuring smooth traffic flow at intersections and students' safe travel to and from school.

Various private organizations, including the Korea Green Mothers and Korea Best Driver associations, play an important role in enhancing road safety awareness among children and their parents through implementation of activities that cannot be sufficiently pursued by public education institutions.

CHAPTER 5

School Zone Improvement Projects

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STOP

01
Introduction

A school zone refers to an area in which traffic safety facilities are installed and managed to protect children from potential traffic accidents as they travel to and from educational institutions.

This system is to prevent traffic accidents involving children by securing safe routes to educational institutes such as kindergartens, elementary schools, special schools, and private cram schools or childcare facilities used by 100 or more children. For this purpose, traffic safety facilities and equipment are installed in certain sections of a road within a 300 m radius from the main gate of such facilities. Presently, efforts are being made to revise a relevant legal and institutional framework in order to expand the school zone system as well as the school zone improvement project.

Figure 5.1 Sign alerting drivers they are entering a school zone

The school zone system in Korea has been implemented

through the following process:

- 1993: Decision to promote a school zone system reached at a meeting of the Administrative Reform Commission
- January 1995: Amendment of the Road Traffic Act for the construction of safe routes to school (Act No. 4872)
- September 1995: Enactment of the Protective Areas for Children Act as a joint decree of the Ministry of Public Administration and Security, the Ministry of Construction & Transportation, and the Ministry of Education
- January 2003: Inauguration of the school zone improvement project
- May 2005: Amendment of the Road Traffic Act for the expansion of the school zone designation scope to cover special schools as well as private cram schools or childcare facilities used by 100 children or more. Previously, the scope covered only kindergartens and elementary schools.
- 2011: Amendment of the Road Traffic Act that paved the way for slapping heavier penalties against offenses within school zones
- January 2011: Enactment of the Protective Areas for Children, the Elderly and the Disabled Act. It was amended in March 2013 by the Ministry of Land, Infrastructure and Transport.

02

A Legal and Institutional Framework for School Zones

Designation and Management of School Zones

Article 12 of the Road Traffic Act, Protective Areas for Children, stipulates the types of establishments around which school zones can be designated. It also provides for the speed restriction of motor vehicles to less than 30 km/h.

Article 12 Protective Areas for Children

① If deemed necessary for the protection of children from the danger of traffic accidents, the Mayor may restrict the driving speed of motor vehicles to not more than 30 km/h, after designating certain sections of roads around any of the following establishments as protective areas for children:

1. Kindergartens provided for in Article 2 of the Early Childhood Education Act, and elementary schools or special schools provided for in Article 38 and 55 of the Elementary and Secondary Education Act;
2. Those designated by Ordinance of the Ministry of Security and Public Administration, among childcare centers provided for in Article 10 of the Infant Care Act;
3. Those prescribed by Ordinance of the Ministry of Security and Public Administration, among private teaching institutes provided for in Article 2 of the Act on the Establishment and Operation of Private Teaching Institutes and Extracurricular Lessons;
4. Foreign schools or alternative schools provided for in Article 60-2 or 60-3 of the Elementary and Secondary Education Act; International schools provided for in Article 189-4 of the Special Act on the Establishment of Jeju Special Self-Governing Province and the Development of Free International City; Schools that have kindergarten and elementary school curricula, among foreign educational institutes provided for Article 2-2 of the Special Act on the Establishment and Management of Foreign Educational Institutions in Free Economic Zones and the Jeju Free International City.

Matters related to the school zone designation procedures and standards are prescribed in the Regulation of Protective Areas for Children, the Elderly and the Disabled which has recently been proclaimed as a decree of the Ministry of Land, Infrastructure and Transport. Out of its provisions, those related to children or to children and the elderly and disabled have been summarized below.

Purpose of the Protective Areas Act

The purpose of the Regulation of Protective Areas for Children, the Elderly and the Disabled and definitions of terms used in the regulation are as follows:

Purpose of the Regulation of Protective Areas for Children, the Elderly and the Disabled and the Definitions of Terms Used in the Regulation

Article 1 Purpose

This Regulation aims to define the procedures and standards related to the designation and management of protective areas for children, the elderly and the disabled pursuant to Article 12 and Article 12-2 of the Road Traffic Act.

Article 2 Definitions

The definitions of the terms used in this Regulation shall be as follows:

1. The term "early education facilities." means any of the following establishments;
   (A) Kindergartens provided for in Article 2-2 of the Early Childhood Education Act;
   (B) Elementary and special schools provided for in Articles 38 and 55 of the Elementary and Secondary Education Act;
   (C) Childcare centers provided for in Article 10 of the Infant Care Act (only those centers around which protective areas for children can be designated pursuant to Article 14-1 of the Enforcement Regulation of the Road Traffic Act);
   (D) Private teaching institutes provided for in Article 2 of the Act on the Establishment and Operation of Private Teaching Institutes and Extracurricular Lessons (only those institutes around which it is deemed necessary to designate protective areas for children pursuant to Article 14-2 of the Enforcement Regulation of the Road Traffic Act);
4. The terms "road management agencies" means any administrative organization that is responsible for road management as provided for in the Road Act, the National Land Planning and Utilization Act, and other relevant laws;
5. The term "road fixtures" means road facilities or attachments provided for in Article 2-1-4 of the Road Act;
6. "Street parking" means any parking space on the surface of a road as prescribed in Article 2-1 of the Parking Lot Act.

Investigation for School Zone Designation

Provisions concerning the investigation for school zone designation as well as the designation scope (within 300 m from the target facility) are as follows:

Designation of Protective Areas

Article 3 Designation of Protective Areas

① The Principal of an elementary school may request the Mayor of a metropolitan city, the Governor of a special self-governing province, or the head of a city or a county (excluding counties in metropolitan cities; the same shall apply hereinafter) to designate roads around an elementary school as protective areas for children, by submitting an application by using Document Form No. 1 in the Annex. In cases where an elementary school has yet to be formally inaugurated, the application may be made by the superintendent of an education board or the head of a ward (the head here means the Mayor of an autonomous ward. He/she can submit an application only for childcare centers).

② – ③ (Omitted)

④ When the Mayor has received an application for the designation of protective areas for children, elderly and disabled (hereinafter referred to as "protective areas"), pursuant to Article 12 and Article 12-2 of the Road Traffic Act, he/she shall investigate any of the following matters:

1. Motor vehicle traffic volumes and parking demand on roads around the establishments subject for protective area designation;
2. Installation of signal equipment and safety signs (hereinafter referred to as "traffic safety equipment") and road appurtenances around the establishments subject for protective area designation;
3. Annual occurrence of accidents on roads around the establishments subject for protective area designation;
4. The number of children, elderly and disabled traveling on the roads around the establishments subject for protective area designation, as well as the toll system.

⑤ For investigation provided for in Paragraph ④, the Mayor may request relevant data from the head of a regional police agency, a police station, or any other related administrative agency or public institute.

⑥ In case the Mayor finds it necessary to designate protective areas as a result of the investigation implemented pursuant to Paragraph ④, he/she shall designate certain sections of roads within a 300 m radius from the main entrance of the target facilities, after consultations with the head of a regional police agency or a police station. If necessary, the Mayor may make the designation for roads within a 500 m radius from the main entrance of the target facilities, after thoroughly examining the traffic conditions of the area and the effects of the designation.

School Zone Designation and Management Plan

The following matters should be included in school zone designation and management plans:

Designation and Management Plans for Protective Areas

Article 4 Designation and Management Plans for Protective Areas

① The Mayor shall formulate a plan for the designation and management of protective areas for the next year (hereinafter referred to as "annual plan") by March 31 every year according to the pertinent document format, and notify it to the head of the National Police Agency by April 30 through the head of a regional police agency in the case of metropolitan cities and special self-governing provinces, and through the head of a local police station in the case of cities and counties:

1. Protective area for children: Document Form No. 4 in the Annex concerning protective area for children designation and management plans

② The annual plan pursuant to Paragraph ① shall include each of the following matters:

1. The number of facilities slated for designation as protective areas;
2. The types and number of traffic safety equipment to be installed in protective areas;
3. The types and number of road appurtenances to be installed in protective areas;
4. Removal or relocation plans for street parking in protective areas;
5. The total amount of budget for traffic safety equipment and road appurtenances to be installed in protective areas, by type and administrative agency (including maintenance and repair costs).

③ If deemed necessary for effective formulation of the annual plan pursuant to Paragraph ①, the Mayor etc. may convene a consultative meeting that includes any of the following persons:

1. Competent officials of the regional police agency or the police station;
2. Competent officials of the road management agency;
3. Competent officials of the education board or the education office.

Article 5 Financial Measures Related to the Designation and Management of Protective Areas

The Mayor shall give priority to formulating the budget and taking other financial measures necessary for the execution of the annual plan.

Traffic Safety Facilities

Regulations concerning the installation of signals, traffic signs and other traffic facilities within a school zone are as follows:

Installation of Traffic Safety Equipment

Article 6 Installation of Traffic Safety Equipment

① The head of the regional police agency or the local police station shall give priority to installing and managing signals at a crosswalk installed on a trunk road at a location nearest to the main entrance of a facility designated as a protective area pursuant to Article 3-6.

② The green light duration of traffic signals installed pursuant to Paragraph ① shall be determined based on the average walking speed of children, elderly and disabled.

③ The head of the regional police agency or the local police station shall install safety signs in accordance with each of the following classifications in protective areas designated pursuant to Article 3-6;

1. Protective areas for children: Annex Table 6 Ⅱ of the Enforcement Regulation of the Road Traffic Act (hereinafter referred to as the "Enforcement Regulation"). Safety signal No. 133, No. 324 and No. 536.

Installation of Sidewalks and Road Appurtenances

In school zones, roadways and sidewalks should be installed in a manner that they are separated from each other. Regulations on this matter and the installation of road signs, speed bumps, safety fences, and road appurtenances are as follows:

Installation of Sidewalks and Road Appurtenances

Article 7 Installation of Sidewalks and Road Appurtenances

① In case a road in a protective area has no clear distinction between a sidewalk and a roadway, the Mayor shall install a sidewalk separated from the roadway or request the local road management agency to install such a sidewalk, if there is no special reason to avoid such an installation.

② The Mayor may install road appurtenances that belong to any of the following categories, or ask the local road management agency to install them, in a protective area:

1. Protective area road signs prescribed in Annex Table;
2. Reflective mirrors;
3. Speed bumps;
4. Slide prevention facilities;
5. Protection fences;
6. Among other road appurtenances which are recognized by the Mayor as facilities necessary for the protection of children, elderly and disabled from the danger of traffic accidents, those that conform with the Road Structure and Facility Standards Act.

③ The road signs within a school zone provided for in Article 2-1 shall be installed on the right-side walkway or the edge of a road.

Ban on On-Road Parking Lots and Other Necessary Measures

Within a school zone, it is not allowed to install street parking spots on a road directly connected to the main entrance of an educational institution. Regulations concerning this matter and other necessary matters such as parking/stopping bans and speed limits are shown below:

Ban on On-Road Parking Lots and Implementation of Necessary Measures

Article 8 Ban on Installing On-Road Parking Lots

① The Mayor of a metropolitan city, the Governor of a special self-governing province, or the head of a city, a county or a ward ("ward" refers to a self-autonomous ward; the same applies hereinafter) shall not install parking spots on a road directly connected to the main entrance of a facility designated as a protective area.

② The Mayor of a metropolitan city, the Governor of a special self-governing province, or the head of a city, a county or a ward shall remove the existing parking spots in a protective area, or relocate them to another place where they would not undermine the travel convenience and safety of children, elderly and disabled, unless there are special reasons to avoid taking these measures.

Article 9 Necessary Measures in Protective Areas

① The head of the regional police agency or the local police station may take each of the following measures in a protective area, pursuant to Article 12-1 or 12-2-1 of the Road Traffic Act:

1. Ban or restrictions on travel by motor vehicles or horse-drawn carriages;
2. Ban on parking or stopping of motor vehicles or horse-drawn carriages;
3. Limiting the travel speed to 30 km/h or less;
4. Designation and operation of local roads (non-arterial urban roads used for travel of the general public) as one-way roads.

② When taking measures provided for in Article 1, the head of the regional police agency or the local police station shall install relevant safety signs thereof.

Road Safety Education

Road Safety Education

Article 10 Road Safety Education for Children, Elderly and Disabled

① The Mayor or the head of a police station shall visit a pertinent facility and implement a pedestrian and road safety education program for children, elderly or disabled, if deemed necessary and requested by the head of an establishment designated as a protective area.

② If deemed necessary for safe travel of children as well the elderly and disabled, the Mayor or the head of a police station shall deploy police officers or a Korea Best Driver at major crosswalks in protective areas under their administrative jurisdiction at a time of day when children, elderly and disabled persons frequently travel, thereby helping them safely cross roads.

Follow-Up Management

Follow-Up Management

Article 11 Follow-Up Management of Protective Areas

① The Mayor shall be equipped with a management card made in accordance with Document Form No. 7 in the Annex for any designated protective area.

② The types and numbers of traffic signals and signs as well as road appurtenances shall be recorded on the management card provided for in Paragraph ①, Whenever these devices are repaired, replaced or subject to any other changes, the relevant data on the card shall be updated.

③ The Mayor shall write a report on the status of designation and management of protective areas in accordance with Document Form No. 8 in the Annex by June 30 and Dec. 31 every year, and notify it to the head of the National Police Agency, through the head of the regional police agency in the case of metropolitan cities and special self-governing provinces, and through the head of the pertinent local police station in the case of cities and counties.

④ For formulation of the budget necessary for the designation and management of protective areas, the Minister of Safety and Public Administration and the Minister of Land, Infrastructure and Transport may request from the head of the National Police Agency relevant data concerning the status of the designation and protection of protective areas prescribed in Paragraph ③ and the annual plans provided for in Article 4-1.

⑤ When the traffic signals and signs as well as road appurtenances are found to be damaged or destroyed, the Mayor shall immediately report the fact to the pertinent local police station chief or the road management agency.

⑥ When the Mayor finds it unnecessary to designate and manage protective areas due to the closure of designated facilities or changes in traffic conditions nearby, he/she may lift the designation of protective areas through consultation with the head of the regional police agency or the pertinent local police station chief.

Article 12 Application Regulation

Matters which have not been provided for in this regulation concerning the types of traffic signals and signs as well as road appurtenances, their manufacturing methods, and locations for installation, shall be determined pursuant to laws and regulations related to roads or road transport.

Article 4 of the Supplementary Provisions Transfer of Management Cards for Protective Areas for Children

The head of the regional police agency or the local police station shall transfer management cards for protective areas for children and the elderly, written under the previous Act, to the pertinent Mayor within 15 days after this regulation goes into effect.

03
Status and Characteristics of School Zone Traffic Accidents Involving Children

The designation of a school zone is normally aimed at protecting elementary school children and preschool kids. Thus, the targets of analysis in this chapter are restricted to persons under the age of 13 as stipulated in the Road Traffic Act, namely elementary aged children and younger.

In 2012, 223,656 road traffic accidents occurred in Korea, claiming the lives of 5,392 people, according to National Police Agency statistics. The number of crashes involving children reached 12,497, accounting for 5.6% of the total. Child fatalities from these accidents amounted to 83, which made up 1.5% of the total number of traffic accident deaths in the nation. Within school zones, 511 accidents occurred, killing six children. The accidents and fatalities accounted for 4.1% and 7.2%, respectively, of the overall traffic accidents involving children and child traffic deaths. This chapter reviews road accidents among children by month, day of the week, and time of day. It also analyzes the characteristics of such accidents in order to produce their implications for endeavors to reduce child traffic casualties.

Traffic accidents Involving Children by Month

Statistics on traffic accidents that occurred over the most recent four years (2009-2012) showed that road accidents involving children occur most

frequently in non-winter seasons, when children engage in a relatively large number of activities. The statistics revealed particularly high rates of crashes among children taking place in May, which is known as Family Month. Accidents within school zones also showed similar trends.

- Of the 58,007 traffic accidents involving children, 2,530 (4.4%) occurred within a school zone:
  - By month, children suffer traffic accidents the most between April and October. Conspicuous concentration of accidents among children is shown in the Family Month of May. Accidents within school zones also occur in large numbers between April and November, except for August. Particularly high rates of accidents are reported between April and June.
- Of the 443 child road deaths, 32 (7.2%) occurred within school zones:
  - By month, child road fatalities occur the most between May and October, showing a high level of concentration in May. Child fatalities within school zones occur most frequently between May and September, particularly in July and September.

Table 5.1 Monthly statistics on traffic accidents involving children (2009-2012)

Categories		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Traffic accidents involving children	Accidents	3,606	3,356	4,268	4,909	6,163	5,642	5,645	5,676	5,141	5,391	4,351	3,859	58,007
	Ratio (%)	6.2	5.8	7.4	8.5	10.6	9.7	9.7	9.8	8.9	9.3	7.5	6.7	100.0
	Deaths	39	30	21	26	50	46	46	41	47	43	33	21	443
	Ratio (%)	8.8	6.8	4.7	5.9	11.3	10.4	10.4	9.3	10.6	9.7	7.4	4.7	100.0
Accidents involving children inside school zones	Accidents	88	130	207	257	290	277	252	173	250	236	221	149	2,530
	Ratio (%)	3.5	5.1	8.2	10.2	11.5	10.9	10.0	6.8	9.9	9.3	8.7	5.9	100.0
	Deaths	1	3	1	1	3	3	6	3	5	2	2	2	32
	Ratio (%)	3.1	9.4	3.1	3.1	9.4	9.4	18.8	9.4	15.6	6.3	6.3	6.3	100.0

Source: Road Traffic Authority, *Traffic Accident Data Analysis (Analysis of Characteristics of Traffic accidents Involving Children)*, 2010-2013.

Traffic Accidents Involving Children by Day of the Week

By day of the week, children are more likely to suffer traffic accidents during weekends, particularly on Saturday, than on weekdays, according to traffic accident statistics compiled between 2009 and 2012. In contrast, traffic accidents within school zones are more likely to take place during weekdays, especially on Wednesday, than over the weekend.

- Children face higher risks of traffic accidents on Friday, Saturday and Sunday than on weekdays. The rate of accidents is conspicuously high on Saturday. In contrast, accidents within school zones occur mostly during weekdays when children attend school, especially at higher rates on Wednesday and Friday.
- Fatalities occur in higher numbers during the weekend as well as on Monday and Tuesday than other days of the week. The highest number of child traffic deaths is reported on Saturday. Child fatalities within school zones occur mostly on weekdays, with the highest number of child deaths taking place on Wednesday.

Table 5.2 Statistics on traffic accidents involving children by day of week (2009-2012)

Categories		Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Total
Traffic accidents involving children	Accidents	9,003	7,702	7,331	7,719	7,673	8,356	10,223	58,007
	Ratio (%)	15.5	13.3	12.6	13.3	13.2	14.4	17.6	100.0
	Deaths	65	72	70	53	47	63	73	443
	Ratio (%)	14.7	16.3	15.8	12.0	10.6	14.2	16.5	100.0
Accidents involving children inside school zones	Accidents	140	414	417	443	403	449	264	2,530
	Ratio (%)	5.5	16.4	16.5	17.5	15.9	17.7	10.4	100.0
	Deaths	1	5	6	11	3	5	1	32
	Ratio (%)	3.1	15.6	18.8	34.4	9.4	15.6	3.1	100.0

Source: Road Traffic Authority, *Traffic Accident Data Analysis (Analysis of Characteristics of Traffic accidents Involving Children)*, 2010-2013.

Traffic Accidents Involving Children by Time of Day

Morning accidents involving children mostly take place when children are traveling to school, while afternoon accidents occur rather evenly through the rest of the day. In terms of fatal accidents, there are clearly times where the occurrence of fatalities is concentrated. Statistics on both overall road accidents and school zone accidents showed that child traffic deaths occur in conspicuously high numbers during school commute hours: from 8 AM to 10 AM and from 2 PM to 4 PM.

- In the morning, road accidents involving children normally occur between 8 AM and 10 AM when children travel to school. In the afternoon, the accidents take place more evenly throughout the day, from noon to 10 PM. The highest number of accidents occur between 4 PM and 6 PM.
- Fatal accidents are most likely to occur during morning commute hours between 8 AM and 10 AM as well as in the afternoon between noon and 8 PM. In the afternoon, a conspicuously large number of accidents take place between 2 PM and 4 PM. Fatal accidents in school zones are concentrated in school commute time: from 8 to 10 in the morning and from 2 to 4 in the afternoon.

Table 5.3 Traffic accidents involving children by time of day (2009-2012)

Categories		00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	Total
Traffic accidents involving children	Accidents	681	187	168	1,068	5,024	3,836	6,588	10,365	12,086	9,759	5,700	2,545	58,007
	Ratio (%)	1.2	0.3	0.3	1.8	8.7	6.6	11.4	17.9	20.8	16.8	9.8	4.4	100.0
	Deaths	10	2	2	6	43	34	43	95	87	63	36	22	443
	Ratio (%)	2.3	0.5	0.5	1.4	9.7	7.7	9.7	21.4	19.6	14.2	8.1	5.0	100.0
Accidents involving children inside school zones	Accidents	5	2	1	31	303	111	477	682	555	265	83	15	2,530
	Ratio (%)	0.2	0.1	0.0	1.2	12.0	4.4	18.9	27.0	21.9	10.5	3.3	0.6	100.0
	Deaths	1	0	2	1	5	3	4	9	4	3	0	0	32
	Ratio (%)	3.1	0.0	6.3	3.1	15.6	9.4	12.5	28.1	12.5	9.4	0.0	0.0	100.0

Source: Road Traffic Authority, *Traffic Accident Data Analysis (Analysis of Characteristics of Traffic accidents Involving Children)*, 2010-2013.

Traffic Accidents Involving Children by Road User Group

Statistics revealed that 62.8% of the child fatalities reported between 2009 and 2012 were among pedestrians. Motorized vehicle occupants and bicyclists accounted for 28.2% and 7.2%, respectively. Within school zones, the share of pedestrians among child traffic deaths further rose to 87.5%. Bicyclists came in second with 9.4%. These figures demonstrate the need to implement special road safety training programs to ensure the safety of child pedestrians and cyclists within school zones.

Table 5.4 Traffic accidents involving children by road user group (2009-2012)

Categories		Car occupant	Motorcycle occupant	Bicycle rider	Pedestrian	Other	Total
Traffic accidents involving children	Killed	125	5	32	278	3	443
	Ratio (%)	28.2	1.1	7.2	62.8	0.7	100.0
Accidents involving children inside school zones	Killed	0	0	3	28	1	32
	Ratio (%)	0.0	0.0	9.4	87.5	3.1	100.0

Source: Road Traffic Authority, *Traffic Accident Data Analysis (Analysis of Characteristics of Traffic accidents Involving Children)*, 2010-2013.

Characteristics and Implications of Traffic Accidents Involving Children

The number of school zone crashes involving children rises conspicuously during the three months between April and June, peaking in the Family Month of May. In terms of child fatalities, July and September are the most accident-prone months of the year. By day of the week, more accidents occur during weekdays than over the weekend. Child road deaths occur in higher numbers during the weekdays than on the weekend being particularly high on Wednesday and Friday. Of the weekdays, Wednesday is most likely to see fatal accidents. By time of day, the two hours between 2 PM and 4 PM are the most accident-prone times of day, followed by a two-hour span between

4 PM and 6 PM. The highest number of child traffic deaths occur between 2 PM and 4 PM.

Road traffic accidents involving children occur in relatively large numbers in May, when children are engaged in a lot of outdoor activities, and in July and September, the months just before and after summer vacation. By day of the week, accidents within school zones occur the most on Wednesday. By time of day, the two-hour span from 2 PM to 4 PM is the most accident-prone time. These findings indicate the need to think carefully about the possibility of lapses in safety measures leading to accidents among children during the above-mentioned times.

The findings may also serve as a basis for adjusting when and how to conduct road safety education programs for children so that they can be implemented in a more selective and concentrated manner.

There is also a need to pay attention to children's behavioral characteristics in relation to road traffic accidents. Regarding this matter, the Road Traffic Authority in 2013 issued a report: A Study on the Designation of Protective Areas for the Mobility Impaired and their Operational Feasibility. The study finds that to a considerable extent, traffic accidents among children are related to the fact that children cannot match the capabilities of adults in terms of perception, hearing and the sense of speed. The report notes that children cannot see properly what happens around them, once they pay close attention to a specific thing. As children have been taught to raise their hand when crossing the street so drivers can better see them, children tend to believe that this action will always cause cars to stop. These behavioral characteristics make children prone to accidents.

In addition to the above-mentioned physical and behavioral characteristics, children's tendency for suddenly actions is the cause of many fatal accidents that occur in school zones. For example, a number of fatal accidents take place when children run into the crosswalk the moment the light turns green or when they dart out between illegally parked cars.

Therefore, motorists should always drive carefully within school zones, particularly when passing through an intersection or making turns, paying

attention to the possibility of child pedestrians acting in an unpredictable manner. The drivers must also observe traffic signals and should not negligent looking ahead of their vehicle. The following Figure 5.2 show two traffic accident cases involving children in a school zone.

Figure 5.2 Examples of traffic accidents involving children within a school zone

Case A	Date	June 6, 2012 (Wed.), 10 AM	
	Location	Near Bansong Elementary School in Neung-dong, Hwaseong, Gyeonggi Province	
	Type	Vehicle-to-person: passenger car and pedestrian	
	Cause	Speeding	
	Outcome	One death: six-year-old girl, 1stgrader	
	Accident overview	While traveling straight on a green signal from Nojak Park toward the Bansong Elementary School intersection inside a school zone, the vehicle hit a pedestrian who was running across a crosswalk with a red light.	
	Recommendation	Lower the vehicle speed and driver carefully near a school zone intersection	
Case B	Date	July 18, 2012 (Wed.), 3 PM	
	Location	Near Sinheung Elementary School in Naun-dong, Gunsan, Jeonbuk	
	Type	Vehicle-to-person: passenger car and pedestrian	
	Cause	Violation of the duty to protect pedestrians	
	Outcome	One death: 8-year-old boy, 2ndgrader	
	Accident overview	Leaving Sinheung Elementary School and turning right toward the municipal library, the driver did not see a pedestrian crossing the crosswalk and thus did not stop.	
	Recommendation	Pay extra attention for pedestrians when making turns at a school zone intersection	

Source: Road Traffic Authority, *Traffic Accident Data Analysis (Analysis of Characteristics of Traffic Accidents Involving Children)*, 2013.

04
School Zone Improvement Projects and a Case Study

School Zone Improvement Project Achievements

As of the end of 2012, school zones were completed at 15,136 locations,

which accounted for 80.9% of the total 18,706 areas entitled for the designation. By then, improvement projects had been competed at 9,021 locations out of the designated school zones.

Among the designated school zones, accident-prone areas are subject to improvement projects, which focus on installing various road safety installations like speed bumps, sidewalk-roadway separation fences, traffic signals and road signs. Achievements made through the improvement project are presented in the table below:

Table 5.5 School zone improvement project achievements

Categories	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Locations	487	753	847	982	1,024	1,242	1,119	900	962	705	9,021
Project cost (Unit: 100 million won)	776	1,268	1,444	1,412	1,822	1,817	1,670	1,940	1,575	842	14,566

Source: National Police Agency, *While Paper on Road Traffic Safety*, 2013.

Impacts of the School Zone Improvement Project

Research conducted by the Road Traffic Authority finds that the school zone improvement project has a positive impact on reducing road traffic accidents involving children. According to the report A Study on the Designation of Protective Areas for the Mobility Impaired and their Operational Feasibility (2013), an increase of 100 designated school zones leads to an annual decrease of 17.8 accidents involving children. Its analysis also shows that implementation of improvement projects contributes to lowering the number of child-related traffic accidents by 31.8 per year.

In 2008, a comparative study of 601 school zones in the Seoul metropolitan area was conducted to evaluate the effects of the first-phase school zone improvement project.[1] It produced results showing that the project led to 39% reduction in road traffic accidents in school zones where improvement work had been implemented. This group recorded 10

fewer children-related traffic accidents, compared with the other group that consisted of school zones that had not undergone improvement procedures.

The project was also confirmed to be effective through another study,[2] which was also conducted in 2008 to analyze the effects of the project on reducing road traffic accidents involving children. It found a 39% reduction in the number of traffic accidents in the areas where the project has been implemented.

As explained above, the designation of school zones and the implementation of the school zone improvement project have been reported to have positive impacts on decreasing traffic accidents, although effectiveness varies depending on the area. These findings demonstrate the need to expand the school zone system and related improvement projects.

A School Zone Improvement Project Case Study

The 2006 Seocho District Basic and Detailed School Zone Project was designed to per match conditions in that district in the hopes of promoting business along with children safety. The contents of the designs are shown below:

- On-site survey and status analysis (thorough analysis of routes to school)
- Setting the improvement project execution standards and developing a plan
- Implementation and analysis of questionnaire surveys from school children and relevant persons
- Problem analysis and formulation of improvement measures →

1) Lee Su-beom, Chung Do-young, and Kim Do-gyeong, "Analysis of the impacts of school zone improvement projects on reducing traffic accidents by land use characteristics," *Korean Society of Transportation*, Vol. 26 No. 3, 2008.

2) Chung Do-young, Kim Do-gyeong, and Lee Su-beom, "Evaluation of the effects of school zones by school route characteristics," *Seoul City Research*, Seoul Institute, Vol. 9 No. 1, 2008.

Execution of basic design

- School routes reconstruction plan, vehicle speed limit, existing equipment maintenance plan, introduction of traffic calming methods, etc.

- Resident briefing and consultation among relevant organizations
- Execution planning and estimation of project costs

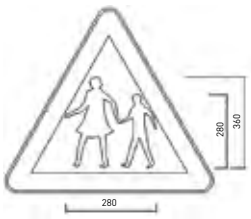
The Protective Areas for Children, the Elderly and the Disabled Act applies to matters concerning the installation of facilities within school zones. The major provisions of the regulation can be summarized as follows:

Article 6 Installation of Traffic Safety Facilities

① Priority on signal installation: Crosswalks on trunk roads nearest to the main gate

② Green light duration: Determination of the greed light duration of pedestrian signals based on children's average walking speed

③ Installation of safety signs: Annex Table 6 of the Enforcement Regulation of the Road Traffic Act Safety signs number 133, 324 and 536

133	Traffic signs for protecting children		• Warning that child walkways or crosswalks are ahead • Warning of nearby school or kindergarten commute route and children's playground	• Installed for walkways or crosswalks where special care is required for protection of children • Installed in a section within 1 km from the main school entrance • Installed on the right-side of the roadway 50 m to 200 m ahead of the school zone
324	Traffic signs for protecting children (within school zone)		• Notice for the protection of children within a school zone	• Installed at a point where a school zone starts • Installed on both sides of the roadway in a school zone

536	School zone sign		• A sign that represents a protective area for children	• Installed at school commute roads within a school zone, where protection of children is required

④ Installation of secondary signs – School Zone, "# m from here," school commute time

Article 7 Installation of Sidewalks and Road Appurtenances

① Installation of road appurtenances: school zone signs, road mirrors, speed bumps, skid-proof pavement, safety fences, etc.

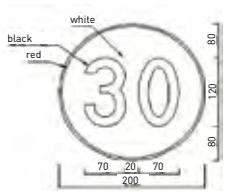
② Installation locations: School zone signs are installed on the right-side of a walkway or at the edge of the roadway where the protective area starts

- Protective area (School Zone, "# m from here")

Article 9 Necessary Measures in Protective Areas

① Traffic restrictions by section, time of day

- Motor vehicle travel ban or restrictions
- Parking or stopping bans for automobiles
- 30km/h speed limit

518	Speed limit sign (within school zone)		• Indicating the maximum allowable speed within a school zone	• Installed within a school zone

- Designation and operation of local roads as one-way roads

② Motor vehicle travel ban or restrictions

- Morning commute: 08:00 - 09:00
- Afternoon commute: 12:00 - 15:00; Time may be adjusted depending on local characteristics.

Article 12 Application Regulation

- Matters which have not been provided for in this regulation concerning the types of traffic signals and signs as well as road appurtenances, their manufacturing methods and locations for installation are determined pursuant to laws and regulations related to road transportation or road.

Figure 5.3 Traffic survey implemented for a school zone improvement project near Seoul's Seoi Elementary School

Source: Seoul's Seocho District Office, *The 2006 Basic and Execution Designs for School Zones in Seocho District*, 2006.

Figure 5.4 On-site checklist for the school zone improvement project

	Seoi Elementary School	Date of survey	April 2006	Surveyor		
Location	1334-2, Seocho 2-dong, Seocho-gu, Seoul			Phone number		
Main roads	Yeoksam-ro, Seoun-ro		Route no.	Seocho 03, Seocho21, 363,144	Road type	Secondary trunk road
Under jurisdiction of	Seocho Police Station		Road management agency	Seocho Ward Office		
Land use	Residential area		Related plan			
No. of students	1,484		No. of staff members		School bus	None

Road Traffic Conditions

Yeoksam-ro	Linear	Road width (m)	Sidewalk width (m)	Crossing facilities	Control facilities	Road facilities	Traffic volume (v/h) / Travel to and from school	Large vehicle ratio (%)	Parking
	Straight	22.2	2.0/4.3	3 crosswalks	Lane marking, Safety sign	-	1,605	%	-
Seoun-ro	Linear	Road width (m)	Sidewalk width (m)	Crossing facilities	Control facilities	Road facilities	Traffic volume (v/h) / Travel to and from school	Large vehicle ratio (%)	Parking
	Straight	20.0	3.0/2.8	1 crosswalk	Lane marking, Safety sign	-	1,522	%	-
Local roads near the rear gate	Linear	Road width (m)	Sidewalk width (m)	Crossing facilities	Control facilities	Road facilities	Traffic volume (v/h) / Travel to and from school	Large vehicle ratio (%)	Parking
	Straight	8.0	2.0/-	1 crosswalk	Lane marking, Safety sign	1 speed bump 1 stone pavement	46		

Mode of Travel to School

Walking (%)	Passenger car (%)	Bicycle (%)	Bus (%)	School bus (%)	Other (%)
98.0	2.0	-	-	-	-

Suggestions	• What needs to be improved in terms of locations and contents in order to ensure children's safe traveling to and from school? - It is necessary to develop safety measures for pedestrians in relation to the installation of a diagonal crosswalk at the Seoi Elementary School intersection - There is a need to establish pedestrian safety measures at the intersection near the Shindongah Apartment Complex - Measures need to be taken against illegal parking at the rear gate • Other

Source: Seoul's Seocho District Office, *The 2006 Basic and Execution Designs for School Zones in Seocho District*, 2006.

Figure 5.5 Before school zone safety installations near Isu Elementary School in Seoul

Maintenance contents

Open type safety gates have been installed on the sidewalk for the protection of pedestrians and prevention of vehicle parking. In addition, pavement was painted and traffic signs were installed.

Figure 5.6 After school zone safety installations school zone safety installations near Isu Elementary School in Seoul

Figure 5.7 Before school zone safety installations near Uam Elementary School in Seoul

Maintenance contents

Removal of street parking and installation of a sidewalk, open type pedestrian safety fences, traffic safety signs, speed bumps, and painted pavement.

Figure 5.8 After school zone safety installations near Uam Elementary School in Seoul

Source: Seoul's Seocho District Office, *The 2006 Basic and Execution Designs for School Zones in Seocho District*, 2006.


STOP

CHAPTER 6

Operation of School Buses for Children

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STOP

01
Introduction

Korean society is showing growing interest in school buses for children, particularly with regard to their safety. This reflects the unique status of school buses in the nation. Generally, they are not perceived as a means of long distance transport for students who live far from their school. Instead, they are commonly regarded as an essential mode of travel for preschool or elementary school children using day care facilities, private institutes, or sports centers. In Korea, it is a common for kids in urban areas to make multiple trips to private institutes by school/institute buses after studying at school.

The Korean government has been implementing various policy measures designed to increase the safety of school buses by accommodating the views of experts, parents and other related individuals. These measures have helped to significantly reduce the number of the fatalities as well as the number of accidents involving school buses.

This chapter aims to make policy suggestions that can help improve the operation of school buses by investigating the unique characteristics and operating features of school buses in Korea as well as various policies implemented to enhance the safety of school bus transportation.[1)]

02
Operation of School Vehicles for Children

School Vehicles for Children and Their Safety Management in Korea

Essentially, school buses are a means of transport that help with the mobility of elementary and secondary school students who have difficulty reaching their schools on foot, in a safe and environmentally friendly manner. In Korea, however, school buses are used more commonly as shuttle buses for traveling to and from kindergartens and nursery facilities like childcare centers as well as private teaching institutes, including those for art or athletic lessons. This is related to the educational enthusiasm of Korean parents, who have their children receive extracurricular lessons at private institutes. Another contributing factor is the increase in the number of dual-income households, which resulted in a rise in the number of preschoolers using nursery facilities. The children enrolled in such establishments mostly use school buses operated by those establishments. Because of such characteristics, many of the school buses in Korea are for preschool or elementary school children. Their operating hours range widely from school commute times to late night or early morning hours. The buses are run by the operators of private educational institutes.

In the late 1990s, the need to prevent traffic accidents among children was raised in earnest, bringing about the question of safety management for vehicles used in carrying children to schools and various private teaching institutes. Consequently, the government introduced a registration system for school buses used for carrying children under the age of 13. Under the

1) In general, the term que characteristics and operating features of school buses iregistered with police as school vehicles as well as those that have not completed such procedure. Specifically "school bus for children" refer to registered vehicles while "schools vehicles for children" refer to unregistered vehicles.

system, the operators of such vehicles are required to meet the relevant safety facilities and insurance conditions, and report their operation in advance to the pertinent authorities. Additionally the drivers of other vehicles are required to protect against accidents with school buses.

However, a large number of small-scale nursery facilities and private institutes continued to operate their vehicles without reporting them to the pertinent authorities. The operators found it burdensome to meet various required conditions related to the purchase and remodeling of vehicles as well as the employment of the driver and the assistant required to be aboard school buses. The government began to refer to them as school vehicles for children, differentiating them from formally registered school buses for children.

As a result of governmental efforts to ensure road safety for children, the number of accidents involving school vehicles dropped considerably. But in early 2013, two children were killed in separate accidents involving

Table 6.1 Reporting system for school buses for children

	Enforcement date	Policy background	Main contents
Reporting system for school buses for children	Aug. 30, 1997	Need to raise the safety of school vehicles used by a large number of children	• Introduction of a school bus registration system • Establish the duty of school bus operators and drivers • Establish the duty of motorists around school buses
Safety policy concerning unregistered school vehicles	Dec. 9, 2011	Need to prepare safety measures for unreported school vehicles for children	• Classifying unregistered school buses as school vehicles for children • Implementation of training for the drivers and operators of school buses and school vehicles for children • Drivers' duty to confirm the safety of children when assistant is not aboard
Introduction of strengthened safety measures, including mandatory registration system	Enforced from Jan. 29, 2015[2]	• National consensus on the need to strengthen safety measures for school vehicles for children • Follow-up measures to the May 3rd comprehensive safety measures prepared by the Prime Ministerles for children vehicles operated by private teaching insti	• Introduction of a mandatory registration system and relevant punitive measures • System and relevant punitive measurese Ministerles • Regulation for children to wear seat belts • Mandatory presence of an assistant aboard school buses • Establish provisions for strengthened safety education for school bus operators and drivers as well as punitive measures for those not receiving the required education • Provision of information concerning school bus-related violations and accidents

Figure 6.1 School buses and school vehicles for children

Source: National Police Agency, A safety education pamphlet for relevant officials

school vehicles, which further raised the level of attention the media and the government paid to the question of safety. Consequently, the presidential office organized a meeting of relevant government organizations to develop measures to ensure the safety of school vehicles. In May 2013, the government disclosed "comprehensive measures aimed at strengthening the safety of school vehicles for children." In January 2014, the Road Traffic Act was amended, establishing a new provision for a mandatory reporting system for school vehicles. This amended act is to be enforced from January 29, 2015.

School vehicles for children can be classified into three categories in terms of usage type: vehicles for traveling to and from facilities for preschoolers such as kindergartens and childcare centers; vehicles for commuting to elementary schools; and, vehicles for carrying children to and from private teaching institutes or sports facilities.[3]

In terms of regulations, school buses can be classified into two categories: "school buses for children" the use of which has been reported to the

2) To lessen the additional financial burden for small-scale teaching institutes, the duty to have an assistant aboard will be implemented from Jan. 29, 2017 for school buses with 15 or less seating capacity vehicles operated by private teaching institutes or sports facilities.

3) School buses for commute to middle and high schools are not handled in this report, as they are not used by children.

pertinent authorities, and "school vehicles for children" which have not been reported to the pertinent authorities as vehicles for carrying children.

Operational Status of School Vehicles for Children

The government agencies responsible for affairs related to school vehicles for children vary depending on the type of facilities operating the vehicles. This has resulted in the lack of statistics compiled in an integrated manner. At that, it is not mandatory for vehicle operators to report their operation to the pertinent authorities. So, while there are reliable statistics on vehicles reported to the authorities as "school buses," there are no trustworthy statistics compiled on the overall vehicles being used in carrying children to and from educational institutions.

Recently, government ministries conducted surveys of the children-related organizations under their administrative jurisdiction. They found that the organizations were using a total of 64,863 vehicles for transporting children. By facility type, 51% of the vehicles belonged to the establishments for preschoolers. Private teaching institutes and sports facilities accounted for 43.1%. Of all school vehicles for children, 52.6% or 34,133 vehicles were found to have completed the reporting procedures. As for the childcare

Table 6.2 Operation of school vehicles for children

Categories	Organizations	School vehicles for children	Reported school vehicles	Reporting ratio (%)
Childcare center	42,527	21,573	20,501	95.0
Kindergarten	8,538	11,475	6,059	52.8
Elementary school	5,895	3,267	2,713	83.0
Special school	155	563	429	76.2
Private teaching institute	77,014	18,991	4,018	21.1
Sports facility	13,439	8,994	413	4.6
Total	147,568	64,863	34,133	52.6

Source: 2012 surveys by the Ministry of Education (kindergartens, elementary schools, special schools, private teaching institutes), the Ministry of Security and Public Administration and (sports facilities), the Ministry of Health & Welfare (childcare centers)

centers, the reporting ratio reached 95%. In contrast, the reporting ratio of sports facilities fell short of 5%.

The statistics compiled through the recent government-administered surveys present a far smaller number of school vehicles for children than the previously estimated numbers. Most researchers, experts and pertinent officials had estimated the number to be around 200,000. Experts say that charter buses or other vehicles illegally used as school vehicles may have been left out of the statistics.[4]

03
Policies Related to the Protection of School Vehicles for Children

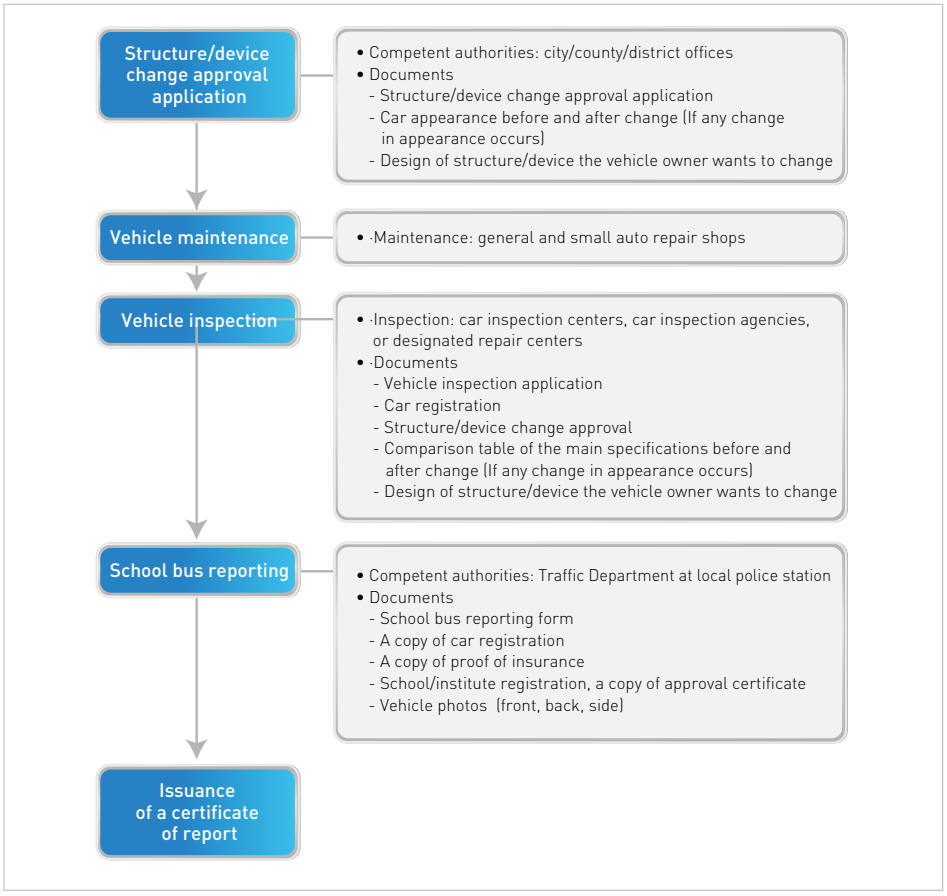
School Bus Registration System

The Road Traffic Act stipulates that any person operating a school bus for children should make a relevant report to the local police chief and that he/she should be issued with a certificate of report when completing the reporting procedures. Vehicles that can be reported as school buses for children are restricted to motor vehicles used for the transportation of children to and from educational institutes for children, such as kindergartens, childcare centers, and sports facilities. Such vehicles should have nine or more seating capacity.

Government ministries that have administrative jurisdiction over school vehicles for children vary depending on the facilities operating such vehicles. The ministries apply different standards in ensuring the safety of the

4) The Ministry of Education conducted a complete survey of school vehicles for children between April through July in 2013. The survey found the total number of school vehicles for children to be 60,691.

Figure 6.2 School bus declaration procedures



vehicles.[5)]

Of the various facilities, childcare centers are under particularly rigorous administrative control. The centers are required to register their vehicles used for carrying children with the pertinent government authorities. Those operating unregistered vehicles are issued with correction orders. If they do not follow the orders, they could be subject to business suspension. For

5) The Ministry of Education has jurisdiction over kindergartens, elementary schools, special schools, and private teaching institutes, while the Ministry of Health & Welfare controls nursery facilities. The Ministry of Culture, Sports and Tourism handles affairs related to sports facilities.

other facilities, there are no provisions that call for mandatory registration of school buses. A report on the operation of a school bus should be made to police station. To be issued with a pertinent certificate, the vehicle concerned should meet the standards related to the following three categories: safety requirements and the attachment of safety signs, car ownership, and insurance coverage.

Table 6.3 Qualifications for school buses for children

Categories	Qualifications
Safety apparatuses and signs	• Safety standards for school vehicles for children - Body color: yellow - Seat belt: seat belts adjustable to properly fit children - Entrance: steps suitable height for children - Lights: red and yellow warning lights on vehicle roof - Mirror: exterior cross-view mirrors • Child in vehicle signs attached to the upper right-hand corner of the front windshield and the bottom center of the rear windshield
Ownership	• Commercial vehicle owned by the facility operator • Charter bus contracted with the facility operator (only for kindergartens, childcare centers, and schools)
Insurance	• Covered by mutual aid cooperatives or special insurance for commercial auto operation • Liability insurance for accidents caused by a private bus while in operation

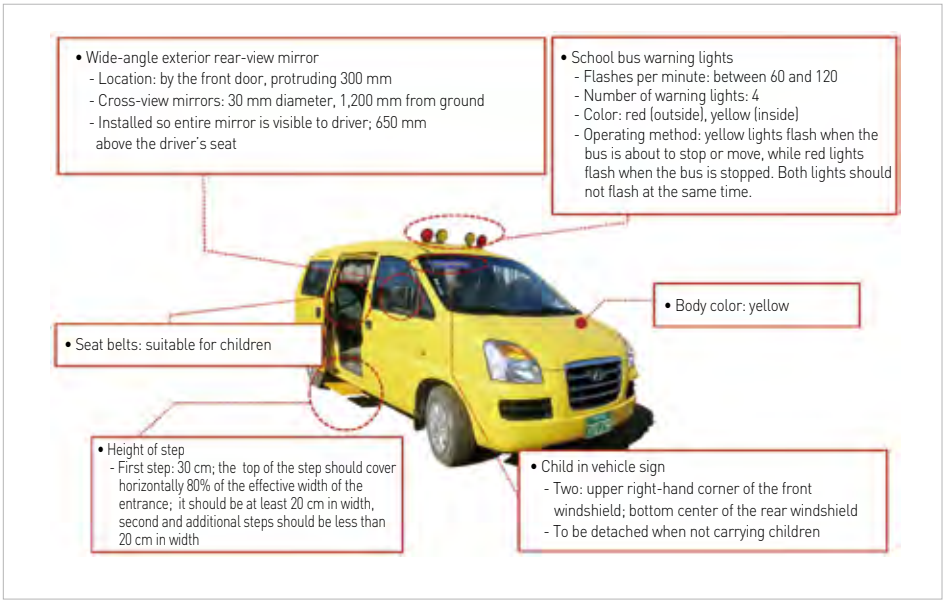
Vehicle Safety Requirements for School Buses for Children

To be official school buses, vehicles should satisfy the safety standards which have been formulated based on the physical characteristics of children. They should also be easily recognizable as school buses when viewed by other drivers.

A school bus for children ought to be equipped with an entrance step installed at an appropriate height so that children can safely board and exit. It must also have seat belts appropriately installed for children. Additionally, wide-angle exterior cross-view mirrors should be installed on school buses to ensure that the driver can see small children.

School buses should be painted yellow so that other drivers can easily recognize and drive accordingly. They are also required to have red and yellow warning lights installed on the roof. The lights are operated to indicate whether a school bus is stopped or whether it is about to stop or move.

Figure 6.3 School bus safety requirements



Duty of School Bus Operators and Drivers

School bus operators and drivers are required to receive periodical education aimed at enhancing their safety awareness. They should also observe various safety regulations related to vehicle operation.

Safety Education Requirement

Through the June 8, 2011 amendment of the Road Traffic Act, a new provision was established, requiring the operators and drivers of school vehicles for children to receive safety education. Relevant educational programs began to be implemented on Jan. 1, 2012. The school bus operators and drivers should receive the initial education within a year of operating the vehicles. Reeducation should occur every three years. The education is focused on the following contents: children's behavioral characteristics related to traffic safety, laws and regulations related to the operation of school buses,

Figure 6.4 Safety training certificates for school bus operators and drivers

For operator For driver

and case studies of major accidents involving school buses. Based on lectures and audio-visual presentations, the safety class lasts three hours.

After receiving the safety education, the operators and drivers are issued with a safety training certificate. The operators should place the certificate in a prominent location within the educational facility, while the drivers are required to keep it inside the vehicle.

Duty to Ensure Safe Operation of School Buses

There are duties related to school bus assistants and confirmation of safety during children's boarding and exiting. The operator of a school bus must arrange for an assistant to ride along. The assistant should make sure that the children are seated and wear their seat belts while the bus is moving. He/she should also help confirm whether children have arrived safely after exiting the bus. The driver ought to start driving the vehicle after checking whether the children are all seated and whether they have safely arrived after exiting the bus.

The drivers are also prohibited from displaying child in vehicle signs or

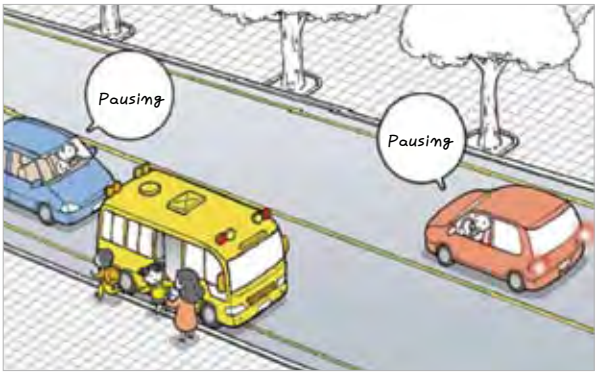
operating warning lights if there are no children on their bus.

Table 6.4 School bus duties of operators and drivers

Categories	Subjects	Duties	Penalties for violation
Assistant	Operator	• A person who can protect children should be on the bus	• Fines: 70,000 won for bus, 60,000 won for van
Safety check during boarding and exiting	Driver	• The driver should start driving the bus only after confirming that all children are seated and after checking whether they have arrived safely at locations such as a sidewalk or edge of road	• Fines: 70,000 won for bus, 60,000 won for van • Driver's license penalty points: 15
Ban on giving false signals		• Warning lights should be operated only when children enter or exit bus • Child in vehicle signs should be displayed only when bus is moving with children aboard	

Duties of Other Drivers to Drive Cautiously around School Buses for Children

Figure 6.5 Duty of other motorists around a school bus



The most dangerous moment for a school bus is when it stops for children to board or exit. To prevent possible accidents during such times, other drivers are required to abide by special regulations for the protection of children on school buses. Under the regulations, when a school bus for children operates warning lights to signal it will stop, the drivers of other vehicles in the same lane as the bus or in the lane just beside it should temporarily stop. Then, they should proceed slowly after confirming it is safe to do so.

The drivers of other vehicles are also prohibited from passing a moving school bus. This prohibition is to prevent other vehicles from inadvertently

causing the bus to suddenly stop or swerve thereby undermining its safety.[6]

Table 6.5 Duty of other motorists around school buses

Categories	Duty to temporarily stop and check for children	Ban on passing a school bus
Conditions	• When a school bus stops on a road and operates warning lights indicating children are boarding or exit the bus	• When a school bus is in motion while indicating children are aboard
Target drivers	• Drivers in the same lane as stopped school bus or in the lane just beside it • Drivers driving in the opposite direction on a road with no center line or along a two-lane road	• All drivers
Duty	• Such drivers should temporarily stop their vehicle before reaching the bus, then proceed slowly after checking for children	• Overtaking a school bus is prohibited
Penalties	• Fine: 50,000 won for buses, 40,000 won for passenger cars • Driver's license penalty points: 10 points	

04
Traffic Safety Related to School Buses for Children

Overview and Characteristics of School Bus Accidents

Overview of School Bus Accidents

During the most recent six years (2007-2012), the number of reported school bus accidents with child casualties amounted to 538. These crashes claimed the lives of 19 children and injured 1,098. Child casualties were reported from 17.5% of total accidents involving school buses during the period. Child deaths and injuries accounted for 25% and 19% of the total number of fatalities and injuries, respectively.

6) Additionally, people are banned from driving vehicles which have similar colors and signs as school buses if they are not legally registered as school buses. Violators are subject to fines of 50,000 won (buses) or 40,000 won (vans).

Table 6.6 Traffic accidents involving school buses (2007-2011)

Categories	Total traffic accidents involving a school bus			School bus accidents with child casualties					
	Accidents	Killed	Injured	Accidents	Ratio (%)	Killed	Ratio	Injured	Ratio (%)
Total	3,081	76	5,679	538	17.5	19	25.0	1,098	19.3
2007	648	21	1,237	117	18.1	7	33.3	271	21.9
2008	612	21	1,172	110	18.0	3	14.3	201	17.2
2009	563	14	978	94	16.7	3	21.4	174	17.8
2010	452	10	812	72	15.9	2	20.0	142	17.5
2011	432	5	800	81	18.8	2	40.0	181	22.6
2012	374	5	680	64	17.1	2	40.0	129	19.0

Source: Road Traffic Authority's Traffic Accident Comprehensive Analysis Center

The school bus accidents that caused child casualties may be classified into two categories: the accidents in which the bus driver is the offender (first party) and those in which the bus driver is the victim (second party). In all of the 19 accidents that led to child fatalities, the bus driver was found to be the first party. As for the accidents that caused injuries among children, the bus driver was shown to be responsible 52.5% of the time. The bus driver was the victim in 47.5% of the accidents.

Table 6.7 School bus accidents with child casualties (2007-2012)

Categories	Killed					Injured				
	Killed	1st party		2nd party		Injured	1st party		2nd party	
		Killed	Ratio (%)	Killed	Ratio (%)		Injured	Ratio (%)	Injured	Ratio (%)
Total	19	19	100	0	0	969	509	52.5	461	47.5
2007	7	7	100	0	0	271	127	46.9	144	53.1
2008	3	3	100	0	0	201	107	53.2	94	46.8
2009	3	3	100	0	0	174	89	51.1	86	49.4
2010	2	2	100	0	0	142	77	54.2	65	45.8
2011	2	2	100	0	0	181	109	60.2	72	39.8
2012	2	2	100	0	0	129	69	53.5	60	46.5

Characteristics of School Bus Traffic Accidents

By month, school bus accidents occur the most in April. They account for

12.8% of the total. April is followed by May (12.3%), July (9.9%), December (8.9%) and October (8.4%). About a quarter of the school bus accidents occur in April and May, the spring months after the start of the new semester.

Table 6.8 Monthly statistics on school bus accidents with child casualties (2009-2012)

Categories	Total	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Accidents	203	11	13	13	26	25	15	20	15	16	17	14	18
Ratio (%)	100	5.4	6.4	6.4	12.8	12.3	7.4	9.9	7.4	7.9	8.4	6.9	8.9
Killed	9	0	1	1	0	1	0	2	1	1	0	0	2
Ratio (%)	100	0.0	11.1	11.1	0.0	11.1	0.0	22.2	11.1	11.1	0.0	0.0	22.2
Injured	344	27	24	14	36	39	31	34	21	17	25	30	46
Ratio (%)	100	7.8	7.0	4.1	10.5	11.3	9.0	9.9	6.1	4.9	7.3	8.7	13.4

By day of the week, Monday accounted for the largest number at 23.6%, followed by Wednesday (20.7%), Thursday (16.7%) and Friday (16.3%).

Table 6.9 School bus accidents by day of the week (2009-2012)

Categories	Total	Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
Accidents	203	7	48	29	42	34	33	10
Ratio (%)	100	3.4	23.6	14.3	20.7	16.7	16.3	4.9
Killed	9	0	2	3	1	1	2	0
Ratio (%)	100	0.0	22.2	33.3	11.1	11.1	22.2	0
Injured	344	12	102	38	56	60	64	12
Ratio (%)	100	3.5	29.7	11.0	16.3	17.4	18.6	3.5

By time of day, the largest percentage of accidents, 34.5%, occurred between 4 PM and 6 PM. The next accident-prone times of day were afternoon school commute hours between 2 PM and 4 PM (26.6%), and a two-hour span after school from 6 PM to 8 PM (16.7%). These statistics indicate that many school buses are being used for purposes other than children's school commute.

Table 6.10 School bus accidents by time of day (2009-2012)

Categories	Total	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Accidents	203	0	0	0	2	24	4	9	54	70	34	4	2
Ratio (%)	100	0	0	0	1.0	11.8	2.0	4.4	26.6	34.5	16.7	2.0	1.0
Killed	9	0	0	0	0	1	0	0	2	3	2	1	0
Ratio (%)	100	0	0	0	0	11.1	0	0	22.2	33.3	22.2	11.1	0
Injured	344	0	0	0	4	61	8	11	96	106	48	6	4
Ratio (%)	100	0	0	0	1.2	17.7	2.3	3.2	27.9	30.8	14.0	1.7	1.2

The most frequently cited offense in school bus accidents is dangerous driving. It accounted for 57.1% of the total school bus accidents that caused child casualties between 2009 and 2012. The violations cited the second and third most frequently were endangering pedestrian (11.3%) and traffic signal violations (9.4%).

Table 6.11 School bus accident statistics by violation (2009-2012)

Categories	Total	Crossing center lane	Traffic signal violation	Tailgating	Dangerous driving	Intersection violation	Endangering pedestrians	Other
Accidents	203	8	19	10	116	9	23	18
Ratio (%)	100	3.9	9.4	4.9	57.1	4.4	11.3	8.9
Killed	9	0	0	0	7	0	1	1
Ratio (%)	100	0	0	0	77.8	0	11.1	11.1
Injured	344	21	55	26	149	23	23	47
Ratio (%)	100	6.1	16	7.6	43.3	6.7	6.7	13.7

Case Studies of Children Killed or Injured in School Bus Accidents

This report analyzed the causes, situations and implications of 148 school bus accidents that caused child deaths or inflicted injuries on children requiring at least three weeks of treatment where the bus drivers were the parties responsible for the crashes.

These accidents were classified into the following four categories

according to types of victims: i) children who were exiting or finished exiting from buses; ii) occupants of school buses or other automobiles; iii) child pedestrians; and, iv) bicycle occupants.[7] Among these groups, pedestrians accounted for the largest portions in numbers of accidents and fatalities. The rate of fatal accidents among total accidents was the highest among children exiting school buses when 6 fatalities occurred in 19 accidents.

Table 6.12 Traffic collisions by victim type

Categories	Accidents		Killed		Injured	
	Frequency	Ratio	Frequency	Ratio	Frequency	Ratio
Total	148	100.0	17	100.0	145	100.0
Pedestrians	95	64.2	9	52.9	88	60.7
Students exiting/ exited school bus	19	12.8	6	35.3	13	9.0
Automobile occupants	22	14.9	0	0.0	34	23.4
Bicycle riders	12	8.1	2	11.8	10	6.9

A total of 19 accidents occurred involving occurred when they were exiting or finished exiting school buses. From the accidents six were killed and 13 others injured. Of these 19 accidents, 10 took place while children were exiting buses. The other nine occurred after children fully got off their bus. Of the 10 exiting passengers, eight suffered accidents as their clothes were caught in the school bus door. The other two were different kinds of accidents. The overview and causes of these accidents are presented in Table 6.13.

Of the nine accidents that occurred after exiting, six took place while the children were crossing the street in front of the buses. The other three involved children who stayed near the school buses after exiting from them.

7) As for the group ii), both school bus occupants and occupants of other cars were counted, because it was impossible to tell whether the car occupants were riding school buses or not based on the avaliable statistics.

Table 6.13 Examples of accidents occurring while exiting school buses

Type		Contents
Clothes caught in door	Accident overview	• Accident occurred as the drivers started driving without knowing that the victims hile were different kinds of accidents. • The victims were run over by the buses or dragged along the road.
	Accident causes	• The victims ranged from six to nine years old. It is difficult for the driver to correctly confirm whether children have fully exited the bus because to their small size and possible blind spots. • Even when a child's clothes are caught in the door, it is difficult for the driver to become aware of it due to the door design. Sometimes, children exit the bus and close the door themselves without the help of the driver, an assistant or any other guardian. These factors increase the possibility of accidents occurring.
	Accident locations	• Accidents occur on various types of roads, mainly on downtown streets or intersections. • Busy roads that have no shoulders or sufficient spaces for parking or stopping. These conditions make it difficult for a school bus to remain stopped for sufficiently long time. • Places that have neither a separate sidewalk nor sufficient space where the bus can remain stopped. • Locations where the driver becomes distracted and cannot secure sufficient visibility due to parked vehicles, signboards, trees and various other installments such as street lights and power poles.
Other exiting accidents		• A child got up from their seat before the bus stopped and due to inertia was thrown out of the vehicle when the door opened. • The other accident involved a child who slipped on the step while exiting the school bus.

Table 6.14 Examples of accidents occurring after exiting school buses

Type		Contents
Accidents involving children crossing a road after exiting	Accident overview	• The driver of a school bus did not see children walking in front of the vehicle to cross a road after exiting the bus. • The children were killed or injured after being hit or run over by the bus.
	Accident causes	• The driver and the assistant aboard the bus did not fulfill the duty to confirm whether children arrived at safely after exiting the bus. The driver neglected to carefully look ahead and the surrounding road conditions while driving. • The victims were children aged between 3 and 6. From their seats within school buses, drivers may fail to notice such small children attempting to cross roads directly in front of them. Behavioral characteristics of children make it difficult to avoid injuries in such accidents, even if the drivers manage to find children attempting to cross the roads after exiting the bus.
	Accident locations	• Such accidents most occur on alleys in residential districts or side roads in commercial districts that have no center lines. The roads are mostly narrow and do not have separate sidewalks. • On such narrow roads, children tend to think that they can quickly cross them. So, they attempt to cross the roads even if they see approaching vehicles. In residential districts, children attempt to cross alleys upon getting off the bus, in order to quickly go home. • There are often walls or buildings located along the roadsides, as well as illegally parked cars, signboards or other installations on road edges. • These conditions make it difficult for drivers to secure sufficient visibility, thus failing to confirm children's locations or to take proper action when children dart out.
Accidents involving children who remained near the school bus after exiting	Accident overview	• The accidents occurred as the drivers failed to see victims who stayed after exiting their vehicle.
	Accident causes	• When driving a school bus after children exit the vehicle, the driver is required to confirm whether children have safely arrived after leaving the bus. In these accidents, drivers acted hastily, inflicting injury on the victims. • Given the characteristics of vehicles, it is difficult to find children located in blind spots with a simple check.

Figure 6.6 School bus accident illustrations

Clothes caught in the bus door

Crossing the road in front of the bus after exiting

05
Policy Achievements and Limitations

Policy Achievements

Korea has pursued safety measures for school buses for children more rigorously than any other country in the world. For example, it has imposed restrictions on private-sector establishments such as teaching institutes and sports facilities. It has also applied tough safety standards, including a provision that the vehicle should be painted yellow. The government's strong will to ensure the safety of school buses, as manifested in these measures, has led to positive results. In 2012, the child deaths and injuries from school bus accidents numbered five and 680, respectively. The numbers were cut in half and by three quarters, compared with 2010 and 2007, respectively. School bus accidents and the relevant losses are dwindling at faster rates than overall traffic accidents involving children.

Table 6.15 Traffic accidents involving children and accidents involving school buses for children (2007-2012)

Categories	Traffic accidents involving children			Traffic accidents involving school buses for children		
	Accidents	Killed	Injured	Accidents	Killed	Injured
2007	15,642	179	19,167	648	21	1,237
2008	14,930	138	18,404	612	21	1,172
2009	14,980	136	18,370	563	14	978
2010	14,095	126	17,178	452	10	812
2011	13,323	80	16,323	432	5	800
2012	12,497	83	15,485	374	5	680
Average annual growth rate (%)	-4.5	-15.4	-4.3	-10.4	-25.0	-11.3

Source: Road Traffic Authority's Traffic Accident Comprehensive Analysis Center

School vehicles for children in Korea are significantly different from school buses in other countries in terms of passengers and operating conditions. According to relevant studies, the number of school buses in operation per unit area in Korea is predicted to be 10 times as high as that of the United States. Given the irregularly placed bus stops and the significantly short distances between stops, the perceived presence of school buses is likely to be much greater in Korea.

Consequently, Koreans general pay close attention to the safety of school vehicles for children. The government has so far made remarkable achievements with regard to the safety of said buses. However, it continues to pursue a new safety paradigm. It aims for zero child fatalities related to school buses. Vehicles used for carrying children are subject to strengthened safety standards, regardless of their purpose or types. The government places the utmost emphasis on minimizing blind spots in safety management. Under this policy, it has adopted a mandatory registration system for school vehicles for children. It has also begun implementing more rigorous safety education programs for school bus operators and drivers, and strengthened vehicle safety standards and accountability over offenses and accidents. Additionally, it has made it mandatory for the operator of a school bus to arrange an assistant to ride with children on the bus.

Policy Limitations and Suggestions for Improvement

School buses for children in Korea are basically different from those of other countries. Thus, the methods for addressing problems cannot be the same. Furthermore, there are various restrictions that must be overcome in order to enhance the safety of school vehicles for children.

Against this backdrop, this paper presents the following suggestions. First, the question of school vehicle safety should be approached in terms of governance. Currently, private organizations like teaching institutes and day care facilities assume the full responsibility for safety management of school vehicles and are required to fulfill all the related duties. Now it is the time for state and local governments to provide financial support regarding the purchase and remodeling of vehicles and the employment of relevant personnel. Second, it is necessary to establish two-track policies of public and private educational sectors in relation to the nature of education commutes and operation types. With regard to this, the government needs to think about the possibility of expanding the school bus policy to cover middle and high school schools as well.

Lastly, there is a need to address problems related to the relatively large number of school vehicles in operation, the extensive range in terms of operating hours, and the irregular stops. Specifically, the government could consider implementing the following measures: improving the visibility of school buses, reducing the number of school buses, strengthening safety standards, readjusting school bus routes and formulating guidelines on installing formal school bus stops and introducing a zone-based joint operation system.

CHAPTER 7

Civic Activities for Children's Road Safety

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STOP

01
Introduction

Reduction in child road casualties in Korea cannot be discussed without mentioning the role and achievements of civic organizations. The nation's civic groups (including volunteer organizations) related to road safety can be broadly classified into the following three categories.

First, there are groups that have been established in accordance with necessity felt by public-sector organizations such as police or schools. Typical examples of such groups are the Korea Green Mothers Society and the Korea Best Driver Association. The former has its origin in mothers groups in elementary schools, while the latter is related to police. These groups actively participate in various government activities and play a leading role in launching road safety campaigns. In return, they receive direct and indirect support from the government.

The second category refers to civic organizations that have been formed by people who have suffered the pain of losing their children in safety accidents. The most prominent groups in this category are the Korea Association for Children's Traffic Safety and the Korea Child Safety Foundation. Characterized by devotion and hard work, members of these groups spend their own money and exert efforts to secure road safety for

children.

Third, there are groups formed based on social necessity of addressing the problem of road accidents involving children. Organizations like Green Transport, Safe Kids Korea, and the Kids Safety School belong to this third category.

These civic groups make policy suggestions related to transportation, raise child road safety issues, and participate in volunteer service programs for prevention of traffic accidents.

This chapter is devoted to reviewing the birth and development of major civic organizations, and examining their road safety activities as well as their contribution to reducing child road deaths in the nation.

02
Birth and Development of Civic Groups

Birth of Civic Groups

In June 1969, a group called Mothers for Road Safety Guidance was formed at a number of elementary schools. It was the predecessor of the Korea Green Mothers Society. In December 1971, the Green Mothers and Korea Best Driver associations were formally launched in six metropolitan cities, including Seoul, under the auspices of the Bureau of National Security, the predecessor of the current National Police Agency. Upon their inauguration, the associations began road guidance activities for children traveling to and from school, and staged civic campaigns for traffic order.

In the 1980s, civic organizations dedicated to road safety for children began to appear. The most prominent examples are the Korea Association for Children's Traffic Safety, Green Transport, and the Coalition for Transportation Culture were all established in June 1991. Their establishment was followed by the inauguration of the Citizens' Coalition for Safety and

Figure 7.1 Korea Green Mothers Society and Korea Best Driver Association participating in a road safety campaign

the Road Safety Research Institute for Children, civic organizations equipped with expertise in road safety for children, in May 1995.

In the 2000s, a number of other groups working for children's road safety were created, such as Safe Kids Korea, Korea Child Safety Foundation, Korean Association for Safe Communities, and Kids Safety School. These groups implemented various activities aimed at preventing child road casualties while stepping up efforts to increase cooperation with relevant international organizations.

Development of Civic Groups

Civic groups related to children's road safety acted separately, implementing activities appropriate for their respective characteristics. During presidential, parliamentary and local elections, they joined forces to exert a collective effort for improving government policies and a legal and institutional framework for children's road safety as well as expansion of the road safety

budget for children.

In particular, they pressured presidential, gubernatorial and mayoral candidates to make pledges of reform aimed at slashing child road casualties by half, expanding the organizational structure for children's road safety, increasing the relevant budget, etc.

These groups became increasingly recognized for their efforts to improve road safety for children. As a result, they could build an organic cooperation system with the government and receive support from the industrial community, particularly from such companies as Hyundai Motor Co., Hyundai Marine & Fire Insurance Co., and Samsung Fire & Marine Insurance Co. Amid such developments, they kept expanding their presence in society, being in the vanguard of national endeavors to prevent road traffic accidents involving children.

Consequently, the Korea Green Mothers Society has established itself as the foremost civic organization with 530,000 members. The other groups such as the Citizens' Coalition for Safety, the Korea Child Safety Foundation, the Korean Association for Safe Communities, and the Kids Safety School have also made steady progress, while being favorably recognized by the state and society.

03
Major Civic Groups and Their Activities

Korea Green Mothers Society

Character

A non-profit volunteer service organization registered with the National Police Agency, with about 530,000 members nationwide, mostly parents of elementary school students.

Main Activities

- There are about 5,700 branches of the association, formed at elementary schools throughout the nation. Every day, 530,000 members conduct guidance activities along school routes to ensure children's safe travel to and from school.
- The association hosts a diversity of events like the Traffic Accident-free Campaign for Children, actively publicizing the seriousness of road crashes involving children as well as specific prevention methods.
- The association searches for risk factors along the roads around schools, and report them to the relevant authorities for improvement. It also conducts road safety training at schools, thereby contributing to significantly reducing child traffic casualties.
- By actively participating in various campaigns designed to promote road safety, establish traffic order, and prevent driving drunk, the association is playing an important role in protecting the public from traffic accidents.
- During presidential, mayoral and gubernatorial elections, the association plays a leading role in pressuring the candidates to adopt pledges of reform for road safety for children.
- Association members are actively participating in international events like the Olympics and the FIFA World Cup as well as local events, thereby helping to ensure successful staging of such events and establish an advanced transportation culture in the nation.

Korea Best Driver Association

Character

A non-profit volunteer service organization registered with the National Police Agency, with about 55,000 members, mostly commercial vehicle drivers.

Main Activities

- Association members volunteer to serve as road traffic helpers during commute hours in congested areas, thus helping to ensure smooth traffic flows and prevent accidents.
- The association actively participates in various activities designed to prevent road accidents involving children. Its members abide by the principle of safe driving and encourage people around them to join in endeavors to reduce child casualties from road crashes.
- The association actively participates in various events aimed at improving road safety for local residents as well as campaigns for preventing drunk driving.
- Association members actively participate in local and international events, conducting activities to control vehicle entry and exit and ensure pedestrian safety.
- Along with the Korea Green Mothers Society, the drivers' association plays a leading role in pressuring candidates to adopt pledges of reform for road safety for children during presidential, mayoral and gubernatorial elections.
- The association reports to the competent authorities accident-prone locations along routes children use when traveling to and from school, and implements activities designed for establishing an advanced transportation culture in local communities.

Citizens' Coalition for Safety

Character

A non-profit organization registered with the Ministry of Employment and Labor. With about 20,000 members, the coalition is one of the nation's most active civic groups dedicated to promoting children's road safety.

Main Activities

- Around the end of January every year, the association hosts a children's

safety fair in conjunction with the Ministry of Security and Public Administration and Hyundai Motor Co., offering chances for children to experience various programs designed to prevent road traffic accidents.

- Together with the ministry and the motor company, the coalition holds online and offline children's quiz contests from March through May, helping to increase road safety awareness among children and parents and providing them with specific ways of learning safety training skills.
- Road safety training instructors are selected group of mothers who tour kindergartens and elementary schools throughout the nation, teaching students safety skills. About 800,000 children a year are given chances to receive safety training through this program.
- The coalition conducts experience-oriented training for about 200,000 children a year by using the traffic parks it operates in approximately ten areas.
- Together with Hyundai Motor Co., the coalition implements a road safety

Figure 7.2 Angel's Wing Campaign

Minister of Land, Infrastructure and Transport SUH Seoung-hwan, poses for a photo with SONG Ja, head of the Citizens' Coalition for Safety, and Hyundai Motor Co. President CHUNG Jin-haeng after participating in an Angel's Wing Campaign event.

training program using animated characters from the Robocar Pol Road Safety Class. It also stages the Angel's Wing Campaign designed to install protective equipment on school buses.

- In addition, the coalition appeals the National Assembly for legislative action for improvement of road safety for children, holds policy forums, and implements programs to support the child victims of road accidents.

Korea Child Safety Foundation

Character

A non-profit corporation that pursues the vision of creating a world in which children can run around freely and safely.

Main Activities

- Car Seat Project: The foundation distributes child car seats free of charge to low-income and socially alienated families with a car and a child below the age of 4.
- Safety Education Project: The foundation operates an experiential safety training project for children who cannot afford to visit safety training centers due to various difficulties. Under this program, experts visit such children and implement an experience-oriented safety training program. Focusing on practical activities related to school, home, fire, disaster, play, road safety, etc., this program is designed to help children develop thorough safety awareness as well as the capacity to minimize the damage from accidents.
- Safety Culture Project: The coalition stages various campaigns concerning such issues as child car seats, walking on the right side of sidewalks and crosswalks, prevention of drowning accidents, and search for missing children.
- Research & Development: The coalition holds children's safety seminars and implements research on the usage of car seats as well as the effects of safety education for children. Additionally, it conducts safety checks and

safety training for child welfare facilities, implements safety checks for youth training facilities, and hosts an overnight safety camp for children.

Korean Association for Safe Communities

Character

A non-profit organization specializing in research, surveys, education and civic campaigns for the purpose of ensuring that all the citizens can be protected from accidents to live safely and happily.

Main Activities

- Various activities to ensure road safety, such as the Slow Campaign staged together with Kia Motors Corp. to prevent school zone accidents.
- Child safety-related government activities, presenting policy suggestions to improve safety for children.
- Training for children, parents and teachers in order to enhance their safety awareness, while nurturing safety training experts.
- Research and academic activities to improve expertise in the field of living a safe life.
- Campaigns for safety improvement.
- Publication and PR projects designed to propagate safety knowledge.
- Various projects to promote exchanges and cooperation with safety organizations at home and abroad.
- Other activities, including counseling on methods and materials necessary for safety improvement.

Kids Safety School

Character

A non-profit organization registered with the Ministry of Security and Public

Administration. It implements on and offline safety education for prevention of accidents involving children, produces safety instructors, and conducts research on safety policy for children. It has 10,000 members.

Main Activities

- Promote the enactment of children's safety ordinances by the nation's 230 autonomous administrative bodies in order to expand the budget, organization and activities related to safety for children.
- Produce safety training instructors through a system of awarding safety training certificates to persons who pass a relevant exam after completing a 32-hour safety education course.
- Propagate accident prevention methods through a children's song contest related to road traffic safety.
- Promote safety education at home by providing safety training programs for preschool kids and their parents in conjunction with Hyundai Marine & Fire Insurance Co. Those completing the program are issued with a certificate,

Figure 7.3 A children's road safety song contest

Children give a performance during a road safety song contest organized by Kids Safety School and Hyundai Marine & Fire Insurance Co.

which can be submitted to school when the kids enter elementary schools.

- Lower the risks of accidents for children by implementing safety training programs at kindergartens, nurseries and elementary schools, improve risk factors along the routes to school, and conduct school safety inspections.
- Conduct safety training for children based on actual cases by holding a safety camp jointly with Hyundai Marine & Fire Insurance Co.
- Conduct experience-oriented safety sessions at elementary schools. Training is conducted by professional instructors using relevant educational tools such as traffic signals and crosswalks installed at a space crated by merging several classrooms into one.
- Implement a cyber education program on road traffic safety for preschool and elementary school children. Children completing the program are issued with a children's safety school graduation diploma.

Safe Kids Korea

Character

Safe Kids is the world's only international safety organization for children, founded by the U.S. Children's National Medical Center in 1987. It has 28 partners around the world. One of the partners is Safe Kids Korea, which has been leading efforts for children's safety since its inauguration in 2001.

Main Activities

- A safety instructor certificate issuance program in conjunction with the Korea Education Training Institute.
- Safety Keepers program designed preparing volunteer workers for children's safety.
- A campaign for crossing roads while holding hands with moms, as part of an experience-oriented training program to teach children safe road crossing skills.
- Safety 365 Campaign designed to emphasize the need for children to live in

a safe environment.

- A bicycle safety program under the Safe Kids Zero One Craft cycling safety research agreement.
- The Happy School Campaign together with Samsung Fire & Marine Insurance Co.
- Various other activities aimed at preventing accidents involving children, such as the Angel Eyes Campaign, the Safe Seoul Fair, a cycling certificate test, and the Child Seat Belt Campaign.

Green Transport

Character

A non-profit organization specializing in a civic movement for improving public health through the use of eco-friendly transportation as well as safeguarding the ecosystem from the effects of global warming.

Main Activities

- The organization implemented the Safe Routes to School Campaign based on research of risk factors, problems and improvement measures in relation to children's travel to and from school.
- The organization produces road safety training instructors and implements a safety training program for children at kindergartens and elementary schools.
- Declaring the pedestrians' right to walk safely, the organization proposed implementing a pedestrian policy focused on the needs of the mobility impaired. The proposal was eventually adopted by the government.
- The organization staged various pedestrian safety campaigns that resulted in the installation of crosswalks at the Gwanghwamun intersection in Seoul, and the establishment of pedestrian walkways along a number of national and local highways.
- The organization also conducted various other activities for the construction of environment-friendly transport systems.

Road Safety Research Institute for Children

Main Activities

- The institute selects mothers willing to actively participate in campaigns for prevention of road accidents involving children. After undergoing an appropriate training course, these mothers are certified as road safety instructors, and entrusted with safety education programs for kindergartens and elementary school children.
- The institute builds a system to provide various types of safety education via the internet, and implements a cyber education program. Those completing a training course under the program are issued with relevant certificates (www.go119.org).
- The institute implements their Walking School Bus program in which children walk to and from school under the guidance of volunteer workers.

04
Major Activities

Safe School Travel

Members of the Korea Green Mothers Society, mostly mothers of elementary school children, serve as crossing guards to ensure children's safe traveling to and from school every day.

Safety Instructor Training and Implementing a School Education

Safety instructor candidates are picked from among mothers willing to actively participate in campaigns to reduce child road casualties. After

undergoing required courses and passing a test, they work as professional instructors to teach children road safety skills.

Entrusted by the Employment and Labor Ministry's Research Institute for Vocational Education and Training with the task to produce traffic safety instructors, the Kids Safety School has issued about 6,500 instructor certificates since 2009. Currently, about 1,000 of these mothers trained as traffic safety instructors tour elementary schools, kindergartens, nursery facilities and local children's centers to conduct road safety training programs for children. Instructors provide road safety education to more than a million children nationwide.

School Visiting Programs

Instructors visit schools to implement road safety education programs for children. They use a diversity of educational tools to teach students the meaning of traffic lights, how to use crosswalks, etc. For this education, the Korea Child Safety Foundation and the Kids Safety School use a bus equipped with various apparatuses for experience-oriented road safety education.

The Citizens' Coalition for Safety is implementing various road safety education programs, including a children's road safety quiz contest, which is jointly organized by the coalition, the Ministry of Security and Public Administration, and Hyundai Motor Co.

Building Experience-Oriented Road Safety Education Facilities for Children

A growing number of children's traffic parks are being constructed to provide opportunities for children to ride cars on an open lot typically measuring 6,600 square meters and learn about causes of traffic accidents as well as how to prevent them. Currently, there are 65 traffic parks nationwide.

Every year, the traffic parks provide opportunities for more than 1 million children to receive experience-oriented road safety education, thereby helping them to develop the capacities to cope with various types of traffic accidents.

Walking School Bus

Concept

Under the Walking School Bus system, children walk to and from school in groups, instead of traveling alone, under the guidance of trained helpers. Stations are built at regular spaces along the main routes children use when commuting to school. Children are picked up at the stations when traveling to school, and taken to the stations after school. Additionally, children are taught road safety skills while traveling on the Walking School Bus.

Purpose

Volunteer workers escort children to and from school, and teach them how to cross roads safely and other road safety skills, thereby preventing the risks of children suffering accidents while traveling to and from school.

Targets

Elementary schools first and second graders

Execution Method

- Implementation of a survey on the risk factors along the routes children use when traveling to school.
- Drawing traffic safety maps centered around the main and rear gates.
- Determining the system operation sections, station locations, and station departure and arrival times.
- Identifying the status of volunteer helpers and children by route.
- Production and provision of a manual on the contents of education to be provided by volunteer helpers as well as the operation of the Walking

School Bus.

Walking School Bus Operating Guidelines

- One Walking School Bus carries around 10 children.
- One route has five to six stations.
- Children stand in two lines with helpers at the front and back.
- Children are told how to walk safely along residential roads.
- Children cross a road in three to four lines. Before crossing a road, they are taught about the safety of walking on the right side of crosswalks, the reason and appropriate method for raising a hand while crossing, and making eye contact with drivers.
- Walking School Bus arrival times at each station are notified to children by route.
- Monthly tickets are given to the children. The pass gets punched when using the Walking School Bus. Gifts are then given to children who use all

Figure 7.4 A Walking School Bus taking children to school

An increasing number of schools are adopting the Walking School Bus system, which was first implemented at Hyoje Elementary School in Seoul on May 31, 2010. The photo shows Minister of Public Administration and Security MAENG Hyung-kyu, Vice Education Minister LEE Joo-ho, and MO Gang-in, deputy head of the National Police Agency, serving as volunteer helpers after the Walking School Bus inauguration ceremony.

their monthly tickets.

Making Proposals on Traffic Safety Policy for Children

Various policies and systems regarding children's road safety have been proposed to the Ministry of Security and Public Administration and other ministries, inducing their adoption official government policies. For example, the government has accepted the following policy suggestions from civic groups: police officer-to-school matching system, the Walking School Bus, rigorous enforcement of traffic regulations within school zones, imposition of heavier penalties against offenses within school zones, expansion of school

Figure 7.5 A Presidential Briefing on road safety measures for children

HUH Eok, secretary general of the Citizens' Coalition for Safety, briefs President ROH Moo-hyun on plans to provide road safety education for children in 2003.

※ In 2003, HUH Eok, secretary general of the Citizens' Coalition for Safety, made the following three proposals to President ROH Moo-hyun which were later adopted as government policies: First, implementation of 3E (Education, Engineering, Enforcement) policies. The 3E policies aim to strengthen road safety education for children, expand road safety facilities, and enforce traffic safety rules and systems in a more rigorous manner. Second, the President should promote safety activities for children by establishing a relevant organization within the presidential office. Third, expansion of school zone and other road safety budget for children.

zone budget, and reinforcement of road safety education for children.

By making various suggestions to the National Assembly, civic organizations have contributed to enacting laws related to the strengthening of protective regulations for school buses and intensifying road safety education for children.

During presidential, parliamentary, gubernatorial and mayoral elections, civic groups push candidates to make pledges to reinforce road safety policies for children and to faithfully implement them after being elected to their desired posts.

Meetings with the President, lawmakers or heads of local governments were used as occasions to make proposals concerning road safety policies for children.

05
Achievements and Future Tasks

Achievements of Civic Organizations

As explained above, civic organizations in Korea have implemented numerous activities aimed at ensuring road safety for children, contributing significantly to reducing child road casualties. Aware of the importance of such civic movements, the government has formed partnership with civic groups and jointly carried out various projects for the prevention of road accidents involving children.

During the 2002 presidential election, candidate ROH Moo-hyun pledged that if elected, he would strive for 50% reduction in safety accidents involving children. He made the pledge by accepting a proposal from the community of civic organizations. A couple of months after his inauguration, ROH declared 2003 as the "first year for Korea to launch efforts to secure children's safety." He then disclosed a plan to slash child fatalities from

accidents by half during his tenure. Under his presidency, the government exerted great effort to improve safety conditions for children. Consequently, safety accidents involving children declined by 48% during the five years when he was in office.

During his election campaign, LEE Myung-bak, who succeeded ROH as president, also promised to strive for a 50% reduction in traffic casualties. After inauguration, he included the pledge in 100 most important state administrative tasks, and continuously supported activities to decrease road accidents.

As a result of the accident prevention activities launched both by the private and public sectors, the number of child road deaths, which hovered around 1,600 in the 1990s, went down drastically to about 80 in 2013.

In a span of just 20 years, child fatalities from road accidents were cut by over 95%. To a considerable extent, such a remarkable achievement is attributable to the civic groups' hard work and dedication to the national endeavor for road safety for children.

Future Tasks

Despite the dramatic decrease in the number of child traffic deaths, children still face a high risk of pedestrian accidents. Pedestrian fatalities account for over 60% of the number of children killed in accidents in Korea. This demonstrates the need to strengthen traffic safety facilities within school zone as well as road safety training at schools.

Parents are worried that their children might become a victim, yet are not fully aware of the importance of road safety education at home and do not know much about proper methods to teach their children traffic safety skills. This indicates the need to provide more road safety education at home.

In Korea, pedestrian accidents account for over 70% of preschool kids killed on roads. As far as this category is concerned, the nation is still comparable to underdeveloped countries. To address this problem, road

safety education at nursery schools and kindergartens needs to be intensified. Case-based teaching methods ought to be used for the education, which should be given not only to children but their parents as well.

Korea could take its cue from France, which is implementing a road safety education certificate system. Under the French system, both preschool kids and their parents are required to receive education on road safety. Those completing the required courses are issued with a certificate, which should be submitted to elementary schools along with a vaccination certificate. Korea needs to expeditiously implement such a certificate system.

Implementing the system will surely provide an occasion for parents to become more interested in road safety and to provide traffic safety education for their children at home.

Now is the time for the nation to aim for "zero traffic fatalities among children" through concerted efforts of homes, schools, the society and the government.

CHAPTER 8

Child Traffic Accident Reduction Targets and Future Policy Directions

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STOP

01
The National Transportation Safety Master Plan

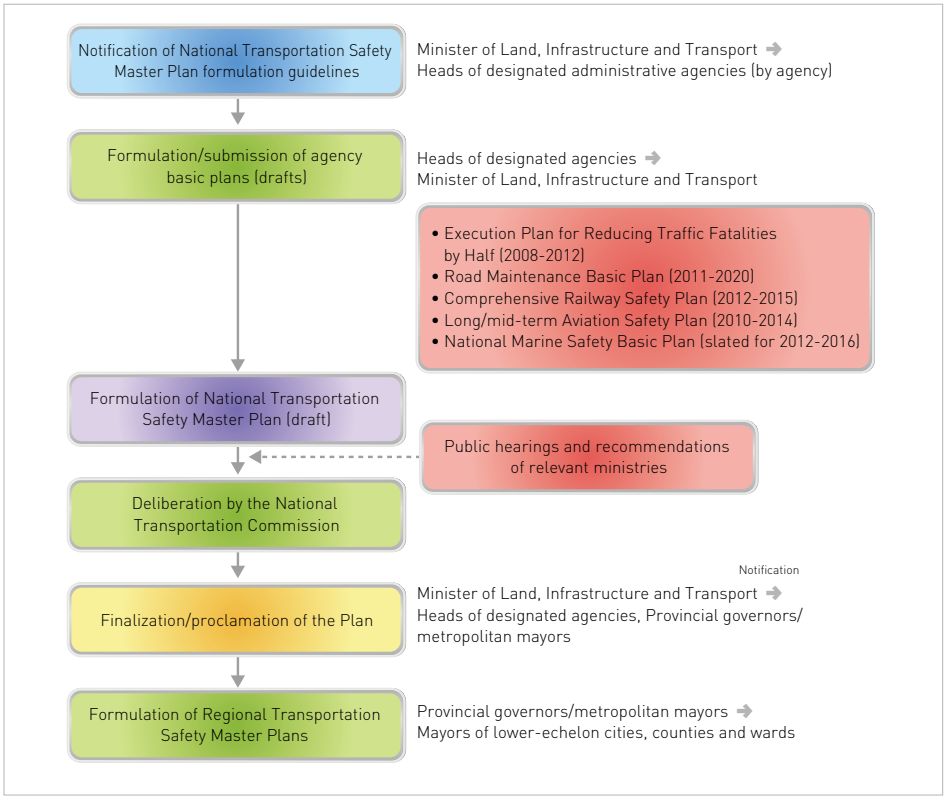
The Nature of the National Transportation Safety Master Plan and Its Formulation Procedures

The National Transportation Safety Master Plan (hereinafter referred to as the "Basic Plan") is a comprehensive traffic safety plan jointly formulated by government ministries and agencies related to traffic safety. It is a long-term, comprehensive master plan that encompasses each ministry's relevant programs. By content, it gives guidelines for implementing programs for raising traffic safety awareness, improving related systems, and ensuring the safety of traffic facilities and modes of transport. By mode, it covers action plans of various sectors such as road, rail, aviation and waterway transport.[1)]

This plan provides the basic directions and guidelines for traffic safety policies that should be formulated and implemented by pertinent administrative agencies for the prevention of traffic accidents. This is a statutory plan that ought to be established every five years, pursuant to

1) Action plans by sector : Execution plan to reduce road traffic casualties by half, basic plan for road maintenance, comprehensive plan for railway safety, long- and mid-term aviation safety plan, national marine safety basic plan, etc.

Figure 8.1 The National Transportation Safety Master Plan formulation procedure



Article 15 of the Road Traffic Act.

Pursuant to the Basic Plan, the Minister of Land, Infrastructure and Transport should formulate the National Traffic Safety Execution Plan every year after receiving traffic safety plans from the designated administrative organizations. The minister is required to present an annual traffic safety report to the National Assembly after analyzing the implementation results. Also, pursuant to the Basic Plan, the provincial governors and metropolitan mayors should formulate and implement a transportation safety master plan for areas under their respective administrative jurisdiction every five years. Based on the provincial and metropolitan transportation safety master plans, the mayors of lower-echelon cities as well as the heads of counties and wards should formulate and implement transportation safety master plans for the

areas under their administrative control.

Main Contents of the National Transportation Safety Master Plan

The 7th National Transportation Safety Master Plan is implemented for five years from 2012 through 2016, with 2021 set as its final target year. It covers the overall areas of land, marine and air transport. It includes mid and long-term policy directions concerning traffic safety, status and analysis of traffic accidents by sector, sector-specific execution strategies for realizing traffic safety policy goals, action programs and investment plans by sector, agency and year, and traffic safety-related investment plans and priorities.

Table 8.1 Main contents of the 7th National Transportation Safety Master Plan

Categories	Contents
Legal grounds	Traffic Safety Act
Implementation period	2012-2016
Final target year	2021
Scope of plan	Transport systems on land, water and air, covering facilities, modes and industries
Main contents	• Mid/long-term policy directions for traffic safety • Status and analysis of traffic accidents by sector • Traffic accident reduction goals by mode and facility • Goals related to propagation of traffic safety knowledge and enhancement of transport culture • Analysis/evaluation of traffic safety policy execution results • Sector-specific implementation strategies for realizing traffic safety policy goals • Action programs and investment plans by sector, agency and year • Maintenance and expansion plans for traffic safety facilities • Professional workforce development in the field of traffic safety • Traffic safety-related investment plans and priorities • Ways to ensure connections and improve implementation capabilities concerning designated agencies' traffic safety measures • Other matters related to the improvement of traffic safety

Source: Interministerial report, *7th National Transportation Safety Master Plan (2012-2016)*, September 2011, pp. 7-8.

02
Child Road Casualty Reduction Targets

Road Traffic Safety Goals

Child road casualty reduction targets are not presented separately in the 7th Basic Plan. The plan presents the overall goal related to road traffic safety. As illustrated in Figure 8.3, the 7th plan offers the vision of reducing road traffic deaths by 40% to achieve the average road traffic safety level among OECD member countries. Based on that vision, it presents the following goals to be reached by 2021 (Table 8.2): decreasing the number of annual deaths per 10,000 automobiles to 0.5, pedestrian fatalities to 1,200, and road deaths from accidents involving commercial vehicles to 170.

Goals to Reduce Traffic Accidents Among Children

In its "Plan Objectives" section, the 7th Basic Plan does not present specific reduction targets with regard to child road casualties. However, in its sixth chapter," Traffic Safety Measures by Execution Strategy," it suggests efforts to cut the number of child road deaths to 80 a year. It is not clear whether the target year is 2016 or 2021. Yet, it would be reasonable to believe that 2016 is the target year, given the purpose of the plan. These findings indicate that the Basic Plan deals with the question of child road safety as part of overall traffic policies, instead of presenting mid and long-term policy directions for the issue.

Figure 8.2 Child road casualty reduction target

Child traffic fatalities: 126 (2010) → below 80

Source: Ibid, p.113.

Figure 8.3 Vision and Goals of the National Transportation Safety Master Plan

Roadway Deaths per 10,000 automobiles: 2.64 ➔ 1.30
Railway Deaths per 100 million km: 42 ➔ 37
Airway Average number of plane crashes: 1 ➔ 0.76
Waterway Number of deaths and people listed as missing in maritime accidents: 176 ➔ 125

※ 2016 targets compared with 2010

Source: Interministerial report, *7th National Transportation Safety Master Plan (2012-2016)*, September 2011, p. 97.

Table 8.2 The National Transportation Safety Master Plan

Vision	Joining Ranks of Global Top 10	
Policy goals	Roadway	Join mid-ranking OECD countries by slashing road traffic fatalities 40% by 2016
	Railway	Aim for 10% reduction in fatalities per 100 million km and zero large-scale accidents
	Airway	Cut fatal and nonfatal plane crashes and minor accidents 24% by 2016, compared with the average over the previous five years (2007-2011)
	Waterway	Reduce fatalities and the number of missing persons in marine accidents by 30%

Plan indicators		2010	2016	2021
1. Roadway	Main indicator: deaths per 10,000 automobiles	2.64	1.3	0.5
	Road traffic deaths	5,505	3,000	1,200
	Pedestrian deaths	2,082	800	360
	Deaths from commercial vehicle crashes	979	440	170
2. Railway	Main indicator: deaths per 100 million km (excluding suicides)	42	37	34
	Train crashes per 100 million km	10.9	9.7	8.4
	Deaths per 1 billion passenger km	0.22	0.18	0.16
	No large-scale rail accident (5-year aggregate)	Zero	Zero	Zero
3. Airway	Main indicator: 5-year average of fatal plane crashes	1.0	0.76	0.56
	Number of crashes and minor accidents	12.4	9.42	6.94
4. Waterway	Main indicator: deaths and missing persons	176	125	115
	Deaths/missing persons per 10,000 ships	21.86	16.07	15.08

Source: Interministerial report, *7th National Transportation Safety Master Plan (2012-2016)*, September 2011, p. 97.

03
Road Safety Policy Directions for Children

Main Contents of the 7th Basic Plan

There are no separate road safety policy directions set exclusively for children in the 7th Basic Plan. However, traffic safety measures presented in the plan for various transport sectors may serve as guide lines for road safety policies for children.

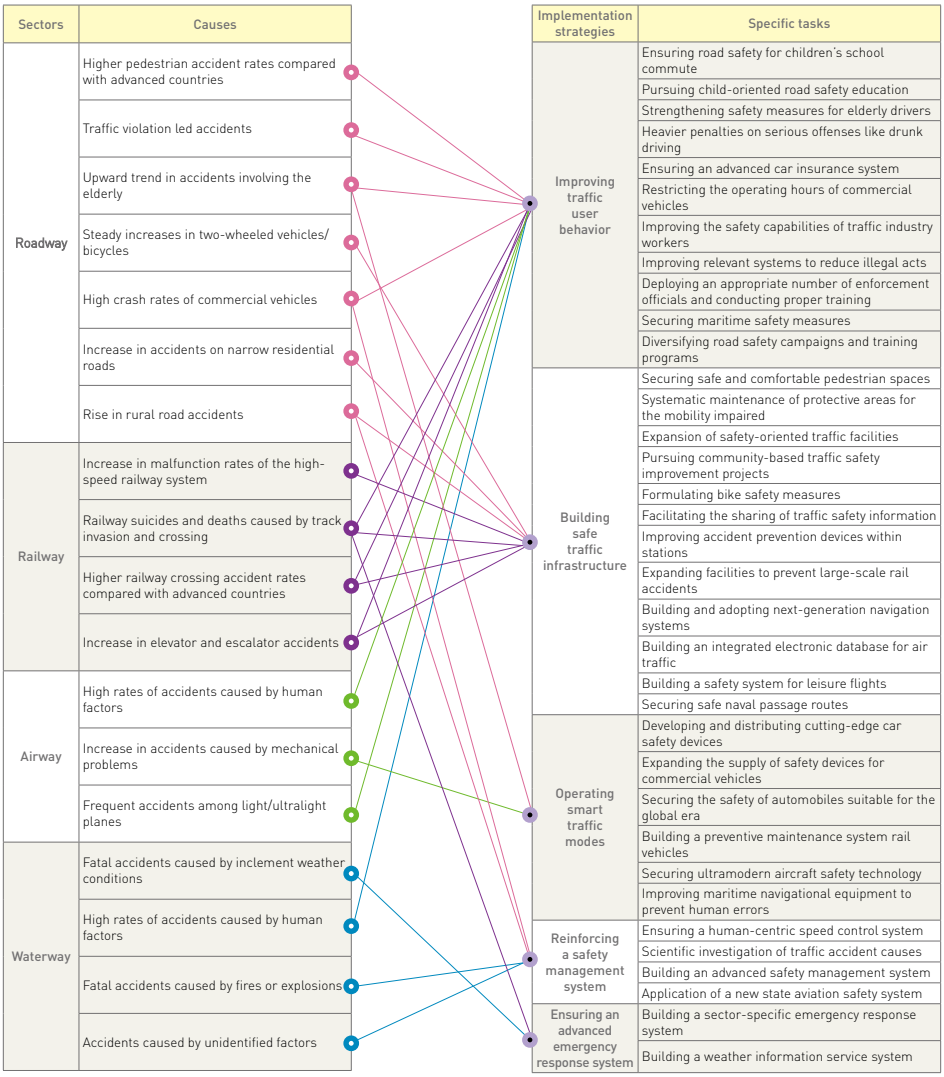
As shown in Figure 8.4, the 7th Basic Plan puts forth five strategies in

Table 8.3 Important child road safety programs under the 7th Basic Plan

Implementation strategies	Major action programs	Specific tasks	Implementation periods	Competent organizations
Ⅰ. Improving user behavior	1. Ensuring road safety for children's school commute	• Deploy Walking School Bus teachers and volunteers for road safety around schools	2012-	MOSPA, MOLIT, NPA (Road Traffic Authority)
		• Formulate measures to ensure school bus registration	-2013	MOSPA, MOLIT, NPA
		• Install safety devices on school vehicles for children	2012-	MOSPA, NPA
		• Launch car seat campaigns and enforce relevant laws	2012-	MOLIT, NPA (Korea Transportation Safety Authority)
	2. Ensuring a shift toward child-centric road safety education	• Develop teaching materials and secure class hours for road safety education	-2013	MOE, MOSPA, MOLIT, NPA
		• Select, support and operate schools for pilot road safety education programs	2012-	MOE, MOSPA, MOLIT
		• Train road safety instructors and specialized personnel	2012-	
Ⅱ. Building safe infrastructure	3. Ensuring systematic maintenance of protective areas for the mobility impaired	• Facilitate the designation of protective areas for the elderly and disabled	2012-	MOSPA, Local governments
		• Install safety facilities for people with mobility handicaps	2012-	
		• Enhance the effectiveness of school zones	2012-	

Source: Ibid, p.195-197.

Figure 8.4 Traffic safety promotion strategies by major causes of accidents



relation to traffic safety: ① improving transport user behavior, ② building safe transport infrastructure, ③ operating smart transport modes, ④ reinforcing a safety management system, and ⑤ ensuring an advanced emergency response system.

Major Policy Directions

Ensuring Road Safety for Children to and from School

In 2012, Korea saw a total of 12,497 road crashes involving children resulting in 83 child deaths. Of the fatalities, 32% occurred during morning and afternoon school commute hours. The fatality rates during commute times were lower in the morning than in the afternoon (8.4% vs. 20.5%). The difference was attributable to the fact that Korea Green Mothers Association members served as volunteer crossing guards near schools in the morning. This indicates the need to devise ways to implement road safety activities during times of day when association members, many of whom are working moms, do not provide crossing guard services for children.

① Deployment of Walking School Bus Teachers and Volunteers for Road Safety around Schools

Walking School Bus is a system in which children walk to and from school, chaperoned by adults, along fixed routes and predetermined schedules. In the U.K., Australia and New Zealand, road accidents among children during school commute hours are reported to have decreased by more than 70% since the walking school bus system went into effect. The Korean government is promoting a plan to train staff and volunteers to accompany Walking School Buses. These staff and volunteers will be deployed along the major routes to and from school during commute hours, thereby helping to prevent traffic accidents involving children around schools.

The government is also pursuing a plan to conduct surveys to determine the level of risks along the major roads around schools as well as the major routes used by children when traveling to and from school. Based on the survey results, education manuals to ensure safe routes to school will be produced and distributed to schools. Under this program, Walking School Bus staff will play a leading role in conducting various road safety education programs for children, improving traffic safety conditions near schools, and patrolling the roads around schools.

② Formulation of Measures to Ensure School Bus Registration

As of the end of 2012, an estimated 65,000 vehicles were being used to transport children to and from various educational institutes in the nation. About 34,000, or 52.6%, were registered with the pertinent authorities as school buses for children. The remaining 31,000 vehicles were being used for transportation of children, without notifying the authorities concerning their use. The problem is most serious with Taekwondo studios, a mere 4.6% of which have conformed with the reporting regulation. In February 2013, a child was killed in an accident involving a Taekwondo studio vehicle, triggering serious controversy over the safety of such vehicles. Still, most of the nation's children sporting facilities do not care about the regulation. Road accidents caused by such unregistered school vehicles are reported annually. A lack of proper safety control over these vehicles continues to exist.

In contrast, accidents and fatalities caused by formally registered school buses are reported to be declining. In 2005, there were 703 accidents and 28 related child deaths. In 2012, the number of accidents and related child fatalities went down to 374 and 5, respectively. These findings demonstrate the need for vehicles being used by private teaching institutes and sports facilities to be reported as school buses, thus being accorded special treatment in terms of safety control and protective measures. In a related move, measures are being developed to ensure private educational institutes conform with the reporting regulation when using use their vehicles for carrying child clients.

Figure 8.5 Walking School Bus in operation Munnam Elementary School, Incheon

Source: Ministry of Land, Infrastructure and Transport, *A Study on the Formulation of the 7th National Transportation Safety Master Plan*, August 2011, p.186.

③ Installation of Safety Devices on School Vehicles for Children

The Ministry of Land, Infrastructure and Transport and the Ministry of Security and Public Administration amended the Regulations on Motor Vehicle Safety Standards in August 2011, establishing a provision that requires the installation of wide-angle side view mirrors on school vehicles with nine or more seating capacity. The mirrors should be installed on school buses in a way that can allow the driver to check safety conditions around the vehicles, even near the rear tires. They are particularly designed to prevent children from colliding with approaching motorcycles or bicycles when disembarking school buses. The scope of cars subject to the new requirements should be expanded to cover vehicles operated by sports facilities, including Taekwondo studios. Further, the Transport Ministry amended the regulations again, making it mandatory for school buses to be equipped with a movable stop signal, rear video camera, and audible backing up beep (proclaimed on Feb. 21, 2014) in an effort to further strengthen road safety measures for children.

④ Child Car Seat Campaigns and Enforcement of Relevant Laws

In 2006, the Road Traffic Act was amended, establishing legal grounds for slapping penalties on motorists not conforming to seat belt laws. The amended law also provided for the installation of car seats on vehicles carrying children or toddlers. However, the provisions are rarely enforced. The Korean Association for Safety Communities in 2010 conducted a survey of 1,126 cars entering a grocery store in Seoul and found only 16.7% of the vehicles were equipped with car seats. Increasing importance is placed on the use of car seats because of changes in the types of car accidents. In 2013, pedestrians made up 37.5% of the entire road accident fatalities, while vehicle occupants accounted for 59%. These statistics mean that six out of ten traffic accident deaths occur while in a vehicle. This demonstrates the significance of using safety devices within cars. In order to increase the ratio of vehicles using car seats, the government needs to provide car seat subsidies for low-income families or provide them free of charge. The government

is currently promoting a plan to increase publicity campaigns and more rigorously enforce the relevant laws concerning the use of car seats.

Strengthening Road Safety Education for Children

The Child Welfare Act (Article 4-1) provides for implementing a road safety training program for children minimum once every two months totaling at least 12 hours a year. It is skeptical, however, whether the statutory training programs are conducted in a practical manner. Elementary school children in Seoul receive 21 hours of road safety education and four hours of experience-based education annually, children in Sweden receive 20 hours, and Japanese schools conduct traffic safety programs two or three times a year while allocating one hour of classroom activities to theoretic education about road safety.

① Developing Teaching Materials and Securing Class Hours for Road Safety Education

Plans are underway to develop road safety teaching materials and secure sufficient number of classes for road safety education under the joint auspices of the Ministry of Land, Infrastructure and Transport, the Ministry of Education, and the Ministry of Security and Public Administration (National Police Agency). In the United Kingdom, road crossing accidents among children are reported to have gone down by 12% to 20% since the implementation of road safety education for children. The relevant government ministries are trying to establish a new curriculum, aiming for 12 class hours for road safety education and training teachers in charge of road safety education and include subsidies necessary to do so.

Figure 8.6 Traffic safety curriculum by school type

- Elementary school: safe traffic behavior, traffic facilities, use of bicycles, etc.
- Middle school: traffic environments and individual responsibilities, the structure and use of automobiles (including two-wheeled motor vehicles)
- High school: socioeconomic understanding of transportation, understanding transport policies

Source: Ibid, p.113.

Road safety education is to be implemented in association with experience-oriented field activities at relevant facilities and traffic parks as well as relevant volunteer activities. Those completing the required courses will be issued with safety training certificates.

Initially, the certificate program will be implemented on a pilot basis for first grade elementary students and high school students with physical disabilities. It will focus on helping the trainees foster a sense of self-reliance and develop capabilities related to traffic safety awareness, perception and behavior. The license will be issued to those who pass relevant tests after undergoing 20 hours of practical and theoretical education spread over three weeks. The tests will focus on properly judging various dangerous traffic locations confirming the capability to act. The tests will include evaluation of methods related to crossing a street, walking along rural roads, vehicle speed estimation, and the use of bus stops. Pertinent officials will have to prepare the evaluation criteria, for instance based on successful implementation of 10 tasks in a row).

② Selection, Support and Operation of Schools for Pilot Road Safety Education Programs

In order to allow children to travel to and school safely and play with friends without worrying about traffic accidents, traffic safety installations must be improved and expanded. Additionally, drivers should be thoroughly educated on road safety with law enforcement rigorously enforcing traffic regulations. What's more important than these measures may be the implementation of road safety education that can help children develop safety awareness and learn skills to cope with dangers on roads. It is essential to provide children with opportunities to receive safety training in a repeated and practice-oriented manner. Through such education, children can develop road safety awareness, eventually pursuing safety-oriented lifestyles.

It is necessary to increase the number of schools designated for the implementation of pilot road safety education programs. Initially 16 schools will be selected in various provinces and cities. Such designated schools should

be provided with the costs needed for conducting the road safety training programs, as well as assistance related to the construction of experiential training centers and securing teaching materials. The contents to be taught in those schools can be classified into five categories: pedestrian safety, safe road crossing, bicycling, use of transport modes, and safe social life.

Figure 8.7 Activities for schools selected for road safety pilot projects

- Supplying road safety teaching materials (videos, etc.) and relevant devices
- Organizing a demonstration class with professional road safety instructor
- Implementing experience-based road safety training programs (Sangju, North Gyeongsang Province)
- Announcing exemplary cases and presenting awards

Source: Ibid, p.113.

③ Training Road Safety Instructors and Specialized Personnel

There are plans to produce road safety instructors and other specialized personnel through coordination among road safety agencies and related civic organizations. First, road safety training is conducted for schoolteachers in charge of safety education. Administrative and financial assistance is provided for teachers attending training courses. Then, efforts will focus on training professional staff for prevention of accidents involving persons with mobility handicaps (children, senior citizens, etc.). Civic groups such as the Citizens' Coalition for Safety and the Korea Green Mothers Association will be involved in the training of such specialized personnel.

Enhancing the Effectiveness of School Zones

School zone maintenance programs are funded by the Special Account for Balanced National Development (formerly the Special Account for Improving Automobile Traffic Management). So far, school zone improvement projects have been carried out solely based on the number of accidents that occurred in the area during the past year. No in-depth analysis have been conducted based on detailed accident data (situation reports on accidents that caused casualties during the past three years, and site maps). Substantially improving road safety in school zones requires identifying repeating patterns of

accidents and verifying the effects of countermeasures.

To enhance the effectiveness of school zones, pertinent measures will be taken based on the following principles: First, safe spaces should be established for children's activities. Road spaces within school zones should allow for children's behavioral errors, regardless of traffic regulations. Children's right-of-way should be guaranteed on roadways and accordingly equipment must be installed to slow motor vehicle traffic. Second, automobile traffic should be restricted to the maximum extent, and those cars traveling in the zones must travel as slowly as possible. Slow moving vehicles contribute to ensuring road safety for children as well as social safety in crime protection. The faster vehicles travel through the zones, the more difficult it becomes to ensure road safety and crime protection. Third, ease of road crossing should be guaranteed. To make it possible for children to easily cross a road within a school zone anytime and anywhere, advanced countries are reducing the number and width of lanes, reducing step height, and installing traffic calming devices. Fourth, extensive crackdowns during school commute hours and enlightenment campaigns should be conducted against speeding, parking, stopping and other offenses within school zones, thereby contributing to substantially reducing road accidents in the area.

Figure 8.8 2013 ADB Knowledge Sharing Workshop in Korea

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APPENDICES

Appendix 1 Main transport indicators

	Population		Registered Vehicles		Licensed Drivers		Rod Length		GDP		Road Traffic Accidents					
											Total		Killed		Injured	
	(thousands)	Index		Index		Index	(km)	Index	(billion won)	Index		Index		Index		Index
1980	38,124	100	527,729	100	1,860,654	100	46,950	100	37,789	100	120,182	100	5,608	100	111,641	100
1981	36,723	102	571,754	108	2,202,759	118	50,336	107	47,383	125	123,373	103	5,804	103	115,289	103
1982	39,326	103	646,996	123	2,581,310	139	53,935	115	54,431	144	141,218	118	6,110	109	130,605	117
1983	39,910	105	785,316	149	2,989,401	161	54,599	116	63,858	169	170,026	141	6,834	122	152,572	137
1984	40,406	106	948,319	180	3,487,138	187	51,003	109	73,004	193	134,335	112	7,468	133	170,377	153
1985	40,806	107	1,113,430	211	4,088,521	220	52,264	111	81,312	215	146,836	122	7,522	134	184,420	165
1986	41,214	108	1,309,434	248	4,651,867	250	53,653	114	94,862	251	153,777	128	7,702	137	193,734	174
1987	41,622	109	1,611,375	305	5,269,494	283	54,688	116	111,198	294	175,661	146	7,206	128	222,701	199
1988	42,031	110	2,035,448	386	6,191,821	333	55,778	119	132,112	350	225,062	187	11,563	206	287,739	258
1989	42,449	111	2,660,212	504	7,190,467	386	56,481	120	148,197	392	255,787	213	12,603	225	325,896	292
1990	42,869	112	3,394,803	643	8,543,903	459	56,715	121	178,797	473	255,303	212	12,325	220	324,229	290
1991	43,296	114	4,247,816	805	9,844,356	529	58,088	124	231,428	612	265,964	221	13,429	239	331,610	297
1992	43,748	115	5,230,894	991	11,613,300	624	58,904	125	263,993	699	257,194	214	11,640	208	325,943	292
1993	44,195	116	6,274,008	1,189	13,301,610	715	61,294	131	298,762	791	260,921	217	10,402	185	337,679	302
1994	44,642	117	7,404,347	1,403	14,889,762	800	73,834	157	349,973	926	266,107	221	10,087	180	350,892	314
1995	45,093	118	8,468,901	1,605	16,403,759	882	74,237	158	409,654	1,084	248,865	207	10,323	184	331,747	297
1996	45,525	119	9,553,092	1,810	17,720,833	952	82,342	175	460,953	1,220	265,052	221	12,653	226	355,962	319
1997	45,954	121	10,413,427	1,973	18,532,172	996	84,968	181	506,314	1,340	246,452	205	11,603	207	343,159	307
1998	46,287	121	10,469,599	1,984	19,549,002	1,051	86,990	185	501,027	1,326	239,721	199	9,057	162	340,564	305
1999	46,617	122	11,163,728	2,115	17,418,878	936	87,534	186	549,005	1,453	275,938	230	9,353	167	402,967	361
2000	47,008	123	12,059,276	2,285	18,697,346	1,005	88,775	189	603,236	1,596	290,481	242	10,236	183	426,984	382
2001	47,343	124	12,914,115	2,447	19,884,337	1,069	91,396	195	651,415	1,724	260,579	217	8,097	144	386,539	346
2002	47,640	125	13,949,440	2,643	21,223,010	1,141	96,037	205	720,539	1,907	231,026	192	7,222	129	348,149	312
2003	47,925	126	14,586,795	2,764	22,062,457	1,186	97,253	207	767,114	2,030	240,832	200	7,212	129	376,503	337
2004	48,199	126	14,934,092	2,830	22,735,053	1,222	100,278	214	826,893	2,188	220,755	184	6,563	117	346,987	311
2005	48,294	127	15,396,715	2,918	23,497,650	1,263	102,293	218	865,241	2,290	214,171	178	6,376	114	342,233	307
2006	48,497	127	15,895,234	3,012	24,088,229	1,295	102,061	217	908,744	2,405	213,745	178	6,327	113	340,229	305
2007	48,456	127	16,428,177	3,113	24,953,963	1,341	103,019	219	975,013	2,580	211,662	176	6,116	109	335,906	301
2008	48,607	127	16,794,219	3,182	25,268,379	1,358	104,236	222	1,026,452	2,716	215,822	180	5,870	105	338,962	304
2009	48,747	128	17,325,210	3,283	25,822,149	1,388	104,983	224	1,065,037	2,818	231,990	193	5,838	104	361,875	324
2010	49,410	128	17,941,356	3,400	26,402,364	1,419	105,565	225	1,173,275	3,105	226,878	189	5,505	98	352,458	316
2011	49,779	128	18,437,373	3,494	27,251,153	1,465	105,931	226	1,235,161	3,269	221,711	184	5,229	93	341,391	306
2012	50,004	131	18,870,533	3,576	28,263,317	1,519	105,703	225	1,272,460	3,367	223,656	186	5,392	96	344,565	309
Average annual growth rate	0.9%		11.8%		8.9%		2.6%		11.6%		2.0%		-0.1%		3.6%	

Note: 1) Two-wheeled vehicles and construction and agricultural machinery are not included in registered vehicles.
2) Licensed drivers statistics. filed since 1990, are based on people who actually hold driver's licenses, regardless of license types.
3) The average annual growth rates were calculated based on the yearly growth rates from 1980 through 2012.

Source: 1) National Police Agency, 2013 edition of Road Traffic Accidents, 2013.
2) The Bank of Korea's economic statistics system [http://ecos.bok.or.kr] 2013.6.

Appendix 2 Changes in population age and household size

	Total	Under 14 years old	15 - 64 years old	65 years old and above	Number of households		
						People per household	Cars per household
1980	38,123,775	12,950,775	23,716,967	1,456,033	8,739,270	4.4	6.0
1981	38,723,248	12,925,036	24,300,033	1,498,179	8,306,442	4.7	6.9
1982	39,326,352	12,886,600	24,880,337	1,559,415	8,585,238	4.6	7.5
1983	39,910,403	12,800,968	25,494,901	1,614,534	8,938,225	4.5	8.8
1984	40,405,956	12,591,760	26,140,581	1,673,615	9,228,028	4.4	10.2
1985	40,805,744	12,304,542	26,759,353	1,741,849	9,788,261	4.2	11.4
1986	41,213,674	12,029,833	27,383,105	1,800,736	9,859,066	4.2	13.3
1987	41,621,690	11,746,377	27,998,885	1,876,428	10,162,294	4.1	15.9
1988	42,031,247	11,487,445	28,581,942	1,961,860	10,607,000	4.0	19.2
1989	42,449,038	11,261,131	29,134,922	2,052,985	11,070,459	3.8	24.0
1990	42,869,283	10,973,592	29,700,607	2,195,084	11,357,160	3.8	29.9
1991	43,295,704	10,858,720	30,170,543	2,266,441	11,467,034	3.8	37.0
1992	43,747,962	10,791,426	30,610,680	2,345,856	11,354,540	3.9	46.1
1993	44,194,628	10,734,528	31,023,107	2,436,993	13,435,710	3.3	46.7
1994	44,641,540	10,653,446	31,445,602	2,542,492	13,777,102	3.2	53.7
1995	45,092,991	10,536,828	31,899,511	2,656,652	14,234,515	3.2	59.5
1996	45,524,681	10,403,277	32,326,522	2,794,882	14,633,248	3.1	65.3
1997	45,953,580	10,233,102	32,791,167	2,929,311	15,085,044	3.0	69.0
1998	46,286,503	10,091,517	33,125,933	3,069,053	15,172,849	3.1	69.0
1999	46,616,677	9,972,894	33,420,207	3,223,576	15,442,261	3.0	72.3
2000	47,008,111	9,911,229	33,701,986	3,394,896	15,765,275	3.0	76.5
2001	47,353,519	9,848,871	33,923,376	3,581,272	16,080,992	2.9	80.3
2002	47,615,132	9,725,532	34,110,668	3,778,928	16,489,107	2.9	84.6
2003	47,849,227	9,573,435	34,300,454	3,975,338	16,987,634	2.8	85.9
2004	48,199,227	9,632,613	34,395,598	4,171,016	17,391,932	2.8	85.9
2005	48,294,143	9,240,017	34,670,970	4,383,156	17,857,511	2.7	86.2
2006	48,371,946	8,988,826	34,790,753	4,592,367	18,326,619	2.6	86.7
2007	48,597,652	8,724,607	35,045,531	4,827,514	18,687,694	2.6	87.9
2008	48,948,698	8,488,729	35,407,814	5,052,155	19,005,339	2.6	88.4
2009	49,182,038	8,232,065	35,694,138	5,255,835	19,261,292	2.6	89.9
2010	49,410,366	7,975,374	35,982,502	5,452,490	19,865,179	2.5	90.3
2011	49,779,440	7,770,912	36,352,538	5,655,990	20,033,142	2.5	92.0
2012	50,004,441	7,559,063	36,555,703	5,889,675	20,211,770	2.5	93.4
Average annual growth rate	0.9%	-1.7%	1.4%	4.5%	2.7%	-1.8%	8.9%

Note: 1) Household statistics for years before 1993 were based on the number of families. From 1993, they were based on the number of registered households.
2) Data for 2006 and the following years were revised based on the 2010 national census.
Source: Statistics Korea [http://www.kosis.kr/], May 2013.

Appendix 3 Number of completed school zones from 2001 to 2012

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of completed school zones	5,700	5,989	6,506	6,841	7,065	8,346	8,429	8,999	9,584	13,207	14,921	15,136

Source: Statistics Korea

Appendix 4 Child traffic injuries and deaths from 1988 to 2012

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Killed	1,766	1,668	1,537	1,566	1,180	998	890	809	932	753	592	572	588
Ratio	15.8%	13.2%	12.5%	11.7%	10.1%	9.6%	8.8%	7.8%	7.4%	6.5%	6.5%	6.1%	5.7%
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Killed	489	468	394	296	250	243	179	138	136	126	80	83	
Ratio	6%	6.5%	5.5%	4.5%	3.9%	3.8%	2.9%	2.4%	2.3%	2.3%	1.5%	1.5%	

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Appendix 5 Child traffic injuries and deaths by month

		Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2000	Accidents	26,702	1,436	1,522	2,013	2,632	2,946	2,759	2,701	2,500	2,440	2,285	1,877	1,591
	Ratio	100.0%	5.4%	5.7%	7.5%	9.9%	11.0%	10.3%	10.1%	9.4%	9.1%	8.6%	7.0%	6.0%
	Killed	518	37	41	43	50	45	46	47	42	43	41	42	41
	Ratio	100.0%	7.1%	7.9%	8.3%	9.7%	8.7%	8.9%	9.1%	8.1%	8.3%	7.9%	8.1%	7.9%
	Injured	29,523	2,241	2,323	2,511	2,742	2,680	2,771	2,774	2,411	2,335	2,317	2,221	2,197
	Ratio	100.0%	7.6%	7.9%	8.5%	9.3%	9.1%	9.4%	9.4%	8.2%	7.9%	7.8%	7.5%	7.4%
2010	Accidents	14,095	842	896	1,006	1,155	1,522	1,448	1,394	1,314	1,210	1,319	1,074	915
	Ratio	100.0%	6.0%	6.4%	7.1%	8.2%	10.8%	10.3%	9.9%	9.3%	8.6%	9.4%	7.6%	6.5%
	Killed	126	12	18	12	9	16	17	17	13	19	15	12	9
	Ratio	100.0%	9.5%	14.3%	9.5%	7.1%	12.7%	13.5%	13.5%	10.3%	15.1%	11.9%	9.5%	7.1%
	Injured	17,178	1,071	1,140	1,121	1,311	1,741	1,691	1,795	1,832	1,554	1,374	1,322	1,226
	Ratio	100.0%	6.2%	6.6%	6.5%	7.6%	10.1%	9.8%	10.4%	10.7%	9.0%	8.0%	7.7%	7.1%
2012	Accidents	12,497	828	737	929	1,096	1,410	1,201	1,237	1,173	1,066	1,075	960	785
	Ratio	100.0%	6.6%	5.9%	7.4%	8.8%	11.3%	9.6%	9.9%	9.4%	8.5%	8.6%	7.7%	6.3%
	Killed	83	7	5	4	7	14	9	7	6	6	10	4	4
	Ratio	100.0%	8.4%	6.0%	4.8%	8.4%	16.9%	10.8%	8.4%	7.2%	7.2%	12.0%	4.8%	4.8%
	Injured	15,485	1,083	934	1,108	1,331	1,692	1,428	1,506	1,524	1,301	1,335	1,198	1,045
	Ratio	100.0%	7.0%	6.0%	7.2%	8.6%	10.9%	9.2%	9.7%	9.8%	8.4%	8.6%	7.7%	6.7%

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Appendix 6 Child traffic injuries and deaths by day of the week

		Total	Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
2000	Killed	518	85	60	77	68	69	71	88
	Ratio	100.0%	16.4%	11.6%	14.9%	13.1%	13.3%	13.7%	17.0%
	Injured	29,523	5,284	3,981	3,721	3,881	3,674	3,801	5,181
	Ratio	100.0%	17.9%	13.5%	12.6%	13.1%	12.4%	12.9%	17.5%
2010	Killed	126	19	20	22	13	12	22	18
	Ratio	100.0%	15.1%	15.9%	17.5%	10.3%	9.5%	17.5%	14.3%
	Injured	17,178	2,929	2,092	2,044	2,180	2,214	2,491	3,228
	Ratio	100.0%	17.1%	12.2%	11.9%	12.7%	12.9%	14.5%	18.8%
2012	Killed	83	14	14	8	14	10	12	11
	Ratio	100.0%	16.9%	16.9%	9.6%	16.9%	12.0%	14.5%	13.3%
	Injured	15,485	2,665	1,999	1,860	1,963	1,883	2,223	2,892
	Ratio	100.0%	17.2%	12.9%	12.0%	12.7%	12.2%	14.4%	18.7%

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Appendix 7 Child traffic injuries and deaths by time of day

		Total	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
2000	Killed	518	8	13	3	23	32	44	63	109	85	67	55	16
	Ratio	100.0%	1.5%	2.5%	0.6%	4.4%	6.2%	8.5%	12.2%	21.0%	16.4%	12.9%	10.6%	3.1%
	Injured	28,523	547	266	188	711	2,281	2,179	2,586	5,145	5,872	4,560	2,789	1,399
	Ratio	100.0%	1.9%	0.9%	0.7%	2.5%	8.0%	7.6%	9.1%	18.0%	20.6%	16.0%	9.8%	4.9%
2010	Killed	126	4	0	0	3	16	6	15	22	27	14	10	9
	Ratio	100.0%	3.2%	0.0%	0.0%	2.4%	12.7%	4.8%	11.9%	17.5%	21.4%	11.1%	7.9%	7.1%
	Injured	17,148	222	53	46	289	1,531	1,188	1,941	3,084	3,488	2,730	1,779	797
	Ratio	100.0%	1.3%	0.3%	0.3%	1.7%	8.9%	6.9%	11.3%	18.0%	20.3%	15.9%	10.4%	4.6%
2012	Killed Killed	83	3	0	1	0	7	8	8	15	17	13	8	3
		100.0%	3.6%	0.0%	1.2%	0.0%	8.4%	9.6%	9.6%	18.1%	20.5%	15.7%	9.6%	3.6%
	Injured Injured	15,485	140	50	42	233	1,499	1,100	1,686	2,737	3,160	2,576	1,596	666
		100.0%	0.9%	0.3%	0.3%	1.5%	9.7%	7.1%	10.9%	17.7%	20.4%	16.6%	10.3%	4.3%

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Appendix 8 Child traffic injuries and deaths by major city and province

		Total	Seoul	Busan	Daegu	Incheon	Ulsan	Gyeonggi	Gangwon	Chungbuk	Chungnam	Jeonbuk	Jeonnam	Gyeongbuk	Gyeongnam	Jeju
2000	Killed	518	52	20	11	18	9	79	36	32	70	33	65	47	40	6
	Ratio	100.0%	10.0%	3.9%	2.1%	3.5%	1.7%	15.3%	6.9%	6.2%	13.5%	6.0%	13%	9.1%	7.7%	1.2%
	Injured	29852	4,410	1,331	926	2,105	295	4,343	1941	1,792	2,269	2,269	2,455	2,877	2,213	626
	Ratio	100.0%	14.8%	4.5%	3.1%	7.1%	1.0%	14.5%	6.5%	6.0%	7.6%	7.6%	8.2%	9.6%	7.4%	2.1%
2010	Killed	79	11	3	3	8	3	10	1	4	9	5	6	6	8	2
	Ratio	100.0%	13.9%	3.8%	3.8%	10.1%	3.8%	12.7%	1.3%	5.1%	11.4%	6.3%	7.6%	7.6%	10.1%	2.5%
	Injured	6699	1118	408	424	378	164	1360	250	212	398	327	631	407	456	166
	Ratio	100.0%	16.7%	6.1%	6.3%	5.6%	2.4%	20.3%	3.7%	3.2%	5.9%	4.9%	9.4%	6.1%	6.8%	2.5%
2012	Killed	83	5	4	2	5	3	21	6	4	4	6	4	5	12	2
	Ratio	100.0%	6.0%	4.8%	2.4%	6.0%	3.6%	25.3%	7.2%	4.8%	4.8%	7.2%	4.8%	6.0%	14.5%	2.4%
	Injured	15,485	1,879	786	866	687	304	3,422	872	747	1,052	794	1,655	1,088	1,014	319
	Ratio	100.0%	12.1%	5.1%	5.6%	4.4%	2.0%	22.1%	5.6%	4.8%	6.8%	5.1%	10.7%	7.0%	6.5%	2.1%

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Appendix 9 Types of traffic accidents involving children

		Total	Vehicle-to-vehicle	Vehicle-to-person	Single-vehicle	Crossing
2000	Killed	518	39	359	120	0
	Ratio	100.0%	7.5%	69.3%	23.2%	0.0%
	Injured	29,523	1,587	16,563	11,373	0
	Ratio	100.0%	5.4%	56.1%	38.5%	0.0%
2010	Killed	126	37	78	11	0
	Ratio	100.0%	29.4%	61.9%	8.7%	0.0%
	Injured	17,178	10,219	6,662	297	0
	Ratio	100.0%	59.5%	38.8%	1.7%	0.0%
2012	Killed	83	17	43	23	0
	Ratio	100.0%	20.5%	53.1%	26.5%	0.0%
	Injured	15,485	9,914	5,312	258	1
	Ratio	100.0%	64.0%	34.3%	1.7%	0.0%

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Appendix 10 Child injuries and deaths by vehicle type

		Total	Car	Motorcycle	Cyclist	Pedestrian	Other
2000	Killed	588	111	9	31	428	9
	Ratio	100.0%	18.9%	1.5%	5.3%	72.8%	1.5%
	Injured	34,252	12,414	338	1,523	19,606	371
	Ratio	100.0%	36.2%	1.0%	4.4%	57.2%	1.1%
2010	Killed	126	36	0	11	79	0
	Ratio	100.0%	28.6%	0.0%	8.7%	62.7%	0.0%
	Injured	17,178	9,015	105	1,251	6,699	108
	Ratio	100.0%	52.5%	0.6%	7.3%	39.0%	0.6%
2012	Killed	83	24	1	3	54	1
	Ratio	100.0%	28.9%	1.2%	3.6%	65.1%	1.2%
	Injured	15,485	8,655	68	1,247	5,347	168
	Ratio	100.0%	55.9%	0.4%	8.1%	34.5%	1.1%

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Appendix 11 Child injuries and deaths by road type

		Total	National expressway	National highway	Special/ Metropolitan city road	Provincial road	City road	Country road	Others
2010	Killed	588	0	5	28	10	22	8	6
	Ratio	100.0%	0.0%	6.3%	35.4%	12.7%	27.8%	10.1%	7.6%
	Injured	34,352	5	445	2,904	500	2,197	243	405
	Ratio	100.0%	0.1%	6.6%	43.3%	7.5%	32.8%	3.6%	6.0%
2010	Killed	126	0	13	35	17	41	8	12
	Ratio	100.0%	0.0%	10.3%	27.8%	13.4%	32.6%	6.3%	9.5%
	Injured	17,178	6	457	6,779	1,488	5,520	993	1,935
	Ratio	100.0%	0.0%	2.7%	39.5%	8.7%	32.1%	3.8%	11.3%
2012	Killed	83	0	4	15	8	20	3	4
	Ratio	100.0%	0.0%	7.4%	27.8%	14.8%	37.0%	5.6%	7.4%
	Injured	15,485	2	145	2,080	403	1,910	205	602
	Ratio	100.0%	0.0%	2.7%	38.9%	7.5%	35.7%	3.8%	11.3%

Source: Traffic Accident Statistics, Traffic Accident Data Analysis

Appendix 12 Ratio of children (under age 15) to adults traffic accident deaths in OECD member countries

Country	〈 15	Ratio	Country	〈 15	Ratio	Country	〈 15	Ratio
Iceland	2	16.7%	Switzerland	10	3.1%	Japan	111	2.0%
Israel	22	6.5%	France	128	3.2%	Korea	101	1.9%
Norway	8	4.8%	Spain	79	3.2%	Greece	22	1.9%
Australia	61	4.8%	Luxembourg	1	3.0%	Czech Republic	12	1.6%
Slovenia	6	4.3%	Hungary	20	2.7%	Italy	61	1.6%
Denmark	9	4.1%	Canada	61	2.7%	OECD average	-	3.0%
Belgium	34	4.0%	United Kingdom	52	2.7%			
New Zealand	11	3.9%	Finland	8	2.7%			
Ireland	7	3.8%	Austria	13	2.5%			
United States	1140	3.5%	Poland	102	2.4%			
Netherlands	18	3.3%	Portugal	19	2.1%			
Sweden	10	3.1%	Germany	86	2.1%			

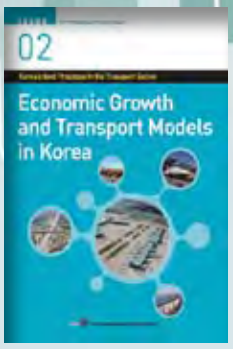
Appendix 13 Child traffic deaths per 100,000 children in OECD member countries

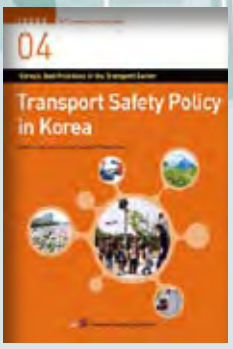
Country	〈 15	Per 100,000 population	Country	〈 15	Per 100,000 population	Country	〈 15	Per 100,000 population
Iceland	2	3	France	128	1.1	Germany	86	0.8
Slovenia	6	2.1	Spain	79	1.1	Japan	111	0.7
United States	1140	1.9	Canada	61	1.1	Italy	61	0.7
Poland	102	1.8	Austria	13	1.1	Ireland	7	0.7
Belgium	34	1.8	Luxembourg	1	1.1	Netherlands	18	0.6
Australia	61	1.4	Israel	22	1	United Kingdom	52	0.5
Hungary	20	1.4	Norway	8	0.9	Sweden	10	0.6
Greece	22	1.4	Denmark	9	0.9	OECD average	-Ð	1.3
Korea	101	1.3	Finland	8	0.9			
New Zealand	11	1.2	Czech Republic	12	0.8			
Portugal	19	1.2	Switzerland	10	0.8			

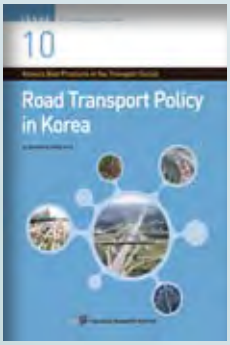
KOTI Knowledge Sharing Reports

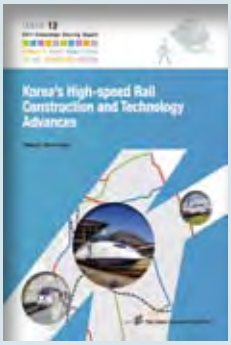
Recently, developing countries have shown interest in Korea's transport policy establishment and infrastructure construction experience on the premise that those changes have enabled the nation to promote economic growth. Against this backdrop, Korea Transport Institute (KOTI) publishes a series of Knowledge Sharing Reports series regarding Korea's transport system and policy accomplishments in the fields of roadway, railway, aviation, logistics, and public transport.

The reports are available to download for free in PDF format on our website at http://english.koti.re.kr.









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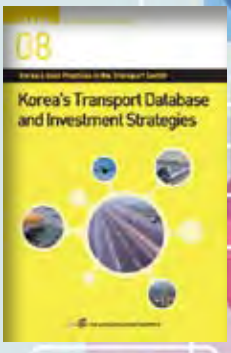

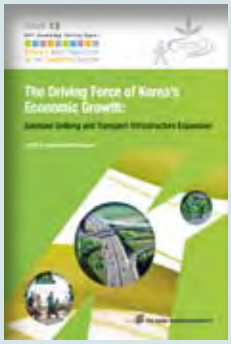

Korea's 95% Reduction in Child Traffic Fatalities: Policies and Achievements

The Korea Transport Institute (KOTI) is a comprehensive research institute specializing in national transport policies. As such, it has carried out numerous studies on transport policies and technologies for the Korean government.

Based on this experience and related expertise, KOTI has launched a research and publication series entitled "Knowledge Sharing Report: Korea's Best Practices in the Transport Sector." The project is designed to share with developing countries lessons learned and implications experienced by Korea in implementing its transport policies. The 15th output of this project deals with the theme of "Reduction of Child Traffic Accidents in Korea."

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