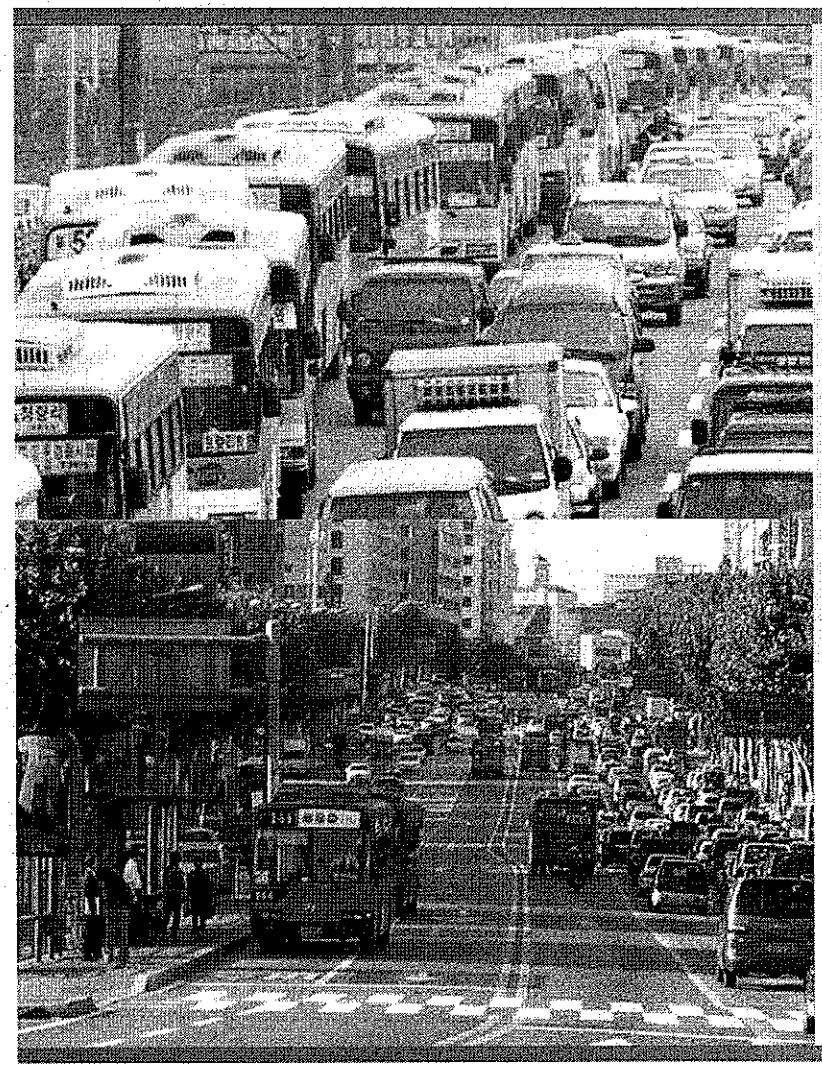
1976

4th UITP International Bus Conference, Brisbane, 25-28 October 2004



Renovation of Bus system in Seoul

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Sangeun Lee

Department of Urban Transit
Seoul Development Institute

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I Traffic Conditions in Seoul

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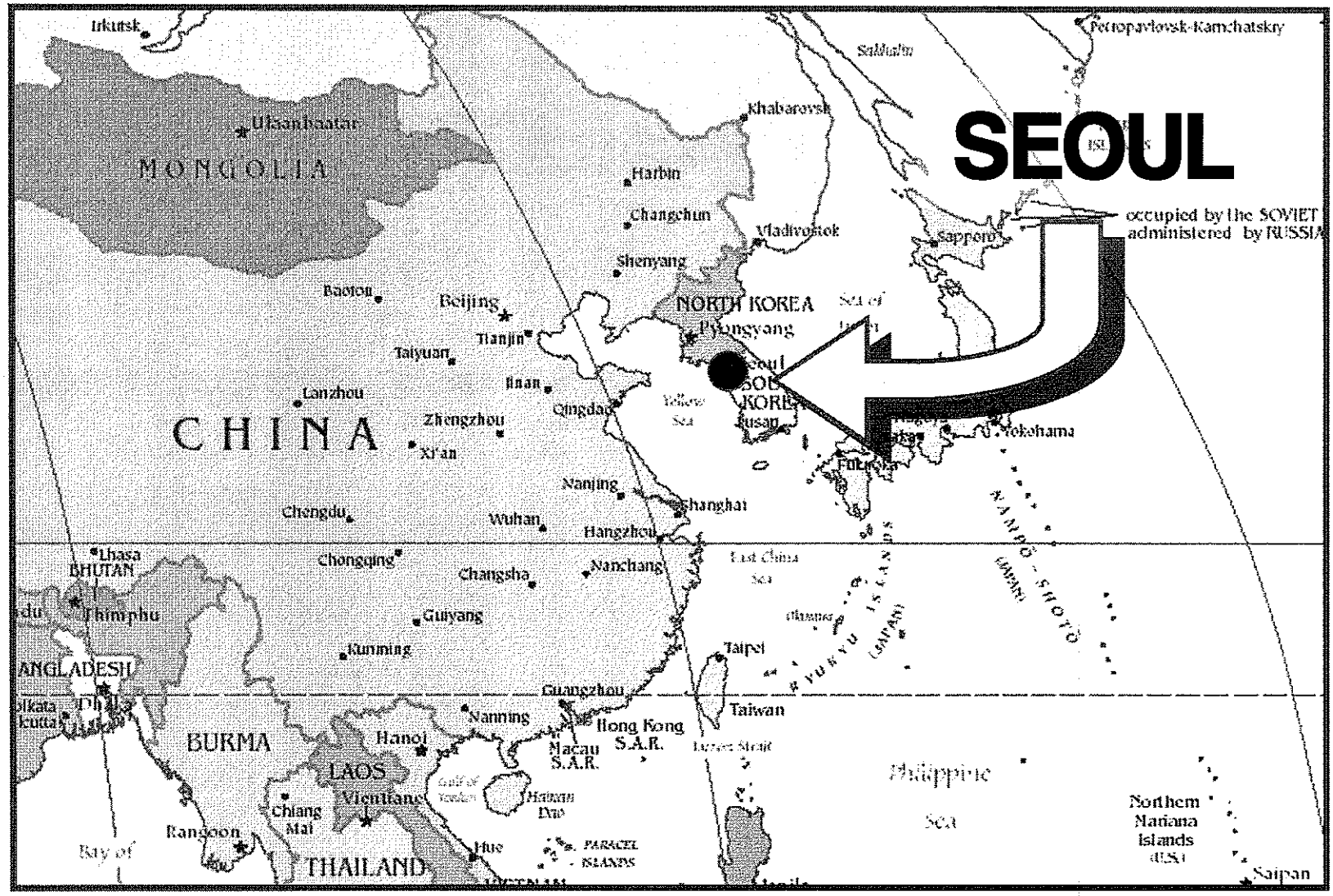

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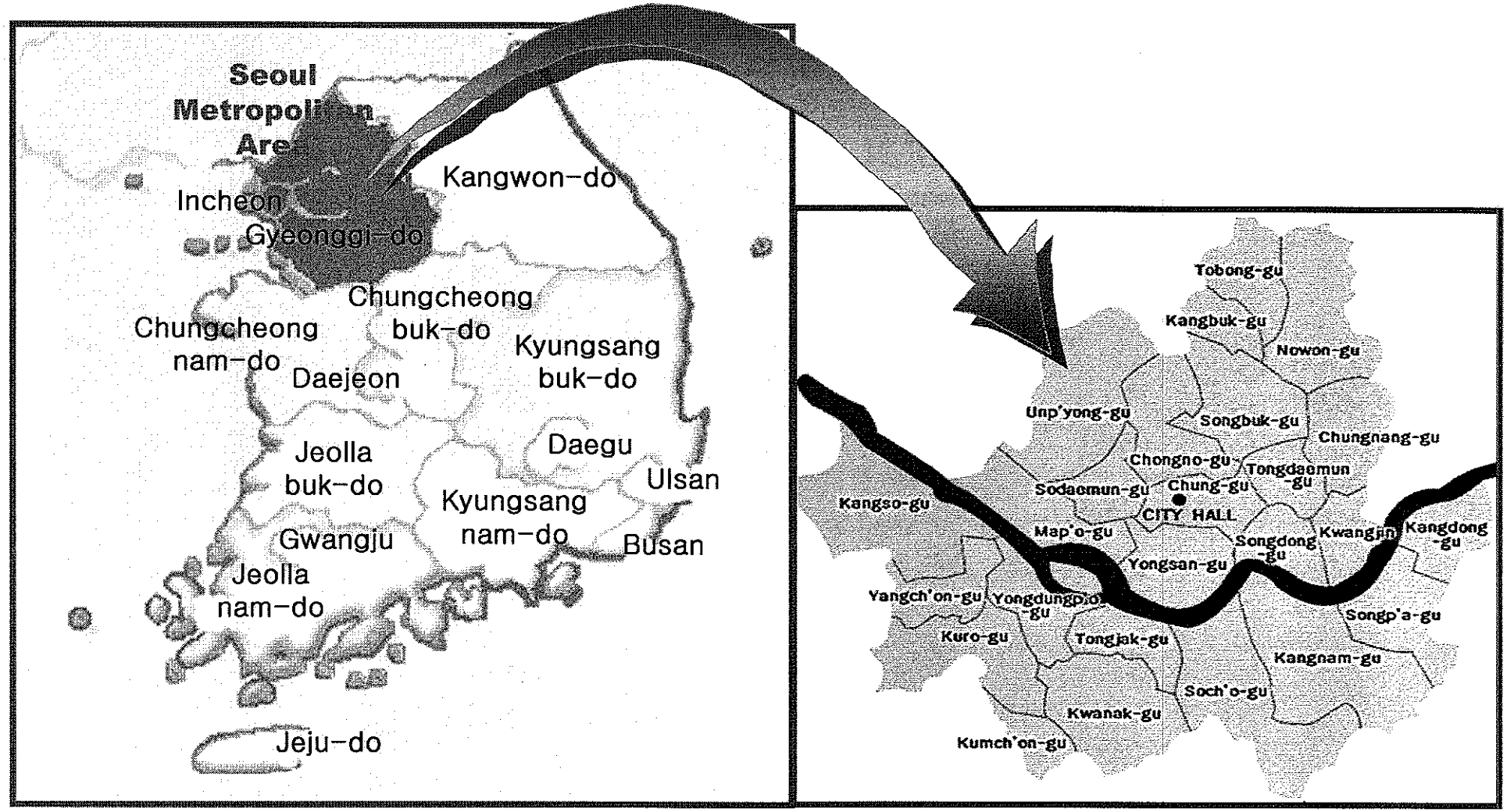

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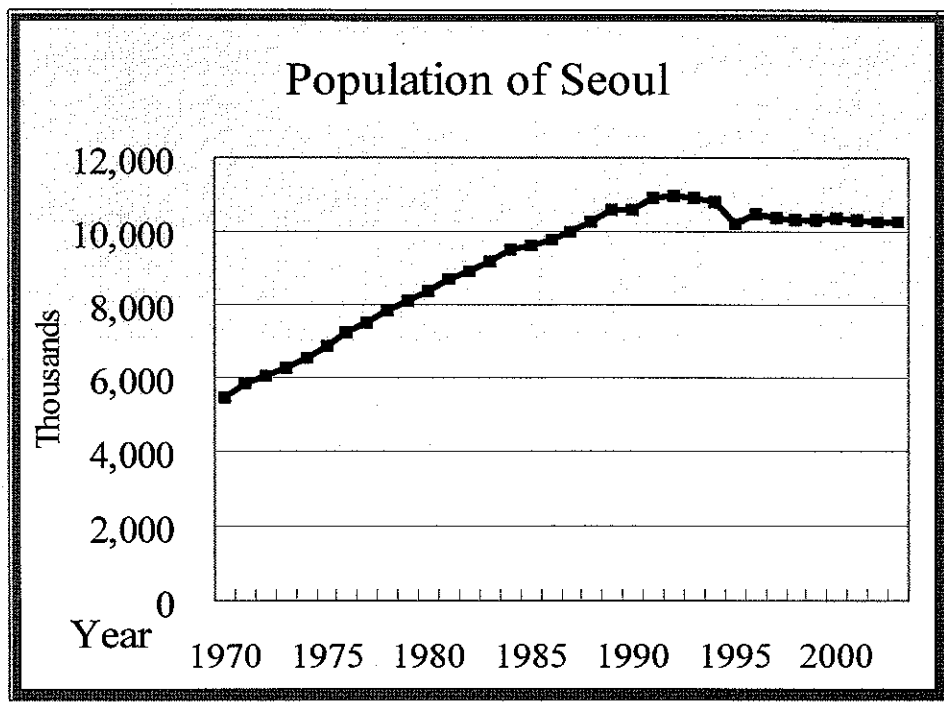
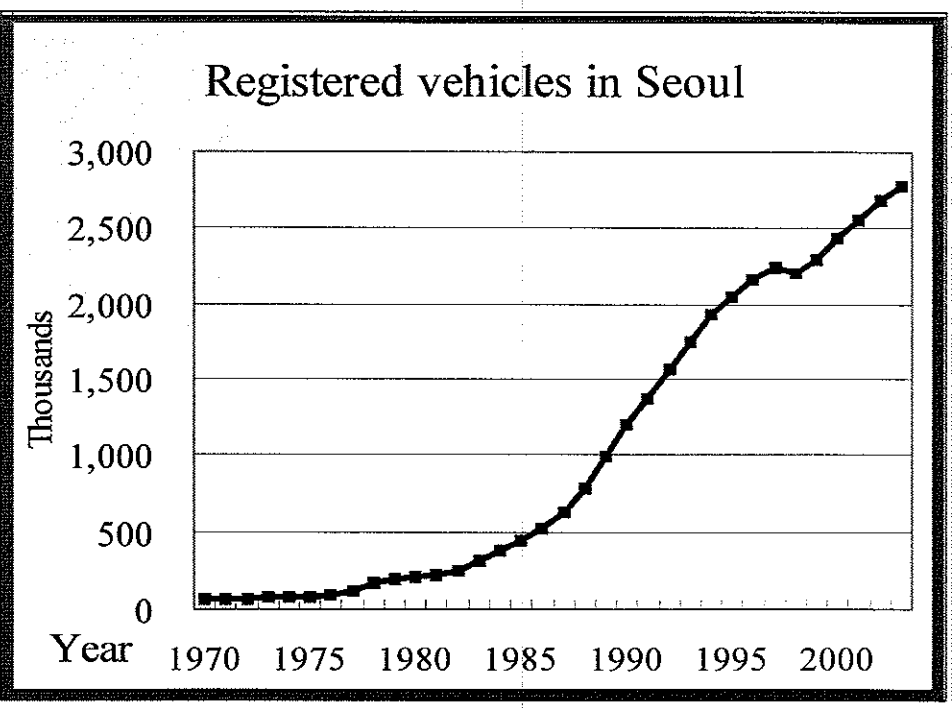
- **Population : 2 times**
  - **1970 : 5.4 Million**
  - **2003 : 10.4 Million**
- **Registered vehicles : 46 times**
  - **1970 : 60 thousands**
  - **2003 : 2782 thousands**





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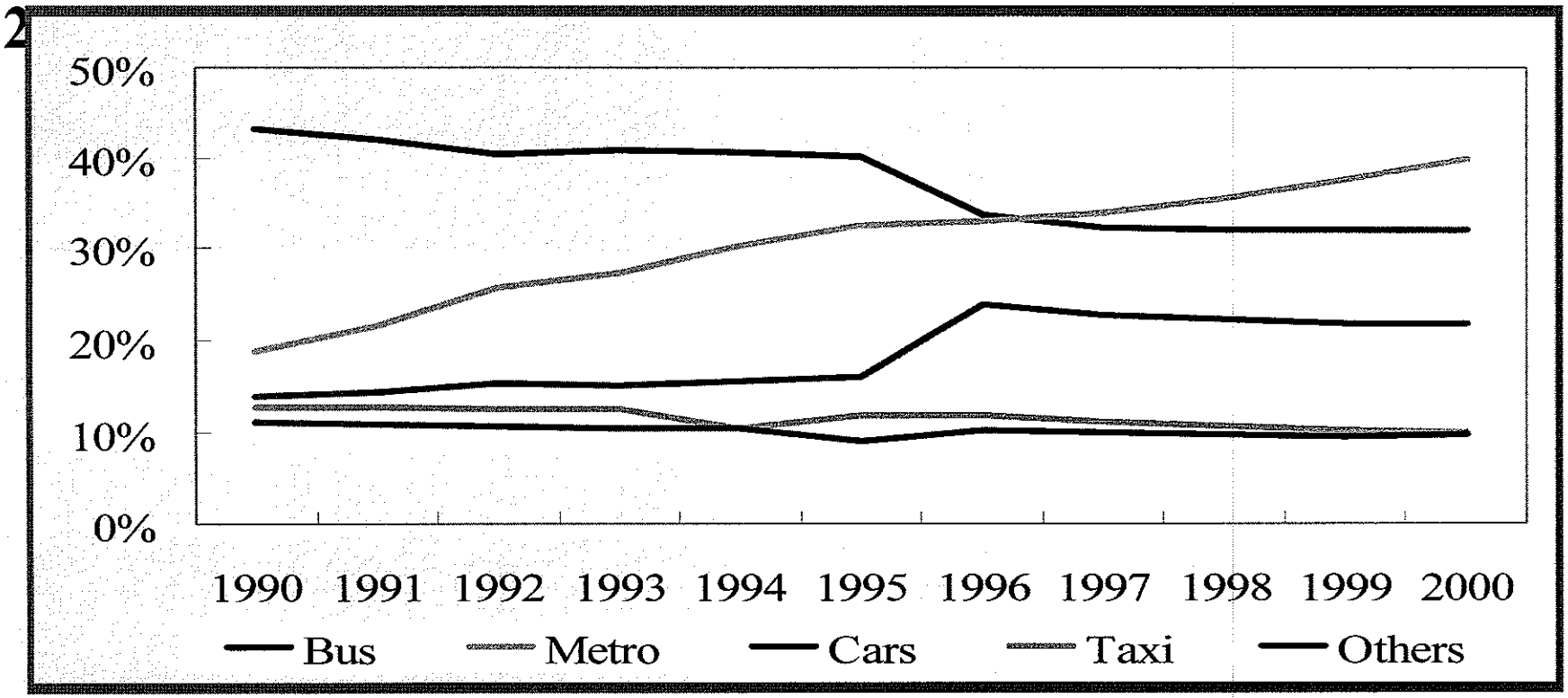
☐ Change of Mode share (1990 to 2000)

- Total traffic : 24.7 to 28 (million/day)
- Metro: 19% to 40% - Bus: 43% to 32% - Cars: 14% to 2



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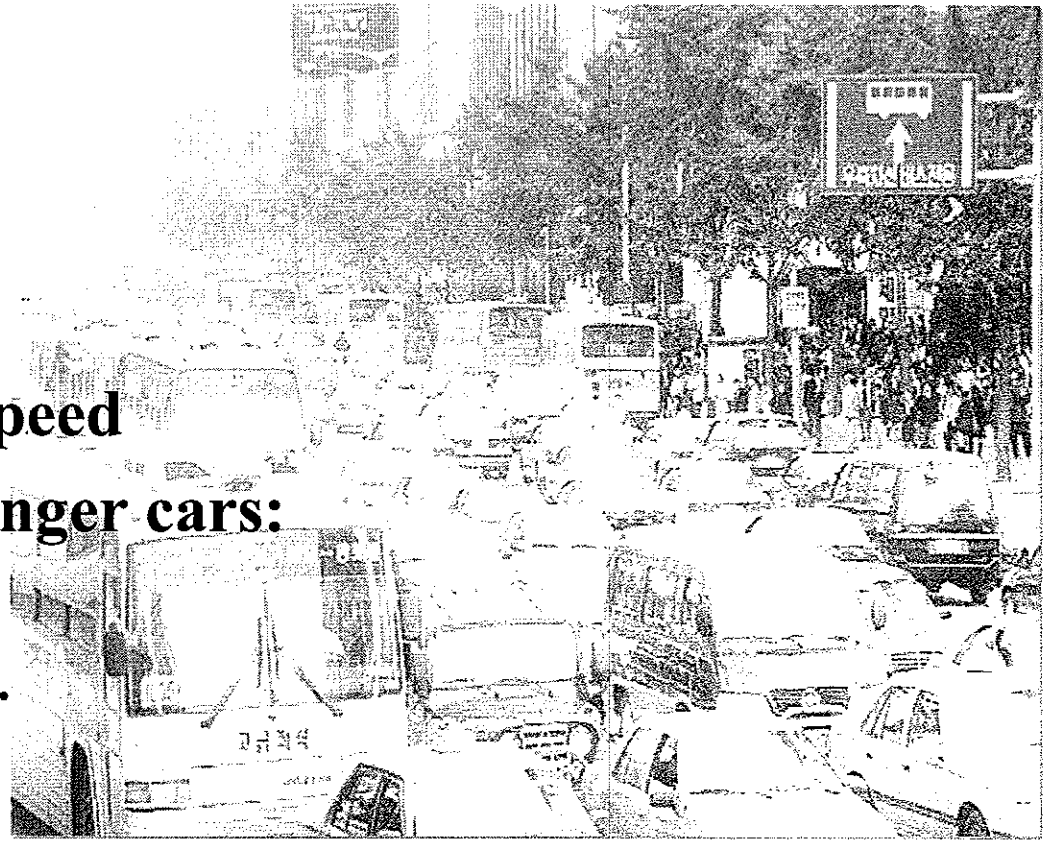
☐ **The traffic volume passing across the boundary of Seoul**

▷ **2.68 M veh/day (1996)**

→ **3.15 M veh/day (2003)**



☐ **Buses' average operating speed is slower than that of passenger cars:**

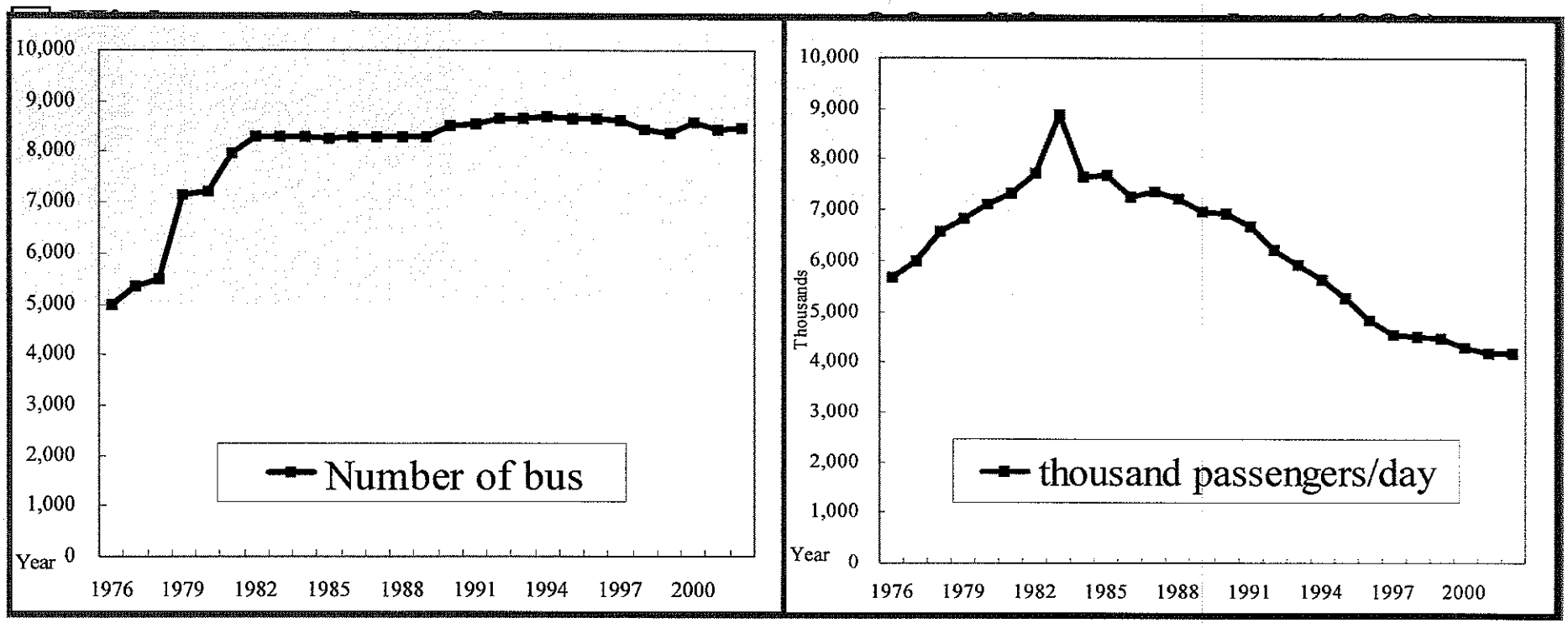
▷ **Buses:18.9㎞/hr**

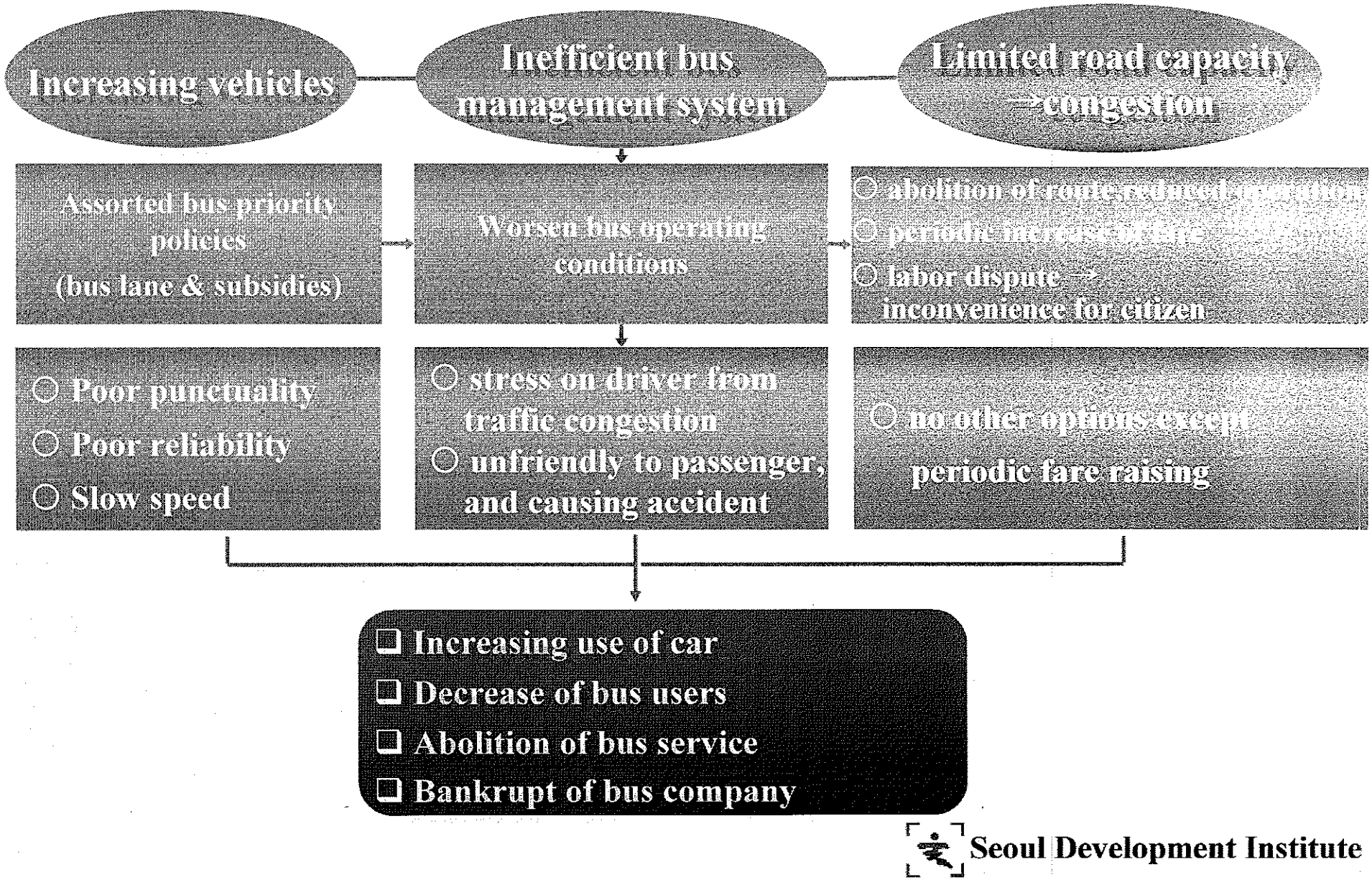
▷ **Passenger cars: 20.2㎞/hr**

☐ **Subway : 10 years' plan, 130 billion won investment :**

▷ **modal share has not increased significantly**

- **Number of bus : 5,000 (1976) to 8,499 (2002)**
- **Bus passengers : 5.7 millions (1976) to 4.2 millions per day (2002)**





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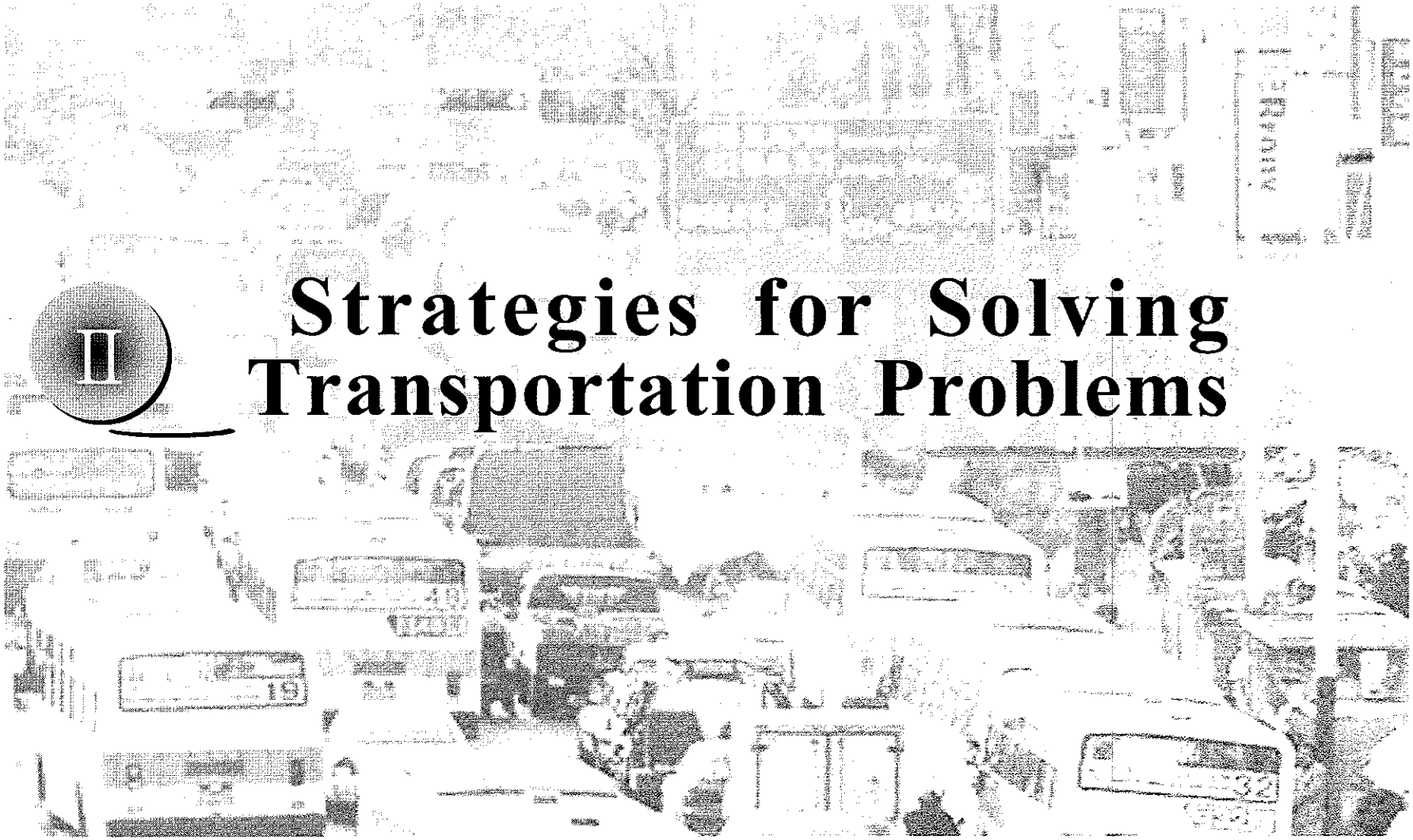

II Strategies for Solving Transportation Problems

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☐ Key for Solving Transportation Problems

"Policy shift from merely meeting the transportation demand to actively managing it"

Concurrent application

- ❑ Public transport reorganization
- ❑ passenger car use restricting policies

Renovation of Seoul Bus System : Action

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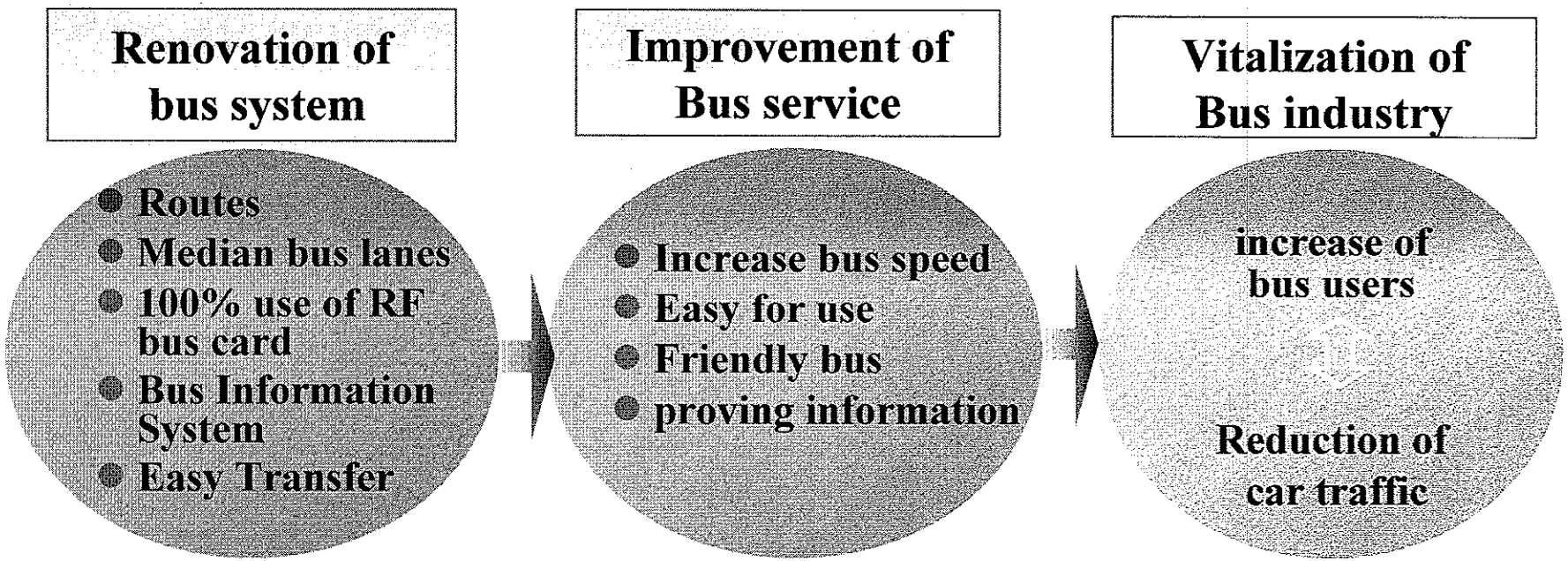
Aim of Seoul Bus Reform Program

Reducing Car traffic by renovation of bus system



New Operation System

1) Trunk and Feeder Lines
2) New bus business scheme

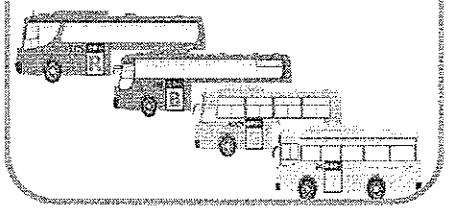
Support System

3) Median exclusive bus lanes
4) Curbside bus lanes
5) Central Bus Management system
6) Transfer system
7) New transportation card
8) High quality buses
9) Distance-based fare system
10) Garages/bus stops renewal
11) Attracting passengers for subways
12) Passenger car management
13) Improving roads' capability

Publicity

14) Publicity
15) Internet Homepage

New buses (on July 1)



Bus Management Center

16) TMC
17) Operation monitoring

Monitoring/ Counter measures

- BMS
- New transportation card system
- Speed analysis for buses/ passenger cars
- Field investigation
- Customers' reports/ suggestions
- Periodical analysis -> press release

Stabilizing the system ASAP

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1. Reorganization of Bus Service Lines and Operation System

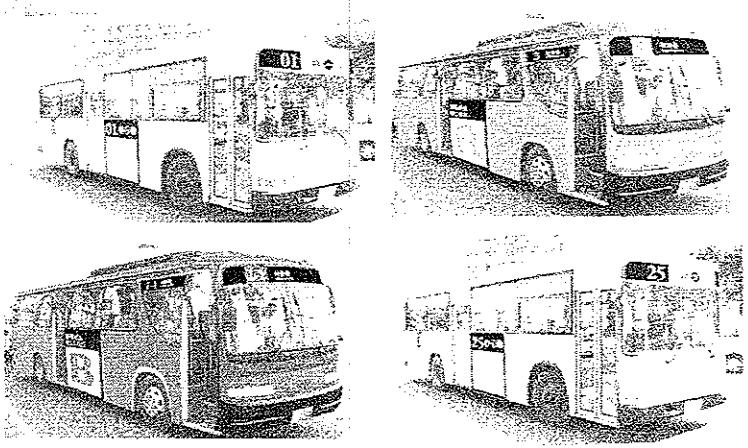
□ Trunk Lines and Feeder Lines

■ **Trunk lines**

: direct connection between the suburbs and downtown area, between the downtown areas

■ **Feeder lines**

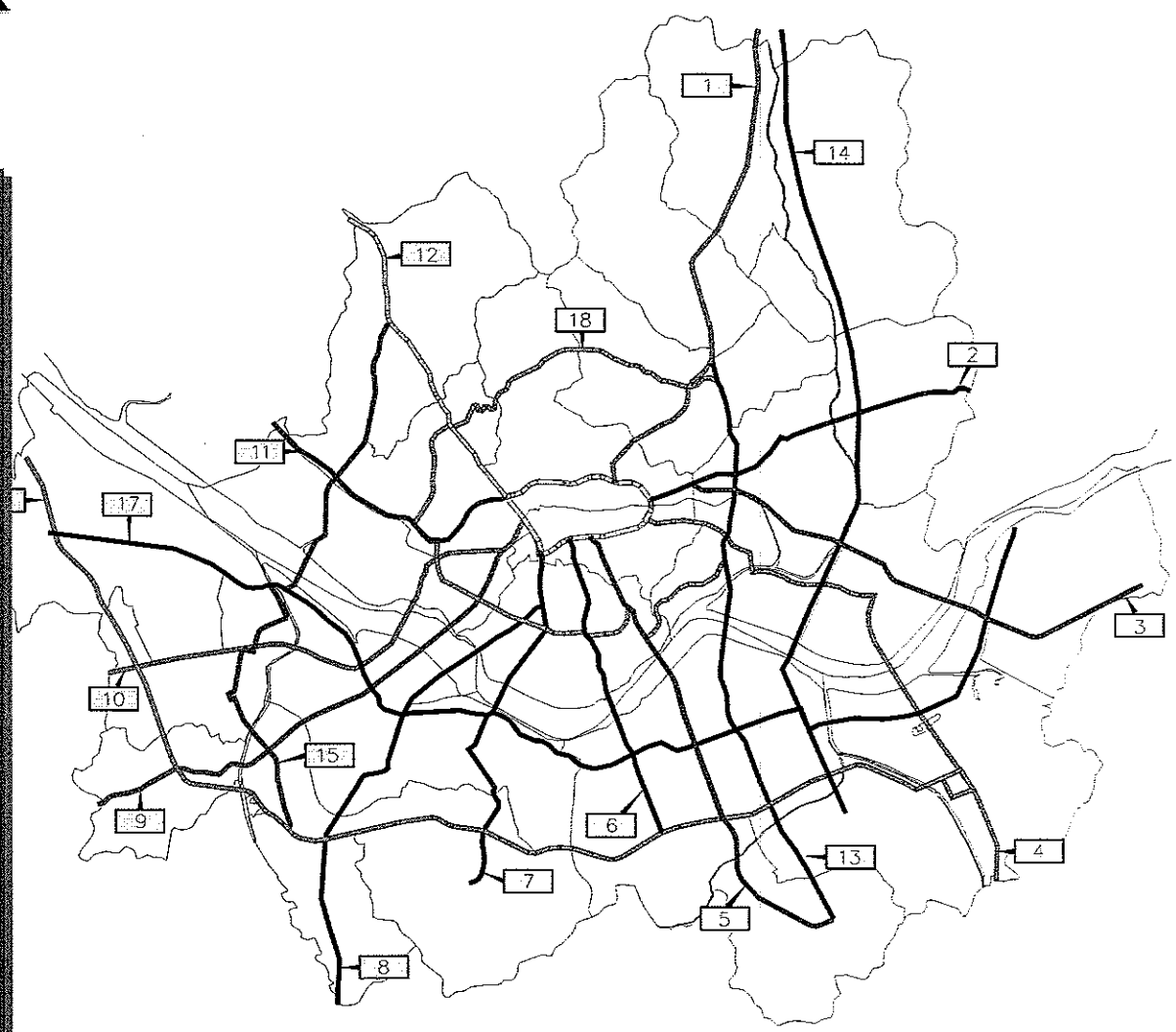
: Linking to trunk line stops/subway stations for easy transfer, providing public transportation for local demand



Trunk Line Network

- 18 Trunk lines

- Passengers
  : 2,300 trips/hr or more
- Buses
  : 120 buses/hr or more
- Arterial Type
  : 6 lanes or more
- Complementary with subways



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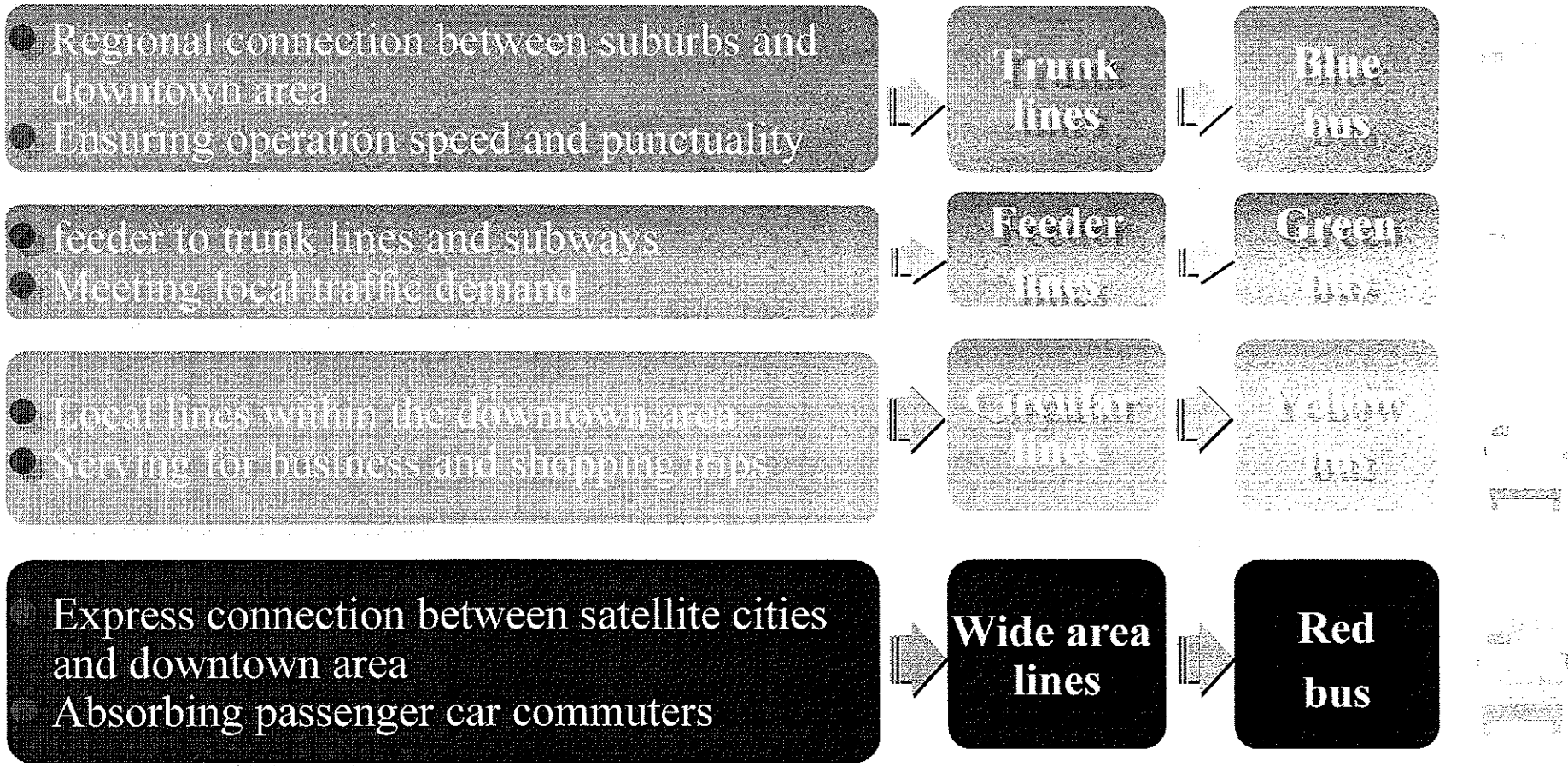
☐ Operation of 4-types of Buses
: Trunk Lines · Feeder Lines · Circular · Wide Area



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☐ Reorganization of the Bus Industry

■ Revenue based on veh-km, not on number of passengers

■ Joint management of line adjustment and revenues: to guarantee the autonomy of private sector management

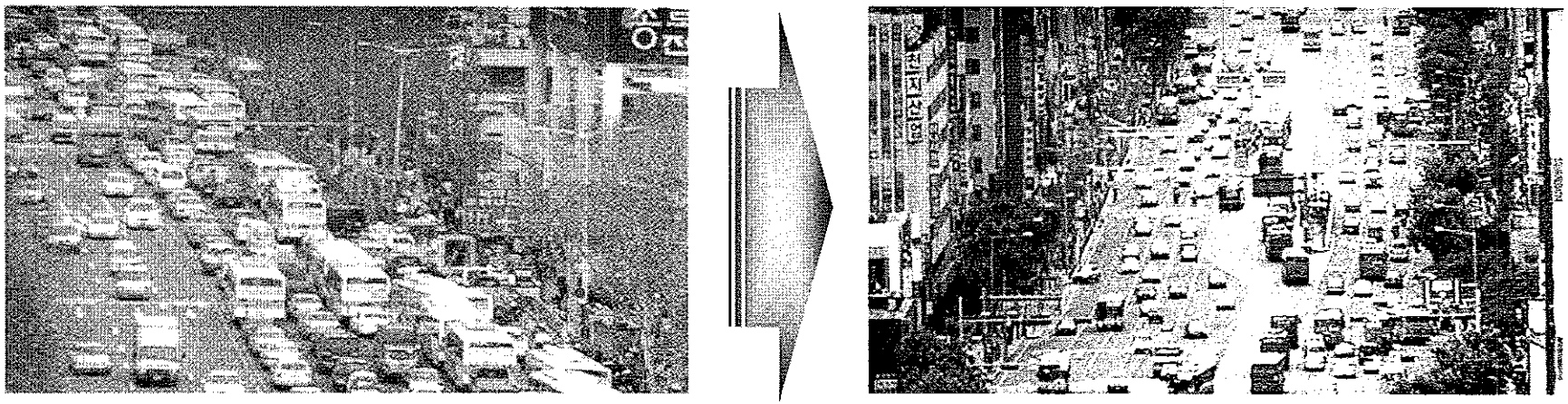
▷ Establishment of an operation monitoring and evaluation system for improving services

■ Contracting for trunk lines: Ensuring the public features of bus lines through semi-public operation system

▷ Lines and method of operation will be decided by City of Seoul ; operation and evaluation will be carried mainly by qualified private parties

2. Establishment of Support System

☐ Expanding Exclusive Median Bus Lanes



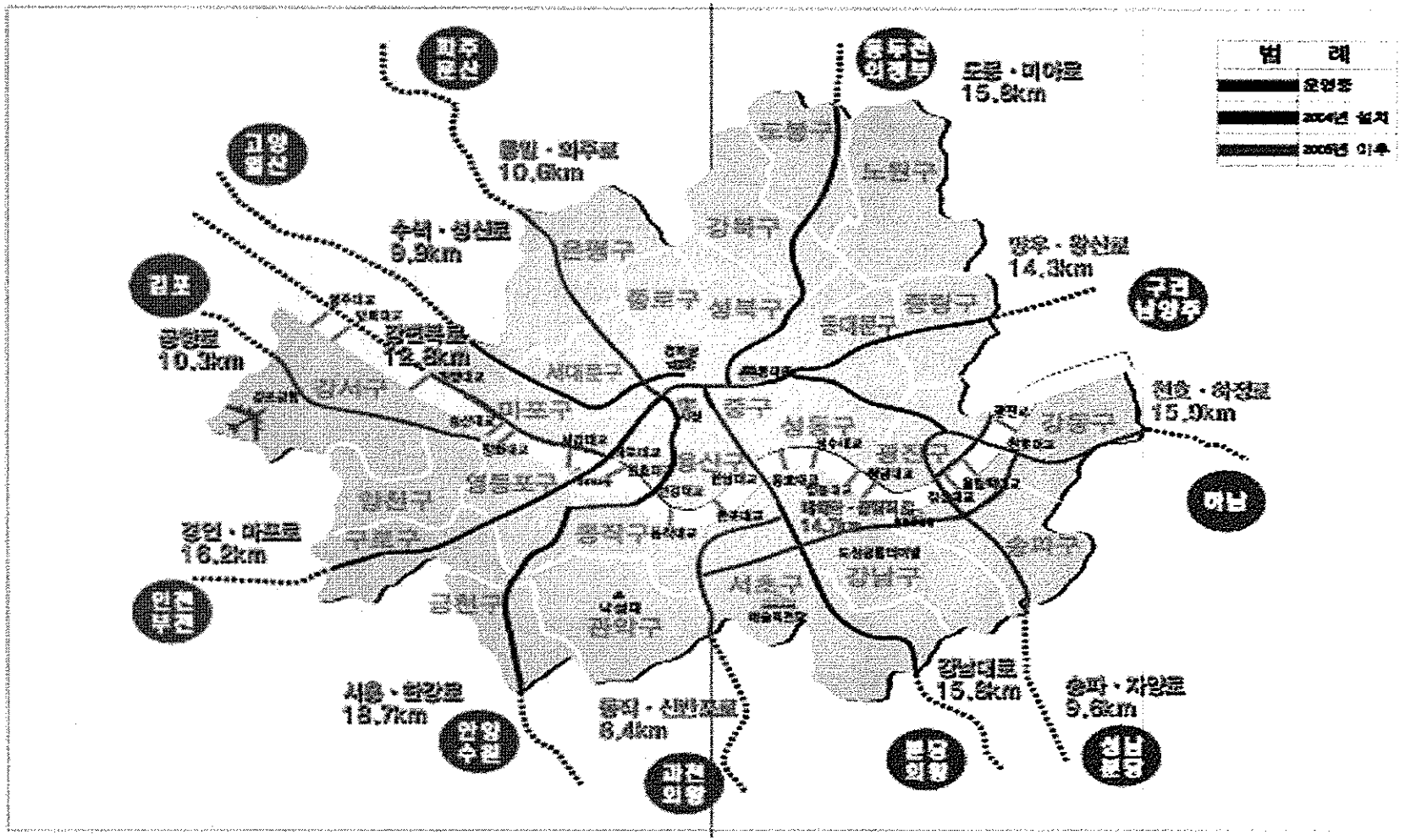
■ Expansion Plan (in 2004: 6 lines/74.6㎞; in 2005 and thereafter: 7 lines/87.8㎞)

※ Status of Existing Bus Lanes

▷ Exclusive median bus lanes: 1 section/ 7.6㎞

▷ Curbside bus lanes: 293.6㎞

☐ Bus Service Lines with Exclusive Median Bus Lanes (Plan)



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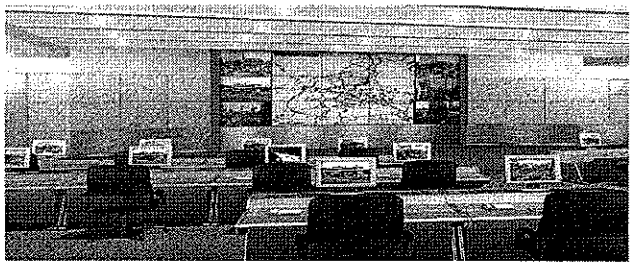
☐ BMS (Bus Management System)

Integrated Bus Control Station



Services for Citizens


Internet


PDA


Cellular Phone

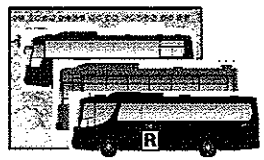

ARS

In-Bus Devices

Information at Bus Stops

Driver

Bus Company



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Evaluation of Operational Results => incentives and penalties

Information on location

Drivers: receive position and on-time status related orders
Companies: adjustment of position and on-time status
Citizens: provided with information on ETA

→ **Ensuring punctuality and predictability**

Data on violations

Drivers: encouraged to drive safely through warnings, etc.
Companies: provided with information on violations
The City: violation enforcements and executes administrative measures

→ **Encouraging Safe operation**

Historical Data

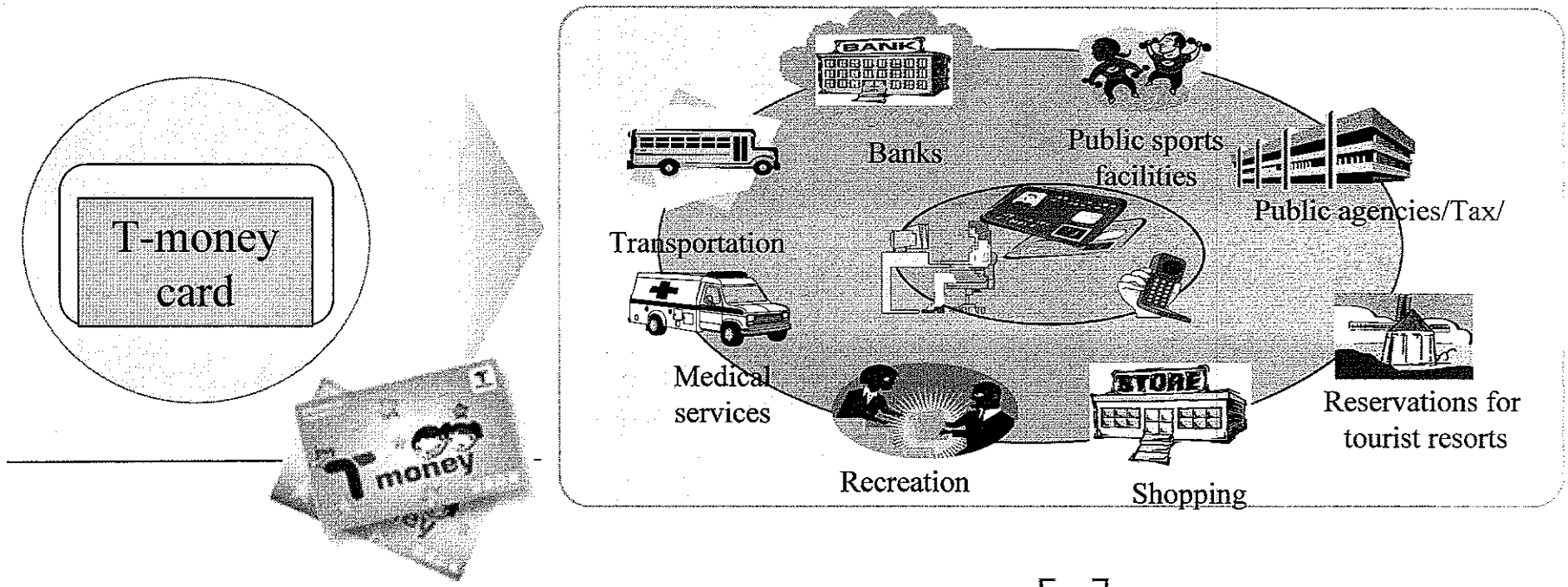
Seoul City: reflect for related policy making
Companies: use for improving bus managing efficiency

→ **Enhancing the efficiency of the bus system management**

Incentives: given to companies/drivers with qualified performance (+ α)
Penalties: imposed on companies with poor performance (- α)

☐ New Smart Card System for fare collection

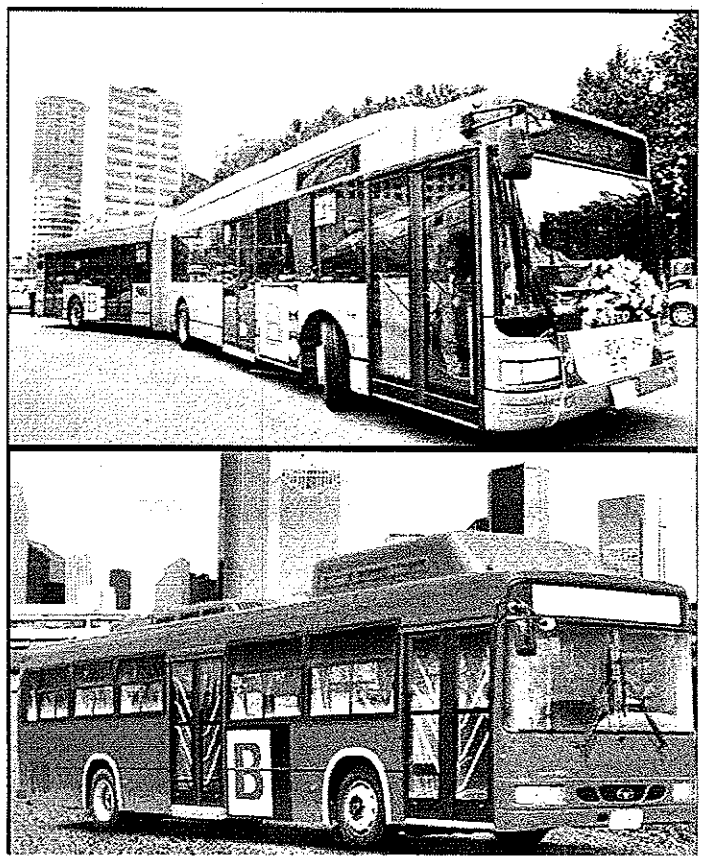
Existing Card	New card
○ Does not meet Int'l standards (Mifare) ○ Functions merely as a memory card	○ Adopted Int'l standards ○ Smart card -> Enhances security and provides multi-functional services



☐ High Quality Buses

■ Principle of Operation by Service Types

Trunk lines	Major lines	Articulated buses, Low-floor buses, CNG buses
	Aux. Trunk lines	Low-floor buses, CNG buses
Feeder lines		Medium-sized buses
Circular lines		Medium-sized buses



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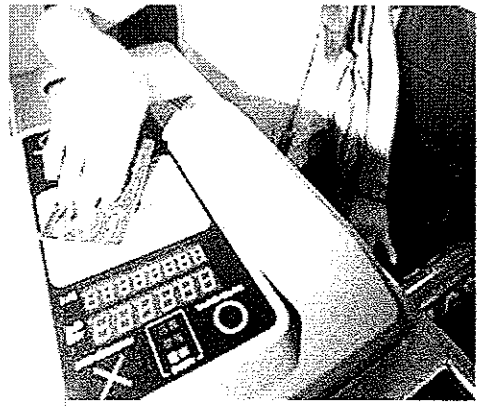
☐ New Fare System

▷ Distance based fare

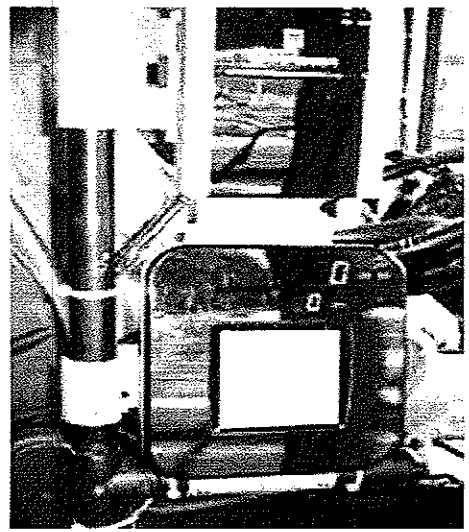
○ Subway single trips
: fare according to distance-traveled
(basic fare : 800 won up to 12 km;
extra fare of 100 won for every additional 6 km)

○ Bus single trips : single fare of 800 won



▷ Free of charge for transfers among modes

○ For transferring trips
: accumulated distance-based fare system
→(basic fare up to 10km;
extra fare for every additional 5 km)



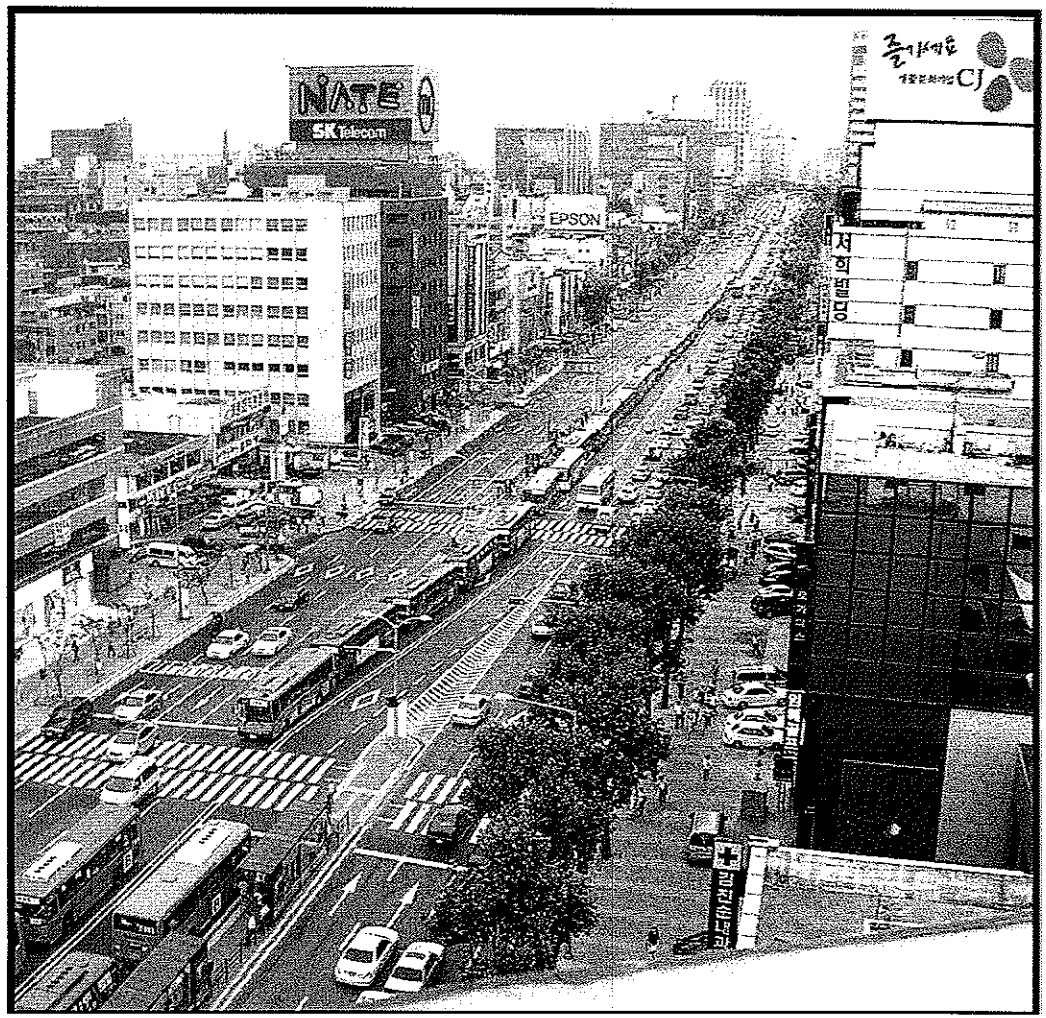
Ⅳ After 1st of July, What's going on?

1. New exclusive median bus lane (1, July)

❑ Kangnam-Daero

- ■ Queues in the bus lane
- ■ Some one-door bus generated long dwelling time at bus stops

▷ Control of numbers of bus in the lane (About 250 buses/h)



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1. New exclusive median bus lane (now)

- **Increase of speed for both bus and car**
  - 10 km/h to over 20 km/h
- **More carriage of passenger**
  - 6 times more passengers than other lanes
- **Less travel time variation**
  - 5 times less than other bus lanes

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2. Increase of Passengers

- **The number of Public Transportation users in July and October increases 11.0% from the same period of last year**

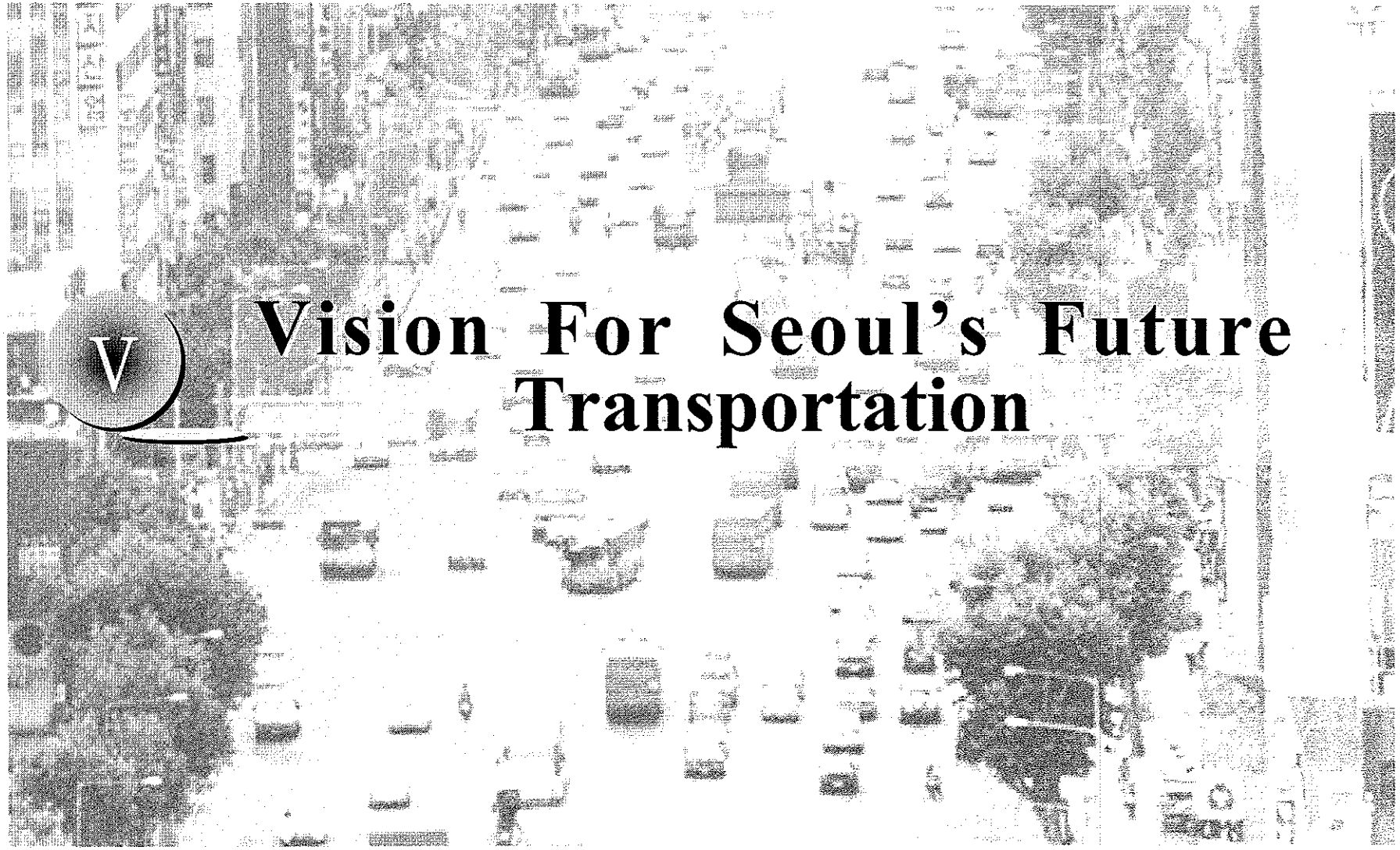
(Thousands/day)

Modes	2003		2004		%
	July	August	July	August	
Bus	3,793	3,744	4,142	4,140	9.9% ↑
Subway	2,699	2,557	3,055	2,867	12.6% ↑
Total	6,492	6,301	7,197	7,007	11.0% ↑

3. Decrease of bus related accidents

- **The number of accidents in July, 2004 decreased 26.9% than the July of 2003**

Year	Number of Accidents	Number of the injured			
		Lightly injured	Heavily injured	Death	Total
2003	654	916	49	6	971
2004	478	704	36	0	740
%	26.9%↓	23.1%↓	26.5%↓	100.0%↓	23.8%↓



Vision For Seoul's Future Transportation

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4. TDM (Transportation Demand Management)

❑ Currently in Forcing Policies

- Mt. Namsan Tunnel #1 and #3

  ▷2,000 charged on passenger cars/vans (when carrying 2 passengers or less)

  ※Policy Effectiveness: improved traffic speed (21.6㎞→ 39.7㎞/hr), decreased in traffic volume by 11.6%

❑ Future policies

- Expanding of congestion charges
- Designation of congestion controlled areas being considered

  ▷Measures such as restricting the use of parking lots, reducing parking lots, and additional toll charges within controlled areas are possible

5. Restoration of Cheonggyecheon

- Decrease of car-traffic volume : 12,5000 veh/day

Before **After**

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6. Reform of Seoul Plaza

- 2004. 5. 1 Open → Restrain Traffic Flow → Ped. Square

Before

After

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Current

- Automobile Oriented
- Vehicle Friendly
- Isolated Modes
- Quantity Aimed

New

- Public Transportation Oriented
- Pedestrian Friendly
- Integrated Modes
- Quality Aimed


Thank you