
Seoul, ready to share with the world!

Seoul Public Transportation



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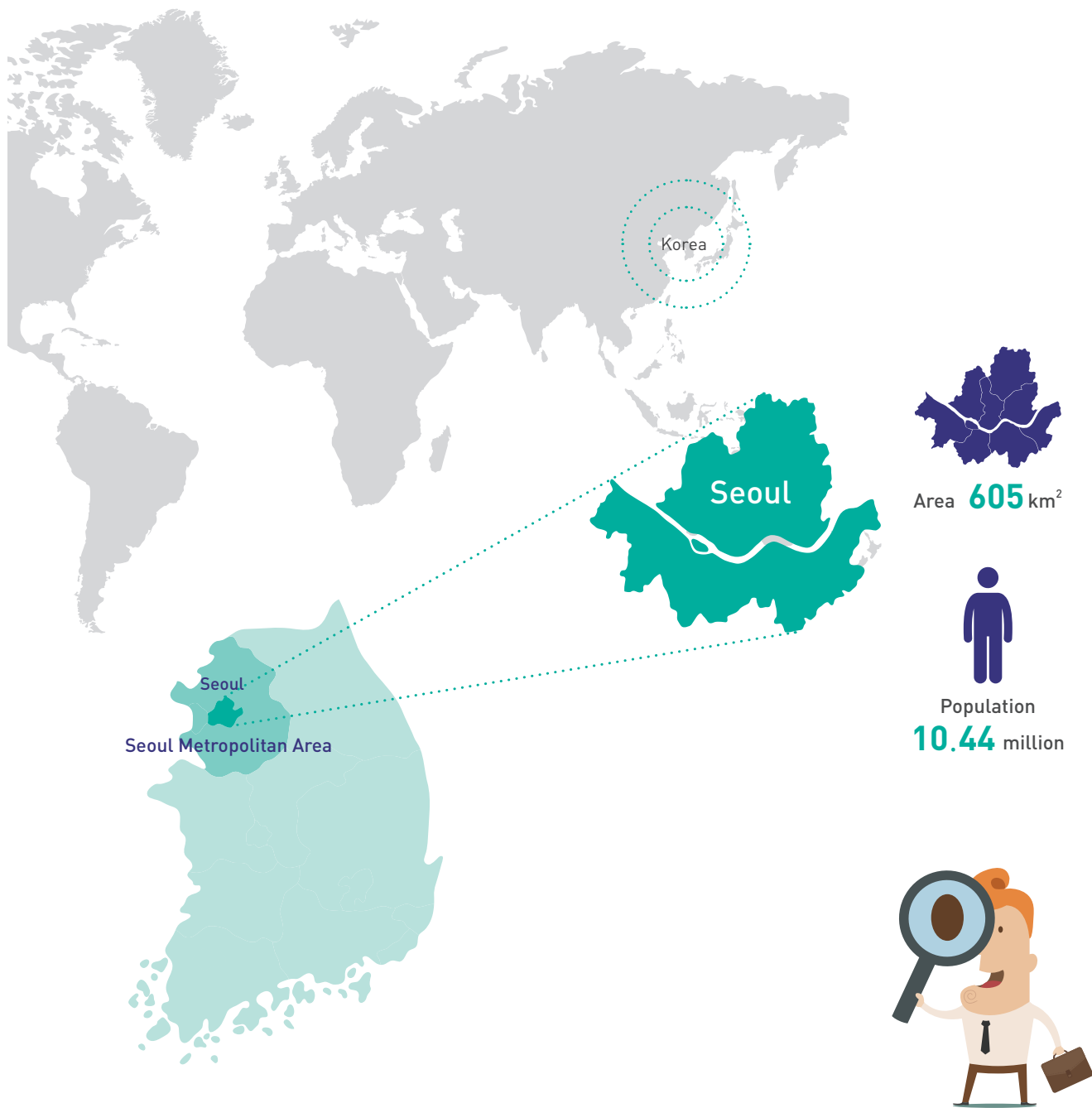
Putting people first

When it comes to public transportation, Seoul City puts people front and center, building a city where the people can enjoy quality lives without the hassle and expense of owning cars, and making its mass transit systems increasingly people-oriented and friendly, while preventing traffic accidents and making its roads safer through advanced traffic management for those who have to drive.

Vision / Traffic Conditions in Seoul

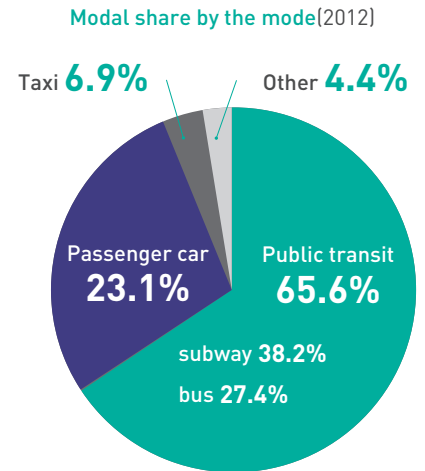
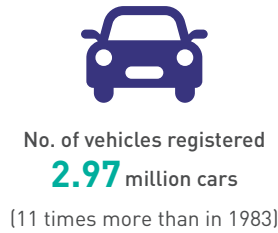
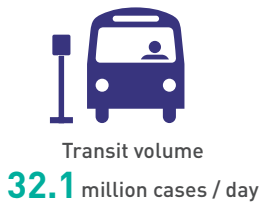


An overview of Seoul



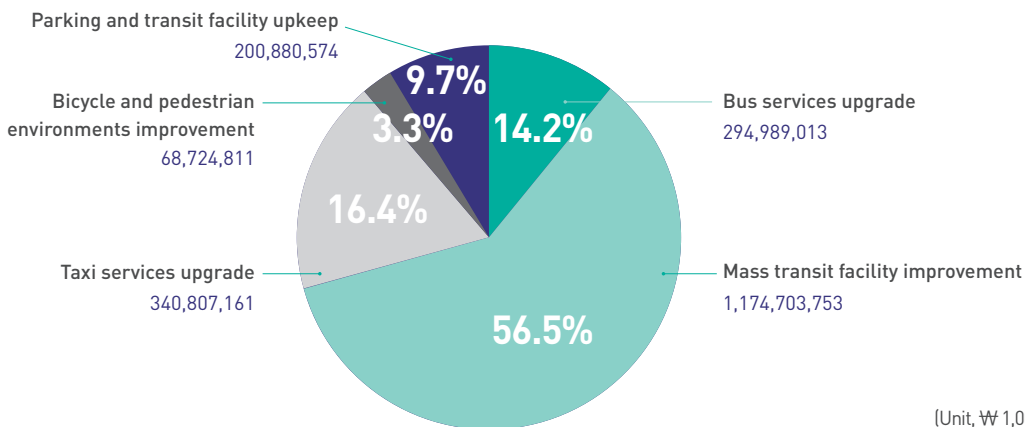
Transportation status and budget

The number of passenger cars in Seoul has grown exponentially since 1980 due to the rapid growth of the people's incomes; by 1983 the number has increased 11 times over the years. In contrast, the length of roads has expanded only 1.2 times, which has compounded the traffic problem. To induce the people to leave their cars behind and take public transportation, the City has been exploring diverse transit policies for the past few years.



Budget

In 2015 Seoul City has allocated ₩ 2,080 billion as a budget for improving its mass transit systems including taxi services, creating environments that would entice more people to bicycle or walk to places, and maintaining its parking and other transportation facilities.

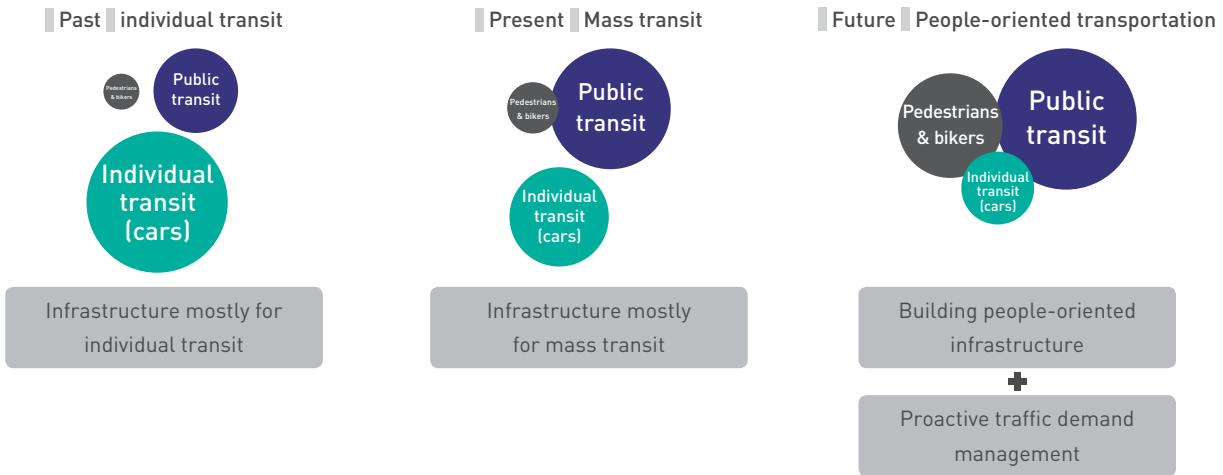


(Unit, ₩ 1,000)

Policy vision

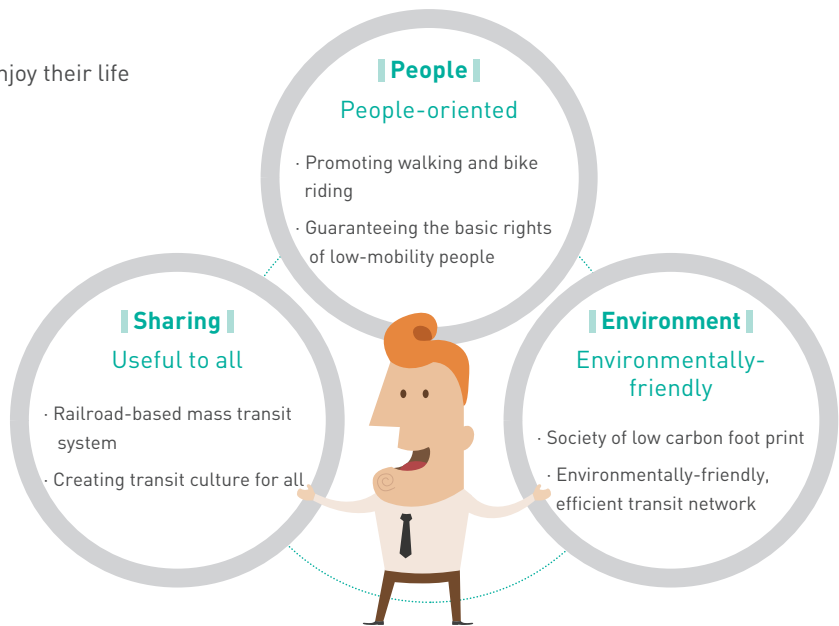
Changes in Policy

Seoul City is shifting its transportation policy away from automobile drivers towards people relying on different mass transit modes for their livelihood, building a seamless mass transit network that is convenient and affordable to use every day.



Vision

A Seoul where people come first and can enjoy their life without owning cars.



Safe and convenient transit infrastructure

Mass transit systems in Seoul are planned and operated in a manner that gives top priority to people's safety and convenience, fully reflects the characteristics and strengths of each system, and takes into consideration the sustainable growth of all systems.

Subways / Buses / Pedestrians & bicycles / Taxis



7M people using Seoul subways every day

The Seoul subway system consists of nine lines crisscrossing the metropolis and reaching many towns beyond the city limits. By extending the existing lines and building light rail lines, the City plans to build a 441 km-long, tightly knitted urban railroad network and to bring the combined modal share of its mass transit systems up to 75%.



9 lines
327.1 km long



Used by 6.9 million people a day

City-managed

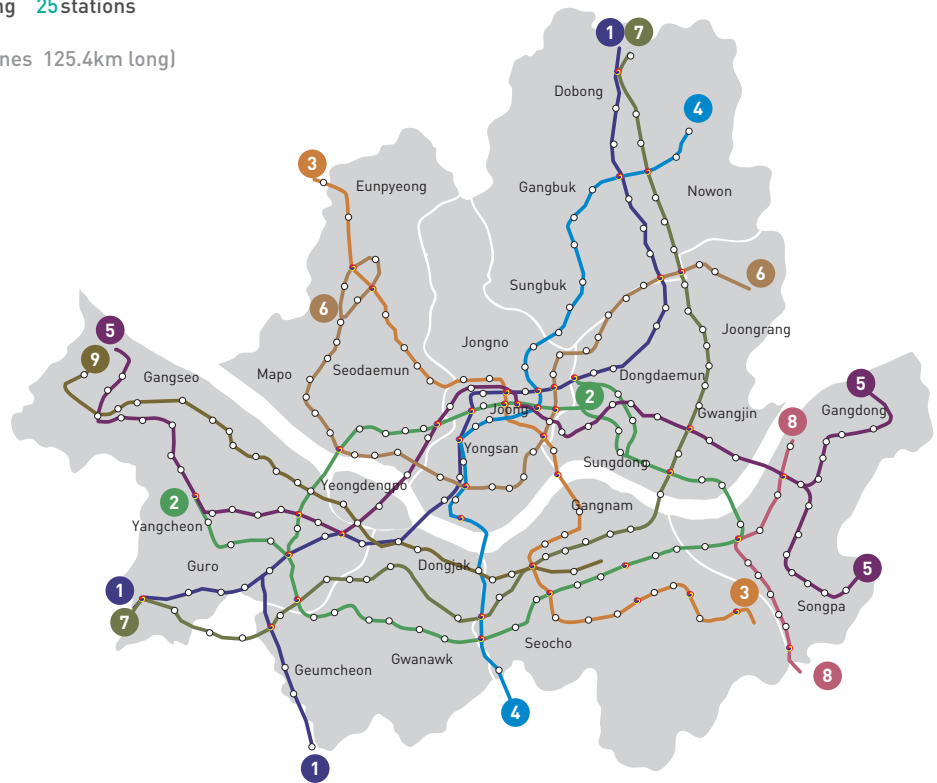
Seoul Metro No. 1 ~ 4 Lines 137.9 km long 120 stations

SMRTC No. 5 ~ 8 Lines 162.2 km long 157 stations

Private-owned

Seoul City Metro No. 9 Line 27 km long 25 stations

[Public and private lines combined 9 lines 125.4 km long]

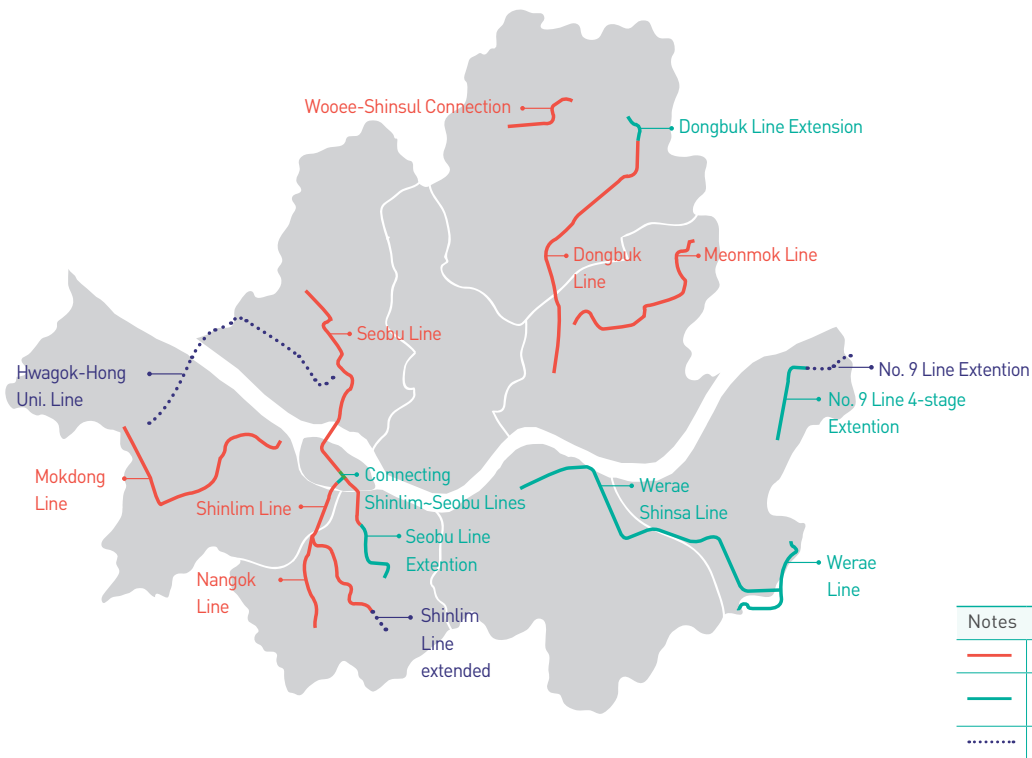


Light rail leads to rail-based transit era

By 2020 there will have been 10 light rail lines, making the subway system accessible within a 10 minute's walk from anywhere within Seoul. These new lines, once completed, will form, together with the existing subway lines, a railroad network connecting every pocket of the Seoul metropolitan area.



Planned metro railroad lines



Benefits expected (2020)



15% ↑

Mass transit modal share : 65% → 75%



6.2 minutes (20%) ↓

Average transit time : 31.6 minutes → 25.4 minutes



₩1,200 billion (15%) ↓

Traffic congestion costs (as of 2011) : ₩ 8 trillion → ₩ 6.8 trillion



16% ↑

Areas accessible to subways in a 10 minute's walk: 62% → 72%

Amenities reflecting people's voices

A variety of amenities are available, which have been created in response to Seoul citizens' voices, from the moment they enter subway stations.

Making easier getting around in subway stations

All subway stations are equipped with elevators and escalators to help the disabled, the elderly, expectant mothers get around with ease.



Elevators

872 (2015) ▶ **911** (2017)



Escalators

2,005 (2015) ▶ **2,137** (2017)

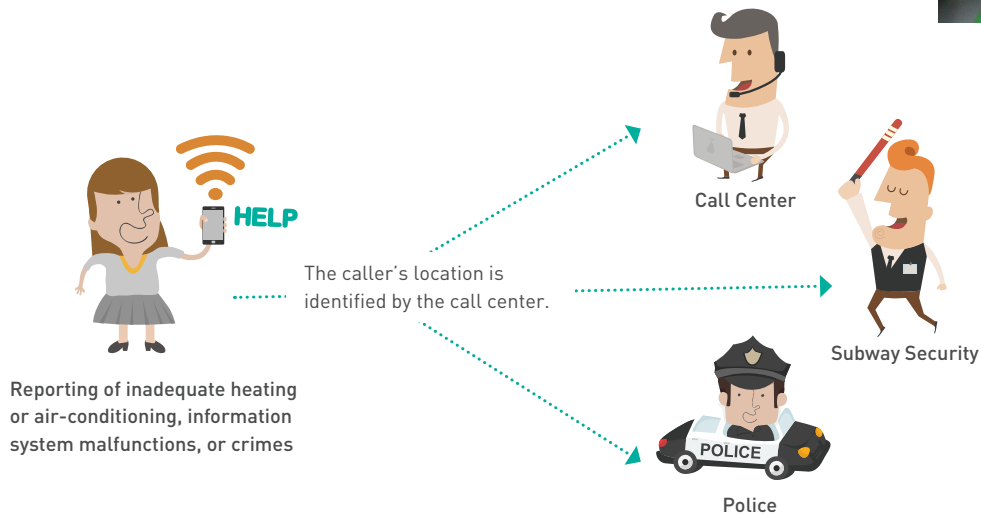


Free Wi-Fi Service

A free, high-speed Wi-Fi service is available in all subway stations and cars, enabling subway riders to access the Internet using their smartphones or tablet PCs.

An app for reporting of emergency or service disorder

An app is available for download which allows users to report an accident, a crime in development, or a service malfunction, quick and easily. The GPS feature of the app enables relevant authorities to promptly dispatch their personnel to the location of the caller.



Making Seoul subways safer

The Seoul subway system has in place a variety of advanced safety features that keep millions of subway riders safe every day.



Subway screen doors protecting riders' health and life

All subway stations have screen doors installed on the platforms to prevent accidental falls onto the rails and to reduce noise.



Accidents on the platforms

0% ↓



Air quality on the platforms

35.3% ↑



Noise

7.9% ↓

Subway security keeping subways safe

Subway security officers conduct among many things prevention of merchandise padding, panhandling, and other activities that cause public nuisances, in the cars.



149 officers (2014) ▶ 350 officers (2018)



CCTVs preventing accidents and service failures

All subway stations operate CCTV monitors (an average of 37), while the No. of CCTVs in the cars is on the rise.



A total number of CCTV monitors in the subway stations

11,260 (2015)

A total number of CCTV monitors in the cars

1,876 (2015) ▶ 3,116 (2022)



Subway platforms as a safe zone for people

Subway platforms are designated as a safe zone as the areas have a high concentration of CCTV monitors and are constantly checked by subway officials.



6 stations (2014) ▶ 16 stations (2015)

Buses, faster and more convenient than cars

In 2004 Seoul City overhauled its bus services to make its car-choked streets more friendly to mass transit. A semi public operation system has been adopted to improve the efficiency of bus operations; bus arrival information made available to the public via monitors at bus stops and an smartphone app; and bus-only lanes created to make buses run faster. As a result of these and other improvements, people have started to gradually leave their cars behind and to take buses instead.



Bus lines **594**



No. of buses in service **8,969**



Daily ridership **5.7** million

Bus line system

There are four basic bus service lines in Seoul: trunk and metro lines efficiently connecting its inner sections and outskirts areas; and branch and circulatory lines running within the city boundaries.



Trunk Line buses

- Linking the main and secondary centers and outskirts of the City



Loop buses

- Linking areas within Seoul City



Branch Line buses

- Linking Trunk Line buses and subways



Late-night buses

- Linking the main and secondary centers of the City from midnight to 5 a.m.



Metro buses

- Linking main centers and Seoul metropolitan areas



Village buses

- Connecting nearby subway stations and residential areas

Semi Public Bus Operation System

Seoul City has adopted a semi public operation system that combines the public interest of government and the operation efficiency of private business. Through this system the City manages bus line and fare adjustments and operations revenues in cooperation with participating bus companies, which contribute to higher transparency in the operation of the bus businesses and thus higher-quality bus service.



On-time arrival **4.6%** ↑
(87.3% in '06 ▶ 91.4% in '13)



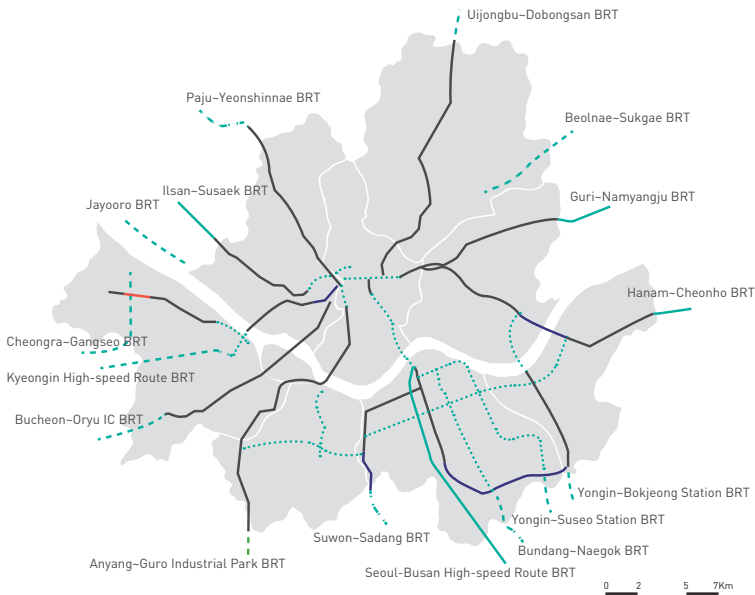
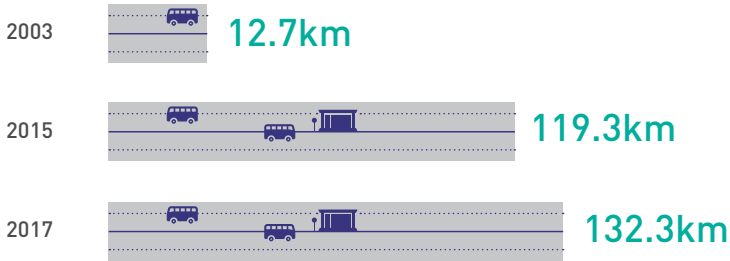
Bus modal rate **7%** ↑
(25.6% in '03 ▶ 27.4% in '12)



Service satisfaction **33%** ↑
(59.2 points in '06 ▶ 79.2 points in '14)

Bus-only median lanes—an axis of city mass transit

With the adoption of bus-only median lanes linking main urban centers to many secondary centers and city outskirts, Seoul buses have become faster and more convenient than cars.



Notes	
	In operation
	2015
	2016 ~ 2017
	To be studied in 2018

Benefits of bus-only median lanes



26% ↑

Average bus speed: 15km/h → 19km/h



On-time arrival rates ↑

on-time arrival: ±1 ~ 2minutes



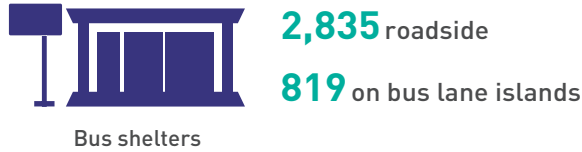
150,000 people

in daily average(2.6%) ↑

5.60 million (2007) → 5.75 million(2013)

Using the bus gets more convenient

Using the bus in Seoul has become much more convenient and less annoying: Many bus shelters are equipped with bus route information, heat-controlled seats, and monitors displaying ETA of buses, all of which make awaiting buses all the more pleasant.



Bus Transfer Centers making inter transit transfers easy

Bus stops once hazardingly clustered on thoroughfares have been consolidated, by destination, into "Bus Transfer Centers" located near subway stations, which has made transfers between the bus and the subway quick and easy.

- Four places (Seoul Station, Cheongryanni, Guro Digital Park, Yoido)



Information terminals displaying ETA of buses real-time

Many of the bus shelters in Seoul have information terminals that display estimated arrival times for the buses, which are updated every 40 seconds.



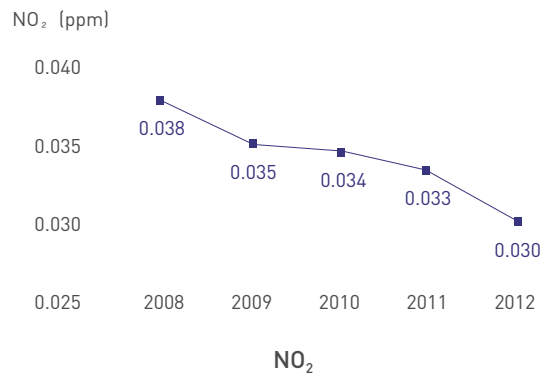
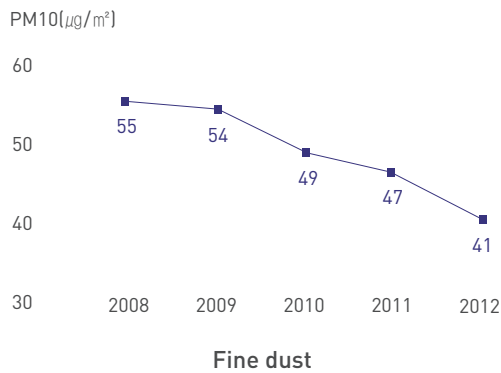
Using eco and people-friendly buses

CNG buses have replaced diesel buses, a major source of fine dust and other toxic pollutants, and low-floor buses have been introduced for the benefit of low-mobility individuals.



CNG buses of zero CO₂ emission

All the buses in Seoul have been replaced by CNG buses that emit no CO₂, a type of greenhouse gas.



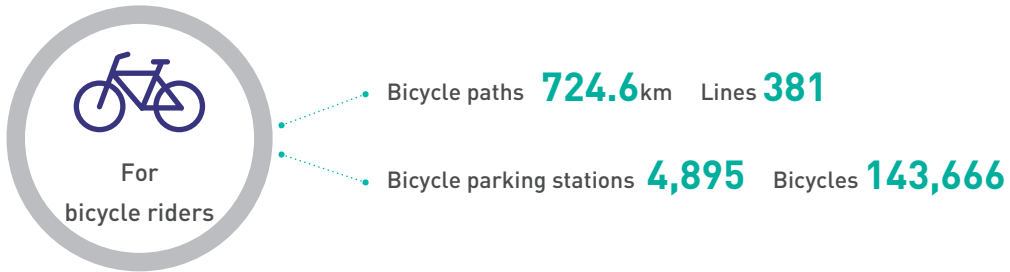
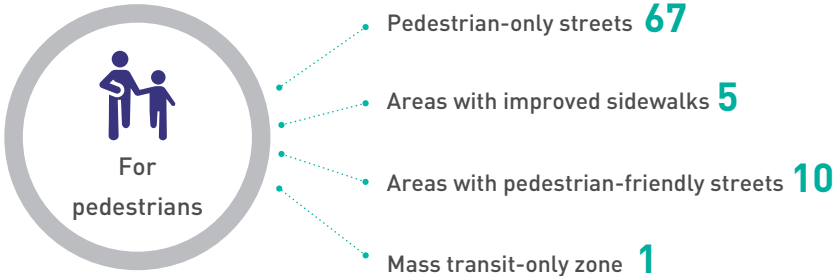
Low-floor buses for low-mobility individuals

The number of low-floor buses running in Seoul is on the rise, making it easier for people on wheelchairs or with baby strollers to get around the City.



Pedestrian and Bicycle-friendly city

Building a city where walking or bicycling is more preferable to driving



Making walking easier by expanding sidewalks

Walking around in Seoul becomes more leisurely as sidewalks are expanded into car lanes and the crosswalk light stays green longer.



Expanding crosswalks and extending the duration of the green light

Diagonal crosswalks and raised crosswalks are becoming more common features on the streets of Seoul, and crosswalk lights stay green longer, helping pedestrians keep their leisurely pace.



A total of crosswalks **32,251** (2014)

Diagonal crosswalks **63** (2014) ▶ **107** (2018)

Keeping narrow crossroads safe from cars

On many of the crossroads in housing areas have cross signs painted as a sign warning of cars that might speed out of alleys.



Expanding safety zones for low-mobility individuals

The number of zones have been expanded for children, the elderly, and the physically challenged to safely pass through.



Children safety zones

1,683 places(2015) ▶ **2,000** places(2022)



Safety zones for the elderly and the handicapped

73 places(2015) ▶ **200** places(2022)

Pedestrian zones, returning to people what's theirs

By blocking cars from streets with a high density of pedestrians, Seoul City has created pedestrian-only streets, gradually returning to people what was once theirs.



67 streets(2015) ▶ **105** streets(2018)



Pedestrian zone on Sejongdaero

- A 550M 6-lane section near Gwanghwamoon
- Open every other Sunday (except in summer and winter)

Pedestrian-only Duksugoong Road

- 301M part of Duksugoong Road
- From 11:30 to 13:30, every weekday

Bus-only zone in the Shinchon area

- A 550M zone between Shincheon Station to Yonsei Uni.
- Open to only pedestrians, bicycles, and buses



30km/h ↓

Car speed : 60km/h → 30km/h



Car lanes ↓

4-lane → 2-lane



The width of sidewalks ↑

3-4m → 8m



Public bicycles pedaling a two-wheel boom

By 2013 over 20,000 public bicycles will have been available for Seoul citizens to ride to work, to school, or to any other destinations of their choices.

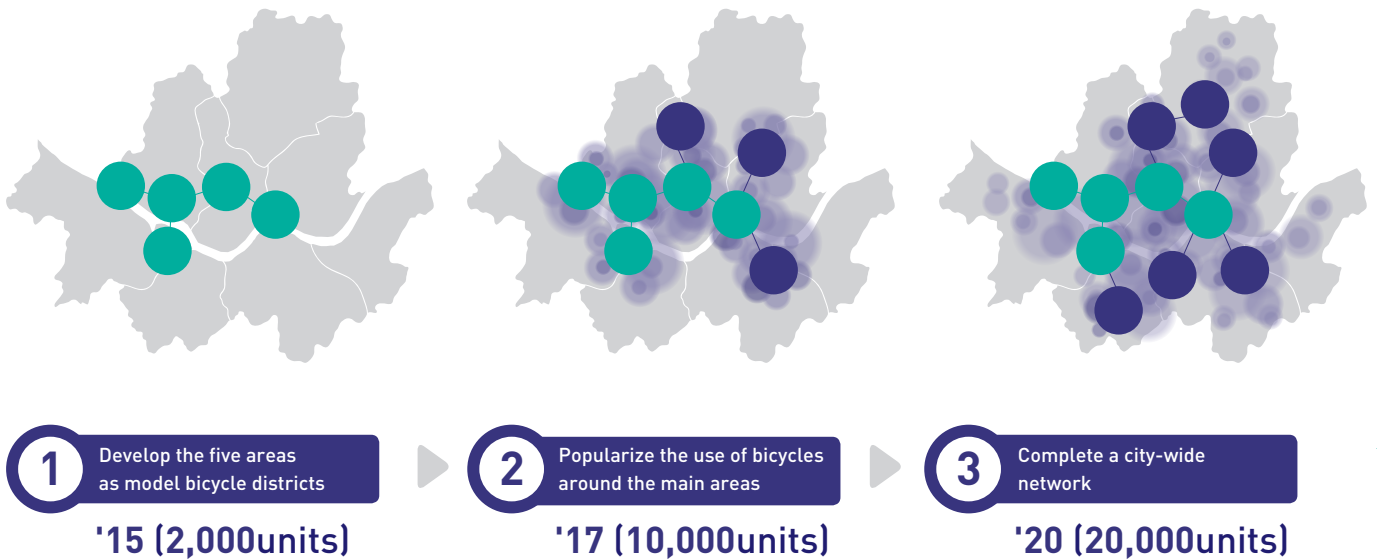


Current status

- 378 rental stations in 44 areas(2014)
- Rental rates

Daily	Weekly	Monthly	Yearly
₩1,000(for 1st hour, additional ₩1,000 for each 30 minutes)	₩3,000	₩5,000	₩30,000

The progressive goals of the public bicycle program



Mobile transit card · Credit card

Reasonable rental rates

An app is available for information on locations and rental availability

Formulating **taxi** services that satisfy all

Based on its analysis of data containing the operation data of over 70,000 taxis, Seoul City develops policies that keep taxi services convenient for its citizens and efficient for taxi operators.



72,160 units

Independent taxis **49,373** units

Company taxis **22,787** units **255** operators

system of basic four shifts (A,B,C,D)
 A,B,C: 2 days work one day off / D: Wed. and Sun. off
 Owl taxis (9 p.m.~9 a.m.)



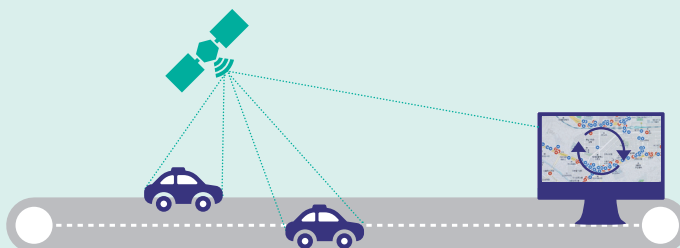
Basic rates: ₩3,000 for 1st **2 km**, additional ₩100 for every **142** meters

Seoul Taxi Information System

The Seoul Taxi Information System collects such taxi data as locations, speeds, points of passenger pick-ups and drop-offs, and fares. Thus collected data are analyzed to be used in developing more efficient taxi services policies.

Benefits

- Crucial to developing rational taxi services policies
- Efficient management of taxi operations
- Effective traffic controls based on analysis of the traveling speeds of taxis on the road



Data upgraded every 2 minutes 30 seconds



- 🔴 Empty taxis
- 🔵 Occupied taxis

Three out of five pay taxi fares with credit cards

All taxis operating in Seoul take smart cards as well as credit cards, making the taxi ride all the more convenient for users.



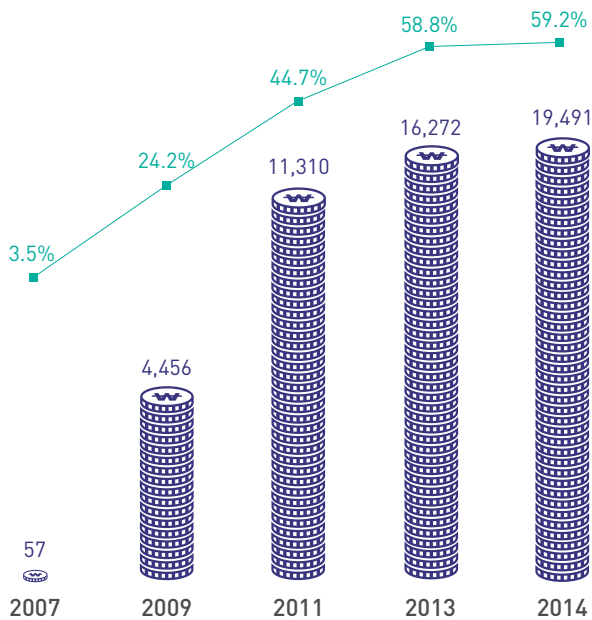
Stand-alone card payment acceptance system

The credit card reader installed in all the taxis is of a stand-alone system in that transactions can be processed even in the case of a failure involving card data transmission.



Growth of taxi fares paid with credit cards

- Payments made in credit card
- Rate of card payments



Effects of the credit card acceptance system



Convenient mode of payment



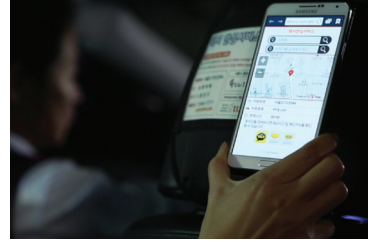
Increased transparency in taxi revenue flows



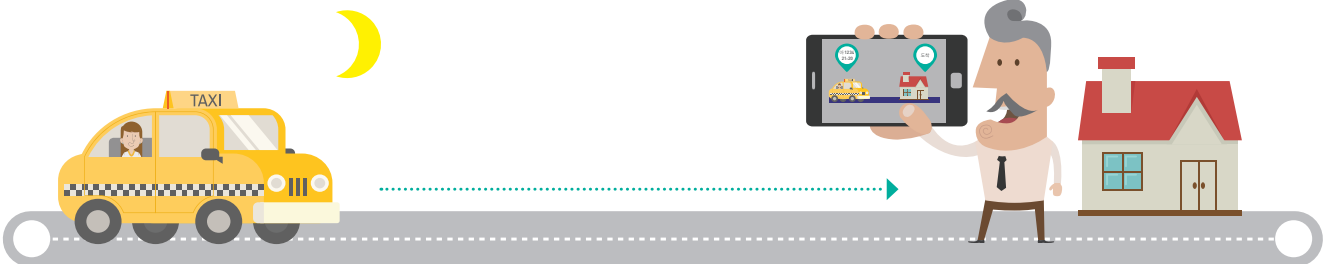
A big drop in things left behind by passengers

Making taxis safe for anyone anytime

All taxis in Seoul are equipped with an NFC system that enables passengers to send information on the taxis and the drivers to their guardians.



NFC-based safe ride home



Tag the data-encoded sticker with a smartphone



input a guardian' phone No.



taxi information automatically sent



guardian gets data of the taxi and the driver

Call a taxi using an app

A smartphone app has been developed that enables the user to have a nearby empty taxi come to his location.



Getting a taxi has never been easier

One can call a taxi and pay for the service using the app



Traffic reduced ↓
Empty taxis can stay put, instead of driving around



taxi service ↑
The quality of taxi service can be evaluated and managed

Reducing road traffic by **managing traffic demand**

Levying congestion charge on city-entering traffic

Congestion charge is applied to automobiles coming into Seoul as a way to reduce traffic in the City.

- Namsan Nos. 1 and 3 Tunnels
- A congestion charge of ₩2,000 is applied to 10-passenger and less vehicles containing two persons and less.



Inner city traffic volume ↓
(34.4%/day)



Average inner city traffic speed ↑
(21.6km/h → 43.1km/h)



Greenhouse gas ↓

Imposing fines on businesses contributing to traffic congestion

Fines are levied on department stores, hotels, and other businesses contributing to inner city traffic congestion, and adjusted in accordance with the level of their participations in programs designed to help reduce traffic.

- Traffic inducement fine of ₩1,000 is charged per square meter
- No. of businesses participating in a “Traffic Demand Management” program: 2,145 as of 2013

Program participation status

Operation of commuter buses, Operation of pay parking lots, Enforcement of car-free days etc.

“Metro Transfer Centers” offering discounts on mass transit rides

“Metro Transfer Centers” have been established on select boundary points of the City as a way to reduce the volume of incoming traffic. Equipped with ample parking facilities, these centers offer discounts on mass transit rides to those who park the cars and take buses or subways coming into the City.

- Four places (Gupabal, Cheonwang, Gaehwa, Dobongsan)
- 50% discount on mass transit rides for parking at the centers



Use of mass transit ↑



Traffic entering city ↓



Improved air quality due to less traffic

Affordable and convenient “citizen cars”

Seoul City makes available cars for its citizens who want to use cars for as little as 30 minutes without the hassle or expense of going through a rental car agency.



912 places

1,922 cars



- From reservation to payment through use of a smartphone app
- Cars can be rented for as little as 30 minutes and by 10 minutes afterwards
- Discount for public transit transfer fee

Benefits



Vehicle operation ↓

In terms of traffic effect

15~20 cars equal to 1 rental car



Yearly ₩2.05 million ↓

In economic terms

6.3 M per private car → 4.25 M per rental car



CO₂ 720 tons ↓

In terms of emissions

Per 100 rental cars

Note 1) Based on the use of an Avante HD (gasoline, 10 years old), at ₩ 2,000 per liter, 10 kms per liter, a daily average driving of 30.5 kms

Note 2) Based on a hourly rental charge of ₩ 5,000, at ₩ 200 per km

How to use



Reserve ▶



pick up ▶



return ▶



pay through an app



IT-based advanced traffic system

TOPIS(Seoul Transport Operation and Information Service) plays the role of the hub of “smart city management” by monitoring 24/7 for traffic accidents, natural disasters, and other emergency situations.

The service is a traffic control center, a disaster status control center, and a civil drill agency rolled into one. The IT-based transit card system, together with another system that varies fares by distance, has contributed to the expanded use among Seoul citizens of mass transit.

TOPIS / Metropolitan Integrated Transfer Discount System / Transit cards



TOPIS (Seoul Transport Operation and Information Service)

TOPIS provides accurate traffic information based on analysis of traffic data collected city-wide, uses the information towards the formulation of scientific transportation policies, and manages diverse bus services based on real-time bus operations information.

01 Real-time communication management / Supply of traffic congestion information

Monitoring traffic conditions and prompt supply of congestion information

02 Scientific traffic administration support

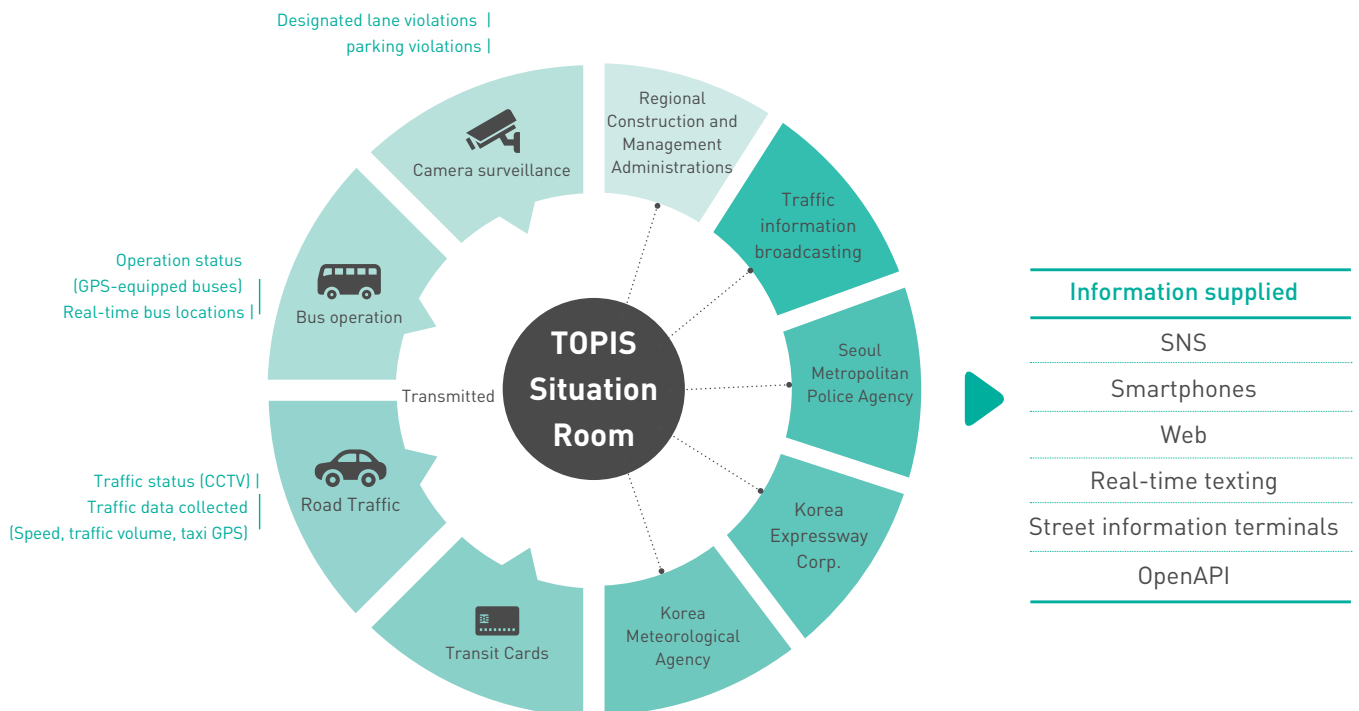
Bus operation support and operation planning / traffic planning involving road and facility improvements

03 Real-time bus operation control

Supplying bus operation information / Coordinating bus detours and assignments

04 Surveillance system operation

Clamping down bus-only lane violations / clamping down illegal parking



City management hub drawing worldwide attention

As a smart city management hub that can monitor and control disaster relief operations, TOPIS makes traffic forecasts and takes preemptive actions, if necessary, against potential traffic problems through use of scientific methods and statistical analysis of big data. For the superiority of its programs backed by proven track records, the technology of TOPIS is being licensed to Azerbaijan, Mongolia, and other developing countries.



Traffic



Disasters



Integrated city management

Smart city management hub created

Citizen casualties and suffering minimized



Public



Private



Export cooperation

Support for exporting intelligent traffic systems strengthened

Win-win ties with private businesses



Big data



traffic



Future traffic cooperation

Prepare for future traffic issues through use of big data

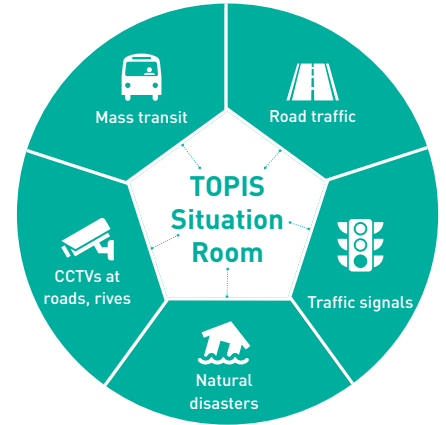
Active implementation of traffic forecast systems



24/7 integrated traffic and disasters management

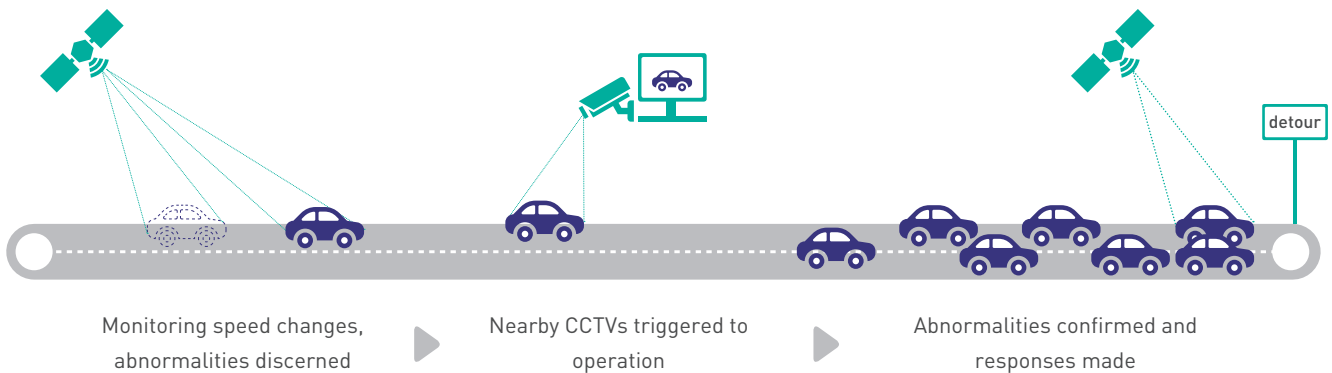
- Such city management functions integrated as road traffic, mass transit, disaster relief operations
- 24/7 monitoring, prompt evaluation of and response to emergencies
- Containing the effect of natural disasters by prompt response and support through monitoring of river levels, weather developments, and traffic conditions.

<Integrated monitoring and surveillance of traffic and disaster developments>



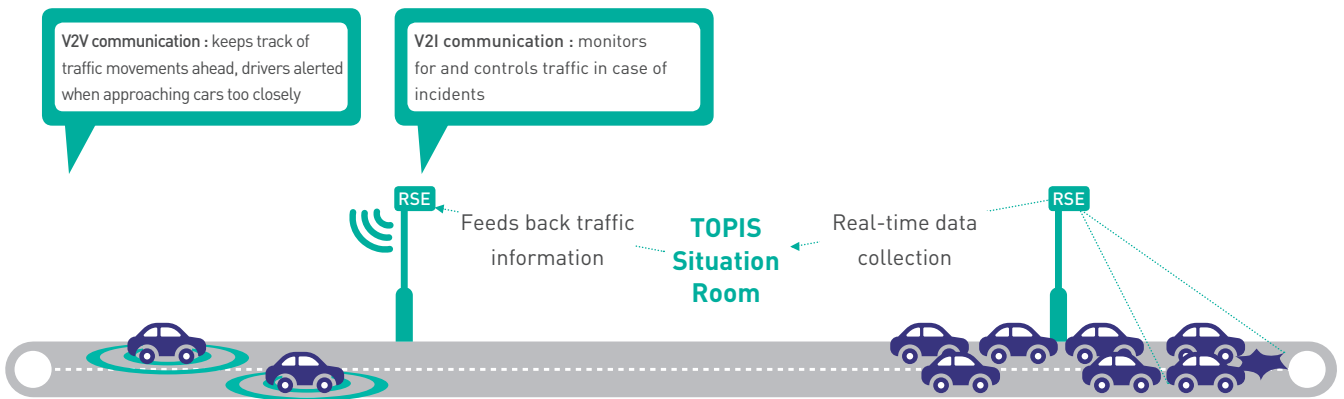
Scientific situation analysis platform / Preemptive traffic congestion controls

- Scientific methods employed, such as "Speed-based Road Condition Monitoring", to detect developing traffic issues and take remedial actions at an earliest possible time.
- Road traffic monitored for speed differences exceeding historical standards

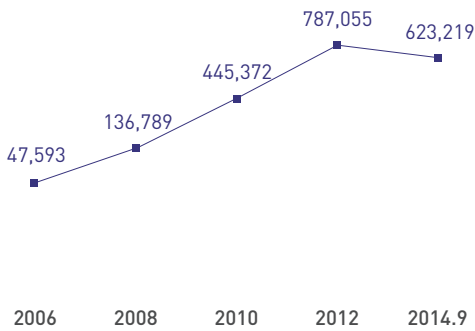


Big data-based traffic forecast system

- The adoption of a traffic forecast/alert system based on the prediction of road traffic situations
 - Makes traffic forecasts and alerts through analysis of big data including a 10-year accumulation of data on traffic speeds on different roads
 - Provides information on detours around congested areas and on when to use roads
- Big data-based next-generation road safety service
 - Preparing a road safety service that aims at a zero traffic accident rate



No. of TOPIS information uses (daily average)



*Media using TOPIS information

ARS, internet, mobile, smartphone businesses

Metropolitan integrated transfer discount system

A system that varies mass transit fares by distance was introduced to Seoul citizens in 2004. The system was soon expanded to serve the city of Incheon and other cities of Gyeonggi Province and, in 2009, modified to charge fares for transfers between all mass transit systems in Greater Seoul Area. Today, Metropolitan Integrated Transfer Discount System helps 25 million people take various mass transit modes economically.



Fare system comparison

Fare burden dropped Up to ₩510,00 per head/year saved



Mass transit use

10.13M '07 → 11M '14 per day

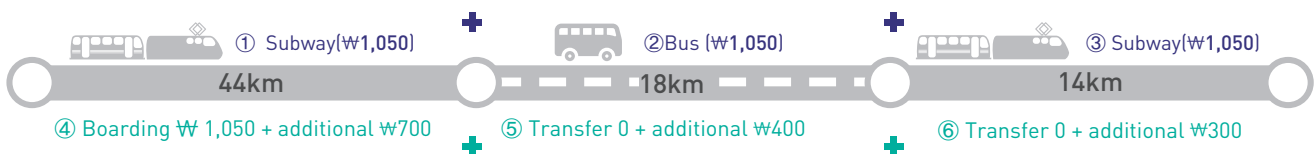
Fare system comparison

	Smart cards		Cash
	Fixed pricing	Integrated pricing('04.7.-)	
Adults	Different fares for different modes	<Basic fares> first 10km (free transfers) <Additional fares> ₩100 at every additional 5km	N/A
Youth	deduct ₩150 and 20% discount off of adult fares		
Children	deduct ₩150 and 50% discount off of adult fares		

Fare application example

* Fixed pricing(① + ② + ③) :

₩3,150(about \$3)



*Integrated Transfer Discount System(④ + ⑤ + ⑥) :

₩2,450 (about \$2.2)

₩ 38% savings

Transit cards, a corner stone of IT-based advanced transportation

Everyday 14.09 million transit card transactions take place within Greater Seoul Area, amounting to ₩ 15.7 billion. The scale and efficiency of Seoul City's transit card operations and technology are an object of interest to many other cities in the world.

The use of transit cards by the mode (12, 2014)



The No. of card uses and amounts generated

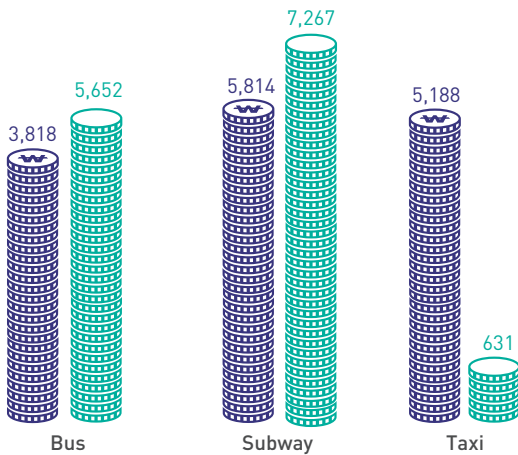
(units: 1000, million won, as of 12, 2014)



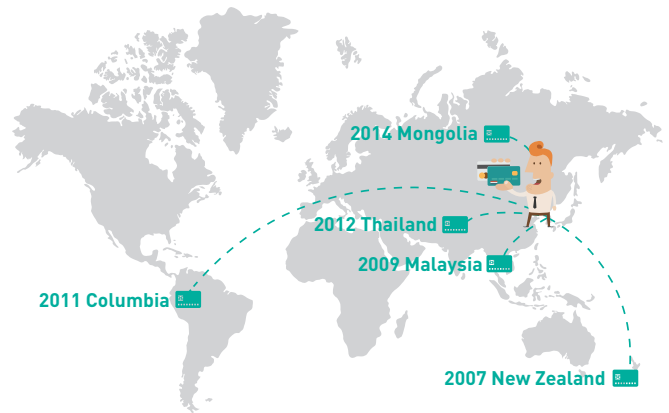
Daily average uses

No. of uses **14,094**
Amounts generated **15,785**

* Cash not included / * long-term cards excluded



Exportation of transit card systems



Daily average amounts
 Daily average uses

