國際

行政院公共工程委員會　函

地址：11010 台北市松仁路 3 號 9 樓
聯 絡 人：陳巧靜
聯絡電話：(02)87897612
傳　　真：(02)87897584

110
臺北市基隆路 2 段 51 號 13 樓之 3
受文者：中華民國全國建築師公會

發文日期：中華民國 104 年 11 月 26 日
發文字號：工程技字第 10400382490 號
速別：普通件
密等及解密條件或保密期限：
附件：如說明

主旨：函轉駐泰國代表處函，為有關泰國大眾捷運公司（Mass Rapid Transit Authority of Thailand, MRTA）邀請我商參加 MRT 捷運黃線（Lat Phrao-Samrong）、粉紅線（Khae Rai-Min Buri）以及藍線（Hua Lamphong-Bang Khae 以及 Bang Sue-Tha Phra）等段工程招標事，請轉知所屬會員參考運用，請查照。

說明：檢送駐泰國代表處 104 年 11 月 23 日泰服字第 10401019920 號函影本乙份。

正本：中華民國工程技術顧問商業同業公會、中華民國營造工程工業同業公會全國聯合會、中華民國全國建築師公會
副本：內政部、工程產業全球化專案辦公室(含附件)

主任委員 許俊逸

本案依分層負責規定授權業務主管決行

電子公文

檔　號：
保存年限：

駐泰國代表處　函

地址："195 South Sathorn Road Bangkok, Thailand"
承辦人：麥嘉容
電話：66-2-6700200 ext.358
傳真：66-2-6700226

受文者：行政院公共工程委員會

發文日期：中華民國104年11月23日
發文字號：泰服字第10401019920號
速別：最速件
密等及解密條件或保密期限：
附件：如文(共29頁)(01019920A0C_ATTCH2.pdf、01019920A0C_ATTCH3.pdf)

主旨：有關泰國大眾捷運公司(Mass Rapid Transit Authority of Thailand, MRTA)邀請我商參加MRT捷運黃線(Lat Phrao-Samrong)、粉紅線(Khae Rai-Min Buri)以及藍線(Hua Lamphong-Bang Khae以及 Bang Sue-Tha Phra)等段工程招標事，請轉知相關廠商參考運用。

說明：

一、依據泰國大眾捷運公司本(104)年11月17日NO.MRTA004/C2632號信函辦理(詳如附件1)。

二、MRTA來函略以，歡迎我對旨揭工程有興趣之相關廠商於本年12月1日前逕至該公司網站(http://www.mrta.co.th)填寫意見調查書(詳如附件2)。MRTA本案承辦人為Mr. Kraisith以及Mr. Atiluk(電子信箱為:kraisith@mrta.co.th、atiluk@mrta.co.th；聯絡電話為:+66(0)2716-4000 ext 1510, 1519, 1520)。

正本：行政院公共工程委員會
副本：外交部、經濟部國際貿易局(含附件) 電2016-11-25交 08:13章

工程會　1041125
10400382490

Mass Rapid Transit Authority of Thailand

Ministry of Transport

Market Sounding Documentation

For

MRT Yellow Line Project : Lat Phrao – Samrong Section

MRT Pink Line Project : Khae Rai – Min Buri Section

MRT Blue Line Project :

Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section

Bangkok Thailand

November 2015

1. Introduction

The Mass Rapid Transit Authority of Thailand (MRTA), a state enterprise under the Ministry of Transport, is implementing the Mass Transit Railway Projects in Greater Bangkok Area under the Public-Private Partnership scheme, including 3 MRT Projects currently under preparation as follows:

- MRT Yellow Line Project : Lat Phrao – Samrong Section
- MRT Pink Line Project : Khae Rai – Min Buri Section
- MRT Blue Line Project : Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section

In accordance with Private Investments in State Undertakings Act B.E. 2556 (2013), MRTA would like to invite private sector who is interested in investing in the MRT Projects to share comments on the investment scheme designed by MRTA for efficient implementation. The information obtained from potential investor will be considered and applied with these projects only. The requirement and information in this document is for the purpose of this Market Sounding Exercise only.

2. Objectives

The purpose of the market sounding is to ascertain market capability as well as the level of the investor's interest in the MRT Projects in the form of PPP Net Cost. This exercise is designed to obtain information and suggestions from the private sector in order to successfully execute the MRT Projects.

3. Target Groups

3.1 Companies that currently operate mass transit system in Thailand and foreign countries

3.2 Financial institutes that are interested in supporting the Projects

3.3 Manufacturer or supplier of railway mass transit system

3.4 Companies that contract in civil works

3.5 Private investors in Thailand and foreign countries.

4. Project Details

The 3 MRT Projects currently under final stages of approval are:

- MRT Yellow Line Project : Lat Phrao – Samrong Section
- MRT Pink Line Project : Khae Rai – Min Buri Section
- MRT Blue Line Project : Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section

The Project Details are as shown in Attachment to this Market Sounding Document.

5. Scopes of Investment

The private sectors who will be appointed by the MRTA as the concessionaires of MRT Projects are obliged to carry out the scope of project investment as follows:

5.1 Required Investment

MRTA has defined the scope of investment by the Public and Private Sectors in the MRT Projects as follows:

1. MRT Yellow Line Project : Lat Phrao – Samrong Section and Pink Line Project : Khae Rai – Min Buri Section

   MRTA will be responsible for land acquisition only. Concessionaire will be responsible for investment and construction of all Civil Infrastructure, supply of M&E Systems, including rolling stocks, and provision of Operations and Maintenance Service until the end of contract.

2. MRT Blue Line Project : Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section

   MRTA will be responsible for land acquisition and investment and construction of all Civil Infrastructure. Concessionaire will be responsible for investment and supply of M&E Systems, including rolling stocks, and provision of Operations and Maintenance Service until the end of contract.

5.2 Public-Private Partnership Scheme

The MRT Projects will be implemented under PPP Net Cost Scheme, in which the Concessionaire will be entitled to all revenue and income collected from the MRT Projects and shall offer remuneration to the Government.

- Concessionaire will be responsible for investment and provision of M&E Systems, rolling stocks and Civil Infrastructure (for MRT Yellow Line and Pink Line only).
- Concessionaire will be responsible for provision of Operations and Maintenance Service with safety and reliability according to the international standards throughout the contract period.
- As a return for its investment, the Concessionaire will be entitled to all revenue and income collected from the MRT Projects and shall offer remuneration to the Government.

5.3 Project Operation Rules and Regulations

Project operation rules and regulations for the MRT Projects will be according to the Private Investments in State Undertakings Act B.E. 2556 (2013), Mass Rapid Transit Authority of Thailand Act B.E. 2543 (2000) and all concerned rules, regulations and contracts.

6. Procedure in Market Sounding

Interested investors can fill in the opinion and submit the questionnaire to MRTA within December 1, 2015 via E-mail to kraisith@mrta.co.th or atiluk@mrta.co.th or send the questionnaire to the following address:

The Governor of the Mass Rapid Transit Authority of Thailand

Mass Rapid Transit Authority of Thailand
175 Rama IX Rd.,
Huay Khwang, Bangkok, 10320
With a word on the envelop corner (Market Sounding)
Fax: (662) 716 4022

For more information, please contact Tel: (662) 716 4000 ext 1510, 1519, 1520

MRTA will neither be responsible for the expenses incurred from the questionnaire responses nor commit to taking actions according to the suggestions or information provided by the responders. However, information obtained from the questionnaire will be kept confidential.

Questions

1. Contact Details

Contact Name	
Position	
Company Name	
Company Address	
Telephone Number	
Fax Number	
E-mail	

2. Type of your business

- ☐ Mass Transit Operator
- ☐ Financial Institute
- ☐ Mass Transit System manufacturer / supplier
- ☐ Civil Works Contractor
- ☐ Private investor
- ☐ Others ; please specify _____

3. Are you interested in participating in the Public-Private Partnership in MRT Projects?

- ☐ Yes (Please answer question no. 5 - 9)
- ☐ No (Please answer question no. 4 only)

4. In case you are not interested in the Public-Private Partnership in MRT Projects as defined in this document, what kind of Public-Private Partnership do you think that would be more appropriate to the projects?

_____

_____

_____

_____

_____

_____

_____

_____

_____

5. In which roles are you interested in participating in the MRT Projects?

- MRT Yellow Line Project : Lat Phrao – Samrong Section
  - ☐ Mass Transit Operator
  - ☐ Financial Institute
  - ☐ Mass Transit System manufacturer / supplier
  - ☐ Civil Works Contractor
  - ☐ Private investor
  - ☐ Others ; please specify _____
- MRT Pink Line Project : Khae Rai – Min Buri Section
  - ☐ Mass Transit Operator
  - ☐ Financial Institute
  - ☐ Mass Transit System manufacturer / supplier
  - ☐ Civil Works Contractor
  - ☐ Private investor
  - ☐ Others ; please specify _____

- MRT Blue Line Project : Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section

  ☐ Mass Transit Operator

  ☐ Financial Institute

  ☐ Mass Transit System manufacturer / supplier

  ☐ Civil Works Contractor

  ☐ Private investor

  ☐ Others ; please specify _____

6. For the implementation of PPP Net Cost scheme in the 3 MRT Projects, do you have any opinions or suggestions on the following subjects;

6.1 What do you think is the proper scope of investment?

_____

_____

_____

_____

_____

_____

_____

_____

_____

6.2 What do you think is the proper rate of return?

_____

_____

_____

_____

_____

_____

_____

_____

_____

6.3 What do you think is the proper method to ensure qualify of train service in the PPP Net Cost scheme?

6.4 Do you have any suggestions on the fare structure that the government should consider in order to reduce the investment risk?

6.5 What is your measure to manage the risk of ridership?

6.6 What is your opinion on any kind of financial supports from the government (if any)?

7. What is your intended source of fund?

8. What are your suggestions for any other supports from the government?

9. Other Suggestions

Mass Rapid Transit Authority of Thailand

Ministry of Transport

Project Details

Market Sounding Documentation

MRT Yellow Line Project : Lat Phrao – Samrong Section

MRT Pink Line Project : Khae Rai – Min Buri Section

MRT Blue Line Project :

Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section

Bangkok Thailand

November 2015

1. MRT Yellow Line Project : Lat Phrao – Samrong Section

1.1 Reason and Necessity

MRT Yellow Line Project : Lat Phrao – Samrong Section is the Project that is consistent with the strategies to solve the transport and traffic problem according to the National Economic and Social Development Plan. Traffic congestion problem in the area of Lat Phrao Road has been unsolved for a very long time. Even though the problem has decreased during economic crisis of the Nineties after the crisis, the problem has increased and the travel speed during peak hour is below the average travel speed in Bangkok and its vicinity. Although the traffic on Srinagarindra Road is not as severe as on Lat Phrao Road, the community along Srinagarindra Road especially area around Phatthanakan – Bangna is a community that is growing rapidly, with continuous development of houses, offices and shopping malls. Therefore, a transport system that could guide the way to proper development will alleviate the present traffic problem and that could worsen in the future if no mass public transport is implemented.

1.2 Alignment of Project

Route of MRT Yellow Line Project : Lat Phrao – Samrong Section originates at the interchange station with the MRT ChaloemRatchamongkhon Line Project at Ratchada/Lat Phrao intersection and runs along Lat Phrao road, to connect in future to the Grey Line (BMA) at Chalong Rat intersection, across Chalong Rat Expressway to Bang Kapi intersection. Then, the alignment will turn right toward south on Srinagarindra Road, connecting with the Orange Line at Lam Sali intersection, crosses Rama IX interchange to connect with the Airport Rail Link and then runs through Phatthanakan, Si Nut, Si Udom, Si Iamtil Si Thepha intersection. Thereafter it will turn right to Thepharak Road to interconnect with the Green Line Project : Bearing – Samut Prakarn at Samrong station and terminal station at Samrong intersection. The total length is approximately 30.4 kilometers consisting of 23 stations.

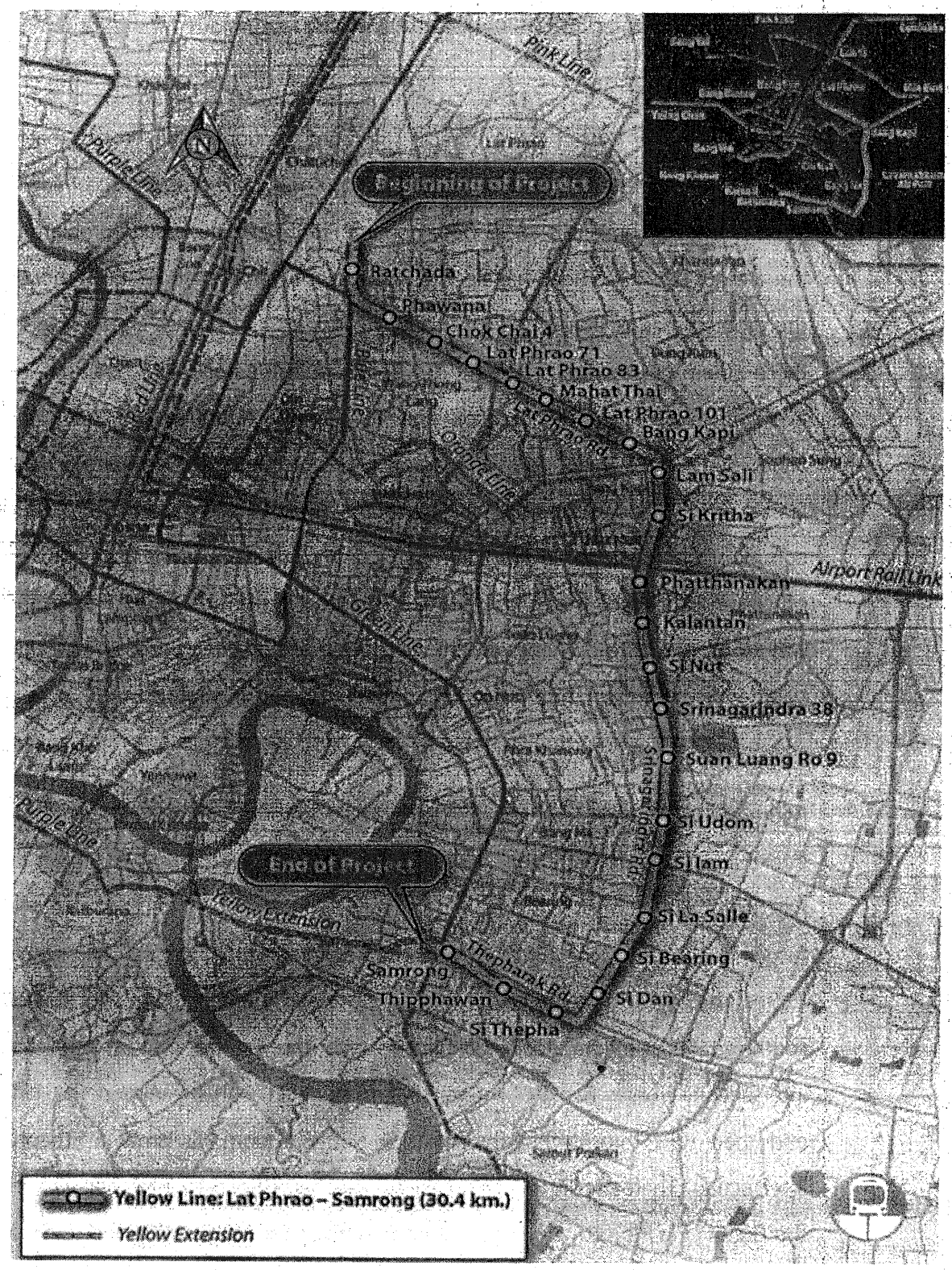

Figure 1 Alignment of MRT Yellow Line Project : Lat Phrao – Samrong Section

1.3 Appropriate Mechanical and Electrical System

MRT Yellow Line Project : Lat Phrao – Samrong Section was designed touse Straddle Monorail. However, it can be implemented for using other types of system that have equal capacity and quality service under these following requirements:

1) Capacity and efficiency in train operation must be equal or higher than required MRTA's the feasibility study.
2) Right of way: the other types of feeder systems must be capable of being built or constructed around MRT Yellow Line Project's right of way without adding more area to be expropriated than designed for Monorail.
3) In case of changing from Monorail to other types of feeder systems, there must be a report that shall be sent to the relevant party for considering the details of changing in the environment before making any changes.

1.4 Right of Way and Land Acquisition

In order to implement MRT Yellow Line Project, 765 lots of land will be acquired along the alignment, stations, depot and park and ride totaling of 61.28 acre (155 rai). There are also 184 buildings to be demolished.

1.5 Ridership forecast

Ridership forecast on service launching according to distance fares (MRTA Free Transfer) as shown in table:

Yellow Line	Ridership (Passenger-Trip/Day)					
	Boarding	Transfer				Total
Year	Yellow Line	Blue Line	Orange Line	Red Line	Green Line	
2020	171,527	36,468	-	5,978	13,259	227,232
2024	197,543	40,026	34,105	4,193	15,536	291,403
2029	230,062	44,473	40,051	1,961	18,381	334,928
2034	262,506	49,561	48,834	2,437	21,332	384,670
2039	294,949	54,650	57,617	2,912	24,284	434,412
2044	327,214	63,534	62,565	3,161	27,017	483,491
2049	359,478	72,419	67,514	3,410	29,751	532,572

1.6 Construction Cost

Construction cost according to the feasibility study is 1,536.89 Mil USD (exchange rate is 35.555 Baht : 1 USD), consisting of civil works, M&E works, project consultant, land acquisition cost and provisional sum as shown in table:

Unit : Mil USD

Item	Cost	Investor
1. Land Acquisition	169.12	Government
2. Detailed Design	8.0	Private
3. Civil Works (Elevated Construction)	464.0	Private
4. Civil Works (Depot and Park and Ride)	90.5	Private
5. Lift and Escalator	35.4	Private
6. Provisional Sum (Civil Works)	87.8	Private
7. M&E Works	373.8	Private
8. Rolling Stock	181.1	Private
9. Provisional Sum (M&E Works)	85.6	Private
10. Project Consultant	41.6	Private
Total	1,536.89	

1.7 Fare Revenue and Non-Fare Revenue

MRT Yellow Line Project fare based on distance. Boarding charge as of 2001 is 10 Baht per trip with free transfer within MRTA network. Distance charge rate is 1.8 Baht/kilometer. Adjustment of the fare is based on average inflation rate at 2.50% per year. On launching year B.E. 2563 (2020), the boarding charge is estimated at 15.99 Baht and distance charge at 2.88Baht/kilometer. In addition, according to the Study, private sector will obtain other revenue from Transit Oriented Development (TOD). All the revenues from fare and other revenues will belong to the Concessionaire.

1.8 Economic Internal Rate of Return

In the economic analysis, the return on cost savings on transportation usage, travel time saved and disposal of waste using the 30 years period has been estimated as follows:

EIRR	NPV	B/C ratio
15.65 %	19,620 Mil Baht	1.42

1.9 Project Implementation

Project implementation activities are scheduled as follows:

1) Selection Process : July 2016 – May 2017
2) Construction, Procurement and Test Run : June 2017 – September 2020
3) Opening for Revenue Service : September 2020

1.10 Scopes of Investment

The private sector who will be appointed by the MRTA as the concessionaire of MRT Yellow Line Project is obliged to carry out the scope of project investment as follows:

1.10.1 The private sector who has been appointed as the Operator commits itself to the project investment and operation in 2 phases as follows:

<u>Detailed Design and Construction</u>

Concessionaire will be responsible for the detailed design and the construction cost; civil works cost and M&E works cost. In addition the concessionaire will provide, produce, and install Mechanical and Electrical system, toll collection system and other relevant systems for the successful of the project.

<u>Train Operation and Maintenance</u>

A train operator will be responsible for the fare collection and to supporting the operation cost, so that the MRT can service the public in an effective manner with safety and reliability according to the

international standards and the MRT Line can be maintained in good condition throughout the 30 year contract period of the Project.

1.10.2 The Government Support

The Government will support the Project on land acquisition, while MRTA will assist concessionaire in coordination with the government sectors. In case the Project has no financial benefit, the Investor can propose for financial support but not more than the civil works cost. In case the Project has financial benefit, the Investor can propose to share benefit with the Government which is in accordance with the selection condition to select concessionaire who proposes the least government support and brings the maximum benefit to the Government.

2. MRT Pink Line Project : Khae Rai – Min Buri Section

2.1 Reason and Necessity

MRT Pink Line Project : Khae Rai – Min Buri Section is the Project that is consistent with the goal to disperse the development from central Bangkok to the area around Bangkokand also to control the density of inner Bangkok. According to Mass Rapid Transit Master Plan in Bangkok Metropolitan Region, this project is one of the feeder systems to serve the passengers in eastern Bangkok, Min Buri district, western Bangkok, and Nonthaburi province which have government offices, houses, and shopping malls located such as government complex, consular council, administrative court, shopping mall and developed housing. Therefore, the Pink Line can alleviate the present traffic problem in the mentioned area.

2.2 Alignment of Project

Route of MRT Pink Line project starts on Rattanathibet Road between Nonthaburi Government Center and Khae Rai intersection where the Line will connect to the Purple Line (Bang Yai - Bang Sue). The Pink Line turns left at Khae Rai intersection onto Tiwanon Road, goes along Tiwanon Road until reaching Pak Kret intersection. It then turns right onto Chaeng Watthana Road, passing Impact

Arena, Mueang Thong Thani, the second stage expressway (Si Rat Expressway), the Government Complex, and Lak Si intersection where it will connect to the SRT Red Line : Bang sue – Rang sit section. After that, the Pink Line crosses under Uttraphimuk Tollway (formerly Don Mueang Tollway) and passes PhithakRatthathammanun Monument Circle where Wat Phra Si Maha That station is located, serving as an interchange station between the Pink Line and the MRT Green Line : Mo Chit - Saphan Mai – Ku Kot section. After that, the Line follows Ram InthraRoad, crosses over Chalong Rat Expressway at Watcharaphon intersection connecting with BMA Grey Line Project : Vacharaphol - Phrakhanong – Rama IX bridge – ThaPra section, and runs further until Min Buri intersection. The route alignment continues towards Min Buri district along Sihaburanukit Road, crosses over Khlong Sam Wa before turning right to cross over Khlong Saen Saep. The Line then turns onto Ramkhamhaeng Road (Sukhaphiban 3) and finally ends at Rom Klao intersection where there is an interchange station with the Orange Line : Bang Kapi - Min Buri section around SoiRamkhamhaeng 192. The entire route length is about 34.5 kilometres, the project components include 30 stations, one depot and stabling yard and one park and ride building in Min Buri.

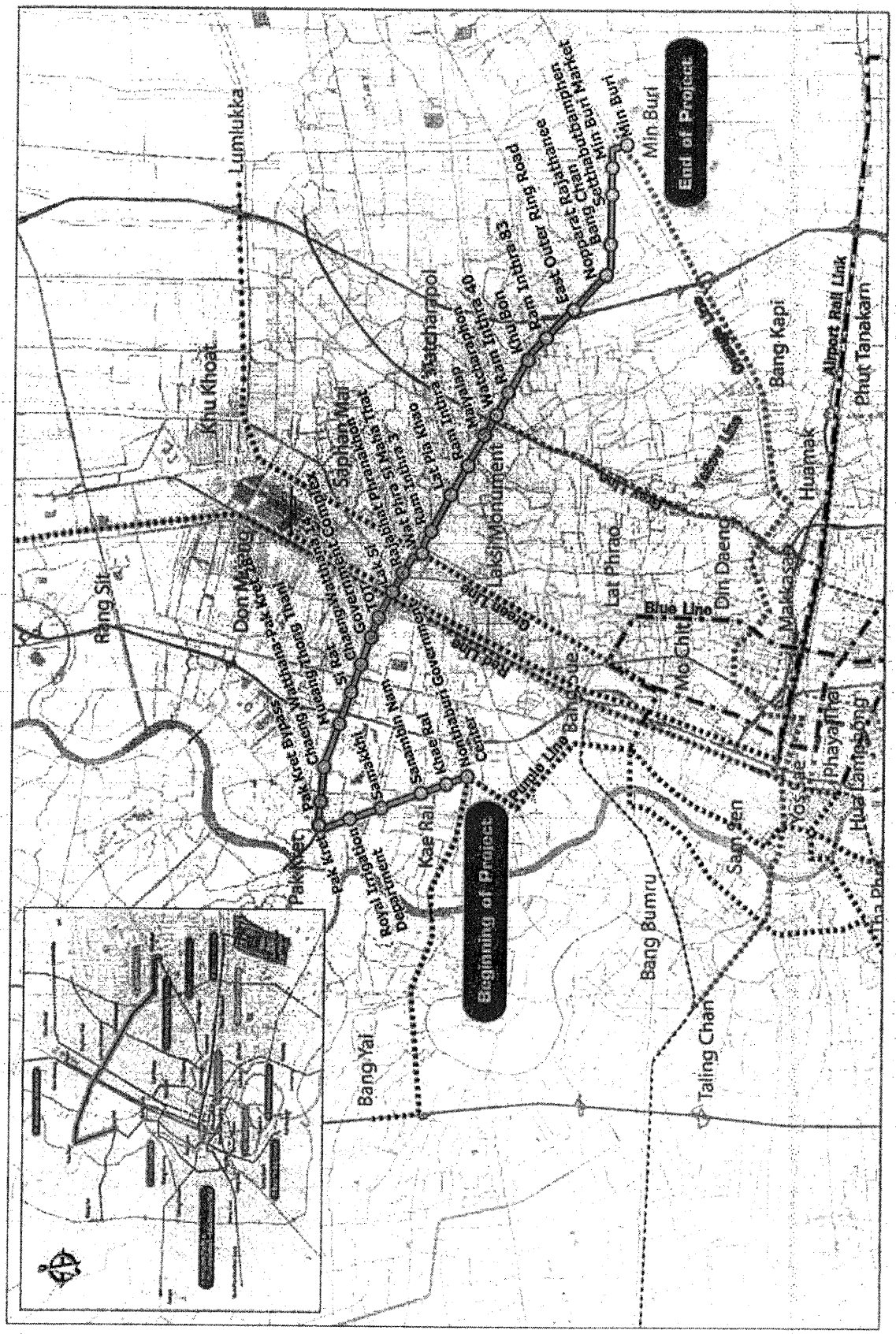

Figure 2 Alignment of MRT Pink Line Project : Khae Rai – Min Buri Section

2.3 Appropriate Mechanical and Electrical System

MRT Pink Line Project : Khae Rai – Min Buri Section was designed to use Straddle Monorail. However, it can be implemented for using other types of system that have equal capacity and quality service under these following requirements:

1) Capacity and efficiency in train operation must be equal or higher than required MRTA's the feasibility study.
2) Right of way: the other types of feeder systems must be capable of being built or constructed around MRT Pink Line Project's right of way without adding more area to be expropriated than designed for Monorail.
3) In case of changing from Monorail to other types of feeder systems, there must be a report that shall be sent to the relevant party for considering the details of changing in the environment before making any changes.

2.4 Right of Way and Land Acquisition

In order to implement MRT Pink Line Project, 648 lots of land will be acquired along the alignment, stations, depot and park and ride totaling of 110.31 acre (279 rai). There are also 185 buildings to be demolished.

2.5 Ridership forecast

Ridership forecast on service launching according to distance fares (MRTA Free Transfer) as shown in table:

Pink Line	Ridership (Passenger-Trip/Day)						
	Boarding	Transfer					Total
Year	Pink Line	Purple Line	Red Line	Green Line	Gray Line	Orange Line	
2020	109,130	3,390	9,380	5,460	-	-	127,360
2024	273,922	7,164	25,906	14,954	-	6,040	327,986
2029	327,876	8,932	31,642	20,956	3,700	7,628	400,734
2034	395,050	12,240	40,488	29,388	10,578	9,666	497,410
2039	457,226	14,594	48,192	35,856	13,120	11,522	580,510
2044	505,191	16,129	53,247	39,621	14,495	12,727	641,410
2049	564,277	18,017	59,473	44,253	16,187	14,210	716,417

Note: The estimated ridership in 2020 has been lowered by 50% of actual forecast, and 2021 has been decreased 25% of actual forecast.

2.6 Construction Cost

Construction cost according to the feasibility study is 1,594.46 Mil USD (exchange rate is 35.555 Baht : 1 USD), consisting of civil works, M&E works, project consultant, land acquisition cost and provisional sum as shown in table:

Unit : Mil USD

Item	Cost	Investor
1. Land Acquisition	192.58	Government
2. Detailed Design	7.82	Private
3. Civil Works (Elevated Construction)	464.91	Private
4. Civil Works (Depot and Park and Ride)	57.4	Private
5. Lift and Escalator	36.73	Private
6. Provisional Sum (Civil Works)	83.31	Private
7. M&E Works	429.7	Private
8. Rolling Stock	184.73	Private
9. Provisional Sum (M&E Works)	94.64	Private
10. Project Consultant	42.64	Private
Total	1,594.46	

2.7 Fare Revenue and Non-Fare Revenue

MRT Pink Line Project fare based on distance. Boarding charge as of 2001 is 10 Baht per trip with free transfer within MRTA network. Distance charge rate is 1.8 Baht/kilometer. Adjustment of the fare is based on average inflation rate a 2.50% per year. On launching year B.E. 2563 (2020), the boarding charge is estimated at 15.99 Baht and distance charge at 2.88 Baht/kilometer. In addition, according to the Study, private sector will obtain other revenue from Transit Oriented Development (TOD). All the revenues from fare and other revenues will belong to the Concessionaire.

2.8 Economic Internal Rate of Return

In the economic analysis, the return on cost savings on transportation usage, travel time saved and disposal of waste using the 30 years period has been estimated as follows:

EIRR	NPV	B/C ratio
17.2 %	24,445 Mil Baht	1.57

2.9 Project Implementation

Project implementation activities are scheduled as follows:

1) Selection Process : July 2016 – May 2017

2) Construction, Procurement, and Test Run : June 2017 – September 2020

3) Opening for Revenue Service : September 2020

2.10 Scopes of Investment

The private sector who will be appointed by the MRTA as the concessionaire of MRT Pink Line Project is obliged to carry out the scope of project investment as follows:

2.10.1 The private sector who has been appointed as the Operator commits itself to the project investment and operation in 2 phases as follows:

Detailed Design and Construction

A Concessionaire will be responsible for the detailed design and the construction cost; civil works cost and M&E works cost. In addition the concessionaire will provide, produce, and install Mechanical and Electrical system, toll collection system and other relevant systems for the successful of the Project.

Train Operation and Maintenance

A train operator will be responsible for the fare collection and to supporting the operation cost, so that the MRT can service the public in an effective manner with safety and reliability according to the international standards and the MRT Line can be maintained in good condition throughout the 30 year contract period of the Project.

2.10.2 The Government Support

The Government will support the Project on land acquisition, while MRTA will assist concessionaire in coordination with the government sectors.

In case the Project has no financial benefit, the Investor can propose for financial support but not more than the civil works cost. In case the Project has financial benefit, the Investor can propose to share benefit with the Government which is in accordance with the selection condition to select concessionaire who proposes the least government support and brings the maximum benefit to the Government.

3. <u>MRT Blue Line Project : Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section</u>

3.1 Reason and Necessity

MRT Blue Line Project Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section is the Project that is consistent with the strategies to solve the transport and traffic problem according to the National Economic and Social Development Plan. Traffic congestion problem in the area of Pracharat Sai 2 Road, Charan Sanit Wong Road and Phetcha Kasem Road has been unsolved for a very long time. Therefore, a transport system that could guide the way to proper development will alleviate the present traffic problem and that could worsen in the future if no mass public transport is implemented.

3.2 Alignment of Project

Route of MRT Blue Line project starts from the existing MRT Chaloem Ratchamongkhon Line's Bang Sue and Hua Lamphong Stations and consists of 2 sections to form circular line of the inner Bangkok. The 2 sections have the following alignment:

Hua Lamphong – Bang Kae Section

This section is 15.9 kilometers long, 5.4 kilometers of which will be underground with 4 stations while the remaining 10.5 kilometers will be elevated with 7 stations. The project starts at Hua Lamphong Station. It goes along Charoen Krung Road, passing China Town, Wang Burapha. It then turns left at Wat Poh before crossing under the Chao Phraya River at Pak Khlong Talart. Next, it reaches Tha Phra Station and runs along Phetcha Kasem Road to Lak Song Station.

Bang Sue – Tha Phra Section

This section is 13 kilometers long with 8 stations. Its structure is elevated throughout the entire route. The project starts from Bang Sue Station, passing along Pracharat Sai 2 Road. It crosses the Chao Phraya River and turns left along Charan Sanit Wong Road reaching Tha Phra area at Phetcha Kasem and Charan Sanit Wong Intersection.

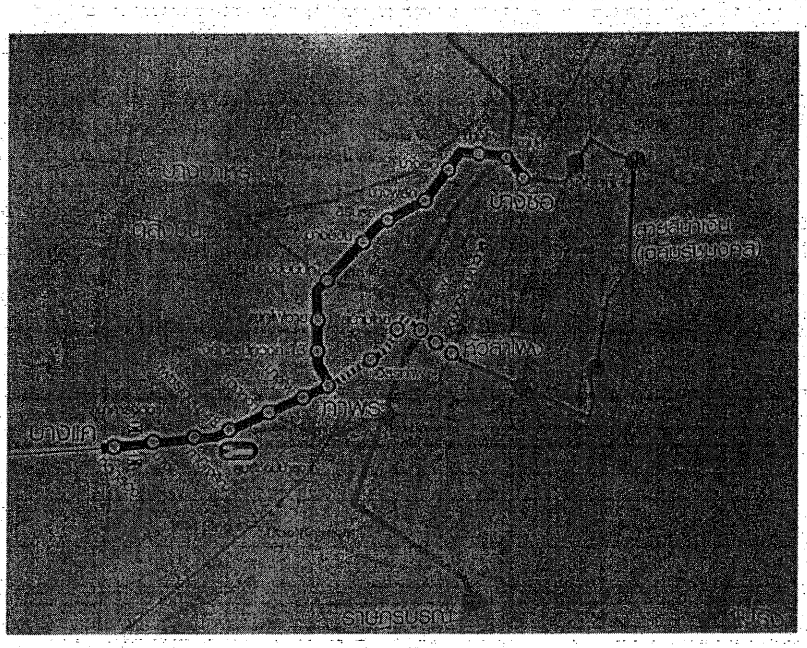

Figure 3 Alignment of MRT Blue Line Project : Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section

3.3 Appropriate Mechanical and Electrical System

MRT Blue Line Project : Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section was designed to use Heavy Rail System both for the elevated and underground sections.

3.4 Right of Way and Land Acquisition

MRTA has acquired all the land required for the Project.

3.5 Ridership forecast

Ridership forecast on service launching according to distance fares (MRTA Free Transfer) with through operation with the existing Blue Line : Hua Lamphong – Bang Sue Section are as shown in table:

Year	MRT Blue Line Hua Lamphong – Bang Khae Section		MRT Blue Line Bang Sue – Tha Phra Section		Total
	Ridership (Passenger-Trip/Day)	Average Distance (km)	Ridership (Passenger-Trip/Day)	Average Distance (km)	
2019	261,665	5.73	230,767	4.96	492,432
2024	281,897	5.47	262,922	4.09	544,819
2029	309,193	5.66	294,625	4.16	603,818
2034	344,259	5.80	330,333	4.23	674,592
2039	383,302	5.95	370,368	4.31	753,670
2043	417,701	6.07	405,862	4.37	823,563

3.6 Construction Cost

Construction cost according to the feasibility study in case of through operation is 83,877 Mil Baht consisting of civil works, M&E works, project consultant, land acquisition cost and provisional sum as shown in table:

Unit : Mil Baht

Item	Cost	Investor
1. Land Acquisition	5,900	Government
2. Civil Works	52,460	Government
3. M&E Works including Rolling Stock	22,895	Private
4. Project Consultant (Civil)	1,953	Government
5. Project Consultant (ICE)	221	Private
6. Project Consultant (M&E)	448	Government
Total	83,877	

3.7 Fare Revenue and Non-Fare Revenue

MRT Blue Line Project fare based on distance. Boarding charge as of 2001 is 10 Baht per trip with free transfer within MRTA network. Distance charge rate is 1.8 Baht/kilometer. Adjustment of the fare is based on average inflation rate at 2.50% per year. On launching year B.E. 2562 (2019), the boarding charge is estimated at 15.60 Baht and distance charge at 2.81 Baht/kilometer. In addition, according to the Study, private sector will obtain other revenue from Transit Oriented Development (TOD). All the revenues from fare and other revenues will belong to the Concessionaire.

3.8 Economic Internal Rate of Return

In the economic analysis, the return on cost savings on transportation usage, travel time saved and disposal of waste using the 30 years period has been estimated as follows:

EIRR	NPV	B/C ratio
17.62 %	53,481Mil Baht	1.92

3.9 Project Implementation

Project implementation activities are scheduled as follows:

1) Selection Process : February 2016 – April 2016
2) Construction, Procurement and Test Run : April 2016 – April 2019
3) Opening for Revenue Service : April 2019

3.10 Scopes of Investment

The private sector who will be appointed by the MRTA as the concessionaire of MRT Blue Line Project : Hua Lamphong – Bang Kae Section and Bang Sue – Tha Phra Section is obliged to carry out the scope of project investment as follows:

3.10.1 The private sector who has been appointed as the Operator commits itself to the project investment and operation in 2 phases as follows:

Construction

Concessionaire will be responsible for the M&E works cost. In addition the concessionaire will provide, produce, and install Mechanical and Electrical system, toll collection system and other relevant systems for the successful of the project.

Train Operation and Maintenance

A train operator will be responsible for the fare collection and to supporting the operation cost, so that the MRT can service the public in an effective manner with safety and reliability according to the international standards and the MRT Line can be maintained in good condition throughout the 30 year contract period of the Project.

3.10.2 The Government Support

The Government will support the Project on land acquisition and Civil Works cost, while MRTA will assist concessionaire in coordination with the government sectors. In case the Project has no financial benefit, the Investor can propose for financial support but not more than the civil works cost. In case the Project has financial benefit, the Investor can propose to share benefit with the Government which is in accordance with the selection condition to select concessionaire who proposes the least government support and brings the maximum benefit to the Government.

การรถไฟฟ้าขนส่งมวลชนแห่งประเทศไทย
MASS RAPID TRANSIT AUTHORITY OF THAILAND
รัฐวิสาหกิจภายใต้กำกับของรัฐมนตรีว่าการกระทรวงคมนาคม
A STATE ENTERPRISE UNDER SUPERVISION OF MINISTER OF TRANSPORT

No. MRTA 004/ C 2632

17 November B.E. 2558 (2015)

Excellency,

Subject : Market Sounding, MRT Yellow Line Project : Lat Phrao - Samrong Section, MRT Pink Line Project : Khae Rai - Min Buri Section and MRT Blue Line Project : Hua Lamphong - Bang Khae Section and Bang Sue - Tha Phra Section

The Mass Rapid Transit Authority of Thailand (MRTA), a state enterprise under the Ministry of Transport, is organising a market sounding according to Private Investments in State Undertakings Act B.E. 2556 (2013) and would like to invite private sector who is interested in investing in MRT Yellow Line Project : Lat Phrao - Samrong Section, MRT Pink Line Project : Khae Rai - Min Buri Section and MRT Blue Line Project : Hua Lamphong - Bang Khae Section and Bang Sue - Tha Phra Section to express opinion.

We would greatly appreciate if the embassy would kindly convey this matter to the attention of investors of your country. Those who are interested, please go to https://www.mrta.co.th to fill in the questionnaire and submit it to MRTA within December 1, 2015.

Please accept, Excellency, the assurances of our highest consideration.

駐泰國台北經濟文化辦事處
第 12 號
20 NOV 2015

(Mr. Peerayudh Singpatanakul)
Governor
Mass Rapid Transit Authority of Thailand

H.E.
Ambassador Extraordinary and Plenipotentiary
Taiwanese Representative Office

□□□□□□□□□□□□□
警安移教研軍僑新經行領政
調民育計協務間濟政務務
室室室室室組組組組組組組

MRT Project Development Department
Tel. 0 2716 4000 Ext. 1510
Fax. 0 2716 4022

001544
23 NOV 2015

175 ถนนพระราม 9 แขวงห้วยขวาง เขตห้วยขวาง กรุงเทพมหานคร 10310 โทรศัพท์ 0 2716 4000 โทรสาร 0 2716 4019
175 Rama IX Road, Huai Khwang, Bangkok 10310, Thailand, Tel.66 2716 4000 Fax.66 2716 4019 http://www.mrta.co.th