

# Social Monitoring Report

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Project Number: 51274-001

Period: July 2018-June 2020 and July 2020-December 2020

March 2021

## Thailand: Bangkok Mass Rapid Transit Project (Pink and Yellow Lines)

### Yellow Line

Prepared by Eastern Bangkok Monorail Company Limited (EBM) as a requirement of the Asian Development Bank.

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**BANGKOK MASS RAPID TRANSIT PROJECT  
(Yellow Line)**

**COMBINED FIRST AND SECOND MONITORING REPORT**

December 2020

**I. INTRODUCTION**

The Eastern Bangkok Monorail Company Limited (EBM) prepared this social monitoring report to cover two monitoring periods: July 2018 --June 2020 and July 2020 - December 2020. The start of the first monitoring period follows the completion of the Due Diligence Report on June 2018 and the subsequent signing of the Offshore Credit Facilities Agreement (OCFA) and the issuance of the Notice to Proceed (NTP). The Due Diligence Report reviewed the performance of the Bangkok Mass Rapid Transit Project Yellow Line on land acquisition, stakeholder engagement, labor management, gender and vulnerable groups consideration, community health and safety and socio-economic status and perception of households along the route. This social monitoring report has the same coverage. Based on the information gathered on these aspects, this report identifies the outstanding issues and actual and planned corrective actions.

**Objectives**

The EBM which is the operator of the Yellow Line and the borrower of Asian Development Bank (ADB) resources prepared this report to meet the following OCFA provision (Clause 11.5.a):<sup>1</sup>

The Borrower shall deliver to the Lender a Safeguards and Social Monitoring Report in English on a semi-annual basis, which shall be delivered until otherwise notified by the Lender, within 180 days from the date of this Agreement and thereafter within 180 days from the date of the last Safeguards and Social Monitoring Report.

Since the CFA became effective on 24 April 2020, the first report was due on 24 October 2020. But upon EBM's request, ADB issued a waiver for this requirement to warrant the release of the first (September 2020) and second disbursements (December 2020) and both parties agreed for the submission of two reports by the end of March 2021 prior to the third disbursement. .

**Methodology**

The information used to constitute this report is from the project documents and database of five organizations involved in the construction of the Yellow Line namely: (i) Mass Rapid Transit Authority of Thailand (MRTA); (ii) Sino-Thai Engineering and Construction Public Company Limited (STECON); (iii) International Engineering Consultants Company Limited (IEC); (iv) BTS; and (v) EBM. The documents include the following

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<sup>1</sup> The BSR Joint Venture, a consortium of three companies, established the EBM. The members of the consortium are BTS Group Holdings (BTS), Sino-Thai Engineering and Construction (STECON) and Ratchaburi Electricity Generation Holding (RATCH).

MRTA. 2017. Environmental Impact Assessment (Final). October.

MRTA. Final List of the Determination of Initial Prices of Immovable Property to be Expropriated and the Amount of Compensation for Yellow Line

BTS. Construction Status Report of Pink and Yellow Lines. Power Point Presentation to ADB Mission. 17 July 2019.

STECON. Overview of Health and Safety and Labor Policy and Practices. Power Point Presentation to ADB Mission. 17 July 2019.

IEC. Lenders' Technical Advisor MRTA Yellow Line Progress Report. May 2019 and 2020.

IEC. Lenders' Technical Advisor MRTA Yellow Line Progress Report. November 2019 and 2020

Asian Engineering Consultants Co., Ltd; Hamburg-Consult GmbH; D2 Consult Asia Co., Ltd; Wisit Engineering Consultants Co., Ltd; Prime Street Advisory Co., Ltd. (Thailand); and, Enrich Consultant Co., Ltd. 2016. Report on Changes in Project Details in the EIA Reports on the Bangkok Mass Transit Yellow Line Project: Lat Phrao-Samrong, combining the EIA Report for the MRT Yellow Line Project (Ratchada-Lat Phrao-Phatthanakan) and the EIA Report for the MRT Dark Yellow Line Project (Phatthanakan-Samrong).

## **II. CONSTRUCTION STATUS**

The construction of the Yellow Line started in March 2018. The commercial operation date is slated on 2022. In December 2020, the actual civil works progress was 70.54% which was 1.74% behind schedule. The delay was a result of the extended time used to transfer of water and electricity lines and handover of acquired land. EBM requested for extension from MRTA due to the unforeseen delays. However, it is confident that the project can commence operation as planned by fast-tracking civil works once all remaining land access issues are resolved and pipeline relocation and upsizing are completed

## **III. LAND ACQUISITION AND RESETTLEMENT**

MRTA completed the land acquisition process and hand-over to STECON all the land needed for the Yellow Line as of January 2020. A total of 23.71 hectares were acquired of 0.39 hectares less than the total area earmarked for land acquisition (Table 1). The reduction was achieved by excluding 0.7 hectares of private land originally slated for land acquisition. The reduction subsequently decreased the number of plots to be acquired from 386 to 283 plots or a total of 103 plots, 102 of which were privately owned. But the number of private land owners affected increased. Among the corporate land owners, the number increased from 28 to 43 and among the individual land owners, from 106 to 122. This means that the plots which were avoided mostly belonged to multiple plot owners.

**Table 1** Data on Land Acquisition Based on 2016 EIA Report and Actual Implementation

Item	2017 EIA Report	Actual Implementation (as of January 2021)	Difference
<b>Total Land Area for Acquisition</b>			
Government Land	0.14 hectares	0.45 hectares	0.31
Private Land	23.96 hectares	23.26 hectares	- 0.7
Total	24.10 hectares	23.71 hectares	- 0.39
<b>Total Land Plots</b>			
Government Land	16 plots	15 plots	- 1
Private Land	370 plots	268 plots	- 102
Total	386 plots	283 plots	- 103
<b>Number of Land Owners</b>			
Government agencies and corporations	6 land owners	6 land owners	0
Corporation	28 land owners	43 land owners	15
Individuals	106 land owners	122 land owners	16
Total	140 land owners	171 land owners	31
<b>Number of Affected Structures</b>			
Commercial	104 units	99 units	- 5
Single Detached Housing	46 units	33 units	- 13
Condominium	1 unit	1 unit	0
Abandoned Structures	4 units	-	- 4
Others (Billboards and Toilet)	3 units	24 units	21
Total	158 units	157 units	- 1
<b>Total Compensation</b>			
Land	4,729,574,421 THB	4,134,556,090 THB	- 595,018,331
Structures	674,876,735 THB	249,580,960.34 THB	- 425,295,774.66
Total	5,404,451,156 THB	4,384,137,050.34 THB	- 1,020,314,105.66
Source: Mass Rapid Transit Authority of Thailand. 2017. Environmental Impact Assessment (Final), October. Appendix 4J and Final List of the Determination of Initial Prices of Immovable Property to be Expropriated and the Amount of Compensation.			

The number of affected structures was reduced only by one. But in terms of type of structures, the number of commercial units affected was reduced by 15 while the number of single detached houses affected was reduced by 13. There was a corresponding increase in the number of billboards and toilets affected by 21 units. The result of the reduction of land acquired and number of commercial and housing units affected is the reduction of compensation from the earmarked amount of 5,404,451,156 THB to 4,384,137,050 THB or 1,020,314,105 THB less. Apart from the compensation of land and structures, payment was made for other losses and for the assistance extended to the affected households. The total cost of compensation and assistance amounted to 4,412,543,286 (Table 2).

**Table 2** Breakdown of Final Compensation and Assistance Paid to Affected Property Owners and Users: 2019

Type of Compensation and Assistance	Number of Entities Compensated	Total Amount of Compensation and Assistance
Land Compensation	167	4,134,556,090.00
Compensation for Structures	217	249,580,960.34
Tenant Compensation	45	3,325,867.01
Tree Compensation	71	1,060,335.00
Whole Residence Expropriation Fee	6	600,000.00
Compensation for Damaged Business Operations	154	14,127,769.25
Compensation for Damages Incurred in Procuring a New Business Facility	53	6,092,264.84
Other Expenses	320	3,200,000.00
Compensation for Damage under Article 21 Final Paragraph	320	24,020,034.09
Total Amount of Compensation and Assistance	4,412,543,286.44	THB
Source: MRTA and PCYL		

The reduction of the actual private land acquired is a result of the expanded use of government land by 0.31 hectares. The 0.14 hectares of government land originally slated for the project increased to 0.45 hectares. The expanded use of government land resulted to the lower number of corporate and houses affected. Included in the government land are the roads which use as the project's right-of-way was maximized. The expanded use of government land was included as the final basis of the final design. Modifications were still done on the design of some stations in the construction phase to further reduce land acquisition.

After all the affected property owners were paid, it was established that there was a total of 275 of them (Table 3). Around 185 of them were private individuals, of which 41% were women. The rest were corporations and government organizations. In addition to the property owners, 46 tenants were affected, 35 of whom were private individuals. Close to half of these individuals were women.

**Table 3** Final Number of Affected Property Owners and Tenants by Gender in the Yellow Line

Items	Total	%
Owners		
Men	109	38%
Women	76	29%
Corporations	84	31%
Government Agencies and Corporation	6	2%
Subtotal	275	100%
Tenants		
Men	18	39%
Women	17	37%
Corporation	11	24%
Subtotal	46	100.0%
Total		

Source: MRTA. Final List of the Determination of Initial Prices of Immovable Property to be Expropriated and the Amount of Compensation

## IV STAKEHOLDER ENGAGEMENT

### Grievance Management

A total of 1,326 cases had been filed as of December 2020 (Table 4). But only 162 of these cases were on land acquisition (Table 4). The rest were on construction impacts. Further, only 3 cases remain outstanding and these were on land acquisition. The outstanding cases are in different stages of resolution (Table 5). All the cases on construction impact were closed. The MRTA field team handles the land acquisition complaints while STECON field offices handles complaints on construction impacts. For complaints on land acquisition, the MRTA field team starts the resolution process through negotiation with the complainant. The main outcome of these negotiations is the redesign of part of the station or carriageway subject to complaint and the reduction of land acquisition requirement. The complaint only goes to the formal grievance mechanism when the negotiation fails.

**Table 4** Number of Cases Filed for Yellow Lines and Status of Cases: December 2020

Type	Number of Cases Filed	Closed	Outstanding
Land Acquisition	162	159	3
Construction	1,164	1,164	0
Total	1,326	1,323	3

Source: International Engineering Consultants Co. Ltd. 2020. Lenders' Technical Advisor (LTA) MRTA Yellow Line Progress Report. December

**Table 5.** Location of the Complaint and Status as of December 2020

No	Location	Status of Complaint
1	YL10 ENT2	EBM informed the complainant that adjustment cannot be made because he already has access which is the subject of his complaint. On November 2020, a letter or notice was sent to the complainant. Update will be provided in the next report.
2	YL13 ENT4	Based on the complaint, the design was adjusted. PCYL has yet to notify MRTA through a letter on this decision. Update will be provided in the next report.
3	YL22 ENT2	EBM decided that the adjustment requested by the complainant cannot be done. EBM will make a letter of confirmation to MRTA. Update will be provided in the next report.

### Information Disclosure

Information about the project was disseminated to the people living or working along the route through signboards, led boards, leaflets social media and home and office visits. The main social medium used was Facebook where the Yellow Line account had 20,319 followers as of November

2019.<sup>2</sup> Between 1 October and 31 December 2020, 31 office and home visits were conducted (Table 6). The information shared was on traffic closure and diversion and construction noise. There was a lull in face-to-face information disclosure activities in most of 2020 due to the Covid-19 pandemic.

**Table 6** Home and Office Visits Conducted to Disseminate Information on the Yellow Line

No	Date	Location	Participants	Topic
1	21 October 2019	Happy Land Junction, Lat Phrao Road	Motorists	Traffic closure and traffic diversion at Soi Lat Phrao 140. Lat Phrao Road
2		Khlong Tha Chang to Soi Srinagarindra Road	Shop-owners and residents	Noise in case of the construction at Khlong Tha Chang, Srinagarindra Road
3	22 October 2019	Between Soi Srinagarinda 43 and 45	Shop-owners and residents	Noise in case of the station entrance construction of Srinagarinda 38 Station (YL 14)
4	23 October 2019	Soi Lat Phrao 103, Lat Phrao Road	Motorists	Traffic closure and traffic diversion at Soi Lat Phrao 130/2. Lat Phrao Road
5	25 October 2019	Bosch Car Services, Srinagarindra Road	Shop-owners and residents	Noise in case of the station entrance construction of Si Nut Station (YL 13), Srinagarindra Road
6	31 October 2019	Si Thepha Intersection, Srinagarindra Road	Motorists	Traffic closure and traffic diversion at Si Thepha Intersection, Srinagarindra Road
7	4 November 2019	IT Solution Co.Ltd Office	Shop-owners and residents	Noise in case of utilities relocation and construction in Srinagarindra Road
8	5 November 2019	Si La Salle Intersection	Shop-owners and residents	Noise in case of utilities relocation and construction in Srinagarindra Road
9	7 November 2019	Si La Salle Intersection	Motorists	Traffic closure and traffic diversion at Soi Si Dan 12, Srinagarindra Road
10		Soi Thephanak 4 and Thephanak Junction	Shop-owners and residents	Noise in case of station column construction of Samrong Station (YL 23) on in Thephanak Road
11	8 November 2019	Si Nut Intersection, Srinagarindra Road	Motorists	Traffic closure and traffic diversion at Soi Srinagarindra 31, Srinagarindra Road
12	9 November 2019	Between railway crossing and Phatthanakan Intersection, Srinagarindra Road	Shop-owners and residents	Noise in case of utilities relocation and construction of Phatthanakan Station (YL 11), Srinagarindra Road
13	12 November 2019	Phatthanakan Intersection, Srinagarindra Road	Motorists	Traffic closure and traffic diversion at Phatthanakan Intersection, Srinagarindra Road
14	13 November 2019	Between Srinagarindra 43 and 47, Srinagarindra Road	Shop-owners and residents	Noise in case of precast beam installation for Srinagarindra 38 Station (YL 14) on Srinagarindra Road
15		Srinagarindra Road between Si Udom Intersection and Soi Srinagarindra 63	Shop-owners and residents	Noise in case of precast beam installation for Si Udom Station (YL 16) on Srinagarindra Road
16	16 November 2019	Between Khlong Lat Phrao and Khlong Hua Mak, Lat Phrao Road	Shop-owners and residents	Noise in case of elevated structural construction between Phawana Station (YL 02) and Chok Chai 4 Station (YL 03) on Lat Phrao Road
17	18 November 2019	Si Nut Intersection, Srinagarindra Road	Motorists	Traffic closure and traffic diversion at Thanya Park Shopping Mall on Srinagarindra Road

<sup>2</sup> International Engineering Consultants Co. Ltd. 2019. Lenders' Technical Advisor (LTA) MRTA Yellow Line Progress Report. November

No	Date	Location	Participants	Topic
18		Si Nut Intersection, Srinagarindra Road	Motorists	Traffic closure and traffic diversion at Soi Srinagarindra 43 on Srinagarindra Road
19		Between Soi Srinagarindra 24 and Khlong Khok Wat, Srinagarindra Road	Shop-owners and residents	Noise in case of precast beam installation of Kalantan Station (YL 12) on Srinagarindra Road
20	20 November 2019	Between Khlong Tha Chang and Soi Srinagarindra 61, Srinagarindra Road	Shop-owners and residents	Noise in case of project construction at Khlong Tha Chang
21	4 December 2020	Soi Lat Phrao 113, Lat Phrao Road	Shop-owners and residents	Noise construction works for entrance 1 at Bangkapi Station (YL08), Lat Phrao Road
22	4 December 2020	From Happyland Intersection to Bangkapi Intersection, Lat Phrao Road	Shop-owners and residents	Noise construction works for elevated structure EL08, Lat Phrao Road
23	6 December 2020	Rama IX Toll Plaza, Rama 9-1 (Sirat) Toll Plaza, Si Nakarin Toll Plaza, Asoke 3 Toll Plaza, Si Nakarin - Rama IX Road	Motorists	Traffic closure and traffic diversion at Motorway No.7 for Steel Guideway Beam installation
24	7 December 2020	Rama IX Toll Plaza, Rama 9-1 (Sirat) Toll Plaza, Si Nakarin Toll Plaza, Asoke 3 Toll Plaza, Si Nakarin - Rama IX Road	Motorists	Traffic closure and traffic diversion at Motorway No.7 for Steel Guideway Beam installation
25	8 December 2020	Krungthep Kritha Intersection, Srinakarindra Road	Shop-owners and residents	Noise construction works for walkway at Si Kritha Station (YL10), Srinakarindra Road
26	9 December 2020	Soi Srinagarindra 63, Srinakarindra Road	Shop-owners and residents	Noise construction works for walkway at Si Udum Station (YL16), Srinakarindra Road
27	10 December 2020	Soi Lat Phrao 95, Lat Phrao Road	Shop-owners and residents	Noise construction works for entrance 2 at Mahat Thai Station (YL06), Lat Phrao Road
28	10 December 2020	Soi Lat Phrao 44, Lat Phrao Road	Shop-owners and residents	Noise construction works for walkway at Phawana Station (YL02), Lat Phrao Road
29	12 December 2020	Ratchada – Lat Phrao Intersection, Ratchadapisek and Lat Phrao Road	Motorists	Traffic closure and traffic diversion at Ratchada-Lat Phrao Intersection, Ratchadapisek and Lat Phrao Road for utilities relocation works
30	17 December 2020	Srinagarindra Road, Chalermprakiat Rama 9 Road	Motorists	Traffic closure and traffic diversion at Srinagarindra Road and Phatthanakan Intersection for Guideway Beam installation
31	19 December 2020	Soi Lat Phrao 44, Lat Phrao Road		Noise construction works for entrance 4 at Phawana Station (YL02), Lat Phrao Road
Source: International Engineering Consultants Co. Ltd. 2019. Lenders' Technical Advisor (LTA) MRTA Yellow Line Progress Report. November and EBM				

## Stakeholders' Meetings

There were 16 stakeholders' meetings were held between October 2019 and December 2020 (Table 7). The meetings shared basic project information and update, assessed construction impacts and solicited feedback and suggestions to improve project operation. As in face-to-face information dissemination activities, there was a lull in stakeholders' meetings in most of 2020 due to the Covid-19 pandemic.

**Table 7** Stakeholders' Meetings Held for the Yellow Line From 1 October 2019 to 31 December 2020

No	Date	Location	Participants	Topic
1	22 October 2019	NIDA University, Serithai Road	Faculty of Environmental Development	Pathway structure design information to be in line with the Bang Kapi City improvement for livable smart city
2		Phatthanakan Intersection, Srinagarindra Road	Management and staff of Askan Condo, Phatthanakan	Basic project information and progress and suggestions on the project operation
3		La Salle Intersection, Soi Sukhumvit 105	Management and staff of Sikarin Hospital	Basic project information and progress and suggestions on the project operation
4	25 October 2019	Thepharak Road	Management and staff of Asap Car Rental Company	Basic project information and progress and suggestions on the project operation
5	7 November 2019	Samitivej Srinagarindra Road	Director of Special Project Division Samitivej Srinagarindra Hospital	Guidelines for the design of and installation of signages to reduce construction impact on hospital clients
6		IT Solution Building, Srinagarindra Road	Complainant (Khun Wisit)	Complaint on noise from the construction of Si Nut Station entrances (YL13) and Bulk Substation 2
7	13 November 2019	Foodland Department Store, Srinagarindra Road	Management and staff of Foodland Department Store	Basic project information and progress and suggestions on the project operation
8		Master Private Village, Soi Srinagarindra 61, Srinagarindra Road	Staff of Juristic Person Department, Master Private Village	Basic project information and progress and suggestions on the project operation
9	18 November 2019	Wat Sri lam, Srinagarindra Road	Director of Wat Sri lam Anusom School	Assistance to enter the area for MRTA knowledge sharing as part of school activities
10		Siam Motors Industry Office, Srinagarindra Road	Managing Director of Siam Motors Industry Company,	Basic project information and progress and suggestions on the project operation
11	19 November 2019	Phatthanakan Intersection, Srinagarindra Road	Director of Khlong Kalantan School	Assistance to enter the area for MRTA knowledge sharing as part of school activities
12	20 November 2019	Palm island Mall, Thepharak Road	Shop owners	Basic project information and progress and suggestions on the project operation
13	2 December 2020	Si Rat Expressway Control Center (CCB2)	Faculty of Public relations officer and Traffic management	Clarify information about traffic diversion for Steel Guideway Beam installation
14	3 December 2020	Suan Luang Intersection, Srinagarindra Road	Khun Thanakorn	Clarify about construction works for entrance 4 Si Nut Station(YL13), Srinagarindra Road
15	16 December 2020	PTT gas station, Srinagarindra-Lasalle Intersection, Srinagarindra Road	Khun Prapa	Clarify about construction works for entrance 1 and 2 Si Udom Station(YL16), Srinagarindra Road

16	18 December 2020	Bangkapi intersection, Lat Phrao Road	Shop-owners and residents	Clarify about utilities relocation works, Lat Phrao Road
Source: International Engineering Consultants Co. Ltd. 2019. Lenders' Technical Advisor (LTA) MRTA Yellow Line Progress Report. November and EBM				

#### IV. LABOR MANAGEMENT

The Yellow Line has 5,011 workers 20% of whom are women as of December 2020 (Table 8). The workers are from Thailand, Myanmar and Cambodia. The foreign workers compose 23% of the total workforce. The youngest worker in all nationalities is 18 years old (Table 9). The workers can freely move around on their off- hours and permitted to have their mobile phone all the time. The management keep their passport with the visa and work permit for safekeeping but these are available on demand. The workers have copies of the documents to carry around.

There is no labor union but complaint mechanism is in place for prompt response and resolution of concerns. The camp manager is the first to receive the complaint. For complaint on camp condition, the camp manager will first resolve the complaint. If the complaint is not resolved, it is elevated to the management. If the complaint is on working condition, the Thai worker will bring the complaint to the foreman. The foreman will resolve the complaint. If the complaint is not resolved, it is elevated to the management. If the worker is from Myanmar or Cambodia, the worker will first bring the complaint to the translator. If he is not understood, the staff in the Training Center and Management will come to site with the engineer to resolve the complaint. As of December 2020, there has been no complaint elevated to the management or to the Training Center and Management. All complaints were resolved at the level of the camp manager and foremen.

**Table 8** Number of Workers of Yellow Lines Under STECON and its Sub-contractors: December 2020

Gender	Nationality			Total
	Thailand	Myanmar	Cambodia	
Male	3,106	699	183	3,988
Female	757	153	113	1,023
Total	3,863	852	296	5,011

Source: STECON

**Table 9** Age of Youngest Worker in the Yellow Line Employed by STECON and its Subcontractors: December 2020

Country of Origin	Youngest Age of Worker
Thailand	18 years old (According to the ministry of labour law in Thailand No.6 (B.E. 2541).)
Myanmar	18 years old (According to the ministry of labour law in Thailand No.6 (B.E. 2541).)
Cambodia	18 years old (According to the ministry of labour law in Thailand No.6 (B.E. 2541).)

Source: STECON

The Department of Labor Protection and Welfare ensures the project's compliance to core labor standards and national labor laws through random inspection of work sites. It has yet to conduct a labor inspection by December 2020. Nonetheless, there was no labor case has been filed since the start of the construction period.

In compliance with laws on foreign workers, the procedure of filing an application to bring in foreign workers was followed. A government permit to bring in 5,500 foreign workers was obtained and each worker was given an employment contract using the standard format of the Ministry of Labor. The Thai Government has a Memorandum of Understanding (MOU) with the government of Cambodia, Laos and Myanmar on employment cooperation. The foreign workers who compose the rank-and-file directly received their daily minimum wage (325 THB in Samut Prakan Province and 375 THB in Bangkok) from STECON although they were recruited through a private agency. A bank account was opened for every worker so that they can safely receive and safeguard their wages.

To protect the health of workers, STECON conducts the following activities: (i) annual medical examination; (ii) twice-a-week safety talk; (iii) daily toolbox talk; (iii) alcohol and drug testing; (iv) blood pressure test before working in high places; (v) provision of drinking water, toilets, rest areas, solid waste management system, traffic signs, parking areas, clinic and nurse in work sites; (vi) provision of shuttle bus; (vii) deployment of security personnel at job site; (vii) posting of required personal protection equipment (PPE) and safety rules in three languages (Thai, Burma and Khmer) and graphic posters; (viii) secondary enclosure in high-risk areas; and (ix) fumigation of camp sites against mosquitoes. (x) guidance to manage workers' salary so that this will not go to alcohol consumption and other vices; (xi) social insurance coverage; and (xii) car and translator's services if the foreign workers have to be brought to the doctor. The medical examination covers not only the routine parameters but also the following infectious diseases: tuberculosis, filariasis, leprosy and syphilis. HIV test is not covered because the law prohibits testing without the concerned person's consent. But prevention of sexually transmitted diseases (STD) is taken up as part of workers orientation. Pregnancy test is also conducted on women. Certain diseases such as dengue are also included in the examination if there are certain to do so. A medical certificate is issued to the worker after every medical examination.

Around 95% of the project workers are unskilled. STECON has a been operating a skills development center for seven years. All the project workers are trained on basic skills under a pre-entry three-day training course. The skills are form-work installation and basic carpentry, masonry, rebar fixing and scaffolding. Specialized training is also offered including such courses as flag manning and cherry picker crane use. Training certificate is given after successful completion of each training course.

Each nationality has its own labor camp. In the camp, the room accommodates two workers. The room has big windows for ventilation. There is separate quarter for couples and single workers and for male and female single workers. Couples have the option to bring their children to live with

them. The camp set a curfew on children at 10:00 PM. For violation of camp regulations, three steps are carried out: (i) warning issuance for the first violation; (ii) 3-day work suspension for the second violation; and (iii) work termination for the third violation. Nobody is terminated so far. Every morning, the workers listen to a safety talk and they are reminded of the need for harmony in living together. A manager supervises the camp who enforces the camp regulations and receives complaint. No violation was yet reported.

## V. COMMUNITY HEALTH AND SAFETY

To ensure community health and safety, the following measures were implemented as part of the construction activities: (i) installing protective barriers between work sites and outside areas; (ii) allocating safety clearance or buffer area between residential areas and construction sites; (iii) wrapping of vertical structures along the road with new safety nets; (iv) securing the continued use of pedestrian crossing with traffic enforcement personnel; (v) prohibiting piling work after 8:00 PM; (vi) maintaining the almost spick-and-span condition of construction areas and immediate vicinity; (vii) operating a solid waste management system in construction areas and labor camps; (viii) installing warning signs around construction areas; (ix) operating a public relations team to discuss complaints from the community and agree on solutions; (x) installing a noise barrier and louvre to reduce the noise and pollution while enhance security and privacy of a house beside the construction site in Station 26; (xi) setting up worker-managed shops in workers camp which reduce workers-community interaction; (xii) requiring to report an incident to MRTA Governor within 15 minutes of its occurrence; (xiii) inclusion in the 3-day workers' orientation the subject of Thai laws and culture where cultural differences and potential conflicts are identified and explained; and (xiv) implementing measures to minimize potential transmission of infectious disease from workers to community members. These measures include annual workers' medical check-up which includes infection diseases, fumigation of camp sites and inclusion of STD prevention in workers' orientation.

The EIA has prescribed the measures to ensure community health and safety (Table 10). These measures were implemented. Due to the advent of the COVID-19 pandemic, the contractors also instituted a protocol to prevent its spread among workers and between workers and community members (Table 11).

**Table 10** EIA Measures to Mitigate Impacts on Community Health and Safety and Actions Done in Construction Period

No	EIA Measures	Actions Done
1	The project outline must be publicized through Bangkok Metropolitan Administration District Offices or municipalities that are area owners at least 30 days in advance. The local agencies must further publicize this through community leaders who will inform the people.	The concessionaire has coordinated and advertised to Bangkok Metropolitan Administration District Offices, Municipalities that are area owners, Community leader and People 30 days in advance.
2	Contractors must ensure that workers will not behave in a way that creates nuisance, trouble	The concessionaire has strictly controlled the officers' and workers' behavior by enforcing

No	EIA Measures	Actions Done
	or dispute with local people or users of roads along the construction sites.	appropriate regulations in the construction area and camp sites.
3	Establish an information and complaint center at the project office which will receive information or complaints from the affected people. It has to post the phone number, e-mail address, and provide a staff stationed 24/7 and collect and process data on complaints, suggestions, and results or corrective actions to MRTA at least once a month to assist affected people	<p>- The Mass Rapid Transit Authority of Thailand (MRTA) operates an Information and Complaints Center at MRTA's headquarters to receive information or complaints from citizen and also published brochures to advertise a way to communicate with MRTA through telephone no. 0 2716 4044 and pr@mrta.co.th.</p> <p>- The concessionaire operates an Information and Complaints Center at the project office and provided information board for a way of communication through telephone no. 0 2610 4915, 0 98257 5555 and assigned staff operating 24/7 to gather, evaluate complaints and suggestions on its performance and results are presented to MRTA once a month to help and alleviate problems of general public that have been affected.</p>
4	Contractor has to carry out construction with caution to avoid damage to life and property of local citizens such as road surface and travel. If this cannot be avoided, minimize the impact within 3 days.	Damages have been avoided by a range of measures. If the life and property of people living in the local community located in the construction area is damaged by the construction activities, the concessionaire will immediately solve the problems to minimize impacts or takes action within 3 days.
5	Announce to the public and users of existing roads during construction at least 7 days before traffic is blocked via several media such as billboards, brochures, newspapers, traffic radio stations, websites and TV stations.	The concessionaire has posted a notification board to notify the public, pedestrians and road users for 7 days in advance before blocking the traffic during the construction period.
6	Provide at least two security staff per construction area to monitor construction and facilitate traffic	The concessionaire has provided security guards to maintain security in construction area and help facilitate traffic during the construction period.
7	A condition shall be stated in the contractor's contract that it has to recruit skilled workers or construction workers from Bangkok Metropolitan region or Samut Prakan province or persons who can show evidence that they are domiciled in these places	The concessionaire has posted a labors recruitment who has domicile in Bangkok Metropolitan region or Samut Prakan province on the board in front of the worker camps and the project office.
8	If there are complaints from business operators along the construction area, they will be allowed to express their opinion on resolving it. Mitigate the problem seriously and urgently	Complaints from business operators along the construction area, the project are received by the concessionaire through its grievance mechanism and discussed with the complainant on how to solve the issues and promptly fix and resolve these. Resolution including mitigation measures are implemented immediately.
9	A Mobile mass relations unit has to be established to carry out public relations activities on periodic basis. The unit has to publicize information on the characteristics and steps of construction, disaster prevention system and the monitoring system to avoid impacts and acknowledge feedback from the public at least once a month. The feedback will	The concessionaire establishes a mobile mass relations unit and carry out public relations activities on periodic basis. Projects publicize information on the characteristics and steps of construction, disaster prevention system and the monitoring system to avoid impacts and acknowledge feedback from the public at least once a month. The feedback will be studied to

No	EIA Measures	Actions Done
	be studied to make improvement, mitigate impacts and make construction schedule clear and in line with people's needs,	make improvement, mitigate impacts and make construction schedule clear and in line with people's needs,
10	MRTA will have mass relations unit which will participate in activities in local communities along the route	The MRTA has mass relations unit which will participate in activities in local communities along the route
12	Contractors must strictly comply with noise prevention and mitigation measures	The concessionaire has strictly complied with the environmental impact prevention and mitigation measures on noise quality during construction phase.
13	The construction areas and project offices must be managed based on the recommendations of the Engineering Institute of Thailand and Ministry of Public Health requirements	<ul style="list-style-type: none"> <li>- The concessionaire has managed for environmental health within the construction area or the project office to be hygienic according to the recommendation of Engineering Institute of Thailand and Ministry of Public Health as detailed below;</li> <li>- Drinking water was provided adequately for all workers within the project office.</li> <li>- Toilets with septic tanks were provided adequately within the project office, worker camps and the construction area.</li> <li>- Waste containers with lids for general waste, compostable waste, hazardous waste and recycle waste were provided in the construction area and the project office. For sanitary waste disposal, Khan Na Yao District was coordinated to be responsible for managing.</li> </ul>
14	Provide workers with temporary shelters in the construction areas for daytime rest and in the vicinity of the construction areas with appropriate size to take lunch, two temporary toilets with built-in tanks connected to septic tank, clean water for drinking and washing face and hands and containers for wet and dry waste.	The concessionaire has provide workers with temporary shelters in the construction areas for daytime rest and in the vicinity of the construction areas with appropriate size to take lunch, two temporary toilets with built-in tanks connected to septic tank, clean water for drinking and washing face and hands and containers for wet and dry waste.
Source: Mass Rapid Transit Authority of Thailand. 2017. Environmental Impact Assessment (Final). October. Section 7.4.1 and 7.4.3		

**Table 11** Protocol Instituted in Yellow Line Project Offices, Construction Area and Labor Camp to Prevent the Spread of Covid-19.

No	Protocol
1	Campaign and public relations activities to raise awareness on Covid-19 protocol.
2	Control measures
	<ul style="list-style-type: none"> <li>- Prohibit travel to the risky areas.</li> <li>- Confine the travel of workers to the construction project area and the workers camp or home only.</li> <li>- Prohibit off-track or lay-over of vehicles travelling between the workers' camp or house and the construction area.</li> <li>- Prohibit outsiders and non-authorized personnel to go to the construction area and the workers' camp.</li> </ul>
3	Preventive measures

No	Protocol
	- Wear surgical mask
	- Keep social distance
	<ul style="list-style-type: none"> <li>• All vehicles (buses or cars)</li> <li>• Restaurants and canteen</li> <li>• Offices and workplaces</li> </ul>
	- Prohibit face-to face gathering for work
	- Wash hands with soap and water or alcohol gel. The company has provided.
	<ul style="list-style-type: none"> <li>• Clean and wipe disinfectant spray for sterilization</li> <li>• Spray and wipe sterilization agent the interior of vehicle (buses and cars)</li> <li>• Spray and wipe disinfectant and clean field offices every day</li> <li>• Spray and wipe disinfectant and clean workers quarters every day</li> </ul>
	- Screening
	<ul style="list-style-type: none"> <li>• Provide only one entrance-exit point in field offices</li> <li>• Take the temperature of every person entering the field offices. If the body temperature exceeds 37.5 Celsius, do separate, rest and recheck timeline and determine if risk of infection is high, Put the worker on work-from-home (WFH) arrangement. Sent to the doctor if needed.</li> <li>• If symptoms of illness appear (e.g., cough and shortness of breath), the worker is sent to the doctor as mandatory.</li> </ul>
	- Conduct third party meetings through teleconference
	- Operate as parcel delivery point
	- Requirements for new employees
	Strictly examine new employees. Screen the medical history and require a medical certificate. Arrange a room separate from current employees. Daily follow-up temperature checks for 14 days.



Figure 1- The monitoring of preventive measures for COVID-19

**VI. GENDER AND VULNERABLE GROUPS**

EBM does not have a gender policy but it implements the code of conduct of the members of the BSR consortium (Table 12). The code is based on respect of human rights including the right to human dignity. BTS also aligns its policy to international standards based on the UN Framework for Business and Human Rights and OECD Guidelines for Multinational Enterprise. Its code of

conduct also covers people with disability. All the three consortium members applies its non-discrimination policy and gender equality to employees and clients. Although only BTS has specific policy for the disabled, the code of conduct of the other two members has provisions requiring them to comply with existing laws and regulations. These regulations include the 2017 Constitution of Thailand, 2015 Gender Equality Act and 2007 Persons with Disabilities' Quality of Life Promotion Act. The Constitution declares that men and women shall enjoy equal rights and prohibits unjust discrimination against a person based on origin, race, language, sex, age, disability, physical or health condition, personal status, economic and social standing, religious belief, education, or political view which is not contrary to the provisions of the Constitution, or on any other grounds (Section 27). The Gender Equality Act requires women's participation in decision-making process and development activities (Section 17). The Persons with Disabilities' Quality of Life Promotion Act is a comprehensive rights-based law for persons with disabilities and contains an anti-discrimination component.

**Table 12** Policy of BSR Consortium Members on Gender and Vulnerable Groups

BSR Consortium Member	Policy
BTS	<p>BTS Group values respect for human rights, taking into account the equality and parity considerations and without discriminating on grounds of race, religious belief, gender, marital status, physical ability, educational institution, position, or other status irrelevant to the work performance, and the Group also respects individualism and human dignity in line with the international norms and standards, such as policies and guidelines on sustainable management of human resource that offer protection of human rights and labor rights based on the UN's "Protect, Respect and Remedy" Framework for Business and Human Rights 2011 and the framework under the OECD Guidelines for Multinational Enterprises.</p> <p>BTS Group also takes into account equality considerations based on human rights principles in order not to discriminate against any person who receives the Group's services on grounds of his/her physical ability or health.</p>
STECON	<p>The Company must treat its personnel based on human rights and must not act in any way that violates those rights including the right to human dignity</p> <p>The Company must treat and provide services equally to all clients with kindness and hospitality</p>
RATCH	Executives should respect individual and human dignity
<p>Sources: BTS Group Holding Public Company Limited. 2011. Code of Conduct 27 May (updated 29 May 2017); Sino-Thai Engineering and Construction Public Company Limited. Undated. Code of Conduct; <a href="http://www.ratch.co.th/en/cg/conductthe-code-of-conduct">http://www.ratch.co.th/en/cg/conductthe-code-of-conduct</a></p>	

Women constitute 20% of the workforce in the Yellow Line project. The following measures are also implemented in the workers' camp to protect women: (i) enforcing workers' camp regulations that include protection against sexual harassment; (ii) allowing women in a committed relationship to room with their partners in the workers' camp and (iii) separating quarters of single women from

single men. In the work setting, women workers are assigned to less physically demanding tasks and provided with separate toilets in addition to pregnancy test as part of the medical examination. No case against the STECON or EBM has been brought to the Committee Consideration of Unfair Gender Discrimination created under the 2015 Gender Equality Act.

The Yellow Line design as presented in the EIA included features intended to provide women and vulnerable groups easier access to its facilities (Table 13 and 14). These features are still part of the final design which is being implemented. The final design also incorporates at the Park and Ride Facilities dedicated parking slots (2 per floor) for vulnerable people, their priority in the use of elevators and at least one dedicated toilet (with baby changing areas) as well as two priority seats in carriages. These features are EBM's commitment to ADB together with the adoption of a gender policy.<sup>3</sup>

**Table 13.** Gender-Sensitive Components of the Yellow Line Physical Design and Status

No	Gender-Sensitive Design Components	Status in the Design Being Implemented
1	Special toilets with floor area large enough to accommodate a baby carriage and wheelchair;	Space designed for wheelchair users only.
2	Elevator.	Elevators will be provided in all stations.
3	Wide entrance-exit gates to fit a baby carriage and a wheelchair	Wide gates will be installed for a baby carriage and a wheelchair access
4	Hardscape architecture	Being incorporated in the detail design
5	Special seats in Pink color for easy identification are allocated for women with a child, disabled and elderly	Different colored seats will be provided in all trains, with signage stickers indicating priority for Pregnant Women, Children, Disabled and elderly persons
6	Adequate lighting in all areas	Adequate lighting will be installed in all areas.
7	Clear visibility through wide and open corridors;	The design for all areas in the station will have clear visibility with wide and open corridors.
8	Cameras and alarm systems such as emergency buttons;	Security cameras will monitor all areas while Fire alarm systems with emergency buttons installed for the safety of passengers
9	Separate sanitation facilities for female and male users	Separate sanitation facilities provided for female and male users

Source: Report on Changes in Project Details in the EIA Reports on the Bangkok Mass Transit Pink Line Project: Lat Phrao-Samrong, combining the EIA Report for the MRT Pink Line Project (Ratchada-Lat Phrao-Phatthanakan) and the EIA Report for the MRT Dark Pink Line Project (Phatthanakan-Samrong); prepared by Asian Engineering

<sup>3</sup> EBM. 2018. Social Due Diligence Report. Proposed Loans Northern Bangkok Monorail Company Limited Eastern Bangkok Monorail Company Limited Bangkok Mass Rapid Transit Project (Pink and Yellow Lines) (Thailand) Bangkok. Mass Rapid Transit Yellow Line Project Part B Draft Supplemental Social Assessment. Project Number: 51274-001. May. [https://www.adb.org/sites/default/files/project-documents/51274/51274-001-sddr-en\\_2.pdf](https://www.adb.org/sites/default/files/project-documents/51274/51274-001-sddr-en_2.pdf)

**Table 14** Station and Train Components and Features for the Vulnerable Groups

No	Component	Feature for the Vulnerable	Status in the Design Being Implemented
1	Accessible Telephones	The telephones are placed at different heights useful to people of all height even children. Clearance and hand rail are provided for wheelchair users.	Space and system Provisional made in Station Detail Design and now under construction.
2	Accessible ATM	Clearance and hand rail are provided for wheelchair users	Space provided for future installation.
3	Ramp	Gently ascending ramps with hand railing are provided beside stairs for the wheelchair users and the elderly.	Ramps and Handrails at Building Entrances incorporated in Detailed Design and now under construction.
4	Special Toilet	One public toilet with floor area that can accommodate a wheel chair, baby carriage, a pregnant woman and a parent with small children. Handrail and a diaper changing station are also installed.	Incorporated in Detail Design according to MRTA requirements. Diaper changing station.
5	Interconnected walkway	Walkways will have wide corridors and barrier-free for safe movement of everybody including visually-impaired persons. Ramps will be provided for wheelchair users.	Incorporated in Detail Design and now under construction.
6	Tactile Floor Surface	Material for the floor surface will serve as tactile indicator to guide visually-impaired person on their location within the station.	Requirements under consideration according to Thai legal requirements.
7	Lift	Lift location will be accessible to all people. Call and control buttons are within reach of the disabled and wheelchair users and with Braille marking indicators. Tactile blocks are provided for visually impaired persons. Road level lifts will be at every station. Signboard is in front of every lift providing information on giving details on how to request the use of the lift.	Incorporated in Detail Design and now under construction.
8	Staircase	Reduced height of steps with several levels of handrails to be usable by children, hunchbacks and the elderly. Color strips will be provided in the steps to increase visibility. Braille indicators will be on handrails for information on number of steps.	'Easy Stair' according to Thai Law incorporated Design and under construction.
9	Special Entrance-Exit Gate	Large entrance-exit ticket-swiping gate will be provided for the wheelchair users, baby carriages, large persons and persons with large luggage	'Wide' type AFC Gates now in procurement.
10	Special Seats	Separate seats in clearly identifiable yellow color will be designated in each coach for pregnant women, disabled and elderly	Separate 'Priority' seats provided in all monorail cars.
11	Hardscape Architecture	Traffic medians and footpath will be hardscape for convenience of disabled people and people travelling with children and luggage.	Being incorporated in Detail Design.

12	Station Staff	Every station will have trained staff to do the following: (i) offer an arm to visually impaired person and guide the way; (ii) warn visually impaired person of change in walking path level; (iii) facilitate use of special entrance-exit gates; (iv) provide assistance in entering the train; (v) coordinate with staff in the destination station for passengers requiring assistance.	Level of assistance to be provided under consideration in Detailed Operating Plan.
13	Information Content and Media	Use of visual announcement through route and location maps, LCD monitors, diagrams and pictures understandable to the those with hearing and communication impairment and the uneducated. Rotating beacons will operate in the stations in case of emergency to alert those with hearing impairment.	Electronic Media Displays being incorporated the system design at all stations, also "Hearing Loop" at Ticket Offices for the hard of hearing other alarms under consideration.

Source: Report on Changes in Project Details in the EIA Reports on the Bangkok Mass Transit Yellow Line Project: Lat Phrao-Samrong, combining the EIA Report for the MRT Yellow Line Project (Ratchada-Lat Phrao-Phatthanakan) and the EIA Report for the MRT Dark Yellow Line Project (Phatthanakan-Samrong); prepared by Asian Engineering Consultants Co., Ltd; Hamburg-Consult GmbH; D2 Consult Asia Co., Ltd; Wisit Engineering Consultants Co., Ltd; Prime Street Advisory Co., Ltd. (Thailand); and, Enrich Consultant Co., Ltd; April 2016. Ch. 3, Sect. 3.12.

## VII. SOCIO-ECONOMIC STATUS AND PERCEPTION OF RESIDENTS ALONG THE ROUTE

The first socio-economic and perception survey was done in 2017 covering 500 households. The same survey has been done yearly ever since covering the same number of households with the most recent one in 2020 (Table 15). The result of the time-series survey shows minimal change in the characteristics of the respondents except in their source of information. Women have always been the majority of the respondents and those born in Bangkok have always constituted half of them. A fourth is a university graduate and except in the first survey, all consider themselves informed about the Yellow Line. But there is a drastic drop in the percentage of respondents who got their information from TV as well as from relatives and neighbors. Correspondingly, there is an increase among those who got their information from flyers, posters and billboards.

**Table 15** Characteristics of the Respondents for Households Surveyed Along the Yellow Line with Unaffected Assets (N=500)

Item	Percentage			
	2017	2018	2019	2020
Gender of Respondents				
Men	38.8	35.0	36.8	36.0
Women	61.2	65.0	63.2	64.0
Total	100.0	100.0	100.0	100.0
Position of Respondents in the Household				
Head	61.0	51.0	48.4	50.2
Spouse	23.0	32.4	35.6	33.8
Son or Daughter	7.2	8.2	9.2	8.4
Others	8.8	8.4	6.8	7.6
Total	100.0	100.0	100.0	100.0
Place of Birth of Respondents				

Item	Percentage			
	2017	2018	2019	2020
Bangkok Metropolis	56.0	51.0	52.8	50.6
Samut Prakan Province	12.0	12.0	13.2	14.2
Others	32.0	37.0	34.0	35.2
Total	100.0	100.0	100.0	100.0
Education of the Respondent				
Primary	21.4	32.8	34.8	28.8
Secondary	32.2	30.6	29.2	29.8
Vocational	17.6	10.4	15.0	16.2
University Graduate	26.0	24.2	19.6	23.6
Postgraduate	2.8	2.0	1.4	1.6
Total	100.0	100.0	100.0	100.0
Information About the Yellow Line				
Informed	90.6	100.0	100.0	100.0
Not informed	9.4	0	0	0
Total	100.0	100.0	100.0	100.0
Sources of information				
Project Staff	2.0	5.8	9.9	5.8
TV	35.9	26.9	23.3	25.2
Poster and billboard	3.6	24.4	29.3	28.8
Radio	0.2	0.6	0.3	0.3
Relatives and neighbors	35.3	19.3	12.2	15.8
Social media	13.3	8.8	10.9	9.9
Flyers	1.9	10.1	9.2	9.7
Website	4.5	3.1	4.4	3.7
Others (e.g., newspaper)	3.3	1.0	0.5	0.8
Total	100.0	100.0	100.0	100.0

Source: UEA. Household Survey. October-December 2017, 2018, 2019 and 2020.

The same minimal change is noted in the characteristics of the respondents' households except in tenure (Table 16). Trading and business are still the dominant occupations of the household head. The majority are earning between 20,000 THB to 40,000 THB per month and are users of commercial buildings. But there is a remarkable reduction of the percentage of the owners of the building they use and an increase of the percentage of renters.

**Table 16** Selected Characteristics Households with Unaffected Assets Along the Yellow Line (N=500)

Item	Percentage			
	2017	2018	2019	2020
Occupation of Household Head				
Private employee	14.6	14.0	14.8	17.2
Trader	41.6	46.4	42.0	43.4
Government employee	0.0	1.0	1.6	1.0
General services	0.0	7.0	8.4	6.4
Business owner	34.4	27.2	29.0	28.6
Others (Retired, Housewife, Unemployed)	9.4	4.4	4.2	3.4
Total	100.0	100.0	100.0	100.0
Distribution by Income Level (THB)				

5,000-10,000	0.4	2.4	1.0	1.4
10,001-20,000	11.4	27.0	28.8	22.6
20,001-30,000	29.4	33.6	35.0	35.8
30,001-40,000	19.4	17.6	18.0	23.0
40,001-50,000	16.6	9.8	8.4	8.4
50,000 and over	22.8	9.6	8.8	8.8
Total	100.0	100.0	100.0	100.0
Type of Structure Used				
Commercial Building	51.2	60.2	57.4	60.6
Town house	12.0	12.0	15.0	13.6
One-story house	10.2	9.0	8.4	8.2
Two-story house	17.4	13.4	14.6	12.8
Others (Shop house, Condominium, Office )	9.2	5.4	4.6	4.8
Total	100.0	100.0	100.0	100.0
Tenure of Structure Used				
Owned	61.6	57.6	55.6	52.6
Rented	36.0	42.4	44.4	47.4
Others	2.4	0	0	0
Total	100.0	100.0	100.0	100.0
Source: UEA October-December 2017 Household Survey and 2020 Survey				

Traffic jam as the top concern among the respondents did not change in the four survey events (Table 17). These are followed by noise and dust. But the percentage of respondents who were concerned about noise and dust drastically fell from more than half in 2017 to just 23.4% and 35.6% in 2020, respectively. The percentage of respondents who have other types of concerns such as vibration and traffic accidents also fell. For all concerns, the percentage of respondents who rated it as a high impact consistently fell as well through the years from the 2017 baseline (Table 18).

**Table 17** Percent of Respondents Who Consider Themselves Affected by Type of Project Impact: (N=500)

Impact	Percent of Respondents Who Consider Themselves Impacted by Construction Activities			
	2017	2018	2019	2020
Noise	53.6	6.8	30.4	23.4
Dust	52.2	8.0	37.6	35.6
Vibration	33.6	6.4	18.0	12.2
Garbage	37.0	4.8	19.6	5.4
Psychological impacts	10.8	3.8	19.6	7.0
Traffic jam	75.6	71.0	83.0	67.6
Traffic accident	26.2	0.8	5.6	5.0
Crime and drugs	6.0	0.4	2.4	0.2
Power outage	7.0	0.6	9.0	5.6
Other	25.4	4.0	12.8	3.0
Mean	33.6	4.8	19.6	7.0
Source: UEA October-December 2017 Household Survey and 2019 Survey				

**Table 18** Percent of Respondents Who Consider Themselves Impacted and Rate the Impact as High: (N=500)

Impact	Percent of Respondents Rated Impact as High			
	2017	2018	2019	2020
Noise	50.7	9.6	9.2	4.4
Dust	48.7	11.0	9.6	17.2
Vibration	33.3	5.0	7.0	1.4
Garbage	17.8	3.2	7.8	0.6
Psychological impacts	14.8	5.6	5.0	4.0
Traffic jam	73.8	9.0	31.0	53.8
Traffic accident	29.0	1.4	2.2	1.0
Crime and drugs	20.0	0.6	0.0	0.2
Power outage	20.0	4.8	1.6	1.6
Other	22.1	1.8	3.6	1.0
Mean	29.0	5.0	7.0	1.6

Source: UEA October-December 2017 Household Survey and 2019 Survey

The percentage of respondents who are expecting benefits from the project has been consistently high except in 2018 (Table 19). This pattern prevails in all types of expected benefit. But while in 2017, more convenient and faster travel time was clearly considered the top benefit, the appreciation of the respondents of the other expected benefits rose to a higher level in 2020. The 2020 survey shows that percentage of respondents that mentioned each benefit of the Yellow Line does not largely varies by type of benefit. However, there was a change in the preference of respondents based on the percentage who rated each expected benefit as high. While more convenient and faster travel time still obtained the highest percentage of high rating, those who rated high on five other benefits significantly dropped (Table 20). These benefits include reduced traffic jam and travel cost as well as improvement of urban environment and quality of life.

**Table 19** Percentage of Respondents Expecting Benefits from the Operation of Yellow Line Project: (N=500)

Expected Benefit	Percentage of Respondents Expecting Benefit			
	2017	2018	2019	2020
More convenient, faster on-time travel	94.8	76.0	99.8	89.2
Reduced traffic jam	90.6	37.6	91.0	88.2
Reduced travel cost	84.4	24.2	93.0	87.2
Improves urban environment and quality of life	73.4	41.2	95.0	89.0
Reduced travel stress	72.6	52.6	98.0	89.0
Reduced pollution	69.2	42.0	99.0	89.4
Expand and decentralize development	72.8	58.4	97.2	89.2
Solve traffic sustainably	82.2	29.2	90.8	88.2
Improved economy	78.8	33.6	91.2	88.8
Reduced accidents	76.4	34.0	87.4	88.0
Mean	78.8	41.2	95.0	89.0

Source: UEA October-December 2017 Household Survey and 2019 Survey

**Table 20** Percentage of Respondents Who Rated Expected Benefits from the Operation of Yellow Line Project as High: 2017 and 2019 (N=500)

Expected Benefit	Percentage of Respondents Expecting Benefit			
	2017	2018	2019	2020
More convenient, faster on-time travel	79.1	21.2	82.0	77.6
Reduced traffic jam	55.8	39.6	40.2	47.4
Reduced travel cost	49.3	56.0	42.0	32.4
Improves urban environment and quality of life	61.0	49.6	37.4	50.4
Reduced travel stress	45.5	39.2	48.6	53.2
Reduced pollution	43.9	50.8	37.8	60.6
Expand and decentralize development	57.1	34.4	56.8	60.4
Solve traffic sustainably	53.3	43.8	25.0	33.4
Improved economy	56.6	47.8	25.0	41.2
Reduced accidents	50.8	42.4	49.6	40.0
Mean	55.8	43.8	42.0	50.4

Source: UEA October-December 2017 Household Survey and 2020 Survey

## VIII. DEVELOPMENT EFFECTIVENESS

This report also provides information on project performance in achieving several development indicators. (Appendix 1). While some indicators will be obtained when the project becomes operational (development indicators 1-5). Other development indicators have also been covered in several portions of this Report including those on the construction status, labor and gender. In one indicator, it is noted that since the start of the construction period until December 2020, the amount of goods and services produced locally in Thailand that the EBM has purchased is estimated to be worth 27,587.42 million THB.

## IX. OUTSTANDING ISSUES AND CORRECTIVE ACTIONS

Except for the three active complaints, the Yellow Line has no identified outstanding issue in land acquisition, stakeholder engagement, labor management, gender and vulnerable groups consideration, community health and safety. The three complaints are in the grievance mechanism process and these are expected to be resolved to the satisfaction of the complainants.

**APPENDIX I**

**FORM OF THE DEVELOPMENT EFFECTIVENESS MONITORING REPORT**

<b>Project name</b>	Northern Bangkok Monorail Company Limited Eastern Bangkok Monorail Company Limited Bangkok Mass Rapid Transit Project (Yellow Line)
<b>ADB Project ID</b>	THA 51274-001
<b>Year of approval</b>	2018
<b>Signed Amount (US\$)</b>	USD159 million
<b>Reporting period:</b>	<b>From: July 2018 to December 2020</b>
<b>PSOD Staff/Division</b>	PSOD - Infrastructure Finance Division 2
<b>Borrower Contact</b>	<p>Terence Kong Chi Keung            Director/ Deputy Chief Executive Officer            terence@btsgroup.co.th            Tel: +66 2273 8611-5</p> <p>Visuth Udompitisub            Deputy Chief Financial Officer            visuthu@bts.co.th            Tel: +66 2617 7300</p>
<b>DEVELOPMENT INDICATORS</b>	<b>Performance during current reporting period</b>
1. Average passenger trips per day at MRT Pink Line	Annual average during the reporting period (if not yet operational: 0) 0
2. Average passenger trips per day at MRT Yellow Line	Annual average during the reporting period (if not yet operational: 0) 0
3. Average train-km per day at MRT Pink Line	Annual average during the reporting period (if not yet operational: 0) 0
4. Average train-km per day at MRT Yellow Line	Annual average during the reporting period (if not yet operational: 0) 0

<p>5. Amount of greenhouse gas emissions avoided in tons of carbon dioxide equivalent per year</p>	<p>Avoided GHG emissions in tCO<sub>2</sub>e / year = average trains-km per day x 2.258 tCO<sub>2</sub>e /train-km per day</p> <p>(5) = {(3) + (4)} * 2.258 tCO<sub>2</sub>e /train-km per day <sup>4</sup></p> <p>n/a</p>
<p>6. Construction progress of the Pink Line</p>	<p>The construction of the Pink Line started in March 2018. The commercial operation date is slated on 2022. In December 2020, the actual civil works progress was 67.75% which was 0.43% behind schedule. The delay was a result of the following factors: (i) extended time used to transfer of water and electricity lines; (ii) deferment in the handover of acquired land; (iii) adjustment made in the location and design of PK01 and 26; and (iv) subsequent preparation and processing of the EIA made for the adjustment in PK01 and 26.</p>
<p>7. Construction progress of the Yellow Line</p>	<p>The construction of the Yellow Line started in March 2018. The commercial operation date is slated on 2022. In December 2020, the actual civil works progress was 70.54% which was 1.74% behind schedule. The delay was a result of the extended time used to transfer of water and electricity lines and handover of acquired land.</p>
<p>8. Number of full-time* jobs generated in relation to the project</p>	<p><u>Jobs generated in relation to the construction of the project</u></p> <p>Number of FTE jobs: 4,406</p> <p>Number of FTE jobs provided to women: 883</p>
<p>9. Local purchase of goods and services amounts during construction*(for the reporting period)</p>	<p>EBM paid totally THB 27,587.42 million to contractors and suppliers from 31 July 2018 to 31 December 2020. Detail of payments were as follows;</p> <ol style="list-style-type: none"> <li>1. Construction Contract (Civil works) THB 14,617.93 million</li> <li>2. Guideway Structure Contract THB 2,165.34 million</li> <li>3. Supply Contract (M&amp;E Works) THB 8,102.96 million</li> </ol> <p>- On-Shore THB 2,015.08 million</p>

<sup>4</sup> This is a simplified calculation based on the result of the ex-ante calculation and may be revised, e. g. during ADB's ex-post evaluation.

	<ul style="list-style-type: none"> <li>- Off-Shore EUR 157.62 million</li> <li>4. Supply of Automatic Fare Collection and Controlled Access Security Systems Contract THB 166.33 million</li> <li>5. Project Manager Contract THB 222.11 million</li> <li>6. Consultant Fee Contract – MRTA THB 706.31 million</li> <li>7. Lender Technical Advisor Contract THB 11.56 million</li> <li>8. Financial costs THB 1,568.37 million</li> <li>9. Other Expenses THB 25.81 million</li> <li>10. Corporate Tax THB 0.69 million</li> </ul>
10. For multi-storey car parks at the new stations of the Yellow or Pink line: average N° of parking slots per level dedicated for women (especially expectant mothers), children, persons with disability or the elderly	<b>For Yellow and Pink Line:</b> The final design for the Park and Ride Facilities incorporates dedicated parking slots (2 per floor) for vulnerable people.
11. For park and ride facilities at the new stations of the Yellow or Pink line: toilets	Final design incorporates the following - special toilets with floor area large enough to accommodate a wheelchair, provision of diaper changing station, wide gates will be installed for a baby carriage and a wheelchair access, separate sanitation facilities provided for female and male users.
12. For new stations of the Yellow or Pink line: adequate security, lighting and elevators	Elevators as designed will be provided in all stations and location will be accessible to all people with different features to cater to disabled and wheelchair users and visually impaired passengers, Security cameras will monitor all areas while Fire alarm systems with emergency buttons installed for the safety of passengers.
13. Dedicated seats for women (especially expectant mothers), children, persons with disability or the elderly	Different colored seats will be provided in all trains, with signage stickers indicating priority for pregnant women, children, disabled and elderly persons. There are 60 seats per train (4 cars).
14. Gender and diversity policy	EBM does not have a gender policy but it implements the code of conduct of the members of the BSR consortium. The code is based on respect of human rights including the right to human dignity. BTS also aligns its policy to international standards based on the UN Framework for Business and Human Rights and OECD Guidelines for Multinational Enterprise. Its code of conduct also covers people with disability. All the three consortium members applies its non-discrimination policy and gender equality

	<p>to employees and clients. Although only BTS has specific policy for the disabled, the code of conduct of the other two members has provisions requiring them to comply with existing laws and regulations. These regulations include the 2017 Constitution of Thailand, 2015 Gender Equality Act and 2007 Persons with Disabilities' Quality of Life Promotion Act.<sup>5</sup></p> <p>The Yellow and Pink Line design as presented in the EIA included features intended to provide women and vulnerable groups easier access to its facilities and these features are still part of the final design which is being implemented and are EBM's and NBM's commitment to ADB together with the adoption of a gender policy.<sup>6</sup></p>
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**\*Explanatory Notes**

<b>Terms</b>	<b>Definitions</b>
Reporting Period:	Annually
Currency/Exchange Rate	Please provide data in local currency and US dollars using the average exchange rate of local currency to US dollars over the current reporting period.
Full time equivalent (FTE)	Number of full-time equivalent employees of the company / project during the reporting period. This includes directly hired individuals and individuals hired through third party agencies as long as those individuals provide on-site services related to the project. Part-time jobs are converted to full-time equivalent jobs on a pro rata basis, based on local definition (e.g., if working week equals 40 hours, a 24 hr/week job would be equal to 0.6 FTE job). Seasonal or short-term jobs are pro-rated on the basis of the portion of the reporting period that was worked (e.g., a full-time position for three months would be equal to a 0.25 FTE job if the reporting period is one year). If the information is not available, the rule-of-thumb is two part-time jobs equal a full-time job.

<sup>5</sup> The Constitution declares that men and women shall enjoy equal rights and prohibits unjust discrimination against a person based on origin, race, language, sex, age, disability, physical or health condition, personal status, economic and social standing, religious belief, education, or political view which is not contrary to the provisions of the Constitution, or on any other grounds (Section 27). The Gender Equality Act requires women's participation in decision-making process and development activities (Section 17). The Persons with Disabilities' Quality of Life Promotion Act is a comprehensive rights-based law for persons with disabilities and contains an anti-discrimination component.

<sup>6</sup> EBM. 2018. Social Due Diligence Report. Proposed Loans Northern Bangkok Monorail Company Limited Eastern Bangkok Monorail Company Limited Bangkok Mass Rapid Transit Project (Pink and Yellow Lines) (Thailand) Bangkok. Mass Rapid Transit Yellow Line Project Part B Draft Supplemental Social Assessment Project Number: 51274-001. May. [https://www.adb.org/sites/default/files/project-documents/51274/51274-001-sddr-en\\_2.pdf](https://www.adb.org/sites/default/files/project-documents/51274/51274-001-sddr-en_2.pdf)

local purchases of goods and services as a result of the project	Value of company's purchases of goods and services from domestic suppliers (including raw materials, security, gardening, cleaning and marketing & research from local companies) during the reporting pe

*Please ensure that any deviations from the above definitions or any unusual aspects of the data are explained*