

Draft Social Due Diligence Report

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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

Prepared for BSR Joint Venture, Eastern Bangkok Monorail Company Limited and the Asian Development Bank.

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Executive Summary

Introduction

The Asian Development Bank (ADB) has policies and requirements requiring all projects undergo a poverty and social analysis. Project impacts on social dimensions, including gender, labor, social risks among the vulnerable groups and information disclosure, need to be identified and managed in projects which are being considered for financing. Specific non-safeguard ADB policies support the consideration of these social dimensions. Further, ADB Social Protection Strategy provides that ADB will ensure that its procurement of goods and services complies with the country's labor legislation and with the internationally recognized core labor standards under international conventions to which the Royal Government of Thailand have also signed. A supplemental social assessment was undertaken to cover these topics.

Updated Social Assessment

Socio-economic Baseline Information. The October-December 2017 survey covered 500 households with unaffected assets within 500-meter radius from the ROW and 35 households with affected assets. Its result shows that among the households with affected assets all the respondents live in the project area since birth. About 50% belong to middle range income groups earning about 20,000 to 40,000 baht and 40% belong to the high income earning groups earning more than 40,000 baht per month. Of significance is that very few (0.4%) of the respondents were receiving only the minimum wage of THB 300 per day or approximately THB 5,000 to THB 10,000 per month. No respondents reported being below the Thai national poverty line. The poverty line is defined by the World Bank as USD1.90 per day. Thailand's nationally defined poverty line is even below that at around THB 52 per day (THB 1,144 to THB 1,560 per month). In terms of the type and tenure of structures used by respondents affected by the Yellow Line Project, slightly more than one-half of the structures are commercial buildings (51.2%); and, most buildings are owned by their occupants (61.6%).

About 85.7% see themselves affected by traffic jam in the pre-construction phase and 75.6%, in the construction phase. Other significant impacts seen are noise and dust. Around 94.8% expect positive project benefits –more convenient, faster and on-time travel.

Vulnerability and Poverty Analysis. Thailand moved from a low-income country to an upper income country in 40 years. Its poverty incidence dropped from 67.0% in 1986 to 7.2% in 2015. It has also raised its overall living standards as seen in its gains in 16 Millennium Development Goal indicators. Thailand aims to eliminate remaining poverty and its strategy is contained in the Twelfth Economic and Social Development Plan (2017-2021). One strategy is to advance infrastructure and logistics with urban public transport as one component. This component is seen as essential for urban areas to effectively spread prosperity to the countryside. For Bangkok Metropolitan Region, the construction of MRT projects is the main activity. The achievement indicator is the increase of the proportion of passengers in the region using MRT system from 5% to 15% by 2021.

The Bangkok Metropolitan Region has 22.0% of the country's population but produces 44.2% of the GNP. With an average household income 52.3% higher than the national average, poverty incidence is minimal. But it is seen as the investment area for anti-poverty measure as the country's main hub. The quality of its infrastructure and the efficiency of its logistics dictate other-regions' access to its services and opportunities. This access filters down development benefits

that reduces poverty in a broader scale. Transportation is a main component in making this access possible because physical mobility is the single strongest factor that enables a person to escape poverty as identified in a large continuing study on upward mobility. Even if the poor are not MRT users, their income rises as indirect benefit due to increased efficiency of the urban system. The project's development benefits will not be confined to Bangkok Metropolitan Region or Thailand but in the neighboring countries as well where poverty rates are higher. The significant spill-over effect of these benefits is recognized in ADB's Country Partnership Strategy 2013-2016.

The rail system in Bangkok Metropolitan Region has 1.4 million ridership capturing 6% of the market. It is used by people of all income classes but more by the middle class. In the 2014 survey, only 60% of the low-income commuters chose it versus 78% of the middle-income class commuters. But with many poor households climbing out of poverty with the continuing rise of the Thai economy, the ranks of middle-class is fast growing and expanding the market for the rail system. The low-income household will likely benefit the most from the 1400 low-skilled work during project construction. Around 10 million baht a month will be paid out as wages for this work. During operation, a much-reduced number of low-skilled work is required

The universal design of the proposed rail system will enable everyone, including pregnant women, elderly, disabled people and the uneducated to use it with ease. Such design aims equitable usability of its facilities without the need of any adaptation from any user. Areas for mobility and personal use will be constructed for the comfortable use of persons with different physical shortcomings and impairment including those with visual disability. Information content and media are meant to serve even those with severe limitation in hearing. Station staff are on standby for those who need assistance to use of the facilities.

Gender Analysis. The 2017 Constitution of Thailand declares that men and women shall enjoy equal rights. This is echoed in the 2015 Gender Equality Act which prohibits any policy, procedures or project of public and private entity that unfairly discriminate a particular gender. Thailand's gender policies are compatible with ADB's Gender Policy requiring to consider gender issues in all aspects of ADB operations, accompanied by efforts to encourage women's participation in the decision-making process in development activities. Both Thai and ADB policies aim of making women's concern integral part of planning and implementing a project so that they benefit from it equally with the men and gender inequity is not perpetuated. These policies are also reflected in the code of conduct of the members of the BSR consortium where non-discrimination and gender equality of employees and clients are professed.

In various studies women expressed 4 key concerns in the use of the MRT. These are addressed in the project ensuring their access and use. The first concern is frequent off-work trips associated with household and caretaking responsibilities. The project has 19 stations where services important to women in meeting these responsibilities are close-by and will enable them to make off-work trips more efficiently and combine these with work-trips. The second concern is trips with children and elderly. The Park and Ride facility has at least one dedicated toilet with floor area large enough to accommodate a baby carriage and wheel chair. In the train coach, special seats are allocated for women with a child, disabled and elderly. The third concern is availability of women staff. In the current MRT practice, about half of the staff are women. The security force also include women personnel. The fourth concern is safety from sexual harassment. The project's features that discourage this behavior include adequate lighting in all areas, cameras and alarm systems and security personnel on surveillance platforms and on patrol. It will also conduct regular briefing sessions for female and male station staff on security-related issues.

Project construction and operation have health impacts affecting women living or travelling along the project route. These are from increased particulates, noise vibration, standing water and chance of accidents during construction. But the risk of these impacts is rated low or moderate. During operation, except for noise, all of these impacts will either cease or downgrade to low risk. The project benefits of women will be in its ridership and livelihood of very poor women. There are more women than men commuters in Bangkok's business districts. In 2014, around 70% of men and women respectively chose the rail for commuting. With a 50/50 ridership among men and women, the project's maximum capacity of 44,000 persons per hour per direction means the inclusion of 22,000 women. In the informal sector, the poor women who will directly benefit from the project are the mobile vendors. Most of them are from the country's poorest regions and vending is a way to get out of poverty through entrepreneurship. Train stations in Bangkok are strategic vending locations and the project will provide 30 of these. The participation of women in the project's decision-making is seen in their membership in the board and top management of BSR consortium companies. In the board, they compose 15% of the RATCH, 7% of BTS and 8% of STECON. In the top management, they compose 45% of RATCH, 18% of BTS and 19% of STECON.

The Project will also implement the following measures: (i) maintain high level of cleanliness and functionality due to their influence on users' perception of security and degree of acceptance of crime or misconduct; (ii) train security personnel, drivers and conductors on women's security and safety issues and gender-sensitive emergency assistance; (iii) conduct regular briefing sessions for female and male station staff on security-related issues including violence against women; and (iv) prepare and input to decision-making incident reports on sexual harassment.

Labor and Working Conditions. The project will impact the labor market in three ways: (i) increased deficit of construction workers in Thailand which is in full employment; (ii) employment of the surplus labor in Greater Mekong Area (GMS) particularly Cambodia, Laos and Myanmar; and poverty reduction in remittance-recipient households.

The four core labor standards are as follows: (i) freedom of association and right to collective bargaining; (ii) elimination of all forms of forced and compulsory labor; (iii) abolition of child labor; and (iv) elimination of discrimination in employment and occupation. The Thai Government ratified six of the eight International Labor Organization (ILO) fundamental conventions upholding these standards. These standards are confirmed in Thai laws including in the 2017 Constitution, Civil and Commercial Code, 1998 Labor Protection Act and its 2008 Amendments and 2015 Gender Equality Act 2015. Three laws strengthen the legal framework on child and forced labor: (i) Penal Code; (ii) Anti Trafficking of Persons Act; and (iii) Child Protection Act. The Thai Government's effort to enforce its labor laws has been increasing as seen in higher funding, number of labor inspection and number of criminal investigations between 2015 and 2016. The code of conduct of the three BSR consortium members requires compliance to these laws and respect of human rights and dignity. There is no accessible evidence indicating that any of them violated the core labor standards.

The settlement of labor cases follows the procedure set in the 1975 Labor Relations Act. A worker can file a case against an employer for any violation of the provision of the labor laws using a five-step process: (i) negotiation between worker and employer; (ii) mediation by a Conciliation Officer; (iii) arbitration by one or more arbiters; (iv) filing the case in the Labor Relations Committee; and (v) filing the labor case in court.

The project's use of migrant construction workers has its risks but these will be mitigated by the existing government measures and specific project measures. Against human trafficking and labor exploitation, the government measures are as follows: (i) enforcement of the 2017 Managing the Work of Aliens Law.; (ii) operation of Post-Arrival and Reintegration Centers; (iii) increased resources allocated to labor inspection and capacity building of inspectors; (iv) government-industry group coordination on enforcement. For the spread of communicable diseases, the more significant measures are as follows; (i) free and accessible testing; (iii) 100% condom-use program; (iv) working with 168 civil society organization; and (v) surveillance system. On the part of the project, the following measures will be taken: (i) MRTA's appointment of Environmental Compliance Monitoring and Supervision Committee; (ii) conduct of periodic and random inspection; (iii) third party preparation of an environmental compliance report; (iv) full compliance to Thai laws on labor and use of migrant workers; (v) application of BSR member's code of conduct among its contractors; (vi) regular medical screening of workers; (vii) orientation of worker's on internal rules; (viii) installation of infirmary in work site; and (ix) operation of MRT's complaints service and BTS's customer service. BSR will report regularly to ADB on (i) its and its contractors' compliance with labor laws and (ii) the measures taken to comply with internationally recognized core labor standards.

Stakeholder Engagement

The Yellow Line Project has five direct stakeholder groups: commuters, property users, business operators along the route, private service providers (hospitals, schools and temples) and government offices along the route. The property users are divided into two: households with expropriated assets and those with unaffected properties. In the long-term, all the stakeholder groups, except the households who will lose all their lands or structure and will move out far from their present location, will benefit from the project's provision of easier point-to-point access. The property owners with unaffected properties and those with affected properties but will stay in the area along the route will gain from increased property value. But in the short-term, they will bear the brunt of construction impacts.

The information disclosure and consultation activities were conducted between June and September 2012 as part of the EIA preparation. Information was disclosed in TV, radio, print media, leaflets, brochures, video, exhibition boards and a dedicated website. Within the same period, four large consultation meetings were held with the communities along the route. The other stakeholder groups consulted were local government officials, business operators and private service providers. Four multi-stakeholder assemblies were held with 300 participants attending each consultation meeting. Seven social concerns were raised in the consultations: (i) need for more public information; (ii) land acquisition; (iii) need to consult with households with affected property; (iv) construction impact on structures; (v) traffic generation; (vi) space and ventilation of the stations; and (vii) provision of emergency procedures.

After the EIA preparation and its amendment in 2016, MRTA and MOT continues to disclose information through conventional and social media including the Yellow Line website and Facebook page. For the affected households the following information disclosure activities are done: (i) posting of royal decree and property price appraisal results in public places; (ii) written notice to owners and renters for site inspection, compensation contract, availability and deposit of compensation, appeal process, requirement to vacate the property and appeal decision in case of complaint; and (iii) public disclosure of minutes of the meeting of Compensation Committee. Consultations on affected assets have been conducted in the neighborhood and household level. With the affected households, consultations and exchange of information with MRTA are a continuous process.

Social Measures in the Environmental Management Plan

EIA Measures: The EIA has the following social measures during project construction: (i) inform the local authorities 30 days before work starts; (ii) regulate strictly workers' behavior; (iii) operate Information and Complaints Center and address complaints within three days; (iv) carry out construction activities watchful of potential damage; (v) use multi-media notification seven days before traffic route modification; (vi) provide personnel for security and traffic management; (viii) require that 70% of workers are domiciled in Bangkok and vicinity for more than five years; (ix) engage the complainant in grievance resolution; (x) meet local communities and conduct monthly public hearing; and (xi) participate in community activities and provide community and household assistance. For the operation phase, the EIA recommends special restoration assistance to small business establishments affected by expropriation apart from the compensation.

Gender and Development Measures: ADB's Policy on Gender and Development (1998) encourages Projects to commit to implement measures to promote gender equality and/or women's empowerment. Specific gender features have been integrated in the design of train coaches and stations such as mobility, safety, and security facilities and services for the physically challenged, elderly, women especially expectant mothers, and children.

In their code of conduct, the three BSR consortium members, profess adherence to non-discrimination and compliance to existing laws. The 1998 Labor Protection Act and its amendment in 2008 prohibits employers to require women perform dangerous tasks and restricts their employment in night shift. It protects pregnant women by prohibiting employers to require them to do physically demanding work and work overtime or in night shift subject to certain conditions. The law also entitles pregnant women to 90-day leave, right to request for a change of type work and full protection from termination. For non-compliance, the employee can resort to labor grievance mechanism. Non-labor related cases, can be brought to the Committee Consideration of Unfair Gender Discrimination created under the 2015 Gender Equality Act.

The following measures will be adopted by the Project: (i) improved mobility of expectant mothers, elderly and persons with disability by providing dedicated parking slots (2 per floor) at the Park and Ride facilities; priority use of elevators and at least 2 priority seats in carriages; at least one dedicated toilet (with baby changing areas) in the Park and Ride facilities; and (ii) adoption of a gender equality policy by EBM.

Measures to Ensure Adherence to Core Labor Standards: Compliance to core labor standards is enforced through the labor inspection system under the Department of Labor Protection and Welfare (DLPW). It combines two methods of inspection: self-assessment of enterprises and site visit. To tap existing corporate governance in enforcing compliance, the Thai Labor Standards Program is operational since in 2003 as a voluntary compliance scheme for large enterprises focusing on Thai Corporate Social Responsibility Requirements, which is used as a system of certification of enterprises. The DLPW has also four preventive measures to enhance compliance: (i) issuance of plain-language compliance guideline for construction sector and training of labor inspectors and enterprise representatives on its application; (ii) distribution of information materials on worker's rights in different languages to cover migrant workers; (iii) operation of a network of NGOs to provide information to workers and enterprises on better ways to comply with labor standards; (iv) consultation with communities and participation in their activities to spread to information on worker's rights.

Institutional Arrangements

As the project owner, MRTA exercises oversight responsibility to ensure compliance on implementing social measures. It involves monitoring of its construction and management consultant and the concessionaire. PCYL is the construction management and supervision consultant of the MRTA and BSR Joint Venture is the concessionaire. MRTA will monitor the concessionaire through an Environmental Compliance Monitoring and Supervision Committee. UAE will be working with this committee as MRTA's environmental and social auditor.

The concessionaire will supervise the contractors who, in turn, will supervise the sub-contractors. At the level of the contractors and sub-contractors, each is required to have a safety officer, personnel and working unit to operate the safety in establishment according to criteria, methods and terms as prescribed by law. The law also provides that the main contractor and the sub-contractor are obliged to carry out an operation on occupational safety, health and environment in the same as the concessionaire does.

Monitoring and Reporting

The Environmental Compliance Monitoring and Supervision Committee will monitor the environmental performance of the project through the conduct of monthly monitoring and inspection and random night inspection by its representative. The monthly monitoring inspection will be done with officers of local agencies and representative of consulting firms. The committee will conduct inspection as deemed necessary. The committee representative will prepare an inspection report on the result of its monthly inspection. The report containing issues and recommended corrective actions will be submitted to the committee. He will also inform the concessionaire of the issues to be corrected, the deadline to implement the corrective actions and the follow-up inspection.

The concessionaire has engaged UAE to undertake third party monitoring. As required in the EMP, UAE prepares monthly environmental compliance reports following ONEP guidelines and submits it to MRTA. UAE also prepares a report every six months for submission to ONEP. The MRTA will receive the bi-annual report every 15th of January and 15th of July to be transmitted to ONEP.

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Chapter 1 Introduction

1.1 Due Diligence on the Social Aspects of the EIA

1. The Amended EIA deals with the social aspects in its four main sections: (i) existing environmental conditions, (ii) environmental impact assessment; (iii) environmental impact prevention and mitigation measures; and (iv) environmental monitoring action plan.¹ In the first section, the EIA presents only the estimate of the land area to be expropriated and number of structures to be affected as well the estimate of their value. The second section states that displacement will result from expropriation and anxiety among displaced persons over the loss of their productive assets and relocation to new area.

2. In the third section which deals with mitigation of non-resettlement impacts. For the construction phase, the potential impacts identified are as follows: (i) nuisance to local communities and pedestrians; (ii) trouble resulting from workers' behavior; (ii) damage to life and properties of local people due construction activities; (iii) blocking of traffic due to construction activities; and (iv) blocking of egress and ingress points of establishments along the route.

3. In the fourth section, the socioeconomic monitoring action plan is presented. The methodology is a socio-economic survey in the pre-construction, construction and operation phase. Using a questionnaire, 500 households living within the 500-meter radius from the ROW will be surveyed. The survey for the preconstruction phase will be done one month before the start of the construction phase. There will be twice a year survey in the construction phase and once a year in the operation phase. The MRTA will be the responsible agency.

1.2 Policy Context

4. The Asian Development Bank (ADB) has policies and requirements requiring all projects undergo a poverty and social analysis. Project impacts on social dimensions, including gender, labor, social risks among the vulnerable groups and information disclosure, need to be identified and managed in projects which are being considered for financing. Specific non-safeguard ADB policies support the consideration of these social dimensions. Further, ADB Social Protection Strategy provides that ADB will ensure that its procurement of goods and services complies with the country's labor legislation and with the internationally recognized core labor standards under international conventions to which the Royal Government of Thailand have also signed. A supplemental social assessment was undertaken to cover these topics.

5. The key social dimensions, supported by specific ADB policies or strategies, include (i) participation;(ii) gender and development; (iii) social safeguards; and (iv) management of social risks, especially among vulnerable groups.²

6. ADB operations incorporate social dimensions to ensure the following social development outcomes, especially for the poor, vulnerable, and excluded groups: (i) policies and institutions that recognize and promote greater inclusiveness and equity in access to services, resources, and opportunities; (ii) greater empowerment to participate in social, economic, and political life;

¹ : Team Consulting Engineering and Management Co Ltd. 2015. Amendment Environmental Impact Assessment Report. The Pink Line MRT Project Khae Rai-Min Buri. Bangkok

² ADB. 2010. Operations Manual Bank Policies (BP). Incorporation of Social Dimensions into ADB Operation. OM Section C3/BP. 6 December

and (iii) a greater sense of security and ability to manage risks.³ The specific non-safeguard ADB policies that support key social dimensions are as follows:

- **Gender and Development Policy:** ADB's Gender Policy adopts mainstreaming as a key strategy in promoting gender equity.⁴ One key element of this strategy is to consider gender issues in all aspects of ADB operations, accompanied by efforts to encourage women's participation in the decision-making process in development activities.⁵ It recommends that gender disparities be directly addressed through project design with specific gender features and delivers gender equality benefits such as improved access to infrastructure.⁶ ADB follows a four-tier gender categorization system for its projects. Depending on the extent to which gender issues are integrated in the project design, projects may be assigned one of the following categories: (i) gender equity theme (GEN), (ii) effective gender mainstreaming (EGM), (iii) some gender elements (SGE) and (iv) no gender elements (NGE).⁷
- **ADB Social Protection Strategy:** One of the issues identified in the ADB Social Protection Strategy Action Plan that must be addressed is the need to promote good social protection practices.⁸ To address this issue, ADB will take all necessary and appropriate steps to ensure that ADB-financed procurement of goods and services, contractors, subcontractors, and consultants will comply with the country's labor legislation and as well as with the Core Labor Standards.⁹
- **ADB Policies on Information Disclosure and Stakeholders' Participation:** As part of its Public Communications Policy, ADB recognizes the right of people to seek, receive and impart information and ideas about ADB-assisted activities.¹⁰ The rationale of this policy is that the views of stakeholders are needed for ADB-assisted activities to meet demands and be effective. This rationale complements ADB Safeguard Policy Statement which considers consultation and participation central to the achievement of safeguard policies objectives.¹¹

1.3 Methodology

7. The data used to prepare the supplementary social assessment are obtained from secondary sources. Apart from the Amended EIA, reports and studies are mined from the

³ ADB. 2010. Operations Manual Bank Policies (BP). Incorporation of Social Dimensions into ADB Operation. OM Section C3/BP. 6 December

⁴ ADB.2003. Gender and Development. June

⁵ The other elements are gender sensitivity, gender analysis, gender planning and agenda setting. ADB.2003. Gender and Development. June

⁶ ADB. 2010. Operations Manual Bank Policies. Gender and Development in ADB Operations. OM Section C3/BP. 6 December. Paragraph 4.

⁷ Key requirements of each gender category include: (i) GEN - Project outcome directly addresses gender equality and/or women empowerment by narrowing gender disparities; (ii) EGM - Gender design features in majority of project outputs with at least three features in each output, and DMF should have at least one target/indicator in more than 50% or project outputs; and (iii) SGE - Ideally two proactive gender features in the DMF. The detailed definitions and requirements are presented in the Guidelines for Gender Mainstreaming Categories of ADB Projects at <http://www.adb.org/sites/default/files/guidelines-gender-mainstreaming-categories-adb-projects.pdf>.

⁸ The other issue is ADB's intervention negative effect on vulnerable groups. ADB. 2001. Social Protection Framework Policies and Strategies. Manila. Appendix 1

⁹ ADB. 2001. Social Protection Framework Policies and Strategies. Manila. Appendix 1

¹⁰ ADB. 2011. Public Communications Policy. Manila. Paragraph 30

¹¹ ADB. 2009. Safeguard Policy Statement. June. Paragraph 32

internet.¹² These reports include the 2016 annual reports to the stockholders of BTS, STECON and RATCH, census reports of the Thailand National Statistics Office, investment fund information memorandum and news reports. The studies are articles published independently and in academic journals, studies made for academic degree and market studies.

¹² : Team Consulting Engineering and Management Co Ltd. 2015. Amendment Environmental Impact Assessment Report. The Pink Line MRT Project Khae Rai-Min Buri. Bangkok

Chapter 2 Updated Social Assessment

2.1 Socio-economic Baseline Information

2.1.1 Profile of the Affected Households

8. The EIA does not provide the socioeconomic information of the affected households. This information gap is filled up by the result of supplementary socioeconomic survey done on October-December 2017. The survey covered 35 households with affected assets and 500 households living along the Yellow Line route but whose assets are not affected.

2.1.2 Households With Affected Assets

9. The respondents for the households with affected assets are almost equally divided between men and women (Table 1), male (51.4%) and female (48.6%). Most of the subjects were born in Bangkok (65.7%), Samut Prakan (11.4%), and moved from elsewhere (22.9%). Most of the subjects had incomes of more than 50,000 baht per month (60.0%), followed by a mean income of 20,001 – 30,000 baht per month (14.3%), a mean income of 40,001 – 50,000 baht per month (11.4%), a mean income of 30,001 – 40,000 baht per month (8.6%) and a mean income of 10,001 – 20,000 baht per month (5.7%), respectively. (Table 2). This means that no household is living below the 2015 poverty line of 2,644 THB per month.

10. The structure affected for 51.4% is commercial in use. For 37.1%, it is rented rooms, tenements, and shops; and, 11.5% are 2-storey houses. Around 65.7% own the structure while 34.3% are renters. Most of the buildings/structures had relocated because the expropriations were complete relocations (51.4%), while the remainder (48.6%) were partial relocations.

11. Among the sources of information on the Yellow Line, the respondents mentioned the television and friends and neighbors 70% of the time. The other sources of information mentioned, albeit, at less frequency are social media and MRTA sources. Around 80% reported to have received information on land acquisition procedures directly from MRTA staff. The rest may not have received yet as land acquisition was on-going during the survey.

2.1.3 Households With Unaffected Assets

12. The respondents for the surveyed households with unaffected assets are 38.8% women (Table 2). Around 61.0% of the respondents are the household head. Those who were born in either Bangkok Metropolis or Samut Prakan compose 61.5 percent. The rest were from outside and migrated into their present area of residence. About 75.8% have more than elementary education. Some 26% have university diploma or even pursued post-graduate studies. Most are informed about the Yellow Line Project. Only 9.4% did not have any information. TV and word-of-mouth are the main information sources accounting for 35.9% and 35.3% of the sources mentioned.

13. Most of the households derive income from commerce (Table 3). Around 76% reported that the primary occupation of the household head is either as a trader or business owner. Their income is relatively high with 48.8% earning between 20,000-40,000 THB a month. Around 39.4% are earning over 40,000 THB a month. Only 0.4% are earning between 5000 to 10,000 THB a month. No one is below the country's 2015 poverty line of 2,644 THB a month.

**Table 1 Result of the Survey Among Households With Assets Affected by the Yellow Line
(N=35)**

Item	Percentage
Gender of Respondents	
Men	51.4
Women	48.6
Total	100.0
Place of Birth of Respondents	
Bangkok Metropolis	65.7
Nonthaburi Province	11.4
Others	22.9
Total	100.0
Distribution by Income Level (THB)	Percentage
5,000-10,000	0
10,001-20,000	5.7
20,001-30,000	14.3
30,001-40,000	8.6
40,001-50,000	11.4
50,000 and over	60.0
Total	100.0
Type of Affected Structure	
Commercial Building	51.4
One-storey house	0
Two-storey house	11.5
Others (Shop house, Rented Property)	37.1
Total	100.0
Tenure of Structure	
Owned	65.7
Rented	34.3
Total	100.0
Severity of Damage to the Structure	Percentage
Total	51.4
Partial	48.6
Total	100.0
Source of Information on Yellow Line	Percentage
MRTA staff	0.0
Television	35.9
Relatives and neighbors	35.3
Social media	13.3
Others (e.g., MRTA website, notices, printed materials and Internet)	8.1
Total	100.0
Receipt of Information form MRTA on Land Acquisition Procedures	Percentage
Received information from MRTA	80
Did not receive information from MRTA	20
Total	100.00
Source: UAE October-December 2017 Household Survey	

Table 2 Characteristics of the Respondents for Households Surveyed Along the Yellow Line with Unaffected Assets (N=500)

Item	Percentage
Gender of Respondents	
Men	38.8
Women	61.2
Total	100.0
Position of Respondents in the Household	
Head	61.0
Spouse	23.0
Son or Daughter	7.2
Total	100.0
Place of Birth of Respondents	
Bangkok Metropolis	56.0
Samut Prakan Province	6.5
Others	37.5
Total	100.0
Education of the Respondent	
Primary	21.4
Secondary	32.2
Vocational	17.6
University Graduate	26.0
Others (e.g., Postgraduate)	2.8
Total	100.0
Information About the Yellow Line	
Informed	90.6%
Not informed	9.4%
Total	100.0%
Sources of information	
TV	35.9
Poster and billboard	3.6
Relatives and neighbors	35.3
Social media	13.3
Website	4.5
Total	100.0

Source: UAE October-December 2017 Household Survey

14. Their level of income and source reflect the type structure they use along the Yellow Line route. Around 51.2% are users of commercial structure. The other 0.4 are using it as an office or for other income generating activity. Only 39.6% are using the structure primarily for residence. About 61.6% own the structures they use. The rest are renters.

**Table 3 Selected Characteristics Households with Unaffected Assets Along the Yellow Line
(N=500)**

Item	Percentage
Household Size	
1-3 members	No data available
4-7 members	
8-10 members	
Over than 10 members	
Total	
Occupation of Household Head	
Private employee	14.6
Trader	41.6
Business owner	34.4
Others (Retired, Housewife, Unemployed)	9.4
Total	100.0
Distribution by Income Level (THB)	
5,000-10,000	0.40
10,001-20,000	11.4
20,001-30,000	29.4
30,001-40,000	19.4
40,001-50,000	16.6
50,000 and over	22.8
Total	100.0
Type of Structure Used	
Commercial Building	51.2
Town house	12.0
One-storey house	10.2
Two-storey house	17.4
Others (Shop house, Office, Condominium)	9.2
Total	100.0
Tenure of Structure Used	
Owned	61.6
Rented	36.0
Others	2.4
Total	100.0

Source: UAE October-December 2017 Household Survey

2.1.4 Perceived Impacts

15. The 500 households with unaffected assets were also surveyed on their perceived project impacts. The survey result identifies these impacts and their intensity as seen by the respondents. Traffic is the top concern of the 500 households surveyed. Around 85.8% consider themselves affected by traffic jam during the pre-construction phase and 80.4% during the construction phase (Table 4). Among those who consider themselves affected by traffic jam, 81.4% said that they will be highly affected during pre-construction and 71.9% for the construction phase (Table 5). The other impacts which more than half of surveyed respondents consider to have an effect on them in the construction phase are noise and dust.

16. The 500 households with unaffected assets were also surveyed on their perceived project impacts. The survey result identifies these impacts and their intensity as seen by the respondents. Traffic is the top concern of the 500 households surveyed. Around 72.8% consider themselves affected by traffic jam during the pre-construction phase and 75.6% during the construction phase

(Table 4). Among those who consider themselves affected by traffic jam, 85.7% said that they will be highly affected during pre-construction and 73.8% for the construction phase (Table 5). The other impacts which more than half of surveyed respondents consider having an effect on them in the construction phase are noise and dust.

Table 4 Percent of Respondents Who Consider Themselves Affected by Type of Project Impact: 2017

Impact	Percent of Respondents Who Consider Themselves Impacted		Difference
	Pre-Construction Activities	Construction Activities	
Noise	13.2	53.6	40.4
Dust	25.8	52.2	26.4
Vibration	1.6	33.6	32.0
Garbage	4.0	37.0	33.0
Psychological impacts	5.2	10.8	5.6
Traffic jam	72.8	75.6	2.8
Traffic accident	14.4	26.2	11.8
Crime and drugs	1.6	6.0	4.4
Power outage	4.2	7.0	2.8
Mean	15.9	37.3	17.7

Table 5 Percent of Respondents Who Consider Themselves Impacted and Rate the Impact as High: 2017

Impact	Percent of Respondents Rated Impact as High		Difference
	Pre-Construction Activities	Construction Activities	
Noise	51.5	50.7	(0.80)
Dust	56.6	48.7	(7.90)
Vibration	12.5	33.3	20.80
Garbage	40.0	17.8	(22.20)
Psychological impacts	57.7	14.8	(42.90)
Traffic jam	85.7	73.8	(11.9)
Traffic accident	13.9	29.0	15.10
Crime and drugs	50.0	20.0	(30.00)
Power outage	10.0	20.0	10.00
Mean	41.99	34.23	(7.76)

17. But an average of 90.9% of the respondents expects a benefit during the operation phase (Table 6). The most expected benefit is more convenient, faster and on-time travel being identified by 97.2 percent. Around 81.3% of them also consider the benefit as high. The other benefits identified by a very high percentage of respondents are reduced traffic jam, cost and stress and sustainable solution to the problem of traffic.

18. But an average of 79.5% of the respondents expects a benefit during the operation phase (Table 6). The most expected benefit is more convenient, faster and on-time travel being identified by 94.8 percent. Around 79.1% of them also consider the benefit as high. The other benefits identified by a very high percentage of respondents are reduced traffic jam, expansion and distribution of urban development, sustainable solution to the problem of traffic, and reduced cost and stress.

Table 6 Percentage of Respondents Expecting Benefits from the Operation Yellow Line Project and Respondents Expecting High Benefit: 2017

Expected Benefit	Percentage of Respondents Expecting Benefit	Percentage of Respondents Expecting That Benefit in High
More convenient, faster on-time travel	<u>94.8</u>	<u>79.1</u>
Reduced traffic jam	<u>90.6</u>	<u>55.8</u>
Reduced travel cost	<u>84.4</u>	<u>49.3</u>
Improves urban environment and quality of life	73.4	61.0
Reduced travel stress	72.6	45.5
Reduced pollution	69.2	43.9
Expand and decentralize development	72.8	57.1
Solve traffic sustainably	<u>82.2</u>	<u>53.3</u>
Improved economy	<u>78.8</u>	<u>56.6</u>
Reduced accidents	76.4	50.8
Mean	79.5	55.2

2.2 Vulnerability and Poverty Analysis

2.2.1 National Poverty Situation

19. Thailand is considered a development success story having moved from a low-income income to an upper income country in 40 years.¹³ It reduced its incidence of poverty by 2.1% a year from 1986 to 2015. By 2015, poverty incidence dropped to 7.2% from 67.0% in 1986. There are only about 4.8 million people who are poor in Thailand out of a population of 67.2 million. The pockets of poverty in Thailand are concentrated in the north and northeast regions as well as in the deep south. Thailand has not only successfully increased income but overall living standards as well. In the 17 Millennium Development Goal indicators where comparative data between 1990 and 2015 are available, Thailand made significant gains in 16 (Table 7).

2.2.2 National Poverty Reduction Strategies

20. Given the big strides it made in reducing poverty, Thailand is setting its sight to eliminate remaining poverty and become a fully developed country. The plan to achieve this is contained in the Twelfth Economic and Social Development Plan (2017-2021).¹⁴ One of the seven objectives of the plan is to provide economic and social security as well as fair access to resources and quality social services. Another is to spread prosperity across all regions through urban and regional development.¹⁵ The plan's objectives aim to achieve the country's six targets, one of which is to further reduce poverty and inequality.¹⁶

¹³ <http://www.worldbank.org/en/country/thailand/overview>

¹⁴ Office of the National Economic and Development Board. Undated. Twelfth Economic and Social Development Plan (2017-2021). Bangkok: Office of the Prime Minister.

¹⁵ The other six objectives are as follows: (i) Lay the foundation for a good value system; (ii) Promote strong, stable, competitive and stable economy; (iii) Preserve and restore natural resources and environmental quality; (iv) Improve public administration; (vi) distribute prosperity across all regions through urban and regional development; and strengthen connectivity between Thailand and other countries..

¹⁶ The other targets are as follows: (i) develop good citizenship; (ii) attain strong and competitive economic system; (iii) improve natural capital and environmental quality; (iv) increase national security, independence, sovereignty,

Table 7 Thailand Performance in Attaining the Millennium Development Goals

Goals and Indicators	1990 (%)	2015 (%)
Goal 1: Eradicate extreme poverty		
1 Proportion of population below 1.25 USD/day	Na	Na
2 Proportion of population below national poverty line	58.0	72.0
3 Prevalence of 20% poorest population in national consumption	6.0	7.5
4 Growth rate of GDP/person employed at current prices	Na	2.4
5 Employment to population ratio	76.9	69.4
6 Prevalence of underweight children under 5 years of age	41.7	9.2
Goal 2: Achieve universal primary education		
7 Net enrollment ratio in primary education	70.0	88.0
8 Literacy rate of population 15-24 years old	91.0	98.0
Goal 3: Promote gender equality and empower women		
9 Ratio of girls in primary education	0.95	0.90
10 Ratio of girls in secondary education	0.97	1.1
11 Ratio of girls in tertiary education	1.0	1.4
12 Proportion of seats held by women in national parliament	2.8	13.3
Goal 4 Reduce child mortality		
13 Under 5 mortality	13.0	8.6
14 Infant mortality rate	8.0	6.2
15 Proportion of 1 year old children immunized against measles	Na	100.0
Goal 5 Improve maternal health		
16 Maternal mortality ratio per 100,000 live birth	24.8	24.6
17 Proportion of birth attended by skilled health personnel	90.8	99.6
Goal 6: Combat HIV/AIDS, malaria and other diseases		
18 Incidence of malaria per 100,000	Na	9.3
19 Incidence of tuberculosis per 100,000	35.3	Na
Goal 7 Ensure environmental sustainability		
20 Proportion of area covered by forest	28.0	31.6
21 Proportion of population using improved drinking water	86.0	97.0
22 Proportion of population using improved sanitary facility	91.0	100.0
23 Telephone lines per 100 population	Na	7.9
24 Cellular subscribers per 100 population	Na	125.8
25 Internet user per 100 population	Na	39.3
Source: ASEAN Secretariat.2017. ASEAN Statistical Report on Millennium Development Goals. Jakarta		

21. The plan has eight strategies to attain its targets. One of these is to advance infrastructure and logistics being considered key social services. Transportation is part of infrastructure and logistics and urban public transport is one component. This component is seen as essential for urban areas to effectively spread prosperity to the rural peripheries. For Bangkok Metropolitan Region, the main activity is to accelerate the construction of mass transit city-rail projects as planned in the M-MAP. The achievement indicator of this activity is the increase of the proportion of passengers in the Bangkok Metropolitan Region using the mass rapid transit system from 5% to 15% by 2021.

social security and cohesion, positive image and national confidence; and (v) enhance efficiency in public management.

22. The Transport Infrastructure Development Master Plan (2015-2022) further emphasizes the importance of mass transit city rail project in Bangkok Metropolitan Region.¹⁷ The plan has six programs one of which is Public Transport Network Development for Bangkok Metropolitan Region Program.¹⁸ This program has three components and extension of the existing MRT system is one of these.¹⁹

2.3 Role of Urban Transport in Poverty Reduction

23. The Bangkok Metropolitan Region has 14.5 million people comprising 22% of the country's population. But its economic output comprises 44.2% of the GNP.²⁰ With a per capita of 14,301 USD or almost three times the national per capita (4,925 USD), the households in Bangkok Metropolitan Region are generally not poor. This is reflected in the survey result among affected households of the Yellow Line Project. The average income of the households in Bangkok Metropolitan Region is 52.3% higher than the national average and their expenditure is 46.0% higher (Table 8). Their living standard, measured in terms of educational attainment, type of housing and access to utilities, ranks much higher than the national average.

24. But Bangkok Metropolitan Region is seen as the area to invest in anti-poverty measure because it is the country's principal hub in capital and commerce. As a hub, the quality of its infrastructure and the efficiency of its logistics dictate other-regions' access to its services and opportunities. It is this access that filters down the development benefits in the form of increased investment, jobs and income. The multiplier effect of these benefits reduces poverty in a broader scale.

25. Transportation is a main component in making this access possible emphasizing its importance in poverty reduction. It is credited as one factor behind Thailand's rapid economic growth. Such infrastructure has attracted foreign investment, eased international trade and increased the efficiency of everyday business activities resulting to job generation and higher income for the poor. Due to the high cost of logistics being highly dependent on land transport and imported energy, an urban rail system is considered an appropriate infrastructure for Thailand.²¹

¹⁷ National Economic and Social Development Board. 2015. Transport Infrastructure Development Master Plan (2015-2022). Bangkok: Office of the Prime Minister

¹⁸ The other programs are as follows: (i) intercity rail network; (ii) capacity enhancement for highway network; (iii) air transport capacity enhancement; and (iv) maritime transit development.

¹⁹ The other components are NGV bus procurement and improvement in service and safety quality and environmental standard compliance.

²⁰ Office of the National Economic and Social Development Board (NESDB) (August 2012). [Gross Regional and Provincial Product chain volume measures 1995–2010 edition](#). Office of the National Economic and Social Development Board.

²¹ Pichaya Fitts. 2009. Bangkok's Skytrain: An Example of the Good Infrastructure and Services Thailand needs. 5 April. <http://blogs.worldbank.org/eastasiapacific/bangkoks-skytrain-an-example-of-the-good-infrastructure-and-services-thailand-needs>

Table 8 Household Income and Expenditure and Living Standard Indicator in Bangkok Region and Thailand: 2015

Indicator	Bangkok	Thailand	Difference
Monthly Income	41,002 THB	26,915 THB	14,087
Monthly Expenditure	30,882 THB	21,157 THB	9,725
Monthly Savings	10,120 THB	5,758	4,362
Living Standard Indicators			
Persons who Never Gone to School	2.9%	5.2%	2.3%
University Graduates of the Population	20.8%	10.6%	10.2
Households Living in Concrete houses	80.2%	58.6%	21.6%
Household Using Gas or Electricity for Cooking	83.8%	70.7%	13.1%
Households Drinking Treated Tap Water	58.0%	21.4%	36.6%
Households Using Flush Toilets	62.0%	34.1%	27.9%
Source: National Statistics Office Thailand			

26. Physical mobility is the single strongest factor in escaping poverty as identified in a large continuing study on upward mobility.²² It outweighs such factors as school performance and two-parent family. The higher is one's access to transportation, the greater are the opportunities for employment, asset building and intergenerational economic mobility.²³ The mass rapid transit in particular is noted to give poor people wider choices of household location, employment and lifestyle.²⁴ In places where the poorer people choose the bus due to greater affordability, they still indirectly benefit from mass rapid transit in the form of higher income resulting from increased efficiency of the urban system.

2.4 ADB's Role in Thailand's Urban Transport Improvement

27. The development benefits of the proposed project will primary go to Bangkok Metropolitan Region and secondarily the rest of Thailand. But ADB recognizes that such benefits have significant spillover effects in the neighboring countries and the region.²⁵ All of Thailand's neighbors in the Greater Mekong Sub-region (GMS) have substantially higher poverty rate than it has. ADB acknowledges that urban infrastructure will provide Thailand sound basis for its manufacturing and service sectors to move up into higher value-added activities.²⁶ The economic return of such upward movement in the production chain is expected to redound to the smaller national economies around Thailand.

²² Quoted in Bouchard, M. 2017. Transportation Emerges as Crucial to Escaping Poverty, New York Times. 7 May, read:<https://www.nytimes.com/2015/05/07/upshot/transportation-emerges-as-crucial-to-escaping-poverty.html>

²³ Majeski, Q. 2016. Assessing the Effect of Commute Time in Poverty in the US. Spring. <https://depts.washington.edu/esreview/wordpress/wp-content/uploads/2016/06/Commute-Time-on-Poverty-.pdf>

²⁴ The World Bank. 2002. Urban Transport and Poverty Reduction. In: Cities on the Move: A World bank Transport Strategy Review. Washington D.C.

<http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/Chapter3.pdf>

²⁵ ADB. 2013. Country Partnership Strategy (CPS). Thailand (2013-2016). October 2013. Paragraph 1. This document is considered effective until the new CPS (2019-2023) is approved.

²⁶ ADB. 2013. CPS. Thailand (2013-2016). October 2013. Paragraph 1.

28. But it notes of Thailand's infrastructure constraints citing transport among areas of particular importance.²⁷ ADB's strategy to support Thailand in responding to its development constraints is the "finance ++" approach. Under this approach, ADB will "provide public and private sector financing in a flexible manner, helping leverage public and private sector financing, and delivering innovative knowledge solutions to accelerate and maximize development effectiveness".²⁸ The approach will be applied to infrastructure development as one of four core strategic areas.²⁹ ADB Country Operations Business Plan. Thailand (2018-2020) retains these four strategic areas.³⁰

2.5 Ridership of Mass Rapid Transit System Among the Poor

29. The rail system in Bangkok Metropolitan Region has 1.4 million ridership capturing 6% of the market.³¹ It is used by people of all income classes but more by the middle class. In 2014 survey, 78% of the middle-income class commuters chose the rail as mode of transport.³² Only 62% of the high-income class commuters and 60% of the low-income class commuters had the same choice. The operation of mass rapid transport system in Bangkok has, in fact, not reduced the use of cars. Distance from a mass transit station proved to be a non-significant variable in the car use in the business district considered to be the most mass-transit networked part of Bangkok.³³ This finding explains the relatively low uptake rate of the mass transport system among high-income households who are invariably car owners.

30. The poor households directly benefit from the rail system through ridership but, in terms of proportion, not as much as the high and middle-income households. A large proportion of the low-income households are using the bus being more affordable.³⁴ Most of these poor users who are using the bus are women because the men are using a motorcycle.³⁵ Further, distance of the residence from the station is a strong determinant in choosing the rail. With the values of nearby land and housing units increasing with the opening of a train station, the number of low income households living nearby is bound to decrease putting them further from the rail system.³⁶ But with many poor households climbing out of poverty with their continuing rise of the Thai economy, the ranks of middle-class fast growing and expanding the market for the rail system.

2.6 Employment and Other Benefits of the Poor from the Proposed Project

²⁷ADB. 2013. CPS. Thailand (2013-2016). October 2013. Paragraph 8.

²⁸ ADB. 2013. CPS. Thailand (2013-2016). October 2013. Paragraph 16.

²⁹ The other areas are (i) finance sector development, (ii) environmentally sustainable development, and (iii) regional cooperation and integration initiatives.

³⁰ The Country Operation Business Plan (COBP) bridges the gap between CSP 2013-2016 and CSP 2019-2023. ADB 2017. COPB. Thailand (2018-2020). Manila. October.

³¹ <https://www.bangkokpost.com/news/transport/1394186/govt-aims-for-5-million-bangkok-train-commuters-daily> and BTS Group. 2017. BTS Group Holding PCL. General Presentation. April.

³² Sanit Peamsook and Others. 2014. Analysis of Location Choice Behavior and Urban Railway Commuting of Bangkok's Households. Urban and Regional Planning Review. Vol 1 pp1-17.

³³ Wichien, M. Undated. Key Factors to Reduce Current Driving Commuters in Inner Bangkok. Research Paper. Bangkok. Department of Engineering, Kasetsart University.

³⁴ ADB. 2005. Bangkok Urban Transport Project (Loan 1195 THA). Performance Evaluation Report. PPETH 25345. Manila: November.

³⁵ Ratanawaraha Apiwat and Saksith Chalermpong. How the Poor Commute in Bangkok. Journal of Transportation Research Board. <http://trrjournalonline.trb.org/doi/abs/10.3141/2568-13>

³⁶ Suphakarn Varinpramote. 2014. Bangkok's Urban Rail System: An Impact Evaluation. Paper Submitted to School of Economics, Erasmus University Rotterdam. 23 October and Peson Sirikolkarn. 2008. The Effect of Mass Transit Systems on the Price of Condominium in Bangkok. Undergraduate Honor Thesis. Department of Economics, University of California Berkeley. 25 April.

31. Although the low-income households may not be a big percentage of the ridership of the Yellow Line, they will be the main beneficiary of the employment opportunities during the construction phase. The project will have 410 full-time staff and 160 temporary staff.³⁷ At the minimum wage of THB 325 per day, these workers will earn a total of THB 4.45 million each month. The construction period is expected to last for 36 months. Part of the work force will be foreigners due to the tight labor supply of construction workers in Thailand. These workers are expected to be from the poorer countries in the GMS. Through remittances, these workers will serve as conduit in transferring project benefits from Thailand to the less developed countries in the GMS and generate a direct spill-over effect.

32. Poor household living along or close to the route will also benefit from the MRTA's requirement for the contractors to participate in community activities such as granting of scholarships.³⁸ During the operation phase, it is estimated that the project will employ around 10 staff per station or a total 300 persons.³⁹ Part of these staff are performing cleaning and guarding tasks and may be among the poor. The poor people along the route may benefit from the CSR activities of the BSR member companies. These activities include the following: health care and medical services (BTS); scholarships (STECON); and health and skills training for the elderly in Nonthaburi (RATCH).⁴⁰

2.7 Project Design Features and Activities to Benefit the Vulnerable

33. The proposed Yellow Line Project has universal design to serve everyone. Such design aims equitable usability of its facilities without the need of any adaptation from any user or group of users. It can be used by anybody regardless of gender, age and level of literacy. It can easily accommodate people with physical disability and mobility-support (e.g., wheel-chair) as well as women with babies in the womb or in carriages.

34. Seven elements are incorporated into the design to attain universality: (i) fairness: usability to all types of people; (ii) flexibility: adjustability of features to the user; (iii) simplicity: ease in learning the use of different features; (iv) understanding: information are transmitted in form and medium accessible to everyone; (v) safety: minimized hazards and adverse consequences of unintended actions; (vi) energy conservation: minimal effort required to use the facilities; and (vii) space: adequate space is allocated to accommodate all range of body size, posture, level of mobility and mobility support.

35. These elements are translated into 13 different features in the station and train components (Table 11). These features are integrated in communication facilities (telephone), areas for mobility (ramp, walkways, staircases, lift, gates and floor), facilities for personal use

³⁷ *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. 3.9.5.

³⁸ MRTA's Requirements: Part 1 Civil Works: Appendix 5: Environmental Protection Requirements: Section 9

³⁹ Team Consulting Engineering and Management Co Ltd. 2015. Amendment Environmental Impact Assessment Report. The Pink Line MRT Project Khae Rai-Min Buri. Bangkok

⁴⁰ BTS Group Holding PCL. Annual Report 2016/17; Sino-Thai Engineering and Construction PCL. Annual Report 2016; and Ratchaburi Electricity Generating Holding PCL. Annual Report 2016)

(toilets and seats), content and media of information and tasks of station staff. Areas for mobility and personal use will be constructed for the comfortable use of persons with different physical shortcomings and impairment including those with visual disability. Information content and media are meant to serve even those with severe limitation in hearing. Station staff are on standby for those who need assisted use of the facilities to ensure that the train and stations will deliver a safe and easy ride to all users. These features make this project fully compliant with the 2005 Ministerial Regulations on Accessible Facilities in Buildings for Disabled Persons and the Elderly.

Table 11: Station and train components and features for the vulnerable

No.	Station & train component	Features for the vulnerable
1	Accessible Telephones	The telephones are adjustable at different heights useful to people of all height even children; Clearance and hand rail are provided for wheelchair users
2	Accessible ATM	Clearance and hand rail are provided for wheelchair users
3	Ramps	Gently ascending ramps with hand railing are provided beside stairs for the wheelchair users and elderly
4	Dedicated toilet at the Park and Ride facility	One public toilet with floor area that can accommodate a wheel chair, baby, pregnant women and parent with small children. Handrail and a diaper changing station are also installed.
5	Interconnected walkway	Walk ways will have wide corridors and barrier-free for safe movement of everybody including visually-impaired persons. Ramps will be provided for wheelchair users.
6	Tactile Floor Surface	Material for the floor surface will serve as tactile indicator to guide visually-impaired person within the station.
7	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.
8	Staircase	Reduced height to steps with several levels of handrails to be comfortable for the use of children, hunchback and elderly. Color strips will be provided in the steps to increase visibility. Braille indicators in be on the handrail for information on number of steps.
9	Special Entrance-Exit Gate	Large entrance-exit ticket-swiping gate will be provided for the wheelchair users, baby carriages and persons with large luggage
10	Special Seats	Separate zones-clearly marked in yellow-will be designated in each coach for pregnant women, disabled and elderly
11	Hardscape Architecture	Traffic medians and footpath will be hardscape for convenience of disabled people
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.
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.

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.

2.3 Gender Analysis

2.3.1 Thailand's Gender Policies and Strategies and Compatibility with ADB Gender Policy

36. The 2017 Constitution of Thailand declares that men and women shall enjoy equal rights (Section 26). It 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. Women's participation in decision-making process and development activities is not only encouraged but required in the Thai law (Gender Equality Act 2015) by prohibiting any policy, procedures or project of public and private entity that unfairly discriminate a particular gender (Section 17).

37. One of the 10 development strategies to achieve the objectives of the Twelfth National Economic and Social Development Plan (2017-2021) is to create a just society and reduce inequality. One action under this strategy to distribute high quality public services more evenly. For women, this will be done by fostering universal and tailored infrastructure appropriate for them. This is to ensure that women have full access to infrastructure and be able to use it to the fullest advantage.

38. Thailand's policy and strategy of gender inclusion is compatible with ADB's policy and strategy of gender mainstreaming as expressed in ADB's Gender Policy.⁴¹ One key element of this strategy is to consider gender issues in all aspects of ADB operations, accompanied by efforts to encourage women's participation in the decision-making process in development activities.⁴² It recommends that gender disparities be directly addressed through project design with specific gender features and delivers gender equality benefits such as improved access to infrastructure.⁴³

39. Both the Thai and ADB policy and strategy aim of making women's concern integral part of planning and implementing a project so that they benefit from it equally with the men and gender inequity is not perpetuated. Gender is one of the four social dimensions that ADB requires to be taken into account in projects that it supports to ensure inclusiveness and equity in access to services resources and opportunities.⁴⁴

2.3.2 Policy of the Developer on Gender and Vulnerable

40. The national policy of gender inclusion is reflected in the code of conduct of the members of the BSR consortium (Table 10). Their policy is based on respect of human rights including the right to human dignity. BTS align 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. Only BTS has specific policy for the disabled.

2.3.3 Women-specific Concerns in Urban Transport and Responsive Project Design Features

⁴¹ ADB.2003. Gender and Development. June

⁴² The other elements are gender sensitivity, gender analysis, gender planning and agenda setting. ADB.2003. Gender and Development. June

⁴³ ADB. 2010. Operations Manual Bank Policies. Gender and Development in ADB Operations. OM Section C3/BP. 6 December. Paragraph 4.

⁴⁴ ADB. 2010. Operations Manual Bank Policies (BP). Incorporation of Social Dimensions into ADB Operation. OM Section C3/BP. 6 December. Paragraph 4 and 5.

41. Women have three particular concerns which must be addressed in the design of an urban mass rapid transport system. If these concerns are not taken into consideration, the access and usability of the system to women will be curtailed and exclusion will ensue. These concerns are as follows: (i) frequent off-work trips associated with household and caretaking responsibilities; (ii) trips with children and elderly; (iii) availability of women staff; and (iv) safety from sexual harassment.⁴⁵ These concerns are addressed in various design features of the Yellow Line Project.

Table 10 Policy of BSR Consortium Members on Gender and Vulnerable

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
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; http://www.ratch.co.th/en/cg/conduct/the-code-of-conduct	

42. **Frequent Off-work Trips Associated with Household and Caretaking Responsibilities.** Women make more trips for household and caretaking responsibilities than men.⁴⁶ The household responsibilities include procurement of food and other household necessities, payment of utilities and coordinating with suppliers of goods and services for such concerns a house repairs, children's health and household maintenance. Their caretaking responsibilities include moving around with children as they go to school, attend social activities, get medical care and obtain government papers. They may extend such caretaking responsibilities to aging parents and relatives. Working women often chain their work-trips with off-work trips to perform their multiple duties.

43. The selection of station location is critical in enabling women to make off-work trips more efficiently and much more, effectively combine these with work-trips. The Yellow Line has 21 stations where services important to women in meeting their household and caretaking

⁴⁵ Peters, D. 2013. Gender and Sustainable Urban Mobility. Thematic Study Prepared for Global Report on Human Settlements. Nairobi and Buckley, N. G. 2016. Sexual Harassment in Public Transit and the Influence of Perceptions of safety and Public Behavior. Report for the Requirement for the Degree of Master of Science in Community and Regional Planning. University of Texas at Austin. May.

⁴⁶ Peters, D. 2013. Gender and Sustainable Urban Mobility. Thematic Study Prepared for Global Report on Human Settlements. Nairobi

responsibilities (Table 11). The service providers in these stations include five schools, five hospitals and two markets and three supermarkets.

44. Located along the line are a wide range of government services, including registration and permitting, grievance settlement, tax payment and information provision are provided in these centers. social security, labor and social welfare services. The MRT Yellow Line has also seven stations located in areas with substantial commercial activities providing employment opportunities to women, although unemployment among women in Bangkok Metropolitan Region is only 0.47 percent.⁴⁷

45. **Trips with Children and Elderly.** The trips of mothers largely follow the mobility pattern of children. To enable them to use the mass rapid transit with ease, provisions for woman with a child, whether in the womb or in the carriage or in tow must be available. Women with aging parents and close relatives also travel as assisting companion. Among the provisions in the Yellow Line stations for mother-and-child riders and women accompanying elderly riders are the following: (i) lift; (ii) wide entrance-exit gates to fit a baby carriage and a wheelchair; (iiv) hardscape architecture; and (iv) station staff to extend assistance. In the train couch, special seats in yellow color for easy identification are allocated for women with a child, disabled and elderly.

46. **Availability of Women Staff.** Based on the current practice of the existing lines, about half of the station staff are women. They handle all types of station tasks from ticketing to security. The code of conduct of the BSR consortium member companies provides equal employment opportunities to women.

47. **Safety from Sexual Harassment.** Around 45% of the women-commuters in Bangkok reported to have experienced unwanted sexual contact while commuting.⁴⁸ Women commuting through the rail were also at the receiving end of this behavior. The Yellow Line has the following design features to prevent sexual harassment within the station and train facilities: (i) adequate lighting in all areas; (ii) wide and open corridors for high and clear visibility; (iii) seats placed along the walls of the coach to afford complete view across the floor area and minimal impediment of movement; (iv) cameras and alarm systems such as emergency buttons; (v) security personnel on surveillance platforms and on patrol; (vi) separate sanitation facilities for female and male users; and (vii) location of sanitation facilities along corridors with high foot traffic.

Table 11 Services providers and types of services important to women that are made more accessible by the Yellow Line for selected stations

Station	Service providers in station's proximity	Type of services important to women made more accessible
1. Ratchada	<ul style="list-style-type: none"> MRT Blue Line interchange 	Transport link
2. Phawana	<ul style="list-style-type: none"> Drug Addiction Clinic No. 2 Nursing School Two primary schools 	Drug addiction treatment Education for women Education for children
3. Chokchai 4	<ul style="list-style-type: none"> Chokchai Police Station Chokchai Electricity Office Thanornpitvithaya School 	Police services Public utilities Education for children
4. Lat Phrao 71	<ul style="list-style-type: none"> Lat Phrao Post Office 	Postal services
5. Lat Phrao 83	<ul style="list-style-type: none"> Suphot Clinic 	Medical care
6. Mahat Thai	<ul style="list-style-type: none"> Bangkok Suksa School Lat Phrao General Hospital 	Education for children Medical care

⁴⁷ These are Stations 2,4,6,7,8,10,11,15,18,19,20,21,22,23,24,25,26,27 and 29.

⁴⁸ <https://www.bangkokpost.com/learning/advanced/1364951/bad-bus-behaviour>.

Station	Service providers in station's proximity	Type of services important to women made more accessible
	<ul style="list-style-type: none"> Foodland supermarket 	Shopping
7. Lat Phrao 101	<ul style="list-style-type: none"> Lat Phrao 24-hour Clinic Bueng Thong Lang Post Office 	Medical care Postal services
8. Bangkapi	<ul style="list-style-type: none"> The Mall Bangkapi N Mark Plaza Big C Bangkapi 	Shopping
9. Lam Sali	<ul style="list-style-type: none"> MRT Orange Line interchange Modern Art Museum Mosque 	Transport link Culture Religious services
10. Si Kritha	<ul style="list-style-type: none"> Church 	Religious services
11. Phatthanakan	<ul style="list-style-type: none"> Airport Rail Link interchange Eastern Railway Line 	Transport link
12. Kalantan	<ul style="list-style-type: none"> Thanya Shopping Park 	Shopping
13. Si Nut	<ul style="list-style-type: none"> Srinagarindra Medical Clinic 	Medical care
14. Suan Luang Rama IX	<ul style="list-style-type: none"> Seacon Square Paradise Park Shopping Center 	Shopping
15. Si Udom	<ul style="list-style-type: none"> Social Security Office, Bangkok 8 	Government services
16. Si Iam	<ul style="list-style-type: none"> Park and Ride 	Transport link
17. Si LaSalle	<ul style="list-style-type: none"> Car Inspection Station Golf Academy 	Government services Sports
18. Si Dan	<ul style="list-style-type: none"> Foodland supermarket Travel for Education Center 	Shopping Travel services
19. Si Thepha	<ul style="list-style-type: none"> Srithepha Food Market Driving school 	Shopping Education for women
20. Thippawan	<ul style="list-style-type: none"> Samut Prakan Provincial Labor and Social Welfare Office Palm Island Mall 	Government services Shopping
21. Samrong	<ul style="list-style-type: none"> Samrong Post Office Samrong Police Station MRT Green Line 	Government services Transport link
Source: Google Maps; accessed on 21 January 2018.		

48. The Project will also implement the following measures: (i) maintain high level of cleanliness and functionality due to their influence on users' perception of security and degree of acceptance of crime or misconduct; (ii) train security personnel, drivers and conductors on women's security and safety issues and gender-sensitive emergency assistance; (iii) conduct regular briefing sessions for female and male station staff on security-related issues including violence against women; and (iv) prepare and input to decision-making incident reports on sexual harassment.

2.3.5 Adverse Health Impact Affecting Women Based on the EIA

49. During project construction and operation, there are health impacts which will affect women living or travelling along the Yellow Line Route. During construction, increased particulates, noise vibration and standing water will affect various aspects of the normal functioning of the human body (Table 12). The respiratory system, eyes and immune system will be vulnerable to particulates. The auditory and nervous systems and the brain will negatively respond to noise and vibration. Standing water can be the pathway to spread disease-causing bacteria and viruses.

50. The presence of foreign workers also will bring the risk of diseases as well as social problems including exerting added burden to existing health and medical facilities. The risk of

road accidents due to frequent modification of traffic routes and road constriction will also increase. But the risk of these impacts during construction is rated low or moderate. The moderate impacts are responded to with appropriate mitigating measures. During the operation phase, most of these impacts will either cease or downgrade to low risk. Only noise will remain to have moderate risk.

2.3.6 Project Benefits to Women

51. An appropriate infrastructure, like an urban rail project, has general benefits that redound to both men and women.⁴⁹ The benefits of women from an urban rail project is seen in its ridership and impact on the livelihood of very poor women.

52. **Benefits to Women Workers.** In the Bangkok Metropolitan Region, women compose 47% of the labor force (Table 13).⁵⁰ Their unemployment rate is less than half compared to the men (0.47% versus 1.21%). But there are less women than men among employers (2% versus 7%) and more among unpaid family workers (9% versus 5%). The percentage of women is higher among employees in both public (10% versus 8%) and private sector (62% versus 57%).

53. Having higher percentage among employees, women should benefit more from an urban rail system in their daily commute to work. The women should feel more such benefit because in the Bangkok Metropolitan Region, they earn slightly less than men. A higher percentage of women than men earn less than 5,501 THB a month (0.5% versus 0.7%) and a lower percentage of women earn more than 20,000 THB a month (26.7% versus 27.5). The difference reflects the narrowing wage gap between genders in Thailand favoring the men. The 15% wage difference in 1996 shrank to 1% in 2013.⁵¹ But the wage gap between genders is still widest among urban industries: 22.2% in hotels and restaurants, 18.0% in manufacturing and 17.2% in construction.

Table 12: Health hazards and risk level generated by the Project as identified in the EIA that will affect women within 500 meters and mitigating measures

Hazard and Impacts	Risk Level		Mitigation
	Construction	Operations	
Dust: The main pollutants that are threatening health in the construction period is dust from construction activities and vehicles used in transportation of construction machineries/equipment. Impacts: Respiratory and eye irritation; symptoms of CO ₂ intoxication; immunity reduction from NO ₂	Moderate	Physical: Medium Mental: Medium	Construction: <ul style="list-style-type: none"> • Spraying water within construction area at least 3 times a day. • Opaque fence to separate construction territory to reduce impacts of dust. • Speed limits for vehicles. Operations: <ul style="list-style-type: none"> • Provide public health surveillance measures in high density residential and commercial areas • Plant more trees • Design vertical landscaping to absorb pollution. • Install proper ventilation system

⁴⁹ Pichaya Fitts. 2009. Bangkok's Skytrain: An Example of the Good Infrastructure and Services Thailand needs. 5 April. <http://blogs.worldbank.org/eastasiapacific/bangkoks-skytrain-an-example-of-the-good-infrastructure-and-services-thailand-needs>

⁵⁰ The Bangkok Metropolitan Region is composed of the Bangkok Metropolis and five adjacent provinces: Nakhon Pathom, Pathum Thani, Nonthaburi, Samut Prakan and Samut Sakhon.

⁵¹ Minh-Tam Thi Bui and Chompoonuh Permpoonwivat. 2015. Gender Wage Inequality in Thailand: A Sectoral Perspective. International Journal of Behavioral Science. Vol 10 Issue 2 pp. 19-36.

Hazard and Impacts	Risk Level		Mitigation
	Construction	Operations	
			<ul style="list-style-type: none"> Measures to detect and prohibit use of black smoke and white smoke and noise above PCD standards
Noise: Exceeding 85 dB induces hearing loss if heard more than 8 hours. Impacts: Heart-beat, high blood pressure, respiratory rate change, insomnia, hearing degeneration, tinnitus, hearing loss temporary or permanent, affect stability system; nuisance, irritability, distracting, emotional changes because of stress, working performance decline.	Moderate	Physical: Low Mental: Low	Construction: <ul style="list-style-type: none"> Schedule working hours that make a loud noise between 08:00 - 18:00 h. Avoid activities that cause loud noise in public recess time (after 18:00 h.). Check and maintain machinery and engines to reduce noise Use construction techniques that do not cause noise Operations: <ul style="list-style-type: none"> Regular inspections of trains Provide channel for complaints
Construction workers' camps: Producing trash, wastewater, sexually transmitted diseases, drug problems Impacts: Spread of diseases from migrant workers from deficient sanitation management; breeding of disease carriers resulting in outbreaks of diarrhea, dengue, flu, etc. Causes mental anxiety and discomfort	Moderate	Physical: Moderate Mental: Moderate	Construction: <ul style="list-style-type: none"> Adequate toilets and sanitation management Recruit workers who are drug free Testing workers for drug use Post signage warning against drug use Provide condoms at first aid stations
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. 6, Table 6.4-17.			

54. With the women's increasing educational level and participation in the labor force as well as increase in the number of single women in 20-40 year age bracket (from 8.4% in 2012 to 16.8% in 2014), there are more women than men who commute in Bangkok's business districts.⁵² In 2012, it was reported that women has higher probability of choosing the bus than men.⁵³ The reason was cost since the bus was a cheaper transport mode than the rail. More women than men found the rail less affordable although they equally considered its service generally satisfactory.⁵⁴

⁵² Intage Inc. 2015. Women in Bangkok. Asia Insight Report 13. 20 November. https://www.intage.co.jp/english/asia_insight_/20151120.html#.Wjn-V2iWayI

⁵³ Sanko N. and Others. 2014. Household Car and Motorcycle Ownership in Bangkok and Kuala Lumpur in Comparison with Nagoya. Transportmetrica. Volume 39, Number 3 pp 187-213

⁵⁴ Duangporn Prasertsupkiy and Vilas Nitivattansanoh. 2012. Evaluation Accessibility to Bangkok Metro System Using Multi-dimensional Criteria Across User Groups. Internal Association of Traffic and Safety Sciences. IATAS Research 36. Pp 56-65

Table 13 Selected Labor Statistics in Bangkok Metropolitan Region: Quarter 3 2016

Data	Male	Female	Difference
Number of Labor Force	2,790,700	2,490,700	(300,000)
Percentage of the Labor Force	53%	47%	(6%)
Unemployment Rate	1.21%	0.47%	(0.7)
Type of Work			
Employer	7%	2%	(5%)
Government Employee	8%	10%	2%
Private Employee	57%	62%	5%
Self-Employed	23%	17%	6%
Unpaid Family Workers	5%	9%	3%
Total	100%	100%	
Class by Monthly Income			
Less than 5,501 THB	0.5%	0.7%	0.2
5,501 -20,000 THB	72.0%	72.6%	0.6
More than 20,000 THB	27.5%	26.7%	(0.8%)
Total	100.0%	100.0%	

Source: National Statistics Office Thailand

55. But in 2014, around 70% of men and women respectively choose the rail as mode for commuting.⁵⁵ This indicates that as women's income goes higher and gender disparity in earnings narrowed, more women will be taking the rail. With a 50/50 ridership among men and women, the current ridership volume of 1.4 million translates to 0.7 million women using the rail.⁵⁶ The aim of the government is to put 5.0 million commuters in the rail by 2023. This means that 2.5 million women will be directly benefiting the rail system by then. The straddle monorail system of the Yellow Line itself will carry a maximum of 44,000 persons per hour per direction.⁵⁷ Half of these will be women.

56. **Benefits to Poor Women.** Among the poor, the mobile vendors will benefit the most. Half of the mobile vendors in Bangkok are women.⁵⁸ Around 88% are from the provinces, mostly from the northeast region where per capita income is the lowest in the country. The livelihood of 70% in their home provinces is agriculture and 85% have not spent more than 6 years of school. Vending is not only a tool for them to enter and stay in the metropolis but also to learn entrepreneurship and accumulate capital to get out from extreme poverty. Train stations in Bangkok are considered strategic vending locations.⁵⁹ The Yellow Line Project will provide 23 prime locations for the mobile vendors through its stations. Mobile vending while regulated are not prohibited in Bangkok Metropolitan Region. Apart from location, personal traits such as risk-taking attitude and creativity as well as social network and knowledge of source of inexpensive materials are identified as success factors among mobile vendors.

2.3.6 Women Participation in Project Decision-Making

⁵⁵ Sanit Peamsook and Others. 2014. Analysis of Location Choice Behavior and Urban Railway Commuting of Bangkok's Households. Urban and Regional Planning Review. Vol 1 pp1-17.

⁵⁶ read:<https://www.bangkokpost.com/news/transport/1394186/govt-aims-for-5-million-bangkok-train-commuters-daily>

⁵⁷ Mass Rapid Transit Authority of Thailand. Undated. The MRT Yellow Line Project: Khae Rai-Min Buri Section.Brochure.

⁵⁸ Narumol Nirathon 2006. Fighting Poverty From the Street: A Survey of Food Street Vendors in Bangkok. Informal Economy, Poverty and Employment. Thailand Series 1. International Labor Organization (ILO)

⁵⁹ Gesele Yasmeen and Narumol Nirathon. May. Vending in Public Space: The Case of Bangkok. WEIGO Policy Brief (Urban Policies) No 16. 2014. Women in Informal Employment: Globalizing an Organizing (WEIGO)

57. The extent the BSR consortium companies are complying with this requirement on women participation in decision-making can be seen in the composition of their board and top management team. The three companies have women in these two bodies. But women are most represented in the RATCH. They compose 15% of the board members and 45% of the top managers (Table 14). The BTS and STECON have almost similar representation of women in their board and top management. Women constitute 7% of BTS board and 8% of STECON Board. In the top management, they constitute 18% in BTS and 19% in STECON.

Table 14 Number and Percentage of Women in the Board of Directors and Top Management of BSR Consortium Member Companies

Item	BTS	STECON	RATCH	Average
Board of Directors				
Total Members	14	12	13	30
Women Members	1	1	2	1.3
Percent of Women	7%	8%	15%	10%
Top Management				
Total Positions	11	16	11	13
Women	2	3	5	3
Percent of Women	18%	19%	45%	27%
Source: BTS Group Holding PCL. Annual Report 2016/17; Sino-Thai Engineering and Construction PCL. Annual Report 2016; and Ratchaburi Electricity Generating Holding PCL. Annual Report 2016				

2.4 Labor and Working Conditions

2.4.1 Labor Market Impact

58. **Increased Deficit of Construction Workers in Thailand.** With an unemployment rate of 1%, the Thai economy can be considered operating at full employment.⁶⁰ The unemployment rate in Bangkok Metropolitan Region is even lower at 0.8 percent.⁶¹ Because of low labor supply, sectors of the economy requiring low-skill and low-paid workers have labor deficit. These sectors are agriculture, fisheries, manufacturing, services and construction.⁶²

59. The 410 full-time staff and 160 temporary staff that the construction of the Yellow Line Project will need will exacerbate this deficit. They will expand the number of persons employed in the construction sector in Bangkok Metropolitan Region by 0.56% (Table 15). During the operation phase, around 230 workers will be employed in 23 stations. This number will only expand the number of workers in the transport and storage sector in the Bangkok Metropolitan Region by 0.07 percent.

⁶⁰ Because people switch jobs, full employment means a stable rate of unemployment around 1 to 2 per cent of the total workforce, but does not allow for underemployment where part-time workers cannot find hours they need for a decent living. McGaughey, E. 2018. 'Will Robots Automate Your Job Away? Full Employment, Basic Income, and Economic Democracy' SSRN, part 2, charts at 6, 10 and 22. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3044448

⁶¹ National Statistics Office Thailand, Quarter 3 2016.

⁶² Public Relations Department. 2016. Migrant Workers Account for 5% of the Thai Labor Force. Inside Thailand. Bangkok: Office of the Prime Minister. 7 March. http://thailand.prd.go.th/ewt_news.php?nid=2822&filename=index##M

60. **Employment of GMS Surplus Labor.** The labor deficit in the Thai economy is filled-in by migrant workers. The use of migrant workers in the construction of the Yellow Line Project is already assumed. The government estimates that 5.0% Thai labor force are migrants.⁶³ The construction sector has 40% of all migrant worker. These migrant workers will most likely be from within smaller economies in GMS sharing borders with Thailand. These countries are Myanmar and Lao PDR which have labor surplus as seen in their higher unemployment rate (Table 16).

61. Cambodia also provides labor to Thailand in spite of low unemployment rate because of its lower pay scale and high vulnerable employment rate. The vulnerable employees are those working in informal sector or small family farm and business. They are largely unprotected by government and industry standards and susceptible to unemployment from disturbance in the micro and macro-economic setting as well as the natural environment. In Cambodia, they are estimated to comprise 60.0% of the labor force.⁶⁴

Table 15 Expansion of Employment in Construction and Transportation Sectors Resulting from the Project

Item	Construction	Transportation and Storage
Number of Persons Employed in Bangkok Metropolitan Region ¹	286,000	398,000
Number of Persons Employed in the Project ²	570 (410 full-time staff and 160 temporary staff)	300
Total	286,570	398,300
Percentage Increment	(0.20%)	(0.07%)

¹ National Statistics Office Thailand, Quarter 3 2016.
² 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.

Table 16 Unemployment Rate in Greater Mekong Area: 2017

Country	Unemployment Rate
Cambodia	1.0%
China	3.9%
Lao PDR	3.6%
Myanmar	4.0%
Thailand	1.0%

Sources: ASEAN Secretariat. 2017. ASEAN Statistical Leaflet: Selected Key Indicators. 2017. Jakarta and <https://www.reuters.com/article/us-china-economy-jobs/china-says-jobless-rate-lowest-in-years-but-challenges-persist-idUSKBN1CR01F>

62. **Poverty Reduction in Remittance-Recipient Households.** It is well-recognized that migrant workers contribute to the development of both their countries of destination and origin.⁶⁵

⁶³ Public Relations Department. 2016. Migrant Workers Account for 5% of the Thai Labor Force. Inside Thailand. Bangkok: Office of the Prime Minister. 7 March. http://thailand.prd.go.th/ewt_news.php?nid=2822&filename=index##M

⁶⁴ Willemyns, A. 2016. Cambodia's Low Unemployment Rate Hides Harsh Reality. The Cambodian Daily. 29 January. <https://www.cambodiadaily.com/news/cambodias-low-jobless-rate-hides-harsh-reality-106803/>

⁶⁵ OECD/ILO (2017), How Immigrants Contribute to Thailand's Economy, OECD Development Pathways, OECD Publishing, Paris. <http://dx.doi.org/10.1787/XXXXXXXXXXXX-en> and Public Relations Department. 2016. Migrant

The Yellow Line Project will contribute to that development through the use for foreign construction workers. At the household level, the contribution of the use of foreign workers can be seen in the increase of their annual household income.

63. In Lao PDR, the remittance of the migrant workers in Thailand increased their household income by 120.0% (Table 17). In Cambodia, the increase is lower and varies between the land-owning and landless households. Among the land-owning households, the increase of household income from remittance is 82.1% but only 59.5% among the landless households. The difference prevails in spite of their almost equal income base.

Table 17 Amount of Remittance and Difference of Household Income Before and After Remittance in Lao PDR and Myanmar

Item	Lao PDR	Cambodia	
		Landless	Landowner
Annual Household Income Before Remittance	697 USD	639 USD	604 USD
Amount Remittance Received	836 USD	380 USD	496 USD
Annual Household Income Including Remittance	1533 USD	1,019 USD	1098 USD
% Increase in Household Income	120.0%	59.5%	82.1%
Source: Deelen, I and P. Vasuprasat, 2010. Migrant Workers' Remittances from Thailand to Cambodia, Lao PDR and Myanmar: Synthesis Report on Survey Findings in Three Countries and Good Practice. Bangkok: International Labor Organization Regional Office for Asia and the Pacific.			

2.4.2 Adherence to Core Labor Standards

64. **Core Labor Standards in Thai Labor Laws.** One of the two collateral issues identified in the ADB Social Protection Strategy Action Plan that must be addressed is the need to promote good social protection practices.⁶⁶ To address this issue, ADB will take all necessary and appropriate steps to ensure and monitor that ADB-financed procurement of goods and services, contractors, subcontractors, and consultants will comply with the country's labor legislation and as well as with the Core Labor Standards.⁶⁷

65. The four core labor standards are as follows: (i) freedom of association and right to collective bargaining; (ii) elimination of all forms of forced and compulsory labor; (iii) abolition of child labor; and (iv) elimination of discrimination in respect of employment and occupation. The International Labor Organization (ILO) has eight fundamental conventions upholding these standards. The Thai government ratified six of these conventions covering three core labor standards. All conventions are in force except CO 111 (Non-Discrimination in Employment and Occupation 1958). The Thai government ratified it in 13 June 2017 and it will only be in force a year after

Table 18 Provisions in Thai Laws on Core Labor Standards and Status of Fundamental ILO Conventions in Thailand

Workers Account for 5% of the Thai Labor Force. Inside Thailand. Bangkok: Office of the Prime Minister. 7 March. http://thailand.prd.go.th/ewt_news.php?nid=2822&filename=index##M

⁶⁶ The other issue is ADB's intervention negative effect on vulnerable groups. ADB. 2001. Social Protection Framework Policies and Strategies. Manila. Appendix 1

⁶⁷ ADB. 2001. Social Protection Framework Policies and Strategies. Manila. Appendix 1

Core Labor Standards	Thai Laws	ILO Convention Ratified, Ratification Date and Enforcement Status
Freedom of association and right to collective bargaining	<p>A person shall enjoy the liberty to unite and form an association, cooperative, union, organization, community, or any other group (2017 Constitution, Section 42).</p> <p>A labor union may be established only by virtue of this Act. The labor union must have the objectives of acquiring and protecting the interests relating to conditions of employment and promoting better relationships between employees and employers and employees (Labor Relations Act Section 86)</p> <p>The demand for an agreement relating to conditions of employment or an amendment thereof shall be submitted in writing either the employer or employees to the other (Labor Relations Act Section 13)</p>	<p>CO87- Freedom of Association and Protection of the Right to Organize 1948. Not Ratified</p> <p>CO 98- Right to Organize an Collective Bargaining Agreement 1949 Not ratified</p>
Elimination of all forms of forced and compulsory labor	<p>Forced labour shall not be imposed, except by virtue of a provision of law enacted for the purpose of averting public calamity, or when a state of emergency or martial law is declared, or during the time when the country is in a state of war or armed conflict (2017 Constitution, Section 30) .</p> <p>The hire of services is a contract whereby a person, called the employee, agrees to render services to another person, called the employer, who agrees to pay remuneration for the duration of the services. (Civil and Commercial Code Section 575)</p>	<p>C029 - Forced Labour Convention, 1930 (No. 29): 26 Feb 1969: In Force</p> <p>CO138- Minimum Age Convention 1976: 11 May 2004: In Force</p>
Abolition of child labor	An Employer shall not employ a child under fifteen years of age as an Employee. (Labor Protection Act Section 44)	C182 - Worst Forms of Child Labor Convention, 1999 (No. 182)_16 Feb 2001 In Force
Elimination of discrimination in respect of employment and occupation	<p>The entrepreneur shall provide contract employees, who perform work in the same manner as employees under the employment contract, to enjoy fair benefits and welfare without discrimination. (Labor Protection Act Section 11)</p> <p>An Employer shall treat male and female Employees equally in employment unless the description or nature of work prevents such treatment (Labor Protection Act Section 15).</p> <p>Prohibition of any policy, procedures or project of public and private entity that unfairly discriminate a particular gender (Gender Equality Act 2015 Section 17)</p>	<p>C100 - Equal Remuneration Convention, 1951 (No. 100) 08 Feb 1999 In Force</p> <p>CO 111 Non-Discrimination in Employment and Occupation 1958, 13 Jun 2017: Not in Force until 13 Jun 2018.</p>

66. These standards are confirmed in Thai laws (Table 18). The elimination of all forms of forced and compulsory labor has corresponding provision in the 2017 Constitution and Section 575 in the Civil and Commercial Code. The abolition of child labor is likewise provided in Section 44 in Labor Protection Act. The non-discrimination in employment and occupation is upheld in two laws: 1998 Labor Protection Act (Sections 11 and 15) and 2015 Gender Equality Act 2015 (Section 17). Three laws strengthen the legal framework on child and forced labor. These are the following: (i) Penal Code (Section 312, 282-283); (ii) Anti Trafficking of Persons Act (Sections 4 and 6); and (iii) Child Protection Act (Article 26).

67. In 24 January 2017, the Royal Gazette issued an amendment to the Labor Protection Act to further prevent child labor by increasing the penalty for non-compliance.⁶⁸ Apart from these laws, Thailand formulated time-bound plans to eliminate forced and child labor on the ground. These plans are the following: National Plan to Eliminate the Worst Form of Child Labor Phase 2 (2015-2020); and National Strategy and Measures for Prevention and Suppression of Trafficking of Persons.⁶⁹

68. The two conventions that the Thai Government has not ratified are on freedom of association and right to collective bargaining. The unratified conventions are CO 87(Freedom of Association and Protection of the Right to Organize 1948) and CO 98 (Right to Organize an Collective Bargaining Agreement 1949). But the 1975 Labor Relations Act provides for employees under the same employer and employees in different employer but the same type of work to establish a union (Section 86). The union can also negotiate with the employers on the employees' terms of employment which can be generally considered collective bargaining (Section 13).

69. **Thai Government Effort in Labor Law Enforcement.** The level of effort that the Thai Government is exerting to enforce its labor laws is increasing as seen in selected indicators (Table 19). The first indicator is funding on labor inspection which increased by 45.0% between 2015 and 2016. The second indicator is on number of labor inspectors which increased by 50.0% on the same period.

Table 19 Data on Selected Indicators on Government Enforcement of Thai Labor Laws

Indicator	2015	2016
Labor Inspection Funding	690,844 USD	1,001,168 USD
Number of Labor Inspectors	592	880
Number of On-site Inspections Conducted	42,606	39,350
Number of Criminal Investigations	2,606	3,040
Number of Violations Found	2,587	3,252
Source: https://www.dol.gov/agencies/ilab/resources/reports/child-labor/thailand		

70. The amount of funding and number indicators may not yet suffice to adequately cover its 1.7 million business establishments.⁷⁰ But it they were able to conduct 39,350 on-site labor inspections in 2016 although 3,256 less than the number of inspections done in 2015. But the quality of inspection may have increased with the 16.6% increase in the number of criminal investigations done during the period. The number of violations found correspondingly increased by 25.7 percent.

71. It is also noted that the Thai government is conducting both routine and unannounced inspection and continuously training their labor inspectors.⁷¹ Their training courses are as follows: (i) initial training for new employees; (ii) training on new labor laws related to child labor; and refresher training of inspectors.

⁶⁸ <https://globalcompliance.com/thai-labour-protection-act-child-labour-violations-20170209/>

⁶⁹ <https://www.dol.gov/agencies/ilab/resources/reports/child-labor/thailand>

⁷⁰ National Statistics Office Thailand. Business establishment is defined as at least one person engaged in economic activity and classified according to the Thailand Standard Classification (TSIC-2009).

⁷¹ <https://www.dol.gov/agencies/ilab/resources/reports/child-labor/thailand>

72. **Employment Policies of BSR Consortium Members.** The code of conduct of the three BSR consortium members expresses provisions for compliance to existing laws and regulations (Table 20). Their common adherence to non-discrimination in treating employees has also specific provisions in the code of conduct of each consortium member. The other common elements in their code of conduct are in providing employees the following: (i) respect of human rights and dignity; (ii) health and safety in work area; and (iii) human resource development. The BTS Code of Conduct provides for a conducive corporate culture and teamwork. Both STECON and RATCH have provision on employees' feedback.

73. **BSR Members' Compliance to Core Labor Standards.** The three companies comprising the BSR Joint Venture have varying staff size. BTS has the largest with 4,248 employees (Table 21). STECON and RATCH have only 1,231 and 201 employees, respectively. On the freedom of association and right to collective bargaining agreement, only STECON has a labor union and a collective bargaining agreement. The staff in the two other companies are not unionized. Nonetheless, there has been no report of a labor dispute on the three companies in the media.

74. For five consecutive years (2012-2015), the Ministry of Labor has rated RATCH's labor relations and welfare as excellent. There has also been no report in the media or any studies on the three companies indicating violation of the three core labor standards. For compliance to other Thai labor laws, the construction phase will create the need for foreign manual labor subject to the 2017 Managing the Work of Aliens Law. It prohibits the use of illegal foreign workers. Although the construction industry of Thailand is highly reliant on foreign labor for manual work, STECON, the construction arm of the BSR Joint Venture, is noted to have used only legally-documented foreign workers.⁷²

Table 20 Employment Policy of BSR Consortium Members

BSR Consortium Member	Policy
BTS	<p>Throughout the entire operation of the Group's business, BTS Group has complied with the relevant laws on human rights, such as equal employment and treatment of male and female personnel, no use of child labor, and compliance with the law on employment of disabled individuals as the Group's personnel.</p> <p>BTS Group believes that human resource is the key factor and valuable resource in its business operation and, therefore, values the employees. The Group treats all levels of employees equally and without discrimination. The Group also respects human rights principles under international standards and laws and regulations. The Group also values the wellness and occupational health, the safety of life and property, and the working environment and promotes good corporate culture and working as a team. All employees are equally provided with an opportunity for career growth. Valuing the potential of employees, BTS Group focuses on personnel development whereby both internal and external trainings are given to the employees and group activities, either among the employees or between the employees and the executives, are organized to develop and build a good relationship in the organization.</p>
STECON	<p>Give precedence to the policy on the development of employee's knowledge, abilities and potential: Supervise compliance with the law and regulations relating to employees so they shall be treated in equal manner; Give precedence to the treatment of employees with integrity, and politeness, to respect individual and human dignity according to human rights and to protect employees from</p>

⁷² <https://www.reuters.com/article/us-thailand-migrants/thailands-new-labor-rules-send-thousands-of-migrant-workers-fleeing-idUSKBN19O0B6>

BSR Consortium Member	Policy
	direct and indirect discrimination of any kind in particular to race, religion, gender, age and education; Supervise the Company's business operations in accordance with the law, regulations and criteria relating to safety, and occupational health: Provide support to encourage employees to report bribery and corruption in violation of laws, code of conduct and policies of the company and file complaints regarding violations of rights or to express their opinions regarding business operations and providing whistle-blower protection policy.
RATCH	Executives will provide employees: (i) fair compensation; (ii) work environment that is safe to the employees and the company's and employees properties; (iii) promotion, rotation, reward and punishment based on equity, honesty, fairness and individual knowledge and competency; (iv) encouragement to develop their knowledge and competency; (v) open venues to employees' opinion and suggestion which is based on their personal knowledge; (vi) strict abeyance to rules and regulations involving employees; and (vii) respect individual and human dignity
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; http://www.ratch.co.th/en/cg/conduct/the-code-of-conduct	

Table 21 Number of Employees and Compliance to Core Labor Standards of Companies Composing the BSR Joint Venture.

Item	BTS	STECON	RATCH
Number of Employees (2016)	4,248 ¹	1,231 ¹	201 ¹
Core Labor Standards			
Freedom of association and right to collective bargaining	None ²	Sino-Thai Workers' Union (Registration: 1981) ³	No Labor Union but rated Excellence in Labor Relations and Welfare Award for five years (2012 - 2016) by the Ministry of Labor ⁴
	No Information	Yearly Collective Bargaining Agreement	No Information
Elimination of all forms of forced and compulsory labor	No case reported	No case reported	No case reported
Abolition of child labor	No case reported	No case reported	No case reported
Elimination of discrimination in respect of employment and occupation	No case reported	No case reported	No case reported
¹ BTS Group Holding PCL. Annual Report 2016/17; Sino-Thai Engineering and Construction PCL. Annual Report 016; and Ratchaburi Electricity Generating Holding PCL. Annual Report 2016 ² BBL Asset Management Company. 2013, Infrastructure Fund Project of BTS Rail Mass Transit Growth Fund. 19 April. ³ http://www.thailabordatabase.org/en/union.php?c=detail&id=49 ⁴ http://www.ratch.co.th/en/about/awards?year=2016			

2.4.3 Labor Grievance Mechanism

75. The settlement of labor cases follows the procedure set in the 1975 Labor Relations Act. A worker can file a case against an employer for any violation of the provision of the labor laws using a five-step process:

Step 1: The worker and the employer or through their representatives will directly negotiate.

Step 2: If the negotiation fails, the case is referred to a Conciliation Officer who will mediate. The Conciliation Officer is under the Ministry of Interior.

Step 3: If mediation fails, the worker may refer the case to arbitration by one or more arbitrators appointed by the worker and the employee.

Step 4: The worker will bring the case to the Labor Relations Committee (LRC). The LRC will mediate between the worker and the employer for a mutually acceptable compromise. If a compromise is not attained and the LRC finds probable cause against the offending party, it makes the appropriate recommendation for the filing of a lawsuit.

Step 5: The worker can file the labor lawsuit in the court. If the probable cause involved fraud or failure or refusal of the employer to pay an arbitral award, a criminal case can be filed. Once the case is filed in court, it can move in the judicial process from the lower to the higher court.

76. The worker may file the case without the help of a lawyer. But a lawyer will better assure that the worker's rights will be fully protected, and all possible claims for compensation are brought to the attention of the LRC or the court. The most common case brought before the labor authorities is illegal dismissal or unlawful termination.

2.4.4 Mitigation for the Risk of Use of Foreign Worker

77. The project's use of migrant workers during the construction period has the risk associated with the use of such workers in Thailand. These risks are the following: (i) human trafficking of migrant workers; (ii) migrant workers' vulnerability to exploitation and illegal practices; (iii) potential spread of communicable diseases particularly HIV/AIDS; (iv) added burden to public health and medical facilities; and (v) social disturbance arising from conflict among workers and with members of local communities.

78. These risks will be mitigated by the existing government measures addressing these risks and specific project measures. Four government measures are taken to mitigate human trafficking and migrant workers' vulnerability to exploitation and illegal practices in general. These measures are as follows: (i) enforcement of the 2017 Managing the Work of Aliens Law.; (ii) operation of Post-Arrival and Reintegration Centers for migrant workers in border districts; (iii) increased resources allocated to labor inspection and capacity building of inspectors; (iv) government-industry group coordination on enforcement.

79. The 2017 Managing the Work of Aliens Law. aims to regulate the recruitment of migrant workers and their employers, prevent human smuggling and protect all stakeholders to receive fair treatment. Among the measures contained in the rules to achieve these aims are as follows: (i) clearer and higher criteria (e.g., amount of capitalization, fixed physical location and track record) for business establishments given permit to bring in foreign workers; (ii) requirement of employers to pay recruitment fee and other expenses; (iii) treating confiscation of work permit or identification document of a foreigner a criminal offense; (iv) shared responsibility given to the recruiter and employer through clear roles in providing fair treatment of migrant worker; (v) expensive penalty (up to 5-year imprisonment and 400,000-8000,000 THB fine) for employer with foreign employee without permit.

80. The Post-Arrival and Reintegration Centers serve the following functions: (i) orient the migrant workers on employment contract, labor rights and life skills; (ii) verify employers according to employment contracts; (iii) pre-screen migrant workers before their arrival to work in Thailand; (iv) record migrant workers' personal information and benefits to which they are entitled upon

return to country of origin; (v) and provide assistance to employers and migrant workers to ensure that both act in accordance with the employment contract.⁷³ Three centers are operating as of October 2016.

81. For the spread of communicable diseases, the Thai government is considered the leader in HIV/AIDS prevention.⁷⁴ Its more significant measures are as follows; (i) free and accessible testing; (ii) 100% condom-use program; (iii) embedding line item for prevention activities in the budget of all ministries and local units; (iv) expanding government capacity by working with 168 civil society organizations; and (v) surveillance system for accurate identification of high-risk groups.

82. On the part of the project, the following measures will be taken to address these risks: (i) MRTA's appointment of Environmental Compliance Monitoring and Supervision Committee; (ii) conduct of periodic and random inspection by the committee; (iii) Third Party preparation of an environmental compliance report; (iv) full compliance to Thai laws on labor and use of migrant workers; (v) application of BSR member's code of conduct to its among its contractors; (vi) regular medical screening of workers as required by law; (vii) orientation of worker's on internal rules; (viii) installation of infirmary in work site; and (ix) operation of MRT's complaints service and BTS's customer service.

⁷³ International Organization of Migration. 2016. Migrant Information Note. Issue Number 30. December

⁷⁴ Taweessap Siraprapasin and Others. 2016. The Impact of Thailand's Public Health Response to the HIV Epidemic 1984-2015. Understanding the Ingredients of Success. Journal of Virus Eradication. Volume 2 Supplement 4. 28 November.

Chapter 3 Stakeholder Engagement

3.1 Type of Stakeholders and Project Impact

83. The Yellow Line Project has five direct stakeholder groups: commuters, property users, business operators along the route, private service providers (hospitals, schools and temples) and government offices along the route (Table 22). The property users are divided into two: households with expropriated assets and those whose unaffected properties. In the long-term, all the stakeholder groups, except the property users with expropriated assets who choose to live far from the line, will benefit from the project. The expropriated assets are compensated at replacement cost.

Table 22 Project Stakeholders, Estimated Number of Persons and Impact

Stakeholder Group	No of Person	Impact	Duration	
			Temporary	Permanent
Commuters	44,000 persons / hour/direction maximum	Increased Traffic	X	
		Easier travel		X
Property Users				
With Expropriated Assets	Owners of land parcels Owners of non-land assets and tenants	Loss of land and other assets		X
No Expropriated Assets	57,000 persons living within 500 meters from the route ³	Increased traffic, dust and vibration	X	
		Risk generated workers	X	
		Increased property values		X
Business Operators in the Route	No information on exact number	Easier access		X
		Increased business		X
Private Service Providers	5 schools, 5 hospitals and 2 places of worship	Easier access		X
Government Offices	9 offices (police, post, social security, car inspection, public utilities)	Easier access		X
¹ 30 km length x 1 m impact area width (500 meter per side) = 30 km ² x 1900 persons/km ² = 57,000 persons				

84. The commuters, business operators along the route, private service providers and government offices will gain easier point-to-point access. Further, the property owners with unaffected properties and those with affected properties but will stay in the area along the route will gain from increased property value. The easier access may also redound to the higher business intensity among business operators along around the stations. But in the short-term, the commuters and property users along the route will bear the brunt of the increased traffic, dust and vibration during construction. These property users will also be exposed to the risks that the presence of workers may pose including communicable diseases and social disturbance.

3.2 Information Disclosure and Consultations in EIA Preparation

85. The information disclosure and consultation activities were conducted between June and September 2012 as part of the EIA preparation. During this period, information was disclosed using multi-media channels (Table 23). These channels include the conventional media (TV, radio

and print), distribution of leaflets and brochure, video, exhibition boards and a dedicated website. A press conference was held with 18 mass media outlets attending. Around 5,000 leaflets and 2,000 brochures were distributed. The Yellow Line website was opened and is still currently operating.

Table 23 Information Dissemination Activities for EIA Preparation

Medium	Unit of Measure	Remarks
Public hearings and focus group meetings	4 events	Affected people from all districts, academics, officials, consultants, MRTA representatives
Pamphlets Distribution	Estimated 5000 leaflets	Distributed in consultation meetings and made available to the public in MRTA office
Exhibition Board	10 Boards	At local administration offices in concerned districts of Bangkok; at provincial, district, township, and village government offices; at concerned provincial and district land offices
Video	2 sets	One in animation and one in pictures; Posted in the internet; Available in English.
Dedicated website	1 site	https://www.mrta.co.th/en/projectelectrictrain/yellowline/
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.		

86. Within the same period, 2 public hearings and 2 focus group meetings were held with the communities along the route with participation from more than 330 stakeholders at each meeting; as well as one-on-one discussions with concerned individual stakeholders (Table 24). The number of consultation meetings with other stakeholder groups were as follows: two with local government units (province, municipalities and districts); eight with big business operators; one with a private service provider; and three with national government units.

Table 24 Consultations Done for EIA Preparation and Social Concerns Raised

No	Type of Stakeholder	Group	Date of Meeting	Social Concerns Raised
1	Business establishments	Seacon Square Department Store	10 May 2013	<ul style="list-style-type: none"> When will the construction be completed? Will the consultant meet with all department stores along the project route? Will this project facilitate to the private sector? The company has space at the back of the shopping center. In the future, if continue development, will it be possible to use the area for a station's location. What actions should the company take to get MRTA to facilitate customer access to the mall from the station? Who is the decision maker on the location of the station?

No	Type of Stakeholder	Group	Date of Meeting	Social Concerns Raised
				<ul style="list-style-type: none"> • Seacon Square Department Store feared its parking area will be used by train users not shoppers at the mall. • If the station is located at Seacon Square Department Store, Are there limits on the size and mass transit fares, within the framework of the law? • Will construction budgets be a problem, if the station is around Seacon Square?
		Thanya Shopping Park Srinagarindra	17 May 2013	<ul style="list-style-type: none"> • The station should be north of the shopping mall. • There should be space for taxis and vans to park; at least 60 - 70 cars. • ITF is required for parking of shuttle buses. • Safety considerations: The station must have a fire escape and safety systems. • Determine the proper location, which floor the station will be located and a clear ascent – descent area. • Fire safety evacuation plan.
		Lat Phrao Plaza Co., Ltd.	5 June 2013	<p><u>Questions:</u></p> <ul style="list-style-type: none"> • How is the location of the station determined? • How many sq. m. for station construction and train rails? • When is the exact project construction phase? • During the station construction phase, traffic congestion may be a problem. What is the solution? • Why not build the station at Lat Phrao Plaza Co., Ltd., mostly it will build with large enterprises? <p><u>Comments/Suggestions:</u></p> <ul style="list-style-type: none"> • Agree on the Yellow Line Project but worry about the traffic problem during project construction. • Should be informed of the timing of construction and completion. • Lat Phrao Plaza is interested in a parking building for mutual benefit with MRTA. Wants to discuss the design for aesthetics and cooperation in development.
		Paradise Park Shopping Center	17 June 2013	<ul style="list-style-type: none"> • Want to have a station between Seacon Square and Paradise Park Mall; should be at Suan Luang Ror. 9 to comply with the station's name Suan Luang Ror. 9. • Ascent - descent of the station should be extended to Mall areas. The roof covers a long corridor to Suan Luang Ror. 9 to facilitate public to walk up to Suan Luang Ror. 9 (a public park). • Each mall should reserve some space for a parking for passengers (ascent–descent) at Suan Luang Ror. 9. • Want to have access to the Mall same as Center One at Victory Monument.

No	Type of Stakeholder	Group	Date of Meeting	Social Concerns Raised
		Siam Makro PCL	11 July 2013	<ul style="list-style-type: none"> Agree on the Yellow Line Project. Concerned about traffic jams during construction. Expect business to be affected during construction on Lat Phrao Road. Siam Makro PCL customers are entrepreneurs buying goods wholesale; not retail shoppers. Most use pick-ups or trucks to transport goods. If train station located in front of the mall, Siam Makro benefits little. The project will be presented to the Management Committee to consider and to achieve mutual benefits with MRTA.
		Big C Super Center PCL	17 July 2013	<ul style="list-style-type: none"> Agree on the Yellow Line Mass Transit Project to alleviate traffic on Srinagarindra Road. Big C Super Center PCL. Srinagarindra would consider a long-term joint venture with MRTA. Big C Super Center PCL representatives will present Yellow Line Project to the Executive Committee for further consideration.
		Bangkok Bank, Lat Phrao 44 Branch	21 October 2013	<ul style="list-style-type: none"> The entrance–exit of Phawana station located in the area of Bangkok Bank, Lat Phrao 44 Branch will require the bank to relocate; affecting local customers and relocation of safes. Requested a plan of entrance–exit of Phawana station to present to Bank executives for consideration and seeking concepts for benefit sharing with MRTA. Proposed expropriation of part of the bank's area required for the station entrance–exit; and, pay compensation for land expropriation and the expropriated building. (No need to pay for building modifications). Proposed expropriation of land, including banks buildings, then the bank will lease MRTA's land for future banking operations. Proposed the bank be allowed to use MRTA land; MRTA will sign a MOU for building an entrance– exit for the bank. Propose to build entrance–exit directly into the bank from the station.
		AEON (Thailand) Co., Ltd.	6 November 2013	<ul style="list-style-type: none"> AEON agreed with Yellow Line Project to develop the Phatthanakan station; the Maxvalue Phatthanakan parking lot for ascent– escent of the station and the Park and Ride Building; and, is willing to co-develop with MRTA. Currently, an area of AEON is a lease with a contract for about 15 years and AEON has the policy to develop both a supermarket and shopping mall. In a related project, this could be developed in collaboration with MRTA. Then the AEON (Thailand) Co., Ltd. will present the Yellow

No	Type of Stakeholder	Group	Date of Meeting	Social Concerns Raised
				<p>Line Project to the board of directors of AEON (Japan) Co., Ltd. for consideration.</p> <ul style="list-style-type: none"> Proposed to re-align the red line of the construction of entrance–exit of the station at the area of Maxvalue Phatthanakan to give an entrance–exit to McDonald's Max Value branch.
2	National government unit	Samut Prakan Highway District, Department of Highways	8 August 2013	<ul style="list-style-type: none"> Agree on the Yellow Line Project with the monorail system. Regarding use of Samut Prakan Highway District area for construction of Depot and Park and Ride building: the office agrees in principle. Requires coordination with the Legal Division and a letter of request to use land to the DG of Department of Highways. If the Yellow Line project needs to expropriate the f Samut Prakan Highway District office building, it is proposed to replace the building with a new building opposite the current office and have a bridge connecting the new office to the train line. The project route at the section of Srinagarindra Road and Thepharak Road was experiencing frequent flooding, so drainage should be considered.
		Office of the Attorney General, Office of Provincial Summary Litigation 2	20 August 2013	<ul style="list-style-type: none"> Agree on the Yellow Line Project with the monorail system. Agree with location of entrance of Samrong station being in empty space and at the old number 2 bus line terminal on Thepharak Road since the space is not utilized. This reduces expropriation impacts on people, housing, and shops in Samrong market. At Thepharak intersection the Yellow Line consultants should coordinate with engineers of the Green Line to design the station's entrance to minimize impacts of land expropriation.
		Office of Archaeology, Fine Arts Department	2 September 2013	<p>Fine Arts Department has appointed an archaeological conservation working group to provide feedback on Skytrain projects in Bangkok. Concerns included:</p> <ul style="list-style-type: none"> Details of the project route to determine potential impacts based on the Fine Arts Department database. What are advantages-disadvantages of a monorail system? How about noise and vibration of from a monorail train? Preliminary project information will be presented to the Committee on Conservation of Historic Places in Bangkok for consideration.
3	Educational Institution			
4	Medical Facility	Lat Phrao Hospital	18 October 2013	<ul style="list-style-type: none"> The entrance – exit of Mahatthai station (Wang Thonglang) located in front of the Lat Phrao Hospital. That designs will close the entrance – exit of building 2, which is

No	Type of Stakeholder	Group	Date of Meeting	Social Concerns Raised
				<p>X-ray room Building of Lat Phrao Hospital. Proposed to Avoid the area in front of the Hospital, by move the entrance – exit to be in front of Techacharas Honda Automobile Co., Ltd., which is an open area. No structural obstacles which may be more appropriate.</p> <ul style="list-style-type: none"> • During construction, should have environmental mitigation measures to control noise, vibration and dust. • Transportation of materials and equipment should be in accordance with relevant laws to minimize impact on people using Lat Phrao Hospital. • Requested the station plan for Mahatthai station, located in front of the Lat Phrao Hospital to present to executives of Lat Phrao Hospital for consideration for benefit sharing with MRTA.
5	Religious Institution			
6	Local Government Unit	Director of Prawet District Office	18 September 2013	<ul style="list-style-type: none"> • Agree on the Yellow Line Mass Transit Project with the monorail system. • Proposed to relocate the Si Udom station to be around Udomsuk intersection. Also, design the entrance-exit on both sidewalks to reduce land expropriation for constructing the Yellow Line. • During construction period, should have measures to control transport of construction materials and equipment. • If there is a need to obstruct public routes, there should be coordination with responsible organizations. Proper diversions should be prepared with clear signage for pedestrians 1 month prior to implementation.
		Mayor of Samrong Nua Municipality	20 September 2013	<ul style="list-style-type: none"> • If there is a need to obstruct public routes, there should be coordination with responsible organizations. Proper diversions should be prepared with clear signage for pedestrians 3 months prior to implementation. • Temporary drainage measures should be implemented during construction to prevent flooding on Thepharak Road. • Proposed to relocate the Si Dan station to Wat Dansamrong junction (Soi Sukhumvit 113) to accommodate the public traveling in Bangphli Industrial Estate and Sukhumvit Road. • Extension of the Yellow Line route to connect with Bang Phli Industrial Estate, Wat Lung Pho Tao and King Kaew Road.

No	Type of Stakeholder	Group	Date of Meeting	Social Concerns Raised
		Director of Wang Thonglang District	20 September 2013	<ul style="list-style-type: none"> • There are concerns during the project construction period, on the water supply system during the dismantling of the water supply pipes, which will suffer the people in Lat Phrao Road. And should have a good traffic management to alleviate traffic congestion during construction. • During construction, there will be traffic jams. Should have a good traffic management to alleviate traffic congestion, which normally very awkward. • What is the passenger capacity of each train car? And how many passengers in one train? • What is the frequency of each train? • Safety must come first. • What is the source of funding of the 2 billion baht for the Yellow Line? • Relocation of utility systems will 18 to 24 months; when will construction begin and the Yellow Line operate? • What is the fare of the Yellow Line? • What are the noise and vibration impact of Yellow Line operations on people?
		Public Works Subdivision, Bang Na District Office	7 October 2013	<ul style="list-style-type: none"> • Agree on the Yellow Line Mass Transit Project with the monorail system. • Proposed design entrance – exit of the stations to be inside of each sidewalk or 15 meters set-back to minimize expropriation impact on people around Si La Salle and Si Bearing stations. • Proposed relocation of Si Dan station to Wat Dan Samrong junction area (Sukhumvit 113) to accommodate the public traveling in Bangphli Industrial Estate and Sukhumvit Road. • If there is a need to obstruct public routes, there should be coordination with responsible organizations. Proper diversions should be prepared with clear signage for pedestrians prior to implementation. • Should design an Emergency Walkway to evacuate passengers quickly enough in an emergency.
10	Public Utility Company			
11	Community	Prawet Community Board	19 September 2013	<ul style="list-style-type: none"> • When will the construction begin and be completed?
		Community Public Hearing No. 1	First meeting:	Social concerns:

No	Type of Stakeholder	Group	Date of Meeting	Social Concerns Raised
		Total participants: 337	21 and 22 September 2013	<ul style="list-style-type: none"> Some consultations should take place on weekends so that people who are working also can participate Have the locations of all the stations already been selected? Are the locations of the stations available on the Internet? <p>Economic concerns:</p> <ul style="list-style-type: none"> When will construction be completed? Will construction be completed as planned in 2019? Construction will impact on the local community The Government should establish a fund for people impacted by the project Construction of the MRT Yellow Line has much more impact on communities than previous lines. Does MRTA think that the cost of the impacts is worth the investment necessary? Will the fare for the MRT Yellow Line really be 20 baht? Is the MRT Yellow Line the last rail line to be constructed? Is this because of the lack of budget funds or because of opposition by the people? What is the capacity of this rail system? Explain the conveniences that will be made available for passengers who are children, women, elder people, and handicapped people <p>Other concerns:</p> <ul style="list-style-type: none"> During the construction phase, how will traffic be managed? How much experience do the consulting companies have that are hired to work on various issues related to construction of the MRT Yellow Line Project? If only one portion of the immovable property is expropriated and only a small portion remains, how will this be managed? Most of the AP who have provided information to MRTA are not the owners but lessees who occupy the property. Owners are unaware of the expropriation.
		Community Public Hearing No. 2 Total participants: 353	26 October 2013	
12	Multi-Stakeholders	Ratchada Forest Project	20 August 2013	<ul style="list-style-type: none"> The Yellow Line Project passes the construction area of Ratchada Forest Project, making it a public building. Constructing the Ratchada Station in nearby could make it a joint venture with the private sector. But Ratchada Forest Project has a clear construction schedule, while the schedule for the Yellow Line is not clear. Concern is about traffic during construction, especially on Lat Phrao Road.
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				

No	Type of Stakeholder	Group	Date of Meeting	Social Concerns Raised
Consultants Co., Ltd; Prime Street Advisory Co., Ltd. (Thailand); and, Enrich Consultant Co., Ltd; April 2016; Chapter 9.				

87. In these meetings, available project details were disclosed and questions about the project and its impacts were answered in a two-way discussion format. social concerns were raised during these meetings: (i) location and size of the pillars of the stations and location of the stations; (ii) land acquisition; (iii) timing of consultations with households with affected property; (iv) construction impact on underground structures; (v) traffic management during construction; (vi) levels of dust, noise, and vibrations during and after construction; (vii) safety considerations at each station; and, (viii) the length of the construction period.

88. The mitigation measures in the EIA and the MRTA requirements for concessioners address the concerns on traffic generation and construction impact on structures.⁷⁵ The MRTA is responding to the need for more information through continuing disclosure. Through design modification, it is reducing land acquisition and consulting with affected property users. The station design provides for space and ventilation as well as emergency-response features.

3.3 Post-EIA Information Disclosure and Consultations

89. The Yellow Line also has a YouTube page (BANGKOK MRT YELLOW LINE - VIDEO4H.COM) and a Wikipedia page ([https://en.wikipedia.org/wiki/Yellow_Line_\(Bangkok\)](https://en.wikipedia.org/wiki/Yellow_Line_(Bangkok))). Bangkok Metropolitan Region has 69.2% internet penetration rate.⁷⁶ Around 70.3% are using the smart phone.⁷⁷ It also has 8.7 million Facebook users.⁷⁸

90. For the affected households the following information disclosure activities are done: (i) posting of royal decree and property price appraisal results in public places; (ii) written notice to owners and renters for site inspection, compensation contract, availability and deposit of compensation, appeal process, requirement to vacate the property and appeal decision in case of complaint; and (iii) public disclosure of the minutes of the meeting of Compensation Committee.

91. The consultations related to households with affected assets has been conducted in the neighborhood and household level. The more discreet mode of the consultation done is due to the delicate nature of the subject matter. It involves information on high-valued properties, authenticity of property ownership, prominent family names, family conflicts and in many instances, huge amount of actual compensation. The documentation of the consultation meetings with affected households is has restricted access.

92. Consultation and exchange of information between MRTA and affected property owners and concerned members of the public are a continuous process being managed by the MRTA

⁷⁵ 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; Chapter 9

⁷⁶ National Statistics Office Thailand

⁷⁷ <https://www.emarketer.com/Article/More-than-90-of-Internet-Users-Thailand-Use-Smartphones-Go-Online/1015217>

⁷⁸ <https://www.aware.co.th/thailand-internet-use-highest-growth-globally/>

grievances office at the MRTA headquarters in Bangkok. Examples of such consultation and resolution of issues include information provided by MRTA related to the following: (i) At the descent at station 14, the grievant requests to reduce the area being expropriated, from 23 m wide and 20 long to 17 m wide and 30 m long. The chairman instructed EBM to check if the area to be expropriated can be reduced. If it can be reduced, EBM should consult with PCYL's advisor to issue a document to confirm the results of the review; (ii) Plot 555, ascent/descent at station 16, STECON could not confirm the exact location of the pillar since the detailed design is still being prepared; but the issue should be resolved (cleared) by March 2018. The meeting acknowledged being informed; (iii) At ascent/descent no. 3 at station 18, the advisor was told to accelerate a response to this matter; but the advisor was waiting for confirmation from EBM. The advisor acknowledged the request and would take action; and, (iv) (รฟม018-(YEL)-PM2-15): The complaints of land expropriation for Yellow Line Project" (Bang Kapi Station YL08), which was referred for further consideration and mitigation. The project has no direct engagement with civil society groups.

Chapter 4. Social Measures

4.1 Social Measures in the Environmental Management Plan

93. The EIA proposes the following mitigation measures for impacts affecting the social conditions during the operation phase: (i) inform the local authorities 30 days before work commencement to alert the local communities; (ii) regulate strictly workers' behavior; (iii) operate Information and Complaints Center and address complaints within three days; (iv) carry out construction activities watchful of potential damage; (v) use multi-media notification seven days before modification of traffic route; (vi) provide personnel for security and traffic management; (vii) require that 70% of workers are domiciled in Bangkok and vicinity for more than five years; (viii) engage the complainant in resolving the complaint; (ix) meet with local communities and conduct monthly public hearing; and (x) participate in community activities and provide community and household assistance.

94. For the operation phase, the EIA identified potential impact on the income of small business establishments in stations affected by expropriation. It proposes to restore the conditions of these business owners through special assistance. An example of an assistance to be provided is a business opportunity in the station.

4.2 Developing a Policy on Gender and Vulnerable

95. In line with the national policy on gender inclusion and code of conduct of the members of the BSR consortium, EBM will develop a policy including a code of conduct which promotes non-discrimination policy gender equality to employees and clients. It will also adopt BTSC policy for persons with disability.

4.3 Responsive Project Design Features

96. Women have three particular concerns which must be addressed in the design of an urban mass rapid transport system. If these concerns are not taken into consideration, the access and usability of the system to women will be curtailed and exclusion will ensue. These concerns are as follows: (i) frequent off-work trips associated with household and caretaking responsibilities; (ii) trips with children and elderly; (iii) availability of women staff; and (iv) safety from sexual harassment.⁷⁹ These concerns are addressed in various design features of the Yellow Line Project.

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97. **Frequent Off-work Trips Associated with Household and Caretaking Responsibilities.** The selection of station location is critical in enabling women to make off-work trips more efficiently and much more, effectively combine these with work-trips. The Yellow Line has 21 stations where services important to women in meeting their household and caretaking responsibilities. The service providers in these stations include five schools, five hospitals and two markets and three supermarkets.

⁷⁹ Peters, D. 2013. Gender and Sustainable Urban Mobility. Thematic Study Prepared for Global Report on Human Settlements. Nairobi and Buckley, N. G. 2016. Sexual Harassment in Public Transit and the Influence of Perceptions of safety and Public Behavior. Report for the Requirement for the Degree of Master of Science in Community and Regional Planning. University of Texas at Austin. May.

98. A wide range of government services, including registration and permitting, grievance settlement, tax payment and information provision are provided in these centers. social security, labor and social welfare services. The MRT Yellow Line has also seven stations located in areas with substantial commercial activities providing employment opportunities to women, although unemployment among women in Bangkok Metropolitan Region is only 0.47 percent.⁸⁰

99. **Trips with Children and Elderly.** The trips of mothers largely follow the mobility pattern of children. To enable them to use the mass rapid transit with ease, provisions for woman with a child, whether in the womb or in the carriage or in tow will be made available. Among the provisions in the Yellow Line stations and Park and Ride facility for expectant mothers, mother-and-child riders and women accompanying elderly riders are the following: (i) special toilets with floor area large enough to accommodate a baby carriage and wheel chair; (ii) lift; (iv) wide entrance-exit gates to fit a baby carriage and a wheelchair; (iv) hardscape architecture; and (v) station staff to extend assistance. In the train coach, special seats in yellow color for easy identification are allocated for women with a child, disabled and elderly. The following features will be provided to improve mobility of expectant mothers, elderly and persons with disability: dedicated parking slots (2 per floor) at the Park and Ride facilities; priority use of elevators and at least 2 priority seats in carriages; at least one dedicated toilet (with baby changing areas) in the Park and Ride facilities.

100. **Availability of Women Staff.** Based on the current practice of the existing lines, about half of the station staff are women. They handle all types of station tasks from ticketing to security. The code of conduct of the BSR consortium member companies provides equal employment opportunities to women. EBM will follow the practice of the BSR Consortium members and adopt its own Gender Equality Policy.

101. **Safety from Sexual Harassment.** The Yellow Line has the following design features to prevent sexual harassment within the station and train facilities: (i) adequate lighting in all areas; (ii) wide and open corridors for high and clear visibility; (iii) seats placed along the walls of the coach to afford complete view across the floor area and minimal impediment of movement; (iv) cameras and alarm systems such as emergency buttons; (v) security personnel on surveillance platforms and on patrol; (vi) separate sanitation facilities for female and male users; and (vii) location of sanitation facilities along corridors with high foot traffic.

102. The Project will also implement the following measures: (i) maintain high level of cleanliness and functionality due to their influence on users' perception of security and degree of acceptance of crime or misconduct; (ii) train security personnel, drivers and conductors on women's security and safety issues and gender-sensitive emergency assistance; (iii) conduct regular briefing sessions for female and male station staff on security-related issues including violence against women; and (iv) prepare and input to decision-making incident reports on sexual harassment.

4.4 Measures to Protect Women Employees

103. The three BSR consortium members, through their Code of Conduct, expressed their adherence to the principle of non-discrimination and compliance to existing laws. The measures to protect women in employment are contained in the two laws: 1998 Labor Protection Act and its amendment in 2008 and the 2015 Gender Equality Act. As protective measures, the Labor

⁸⁰ These are Stations 2,4,6,7,8,10,11,15,18,19,20,21,22,23,24,25,26,27 and 29.

Protection Law prohibits employers to require women perform dangerous tasks and restricts their employment in night shift (Table 26). It is specifically protective of pregnant women by prohibiting employers to require them to do physically demanding work and work overtime or in night shift subject to certain conditions. The law also entitles pregnant women to 90-day leave, right to request for a change of type work even after delivery and full protection from termination.

104. For non-compliance by employers, the employee can resort to the labor grievance mechanism. Non-labor related cases, can be brought to the Committee Consideration of Unfair Gender Discrimination created under the 2015 Gender Equality Act. This law provides that any person who suffers or likely to suffer damage caused by acts considered to be unfair gender discrimination, where the case has no pending or final court decision shall be entitled to submit a complaint to the committee for consideration and decision (Section 18). Among the committee's functions are the following: (i) decide the case on unfair gender discrimination; (ii) establish temporary measures to protect the complainant or mitigate the suffering; and (iii) issue orders to any organization or person to prevent or end gender discrimination and compensate and remedy an injured party (Sections 14, 18, 19 and 20). The decision made by the committee is considered final (Section 18).

4.5 Measures to Ensure Adherence to Core Labor Standards

105. Compliance to core labor standards is enforced through the labor inspection system managed by the Department of Labor Protection and Welfare (DLPW) under the Ministry of Labor. The system has 880 inspectors in 2016 with a funding of 1,001,168 USD.⁸¹ The scope of inspection covers general working conditions, occupational safety and health, labor welfare and labor relations. The DLPW combines two methods of inspection: self-assessment of enterprises on their compliance to labor laws and site visit.

106. Although integrated labor inspection is the official policy, in practice there are two different inspections: one to verify general conditions of work, and the other to check on occupational safety and health. Visits can be initiated by request or complaint, as part of the general or provincials plan or as a follow-up visit to a previous inspection. As a standard procedure, when inspectors visit enterprises, they always go in teams of two. Follow-up visits are organized to check concrete steps and improvements undertaken by employers. Labor inspectors can issue a written order requiring the employer to comply with the legislation when infractions are identified. They can take immediate measures when they believe that there is an imminent and serious danger to the health or safety of the workers, including temporarily suspending operations. When employers are dissatisfied with a decision made by a labor inspector, they have the right to appeal the decision.⁸² To tap existing corporate governance in enforcing compliance, the Thai Labor Standards Program is operational since in 2003 as a voluntary compliance scheme for large enterprises focusing on Thai Corporate Social Responsibility Requirements, which is used as a system of certification of enterprises.⁸³

⁸¹ <https://www.dol.gov/agencies/ilab/resources/reports/child-labor/thailand>

⁸² http://www.ilo.org/labadmin/info/WCMS_153137/lang--en/index.htm

⁸³ http://www.ilo.org/labadmin/info/WCMS_153137/lang--en/index.htm

Table 26 Provisions in 1998 Labor Protection Law and its 2008 Amendment Protecting Women in Employment

Section	Provision
Section 10 in 2008 Amendment	An employer shall be prohibited to require a female employee to perform any of the following work: (i) mining or construction work to be performed underground, underwater, in a cave, in a tunnel or mountain shaft, except where the conditions of work are not harmful to health or body of the employee; (ii) working on a scaffold of ten meters or more above the ground; (iii) producing or transporting of explosive or inflammable materials, except where the conditions of work are not harmful to health or body of the employee; and (iv) any other work as prescribed in the Ministerial Regulations.
Section 10 in 2008 Amendment	An employer shall be prohibited to require a female employee who is pregnant to perform any of the following work: (i) work involving vibrating machinery or engine; (ii) work of driving or going on a vehicle; (iii) work of lifting, carrying on the back, carrying on shoulder, carrying with a pole across shoulder, carrying on a head, pulling or pushing of loads in excess of fifteen kilograms; (iv) work on a boat; or (v) any other work as prescribed in the Ministerial Regulations.
Section 11 in 2008 Amendment	An Employer shall be prohibited to require a female employee who is pregnant to work between 10.00 p.m. and 06.00 a.m., to work overtime or to work on holidays. Where the female employee who is pregnant works in an executive position, academic work, clerical work or work relating to finance or accounting, the employer may require the employee to work overtime in the working days as long as there is no effect on the health of pregnant employee and with prior consent of the pregnant employee on each occasion.
Section 40	Whereas an employer requires a female employee to work between 24.00 hours and 6.00 hours and the Labor Inspector is of the opinion that the work may be hazardous to her health and safety, the Labor Inspector shall report it to the Director-General or a person entrusted by the Director-General for consideration, and shall order the employer to change or reduce the female employee's working hours, as inspector deems appropriate, and the employer shall comply with such order.
Section 41	A female Employee who is pregnant shall be entitled to maternity leave of not more than ninety days for each pregnancy. A leave taken under paragraph one shall include Holidays during the period of leave.
Section 42	Whereas a female employee who is pregnant presents a certificate from a first-class physician certifying that she is unable to continue in her previous duties, the employee shall be entitled to request the employer to temporarily change her duties before or after delivery, and the employer shall consider changing her duties to suitable work for such an employee.
Section 43	An Employer shall not terminate the employment of a female Employee on the grounds of her pregnancy.

107. The DLPW had also implemented four preventive measures against violations of labor standards. First, it issued guidelines in plain language to various sectors including construction and trained labor inspectors and enterprise representatives on their application. Second, it distributed information materials on worker's rights in different languages to cover migrant workers. Third it set up a network of NGO to provide information to workers and enterprises on the better ways to comply with labor standards. Fourth, labor inspectors are consulting with communities and participating in their activities to spread to a wider audience information on worker's rights. Highly-informed workers are considered effective deterrent against violations of labor standards by employers.

108. The 1998 Labor Law has specific provision (Section45) to facilitate monitoring by labor inspectors of workers below 18 years old. To employ them the employer is required the following: (i) notify a labor inspector on the employment of a young worker within 15 days of the commencement of work; (ii) prepare a record of his employment conditions to be kept at the place of business or at the office of the employer and available for inspection by a labor inspector; and (iii) notify the labor inspector on termination of employment of a young worker within seven days from the date of dismissal.

Chapter 5. Institutional Arrangements

109. As the project owner, MRTA has the responsibility over the project. When BSR won the concession right to the project, it obtained the responsibility for civil engineering, mechanical and power systems, train operation, maintenance and fare collection. The responsibility to implement social measures, which are mainly put in place to prevent and mitigate the adverse social impacts of civil engineering and train operation activities, goes to the BSR. MRTA's responsibility will be to oversee to ensure that both environmental and social impacts are adequately addressed.

110. To provide oversight, MRTA set its requirements in a document where Part 1 is on civil works.⁸⁴ Appendix 5 of Part 1 is environmental protection requirements. The document provides the methods to monitor the concessionaire's compliance with environmental management requirements of MRT projects under MRTA's responsibility. Among the requirements for the concessionaire is to pay all expenses in implementing environmental impact prevention, mitigation and monitoring measures and implement remedial action without delay and at its own expense in case of any complaints.

111. Attached to the requirements (Attachment 5) is an environmental manual for contractors which the concessionaire must comply in addition to the EIA report requirements. The requirements are in 10 aspects: (i) air quality; (ii) noise and vibration; (iii) surface water quality; (iv) drainage; (v) waste management; (vi) public utilities; (vii) transportation; (viii) public and occupational health; (ix) socioeconomics; and (x) community segregation. This manual indicates that the concessionaires will contract out civil works and the contractors will have the ground level role of implementing social measures. But being answerable MRTA, the concessionaire will supervise the contractors in implementing these measures.

112. The MRTA will engage a construction supervision and management consultant for the civil works. To oversee compliance of its environmental requirements, it will monitor both the construction and management consultant and the concessionaire. PCYL is the construction management and supervision consultant of the MRTA. It is a consortium of six companies led by the AEC. One of its members, UAE prepared the EMP and reviewed by the MRTA. The approved EMP will be implemented in during construction phase and will be the basis of environmental monitoring. UAE will monitor the implementation of the EMP as implemented by the contractors under the supervision of the concessionaire. The UAE prepared the Draft Environmental Audit and Socio-economic Survey Monitoring Plan for the Pink and Yellow Lines for PCYL and MRTA.

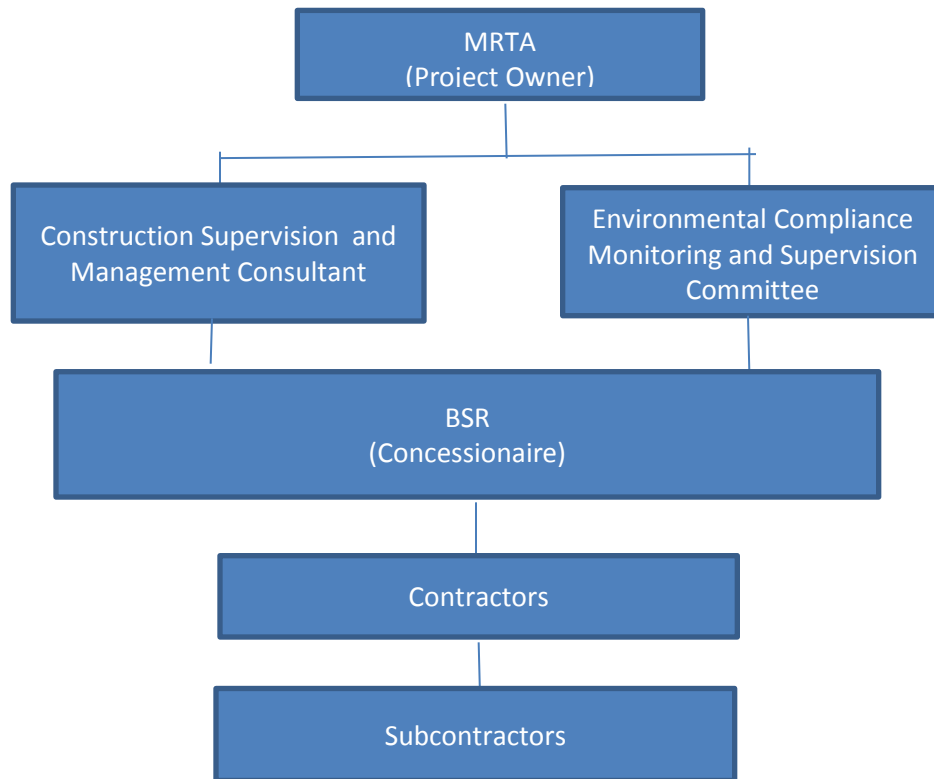
113. MRTA will ensure the compliance of the concessionaire and its contractors and sub-contractors through an Environmental Compliance Monitoring and Supervision Committee. At the level of the contractors and sub-contractors, each is required to have a safety officer, personnel and working unit to operate the safety in establishment according to criteria, methods and terms as prescribed in the law.⁸⁵ The law also provides that the contractors and the sub-contractors are obliged to carry out an operation on occupational safety, health and environment in the same manner as the concessionaire.⁸⁶ The flow of responsibilities of the organizations involved in implementing the social measures are shown in Chart 1.

⁸⁴ MRTA Requirements. Undated. Part 1: Civil Works. Environmental Protection Requirements

⁸⁵ Occupational Safety, Health and Environment Act (2011) Section 13

⁸⁶ Occupational Safety, Health and Environment Act (2011) Section 23

Chart 1
Flow of Responsibilities of Organizations in Implementing Social Measures



Chapter 6 Monitoring and Reporting

114. The MRTA will monitor the environmental performance of the project through the Environmental Compliance Monitoring and Supervision Committee. The committee representative will conduct monthly monitoring and inspection and random night inspection. The monthly monitoring inspection will be done with officers of local agencies and representative of consulting firms. The committee will conduct inspection as deemed necessary.

115. After the monthly monitoring inspection, the committee representative will prepare an inspection report using the format in the manual contained in MRTA Requirements: Part 1: Civil Works, Environmental Protection Requirements. The report containing issues and recommended corrective actions will be submitted to the committee. He will also inform the concessionaire of the issues to be corrected, the deadline to implement the corrective actions and the follow-up inspection. Failure to implement the corrective actions three times entails removal of construction site supervisor.

116. The concessionaire for its part will engage a third party to prepare a monthly environmental compliance report. The report will be prepared following ONEP guidelines. It will be submitted to MRTA every month. A report will also be prepared every six months for submission to ONEP. The MRTA will receive the bi-annual report every 15th of January and 15th of July to be transmitted to ONEP.

117. ADB will engage an external monitor to review in the implementation of social measures in the EMP and in Chapter 4. The external monitor will coordinate with MRTA, UAE the appointed environmental auditor and the committees established too monitor EMP implementation. Semi-annual monitoring reports will be prepared, submitted to EBM, the Borrower, and ADB. Monitoring reports will be disclosed on ADB website.