R & D is Key to Finding Solutions

การวิจัยและพัฒนาเป็นกุญแจสู่การค้นหาแนวทางแก้ไข

Transportation

Energy Environment

Traffic Safety

COMPENDIUM OF 8th ATRANS SYMPOSIUM

"Transportation for A Better Life: Harnessing Finance for Safety and Equity in AEC"

(การขนส่งเพื่อชีวิตที่ดีกว่ากับการกำหนดปัจจัยที่นำมาสู่ความปลอดภัย และความเสมอภาคในประชาคมเศรษฐกิจอาเซียน)

21 August 2015

Bangkok

ASIAN TRANSPORTATION RESEARCH SOCIETY (ATRANS)

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8th ATRANS SYMPOSIUM

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21 August 2015

Bangkok

ASIAN TRANSPORTATION RESEARCH SOCIETY (ATRANS)

8th ATRANS SYMPOSIUM
Transportation for A Better Life:
Harnessing Finance for Safety and Equity in ASEAN Economic Community (AEC)

21 August 2015
Swissotel Nai Lert Park,
Bangkok, Thailand

Day 1: 21 August - Main Symposium

Duration		Program
9:00 – 9:40	Morning session	**Opening Session**
		9:00 – 9:10 Introductory Speech by Mr. Akira Hasegawa, Managing Director of IATSS
		9:10 – 9:20 Welcoming Speech by Prof. Dr. Wiroj Rujopakarn, ATRANS Chairperson
		9:20 – 9:40 **Opening Speech by Mr. Sorasak Sansombat, Inspector-General of Ministry of Transport, Thailand**
9:40 – 10:0		Coffee Break & Poster session, exhibition and Riding simulator corner
10:00 – 12:00		**Session 1: Panel Discussion - "Harnessing Finance for Safety and Equity in AEC"** **Moderated by Asst. Prof.Dr. Pongrid Klungboonkrong, ATRANS Board, Khon Kaen University (KKU)** (each speaker has 20-minute for presentation and 5-minute for Q&A)
		10:00-10:25 **Harnessing Finance for Safety and Equity in Thailand and AEC in WHO Point of View**
		By Dr. Witaya Chadbanchachai, ATRANS Board and WHO Expert Advisory Panel for Injury Prevention & Control
		10:25 – 10:50 **"Green Safety": Suggesting the Driver Behavior / Attribute Strongly Related to Accident - Lesson Learnt from Japan**
		By Mr. Tomiji Sugimoto, Deputy Director, Honda Motor, Japan
		10:50 – 11:15 **Traffic Safety Strategies for Vietnam**
		By Dr. Khuat Viet Hung, Executive Vice Chairman of National Traffic Safety Committee, Vietnam
		11:15 – 11:55 **Harnessing Finance for Safer Road**
		By Mr. Michael Woodford Executive Chairman of Safer Road Foundation, U.K.
		11:55 – 12:00 Discussion
12:00 – 13:00		Buffet Lunch provided
13:00 – 15:10		**Session 2: Parallel Session of Main Symposium and ATRANS Young Researcher's Forum**
	Afternoon session	**Session2A: Traffic Safety** **Moderated by Dr. Witaya Chadbunchachai, WHO representative** (each speaker has 20-minute for presentation and 5-minute for Q&A)
		13:00-13:25 **Multilateral and Bilateral donors to harness investment in safety and the potential for road safety social impact bonds**
		By Mr. Greg Smith, Regional Director of International Road Assessment Programme (iRAP), Australia
		13:25 – 13:50 **Harnessing finance for Road Safety and Equity in AEC**
		By Dr. Robert Klein, Asian Development Bank (ADB)
		13:50 – 14:15 **Time for A Safe Road System Action in Thailand**
		By Prof.Dr. Pichai Taneerananon, ATRANS Board, Prince of Songkla University (PSU)
		14:15 – 14:40 **ATRANS Research Project on Safety Map Applica for Community**
		By Dr. Saroch Boonsiripant, ATRANS Committee, Kasetsart University
		14:40 – 15:10 Questions & Answers
15:10 – 15:30		Coffee Break & Poster Session

Day 1: 21 August – ATRANS Young Researcher's Forum (continued)

Duration		Program			
13:00 – 15:10		**<Session 2>: Parallel Session of ATRANS Young Researcher's Forum** **(Each presenter has 7-minute for presentation and 3-minute for questions and answers)**			
		<Session 2B-1> Topics: 1 – 9 (English Session) Room: Park A, G-Floor Chaired by AYRF Advisory Committee & Representative	<Session 2C-1> Topics: 1 – 9 (English Session) Room: Park B, G-Floor Chaired by AYRF Advisory Committee & Representative	<Session 2D-1> Topics: 1 – 9 (Eng. &TH Session) Room: Park C, G-Floor Chaired by AYRF Advisory Committee & Representative	<Session 2E-1> Topics: 1 – 9 (Thai Session) Room: Ballroom B, G-Floor Chaired by AYRF Advisory Committee & Representative
13:00 – 13:10	Afternoon session	AYRF15-001 Estimating bus passenger loading in London using Automated Fare Collection system and Automatic Vehicle Location system By Minh Tam Vu, Thanh Huong Pham	AYRF15-031 Factors Influencing Footbridge Usage Along Epifanio Delos Santos Avenue (EDSA), Metro Manila By So-Aaron-Nicklaus Tan King, Rigel Kent Ilagan Cadag, Rei Robin Roland Abacan Tumambing, Mr. Jireh Daniel Virag Despabiladeras, Dr. Alexis M. Fillone	AYRF15-044 Travel survey data: Comparative analysis from different travel survey methods By Dr. Nguyen Thanh Tu	AYRF15-007 แนวทางการออกแบบเส้นทางจักรยานโดยการมีส่วนร่วมของประชาชน กรณีศึกษาเทศบาลนครสวรรค์ (Public Participation in Design Process of Bicycle Lane: A Case Study of NakhonSawan Municipality) By Yupaporn Bunprasert, Dr. Prapatpong Upala
13:10 – 13:20		AYRF15-002 Evaluation of urban bus service quality using Servqual model in Hanoi By Hieu Nguyen, Linh Nguyen	AYRF15-033 Traffic conflict technique development to analyze traffic safety at signalized intersections under mixed traffic conditions By Vuong Tran Quang, Dr. Tuan Vu Anh	AYRF15-057 Safety Improvements of Black Spot Intersections in Lampang Municipality By Thodsapon Hunsanon, Dr. Nopadon Kronprasert, Dr. Auttawit Upayokin, Akharapong Tepkeaw	AYRF15-008 การวิเคราะห์พฤติกรรมการเดินทางของผู้ใช้บริการขนส่งสาธารณะเชิงวัฒนธรรมในเมืองตรัง (A Travel Behavior Analysis of Urban Cultural Transit in Trang City : The Case Study of Tuk Tuk) By Saowapak Wuti, Dr. Prapatpong Upala
13:20 – 13:30		AYRF15-003 Viability Of New Toll Road Infrastructure under Operational Uncertainties By Troung Thi My Thanh, Dr. Chotchai Charoenngam, Dr. Hanno Friedrich	AYRF15-034 Characterizing Bus Passenger Demand along Epifanio de los Santos Avenue (EDSA), Metro Manila By Sean Johnlee Quema Ting, Kervin Joshua Cervantes Lucas, Dr. Alexis M. Fillone	AYRF15-046 Examination of Problems faced by the Drivers of Three-Wheelers I Kurunegala District, Sri Lanka By Chamodya Sathsarani Ranathunga, Dr. Djoen Santoso	AYRF15-009 การบูรณาการโครงสร้างพื้นฐาน การขนส่งและการใช้ประโยชน์ที่ดินโดยใช้ปัญหาต้นไม้ทอดข้ามน้อยที่สุดและอัลกอริทึมแบบประหยัด กรณีศึกษาบริษัท วิทยุการบินแห่งประเทศไทย จำกัด ทุ่งมหาเมฆ (Integration of Infrastructure, Transportation and Land Use Planning with Minimum Spanning Tree Problem and Saving Algorithm: A Case Study of Aeronautical Radio of Thailand Ltd. Tungmahamek) By Charin Thongpiam, Dr. Prapatpong Upala
13:30 – 13:40		AYRF15-005 A study of the relationships between quality, customer satisfaction, and customer loyalty in public transport of Hanoi, Vietnam By Ngoc Minh An, Dr. Tuan Anh Vu, Luong Tuan Anh	AYRF15-030 Revisiting Volume-Delay-Functions Used in Transport Studies in Metro Manila By Jiaan Regis Go Gesalem, Dr. Alexis Morales Fillone	AYRF15-054 Comparison of Different Standards in Designing Signalized Mid-Way Crossings for Maharagama, Sri Lanka By Sohani Pramoodha Liyanage, Dr. Djoen San Santoso	AYRF15-010 การศึกษาการให้บริการรถโดยสารประจำทางสาธารณะในเมืองภูเก็ต (A Study of Public Bus Service in Phuket) By Sumathee Jaroentham, Dr. Paramet Luathep
13:40 – 13:50		AYRF15-013 Impact Analysis of the Proposed Ferry Service On Commuter Travel In Iloilo City By Lhora Lee Zafra Alcantara, Robert Jener Vallente Moya, Karlo-Mickael Remoquillo Garrido, Christian James Llorente Pimentel, Dr. Alexis M. Fillone	AYRF15-036 Logit choice models for the Western Visayas Region, Philippines By Nicanor Jr. Rodriguez Roxes, Dr. Alexis Morales Fillone	AYRF15-060 An Analysis of Signalized Intersection and Solution for Applying Real-Time Traffic Control Technologies: A Case Study for Mixed Traffic Condition in Hanoi city By Hoang Trung Thong, Truong Hoang Ha, Truong Hoang Ha	AYRF15-011 การพัฒนาระบบระบุตำแหน่งรถโดยสารสาธารณะภายในมหาวิทยาลัยสงขลานครินทร์ (Development of Bus Location Identification System in Prince of Songkla University) By Sarayut Julkaew, Dr. Paramet Luathep
13:50 – 14:00		AYRF15-014 Characterizing Public Transport Terminals in Shopping Malls in Metro Manila By Trina Gabrielle Anonuevo Basilio, Raymond Pontillas Marchan, Romiel Rae Ocastro Uy,	AYRF15-038 Traffic Safety at Intersection Between Road and Railway in Vietnam By Tung Thanh Vu, Hang Thi Tran, Prof.Dang Thi Kim Tran	AYRF15-061 An Efficient Solution to Promote Public Transportation toward Sustainable Development: A Case Study in Haiphong city By Mr.Nguyen Quang Thanh, Hoang Trung Thong, Dr. Dinh Van Hiep	AYRF15-012 การศึกษาปัจจัยที่ส่งเสริมการเดินทางแบบไร้เครื่องยนต์ภายในมหาวิทยาลัยสงขลานครินทร์ (Factors Affect non-motorized transport in Prince of Songkla University) By Naruphol Niyom, Dr. Paramet Luathep

Day 1: 21 August – ATRANS Young Researcher's Forum (continued)

Duration		Program			
		10-minute break and switching sessions			
		<Session 2B-2> Topics: 1 – 9 (English Session) Room: Park A, G-Floor Chaired by AYRF Advisory Committee & Representative	<Session 2C-2> Topics: 1 – 9 (English Session) Room: Park B, G-Floor Chaired by AYRF Advisory Committee & Representative	<Session 2D-2> Topics: 1 – 9 (Eng.&TH Session) Room: Park C, G-Floor Chaired by AYRF Advisory Committee & Representative	<Session 2E-2> Topics: 1 – 9 (Thai Session) Room: Ballroom B, G-Floor Chaired by AYRF Advisory Committee & Representative
14:10 – 14:20		AYRF15-015 Reconstruction Prioritization and Robustness of Road Network in Metro Manila based on Possible Random Terrorist Attacks By Jacob Trinidad Chan, Dr. Kardi Teknomo, Mr. Leandro Isla,	AYRF15-043 Integrating development of multi-modal transportation and logistics infrastructure in medium-sized cities in Vietnam: case study in Danang By Dr. Le Thu Huyen	AYRF15- 062 Person trip monitoring and analysis method for extracting rapid socio-environmental changes By Satomi Kimijima, Dr. Masahiko Nagai	AYRF15-020 การปรับปรุงความปลอดภัยทางถนนในเขตเทศบาลนครหาดใหญ่ (Road Safety Improvement in Hatyai Municipality from Theory to Practice) By Chaithep Sacornwises
14:20 – 14:30	Afternoon session	AYRF15-021 Transportation Modes Detection in Bangkok Using GPS Logger Data and GIS Data By Kunnaree Kritiyutanont, Dr. Masahiko Nagai, Dr. Apichon Witayangkurn	AYRF15-048 Study on Estimation for Impact of CO2 Emission Reduction under the Policies Considered the Change of Transportation Network and Land Use: Case Study of Niigata, Japan By Hiroki Kikuchi, Prof. Dr. Atsushi Fukuda, Dr. Tetsushiro Ishizaka	AYRF15-063 Study of Vehicle Ownership in Yangon Using Household Data By Nandar Tun, Dr. Piyapong Jiwattanakulpaisarn, Dr. Kunnawee Kanitpong, Dr. Hironori Kato	AYRF15-026 การศึกษาความปลอดภัยของชุมชนนอกเมืองบริเวณริมทางหลวงแผ่นดิน (A Study of Highway Safety in Roadside Communities outside Urban Area: Songkhla Case Study) By Krittanon Sriklamahanto, Prof.Dr. Pichai Taneerananon
14:30 – 14:40		AYRF15-023 Characteristics of Travel Behavior of the Community Café's Visitors in Local Cities of Japan By Koki Okada, Dr. Kunihiro Kishi	AYRF15-050 Bangkok Taxi Probe's Big Data Processing for Traffic Hotspot Analysis and Visualization Using the Apache Hadoop Distributed System By Saurav Ranjit, Dr.Masahiko Nagai, Dr. Apichon Witayangkurn	AYRF15-064 Walkability Indicators regarding the Structures of Street Network By Dr.Sathita Malaitham, Prof. Atsushi Fukuda, Vasinee Wasuntarasook, Dr. Varameth Vichiensan	AYRF15-052 การประเมินวัฒนธรรมความปลอดภัยบนถนนของผู้ใช้รถใช้ถนนในเขตเทศบาลนครเชียงใหม่ (Evaluating Traffic Safety Culture of Road Users in Chiang Mai Municipality) By Pongpat Makad, Dr. Nopadon Kronprasert, Dr. Preda Pichayapan
14:40 – 14:50		AYRF15-025 The relationship between an improved transportation system and FDI inflows into a country By Hanh Thi Hong Vu	AYRF15-056 Queue Length Estimation for Adaptive Traffic Signal Control Based on Traffic Information Collected from GPS Probe Data By Napon Srisakda, Prof.Dr.Atsushi Fukuda, Dr. Tetsushiro Ishizaka	AYRF15-049 การวิเคราะห์พฤติกรรมการเลือกรูปแบบการเดินทางในมหาวิทยาลัยเชียงใหม่ (Analysis of Travel Mode Choice Behavior in Chiang Mai University) By Wutichai Chaiya, Dr.Auttawit Upayokin	AYRF15-055 การสืบสวนอุบัติเหตุเชิงลึกในภาคตะวันออกเฉียงเหนือตอนบนของประเทศไทย: กรณีอุบัติเหตุรถกระบะ (In-dept Accident Investigation in The Upper Northeastern Region of Thailand: Case Studies of The Pick-up Truck Involved Accidents) By Phuwanai Chaiyawarn, Dr.Pongrid Klungboonkrong
14:50 – 15:00		AYRF15-028 Intelligent Parking Management System For Automobile In Downtown Area of Ha Noi By Tien Le Ngoc, Ngan Pham Thien, Linh Nguyen Ngoc, Yen Nguyen Thi, Hang Tran Thi	AYRF15-035 Traffic safety in two-lane expressway on mountainous area By Hang Thi Tran, Tung Thanh Vu, Huyen Thi Tran, Anh Thi Mai Nguyen	AYRF15-068 การศึกษาและพัฒนาแบบจำลองคาดการณ์ความเร็วของยานพาหนะ (Study on Development of Vehicle Speed Prediction Model) By Jetsada Kumphong, Dr.Thaned Satiennam	AYRF15-058 การพัฒนาระบบผู้เชี่ยวชาญ ต้นแบบเพื่อแนะนำค่าขีดจำกัดความเร็วบนถนนสายหลัก กรณีศึกษาเมืองขอนแก่น (Development of a Prototype of Expert System to Recommend Appropriate Speed Limits of the Main Roads: Khon Kaen Case Study) By Ratchamongkol Kummuntree, Dr.Pongrid Klungboonkrong
15:00 – 15:10		Discussion & Questions & Answers	Discussion & Questions & Answers	Discussion & Questions & Answers	Discussion & Questions & Answers
		Poster Session	AYRF15-029 Sustainable Mobility and Designing Living Streets by Pedestrianization For a Better life For Community in Istanbul, Turkey By Abdulbasid Dogru, Gokhan Yilmaz, Fatih Kafali, Yasin Inan, Yener Bakis, Ahmet Yildirim		

***Day 1: 21 August – Main Symposium** (continued)*

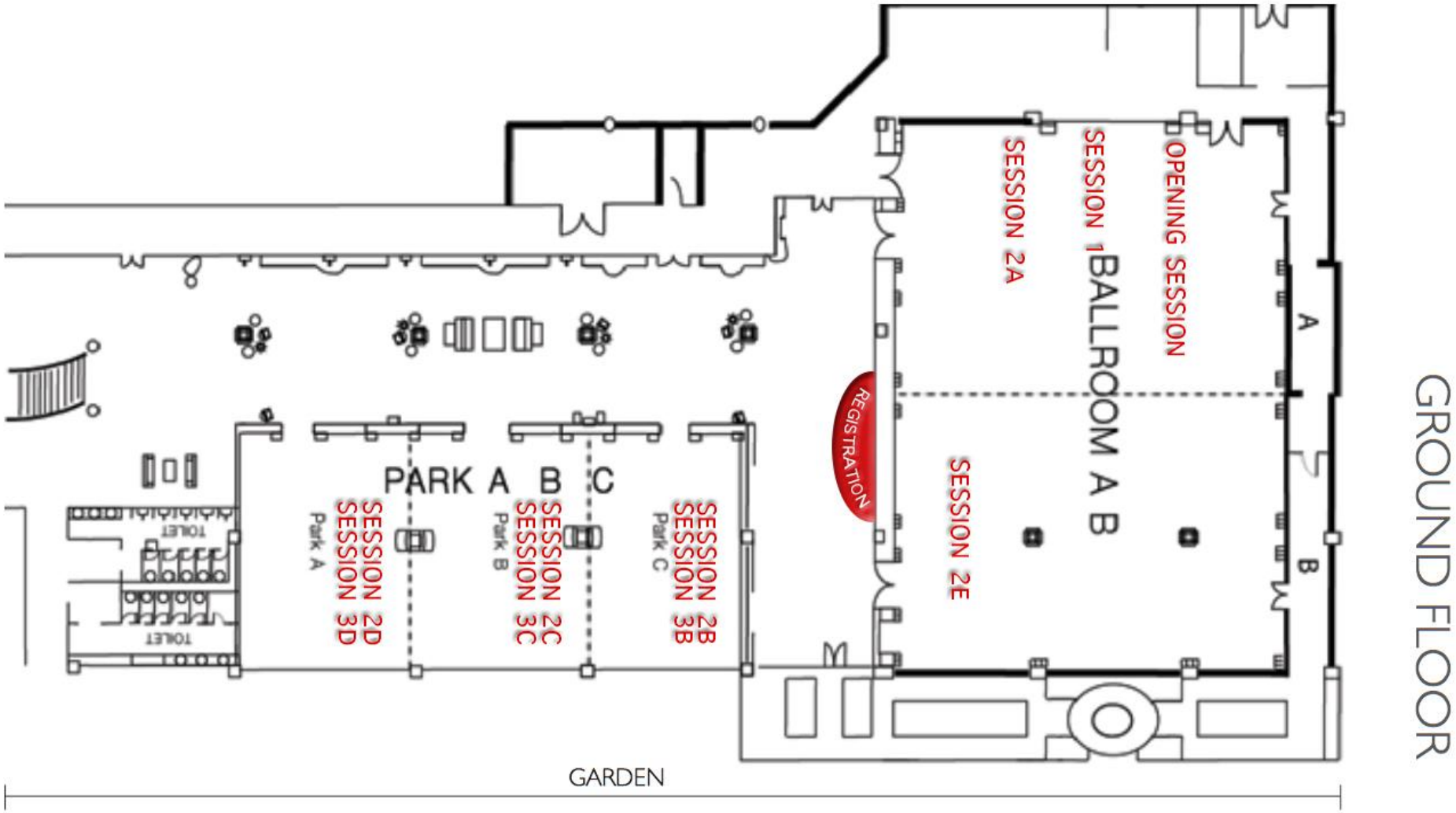
Duration		Program			
15:10 – 15:30		Coffee break and see poster session & exhibition			
		<Session 3>: Parallel Session of Main Symposium (each speaker has 20-minute for presentation and 5-minute for Q&A)			
15:30 – 7:30	Afternoon session	**<Session 3A>** Rail System and Transit Oriented Development (TOD) Room: Ballroom AB, Ground Floor Moderated by Asst. Prof. Dr. Sittha Jaensirisak, ATRANS Committee, UBU	**<Session 3B>** Logistics and Disaster Management Room: Park A, Ground Floor Moderated by Mr. Oravit Hemachudha, ATRANS Board, Navamindradhiraj University, Bangkok	**<Session 3C>** Transportation-related, Energy & Environment Room: Park B, Ground Floor Moderated by Prof. Dr. Atsushi Fukuda, ATRANS Honorable Advisor, Nihon U, Japan	**<Session 3D>** Intelligent Transportation System (ITS) Room: Park C, Ground Floor Moderated by Assoc. Prof. Dr. Sorawit Narupiti, ATRANS Committee, Chulalongkorn U.
15:30 – 15:55		Introduction of High Speed Rail: Gauge and Operation of HSR By Mr. Tetsuhisa Kobayashi, Railway System Specialist, TEAM Consulting Engineering and Management Co.,Ltd., Thailand	Logistic and Disaster Management in Thailand By Dr. Bhichit Rattakul, President of Navamindhradhiraj University and Former Bangkok Governor	Future Transport and Land Use Vision and Global Low Carbon Society for Bangkok By Prof. Dr. Yoshitsugu Hayashi, WCTRS President, Nagoya University, Japan	V2V Technology for Road Safety By Dr. Hideaki Nanba, Denso, Japan
15:55 – 16:20		Rail System and Area Development along the Train Stations: A Case of Hikarie Project By Mr. Shuichi Ueno, Manager, Tokyu Construction, Japan	Transportation and Disaster Management By Prof. Dr. Anthony Chen, Head of Transportation Division, Utah State University	Sustainable Mobility and Design Livable Streets as Pedestrianization for a Better Life of Community in Istanbul, Turkey By Mr.Gokhan Yilmaz, Head of Housing and Urban Development Dept. & Mr. Abdul Basid Dogru, Specialist of Urban and Transport Planner, Itanbul Municipality, Turkey	Tracking People's movements for ITS applications By Assoc. Prof. Dr. Masahiko Nagai Center for Spatial Information Science, University of Tokyo, Japan
16:20 – 16:45		Government Policy on Transit-Oriented Development (TOD) and Housing Development along Rail Stations By Mr. Thanongsak Wikul, Former Deputy Governor of National Housing Authority, Thailand	Logistic in Disaster Medicine By Dr. Pumin Silapun, Deputy Secretary-General of National Institute for Emergency Medicine, Thailand	Tuning for Sustainable Urban Transport Development Utilizing Real Time Traffic Monitoring and Information System: A Case Study of Hanoi By Dr.Vu Anh Tuan, Director of Vietnamese-German Transport Research Center, Vietnam	ITS for Public Transportation System in Bangkok By Dr. Padet Praditphet, Acting Director of Office of Common Ticketing Administration Project, OTP, MOT
16:45 – 17:10		TOD and Opportunity and Potentiality of Real Estate Development in Private Sector Point of View By Mr.Pornarit Chuanchaiyasit, Chairman of The Thai Real Estate Association	Disater Preparedness and Management for AEC By Dr. Peeranan Towashiraporn, Director of Asian Disaster Preparedness Center (ADPC)	National Policy and Planning for Implementation of Transport-related Environment Project in Thailand By Ms. Chutinthorn Mankhong, Office of Transport and Traffic Policy and Planning OTP, MOT	ITS Technology for Improvement of Taxi Service: A Practical Case of All Thai Taxi By Assoc. Prof. Dr. Agachai Sumalee, Director of Smart City Research Centre, Faculty of Engineering, KMITL
17:10 – 17:30		Questions and Answers	Questions and Answers	Questions and Answers	Questions and Answers
17:30 – 18:00		**Closing Ceremony** **Room: Ballroom AB, Ground Floor**			
		Young Researcher's Forum Best Paper and Presentation Award By Mr. Chamroon Tangpaisalkit, 1st Vice Chairperson	Certification of Appreciation to AYRF Committee By Mr. Chamroon Tangpaisalkit, 1st Vice Chairperson	Closing Remark By Mr. Chamroon Tangpaisalkit 1st Vice Chairperson	

Continued:-

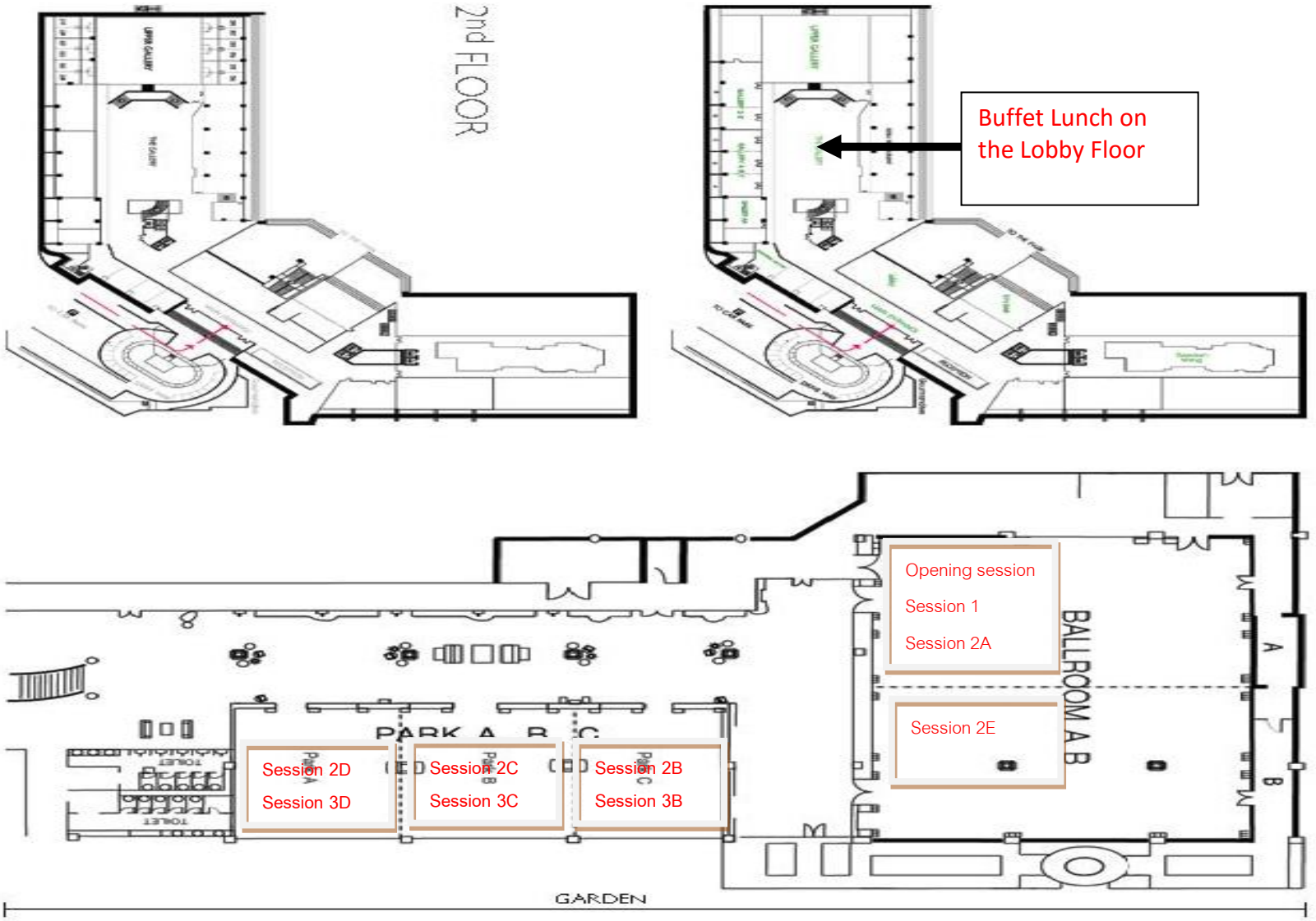
Day 2: 22 August - Technical Visit - Air Traffic Control Tower, Suvarnabhum Airport

Duration		Tentative Program/Tentative Agenda	Remarks
8:00	Morning session	Gathering at Swissotel Nai Lert Park Lobby	The technical visit can accept only 60 persons. So, to reserve your seat, early registration is required. 2 buses are provided by AP HONDA. Light meal and soft drink are provided on board.
8:30		Departure from Hotel by Buses	
10:00		Arrival at airport terminal to Air Traffic Control	
10:00 – 11:00		Visit Air Traffic Control Tower, Introduction of ATRANS participants and Listen to presentation & See practical operation	
11:00 - 11:30		Conclusion of technical visit and thankful speech and present a token of appreciation & Group Photo Taken	
11:30 – 12:30		Leave Air Traffic Control and back to Hotel by buses	

8th ATRANS Symposium Floor Plan



8th ATRANS Symposium Floor Plan



Guide Map from Swissotel Nai Lert Park to Suvarnbhumi Airport and Air Traffic Control Tower

< OPENING SESSION >

Opening Session
Introductory Speech By Mr. Akira Hasegawa, Managing Director of IATSS
Welcoming Speech By Prof. Dr. Wiroj Rujopakarn, ATRANS Chairperson
Opening Speech By His Excellency, Air Chief Marshall Prajin Junthong Minister of Transport (MOT), Thailand

ATRANS
ASIAN TRANSPORTATION RESEARCH SOCIETY

Introductory remark

By Mr. Akira Hasegawa, Managing Director
International Association of Traffic and Safety Sciences (IATSS)

Good morning/Sawasdee kaap

- Mr. Sorasak Sansombat, Inspector-General of Ministry of Transport,
- Professor, Dr. Wiroj Rujopakarn, ATRANS Chairperson,
- Distinguished guests, ladies, and gentlemen.

My name is Akira Hasegawa, Managing Director of IATSS, and I am very happy to welcome you all to the 8th ATRANS Symposium.

Please allow me to say some brief words on behalf of IATSS.

IATSS was established in 1974 by Mr. Soichiro Honda and Mr. Takeo Fujisawa, co-founders of Honda, and we just celebrated its 40th anniversary last year in September.

IATSS is now off and running for the next ten years.

While maintaining our ultimate goal of bringing about an ideal mobility society, we have also begun setting objectives for contributing globally over the next ten years.

To this end, we will be establishing a new forum for knowledge activities such as discussing new strategic approaches and transportation globally.

Looking at overarching trends, while Europe, North America, and Japan have mature transportation environments, it is incredibly important to reduce and prevent traffic accidents, and to work to address environmental issues, in areas of Asia where traffic accidents are increasing as motorization expands.

ATRANS is now marking the 8th edition of this symposium, and the efforts made and knowledge accumulated is evident. I look forward to working together to apply such efforts and knowledge to the real world, sharing the experience of mature countries and making proposals that reflect it as we contribute together to bringing about a better mobility society.

I look forward to your innovative ideas and continued ability to get things done.

I look forward, too, to an energetic exchange of views today.

Thank you very much. END

ATRANS
ASIAN TRANSPORTATION RESEARCH SOCIETY

Welcome Remark

By Prof. Dr. Wiroj Rujopakarn, ATRANS Chairperson
Kasetsart University, Thailand

Good morning. On behalf of the Asian Transportation Research Society or ATRANS in short, it is my privilege and honor to welcome you all to the eighth (8th) ATRANS Symposium:

- Mr. Sorasak Sansombat, Inspector-General of Ministry of Transport,
- Mr. Silpachai Jarukasemratana, ATRANS Honorable Advisor
- Mr. Rapin Charutula, ATRANS Honorable Advisor;
- Prof. Dr. Atsushi Fukuda, ATRANS Honorable Advisor, Japan;
- Mr. Akira Hasegawa, Managing Director of IATSS;
- Mr. Tomiji Sugimoto, Deputy Director, Honda Motor, Japan;
- Prof. Dr. Yoshitsugu Hayashi, President of World Conference on Transport Research Society (WCTRS), Nagoya University, Japan;
- Mr. Michael Woodford Executive Chairman of Safer Road Foundation, United Kingdom;
- Dr. Robert Klein, Asian Development Bank (ADB);
- Dr. Bhichit Rattakul, President of Navamindhradhiraj University and Former Bangkok Governor;
- Mr. Chamroon Tangpaisalkit, ATRANS 1st Vice-Chairperson

As well as ASEAN delegates, distinguished guests, ladies and gentlemen, we, at ATRANS, are delighted to host this gathering today.

Let us briefly look back at the history of ATRANS activities:

On 4th of May 2007, a group of keen academics, researchers and Transport Practitioners joined hands to discuss seriously in forming a non-profitable and pure academic activity benefiting society at large which has become ATRANS at present.

Our vision is to pursue "Transportation for a Better Life," in which one of ATRANS missions is to bridge the gap between research outcomes and actual implementation in community.

We will always step forward little by little to contribute to our dynamic society through accumulating research and knowledge on transportation, traffic safety, energy and the environment and through providing opportunities to share the outcomes with all of you.

Continued next page:-

In addition to our research activity and in response to the needs of young researchers, we initiated ATRANS Young Researcher's Forum in 2013 as an amendment of ATRANS Student Chapter Session to provide a broader opportunity to not only young researchers but also students at large to present their research outputs and to share their knowledge and opinions with one another.

Particularly, it provides an opportunity for building network in cross-cultural friendship among participants from ASEAN countries and beyond.

His Excellency Prajin, Distinguished guests, ladies and gentlemen:

There is a significant issue that we all have been waiting for, that is the approaching of ASEAN Economic Community or AEC. AEC seeks to put in place a comprehensive policy framework that would guide the development of enhanced ASEAN connectivity in all aspects.

On the other hand, road safety is a growing area of concern and a key priority area of work for Thailand. Road accidents have emerged as an important cause of deaths and injuries in recent years. With extremely high casualties and property damages, road crashes have tremendous impacts on human life and national economy. It is inevitably to discuss funding mechanism for making Thai Roads Safer for everyone.

In light of that, the main theme of our 8th ATRANS Symposium is "Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC." Seeking funding mechanism for transport safety and equity in Thailand and in AEC is of great challenge. But I believe it is not beyond our capability.

The AEC, together with Transport Infrastructure like Rail System and Transit Oriented Development, Logistics and Disaster Management have recently drawn a lot of attention here in Thailand. The sustainable transport and safety as well as ITS technology and Environmental aspects have also been discussed a great deal these days. I hope you will all join in the discussion today, making it fruitful and beneficial for everyone.

Distinguished guests, delegates, ladies and gentlemen:

Our members and staffs here have worked eagerly and relentlessly in preparing and making this annual symposium happened. We wish to ensure that all of the distinguished participants gain many and diverse ideas related to transportation. We hope you may use this opportunity for network building and as a cross-cultural exchange with one another.

At this time, ATRANS is honored to invite His Excellency, Air Chief Marshall Prajin Junthong, Minister of Transport of Thailand, to address our assembled delegates and guests and present the opening remarks.

Mr. Minister, please.

END

Opening Remark

By Mr. Sorasak Sansombat,

Inspector-General of Ministry of Transport,Thailand

Good morning:

- Prof. Dr. Wiroj Rujopakarn (ศ.ดร.วิโรจน์ รุโจปการ), ATRANS Chairperson;
- Mr. Silpachai Jarukasemratana (นายศิลปชัย จารุเกษมรัตนะ), ATRANS Honorable Advisor
- Mr. Rapin Charutula (นายระพินทร์ จารุดุล), ATRANS Honorable Advisor;
- Prof. Dr. Atsushi Fukuda (ศ.ดร.อัทสุชิ ฟูกูดะ), ATRANS Honorable Advisor, Japan;
- Mr. Akira Hasegawa (มร.อะคิระ ฮาเสะกาว่ะ), Managing Director of IATSS;
- Prof. Dr. Yoshitsugu Hayashi (ศ.ดร.โยะชิทสุกุ ฮายะชิ) , President of World Conference on Transport Research Society (WCTRS), Nagoya University, Japan;
- Mr. Michael Woodford (มร.ไมเคิล วู๊ดฟอร์ด) Executive Chairman of Safer Road Foundation, United Kingdom;
- Dr. Robert Klein (ดร.โรเบิร์ต ไคลน์), Asian Development Bank (ADB);
- Dr. Bhichit Rattakul (ดร.พิจิตร รัตตกุล) , Rector of Navamindhradhiraj University and Former Bangkok Governor;
- Mr. Chamroon Tangpaisalkit (นายจำรูญ ตั้งไพศาลกิจ), ATRANS 1st Vice-Chairperson

As well as ASEAN delegates, distinguished guests, ladies and gentlemen.

It is a pleasure to be invited here to deliver an opening speech at this international symposium on "Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, organized by Asian Transportation Research Society.

Distinguished Guests, Ladies and Gentlemen:

Transportation has become an inseparable part from our daily life. It is an essential and integral part of our mobile society. It bridges the gap between social exclusion and mobility which entails an equal accessibility and mutual interaction to all mankind. Transportation development has significant influenced upon not only daily living and lifestyle but also social culture, human behavior and environment.

- ต่อหน้าถัดไป//....

Infrastructure is one of Thailand's key competitive advantages. It is well connected both domestically and internationally through an extensive transportation network, connecting China, Laos, Myanmar, Vietnam, Malaysia and Singapore, and situated within a 5-hour flight from Asia's major cities.

Thailand's state-of-the art transport infrastructure has drastically reduced transit times between Bangkok and the industrial zones, while the linkage logistics system has strategically provided convenient and rapid shipping through the deep-sea ports and Suvarnabhumi International airport, one of Asia's major aviation hubs.

In 2010, ASEAN adopted the ASEAN Strategic Transport Plan (or ASTP) 2011–2015, a comprehensive planning and assessment of the current transport situation in the region.

This is to connect ASEAN through enhanced physical infrastructure development, effective institutions, mechanisms and processes and empowered people.

The vision of ASEAN Leaders to build an ASEAN Community by 2015 calls for a well-connected ASEAN that will contribute towards a more competitive and resilient ASEAN, as it will bring peoples, goods, services and capital closer together.

Distinguished guest, ladies and gentlemen,

The ASEAN Economic Community is a vehicle for this connectivity as ASEAN builds a Single Market and Production Base that is competitive, sustainable, inclusive, and fully plugged into the global economy.

If the ASEAN Connectivity proceeds as planned, ASEAN will be a formidable economic power house in the world in the near future.

For instance, today if ASEAN were a single country and well connected with 600 million people, it will be the world's ninth (9^{th}) largest economy after the EU, US, China and Germany.

Delegates, ladies and gentlemen,

Road safety problems in ASEAN have reached alarming proportions, with over seventy-five-thousand (75,000) deaths and 4.7 million injuries occurring annually, causing very serious physical, psychological and material harms to the victims and their families.

In 2011, the Decade of Action for Road Safety was launched globally. Countries around the world pledged to implement measures to lower the number of road traffic accidents as well as the fatality rates from road crashes substantially by 2020. As part of this endeavor, WHO was designated as the global coordinating agency to move this initiative forward.

- ต่อหน้าถัดไป//....

However, given Thailand's record on road safety, Thailand was ranked as the 2nd highest number of road accidents, injuries and fatalities according to World Health Organization (WHO), 2014.

The Thai government realized the gravity of this manmade problem and has put together a 'Decade of Action' plan from 2011-2020 and a National Road Safety Program in place in its attempt to reduce road accidents during the period.

In collaboration with WHO, Thailand welcomes technical knowledge where needed and facilitate knowledge-sharing to better strengthen approaches to road safety in hoping this will bring the good economic internal rate of return (EIRR) in terms of minimizing road fatalities and better quality of lives and safer roads.

The question is, "can Thailand be a good model in reducing Accidents and producing Zero fatalities?" If it is so, what would be practically possible or optimal measures to tackle Road Safety Problems in Thailand and in ASEAN?

Delegates, ladies and gentlemen,

I am certain that we will have more to discuss in the symposium.

I hope you will all join in the discussion of the symposium today make it successful event for all.

Now, it is time for me to declare the symposium opens.

Thank you very much.

จบคำกล่าว/END

< MORNING SESSION >

Program
Session 1: Panel Discussion session - "Harnessing Finance for Safety and Equity in AEC**"** Moderated by Asst.Prof.Dr. Pongrid Klungboonkrong, Deputy Director of Sustainable Infrastructure Research & Development Center, Thailand
Harnessing Finance for Safety and Equity in Thailand and AEC in WHO Point of View By Dr. Witaya Chadbanchachai, WHO Expert Advisory Panel for Injury Prevention & Control
"Green Safety":Suggesting the Driver Behavior / **Attribute Strongly Related to Accident - Lesson Learnt from Japan** By Mr. Tomiji Sugimoto, Deputy Director, Honda Motor, Japan
Traffic Safety Strategies for Vietnam By Dr. Khuat Viet Hung, Executive Vice Chairman of National Traffic Safety Committee, Vietnam
Harnessing Finance for Safer Road By Mr. Micheal Woodford, Executive Chairman of Safer Road Foundation, United Kingdom

Moderator of <Session 1>

Asst. Prof. Dr. Pongrid Klungboonkrong
Deputy Director Sustainable Infrastructure Research and Development Center, Khon Kaen University
E-mail: kku.sirdc.17@gmail.com

Brief Biography:

Education:

1999: Ph.D. (Transport Systems Engineering), Transport System Centre (TSC), School of Geoinformatics Planning & Building, University of South Australia, AUSTRALIA
1989: M.Eng. (Transportation Engineering), University of Manitoba, CANADA
1984: B.Eng. (Civil Engineering), Khon Kaen University, THAILAND

Positions & Experiences:

2014:	World Bank International Consultant
2013-present:	Director of Excellent Center of Traffic and Transportation System Management in the Upper Northeastern region of Thailand, Khon Kaen University
2007-Present:	Deputy Director for Administrative Affairs, SIRDC, Khon Kaen University
2004-2005:	Associate Dean for Research and International Affairs, Faculty of Engineering, Khon Kaen University

Scholarship and Prize awarded:

- In 2009, Dr Pongrid Klungboonkrong received the best paper prize)Practical Paper(awarded by The Engineering Institute of Thailand under H.M. the King's Patronage at the 6th National Transport Conference, Thailand.
- In 2003, Dr Pongrid Klungboonkrong received the Thailand Transportation and Traffic Innovation Award 2003 form the Prime Minister organized by the Office of Transport and Traffic Policy and Plan (OTP), Ministry of Transport.
- In 1999, Dr Pongrid Klungboonkrong was awarded the Yasoshima's Prize for the best paper at the 3rd Eastern Asia Society for Transportation Studies (EASTS) Conference, Taipei, Taiwan

First Speaker of <Session 1>

Dr. Witaya Chadbanchachai
ATRANS Board Committee and WHO Expert Advisory Panel for Injury Prevention & Control
E-mail: buncha96@yahoo.com, dr.bunchachai@gmail.com

Brief *Biography*:

Education:

1983: Fellow of Royal College, Surgery, Faculty of Medicine, Khon Kaen
1977: MD, Medicine, Mahidol University, Thailand

Position:

- Senior Deputy Director, Khon Kaen Regional Hospital
- Director of Trauma and Critical Care Center, Khon Kaen Regional Hospital
- Director of WHO Collaborating Center on Injury Prevention and Safety Promotion
- Member in WHO Trauma and Emergency Care Services Advisory Group
- Member in Board of National Institute for Emergency Medical Service
- Chairman of Trauma Committee, Royal College of Surgeon of Thailand
- Chairman of Provincial Technical Support for Traffic Injury Prevention Project, Thai Health Promotion Foundation
- WHO Expert Advisory Panel on Injury and Violence Prevention and Control

Honour, Award Received:

1992: Topnotch Physician Award, International College of Surgeon of Thailand
1994: Topnotch Physician Award, Medical and Disaster Institute, Medical Department
1995: Bronze prize in Paper Presentation Annual Academic Conference, Ministry of Public Health
1995: Golden prize in Paper Presentation Annual Academic Conference, Ministry of Public Health
1997: Mahidol – B Braun Award
2003: Personal excellent award in Traffic Injury Prevention, National Safety Council
2008: Gold Medal in UC Partnership Award, National Health Security Office
2010: Personal excellent award, Royal College of surgeon of Thailand
2012: Physician excellent award, Medical Council of Thailand

Harnessing Finance for Safety and Equity in Thailand and AEC in WHO Point of View

By Dr. Witaya Chadbanchachai

Summary*:*

UN had announced 2011-2020 the Decade of Action for Road Safety with 5-pillar strategies to tackle the problems.

The Pillar 5 on post-crash management, is also important when all preventive measure fail and still road crash occurred.

Although the inclusive trauma care system which including pre hospital care, acute care facilities, referral and definitive care in tertiary center is universally recommended.

Anyway one important component that essentially required to promote successful trauma care for the victim is financial support not only to establish the system but also to maintain the system.

This should guarantee all trauma patient no matter what economic status, rich or poor, no matter what province or what hospital they go, will receive acceptable minimum standard of care.

Thailand trauma care system had well nationwide developed. At the same period of time, the insurance system for all Thais had also developed.

Nowadays, there are 3 insurance regimes for Thai people, National Health security for Universal coverage, Social security, and Government security. Every Thai people has at least one insurance to cover their cost of care.

These insurance system are also apply for trauma patients. In 2013 the Cabinet had announce a new advance policy for trauma and emergency care that all critical trauma and emergency patients can go to any nearest hospital even private. The hospital has to take care of the patient with standard of care and refund to the patient's insurance coverage.

Harnessing Finance and Safety and Equity in Thailand and AEC in WHO point of view

Witaya Chadbunchachai, M.D.,FRCST
WHO Expert Advisory Panel for Injury prevention and Control

AN UNSUSTAINABLE URBANIZATION PATH

1.2M traffic fatalities

Quality of Life

3.7M air pollution premature deaths

+3.2M physical inactivity

Climate

2% of the land but

70% of the CO_2 emissions

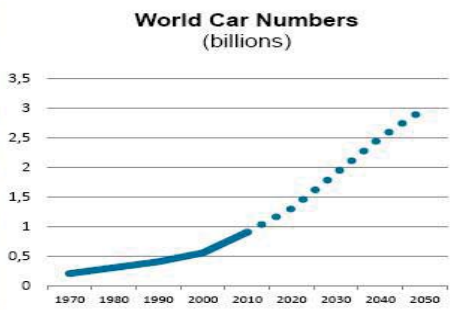
Public Finances

75% of the 2050 infrastructure has yet to be built

Source: Land use and emissions, UN-HABITAT. Infrastructure needs, Resilient Cities. Air pollution and traffic fatalities, WHO.

WORLD RESOURCES INSTITUTE

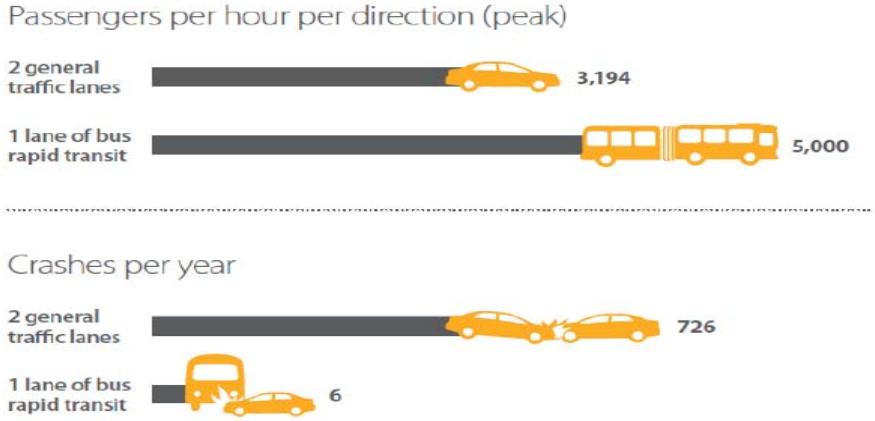
AN INCREASINGLY URBAN, CAR-FILLED WORLD



1 billion motor vehicles today will **triple** by 2050

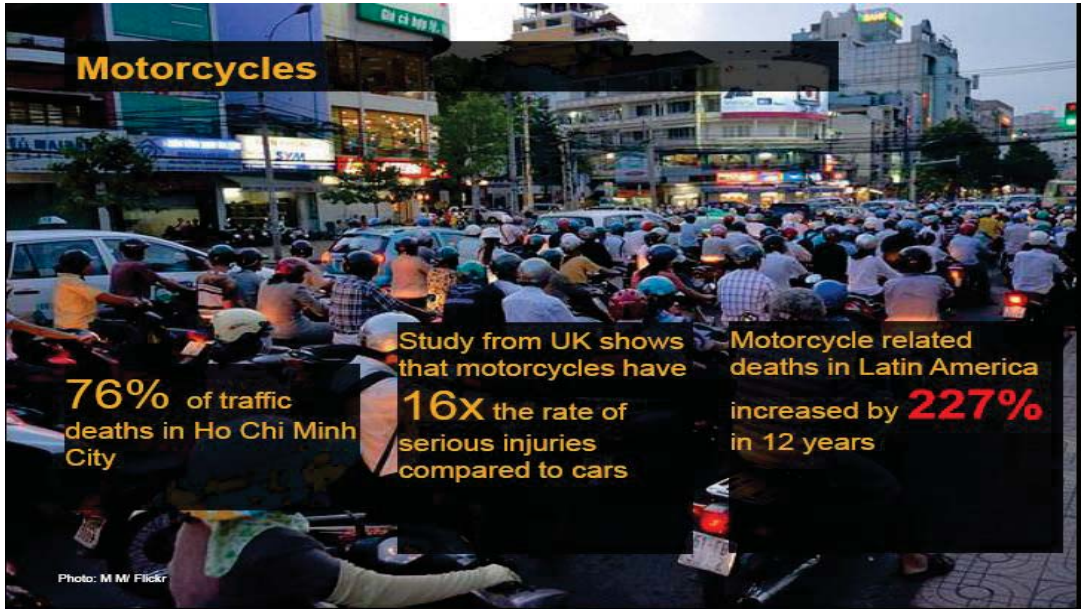
WORLD RESOURCES INSTITUTE

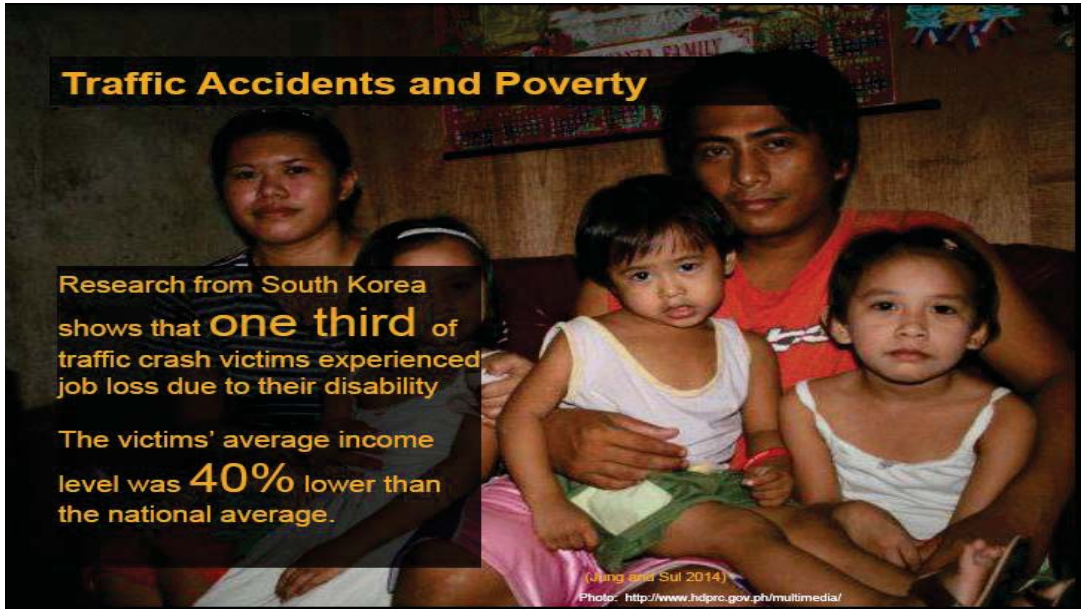
PRIVATE VEHICLE VS. MASS TRANSIT



Guadalajara case study

WORLD RESOURCES INSTITUTE

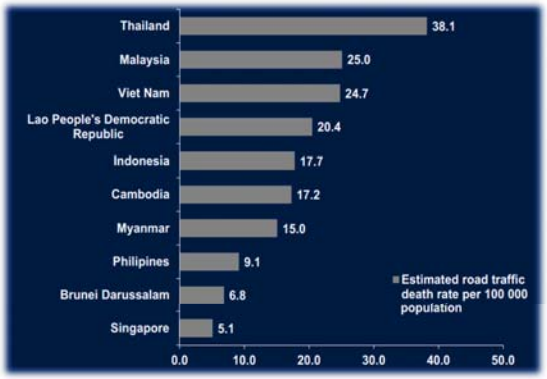

Motorcycles
76% of traffic deaths in Ho Chi Minh City
Study from UK shows that motorcycles have 16x the rate of serious injuries compared to cars
Motorcycle related deaths in Latin America increased by 227% in 12 years
Photo: M M/ Flickr


Traffic Accidents and Poverty
Research from South Korea shows that one third of traffic crash victims experienced job loss due to their disability
The victims' average income level was 40% lower than the national average.
(Jung and Sul 2014)
Photo: http://www.hdprc.gov.ph/multimedia/

WHO : Estimated total RTI deaths for 2010

- Report number of deaths for 2010 = 13,766
- Estimated total RTI deaths for 2010 *(13 variables used for estimation: GDP, vehicle/capita, road density, national speed limit urban-rural, health system access, alc consumption, population working, percenaage MC, corruption index, national policy for walking/cycling, population)* = 26,312
- Estimated total RT fatality rate per 100,000 pop. = 38.07

Etienne Krug
8 November 2012
WHO-Geneva



15,000 million USD Economic loss in 2014





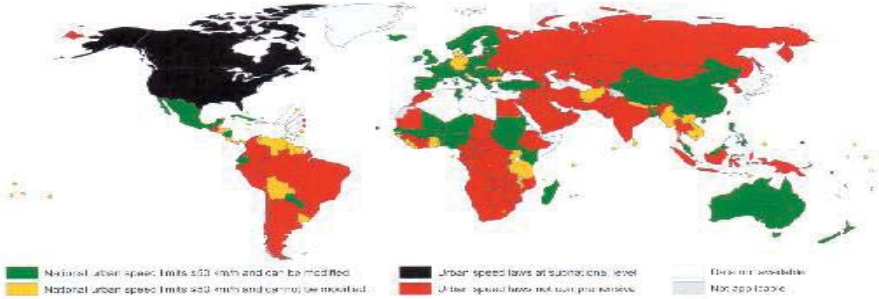

WHO framework for decade of action(2011-2020)
UNGA ,2 March 2010 , New York

International Coordination

National activities

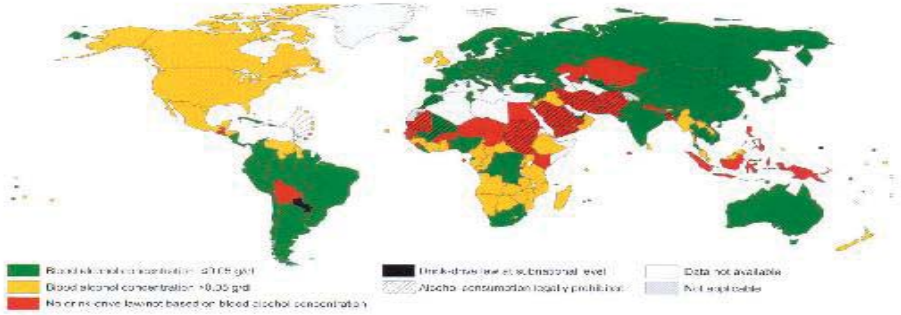
- Road Safety Management
- Infra structure
- Safe Vehicle
- Road user behavior
- Post crash care

Figure 5. Urban speed laws by country/area

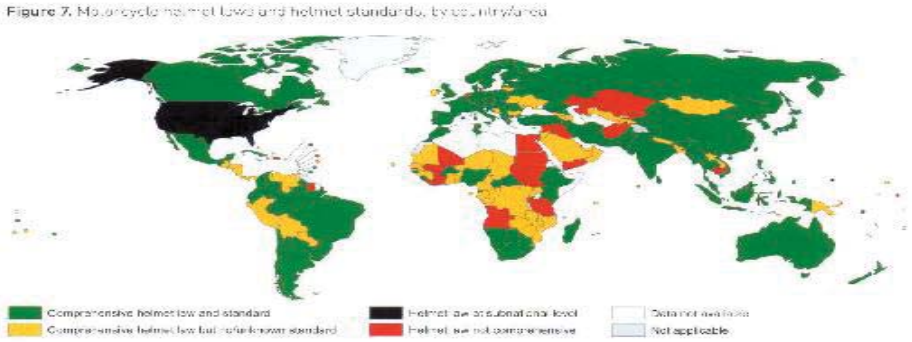


Only 59 countries, covering just 39% of the world's population (2.67 billion people), have implemented an urban speed limit of 50 km/h or less and allow local authorities to reduce these limits.

Figure 6. Drink–driving laws, by country/area



89 countries, covering 66% of the world's population (4.6 billion people), now have a comprehensive drink–driving law, defined as a blood alcohol concentration limit of 0.05 g/dl or less.



90 countries, representing 77% of the world's population, have a comprehensive helmet law covering all riders, all roads and all engine types, and apply a helmet standard.

WHO framework for decade of action(2011-2020)
UNGA ,2 March 2010 , New York

International Coordination

National activities

- Road Safety Management
- Infra structure
- Safe Vehicle
- Road user behavior
- Post crash care

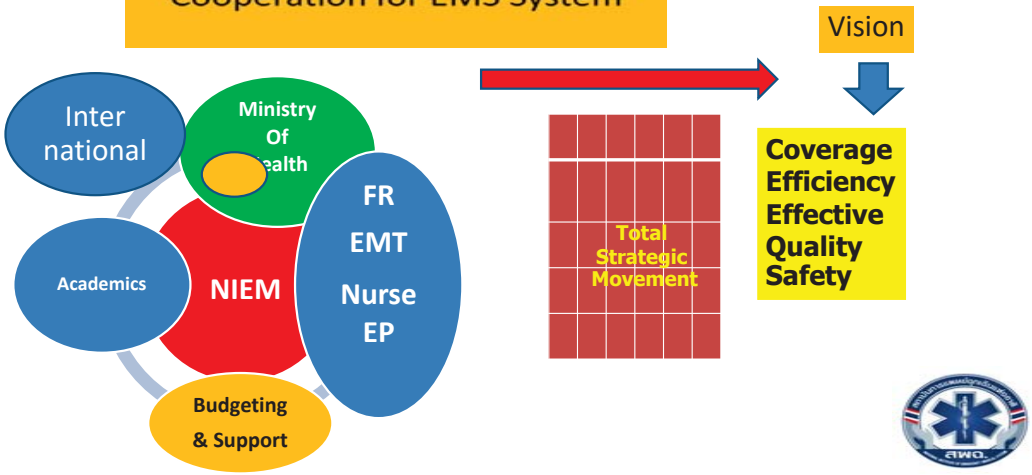
In each year , 24 million trauma and emergency patients visited ER of the public hospitals , 1.5 million were traffic injured.

2555 surveyed from all public hospital in Thailand , TCC-KKH

Pre hospital care

National EMS Act (2008)
National Emergency Medical Institute (2008)
National EMS Board (2008)
National strategic plan for EMSS(2010)
National budget (2007)
National Emergency Alarm Number (2006)
National Trauma Care Standard (2010 by RCST)
National KPI for trauma care (2011 , RCST
National regulation for designation level of Trauma Center (2011)
National plan for EMS education (2014)

Thailand International Cooperation for EMS System

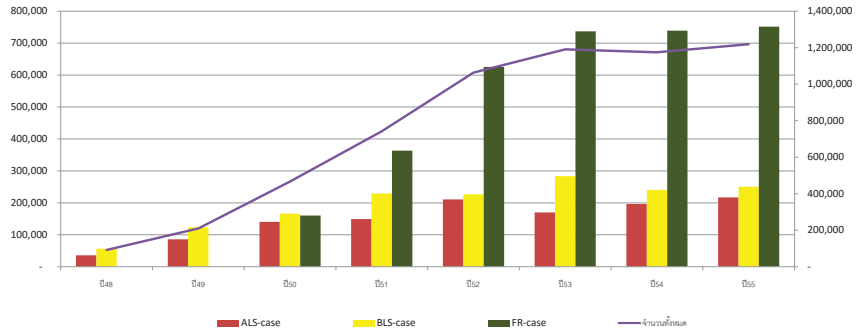


The registered EMS personnel

- The registered EMS Personnel 2015: 150,727 persons

Personnel	Persons
EP,GP	1,639
Paramedics	18,728
EMT-I	2,001
EMT-B	5,267
FR	123,092

Ambulance mission in Thailand 2005-2012

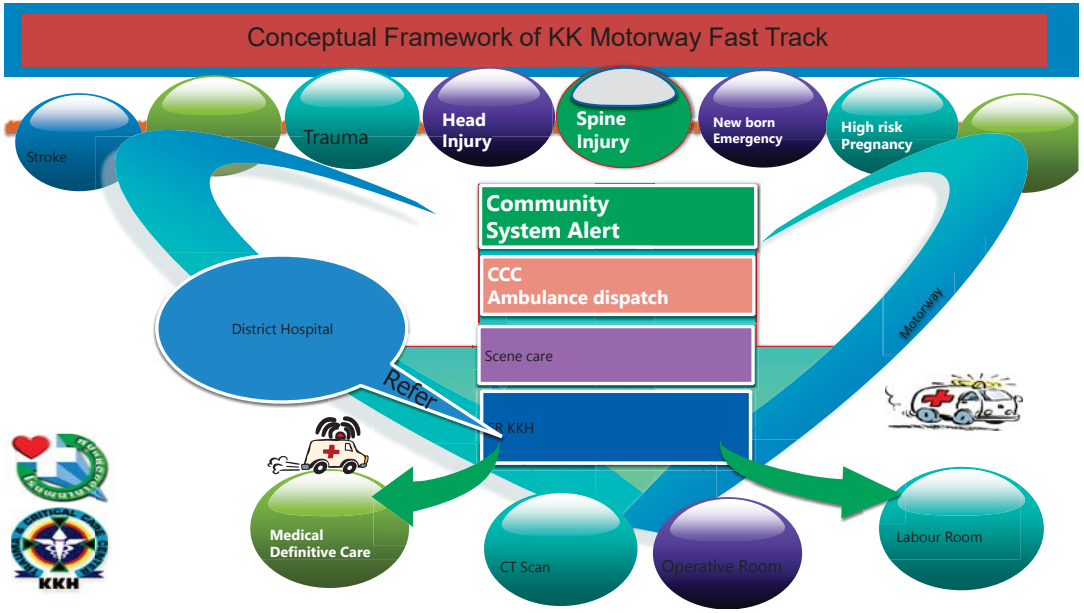


MOPH National Board For National Program of Trauma service plan

Region	level 1	level 2
1	Chiangrai,Chiangmai	Lumpang
2	-	Phisanulok
3	Nakornsawan	-
4	Saraburi	Nonaburi
5	Rajchaburi	Prajuabkerekum
6	Chonburi	Chantavuri,Prajeen
7	KhonKaen	Roied
8	Udorn	Sakol
9	Nakornrajsima	Surin
10	Ubol	-
11	Suraj	Nakornsritammaraj
12	Songkhla	Yala

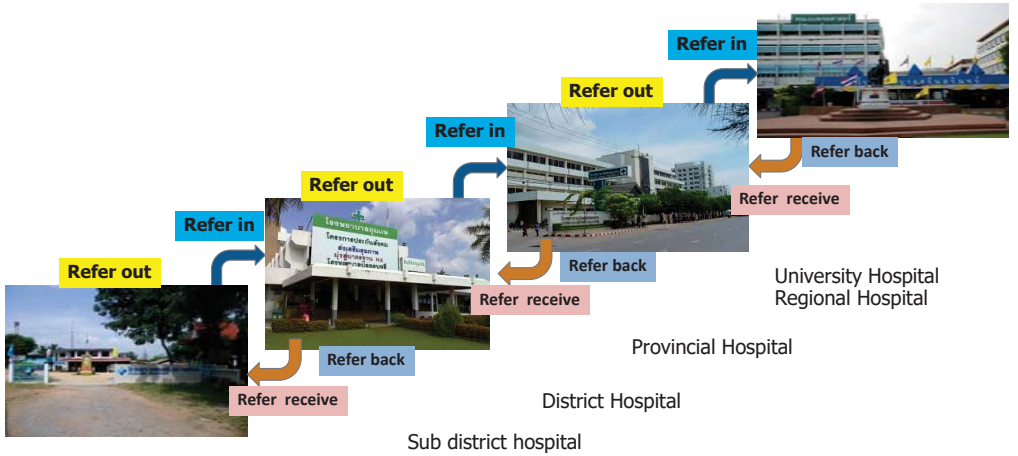
Motor way for Trauma and Emergency Fast track

Conceptual Framework of KK Motorway Fast Track



8TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

The Referral system
TERMINOLOGY



Finance and safety and equity in Thailand

- Pre hospital care

The service is provided for all traffic injured patients free of charge

Government supports all cost of the service through EMS fund run by National Institute for Emergency Medicine.

8TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

Finance and safety and equity in Thailand

Hospital care

- Health insurance system for Thai

Health care scheme (National Health security- Universal coverage)

Social security scheme

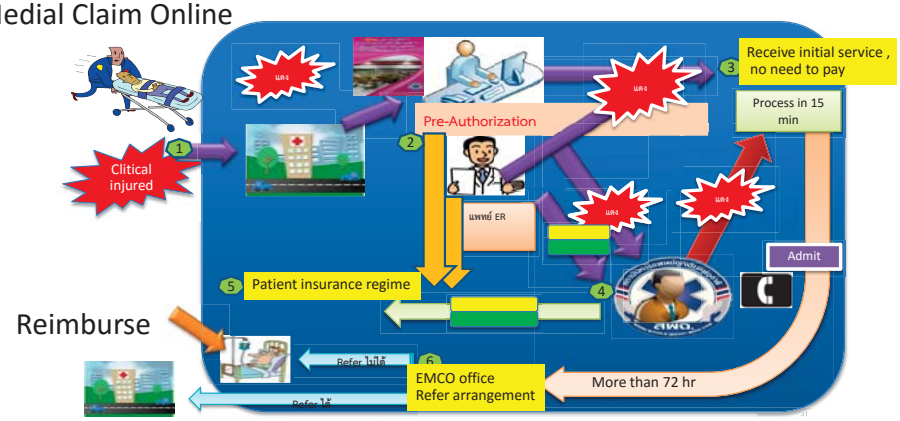
Government officer welfare scheme

Road accident victim protection regime

Private insurance

สถาบันการแพทย์ฉุกเฉินแห่งชาติ
National Institute for Emergency Medicine
www.emit.go.th
เจ็บป่วยฉุกเฉินโทร 1669

Emergency Medial Claim Online
EMCO ,2013



15,000 million USD Economic loss in 2014

Save one life , Safe the world

Second Speaker of <Session 1>

Mr. Tomiji Sugimoto
Deputy Director, Honda Motor, Japan
E-mail: Tomiji_Sugimoto@hm.honda.co.jp

Brief Biography:

Mr. Tomiji Sugimoto serves as an Executive General Manager with Honda Motor Co., Ltd. in Tokyo, Japan. He is charged with Environment and Safety Planning in Corporate Planning Division at Headquarter of Honda Motor Co., Ltd.Prior to this position, Mr. Sugimoto was an Executive Chief Engineer at the Automotive R&D Center in Honda R&D Co., Ltd. in Tochigi, with responsibility for technology PR by October 2009,Mr. Sugimoto was a Vice President with Honda R&D Americas, Inc. (HRA) based in Southfield, Michigan, with responsibility for the Automobile Technology Research Division from 2005 to March 2009. Prior to joining HRA, Mr. Sugimoto was a Senior Chief Engineer with Honda R&D Co., Ltd., in charge of safety technology for Honda since 2001. In that role, he also had oversight of Honda's state-of-the-art Omni-directional Crash Test Safety Facility in Tochigi, Japan. Mr. Sugimoto first became engaged in Honda's crash safety technology development efforts in 1978. He joined Honda Motor Co., Ltd. in 1977 and transferred to Honda R&D Co., Ltd. in 1978.

For the next six years he played a major role in the research and development of Honda's air bag technologies. From 1985-89 Mr. Sugimoto worked at Honda R&D North America (Now Honda R&D Americas) in Torrance, California where he was actively involved in the effort to develop and introduce airbag technology in Honda and Acura automobiles in North America. Returning to Honda R&D Co. in Japan in 1989, he continued work in the safety area. In 1992 he was promoted to Chief Engineer in 1992 and became Manager of the Crash Safety Research Division 1994, where Honda has focused much of its efforts to improve passive safety technologies and including air bag systems and body structure developments.

Mr. Sugimoto received the Pathfinder Award from Automotive Safety Council in 2012 due to his effort for Safety Activity.

Mr. Sugimoto was appointed as a Society of Automotive Engineers (SAE) Fellow at the SAE World Congress in 2008 for his role in the development of Honda's advanced body structure and airbag systems. His research earned the Award for Safety Engineering Excellence from the National Highway Traffic Safety Administration (NHTSA) at the Amsterdam ESV Conference in 2001. He also has won the Japan Society of Automotive Engineers (JSAE) Award. He has played a major role in industry efforts to establish the SAE Pedestrian Dummy Standard.

His published articles with the JSAE include "Research of occupant injuries in frontal collisions between passenger cars"; "Innovative Body Structure for the Self Protection of a Small Car in a Frontal Vehicle-to-Vehicle Collision"; "Study of the test procedure for offset crash"; and "A Trend of SRS Air Bag System".

He also served in a number of important industry organizations, including as chairman of the Traffic Accidents Analysis Experts Group of the Japan Automobile Manufacturers Association (JAMA) and executive member of the board of directors General Affairs and Standardization of the Society of Automotive Engineers of Japan, Inc. (JSAE). Now he is serving in several sub-committees under Environment Committee and Safety, Environment Technical Committee of JAMA as co-chairman, also General Affairs of JSAE as executive member of the board of directors. Mr. Sugimoto graduated in 1977 from Aoyama Gakuin University with a B.S. degree in Mechanical Engineering.

"Green Safety": Suggesting the Driver Behavior / Attribute Strongly Related to Accident - Lesson Learnt from Japan

By Mr. Tomiji Sugimoto

Summary:

Car accidents occur when the space shielded from the outside world creates an illusion … that leads to self-centered behavior carelessness and causes us to take action with a car that has energy that cannot be controlled by human abilities.

In each case, once we enter the booster system of the iron box.We start driving egotistically based on the principle of "Me First."

The basic approach to developing a "car that does not crash" requires that we consider the relationship that I would like to mention among the driving environment … the vehicle and man.

There are two general approaches to the challenge.

The passive solution is for the car to detect the relationship between the external environment and the driver, and then take action to apply technology to prevent the driver from driving radically.

The active solution is to make the driver better informed. This will help them become calmer and make better choices as they drive.

Either way, this knowledge will remove some of the anxiety associated with driving.it will lower stress and make the trip more enjoyable

My dream is for the experience of driving the car to generate a lot of smiles.

August 21, 2015

Green Safety

Tomiji Sugimoto
Deputy Director
Honda Motor Co., Ltd.

2015 8th ATRANS Symposium on Transportation for a Better Life : Harnessing Finance for Safety and Equity in AEC

HONDA
The Power of Dreams

Solution of reducing Traffic Fatality

< Developed Country >

< Developing Country >

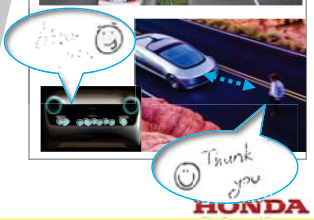
5 views・「5E」

Engineering Safety Technology	Education Traffic Safety Education	+	Evaluation Statistics/Analysis	Enforcement Regulation/NCAP	EMS Emergency System
					

Study the accident in Developing Country with wide vision

Revolutionary Challenge

Developing Country (China、Asean、South America) → Developed Country (Japan、North America、Europe)

Chaos	Organized	Cooperation Harmony
Accident	Almost Accident	Never Accident
		
		

Evolution　Evolution

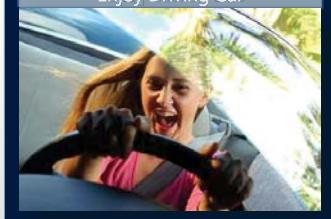
Thank you

HONDA

More Secured Society

Safety for Everyone　Honda Safety Concept

Realizing the joy of free driving

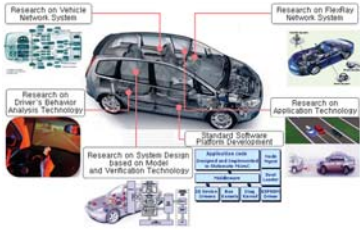
Enjoy Driving Car	Enjoy Traveling	Enjoy Reunion
		

To Enjoy the life,
Securing your life with Smile

Joy with Security

Industrywide Effort to Enhance Safety

■**Enhance Passive Safety to reduce fatalities**



■**Encourage research for Active Safety to reduce accidents**

HONDA The Power of Dreams

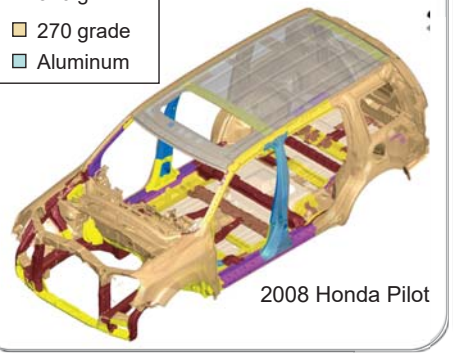
Designing for “Green Safety”

■**Reduce the body weight**

High Strength Steel

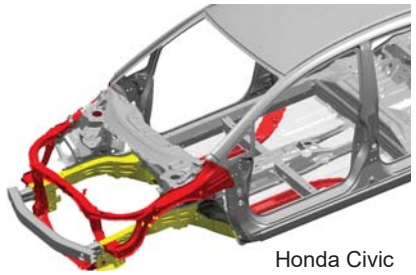
- 980 grade
- 780 grade
- 590 grade
- 440 grade
- 340 grade
- 270 grade
- Aluminum

HSS represents 52% of white body



2008 Honda Pilot

Advanced Compatibility Engineering™ (ACE™)

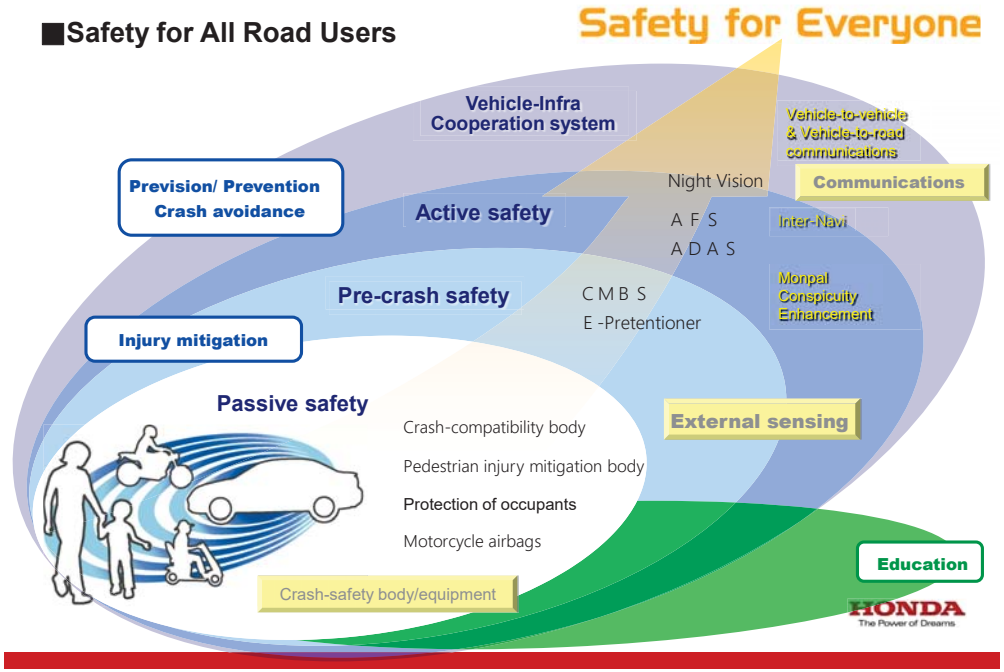


Honda Civic

HONDA The Power of Dreams

Safety for Everyone Commitment

■**Safety for All Road Users**



HONDA The Power of Dreams

Today’s Discussion

■**Green Safety - Human Element of Safety**

- Not a focus on “hardware” – technologies to protect occupants or enable them to avoid accidents
- Human element of safety – design vehicles and systems the enable people to reduce human error that contributes to accidents

HONDA The Power of Dreams

Approach to Developing a “Car That Does Not Crash”

■ **Over 90% of traffic accidents are caused by human error**

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Approach to Developing a “Car That Does Not Crash”

■ 3 **Key Factors**

Optimal traffic flows are maintained through the harmonization and integration of the Traffic Environment – Vehicle – Human

■ **Mutual Compatibility**

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The Power of Dreams

Approach to Developing a “Car That Does Not Crash”

■**Driver's Skill**

The difference between an unskilled driver and a race car driver

The driving performance to control the car to fit certain conditions with the correct judgment to avoid an “incompatible situation”

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The Power of Dreams

Approach to Developing a “Car That Does Not Crash”

■**Human Factor**

Education about the cause of traffic accidents related to human factors is done in driving school

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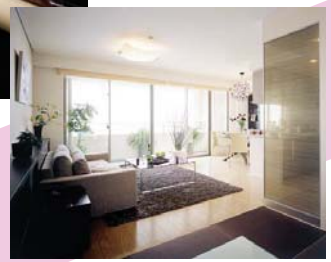
Approach to Developing a “Car That Does Not Crash”

■Isolated Iron Box

An iron box called a “car”

A false sense of security
Leads to carelessness



A sense of being in our own living room

Isolation from outside information and other people

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Approach to Developing a “Car That Does Not Crash”

■Distraction

Don't look at me while you are driving!

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The Power of Dreams

Approach to Developing a “Car That Does Not Crash”

■Booster System

Cars have energy (speed, weight) we cannot even handle

Cars are booster systems designed to enhance the mobility of man

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Approach to Developing a “Car That Does Not Crash”

■Booster System

Cars do not have complete freedom or nimbleness

Cars cannot stop or turn suddenly like a Cheetah

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Approach to Developing a “Car That Does Not Crash”

■ **Illusion:**
Anonymity in the iron box

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Approach to Developing a “Car That Does Not Crash”

■ **The principle of “Me First”**

The feeling of anonymity contributes to self-centered behavior (anger, frustration)

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The Power of Dreams

Approach to Developing a “Car That Does Not Crash”

■ In summary

Accidents occur when this space shielded from the outside world creates an illusion … that leads to self-centered behavior and carelessness … and causes us to take action with a car that has energy that cannot be controlled by the abilities of a human being

HONDA
The Power of Dreams

Approach to Developing a “Car That Does Not Crash”

■ **Optimization among Traffic Environment ⇔ Vehicle ⇔ Human**

One approach to developing a “car that does not crash:”

Cooperative vehicle communication system:
⇒ Provide driver with more and better information
•how to get to their destination and how long it will take
•calm driver by establishing realistic expectations

Coordination with the outside world
⇒ Independence and autonomy are not a “trade-off”

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The Power of Dreams

Approach to Developing a “Car That Does Not Crash”

■ Approach

● Passive:
The car detects the relationship between the external environment and the driver, and prevents the driver from driving radically.

● Active:
The driver feels good and becomes gentle whenever driving the car.

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The Power of Dreams

HONDA
The Power of Dreams

Third Speaker of <Session 1>

Dr. Khuat Viet Hung
Executive Vice Chairman of National Traffic Safety Committee, Vietnam
E-mail: kviethung.mt@gmail.com

Brief Biography:

- **Doctor of Engineering, Transport Planning and Traffic Engineering,** Graduated in December 2008. Darmstadt University of Technology, Germany.
- **Master of Engineering, Transportation Engineering**, Graduated in April 2000. Asian Institute of Technology, Thailand.
- **Diploma-Engineer in Transport Economic**, Graduated in June 1997. Hanoi University of Transportation and Communication.

2. Professional Experiences

6.2010-present	Dean, International Research and Education Center (IREC), University of Transport and Communication (UTC)
3.2009-5.2010	Vice Dean (and Acting Dean), Institute of Transport Planning and Management (ITPM), University of Transport and Communication (UTC).
	Head, Urban Transport Planning and Management Section, ITPM, UTC.
10.2008-present	Membership, Japanese Society of Civil Engineering
10.2007-present	Director, Consulting Centre for Transport Development, University of Transport and Communication
2.2010-present	Visiting Faculty, Transport Planning and Traffic Engineering, Darmstadt University of Technology, Darmstadt, Germany.
11.2009-present	Visiting Faculty, Senior Research Fellow, Transportation Engineering Laboratory, Department of Transportation Engineering and Socio-Technology, Nihon University, Japan.
	Teaching Subject: Transport Planning & Traffic Engineering in Developing Countries

Traffic Safety in Vietnam

By Dr. Khuat Viet Hung

Summary

The presentation present Vietnam demographic-society features, transportation System characteristics, traffic safety in Vietnam, and finally traffic safety strategies and measures for Vietnam up to 2020.

Vietnam, a country in ASEAN with more than 90 million people, is enjoying economic growth over the last two decades with current GDP 2000 USD per capital. Urbanization and motorization created opportunities but also many challenges, including traffic congestion, environmental pollution and traffic accidents.

Although car ownership is relatively low (20 cars per 1000 people), Vietnam motorcycle ownership is one of the highest in the world 487 motorcycle per 1000, making this country a high motorization ownership case, with high risks from motorcycles. Road traffic accident accounts 99 % of the fatalities and fatality rate is approximately 10 per 100.000 people per year.

To improve traffic safety, Vietnamese government has formed National Traffic Safety Committee to support government, particularly Prime Minister to direct agencies, coordinate interdisciplinary activities and resources to combat traffic accidents. With high ranking officials (deputy prime minister as chairman, and the minister of transport as vice chairman) and permanent members such as ministry of transport, ministry of public securities and other powerful state media to be involved, NTSC is popular and one of the largest government committees in Vietnam.

In the last decade, Vietnam has seen significant improvements in transport laws, NTSC strengthening, road traffic law, transport business management, road transport management, compulsory helmet regulation to name as few. Comprehensive solutions for five main transport modes, with integrated measures for human factor, vehicle, infrastructure, management and accident responses lead to significant improve in traffic safety. Statistic number showed a reduction of 2,400 fatalities during 4 years, from 11,395 (2011) to 8,996 (2014); a reduction of 9,000 injuries during 3 years, from 33,411 (2012) to 24,417 (2014).

There are still many challenges in traffic safety in Vietnam, including awareness, custom, driving behavior, infrastructure, motorization, enforcement capacity, database and coordination and resources. These require appropriate strategies, plans, and steps to be implemented to make sure traffic accident is well controlled and reduced.

The government has release an ambitious strategies to reduce traffic accident and fatalities from 5-10% annually. The strategies aim at basic aspects for traffic safety: loading control, speed controlling, drink driving enforcement, IT applications, vehicle and driver license system and others. To mobilize capital for above plans, public private partnership is being used as one of effective tools to get resources to fulfill above strategies

TRAFFIC SAFETY STRATEGIES FOR VIETNAM

Dr.-Ing. Khuat Viet Hung
Executive Vice Chairman
National Traffic Safety Committee - NTSC, Vietnam
Present at: ATRANS Symposium "Transportation for A Better Life"
Bangkok, Thailand - August 2015

Content

Vietnam Economic Conditions, Demographic-Society, and Environment

Economic:

- Stable growth at high rate (6% p.a – 2000-2014) and will continue in the future (Govt.'s target > 6% p.a., 2015-2020)
- Successful in poverty alleviation (Percentage of households with income of under national poverty line 2005/2013 = 22% / 7,8%)
- GDP: 2000 USD per capital (2015)

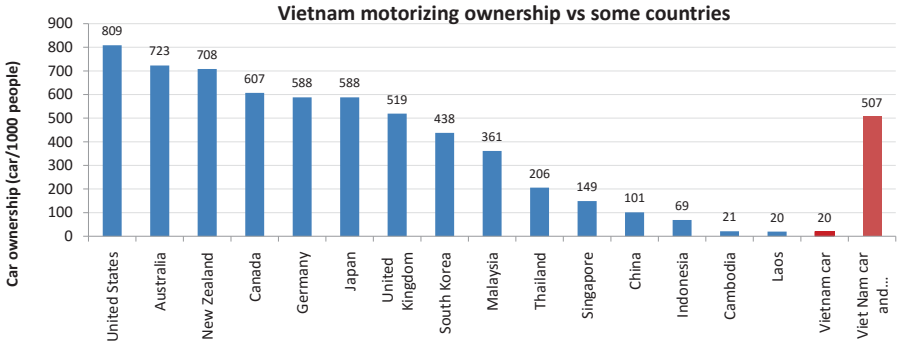
Demographic and Society

- Population: 90 millions (National Population and Housing Survey , 2014)
- Relative young population (94,7% of population < 64 years old)
- Fast and high risk of uncontrolled urbanization by illegal migration [Urban population 19% (1986) ->25% (2002) ->34% (2012)].
- Gradually increasing of social gaps and conflicts;

Environment

- Declining air quality in major cities: motorized traffic is the main polluter;
- Increasing energy consumption and CO2 emissions (25.8%/year , 1990-2005)

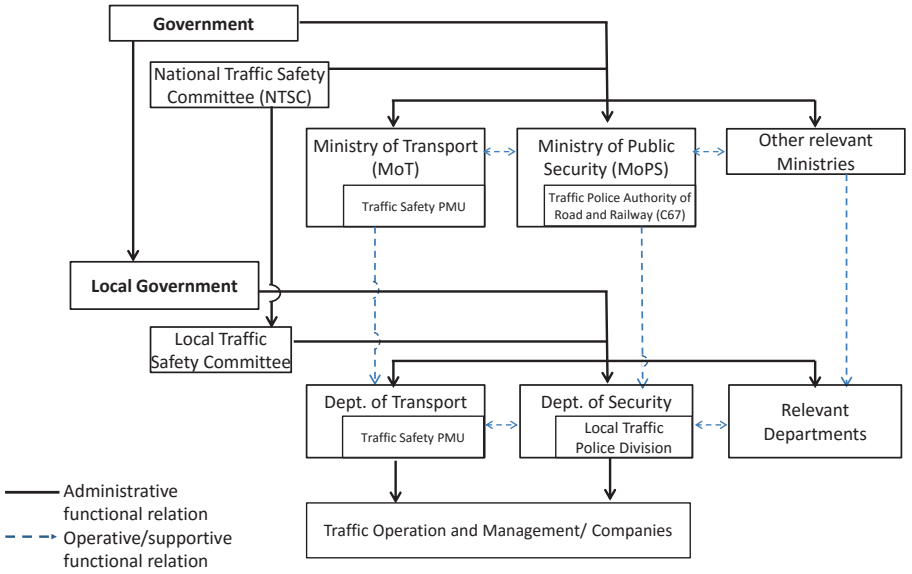
Motorization in Vietnam



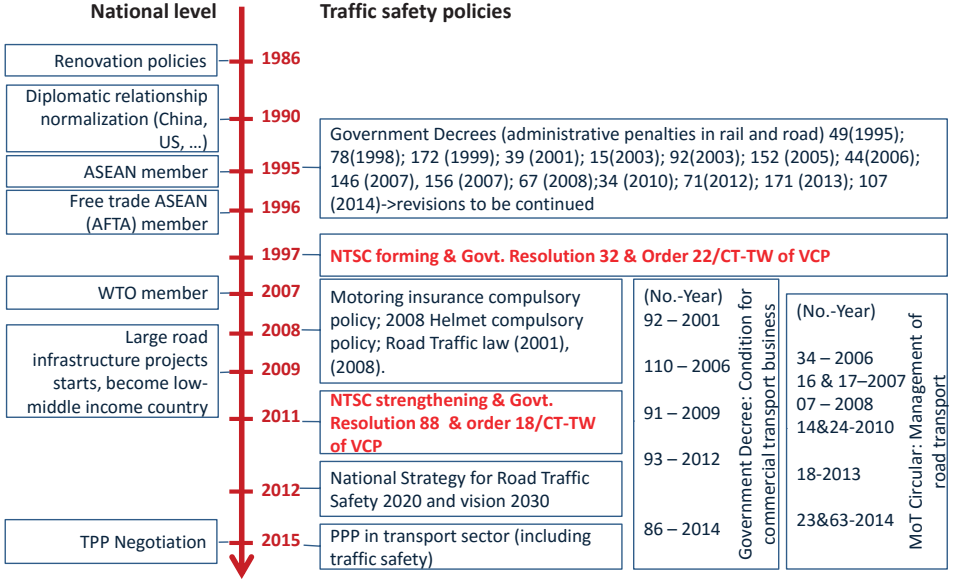
- Motorization: approximately 2.4 million cars and 43 million motorcycles registered.
- Motorizing ownership: 20 car/1000 people, and 487 motorcycles/1000 people
- Motorizing vehicles increase at rapid speed (annual growth rate is 7.3% for motorcycles and 6.3% for cars, 300.000 cars and more than 3 millions motorcycle newly registered every year (data for 2014), which is equal to 850 new cars and 9000 new motorcycles every day)
- Road density: 0.3 km/km2 and 1.12 km/1000 people

Sources: NTSC, Vietnam register, Vietnam National Statistics Office, Other country data for 2010-2014 period 2014

Traffic safety in Vietnam
NTSC Organization



Traffic Safety in Vietnam
Some milestones and traffic safety policies



Transport System Management Policies

- Transport infrastructure:
  - Transport Infrastructure is improving but still over-loaded;
  - Restructuring of investment toward other modes, but road is remaining dominant;
  - Road Maintenance Fund (RMF) starts its importance;
  - PPP investment and operation (Road, IWT, Aviation, Maritime and Rail);
  - Clear prioritization in infrastructure development;
- Vehicle management policies
  - Easing of policies on domestic road vehicle industries;
  - More consideration on vehicle quality management;
  - Keeping high access price for individual motorized vehicles;
- Commercial Transport Services
  - Decentralization in Administration: Privatization
  - Transport Market Restructure: Enhancing capacity and quality of Aviation (LCC) Railway, Inland Waterway, Coastal and Maritime
  - Comprehensive Incentive Program on public transport investment and operation ;
  - IT application in commercial transport administration (GPS Monitoring device is required for all commercial vehicles)

Implementation of Traffic Safety Countermeasures and Significances
Resolution of Government 88/NQ-CP dated 2011

Aimed at 5 major areas of traffic safety:

1. Road Traffic Safety
   - Control the drinking drivers;
   - Maintain and improve the wearing helmet; Enforce the teenagers in motorcycle driving;
   - Educate traffic safety in the schools;
   - Improve the traffic safety emergency;
   - Improve the traffic safety culture propaganda;
   - Enhance the management of commercial transport business;
   - Improve traffic management, traffic control, and safety of transport infrastructure;
   - Improve traffic inspection and enforcement;
   - Improve the management in driving training and test;
2. Railway Traffic Safety
   - Enhance the safety corridor along the railways;
   - Remove
3. Inland Waterway Safety
   - Enhance the management of transport for tourism;
   - Enhance the management of transport across river, motivate passengers wearing life jacket;
   - Improve the inland waterway management to reduce the conflicts;
   - Improve the driving training and test;

Implementation of Traffic Safety Countermeasures and Significances

Resolution of Government 88/NQ-CP dated 2011

4. Airway Safety
   - Monitor the obey the airway safety regulation at the airports ;
   - National airway safety would be issued by 2012;
   - Improve the efficiency of operation;
5. Seaway Safety
   - Improve inspection and enforcement;
   - Improve the training for all relevant human resources, register for ships;
   - Remove all illegal/temporary ports;
   - Investments in dredging, storm shelters for ships.

…and strengthen the institutional management efficiency:

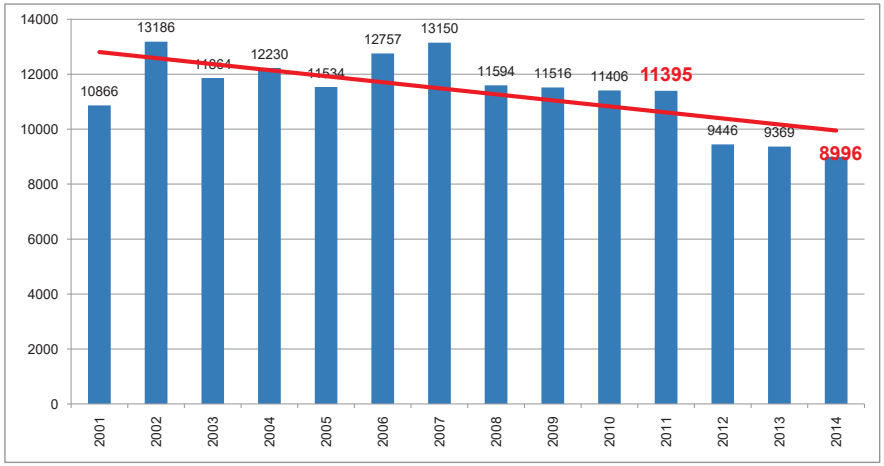
- Improve the institutional management efficiency from the Central Government to the Local;
- Continue to enhance National TSC and Local TSC;
- Capacity Development for traffic safety from Central to Local Agencies

Significances of implementation:

- Reduced ~2,400 fatalities during 4 years, from 11,395 (2011) to 8,996 (2014);
- Reduced ~9,000 injuries during 3 years, from 33,411 (2012) to 24,417 (2014);

Traffic accident in Vietnam 2000-2014

Reduction

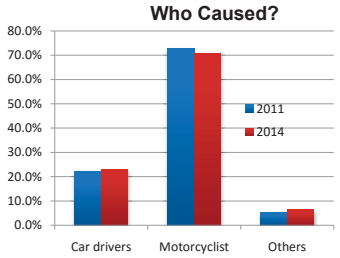


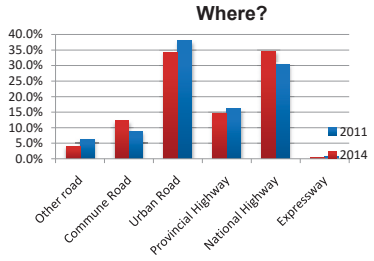
Sources: Vietnam National Traffic Safety Committee 2014

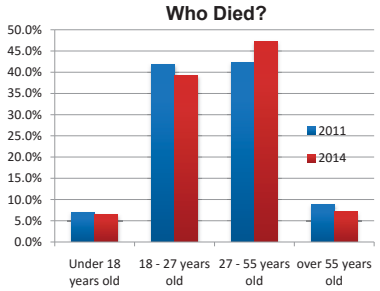
Road accidents share about 99% of total cases and 98% of fatalities

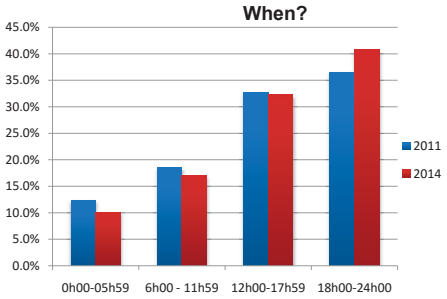
Traffic accident in Vietnam

Car – Rural- Youth- Night!



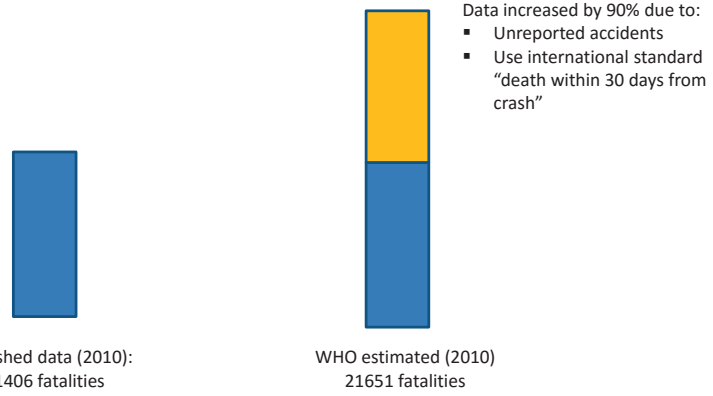






Traffic accident in Vietnam

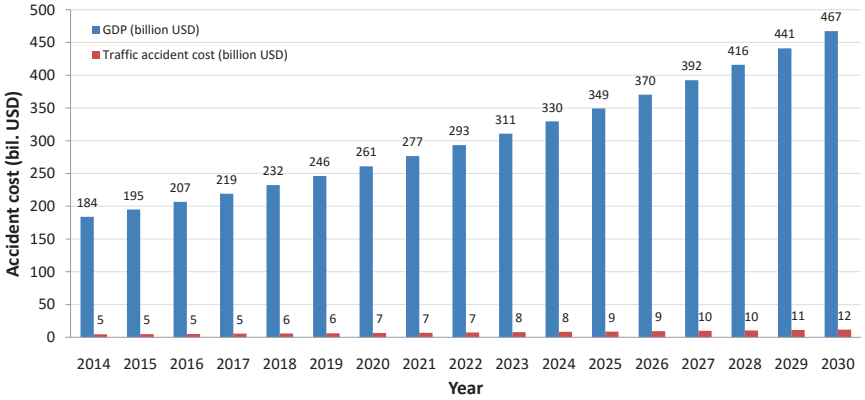
Statistics?!



Sources: Vietnam National Traffic Safety Committee 2014
WHO Global Status Report of Road Safety 2013

Traffic accident in Vietnam

Costs



Sources: Based on initial inputs in WHO Global Status Report of Road Safety 2013 and Vietnam National Statistics Office 2014

- Based on assumptions: GDP growth 6% annually and traffic accident cost accounts for 2.5% of GDP.
- Accident cost per year: 5-12 billion USD, total traffic accident cost 2015-2030 period: 130 billion USD!

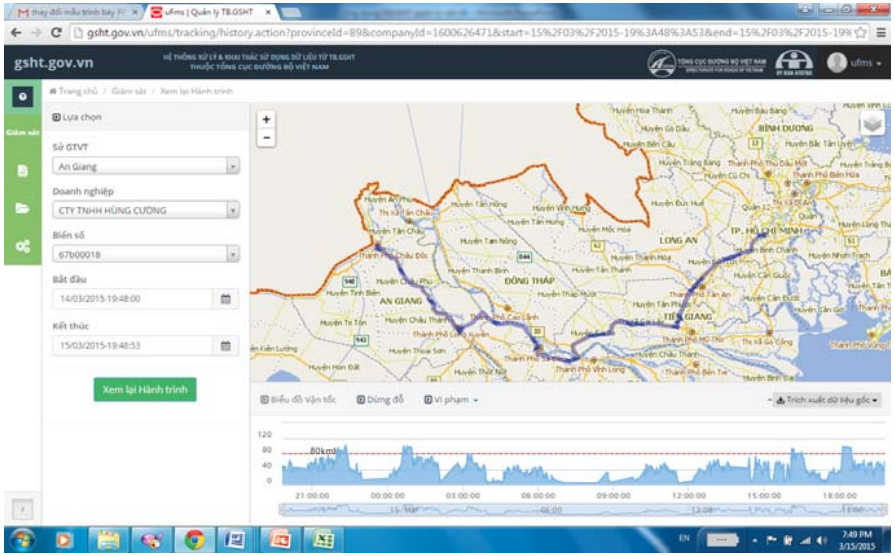
Traffic Safety Good Practice in Vietnam

Compulsory Helmet Regulation.

90% adults and 60-65% children are wearing helmets on traveling by motorcycle

Traffic Safety Good Practice in Vietnam

GPS Monitoring System for Commercial Vehicles



Traffic Safety Good Practice in Vietnam

Overloaded Trucking Control

Traffic Safety Good Practice in Vietnam
Driver mângement

- Centralized database and Automated Online Renewal Driver Licenses
- Camera monitoring for Car Driver Test (Knowledge and Practice)

Challenges to Traffic Safety in Vietnam
Road Users

- Driving awareness
  - Road law is still unofficial in the education program in schools;
  - Unaware on the traffic law, especially road law;
  - Naturally make violations: Signal violation; Lane violation; …
- Custom
  - One of the top countries in the world consume alcohol (wine and beer);
  - Popular drinking driving;
  - Driving due to natural habit, not based on the regulation (over speeding in low traffic road, willing to make violation if do not see the traffic police,…);
- Driving behavior
  - Uncooperative or selfish driving;
  - "Young phenomenon" in driving behavior;
  - Road users make violation because of the others make violation;

Challenges to Traffic Safety in Vietnam
Others

- Motorization (Motorcycle and Car)
- Law enforcement capacity
- Traffic Safety Education and Propaganda
- Infrastructure capacity and safety
- Technologies (Database & Coordination)
- Resources (Financial and Human)

Traffic Safety Strategies for Vietnam to 2020
Objectives to 2020: Reduction of 5 to 10% accidents/year

- Legal system improvement
  - Road Traffic Law and Railway Law amendment;
  - Completion of Decrees, Circulars for all Laws (Road, Railway, Aviation, IWT and Maritime)
- Institutional and human resource capacity improvement
  - Database and Information Sharing;
  - Enforcement;
  - Accident Investigation and Analysis;
  - Infrastructure Safety Audit
  - Vehicle quality management.
- Traffic Safety Education:
  - Drivers;
  - School Children;
  - Public.

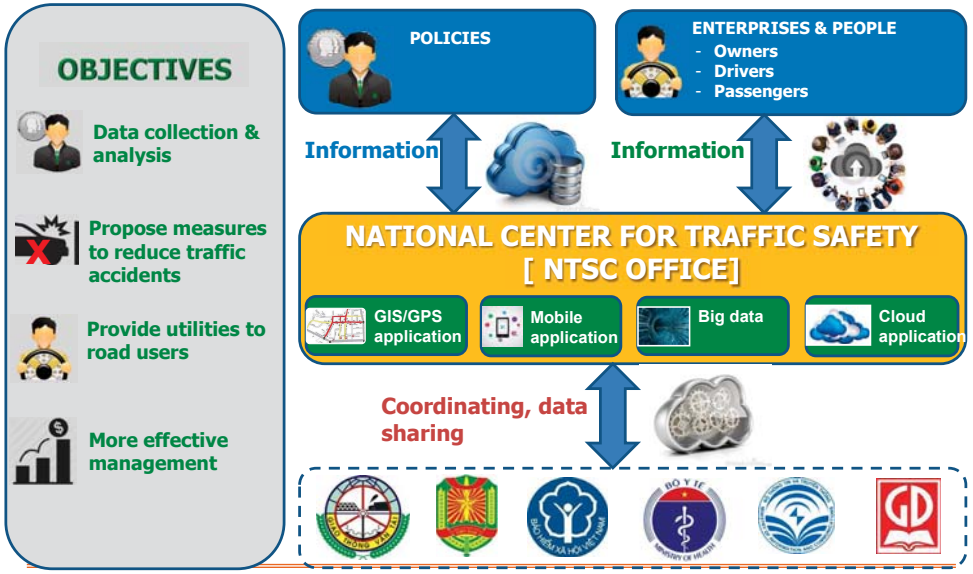
Traffic Safety Strategies for Vietnam to 2020 vision 2030

Objectives to 2020: Reduction of 5 to 10% accidents/year

- Infrastructure improvement
  - Infrastructure safety corridor protection
  - Elimination of Infrastructure black spots;
- Reduction of individual motorized vehicle trips
  - Public transport improvement:
    - Intercity
    - Intra City
  - Non-motorized transport promotion
- Post-crash services improvement
  - First-aid posts,
  - Rescue stations

Traffic Safety Strategies for Vietnam to 2020

Measures: Information Technology Application



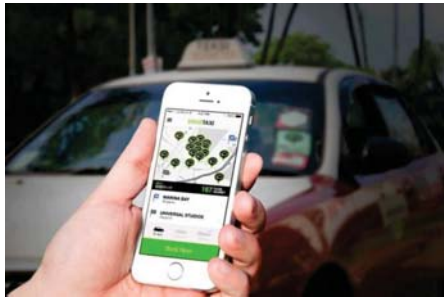
Traffic Safety Strategies for Vietnam to 2020

Measures: Information Technology Application

Traffic Safety Strategies for Vietnam to 2020

Measures: Public Private Partnership in Funding and Implementation

- FUNDING VIA TOLL COLECLTION AND PENALTIES
  - Infrastructure development and maintenance
  - IT application project: ITS, Traffic Control Centre, Monitoring Devices
- IMPLEMENTATION IN TRAFFIC EDUCATION
  - Helmet Donation Program;
  - Driving home service for Drunk Driver (GrabTaxi & Uber)
  - Safe Driving Skill Training: Vehicle manufacturers (Toyota, Honda, Yamaha, Ford)
  - Drink Don't Drive Propaganda: Alcohol supplier (Heiniken, VIARD)
  - School Safety Education: SMART TRAFFIC (traffic safety games via internet);...



Q& A

Contact:
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Email: kviethung.mt@gmail.com

Thank you very much for your kind attention!

Fourth Speaker of <Session 1>

Mr. Michael Woodford
Executive Chairman of Safer Road Foundation, United Kingdom
E-mail: michael.woodford@saferroadsfoundation.org

Brief Biography:

Born in 1960, Michael grew up in the British port city of Liverpool, and after moving to the south of England spent the next 30 years of his professional life working at Olympus. In April 2011, he was appointed President of the Olympus Corporation - the first Western 'salary-man' to rise through the ranks to the top of a Japanese giant, chronicled in his Grisham-like bestselling book 'Exposure'.

Whilst now being publicly best-known as the CEO who became a whistleblower of his own company in exposing the $2 billion fraud at Olympus and having to flee Japan in fear of his life, for over thirty years Michael has been actively involved in road safety. This is now his major focus but he also spends much of his time visiting different countries talking about everything from corporate governance and transparency, to the frailties of human nature!

Michael has an immense passion for road safety and is Executive Chairman of the UK registered charity the Safer Roads Foundation (SRF), which he founded some fifteen years ago. SRF is a not-for-profit organisation dedicated to the reduction of road casualties, not just in the UK and Europe but in numerous countries around the world, with Thailand being a special focus.

The Foundation's support is provided by the implementation of engineering measures to improve safety at specific sites (accident 'black spots'), and collaborating internationally with governmental, NGOs and commercial organisations in the development of design standards affecting the safety of road users globally. SRF also works to increase public awareness of the issues affecting safety on the roads through education and promotion, working closely with government, road safety organisations and individuals with shared objectives.

Harnessing Finance for Safer Road

By Mr.Micheal Woodford

Summary:

The Safer Roads Foundation (SRF) is a not-for-profit organisation (registered charity) dedicated to the reduction of road casualties through:

- The implementation of engineering and other measures to improve safety at specific sites (accident 'black spots').
- Collaborating internationally with governmental, NGOs and commercial organisations in the development of design standards affecting the safety of road users globally.
- Increasing public awareness of the issues affecting safety on the roads through education and promotion, working closely with government, road safety organisations and individuals with shared objectives.

Encouraging a culture of safety through SRF Activities around the world

Background to SRF Involvement in Thailand: With 26,000 traffic 'accident' deaths a year, on a per capita basis, Thailand's roads are the second most dangerous in the world.

SRF's commitment to reducing road accident casualties in Thailand. Below are examples of projects in Thailand:

- Bangkok
- Chiang Mai
- Koh Samui
- Khon Kaen
- Nakhon Nayok
- Songhkla

THE FUTURE SRF'S COMMITMENT TO THAILAND

SRF is committed to working in Thailand with the Ministries, various government agencies and NGOs to address accident 'black spots' throughout the country.

SRF

SAFER ROADS FOUNDATION

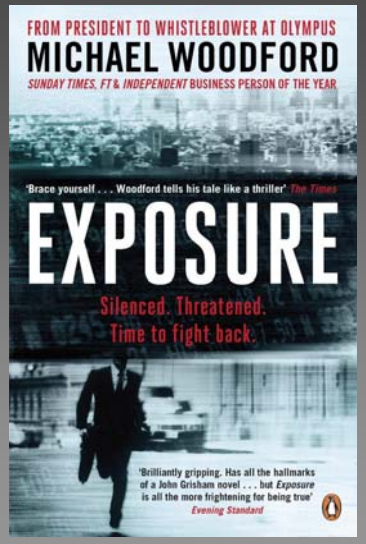
8TH ATRANS SYMPOSIUM 'TRANSPORTATION FOR A BETTER LIFE: HARNESSING FINANCE FOR SAFETY AND EQUITY IN AEC'

BANGKOK, FRIDAY 21ST AUGUST 2015

BACKGROUND TO SRF INVOLVEMENT IN THAILAND

With 26,000 traffic 'accident' deaths a year, on a per capita basis, Thailand's roads are the second most dangerous in the world.

MY HISTORY



PRESENTATION STRUCTURE

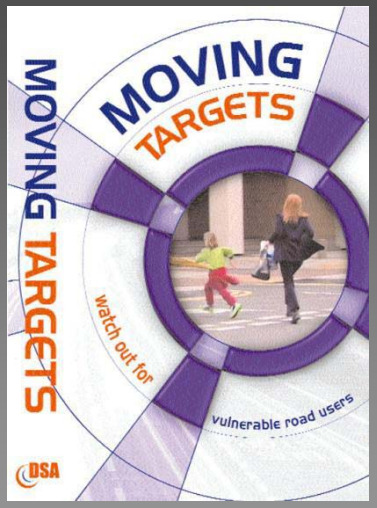
1. Background to Safer Roads Foundation
2. Examples of SRF activities around the world
3. Examples of projects in Thailand:
   - Bangkok
   - Chiang Mai
   - Koh Samui
   - Khon Kaen
   - Nakhon Nayok
   - Songhkla
4. SRF's commitment to reducing road accident casualties in Thailand

BACKGROUND - SRF

The Safer Roads Foundation is a not-for-profit organisation (registered charity) dedicated to the reduction of road casualties through:

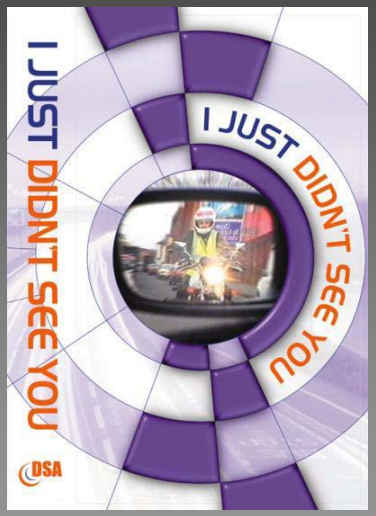
- The implementation of engineering and other measures to improve safety at specific sites (accident 'black spots').
- Collaborating internationally with governmental, NGOs and commercial organisations in the development of design standards affecting the safety of road users globally.
- Increasing public awareness of the issues affecting safety on the roads through education and promotion, working closely with government, road safety organisations and individuals with shared objectives.

Support for Driving Standards Agency



Vulnerable road-users video

Support for Driving Standards Agency



Motor-cycle conspicuity video

Encouraging a culture of safety

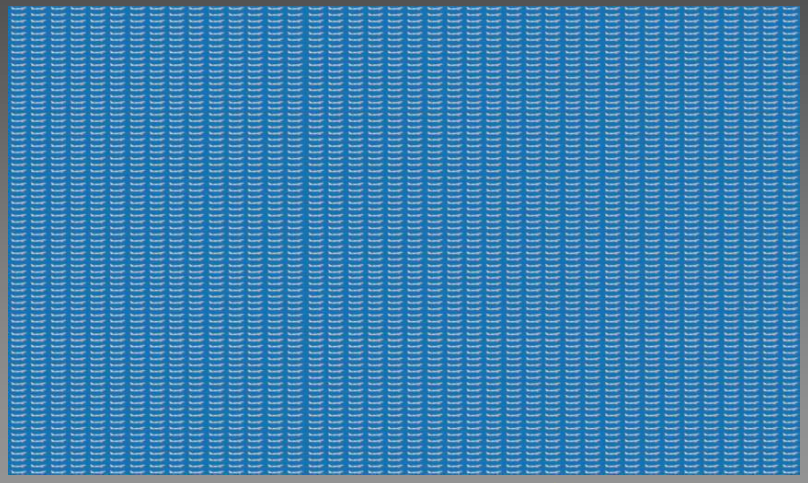
EXAMPLES OF SRF ACTIVITIES AROUND THE WORLD

Over 30,000 road deaths in Europe every year

* Source: ETSC flagship PIN (Performance Indicators 2011)

France

Worldwide 1.5 million road deaths every year

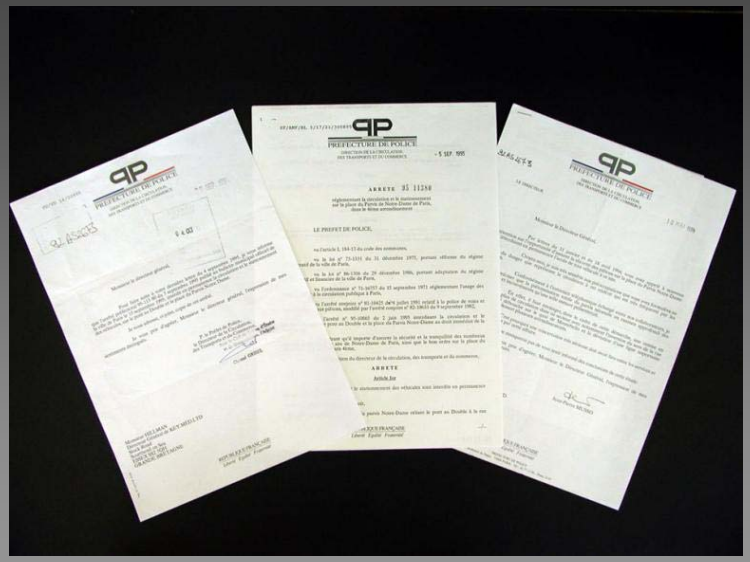


* Source: WHO

Notre Dame ... vehicle/pedestrian conflict

Notre Dame ... pedestrians distracted

Notre Dame ... exchange with Préfet de Police



Notre Dame ... vehicle/pedestrian conflict

Notre Dame ... vehicle access restricted

The Champs Élysées … obscuration of traffic signals

The Champs Élysées … obscuration of traffic signals

The Champs Élysées … obscuration of traffic signals

The Champs Élysées … pedestrians at risk

The Champs Élysées … simulation

The Champs Élysées … 'After' image of tall demountable signals

SPECIALLY-COMMISSIONED DOCUMENTARY PROGRAMME

The Champs Élysées … 'After' image at Place de la Concorde

The Champs Élysées … 'After' image at Place de la Concorde

Karlstrasse Hamburg, Germany signals obscured by trees

Germany

Karlstrasse Hamburg, Germany signals bracketed restoring visibility

Greece

Previous position

Supporting the Road Safety Institute, Greece

Ι.Ο.ΑΣ.
ινστιτούτο οδικής ασφάλειας
Πάνος Μυλωνάς

- Staffing assistance
- Major funding of accident remedial schemes

Simulation

NOW!

Abderrahim Bouabid Highway, Rabat, multiple lane carriageway - one signal

Morocco

Abderrahim Bouabid Highway, Rabat, multiple lane carriageway - one signal

Abderrahim Bouabid Highway, Rabat, additional signals installed

Bali

Abderrahim Bouabid Highway, Rabat, additional signals installed

Main Nusa Dua/Denpasar Highway, Bali solitary signal obscured on the approach

Main Nusa Dua/Denpasar Highway, Bali additional signals installed

Gianyar District, (northbound), Bali installation of traffic signals

Gianyar District, (northbound), Bali dangerous junction, gyratory system

Gianyar District, (westbound), Bali without signal-control

Gianyar District, (westbound), Bali installation of traffic signals

Paseo Colon, Irùn … solitary signal

Spain

Paseo Colon, Irùn … solitary signal obscured

Paseo Colon, Irùn

Paseo Colon, Irùn … simulation

Paseo Colon, Irùn … signal obscured

Paseo Colon, Irùn … additional overhead signals installed

Current Projects in Thailand

Bangkok
Chiang Mai
Koh Samui
Khon Kaen
Nakhon Nayok
Songhkla

BEFORE

Pedestrians interpret all five lanes being for traffic heading northbound, and do not appreciate that the 5th lane, as shown above, is for vehicles travelling south (albeit as a temporary but long-term arrangement), which could so easily have catastrophic consequences.

Bangkok

Thanon Mahaphruttharam at its junction with Thanon Rama IV

Pedestrians unaware of traffic flows on the multi-lane crossing

BEFORE

The most dangerous concern is when there are high-sided vehicles, such as coaches and lorries in lane 4, as pedestrians stepping out onto the crossing are completely unsighted to approaching drivers in lane 5, with the result that there is a real and ongoing danger of a serious vehicle/pedestrian collision.

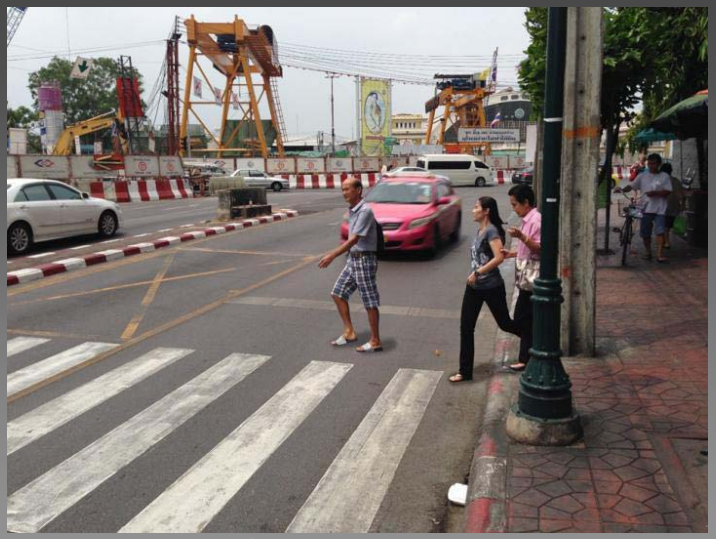
BEFORE

Pedestrians on the crossing, heading west to east who are unfamiliar with the location, particularly during congested periods, presume the road to be one-way as it was originally designed, and routinely do not look to their left for oncoming traffic heading south.

SRF'S PROPOSED REMEDIAL SOLUTION

The combination of white directional arrows, coning and removing the old 'STOP' line marking in lane 5, together with installing prominent vertical signing at the crossing, would make the road geography clear to both pedestrians and drivers.

BEFORE



A comparable danger exists for pedestrians heading east to west, where those who are clearly unfamiliar with the junction, simply do not look to their right, presuming the road to be one-way again, with potentially fatal consequences.

AFTER

Driver's approach to crossing southbound, incorporating directional arrows and yellow lining making clear traffic flow. 'Rumble' strips emphasising the need to SLOW.

AFTER

'Look Right/Left' and arrow markings making clear to pedestrians the direction in which to look for oncoming traffic.

Chiang Mai

Northbound on the main Chiang Mai to Fang Road (107) at its junction with the minor road from Mae Rim to Samoeng

Inoperative and misaligned traffic signals

8th ATRANS Symposium – 21 August 2015

AFTER

Coning installed to make clear the road geography, and prominent vertical 'Pedestrian Crossing' signs installed.

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DANGER - NORTHBOUND

The danger is that at this junction when heading northbound, the pavement-mounted facing signal on the left has been knocked out of alignment and is also inoperative. With the current conditions, if the remaining single overhead signal were to fail, the junction would be completely unprotected and unfamiliar drivers would be unaware of the need to concede priority, with potentially devastating consequences.

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DANGER - NORTHBOUND

The situation is most critical at night.

MAE RIM JUNCTION UPGRADE

Through the dialogue established, we have now agreed with the Governor of Chiang Mai and Highways District 2, to fund an upgrade of the signalling and the installation of advanced warning signage, to ensure drivers are aware of the presence of the traffic lights and hidden junction ahead

SIMULATION

If the overhead red aspect were to fail, as simulated above, approaching drivers heading north on the 107 would be completely unaware of vehicles crossing their path, with the need to concede priority.

AFTER

AFTER

Koh Samui

Location 1: Danger on Sanam Bin Road at its junction with the 4171

Unclear 'Give Way'

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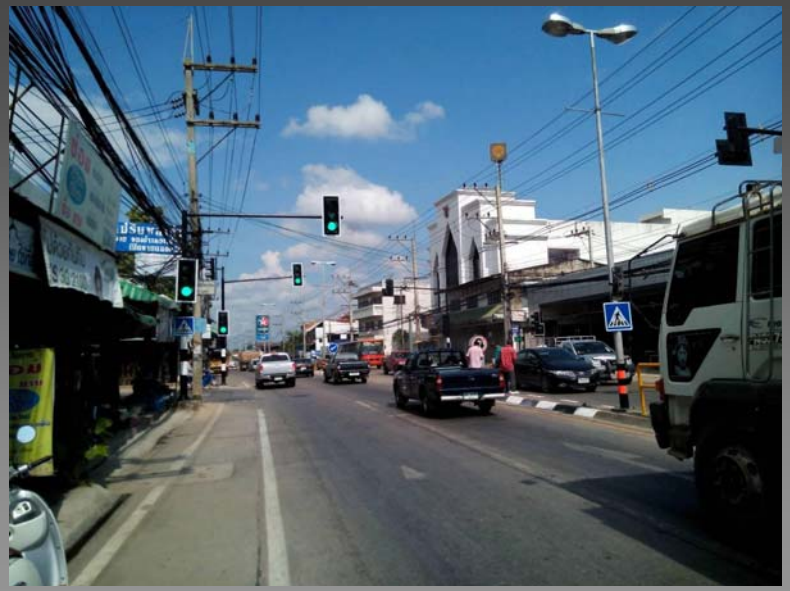
AFTER



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PREVIOUS POSITION

Unfamiliar drivers can be completely unappreciative of the need to concede priority when heading north on Sanam Bin Road at its junction with the 4171. Visually the road appears to continue without interruption, curving to the right, with the result that drivers can regularly be seen travelling through the junction without conceding priority to traffic on the 4171. The problem is particularly acute during darkness.

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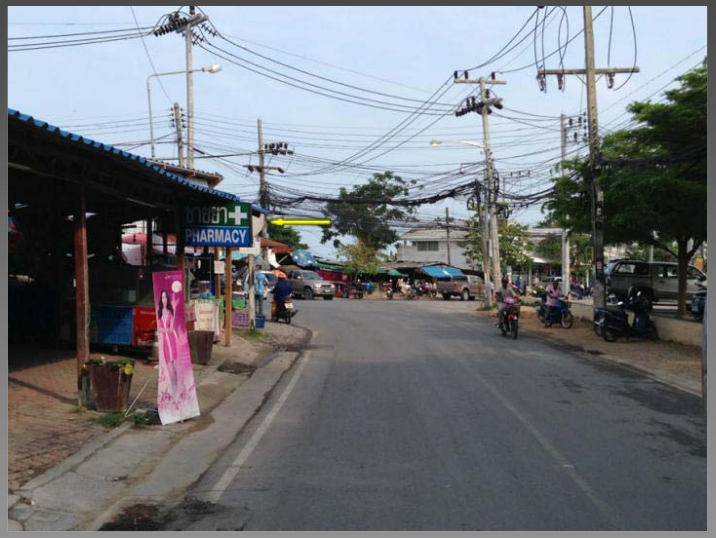
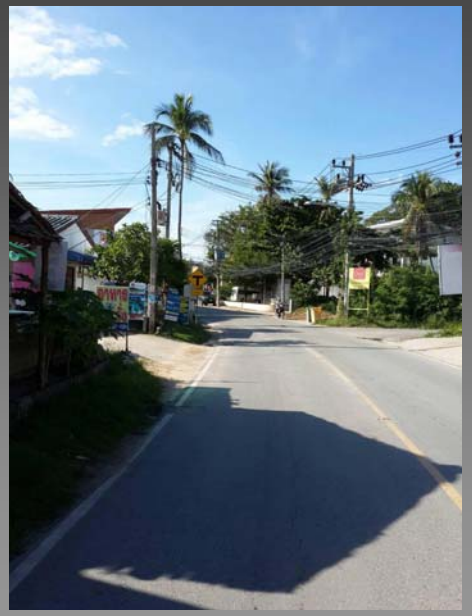
PREVIOUS POSITION



The 'STOP' sign, as highlighted by the yellow arrow above, is obscured by the signs and canopy of the adjacent pharmacy.

POSITION AFTER SRF SUPPORT



PREVIOUS POSITION

The plaque itself is totally faded, making it indistinguishable, with the result that approaching drivers completely miss this safety-critical warning.

POSITION AFTER SRF SUPPORT

Koh Samui

Location 2: Danger when heading north or south on Bontji Moo 4 at its junction with Bond Kai Road

Unmarked crossroads

SOUTHBOUND APPROACH ON BONTJI MOO 4

On the southbound approach, drivers have come round the left-hand bend and as the road straightens out, appears to have a natural momentum and priority. The danger is particularly problematic during quiet periods, when there is no visible west/east cross-traffic, which would provide an indication of an intersection ahead.

BOND KAI ROAD AT ITS JUNCTION WITH BONTJI MOO 4

Bond Kai Road, as shown above, (the main access route for departures at the airport), is the main highway yet drivers on Bontji Moo 4 often wrongly believe they have priority, and fail to concede priority.

SIMULATION – SOUTHBOUND APPROACH

The danger would be simple and easy to resolve, by the introduction of a 'STOP' sign on both the north and south approaches on Bontji Moo 4. The cost of the warning plaques would be minimal, yet could so easily prevent an accident from occurring which, by its nature, would likely involve loss of life or serious injury.

SOUTHBOUND: POSITION AFTER SRF SUPPORT

CHAO SAMRAN ROUNDABOUT NOW UNDER CONSTRUCTION

Phetchaburi District

Location 1: Baan Laem
Location 2: Chao Samran

Converting intersections to roundabouts

Khon Kaen

Mittraphap Arterial

Automatic Speed Enforcement System (14km)

In 2013, there were 551 reported accidents on this section of carriageway

MITTRAPHAP ARTERIAL 4

This road was once a 2-lane undivided carriageway, but is now a 12-lane divided highway, with high-speed traffic.

MITTRAPHAP ARTERIAL 4

Urban speed limit, 60 km/hr, was introduced and enforced by police since 2012 (18% of accidents decreased). Police currently enforce speed control only 2 hours per day at one location, therefore installing 'Automatic Speed Enforcement Devices' will increase the effectiveness of the program.

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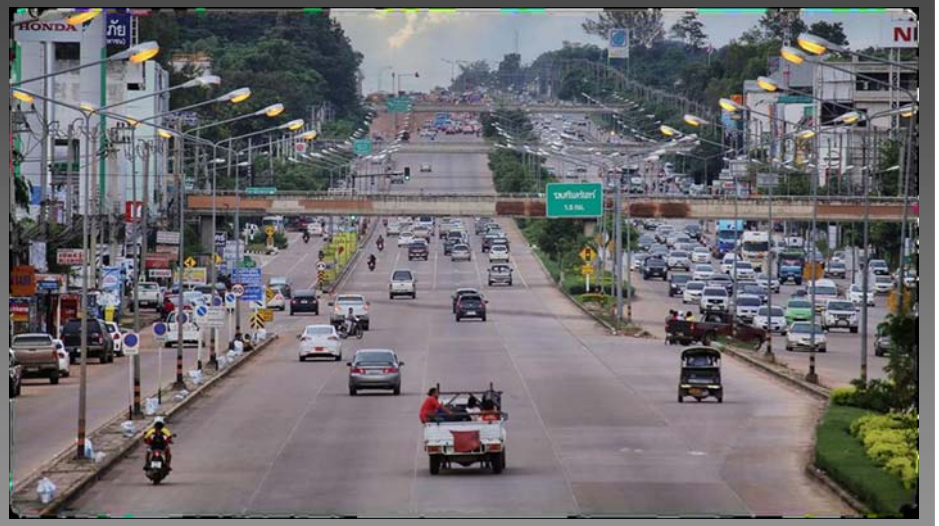
MITTRAPHAP ARTERIAL 4



There are numerous conflict points with access/exit roads and u-turns. A fundamental problem is that high-speed through traffic is mixing with local traffic which is joining and exiting the highway.

SIMULATION

Examples of road section after installing signs, overhead structure and cameras.

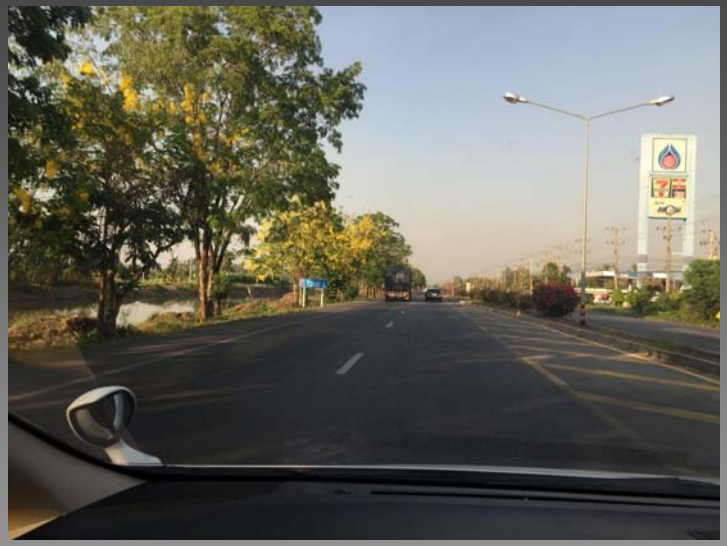
Nakhon Nayok

Installation of guard rail (4km)

NAKHON NAYOK

Guard rail installed in April 2015 to a higher standard.

NAKHON NAYOK



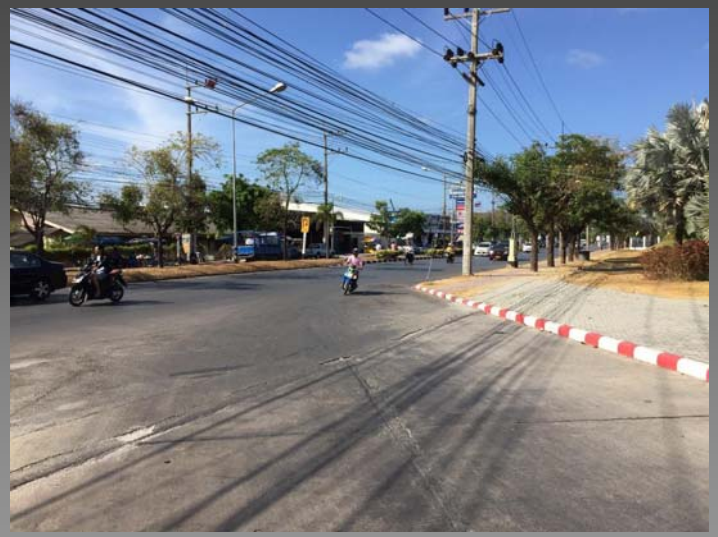
There is nothing to prevent a driver from leaving the road and colliding with a structure, or fall into the canal, which could have devastating consequences.

NAKHON NAYOK – SO MUCH MORE TO BE DONE!

Songhkla

Signalisation of intersections by Thaksin and Rajabhat and Universities

SIGNALISATION OF INTERSECTION AT THAKSIN UNIVERSITY



SIGNALISATION OF INTERSECTION AT THAKSIN UNIVERSITY

SIGNALISATION OF INTERSECTION AT THAKSIN UNIVERSITY

SIGNALISATION OF INTERSECTION AT RAJABHAT UNIVERSITY

Songhkla

Location 2: Highway 414 (connects the City of Hatyai and City of Songkhla)

Installation of 2km guardrail on bends

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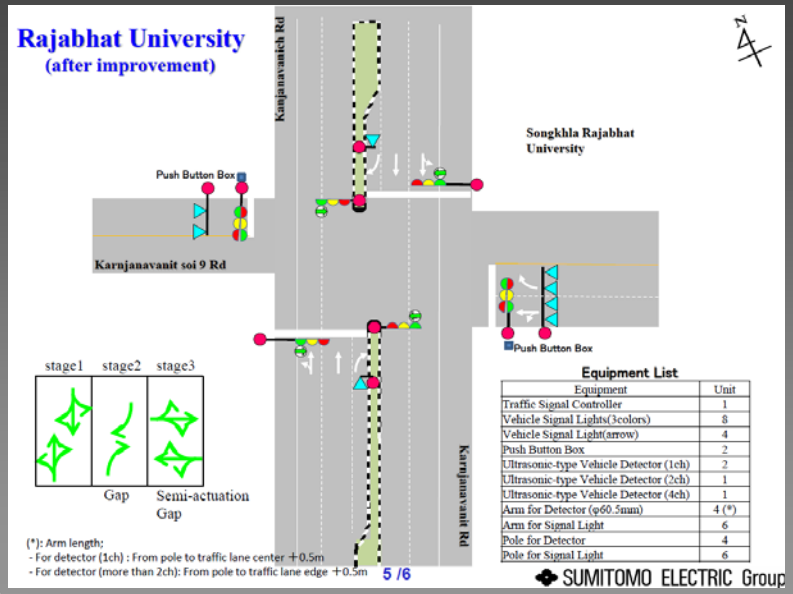
SIGNALISATION OF INTERSECTION AT RAJABHAT UNIVERSITY



Equipment List

Equipment	Unit
Traffic Signal Controller	1
Vehicle Signal Lights(3colors)	8
Vehicle Signal Light(arrow)	4
Push Button Box	2
Ultrasonic-type Vehicle Detector (1ch)	2
Ultrasonic-type Vehicle Detector (2ch)	1
Ultrasonic-type Vehicle Detector (4ch)	1
Arm for Detector (φ60.5mm)	4 (*)
Arm for Signal Light	6
Pole for Detector	4
Pole for Signal Light	6

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NO GUARD RAIL ON BENDS

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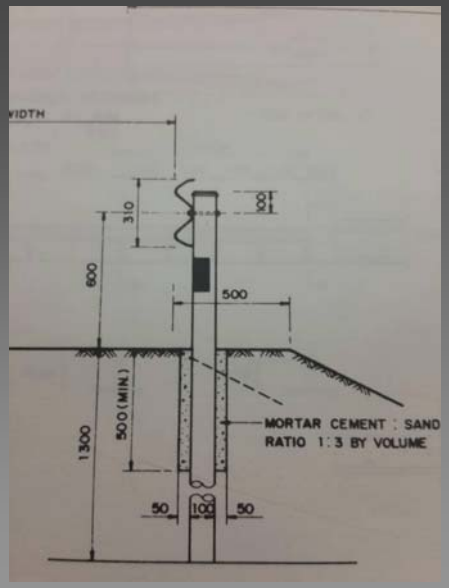
DAMAGED GUARD RAIL

GUARD RAIL - CURRENT STANDARD



The current (1994) specification for DOH guard rail requires 1300 mm of the 2000 mm post to be underground with a minimum of 500 mm of the post encased in mortar! (not concrete); the hole diameter specified is only 200 mm, and the post diameter 100 mm.

DAMAGED GUARD RAIL

On Tuesday 25th August SRF is meeting with the Ministry of Transport with Dr Pichai in relation to endeavouring to bring about the introduction of a new standard for Guardrail (Safety Barrier) in Thailand. This is of such importance as an effective national standard applying to all new barrier construction across the kingdom would undoubtedly save hundreds, if not thousands, of lives over the years ahead. What is currently obscene is that huge amounts of tax payers' money is being wasted by installing barrier which cosmetically looks fit for purpose, but whenever this is struck at a sharp angle by an errant vehicle travelling at speed, it literally collapses like a pack of cards.

GUARD RAIL – NEW STANDARD


HighgateTransportation

Barriers

On UK motorways central barriers are now provided as rigid concrete barriers along the central reserve, as this is considered the most effective way to prevent a vehicle crossing over to the opposing carriageway. As a result steel central barriers are gradually being replaced with concrete barriers, however, Armco type flexible steel barriers are still provided along the boundary edge.

The barrier design involves defining a number of parameters including vehicle speed (typically either above or below 50mph), containment level (measured by type/weight of vehicle and angle of impact), impact severity level (a measure of the likely effect on someone in the vehicle) and working width (width of barrier plus its deflection on impact plus vehicle overhang).

Most of the document guidance referred to above relates to the barrier rather than the foundation.

Foundations

Post foundations and depth and grade of concrete to be used form an integral part of the overall barrier detailed design process and on Armco type systems the foundation is typically a post and socket encased in concrete. Following a site investigation and lab testing of soil samples to determine the ground conditions and load bearing capacity of the soil, the engineer would set out the design, specification and strength testing regime of the post and foundation and this would be subject to checking and approval by an engineer acting for the highway authority or overseeing organisation. In order to determine the depth, massing and strength of concrete to be used, the key factors that will influence the foundation design are the amount of energy to be absorbed on impact, the local ground bearing and drainage conditions and, if appropriate, the proximity to a slope. As such the design of the foundations will vary from location to location and should be treated as job specific. Finally, the post and foundation will be tested on site to ensure it meets its specification.

What Does this mean in Practical Terms?

I appreciate that there are many places where a bespoke approach does not occur, and a more practical approach adopted. From my experience, firstly the entire underground section of the post will be encased in concrete, the length of post can vary, but the minimum underground depth would be 600mm. Secondly, for roads above 50mph and with good ground conditions the minimum concrete foundation dimensions I would expect to see would be 600mm deep by 350mm diameter. Thirdly, where ground conditions are less good, and assuming a post length of 2000mm, I would anticipate the post to be up to a maximum length of 1200mm below ground level, fully encased in concrete, and with a foundation diameter of typically 500mm.

This approach I would expect to work most of the time, but would still be prone to failure if located, for example, near the top of a slope or if the ground conditions are poor.

I trust the above information is helpful and I am happy to discuss.

Yours sincerely,

Dave Tighe (Director)

Highgate Transportation's advice is as follows:
"The post to be up to a maximum length of 1200mm below ground level, fully encased in concrete, and with a foundation diameter of typically 500mm."

THE FUTURE
SRF'S COMMITMENT TO THAILAND

With 26,000 traffic 'accident' deaths a year, on a per capita basis, Thailand's roads are the second most dangerous in the world.

SRF is committed to working in Thailand with the Ministries, various government agencies and NGOs to address accident 'black spots' throughout the country.

SRF

SAFER ROADS FOUNDATION

8TH ATRANS SYMPOSIUM 'TRANSPORTATION FOR A BETTER LIFE: HARNESSING FINANCE FOR SAFETY AND EQUITY IN AEC'

BANGKOK, FRIDAY 21ST AUGUST 2015

<AFTERNOON SESSION >

< 1st AFTERNOON SESSION >

<Session 2A> Parallel Session on "Traffic Safety"

Session 2: Parallel Session of Main Symposium and ATRANS Young Researcher's Forum Session
Session2A: Traffic Safety Moderated by Dr. Witaya Chadbunchachai, WHO representative
Multilateral and bilateral donors to harness investment in safety, **and the potential for road safety social impact bonds** By Mr. Greg Smith, Regional Director of International Road Assessment Programme (iRAP), Australia
Harnessing Finance for Road Safety and Equity in AEC By Dr. Robert Klein, Asian Development Bank (ADB)
Time for A Safe Road System Action in Thailand By Prof. Dr. Pichai Taneerananon, Prince of Songkla University
ATRANS Research Project on Safety Map Applica for Community By Dr.Saroch Boonsiripant, Kasetsart University

Moderator of <Session 2A>

Dr. Witaya Chadbanchachai
ATRANS Board Committee and WHO Expert Advisory Panel for Injury Prevention & Control
E-mail: buncha96@yahoo.com, dr.bunchachai@gmail.com

Brief *Biography*:

Education:

1983: Fellow of Royal College, Surgery, Faculty of Medicine, Khon Kaen
1977: MD, Medicine, Mahidol University, Thailand

Position:

- Senior Deputy Director, Khon Kaen Regional Hospital
- Director of Trauma and Critical Care Center, Khon Kaen Regional Hospital
- Director of WHO Collaborating Center on Injury Prevention and Safety Promotion
- Member in WHO Trauma and Emergency Care Services Advisory Group
- Member in Board of National Institute for Emergency Medical Service
- Chairman of Trauma Committee, Royal College of Surgeon of Thailand
- Chairman of Provincial Technical Support for Traffic Injury Prevention Project, Thai Health Promotion Foundation
- WHO Expert Advisory Panel on Injury and Violence Prevention and Control

Honour, Award Received:

1992: Topnotch Physician Award, International College of Surgeon of Thailand
1994: Topnotch Physician Award, Medical and Disaster Institute, Medical Department
1995: Bronze prize in Paper Presentation Annual Academic Conference, Ministry of Public Health
1995: Golden prize in Paper Presentation Annual Academic Conference, Ministry of Public Health
1997: Mahidol – B Braun Award
2003: Personal excellent award in Traffic Injury Prevention, National Safety Council
2008: Gold Medal in UC Partnership Award, National Health Security Office
2010: Personal excellent award, Royal College of surgeon of Thailand
2012: Physician excellent award, Medical Council of Thailand

First Speaker of <Session 2A>

Mr.Greg Smith
Regional Director of International Road Assessment Programme (iRAP), Australia
E-mail: Greg.Wallis@austrade.gov.au

Brief Biography:

Greg Smith is the Regional Director, Asia Pacific at the International Road Assessment Programme (iRAP). He is responsible for developing and leading iRAP throughout the region and is actively working on road infrastructure safety projects with Australia, Bangladesh, Brunei, China, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Nepal, Papua New Guinea the Philippines and Vietnam. Greg works closely with governments, the World Bank, the Asian Development Bank and non-government organisations. Greg is also responsible for iRAP's global communications strategy. Prior to joining iRAP in 2008, Greg was research manager for the Australian Automobile Association and traffic and transportation manager at Kogarah Council in Sydney, Australia. Greg is the recipient of the Prince Michael International Road Safety Award (2014), the Institute of Transportation Engineers ITEANZ Emerging Professional of the Year Award (2010) and the Roads Engineering Association of Asia and Australasia (REAAA) Katahira Award for Best Technical Paper (2009). Greg holds a bachelor degree in civil engineering and masters degree in public policy.

Multilateral and Bilateral donors to harness investment in safety and the potential for road safety social impact bonds

By Mr. Greg Smith

Summary:

Second Speaker of <Session 2A>

Dr. Robert Klein
Asian Development Bank (ADB)
E-mail: rob.klein@bigpond.com

Brief Biography:

Rob Klein is currently the Team Leader of the ADB/ASEAN Capacity Building. This project is working with Government officers from ASEAN counties and includes redevelopment of the ASEAN Region Road Safety Strategy.

In recent years Rob has worked on other ADB projects in China, India and Vietnam. He has also undertaken worked extensively with the liquor industry and various corporate organisations such as Rio Tinto and Chevron and Shell.

Prior to these roles Rob was Regional Director for GRSP where he has contributed to the development of the UN Good Practice Guides and lead implementation of the guides in ASEAN countries. He has also overseen the development and implementation of professional development enforcement and public education programs to support implementation of the Good Practice Guides.

Prior to joining GRSP, Rob had been a practitioner and manager in the road safety field for VicRoads and ARRB Transport Research for over twenty years. He has extensive management experience, having been responsible in the State of Victoria for managing the teams leading vehicle roadworthiness programmes, road safety education and community road safety programmes. He has in depth knowledge of public education through both community and media delivery, traffic safety education, vulnerable road user and vehicle safety. His experience encompasses policy and strategy, product and program design and development, deliverer preparation, program monitoring and performance management.

Robert has an outstanding record of road safety achievement in a broad range of appointments including road user behaviour strategy and programs, education programs, community programs, pedestrian safety programs and vehicle safety services.

Harnessing Finance for Road Safety and Equity in AEC

By Dr. Robert Klein

Summary:

Road traffic crashes cause around 1.3 million deaths and injuries; and disabled as many as 50 million people around the world each year. Over 90% of these accidents occur in low and medium income countries. Unless immediate action is taken, casualty numbers are expected to increase by a further 80% by 2020. The United Nations (UN) has called on all its member countries, its United Nations commissions, and multilateral agencies to address this urgent problem. In 2010, the UN General Assembly declared a Decade of Action for Road Safety 2011–2020 and set casualty reduction targets for each of its regions and member countries.

The problem is particularly serious in ASEAN countries due to the high proportion of motorcycles in traffic (e.g., 95% in Viet Nam, 82% in the Lao People's Democratic Republic, and 78% in Cambodia[1]). The economic development of ASEAN countries has hastened rapid growth in the level of motorization and resulted in significant deterioration of the road safety situation, resulting in increased road crash deaths and injuries. In 2008, police in ASEAN countries reported 60,886 deaths and 226,427 injuries from road crashes. However, due to police underreporting, the actual figures may be significantly higher. Large numbers of households fall into a spiral of poverty and debt as a result of the loss of a wage earner, and the region suffers recurring annual economic losses estimated at 2.2% of gross domestic product (around $28 billion) per year[2].

Road traffic casualties are preventable. There are well-proven interventions and techniques used in countries that have already successfully addressed their road safety problems, and these could be adapted to assist ASEAN countries. Road safety is now included among specific actions to be undertaken by member countries as part of the ASEAN Economic Community Blueprint.

[1,2, 3] ASEAN Secretariat 2008 Economic Community Blueprint. Jakarta

Harnessing Finance for Road Safety and Equity in AEC

Presentation to ATRANS by Rob Klein,
ADB Consultant
21 August 2014

Japan Fund for Poverty Reduction

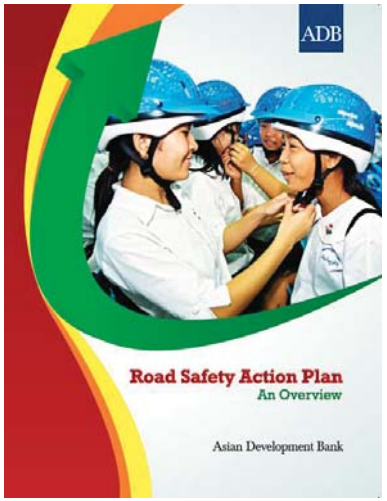
ADB

ASEAN & ADB a Policy and Financing Case Study

- Current Phase Two Project Outlined and proposed Phase Three Project Scoping
- ASEAN Road Safety Strategy and UN Sustainable Development Goals

Japan Fund for Poverty Reduction ADB

ROAD SAFETY ACTION PLAN



- **Impact**

  Sustainable, effective, and cost-efficient improvement of road safety in the DMCs.

- **Outcome**

  Improved ADB road safety capacity and expanded portfolio of projects to support road safety improvement in DMCs.

Japan Fund for Poverty Reduction ADB

CONTEXT: developing structures

2003-2006: Phase 1. (TA) for Road Safety in ASEAN

2009-present:Engagement with LTWG and MRSSWG

2012- 2015: Phase 2. (TA) for Improving Road Capacity Safety in ASEAN including new ASEAN strategy

2016 - ?: Phase 3. (TA)

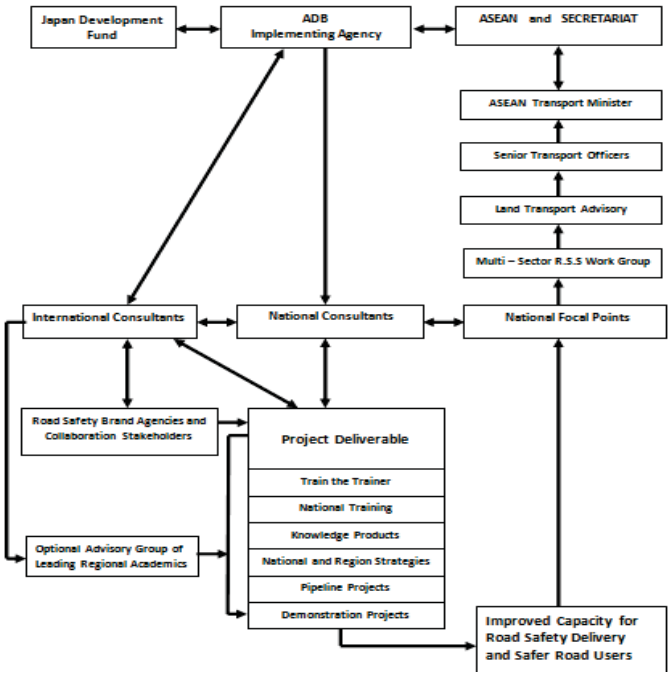
Japan Fund for Poverty Reduction ADB

ASEAN TA
IMPROVING ROAD SAFETY

- Aims: improve regional road safety in ASEAN
- Outcome: increase capacity of ASEAN governments to address national and regional road safety issues
- Mechanism: Train the Trainer concept- a pilot project for the region
- Implementation: *May 2013 – Nov 2015 with appointment of National Consultants and activity delivery.*

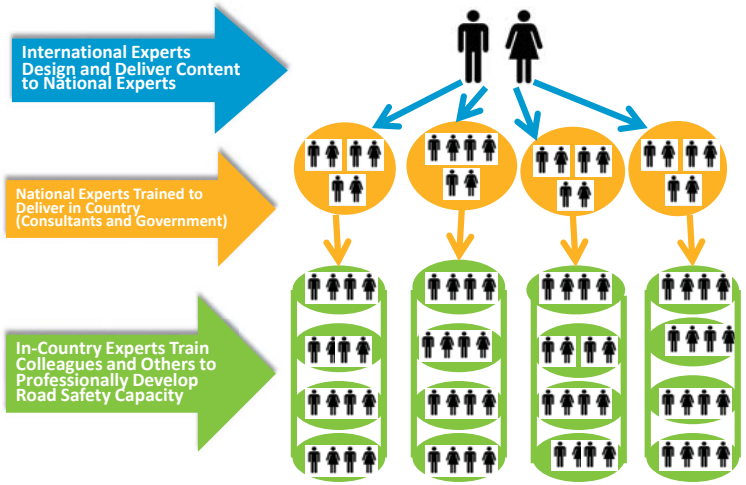
Japan Fund for Poverty Reduction ADB

ADB/ASEAN ROAD SAFETY CAPACITY BUILDING PROJECT STRUCTURE



Japan Fund for Poverty Reduction ADB

TRAIN THE TRAINER
CONCEPTUAL MODEL



Japan Fund for Poverty Reduction ADB

OUTPUTS: STRENGTHEN CAPACITY

1. …Monitor and analyze road crash data
2. …Implement road safety strategies
3. …Address motorcycle safety issues
4. Improved enforcement capacity of traffic police
5. …Pipeline of road safety projects
6. …Knowledge products disseminated publicly

Japan Fund for Poverty Reduction ADB

ACTIVITIES: 2013-2015

- ASEAN National Focal Point appointment
- Survey of current priorities for capacity building:
  - Management, data systems, motorcycle safety, enforcement and community road safety
- International experts appointment
  - develop and deliver training content
- Working partnerships with key road safety agencies:
  - GNCAP, APEC, iRAP, GRSP, etc
- Development of knowledge products
- Delivery of train the trainer (ToT) program:
  - 36 selected delegates representative of eight ASEAN countries

ACTIVITIES: UNTIL JUNE 2015

- National consultants appointments
- Finalise materials:
  - Disseminate – web based
  - Translate as required
- Country work and training plans
  - national consultant and trainees
  - work practices, training delivery, pipeline, project development and training survey
- Preparation of new regional strategy

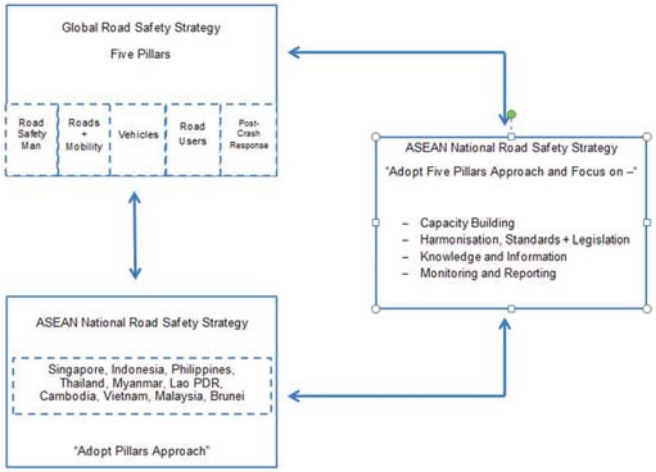
IN COUNTRY ACTIVITIES: 2014-2015

1. Trainees work as a team
2. Focus on two training delivery priorities
3. ADB Knowledge products
4. Deliver training by October 2015
5. Mentored by International Experts
6. Supported by National Consultants

Proposed Phase Three Project

- Consultant Appointed to Scope ToR
- Financier agreed to receive proposal
- Consultations with Delegate Missions
- Based on ASEAN Road Safety Strategy
- Supports of SDG's
- Based on Phase Two outputs and methodology

Contextual Model for Road Safety Strategies to driving financing



Japan Fund for Poverty Reduction ADB

UN General Assembly Driving Policy

- Series of UN resolutions
- Global road safety weeks
- UN Collaboration
- Good practice Manual series
- Global status report series
- Projects, programs and partnerships
- Ministerial summits
- Sustainable Development Goals (SDG)

Japan Fund for Poverty Reduction ADB

SDG's to include Road Safety

- **Goal 3: Ensure healthy lives and promote well-being for all at all ages**:
- *3.6. By 2020, halve the number of global deaths and injuries from road traffic accidents*
- The road safety target figures alongside other major priorities including maternal mortality, AIDS and universal health coverage in the Health Goal.
- **Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable:**
- *11.2. By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons*

Japan Fund for Poverty Reduction ADB

Third Speaker of <Session 2A>

Prof. Dr. Pichai Taneerananon
E-mail: 2007tao@gmail.com

Brief Biography:

Dr. Taneerananon is a well known professor in the area of road safety in Thailand where he has been involved in the study of road crashes and black spot identification and development of countermeasures, conducting road safety audits and training of road safety auditors for over 20 years. He first published a paper 'Road Accidents in Thailand' in 1981. He was credited for introducing road safety audit to Thailand and published the first paper on the subject in Thai, and currently a senior road safety auditor accredited in Western Australia. In2005, he led a team of highly qualified academics and professionals to complete a 2-year study on the cost of traffic accidents in Thailand. The outcomes from study now form the basis for costing road accidents in Thailand. He is currently a member of the National Sub – Committee in charge of development of accident database and research to identify long-term countermeasures. He is also widely known in Asian countries through his contribution as a member of International Scientific Committee for the Eastern Asia Society for Transportation Studies (EASTS) since 1996 and chairing of 3 of the Road Safety sessions in the last 4 EASTS conferences. He is an author of the soon to be published book on Asian Transportation, in which he writes about traffic safety. He is the present chief of topic group: road safety and traffic accident for the 2009 EASTS conference in Surabaya.

Education:

1969-1972: B.E. (Second Class Honours Division A) Civil Engineering, University of Western Australia. Holder of a Columbo Plan Scholarship

1975-1976: M.Eng.Sc. (Highway and Transportation Engineering) University of New South Wales. Holder of UNSW University Postgraduate Fellowship in Highway Engineering.

1977-1981: Ph.D., (Civil Engineering) University of New South Wales. Holder of UNSW University Postgraduate Scholarship.

Membership in Professional Societies:

- Professional Engineer (registered with the Royal Thai Government)
- Member of the Engineering Institute of Thailand
- Member of Road Association of Thailand
- Founding Member of Thai Society for Traffic and Transportation Studies
- President of Thai Society for Traffic and Transportation Studies 2006- present
- Member of The Road Engineering Association of Asia and Australasia
- Member of The Institution of Highways and Transportation, UK (1992 – 2000)

Time for A Safe Road System Action in Thailand

By Prof. Dr. Pichai Taneerananon

Summary

The 8th ATRANS Symposium

Time for A Safe Road System Action in Thailand

21.8.15

Pichai Taneerananon

Dept of Civil Engineering Prince of Songkla University, Hat Yai, 90112, Thailand

Outline

- **Introduction**
- **The Safe System Approach**
- **The Need for Actions**
- **Conclusions**

The Art of Life

- To live
- To live well
- To live better

Professor Alfred North Whitehead

Road Traffic System

- The Human
- The Vehicle
- The Road

" An accident may be considered as a ' failure' in the System"

Ken Ogden

The Immense Cost

- Some 24000 of our people were killed on our roads, annually
- At a cost of some 500,000 MB to the nation

Our Job

- To prevent /fix this ‘ failure’

The Need to Act !

- Traditional way…100 % Helmet, tougher enforcement etc.

or

- A paradigm shift to new thinking

A new Approach

No problem can be solved from the same level of consciousness that created it

Albert Einstein

Outline

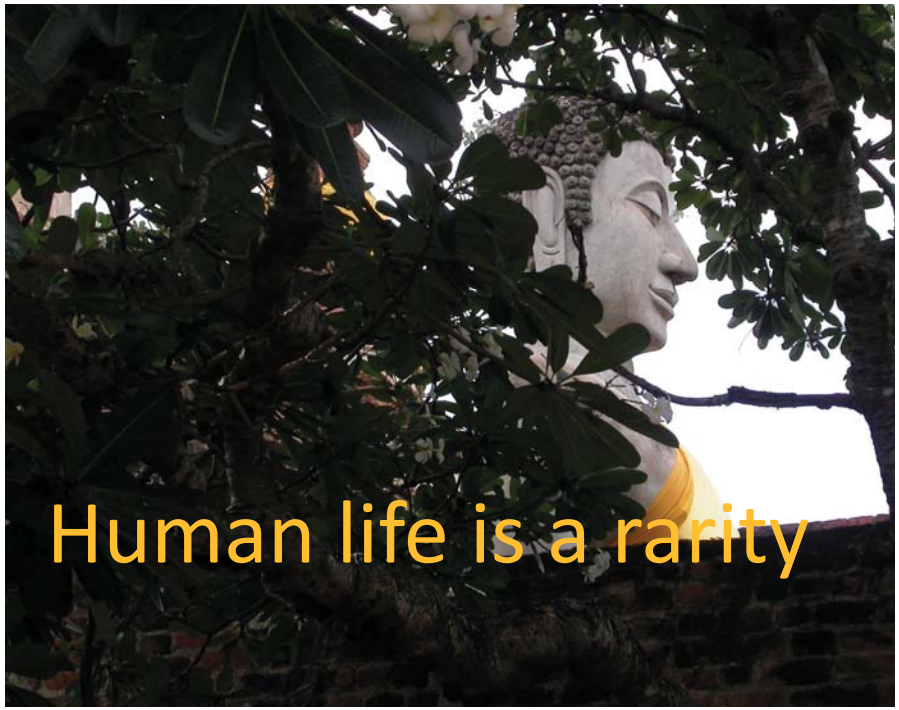
- Introduction
- The Safe System Approach
- The Need for Actions
- Conclusions

In 1997, the Swedish parliament passed the Road Traffic Safety Bill founded on Vision Zero.

The legislation is based on four principles:

1. **human life and health are paramount** and take priority over mobility and other objectives of the road traffic system;

2. providers and regulators of the road traffic system share responsibility with drivers and other users;



3. road traffic systems should take account of human fallibility and minimize both the opportunities for errors and the harm done when they occur; and

4. providers and regulators must do their utmost to guarantee the safety of all citizens and cooperate with road users, and all three must be ready to change to achieve safety.

The Safe System Approach

Assume..

- Competent and compliant drivers/riders
- If they are not competent, the system will help train the drivers and ensure they are

Allow…

Drivers, pedestrians to make errors and accommodate these in the road & vehicle design

Accept..

Responsibility to do the utmost to save lives of road users

Focus on 3 elements

- Safe roads and roadsides
  - Thru safe Design, maintenance and operation
- Safe vehicle
  - Ensure vehicles have good crash rating (ANCAP), safety and protective equipment (ESC, air bags, etc.)
  - But what to do about motorcycle ?
- Safe speed
  - Ensure impact speed does not cause death/serious injury

Safe System Approach

In short, under the safe system,

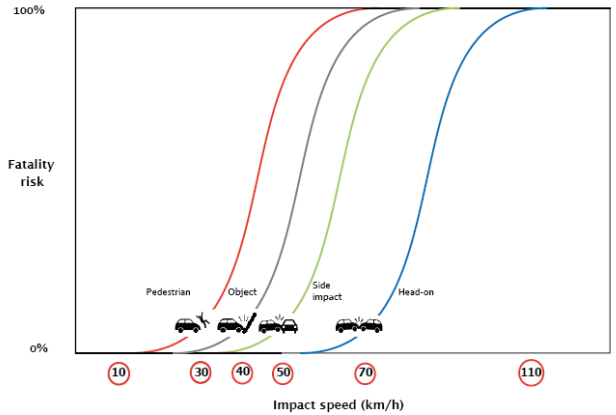
- It is unacceptable to trade off human life and health for other benefits of the transport system (e.g. increased speed).

The Safe System Approach

The basic principle is to ensure that :

In a crash, the impact energy, which largely depends on the impact speed, is not excessive as to cause death or serious injury.

Speed vs. Fatality risk



Source: Austroad

Impact speed vs. fatality risk

IMPACT SPEEDS ABOVE WHICH CHANCES OF SURVIVAL DECREASE RAPIDLY		
Crash Type	Impact Speed	Example
Car/Pedestrian or Cyclist Car/motorcyclist	30 km/h	Where there is a mix of vulnerable road users and motor vehicle traffic..
Car/Pole or Tree	40 km/h	Where unprotected road hazards exist within defined clear zone.
Car/Car (Side impact)	50 km/h	Where there is a likelihood of side impact crashes (eg, intersections or access points).
Car/Car (Head-on)	70 km/h	Where there is no separation between opposing traffic streams

Outline

- Introduction
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- The Need for Actions
- Conclusions

Chain of Events

Knowing that one defective element can lead to a crash :

H : Human Errors

I : Infrastructure Defects

V : Vehicle Defects



No helmet for all, fail to comply or failure to enforce ?

To teach “To be alive is paramount”

A fatal crash, a human error was made

5 Navy officers killed Surat thani 6.7.15

The system fails to provide a safe median

An Unsafe System could not protect an errant driver

A Faulty design (providing a front basket) that has probably killed thousands

By inadvertently encouraging riders not to wear helmet

The most vulnerable road user

In Thailand, Motorcycles make up some 61 % of the total number of registered vehicles of 28,484,829.

74 % of deaths involved motorcycles,

The Most vulnerable road users

74 % MC ~ annual 20,000 deaths

2013 Global Status Report on Road Safety

- The report highlights the important role that road infrastructure can play in reducing injuries among all road users, including pedestrians, cyclists and motorcyclists.
- It recommends that governments implement regular road safety audits to assess safety levels of both existing and new road infrastructure projects.

The Safe System Approach

Requires:

the system designers/providers

to take actions to save lives

2 points …

1/the MC Industry,

2/the Road Designer

The MC Action

- 1st line defence : the Rider
- 2nd line defence : the Motorcycle Lane
- 3rd line defence : the Motorcycle and the Helmet

The Shared Responsibility

The Safe System Approach is about shared responsibility

- The riders must do their part
  - Eg. Get themselves properly trained, wear their helmet
- The Highway engineer must provide safe road for them
- The MC industry must provide safe vehicle

The Helmet Act

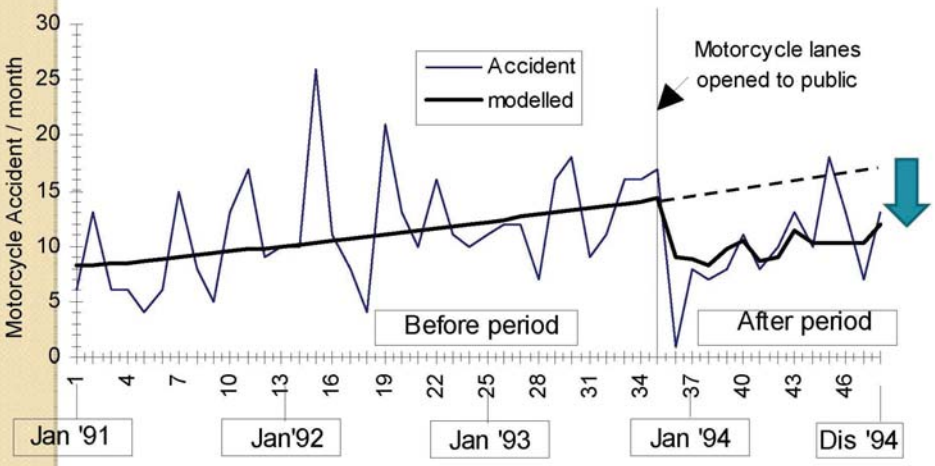
- Since 1994,
- Bkk 2014

The 100% Helmet wearing campaign

- From 44% to 46%
- Riders 53% to 54%
- Pax 19% to 24%
- source : Thai Road

Faulty design can encourage non-helmet wearing

We need MC lane, an Engineering SOLUTION

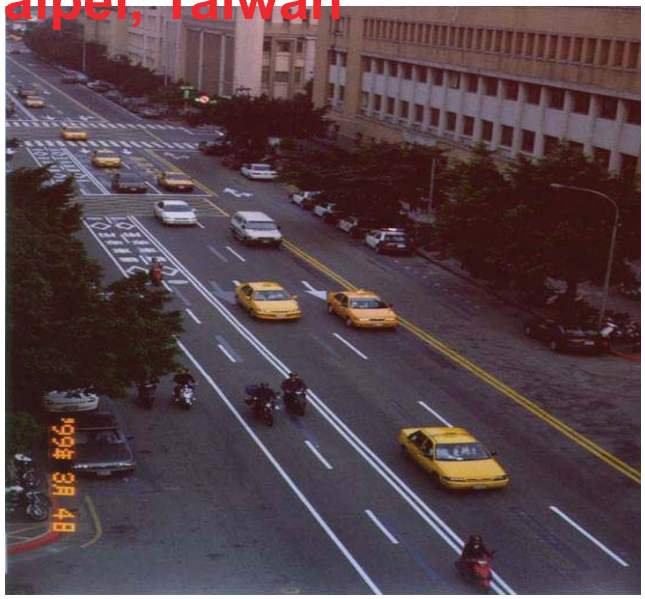


- **39% less Accidents**
- **83% less Fatality**
- **Benefit:Cost = 5**

Source: Radin Umar MIROS

Because a small error can mean death

Motorcycle exclusive lane in Taipei, Taiwan



An Equity as much as Safety issue

Enough pavement for MC lane

Pilot testing of MC lane in Narathiwas

DOH's action that has saved many lives by providing MC cum Pedestrian bridge

Outline

- Introduction
- The Safe System Approach
- The Need for Actions
- Conclusions

Conclusions

The Safe System Principle clearly states that human life is paramount, so safety of road users must become the top priority

10 years on, the Helmet Act has only managed 50% of helmet wearing

With some 20,000 deaths involving motorcycles, the safe system requires a new training and licensing system

And provision of motorcycle lane wherever is practical, if not then impact speed management is imperative.

No one is safe until the System is safe !

Thank you

The Immediate Actions

- At the recent signing ceremony of the declaration of the Right to Safer Roads,
- the Organization for the Right to Safer Roads has proposed to the military government to take the following four immediate actions:

The Immediate Actions

1. Order agencies concerned with the enforcement of the 1979 Road Traffic Act and other related Acts to perform their duty strictly, fairly and continuously, especially on the 3 key issues: 1) use of motorcycle safety helmet 2) Drink and Drive and 3) Speeding. And ensure that all public servants, police, troops, and judges strictly obey the law so as to set a good example.

2. Order concerned agencies to: establish in-depth crash investigation for cases involving more than 5 killed or seriously injured persons or cases of interest so that they lead to the treatment of hazardous road locations and hazardous roadside, and publicize the outcomes; establish a monthly public reporting system on the cost of road crashes including the number of fatalities; establish a road safety audit system for existing roads, during construction stage, and design stage.

The Immediate Actions

3. Order the Land Transport Department and National Police Bureau to be more stringent in carry out their vehicle inspection according to the 1979 Land Transport Act, 1979 Motor Vehicle Act, and related regulations so as to ensure that all vehicles, especially buses are roadworthy.

4. Order that the monitoring of the above actions be reported to the Cabinet monthly.

- But so far they fall on deaf ears

Fourth Speaker of <Session 2A>

Dr. Saroch Boonsiripant
Faculty of Engineering, Kasetsart University
E-mail: boonsiripant@gmail.com

Brief Biography:

Saroch Boonsiripant is a lecturer in the Department of Civil Engineering at Kasetsart University. His research focus is in the area of Intelligent Transportation System (ITS), especially applications in freeway management, public transportation, and automated traffic enforcement system. Before joining Kasetsart University in 2011, he was the Chief of Transport System Research and Development Section, Office of Expressway System Engineering Research and Development, Expressway Authority of Thailand. His roles involved the Intelligent Transportation System (ITS) initiatives to enhance EXAT' expressway network. He is also a board committee member of the ITS Thailand Association.

Dr. Boonsiripant received the Bachelor Degree in Civil Engineering from Chulalongkorn University in 2001, the M.S. and Ph.D. Degrees in Civil Engineering from Georgia Institute of Technology, USA in 2003 and 2009, respectively. From 2003 to 2004, he worked as a Transportation Engineer at Grice and Associates, a transportation consulting firm in Atlanta, Georgia. At his workplace, he received the 2004 Grice's Gold Star Employee Award.

Dr. Boonsiripant is the recipient of the Dwight David Eisenhower Fellowship in 2008. His paper, "Determining Acceleration and Deceleration Zones at Traffic Controlled Intersections Based on GPS Data", received the 2008 Best Paper Award from the Institute of Transportation Engineers (ITE) Georgia Section. His following paper, "Measurement and Comparison of Acceleration and Deceleration Zones at Traffic-Controlled Intersections" also received the 2010 Best Paper Award from the Operational Effect of Geometrics Committee at the 89th Transportation Research Board Annual Conference. The National Transport Academic Committee recently awarded him the Best Technical Paper Award for the paper, "Smart Pass: Evaluation of ETC Operations for Truck Traffic", in the 7th National Transport Conference, Bangkok, Thailand in 2010.

ATRANS Research Project on Safety Map Applica for Community

By Dr.Saroch Boonsiripant

Summary*:*

In 2014, Thailand has the second-highest traffic fatality rate in the world, with 44 deaths per 100,000 populations, a new study says. The only country with roads deadlier than Thailand's was Namibia, which had 45 deaths. Iran was ranked just behind Thailand with 38 deaths, according to researchers at the University of Michigan Transportation Research Institute. Fatalities from road accidents made up to 5.1 percent of Thailand's overall deaths. The road fatality rate in Thailand is more than double the global average of 18. Thailand has made headlines on several occasions in recent years due to its appalling road safety records. The government announced in 2011 that it sought to cut road deaths by half by 2020, a commitment that is part of its decade-long campaign to improve traffic safety. In December 2013, the government said it would introduce measures to raise awareness of road safety and work across departments toward lowering fatalities.

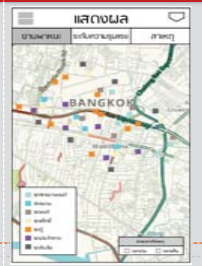
Regardless of the road safety situation in Thailand, local governments such as municipalities and Subdistrict Administrative Organizations (SAOs) are unable to access historical crash database such as police reports. Other databases are also difficult to access and understand/interpret. Early this year, Khon Kaen Hospital agreed to provide the Injury Surveillance database, i.e., patient injury data actively collected from the Emergency Room (ER), to the Khon Kaen local authorities. Municipalities and SAOs can analyse this data to determine the black spots on their road network. However, the injury data is rather different from the road accident data from police report. Accident type, cause of accident, number of vehicles involved, and road conditions are not included in the database. Therefore, there is a need to quantify the patient's injury severity into the road safety index so that the local authorities can use this information to determine sites with promises. Afterward, in-depth site investigation can be conducted to determine the main causes of the hazardous location and propose the safety measures.

Currently, local authorities do not have a routine road safety inspection/audit. With a limit number of staff, the authorities do not have sufficient engineers to inspect all the road network. The local authorities usually fix the road when someone from the community report or file a complaint. Black spot analysis cannot be conducted since police reports cannot be accessed easily. With the development of the road safety index based on the ER's patient data, agencies can screen the road network with promising sites. The local authorities can only need to visit a small number of sites to investigate the major causes of accident and propose solutions. This will help the local governments to spend limited budget on the most dangerous locations so that the overall road safety can be improved.

ATRANS Research Project on Safety Map Applica for Community

By Saroch Boonsiripant
Kasetsart University

Presented in 8th ATRANS Symposium "Transportation for A Better Life: Harnessing Finance for Safety and Equity in AEC"



SAFETY MAP APPLICA

21 AUGUST 2015

Project Members

- Saroch Boonsiripant, Kasetsart University
- Paramet Luathep, Prince of Songkla University
- Thaned Sathiennam, Khon Khaen University
- Preda Pichayapan, Chiang Mai University
- Sittha Jaensirisak, Ubon Ratchathani University

Advisors

- Police Captain Jinda Klubklai, WRTP, Police Education Buereau
- Noppadol Santipakorn, Managing Director, Road Accident Victims Protection Co., Ltd
- Alaksh Phonprapha, AP Honda
- Wittaya Chadbunchachai, MD, Khon Kaen Hospotal
- Hideaki Takaishi, Honda Motor Co., Ltd.
- Torpong Krongtraiwet, MD, Maharaj Nahkon Si Thammarat Hospital
- Pol.Col. Kriangdej Juntrawong, Royal Thai Police
- Dr. Passakorn Prathombutr, NECTEC

Motivations

- Thailand ranked the 3rd in road fatality rate in 2013 (WHO).
- Thailand ranked the 2nd in road fatality rate in 2014 (WHO).

Country	Road fatalities per 100,000 inhabitants per year	Road fatalities per 100,000 motor vehicles	Road fatalities per 1 billion vehicle-km	Total fatalities latest year (adjusted/estimated figures by WHO report)
Eritrea	48.4[13]	4400.0*	n/a	
Dominican Republic	41.7	151.5	n/a	4143
Thailand	38.1	92.4	n/a	26,312
Venezuela	37.2	266.4	n/a	10,791
Nigeria	33.7	425.2	n/a	53,339

road fatality rate in 2013 (WHO).

Motivations

- Most of safety campaigns developed from local knowledge and judgment regardless of actual causes of accidents.
- Several crash databases available in Thailand.

Motivations

- However, few agencies develop road safety improvement programs based on these databases because:
- It is difficult to access and
- It is difficult to understand/interpret
- Need a tool to 1) access easily and 2) visualize crash database

Road Safety Improvement Process

Screen Road Network

Conduct Detailed Studies

Project Selection

ATRANS Research
Project Safety Map
Applica for Community

ATRANS members +
KKPAO, KKM

Objectives

1. Develop a crash database from multiple sources.
2. Design User Interface to visualize crash data.
3. Develop Safe Applica in iOS/Android Platforms.
4. Work with a local government to develop road improvement program.

Safety Map Applica Roadmap

Phase 1: Review
- Literature Review
- Transferability
- Stakeholder Interviews

Phase 2: Prototype
- UI Design
- Develop web app
- Develop mobile app
- Develop road improvement program for KKPAO, KKM

Phase 3: Full Scale
- Implementation
- Evaluation
- PR

Phase 2 – Safe Applica Prototype Development

1. Database Development
2. Process and UI Designs
3. Application Development

Database Dev
- Historical Crash Data
- Hiyari-Hatto Data

UI Design
- Data Analysis
- Visualization

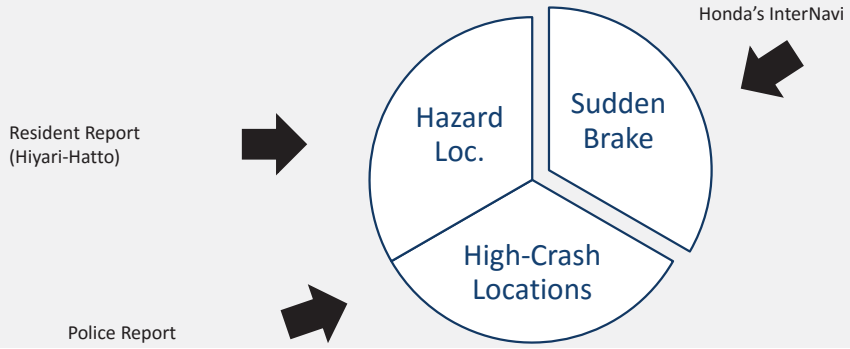
Mobile App
- Android
- iOS

Findings from Phase 1

- Many accident databases already exist.
- Most of them need further analyses/ interpretation, better visualization, easier accessibility.

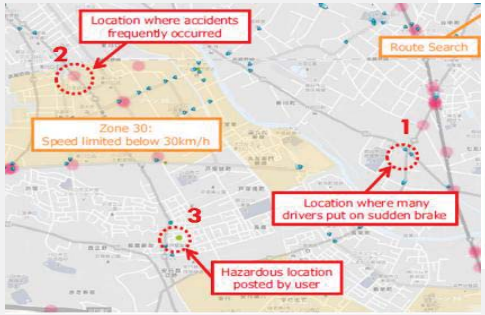
Honda Safety Map

- Data Input



Honda Safety Map

- Data Output

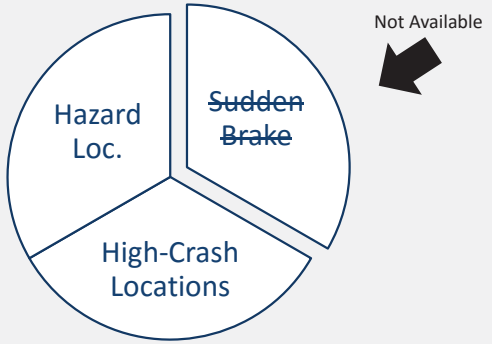


Safety Map Applica

- Data Input

Resident Report
(Hiyari-Hatto)

ER, EMS Database

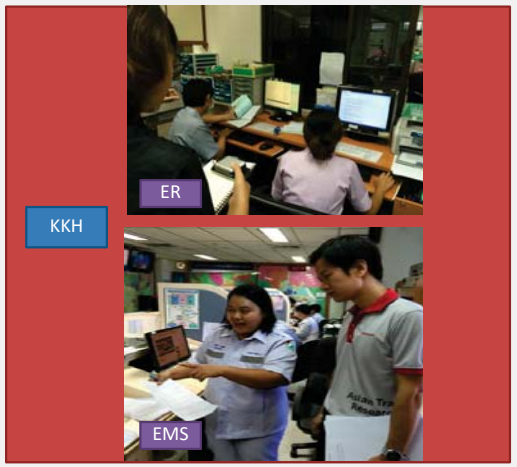


Implementation Strategy

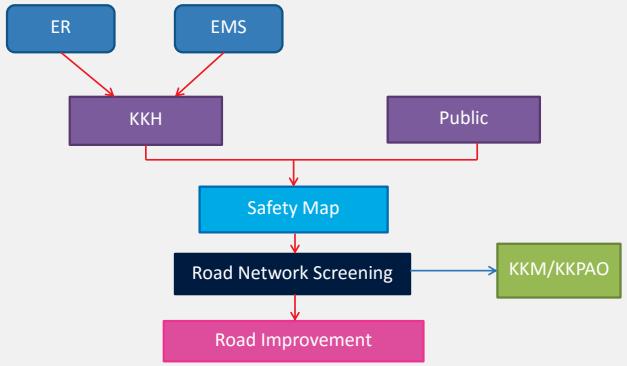
- Start from small area and highly collaborative agency.
- Work closely with agency to develop a safety improvement program ->high/visible impacts.

Acquire Crash Database/Hiyari → Develop Safe Applica → Safety Improvement Program

Interviews

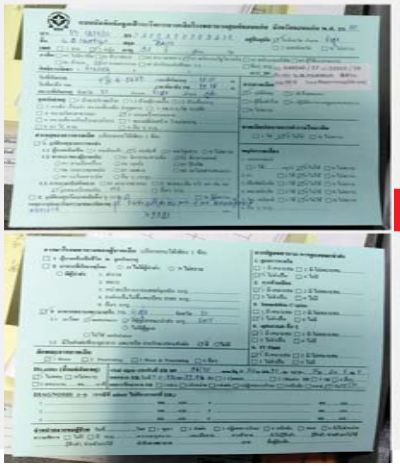


Road Safety Improvement Process



Existing Databases

ER: Blue Card –> IS Application Interface



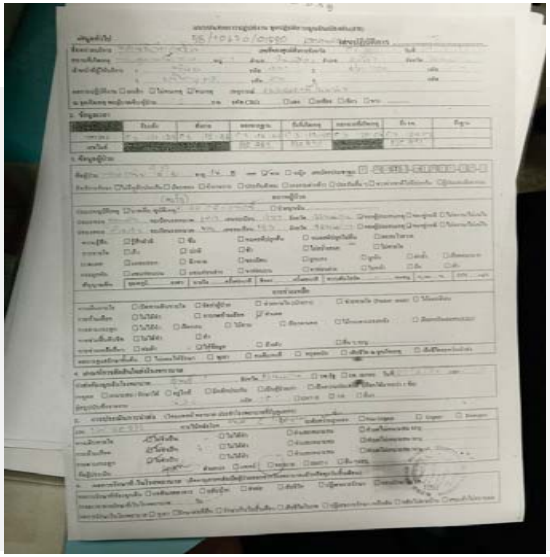
Field	Entry
Causes of Injuries	• Road Accident • Attempt to commit suicide • Abused • Others
Injury Type	• Blunt • Penetrating • Blunt and Penetrating • Others

ER (KKH): White Sheet, GIS Application Interface

- HN
- **Accident ID**
- Date ,Time
- **Location**

EMS Form

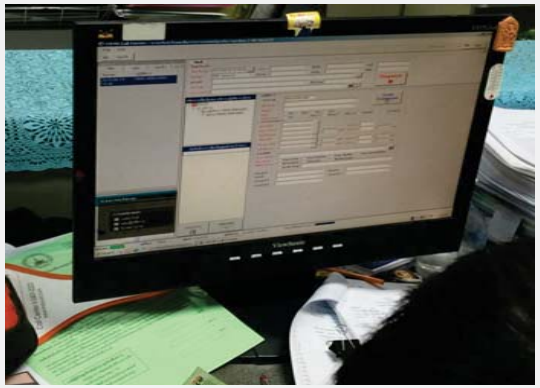
- Date, Time
- Location
- Type of car
- License Plate
- Condition (patient's symptoms)
- HN
- Incident Dispatch Code



Available EMS Data Attributes

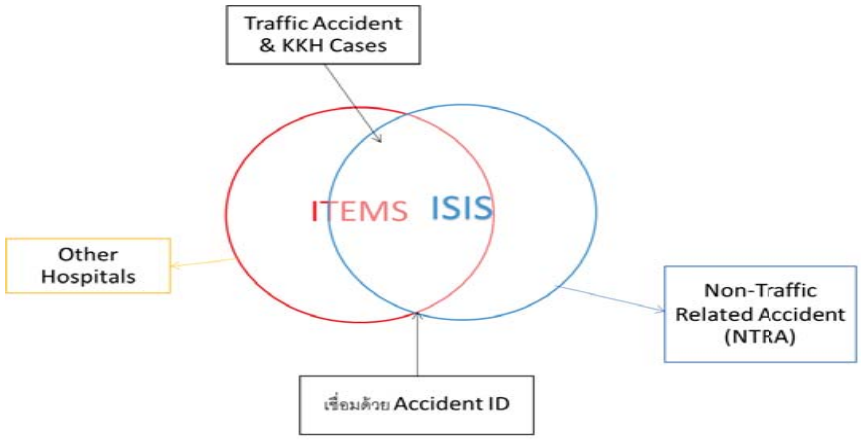
Field	Entry
Condition (patient's symptoms)	• Feeling - conscious - depress - unconscious - bawl • Breathing - fast - normal - slowly - unstable - stop breathing • Wound - bruise - torn (rip) - sharp weapon - stab • Fracture

ITEMS Application Interface

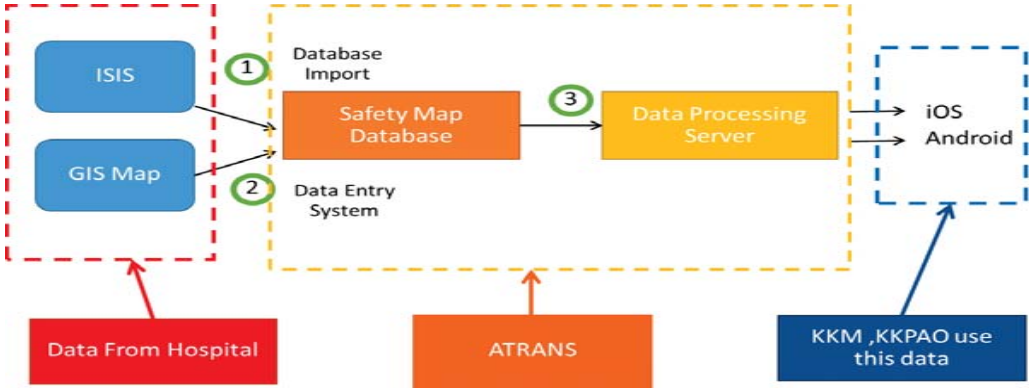


- Date ,Time
- Location
- Condition (patient's symptoms)
- Incident Dispatch Code
- Operations Information
- HN

Relationships among Databases



System Architecture

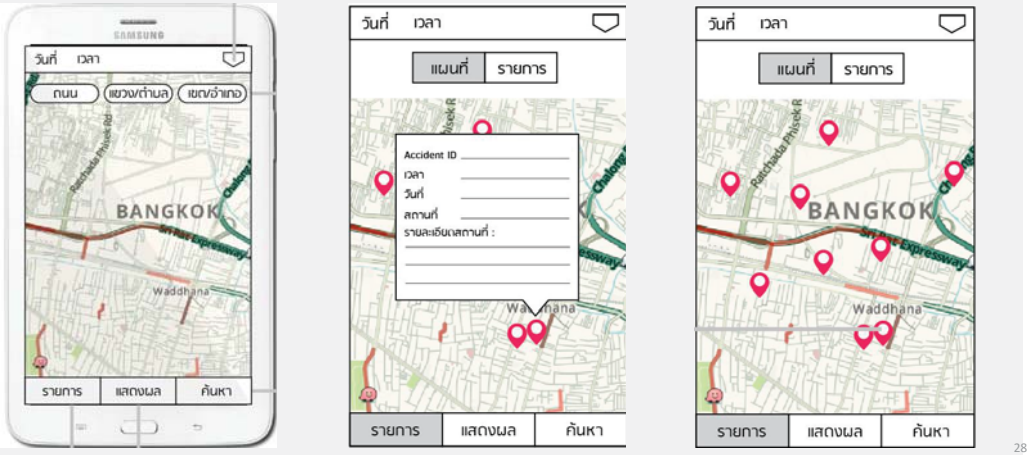


Summary

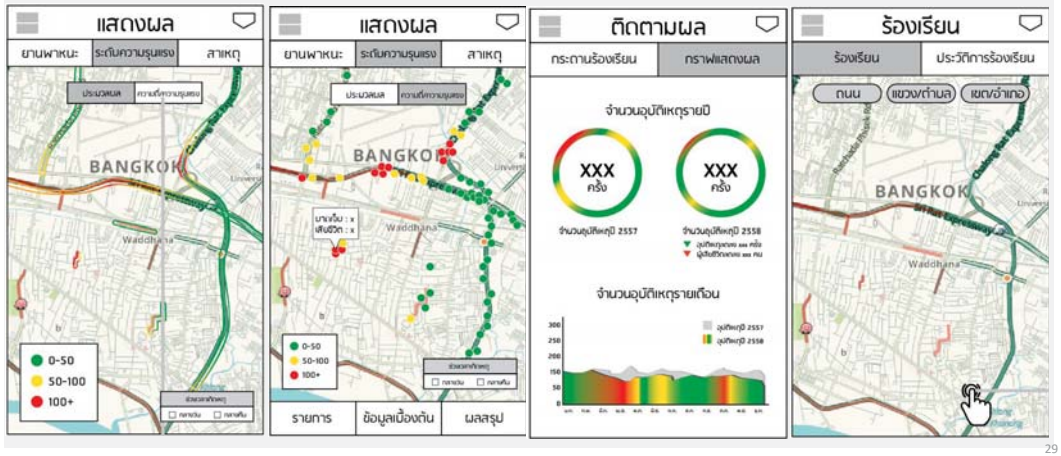
- GIS Map limited to City of Khon Kaen
- Need new spatial database system
- Data is mostly used in accident summary, no spatial analysis was conducted
- KKH has comprehensive crash database
- KKPAO has no access to crash data
- GIS database expanding to other hospitals
- Severity Score based on Trauma condition
- Integrating Safety Map in the MPO's black spot identification
- Detailed traffic engineering study and proposed solution for most promising black spots

EMS App

ER App



Public / Govern App



< 2nd AFTERNOON SESSION >

<Session 3A> Parallel Session on "Traffic Safety"

Session 2: Parallel Session of Main Symposium and ATRANS Young Researcher's Forum Session
Session 3A: Rail System and Transit Oriented Development Moderated by Asst.Prof.Dr. Sittha Jaensirisak, Ubonratchathani University
Rail System and TOD in Thailand By Mr. Tetsuhisa Kobayashi, Railway System Specialist, TEAM Consulting Engineering and Management Co.,Ltd., Thailand
Rail System and Area Development along the Train Stations: A Case of Hikarie Project By Mr. Shuichi Ueno, Manager, Tokyu Construction, Japan
Government Policy on Transit-Oriented Development (TOD) and Housing Development along Rail Stations By Mr. Thanongsak Wikul, Former Deputy Governor of National Housing Authority, Thailand
TOD and Opportunity and Potentiality of Real Estate Development in Private Sector Point of View By Khun Pornarit Chuanchaiyasit, Chairman of The Thai Real Estate Association

Moderator of <Session 3A>

Asst. Prof. Dr Sittha Jaensirisak
ATRANS Committee, UBU
E-mail: Sittha.j@gmail.com / Sittha.j@ubu.ac.th

Brief Biography:

Sittha Jaensirisak (PhD) is an assistant professor in transport engineering at Ubon Ratchathani University. He received a master degree from University of Newcastle upon Tyne, UK, and PhD from Institute for Transport Studies (ITS), University of Leeds, UK. His experiences include: study of acceptability and effectiveness of London Congestion Charging, prediction of travel demand, estimation of values of travel time and other service attributes for public transport, traffic impact assessment of land development, city planning, development of integrated transport and land use modelling for Bangkok, and national freight modelling for Thailand. He also has experience in organising workshops and training courses on sustainable transport and land use planning in the Mekong Region, including: Cambodia, Laos, Thailand and Vietnam. Currently, he has been working on Bus Rapid Transit (BRT) planning and non-motorised transport (NMT), integrated sustainable transport planning, as well as transit oriented development (TOD).

First Speaker of <Session 3A>

Tetsuhisa KOBAYASHI
Railway System Specialist,
TEAM Consulting Engineering and Management Co.,Ltd., Thailand
E-mail: kobayasawadikobasan@yahoo.co.jp

Brief Biography:

Name: Tetsuhisa KOBAYASHI

Date of birth: 3 March 1950

Nationality: Japanese

Academic background: March 1973, Waseda University, JapanDepartment of Civil Engineering

The first career: April 1974, JRCC (Japan Railway Construction Public Corporation)

Present position: Senior advisor, Railway system specialist, TEAM Consulting Engineering and Management Co.,Ltd.

Notable License: Licensed Consulting Engineer

Major career:

1) In Japan

I have been involved 23 conventional lines, 4 shinkansen lines and 1 Magnetic Levitation Train line in designing and construction in JRCC since 1974.

2) Overseas

- 1979-1981: Chief of the Matadi Bridge design in Republic de Zaire.
- 1997-2000: Advisor to The State Railway of Thailand (SRT)
- 2002-2003: The Director of Track Division in Taiwan Shinkansen Trackwork
- 2004-2008: Advisor to The Office of Transport and Policy and Planning (OTP), The Ministry of Transport in Thailand.

Introduction of High Speed Rail: Gauge and Operation of HSR

By Mr.Tetsuhisa KOBAYASHI

Summary:

This presentation shows very basic knowledge when studying and designing High Speed Rail (HSR).

1. The gauge of existing conventional railway which has the decisive impact for planning the HSR project.
   In Europe, existing gauge is standard gauge (G = 1435 mm) which is same as HSR. Therefore, HSR service is usually mixed operation with conventional passengers train, sometimes with freight services. But in Japan, existing gauge is narrow (G = 1067 mm) which forces the Shinkansen network to be dedicated ones. The case will be same in Thailand.
   Mixed operation seems to have a lot of advantage such as construction cost comparing dedicated HSR. But actually, mixed operation has many problems in terms of capacity and operation speed. Therefore, dedicated HSR is becoming a main stream in the world.

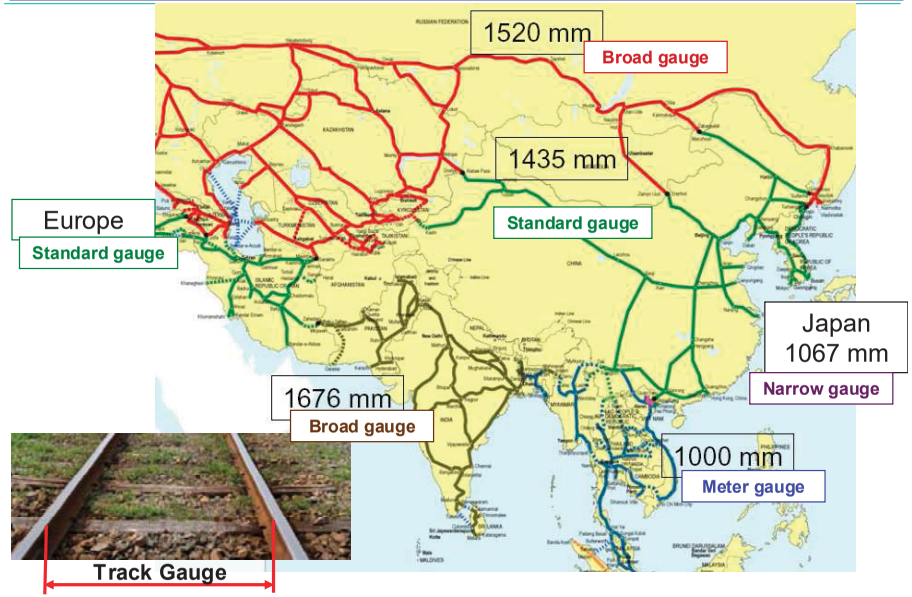
2. Capacity of HSR
   There are mainly three factors when calculating the capacity of HSR. Each factor has each impact on the construction cost and the cost of rolling stock. Here, some basic understandings are shown.

3. The market share of HSR in the world
   HSR has to have enough market share in transportation business in the targeted country to be feasible. To attract a lot of passengers from other transportation means, HSR shall have some advantage in terms of safety, reliability, fare and travel time and so on. Here, some examples of the HSR market share in Europe and Japan.

Introduction to High Speed Rail

T. Kobayashi

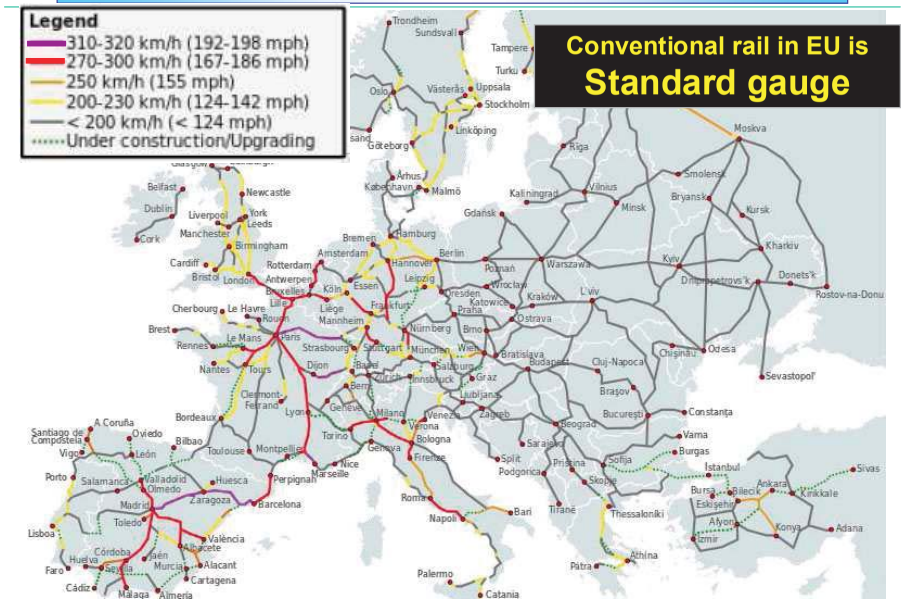
Track Gauge of conventional rail in Asia



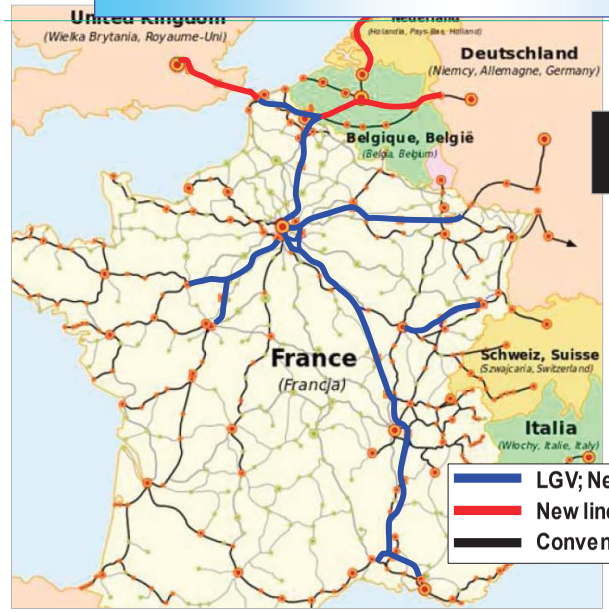
Gauge and Operation of HSR

HSR Network in the world

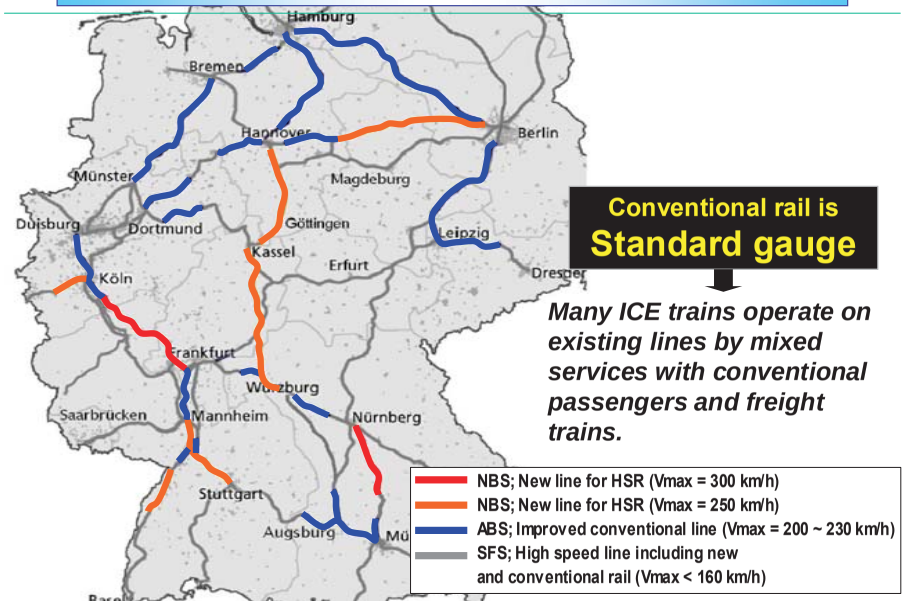
HSR Network in Europe



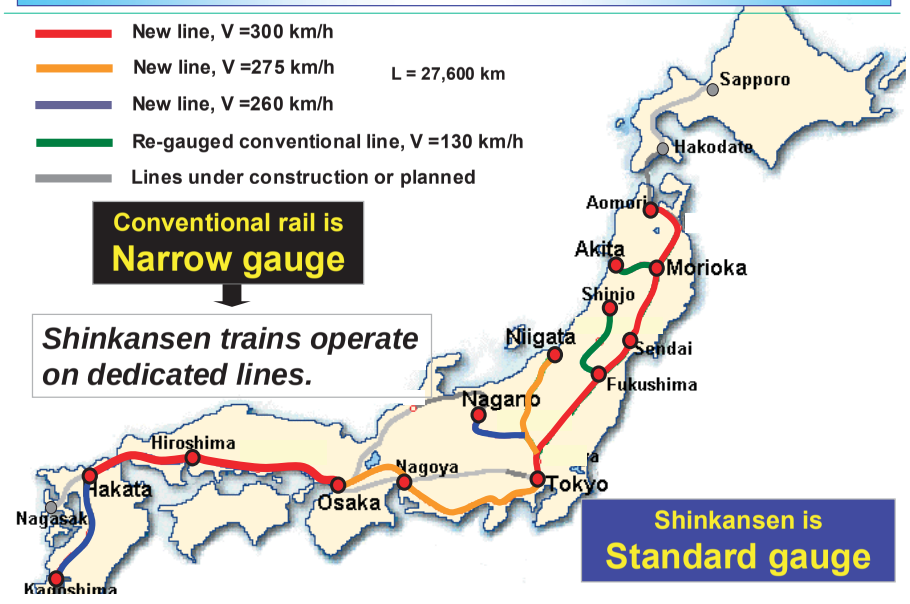
TGV network in France



HSR (ICE) Network in Germany



HSR (Shinkansen) network in Japan



HSR Plan in Thailand

Existing SRT rail is Meter gauge

Thai HSR shall be dedicated rail.

Existing SRT network will be used for
- ***Commuter services***
- ***Regional transport***
- ***Freight services***

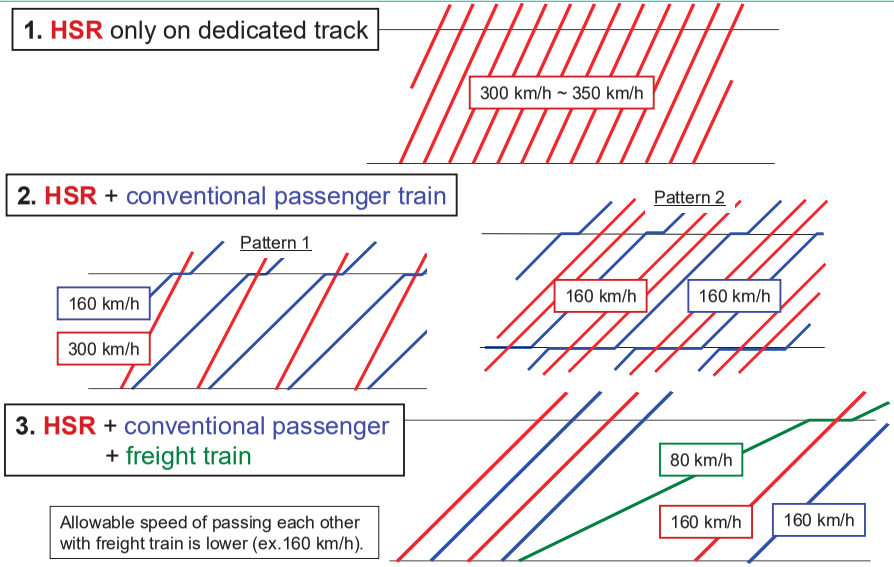
(NE); Bangkok ~ Nong Khai, 610 km
(S); Bangkok ~ Hua Hin ~ Padang Besar, 980 km
(E); Bangkok ~ Rayong, 220 km
(N); Bangkok ~ Phitsanulok ~ Chiang Mai, 680 km

Maximum speed; 250 ~ 300 km/h
Travel time; Bangkok ~ Chiang Mai = about 3 hours

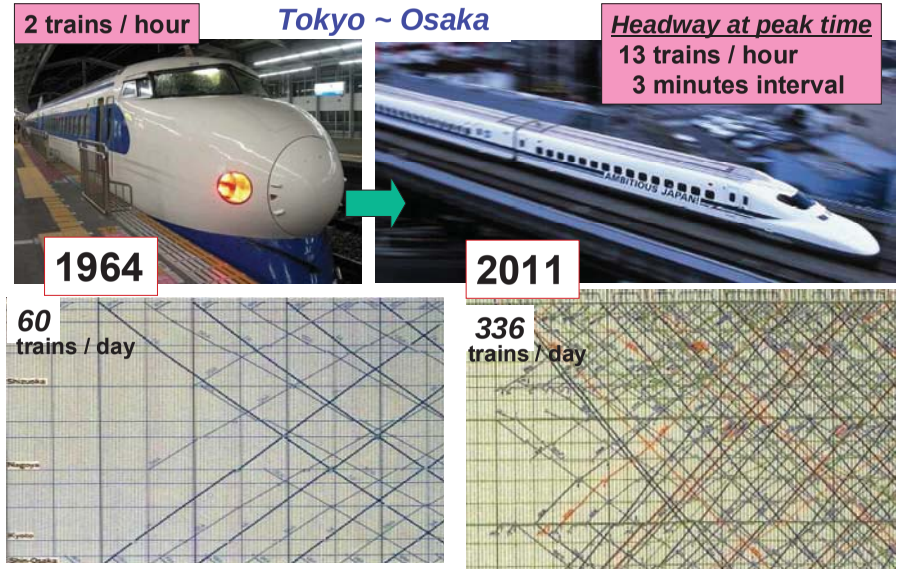
Operation and Capacity of HSR

Speed and Line Capacity

dedicated rail and mixed operation with conventional rail



Change in train diagrams



Wide body and Narrow body

Wide body EMU

(E2, N700, Velaro CN, CRH3 etc.)

5 seats/row with big capacity

Narrow body EMU

(E3, AGV, ICE3 etc.)

4 seats/row

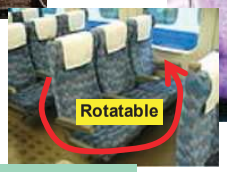
5/4 = 25 % up

Narrow body is mainly used in Europe to meet narrow loading profile of UIC because of mixed operation with existing conventional rail of standard gauge.

Seat pitch and capacity

Shinkansen 700

1040 mm

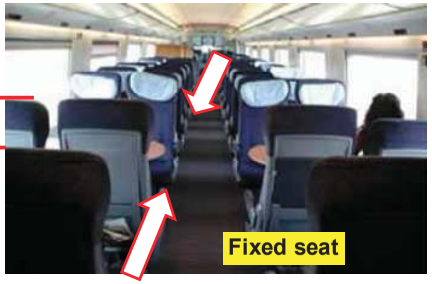


Short pitch ➡ Increased capacity

1040/920 = 13 % up

ICE-3

920 mm

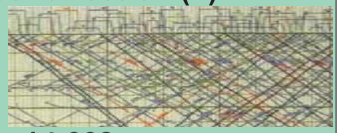


Line Capacity of HSR

1. The average number of passengers per 25 m car (P).
   Shinkansen (4 ~ 5 seats/row); P = 64 ~ 83 (passengers/car)
   ICE-3 (4 seats/row); P = 54 ~ 58 (passengers/car)

2. The number of cars per train (N)
   N = 6 ~ 16 cars/train

3. The number of trains at peakhour per direction (T)
   T = 6 ~ 11 trains/peakhour/direction



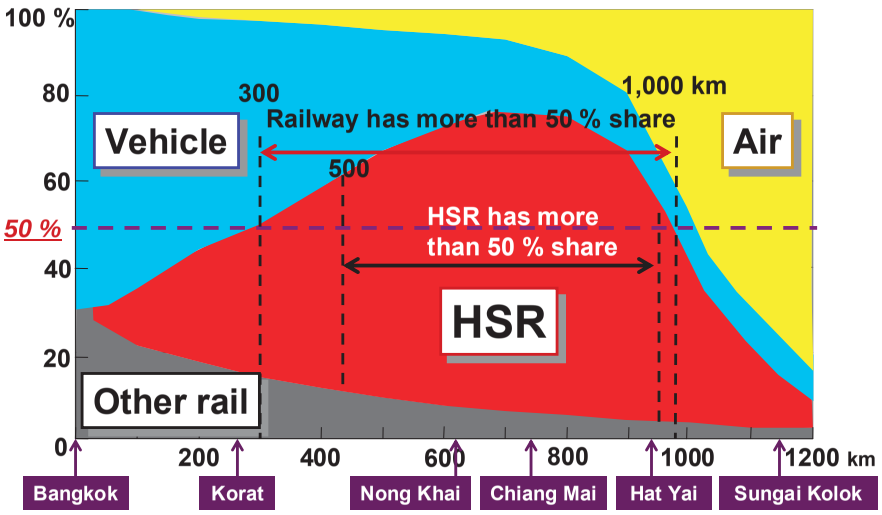
Line Capacity = P x N x T = 1,944 ~ 14,608
= 2,000 ~ 15,000 (passengers/peakhour/direction)

Expected Demand ⇒ 27,000 ~ 200,000 (passengers/day) at busy section.

Market share of HSR in Railway business

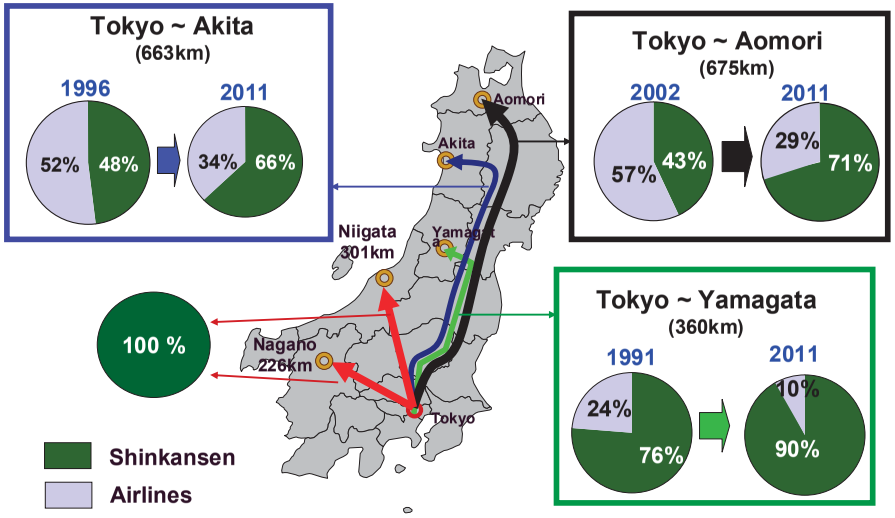
Target of HSR (Market share of railway)

Share and journey distance



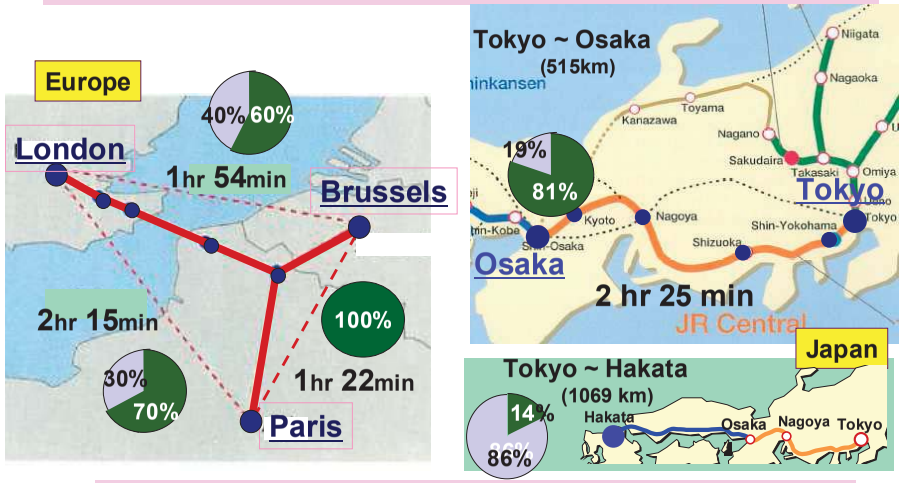
Competition with Airlines

Before and *After* HSR service started



Travel time and share

Rail is dominant over air for shorter than 3 hours' travel.



Shorter Travel time is the key in HSR design.

Thank you !

Second Speaker of <Session 3A>

Mr. Shuichi Ueno, Manager
Tokyu Construction, Japan
E-mail: ueno.shuuichi@tokyu-cnst.co.jp
URL:http: //www.tokyu-cnst.co.jp

Brief Biography:

Mr. Shuichi Ueno is Head of the Department of Building Engineering, Project Management Div., Building Construction Div., Tokyu Construction.

He has worked in the engineering field for 32 years and doing research and institute in the field of building construction systems analysis and building planning.

Mr. UENO has led various feasibility studies on the Clean Development Mechanism studies in the improving environment around the landfill in the ASEAN region.

Tokyu Construction is general contractor in Japan. Brand message is Town Value-up Management. It is aiming at "New Value Creation" through construction, they at Tokyu Construction consider the community as a whole from the viewpoint of customers and residents, thereby contributing to the creation of safe and pleasant living environments.

Tokyu Construction is one of the Tokyu group. Tokyu Corporation is their mother company. It has operated, without major incidents, 8 railway lines, over 100km network, in and aroud the Tokyo metropolitan area, which is one of the busiest in the world. Tokyu lines have long provided safe and reliable means of transportation. Tokyu Corporation developed a lot of area around railway stations.

Rail System and Area Development along the Train Station:A Case of Hikarie Project

By Mr. Shuichi Ueno, Manager

Summary:

Shibuya Station is being redeveloped, with aim of making it the No.1 destination in Japan, and maximizing the special features that give Shibuya its one-of-a-kind vibe.

Since the opening of the current JR and Tokyu stations in the Meiji Era, Shibuya has thrived as a key terminal as well as a cultural center with many movie theaters and galleries.

Tokyu Toyoko Line was underground-ized in March, 2013, and mutual direct communication-ization with Tokyo Metro Fukutoshin-Line opened in June, 2008 was attained. The convenience of traffic is further substantial.

Relocating the JR line and Ginza line platforms provide more convenient connections to the Toyoko and Fukutoshin lines underground. The development of an urban core, a three-dimensional pedestrian flow line, will create an open space that generates more interaction and activity.

Temporary evacuation facilities is aiming to create a town that is resistant to unexpected torrential rain, major rainwater reservoir facilities will be constructed under station plazas.

A bus terminal will be set up at the station front with bus stops for airport limousines to Narita Airport and Haneda Airport. Additionally, by creating tourist information centers, etc., we aim for urban development that is also friendly and comfortable to foreigners as a gateway to an international city and a hub for Tokyo tourism.

Shibuya Hikarie is one of Japans largest theaters, event halls and other creative spaces serve as a base to launch Shibuya culture throughout the world.

Shibuya Station district will be a new landmark building. Comprising East, Central, and West towers, this building will be one of largest office and commercial facilities in the area, while aiming to enhance Shibuyas international competitiveness with an interactive function to encourage the development of creative functions industries.

Shibuya Station South District is a high-rise complex for creative workers that evokes memories of the former Toyoko Line Shibuya Station. Next to it, the Shibuya River will be revived, creating a new oasis in Shibuya.

Re-Development of Shibuya Hikarie Project at Shibuya Station
-Towards Ideal Town Re-development-

After specifying the circumference of Shibuya Station as the specific urban development emergency development area based on the Special Measures for Urban Renewal Law in 2005, at Shibuya Station, two or more large-sized development projects and town redemarcation projects are advanced. What was opened as the leadoff project is the Shibuya Hikarie which high rised complex building at the Shibuya Station east gate.

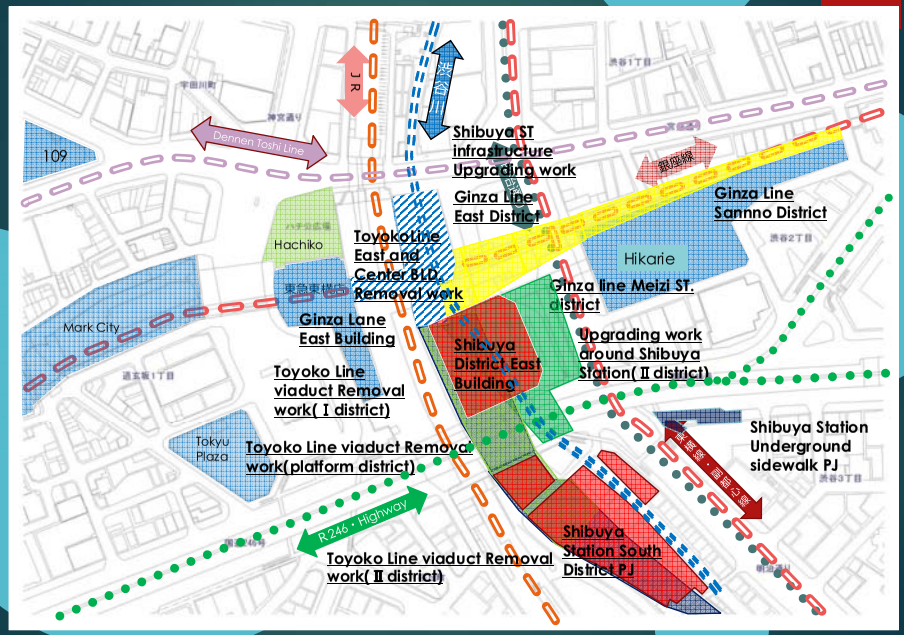
It links directly in Tokyo Metro Shibuya Station at underground, and there is commercial center, such as Tokyu Department Store and restaurants in a low floors.
There is an exhibition hall and a theater in a middle floors, and an office in a high floors.

There is a role which connects a town in three dimensions according to the geographical feature of the shape of a valley peculiar to Shibuya. People can move to a lengthwise direction through a huge well. Shibuya is the traffic point which a part is worked in the public flow line.

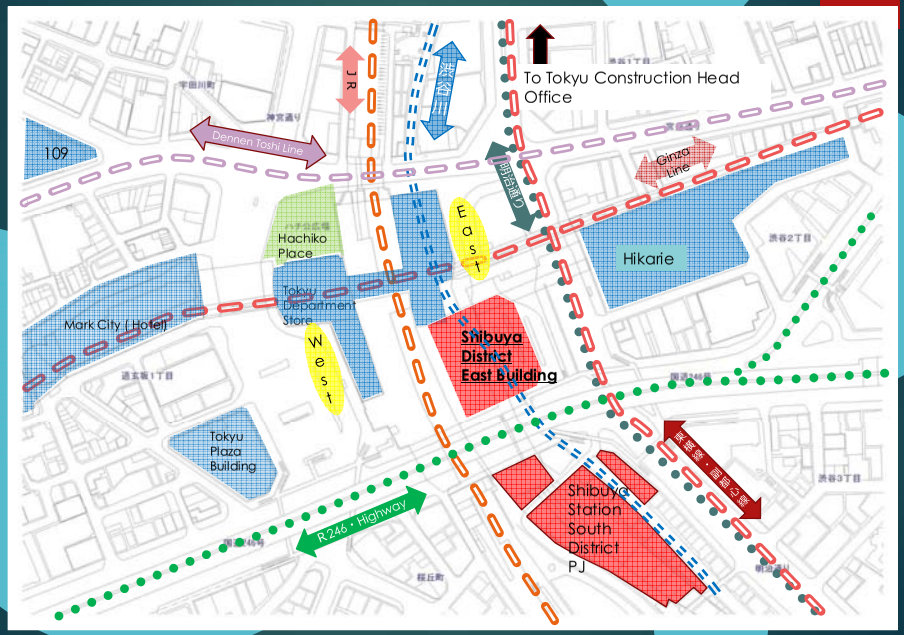
In this presentation, the outline of this project will be introduced. In addition to, It will be introduced how to start the Re-Development project.

Redevelopment of Shibuya PJ

渋谷駅周辺工事



Location of around Shibuya Station



現在進行中の各工事 PJ which is under construction

- 東急東横店東・中央館解体JV　東急・鹿島・清水・鉄建JV（約25.6億）
- 渋谷駅街区東棟JV　東急・大成JV（約714億）
- 渋谷南街区プロジェクトJV　東急・大林JV（約583億）
- 渋谷駅南街区土地区画整理事業に伴う公共施設整備工事　東急建設（約9.7億）

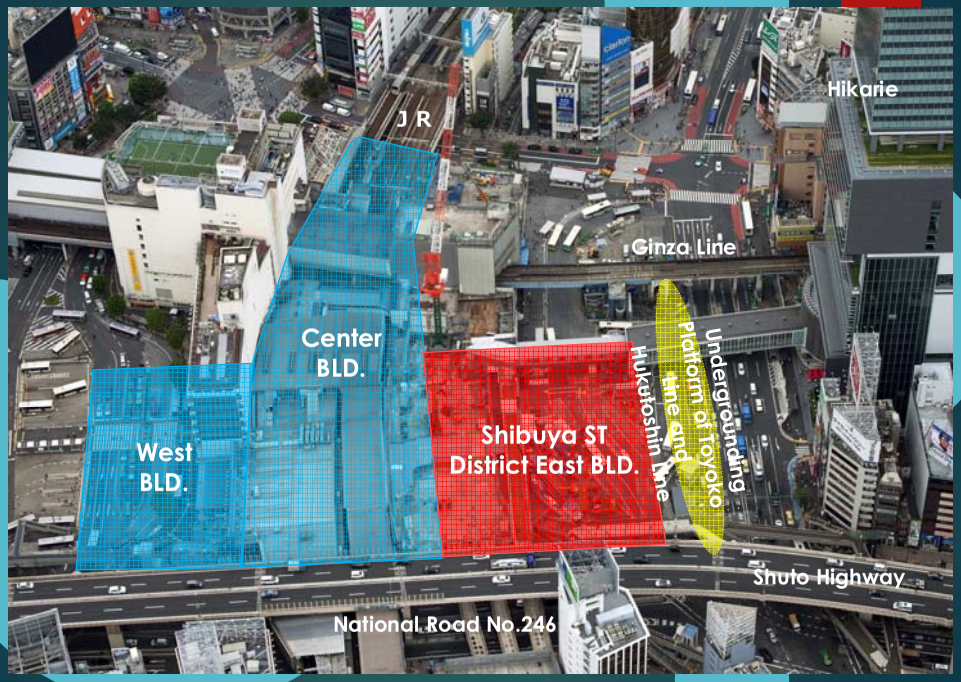
以上　4件の建築工事

- 銀座線渋谷駅東館工区土木工事　東急・鹿島・清水・鉄建JV（約12.8億）
- 銀座線渋谷駅東口広場・明治通り工区土木工事　東急・清水・鹿島JV（約18.6億）
- 銀座線渋谷駅金王工区土木工事　東急・大成JV（約23億）
- 渋谷駅（東口）基盤整備（1工区）　東急・清水・鹿島JV（約37億）
- 渋谷駅（東口）基盤整備（2工区）　大成・鉄建JV
- 東横線渋谷高架橋撤去工事（1工区）　東急・大成・鉄建JV（約5.1億）
- 東横線渋谷高架橋撤去工事（2工区）　東急・清水・大林ＪＶ（約3.4億）
- 東横線高架橋解体乗場工区　大成・鉄建JV
- 渋谷駅東口地下歩道（南東部）構築工事　東急建設（約13.4億）

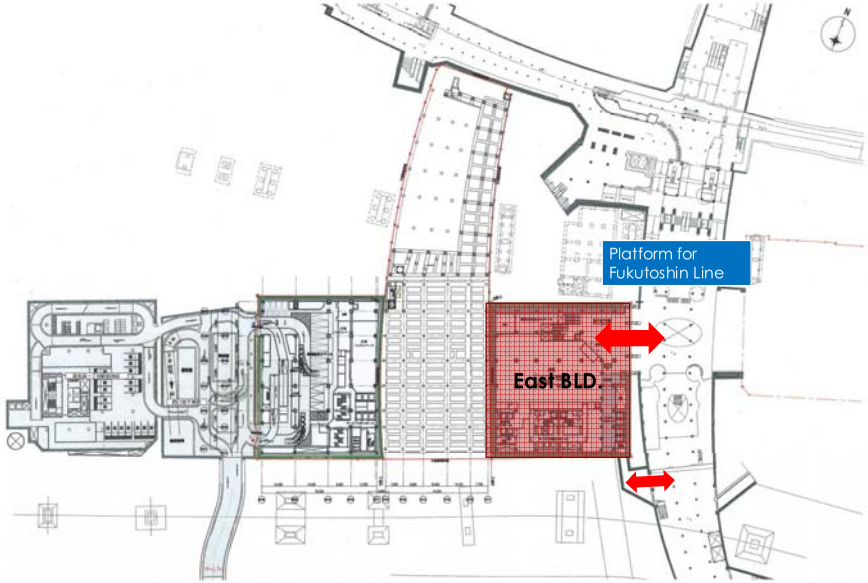
以上　9件の土木工事

Total 13 Project amount 145,000 million Yen (40,000 million Bath)

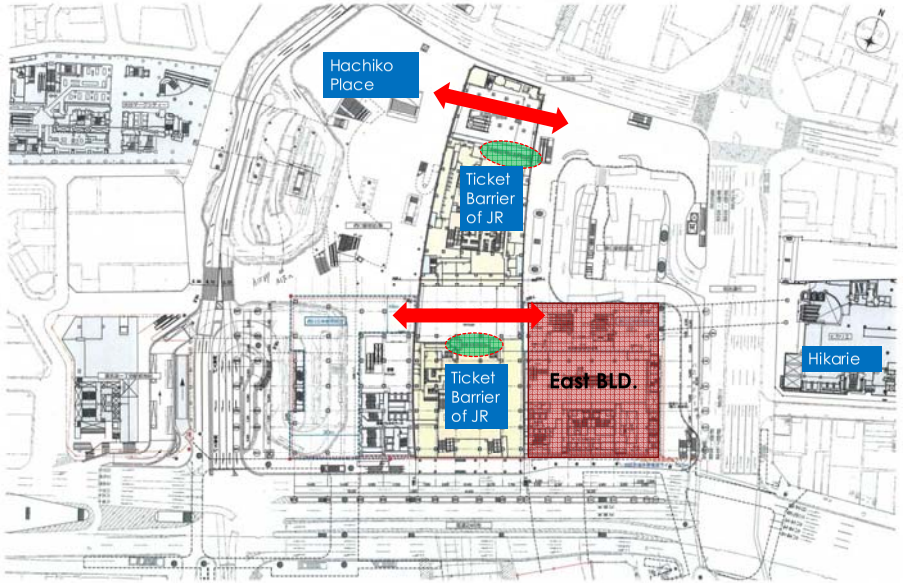
Shibuya St District East BLD.



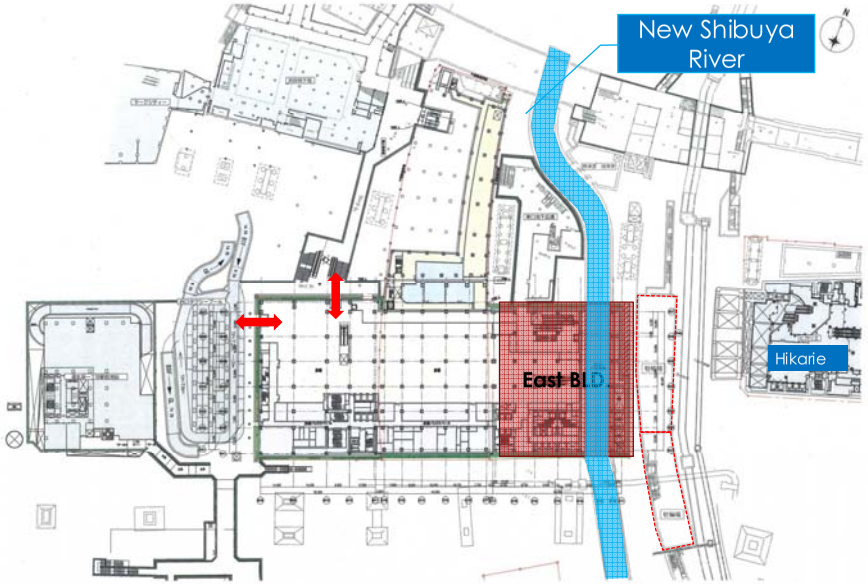
Station District Plan B2F



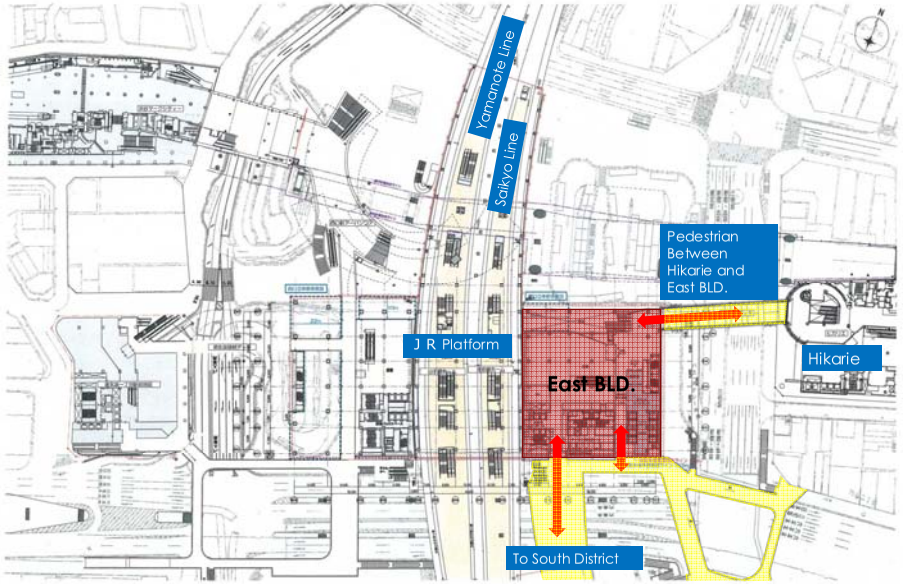
Station District Plan 1F

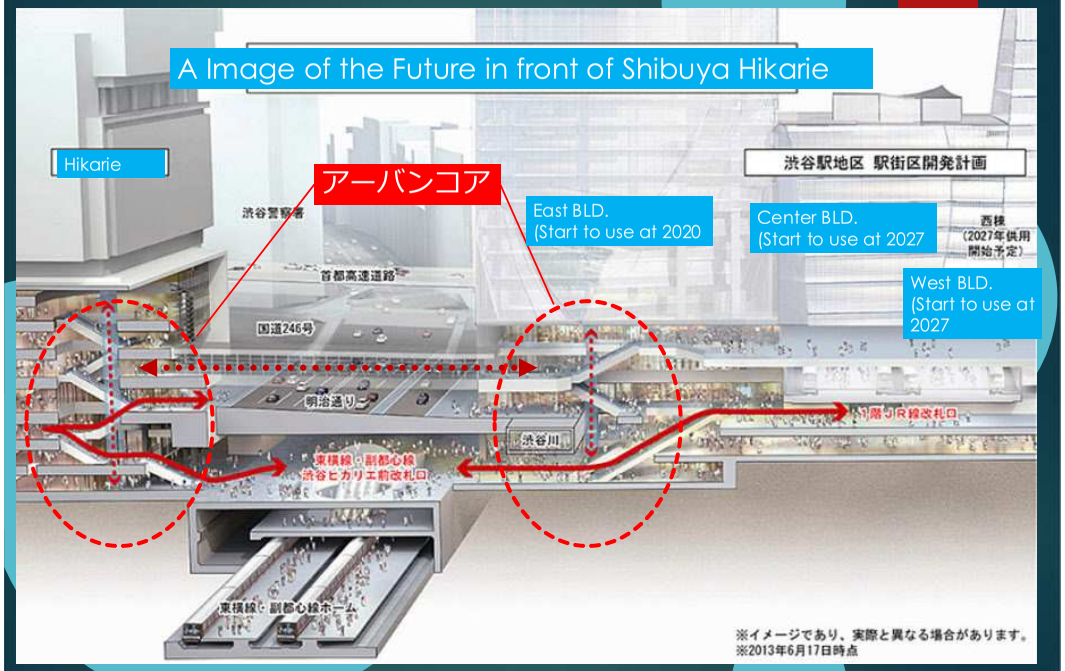


Station District Plan B1F

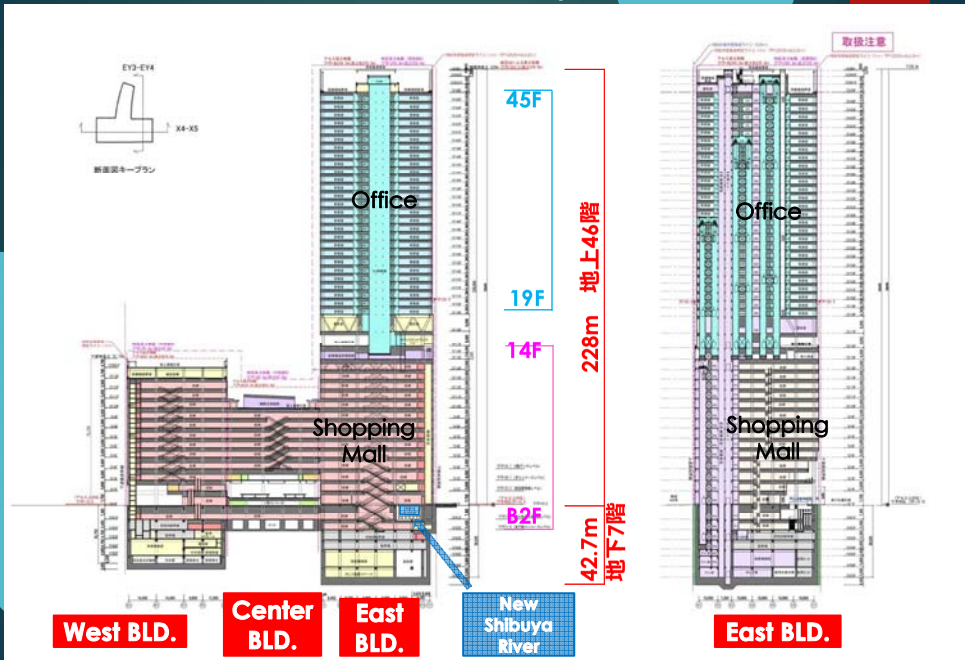


Station District Plan 2F

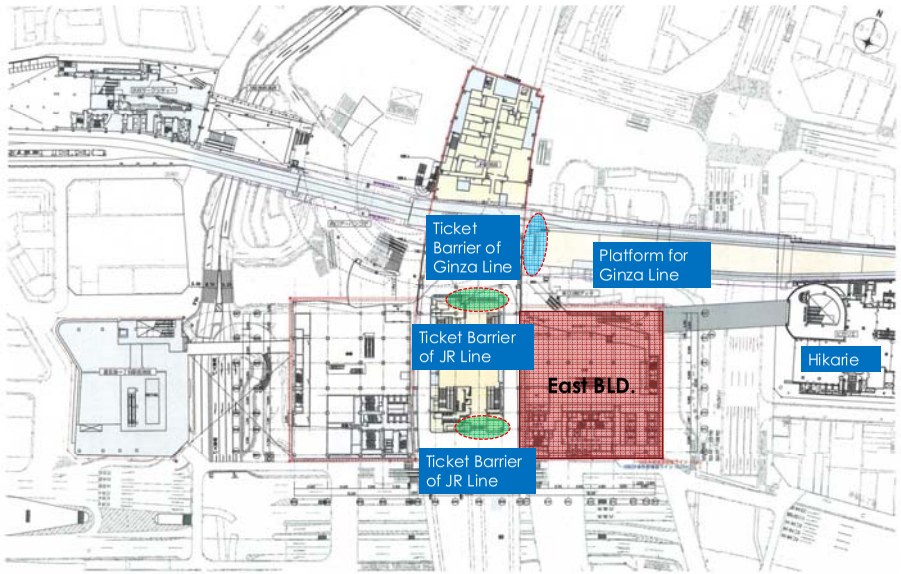




Station District Elevation(East - West)

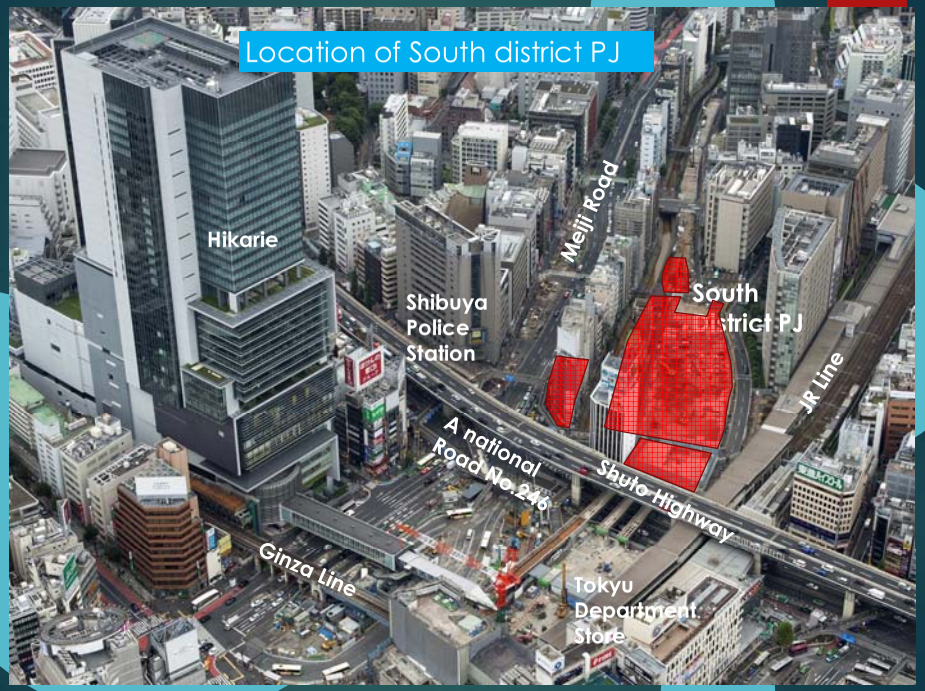


Station District Plan 3F



Shibuya Station South District PJ

Location of South district PJ



Appearance of South district BLD.

Appearance of South district BLD.

発注者：東京急行電鉄株式会社
設計者：東急設計コンサルタント

A敷地　ホール棟、国道246ﾃﾞｯｷ
構造規模：RC造、SRC造、Ｓ造　地下4階

Summary of this PJ

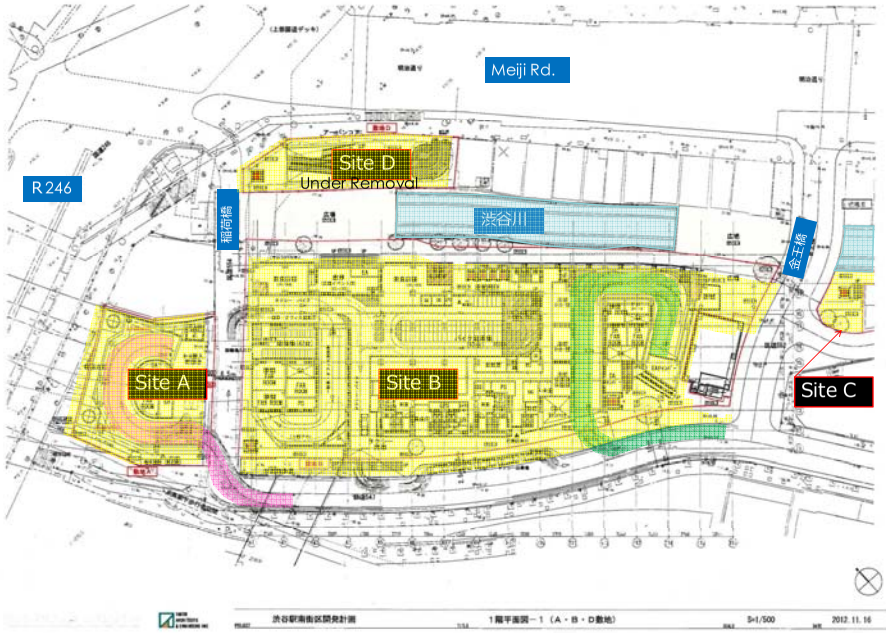
Owner : Tokyu Corporation
Design : Tokyu Design Consultants
Structure : RC and SRC B4F - 35F
Land Space : 7,109.93m2
Total Floor Area : 116,536m2
Maximum height : 179.95m
Maximum depth : 30.0m

建築面積：4,643.74m2
法延床面積：108,779m2
最高高さ：179.95m

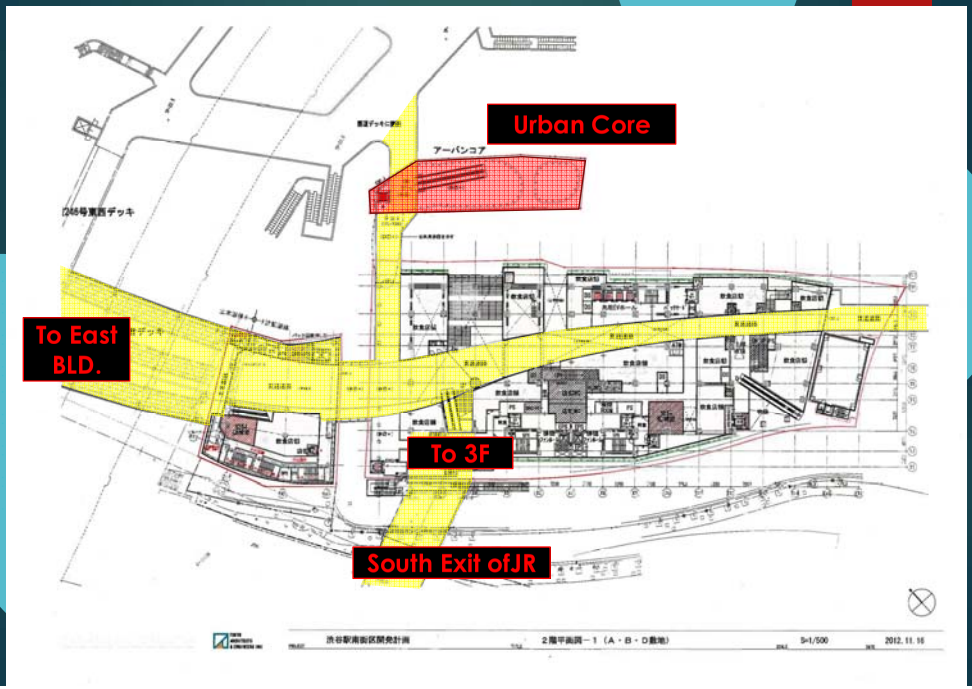
C敷地　EV棟
構造規模：Ｓ造　地下2階　地上2階
敷地面積：666.62m2
建築面積：31.8m2
法延床面積：21m2
最高高さ：11.9m

D敷地 アーバンコア
構造規模：RC造、Ｓ造　地下2階　地上2階
敷地面積：524.43m2
建築面積：271m2
法延床面積：383m2
最高高さ：16.5m

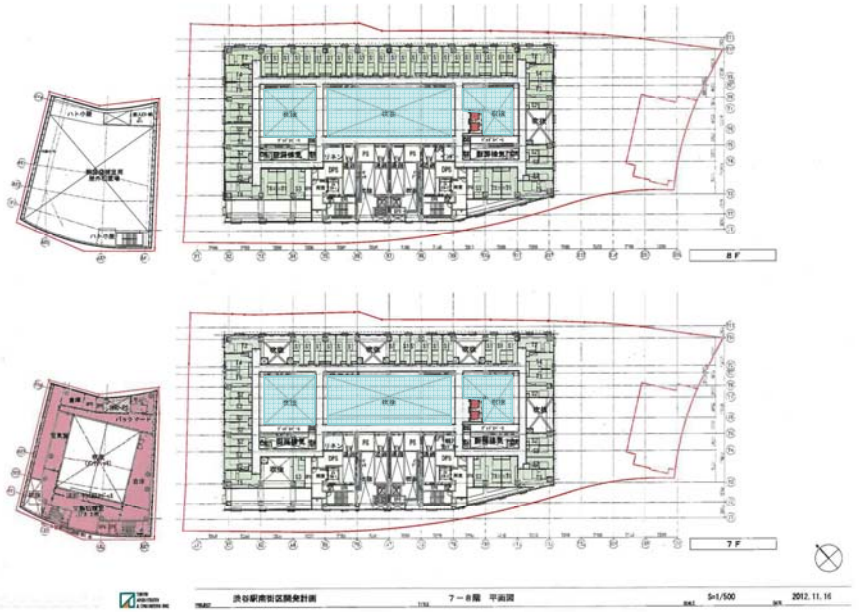
South District Plan 1F



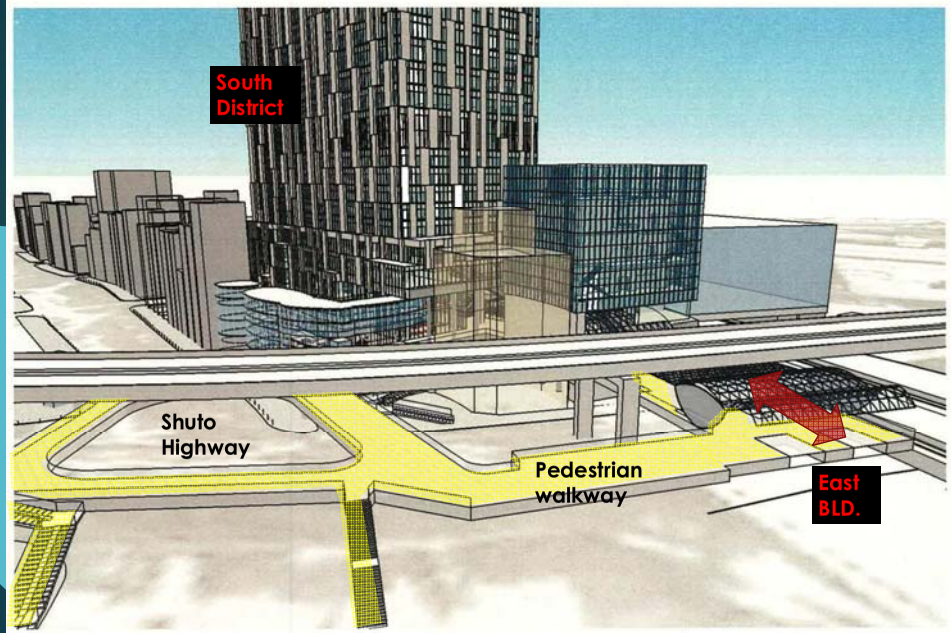
South District Plan 2F



South District Plan (Hotel Floor) 9～13F

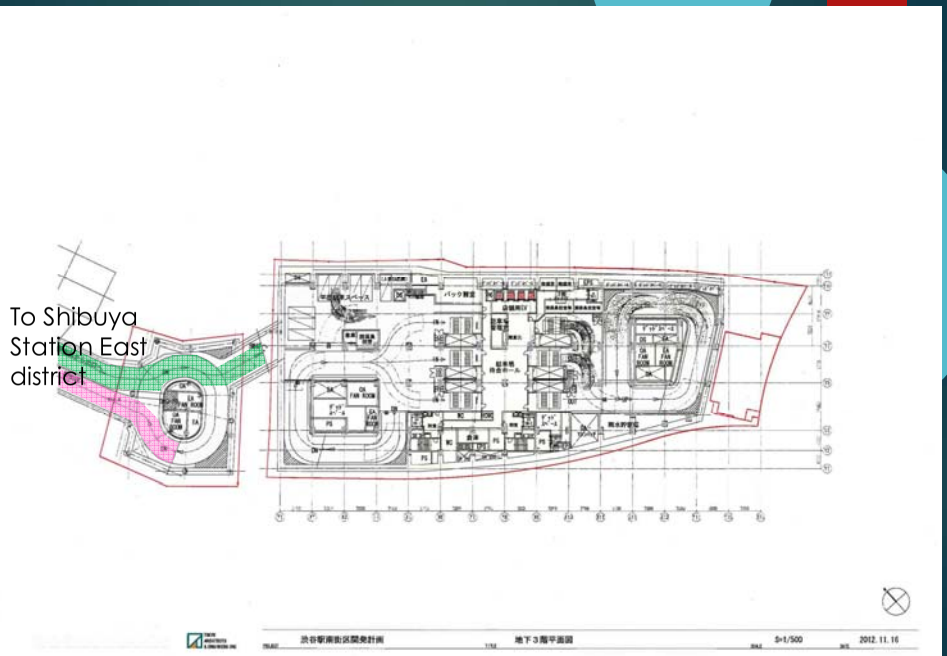


Pedestrian walkway at crossing between Meiji Rd. and 246 Rd.

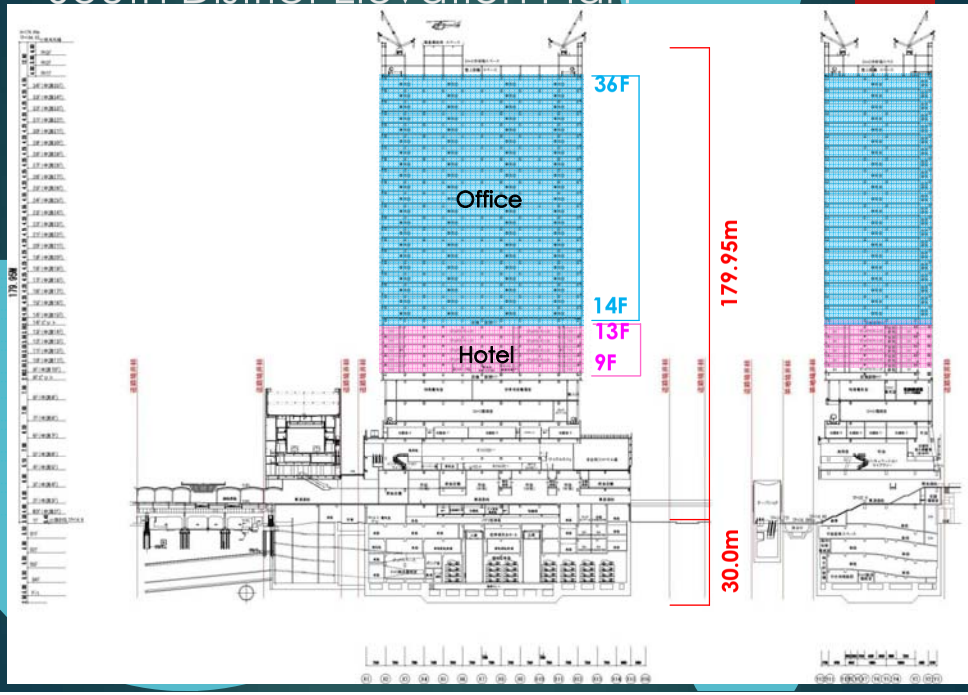


South District Plan (Office Floor) 14～36F

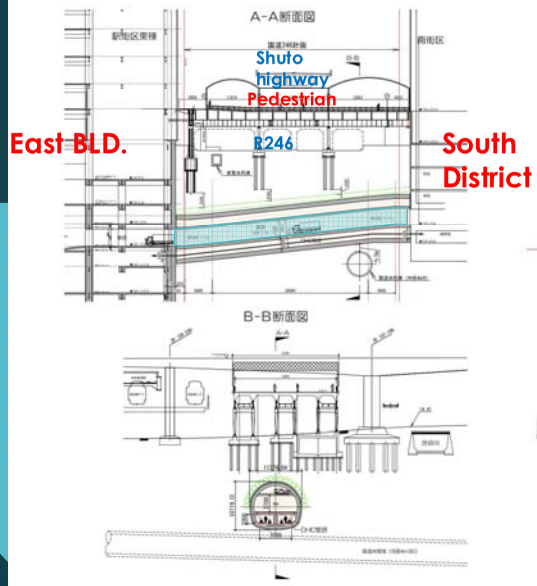
South District Plan B3F



South District Elevation Plan



South District Plan (Underpass)



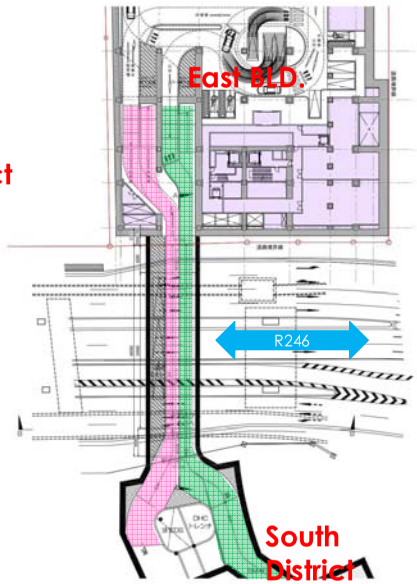
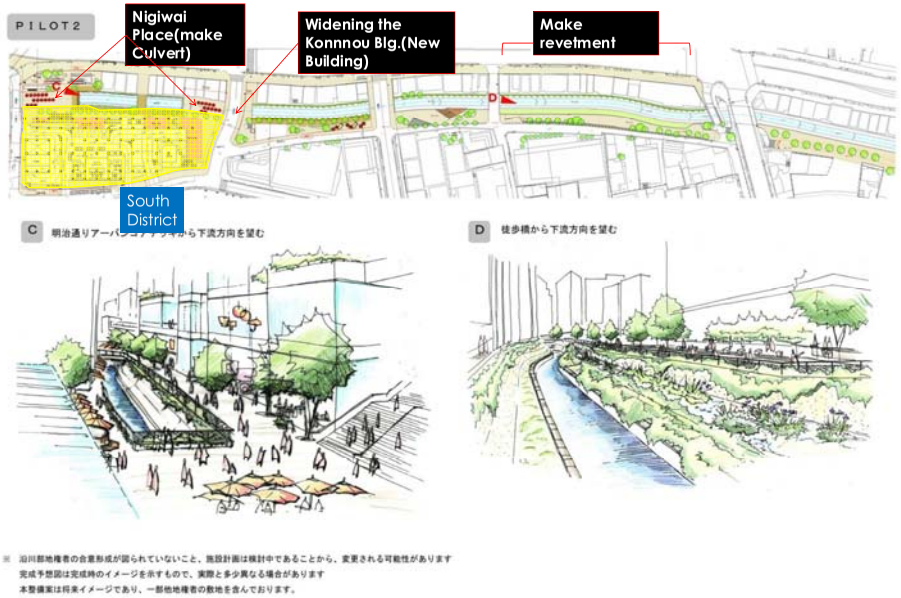
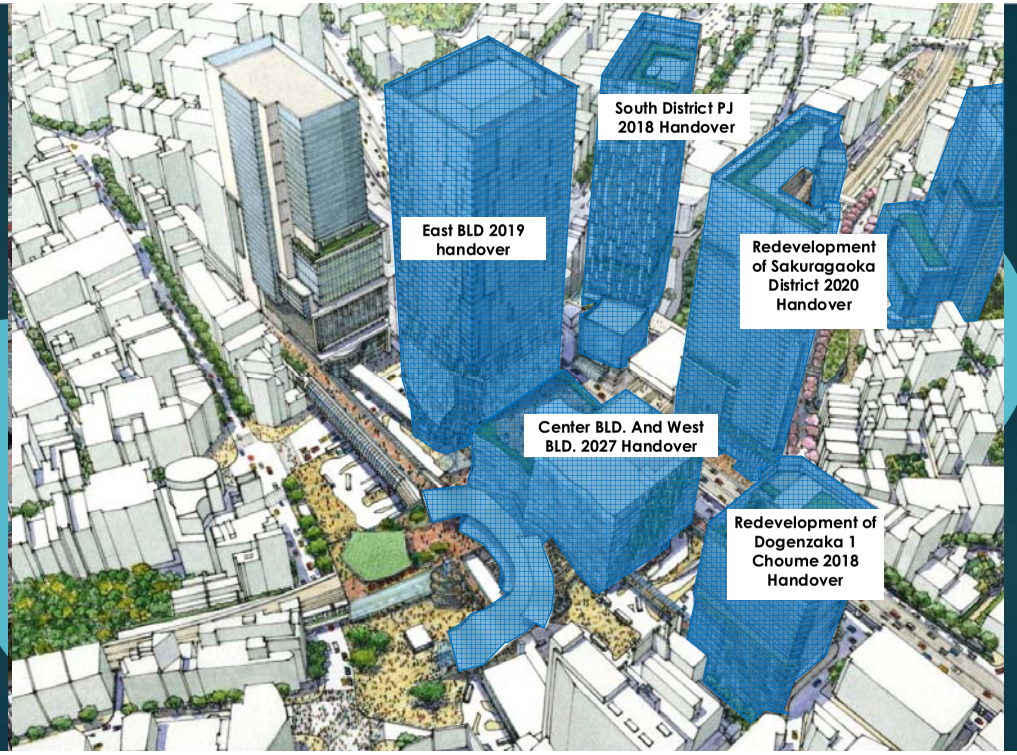


Image of Shibuya River



Dogenzaka 1 chome redevelopment PJ (for reference)



Shibuya Sakuragaoka District redevelopment PJ (for reference)

South District PJ & Shibuya Station East District BIM(Building Information Modeling)

Third Speaker of <Session 3A>

Mr.Thanongsak Wikul
E-mail: Thanongsakwikul@gmail.com
Thanongsak @nha.co.th

Brief Biography:

Mr.Thanongsk Wikul is a planner. He studied Political Sciences at Thammasat University and received Master Degree in City Planning and the Environment from King Mongkut Institute of Technology Ladkrabang. He has more than thirty years of professionalexperience.

He worked twenty five years for National Housing Authority, in the areas of housing policy, community development, estate management and NHA new town development.

He retired in 2016 as Deputy Governor of the National Housing Authority.

Government Policy on Transit-Oriented Development (TOD) and Housing Development along Rail Stations

Mr.Thanongsak Wikul

Summary:

The topic of my talk is A Pilot Project on Housing Development Area Near or Adjacent to the Mass Transit Stations. This is a project in collaboration between the National Housing Authority (NHA) and the Mass Rapid Transit Authority (MRTA) of Thailand. The main objectives of the project are to explore the opportunities to provide housing for low-income households by using the land which have become key new development areas from the Transit Oriented Development (TOD). Utilizing the land for housing projects for low income households will create opportunity to provide more affordable housing in the new developed areas. Proposed implementation measures included mixed uses of commercial and residential development. The project also propose cross- subsidization of the commercial areas for housing the low-income households which helps reducing the burden of the Government and synergizing the government resources in providing services to the public. The project suggested two types of development: Type 1 - MRTA will lease the land to NHA on 30 years contract. After 30 years, the property will be transferred to MRTA.Type 2- Joint-Venture between MRTA and NHA, the benefits would be shared in proportion to the investment, suggesting MRTA calculates the present value plus the return on 30 years lease contract as a basis for joint venture with NHA.

GOVERNMENT POLICY ON TRANSIT - ORIENTED DEVELOPMENT (TOD) AND HOUSING DEVELOPMENT ALONG RAIL STATION

Mr.Thanongsak Wikul
Former Deputy Governor of
National Housing Authority, Thailand
Secretary of Wadhanyu Na Thalang Foundation

Mission of The National Housing Authority

The National Housing Authority (NHA) was established on February 12, 1973 as a state enterprise. From 1973 – 2015 NHA has construed housing 705,441units in Bangkok and regional provinces.

MRTA in collaboration with NHA

National Housing Authority (NHA) and Mass Rapid Transit Authority (MRTA) Housing Development along the Mass Rapid Transits. The project is in collaboration between MRTA and NHA.
On September 28, 2012 MRTA signed the Memorandum of Understanding (MOU) with NHA on the joint collaboration project.

MRTA in collaboration with NHA

This joint collaboration is in line with the government policy to synergize the resources of the state enterprise agencies. NHA and MRTA are state enterprise entities.
The housing development along the mass transit lines will provide the opportunities for the low-income households to own their homes. NHA will construct condominium units to accommodate the low-income housing along the ten mass transit lines.

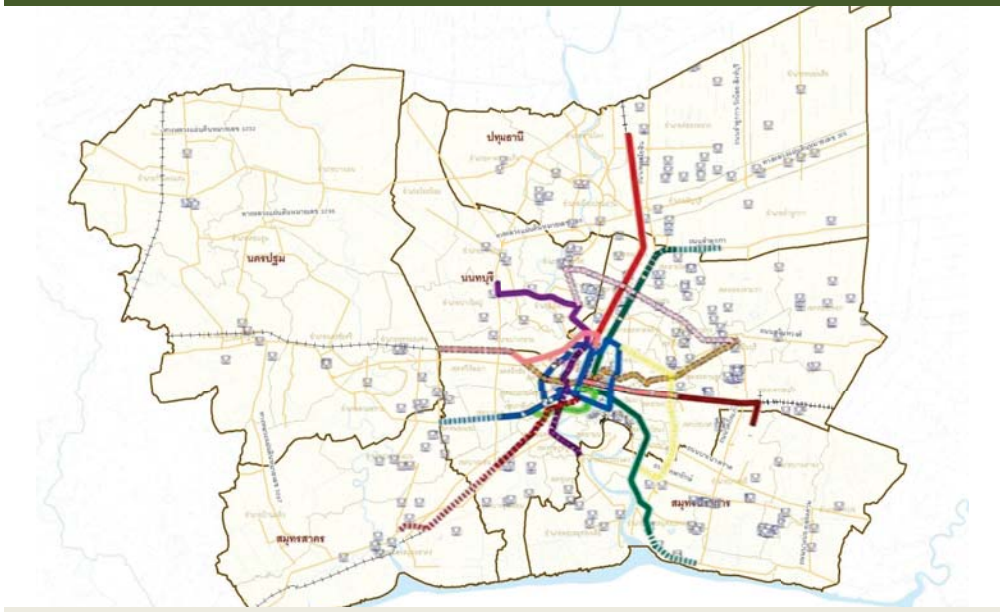
MRTA in collaboration with NHA

Objectives

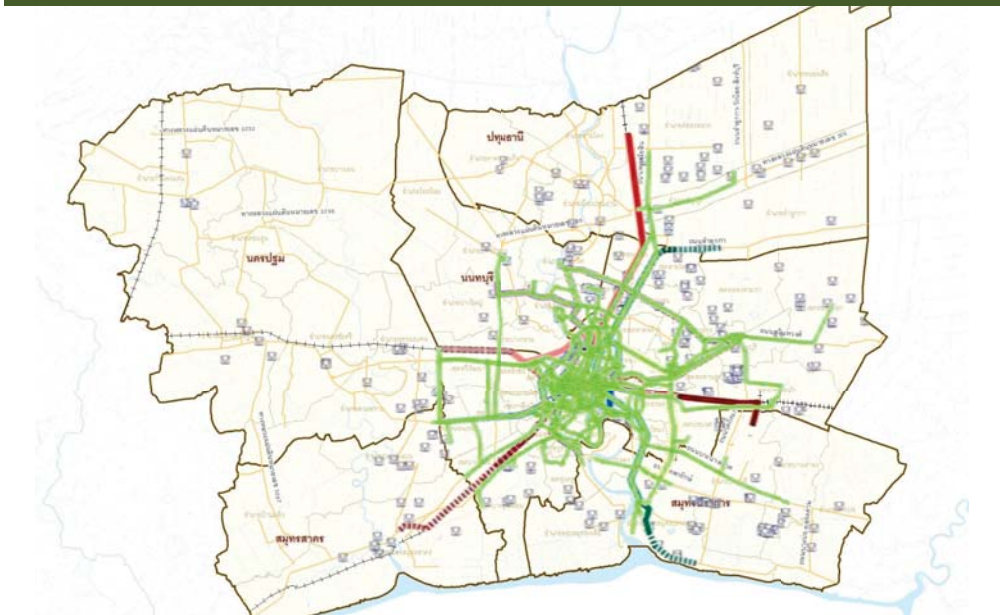
- To provide housing and develop residential areas in accordance with the concept and directions of urban development.
- To develop self-contained communities with better accessibility to the mass transit system in order to improve people's quality of life and their livelihood.
- To efficiently synergize and optimize the resources of the public sector (MRTA and NHA)

National Housing Project and Transport in BMA

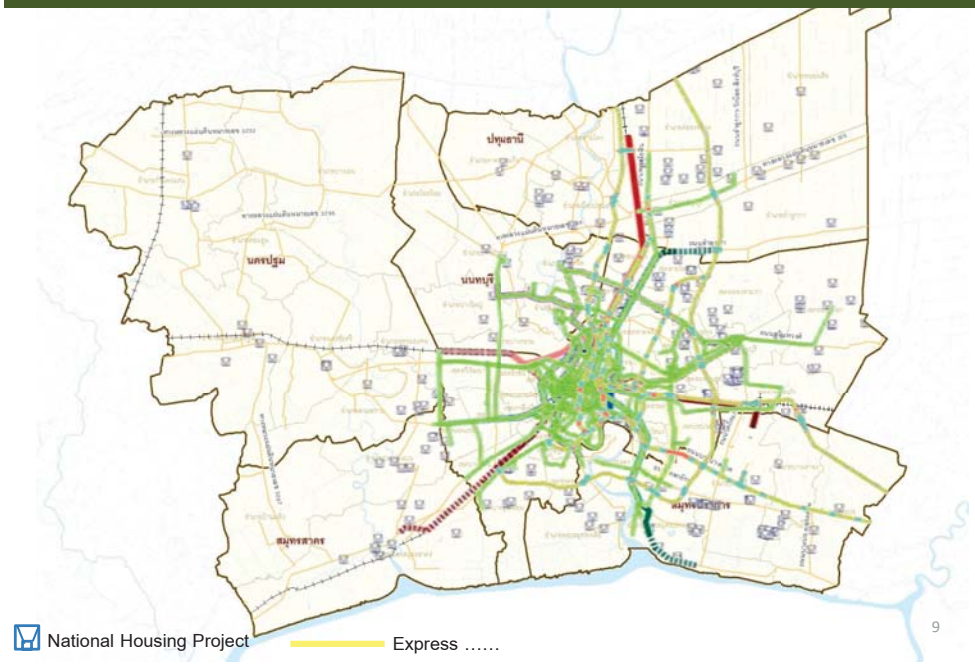
National Housing Project and Transport Network in BMA



National Housing Project and Transport Network in BMA



National Housing Project and Transport Network in BMA

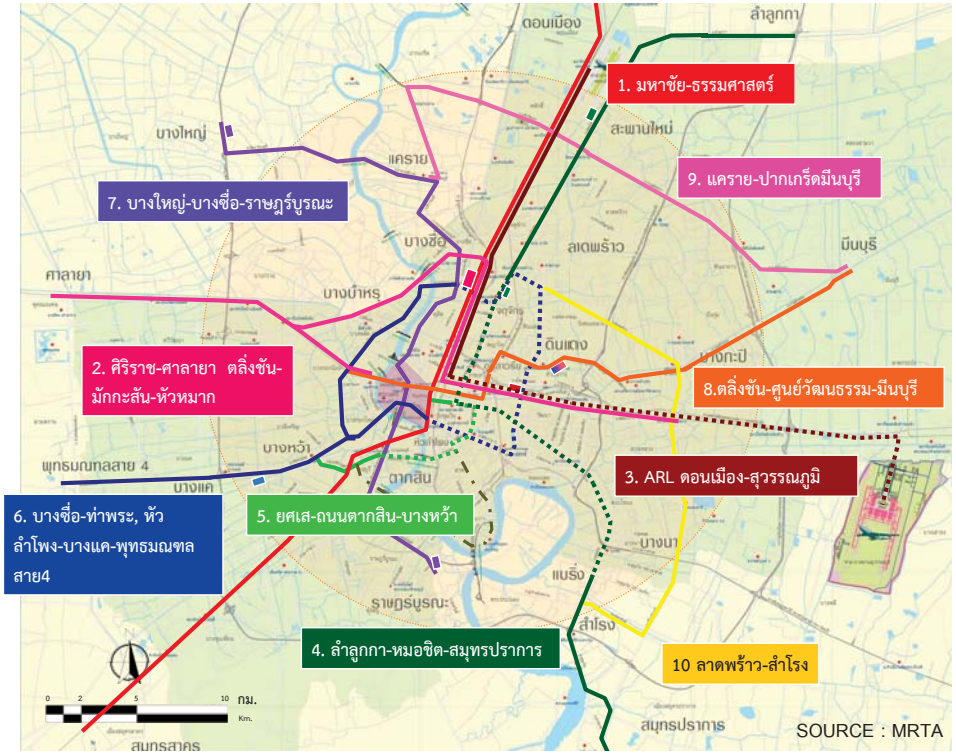


Policy of Government MRT 10 Lines

National Housing Project and Transport Network in BMA

Government policy

On August 23, 2011, The Royal Thai Government declared the Government policy regarding fundamental infrastructure and to speed up the construction of 10 mass transit lines in Bangkok and Metropolitan Region to the House of Parliament under section 3.4 The Government will also provide housing for low-income households for hire-purchase or rent around the mass transit stations.



National Housing Project along Mass transit line

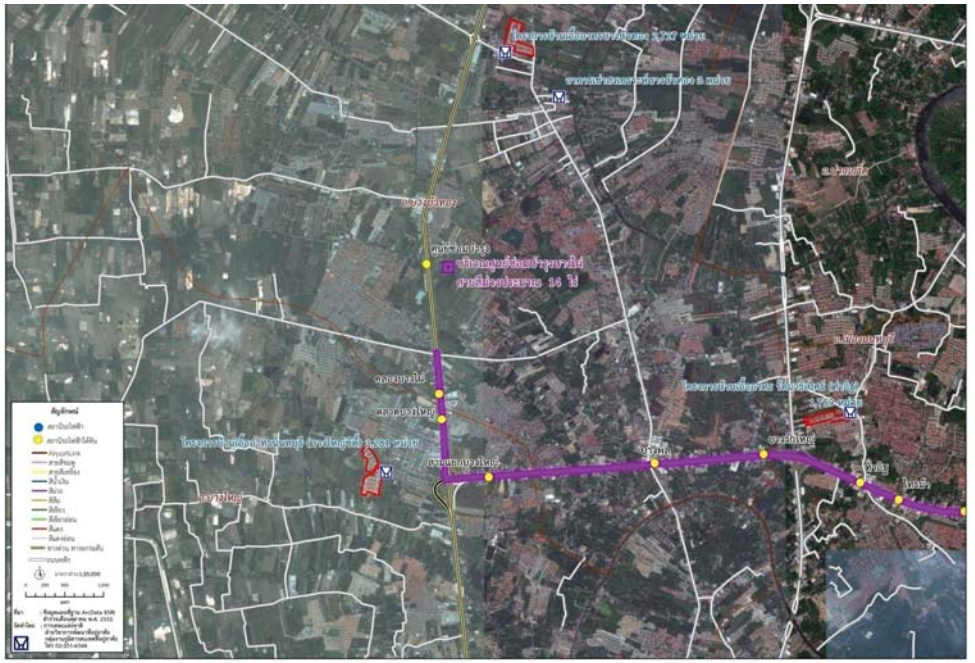
SOURCE : http://www.oknation.net/blog/print.php?id=793494

Government policy on TRANSIT - ORIENTED DEVELOPMENT (TOD)
And housing development along rail station

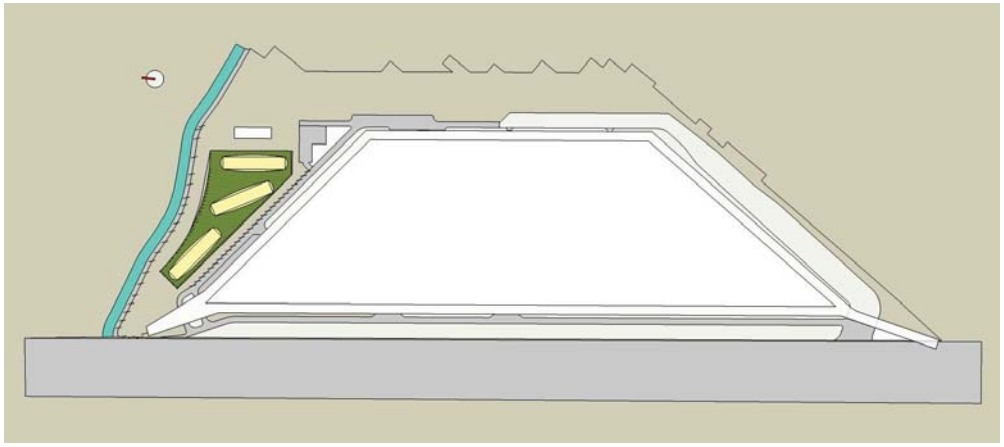
14

Purple Line : located near Bang Phai depot, area 14 rai or 2.24 Ha.

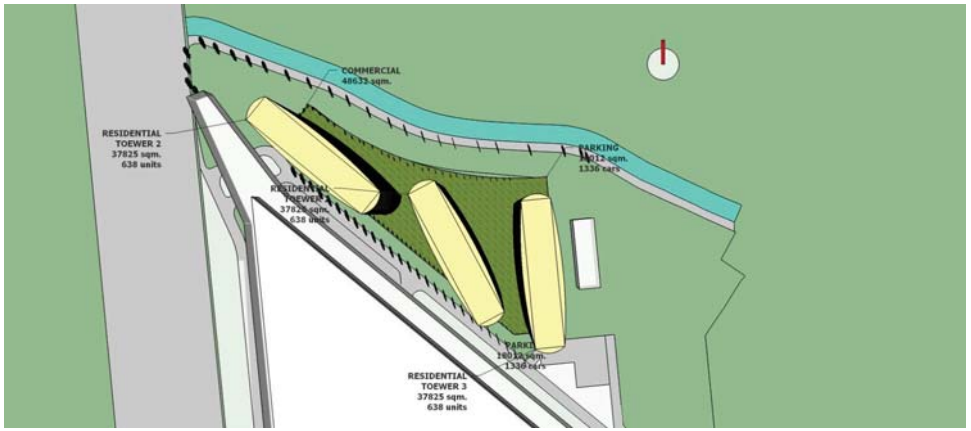
Purple Line : **located near Bang Phai depot, area 14 rai or 2.24 Ha.**



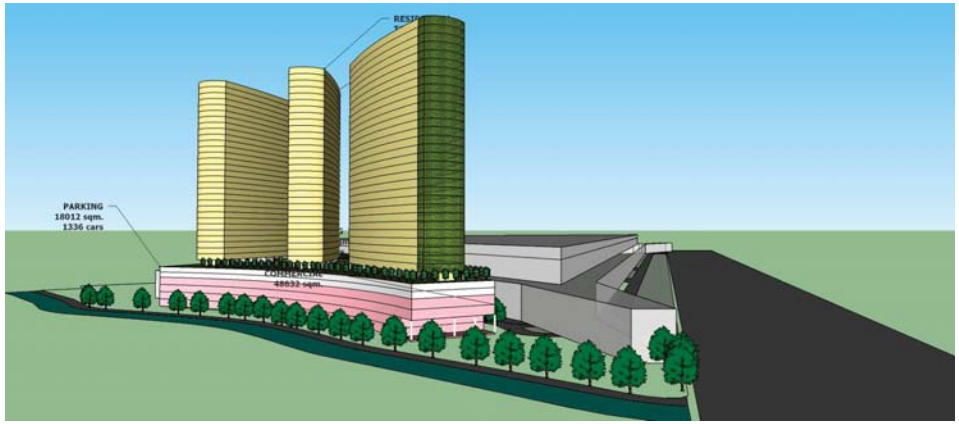
Master Plan



Master Plan



Perspective



Pink Line : located near Minburi depot

area218 rai or 34.88 Ha.

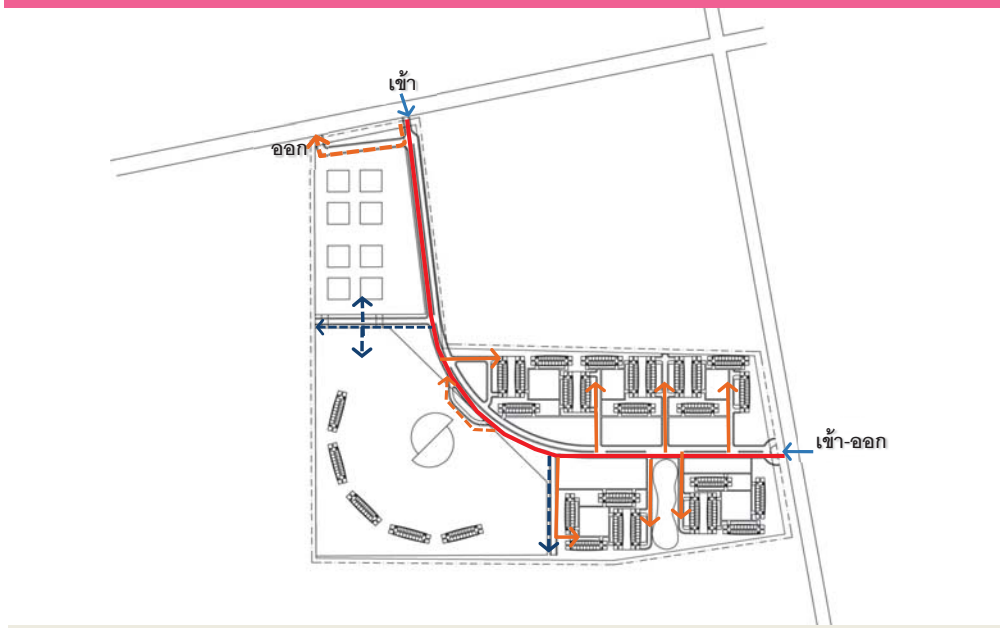
Pink Line : located near Minburi depot area218 rai or 34.88 Ha.

Master Plan

Pink Line : located near Minburi depot area218 rai or 34.88 Ha.

Master Plan

Road Layout

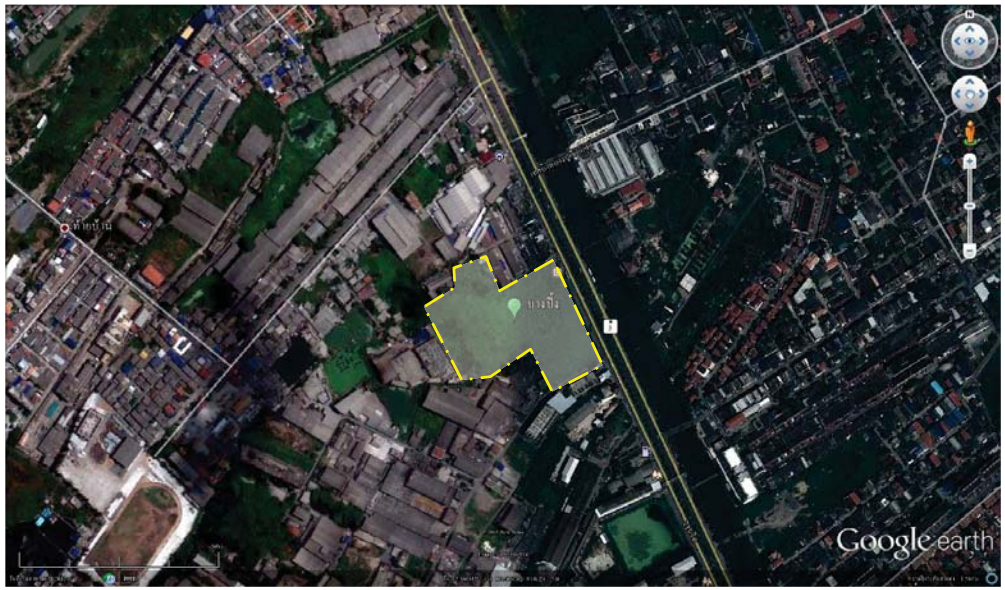


Government policy on TRANSIT - ORIENTED DEVELOPMENT (TOD)
And housing development along rail station

Green Line : located around Bang Pling park and ride area 18 rai or 2.88 Ha.

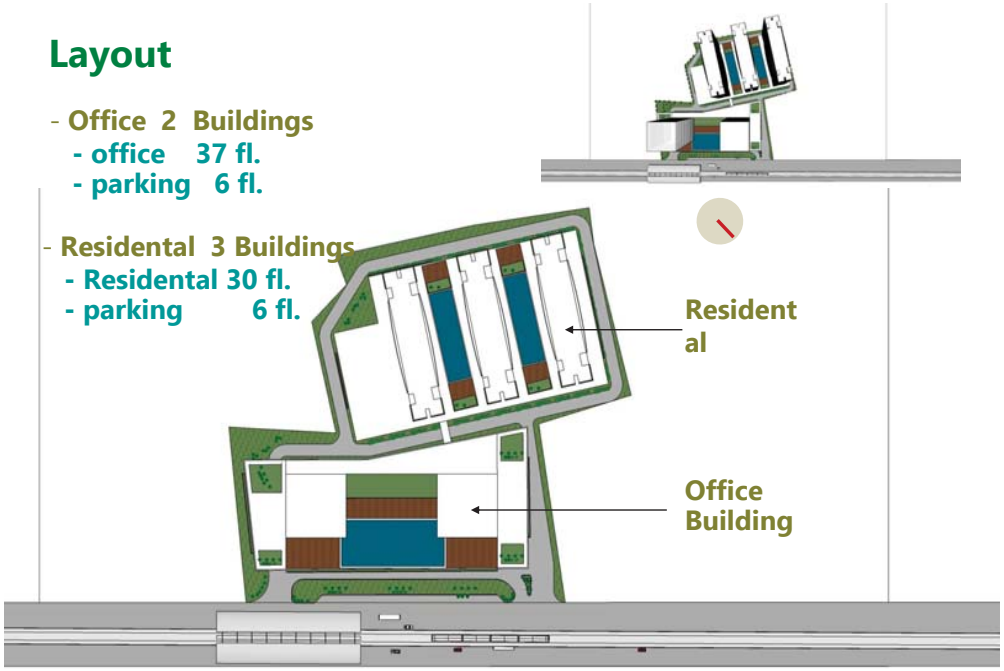
Green Line : located around Bang Pling park and ride area 18 rai or 2.88 Ha.

Green Line : located around Bang Pling park and ride area 18 rai or 2.88 Ha.



Layout

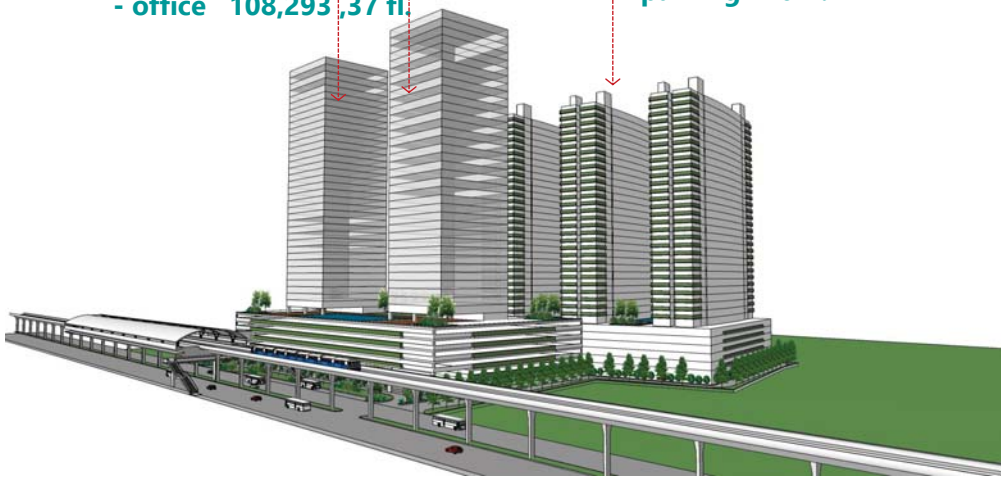
- Office 2 Buildings
  - office 37 fl.
  - parking 6 fl.
- Residental 3 Buildings
  - Residental 30 fl.
  - parking 6 fl.



Perspective

Office 2 Buildings 43 fl.
- commercial 6 fl. 46,411 sqm.
- office 108,293 ,37 fl.

Residential 3 Buildings - Residential 154,704 sqm.,30 fl.
- parking 6 fl.



Perspective

Residential 3 Buildings 30 fl.

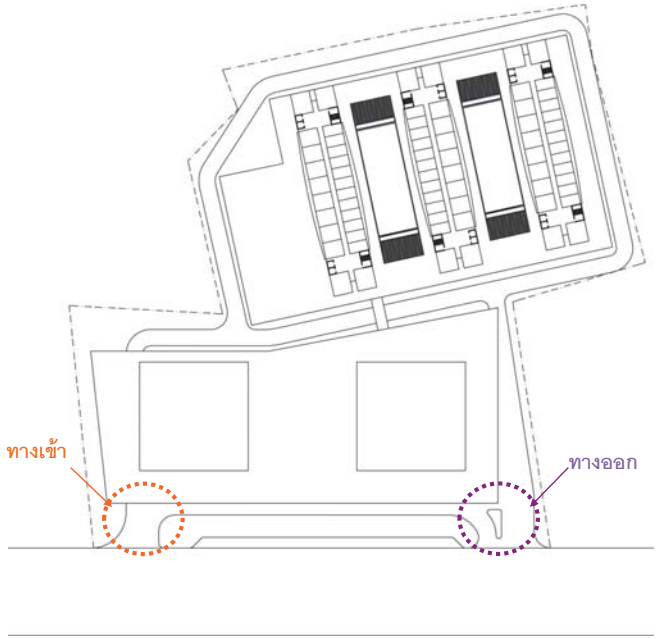
- Residential 30 fl.
  154,704 sqm.
  720 Units/Buildings
  2,160 Units/3 Buildings

-Commercial
-parking
-Bus 15 cas
-Minibus 21 cars
-Motorcycle 92
Bicycle 65

- parking 6 fl.
  42,192 sqm.
  1,758 cars

Perspective

Road Layout



Summary of NHA & Pacific Rim Council on Urban Development (PRCUD) 11 -13 March 2013

- Long-existing NHA projects are not being densified to take advantage of their high land value, high accessibility locations.
- The accessibility gap between low-middle and middle-high income households is widening in Bangkok. NHA programming is not improving this situation.
- How well is NHA positioned to take advantage of the large amounts of accessible land that will be opened up around new stations?

Lessons

1. Transport and housing policies should be integrated
2. They should be key of city planning which results in just and inclusive cities
3. Transport should go to scale with affordable and efficient services
4. Transport and housing policy should strengthen communities and create opportunities

Summary of NHA & Pacific Rim Council on Urban Development (PRCUD) 11 -13 March 2013

- Accessibility premiums generated by MRT locations are among the highest in East Asia; this positive externality is not being captured for public projects.
- At the micro level, there is often poor connectivity between MRT stations and their surroundings.
- There is limited integration between land use planning, road and parking planning, and MRT stations.
- NHA should purchase land near future MRT stations to implement innovative land development/financing mechanisms to deliver affordable housing units (<1 million Baht). Different mechanisms can be explored: cross-subsidization; PPP projects; land banking; etc.
- NHA projects near MRT stations should extend catchment areas of stations through para-transit.

- Parking should be limited in NHA projects near MRT to encourage use of MRT.
- NHA should take advantage of FAR bonuses shortly to be enacted by BMA Town & Country Planning and should lobby for more substantial future FAR bonuses.
- In developing new TOD areas, NHA should plan and facilitate delivery of local public services (schools), retailing (shopping), and private services (entertainment, retailing).
- A walkable environment should be constructed with seamless connections to stations.
- NHA should put in place mechanisms to gain support of residents / tenants to regain control of highly accessible properties
- In key TOD nodes NHA should work with private partners to create better residence–jobs balance.

Fourth Speaker of <Session 3A>

Mr. Pornarit Chuanchaiyasit
Chairman of The Thai Real Estate Association
E-mail: *center108@gmail.com, trea@thairealestate.org*

Brief Biography:

Education:

2522-2510	***Assumption School, Bangrak***
2523-2527	Bachelor of Commerce, Thammasat University
2528-2530	Master of Business Administration, Southern New Hampshire University, New Hampshire U.S.A.
2534-2536	Housing Development, Faculty of Architecture, Chulalongkorn University
2553	Attained Real Estate Development course (RE-CU: 38), Faculty of Architecture, Chulalongkorn University
2555	Attained Thammasat Leadership Program, Thammasat University (หลักสูตรนักบริหารระดับสูง ธรรมศาสตร์เพื่อสังคม นมธ รุ่น 1)
2558	Joining Urban Management Administration Programs, Institute of Metropolitan Development (หลักสูตรผู้บริหารระดับสูงด้านการบริหารงานพัฒนาเมืองมหานคร รุ่น 4)

Professional Experiences:

2531255-5	Managing Director of Pornpailin Development Co.,Ltd.
2555-2534	Managing Director of Lazal Housing Co.,Ltd.
2545-2535	Managing Director of Sand and Stone Co.,Ltd.
2552-2545	Board Committee of Center Point Entertainment Co.Ltd.

Current Positions

Managing Director of Pornpailin Development Co.,Ltd., and Conglomerates
President of Thai Real Estate Association
Committee of Real Estate Information Center
Committee of Thammasat Association under Royal Patronage
Committee of The Property Management Office, Thammasat University
Committee of Alumni Association of Faculty of Commerce and Accountancy, Thammasat University
Committee of Naraniti Sethabutra Fund

TOD and Opportunity and Potentiality of Real Estate Development in Private Sector Point of View

By Mr.Pornarit Chuanchaiyasit

Summary:

< 3rd AFTERNOON SESSION >

Session 3B: Parallel Session of Main Symposium

Session 3B: Logistic & Disaster Management Moderated by Mr. Oravit Hemachudha, ATRANS Board member
Logistic and Disaster Management in Thailand By Dr.Bhichit Rattakul, President of Navamindradhiraj University and Former Bangkok Governor
Transportation and Disaster Management By Prof.Dr. Anthony Chen, Head of Transportation Division, Utah State University
Logistic system in Disaster Medicine By Dr. Pumin Silapun, Deputy Secretary-General of National Institute for Emergency Medicine, Thailand
Disaster Preparedness and Management for AEC By Dr. Peeranan Towashiraporn, Director of Asian Disaster Preparedness Center (ADPC)

Moderator of <Session 3B>

Mr. Oravit Hemachudha
ATRANS Member Board
Navamindradhiraj University, Bangkok
E-mail: oravit1@gmail.com

Brief Biography:

Education:

Bachelor of Engineering (Civil Engineering), Chiang Mai University 1970-1974
Master of Engineering (Transportation Engineering), AIT 1980-1984

Experience:

- Deputy Director-general, Traffic and Transportation Department 2009-present
- Director of Traffic Engineering Division,
- Traffic and Transportation Department 2007-2009
- Director of Transportation Division,
- Traffic and Transportation Department 2005-2007
- Director of Planning and Public Utility Coordination Division,
- Public Works Department 2005
- Chief of Planning Subdivision, Public Works Department 1989-2004
- Civil Engineer, Public Works Department 1976-1989
- The Samut Sakhon Municipality 1975-1976
- The Prince Royal's College 1974-1975

First Speaker of <Session 3B>

Dr. Bhichit Rattakul
Rector of Navamindhradhiraj University and
Former Bangkok Governor

E-mail: bhichit@loxinfo.co.th

Brief Biography:

Dr. Bhichit Rattakul (พิจิตต รัตตกุล), (born on August 30, 1946) is currently President of Navamindradhiraj University, a public university located in Bangkok, Thailand. The university was previously known as University of Bangkok Metropolis as it was established, and currently funded, by the Bangkok Metropolitan Administration. It was formally named by King Bhumibol Adulyadej as Navamindradhiraj, meaning the ninth monarch, referring to himself.

Dr. Bhichit is the son of former Foreign Minister and Deputy Prime Minister Bhichai Rattakul and is a Thai politician who served as the Governor of Bangkok from 1996 to 2000 and the Science Minister for Thailand. Dr. Bhichit completed his undergraduate studies at Chulalongkorn University and his M.Sc., and PhD., in Chemical Engineering at Brigham Young University, USA. His experience encompasses both academic and political arenas, and was elected thrice as a Member of Parliament, as well as Governor of Bangkok and Senator. He served as Science and Technology Portfolio Cabinet member of the Royal Thai Government.

Dr. Bhichit has over 20 years of experience in policy and management as well as disaster management, environmental education and research. He was Senior Advisor to ADPC prior to becoming Executive Director and has been coordinating the disaster preparedness programmes in Thailand supported by UNDP and The World Bank.

Logistic and Disaster Management in Thailand

By Dr. Bhichit Rattakul

Summary:

Second Speaker of <Session 3B>

Prof. Dr. Anthony Chen
Head of Transportation Division, Utah State University
E-mail: anthony.chen@usu.edu

Brief Biography:

Dr. Anthony Chen is a Professor in the Department of Civil and Environmental Engineering and Head of the Transportation Division at Utah State University (USU) in the United States. He also serves as the Chang Jiang Chair Professor at Tongji University, Shanghai, China. Dr. Chen was a recipient of the prestigious Faculty Early Career Development Grant from the National Science Foundation (NSF) in 2002. He was a member of the Transportation Network Modeling Committee of the Transportation Research Board from 1999 to 2009, and an editorial board member of the ASCE Journal of Urban Planning and Development from 2007 to 2014. Dr. Chen is currently serving as an associate editor for *Transportmetrica A: Transport Science*, *Networks and Spatial Economics*, and *Journal of Advanced Transportation*, and an editorial board member of *Transportation Research Part B: Methodological*.

Transportation and Disaster Management

By Prof. Dr. Anthony Chen

Summary:

Transportation networks are an essential backbone for supporting the industrial activities and economic developments of the nation. Disruption to these networks can make peoples' daily lives extremely difficult as well as seriously cripple economic productivity of the region. This talk will present the development of a decision support system (DSS) tool for assessing vulnerability of transportation networks. The DSS tool is developed to facilitate decision making through the applications of database management capabilities, graphical user interface, GIS-based visualization, and transportation network vulnerability analysis. A *what-if* analysis approach for evaluating the consequences of network disruption scenarios is employed to demonstrate the features and applications of the DSS tool. To demonstrate the practicality of the DSS tool, two case studies will be discussed in this talk: (a) an earthquake scenario in Utah, USA, and (b) a flood scenario in the Chao Phaya River Basin, Thailand. Some strategic planning implications for preparedness and devising remedial strategies to protect the transportation network will also be discussed.

Third Speaker of <Session 3B>

Dr. Phumin Silapun
Deputy Secretary-General of National Institute for Emergency Medicine, Thailand
E-mail: puminsila@gmail.com, pumin.s@niems.go.th

Brief Biography:

1. Qualification

1995: Medical Doctor, Chulalongkorn University
1998: Public Health Administration, Sukhothaithammathirat University
2001: Board General Surgery, Chulalongkorn University
2008: Certificate: Advanced Trauma Life Support, The American college of surgeons and The royal college of surgeons of Thailand
2012: Certificate on Volunteer Management for Disaster Resilience Community in Asian Country , JICA

2. Experience

1995-1996 General Physician,Phanga Hospital
1996-1997 General Physician,Kapong Hospital
1997-1998 Director of Takuathung Community Hospital
2001-2007 General Surgeon,Trang General Hospital
2007-2009 Director of Takuathung Community Hospital
2009-2012 Director of Patong Community Hospital
2012-2013 Deputy Director Provincial Public Health Administrator ,Krabi province
2013-Present Deputy Secretary-General of National Institute for Emergency Medicine

3. Experience in Disaster Medicine

2010: Establish first Disaster Medical Assistance Team (DMAT) of Thailand
2010: Leader of DMAT work during Flash flood at Hadyai, Songkla province
2011: Leader of DMAT work during Thailand Mega flood at Ayutthaya province
2011: Leader of DMAT Thailand in Military Joint Combined Exercise between Thailand and Malaysia on disaster relief (JCEX THAMAL 11)
2012: Supervisor in Military Joint Combined Exercise between Thailand and Cambodia on disaster relief
2012: Lecturer on "Incident Command System"

Logistic in Disaster Medicine

by Dr.Pumin Silapun

Summary:

Logistic and Disaster medicine

A disaster leads to huge amount of live and property loss. The better administrate, the less the risk is. Difficulties on disaster preparedness and response are varies from inadequate human resources, to equipment. Ironically, sometime it happens to be too many assistance enter into a disaster areas. Last, but far from least, the transportation is also taken into account.

The transportation is one of the important factors for evacuation in a disaster. A deployment of an assistance team, a mobilization of food, drink and necessity are all depend upon the transportation. Difficulties on the transportation are numerous, for example, ruin roads, proper kind of vehicle, appropriate number of vehicle etc. They are all challenges which resulting to the efficiency of the disaster assistance.

A medical operation in disaster is significant: treatments for injured victims, disease control, health and sanitary assistance. They are great factors in reducing the death toll. It is, then, necessary for the medical teams to quickly access to the disaster areas, and also to evacuate the injured victims to the nearest hospital.

During the mega flood in 2011, great amount of injured victim were trapped in the affected areas. Several hospitals were flooded and were not be able to provide the healthcare services. Even worse, when they had to evacuate hundreds of their patient through flooded roads. It was a grand challenge where required efficient planning, proper and adequate vehicles, we even needed to modify vehicle in order to evacuate the victim and deploy the medical assistance team into the areas.

The medical operating in the Earthquake in Nepal was one of the challenge. It started with the crowded airport, the complex of its custom system: medicine and medical equipment got stuck in the cargo. Afterwards, the search for the vehicle, route planning, ruin roads, travel to remote areas in high land, to mobilize the victims to the nearest hospital.

The experiences on medical operation in varies situations are taken into account for the logistic system development where is the most suitable for the disaster response in the near future.

Logistic system

in Disaster Medicine

Dr. Phumin Silapunt
Deputy Secretary-General
National Institute for Emergency Medicine

National Institute for Emergency Medicine

- was established under the Emergency Medical Act 2008 (EMS Act B.E. 2551)
- responsible for the administrative management and coordination of relevant agencies from both the public and private sectors
- promote engagement of local governments in the management of EMS

Vision

"Adopt the international standard emergency medical system and provide universal access to emergency medical treatment for everyone in Thailand"

National Institute for Emergency Medicine

Mission

- ❑ To develop and standardize the emergency medical system in Thailand, which can be made accessible to everyone.
- ❑ To promote and strengthen the emergency medical system of Thailand through efficient administration.
- ❑ To develop the emergency medical system of Thailand for disaster preparedness.
- ❑ To strengthen a financial system that can provide sustainable and effective support to the emergency medical system of Thailand.
- ❑ To collaborate on issue related to the emergency medical system with the ASEAN community and other international actors.

Logistic System in Disaster Medicine

- ❑ To deploy Medical Assistant Teams to the affected areas
- ❑ To bring essential resources and supplies as quickly as possible (foods, medical equipment, medical supply, etc.)
- ❑ To transfer/evacuate patients from critical areas to definitive cares
- ❑ To refer patients between hospitals (Inter-hospital patient transfer)

Obstacles to effective logistic system in disaster medicine

- Planning/Itinerary
- Survey, assessment, and mapping of the affected areas
- Limitation of GPS
- The removal of the barriers or debris along the routes
- Arranging appropriate and enough transports to meet the need

Thailand Mega Flood 2011

Hospital evacuation by ground EMS and HEMS (Thai "doctor-heli"), coordinated by EMIT

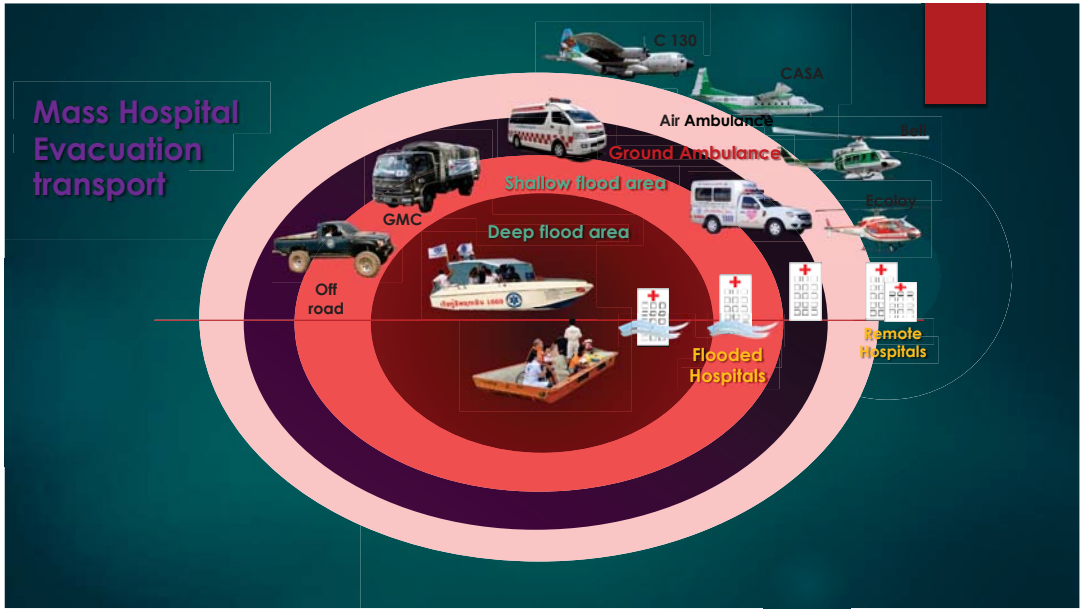
Most useful transportation:

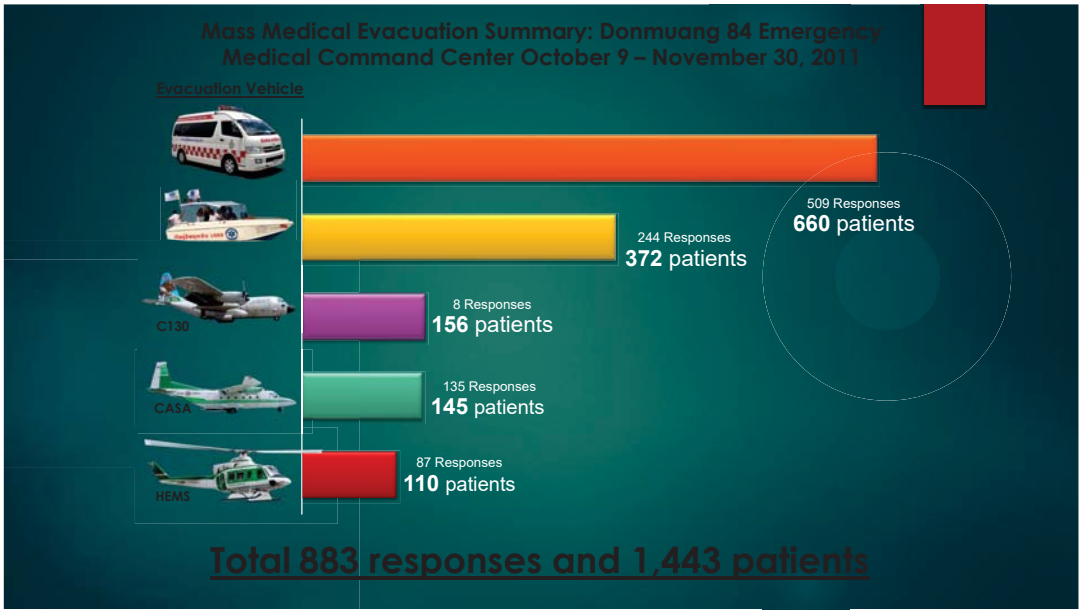
Army Truck

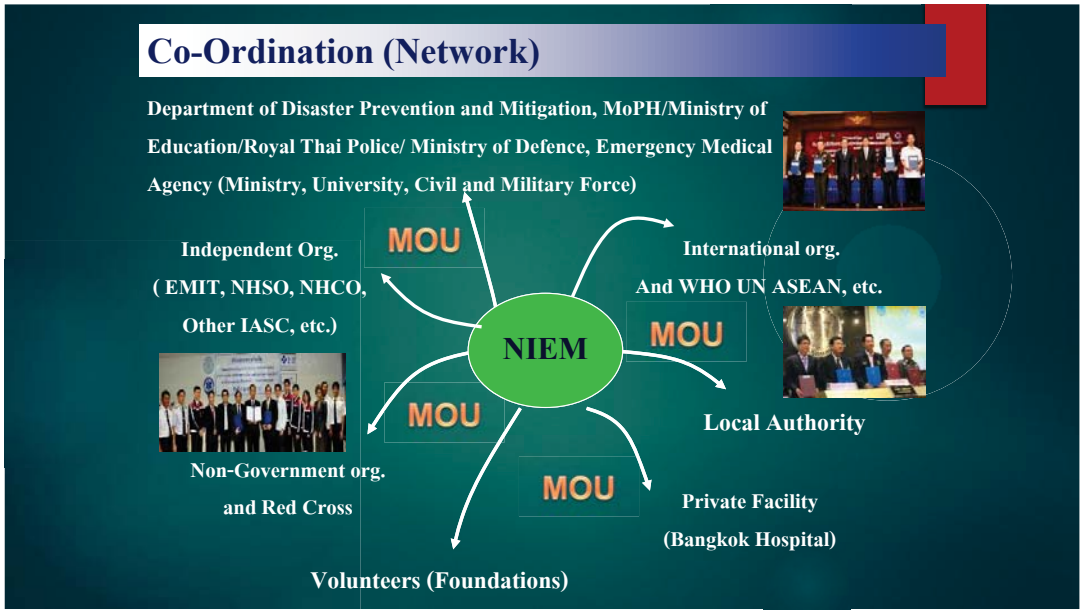
Naval Vessel

Helicopter

Army truck was modified to transport patients.


Mass Hospital Evacuation transport
C 130
CASA
Air Ambulance
Ground Ambulance
Shallow flood area
Deep flood area
GMC
Off road
Flooded Hospitals
Remote Hospitals


Mass Medical Evacuation Summary: Donmuang 84 Emergency Medical Command Center October 9 – November 30, 2011
Evacuation Vehicle
509 Responses
660 patients
244 Responses
372 patients
C130
8 Responses
156 patients
CASA
135 Responses
145 patients
HEMS
87 Responses
110 patients
Total 883 responses and 1,443 patients


Co-Ordination (Network)
Department of Disaster Prevention and Mitigation, MoPH/Ministry of Education/Royal Thai Police/ Ministry of Defence, Emergency Medical Agency (Ministry, University, Civil and Military Force)
Independent Org.
(EMIT, NHSO, NHCO, Other IASC, etc.)
Non-Government org. and Red Cross
MOU
NIEM
MOU
MOU
MOU
International org.
And WHO UN ASEAN, etc.
Local Authority
Private Facility
(Bangkok Hospital)
Volunteers (Foundations)

Prepare for Operation

- Mapping
- Food supply, Mobile telephone
- Meet with Nepal MOPH for information of any area that needs medical attention : Siphagat

Allocation of medical assistant units from Thai side and Nepalese side

Logistic limitation in Katmandu airport

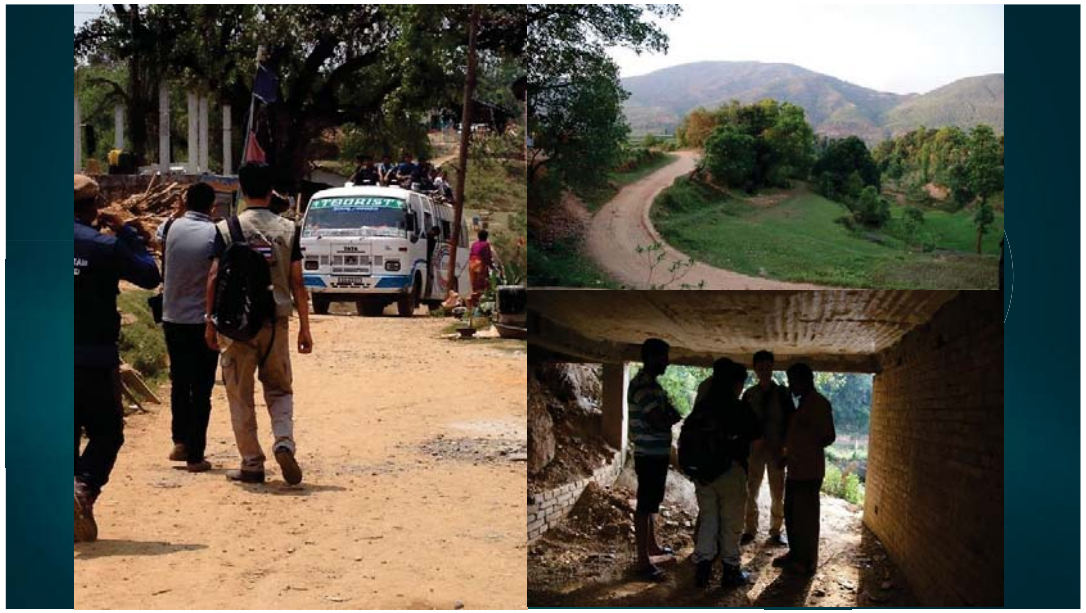
- Katmandu is the only airport in the country that can handle the larger aircraft. There are strict weight restrictions:
  - the capital's 4,600-foot elevation
  - relatively short runway
  - 6,600-foot runway was damaged in the earthquake but still responded
- the airport chocked by an influx of supplies:
  - workers there didn't have enough of the heavy equipment needed to efficiently handle large quantities of food and medical material arriving with relief workers.

Strategic entry point:

- Use smaller cargo aircraft and fly in more frequently
- Set up a land bridge to connect the airport to Nepal through a type of trans-shipment center.
- Shipments can be sent to the hub and shifted between trucks heading to different destinations.

May10, 2015 3rd team arrived : Chandeni

- mission for 2 weeks
- 3rd team arrived with carrying baggages.
- New problem from one mistake
- New team or replacement
- Obstruction of medicine



Mobile Unit

Recommendation

- Setting up initial survey and assessment teams; cartography, computer mapping analysis
- Survey Technology; Global Navigation Satellite System, GIS, GPS, Remote Sensing
- Route and street clearing; scouting roads
- Transportation plan and management
- Coordination and collaboration among related organizations in both public and private sectors

Fourth Speaker of <Session 3B>

Dr. Peeranan Towashiraporn
Director, Asian Disaster Preparedness Center (ADPC)
E-mail: peeranan@adpc.net

Brief Biography:

Dr. Towashiraporn works as a Director at Asian Disaster Preparedness Center. His main area of focus is using science to address challenges related to disaster risk management, including scientific quantification and mapping of disaster risk, effective risk communication, linking geospatial technology to disaster preparedness and response, and disaster risk finance. In recent years, he has taken parts in projects to identify and map disaster risk in Bangladesh, Cambodia, Indonesia, Lao PDR, Myanmar, Nepal, Pakistan, the Philippines, Thailand, Timor Leste, and Vietnam. He is now involved in a project that will promote the use of geospatial information and analyses to address various challenges in the Lower Mekong region.

Previously Dr. Towashiraporn worked as senior engineer at AIR Worldwide Corporation, a premier catastrophe risk modeling firm in the United States. He engaged in works related to seismic vulnerability and risk assessment of buildings as well as earthquake-induced casualty estimation. He joined ADPC in 2010 as senior project manager under the Urban Disaster Risk Management program.

Dr. Towashiraporn has published several technical papers on earthquake engineering and vulnerability assessment. He's been a member of damage reconnaissance teams for an earthquake in Greece and several hurricanes in the United States. Recently, he took part in an investigation of damage to buildings and infrastructures as a result of an earthquake in Myanmar and the northern part of Thailand. He was also recognized by the United Nations Office for Disaster Risk Reduction (UNISDR) as an expert to take part on their Ask-an-Expert forum on disaster risk assessment and its applications in February 2015. Dr. Towashiraporn holds Ph.D. Degree in civil engineering from Georgia Institute of Technology, USA.

Disaster Preparedness and Management for AEC

by Dr. Peeranan Towashiraporn

Summary:

As the ASEAN Economic Community (AEC) comes to fruition in 2016, the flow of people, products, and service across its member countries will increase significantly. The need for infrastructure, transportation, and logistic linkages amongst the countries has never been higher. Unfortunately, countries in AEC have been suffering from recurring disaster events where some of them have affected significantly the logistic links. Examples of those disaster events include the Thailand mega flood in 2011 which cut off many of the roads linking Thailand to its neighboring countries and the eruptions of Mount Merapi in Indonesia in 2010 which forced several airports on Java Island to close. These disastrous events, if they were to recur, would create serious disruption to the logistic links within AEC.

Understanding the landscape of disaster risk at a regional level becomes the first priority in order to manage effectively the risk existed in the logistic sector in the ASEAN Economic Community. Disaster risk assessment (DRA) is a process that results in a projection of the possible occurrence of future disaster events, and if they were to happen, an estimation of the impact the disasters can create on the people as well as on various economic sectors (in this particular case, the transport and logistic sector). Disaster risk assessment is a foundation for not only managing existing disaster risk, but also for achieving sustainable development in the future.

The effort to understand the disaster risk for AEC must be done at a regional level, and not for particular countries at a time. This is mainly because natural disasters do not stop at national borders. Earthquakes that had their epicenters in one country sometimes affected other countries. Typhoons often crossed several countries and created havoc wherever they passed. Floods as a result of one typhoon can occur in several countries at the same time. More importantly the quantification of the impact of these disaster events must consider cross-boundary transaction and economic interdependencies amongst different systems in different countries in the AEC, as well as globally. That is an extremely tall task for anyone to work alone.

< 4th AFTERNOON SESSION >

Session 3C: Parallel Session of Main Symposium

<Session 3C> Transportation-related, Energy & Environment Room: Park B, Ground Floor Moderated by Prof. Dr. Atsushi Fukuda, ATRANS Honorable Advisor, Nihon U, Japan
Future Transport and Land Use Vision and Global Low Carbon Society for Bangkok By Prof. Dr. Yoshitsugu Hayashi, WCTRS President, Nagoya University, Japan
Sustainable Mobility and Design Livable Streets as Pedestrianization for a Better Life of Community in Istanbul, Turkey By Mr.Gokhan Yilmaz, Head of Housing and Urban Development Dept. & Mr. Abdul Basid Dogru, Specialist of Urban and Transport Planner, Itanbul Municipality, Turkey
Tuning for Sustainable Urban Transport Development Utilizing Real Time Traffic Monitoring and Information System: A Case Study of Hanoi By Dr.Vu Anh Tuan, Director of Vietnamese-German Transport Research Center, Vietnam
National Policy and Planning for Implementation of Transport-related Environment Project in Thailand By Ms. Chutinthorn Mankhong, Office of Transport and Traffic Policy and Planning OTP, MOT

Moderator of <Session 3C>

Dr. Atsushi Fukuda
Professor of Department of Transportation Systems Engineering,
College of Science and Technology, Nihon University
E-mail: fukuda.atsushi@nihon-u.ac.jp

Brief Biography:

Professor Atsushi FUKUDA has served in the academic field for 26 years teaching and doing research in the field of transportation systems analysis and transportation planning. He was seconded by the Japan International Cooperation Agency (JICA) as Assistant Professor to the Asian Institute of Technology for two years. He has also fulfilled his responsibility as Chairperson of the Advisory Committee for many ODA projects such as the study on improvement of road traffic environment in Chiang Mai City, Thailand.

Prof. Fukuda has led various feasibility studies on the Clean Development Mechanism, Nationally Appropriate Mitigation Actions (NAMAs) and Joint Crediting Mechanism (JCM) studies in the transport sector in the ASEAN region.

Education:

1978-1982: B.Eng. (Transportation Engineering) Nihon University
1982-1984: M.Eng. (Transportation Engineering) Nihon University
1984-1988: Dr.Eng. (Transportation Engineering) Nihon University

Honors and Awards:

1988 IATSS Dissertation Award, IATSS
1997 Best Presenter Award, 52th Annual Meeting of JSCE
2003 Best Paper in the Decision Technologies Track Award, 36th Annual Hawaii International Conference in System Sciences
2006 Excellent Practice Paper Award, the 3rd National Transport Conference, Ministry of Transport, Engineering Institute of Thailand, Khonkean University
2009 International Activity Incentive Award, Japan Society of Civil Engineers (JSCE)

First Speaker of <Session 3C>

Professor Dr.-Eng. Yoshitsugu Hayashi
WCTRS President, Nagoya University, Japan
E-mail: yhayashi@genv.nagoya-u.ac.jp

Brief Biography:

Professor Dr.-Eng. Yoshitsugu **Hayashi** –Director & Professor of SusCoDe (Education and Research Center for Sustainable Co-Development), Graduate School of Environmental Studies, Nagoya University, Japan is now the President of WCTRS (World Conference on Transport Research Society) with more than 1,000 researchers and practitioners in railway, road, air and maritime and integrated transport from 80 developing and developed countries/regions. His background is Civil Engineering and the major field of research is analysis and modelling of transport – land use interactions and countermeasure policy to overcome negative impacts of urbanization and motorization has lead related international study groups. The results are published in such books as "Urban Transport and the Environment – An International Perspective", "Intercity Transport and Climate Change – Strategies for Reducing the Carbon Footprint", the Japanese Edition of "Factor 5" originally authored by Ernst von Weizsaecker, et.al, etc.

He is also Board member of the Engineering Academy of Japan, Ex-Vice President of JSCE (Japan Society of Civil Engineers), Chair of Taskforce Redesigning Japan as Resilient, Leader of Education Programme "From Earth Science to Basic and Clinical Environmental Studies", and has lead related research groups and the movement of "Smart Shrink" as a key strategy for declining and aging cities and regions. The results are published in such books as "Sustainability – Future Balance between Nature and Civilisation", "Sustainable Society after the Great East Japan Earthquake", "Diagnosis and Prescription for China's Urbanisation – Paradigm Change of Development and Growth", "Resilience and Regional Renovation", etc.

He was the Chair of Steering Committee of JICA Study on Bangkok Integrated Railway and Urban Development during 1993-1996, of which report has influenced a lot to the drastic reform of Bangkok urban transport strategy from road oriented to rail oriented, which has lead to today's rail transit network shape.

Future Transport and Land Use Vision and Global Low Carbon Society for Bangkok

By Professor Dr.-Eng. Yoshitsugu Hayashi

Summary:

The presentation will show the future visions of transport and land use as TOD based compact city and a backcasting method to get the future framework of land use - transport to achieve the goal of CO_2 emission.

ATRANS 2015
21 August 2015, Bangkok

Future Transport and Land Use Vision and Low Carbon Society for Bangkok

Yoshitsugu Hayashi

Professor, Nagoya University, Japan

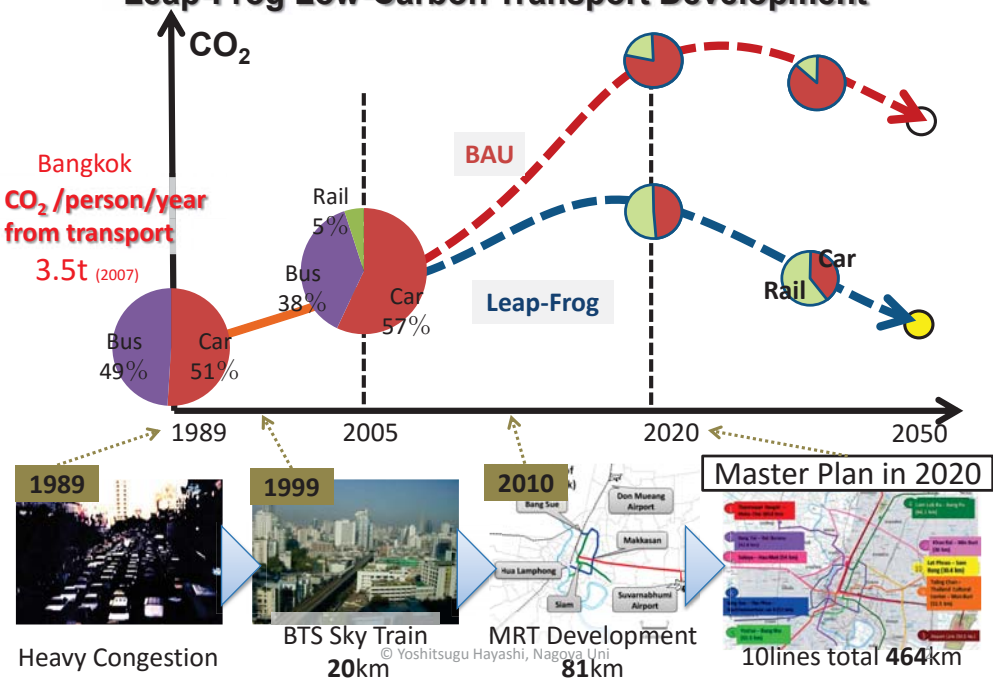
President, WCTRS (World Conference on Transport Research Society)

Full Member, Club of Rome

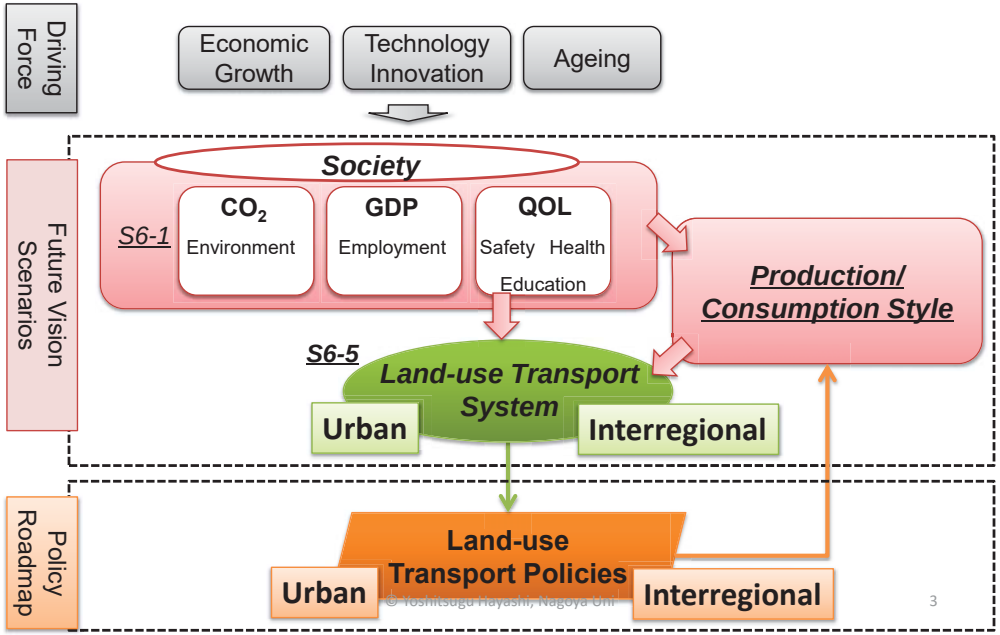
Co-Authors

Kazuki Nakamura, Kei Ito, Hirokazu Kato

Leap-Frog Low-Carbon Transport Development



The Framework of Backcasting Approach to Developing Low-Carbon Systems in 2050 (S6)



Low-Carbon Transport Studies

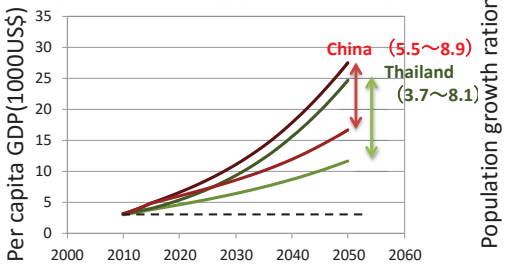
- Low-carbon transport policy options have been summarized for developing countries (TRL, GTZ), but there are problems with implementation, particularly financially, because of lack of measurement system of CO2 mitigation from transport development.
- Simple estimation has been made for potential CO2 mitigation from international transport development with limited data in developing countries (ADB, World Bank), but they are based more on the current trend.
- Long-term future visions of low-carbon transport systems have been analyzed in some Asian regions, identifying necessary changes in transport technology and demand as Backcasting (Vibat, ITPS), but they do not identify the levels and timing of policy implementation.

More Attention is needed to
Long-term Visions and Policy Roadmaps based on Changes in Production/Consumption Styles
to Decouple Economic Growth with Emission Growth.

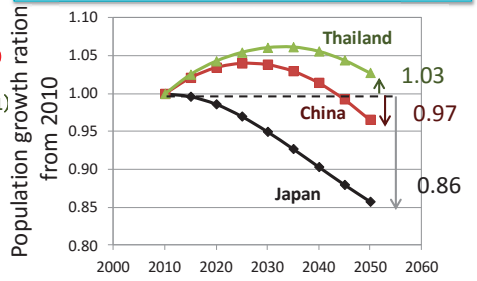
Driving Force

Driving Forces of Socio-Economic Changes in Asia

①Economic growth (vs 2010)

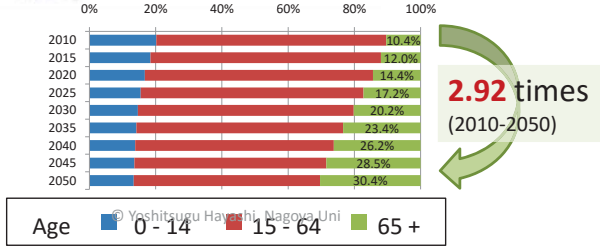


②Population change (vs 2010)



Source: UN World Population Prospects: The 2010 Revision

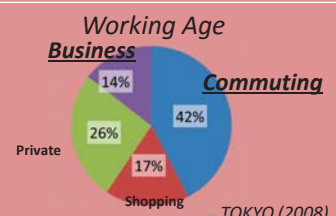
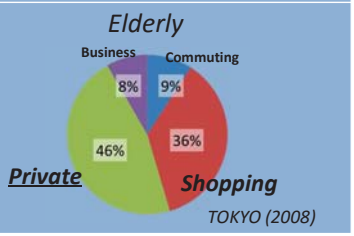
③Ageing in Thailand (2010-2050)



2.92 times (2010-2050)

Socio-Economic Vision

Visioning Future Society in Asia

	Aggressive Growth (Efficiency Demanding)	Moderate Growth (Sufficiency Seeking)
Society	Economically Developed	Socially Matured
Environment	More **Technological Approach** for Solution	More **Behavioral Approach** for Solution
Employment	More **Full-time** Employment	More **Flexible** Working Style
Education	More Education for **Career Development**	More Education for **Social Responsibility**
Safety	More **Technology-based** Protection	More **Community-based** Protection
Health	More Medical **Treatment** Reliance	More **Precautionary** Health Care
Production Style	**Mass** Production for Mass Consumption	More **Local** Production for Local Consumption
Lifestyle	**Work Oriented**	More **Social Activities**
Travel Purposes		

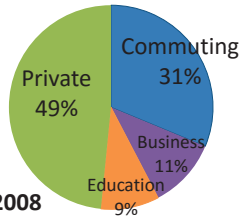
Urban Vision

Targeting Low-Carbon Urban Transport Systems

Efficiency Demanding

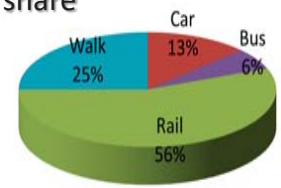
Tokyo (23 wards)

Trip Purpose



2008

Mode share



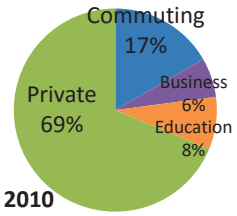
(2008)

CO_2 /person/year from Transport 1.6t (2004)

Sufficiency Seeking

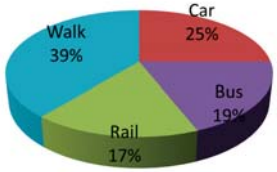
London (Inner)

Trip Purpose



2010

Mode share

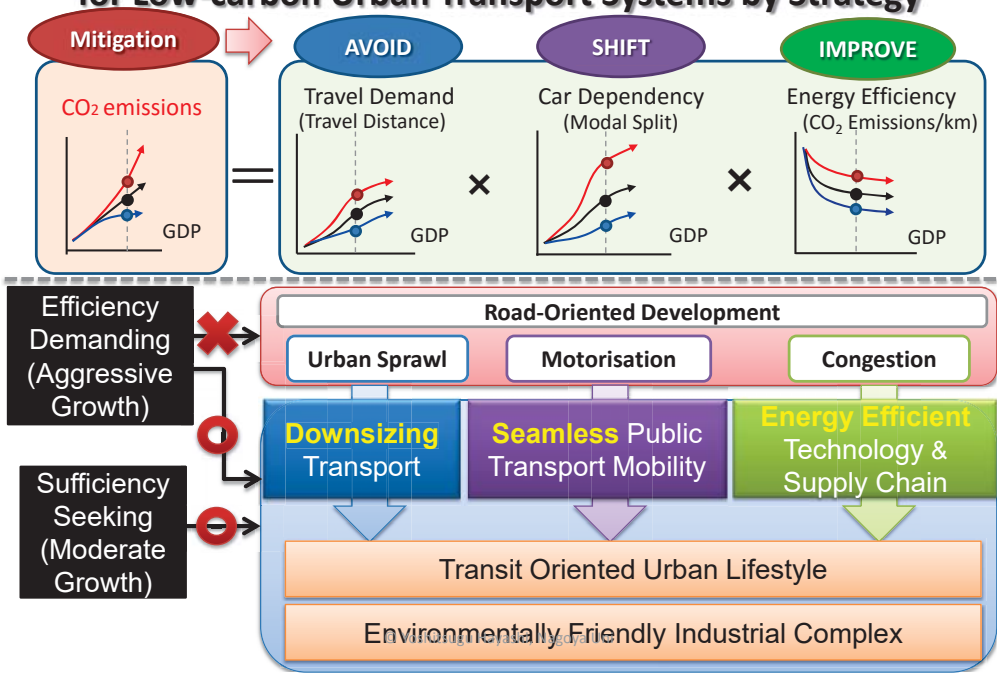


(2007)

CO_2 /person/year from Transport 1.2t (2010)

Urban Vision

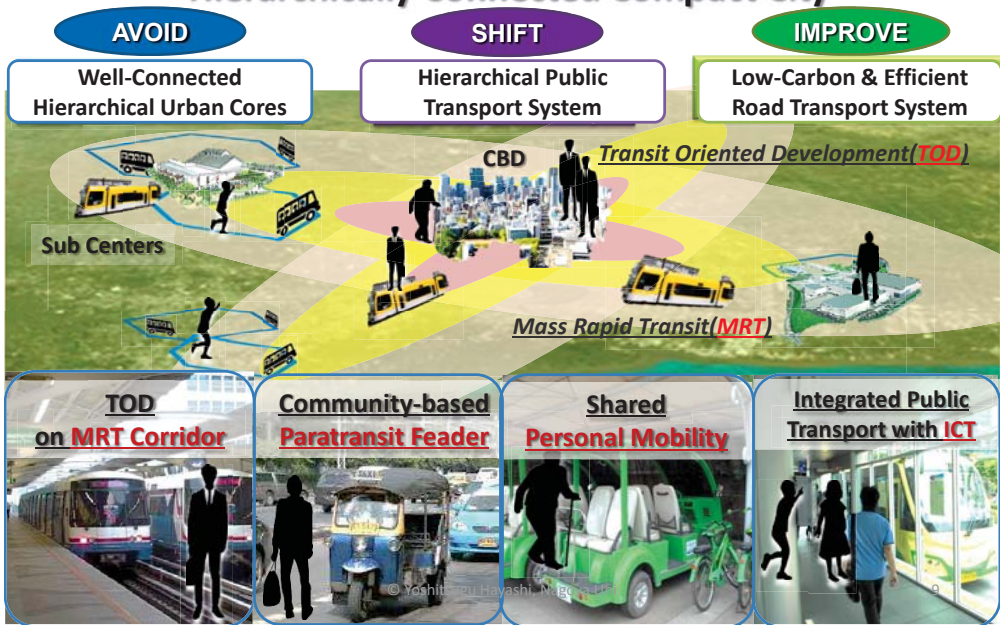
Visioning Lifestyle & Production Style for Low-carbon Urban Transport Systems by Strategy



Urban Vision

Visioning Low-Carbon Urban Transport Systems:

Hierarchically Connected Compact City

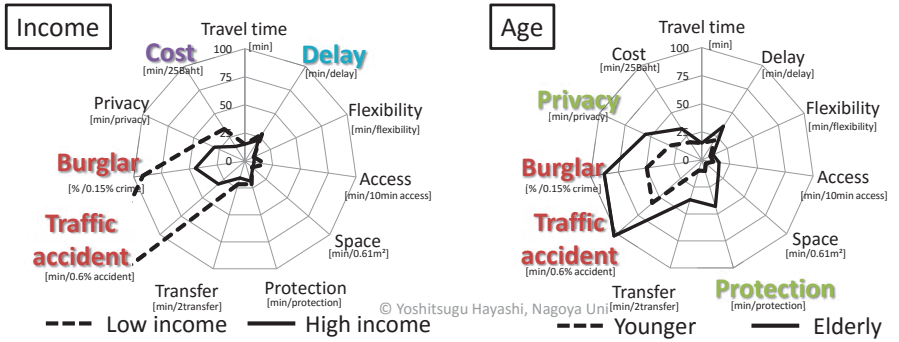


Urban Vision

Examining Quality of Life (Mobility)

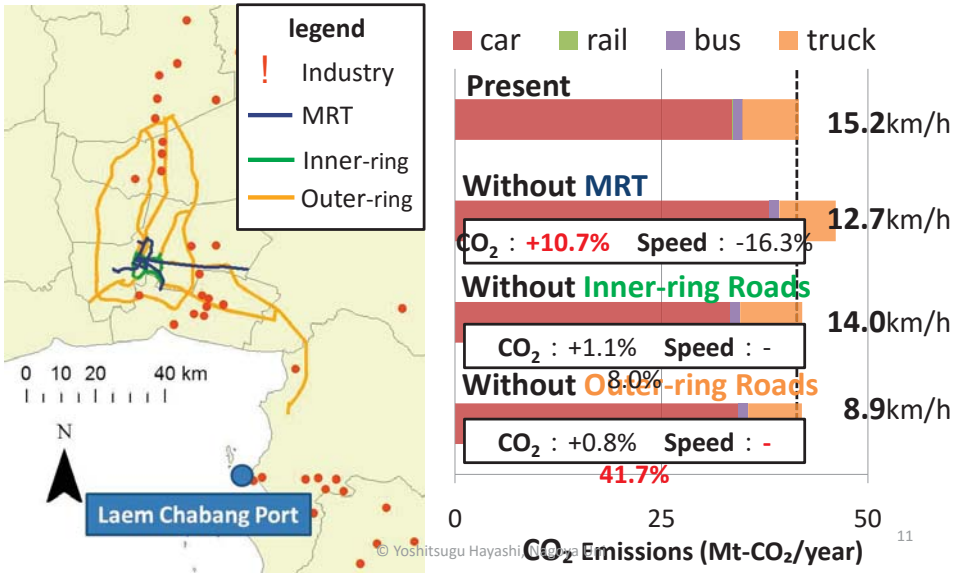
- Case of Bangkok -

Quality of Life (Mobility)



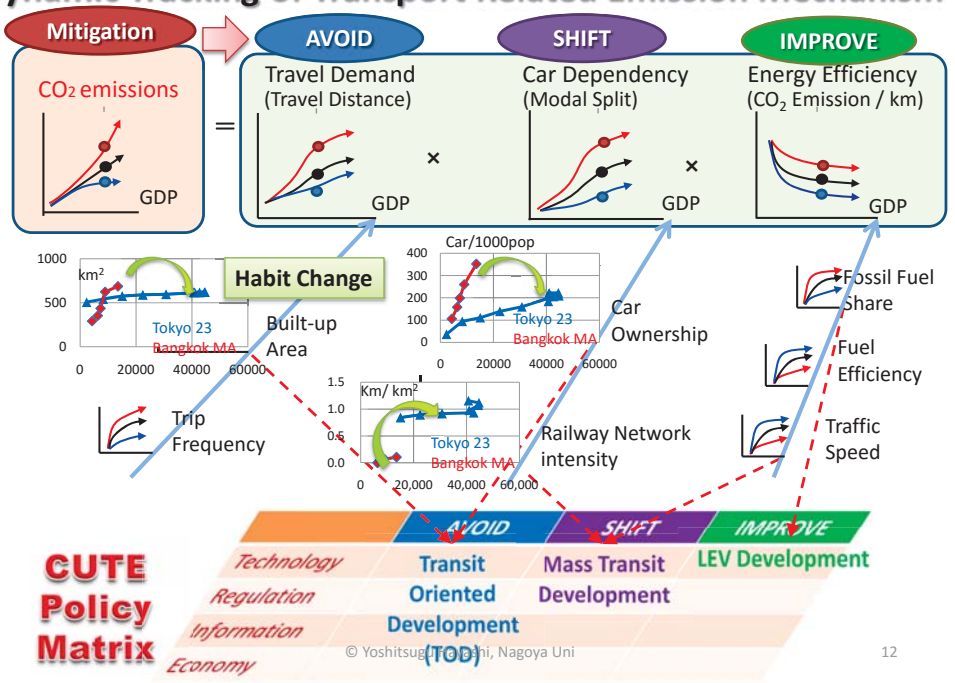
Interregional Vision

The Effects of Integrated Systems for Freight and Passenger Transport



Urban Policy Roadmap

Dynamic Tracking of Transport Related Emission Mechanism



CUTE Matrix: Policy/technology options

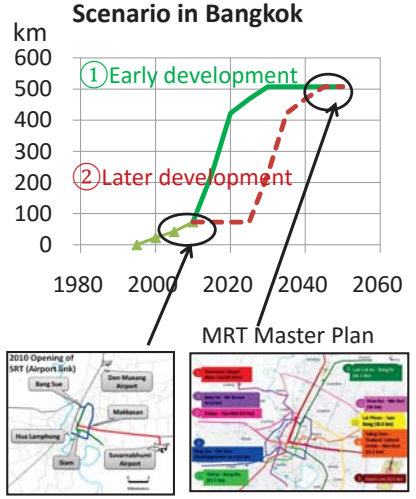
Strategies / Means	AVOID	SHIFT	IMPROVE
Technologies	• Transport oriented development (TOD) • Poly-centric development • Efficient freight distribution	• Railways and BRT development • Interchange improvement among railway, BRT, bus and para-transit modes • Facilities for personal mobility and pedestrians	• Development of electric vehicles • Development of biomass fuel • "Smart grid" development
Regulations	• Land-use control	• Separation of bus/para-transit trunk and feeder routes • Local circulating service • Control on driving and parking	• Emissions standards • "Top-runner" approach
Information	• Telecommuting • Online shopping • Lifestyle change	• ITS public transport operation	• "Eco-driving" • ITS traffic-flow management • Vehicle performance labeling
Economy	• Subsidies and taxation to location	• Park & ride • Cooperative fare systems among modes	• Fuel tax/carbon tax • Subsidies and taxation to low-emissions vehicles

Nakamura, Hayashi,May eds.(2004) Urban Transport and the Environment, Elsevier

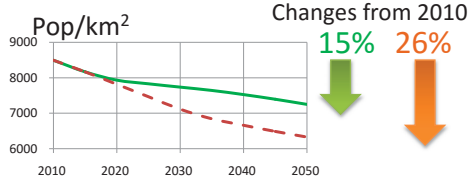
Urban Policy Roadmap

The Effects of Early MRT Development

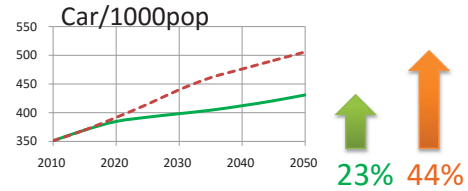
MRT Development Timing Scenario in Bangkok



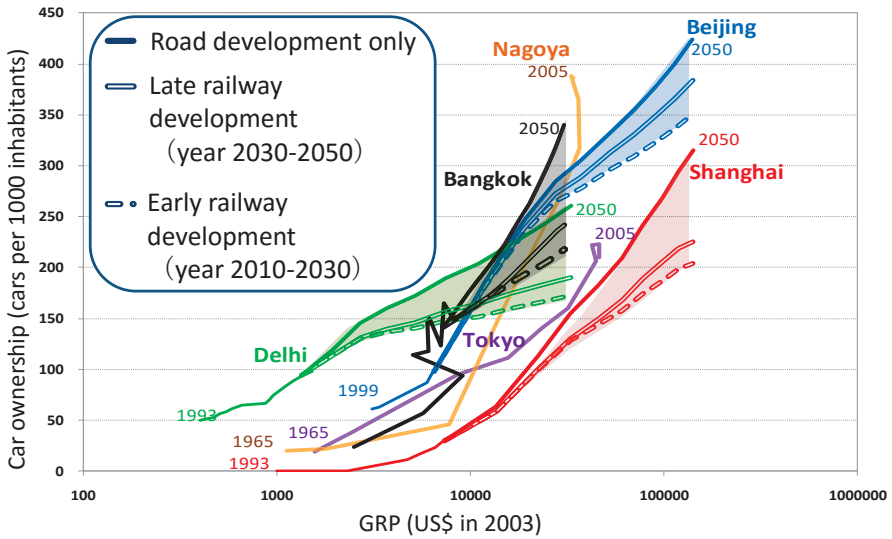
Calming Urban Sprawl by High Density Development around Stations



Calming Car Ownership Growth by Rail-oriented Travel Habit



The Effects of Early MRT Development - Application to Asian Megacities -



Scenarios of Technology Advancement

Energy Production Efficiency

- Fuel (gasoline, light oil, LPG, CNG, Bio)
  Fixed Efficiency (energy per fuel)
- Electricity
  Fixed Efficiency of each source (Petrol, Coal, Nuclear, Renewable energy)

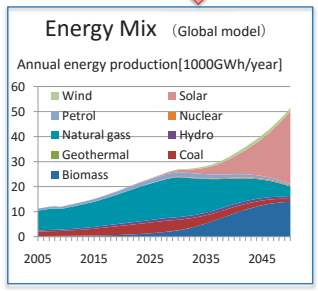
Scenario of Energy Mix

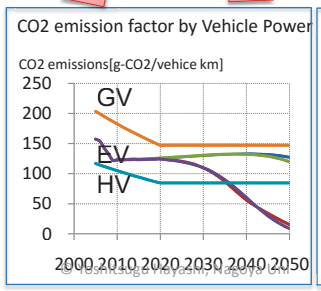
Energy Consumption Efficiency

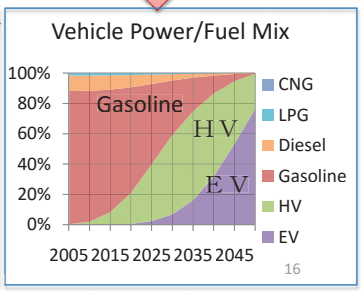
- Railway (Electricity), Bus
  Fixed Efficiency (energy per km)
- Car
  Gasoline (GV), Diesel, Hybrid (HV): 28% more efficient by 2020
  Electric (EV): Fixed efficiency

Scenario of Vehicle Power/Fuel Mix

Thailand







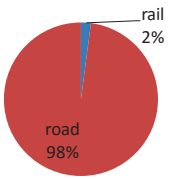
Transport Investment Scenarios

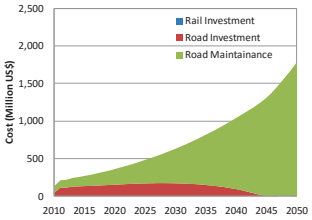
Forecasting Investment for Transport in Bangkok （2005-2050　$32,875 million）

Budget			Cost (m US$/km in 2005)		
Public Budget / GDP in Thailand	Transport / Public Budget in Thailand	Bangkok transport / Transport Budget	Rail Const ruction	Road Construction	Road Maintenance
20-30%	4-6%	9%	41 (-50%)	0.46	0.01

2050　BAU (Road-Oriented)

Rail：81km (+77%)
(Current)
Road：8,123km (+96%)



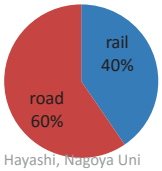


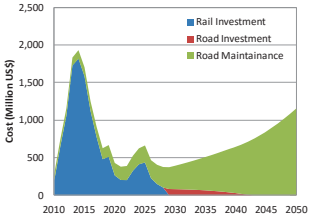
2005

Rail：46km
Road：4,140km

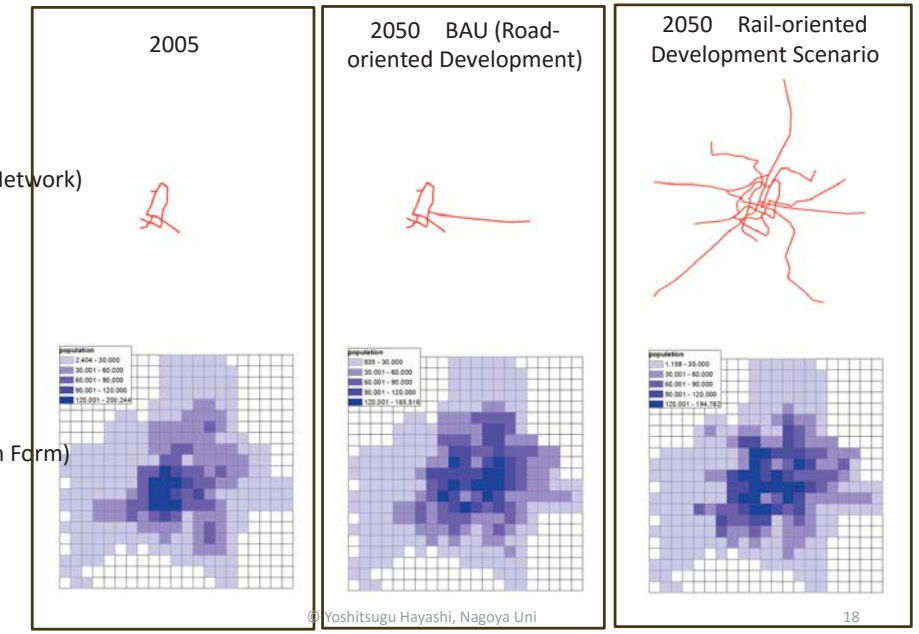
2050　Rail-Oriented Development Scenario

Rail：509㎞ (11 times)
(Plan)
Road：5,253km (+27%)



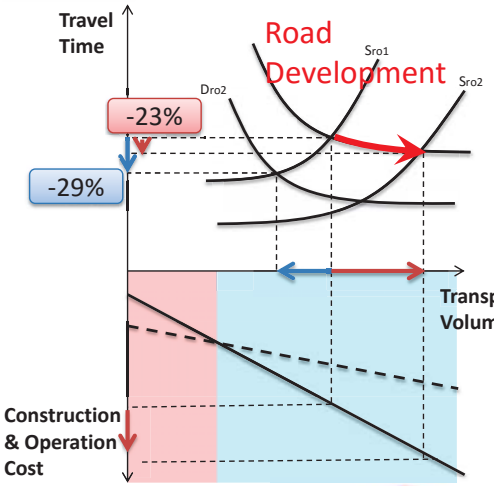


Transport Development Scenarios (Bangkok)



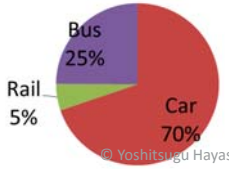
Urban Policy Roadmap

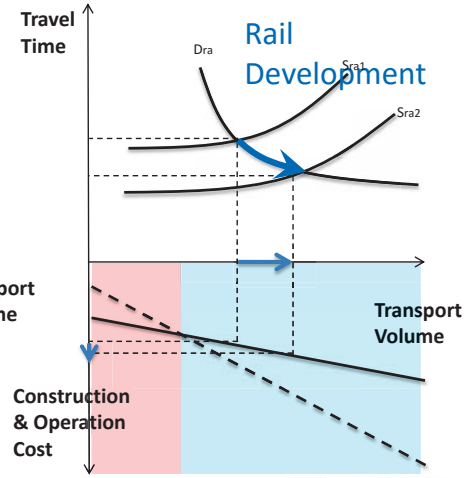
Road vs Rail: which is more effective ? (Bangkok in 2050)



Road-Oriented Development

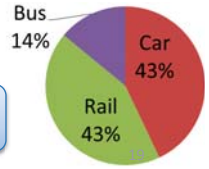
CO_2 Emissions:
-22% from 2005



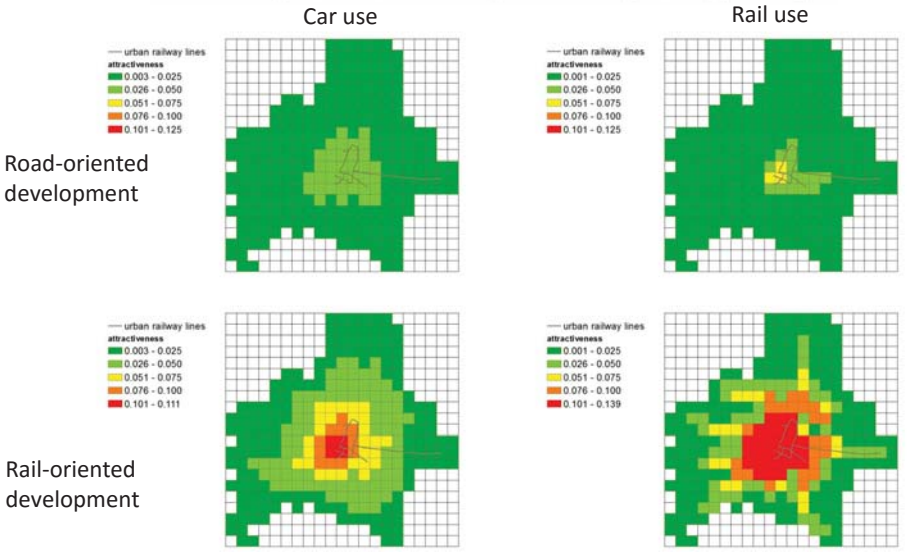


Rail-Oriented Development

CO_2 Emissions:
-45% from 2005



Estimated QOL (Mobility) Improvement from Transport Development (Bangkok)



Applicable to attractiveness of location (QOL: Quality Of Life)

Conclusions

Findings

- Developing hierarchically backcasting system from combining visions of society and transport systems to policy roadmaps.
- The urban transport vision of Hierarchical Compact City supported by transit-oriented urban lifestyle can secure Quality of Life in megacities in Bangkok.
- The early Implementation of rail-oriented Development can mitigate CO2 emissions by 45% and save travel time by 30% from the current level in megacities in Bangkok.
- While BRT is low carbon for many GMS megacities, MRT is necessary for cities with large population.

Policy Implications

- The Leap-frog Implementation of Policies is required to completely Shift Conventional High-carbon Development of Road-oriented Mobility into Transit-oriented Urban Lifestyle in Asia.

Second Speaker of <Session 3C>

Mr.Gökhan YILMAZ
Urban Planner, Local Government Specialist, Public Administration Specialist,
International Relation (Master of Urban Planning)
E-mail: Second Speaker of <Session 3C>

Brief Biography:

He was born in 29.05.1973 in Istanbul, Turkey, he married and has a son, live in Istanbul.

Education

1990 graduated Kabataş High School
1990-1994 Bachelor Degree Urban and Regional Planner -Yıldız Technical University, Istanbul
1998-2003 Master Degree, Urban Planner –Istanbul Technical University, Istanbul
He also has graduated Local Government Department, Public Administration Department and International Relation Department.

Professional Experience

Kağthane District Municipality (1998-2009)
He worked as Urban Planner at Directorate of Housing at Kağıthane District Municipality, then he worked as Chief at Urban Planning Directorate, after that he worked as Director of Housing Directorate, He planed Urban Implementation Planning Of Kağıthane District,
Istanbul Metropolitan Municipality
2009, he worked as Deputy Manager of Housing Directorate, then he worked as Deputy Manager of Urban planning Directorate, he worked as Director of Urban planning Directorate in May of 2013, then he promoted at Head of Housing and Urban Development Department in July of 2014 and he is currently working at same position.
Project and tasks; he managed most of Urban Master Planning of districts in Istanbul, beside planning Urban Master plan, he also managed Istanbul Metropolitan Environment Planning during his task of Urban Planning Directorate,
He is administrating Directorate of Cartography, Directorate of Housing Directorate, Directorate of City Planning, Directorate of Planning and Directorate of GIS and managing most of project and tasks belong these directorates, beside this tasks, he also has been coordinating and responsible for Parking management and planning parking lot areas, TOD (transit-oriented development) planning and Public Transportation and Public Transport Transfer Center planning, pedestrian network planning for different location in Istanbul Metropolitan Area,
At the additionally beside the task of Istanbul Metropolitan Municipality, he also took charge as delegate of Istanbul Municipality at 1 Number, 2 Number and 3 Number Cultural And Natural Heritage Preservation Board during his task of Istanbul municipality.

Second Speaker of <Session 3C>

Abdul basid DOGRU
Specialist Urban Planner and Urban Transportation Planner
E-mail: abasitdogru@gmail.com

Brief Biography:

He was born in 06.03.1976 in Bitlis Province of Turkey, married and has three daughters, live in Istanbul.

Education

1993-1997, Bachelor Degree Urban Planner -Yıldız Technical University, Istanbul,

1998-2003, Master Degree, Urban Planner -Mimar Sinan University, Istanbul, Master Degree Thesis: The Peri-Urban Sprawl and Sustainability In Istanbul,

2013 (September-December), JICA Group Training Program, Comprehensive Urban Transport Planning and Project Training Course, during course he had lesson from some lecturers of Tokyo University, University of Tsukuba, Tokyo Institute of Technology, Nihon University, Hiroshima University and Yokohama National University, ha has been in Hiroshima, Osaka, Nagoya and Yokohama.

Professional Experience

Istanbul Metropolitan Municipality, Department Of Housing And Urban Development,

1997-2005

Position: Urban Planner, Projects: Urban Planning in Istanbul,

2005-2013

Position: Project manager of Urban Planner and Transport Planner, Projects: Urban Master Planning and integrated Transportation Planning in Istanbul

2013-2015

Position: Specialist Urban Planner And Urban Transportation Planner, Projects: Parking management and planning parking lot areas, TOD (transit-oriented development) planning, BRT, LRT and Public Transportation and Public Transport Transfer Center planning, pedestrian network analyses and planning for different location in Istanbul Metropolitan Area,

Experience International Studying At The Abroad

2011 ITALY -Cooperation with some municipality of Italy Planning Tourism Master, Position: Expert Urban Planner - Project Management; studied Urban and Tourism Master Plan and cooperation with Roma Municipality, Firenze Municipality and Venice Municipality in 2011,

2014 FRANCE- Attending to TRA (Transport Research Arena) conference and studying and cooperation transportation subjects; during that conference attended and studied topics; 1-Electromobility, 2-Traffic Management and Routing, 3-Urban Mobility and Eco-Mobility, 4-Pedestrians network planning, 5-Urban Logistics, 6-Public Transport Modes, 7-Land Use and Planning, 8-Rail Freight, 9-Integrated Public Transport Services, Terminals and ICT Impacts,

Sustainable Mobility and Design Livable Streets as Pedestrianization for a Better Life of Community in Istanbul, Turkey

by Mr.Gokhan YILMAZ and Mr.Abdul Basid DOGRU

Summary:

This paper's main subject is finding better solution for community by sustainable urban design and transport planning after rapid urbanization and motorization event. In recent 50's years during rapid urbanization, the expectations of life, immigration and the population of cities were increased very much and it was created high density urbanization in metropolitan area. In this case although high density and big urbanization area the transport infrastructure has been insufficient. The concentration of a large population has negative results especially in developing countries. Heavy traffic, air pollution, noise pollution and unsuitable environment for living are some of its results. Before motorization term automobiles should be adapted with urban spaces, but this process causes to destroy the attendance of pedestrians in urban area.

This paper's aim is to resolve the current issues related negative externalities of motorization and the increasing of the car, a pedestrian has to anticipate safety risks of automobiles traveling at high speeds because they can cause serious injuries to a human and can be fatal. Pedestrian scale has been lost and neighborhood units have also disconnected communities. Use of cars for transportation creates barriers by reducing the landscape required for walking and cycling. It causes a threat to children and the elderly. The environmental impact of transport is significant because it is a major user of energy, and burns most of the world's petroleum. Cars contribute to pollution of air and water.

The increasing attendance of automobiles causes creating an unsafe, unpleasant and dangerous place for residents of that city. So many countries are thinking about some solutions for it and Pedestrianisation is an efficient solution for this problem. Safe, attractive, and accessible spaces for community interaction are a vital component of sustainable, livable cities. Pedestrianization improves safety and accessibility for pedestrians and brings larger social, environmental, and economic benefits for cities. Pedestrianization improves public health by providing opportunities for physical activity through active transport, and improves traffic safety and it supports local businesses and fosters economic growth through tourism and cultural exchange, building thriving and prosperous urban communities. So we can create a city that has Pedestrianisation and in result it will has a healthy and safe and compatible with human being characters. It also can help to reduce both noise and pollution by discouraging or restricting access of non-essential vehicles, it creates a pleasant environment that people can involve in different social, cultural and tourism activities as well, also it can improve the economical growing of that district, it helps to promote walking as a transport mode and it has positive economical and environmental efficiency and can be an efficient way to improve environmental conditions in city.

In this regard "living street project" aims to design neighborhood units as non-motorized zone and pedestrianized streets and at the result that to provide human scale spaces to increase the safety of unsafe streets to transformed to living quarters. The main proposal of this project design safe and social and people oriented spaces, in this respect this project is a sustainable social, environment, urban planning and transport planning project that designing the natural and artificial environment at human scale. The "Living Streets project" is a social and health project in order to consider of pedestrian oriented and walkability for people. Walkability is most necessary subject for people health and this project aims to design the spatial in human scale based to provide to access and connect to open space for community by walking. By the providing to increase the usage of streets by the pedestrians and passing free by the pedestrianization and organizing non-motorized and planning alternatives road network for cars in neighborhood units and to aims to transform streets to creating and designing free and open spaces for socializing, communication and enjoying for all different social groups, especially for children.

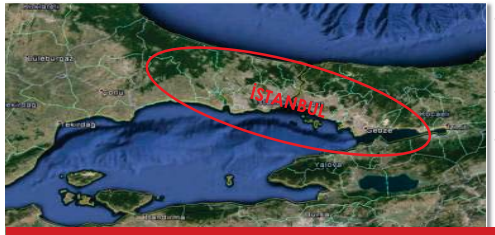
Sustainable Mobility and Sustainable Urban Planning, As a Social and Environmental Project; Designing Living Streets

Gökhan YILMAZ: Urban Planner, Local Government Specialist, Public Administration Specialist, Head of Housing and Urban Development Department, Istanbul Metropolitan Municipality,

Abdulbasid DOGRU: Specialist Urban and Transport Planner, Housing and Urban Development Department, Istanbul Metropolitan Municipality,

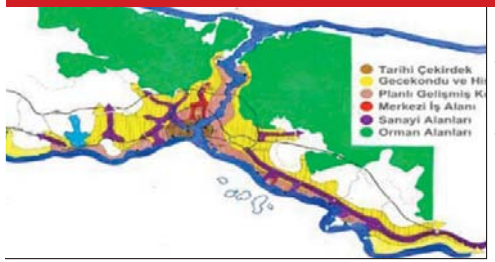
The geographical location of Istanbul, Turkey

Urbanization Proses Of Istanbul



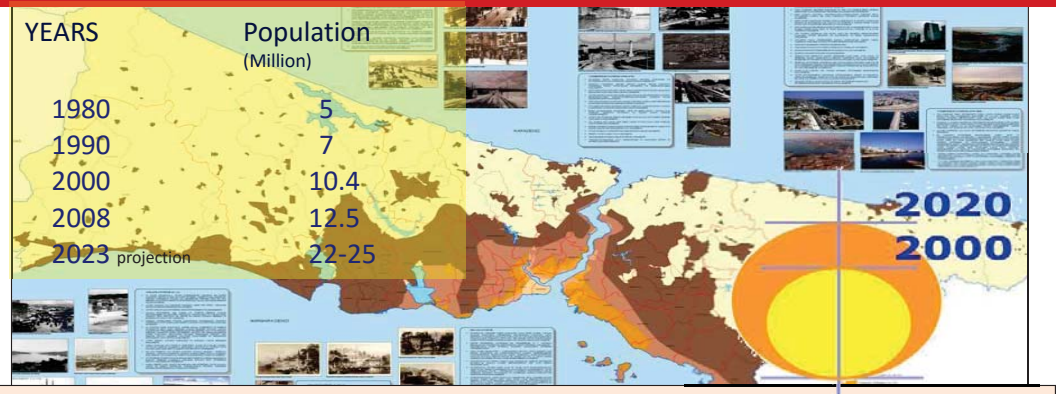
- The history and the history of the world with its natural beauty and reputation of the geographical location has a special place among the metropolis of the world.
- The İstanbul City is in national and international trade and tourism center.
- At the that time industrialization began in İstanbul, Therefore many people have started to migrating Istanbul from small towns in Turkey after in 1950

Rapid urbanazation by the industrial growth (1950-1980)



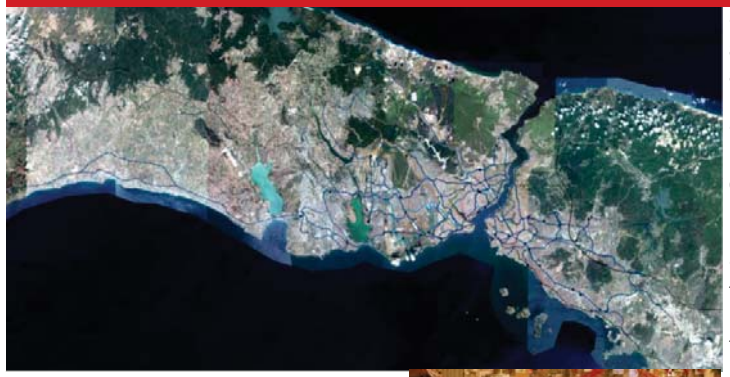
- unplanned and uncontrolled development has caused by rapid urbanization, it has been effected by the land use and transportation.
- migration of population concentration that comes with it has been an important part of the process.

Urban Spatial Development Of Istanbul



The most important factor which causes existing trend is MIGRATION!

Istanbul Metropolitan Area



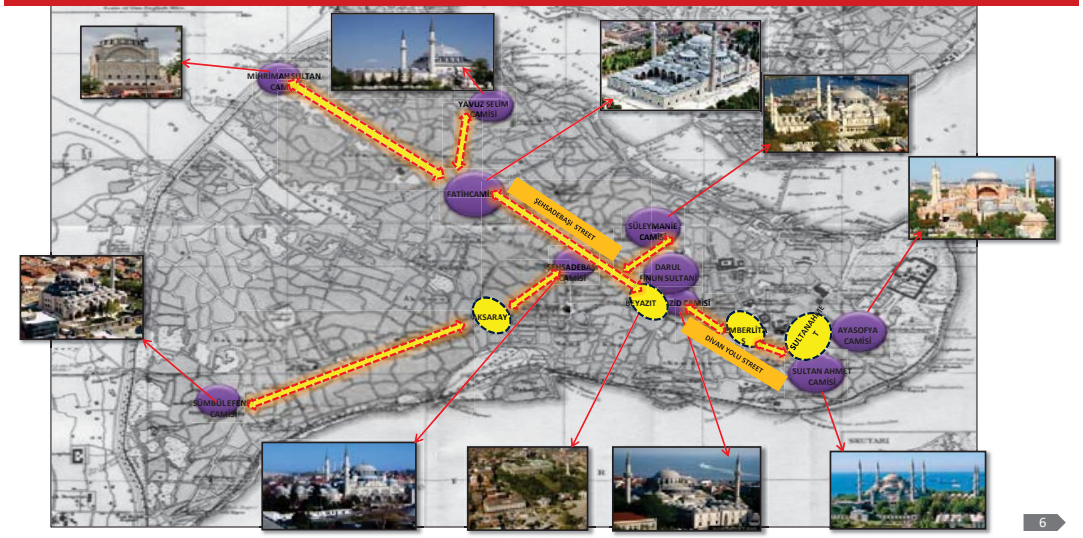
- Istanbul is the largest metropolitan city of Europe with it's big population and it is bigger than 23 country in Europe, the density of population is 20.116 person in the center of city

- Istanbul is a megapolis with approximately 15 million population and 39 district,
- Instead of rapid urbanization in Istanbul Metropolitan we need to create Sustainable Cities that have limited dimension and small area ,
- the concentration of population the public transportation system needs to improve with sustainable transportation and urban planning policies.
- The rapid population growth of the 1950s strained the historic nature of the urban fabric.

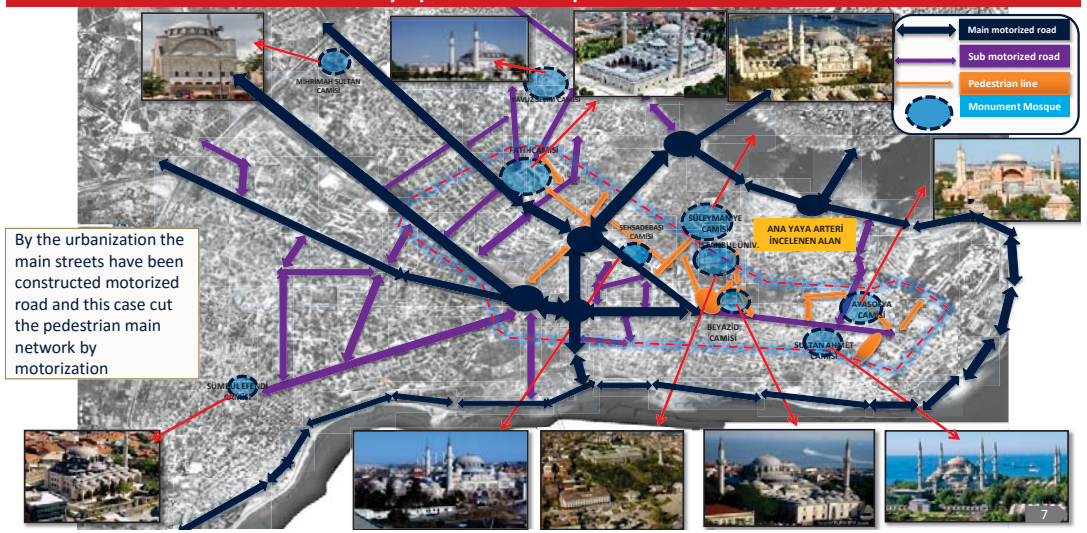
Istanbul, Byzantion period (330-400), city squares and main pedestrian lines

The old Istanbul city has been established around several monument mosques, such as, Fatih Mosque, Sultanahmet Mosque- Blue Mosque, Ayasofya Church and squares and there were a main pedestrian live between these squares to contact each squares with others.

Istanbul- Historical Peninsula, Ottoman Empair period (1453-1900), city squares and main pedestrian lines



Istanbul- Historical Peninsula, Rapid Urbanization and Motorization period (1950-1980), city squares and main pedestrian lines



By the urbanization the main streets have been constructed motorized road and this case cut the pedestrian main network by motorization

Social life in neighborhood before rapid urbanization

- Social life has been established at streets and around mosque at neighborhood scale in old Istanbul
- The streets are connected the mosque square and small green areas were majority free public places
- Community was having social relation around of the mosque square and at streets.
- squar is the living centers where are the collectors of streets, complementary and unifying element .

Square Oriented Living Center Project

What is Square?

Based on intimacy in social life

•Occurred in community culture,

•square is not a tool for the detection of monumentality,

•it is social centers for meeting of the society,

•cohesion and developing activities such as making the trade.

•Square and streets were living spaces and safe zone for all different age groups, older, adult, younger and children age groups,

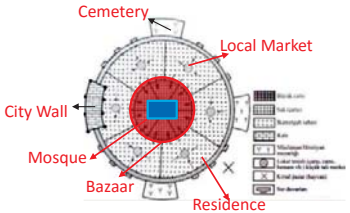
•Community is cooperating and helping each other with the spatial's well organized.

•free spaces form have been designed to create a strong social structure and community in neighborhood,

Sarajevo Square, Bosna Hersek

Old Istanbul square

Relationship Between Market And Square



Market Neighborhood

"Mosques, bazaars and soup kitchens are the dominant elements of the Ottoman town planning. This area can be defined as the market neighborhood."

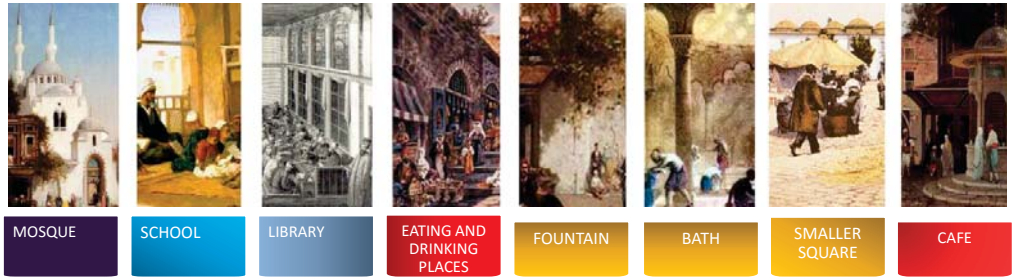
Faroqhi, 2004

- The past design should be well-analyzed to be inspired from the past.
- It was constructed a mosque first of all than it was constructed a the houses around of the mosque,
- Then new neighborhoods have grown outward from the center of the mosque by constructing housing piece by piece.

Inspiration from the Old Culture

Relating Square Oriented Living Center To The History And Culture Past

Public and Common Elements

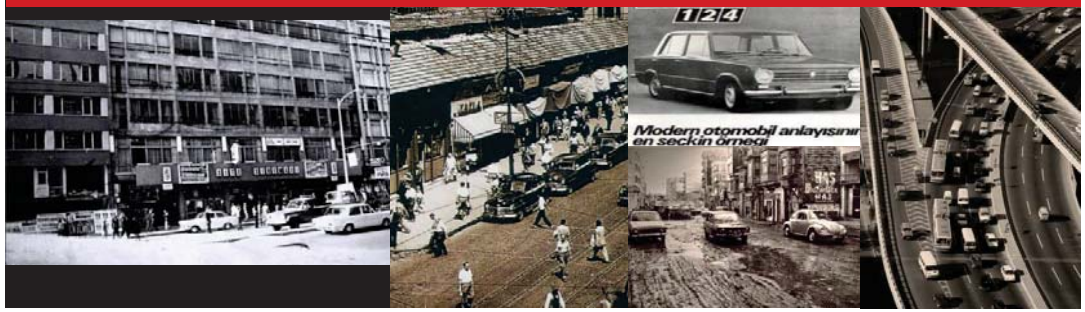


- Each home would built absolutely respected "seniority rights" of the previous one about allowing its light and wind.
- The neighborhood widen size was usually between 1-5 hectares and population had changed between about 1000-2000 people.
- Neighborhood was ending with a dead-end street and every neighborhood had its own public and common elements.

Before The Car Social and Spatial Environment

- Before the car, vehicles were used in out of residential areas for different transport purpose such as for carrying goods and fora transport people between cities. Pedestrian-oriented transport was the most conmen in the cities.
- The city was shaped by the needs of the people. Streets, squares were safer and social life centers.

After the Car Changed the Social and Spatial Environment



- the car has become a part of our life-since the middle of 20th century,
- urban social life has been changed in order to using car in the city. The effects of the car on everyday life have been a subject of controversy,
- While the introduction of the mass-produced car represented a revolution in mobility and convenience,
- the modern consequences of heavy automotive use contribute to the use of non-renewable fuels,
- a dramatic increase in the rate of accidental death, social isolation, the disconnection of community, the rise in obesity, the generation of air and noise pollution, urban sprawl, and urban decay.

Rapid Urbanization and motorozation

- In recent 50's years during rapid urbanization, immigration and the population of cities were increased,
- high density urbanization in metropolitan area,
- the urbanization area getting bigger instead of high motorization and with a large population,
- the transport infrastructure has been insufficient.
- The concentration of a large population in one or several cities has negative results especially in developing countries.
- Heavy traffic, air pollution, noise pollution and unsuitable environment for living are some of its results.
- Before motorization term automobiles should be adapted with urban spaces,
- Motorization process causes to destroy the attendance of pedestrians in urban area.
- In rapidly urbanizing cities streets become exhibition space of the car because of parking,
- especially in the last sixty years, streets has fewer children and more "gray" color.

After rapid urbanization and motorization, The effect of using cars on changing urban society life


Too complicated urban structure, no neighborhood structure


Crowded and separated community

Well design neighborhood model

- the spatial form and structure has been changed,
- the street network has been designed for high rate car usage and oriented cars,
- Limited the accessibility of pedestrians.
- The neighborhoods structure and forms have been destroyed
- The well designed spatial structure for communication and socializing, have changed with car oriented form.
- The neighborhoods have been transformed such as huge part of urban area
- neighborhoods have been divided by car oriented high speed roads.
- the human scale designed neighborhood structure was lost.
- The community has been separated according to economic groups, different age groups.
- the communication and socializing has decreased between communities
- The neighborhood units have divided by the form of urban area in city
- socializing and social cooperation has been decreased
- The community has been transformed such as individual crowded who do not know and do not trust each other.
- after motorization they have been transformed only for passing cars and car parking
- that never safe especially for pedestrian and children.

Before the Cars

General Characteristics of the Street Before the Car

PART OF THE HOUSE	SOCIAL AKTIVITIY	PLAYGROUND	WALKABLE	SECURE
The streets are a continuation of the residential building and part of the house where house life intersect with bay window, balcony and the garden gate	A place where women are sitting and chatting at fountains, communication and everyday life are provided	A playground where children play	A pedestrian path that pedestrians walk comfortably	Safe and peaceful places

The former mayor of Bogota, Enrique Penalosa with the words;
"The great city is not the one that has highways, but one where a child on a tricycle or bicycle can go safely everywhere."

After the Car

General Characteristics of the Street After Car

BORDER OF THE HOUSE	TRANSPORTATION	WEAK NEIGHBORHOOD	DEPENDENCE	UNSAFE
The streets are where houses ends and limiting factors, rather than being a part of the housing	Use only for transport instead of socializing	Alienation between neighborhood	The children are computer addicted and Asocial	The streets are noisy, unsafe

In rapidly urbanizing cities like Istanbul, Streets become exhibition space of the car because of parking and ownership issues; especially in the last sixty years, streets has fewer children and more "gray" color.

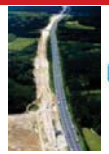
The one is most necessary objective is whether the streets are safe or not for social community.

- the space safety and specifically the safety streets are related with designing spatial with human scale,
- the safety space is related being the place perceivable and controllable scale for human.
- the human feel safe when they were at the place where they can control it.
- The human feel unsafe and alone when they were in large crowds.

The effect of using cars on changing to urban society

- the car is that modern urban pedestrians must be more alert
- With the increasing of the car, a pedestrian has to anticipate safety risks of automobiles traveling at high speeds
- Pedestrians can cause serious injuries to a human and can be fatal.
- the loss of pedestrian-scale villages has also disconnected communities.
- Many people in developed countries have less contact with their neighbors and rarely walk unless they place a high value on exercise.
- rarely walk unless they place a high value on exercise.
- Use of cars for transportation creates barriers by reducing the landscape required for walking and cycling.
- Transport is a major land use, leaving less of this resource for other purposes.

The negative externalities of using car on environment



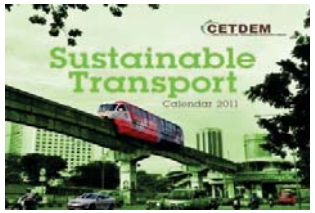

Motorization impacts on environment

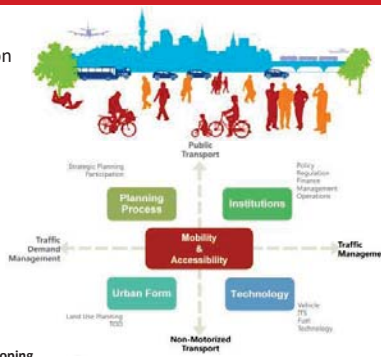
- The environmental impact of transport is significant because it is a major user of energy,
- burns most of the world's petroleum.
- creates air pollution, including nitrous oxides and particulates,
- a significant contributor to global warming through emission of carbon dioxide,
- road transport is the largest contributor to global warming.
- Cars contribute to pollution of air and water.
- Emissions of harmful gases like carbon monoxide, ozone, carbon dioxide,
- benzene and particulate matter can damage living organisms and the environment.
- The emissions from cars cause disabilities, respiratory diseases, and ozone depletion.
- headaches, and stress to those frequently exposed to it.
- Transport systems include traffic congestion and automobile-oriented urban sprawl,
- Vehicles can consume natural habitat and agricultural lands.
- By reducing transportation emissions globally,
- it is predicted that there will be significant positive effects on Earth's air quality, acid rain, smog and climate change.
- The health impact of transport emissions is also of

	CO2	Carbon	NOx
Airplane	340	93	0.7
Car	200~298	55~81	0.3~0.95
Train	116	32	n/a
Bus	90	25	0.3

Sustainable mobility, social and environment solution; Pedestrianization

- Safe, attractive, and accessible spaces for community interaction are a vital component of sustainable, livable cities.

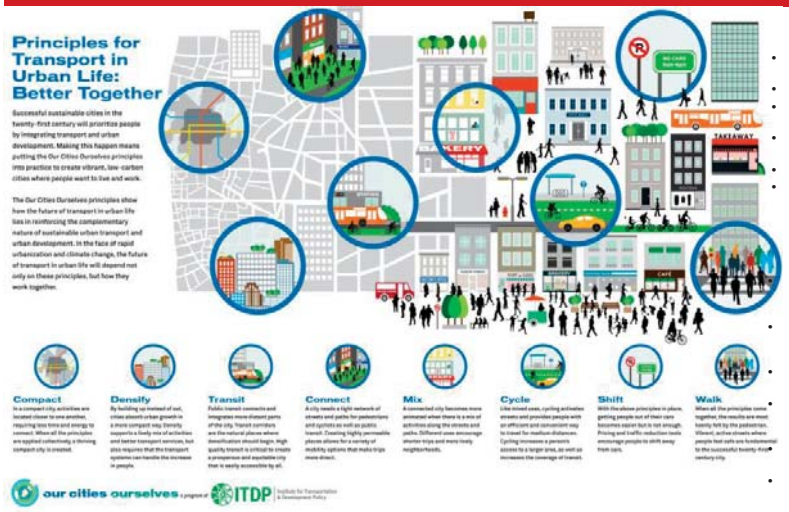




- **Pedestrianization**
- the process of closing streets to vehicle traffic, not only improves safety and accessibility for pedestrians,
- Brings larger social, environmental, and economic benefits for cities.
- improves public health by providing opportunities for physical activity through active transport,
- Curbs local air pollution, and improves traffic safety.

- **The importance of pedestrianisation in developing countries**
- increasing continuously because owner car rate has increased and vehicular access are overcoming in rapidly in the urban area.
- increasing attendance of automobiles causes creating an unsafe, unpleasant and dangerous place for residents of that city.
- many countries are thinking about some solutions for it and Pedestrianisation is an efficient solution for this problem.
- With creating cities that because of its limit area instead of creating an unsafe,
- unpleasant and dangerous environment
- respecting pedestrian as a main user in urban web in urban designing.
- Creating a city by the Pedestrianisation
- it will has a healthy and safe and compatible with human being characters.
- Helps to reduce greenhouse gas (GHG) emissions and mitigate global climate change.
- supports local businesses and fosters economic growth through tourism and cultural exchange,
- Builds thriving and prosperous urban communities.
- consists combine to create cities that are livable and sustainable, improving quality of life for urban residents.

Sustainable mobility, social and environment solution; Pedestrianization



Sustainable mobility and pedestrianization

- can promote walking as a transportation mode without any need to oil
- mode using public transportation
- there can be more space on the streets not only for pedestrianisation
- also present opportunities for planning of additional planting areas
- improving street furniture and landscaping.
- All these would help to beautify the local street and create a better environment.

Sustainable Mobility for better Social life for neighborhood

Social life has been established at streets and around mosque at neighborhood scale in old Istanbul

- The streets are connected the mosque square and small green areas were majority free public places
- Community was having social relation around of the mosque square and at streets.
- Square and streets were living spaces and safe zone for all different age groups, older, adult, younger and children age groups,
- Community is cooperating and helping each other with the spatial's well organized.
- free spaces form have been designed to create a strong social structure and community in neighborhood,

What are the aims of **LIVING STREETS** ?

SOCIAL

1. Make people **sense of belonging** to the area
2. **Reducing social crime rates** by increasing day and night use
3. **Improving dialogue** between neighbors
4. Creating **safe areas** for pedestrians
5. Creating **safe playgrounds** where children can play

ENVIRONMENTAL

1. Reduction of **noise,air and visiual pollution** levels
2. Making **physical image** stronger
3. İmproving **landscape elements**
4. Creating **ecological zones** in the city
5. Increasing **the diversity of flora and fauna** in the city

ECONOMIC

1. The revitalization of the **retail trade**
2. Make **continuous night life** as well as during the day
3. Creating n**ew and attractive investment area** except shopping malls
4. **Reducing the average annual cost** of maintenance and parking per vehicle of citizens
5. Supporting **brand value and tourism sector** of city

SPATIAL

1. Creating a network of **safe pedestrian circulation towards the city center**
2. The **development of public transportation and ensuring pedestrian / bicycle network with integration**
3. **Forbidding driving on** the living streets

Pedestrian network planning and design pedestrianization





- "living street project" aims to design neighborhood units as non-motorized zone and pedestrianized streets
- to provide human scale spaces to increase the safety of unsafe streets to transformed to living quarters.
- The main proposal of this project design safe and social and people oriented spaces.
- changing the function of streets thereby changing the current usage to provide relation and communication between different social and economic groups

- to socializing community that they have been divided by creating relation one by one and face to face between individuals.
- Thereby designing the spaces for this aim it could be achieved for community happiness.
- In this respect the "Living Streets project" is
- a sustainable social, environment, urban planning and transport planning project
- designing the natural and artificial environment at human scale.




human scale design, social and spatial design, Living Street




- it is a health project in order to consider of pedestrian oriented and walkability for people.
- While the motorization the time to spending for walking getting shorter became a danger level for people health in community of city.
- walkability is most necessary subject for people health, because it aims to design the spatial in human scale based to provide to access and connect to open space for community by walking.

- providing to increase the usage of streets by the pedestrians and passing free by the pedestrianization
- organizing non-motorized and planning alternatives road network for cars in neighborhood units
- to transform streets to creating and designing free and open spaces for socializing,
- communication and enjoying for all different social groups, especially for children




Which Phases Living Streets Project consist ?

Living Streets Project Phases

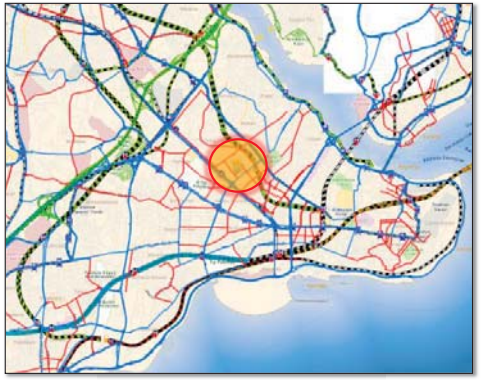
Living street project has steps due to traffic purification by reducing the use of personal cars with encouraging the public transport system, improving bicycle system, completion of the modular parking infrastructure respectively.

1| PUBLIC TRANSPORT	2| BICYCLE	3| CAR PARK	4| ZONING	5| DESIGN	6| DETAIL
encouraging the public transport system	The promotion of bicycle use in each area	Creating Modular storey or underground car park	Creating defined neighborhood zones	Designing safe areas	Locational Solutions



LIVING STREET PROJECT IMPLEMANTION IN
Hrkai Serif Neighborhood in Historical Peninsula, Istanbul

The Historical Peninsula (Fatih District) -Main road and street network, subway network schema



Hirkai Serif Neighborhood- Main road and street network, subway network schema

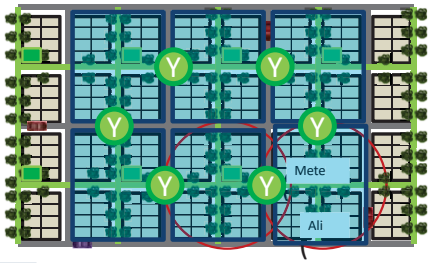
Hirkai Serif Neighborhood land use and urban plan map

Pedestrians and kids are helpless at streets because of many cars

8TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

Living Street, Safe Areas And Continuous Pedestrian streets

Planning Non-motorized pedestrian zones: Most pedestrian-only areas are created by restricting traffic access or closing roads to traffic.



Safe Area
(Game Interaction Areaı)

The Green Dome
Green dome project has been developed for protecting continuity of the pedestrian and bicycle route and allowing vehicles to enter to parking lot

Level Crossing (Vehicle weighted road and LPS), In these nodes "the Green Dome" project will be implemented.

Definition of the Issue

Today the area is faced with serious problems that increasing car use, migration, population growth and rapid urbanization by apartment buildings.

In the area there is a serious lack of parking spaces because of high rates of car ownership, dense building area and high population density.

According to Fatih's historic mission, the problems should analyze precisely and seek solutions which will bring old tolerant Fatih back by Living Street Project

8TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

Living Street Playground

Creating Secure Playgrounds

It is clear that there should be solution for the generation tend to be artists, athletes, happy and self-confidence people on the streets except growing internet addict generations. In international examples, the streets are forbidden to cars and provide the area to the children for playing games.

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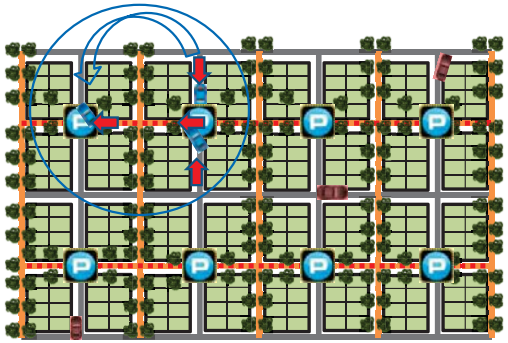
Living Street Parking System

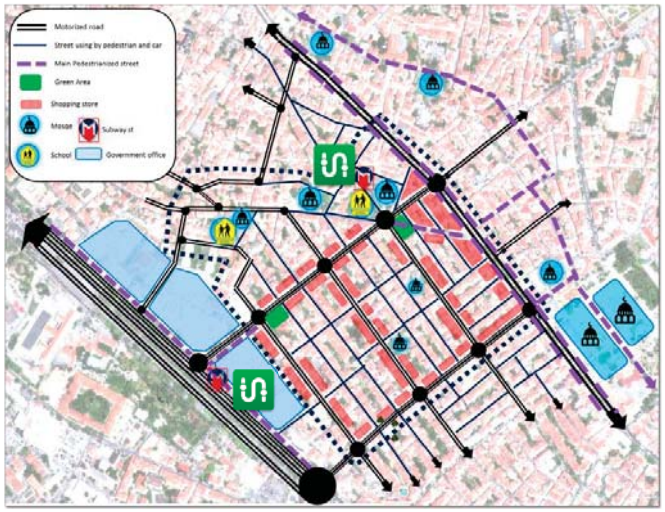
LIVING STREETS

underground parkingc



underground parking will be designed under pedestrianized streets. Each underground parking will planned for 4-6 blocks with considering amount of population, ownership of vehicles and parking spots for guests. There will be services like providing online subscription and learning capacity.

Current transportation case in Hirkai Serif Neighborhood



Living Streets Project Step by Step

Mass Transit system must be improved.

Metro should be prioritized in Fevzipaşa Street where Fatih Complex and lots of Public infrastructure located and Integration should be ensured with Metro station in Vatan street. Metro System should be designed suitable for bikers according to **Bicycle Plan**.

- **Designing living streets concept**
- The concept of 'living streets' recognizes that, as a priority,
- streets should be designed with living and community interaction .
- While cars are not excluded, they are designed so drivers are aware
- they are in an area where pedestrian and other users are important.
- A living street aims to balance the needs of residents, businesses, pedestrians
- cyclists with cars, and thereby encourage a better quality of life and a greater range of community and street activity.

Using GIS data to examine movement patterns by using Spatial network analysis

Fatih District,Total Connectivity, R:2000

- **Walkability** components of proximity and connectivity can be readily utilized using GIS methods.
- This methodology is used the measures of segment-based connectivity measures implemented on a GIS platform using GIS street network representations.
- various research fields in transportation, architecture and urban planning.
- With in this scope it has run the **DepthmapX** GIS software.
- DepthmapX is a multi-platform software platform to perform a set of spatial network analyses designed to understand social processes within the built environment.

Fatih District,Total Node Count, R:2000

- **Connectivity Patterns:**
- To assess the street connectivity patterns, the entire street network of Istanbul Metropolitan area was analyzed used the Streetmap of 2015.
- In this research freeways were excluded since they do not factor in pedestrian movement.
- Connectivity was computed for two level and first level used for Fatih District
- (1-Total Connectivity, 2-Total Node Count, 3-Total Integration for radius: 2000 m.)

Fatih District,Total Integretion, R:2000

- The objective of the analysis is to derive variables which may have social or experiential significance. It has been used DepthmapX by 1-Total connectivity analysis, 2-Node Count analysis 3-Integration analysis.
- **Total connectivity analysis:** The number of lines which each line intersects
- **Node Count analysis:** The number of nodes within a "cookie cut" Radius
- **Integration analysis**: Show how each street is connected to all others in a whole city in terms of the maximum possible direction changes.

Using GIS data to examine movement patterns by using Spatial network analysis

Hirkai Serif Neighberhood-Total Connectivity, R:2000

Hirkai Serif Neighberhood- Node Count, R:2000

Hirkai Serif Neighberhood-Total Integretion, R:2000

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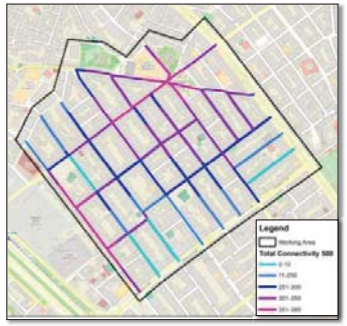
- **Integration analysis**: Show how each street is connected to all others in a whole city in terms of the maximum possible direction changes.

- Each level is considered by the regional scale that when running
- 1-Total Connectivity, for radius: 2000 m,
- 2-Total Node Count, for radius: 2000 m,
- 3-Total İntegration for radius: 2000 m,

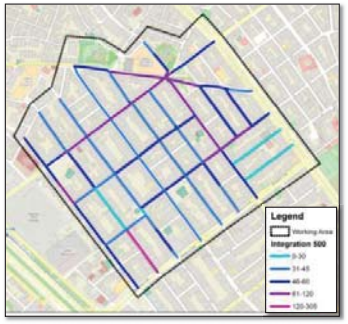
Using DepthmapX Spatial network analysis for Hirkai Serif Neighborhood

Total Connectivity, R:500



Node Count, R:500

Integretion, R:500

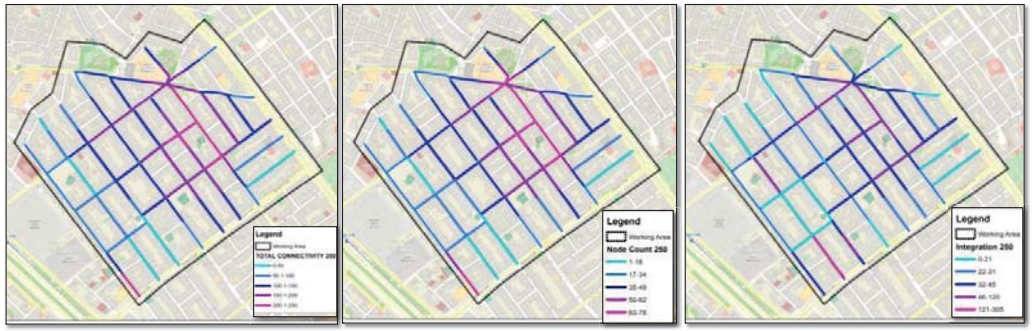


Hirkai Serif Neighborhood

- 1-Total Connectivity, for radius: 500m
- 2-Total Node Count, for radius: 500m
- 3-Total İntegration, for radius: 500m

Using DepthmapX Spatial network analysis for Hirkai Serif Neighborhood

Total Connectivity, R:250 **Node Count, R:250** **Integretion, R:250**

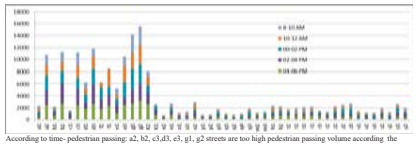


Hirkai Serif Neighborhood

- 1-Total Connectivity, for radius: 250 m.
- 2-Total Node Count, for radius: 250 m.
- 3-Total İntegration, for radius: 250 m.

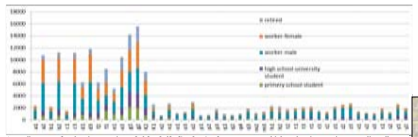
The analysis of data collecting: pedestrian passing and usage streets for Hirkai Serif Neighborhood

Table 1: According to time- pedestrian passing



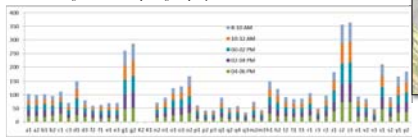
According to time- pedestrian passing: a2, b2, c3,d3, e3, g1, g2 streets are too high pedestrian passing volume according the each different time period, Table 1

Table 2: According sort of pedestrian- passing



According sort of pedestrian- passing: a2, b2, c3,d2, f1, e3, g1, g2 streets are too high pedestrian passing according all sort of pedestrian passing volume. Table 2

Table 3: According to time on-street parking occupancy

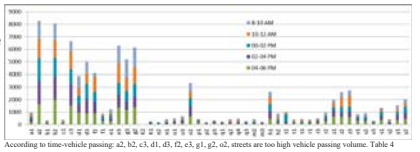


According to time on-street parking occupancy:, g1, g2, o2, z2, z3, s1, y1, y2, streets are too high on-street parking occupancy. Table 3

Pedestrian count data were systematically collected in the areas for 50 streets during June 2015. Pedestrian and vehicle are counted for 5 different time period

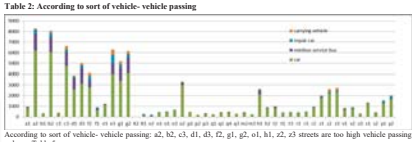
1:8.00-10.00 AM,
2:10.00 AM-12.00 NON, 3:12.00-2.00 PM,
4:2.00-4.00 PM,
5:4.00-6.00 PM)

Table 1: According to time-vehicle passing



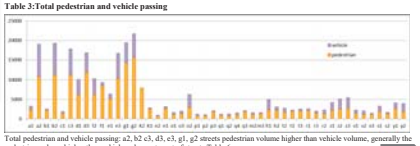
According to time-vehicle passing: a2, b2, c3, d1, d3, f2, e3, g1, g2, o2, streets are too high vehicle passing volume. Table 4

Table 2: According to sort of vehicle- vehicle passing



According to sort of vehicle- vehicle passing: a2, b2, c3, d1, d3, f2, g1, g2, o1, h1, z2, z3 streets are too high vehicle passing volume. Table 5

Table 3:Total pedestrian and vehicle passing



Total pedestrian and vehicle passing: a2, b2 c3, d3, e3, g1, g2 streets pedestrian volume higher than vehicle volume, generally the pedestrian volume higher than vehicle volume at most of streets Table 6

The analysis of data collecting: pedestrian passing and usage streets for Hirkai Serif Neighborhood

Count Points For Pedestrian And Vehicle Passing

Primary school student pedestrian passing

high school-university student pedestrian passing

worker-female pedestrian passing

worker-male pedestrian passing

Retired pedestrian passing

The analysis of data collecting: pedestrian passing and usage streets for Hirkai Serif Neighborhood

Roadside parking is prohibited in the entire project area.

Fevzipaşa street additional subway connection (additional underground to Yenikapı-Hacıosman metro line, Connection to Aksaray-Airport metro and funicular)

The vacated areas where no roadside parking will be evaluated as a continuous bike path.

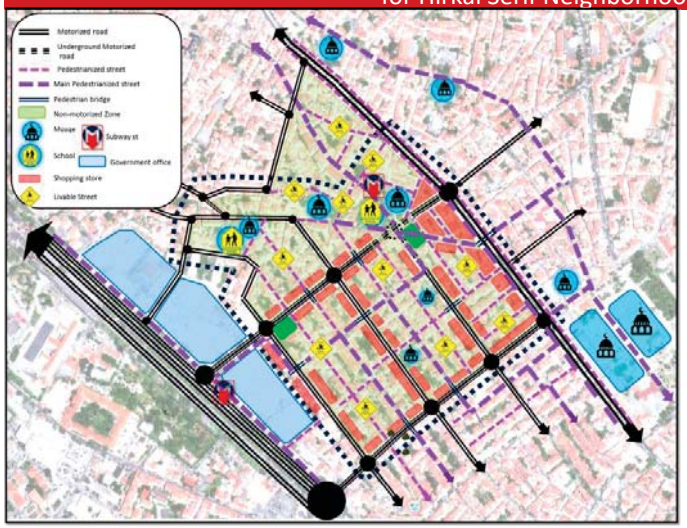
The analysis of data collecting: pedestrian passing and usage streets for Hirkai Serif Neighborhood

Safe neighborhood regions have been designed by zoning analysis

Parking lots are located in intersection of vehicle roads and pedestrianized street and also integrated with bicycle and pedestrian networks.

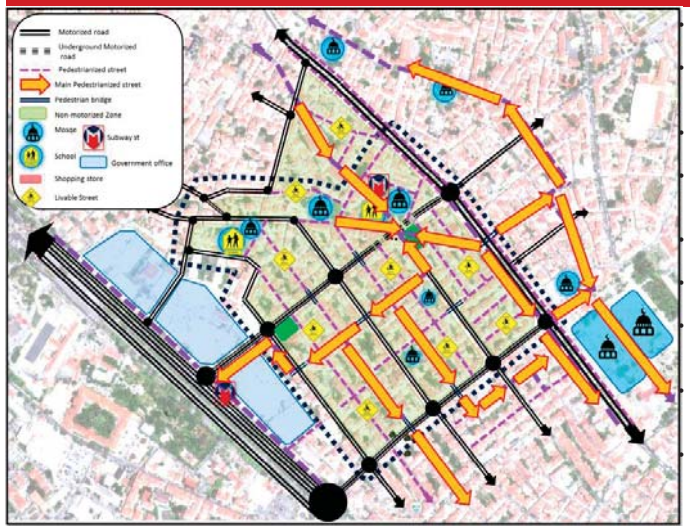
Safe streets and game streets are well-defined and locational solutions that have been developed.

Planning Living Streets Project Step by Step for Hirkai Serif Neighborhood



Mass Transit system must be improved. **Metro** should be prioritized in Fevzipaşa Street where Fatih Complex and lots of Public infrastructure located and Integration should be ensured with Metro station in Vatan street. Metro System should be designed suitable for bikers according to **Bicycle Plan/**

The design Living Street Project for Hirkai Serif Neighborhood



- while design this project it has been considered pedestrian movement data,
- pedestrian passing and usage data, it was used GIS data movement patterns by using spatial network analysis,
- it was applied GIS Connectivity analysis model to assessment of network planning,
- it was evaluated the analysis GIS Movement pattern pedestrian and car movement for Hirkai Serif Neighborhood.
- All analysis are evaluated to design non-motorized zones and playground zones
- and determined pedestrian network and main pedestrian network,
- pedestrianization streets by considering school, mosque, green area, shopping stores and public transport stations pedestrian ways.
- With these scope providing the free step possibility for pedestrians between non-motorized zones by the designing pedestrian bridges.
- The designing square is the main part of "Living Streets Project "with pedestrian network and pedestrianization.

Pilot AUCS Project Area for Hirkai Serif Neighborhood

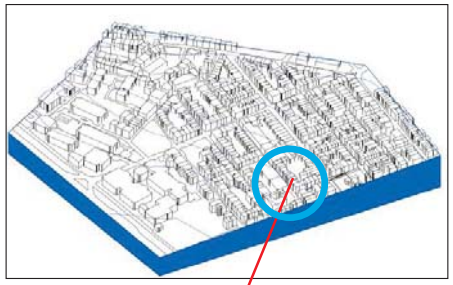
Hırka-i Şerif Street

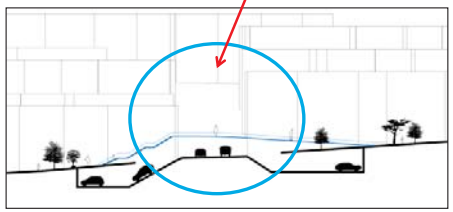
Automatic underground car storage

•Automatic under floor Storey Car Park
•22 Sequence parking area with the elevator shaft in the middle and two available side for the car parking. Thus each floor has 44 car parking area (22X2)
•If the building has 3 floors, there will be 132 car-capacity with automatic underground technology.

designing pedestrian bridges

free step possibility for pedestrians between non-motorized





With these living streets project scope providing the free step possibility for pedestrians between non-motorized zones by the designing pedestrian bridges

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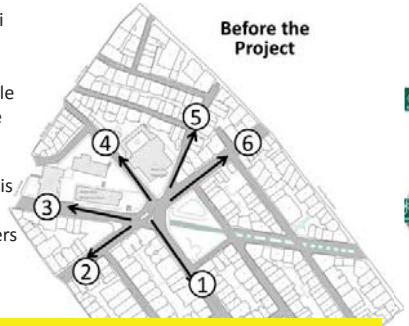
As a main part of Living Street Project: Square Oriented Living Center Project

Definition of the Problem Hırka-i Şerif And Akşemsettin Streets: There is no defined square but there is roadside parking in whole area and streets are not suitable for pedestrian use.

Occurred in our culture, square is not a tool for the detection of monumentality, it is social centers for meeting of the society, cohesion and developing activities such as making the



Project's Outcomes

A strong relationship between the school and the mosque,
A strong relationship between mosque and squares,
A strong Fatih Bazaar (2nd stage market) and Hırka-i Şerif Market Relations (local market),
A strong school, major-pedestrian artery and commercial relations,
A strong relationship between green spaces and square,
Underground parking lots in the whole area,
Connected with livable pedestrianized street secure,
Commercial, cultural and tourist activities,
Metro connections and a tight relationship between different transportation modes

8TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

Third Speaker of <Session 3C>

Dr. Vu Anh Tuan
Vietnamese-German University, Ho Chi Minh City, Vietnam
Email: drtuan.va@vgtrc.vgu.edu.vn

Brief Biography:

Dr. Vu Anh Tuan is currently a Director of the Vietnamese-German Transport Research Centre (VGTRC) at the Vietnamese-German University (VGU). Dr. Tuan earned his Doctoral Degree and MSc. in the field of Transport Planning and Traffic Engineering from the University of Tokyo, Japan. Prior to working for VGU, he was a Research Fellow at Institute of Transport Policy Studies (ITPS) in Tokyo, Japan for three years. During the period, his research activities focused on transport issues and innovative long-term policy solutions for Asian cities. Previously, he worked at Asian Development Bank Institute (Tokyo) as a Research Associate on a project namely ADB/ADBI's Flagship Study "Infrastructure for a Seamless Asia". Tuan's research interest covers broad fields, including transport planning methods, innovations, and transport policies in developing countries. He is currently actively participating as policy advisors for key infrastructure development projects in Vietnam, such as Accessibility Improvements for UMRT Line 1 (Ben Thanh – Suoi Tien, Ho Chi Minh City, funded by JICA), Bus Rapid Transit Vo Van Kiet-Mai Chi Tho Avenue (funded by the World Bank), and Research Program for Managing Urban Road Traffic Congestions in Ho Chi Minh City (funded by HCMC Department of Sciences and Technologies). Dr. Tuan is also chairing a sub-committee on human factor of the Vietnam's Traffic Safety Forum, established by Vietnam's National Traffic Safety Committee.

Tuning for Sustainable Urban Transport Development Utilizing Real Time Traffic Monitoring and Information System: A Case Study of Hanoi

By Dr.Vu Anh Tuan

Summary:

Fast urbanization and motorization in metropolitan regions of developing countries are presenting both opportunities for socioeconomic development and challenges to sustainability, such as energy consumption, air pollution, noise, traffic jams, and difficulties in urban planning, development and management. In Hanoi City – a typical motorcycle-dependent city, air pollutants from motorized traffic are causing both local issue (i.e., health and social problems) and global issue (i.e., GHG and climate change). To support the formulation and fine tuning of strategies and measures for the sustainability, it is required to have mobility and accessibility concepts aiming for GHG and energy reductions. Smart engineering solutions can be one of the approaches as it helps optimize the existing infrastructure capacities.

This presentation aims to share a research and development project on "Real Time Monitoring of Urban Transport - Solutions for Transport Management and Urban Development in Hanoi (REMON)" as a typical smart engineering solution.

The main contents of this presentation include:

1. Introduction
    - Overview of transport issues and challenges in Asia
    - The specific issues and challenges of Hanoi
2. Overview of REMON project
    - Objectives (highlighting GHG reduction targets)
    - Duration of project implementation
    - Partners on the project
    - Components of the project
3. Land-use change monitoring and urban growth modeling
    - Satellite image monitoring of urban land-use changes over time
    - Urban expansion by zone and corridor
    - Modeling urban dynamics and initial results
4. Traffic management strategies and transport modeling
    - Traffic management concept
    - Traffic management strategy tailored made for Hanoi
    - Transport model and initial results of policy interventions
5. Developing a traffic information system
    - Objectives
    - Floating Car Data and Floating Phone Date techniques
    - Traffic level of service mapping and traffic state online updating
6. Conclusions
    - Innovations and capacity of the developed system
    - Future works

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ATRANS Conference – 21 August 2015, Bangkok

Tuning for Sustainable Urban Transport Development by Real-Time Traffic Monitoring and Information System – A Case Study in Hanoi

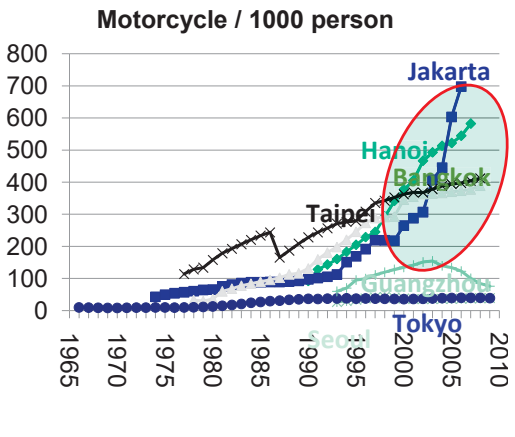
Dr. Vu Anh Tuan, Vietnamese-German University, HCMC, Vietnam

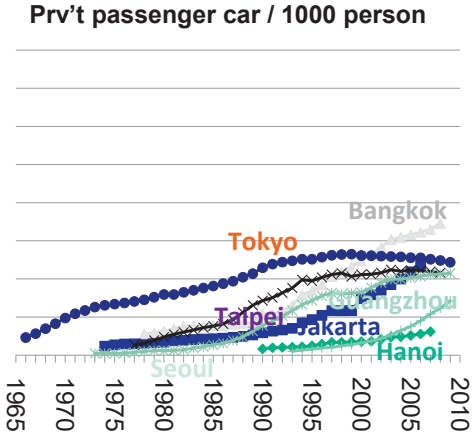
CONTENTS

Introduction

- Urban Transport Issues and Challenges in Asia
- Specific Issues of Hanoi City

Motorization in selected Asian cities





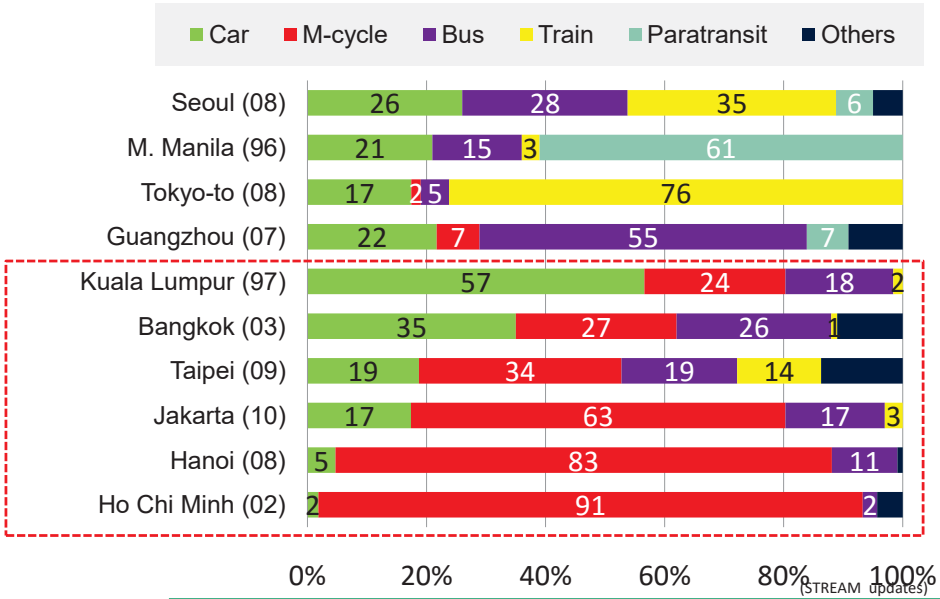
- MC rapidly increased in Hanoi, Jakarta despite of lower incomes
- Continued increasing in Taipei at high incomes

- Cars increasing rapidly in Bangkok, Jakarta
- Hanoi may do so in the future

(V.A. Tuan,, 2014)

Modal splits in major Asian cities

(% motorized trips)



(STREAM updates)

Hanoi's Transport: 1990s vs 2000s

1990s

2000s

Nguồn: http://reds.vn/index.php/khoanh-khac-lich-su/402-ha-noi-1990/

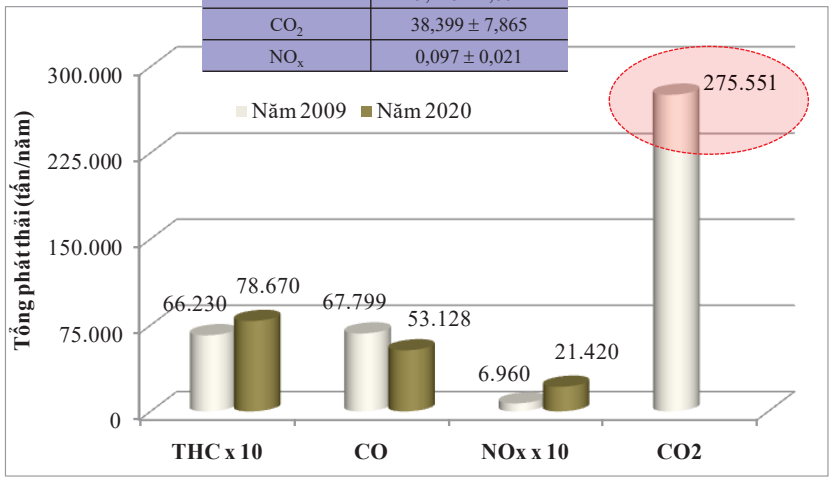
(Huyen, 2015)

Traffic Situation in Hanoi City

- Motorcycle dependent city
- High utilisation of existing infrastructure
- Many trips per person and day
- Short distances (inner city)
- Low speeds
- Many starts and stops

Pollutions by motorcycles in Hanoi

Pollutants	Value (g/km)
THC	0,923 ± 0,178
CO	9,448 ± 1,864
CO_2	38,399 ± 7,865
NO_x	0,097 ± 0,021



Source: Lê Anh Tuấn et al. (2011)

Agenda Setting and Policy Making in Vietnam

- Political institutions are centrally organised
- High awareness in central institutions

E.g., Vietnam Green Growth Strategy
- **National action plan to respond to climate change**
- **Key strategies:**
  - **Development of public transport**
  - **Introduction of low carbon fuels**
  - **Control of the number of motorized vehicles in urban areas**

But on local level:
- Low awareness
- Political institution for climate change is missing
- Strongly limited financial and personnel resources

→ **Weak and vulnerable implementation**

Overview of REMON Project

- Objectives
- Project duration
- Project partners
- Components

REMON: Real Time Monitoring of Urban Transport - Solutions for Transport Management and Urban Development in Hanoi

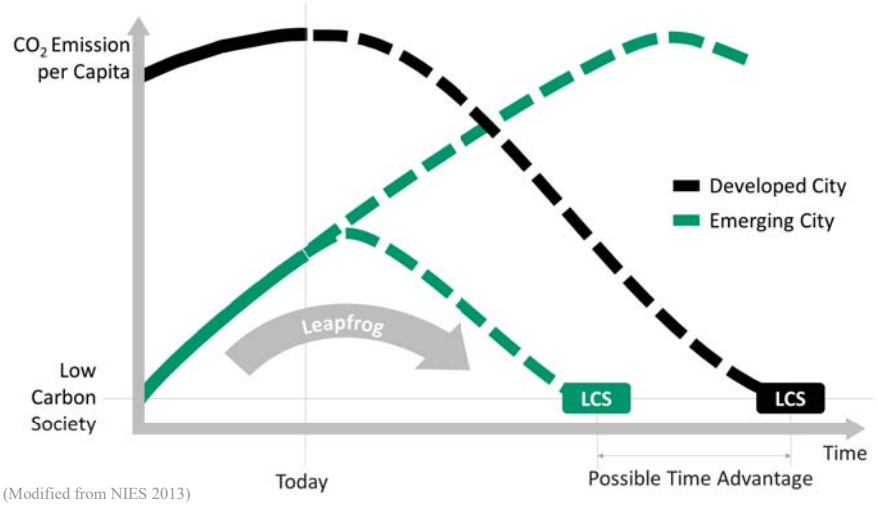
Key objectives
- Reduction of traffic induced air pollutants
- Reduction of energy consumption within Hanoi's urban transport sector

Project duration: 3 years
- Jan 2013 to Dec 2015

Project Partners

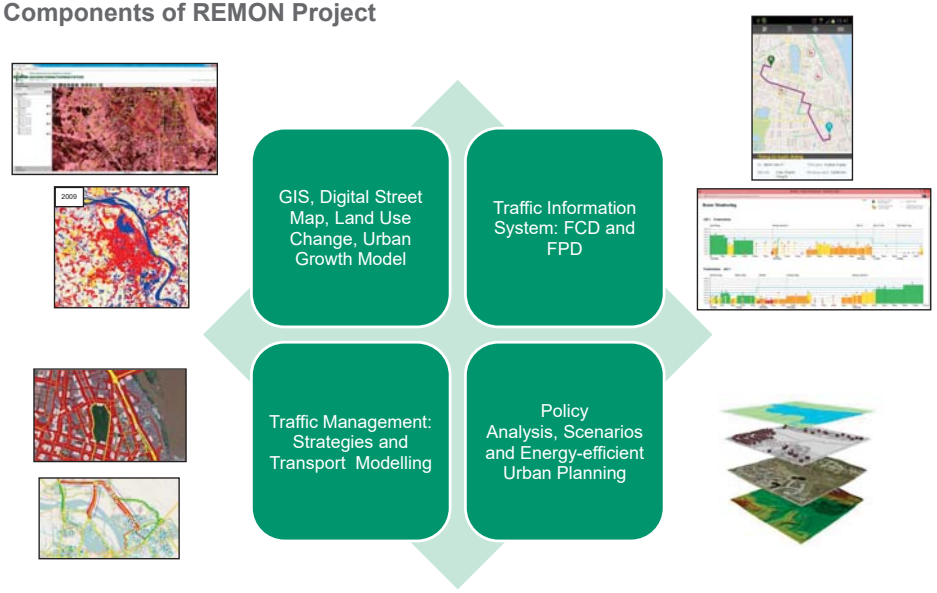
AS&P	AS&P - Albert Speer & Partner GmbH
DELPHI IMM	Delphi IMM GmbH
DLR	German Aerospace Center (DLR), Optical Information Systems at the Institute of Robotics and Mechatronics
Freie Universität Berlin	Freie Universität Berlin, Remote Sensing and Geoinformatics
INTERNATIONALE AKADEMIE BERLIN	International Academy Berlin for Innovative Pedagogy, Psychology and Economics gGmbH (INA), Institute for International Urban Research
TECHNISCHE UNIVERSITÄT DARMSTADT	Technische Universität Darmstadt, Transport Planning and Traffic Engineering (FGVV)
TDSI	Transport Development and Strategy Institute (TDSI), Ministry of a of Vietnam
	University of Transport and Communications, Institute of Transport Planning and Management
VGU	Vietnamese-German University, Vietnamese-German Transport Research Centre (VGTRC)
WWL	WWL Umweltplanung und Geoinformatik GbR

Possible development paths for developing cities



(Modified from NIES 2013)

Components of REMON Project

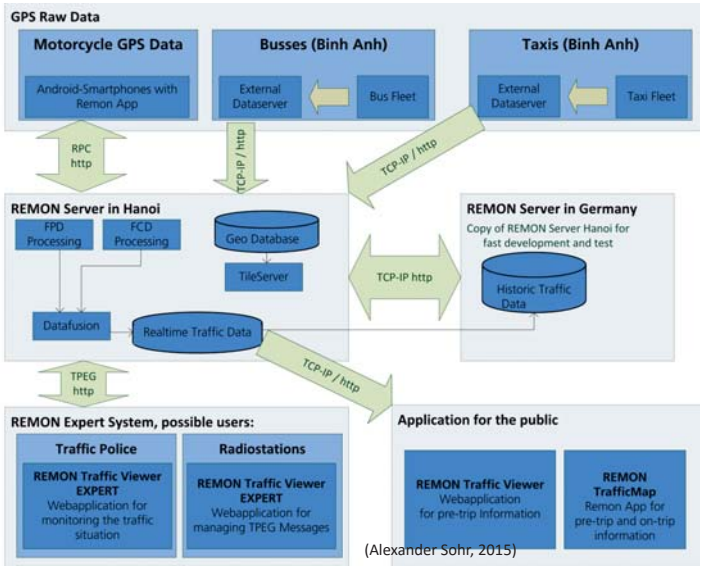


Real-time Traffic Information System

- FCD, FPD & FMD
- Mapping traffic LOS
- Analysis of hot spot

System Architecture

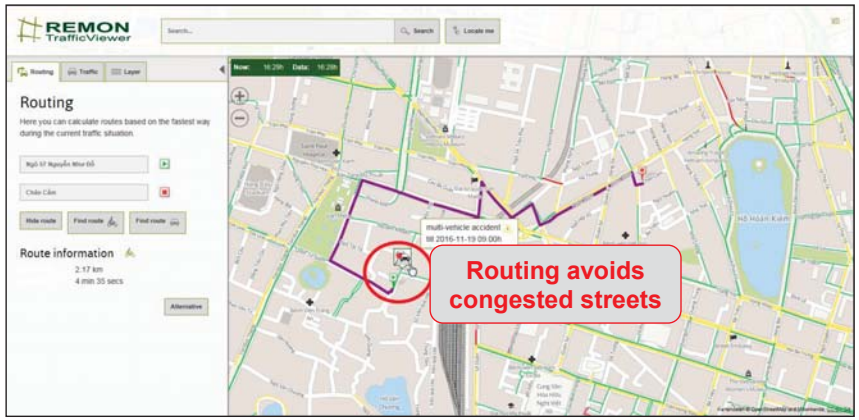
Data Processing:
- Mapping current positions on street map and deriving trajectories
- Calculating travel times for affected streets for each vehicle type (cars, busses and motorbikes)
- Data Fusion: Combining all current information for each street and determining its current



(Alexander Sohr, 2015)

Traffic Viewer

- Traffic information (LOS)
- TPEG messages
- Dynamic routing
- POI (Points Of Interest)



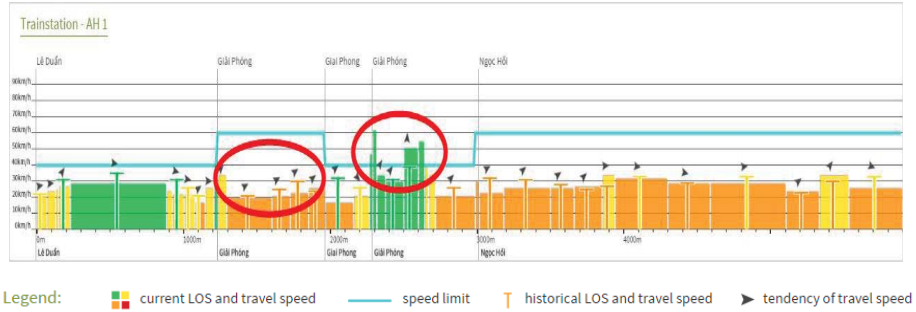
(Alexander Sohr, 2015)

Traffic Viewer Expert

(Alexander Sohr, 2015)

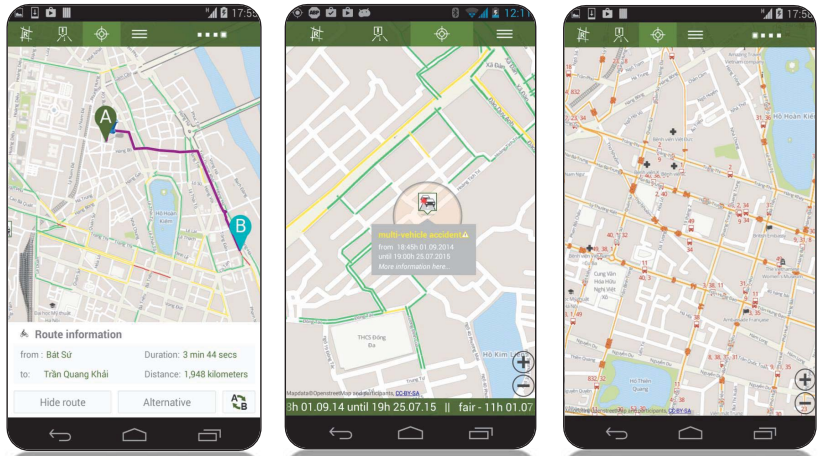
Traffic Viewer Expert – Route Monitoring

- Traffic visualisation of defined routes (including trends)



(Alexander Sohr, 2015)

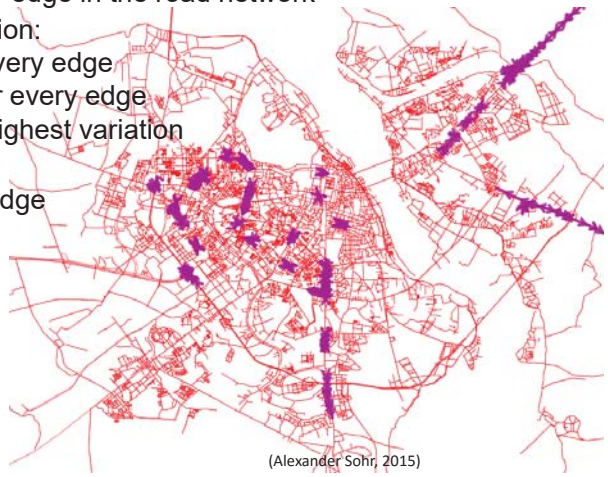
REMON Traffic Map App - Screenshots



(Alexander Sohr, 2015)

Hotspot Analysis

- Data source:
  - historical taxi data of four months (no weekends)
  - daily courses for every edge in the road network
- Automatic **Hotspot** detection:
  - ‚FreeFlowSpeed for every edge
  - Standard Deviation for every edge
  - Filter the edges with highest variation
- Defining **Hotspots**
  - based on local knowledge



(Alexander Sohr, 2015)

Traffic Management Strategy & Transport Modelling

- Traffic management strategy tailed made for Hanoi City
- Transport model
- Initial results of policy impact testing

Measures tailor-made for Hanoi's Requirements

General requirements of the measures:

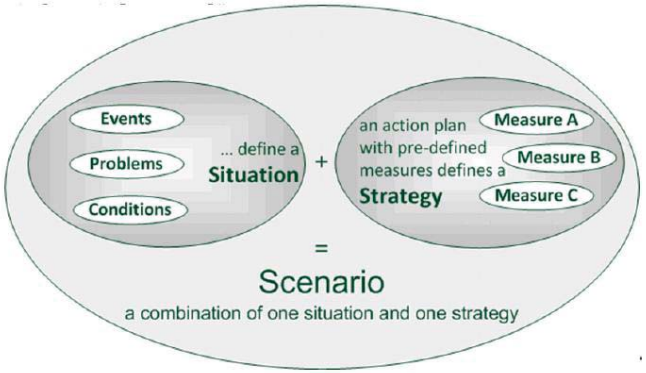
- Applicable in the short term
- Considering political, economic conditions, and current traffic situation, e.g.:
  - Willingness to introduce regulatory (and economic) measures
  - Ability to utilise existing informational channels

Approaches / Instruments	AVOID	SHIFT	IMPROVE
Technological	E-Commerce	Development of Infrastructure for Multimodal Use	Development of Signal Coordination
Regulatory	Transit Oriented Development (TOD)	Parking Restrictions / Metering	Restrictions on Registration
Informational	Influencing Lifestyle	Dynamic Guidance and Routing	Dynamic Guidance and Routing
Economic	Spatial differentiated Subsidies	Tolling / Taxing	Reduced Parking Fees for Low Emission Vehicles

Source:WCTRS et al. 2004, slightly modified

The most favorable traffic management measures (evaluated by Vietnamese experts)

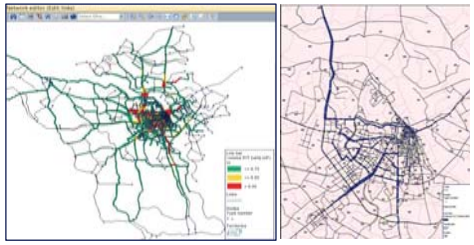
Position in overall ranking		Position in applicability ranking	Position in effectiveness ranking
1	Flexible cycle time and traffic signal control	1	2
2	Static parking restrictions in congested areas for all vehicles	2	5
3	Static parking restrictions in congested areas for specific vehicles	3	11
4	Dynamic parking restrictions in congested areas for specific vehicles	7	3
5	Integrated traffic control center	8	4
6	Dynamic alternative routing	11	6
7	Traffic signal coordination	4	16
8	Improved scheduling (buses)	9	12
9	Bus feeder system	12	7
10	Temporal access restrictions for specific vehicles	5	19

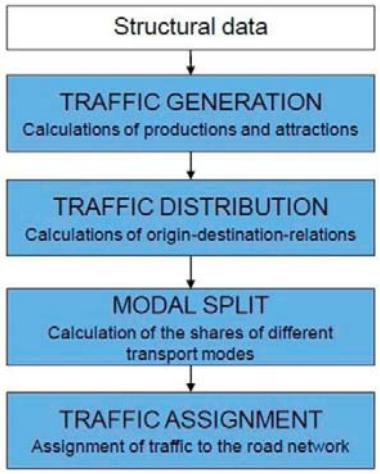


- **Project's targets**
  - **Traffic jam reduction: 5-10%**
  - **Emissions reduction: 10-15%**

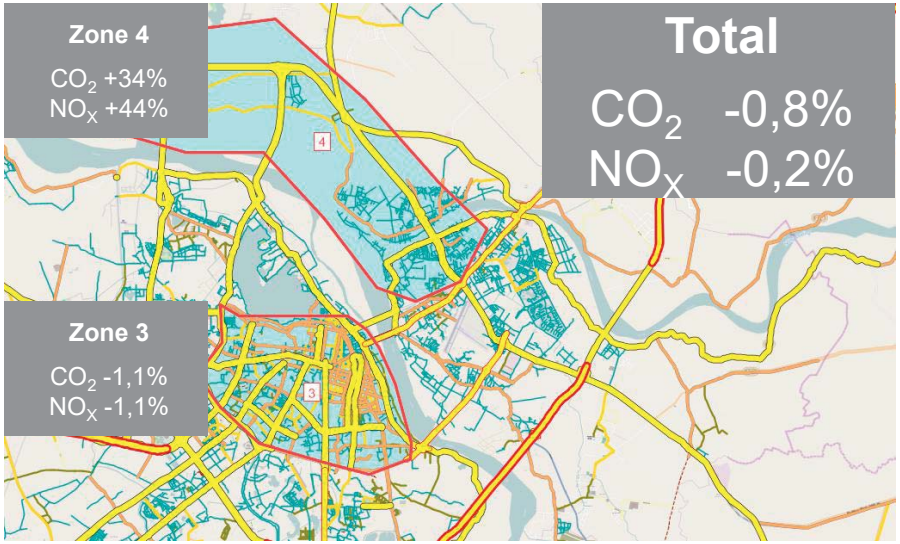
The 4-Step Model (VISUM)

- **Available data**
  - HAIDEP (2006)
  - Census
  - Road inventory (2012)
  - Public transport network (2013)
  - TEDI HIS, Traffic Counts,… (2011)
- **Additional data**
  - Conducted under REMON (traffic counts, speed survey, etc)

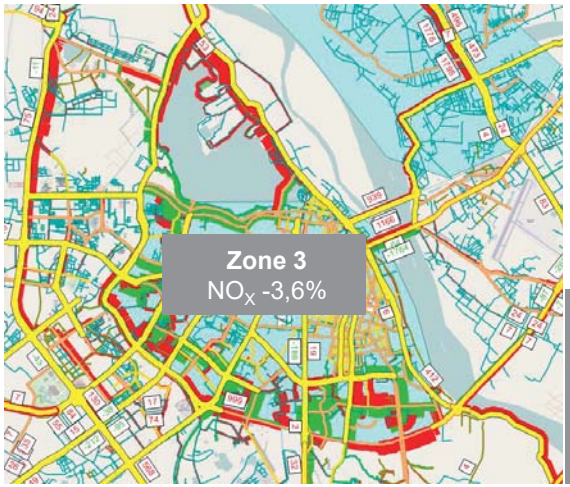




Preliminary Results – New Bridge across Red River



Preliminary Results – Metering



Total

CO_2 +1,1%

NO_X +1,0%

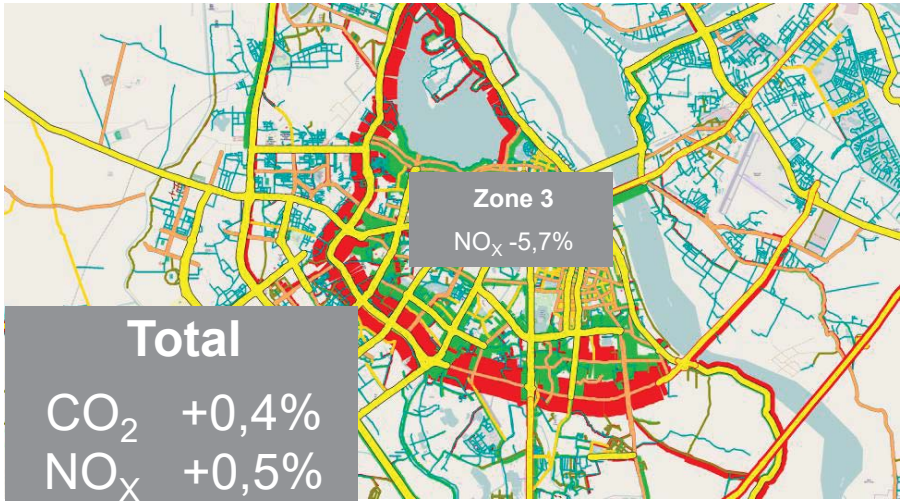
Preliminary Results – Extended Ring Road

Total

CO_2 -0,6%

NO_X -0,4%

Preliminary Results – Extended Ring Road + Metering



Total

CO_2 +0,4%

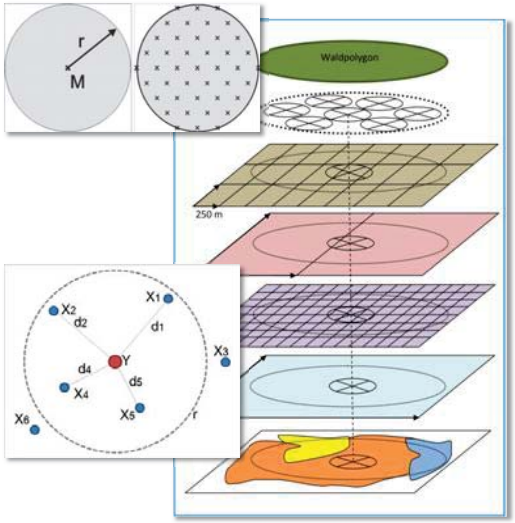
NO_X +0,5%

Land-use Change Monitoring & Urban Growth Modelling

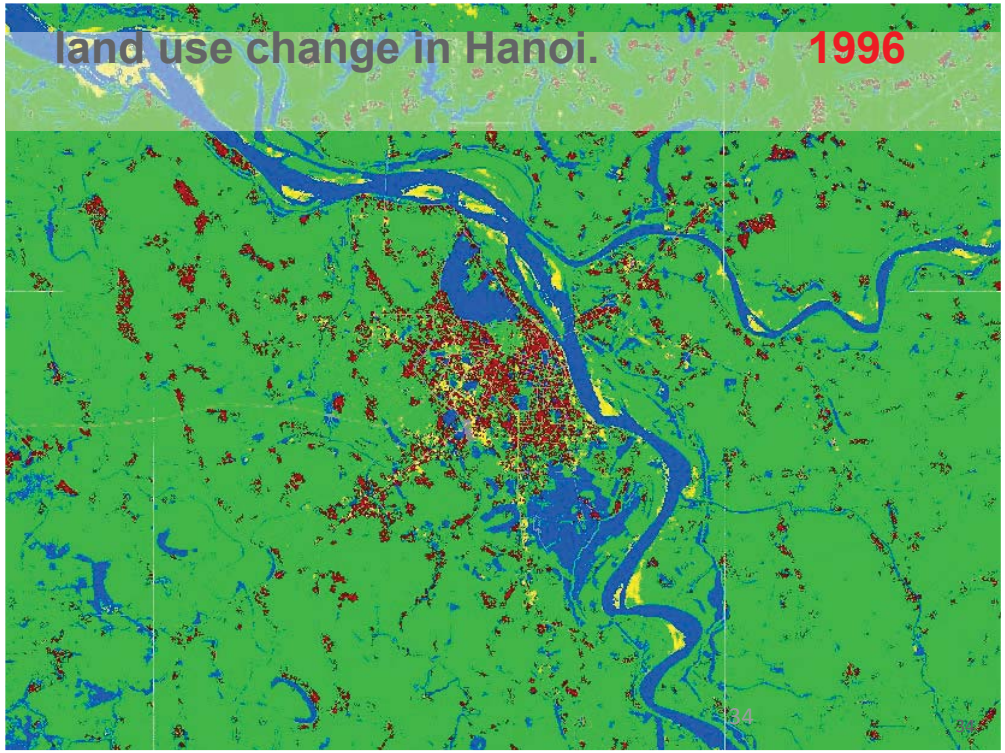
- Monitoring of landuse changes over the past 20 years
- Urban expansion analysis by zone and corridor
- Modeling urban dynamics and initial results

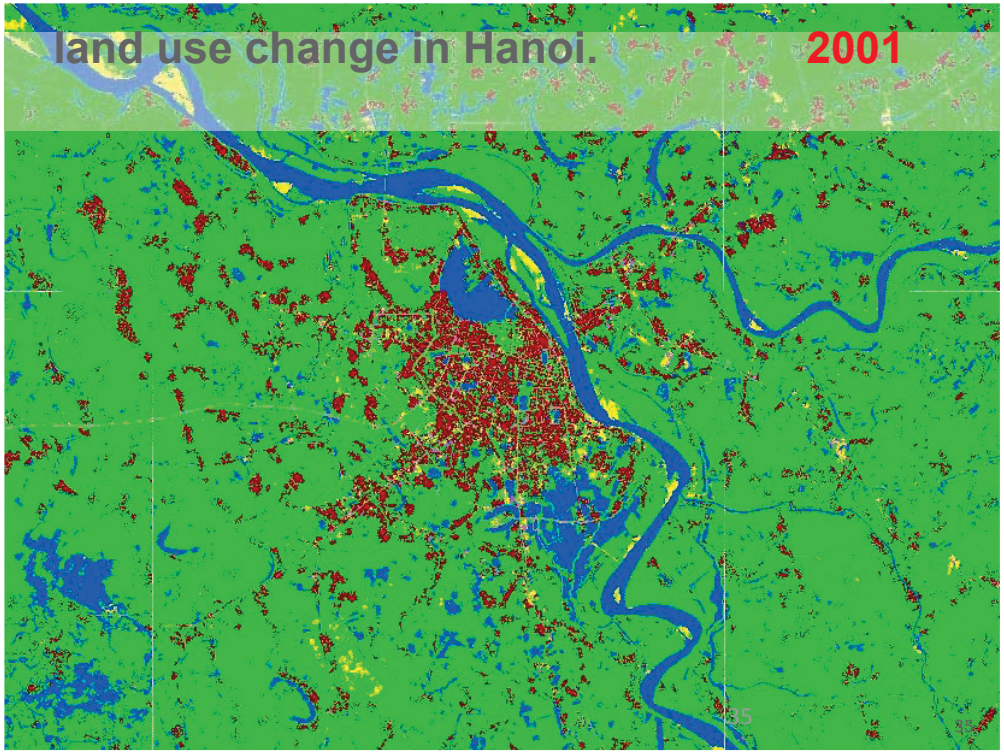
eConstruction Method

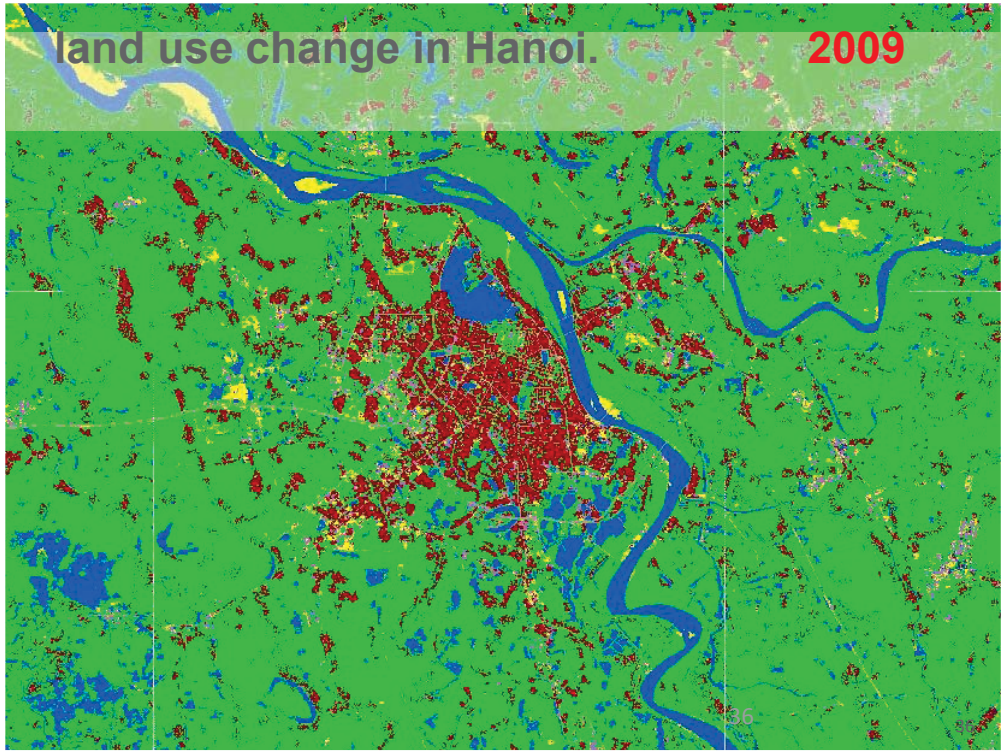
- A point is defined a **representative** of the image
- Data from different sources can be analysed by adequate rules (e.g. radius, method)
- The features can be analysed by new technologies, depending on the question

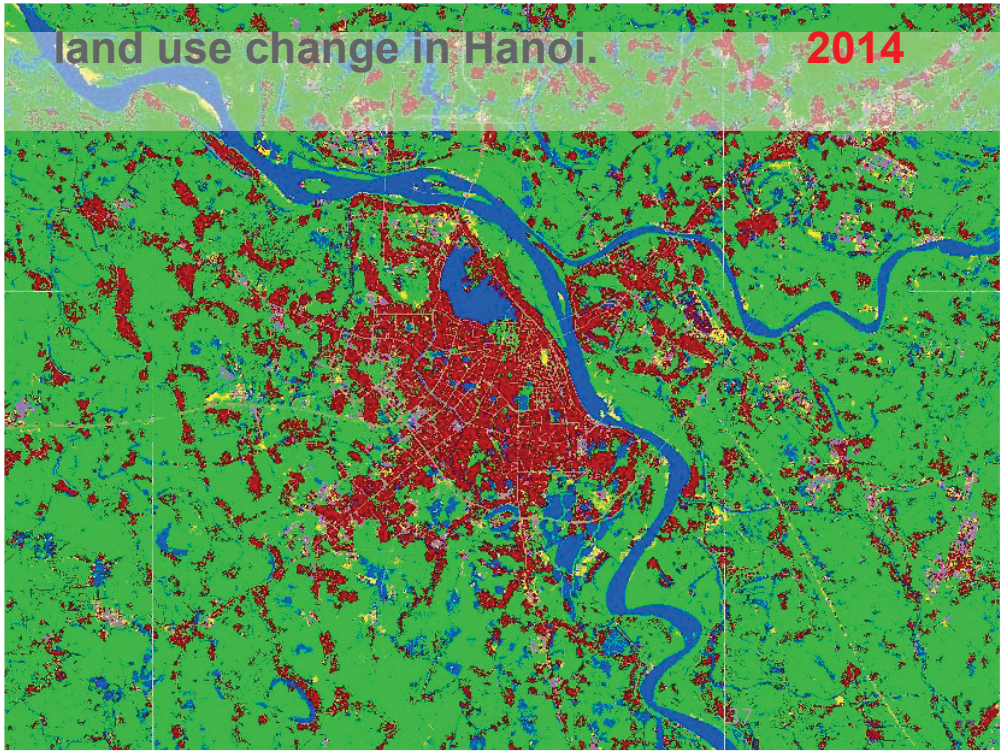


date	Satellite Sensor	Spectral resolution	Geometric resolution	Radiometr. resolution
29.12.1975	Landsat MSS	4 (blau, rot, NIR1, NIR2)	57 x 57m² (79 x 79m²)	8 Bit (256)
27.12.1993	Landsat TM5	7 (blau, grün, rot, NIR1, MIR1, PAN, MIR2)	30 x 30m²	8 Bit (256)
30.09.1996	Landsat TM5	7 (blau, grün, rot, NIR, MIR1, PAN, MIR2)	30 x 30m²	8 Bit (256)
20.12.1999	Landsat ETM7	9 (blau, grün, rot, NIR, MIR1, TR1, TR2, MIR2, PAN)	30 x 30m²	8 Bit (256)
11.04.2000	Landsat ETM7	9 (blau, grün, rot, NIR, MIR1, TR1, TR2, MIR2, PAN)	30 x 30m²	8 Bit (256)
23.11.2001	Landsat ETM7	9 (blau, grün, rot, NIR, MIR1, TR1, TR2, MIR2, PAN)	30 x 30m²	8 Bit (256)
08.11.2007	Landsat ETM7	9 (blau, grün, rot, NIR, MIR1, TR1, TR2, MIR2, PAN)	30 x 30m²	8 Bit (256)
10.12.2010	WorldView II	5 (blau, grün, rot, NIR, PAN)	2 x 2m²	11 Bit (2.048)
18.11.2012	RapidEye	5 (blau, grün, rot, Red Edge, NIR)	5 x 5m²	16 Bit (65.536)
20.05.2013	RapidEye	5 (blau, grün, rot, Red Edge, NIR)	5 x 5m²	16 Bit (65.536)
03.11.2013	RapidEye	5 (blau, grün, rot, Red Edge, NIR)	5 x 5m²	16 Bit (65.536)
14.05.2014	RapidEye	5 (blau, grün, rot, Red Edge, NIR)	5 x 5m²	16 Bit (65.536)

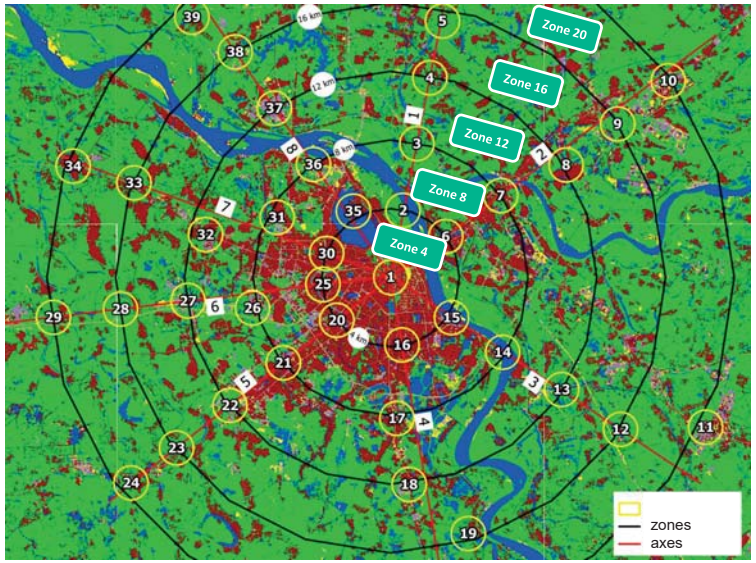




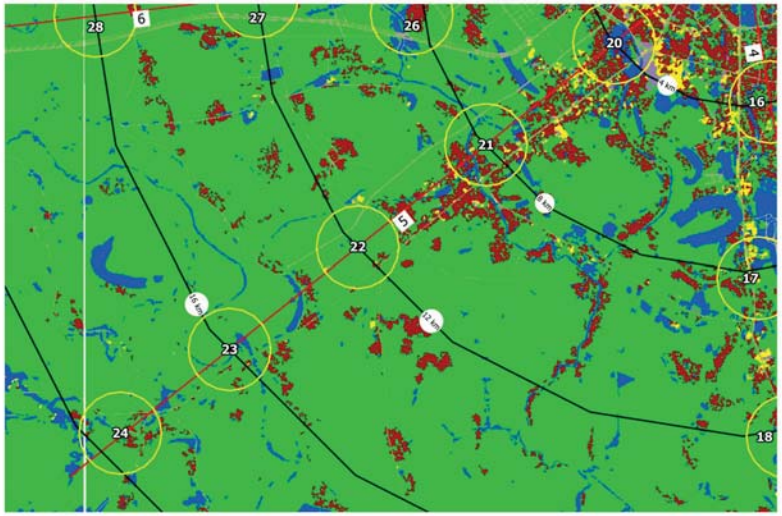




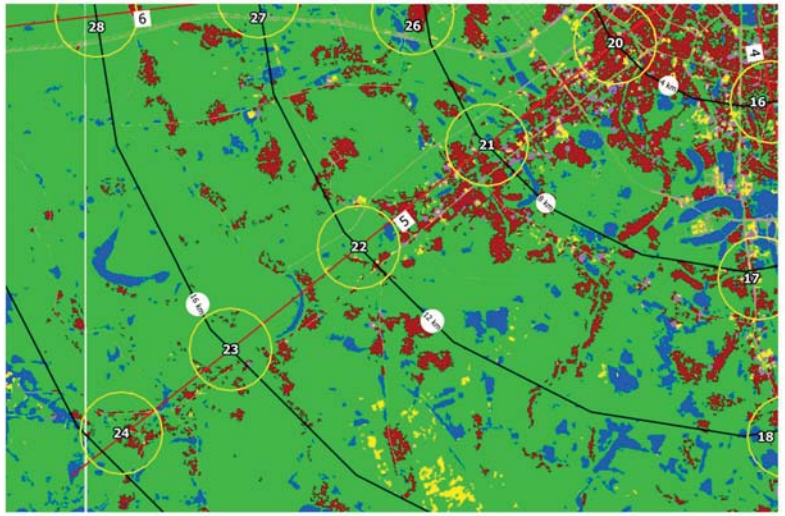
Analysis of urban development



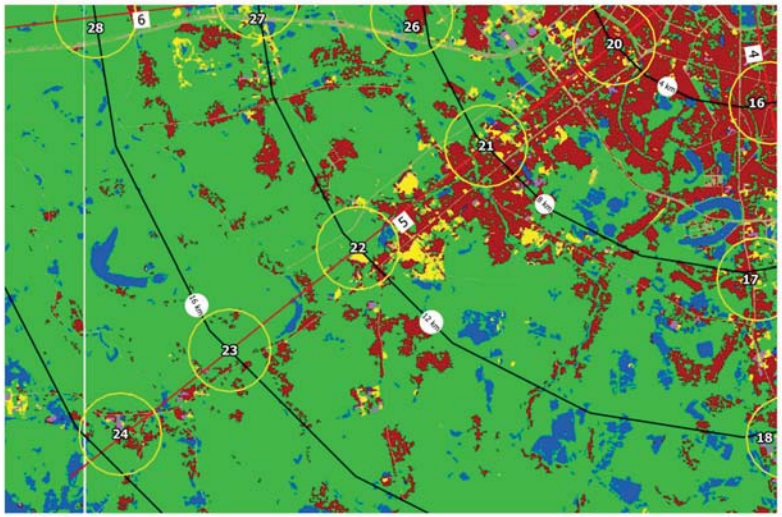
comparison of different axes. 1993



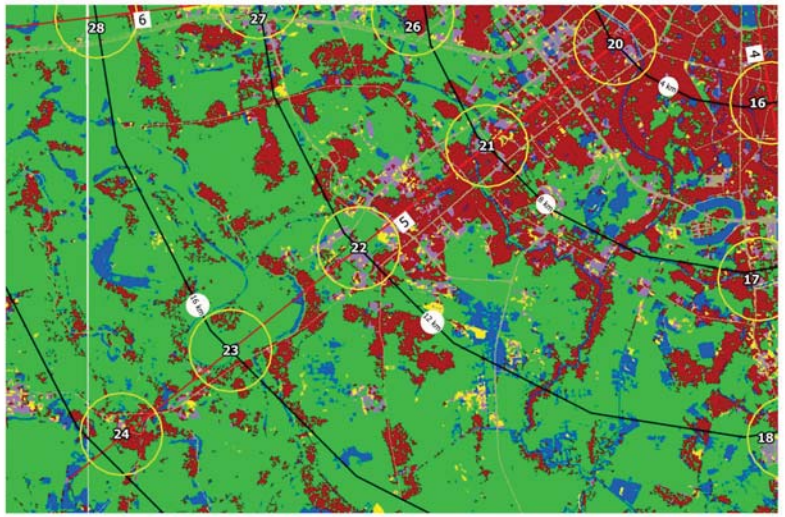
comparison of different axes. 2001



comparison of different axes. 2007



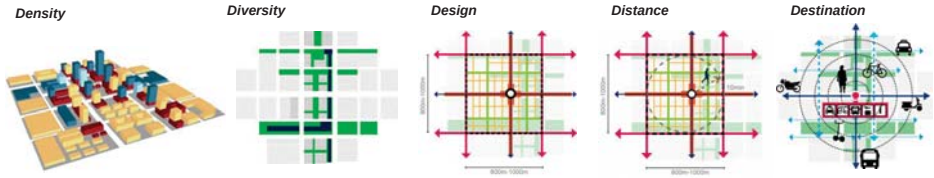
comparison of different axes. 2014



Transit Oriented Development (TOD)

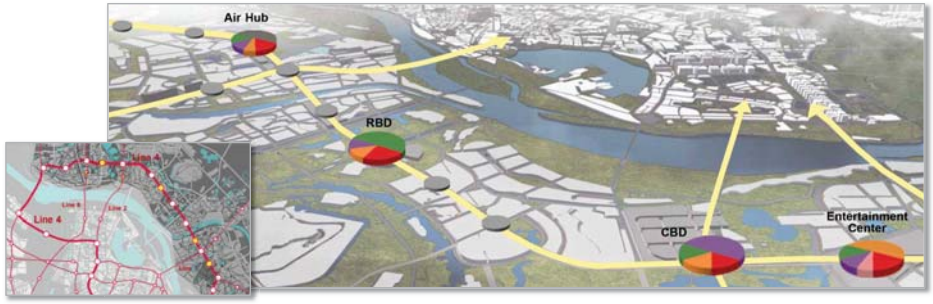
Five criteria:

- Increased **Density** around stations
- **Diversity** of functions and services
- Quality of Urban **Design**
- Minimize **Distance** to transit
- **Destination** accessibility



Conceptual Masterplan

- Additional metro stations
- Moved stations to the center of existing settlements
- Creating interlinked sub-centers
- Defining core areas by defined character / theme
  - the core areas were supported by mixtures of different use with varying proportions
- Interlinked green network “glues” structure together



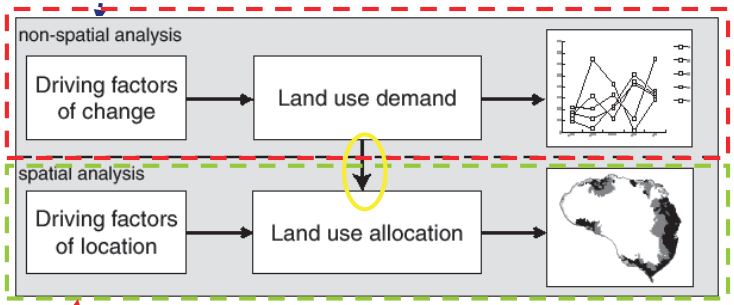
Conceptual Masterplan - selected core area

- Public transport hinge serves National Stadium and touristic link to relic site
- Integration of existing villages in a new settlement pattern

Model approach for urban dynamics in Hanoi

Structure CLUE-Model

- **Demand for housing, mobility,...**



Modul 1: non-spatial demands

Modul 2: spatially explicit allocations

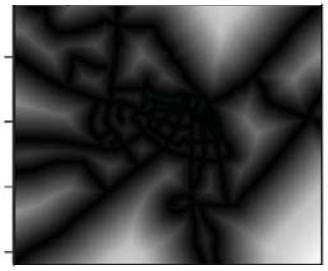
- **Distance to roads, distance to center, land cover, prices, development area, orignial land cover / land use**

(Verburg et al. 2002)

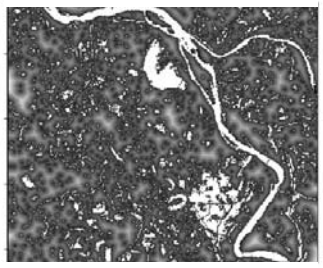
Model approach for urban dynamics in Hanoi

Parameters influencing urban dynamics Hanoi

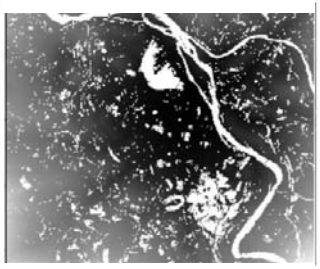
Distance to roads



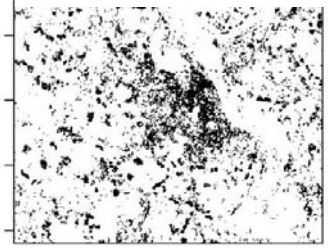
Distance to water



Distance to centres

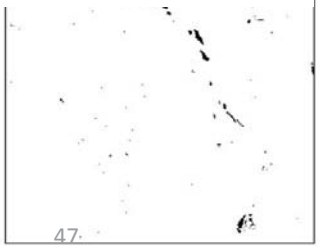


urban areas



vegetation

sand / barren land



Model approach for urban dynamics in Hanoi

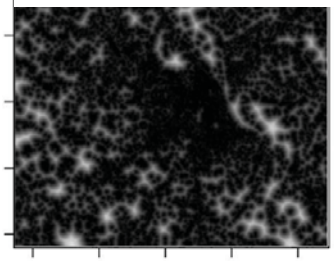
Parameters influencing urban dynamics

water

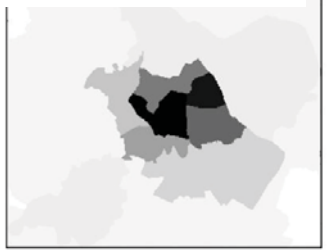
easting coordinates

northing coordinates

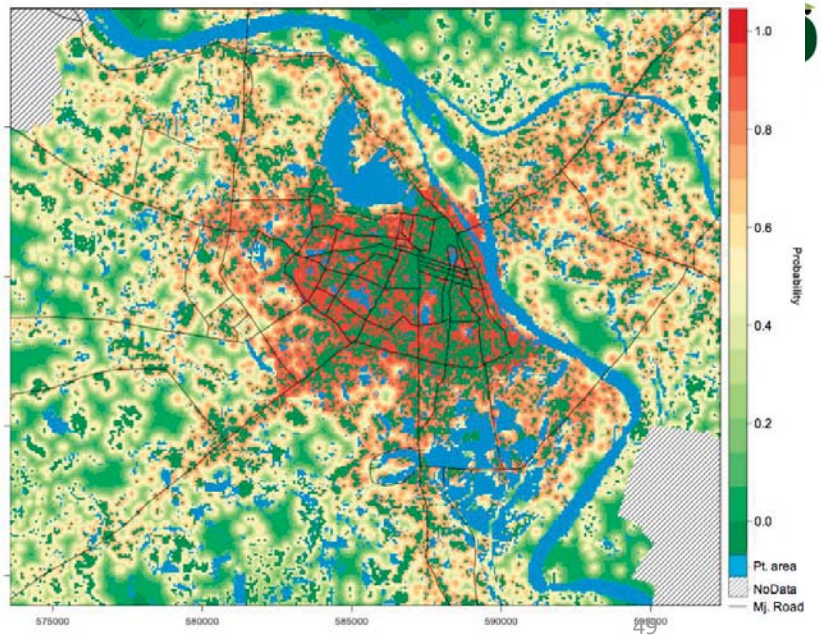
distance to urban

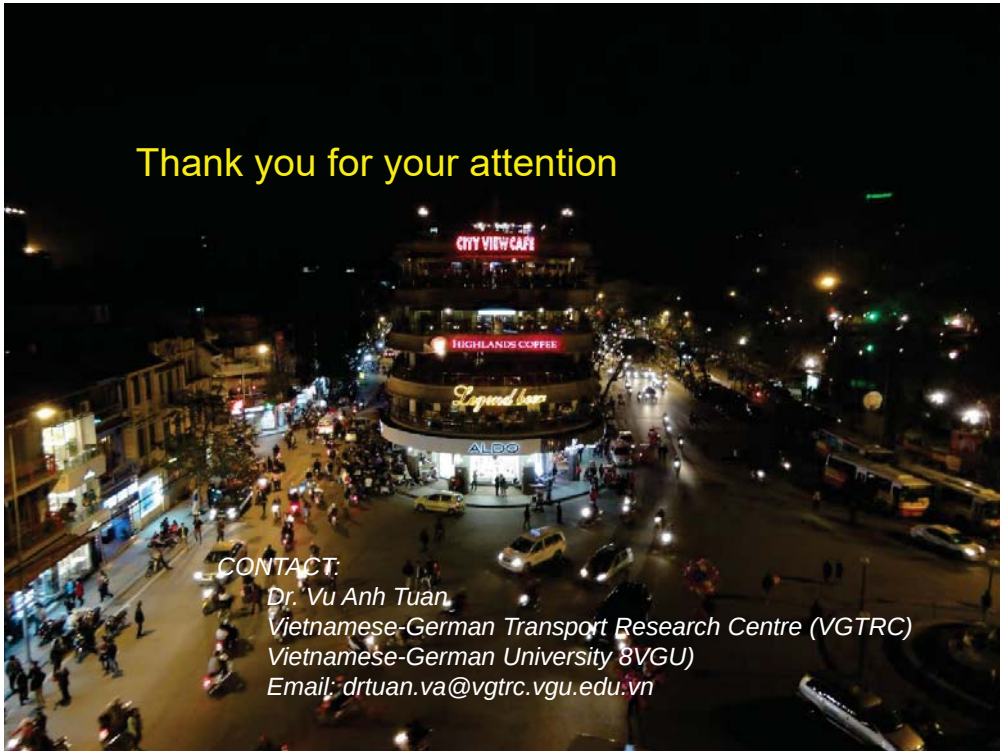


population density



Probability map for conversion to Urban





Conclusions

- Running real-time traffic information system
- Well-adapted traffic management strategies
- Sound policy recommendations on urban development
- Showcases of energy-efficient urban and transport planning

- The local government, authorities, and planners will be able …
  - to measure traffic conditions,
  - to test GHG reduction impacts of proposed policy measures, and
  - to well monitor the performance of transport infrastructure/services

Fourth Speaker of <Session 3C>

Ms.Chutinthorn Mankhong
Office of Transport and Traffic Poicy and Planning (OTP), MOT
E-mail: chutinthorn.p@gmail.com

Brief Biography:

Position: Policy and Plan Analyst , Professional level.

Office: Sustainable Promotion Group, Bureau of Safety Planning Office of Transport and Traffic Policy and Planning (OTP) , Ministry of Transport.

Education : Master degree in Industrial Ecology and Environment (International Programme), Faculty of Environment and Natural resources , Mahidol University.

Work experience: More than 10 years experience on Environmental and Climate Change issues in transport sector which an expertise on Environmental Sustainable Transport (EST), Clean Development Mechanism (CDM) and Nationally Appropriation Mitigation Actions (NAMAs) in Transport sector.

Key projects and responsibilities:

1. Clean Development Mechanism (CDM) in Transport sector phase I and II.
2. Environmental Sustainable Transport and Climate Change.
3. Promotion of Non-motorized Transport in Thailand.
4. Nationally Appropriation Mitigation Actions (NAMAs) in Transport sector.

Thailand's Sustainable Transport Master Plan.

By Ms.Chutinthorn Mankhong

Summary:

This presentation is going to present about Thailand's Sustainable Transport Master Plan which conducted by the Office of Transport and Traffic and Planning (OTP). This master plan was calculated Green House Gases emissions (GHGs) which emitted by transport activities in Thailand at the year 2005 as base year and also forecast emissions at the business as usual (BAU) level at year 2020 and 2030. Moreover, this master plan also calculated the emissions reduction according to the 120 sustainable transports projects/plans and programs under the Avoid, Shift and Improve concept. The presentation will cover the Non-motorized transport project which is one from those 120 projects/plans and programs under the EST master plan. The NMT project was also calculated the emission reduction from the project implementation according to mode shift activities. NMT project cover BMR area with 140 links between buses, MRT/BTS and water transport. Lastly, the presentation will show the pilot project at Pitsanulok municipality.

Environmental Sustainable Transport and Climate Change Mitigation Master Plan

8th ATRANS Symposium
Bangkok

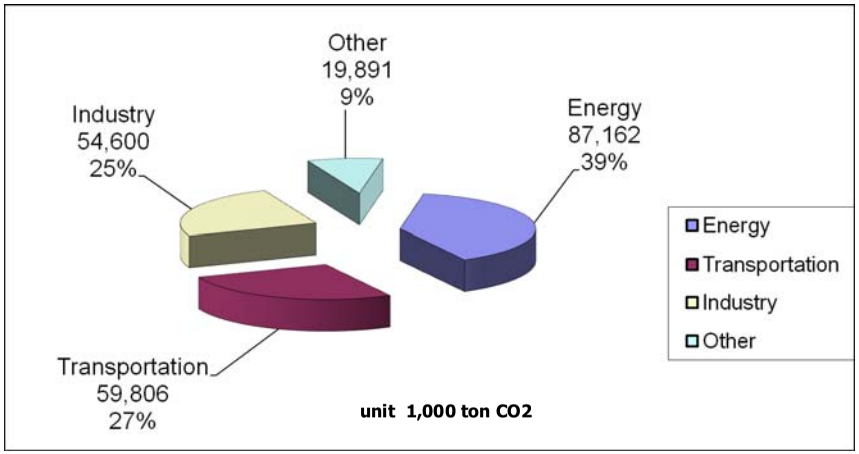
21 August 2015

Ms. Chutinthorn Mankhong
Office of Transport and Traffic Policy and Planning (OTP)

Topic

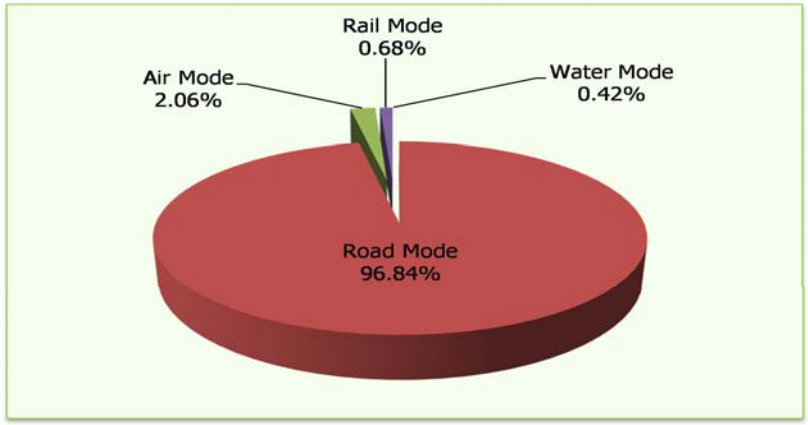
- Background
- Environmental Sustainable Transport and Climate Change Mitigation Masterplan
- Non - Motorized Transport :NMT Master plan

GHGs Emission by Sector : 2011



Source: Thailand Energy Statistic 2012

Volumes of Greenhouse gas released by Thailand's Transport Sector



Source: *National Greenhouse Gas listing*

11th Thailand National Economic and Social Development Plan (Transport Sector During Year 2010-2015)

International Trade Agreement	Climate Change	Sub – regional Corporation	Energy	Aging Society

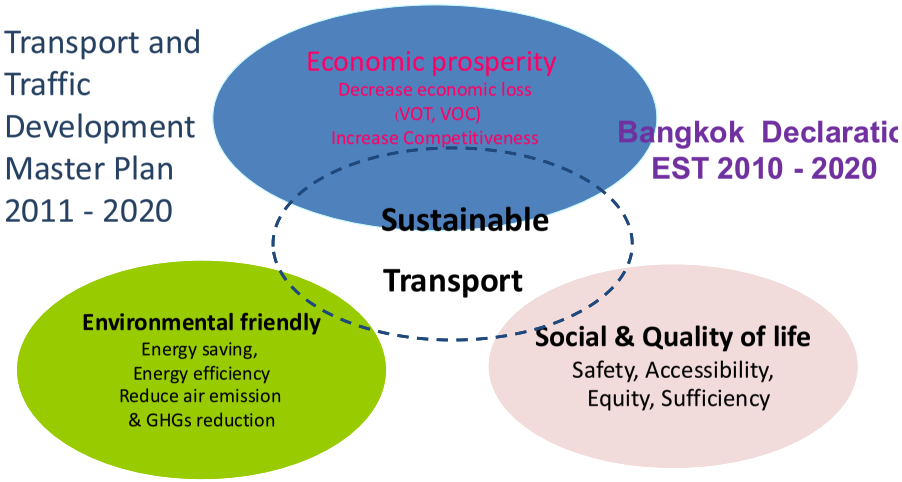
Green Transportation

- Change to Alternative Energy , Green Energy and Efficiency use in Energy
- Road and Rail integrated Network around country and Neighboring Country
- Improve Multi-modal Transportation
- Improve Transport System, Efficiency , Effectiveness, Accessibility, Safety ,Transport for all, (Aging people and Handicap)
- More Public Private Participation(PPP) Investment

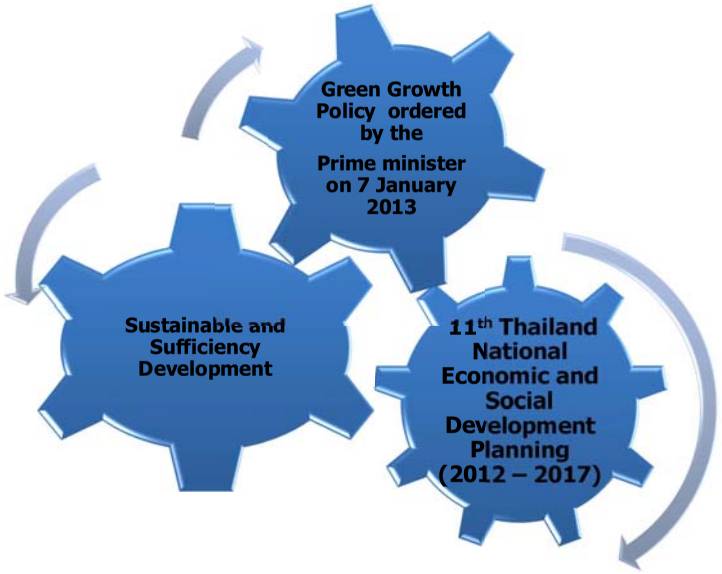
Ministry of Transport

Vision : Toward Sustainable Transport

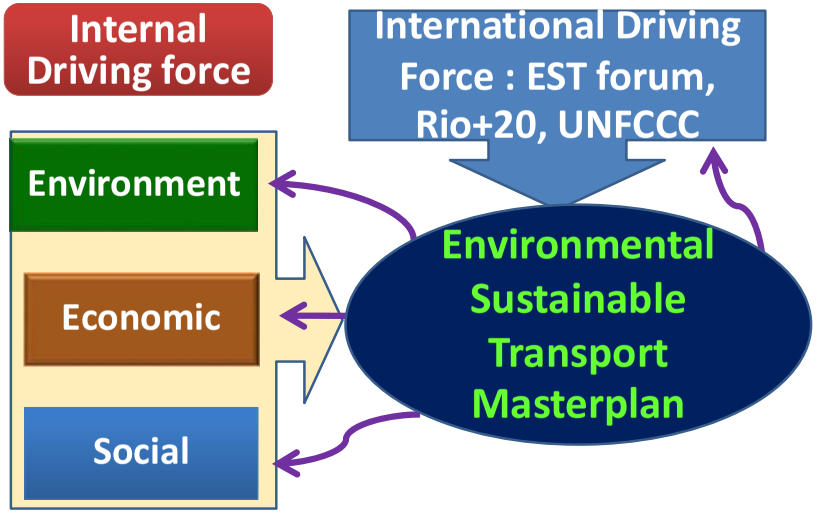
Transport and Traffic Development Master Plan 2011 - 2020



Linkage of National Strategic Formulation through Transportation Planning

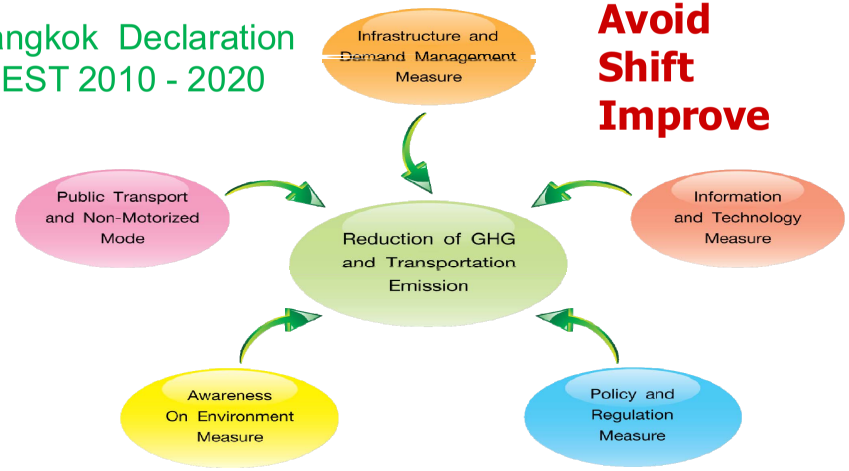


Master Plan Development



SUSTAINABLE TRANSPORT MASTER PLAN

Bangkok Declaration
EST 2010 - 2020



Avoid
Shift
Improve

Potential GHGs reduction in Transportation Sector

Year	GHGs at BAU (Million tons CO_2 e)	Potential of GHGs reduction	
		(Million tons CO_2 e)	%
2005	57.52	-	-
2017	67.53	11 - 13	16 - 19
2020	74.02	15 - 16	20 - 22
2030	102.82	27 - 30	26 - 29

Source: OTP, 2013

STRATEGY

Strategy 1: *Upgrade capability of agencies and personnel for the development of an environmentally sustainable transport system.*

Strategy 2: *Establish appropriate plans and mechanisms for interfacing and monitoring of transport and traffic work plans/measures/projects; and to move them forward to implementation.*

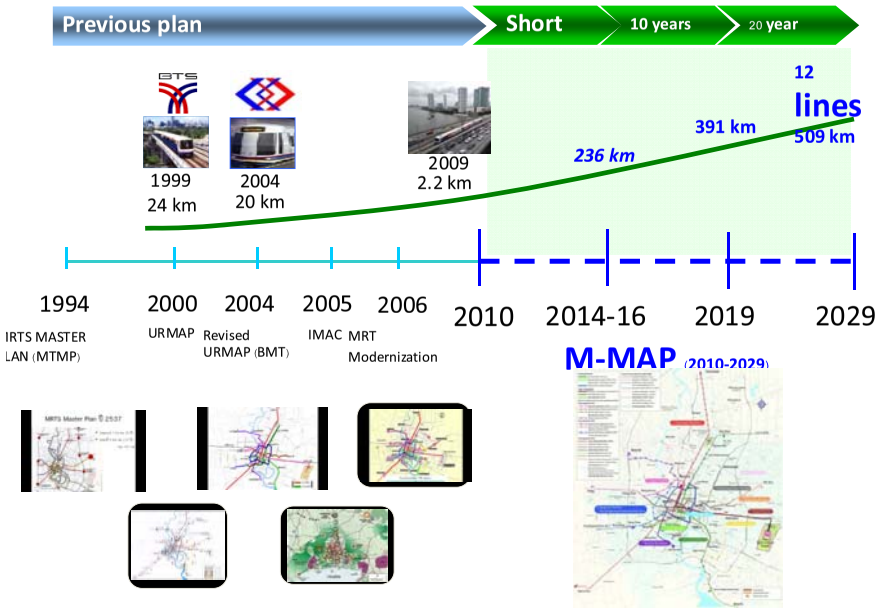
Strategy 3: *Establish comprehensive and inter-connected transport infrastructure.*

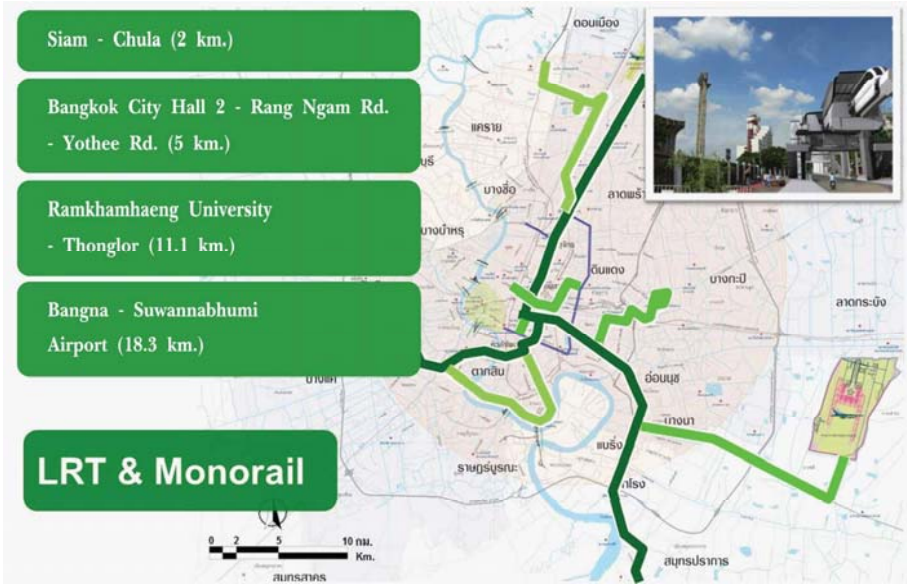
Strategy 4: *Efficient transport management for sustainability and greenhouse gas reduction.*

Strategy 5: *Promote transport R&D and adoption of environment-friendly innovations and technologies.*

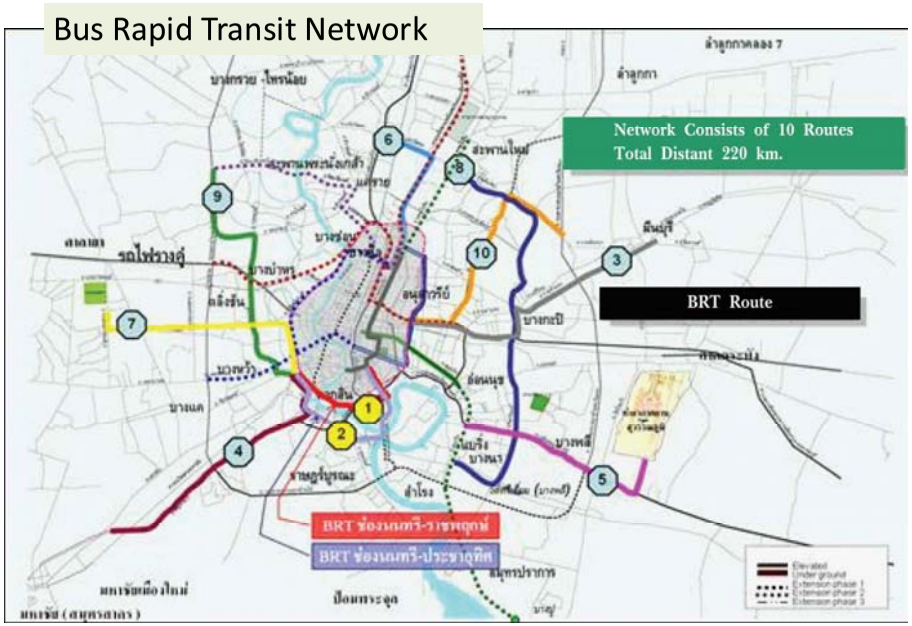
Strategy 6: *Promote public awareness of the environment.*

Mass Rapid Transit Master plan




Siam - Chula (2 km.)
Bangkok City Hall 2 - Rang Ngam Rd. - Yothee Rd. (5 km.)
Ramkhamhaeng University - Thonglor (11.1 km.)
Bangna - Suwannabhumi Airport (18.3 km.)
LRT & Monorail


Inland water - Bangkok
Current River Cruise Routes
Chao Phraya River
Saen Saep Canal
Bangkok Yai Canal
Dao Khanong Canal
Phasi Charoen Canal
Phra Khanong Canal
Future Routes
Saen Saep Canal (Extension)
Lat Phrao Canal


Bus Rapid Transit Network
Network Consists of 10 Routes
Total Distant 220 km.
BRT Route


Existing
– 23 routes
-185 km. length
New - 39 routes
Completed
Routes in the Future

Current NMT Facility in Bangkok

Pun Pun Public Bicycle Project

Current NMT Facility in Bangkok

Pun Pun Public Bicycle Project

Non-Motorized Transport (NMT) project

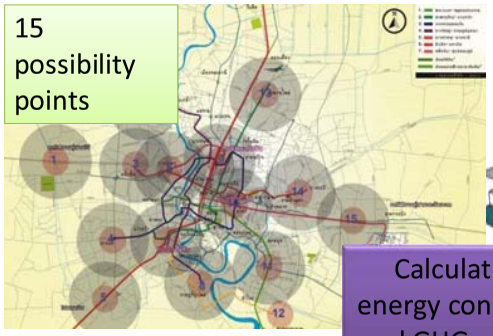
Non-Motorized Transport project (started from 1 November 2013 – 31 August 2014)

Connect the link between each mode of Transport

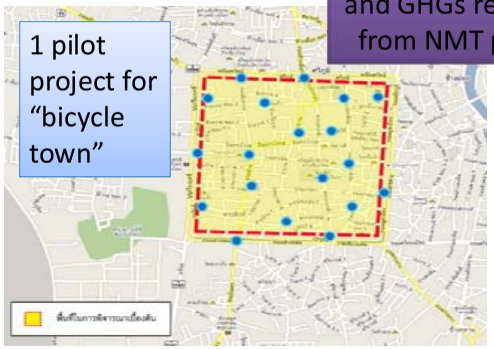
- 3 pilot projects in BMR
- 1 pilot "bicycle town"
- Energy consumption reduction
- GHGs emission reduction

National Health Assembly

Cabinet resolution on 19 November 2013 approved the promotion of "Bicycle use in daily life"



Calculation for energy consumption and GHGs reduction from NMT project



15 Possibility Points : BMR

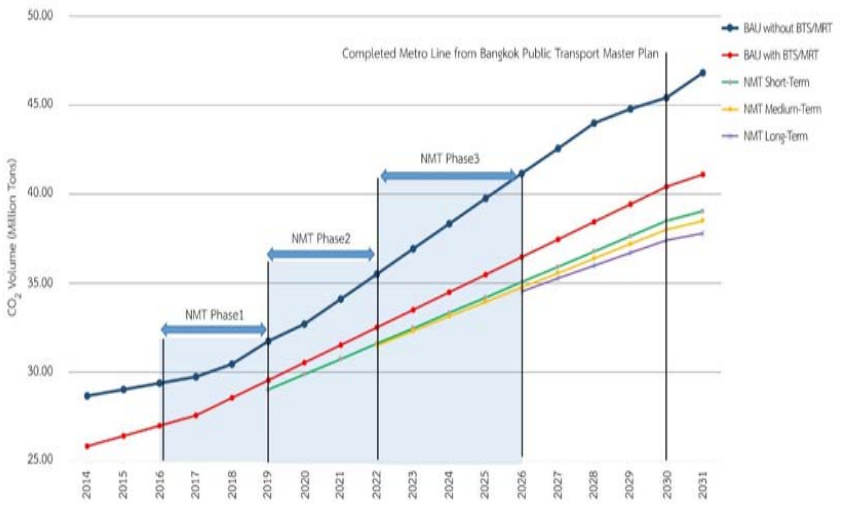
1. Mor-Chi BTS Station
2. Phayathai BTS Station
3. Pakkret Boat Station
4. Pharam 9 MRT Station
5. Hualumpong Bus Station
6. Phonimit BTS Station
7. Prakanong BTS Station
8. Sapan Withayu Boat Station
9. Ratchawong Boat Station
10. Ladprow Bus&MRT Station
11. Pharam 9 Bus Station
12. Udomsuk BTS Station
13. Ratcharop BTS Station
14. Sapan Phut Boat Station
15. Wat Tuk Boat Station

Target of OTP's NMT project

- To unify the policy of Non Motorized Transport in Public and Private sector in support of NMT in connection with Public Transport Modes
- To create NMT Master Plan that serve the transport need of the people in Greater Bangkok toward sustainable transport
- To create awareness and public participation in using NMT as alternative to private car
- To calculate the energy consumption and GHGs reduction from NMT project in order to submit as NAMAs project.

3 Pilot Project : Details Design

GHGs reduction from NMT project

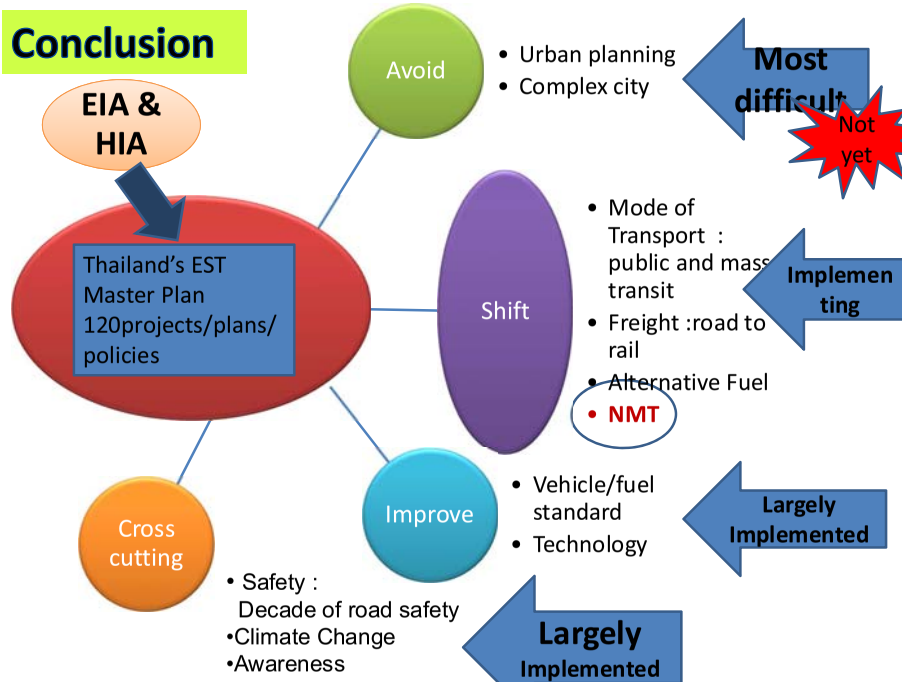


Source: OTP, 2015

Thank you for your attention

Further information: chuttinthorn_p@gmail.com

Conclusion



< 5th AFTERNOON SESSION >

Session 3D: Parallel Session of Main Symposium

Session 3D: Intelligent Transportation System (ITS) and Safety Moderated by Assc.Prof.Dr. Sorawit Narupiti, Chulalongkorn University
V2V Technology for Road Safety By Dr. Hideaki Nanba, Denso, Japan
Monitoring Movement of People and its Applications: A Case of Nepal By Assoc. Prof. Dr. Masahiko Nagai Center for Spatial Information Science, The University of Tokyo, Japan
ITS for Public Transportation System in Bangkok By Dr. Padet Praditphet, Acting Director of Office of Common Ticketing Administration Project, OTP, MOT
ITS Technology for Improvement of Taxi Service: A Practical Case of All Thai Taxi By Assoc. Prof. Dr. Agachai Sumalee, Director of Smart City Research Centre, Faculty of Engineering, KMITL

Moderator of <Session 3D>

Assoc. Prof. Dr. Sorawit Narupiti
Department of Civil Engineering, Faculty of Engineering,
Chulalongkorn University, Pathumwan, Bangkok 10330 Thailand
Tel : +662-218-6460 Fax : +662-251-7304
E-mail : kong@chula.ac.th

Brief Biography:

Dr. Sorawit Narupiti is an Associate Professor at Department of Civil Engineering, Chulalongkorn University, where he serves as Head of Department from 2012 to present. He specializes in transportation and traffic engineering especially Intelligent Transportation Systems (ITS). He has been conducting research and development on Intelligent Transportation Systems (ITS) for more than 15 years.
He has numerous academic papers and made presentations on ITS topics at regional conference levels. He is currently a reviewer in some ITS-related journals/conferences and a coordinator of the ITS group at Chulalongkorn University.
He has taught classes on Highway Engineering, Traffic Engineering, Transport Policy and Planning, Intelligent Transport System, Simulation and Modeling and more. Professionally, he served as the President of Thai ITS Association from 2008-2012, the secretary of Intelligent traffic information center (iTIC) foundation which promotes better transport through the use of intelligent transport system data in Thailand. Moreover, he joins many transportation engineering professional associations.

He has involved in ITS activities in Thailand. He served as President of Thai ITS Association (ITS Thailand) from 2008-2012. He is also active in ITS activities in Asia-Pacific region.

First Speaker of <Session 3D>

Dr. Hideaki Nanba
Project Director of DENSO CORPORATION
DENSO Head Office, 1-1, Showa-cho,
Kariya-shi, Aichi-ken, 448-8661, Japan.
E-mail: hideaki_nanba@denso.co.jp

Brief Biography:

"Mr. NANBA is an ITS expert based on the radio technology. He has the more than 30 years experiences from automobile computerization to ITS system. Now, he is one of the project leaders of SIP (Strategic Innovation Program) "Automated Driving System" of the Japanese Government Project.

Education

Apr. 1977 - Mar. 1979 Osaka University Graduate School, Master of Computer Science and Information Technology.

Apr. 1973 - Mar. 1977 Osaka University, Bachelor of Computer Science and Information Technology.

Publication

"Towards Ubiquitous ITS Realization through Various Wireless Media", Vol.50 No.1, Information Processing Society of Japan (2009).

"Application of LQ Control Theory to Automotive Engine Control System", No.910-31, Robotics and Mechatronics Conference, NAGOYA, Mechanical Engineering Society of Japan, 1991.

"Application of Reduced Order Model to Automotive Engine Control System", ASME vol.109, Sept, 1987

"On the Application of Modern Control Theory to Automotive Engine Control", IEEE, IE, vol.IE-34. 1987

Work Experience

2009 – 2015: ITS project leader of the Japanese government standardization committee.

2004 – 2009: General Manager of Wireless technology applying to ITS field. Development of the wireless unit for Vehicle to Vehicle communication. Representative staff of DENSO CORPORATION for the government committee.

2000 – 2004: Manager of R&D of Communication Technology applying to ITS system.

1991 – 2000: The development leader of Base station of PHS cellular system. CDMA cellular phone development manager. Chipset development manager. The coordinating manager of US-Japan co-operation. Negotiating manager toward US semiconductor companies (Qualcomm, LSI Logic).

1988 – 1991: Application of Control Theory to Automotive systems. Electric controlled throttle system for TOYOTA.

1979 – 1988: Development of Electronic Control Unit for Automotive control system, for example, Engine Control Unit, Racing Car Control Unit for MAZDA _Du Mans, Motor Bike Engine Control Unit for HONDA(CX-500Turbo), Diesel Engine Control Unit for TOYOTA.(Spill control, VE pump)

—**1979:** Enter the DENSO CORPORATION.

Skills, Awards

- DENSO grants me the title of "Distinguished Engineer".
- O. Hugo Schuck Best Paper Award, 1987 AACC (American Automatic Control Council).
- First Grade Radio Engineer Certification of Ministry of Internal affairs and Communication of Japan

Professional Organization

Member of The Institute of Electronics, Information and Communication Engineers

V2V Technology for Road Safety

By Mr. Hideaki NANBA

Summary:

Background

Toward the safest road traffic society, Automated Driving Systems are considered as the expectant realization. Collaborative automated driving system, going before autonomous driving system, needs the more advanced V2V and V2I communication technology. The aim of this project is to establish the V2V, V2I communication technology for road safety.

■Subject

3 subjects are recognized as the important theme toward the penetration of V2V, V2I technology.

① As for Road Safety, sensor information is applied to the preventive safety technology before the V2V technology's penetration.

② To verify the satisfaction of the communication performance, even in the much increased vehicles installed the wireless units, in the case of the execution of the application.

③ To appeal the usefulness of the V2V, V2I for its technology's penetration, the demonstration of the accepted application plays the very important role.

■Activity

Checking the communication capacity in the real world is necessary, because of the huge volume of wireless units equipped cars transmitting the safety information each other. The feasibility of the systems is going to be demonstrated on the public roads using many vehicles. Simulation technology is used for the limitation of the real experiment, and the difference should be analyzed so that we collect the valuable data. The field operation trials are conducted in 3 cities, NAGOYA, YOKOSUKA, KOBE in thinking of its features

■Field Operation Trials

In NAGOYA city, 105 vehicles are used for the communication performance test. In YOKOSUKA city, HMI relating data is collected. In KOBE city,the transmissibility in the multiple roadside wireless units.

V2V, V2I Communication Technology for Road Safety and toward the Automated Driving Systems

2015/08/21

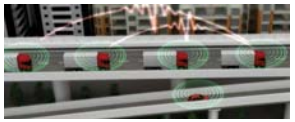
Hideaki NANBA
Project Director , DENSO CORPORATION

This presentation is the result of the Japanese Government's SIP(Strategic Innovation Promotion Program) Research and Development of Automated Driving Systems.

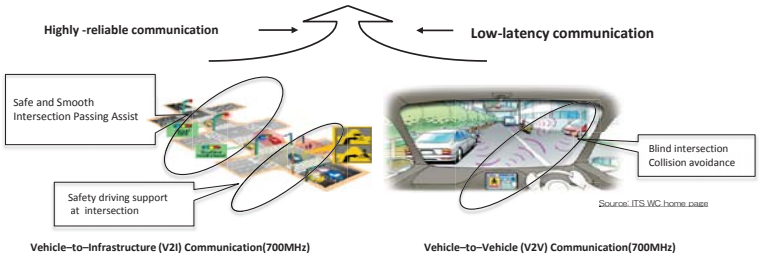
Toward the Automated-Driving Systems

Automated Driving for Commercial Vehicle

Cooperative Automated Driving



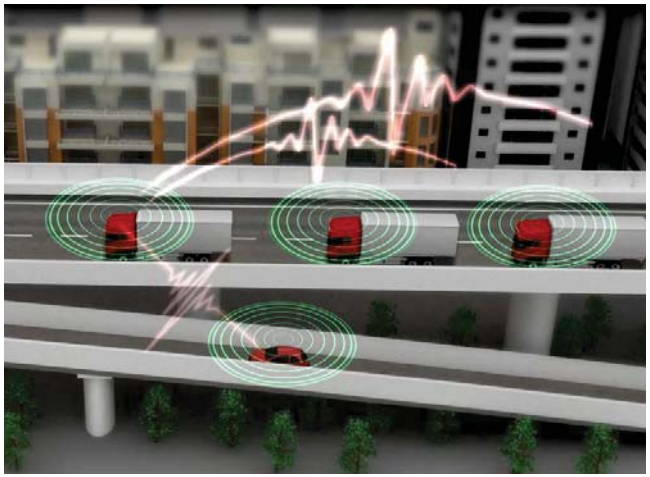
Enhanced and Sophisticated



Topics of the auto-driving system

From Promotion Video of European Company

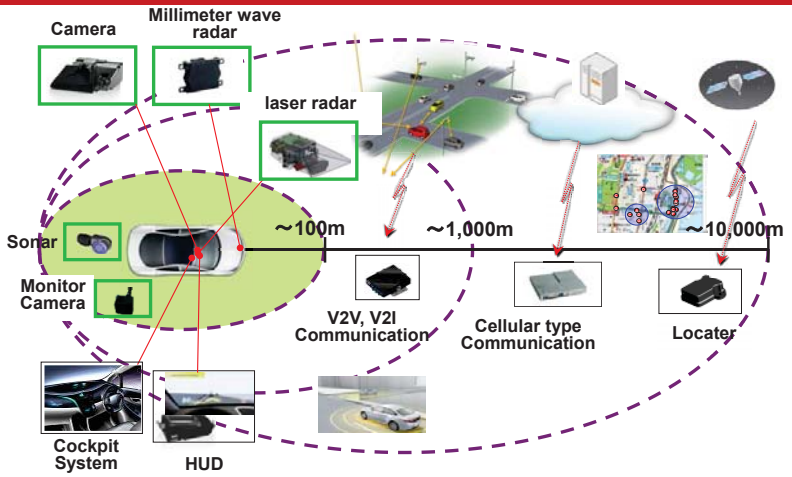
Images of Automated Driving Systems



Images of Automated Driving Systems

Communication with other cars is needed

Sensing the surround of the car

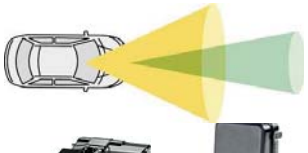


Preventive safety technology

Collision avoidance support brakes

Pedestrian collision avoidance support brakes

Lane keep support system



Camera

Millimeter wave radar

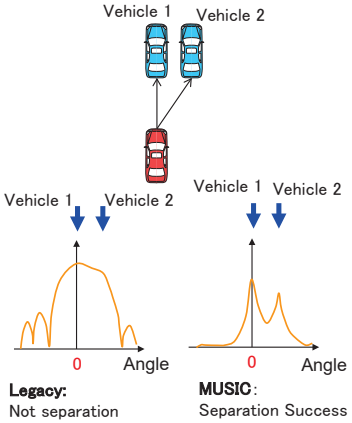
Active cruise control

Automatic high beam

Traffic sign recognition

High recognition technology "MUSIC" in Millimeter wave radar

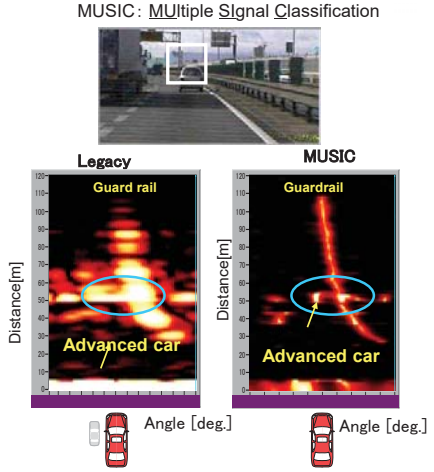
(Example)
Two vehicles cruise in same speed



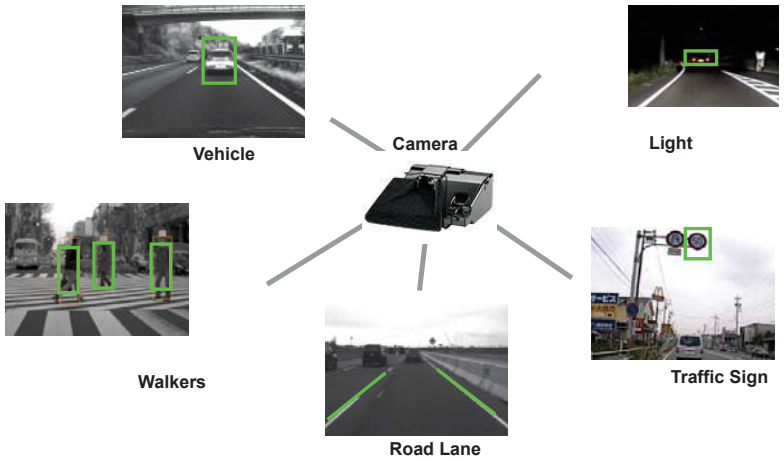
Legacy:
Not separation

MUSIC:
Separation Success

MUSIC: MUltiple SIgnal Classification

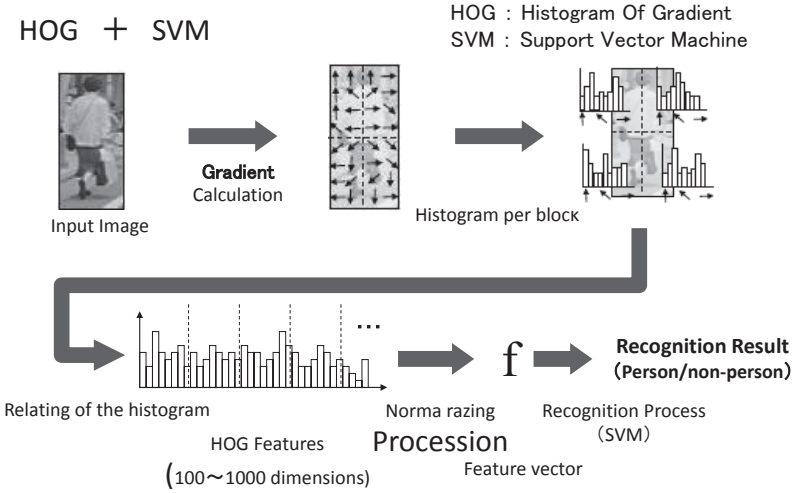


Recognition Target of Camera Images



Walkers in many fashion

Example of the pedestrian recognition



Wireless Sensors / Devices relating to Safety

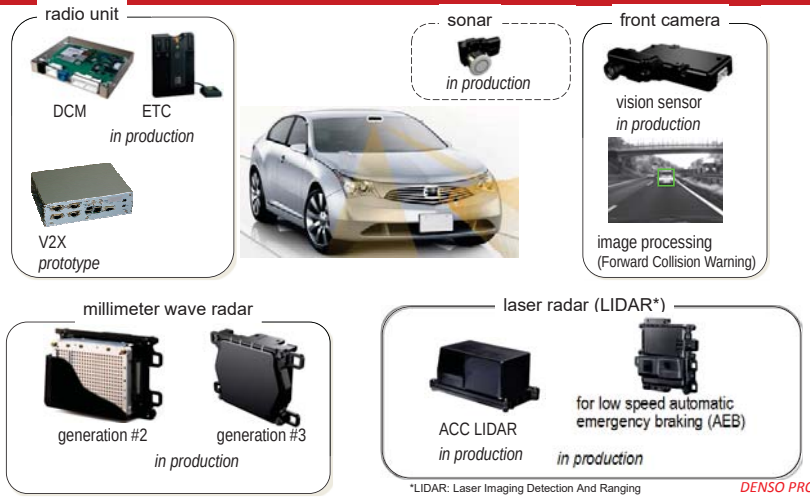
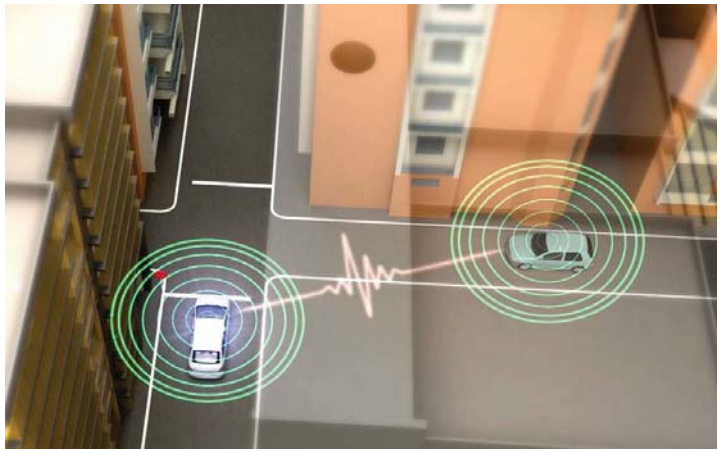
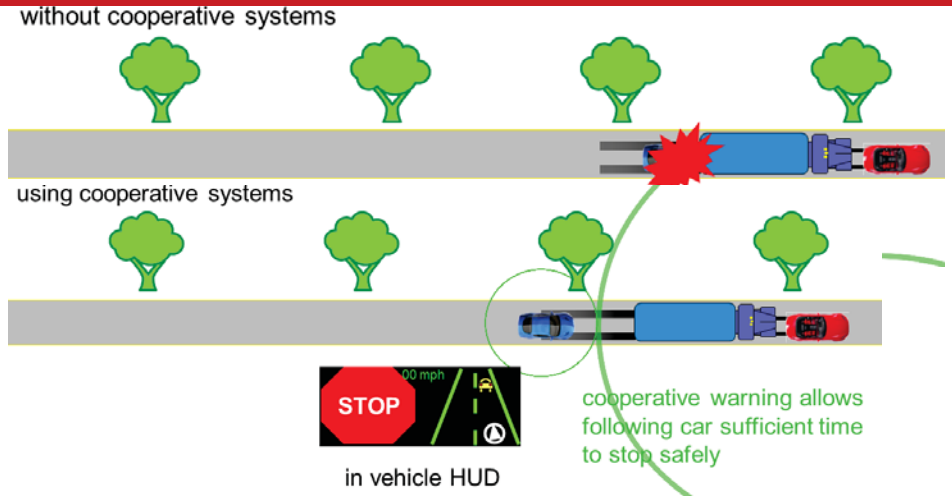


Image of V2V communication at the blind corner



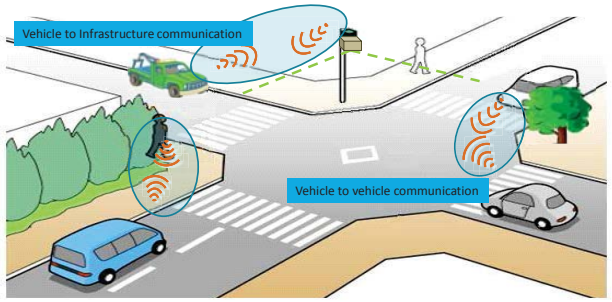
Emergency Electronic Brake Lights Safety Application by V2V



Background and Aims of the Research and Development

Using the predictive information on **ITS**,
Automated Driving Systems shall be realized and expedited.

(From the Cabinet Office)



Field Operation Test

Collaboration with MLIT- project and NPA- project

■NAGOYA-city

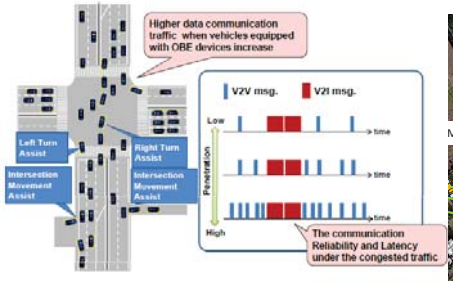
■YOKOSUKA-city

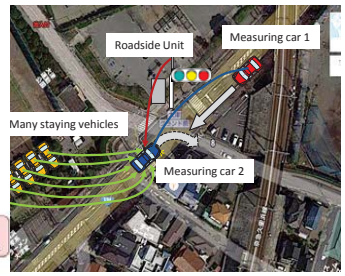
■KOBE-city

One Road-side unit is put in place for NAGOYA and YOKOSUKA.

Six Road-side units are put in place for KOBE by NPA- project.

a) The study of communication in the cooperative system (V2V, V2I)





Communication performance at the heavy traffic jam is evaluated in the specific area.

Experimental Site : NAGOYA city, YOKOSUKA city

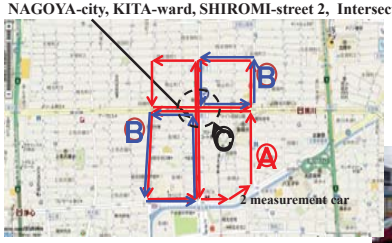
Outline of NAGOYA FOT

Experiment Area :
NAGOYA-city, KITA-ward, SHIROMI-street-2, Intersection

Experiment Purpose
- Verification of the communicable area
- Influence Check of the shadowing
- Influence Check of the communicating traffic increase

Experiment Scale
- 1 Road-side wireless unit
- 100 cars with wireless unit

NAGOYA-city, KITA-ward, SHIROMI-street 2, Intersection



EXPERIMENT	VEHICLE	WIRELESS UNIT
Pseudo-ambulance car	1	1
Rent-car w/ hired driver	15	15
Measurement car	2	2
Subtotal	18	18
Real ambulance car	32	32
Customer car / Commercial car	34	34
Rent car (DENSO)	10	50
Rent car (Panasonic)	5	25
Subtotal	81	141
Total	99	159

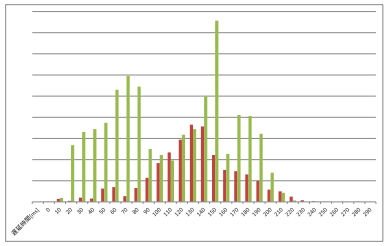
Experimenter
DENSO / 99 cars
Panasonic /6 cars
Joint Project with MLIT and NPA project

Date
2015/02/09 -- 02/20

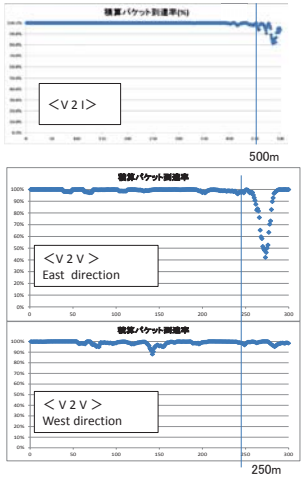
a) The study of communication in the cooperative system (V2V, V2I)

Communication performance at the heavy traffic in the big intersection area of NAGOYA-City

Result of the latency



Result of the packet arriving rate

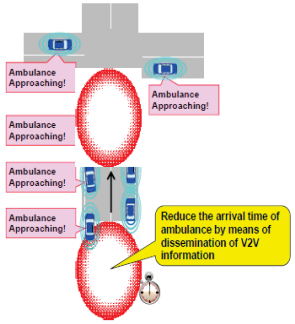


The Emergency Motor Vehicle is prioritized

C) The study of promotion and penetration

Shorten the time to the destination of the emergency Vehicle is very controversial problem.

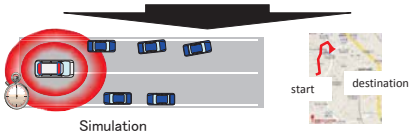
Assistance for emergency vehicle traveling



Experimental Site :
NAGOYA city, YOKOSUKA city

Fixed Camera

Ambulance vehicle with wireless unit



Simulation

6TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

Summary

■For Road Safety
・Advanced automobile sensors support the automotive safety driving system.
・V2V technology provides the invisible information to the driver.
・Automated driving system shall evolve from the bases of V2V technology.

■Last year's result
・As for the verification of the requested communication condition, real measurement data is collected and simulation shows the data in various penetration rates.
・As for the service confliction in the case of having the same kind information, the data is collected in the real public road.
・As for the effect of V2V application to the ambulance vehicle, the basic data is collected.

■This year's plan
※ New theme is added toward the automated driving system

Second Speaker of <Session 3D>

Assoc. Prof. Dr. Masahiko Nagai
Center for Spatial Information Science, The University of Tokyo
Cw-503, IIS, 4-6-1, Komaba, Meguro-ku, Tokyo 153-8505, Japan
Phone: +81-3-5452-6417 Fax: +81-3-5452-6414
E-mail: nagaim@iis.u-tokyo.ac.jp

Brief Biography:

Dr. Masahiko Nagai is Associate Professor of Center for Spatial Information Science, the University of Tokyo, Japan. Also he is a visiting Associate Professor of School of Engineering and Technology, Asian Institute of Technology (AIT). He received the Doctoral Degree of Engineering from The University of Tokyo, Japan.

His current research focuses on Spatial Information Engineering, such as Remote Sensing, GIS, and GNSS application. Also, he has developed several monitoring tools such as UAV and Vehicle based system, Sensor Network system, and so on. His current research interest is analysis and visualization of big data for transportation application.

Tracking People's movements for ITS applications

By Assoc. Prof. Dr. Masahiko Nagai

Summary:

Recently, there are various types of trip data available, such as taxi probe data, GPS logger data, CDR (call detail record) data, and so on. Tacking of vehicle and people is essential for understanding of dynamic activities of people. It has high potential to apply for not only urban planning and disaster management, but also ITS applications. "Probe Taxi" that have been operated in the Bangkok since the July of 2012 by Toyota Tsusho Electronics (Thailand) Co. Ltd. Approximately 10,000 probe taxi are utilized for the real time traffic information monitoring. GPS devices have been installed in the probe taxies to collect spatial and temporal information every 3 to 5 seconds along with other necessary information. Also, person trip data has been collected from GPS logger too in Bangkok and Myanmar. The spatial information includes the latitude and longitude and temporal information includes the UNIX epoch time. The main challenge of this study is to handle spatial big data. The objective of this study is to find the suitable method to process and visualize the big data and remove noise from the big data set and produce the relevant information from the big data set. Also, accuracy assessment of GNSS (Global Navigation Satellite System) positioning has been done.

Tracking People's movements for ITS applications

Dr. Masahiko Nagai

Associate Professor,
Center for Spatial Information Science,
The University of Tokyo, Japan

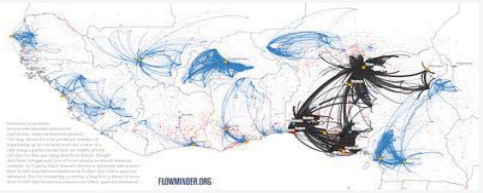
Cell Phone Network Technologies

- As a tool to distribute information
  - Provision to disaster information
  - e.g.) Frontline SMS crowd

http://www.frontlinesms.com/

- As a tool to collect information
  - Real-time monitoring for movement of people, car, and goods including cross-boarder transfer

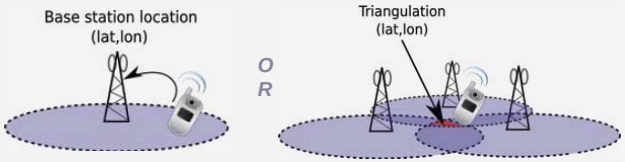
People flow of Tokyo, Mar.11, 2011
Courtesy: Shinsai Big Data (H.Abe edit, NHK publishing, 2014)



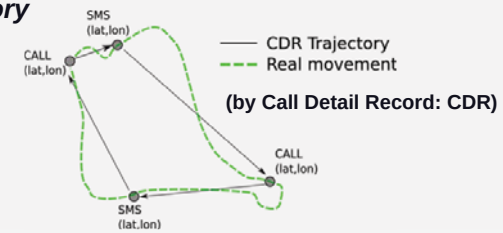
http://www.worldpop.org.uk/ebola/

How to Mesure the Location of and Track Mobile Phone Users?

1) Localizaton by cell towers



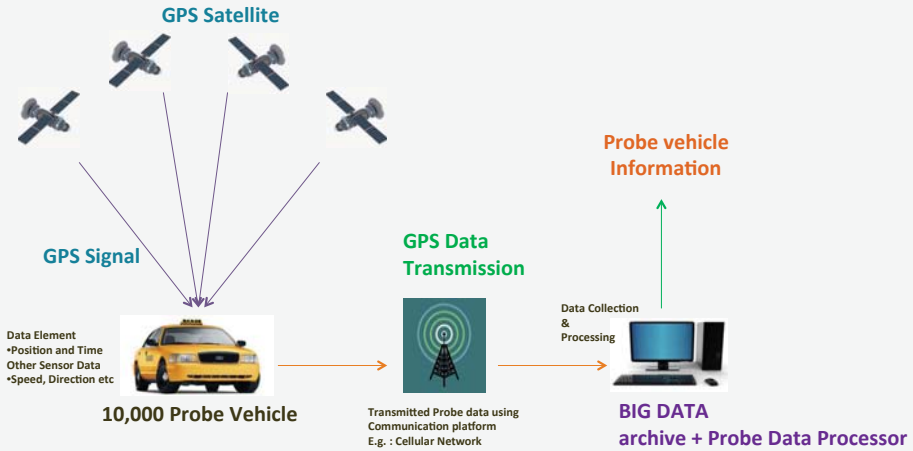
2) Trajectory



Cell Phone Network Technologies

2014/3/11 Tokyo
Before and After the Earthquake
Courtesy: Shinsai Big Data (H.Abe edit, NHK publishing, 2014)

Bangkok Taxi Probe's Big Data Processing



8TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

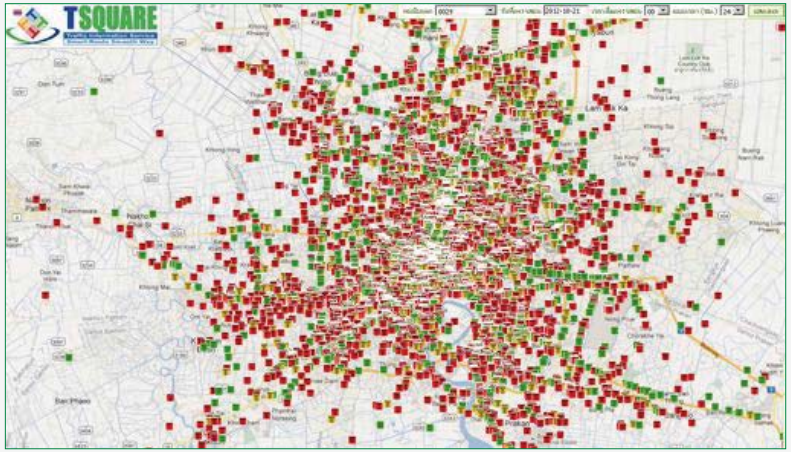
Bangkok Taxi Probe's Big Data Processing

- Toyota Tsusho Electronic Thailand Co Ltd
  - Providing real time traffic information of Bangkok area
  - 10,000 GPS enabled Taxi in Bangkok
  - Collects traffic raw data from 10K taxi probes every 3 to 5 and stores in cloud server
  - Reliable and predictable traffic information
  - Tsquare App -> https://app.rtic-thai.info/tsquare/

Taxi in "TSQUARE" Group

8TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

"TSQUARE" VICS/RTIC traffic service in Thailand



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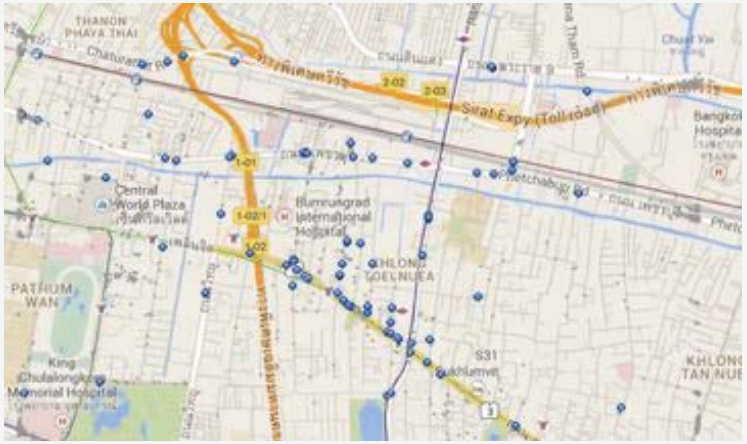
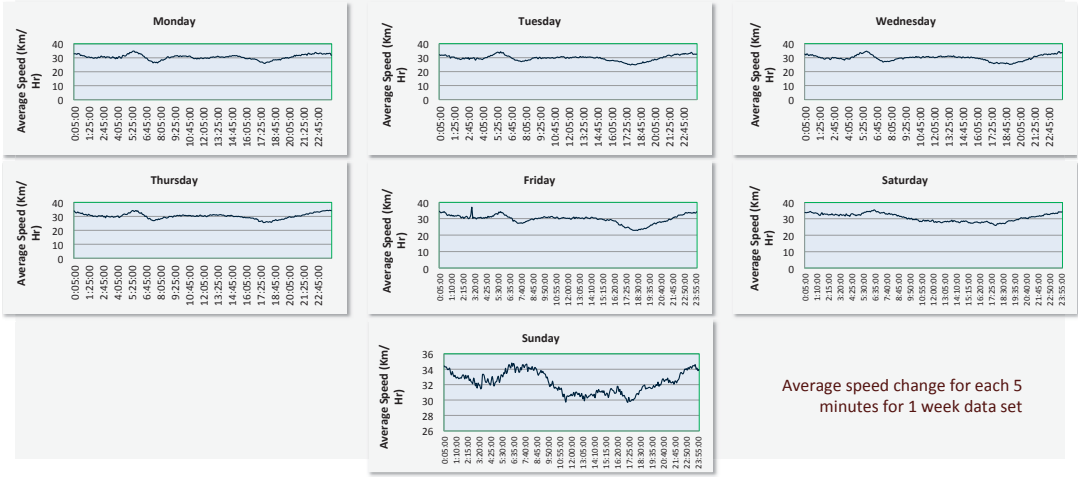
Visualization of Taxi Probe data



Data Analysis: Average Speed Pattern



Average speed change for each 5 minutes for 1 week data set

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"TSQUARE" VICS/RTIC traffic service in Thailand

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Applying "Taxi Probe" data for "Flood"

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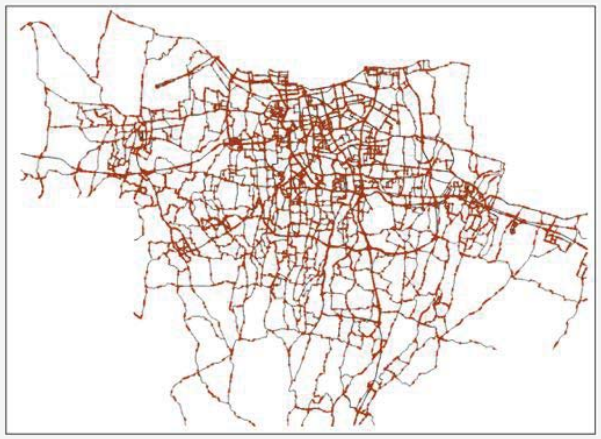
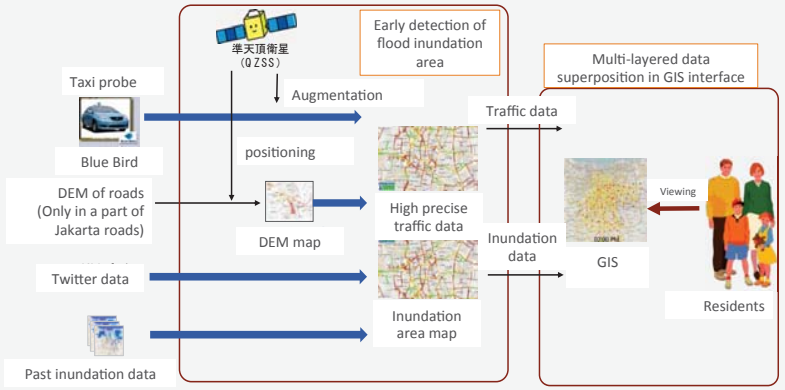
Taxi Probe data in Jakarta by Blue Bird Taxi



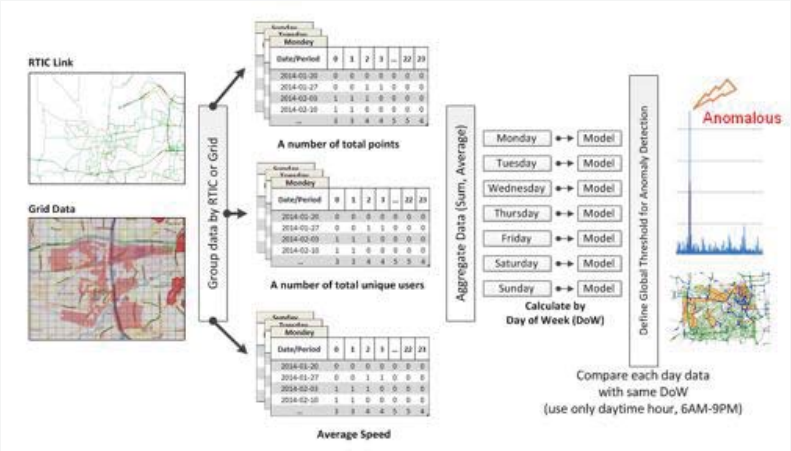
Specification of data set

- IMEI (International Mobile Station Equipment Identification)
- Latitude / Longitude (In Decimal Degree)
- Speed (Km/hr)
- Direction (In Degree)
- Meter (0/1)
- Unix Time Stamp (Second)
- Rticlink

"Urban Flood Response Support" system



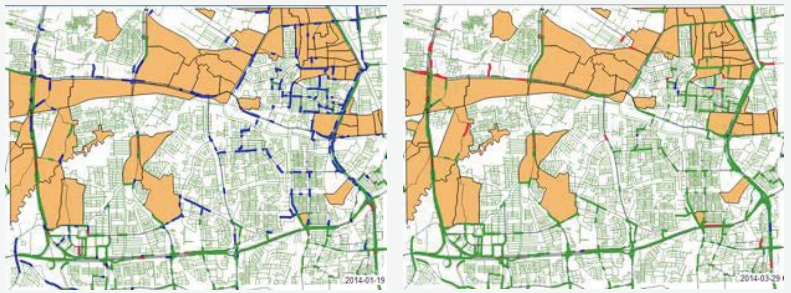
Overall Data Analysis Flow



Data analysis in the region of interest in time series

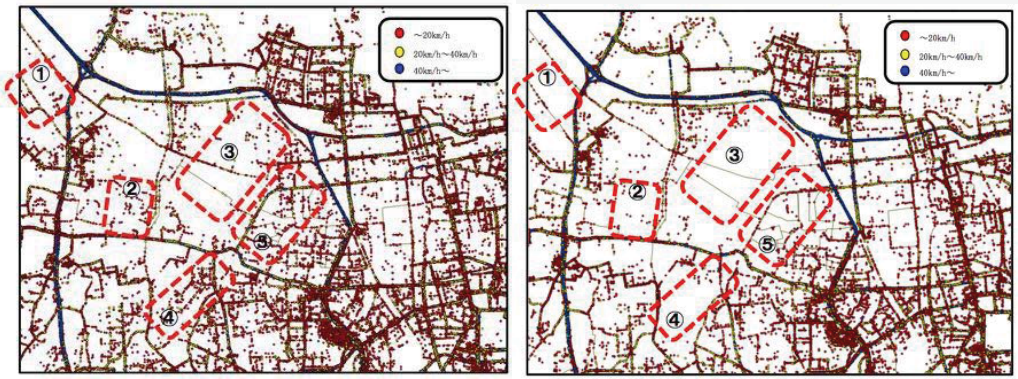
Anomaly at date level

- Compare during flood (2014-01-19) and not flood (2014-03-29)



Blue : very less traffic, Green: normal, Red: very high traffic

Comparison between Normal and Flood



Normal: 19/03/2014

Flood: 22/01/2014

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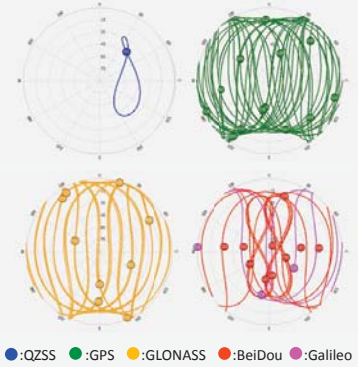
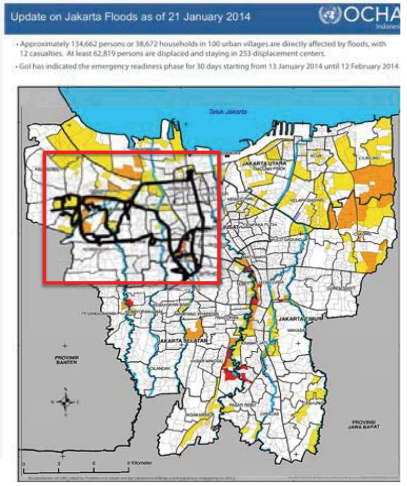
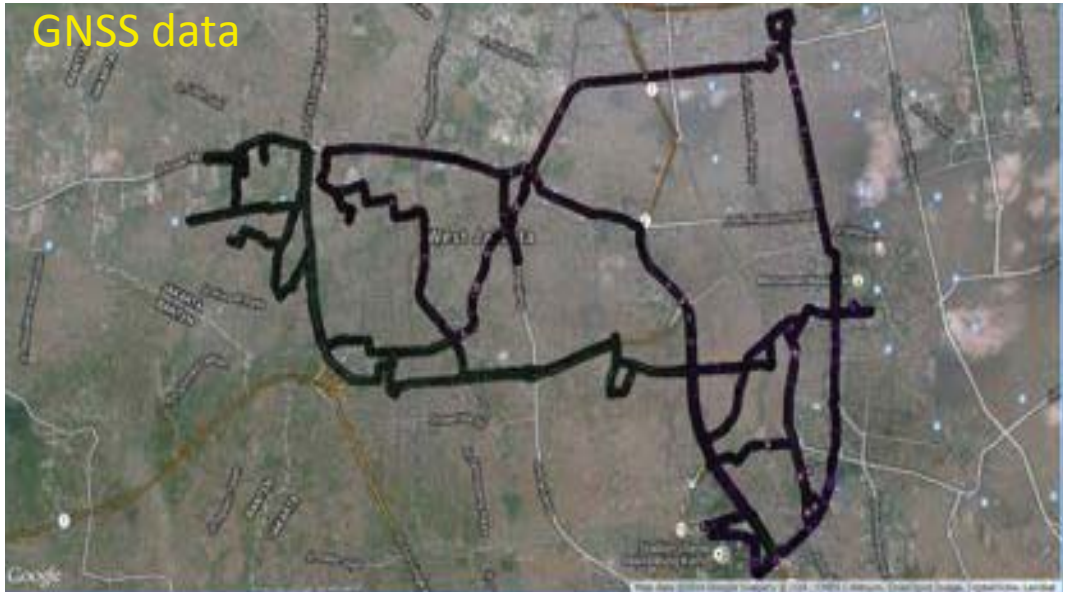
Multi-GNSS Experiment for DEM

2014/12/01
Jakarta, INDONESIA (UTC+7)
6°13' S
106°48' E

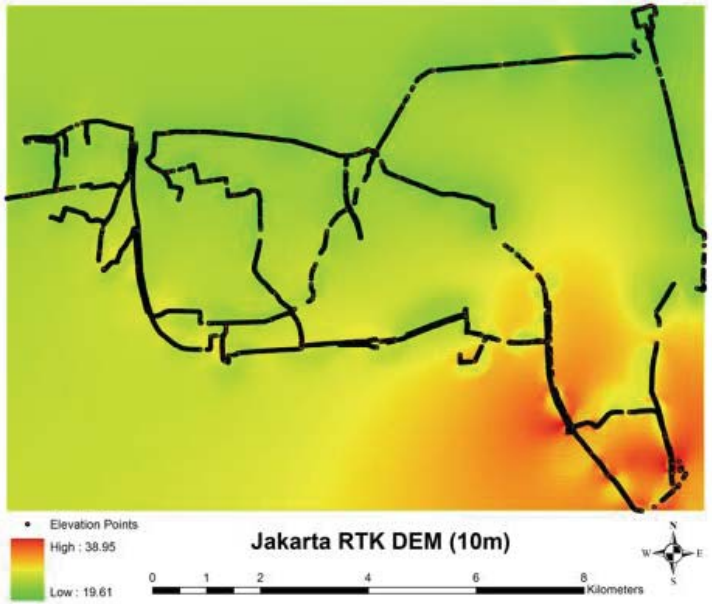




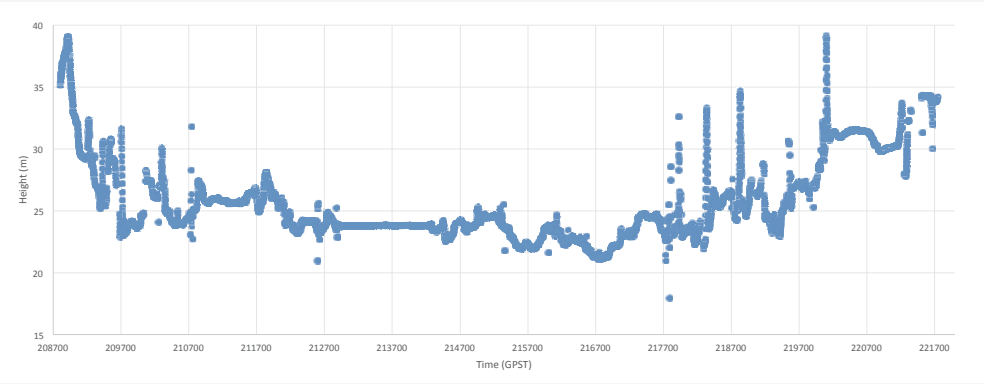


Statistics

- Min: 19.61
- Max: 38.95
- Mean: 25.07
- Std Dev: 2.33



Height of Road Surface



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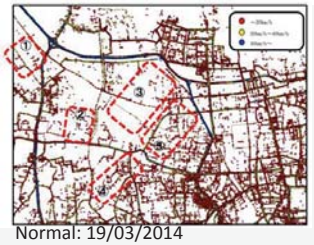
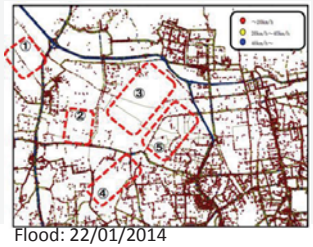
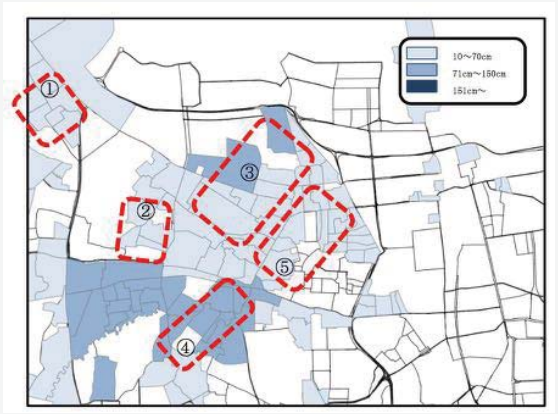
Outcomes



Normal: 19/03/2014



Flood: 22/01/2014



Flood: 22/01/2014

8TH ATRANS SYMPOSIUM on Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC, 21 August 2015, Bangkok, Thailand

Conclusions

- Our team develops “Urban Flood Response Support” system with;
  - Analysis of taxi probe data,
  - Multi-layered superposition of flood inundation area map and digital elevation model data of roads.
  - Data disclosure with GIS interface.

Third Speaker of <Session 3D>

Dr. Padet Praditphet
Acting Director of Office of Common Ticketing Administration Project
Office of Transport and Traffic Policy and Planning, Ministry of Transport
E-mail: **padet.pra@gmail.com**

Brief Biography:

Dr. Padet completed his undergraduate study at Maejo University, Chiang Mai, graduate study at Kasetsart University and Ph.D (International Program) at Chulalongkorn University. His Doctoral Dissertation is about Air Pollution Prevention Applications from Transport Sector by Integration of Transport and Vehicle Emission Model in Urban Area: Case Study Bangkok, Thailand.

Dr. Padet serves as Policy and Planning Analyst and Acting Director of Office of Common Ticketing Administration Project from 1993 to present.

ITS for Public Transportation System in Bangkok
Dr. Padet Praditphet

Summary:

Public transportation provides a good alternative to driving a personal vehicle. Enhanced with the use of intelligent transportation systems (ITS) technologies, public transit providers like Bus Rapid Transit (BRT) have been able to improve customer service and become more efficient, ultimately resulting in even greater mobility and access. ITS initiatives for transit are typically undertaken by public transportation agencies like NECTEC, MOST and OTP, MOT. These applications benefit the transit ridership as well as having positive implications on the overall transportation network as a whole.

Intelligent transportation systems (ITS) are advanced applications which, without embodying intelligence as such, aim to provide innovative services relating to different modes of transport and traffic management and enable various users to be better informed and make safer, more coordinated, and 'smarter' use of transport networks.

Intelligent transport systems vary in technologies applied, from basic management systems such as car navigation; traffic signal control systems; container management systems; variable message signs; automatic number plate recognition or speed cameras to monitor applications, such as security CCTV systems; and to more advanced applications that integrate live data and feedback from a number of other sources, such as parking guidance and information systems and radio frequency identification and detection (RFID) such as easy pass of EXAT. One among other promoting ITS system is a common ticketing system.

The idea of a common ticket has been under development for several years which provides not only for common tickets, but also for eventual integration of fares.

The Transport Ministry plans to introduce a common ticketing system for the Mass Rapid Transit Project in Thailand. The main concern of the Integrated Ticketing System for the Mass Rapid Transit Project in Thailand is to improve the system in the mass rapid transit (MRT) in Bangkok. This will involve the installation of an integrated ticketing system for the MRT. Moreover, the project would strengthen the capacity of the involved

institutions and government agencies in implementing the project and maintaining the impact of the project.

Fourth Speaker of <Session 3D>

Assoc. Prof. Dr. Agachai Sumalee
Director of Smart City Research Centre,
Faculty of Engineering, KMITL
E-mail:

Brief Biography:

Dr. Agachai Sumalee (www.agachai-sumalee.com) holds B.Eng in Civil Engineering (King Mongkut's Institute of Technology Ladkrabang, KMITL), MSc (Eng) and PhD in Transportation Planning and Engineering (ITS, Leeds University). He was previously Senior Research Fellow at University of Leeds, Associate Professor at Hong Kong Polytechnic University, and Visiting Professor at University of Tokyo. He is currently Vice President of King Mongkut's Institute of Technology Ladkrabang and Associate Professor at Department of Civil Engineering (KMITL). He is also currently the Director of Smart City Research Center at KMITL. His research areas are intelligent transport system (ITS), network modelling, transport economics, and transport policy. Dr. Sumalee has published more than 90 journal papers in top peer-reviewed journals. In 2014 he is ranked as the second most influential researcher in the world in the field of transportation engineering in the last five years by the Microsoft Academic Research Database. He has received several prizes and awards including the 2014 APEC Science Prize for Innovation, Research and Education ("ASPIRE") awarded by Asia Pacific Economic Cooperation (APEC), Hans Jürgen Ewers Prize for outstanding research in infrastructure economics, Annual best paper award by Hong Kong Institute of Engineer, the Smeed Prize, and twice outstanding paper awards at the EASTS conferences in Fukuoka and Bangkok. He is currently the Editor in Chief of SCI journal Transpormetrica B: Transport Dynamics, Associate Editor of Networks and Spatial Economics, and Editorial Board Member of Transportation Research Part B, Transportation, Journal of Advanced Transportation, Transportmetrica. He is also currently the member of Sub-committee of National Housing Authority of Thailand (NHA), member of ATRANS, board member of Hong Kong Society for Transportation Studies, ISC member of EASTS, Vice-Chair of Railway System Committee of Engineering Institute of Thailand (EIT), former committee members for State Railway of Thailand, Expressway Authority of Thailand, and Mass Rapid Transit Authority of Thailand. He is the developer of various ITS solutions including All-Thai-Taxi system, ITS system of Expressway Authority of Thailand, ITS Application System of Motorway (Department of Highway), and Lane Control System of Motorway (Department of Highway).

ITS Technology for Improvement of Taxi Service: A Practical Case of All Thai Taxi

By Assoc. Prof. Dr. Agachai Sumalee

Summary:

Internet of Things (IOTs) has recently gained rapid and widespread of attention by developers, manufacturers, and academics. The concept of IOTs is built on the connectivity of equipment through the internet infrastructure to transmit the status of the equipment and/or environment to the central database in which the data will then be used for real-time analysis/operation of that equipment or a larger system. This presentation will provide the background of IOTs and its application in developing Smart City which involves intelligent management of various city infrastructure ranging from electricity grid to transportation system. In particular the presentation will discuss the role of IOTs in the development and implementation of Smart Transport. The concept of Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) will be explained with the view on potential paradigm shift of transportation operations. The presentation will describe in detail the concept of Smart Taxi which is designed to allow for dynamic depot operation and efficient fleet management. The Smart Taxi system described is based on the development and deployment of the system in Bangkok with a fleet of 500 taxis. Each taxi is equipped with a vehicle gateway which collects all engine and vehicle data on the real time basis and transfer back to the back office system. The back office system runs two algorithms for determining job assignment and shift assignment. The vehicle gateway also runs an algorithm for hub assignment and task assignment. The system allows the transaction of meter data to back office for financial control and accepts passenger request through mobile phone application and call center. The presentation will describe the overall concept design from the service perspective to the detail of the software architecture as well as hardware integration. The ability of the system to carryout "business intelligence analysis" to optimize the operation and service will also be illustrated. The presentation will also discuss the key issues in developing a successful Taxi ITS solution for the practical environment as well as the challenges lie ahead for the wider deployment of such system.

ศูนย์วิจัยนครอัจฉริยะ
Smart Cities Research Center

ITS Technology for Improvement of Taxi Service: A Practical Case of All Thai Taxi

Where Smart Solution Begins

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THE BEST TAXI IN THE WORLD 2013

AS VOTED BY 30 COUNTRIES

RANK	CITY	PERCENTAGE
1	LONDON	22%
2	NEW YORK	10%
3	TOKYO	9%
↓		
8	BANGKOK	3%

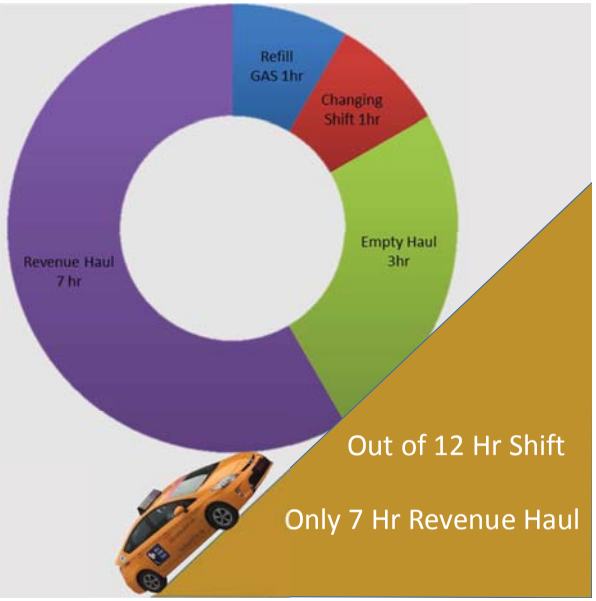
Source: http://press.hotels.com/en-us/more-infographics/2013-taxi-survey-results/

THE MOST COMPLAINT about taxi in Thailand 2012

1	Refuse Passenger	62%
2	Politeness	14%
3	Destination	10%
4	Dangerous Driving Behavior	8%
5	Don't use meter	6%

Source: Department of Land Transport via call center (1584)

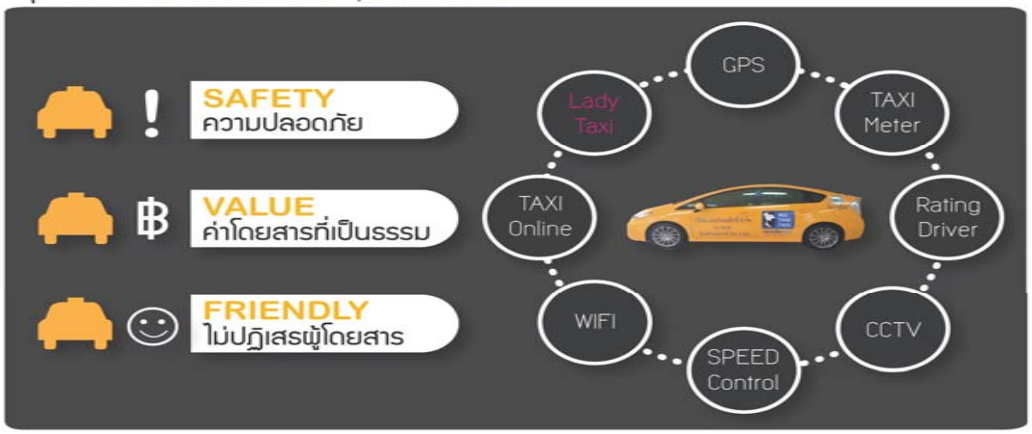
Analysis of Taxi Service



ALL THAI TAXI

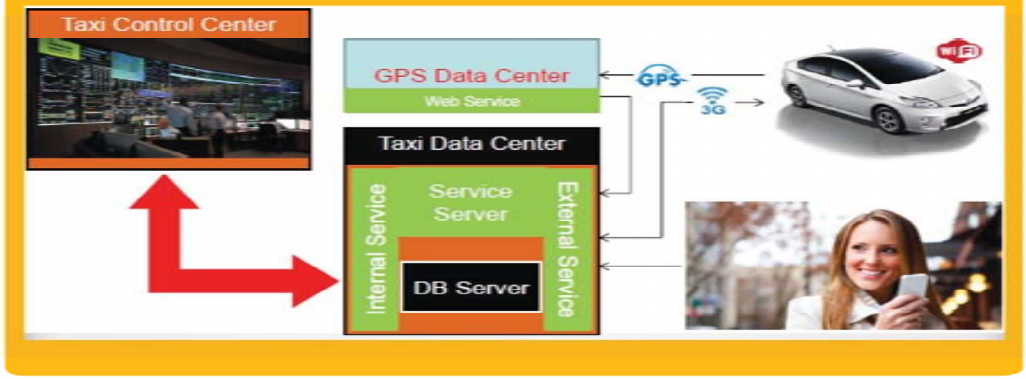
INTRODUCTION

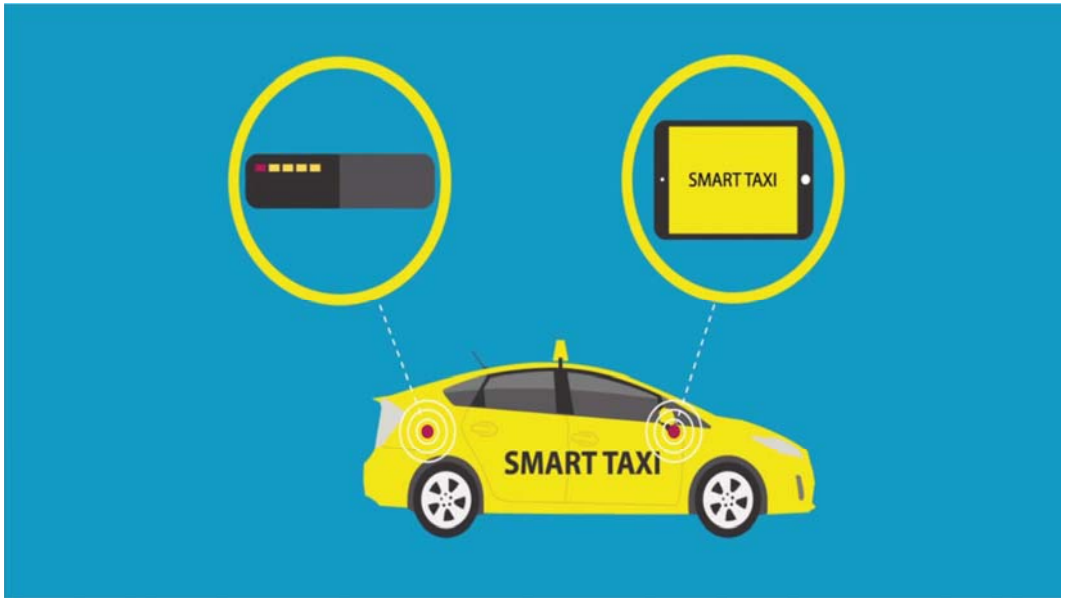
จุดเด่นของ ALL THAI TAXI by นครชัยแอร์

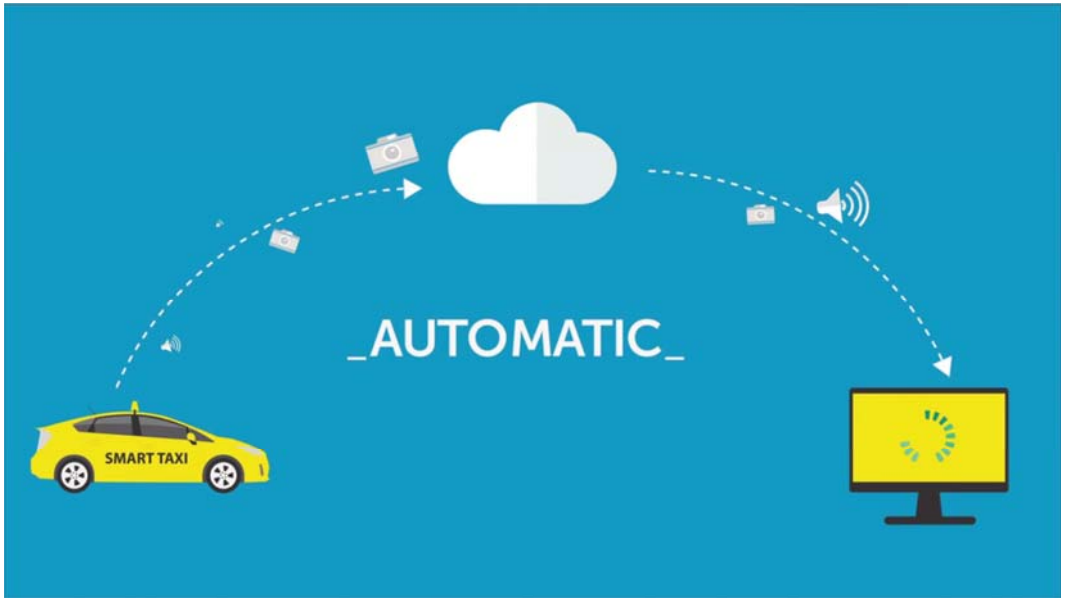


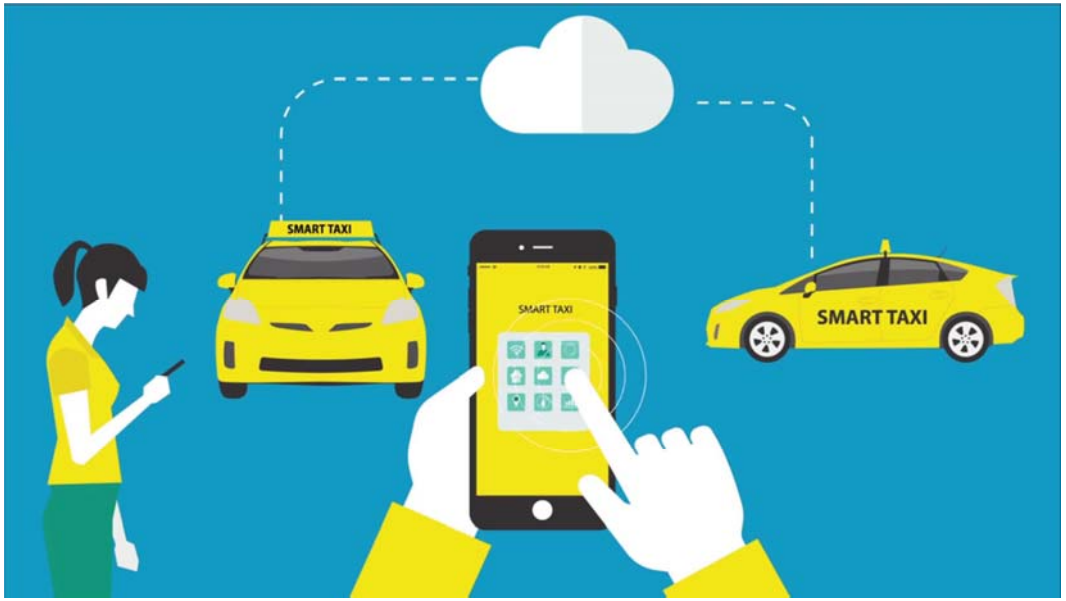
ALL THAI TAXI

SYSTEM DESIGN




SMART TAXI
SMART TAXI


AUTOMATIC
SMART TAXI


SMART TAXI
SMART TAXI
SMART TAXI


500 Fleets
Taxi Services as a fleet
All Drivers are Employees

Solutions

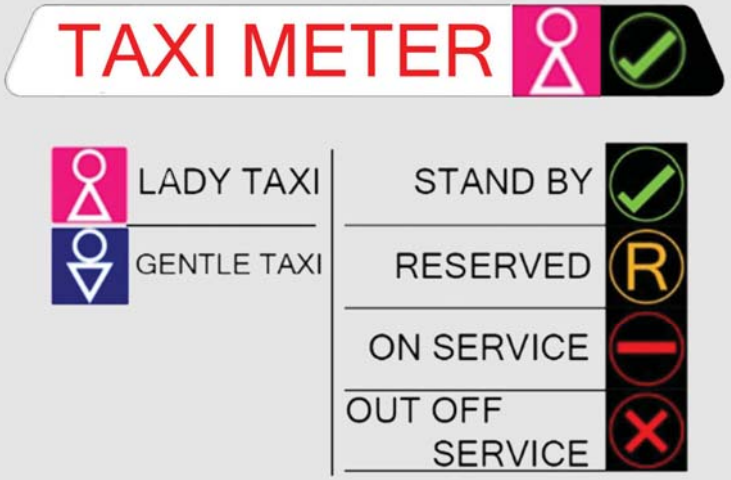
- Instruments and Connection
- Taxi Status
- Jobs
- Booking & Payment
  - By Thumbing
  - Via Call Center / Mobile Application
  - Payment
- Applications
  - Passengers Application
  - Drivers Application
  - Vehicle Application
- Traffic Management Control (TMC)

Instruments & Connections

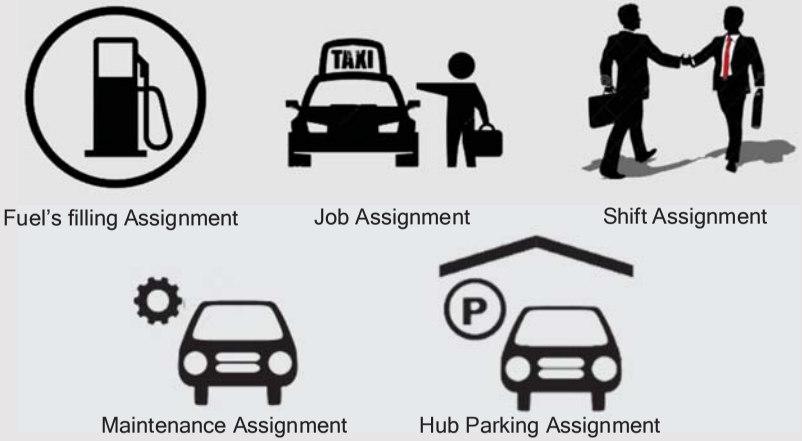
Back

Front

Taxi Status at Taxi Sign



Jobs



Jobs

Fuel's Filling Assignment

Condition

1st Priority if not on job

Fuel Lower than 20%

Jobs

Job Assignment

Condition

Thumbing

Passenger's Application

Assignment by Operator

Jobs

Job Assignment

Passenger's Application
/ Assignment by Operator

Best Travel Time to pick passenger up

Choose Only Stand By Status

Jobs


Shift Assignment

Condition

Matching Driver & Taxi

Optimal Hub to Shifting

↳ Calculate with Objective Function

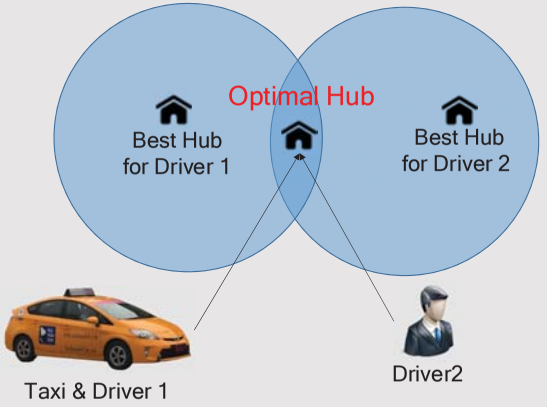
= Minimum Cost of

(w*Taxi + w*Sender + w*Receiver)

Jobs Shift Assignment 

Optimal Hub to Shifting

- Check Hubs in the Intersect Areas of The Best Hubs
- Check Hubs that don't reach Maximum Capacity
- Optimal Hub = Minimum Cost of (w*Taxi + w*Sender + w*Receiver)



Jobs

Maintenance Assignment

Condition

Maintenance by Toyota

10 units per week on Monday

Cleaning

1 time per day

1 hour per unit

Jobs

Hub Parking Assignment

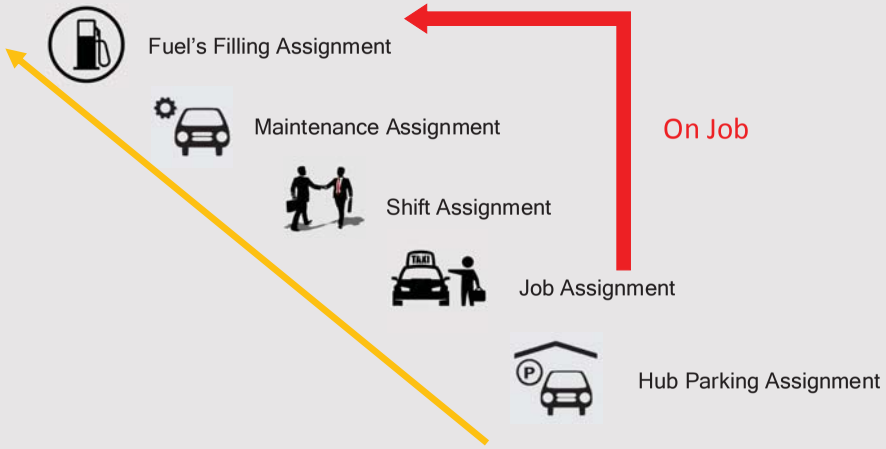
Condition

No Job

If parking more than 15 min.
Changing Hub Station (Hub Hobbing)

Distribution at Equilibrium between
Demand of Customer & Supply of Taxi

Jobs Priority



ATRANS
ASIAN TRANSPORTATION RESEARCH SOCIETY

Closing Remarks

By Mr. Chamroon Tangpaisalkit, ATRANS 1st Vice-Chairperson

Distinguished guests, Delegates, Ladies and gentlemen,

The main symposium today has come to its inevitable conclusion. I would like to express my heartfelt thanks to you all for taking the time to join the 8th ATRANS Symposium on "Transportation for a Better Life: Harnessing Finance for Safety and Equity in AEC." I am certain that these issues will be continued on until its implemented year.

I am overwhelmed by your enthusiastic participation today. More than **250** participants from across the nation and overseas have taken part in this International Academic Event.

Briefly looking back on today's sessions:

The first Panel Discussion was, I believe, a good opportunity to share various perspectives on "Harnessing Finance for Safety and Equity in AEC."

At the Parallel Sessions, I believe we were able to broaden and deepen our knowledge about Rail System and Transit Oriented Development, Logistics and Disaster Management, Traffic Safety, as well as Transportation and Environmental issues presented by our reputable and well-known speakers.

In addition, I hope you also enjoyed listening to the young researcher and student paper presentations in the Young Researcher's Forum.

I also would like to congratulate those whose papers and presentations were selected as the Best Paper and Presentation Award. Your hard works are finally paid off. Congratulations once again.

In closing today's session, I would like to thanks to you all once again for your kind participation and cooperation in making this event such a real success.

We sincerely ask for your continual support and collaboration in the future so that ATRANS can continue doing its best to serve and to contribute to our mobile society in the Asian region and beyond.

To our foreign guests and participants, we hope you have a pleasant stay here in Bangkok. Please enjoy your time and make your trip a memorable one.

We look forward to meeting you again in the 9th ATRANS Symposium next year. Thank you very much.

END

R & D is Key to Finding Solutions

การวิจัยและพัฒนาเป็นกุญแจสู่การค้นหาแนวทางแก้ไข

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