

# ∞ TRANSPORTATION STRATEGY 2017 WORKSHOP FOR ASIAN CITIES

BUS RAPID TRANSIT AND TRANSFER SYSTEM

JULY 2 - 6, 2018  
SEOUL, REPUBLIC OF KOREA





## CITYNET SECRETARIAT

CityNet Secretariat is the largest association of urban stakeholders committed to sustainable development in the Asia Pacific region. Established in 1987 with the support of UNESCAP, UNDP and UN-Habitat, the network of cities has grown to include over 150 municipalities, NGOs, private companies and research centers. The CityNet connect actors, exchange knowledge and build commitment to establish more sustainable and resilient cities. Through capacity building, city-to-city cooperation and tangible projects, we help our members respond to climate change, disaster, SDGs and rising infrastructure demands.



## SEOUL HUMAN RESOURCE DEVELOPMENT CENTER

The Seoul Human Resource Development Center (SHRDC) of the Seoul Metropolitan Government is a training and education center for public officials of the city of Seoul and its 25 autonomous district offices. As the SHRDC attracts the Metropolis International Training Institute Headquarters, it has taken off as the international network that educates public officials from all over the world and supports international exchanges.



## THE WORLD BANK GROUP

The International Bank for Reconstruction and Development (IBRD), commonly known as the World Bank, is a global development cooperative owned by 189 member countries. As the largest development bank in the world, it supports the World Bank Group's mission by providing loans, guarantees, risk management products, and advisory services to middle-income and creditworthy low-income countries, as well as by coordinating responses to regional and global challenges.

Created in 1944 to help Europe rebuild after World War II, IBRD joins with IDA, our fund for the poorest countries, to form the World Bank. They work closely with all institutions of the World Bank Group and the public and private sectors in developing countries to reduce poverty and build shared prosperity.

# ACKNOWLEDGEMENTS

CityNet Secretariat would like to express our gratitude to the Seoul Human Resource Development Center (SHRDC) and the World Bank for their cooperation and contribution to the “2018 SHRDC: Transportation Strategy for Asian Cities” from June 1st to 8th. Their support has been fundamental for the successful completion of the workshop on Bus Rapid Transit and Transfer System Management.

CityNet Secretariat is also indebted to the lecturers and field experts for providing excellent knowledge and experiences of Seoul’s public transportation system and bus rapid transit management. Their professional insight has significantly enhanced the quality of the workshop.

CityNet Secretariat is also grateful to the World Bank representatives, Mr. Georges Darido, Lead Urban Transport Specialist, Mr. David Ingham, Senior Urban Transport Specialist and Mr. Eric Turner, Transport Analyst. Their consultancy on the participants’ SWOT analyses and Action Plans has exemplified the significant role of highly capable professionals in the transfer of knowledge and exchange of best practices.

We would like to acknowledge the role of CityNet Secretariat members who dedicated themselves throughout the workshop. Special appreciation is delivered to Ms. Seunghyeon Han and Ms. Chanrahn Hwang for overseeing the preparation and completion of the Workshop, thus contributing substantially to its success. The Secretariat also thanks Ms. Jihyun Hwang and Ms. Jinhee Lim for their assistance in note-taking and site visits.

Finally, the Secretariat was greatly inspired by the keen interest and determination of the participants whose enthusiasm has enriched the workshop. We appreciate your commitment to this workshop and we wish a great success for you and your cities.

# CONTENTS

## 1) Introduction

- 1-1) Workshop Overview
- 1-2) Participants
- 1-3) Lectures

## 2) Background

- 2-1) Pre Self-Assessment Survey
- 2-2) City Profile

## 3) Session Summary

- 3-1) Summary and workshop schedule
- 3-2) Lectures
- 3-3) Site Visits

## 4) Conclusion/Learning Points

- 4-1) Wrap up & Discussion  
(SWOT & Action Plan)







# 1.1 INTRODUCTION

## Workshop Overview

### Background

Asia Pacific is the world's fastest urbanizing region, and the rate of population growth in Asian cities is very rapid. However, existing transportation networks and infrastructure do not meet the needs of a heavily growing population, resulting in many Asian cities experiencing worsening traffic problems.

Based on the survey of the most interesting and applicable transportation policy at the Transportation Strategy Workshop for Asian Cities, Bus Rapid Transit (BRT) and Transfer System were selected as the most interesting topic on transportation. This workshop connected urban professionals to discuss BRT best practices and transportation problems in the Asia Pacific region to exchange innovative practices and explore potential solutions of the problems raised.

Specifically designed for urban practitioners and decision makers from rapidly growing contexts, the workshop offered discussions with urban actors on sustainable transport policy making and an opportunity to strategize a new agenda for urban transportation.

### Learning Objectives

By the end of the workshop, participants were able to understand BRT business plan formulation and conventional bus operations reform, network, design, and modernization.

The workshop aimed to facilitate cooperative relations between participants and organizations of Seoul, the World Bank, CityNet and its member cities by sharing and transferring knowledge and information on transportation. The various best practices on BRT in the Asia Pacific Region were explained throughout the workshop to promote active learning of the participants. By the end of the workshop, the participants were able to; analyze related challenges of their cities and find out solutions; develop transportation policies; investigate current BRT operating performance, and determine BRT improvement strategies by using KPIs (Key Performance Indicators).



# INTRODUCTION 1.2

## Participants



### **Jimmy Ventius Parluhutan**

Indonesia, Bogor  
Bogor City Government  
Head of Public Transportation Division



### **Reinhard Maynard**

Indonesia, Jakarta  
Jakarta Capital City Government  
Staff of Public Transportation Division



### **Henu Aji Marsetio**

Indonesia, Jakarta  
Jakarta Capital City Government  
Staff of Public Transportation Division



### **Kim Bock Steven Tan**

Malaysia, Kuala Lumpur  
Kuala Lumpur City Hall  
Deputy Director of Civil Engineering and Urban Transportation Department



### **Mohd Azfaezul Mohamed Azmi**

Malaysia, Kuala Lumpur  
Kuala Lumpur City Hall  
Civil Engineer of Civil Engineering and Urban Transportation Department



## 1.2 INTRODUCTION

### Participants



#### **Duong The Binh**

Vietnam, Hanoi  
Hanoi People's Committee  
Vice Director of Urban Transport Management and Operation Center



#### **Xuan Hung Dihn**

Vietnam, Hanoi  
Hanoi People's Committee  
Officer of Transport Management Division of Hanoi Department of Transport



#### **Hoang Le Quan**

Vietnam, Ho Chi Minh  
People's Committee of Ho Chi Minh City  
Officer of Division of Road Based Transportation of Ho Chi Minh City Department of Transportation



#### **Dinh Dao Nguyen**

Vietnam, Ho Chi Minh  
People's Committee of Ho Chi Minh City  
Officer of Project Department of Ho Chi Minh City People's Committee



#### **Thai Binh Phan**

Vietnam, Da Nang  
Da Nang People's Committee  
Deputy Head of Division of Planning and Investment of Department of Transport



#### **Le Quang Phuc**

Vietnam, Da Nang  
Da Nang People's Committee  
Officer of Division of Protocol and External Relations from Department of Foreign Affairs





### Sangbum Kim

(CityNet, Deputy Secretary General)

Worked for the Seoul Metropolitan Government for 30 years. He was city's Vice Mayor until his retirement and was president of The Seoul Institute, a think-tank of urban solution for Seoul. Field of Expertise includes transportation and regional industry development. He was involved in the Seoul's major transportation projects. Currently he is the Deputy Secretary General from the CityNet and have been supporting local authorities to obtain a sustainable development.



### Joonho Ko

(Hanyang University, Associate Professor of the Graduate School of Urban Studies)

Joonho Ko was a research fellow in the department of transportation systems research at the Seoul Institute. In the institute, he actively conducted various transportation studies, including public transportation, green car deployment plans, and congestion mitigation strategies. Currently he is the Associate Professor of the Graduate School of Urban Studies at Hanyang University.



### Keeyeon Hwang

(Hongik University, Professor of Urban Design and Engineering Department)

Keeyeon Hwang served as the president of the Korea Transport Institute (2008-2011) and director of the Research Center for Cheonggyecheon stream restoration at the Seoul Institute and also contributed to BRT network development in Seoul. He is currently professor of Urban Design and Engineering Department at Hongik University, co-chair of Korean Automated Vehicle Committee, and an active member at regional and national committees on land policy, sustainable development, and transportation policy.



### Jindong Kang

(Seoul Metropolitan Government, Director of Transportation Operation Division)

Previously Jindong Kang, lectured at Myoungji University with focus on traffic survey, traffic capacity, and traffic planning. He developed KHCM (Korea Highway Capacity Manual) software. Joined SMG in 2013, since then he is in charge of the traffic safety, BRT (Bus Rapid Transit), signal facility operation, and traffic facility management and development.

# 1.3 INTRODUCTION

## Lectures



### Youngwook Park

(SMDev, CEO)

Youngwook has been a senior vice president and CTO of Korean Smart Card Corp. (KSCC, T-Money) and worked for the engineering department of Yongsan University located in Busan. Currently, as the CEO of SMDev, he is focusing on communication engineering design, planning of transportation research, private engineering companies, international consultancy services of urban transportation and business development.



### Georges Darido

(The World Bank, Lead Urban Transport Specialist)

Georges Darido is based in Washington DC as a Lead of Urban Transport Specialist and a co-Leader of the Urban Mobility Global Solutions Group. Currently, leading on more than ten cases of the World Bank investments and technical assistance activities, which are including urban rail, BRT, urban roads and traffic management in Southeast Asia, China, and Peru.



### David Ingham

(The World Bank, Senior Urban Transport Specialist)

Based in Jakarta, Indonesia, David Ingham has previously worked as a Transport Specialist and project director on multiple projects in at least 14 different countries, and currently as a Senior Urban Transport Specialist. His primary field of interests is Urban Transport Infrastructure and Public Transport Systems, which branches out to the idea of operational investigations & infrastructure provision for BRT, conventional bus and minibus paratransit systems; with his core competencies in Road Infrastructure feasibility and development, Toll Roads and Public-Private Partnerships, and Traffic Engineering of Road Safety.



### Eric Turner

(The World Bank, Transport Analyst)

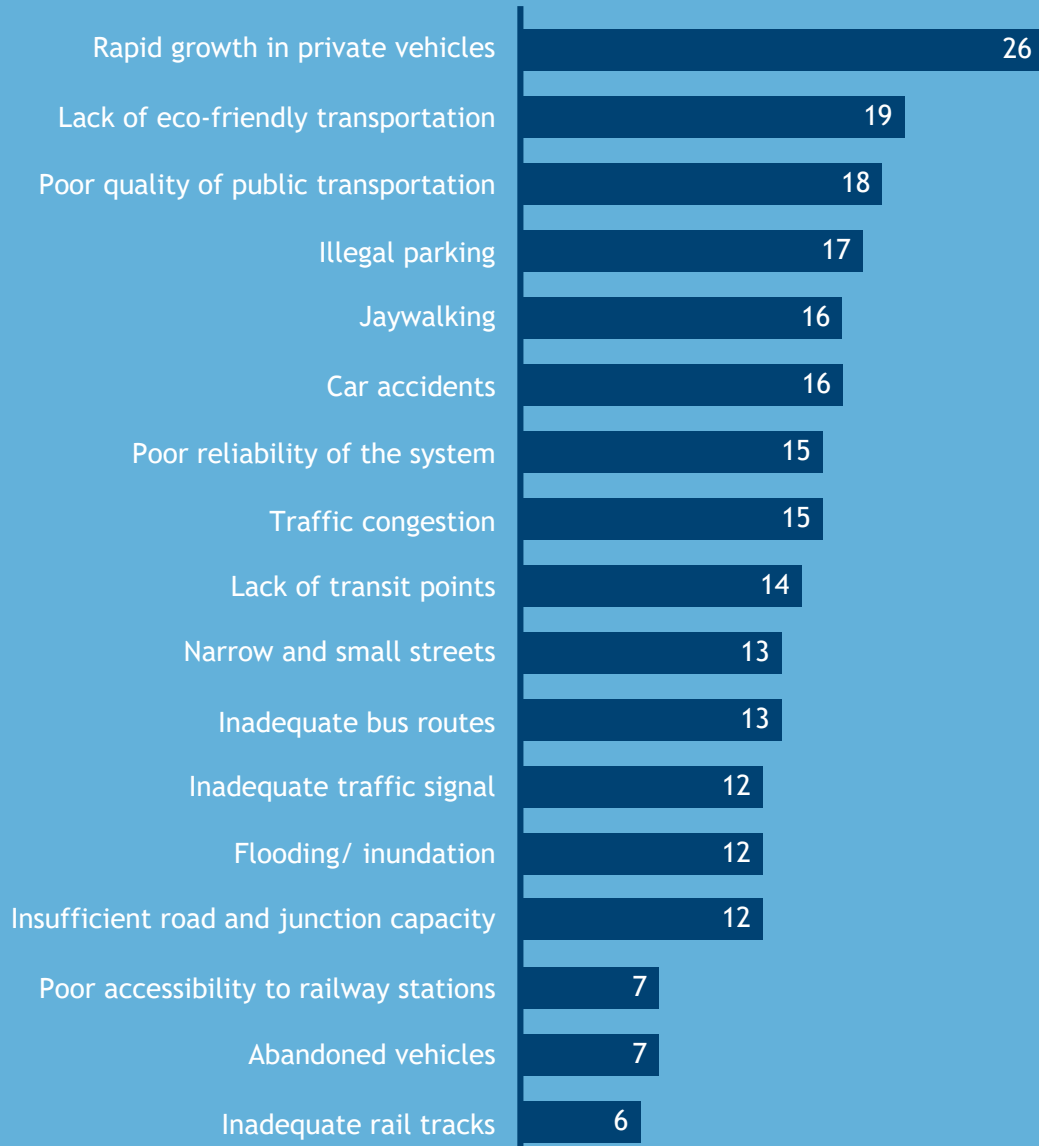
Based in Singapore, Eric Turner has previously worked at MTA New York City Transit, North America's largest public transport provider, in the Office of Management and Budget before moving to the agency's Global Benchmarking and Best Practice group. Currently working as a Transport Analyst, Eric focuses on urban transport systems and mass transit, including urban rail and bus operations. His current projects include urban rail systems in China, bus networks in Vietnam, and urban transport in Sri Lanka.

## BACKGROUND 2.1

### Pre Self-Assessment Survey



*What is a major urban transportation challenge of your city?*



## 2.1 BACKGROUND

### Pre Self-Assessment Survey



*Please state your training goals. How will your participation benefit your city?*



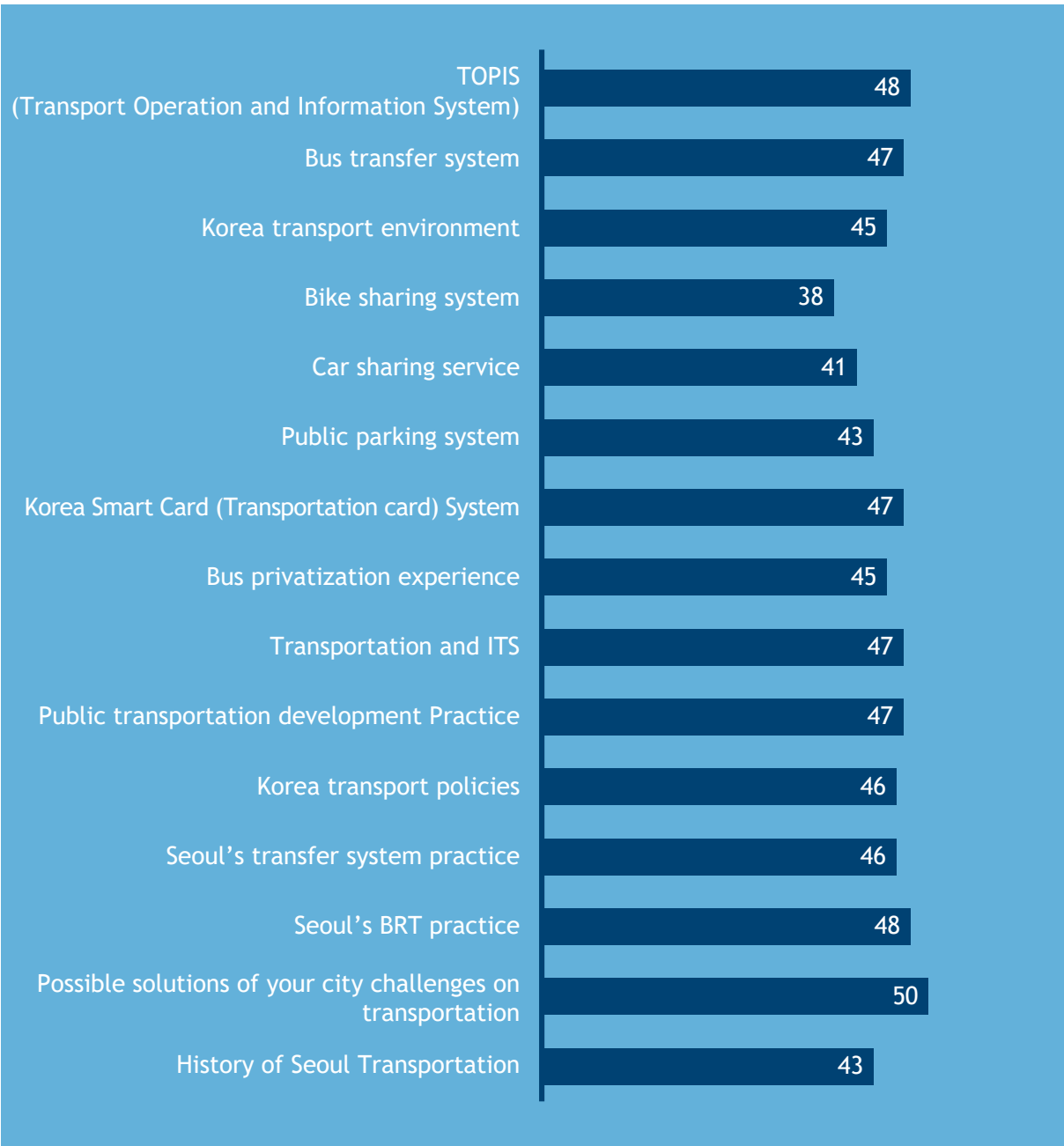


## BACKGROUND 2.2

### Pre Self-Assessment Survey



*Please specify what would you like to learn from the training?*



## 2.2 BACKGROUND

### City Profile

#### Bogor, Indonesia

---

##### Policy Objective

- Reduce traffic congestion by promoting use of public transportation
- Promote eco-friendly public transportation and improve the quality of public transportation

##### Policy Challenge

- Citizens' continuous shift to private vehicles and motorcycles due to unsatisfactory public transport
- Overlapping public transport routes and the consequent inefficiency



#### Jakarta, Indonesia

---

##### Policy Objective

- Implement OK OTRIP by selecting remote and densely-populated test routes
- Connect the improved transport with Transjakarta feeder and corridor in cooperation with existing operators

##### Policy Challenge

- Installment of a new card reader and incorporating OK OTRIP with the existing payment system
- Newly measured transport cost that is insufficient to cover operational costs

#### Kuala Lumpur, Malaysia

---

##### Policy Objective

- Encourage bicycle usage as public transport and tourist attraction to promote sustainability
- Develop measures to complement the existing public transportation and reduce traffic congestion in city center by 2020

##### Policy Challenge

- Potential overlap between bicycle lanes and loading zones of public transportation
- Appropriate intersection design for potential delays and queuing, motorized traffic volumes and speed



## Hanoi, Vietnam

---

### Policy Objective

- Attract citizens to utilize buses and reduce private vehicles
- Provide transport information, high-quality bus services and accessible transport infrastructure for citizens

### Policy Challenge

- Difficulty of forecasting urban development and accordant traffic flow
- Challenges of organizing the existing traffic and planning future bus operation

## Ho Chi Minh City, Vietnam

---

### Policy Objective

- Integrate various public transportation, such as buses, river buses, BRT, MRT and monorails, for passenger convenience
- Adopt big data and CCTV to provide accessible traffic information

### Policy Challenge

- Lack of budget, technology and human resources for long-term planning and zoning
- Insufficient community support arising from familiarity to motorcycles and prejudice about poor bus services

## Da Nang, Vietnam

---

### Policy Objective

- Development of the transport infrastructure, such as MRT, in accordance with the master plan of the city
- Upgrade the traffic control center and introduce smart ticketing system with Intelligent Transportation System (ITS)

### Policy Challenge

- Prevalent use of motorcycles and yearly increase of private vehicles, leading to congestion
- Limited urban bus service with low frequencies, buses arrive every 20-30 minutes



## 3.1 SESSION SUMMARY

### Summary and workshop schedule

The Workshop was organized into in-class sessions - such as lectures, presentation of city profile and concluding Action Plan sessions - site visits and distinguished discussion with the World Bank on BRT system design and implementation.

The Workshop was launched with participants' presentation on their cities performance, including successes, failures and future strategies to improve urban transportation. The participants benefitted from the opportunity to reflect upon their own cities, existent problems and exchange feasible solutions.

The lectures provided an insightful overview of Seoul's transportation system, including the transport history of Seoul and case comparison of BRTs in Seoul and overseas. A wider range of topics were also examined in the lectures, such as the restoration project of Cheonggyecheon stream, integrated fare system and quasi-public bus system. The lecture contents were further developed in the discussion with the World Bank representatives, during which participants explored country-specific strategies and reaffirmed core takeaway lesson.

Site visits allowed the participants to closely observe Seoul's best practices. Visit to the Cheonggyecheon Museum, TOPIS, Seoulo 7017 and Seoul Station Bus Transfer Center superbly supplemented the preceding lectures. Furthermore, visits to the Korea Smart Card Co., Ltd. offered the participants a chance to directly communicate with Seoul's experts on integrated payment system. Finally, the participants were particularly satisfied with their firsthand experience of Seoul's public transportation, as they rode Seoul's BRT-serviced bus themselves.

The workshop concluded with a specialized session for problem-solving and Action Plan-designing. The participants were asked to perform a SWOT (Strengths · Weaknesses · Opportunities · Threats) analysis. With expert consultancy from the World Bank representatives, the participants elaborated on their analysis to design an Action Plan. The drafting and designing of the Action Plan allowed the participants to explore specific implementation schemes, including day-to-day operations of BRT and transit mechanisms, in their respective cities. Upon sharing their Action Plans with fellow participants, dialogues to enhance future strategies and explore fields of future cooperation continued.





# SESSION SUMMARY 3.1

## Summary and workshop schedule

### SCHEDULE PLAN

July2(MON)	July3(TUE)	July4(WED)	July5(THU)	July6(FRI)
<b>Introduction</b> Citynet/World Bank 10:00-10:30	<b>Lecture 2</b> Case Comparison between overseas BRT and Seoul BRT JH KO Hnyang University 19:30-11:30	<b>Study Visit 2</b> Experience Seoul BRT (Transfer/BRT) 09:00-10:30	<b>Study Visit 4</b> Seoullo 7017 09:30-11:00	<b>Session &amp; Discussion 2</b> BRT system Implementing GEORGES DARIDO/ DAVID INGHAM / ERIC TURNER World Bank 09:30-11:30
<b>Lecture 1</b> Transport History of Seoul SB KIM Fomer Vice Mayor of Seoul 10:30-12:30		<b>Study Visit 3</b> TOPIS 10:30-12:00	<b>Study Visit 5</b> Seoul Station Bus Transfer Center 11:00-11:30	
<b>City-Paper Presentation</b> Participants 04:30-17:00	<b>Lecture 3</b> Cheonggyecheon Restoration and Seoul's BRT KY HWANG Hongik University 14:00-16:00	<b>Lecture 4</b> Introduction on Seoul BRT JD KANG Transportation Operation Division 14:00-16:00	<b>Study Visit 6</b> Korea Smart Co.,Ltd. 13:30-15:00	<b>Wrap up &amp; Discussion</b> Problem solving, key takeaways and build action plan GEORGES DARIDO/ DAVID INGHAM / ERIC TURNER World Bank 13:30-16:00
<b>Session &amp; Discussion 1</b> BRT system Planning GEORGES DARIDO/ DAVID INGHAM / ERIC TURNER World Bank 17:00-19:00	<b>Study Visit 1</b> Cheonggyecheon Museum 17:00-18:00	<b>Cultural Experience</b> Non-verbal Performance (Nanta) 17:00-19:00	<b>Lecture 5</b> Integrated Fare System & Quasi-Public Bus System YW PARK 16:00-18:00	<b>General Evaluation</b> 16:30-17:00
				<b>Closing Ceremony</b> 17:00-17:30

## 3.2 SESSION SUMMARY

### Lectures



#### History of Transportation Seoul

---

Sangbum Kim

---

Sangbum Kim lecture was about the history of Seoul Transportation policy in the 1950s. In line with the rapid urbanization and population growth in Seoul, he explained transit-oriented development of Seoul in three stages; expansion, compressed growth, and stage of becoming a smart city. Lecture introduced the Bus Rapid Transit (BRT) and the integrated fare system, which was implemented in the 2000s, as a critical factor to achieve a better and sustainable public transport operation. In addition, Sangbum Kim introduced the new target and strategy from SMG of increasing Seoul's model share of green transportation to 80% by the year 2030, which includes reducing the volume of private vehicles by 30%, commuting time of mass transit by 30%, and increasing the amount of space for bikes and pedestrians.



#### Bus Rapid Transit

---

Georges Darido

---

The lecture of Georges Darido was centralized around guidance on good practice development of integrated urban transportation strategies highlighting the Bus Rapid Transit (BRT) system. This included planning process involving alternative analysis regarding social impact, sustainability considerations, design options from showing cases from others cities, and set-up procedure. He also mentioned the importance of taking financial costs into consideration through comparing each transportation method capacity, benefits, and risks. He also gave the example that in higher-income economies, the most successful BRT systems have been operated by financially ring-fenced transit authorities or corporate transit service providers with a clear mandate to manage BRT systems as part of overall public transport system operations.



### **Characteristics of Seoul BRT : Comparing with International Systems**

Joonho Ko

Joonho Ko started his lecture by introducing the basics of the BRT system; a concept that embraces various elements which are the use of median bus lanes and bus stops, and the addition of facilities to ensure safety to pedestrians. He also explained about the case of Curitiba in Brazil, adapted in 1974. Then lecture moved on to the overall condition and progression of the BRT in Seoul, emphasizing its continued expansion and development into the 6th longest BRT corridor of the World. In addition, he also highlighted the limitation in its system; lack of space and safety facilities, insufficient introduction of the low-floor buses, and not enough provision for bus corridors to increase the BRT speed. At the end of his lecture, he shared the need to implement a proper brand and vehicles that would be exclusive to the Seoul BRT system.



### **Cheonggyecheon Restoration and Seoul's BRT**

Keeyeon Hwang

Keeyeon Hwang presented the dramatic transition and history of the Cheonggye Stream along with the improvement of conditions. The history of the Cheonggyecheon began with the main source of water for the locals in the late mid 19th and turned into the urban squatter settlement region after the Korean War (1950-1953). After it lost its identity as a water stream it covered with an elevated highway called Cheonggye Expressway and became a symbol of the industrialization and modernization in Korea. Keeyeon Hwang emphasized that changes in the surrounding environment of the Cheonggyecheon caused poor traffic circulation, declining of business, and environmental pollution in the area. The Cheonggyecheon Restoration Project, hence, implemented to solve those issues.

## 3.2 SESSION SUMMARY

### Lectures



#### **Seoul's Challenges & Achievement in Sustainable Urban Transport**

Jindong Kang

Jindong Kang lecture was about the past and present challenges, and achievements in sustainable and intelligent urban transportation during the public transport reformation. During that time, he explained that the government policy focused on building an eco-friendly integrated transportation system. The lecture also introduced ITS based transportation, car-sharing business, parking lot facilities, and SMG's action on the subway network, bus services, and pedestrian walkway improvements. Lecture closed with a discussion of challenges within speed reduction and traffic incidents in particular areas and presented a plan for implementation of safety policy, public bike infrastructure. At the end, he emphasized the need for policy change and defined plans for new targets to improve user satisfaction.



#### **Semi-Public Bus Operation & Fare Collection System**

Youngwook Park

Youngwook Park explained the Semi-Bus operation system from Seoul and how does the city maintain the financial structure and performance evaluation plan for private bus operation companies. He explained that in Seoul, the private bus firms run their bus operations on the assigned routes and schedules determined by the government. The operations are reimbursed based on the amount of service and their quality with guaranteed business profit rate by the revenue pool committee. Secondly, Youngwook Park gave an insight about the use of smartcard-based fare collection system, real-time vehicle tracking, fleet management, and eventually, passenger services using mobile devices and smart panels displayed over the city. To close, he noted the potential for further improvement in the future through innovative ICT solutions.





### BRT System Implementing

David Ingham

David Ingham lecture focused on the implementation of BRT systems in each city, with topics ranging from demand enhancement, conceptualizing the system, elements of public transport reform, ensuring the quality of service, and formalization of the operation. He also noted that critical knowledge and political force possessed by the existing operators can be invaluable to implement an efficient transport system. At the end, the lecture was concluded with three lessons of BRT: first, the local government must incorporate existing operators; second, improvement of routes is critical; and third, means of mitigation and incorporation of those who cannot be incorporated into the system is fundamental to enhance the overall BRT implementation.



## 3.3 SESSION SUMMARY

### Site Visits

#### Cheonggyecheon Museum



The long tubular glass structure covering the front part of Cheonggyecheon Museum, established to commemorate the historic Cheonggyecheon restoration project, symbolizes the Cheonggyecheon watercourse which has been restored for the public since October 1, 2005. Cheonggyecheon Museum

The museum consists of a permanent exhibition gallery, a special exhibition gallery, an auditorium for cultural performances and an education room for children where visitors can learn about the history of Cheonggyecheon, the Cheonggyecheon restoration project which proceeded from July 2003 until October 2005, the changing face of the city since then, and a long-term vision of Cheonggyecheon.

#### TOPIS

Seoul TOPIS refers to the general transport control center responsible for operating and managing Seoul's overall traffic. TOPIS does this by collecting traffic information from the Bus Management System (BMS), the Transit Card System, the unmanned surveillance system and traffic-related authorities and institutions such as Seoul



Traffic Broadcasting, Seoul Metropolitan Police Agency and the Korea Expressway Corporation. The system is designed to clear heavy traffic and avoid sudden traffic issues by collecting information on bus operations, the number of people using public transport, traffic density, traffic speeds, incidental situations such as traffic accidents and demonstrations, status of expressways, private traffic information and other information related to transportation, and establishing science-based public transit policies through analysis of this integrated traffic information.

## SESSION SUMMARY 3.3

### Site Visits

#### Seoul Station Bus Transfer Center & Public Transportation Experience



Bus transfer center is designed to facilitate citizens' transfer between different modes of transportation like subway, buses, taxis, private cars, etc. at key locations throughout the city. During this experience, the participants were able to experience public transportation of Seoul in order to understand the Seoul's transportation policy more easily by taking the subway and bus.



#### Korea Smart Card Co. , Ltd

Korea Smart Card Co., Ltd(KSCC) was established in 2003 for a special purpose by the Seoul Metropolitan Government(SMG). The metropolitan was suffering from air pollution caused by high usage of personal car. To increase public transportation ridership and to prevent more loss of social cost, it was essential to improve public transportation services. At the end of the competition, LG CNS was selected as winner on the public bidding announced by SMG and then, established KSCC only for this special purpose. This explains why SMG and LG CNS are our 1st and 2nd shareholders respectively.

KSCC provides reliable and sophisticated smart card technology for unified fare collection system with nation-wide interoperability. It covers the integrated mass transportation network in Seoul, 15 other cities in Korea and several other cities abroad. Nowadays KSCC is highly recognized as its brand name 'Tmoney'. KSCC is a prepaid card issuer, owner of AFC infra and a settlement operator. KSCC has expanded its business operations from Public transport payment system to t-money system for retails industries





## 3.3 SESSION SUMMARY

### Site Visits

#### SEOULLO 7010



The remarkable economic growth of Korea began in the 1960s. The Seoul Station Overpass was designed in the form of crossing the east to the west of Seoul Station and completed in 1970 in order to cope with the increasing population and traffic congestion, being a symbolic structure of Seoul since then. With the grandeur of the overpass winding around Seoul Station, it had become the face of Seoul for people who went to Seoul from the provinces. It is also left as a part of memories of Seoul citizens who had passed through the overpass for the last 45 years. However, the safety issue of the Seoul Station Overpass had been brought up every year since the late 1990s. The Seoul Metropolitan Government has performed regular safety inspections, precision safety diagnosis, and necessary maintenance works for the overpass annually. In 2006, however, the elevated road was rated to have serious safety problems and, accordingly, the vehicle traffic completely prohibited. Eight years had passed for the Seoul Metropolitan Government to review the demolition of the overpass and to make a decision to tear it down, with the policies to put safety first against traffic and to give priority to the people.



# Conclusion/Learning Point 4.1

## Wrap up & Discussion (SWOT & Action Plan)

Eric Turner initiated the session by introducing four take-away messages that he urged all participants at the workshop to remember. First, he encouraged the participants to tackle the soft side of the BRT design, such as the business plan, marketing, and branding of the system. Second, he highlighted the importance of considering all feasible alternatives; hence, he suggested that instead of conducting a 'feasibility study' of one project, the participants perform alternative studies or alternative analyses. Mr. Turner claimed that taking into account all alternatives can be very effective for bus way designs, especially in narrow corridors and the urban core. Third, Mr. Turner noted that the introduction of the BRT project in your city is an opportunity to think about what kind of reforms are necessary to make the system work. Finally, he encouraged the participants to consider the level of demand risks that can be transferred to operators in the remuneration formula and contract design. With particular regards to the contract design, he emphasized that the length of the contract is a very important variable in negotiating with the operators.

### SWOT Analysis:

In this workshop, SWOT analysis was explained as a process to check if lessons from the workshop are useful or not, and to identify what to implement after going back to work. For SWOT, the participants were invited to consider:

- 1) Strengths: What benefits could the ideas presented in this session bring to my work?
- 2) Weakness: What disadvantages could the ideas presented in this session bring to my work?
- 3) Opportunities, Could this be easily applied to my work? Why? What elements benefit this adoption?
- 4) Threats: What could prevent this to be applied to my work? Why? What elements could prevent the adoption?



### Action Plan Analysis:



On the last part of the workshop, the participants developed SWOT analysis into Action Plan analysis to start the implementation of the lessons gained from the workshop and getting a feedback from the lecturers. Four steps were suggested for the Action Plan. First, the participants were encouraged to point the transportation policy, technology or practice they would like to implement in their cities from the topics of the workshop. Second, mention which transportation problem it would solve. Third, make a plan to implement the chosen transportation idea. And fourth, to analyze the challenges for implementation and the elements which could prevent the implementation of the chosen idea.

## 4.1 Conclusion/Learning Point

### Wrap up & Discussion (SWOT & Action Plan)

#### Results from the participants:

##### Bogor, Indonesia

---

###### Defining the Project

- **Lesson Implemented:** Alternative solution to Bogor City Transitional Process
- **Strength:** Reduced road volume and increased mass rapid capacity
- **Weakness:** Drivers' loss of employment and increase of traffic congestion
- **Opportunity:** Search for alternative solution to Bogor City transitional process from conventional system to more ideal mass rapid transit that is suitable to the city
- **Threat:** Resistant to the reform
- **Action Plan:**
  - 1) Gradual, step-by-step transitional process
  - 2) Tackle traffic congestion and decrease the excessive use of the private vehicles
  - 3) Create a comprehensive concept on socio-economic perspective. Work on the communication and negotiation process with relevant stakeholders, particularly with the current operator, to analyze the best option
  - 4) Barriers: the current regulation constraint and uncertain political and economic condition that impede securing subsidies

##### Jakarta, Indonesia

---

- **Lesson Implemented:** Revenue system
- **Strength:** Clear roles, functions and authorities
- **Weakness:** Drivers' loss of employment and increase of traffic congestion
- **Opportunity:** Unexpected time extension to provide a better regulation function to the current condition
- **Threat:** Lack of budget for which higher level of government must be contacted
- **Action Plan:**
  - 1) By generating a revenue pool, the city aims to smooth the operation of the public transportation
  - 2) This Action Plan requires an agency or a committee specifically for the revenue pull and budget, time and human resources must be secured to implement this Plan



# Conclusion/Learning Point 4.1

## Wrap up & Discussion (SWOT & Action Plan)

### Kuala Lumpur, Malaysia

---

- **Lesson Implemented:** A pilot good quality bus lane in Kuala Lumpur City Center
- **Strength:** More reliable bus services, shorter bus waiting and traveling time
- **Weakness:** Reduced road capacity and longer journey time for private vehicles
- **Opportunity:** Regulatory authorities to provide bus lanes, ability to get bus operators to support provision of bus lanes
- **Threat:** No authority to regulate bus operators, complaints from motorists
- **Action Plan:**
  - 1) This Action Plan stems from the unreliability of the existing bus service. Information about bus operation, such as running time, is limitedly provided
  - 2) For the implementation, cooperation with the Ministry of Transport is critical
  - 3) Challenges that must be overcome include: potential rejection from the Ministry of transport, insufficient authority of the Kuala Lumpur City Hall, difficulty of endorsing this Action Plan manually and lack of regulations on enforcement using technology, such as CCTVs

### Hanoi, Vietnam

---

- **Lesson Implemented:** Improving inter-modal transport facilities
- **Strength:** Enhance accessibility, encourage transfer, improve ridership
- **Weakness:** Investment risk
- **Opportunity:** New MRT line, on-going studies, commercial interests in advertising, green infrastructure
- **Threat:** Financial arrangements, policies related to infrastructure and technology, inter-agency coordination

- **Action Plan:**

In 3 weeks, Hanoi will run three routes with 50 CNG buses. According to the experts in Seoul, the CNG buses can take up to 21% of the whole cost. And that is the key point that Hanoi wants to keep in mind. The way the smart card works, especially the tap-on and tap-off function, is the way Hanoi can also collect and analyze the passengers' data. But for this Action Plan, Hanoi has to amend bus and BRT operation and government support is key. One interesting idea to take away from Korea is the portable BRT corridor platform. Hanoi can also move the BRT corridor platform without wasting the resources as there are many political agencies in Hanoi. Hanoi can also try practices that are similar to Seoul, such as CCTVs, radios, GPS, accessibility services and online ticket sales. Furthermore, three technologies are currently in operation in Hanoi Railways, thereby causing riders to use separate cards. T Money Card seemed to effectively handle this problem and its means of transferring the information so that users may benefit from the service were impressive



# 4.1 Conclusion/Learning Point

## Wrap up & Discussion (SWOT & Action Plan)

### Ho Chi Minh City, Vietnam

- **Lesson Implemented:** Development of a smart card system with integrated technology
- **Strength:** Eagerness for change, technology and convenience. 111 lines of normal bus lanes, 6 BRT lines and 4/8 MRT lines currently in operation, rising demand which is likely to trigger active action of leaders
- **Weakness:** The lack of city budget and human resources in MRT/BRT implementation
- **Opportunity:** ODA loans from the World Bank and Asian Development Bank to invest in MRT and BRT lines, able to learn past experiences from Seoul, Tokyo and Singapore, new technology in payment, familiar with smart cards and smart phones
- **Threat:** Late selection of IC card standards due to existing MRT projects that lead to higher cost
- **Action Plan:** Time line-based plan to introduce an integrated smart card system
  - 2018: Upon the completion of the SHRDC workshop and return to Ho Chi Minh City, prepare for a public-private partnership client bidding
  - 2019-2020: International bidding for bus smart card for 1300 clients
  - 2021-2025: Technical design, operation system establishment, evaluation and improvement of the system, followed by gradual application to MRTs
  - 2025-2035: Stop 1300 contracts and encourage re-investment to scale-up the initiative to other transportation system, such as BRT, monorails, tramways, river buses etc
  - 2050 onwards: Inheritance and continue the innovation
- **Comments:**

It is ambitious to plan a nationwide system. However, if each city has different payment systems, the inconvenience may also increase. It might be beneficial to discuss with other cities to address this issue (Eric Turner, Transport Analyst, from the World Bank)





# Conclusion/Learning Point 4.1

## Wrap up & Discussion (SWOT & Action Plan)

### Da Nang, Vietnam

- **Lesson Implemented:** BRT implementation
- **Strength:** BRT project has already planned by the city, technical support from World Bank experts and international consultants
- **Weakness:** Brand new system implemented in Da Nang, citizens unaccustomed to public transport, BRT unincorporated in the land use planning
- **Opportunity:** Introduction of a new system of public transport, quality improvement compared to previous buses, a new chance to review general urban planning with TOD orientation
- **Threat:** Citizens' reaction regarding a dedicated lane, potential impact on other forms of public transportation
- **Action Plan:** Planning, securing accessibility and building a smart BRT system
  - Review the current transportation and narrow-scope land use planning
  - Continuous monitoring of the Action Plan to secure the resources for future development and evade unrestricted investment on the BRT





## 4.1 Conclusion/Learning Point

### Wrap up & Discussion (SWOT & Action Plan)

*“I will review and refine the concepts of Seoul Transportation reform process to reflect on the current Bogor City’s transportation reform policy. I hope to find more guidance and technical assistance from SHRDC and CityNet Secretariat.”*

Jimmy Ventius Parluhutan  
Bogor City Government, Head of Public Transportation Division

*“We learned and discussed Seoul Transportation System’s revenue pool which involves with many other stakeholders, and we would like to implement and build revenue pool that involves many stakeholders in our cities.”*

Reinhard Maynard  
Jakarta Capital City Government, Staff of Public Transportation Division

*“I was really impressed with the Seoul BRT. With this workshop I experienced and learned about Seoul BRT which was very easy and comfortable to use.”*

Henu Aji Marsetio  
Jakarta Capital City Government, Staff of Public Transportation Division

*“After the learning from this workshop, we would like to implement the Seoul bus lane as a pilot city project to enhance transportation quality in Kuala Lumpur city.”*

Kim Bock Steven Tan  
Kuala Lumpur City Hall, Deputy Director

*“We will look and study the Seoul Policy with our local council to apply in our city, especially in transportation and pedestrian policy.”*

Mohd Azfaezul Mohamed Azmi  
Kuala Lumpur City Hall, Civil Engineer

*“We will look and study the Seoul Policy with our local council to apply in our city, especially in transportation and pedestrian policy.”*

Duong The Binh  
Hanoi People's Committee, Vice Director

*“Time changes in perception of public transport. Making the city more beautiful and environmentally friendly enhances the people’s consciousness. This workshop let me take a new approach to public transport.”*

Xuan Hung Dihn  
Hanoi People's Committee, Official

# Conclusion/Learning Point 4.1

## Wrap up & Discussion (SWOT & Action Plan)

*“This workshop made participants to understand how Seoul BRT operation is different from the others cities.”*

Hoang Le Quan  
People's Committee of Ho Chi Minh City, Officer

*“With this workshop, we learned the general method to control the traffic problems, flood & crime control and another multi-purpose monitoring system. The Seoul’s monitoring system is impressive, and we would like to apply the monitoring and controlling system to Ho Chi Minh City.”*

Dinh Dao Nguyen  
People's Committee of Ho Chi Minh City , Officer (Expert)

*“The Korean Transport Institution showed the vision and commitment of the leaders.”*

Thai Binh Phan  
Da Nang People's Committee, Deputy Head of Division

*“My favorite lecture is Cheongguecheon Restoration Project which shows the leadership and commitment of the Seoul. Thanks to this workshop, I had obtained understand of how important urban planning is.”*

Le Quang Phuc  
Da Nang People's Committee, Officer

### EDITORIAL TEAM

YOUNGMIN CHANG (Director of Programs)  
E: ychang@citynet-ap.org

SEUNGHYEON HAN (Program Officer)  
E: sdgplatform@citynet-ap.org

CHANRHAN HWANG (Program Officer)  
E: communication@citynet-ap.org

2018  
TRANSPORTATION  
STRATEGY  
WORKSHOP  
FOR ASIAN CITIES  
BUS RAPID TRANSIT AND TRANSFER SYSTEM