

Korean Situations and Policies to Stimulate Bicycle Use for Urban Transport

January 28, 2010

Republic of Korea

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Introduction

Problems with Old Paradigm



Energy crisis & climate change

- Oil-dependent economy & transport system
- Green house gas

Auto-oriented transport system

- Congestion, air/noise pollution
- High energy consumption

Non-motorized transport as a bridging strategy towards “Low Carbon and Green Growth”



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Role of Cycling



What is Bicycle Transportation?



- Main Non-Motorized Transport (NMT)
- Mainly for short-trips and recreation
- “Forgotten mode” in today’s Korean transport planning

Why Bicycle Transportation?

- Ecological impact

	Car	Car plus catalytic converter	Bus	Bicycle	Air	Train
Space consumption	100	100	10	0	1	6
Primary energy consumption	100	100	30	0	405	34
CO ₂	100	100	29	0	420	30
Nitrogen oxides	100	15	9	0	290	4
Hydrocarbons	100	15	8	0	140	2
CO	100	15	2	0	93	1
Total atmosphere	100	15	9	0	250	3
Risk of accidents	100	100	9	2	12	3

Why Bicycle Transportation?

(contd.)

- **Socio-political impact**
 - Increase individual freedom of mobility & self-confidence
 - Greater autonomy & accessibility to young & elderly people



Why Bicycle Transportation?

(contd.)

- **Economic benefit**

- Low purchasing and maintenance cost
- Less cost to build infrastructure than cars
- Low space requirement



VS.





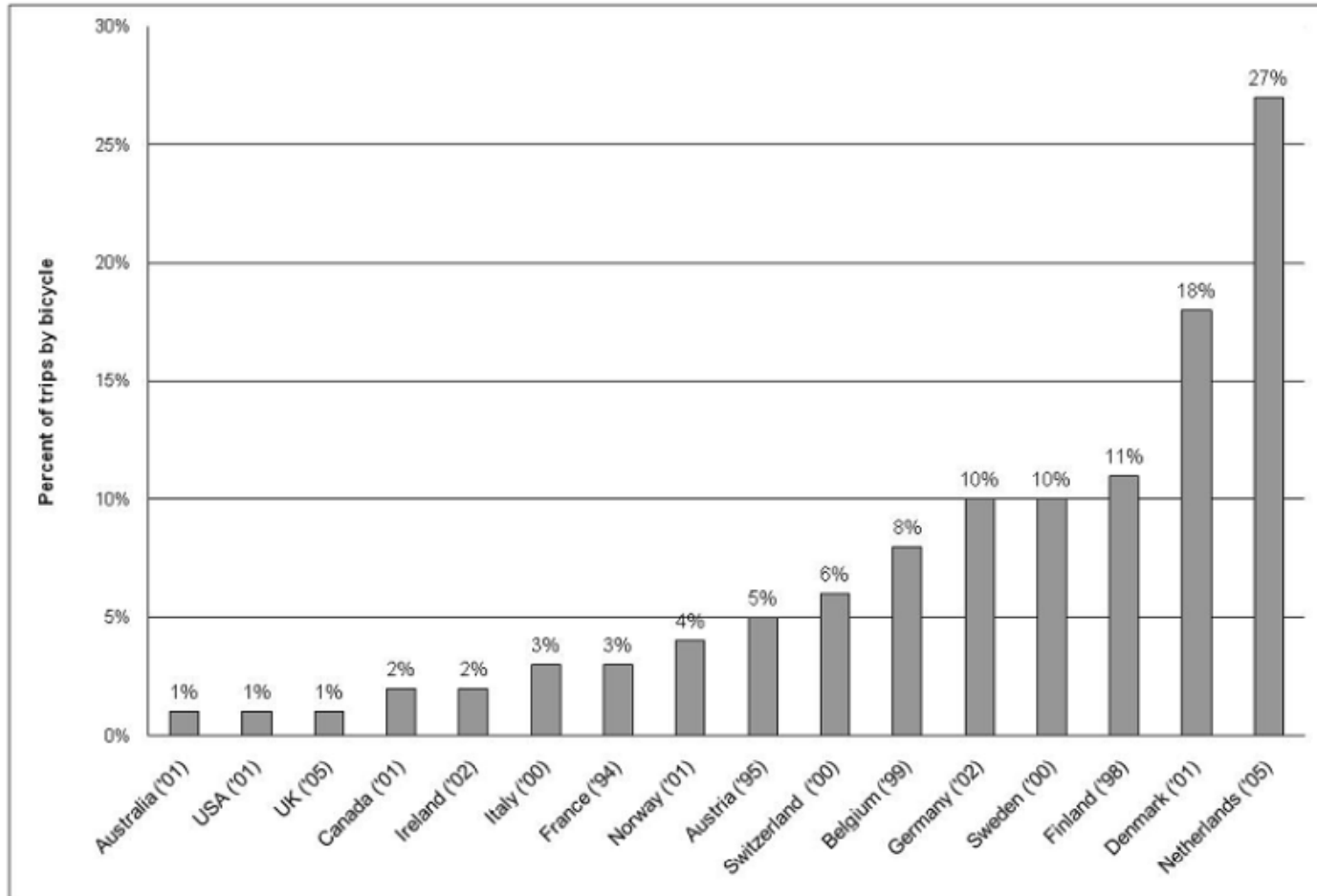
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Current Status and Barriers

The GHGs Emissions Volume (Korea)

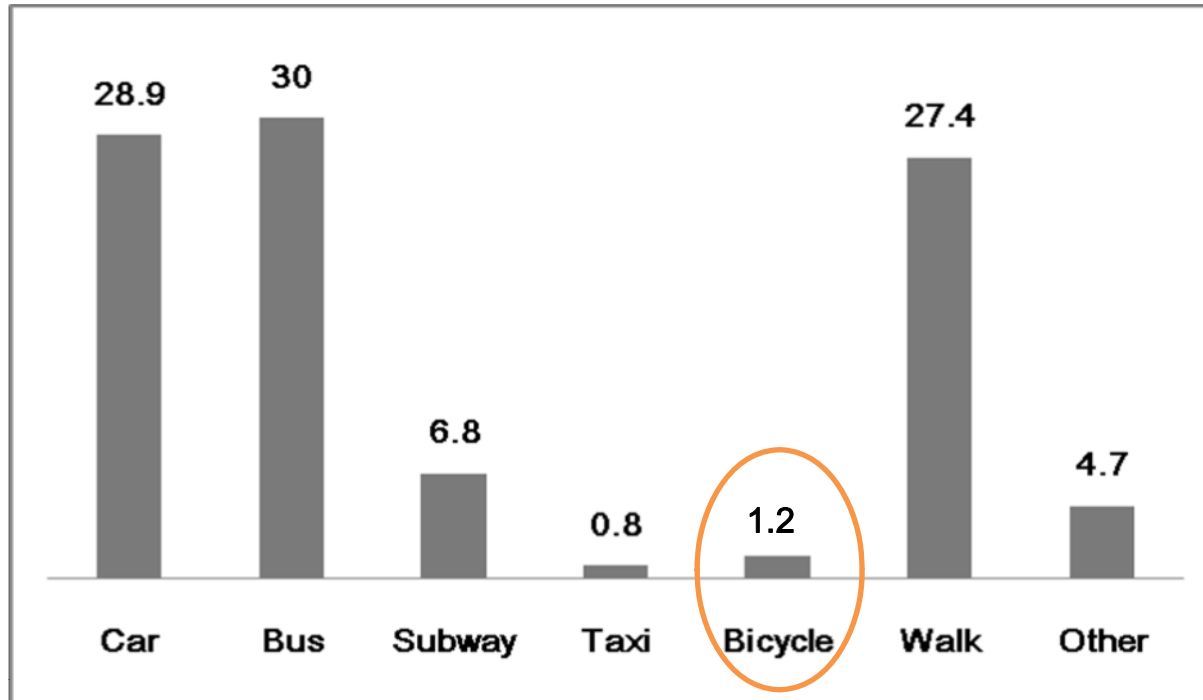
- About 1 Billion Greenhouse Gas Emissions in Transportation Sector
 - **Road (85.7 million)**, Railway(2.0 million),
Marine transportation (11.6 million), Flight (6.6 million)
 - Road (85.7 million) : Automobile (61.1 million)
Motorcars for Business use (24.6 million)
- About 4.5 trillion won
 - **Road (3.6 trillion)**, Railway(0.1 trillion),
Marine transportation (0.5 trillion), Flight(0.3 trillion)
 - Road (3.6 trillion) : Automobile (2.6 trillion) ,
Motorcars for business use (1.0 trillion)
- Greenhouse Gas Emissions is lower than other developed countries but increasing rate is about the double (2005) (unit : ton)
 - Korea (125.73 million) , U.S.A.(1947.5 million)
U.K (172.6 million), France (160.43 million)

International Trend



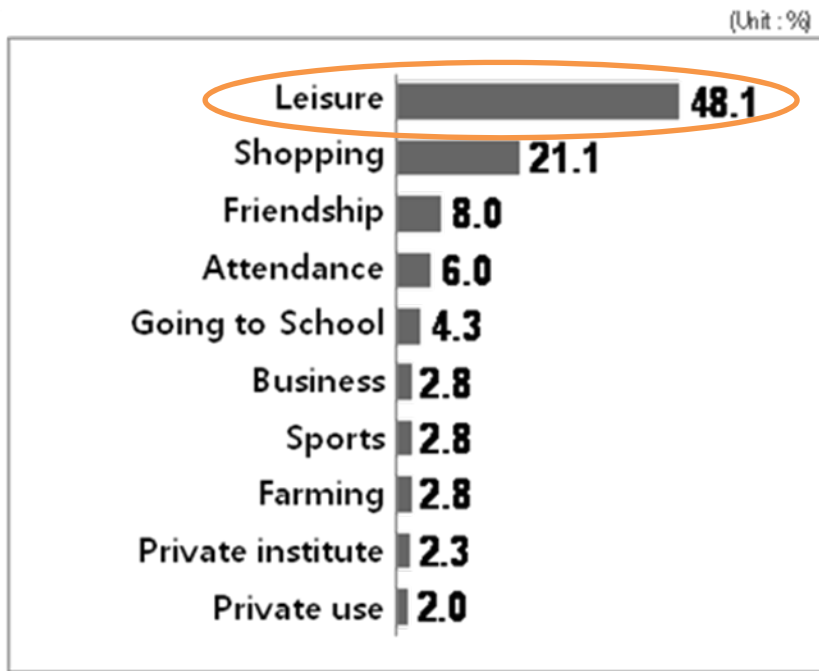
Bicycle share of trips (%)

Current Status in Korea

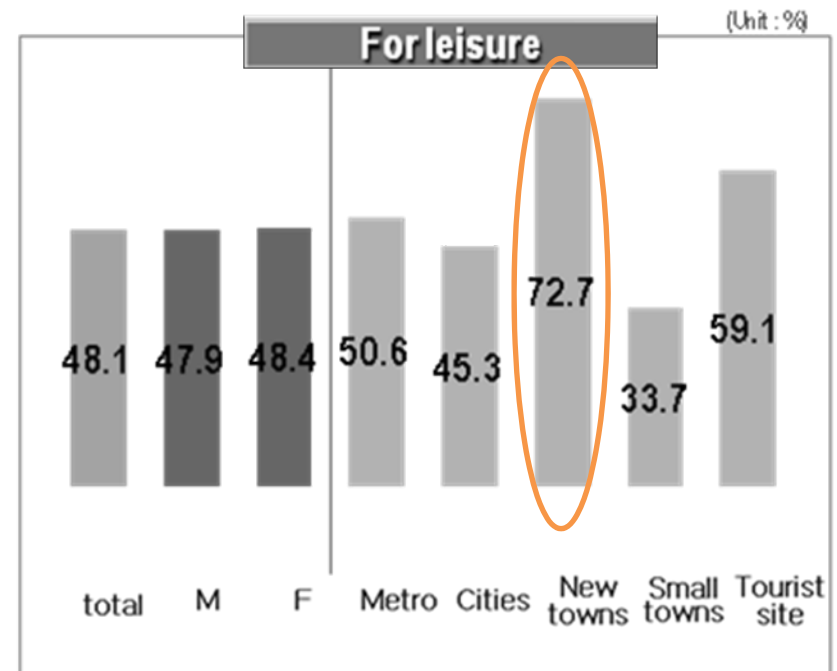


Transportation Mode Share (%)

Current Status in Korea (contd.)



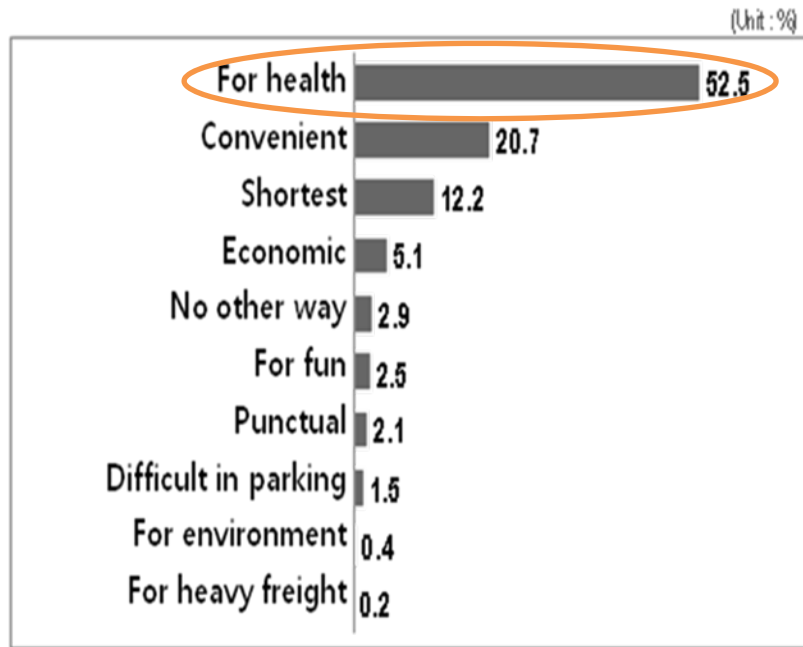
Purpose of cycling



Recreational cycling by region

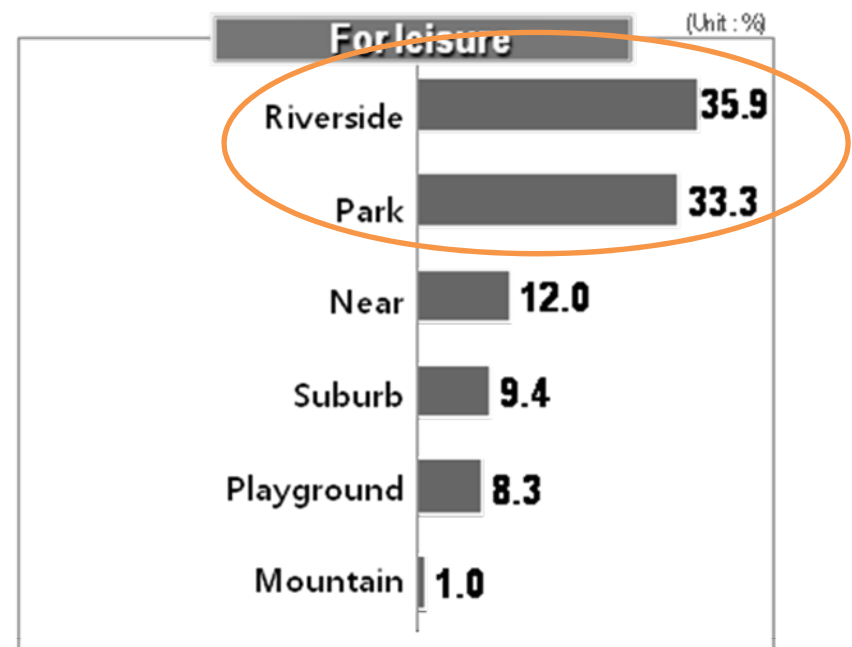
- Half for leisure, the others for everyday activities
- About 73% using bikes for leisure in new towns

Current Status in Korea (contd.)



※ Face-to-face

Reasons for cycling



※ Telephone survey

Preferred location of recreational cycling

- Mostly for health, correspondent with leisure purpose
- Riverside and parks preferred location of cycling

Perceived Barriers and Attractors

Road users	Barriers for cycling	Attractors for cycling
Car drivers	<ul style="list-style-type: none">• The cycling network is incomplete• Cannot transport heavy things• Depend on the weather• Cycling is dangerous• Badly signed cycle routes	<ul style="list-style-type: none">• Cycling is fun• Cycling is environment-friendly• Cycling is healthy• You make exercise
Cyclists	<ul style="list-style-type: none">• The cycle network is incomplete• High speed of car drivers• Lack of secure parking• Car noise and fumes	<ul style="list-style-type: none">• Cycling is fun• Cycling is environment-friendly• You feel flexible and independent• Cycling are fast

- Both feels that the cycle network is incomplete
- Both thinks that cycling is fun and environment-friendly

Common Barriers to Cycling

- **Safety:** cyclists are vulnerable to motor vehicle traffic
- **Security:** fear of theft or damage
- **Infrastructure:** incomplete and unmanaged cycle network
- **Distance:** increased travel distance discourages cycling
- **Health:** toxic emissions from cars and buses
- **Social status:** cyclists perceived as poor people
- **Weather:** unfavorable weather conditions for cycling
- **Topology:** hilly terrain and steep roads can discourage cyclists.



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History of Korean Cycling Policy



History of Korean Cycling Policy

Formulated the campaign plan for cycle use (April 1993)

- Ministry responsible : Ministry of Home Affairs
- Origin of Ministerial Directives for development of cycle infrastructures

Promulgated the Law for Cycle Use Activating (Jan. 1995)

- Ministry responsible : Ministry of Home Affairs
- Origin of implementing ordinance and enforcement regulation

Announced national cycling use activating plan

- Ministry responsible : Ministry of Home Affairs
- 5 years plan focused on infrastructures

History of Korean Cycling Policy

Announced the Second national plan for cycling use activating

- Ministry responsible : M. of Government Administration and Home Affairs
- Based on the assessment of 1st national plan

Some briefs of the Assessment of 1st national plan

- Modal share increased : 1.85% for 1995, 2.4% for 2002
- Total budgets used : 478 billion won (National 30%, Local 70%)
- Infrastructures : Cycling path 4,419km / Cycle parking for 190,000 cycles

Objectives of 2nd national plan

- Budgets : 500 billion won (National 40%, Local 40%, Other 20%)
- Infrastructures : Cycling path 4,000km, cycle parking for 80,000 cycles
- New : National campaign, education for safety

History of Korean Cycling Policy

Lee Myung Bak administration announces new era


- Announced green growth (Aug. 2008)
- National Initiative plan was released (Jan. 2009)

New national plan

- Modal share target: 5% for 2012
- Total budgets: 1.2 trillion won (national only, local independently)
- Infrastructures target: Cycling path 17,000km

Other plans

- Promote bicycle industries
- Revision of laws
- National campaign, education for safety, Expo, and so on



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Comprehensive Bicycle Plan of Korea



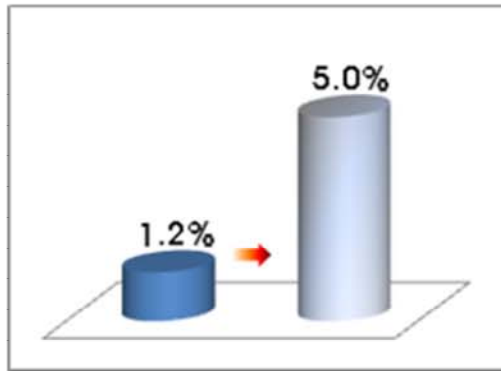
Comprehensive Plan for Green Growth



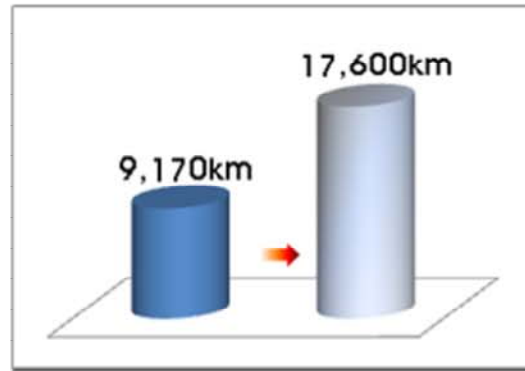
- Bicycle industry + bicycle infrastructure \Rightarrow Green Growth

Policy Direction

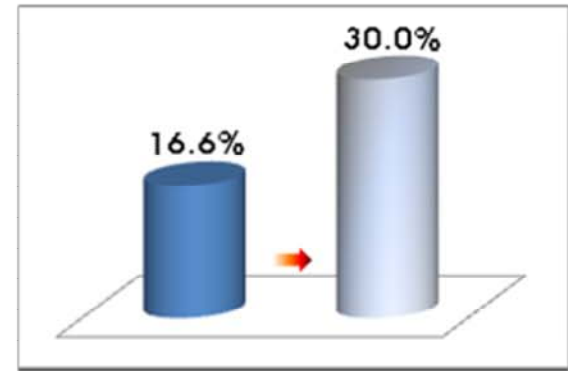
Objectives



Modal Share



Infrastructure



Ownership

OUR FOCUS

Strategie

Legal / Institutional

- Mandate facilities
- Safety and regulations
- Bicycle insurance

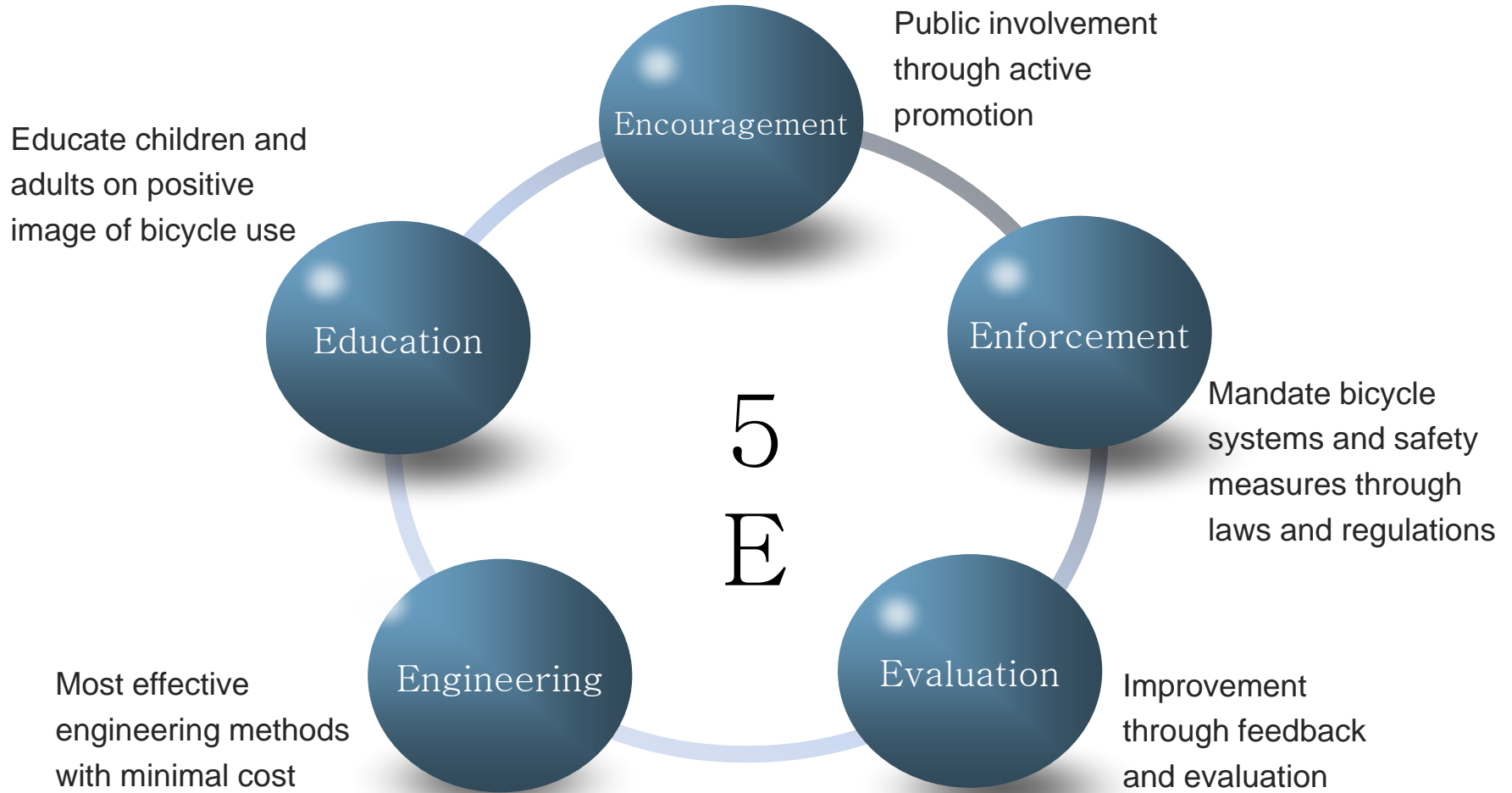
Infrastructure

- Bike facilities
- Utility bikeways
- National bike network

Public awareness

- Campaigns
- Education & promotion

Legal / Institutional Framework



Institutional Support

Public Affairs

- Revise Bicycle Promotion Act and improve management
- Establish Dept of Sustainable Transport, Bike education, and relevant organizations
- Provide public facilities for bike education
- Manage national bicycle network

Environment

- Develop and promote environment-friendly bike program

Land

- Improve National Transport Network
- Establish 'National Integrated Transport Plan'

Education

- Develop target-group curriculum and materials
- Encourage bike commute, provide accommodations

Public Health

- Research on health effects of bicycle use

Finance

- Expand budget on effective bicycle policy
- Develop general bicycle insurance

Economic

- Cultivate bicycle-related industries

Culture

- Support development of general bike insurance
- Organize national and international events

● Role of central government

Evaluation & financial support

- Establish evaluation and execution system
- Develop bicycle compatibility index
- Establish information hub (website)
- Provide national cycling policy
- Designation of responsibility
- Conflict resolution among municipalities

● Role of municipality

Evaluation & execution

- Use of bicycle compatibility index
 - Update and manage index, utilize index for basic estimation and policy improvement
- Develop evaluation system: implement database
- Devise maintenance measures and conduct regular facility check-ups

Bicycle Infrastructure



Public Awareness


Campaigns

- Integrate national and regional bicycle festivals
- Adopt national bicycle day
- Encourage active civic engagement

Education & Promotion

- Mandate safety and maintenance education
- Establish bicycle education school
- Foster bicycle communities and clubs (on/off-line)
- Launch various events (Tour de Korea, etc.)





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Bicycle Infrastructure

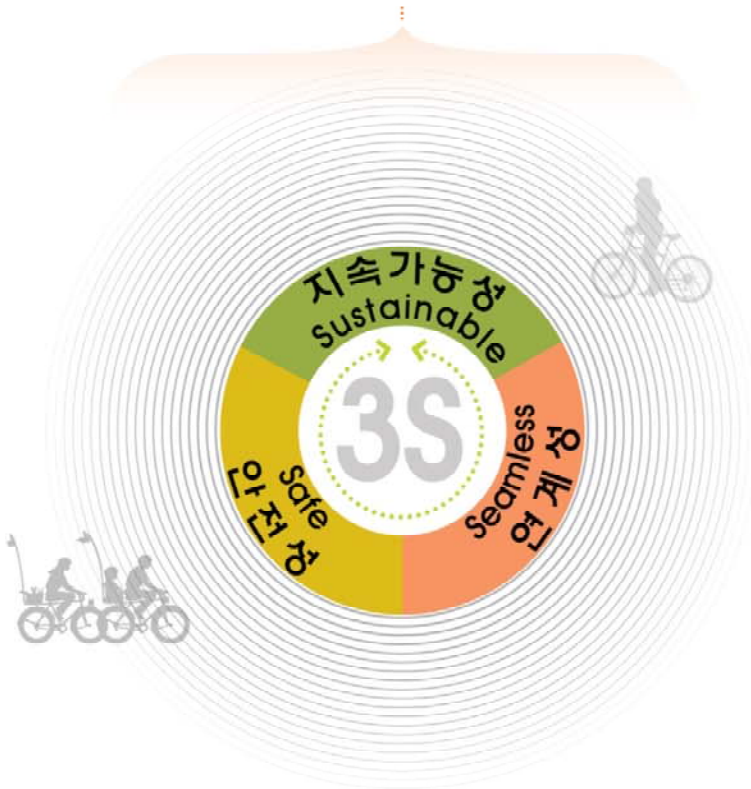
Overall Strategy

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Sustainable, Safe, and Seamless Implementation

Objectives

Strategies



Contribute to low carbon, green transportation

Ensure safety thru physical & regulatory means

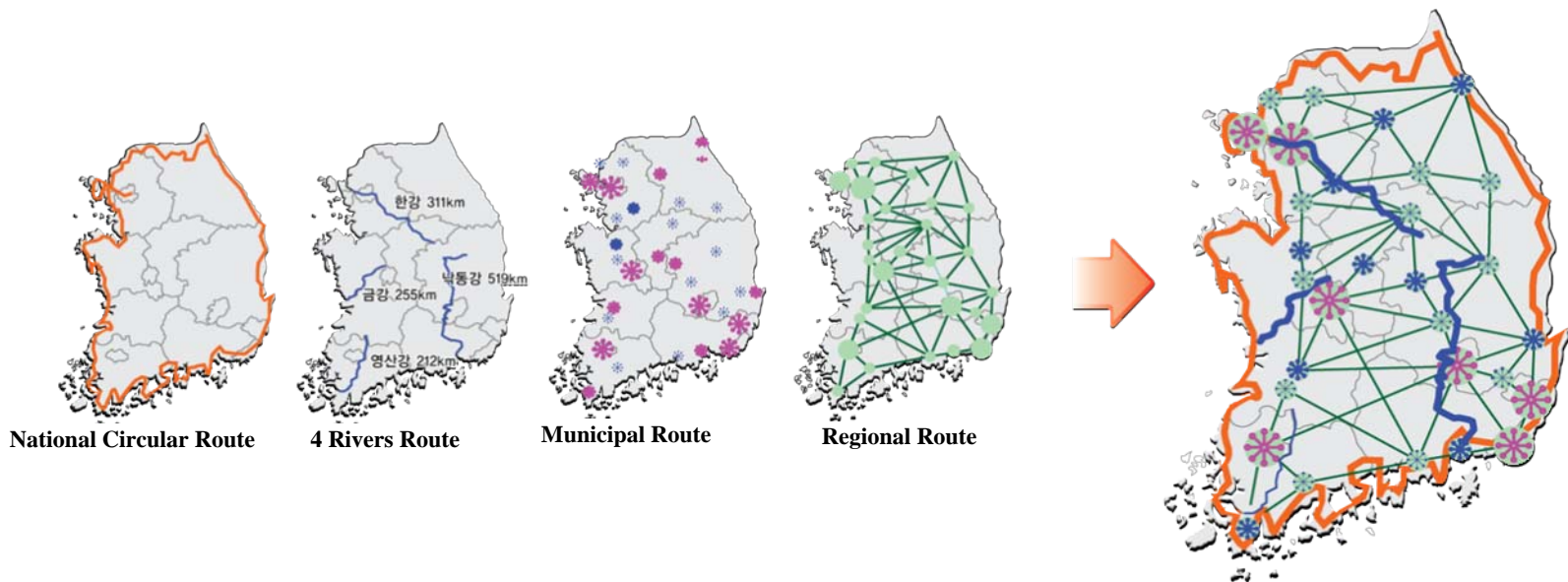
Increase connectivity of various bicycle paths

Incorporate regional, historical & cultural traits

Framework for continuous implementation

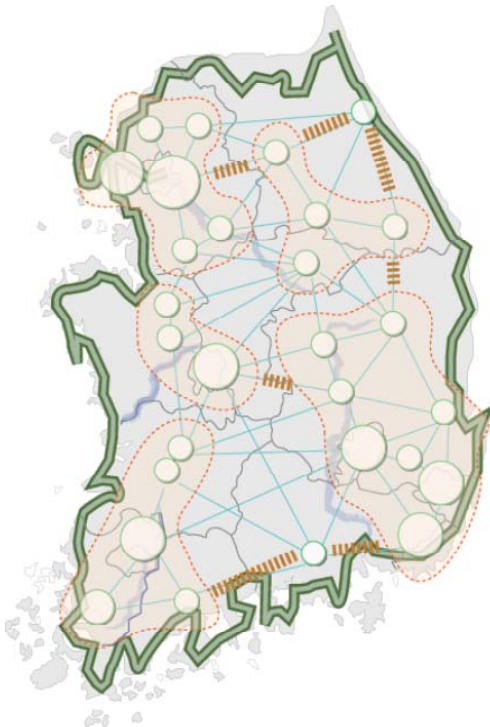
Types of Implementation

Type	Context	Responsibility	Purpose
National	Near DMZ and along coastal lines	Ministry of Public Admin	For connection and utility/leisure
4 Rivers Route	Along the 4 rivers	Ministry of Land	For connection and leisure
Regional Route	Community border	Ministry of Public Admin	For connection and leisure
Municipal Route	Urban and metropolitan areas	Municipality	Utility/leisure

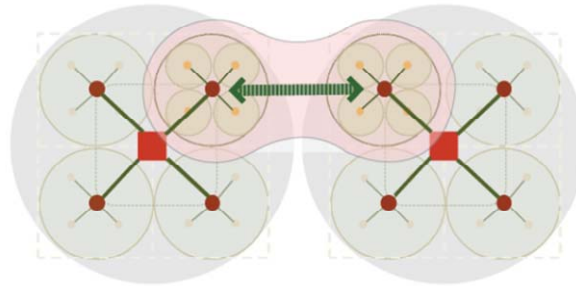


Regional Route

- Inter-community link



• Establish inter-community link through regional plan



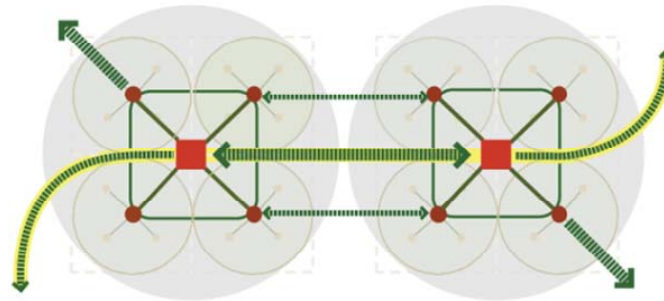
• Linked through economy

■ Urban center

• Town center

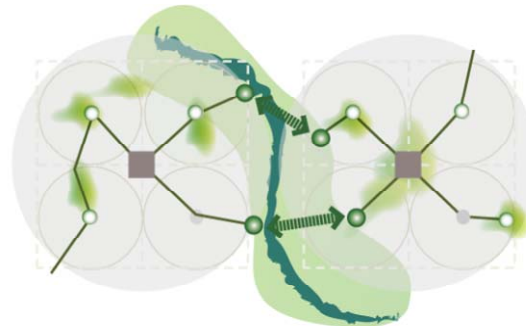
↔ Inter-community network

— Municipal network



• Linked through transit

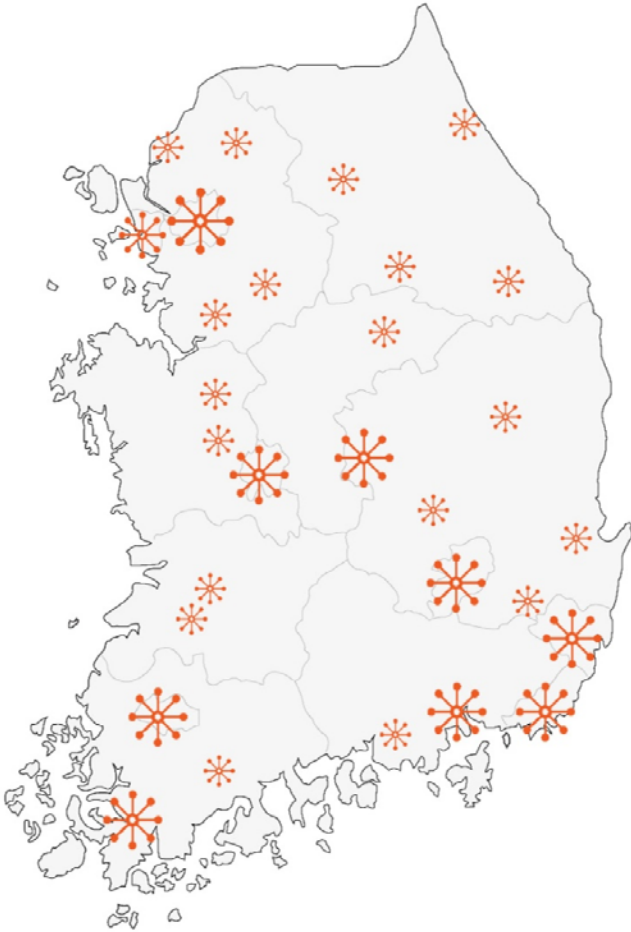
— Public transit path



• Linked through terrain feature

— River, park, green space

Municipal Route



- Each city responsible for construction
- Quick and easy inter-modal transport
- Road-diet and traffic calming
- Link to public transit & bike terminal
- Compact & mixed-use development

Municipal Route (contd.)

- Examples of cycle-oriented transportation planning



- Road-diet
(City of Incheon)



- Traffic calming
(Insadong Street)

Municipal Route (contd.)

- Examples of compact & cycle-friendly urban planning



- Compact and NMT-friendly development (Cheonggye Stream)



- Bicycle-friendly city (City of Changwon)

Municipal Route (contd.)

- Examples of bicycle and transit system in urban centers



- Easy transfer to transit
(Korean Railway)

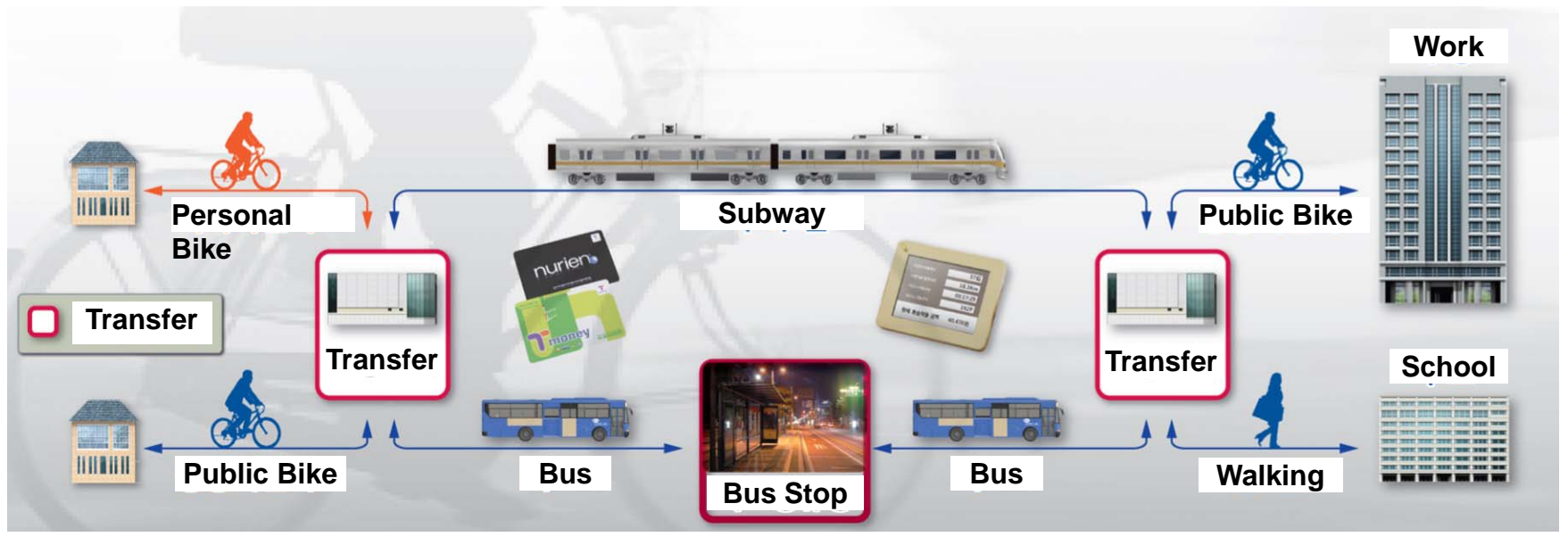


- Bike terminal
(City of Seoul)

Transit Oriented System

U-Bike City

- Apply ubiquitous technology to link bicycle and transit system
- Select 5 cities for pilot program and focus national efforts






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Conclusion



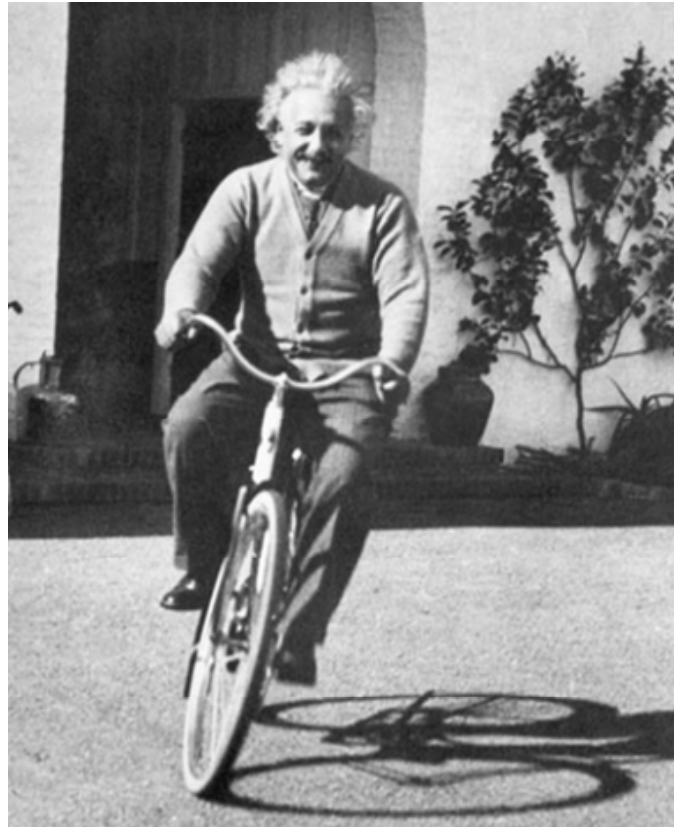
“A paradigm shift to green transportation”

SHIFT IT



You're better off by bike
On short trips it's quicker and more convenient

Questions or comments?



Thank you for your attention

For further information,
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