

## APEC 質の高いインフラ・ハイレベル会議結果報告(仮訳)

## APEC 地域における質の高いインフラ投資の推進

1. 「APEC 質の高いインフラ・ハイレベル会議」は2017年10月17~18日に、日本国東京において開催された。同会議は、日本政府国土交通省の吉田光市 国土交通審議官、ベトナム政府建設省国際協力局のグエン・ダック・カン副局長が共同議長となった。
2. 会議参加者は、「質の高いインフラ投資」のグッド・プラクティスを共有し、「質の高いインフラ投資」を実現する上での課題、グッド・プラクティス、質の高いインフラ投資をもたらす要素、「質の高いインフラ」推進のためにAPECに期待することについて議論した。
3. 本会議において提示・議論された多様な事項、APEC や国際場裡における議論、更には持続可能な開発目標をも考慮して、以下の見解を共同議長は提示する。
4. 2016年のペルー-APEC 首脳宣言に基づき、地域経済統合と質の高い成長を推進するため、均衡のとれ、包摂的で、持続可能で、革新的で、強靱なAPEC地域の成長に向けた意欲を本会議は再確認した。
5. 「2015-2025年APEC 連結性ブループリント」を踏まえ、また、質の高いインフラを推進する世界的・地域的なイニシアティブに鑑み、本会議は、質・量双方の観点からインフラ投資を推進し、それにより、連結性を強化し、持続可能な経済成長の新たな源泉を開拓するとともに、包括的で相互に関連した開発を促進し、APEC地域における地域経済統合を推進することを確認した。
6. 本会議において、持続可能な経済成長及び人間中心の都市化にとって、質の高いインフラが重要であることを再確認し、APECエコノミーによる質の高いインフラ投資の実践を奨励した。本会議において、質の高いインフラ投資の直接的・間接的な効果を測定することの難しさ、PPPの経験不足、質の高いインフラ提案の採択を保証する調達プロセスの適切なマネジメント等、各エコノミー及びAPECレベルにおいて課題が依然としてあることが指摘された。参加者は、質の高いインフラ投資の要素に係る見解やグッド・プラクティスについても共有した。
7. 共同議長は、中国、香港、インドネシア、日本、韓国、マレーシア、フィリピン、台湾(チャイニーズ・タイペイ)、タイ、ベトナムによるグッド・プラクティスの共

有に対して、感謝を表明する。このグッド・プラクティスは、付属書 A として添付されている。本会議は、APEC エコノミーと国際機関との協力により、グッド・プラクティスを今後も共有するため、このような会議を活用しながら、より多くのグッド・プラクティスを収集していくことを推奨する。

8. 本会議で提示された多様な意見、APEC や国際場裡における議論、更には持続可能な開発目標を考慮し、質の高いインフラ投資を実現するためのありうべき重要なターゲット/要素を本会議は議論した。質の高いインフラ投資についての理解を深め共通の見解を醸成するよう、APEC エコノミーが議論を継続することを本会議は推奨する。
9. 共同議長は、経済協力開発機構（OECD）、世界銀行、アジア開発銀行、グローバル・インフラストラクチャー・ハブ、APEC ビジネス諮問委員会（ABAC）を含む国際機関及び民間企業の視点を提供した民間企業に感謝を表明する。インフラに係る官民対話が APEC において継続されることを本会議は推奨する。

#### 今後に向けて

10. インフラプロジェクトにおける「質」の重要性を認識し、また、APEC エコノミーの多様性に鑑み、APEC エコノミーが個々の状況に応じて適切に質の高いインフラプロジェクトを進めることを、本会議は各エコノミーに推奨する。
11. インフラの計画及び実施を担当する省庁が集まるこのような会議の活用も含めた施策を通じて、以下のような努力を継続していくことを本会議は提案する。
  - 2013 年に採択された「インフラ開発・投資に関する APEC 数年次計画」においてすでに指摘されているように、質の高いインフラプロジェクトを推進する上で重要かつ影響を及ぼす調達システムに関する情報並びにプロジェクトの特定及び準備に関する情報を共有する。
  - 質の高いインフラプロジェクトの計画及び実施におけるグッド・プラクティスを共有する。
  - 効果的なモニタリング及び情報蓄積のあり方を検討する。
12. 本会議は、APEC エコノミーにおける質の高いインフラを推進するため、APEC エコノミー、国際機関及び民間部門とともに、グッド・プラクティスや関連する情報を共有し意見交換する取組みを続けることを APEC エコノミーに対して確認する。

# **Good Practice Quality Infrastructure Case Book**

**17 October 2017  
APEC High Level Meeting on  
Quality Infrastructure**



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## 1. China

### Good Practice 1: <Waste Interception around Erhai Lake PPP Project in Dali of Yunnan Province>

#### Project Summary

- ✓ In recent years, the water pollution of Erhai Lake, a famous tourist attraction, has become severe although local government paid great efforts. In order to control the pollution efficiently and effectively, the local government decided to carry out this project via PPP.



#### <The impacts>

- ✓ The total investment of the project full-life cycle cost, from planning, design, construction to operation, decreases to US\$445M from US\$521M, the planned investment;
- ✓ The construction period is 6 months ahead of schedule; and
- ✓ The winner of the project, selected by competitive consultation, uses a systematic solution approach with advanced technology, including building up sewage pipe network to collect waste water in the area, 6 underground waste water treatment plants, and landscape planting.

#### Good Practices

\*Please explain why you think this project is a good practice of QII.

- ✓ Water quality is foreseen and guaranteed during PPP agreement period;
- ✓ Government makes performance-based payment to improve the performance of fiscal fund;
- ✓ Best contractor is selected through high competitive procurement; and
- ✓ The private sector provides systematic solution approach and innovative technology.

## 2. China

### Good Practice 2: < Changsha Mid-Speed Maglev Express PPP Project, Hunan Province >

#### Project Summary

- ✓ Total length is about 18.5km. It runs from the Railway Station, through crowded downtown, to the Airport;
- ✓ The train has three carriages, each carrying 363 passengers at maximum. Designed top speed is 100km/h; and
- ✓ Began in May 2014, conducted trial operation in May, 2016.



#### <The impacts>

- ✓ Low Cost. RMB 195 million (USD 29 million) per kilometer due to a smaller turning radius such as 50 meters at minimum. So it can save a lot of cost for displacement and resettlement;
- ✓ Low Noise, more safety and zero emission. Maglev train basically “holds” the track while running. It floats about 8mm above the F track, thus avoiding risks of derailing in traditional rail transport with low noises and vibrations, and zero emission; and
- ✓ More smooth, convenient transportation with better services.

#### Good Practices

\*Please explain why you think this project is a good practice of QII.

- ✓ Use the most appropriate technology like mid-speed instead of high-speed maglev train;
- ✓ The success of this project is copied by Beijing and other cities; and
- ✓ Fully use the advantages of consortium, which has 5 shareholders including constructor, operator, investor and equipment supplier.

### 3. Hong Kong, China

## Good Practice: <Kai Tak Development (KTD)>

### Project Summary

#### Background

- 320 ha brownfield site from relocation of international airport from Kai Tak to Chek Lap Kok
- Infrastructure investment > HK\$100 billion

#### Planning Vision

- A distinguished, vibrant, attractive and people-oriented community by the Victoria Harbour
- Home for 130,000 people

#### Planning Themes/ Initiatives

- Quality living environment
- Green web for sustainable development
- Heritage, green, sports and tourism hub of Hong Kong
- Pilot area for smart city, strategic site for transforming Kowloon East into CBD2



### 3. Hong Kong, China

## Good Practice: <Kai Tak Development (KTD)>

### Good Practices

#### Major Features

- *A world-class cruise terminal together with a tourism and entertainment hub (Kai Tak Fantasy) to promote Hong Kong as a regional cruise centre*
- *A mega Kai Tak Sports Park with a 50,000-seat world-class stadium for major international sports and other events*
- *Efficient and green transport infrastructure for high connectivity*
- *The first district cooling system in Hong Kong to enhance cooling efficiency and lower energy consumption*
- *100 ha green open space with a 24 ha Metro Park and 11km long waterfront promenade*



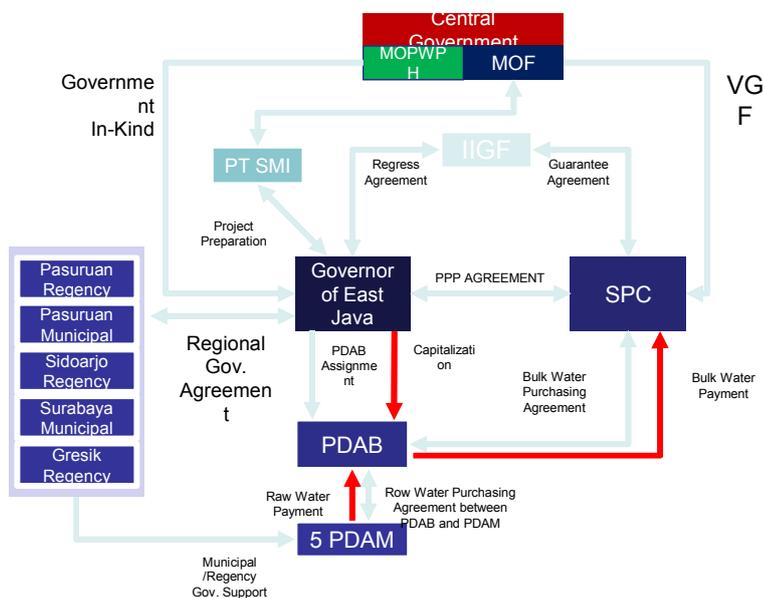
#### Project Implementation Policies

- Government commitment for sustained long-term development
- Comprehensive planning under statutory procedures and widespread public engagement
- Phased implementation to allow better control on budget as well as programme
- Dedicated multi-disciplinary professional major project leaders overseeing planning, design, construction, operation and maintenance of infrastructure



# PPP with Tariff and Viability Gap Fund (VGF)

## Umbulan Water Supply (US\$ 140.7 million)



### Viability Gap Fund

- VGF is a Government support facility in the form of fiscal contribution.
- VGF is given to infrastructure projects which are built under the PPP scheme and aims to improve the project's financial viability.
- The maximum value of VGF is 49% of project investment value.
- Tariffs are set by Regional Water Company (PDAB) based on a bulk water supply agreement with 5 Municipal Water Companies (PDAM).

### Legal basis :

- Ministry of Finance Decree Number 223/PMK.11/2012 concerning the Provision of Viability Support for Part of Construction Costs on Government Partnership Projects with Business Entities in the Provision of Infrastructure.

The Investment Coordinating Board of the Republic of Indonesia

## UMBULAN WATER SUPPLY



### Summary

- Investment value:** US\$ 140.7 million
- Capacity:** 4.000 L/sec
- Cooperation period:** 25 years start when COD
- VGF:** 818 Billion IDR, awarded 25 January 2016
- Financial Close:** January 2017
- Private Role:** BOT for Production and transmission
- Buyer:** 5 regional owned enterprises (called PDAMs) in 5 Cities/Regencies (Pasuruan City, Pasuruan Regency, Surabaya City, Sidoarjo Regency, and Gresik Regency)



### IMPACT

- ✓ 1.3 million people or 310.000 houses receive benefit of clean water

### GOOD PRACTICES OF QII

- ✓ Effective governance with transparent in whole project cycle
- ✓ Sustainable finance scheme with VGF from Ministry of Finance
- ✓ Promoting private investment with PPP scheme
- ✓ Good evaluation with on time financial close
- ✓ Big impact to the local communities

## 5. Japan

### Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (Vietnam, Japanese ODA Loan)

#### Background, summary, etc.

##### [Background]

##### ○ Deterioration of traffic conditions

Deterioration of traffic conditions due to rapid increasing of automobiles as a result of population growth in the central part and suburbs of the metropolitan area.



##### [Project summary]

To meet increasing traffic demand, a bridge (3.9 km long; 8 lanes) over the Song Hong River, which runs across Hanoi City, and approach roads (north and south roads of 5.9 km in total) were constructed under the STEP (Japan-tied loan conditions). Japanese ODA Loans (54.1 billion yen in total) were provided for Phase I (approved in March 2006; 13.7 billion yen), Phase II (approved in January 2011; 24.8 billion yen) and Phase III (approved by March 2013; 15.6 billion yen). The bridge opened in January 2015.

##### [Result]

Efficiency improvement of distribution, mitigation of traffic congestion (required time between Noi-bai airport and Hanoi City was reduced by about 20 min)

Promotion of economic development and improvement of international competitiveness in Hanoi City and the northern part of Vietnam

#### Characteristics as a "Quality Infrastructure" project

- |   |   |  |
|---|---|--|
| 4) Economic efficiency (e.g. low life-cycle cost) | } | ✓ A Japanese company contributed to the reduction of environmental burdens and the improvement of cost efficiency in the construction, applying "Steel Pipe Sheet Pile Wall structure," its soft-ground construction method, for the foundation of the bridge. |
| 6) Safety / resilience                            | } | ✓ The above-mentioned structure was used in Vietnam for the first time. As a result of the application for this project, the method was adopted as the country's bridge design standard, contributing to safe construction of bridges.                         |
| 8) Convenience / amenities                        | } | ✓ The procurement of equipment and materials for construction and labor management was carried out by Japanese companies to secure the quality and safety of the construction.   |
| 9) Contribution to the local society and economy  | } | ✓ The Noi Bai International is connected with central Hanoi by a high-standard highway and bridges to shorten the required time for transportation by about 20 min (i.e. 55 min → 35 min).   |
|   |   | ✓ Japanese skilled engineers transfer skills to Vietnamese engineers.  |
|   |   | ✓ Bridge parts and materials are manufactured local subsidiary of a Japanese company (many of whose employees are Vietnamese).   |

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## 6. Japan

### Jakarta Mass Rapid Transit (Indonesia, Japanese ODA Loan)

#### Background, summary, etc.

##### [Background]

##### ○ Sharp rise in the population of the Jakarta metropolitan area

21 million in 2000 → 28 million in 2010

##### ○ Air pollution and greenhouse gas

Taking measures for reducing air pollution and greenhouse gas is acutely necessary due to the worsening traffic congestion.

##### ○ Deterioration of traffic condition

The traffic congestion deteriorated as a result of an increase in the population of the center and suburbs of the metropolitan area and an increase in the total number of registered vehicles.

Number of registered vehicles (two-wheeled vehicles and passenger vehicles): 2.67 million in 2000 → 9.63 million in 2010

##### [Project summary]

The purpose of the project is to construct a mass rapid transit system in the Jakarta metropolitan area, where traffic congestion is serious, in order to improve the passenger transport capacity and mitigate traffic congestion.



#### Characteristics as a "Quality Infrastructure" project

- |   |   |   |
|---|---|---|
| (2) Ensuring alignment with socioeconomic development and development strategies of developing countries/regions as well as comprehensive response to the needs | } | ✓ In the "National Railway Master Plan" (2011), Ministry of Transportation of Indonesia designated this project as one of the main projects for dealing with an increased railway demand expected by 2030.  |
| (3) Application of high-quality standards (e.g. guidelines for environmental and social considerations)   | } | ✓ This project assists the Indonesian Government to address issues, such as environmental consideration (by contributing to the reduction of air pollution) and urban problems (by mitigating traffic congestion through the development of a public transit system).                                   |
| (4) Economic efficiency of reduction in life-cycle cost   | } | ✓ Public works: The mud pressure shield method, for which Japanese companies have comparative advantage, is used to minimize impact on the ground surface and mitigate traffic congestion.  |
| (8) Convenience / amenities   | } | ✓ Railway system: The project adopted train cars in accordance with "STRASYA," the standard specification of urban railway system which enables the public and private sectors in Japan to promote exports to Asian countries. The project also adopted Japan's signal system and the IC card "FeliCa." |

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## 7. Korea

# Incheon Bridge

### Project Summary

- ▶ Reinforced concrete bridge connecting Incheon Airport and mainland of Korea
- ▶ Construction Period: '05.7-'09.10(52 months)
- ▶ 21.348km long with 12.34km on the sea
- ▶ Six lanes, 31.4m wide, main span 800m
- ▶ Funded by private sector and public sector
  - \* Private 1.3 billion USD, Public 0.75 billion USD
- ▶ Developed by PPP (BTO)
- ▶ The world's fifth-longest long-span, cable-stayed bridge



### Good Practices

- ▶ An excellent case of public private partnership (PPP) where the government's pursuit of the public interest and the contribution of foreign capital and technologies are well combined
- ▶ With shorter time and distance between the southern parts of Seoul and the Metropolitan area to the Incheon International Airport by 40 minutes and 13km
- ▶ The anticipated economic effects of USD 7.3 billion in total production inducement, USD 2.14 billion in value-added inducement, and 76,000 in job creation
- ▶ Can be utilized as tourism resources and an alternative to the Yeongjong Grand Bridge in case of emergency such as natural disasters

## 8. Korea

# Incheon International Airport Expressway

### Route Map



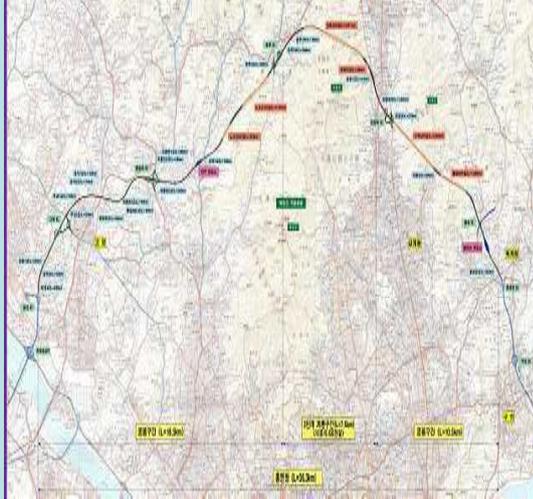
### Outline

- Extension : 40.3Km(6~8-lane-road)
- Section : Incheon ~ Goyang
- Investment Cost : 1.74 trillion won (1.6 billion dollars)
  - PI 1.46 Const. Subsidy 0.12 Land Cost 0.16
- Implementation Type : BTO (for 30yrs)
- Construction period: 1995.11 ~ 2000.11
- Rate of Return : 9.7% (after-tax)

- ※ No. 1 PI Project implemented by PI Promotion Act
  - ▶ Connected the Airport with capital area

## Seoul Outer Ring (Ilsan – Toegyewon) Expressway

### Route Map



### Outline

- Extension : 36.3Km(8-lane-road)
- Section : Goyang ~ Namyangju
- Investment Cost : 2.28 trillion won (2.1 billion dollars)
  - PI 1.48 Const. Subsidy 0.5 Land Cost 0.3
- Implementation Type : BTO (for 30yrs)
- Construction period
  - 1st : 2001.6~2006.6(Ilsan~Songchu, Uijeongbu~Toegyewon)
  - 2nd : 2001.6 ~ 2008. 6 (Songchu~Uijeongbu)
- Rate of Return : 8.51% (after-tax)

※ Dispersed traffic in outskirts of Seoul, solved severe traffic problem in capital area



## Good Practice: Pan Borneo Highway Project

### Project Summary

1<sup>st</sup> highway project to be implemented by the Government of Malaysia utilizing the Project Delivery Partner concept that is monitored on Key Performance Indicators (KPIs). Involving works of upgrading current trunk road from 2-lane single carriageway to a 4-lane dual carriageway and other amenities. Development period of 5 years with target completion by 2021. The estimated total length of Pan Borneo Highway is 2300 km (Sarawak - 1,089 km, Sabah - 1,236 km).

### Benefits of project

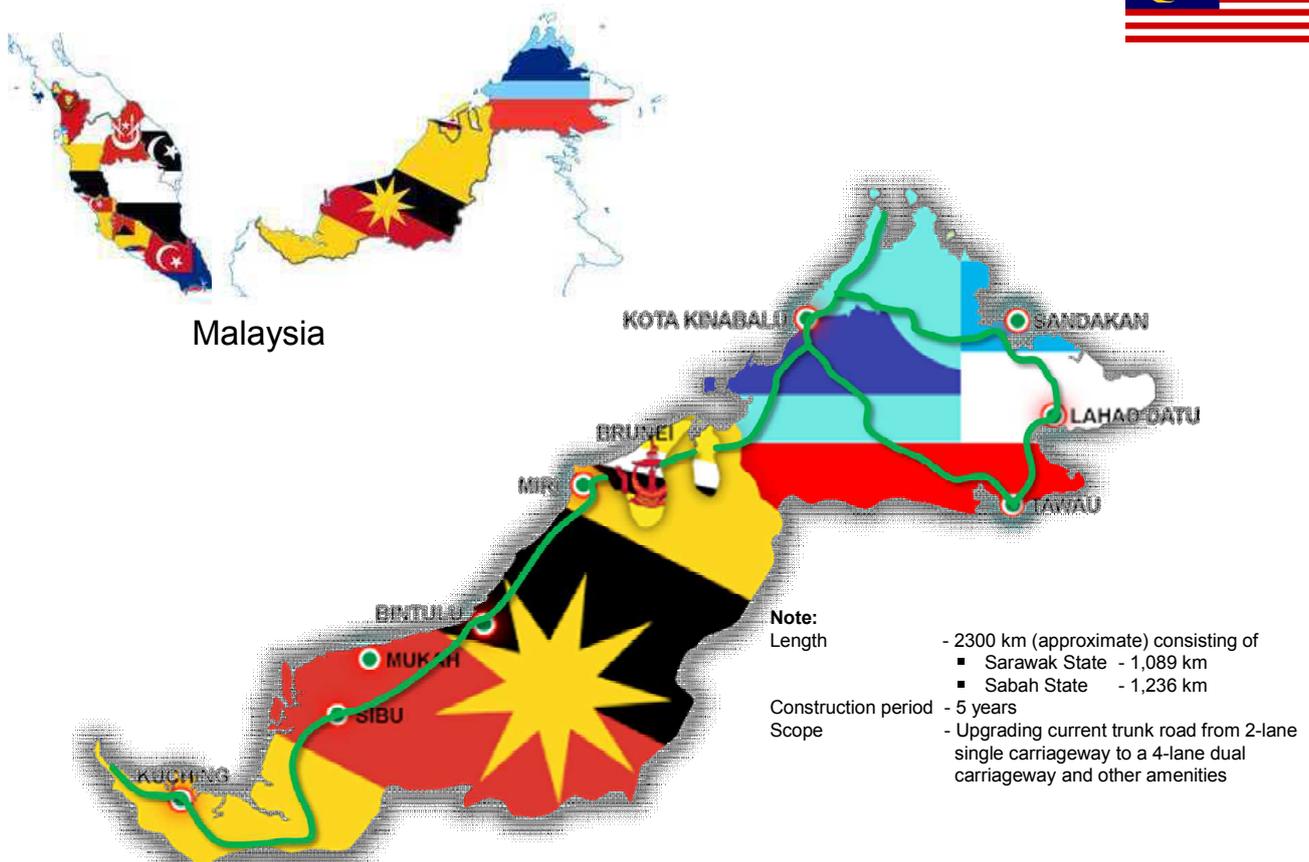
- **Improving road users' journey** – safer, faster, cheaper travel
- **Highway spin-offs** – economic multiplier, job creation in various areas
- **Spill over effects** – knowledge/technology transfer, human resource development and talent management
- **Socio economic catalyst** – boosts economic and development corridor

### Good Practices

- ✓ Effective governance, operations and economic efficiency
- ✓ Employment creations and knowledge transfer to local communities
- ✓ Successful management of social and environmental impacts
- ✓ In line with economic and development strategies
- ✓ Effective resource utilisation and management



## Good Practice: Map of Pan Borneo Highway Project



## 11. Peru

### Line 2 and Branch Line 4 Concession of the Lima and Callao Basic Metro Network

#### Project Summary

- ✓ \*Integral concession including design, financing, construction, equipment systems provision, electromechanical equipment, acquisition of rolling stock, operation and maintenance.
  - ✓ Type of Infrastructure: Underground - Type of Tunnel: bidirectional - Internal diameter of the Tunnel: 9.20 m - Operation: GoA4 – Self-drive
  - ✓ The Line 2 Subway Covers 13 districts of Lima Metropolitan area and Callao. It has 35 stations to serve directly to 1.15 million people per day.
  - ✓ It comprises 27 stations, plus 8 stations corresponding to the Line 4 Subway. It will be connect with the “Metropolitano”(rapid bus system) at the Central Station, with (Metro) Line 1 at 28 de Julio Station, and with future Lines 3 and 4 of the Lima and Callao Subway (Metro).
  - ✓ Investment on the Project: USD 5.7 billion (VAT excluded).
- Co-financing
- ✓ Concession term: 35 years – Award Date: 28 March 2014



#### Good Practices

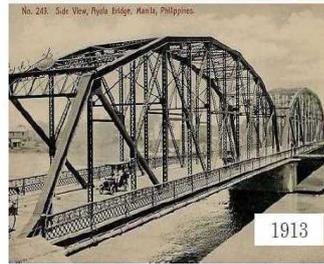
- \*The project will transform the quality of life of the population of Lima and Callao. It will improve user travel times, optimize vehicles operating costs, reduce accidents, and reduce pollution. Likewise It will generate economic benefits by revalorizing the land near the stations.
- ✓ Reduction of traffic and vehicular chaos.
- ✓ Reduction of pollution.
- ✓ 1.15 million people live 500 meters from the track.
- ✓ 2.3 million single passengers / year are estimated from 2020.

## 12. Philippines

### Good Practice: <Rehabilitation of Ayala Bridge, Manila>

#### Project Summary

- ✓ Rehabilitation of the 2-lane (per direction) 142 meter bridge
- ✓ Raising the bridge by 0.70 meters to provide adequate navigable clearance and prevent damage cause by vessels passing under the bridge.
- ✓ Retrofitting to restore the original configuration and increase bridge capacity to 20 tons.



#### Good Practices

- ✓ Enhances **resilience** against major earthquake
- ✓ Reduces **traffic disruption** compared to conventional way of replacing the bridge, the cost of replacement would have been estimated at P1.2 Billion and would require total closure for 24 months.

## 13. Philippines

### Good Practice: <Metro Manila Skyway Stage 3>

#### Project Summary

- ✓ 14.8 kms., 6-lane expressway that will connect Balintawak, Quezon City to Buendia, Makati
- ✓ Will decongest EDSA and other major roads in Metro Manila (e.g., Quezon Ave., Araneta Ave., Nagtahan, and Quirino Ave) by as much as 55,000 vehicles daily.
- ✓ Will reduce travel time from Buendia to Balintawak from 2 hours to 15 to 20 minutes
- ✓ Provides direct employment of around 6,000 jobs during construction plus additional of around 10-12 thousand indirect jobs.

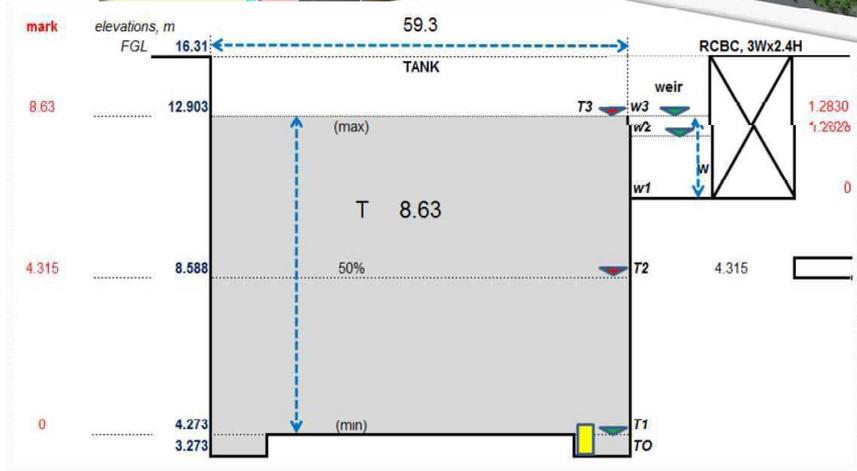


#### Good Practices

- ✓ Reduces **traffic disruption** by using Sosrobahu Technology.
- ✓ Adopts **24/7 construction schedule**.

## 14. Philippines

### Good Practice: <Fort Bonifacio Retarding Tank>



#### The Detention Tank

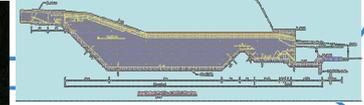
- is not meant to detain water for other uses
- is meant to temporarily detain “post development run-off” only
- should always be empty
- is fully automated

## 15. Chinese Taipei

### Good Practice: Zengwen Reservoir Sediment-Sluice Tunnel Project

#### Project Summary

- ✓ 1,266m in total length, with a maximum discharge capacity 995m<sup>3</sup>/s.
- ✓ Primary structures: Steel intake pipe (10m in diameter, 60m in length), Vertical shaft (with maintenance/ emergency fixed gear gate), Tunnel (9m in diameter, 860m in length), Plunge pool, two Tunnel-outlets (10m in width).
- ✓ Plunge pool excavated in the rock: 168.3m in length, 18m in width, one of the largest in the world.
- ✓ The project began construction in 2014, expected to be completed by December 2017.
- ✓ The expected annual sediment sluicing: 1.04 million m<sup>3</sup>. (averaged)
- ✓ Total budget: 136 million US dollars.



#### Good Practices

- ✓ Reservoir keeps operating for water supply and power generation during project constructing.
- ✓ Effective working: Construction period is 48 months only, faster than other same kind of infrastructures.
- ✓ Construction safety: No accident occurred, won a Public Construction Golden Safety Award.
- ✓ Reducing expenses of removing sediment, annual cost can be saved 23 million US dollars.
- ✓ Resilience against natural disasters and climate change adaptation: Increasing discharge capacity, reducing reservoir siltation, contributing to sustainable use of facilities.
- ✓ Creates local jobs during construction.
- ✓ Eco-friendly: Protecting Russet sparrows, the measures including the designation of non-disturbance zones; preservation of habitats, plants artificial nests.
- ✓ Circular economy: Supplement sediments to downstream channel and coastline; sediment can be used as the back-filling material, recycling for concrete products.



## 16. Thailand

### Good Practice: PPP Motorways for Operation and Maintenance

#### Project Summary

- ✓ A total 146 km. of motorways no. 7 and 9 operated by Department of Highways requires more than 2,000 staff for operation and maintenance, causing undesirable workloads for efficient operation and human resource management. Public sector capacity and capability to introduce and implement advanced technology and innovation for improving motorway services are quite limited.
- ✓ A Public Private Partnership (PPP) for operation and maintenance has been introduced to new motorway projects connecting Bangkok to North Eastern region (196 km of Motorway No. 6) and Western and Southern regions (96 km of Motorway No. 81) which are currently under construction of civil work.
- ✓ Scope of private financing for these two motorway projects includes construction of toll plaza, installation of toll collection and traffic control system (approx. 420 M.USD) as well as long term operation and maintenance of the entire route for the period up to 30 years.
- ✓ Private sector receives availability payment based on output and performance (irrespective of demand)



#### Good Practices

- ✓ Enhance effective resource mobilization from both public and private sector through PPP
- ✓ Introduce private sector efficiencies due to the whole life cycle approach of the PPP
- ✓ Encourage innovation from expertise and experience of the private sector
- ✓ Reduce operational and project execution risks for public sector
- ✓ Reduce government budgets and budget deficits, allowing public funding to be re-directed to other infrastructure or social services

## 17. Thailand

### Good Practice: National Program on Roadside Safety Improvement

#### Project Summary

- ✓ Thailand has been suffering from massive economic loss due to road traffic accidents for decades.
- ✓ Roadside crashes (e.g. run-off road vehicle hitting a fixed object) account for very significant proportions of total highway accidents and fatalities. While the application of the forgiving road concept has been clearly needed, allocation of resources to improve roadside environment and safety has been relatively low, compared to roadway capacity and mobility improvement.
- ✓ Given this evidence, Department of Highways by Bureau of Highway Safety made their greater efforts than ever to implement national program on roadside safety improvement in late 2016 by allocating a budget of over 43 million USD to highway districts nationwide for installation of guardrails on highways with roadside crash records or high-risk locations.
- ✓ The number of fatal cases and deaths from roadside crashes during the first 6 month after the implementation (March to August 2017) started to decrease, compared to the same period over the past 5 years.



#### Good Practices

- ✓ Efficient resource allocation to solve the problem
- ✓ Improve road safety and reduce economic loss from road accidents