Seoul
Together we stand

Seoul Transportation 2030

Seoul Metropolitan Government

Contents

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Together we stand

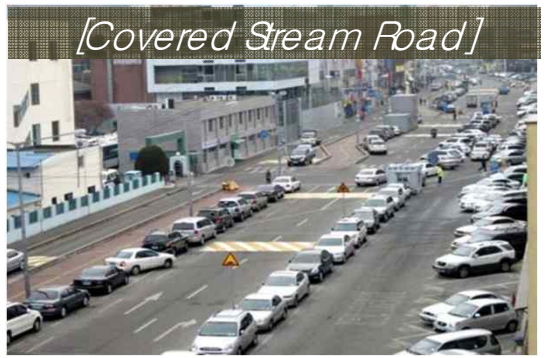
I. Past

1. Past

Car-oriented infra	Road facilities for Car	Traffic system for Car

[Overpass]

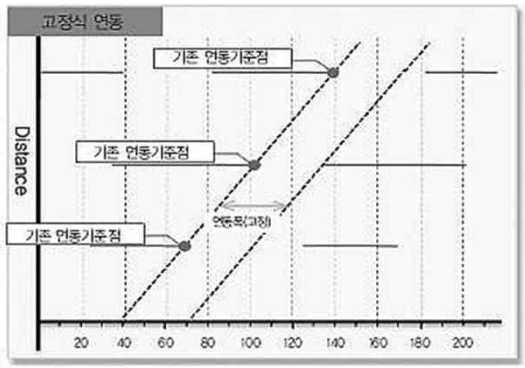
[Covered Stream Road]



[Main road linked signal]

[Underpass]

[Flyover]



Car-Oriented Policy

2. Background of the car-oriented policy…

Period of development basic urban infrastructure	Increasing traffic demand	Increasing

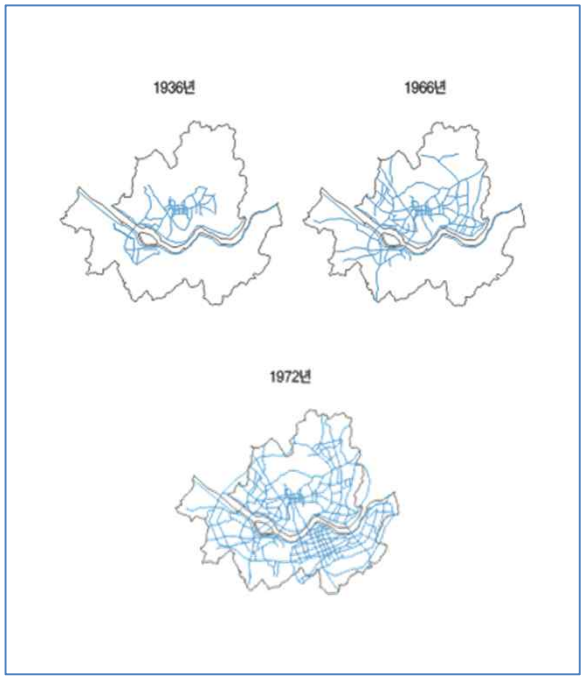
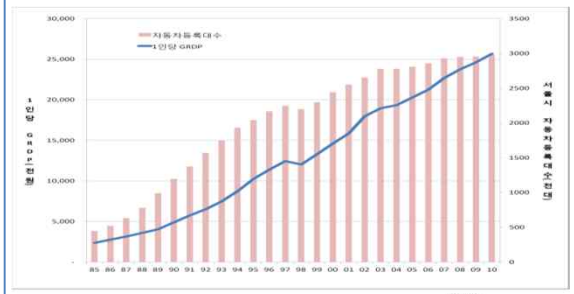


사진 : 80년대 강남역, 여의도



자료: 한국자동차산업연구소

Supporting urban development and traffic demand

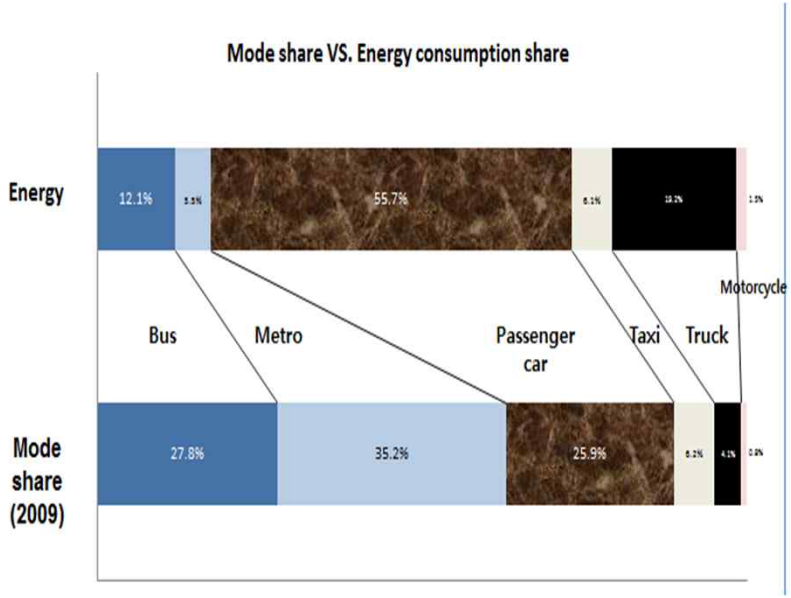
3. Side Effect... (Environment, Energy)

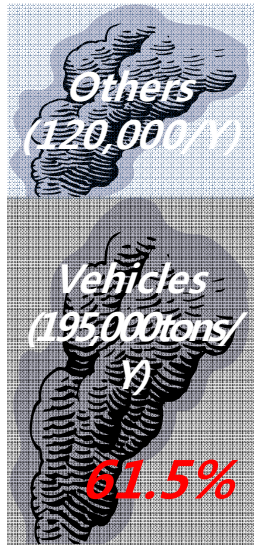
Transport ‘
Share of energy consumption(Seoul): 31%

Co2 emission of private=
7 times of Bus, 15 Times of Metro

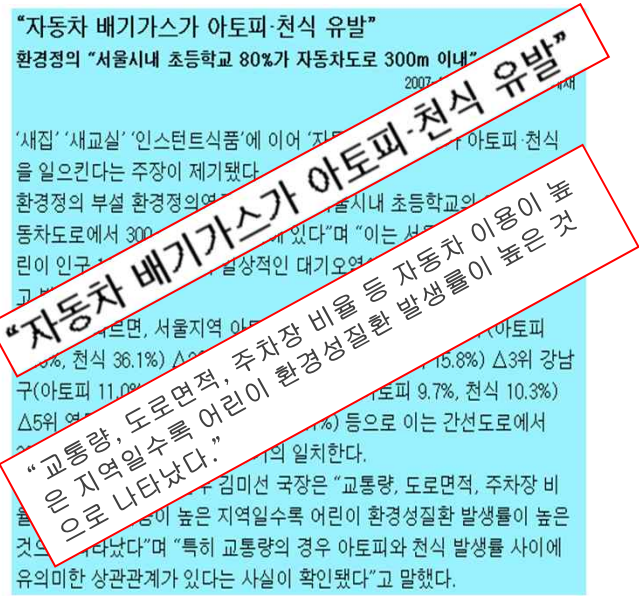
Mode share of Private car: 25.9%,
Share of energy expenditure: 55.7%

61.5% of air pollution from Vehicles





[대기오염물질배출량('09)]


“자동차 배기가스가 아토피·천식 유발”
환경정의 “서울시내 초등학교 80%가 자동차도로 300m 이내”
“교통량, 도로면적, 주차장 비율 등 자동차 이용이 높은 지역일수록 어린이 환경성질환 발생률이 높은 것으로 나타났다.”

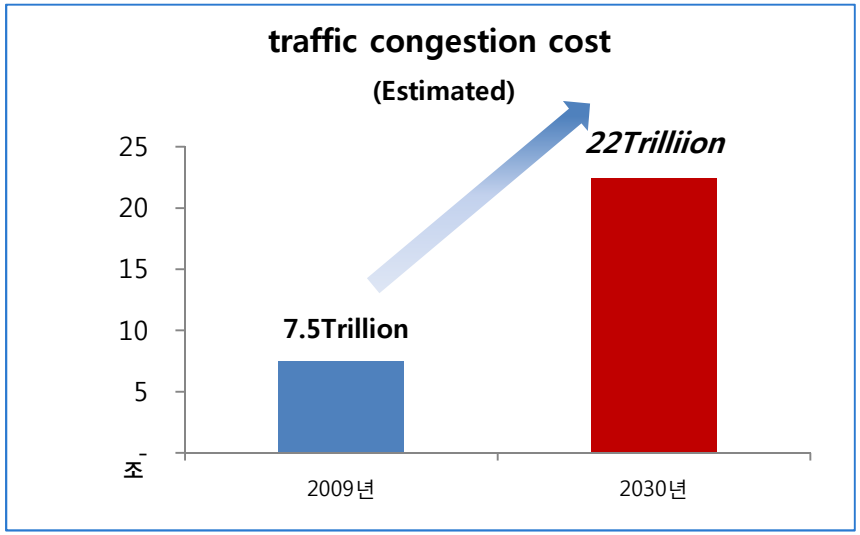
Energy consumption structure, Excessive emission of pollutant

3. Side Effect... (Economy/Urban Planning)

Spending 11times cost public transportation instead of a private car

Lack of space of constructing road , Spending 78% of constructing budget for Compensation expenses

Increasing traffic congestion cost



※ 2009년 전국 교통혼잡비용 추정과 추이 분석 (한국교통연구원, 2012)

Causing inefficiency

- Private car 's dimension of parking lot= 20 times of Bus
- Private car's dimension of Road = 8.5 times of Bus

자료: City of Muenster Planning Office, 2001/8)

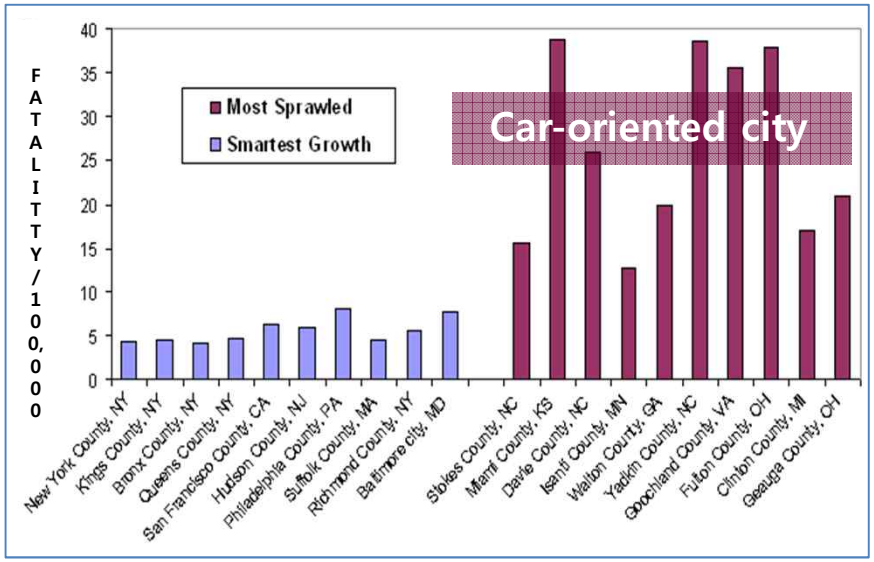
Economical and Spatial inefficiency

3. Side Effect... (Local Communication/Control Traffic Demand)

Dismantling of Community

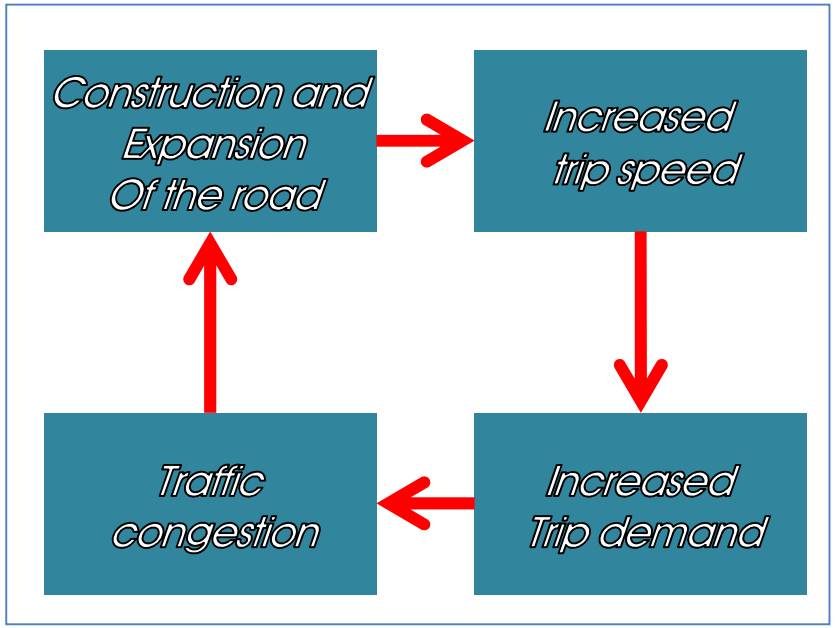
- Dismantling of Community due to car-oriented system
- Possible of Fatality: City pedestrian-oriented city = 4 times of Car-oriented

Traffic fatality by cities



Solution for traffic congestion
▷ Constructing road ▷extreme traffic congestion

- Brass paradox



자료: Ewing, R. et al., 2003, Urban sprawl as a risk factor in motor vehicle occupant and pedestrian fatalities, American Journal of Public Health, 93(9): 1541-1545

Dismantling of Community, Traffic congestion Vicious cycle

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II. New Challenge

1. Demands for an Improved Quality of Life

Changes in Citizens 'values of 'Quality of life'

Restored Humanity
- Demanding a people-centered transportation system which overcomes human alienation

Communication
- Demanding a transportation system that communicates with citizens and their viewpoint

Society Integration
- Demanding an equitable transportation system for everyone

Public Domain
- Demanding a shared transportation system (public transportation, car pools, etc.)

Health
- Demanding a healthy transportation system (well-being, LOHAS)

Need for a transportation system that values people, communication, equality, sharing, and health

2. Energy/Climate Change Crisis

Excessive oil use

- 5th in global oil consumption per head
- 2nd in oil consumption per head among non-oil nations
- An advent in oil production peak in 2020

Source: Italian Oil Company (Enl) Report, 2006

예측 기관/ 전문가	피크 오일(년도)	추정량
바크티아리(ASPO)	2006~2007	-
콜린 캠벨(ASPO)	2007	all liquids, 궁극매장량 2조 5,000억 배럴
Center for Alternative Technology**	2010~2031	-
장 라에레르(ASPO)	2015	all liquids, 궁극매장량 3조 배럴
피크오일연구협회*	2014~2018	-
피에르 르네 보키(ASPO)	2020	all liquids
TOTAL	2025	-
IEA	-	재래식 석유, 궁극매장량 2조 6,260억 배럴
DOE	2020	-
피터 R. 오델	2060	all liquids, 궁극 매장량 6조 배럴 이상

출처 : 벵제르, 2007, DOE, 2004, Attali, 2009, CAT, 2010

Possibility of being added to 'emission reduction nations' according to the Climatic Change Agreement

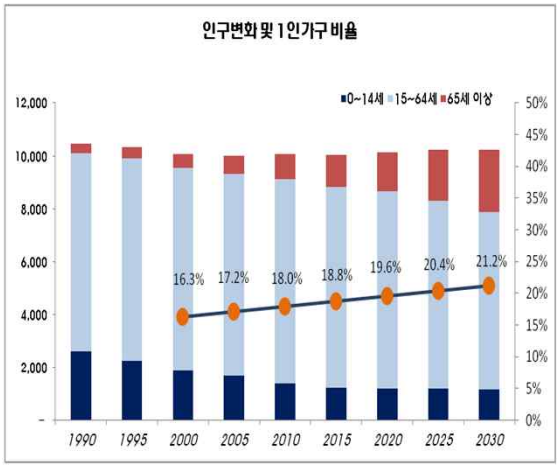
- Federal government announces greenhouse gas emission reduction goals
  - national : 30% reduction compared with BAU in 2020
  - transportation section : 34.3% reduction compared with BAU in 2020

Source: Korea Energy Agency

Need to switch to a transportation system that deviates from fossil fuel dependence

3. Change in City Environment

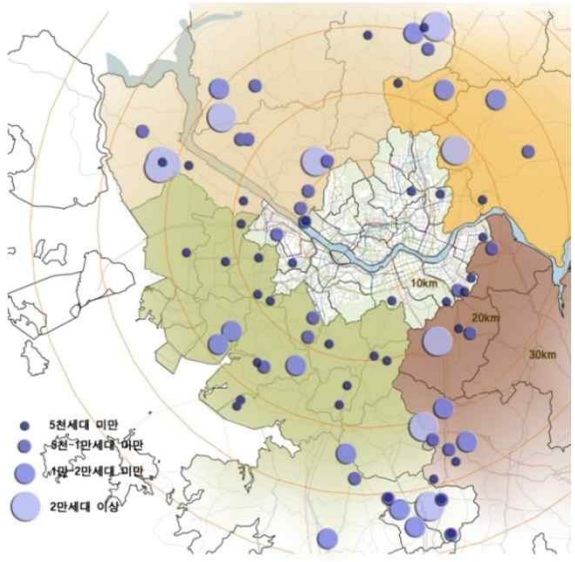
Change in Population



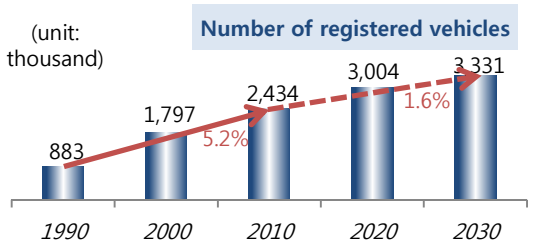
Source : Statistics Korea, age-specific population estimate

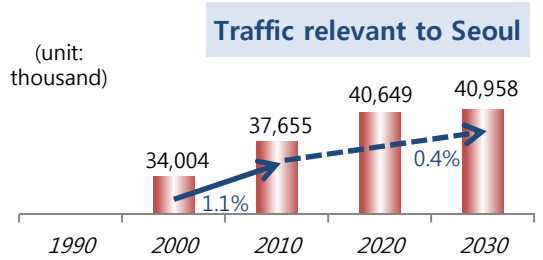
- Stagnation and reduction in total population
- Above age 65: 1 out of 5 people (22.9%)
- single households: 1 out of 5 households (21.2%)

Change in City Structure



Change in Transportation Demand





- car : 5.2%(past 20 years) vs. 1.6%(future 20 years)
- traffic : 1.1%(past 10 years) vs. 0.4%(future 20 years)

Aging Society, increase in single households

City expansion and conurbation

Slowdown of a growing trend of cars and traffic

Need to switch to a management-centered transportation policy rather than a growth centered policy

4. Development of advanced technology

Vehicle and communication technology

Source : Presidential Council on National Competitiveness, ITS Developmental Strategies

- Infrastructure and constant intravehicular communication (V2I,V2V)
- Rear delivery of obstacle information
- prevention of collision and lane deviation

Provide proactive safety service

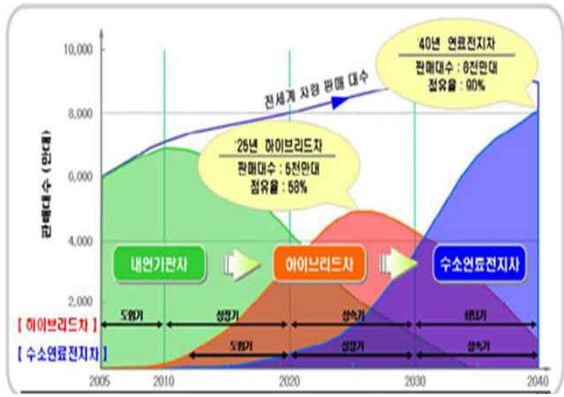
Data and positioning technology

Source : the Korea Transport Institute, share base plan of transportation system

-Advanced computer process performance (cloud, big data)
- Accuracy enhancement of determination technology and sensing technology
- Supply of smart devices

Create and provide various and accurate information

Fuel and energy technology



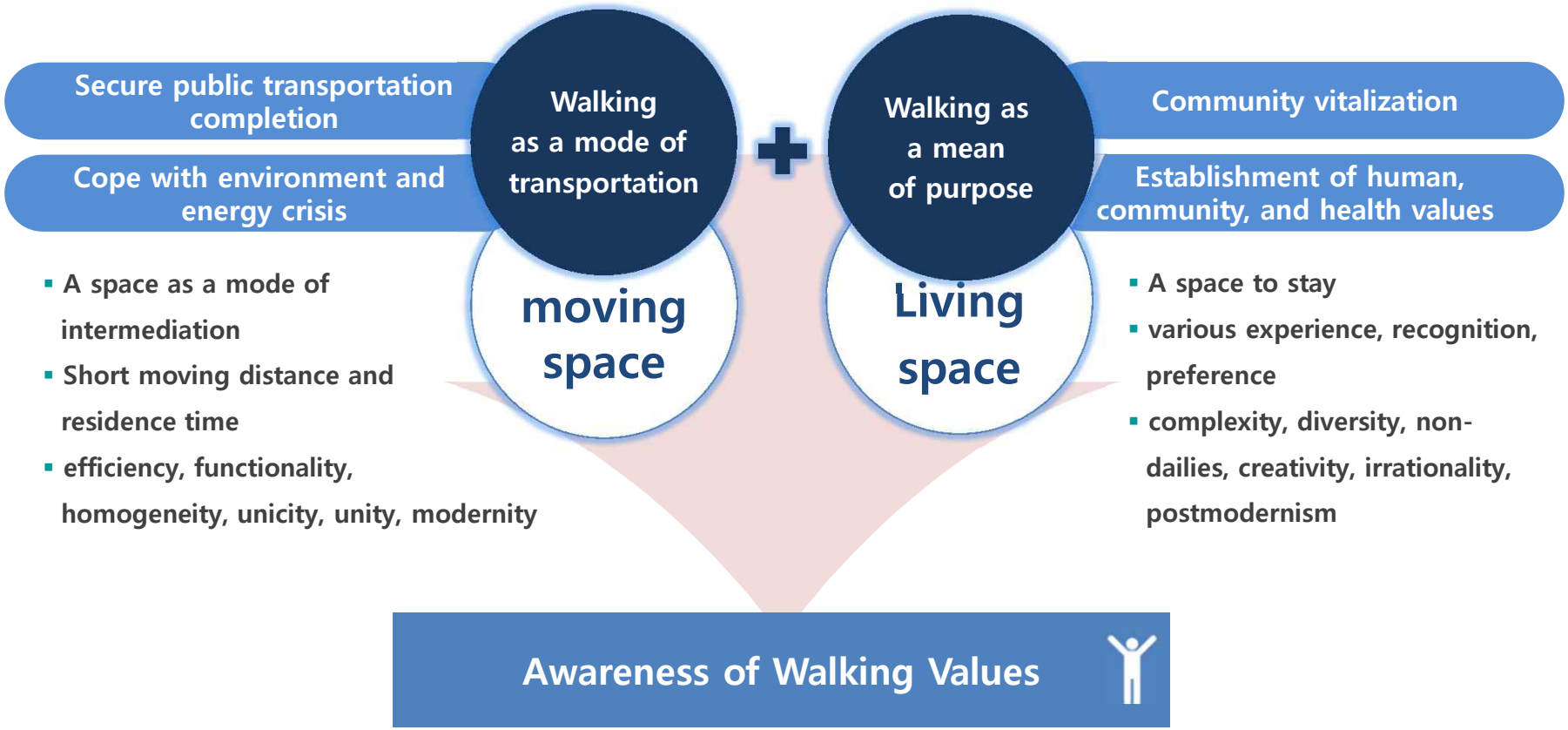
Source : Global Insight

- Commercialize vehicles that use new fuels
- Increase efficiency of solar energy
- Commercialize wireless charging system

Supply new transportation modes and increase energy efficiency

Needs an efficient transportation system supported by advanced technology

5. Awareness of pedestrian values



Needs a pedestrian policy that considers completion of traffic and enhanced quality of life

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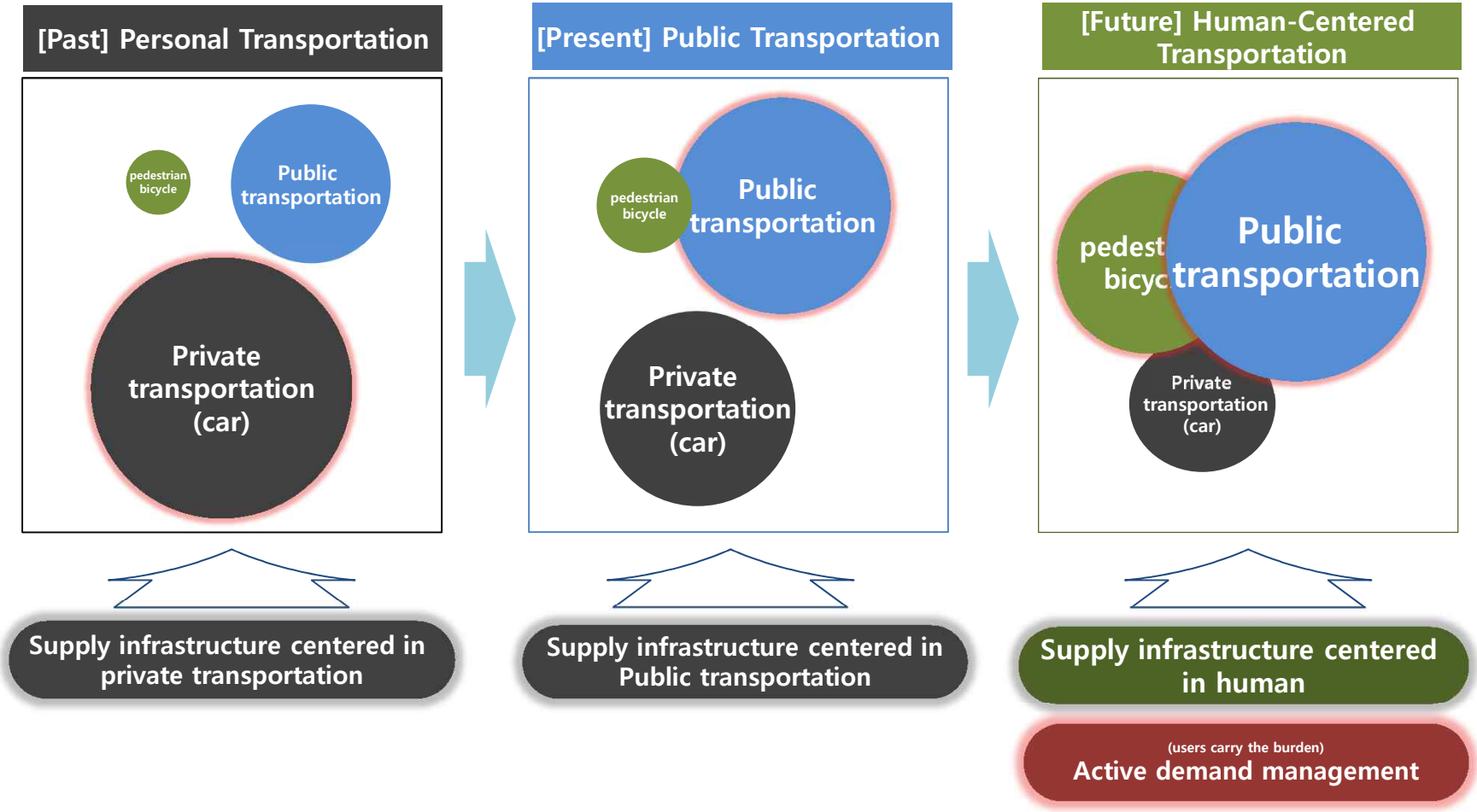
III. Evolution

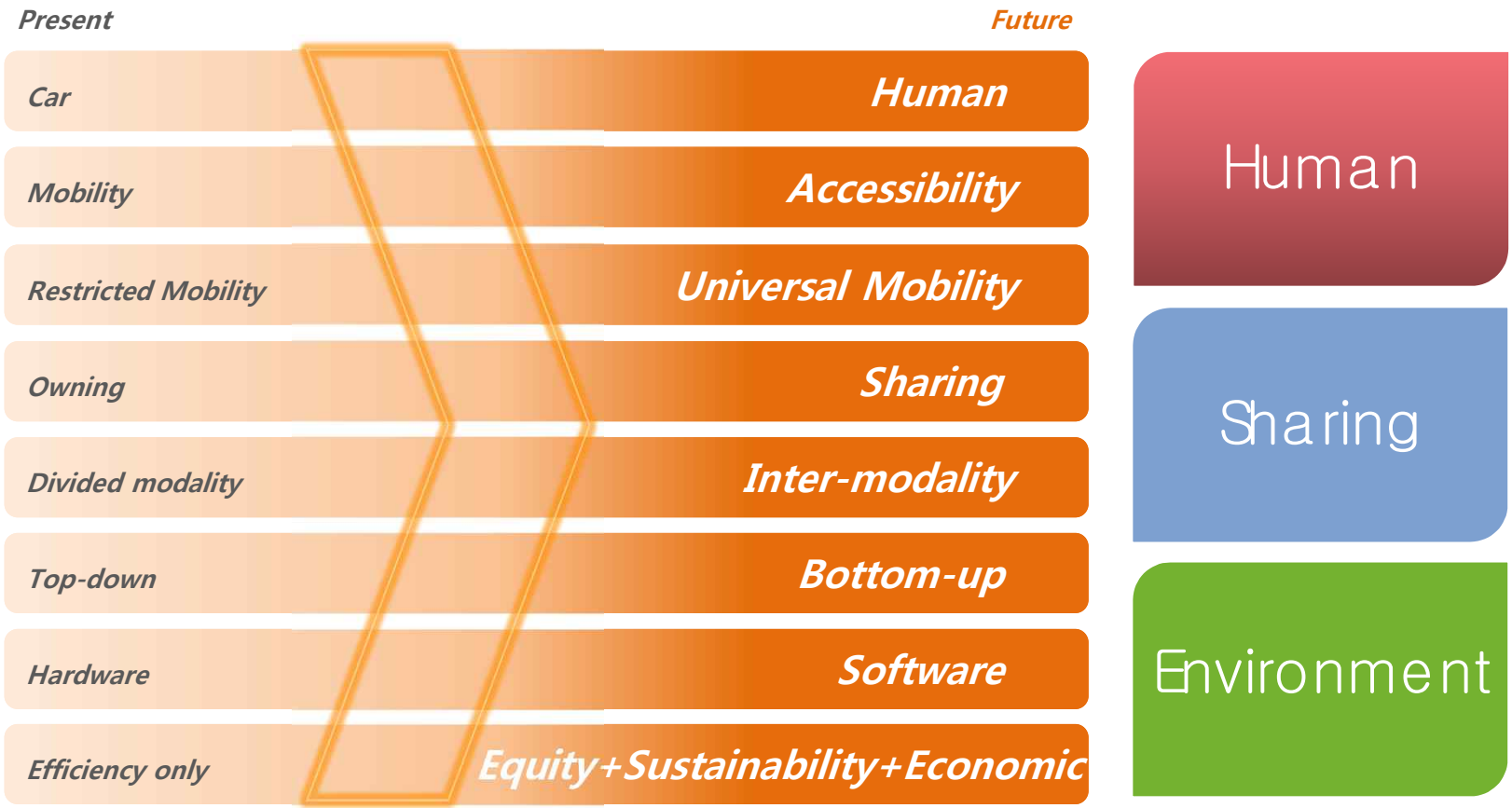
1. Shift in Traffic Policy Paradigm

- ***A central movement from a policy that prioritizes 'social value' to 'personal convenience'***



1. Paradigm Shift

Toward paradigm shift



2. Vision

VISION

Livable Seoul without relying on Vehicles

Human — Human-oriented
- Promoting walking and cycling
- Improving neighborhood streets
- Securing mobility for the transportation vulnerable

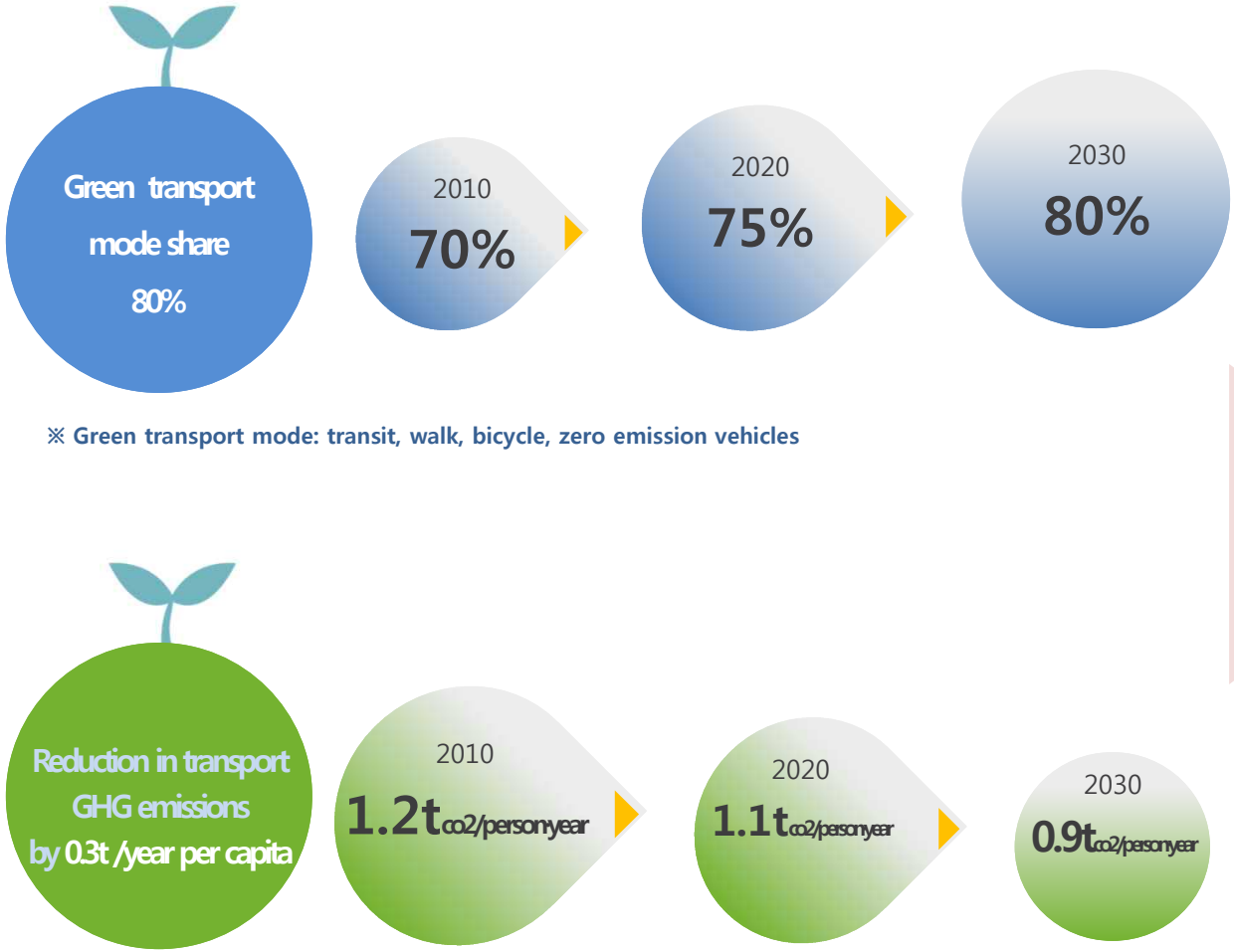
Sharing — Sharing together
- Establishing transit oriented-transport system
- Promoting sharing transportation
- Converting car-oriented road space

Environment — Considering environment
- Encouraging rational use of cars
- Saving energy with efficient traffic operations
- Introducing eco-friendly transport modes

6 principles for implementation

Safety | Diversity | Agreement | Design | Technology | User-Pay

3. Vision


Green transport mode share 80%
2010
70%
2020
75%
2030
80%
※ Green transport mode: transit, walk, bicycle, zero emission vehicles
Reduction in transport GHG emissions by 0.3t /year per capita
2010
1.2tco2/personyear
2020
1.1tco2/personyear
2030
0.9tco2/personyear
2030
Triple 30
Car trip reduction by 30%
Transit commute travel time reduction by 30%
Green space ratio in downtown From 10% to 30%

4. Action Plan

「Seoul Transport 2030」

11 Promises

- Building pedestrian-oriented environment
- Encouraging the wide use of bicycles
- Making an accident free city
- Removing barriers for the transportation vulnerable
- Establishing rail-oriented public transit system
- Making public transit faster and more convenient
- Encouraging shared transport
- Reducing unnecessary trips
- Introducing environmentally friendly transportation modes
- Making cars on the road flow smoothly
- Improving the citizen's awareness of the better transport culture

Human

Sharing

Environ ment

Human-Oriented Transportation

Human

- Building pedestrian-oriented environment
- Encouraging the wide use of bicycles
- Making an accident free city
- Removing barriers for the transportation vulnerable

Double expansion of sidewalk and bike paths (1㎡→2㎡, 8%→16%)

Reducing traffic fatality by under 1/6 (430→70)

100% implementation of transportation vulnerable support facility (75% →100%)

▪ ***What is the establishment rate of transportation vulnerable support facility? (=a suitable installation rate of transportation vulnerable travel convenience facility)***

- Traffic convenience facilities are appropriately installed according to the subsection standards of the ' Law on Movability Improvement for Traffic-Vulnerables *' - An average of transportation methods (bus, city rails), passenger infrastructure(city rail station, railway station, bus stop, terminal), road(sidewalk, pedestrian environment)*

Human-Oriented Transportation

01 Building Pedestrian-Oriented Environment

Expansion of pedestrian prioritized space and time

Evaluation of SMG's pedestrian level of service and improving the standard

Space where pedestrians can roam about freely

- **Expansion of pedestrian prioritized space**
  - *Expansion of pedestrian prioritized permanent space*
  - *Construction of 30 transit malls*
  - *Construction of promenade*
- **Vulnerable protected area**(Senior, Children, Disable)
  - *Hourly vehicles entering restricted , operations integration / association*
- **Evaluation of SMG's pedestrian level of service and improving the standard**
- **Levying garage option on car buyers**
- **Building underground city center pedestrian network**
- **Creating a vehicle-free town**

No more waiting or detouring due to traffic

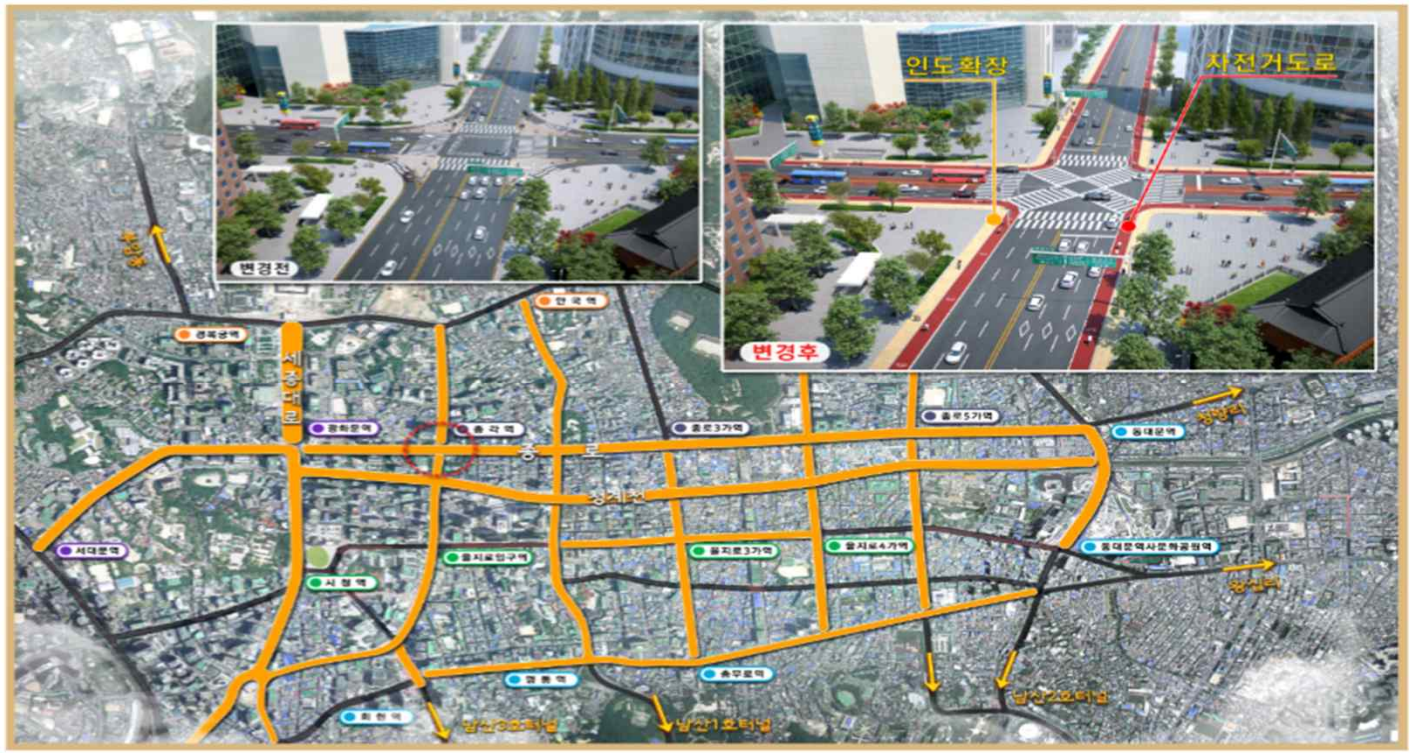
- **Expansion of pedestrian prioritized road facilities**
  - installation of a pedestrian friendly crosswalk: diagonal or double width crosswalk
  - Demolition of pedestrian overpass facilities
- **Implementation of Pedestrian prioritized traffic signal**
  - Interlocking pedestrian traffic signal, extending pedestrian crosswalk time
  - Installing pedestrian operated traffic signs
- **Providing pedestrian only direction guidance service**
  - Implementing pedestrian route guidance system
  - Building pedestrian electronic map

Human-Oriented Transportation

❖Improvement of pedestrian environment

✓ **Reduction space of road and expansion of pedestrian space in CBD – 18 route 20.02 km**

- 1st phase: 6 routes (4.45km), 2nd phase: 6 routes(10.64km), 3rd phase: 6route(4.84km)



Human-Oriented Transportation

✓ **Pedestrian prioritized zone**

- **Sejongno Pedestrian prioritized zone**
  - Operation section: 550m
  - Operation hour: 2day/m(Sunday)
  - Visitor: 430,000 persons

- **Deoksugung Pedestrian prioritized zone**
  - Operation section: 310m
  - Operation hour:

    11:30~13:30(every day)

    # Open City happy Street on every wednesday

Human-Oriented Transportation

✓ Seoul station flyover **covert into Pedestrian prioritized zone**

- **Constructing in Y1970 and regeneration in Y2017**
- **17 Pedestrian prioritized zone at 17m high**
- **Integrated Regeneration of Areas near Seoul Station and the Seoul Station Overpass Expected to Revive Local Economy**

Human-Oriented Transportation

❖ Sinchon Transit mall

✓Improbing pedestrian environment for walking and entertaining

✓Creating a cultural street for reviving local economy

- Operation Section : Yeonse-ro (550m)and Myeongmul street(450m)
- Project period : Mar. 2012 ~ June. 2014 ('14.1.6 first transit mall at Yeonse-ro)
- Contents: Expanded walkway(3~4m->7~8m), constructing a square
- Allowed Vehicles : Vans carrying 16 or more, vehicles for emergency use, at all time, Taxi(00~04), Messenger bike(10~11,15~16)
- Process: Interested group participation project

※ No vehicles day (Sat. 14:00 ~ Sun.22:00)

Human-Oriented Transportation

02 Encouraging the wide use of bicycles

Establish a bicycle friendly town

Expansion of public bicycles at life zone and linked operation

Contract bicycle paths all around Seoul

- **Establish a bicycle friendly town**
  - Expand life zone bicycle paths, parking facilities, repair centers
- **Establish a bicycle trunk network**
  - Expand linked network among life zones
  - Create bicycle trunk network (Han River, bicycle priority lanes)

Provide safer bicycle usage

- **Operate a bicycle theft prevention system**
  - Bicycle registration, theft prevention parking system, reinforced punishment standards
- **Reinforce public transportation transfer support**
  - Expand boarding with bicycles
  - Reinforce public transportation transfer
- **Vitalize bicycle usage**
  - Expand bicycle bus lines and Campaigning for road share

Rent bicycles anywhere, anytime

- **Expansion of public bicycles at life zone**
  - (short term): CBD, life zone
    => (Long term) the Seoul Metropolitan area
- **Linked operation of Public bicycle rental service in city, district, and Han River**

Human-Oriented Transportation

03 Making an accident free city

Limit all life zone speed limit to 30km/h

Operate enforcement management system 'Seoul EYE'

Reduce conflicts with vehicles in life zones

- **Integrated maintenance of life zone transportation environment**
  - Limit all life zone speed limit to 30km/h, restrict passing traffic
  - Reinforce speed limit to 20km/h at preserved area
- **Implement proof system of garage in life zones**

Strengthened traffic safety standards on trunk roads

- **Reinforce speed limits in city main roads (60→50km)**
- **Maintaining all traffic safety facilities**
- **Create an immediate response system for all traffic fatalities**
  - Establish accident response system and TF team

Safer use of public transportation

- **Improve public traffic safety**
  - Implement constant surveillance system in urban railways based on in-vehicle video surveillance(cctv)
  - Reinforce management of transportation practitioners, implement speed limit equipment
  - Reduce persisting period in vehicles and facilities
- **Reinforce public traffic security(crime prevention)**
  - Introduce call-Bus
  - Introduce late-night safe rides for female passengers

Safer Seoul traffic with advanced traffic safety management system

- **Operate enforcement management system 'Seoul EYE'**
  - Surveillance of public vehicle traffic offence (bus, taxi, public organization vehicles)
- **Operate a 24 hour Seoul Safety integrated situation room**
  - Response and information sharing system of traffic, firefighting, disaster situations

Human-Oriented Transportation

04 Removing barriers for the transportation vulnerable

100% of city buses change to low-floor buses

Install integrated transportation support center for the transportation vulnerable

Convenient public transportation for the transportation vulnerable

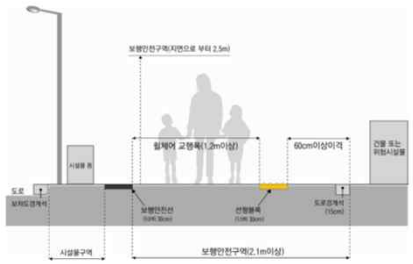
- **100% of city buses change to low-floor buses**
- **Establish a support system for the transportation vulnerable in all city railway stations**
  - Secure travel paths only for the transportation vulnerable

Removal of obstacles for the transportation vulnerable

- **Establish a pedestrian environment without obstacles**
  - Expand effective sidewalk width, install bump crosswalks
- **Transportation designed based on the transportation vulnerable (Universal Design)**
  - Systemize modes of transportation so that the design would consider the transportation vulnerable before construction

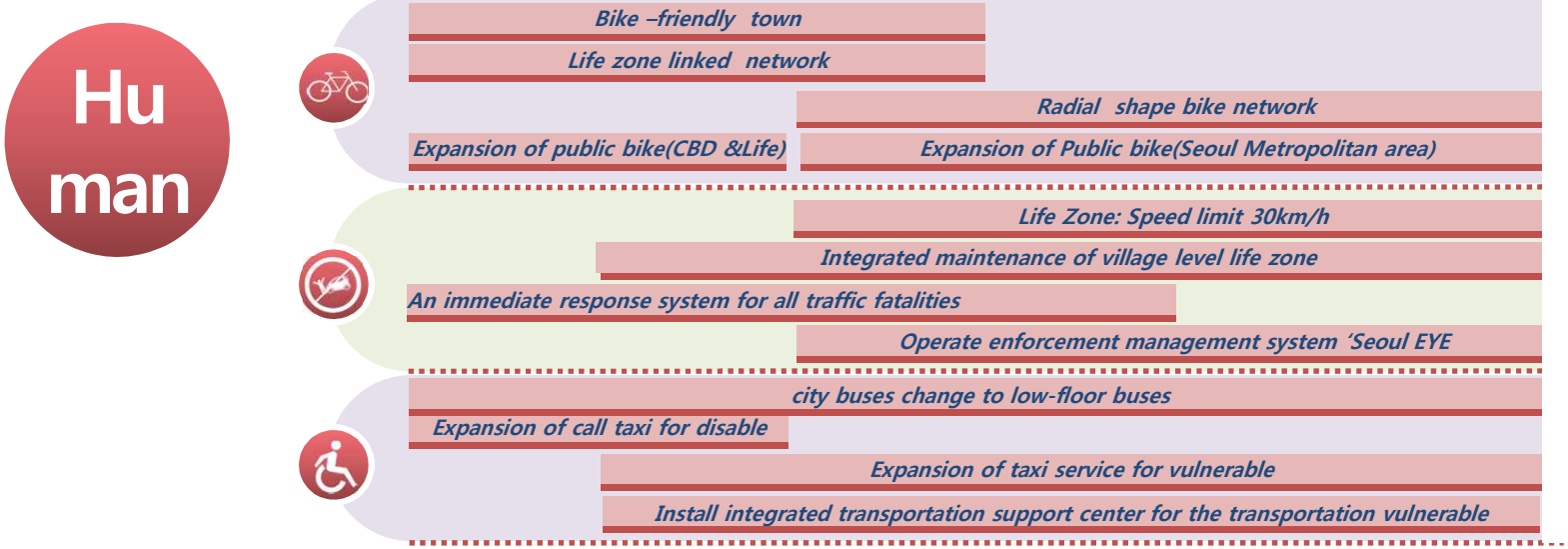
Expansion of transportation system for the transportation vulnerable

- **Expand call-taxi services for the disabled**
  - Increase the number of call taxis for the disabled (taxis must be able to board wheelchairs)
  - Make practical use of regular taxis to provide call-taxi services for the disabled (non-wheelchair disabled persons)
- **Introduce welfare(emergency) taxi**
  - Automated phone connection for the elderly and the infirm, especially for those who live alone
- **Install integrated transportation support center for the transportation vulnerable**
  - Provide linked services for modes of transportation, moving route, and facilities



Human-Oriented Transportation

Human-oriented	Short(~'16)	Mid(~'21)	Long(~'31)
Green transport mode share(now 70%)	72%	75%	80%
Dimension of walkway per person (now 1.0m²)	1.2m²	1.5m²	2.0m²
Ratio of bicycle way (now 8.3%)	8.8%	11.7%	16.6%
Traffic death (Y2015 372/y)	340 person / Year	200 Person/Year	100 Person/Year
Ratio of facility for transportation vulnerable (now 75%)	82%	90%	100%



Sharing Transportation

Sharing

Establishing rail-oriented public transit system

Making public transit faster and more convenient

Encouraging shared transport

10 minute access to the subway station despite location

Current subway isolated area 38%

25km/h median bus lane speed Limit (20.1km/h→25km/h)

Per 10km drive 30minutes⇒24minutes

3 Car-sharing service branches per region (292→1,200)

Assuming car sharing occurs within 5 minutes

Sharing Transportation

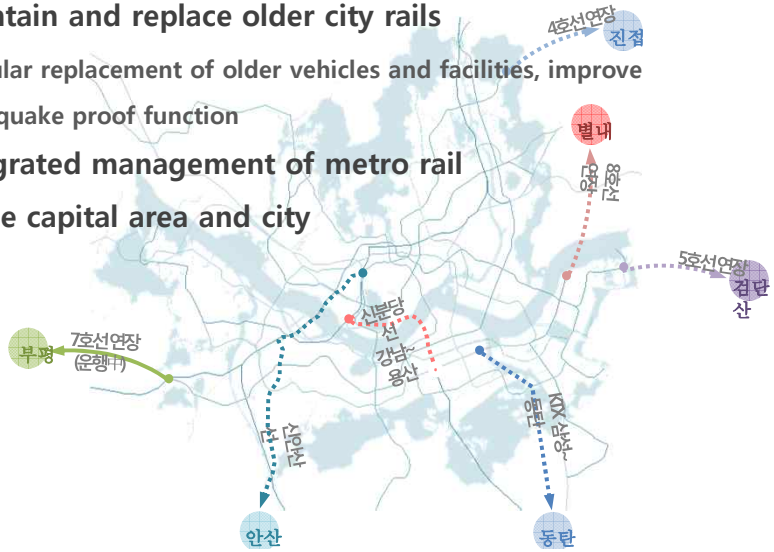
01 Establishing rail-oriented public transit system

Expansion of LRT and inter-city metro

Reform subway supporting trunk/feeder bus

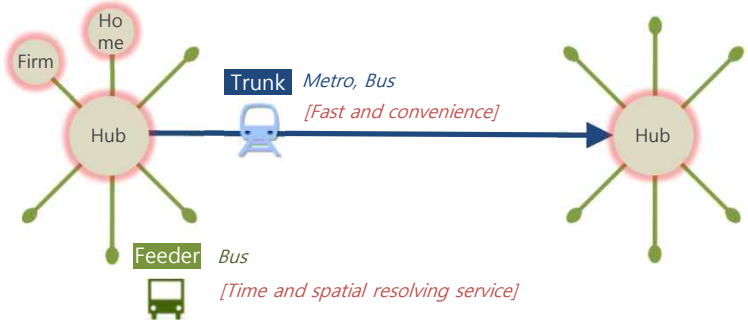
Constant improvement and expansion of city railway

- **Expansion of metro rail transit and light rail transit**
  - Reinforce GTX functionality that links Seoul and the metro area
  - Improve light rail lines for areas without railway services
- **Improve subway congestion**
  - Establish a prediction system for inner vehicle congestion, Reduction of interval time at rush hour
- **Maintain and replace older city rails**
  - Regular replacement of older vehicles and facilities, improve earthquake proof function
- **Integrated management of metro rail in the capital area and city**



Removal of public transportation blind spots through bus system reformation

- **Reform subway supporting trunk/feeder bus**
  - Reform bus line system for feeder lines(links city rail and trunk bus)
  - Circular bus linked with public transportation (city center, areas without rail service)
  - city circulation bus
  - Bus station liked metro
- **Remove time-based blind spots of public transit service**
  - Expand mode of transportation in response to late-night transit demands (late-night bus, on demand safe ride taxi service)



Sharing Transportation

02 Making public transit faster and more convenient

Expanding city railway express service

Operating Transfer supporting structure (No-Tag, Non-Stop, All-Pass)

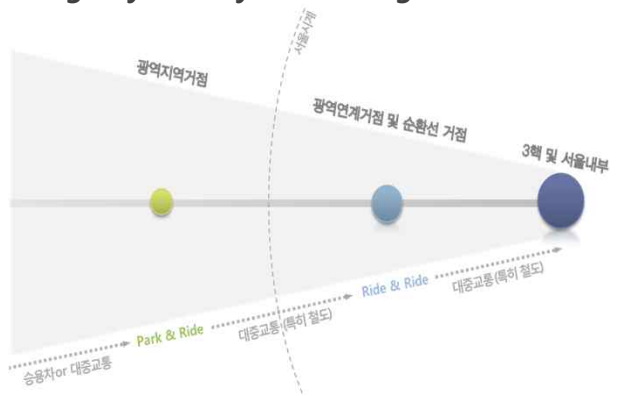
Increased operation speed of public transit

- **Expanding city railway express service**
- **Radial and ring median bus lane**
  - *Radial road(liked main road) + Ring road(connected three point)*
  - *Expansion of BRT(Bus Rapid Transit)*
  - *Operate a median bus only lane and bus-oriented traffic signal*
- **Introducing a demand response model of trunk express bus**

  -M BUS(Express Bus)

Shortened transfer time and distance

- **Creating a transfer supporting system**
  - Establish a No-Tag, Non-Stop, All-pass system
  - Provide integrated transfer information
- **Expansion of systemized functional transfer facility**
  - wide area base : wide area transfer center in the city skirts (car ↔ public transit)
  - Inner city base : public transit transfer center (urban railway↔bus)
- **Project for linked between bus and metro station**
- **Operating city railway reshuffling**

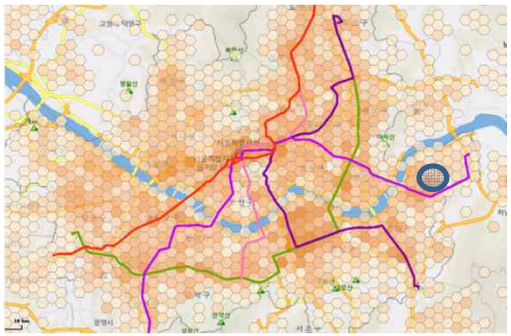


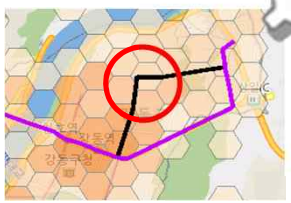
Sharing Transportation

❖ Night bus(owl bus)

- ✓ Developing the route using the floating population at night and verification of concentration
- ✓ Setting the route based on big data analysis(using call volume)
- ✓ Most innovative policy in Y2013 selected by Citizen

- Route : 8 routes
- Hours : 24:00~05:00
- Fare : 2,150KRW(T-Money card)
- Interval: 40~45 minutes





Sharing Transportation

❖ **Tayo bus and Lava train (Animation character)**

Sharing Transportation

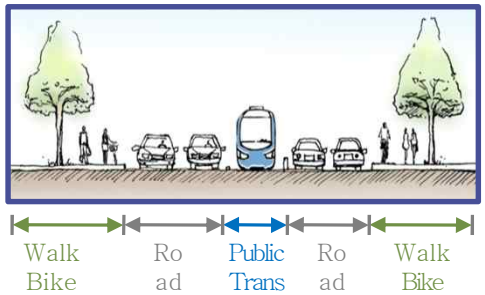
03 Encouraging shared transport

Establishing Shared Road

Promote private car sharing (P2P)

Returning formerly vehicle oriented space to people

- **Constructing shared road**
  - A shared road without boundaries between sidewalks and roads for pedestrians
- **Expanding road diet**
  - Expand sidewalks and bicycle paths through reduction of existing roads
- **Introducing parking lot sharing**
  - A time based distinction between public and private parking lot ownership
  - Implement parking reservation



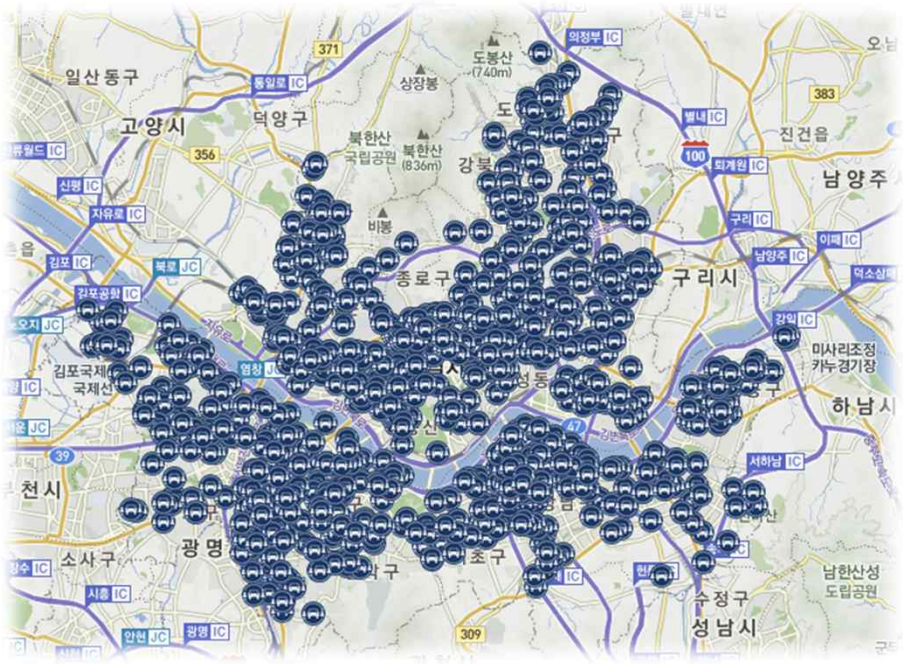
Effective use of transportation resources

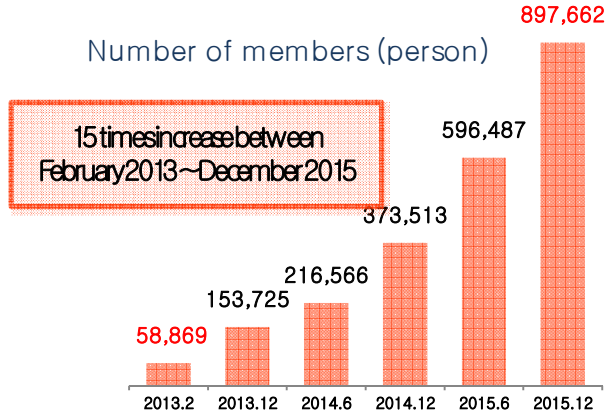
- **Commercialization of car sharing service**
  - Expand service branches (community center, public parking lot)
  - Promote private car sharing (P2P)
- **Implementing bus sharing**
  - Operate shuttle buses using excess vehicles (for commuting or welfare purposes)
- **Expanding bicycle sharing (public bicycles)**
- **Institution for supporting sharing transportation**
  - Integrated sharing transportation information system
  - Sharing transportation card(integrated public, car sharing, bike)

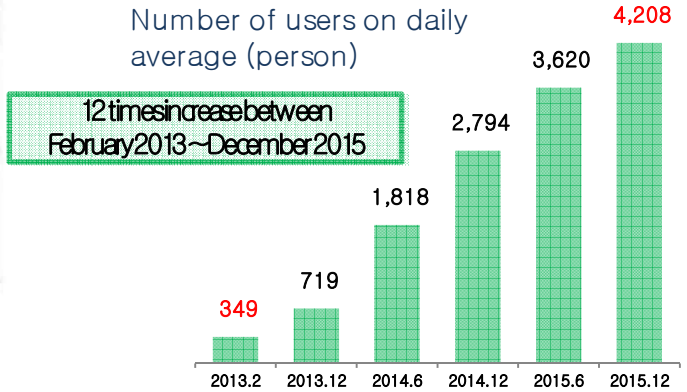
Sharing Transportation

❖ Nanum car(Car sharing) service

- ✓ Non-car owners are available to anyone anywhere at any time
- ✓ Reduction of traffic demand, Saving energy

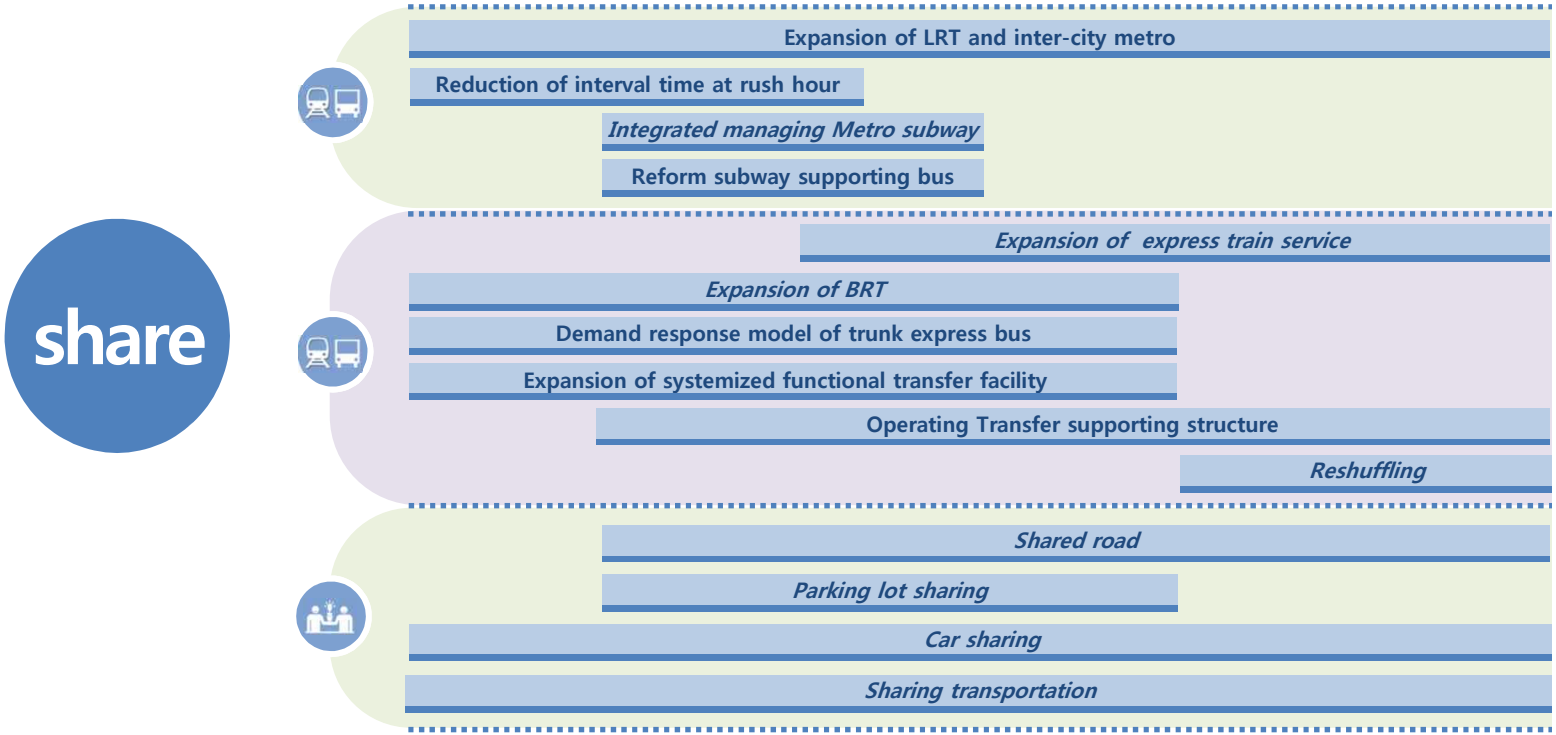






Sharing Transportation

Sharing Transportation	Short(~'16)	Mid(~'21)	Long(~'31)
Green transport mode share(now 70%)	72.5%	75%	80%
Ration of Walk to the nearest metro station* (Now 62%)	64%	67%	71%
Speed of Median bus lane (Now 20.1km/h)	20.5km/h	22.0km/h	25.0km/h
Car sharing outlet (Now 292outlets) (0.7/village)	1 outlet/village (430outlets)	2 outlets/village (830outlets)	5 outlets/village (2,000 outlets)



Eco-friendly transportation

Eenvironment

- Reducing unnecessary trips
- Introducing environmentally friendly transportation models
- Making cars on the road flow smoothly
- Improving the citizens' awareness of the better transport culture

Inner city car modal share rate 10%
(18.4% → 10%)

Rate of emission free public transportation vehicles 100%
(0.2% → 100%)

Rate of trunk road congestion 10%
(19 % → 10%))

(including sidewalk and bike paths)

Eco-friendly transportation

01 Reducing unnecessary trips

Congestion fee and tax based on driving distance

Operating Zero Emission Zone

Reasonable car usage

- **Reinforce principles of private vehicle usage and the driver's burden**
  - Implement congestion fee based on driving distance
  - Substantialize business management of traffic demands
- **Introduce management of parking demands per block**

Reducing commute related pressure through TOD

- **City maintenance and management in consideration of public transit quantity and expandability of the city**
  - Prepare transportation infrastructure installment policy in case of city planning
  - Vitalize TOD centered transportation node
- **Expanding flexible workplace**
  - Reinforce flexible hours such as telecommuting (time based attendance, part time working hours)
  - expand smart work center through public ownership of private facilities (public: 50, private: 150)

A pleasant city with less vehicles

- **Operating Zero Emission Zone**
  - Restriction of air contaminant emitting vehicles
- **Reinforcing large scale traffic-causing infra management**
  - Designation and management of congestion managed region/facility
- **Reinforcing downtown parking demand management policies**
  - Implement zero large parking infrastructure
  - Expanding policies limiting installment of attached parking lots
- **Reform a urban transportation structure**

Eco-friendly transportation

❖Collect congestion fee(Namsan tunnel 1&3)

- ✓Start of collection: 11. Nov. 1996
- ✓ Facilities : Namsan tunnel 1&3
- ✓ Collection hours : 7 ~ 21(Weekday)
- ✓ Fee : 2,000 KRW(discount 50%: Small car, self car-free day, low-emission car)
- ✓ Collection way : Card or Cash
- ✓ Target : Below 10 seater-private car that board less than two people
- ✓ Fine : 10,000KRW (Small car : 5,000KRW)
- ✓ Effect
  - Private traffic: 70,877(before) → 46,468('10) → 45,110 unit/day('15)
  - Bus traffic : 2,877(before) → 7,067('10) → 6,498 unit/day('15)
  - Taxi traffic : 7,052(before) → 23,322('10) → 22,075 unit/day('15)

Eco-friendly transportation

❖Expanding policies limiting installment of attached parking lots

- ✓ Traffic demand control policy for CBD and secondary central business district
- ✓ Before : CBD → Expansion of expected traffic congestion area considering change of urban structure and metro station and transfer center

- Readjustment of 7 trial area
- Expansion new town that predict traffic congestion(Mok-dong, Young-san, Mapo, Mia)
- Designation special management area for congestion near metro station

Area for limiting parking lot

Eco-friendly transportation

02 Introducing environmentally friendly transportation models

Zero Emission of public transportation

Road power plant : Installation Solar Way 200km

Reduced emission of contaminants from vehicles

- **Carrying out environmental friendly modes**
  - Commercialize emission free vehicles
  - Environmental friendly modes for regular
  - Implement city type environmental friendly transportation mode (tram, segway, etc)
- **Creating a management and infrastructure for environmental friendly operation**
  - Supply eco driving device for bus and taxi and strengthen education
  - Expanded eco-friendly vehicle charging infrastructure
  - Installation obligation of DPF
  - Implement a monitoring system for traffic volume and air quality

Energy produced and pollutants purified on the road

- **Construction of Solar Way**
  - Constructing solar way (solar battery)
  - Road, Bus station, soundproof wall
- **Constructing an environmental friendly road environment**
  - Air contaminant · rainwater absorbent pavement, self-cured asphalt pavement
- **Plantation tree for purification of pollution**

Eco-friendly transportation

03 Making cars on the road flow smoothly

Operate express lane

Establishing transportation alert system

Improving communication between village by proper maintaining and expanding road

- **Undergrounding road for improving relation between community**
  - *Undergrounding west and east urban expressway*
  - *Undergrounding main road for strengthen eco-friendly*
- **Efficient management of road network**
  - *Lane Balance*
  - *Construction of new urban express IC for connectivity (12 ICs)*

Congestion is relieved through efficient road operation

- **Operate express lane**
  - *carpool lane*
- **Expanding state-of-the-art transportation operation and management**
  - *Operate intelligent intersection and real-time traffic*
  - *Expand trunk metering, variable lanes, variable speed*
  - *Expansion of changeable vehicular road and alleviation speed limit*
- **Establishing transportation alert system**
  - *Predict the traffic flow and provide the information*

Eco-friendly transportation

04 Improving the citizens' awareness of the better transport culture

Running citizen participation committee

Establish master plan for advanced transportation culture

Policies are made and managed by citizens

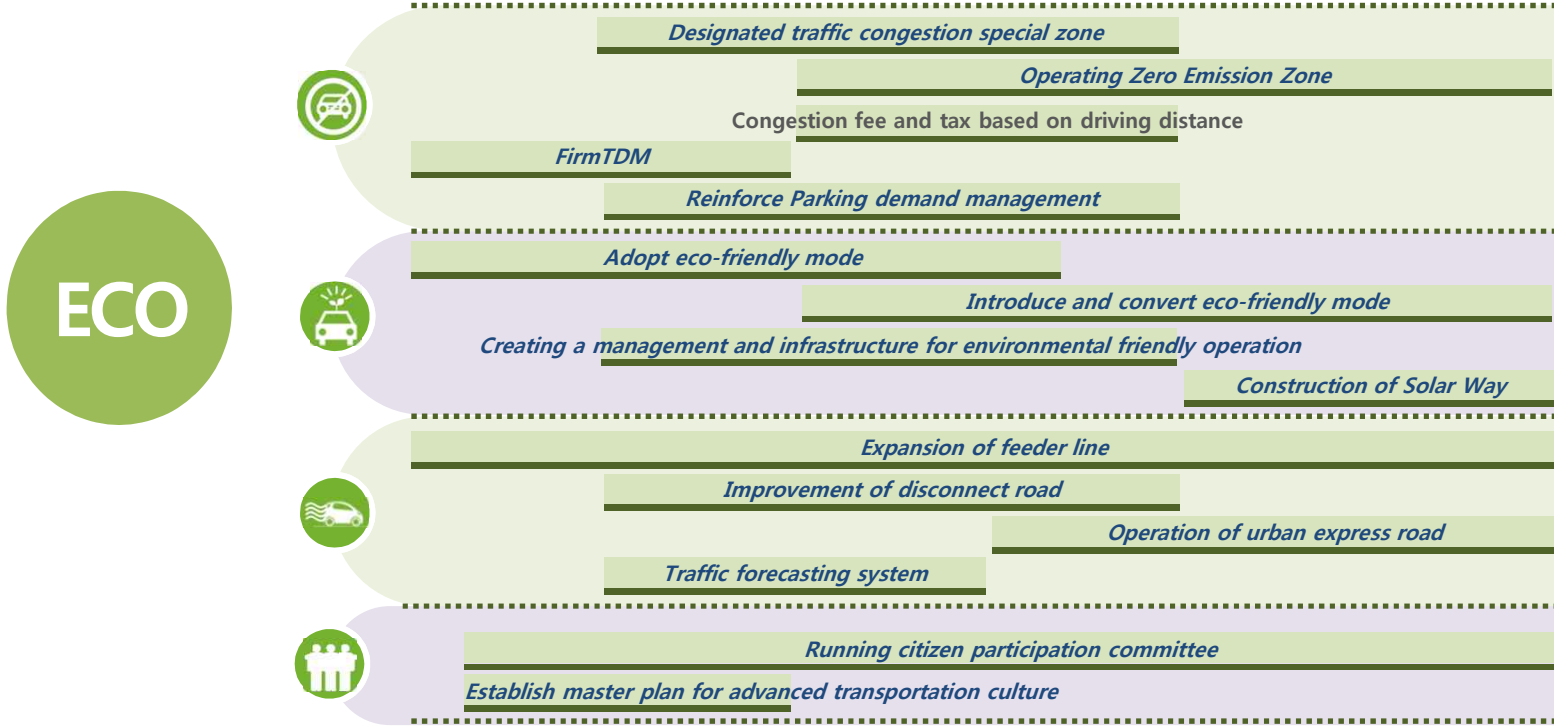
- Establishing policy governance system with citizens and professionals
- Strengthen citizen's policy monitoring
  - Seoul Transport Poll application, community mapping, SNS

Developed transportation culture

- Providing development plans for transportation culture
  - Develop suitable education program
- Implementing transportation facility design
- Suitable maintenance of law/policy
  - Revise laws regarding public manners and transportation safety

Eco-friendly transportation

Eco-friendly transportation	Short(~'16)	Mid(~'21)	Long(~'31)
Co2 emission (now 1.19t/p · y)	1.15t/p · y	0.95t/p · y	0.78t/p · y
Energy consumption(now 0.52TOE/p · y)	0.50TOE/p · y	0.42TOE/p · y	0.34TOE/p · y
Mode share of car(Now 18.4%)	17.5%	14.0%	10.0%
zero emission of vehicle (Now 0.2%)	5%	40%	100%
Ratio of Main road congestion (Now 19%)	18 %	15%	10%



Seoul
Together we stand

IV. Changing view of Seoul

1. CBD ①

Jong-ro

- Solar street lamps
- Median bus lane
- Speed limit: 50km/h
- Separated bicycle way
- Improving pedestrian space (Expansion of walkway)

1. CBD ②

Myung-dong

Pedestrian friendly commercial walkway

Expansion physical walkway

Internalization of metro station

Space application side and walkway

Expansion of walkway by arranging shop

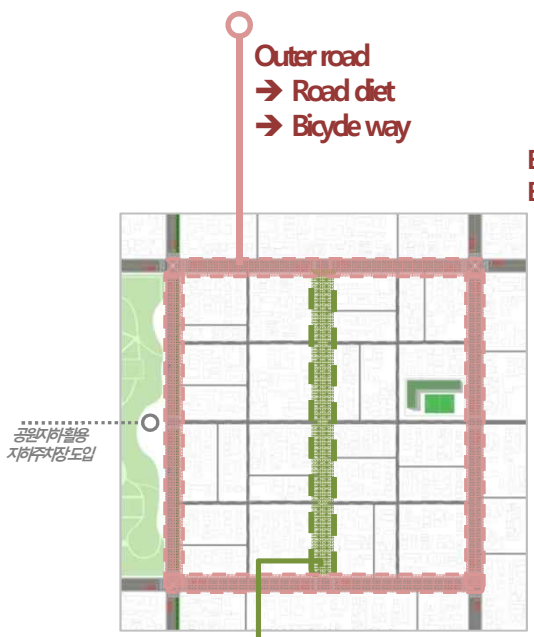
1. CBD ③

Ujeongg ungno

Adjustment illegal parking space
Reduction of road
Separated bicycle way

Speed limit 40km/h

2. Life-zone ①



Outer road– Road diet and bicycle way

Underground parking space

Speed limit 30km/h

Expansion of pedestrian space
Bicycle parking space

Road diet➔ Double shift road➔ Bike way

Inner road(1) – Shared road

Illegal parking space
Maintaining walkway
Rest area

Shared road
(car and People)

2. Life-zone ②

Inner road(2)
➔ S-shaped road

Underground transmission line

Maintaining street and illegal parking

Alley
➔ Fun and safe

S-shaped road

School zone
➔ Car free zone(time limit)

Inner road(2) – S-shaped road

School zone- Car free zone(Time limit)

Sign for protection zone
Sign for car-free zone
CCTV

Green parking

Car free zone(time limit)

Speed limit 20km/h

Alley – Fun and safe

Pedestrian safe way
Leisure space

Providing information by map

Thank You
(شکرا)