

付属資料 4

Request for New Technical Assistance Project

Project Title : An Integrated Study on Railway Transport Improvement and Urban Development Scheme for Bangkok Metropolis

Requesting Agencies : State Railway of Thailand (SRT) and Office of the National Economic and Social Development Board (NESDB)

Proposed Source of

Assistance : The Government of Japan

1. BACKGROUND INFORMATION AND PROJECT JUSTIFICATION

Lately the chronic traffic congestion in Bangkok, often described as one of the most severe in the world, as taken on an additional dimension. It is now regarded as one of the major bottlenecks impeding the growth of the Thai economy. This realization has come not only from the resident's growing sense of waste but also from the attitude of foreign investors, whose inward investments have been a major factor of the Thai economy's recent rapid growth. The number of applicants by foreign investors to the Board of Investment in the first half of 1989 was lower than in 1988. Traffic congestion has become a significant factor causing foreign investors to shy away from Thailand as their survey missions comparing congestion in Bangkok and hear that little prospect for its easing exists. The planned central area Skytrain mass transit system will not be in operation before the middle of this decade and will not accommodate commuters in rapidly expanding suburbs.

The population of the Bangkok Metropolitan Region (BMR), 7.3 million in 1986, is expected to reach 10.3 million by 2001, i.e. an increase of 42 %. Population increase in the area outside the Middle Ring Road alone in this period will be more than 2 million or more than 60 % over the 1986 figure. Increase in car ownership will certainly exceed such percentage as the population grows more affluent. Something must be done urgently if the present momentum of economic growth is to be maintained.

SRT has extensive right-of-way (ROW) and other land within BMR. Currently, for technical and financial reasons, SRT's main priorities are long distance passenger services and freight traffic. The Government now wishes to consider the feasibility of developing the ROW of SRT network in the BMR to provide an efficient system of urban transport. As the land already belongs to the public sector (SRT in this case), such a system could be established in a short period of time without the need for lengthy land acquisition procedure.

The utilization of SRT's ROW should obviously be done considering the role of SRT not only in the Bangkok Metropolitan region but also in the context of national transportation network. At present only 90 km of the Northern Line between Hua Lamphong and Ban Phachi is double tracked. All other lines are of single track. Even at the current level of train schedule chronic train delays are taking place. With the anticipated traffic demand increase between Bangkok and the Eastern Seaboard and elsewhere the capacity constraint of existing single track network could become a serious impediment to the growth of Thai economy. Many at grade rail-crossings with heavily congested roads in the Bangkok Metropolitan Area are problems affecting both rail and road traffic. A comprehensive study is necessary to determine the role of rail network in the national and Metropolitan context and to plan for the future.

It should be noted that despite the primary attention to the SRT's ROW, this study should not be regarded as solely a railway project. Implementation of any significant urban transportation system can greatly affect the performance and pattern of urban development. It can also be said that the pattern of urban development greatly affects the performance and viability of the urban transportation system. Both are highly interrelated. The present situation of Bangkok is largely a result of mutually reinforcing development of arterial streets and expansion of urbanized areas along these arterials with virtually no alternative to street based transportation. Thus the provision of a major urban transport system must be considered together with urban land development. In the Bangkok case it is all the more important because some kind of dispersion of urban functions to avoid over-concentration in the city center is necessary. This study therefore should be viewed primarily as an urban development project with transport sector as a guiding force while at the same time providing for national transport needs.

A considerable number of studies and plans have been prepared in the past to address the problem of traffic congestion and yet only a fraction has been actually implemented. Reasons for such inaction are in large part financial and institutional. The lack of sufficient public funds could be overcome by mobilizing private sector resources by, for example, appropriate packaging of transport projects taken as an integrated urban development project. Institutional obstacles have proved to be at least as difficult as financial ones. Many agencies are typically involved in various urban transportation projects with different laws and regulations binding their scope of actions. Considering the urgency of the problem, this study must produce a plan incorporating readily implementable action plans in all fields including

recommendations for financing schemes and institutional structures.

As for the rail network, studies were carried out for the elevation of rail tracks in the central part of the Metropolitan area and for a shuttle service between Don Muang and Hua Lamphong, both of which have remained as proposals.

The Japan International Cooperation Agency has completed the Study on Medium to Long-Term Improvement Plan of Road and Road Transport in Bangkok in March 1990, with the submission of a road network master plan for Bangkok. The master plan set a framework for the future transport development in Bangkok considering not only roads but also other modes. The Feasibility Study proposed here will be a natural follow-up of the JICA master plan study in that it will be development on the basis of the master plan's framework. It is therefore deemed most appropriate that assistance be sought from the Government of Japan for implementing this Feasibility Study.

At least two large scale urban rail projects are awaiting implementation at present. One is the Mass Rapid Transit System (Skytrain) comprising initially two lines on elevated tracks mostly along existing major roads within the central part of Bangkok. The other is the Community Train and Urban Freeway System (Hopewell Scheme) comprising elevated commuter railway lines with freeways on top utilizing the right of way of SRT in the central part of the Metropolitan area. Both projects have not been finalized and this proposed study will be carried out integrating the final forms of the two projects as they become definite.

It is generally recognized that urban rail services can hardly be financially viable even though they are highly efficient in high density passenger transport and effective in guiding urban area development. In most cities in the world urban rail services receive

either direct governmental subsidy or are cross subsidized by other activities in the same ROW or in the vicinity. The proposed skytrain and Hopewell scheme are no exception. The study also is aimed at formulating a package of urban and transport development that is self-standing as a whole.

2. OBJECTIVES OF THE STUDY

- (1) To determine the role of railway transport utilizing the existing ROW of SRT in the Bangkok Metropolis (within the radius of 200 kilometers from Hua Lamphong) in conjunction with associated urban development pattern that can attain the proper functioning of the metropolis alleviating the extent of economic loss, environmental deterioration, and personal discomfort caused by traffic congestion, considering at the same time requirements for railway from the national transportation view point.
- (2) To determine a rail network strengthening master plan for the metropolis that is compatible with the transport and urban development pattern as described above, including the rail line links to the proposed site of the Bangkok's second airport.
- (3) To identify development potentials that could be realized by an integrated development of improved transport service and associated urban development for effective urban expansion in the metropolitan area of Bangkok.
- (4) To formulate integrated schemes of area development and transport infrastructure and service development for selected areas including areas owned by SRT and surrounding areas in phases considering technical, economic, financial, and institutional conditions and constraints.

- (5) To determine the most appropriate institutional structure to implement and operate the above stated schemes considering the prevailing and anticipated financial and institutional conditions and constraints.
- (6) To prepare implementation plans for the above.

3. STUDY AREA

The study area will cover the entire Bangkok Metropolis, i.e., the area surrounded by a radius of 200 kilometers from Hua Lamphong. Subject of studies on physical facilities, however, will be limited to areas within the ROW of SRT and its immediate vicinity. If the Hopewell scheme is to be implemented as currently proposed, studies on physical facilities will be limited to areas outside of the outermost stations of the scheme, i.e. Rangsit Station, Hua Mak Station, Phonimit Station, and Taling Chan Station. If the Hopewell scheme is to be altered of its scope, the study subject area will be adjusted accordingly.

4. SCOPE OF THE STUDY

The Study will be carried out in two phases. Phase I will identify possible alternative schemes. Schemes may vary depending on the corridor. Ranking of alternatives will be made based on preliminary evaluation. Phase II of the Study will commence following the selection of schemes by the Government, determine its economic, financial and institutional feasibility, and formulate an implementation program.

No major data collection surveys will be carried out in this study as major surveys had been carried out in recent years, notable among them were surveys conducted by the JICA Study of Road Improvement,

Rehabilitation and Traffic Safety in 1986 and the JICA Study on Medium to Long-Term Improvement Plan of Road and Road Transport in Bangkok in 1988. However, supplementary surveys will be undertaken to complement existing data.

4.1 Phase I Study

Phase I Study will include but not limited to the following work items.

- (1) Review all relevant studies, proposal, and plans.
- (2) Analyze existing information on physical conditions, socioeconomic activities, urban development, transport systems, development policies and framework in the study area.
- (3) Carry out supplementary surveys.
- (4) Establish general framework concerning existing and future land use and transport demand in the study area, including the second airport for Bangkok.
- (5) Establish general framework concerning existing and future demand for rail services from national view point.
- (6) Determine requirements for rail transport in the study area from the national view point.
- (7) Formulate rail service strengthen plans incorporating both national and urban demand characteristics, for the latter of which complementary nature of the urban development and transport service supply will be considered.
- (8) Identify of urban development potentials in the influence areas of the urban rail transit improvement schemes. The areas owned by SRT will be primarily

looked into but other potential areas will also be specified.

- (9) Formulate integrated railway and urban development strategies for each of the subject corridor.
- (10) Formulate alternative urban transport plans utilizing the ROW of SRT and other SRT-owned land.
- (11) Formulate alternative land use plans deemed complementary to each of the transport plans formulated.
- (12) Examine legal and insitutional constraints.
- (13) Evaluate and rank alternative schemes.

4.2 Phase II Study

The Phase II Study will be carried out to determine the feasibility of urban development with railway strengthening schemes to be selected among alternatives developed in Phase I. Work will include but not limited to the following.

- (1) Forecast inter-regional trip demand, intra-urban trip demand, and the new airport trip demand for the improved railway network with the planned associated urban development.
- (2) Carry out preliminary design of railway facilities including tracks, signalling and telecommunication, and rolling stock, and associated urban development schemes, some part of which may be integrated with the railway facilities.
- (3) Determine the staging of the implementation of the selected schemes including their operation.
- (4) Determine preliminary costs of the above, construction and operation.

- (5) Determine financial feasibility of each scheme.
- (6) Carry out economic evaluation of the schemes.
- (7) Identify possible funding sources and determine feasible form of implementing entity.
- (8) Prepare an implementation program including institutional procedures, construction phasing and operation phasing.
- (9) Assess environmental impact.

5. STUDY SCHEDULE

This whole study will require seventeen (17) months. Phase I will be completed during the first six (6) months of the study. The Government will take one (1) month (during month 7th) for reviewing of the ranking alternative schemes. Phase II will start from month 8th onward.

6. REPORTS AND TIMING

The Study Team will prepare and submit the following reports in English to the Steering Committee set up by NESDB/SRT.

- (1) Inception Report (50 copies); Within one month from the commencement of the Study. This report shall outline the Study plan and flow and other relevant matters related to the execution of the Study.
- (2) Interim Report (80 copies); Within six months from the Study commencement date. This report shall present the results of the first phase of the Study.
- (3) Progress Report (50 copies); Within eight months from the commencement date. This report shall describe work approaches to be taken in the second phase of the Study.
- (4) Draft Final Report (100 copies); Within fourteen months from

the commencement date. The Government of Thailand will provide the Study Team with review comments within one and a half months after the receipt of the report.

- (5) Executive Report and Final Report (150 copies each); Within one and a half months after the receipt of the comments on the Draft Final Report.

7. FORMATION OF THE COUNTERPART AGENCY

A Steering Committee comprising related officials and private sector will be set up by NESDB/SRT. A joint counterpart team from NESDB and SRT will be formulated to act as counterpart agency for this Study. This counterpart will liaison with the Japanese experts team, coordinate with other relevant agencies, and engage in activities relevant to the proceedings of the Study.

8. TECHNICAL ASSISTANCE REQUESTED FROM JAPAN

8.1 Dispatch of Japanese Experts Team

A multi-disciplinary team is required to carry out the study, consisting of the following experts:

- 1) Team Leader
- 2) Transport/Railway Planner
- 3) Transport/Railway Economist
- 4) Highway and Traffic Engineer
- 5) City Planner
- 6) Urban Infrastructure Planner
- 7) Railway Civil Engineer
- 8) Railway Signal Engineer
- 9) Structural Engineer
- 10) Financial Specialist

- 11) Environmental Specialist
- 12) Legal Affairs Specialist
- 13) Organizational Specialist

8.2 Training in Japan

Two NESDB and two SRT officials related to the Study shall receive a study trip to Japan to visit railway and planning authorities in major conurbations for approximate duration of three weeks.

8.3 Equipment

On completion of the project all equipment used in the study such as micro-computers, photocopiers, facsimile, etc., be donated to NESDB/SRT.

8.4 Seminar

A one-day seminar on findings of the study for 150 attendants (both public and private sectors) shall be held at the end of the Draft Final Report stage.

9. THAI GOVERNMENT PROVISIONS

Office accommodation for the Japanese Team will be provided at SRT's headquarter office.

付属資料5

タイ国都市開発と一体化した首都圏鉄道輸送力増強計画（事前調査）
対処方針（案）

項 目	対 処 方 針	備 考
1. 事前調査の目的 及び今後の予定		
(1) 目 的	<p>次の通り整理し、説明する。</p> <p>①先方政府の要請内容及び意向の確認 ②Q/Nに基づく資料及び情報の収集 ③現地踏査 ④本格調査実施方針及びS/Wの協議 ⑤先方受入体制の確認</p> <ul style="list-style-type: none"> ・先方政府の実施すべき事項 ・先方カウンターパート機関 ・調整等を目的とする委員会 (Steering Committee) の必要性の有無 ・その他 <p>⑥S/W,M/M 締結 ⑦本格調査実施に必要な情報収集</p>	<p>(設計基準、調査経費積算 データ、関連プロジェクト報告書、タイ側の自然条件調査・環境影響 評価実施能力、測量等単価、 ローカルコンタクトの能力等)</p>
(2) 今後の予定	<p>概略の予定について確認する。 1993年3月 本格調査開始予定</p>	
(3) 協議機関	<p>(国家社会経済開発庁) Nasional Economic and Social Develo pment Bord (タイ国鉄) State Railway of Thailand</p>	
2. 要請内容及び 意向の確認	<p>①タイ国における鉄道輸送を取り巻く現状、バンコク周辺の道路交通混雑及び都市開発の現況・将来動向を踏まえ、要請内容・背景を確認する。 ②当方の本件調査協力に関する考え方を説明する。合意事項については、先方と事前調査団とがS/W・M/Mに署名し確認する。 ③本格調査F/S段階における沿線土地利用計画等、鉄道需要増進策については、タイ側との協議結果に基づき、必要により調査項目に加える。</p>	

項 目	対 処 方 針	備 考
3. Q/Nに基づく情報・資料の収集及び協議	別途作成するQ/Nに基づき情報収集及び協議を行う。	(Q/N)
4. 現地踏査	バンコク中心部より約 200kmの鉄道路線及びその沿線を対象とするが、時間的制約もあり、主として日帰り可能な範囲を主な対象とする。	
5. 本格調査の実施方針及びS/W内容の協議	下記の項目について協議を行ない、その結果をS/Wで確認する。 ・ Objective of Study ・ Study Schedule ・ Scope of Study ・ Report	
(1) 本格調査の目的	都市開発を考慮した、首都圏鉄道輸送力増強計画をさくいている。	
(2) 本格調査の対象地域	バンコク中心部より約 200kmの範囲内（但し、ホープウェル・プロジェクト対象区域を除く。） の内、優先度の高いものについてフィージビリティ調査を実施する。	
(3) 本格調査の内容と項目	1) Phase I (M/P) ①関連調査・計画の分析 ②関連する情報、社会・経済状況、自然条件、都市開発計画、輸送システム、土地利用構想の分析 ③現地踏査 ④社会・経済フレームの設定 ⑤鉄道輸送フレームの設定 ⑥鉄道輸送が備えるべき条件の設定 ⑦鉄道沿線都市開発が鉄道輸送に与える影響の確認 ⑧鉄道輸送動向の把握 ⑨鉄道輸送増強計画の作成 ⑩鉄道改良優先プロジェクト及び都市整備優先地区の選定 2) Phase II (F/S) 調査対象に新線が想定される場合 ①補足調査 ②自然条件調査	
		(測量、地質調査等)

項 目	対 処 方 針	備 考
	2) F/S対象：バンコク近郊鉄道改良 ①インセプション・レポート (IC/R) ・調査実施方針、スケジュールを記載 ②プログレス・レポート ・現況把握結果 ③インテリム・レポート (1) (IT/R(1)) ・M/P ・優先プロジェクト選定結果 ④インテリム・レポート (2) (IT/R(2)) ・施設計画 ⑤ドラフトファイナル・レポート (DF/R) ・事業実施計画 ・総合評価・提言 ⑥ファイナル・レポート (F/R) ・⑤に対するタイ側のコメントを踏まえた、最終報告書 *なお、レポートは英語版を作成する。	(本格調査開始時) (本格調査開始後 4か月) (本格調査開始後10か月) (本格調査開始後17か月) (本格調査開始後20か月) (本格調査開始後23か月)
6. 先方受け入れ体制の確認		
(1) 先方の実施すべき事項	タイ国における既存JICA開調プロジェクトを基に協議する。	
(2) 先方カウンターパート機関	①先方政府全体行政機構の中における、カウンターパート機関の確認 ②関連機関の協力体制（役割と機能）の確認	
(3) Steering Committee の構成	調整等を目的とする委員会の設置の必要性の有無とその役割の確認	
7. 協議内容に基づくS/W、M/Mの締結	(署名者) ① 日本側 Signer 調査団長 ② タイ側 Signer NESDB 長官クラス SRT 総裁クラス	

項 目	対 処 方 針	備 考
8. 本格調査に必要となる確認事項	①地形測量、地質調査等自然条件及び環境影響評価の必要性及び実施体制 ②上記調査の実施規模、所要期間、金額及びC/P 又はローカル・コンサルタントの能力 ③本格調査の実施時期（自然条件、タイ国事情等を勘案して決定）	
9. 請訓事項	①調査内容については、著しい変更のある場合請訓する。 ②Under-takings の内容に係る事項については必要に応じて請訓する。	
10. 事前調査団各団員の担当事項		
(1) 総括	<ul style="list-style-type: none"> ・調査団の業務全般総括 ・本格調査実施時の調査内容、実施体制、スケジュール等、基本方針の取りまとめ ・調査団を代表し、相手国実施機関代表者との間で、S/W、M/M 等確認文書への署名 ・事前調査報告書の取りまとめ ・事前調査報告書の取りまとめ 	
(2) 輸送計画	<ul style="list-style-type: none"> ・鉄道輸送の現状分析、予測、計画 ・現地踏査 ・情報収集 ・本格調査内容（輸送計画）の検討 ・S/W 協議 ・S/W（案）、対処方針（案）の検討 ・Q/N の検討 ・事前調査報告書の作成 	
(3) 鉄道施設計画	<ul style="list-style-type: none"> ・鉄道施設に関する現状分析、路線検討 ・現地踏査 ・情報収集 ・本格調査内容（鉄道施設）の検討 ・S/W 協議 ・S/W（案）、対処方針（案）の検討 ・Q/N の検討 ・事前調査報告書の作成 	

項 目	対 処 方 針	備 考
(4) 都市開発計画	<ul style="list-style-type: none"> ・沿線都市開発に関する現状等の分析・検討 ・現地踏査 ・情報収集 ・本格調査内容（都市開発計画）の検討 ・S/W 協議 ・S/W（案）、対処方針（案）の検討 ・Q/N の検討 ・事前調査報告書の作成 	
(5) 環境調査	<ul style="list-style-type: none"> ・環境に関する現状・基準等の分析・検討 ・本格調査における環境影響評価の必要性の確認及びその規模・期間・費用等の検討 ・S/W 協議への参加 ・S/W（案）、対処方針（案）作成への協力 ・Q/N 作成への協力 ・事前調査報告書案の作成（他団員の担当分を除く）及び取りまとめに協力 	
(6) 自然条件	<ul style="list-style-type: none"> ・本格調査における地形測量・地質調査等の必要性確認及びその規模・期間・費用等の検討 ・S/W 協議への参加 ・S/W（案）、対処方針（案）作成への協力 ・Q/N 作成への協力 ・事前調査報告書案の作成（他団員の担当分を除く）及び取りまとめに協力 ・費用等の検討 	
(7) 調査企画	<ul style="list-style-type: none"> ・調査実施にあたっての全体計画の作成及びその総合的な調整 ・関連機関、在外公館等の調整 ・業務調整 ・事前調査報告書の取りまとめ 	

項 目	対 処 方 針	備 考
11. 議事録等	<ul style="list-style-type: none"> ①協議事項についてはM/Mに記載し、双方の代表者が署名確認する。 ②C/P研修、セミナーの開催については要請の伝達に留める。 (M/Mに記載は可とする) ③事業実施段階における資金調達に関しては、調査団の権限範囲外である旨、先方に伝える。 	
12. 報告書	<p>別途作成する目次案にしたがって、各担当者が作成する。</p>	

付属資料 6

List of Additional Information/Materials Required

I T E M	SCALE/AREA/RANGE	SUPPLY		AVAILABILITY		AUTHORITY	POSSIBLE SUBMIT TIME	TITLE OF DATA	LAN- CUAGE
		NOW	LATER	YES/NO	PLACE OF DATA				
1. SOCIO-ECONOMY									
Land-Use	Land Use Map Town Planning Map Law, Regulation and guide line of land-use and development (include land zoning map)	1:50,000(Study area) 1:50,000(Study area) Study area	X		Y	ANY		DTCP	
Population	Population statistics (by age, sex, household, work force, rate of increase, others)	Whole country Study area		X	Y	ANY		NESDB	
Economy	Gross national product Gross regional product (by area, industrial group, etc.) Average family income/spending	Whole country		X	Y	ANY		NESDB	
Administration	Administrative boundary map	Whole country Study area	X		Y	ANY		BOOK SHOP	
Transportation (other than railway)	Road Network map Bus system - Bus service network	Whole country Study area Study area	X			ANY		DOH BMTA	

List of Additional Information/Materials Required

I T E M	SCALE/AREA/RANGE	SUPPLY		AVAILABILITY		AUTHORITY	POSSIBLE SUBMIT TIME	TITLE OF DATA	LAN- GUAGE
		NOW	LATER	YES/NO	PLACE OF DATA				
1. SOCIO-ECONOMY (continued)									
Transportation (other than railway) (continued)	Study area	X		Y		BMTA			
- Bus service (headway, fare, route, passenger)	Whole country Study area		X	Y		DLT			
Vehicle registration	Whole country Study area		X	Y		DLT			
Cargo transportation (system, volume)	Whole country Study area		X	Y		DLT			
2. DEVELOPMENT PLANS									
On-going	Study area								
Regional development	Study area					NESDB			
Urban development (industry, commerce, etc.)	Study area		X	Y					
Future Planned	- same as above -		X	Y		NESDB			
3. RAILWAY SYSTEMS									
General	Whole country								
Railway network and stations	Whole country								
- Rail (gauge, weight, sleeper, etc.)		X				TRAFFIC DEP.			

List of Additional Information/Materials Required

I T E M	SCALE/AREQ/RANGE	SUPPLY		AVAILABILITY		AUTHORITY	POSSIBLE SUBMIT TIME	TITLE OF DATA	LAN-GUAGE
		NOW	LATER	YES/NO	PLACE OF DATA				
4. STATIONS (continued)									
Allocation (continued)	(passenger/freight, contents) Rolling stock yard, maintenance yard, operation center, etc. - location, role, capacity Station square map of major ones	(for each station) Northern Railway (specially around study area and other major ones)	X						
			X	Y					
			X	Y					
			X	Y					
			X	Y					
5. RAILWAY TRAFFIC VOLUME									
Passenger	Station, origin and destination		X	Y					
Freight	Station, origin and destination.		X	Y					

List of Additional Information/Materials Required

I T E M	SCALE/AREA/RANGE	SUPPLY		AVAILABILITY		AUTHORITY	POSSIBLE SUBMIT TIME	TITLE OF DATA	LAN-GUAGE
		NOW	LATER	YES/NO	PLACE OF DATA				
3. RAILWAY SYSTEMS (continued)									
General (continued)	X	- electrification	X						
		- communication							
		- capacity of train	X	X	Y		STD		
		- locomotives	X		Y		MD		
		- rolling stock and yard	X		Y				
		- staff	X						
		- organization							
Operation		Operation systems							
		- route	X		Y		TD		
		- headway							
		- time-table	X	X	Y		MRD		
		- passenger	X		Y				
		- freight	X		Y				
		- train length	X		Y				
- speed (operation, top)	X		Y						
- capacity of transport	X		Y						
Regulation		Design standard	X	X	Y				
		Operation manual Rules and regulations	X		Y		CED		
4. STATIONS									
Allocation		Locations and roles of stations (passenger/freight)							
		Handling statistics					TD		

平成 年 月 日作成

資料リスト (収集資料)

主管部長	文書管理課長	情報管理課長	技術情報課長

地域	東南アジア	調査団名又は専門家氏名	都市開発と一体化した首都圏鉄道輸送力増強計画調査(事前調査)	調査の種類又は対象科目	事前調査	作成部署	社会開発調査部社会開発調査第1課
国名	タイ国	配属機関名		現地調査期間又は派遣期間	1992年12月6日~1992年12月20日	担当者氏名	斉藤信吾

番号	資料の名称	形態	版数	ページ数	オリジナルコピーの別	部数	収去先名称又は発行機関	寄贈・購入(価格)の別	取扱区分	利用表示	利用者所属氏名	納入予定日	納入確認
1	Bangkok Metropolitan Region: Policies and Issues in the 7th Plan	おかけ	A4	30	コピー	1	NESDB						
2	7th National Economic and Social Development Plan	おかけ	A4	21	コピー	1	NESDB						
3	Urban Development Policy The Seventh National Economic and Social Development Plan. (1992-1996)	おかけ	A4	33	コピー	1	NESDB						
4	NHAのニュータウン開発構想の概要		A4	1	コピー	7	NESDB						
5	Eastern Seaboard Development Programme	おかけ	A4	16	コピー	1	NESDB						
6	Map of Thailand	製本	A4	48	オリジナル	1							
7	Bangkok Advice on Rationalisation of Rapid Transit Systems Recommendations	製本	A4	145	オリジナル	1	SRT						
8	Transport Statistics, Data for 1989	製本	A4	126	オリジナル	1	SRT						
9	Design Standard for Concrete Structure	おかけ	A4	6	コピー	1	SRT						
10	The State Railway of Thailand Act B. E. 2494, Act (No.2) B. E. 2502 (1959), Act (No.3) B. E. 2509 (1966)	おかけ	A4	15	コピー	1	SRT						

図録組込用

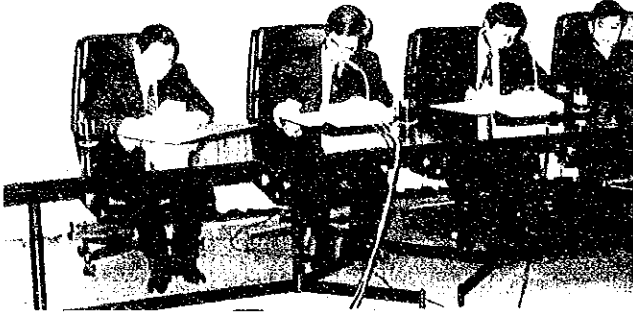
国際協力事業団

資料リスト (収集費資料)

番号	資料の名称	形態	版	型	ページ数	オリジナル コピーの別	部数	収集先名称又は 発行機関	寄贈・購入 (価格)の別	取扱区分	利用表示	利用者所属氏名	納入 予定日	納入 確認済
1.1	No. of Passenger and Revenue around BKK 200kms. FY.1992.	表	B4		3	オリジナル	1	SRT						
1.2	Carload Freight Traffic around BKK 200kms. FY.1992	表	B4		14	オリジナル	1	SRT						
1.3	洗水記録	表	A4		5	オリジナル	1	SRT						
1.4	Criteria Design for Permanent way (SRT)	表	A4		2	コピー	1	SRT						
1.5	Rail Classification	図面	A4		1	コピー	1	SRT						
1.6	Concrete Sleeper	図面	A4		1	コピー	1	SRT						
1.7	Information Location of Track Rehabilitation Project	図面	A4		2	コピー	1	SRT						
1.8	Bangkok Transit System	表	A4		9	コピー	1	SRT						
1.9	All you wanted to know about the skytrains		A3		1	コピー	1	SRT						
2.0	State Railway of Thailand 組織図	図面	A4		1	コピー	1	SRT						
2.1	State Railway of Thailand Act (No.6) B.E. 2535 (1992)	表	A4		4	コピー	1	SRT						
2.2	Statistical Yearbook Thailand 1992	製本	A4		457	オリジナル	1	SRT						
2.3	SEVENTH PLAN URBAN AND REGIONAL TRANSPORT		A4		58	コピー	1	NESDB						
2.4	NATIONAL URBAN DEVELOPMENT POLICY FRAMEWORK Volume 1		A4		1-15	コピー	1	NESDB						
2.5	NATIONAL URBAN DEVELOPMENT POLICY FRAMEWORK Volume 2		A4		61	コピー	1	NESDB						

図書館提出用

国際協力事業団



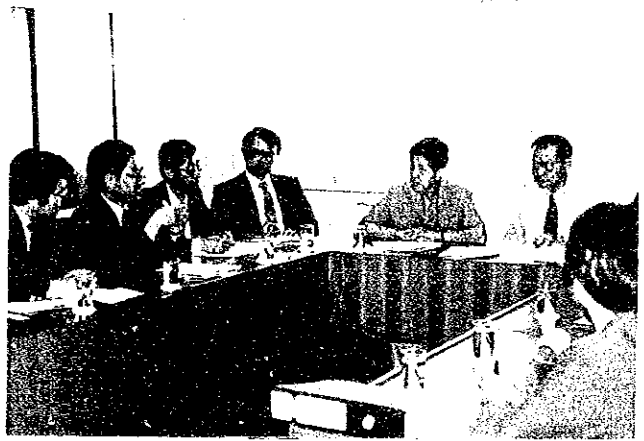
S/W, M/M 署名 (SRTにて)



SRT との協議風景



DTEC との協議風景



NESDB との協議風景



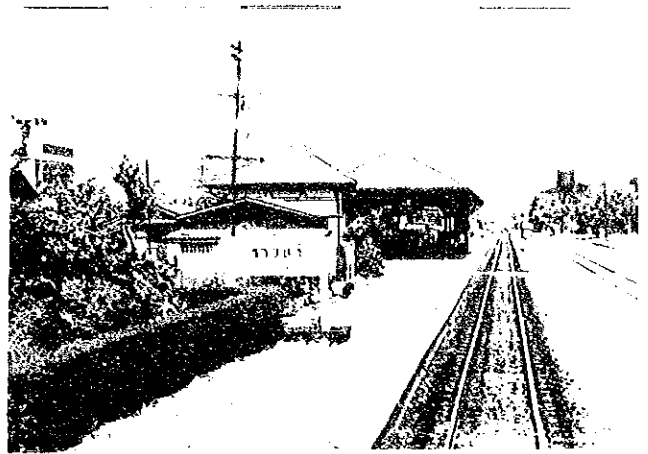
鉄道の平面交差は、道路交通にとっても大きい支障



遠くのタワーが先端だけしか見えないほどの、バンコク市内の大気汚染状況



HUA LAMPHONG 駅構内



南線 郊外の駅 (RATCHABURI) とその周辺



東線 朝のラッシュ時間帯の限られた本数の列車には、かなりの利用者がいる。



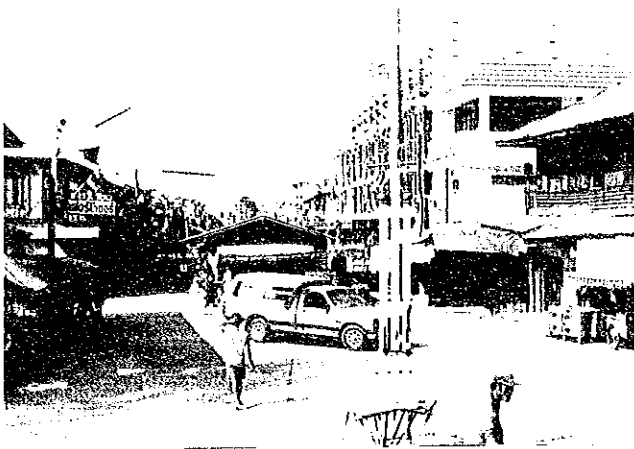
東線 HUA TAKHE 駅の混雑状況 (バンコクから東へ 30km くらいまでは、限られた列車へかなりの乗降者がいる。)



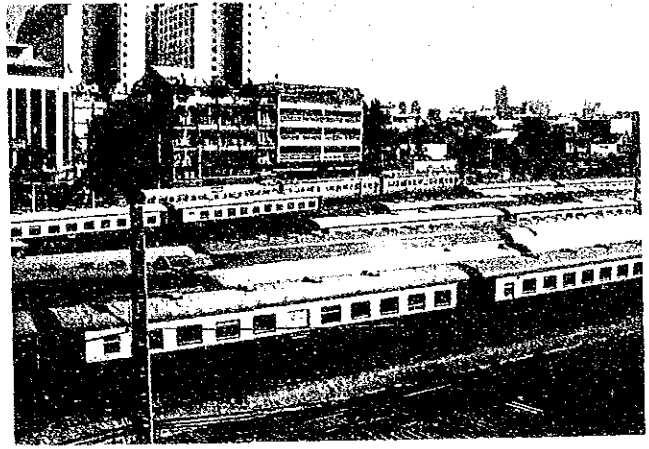
東線 有数の観光地 PATTAYA 駅の金曜日の風景、鉄道を利用してくる客は少ない。



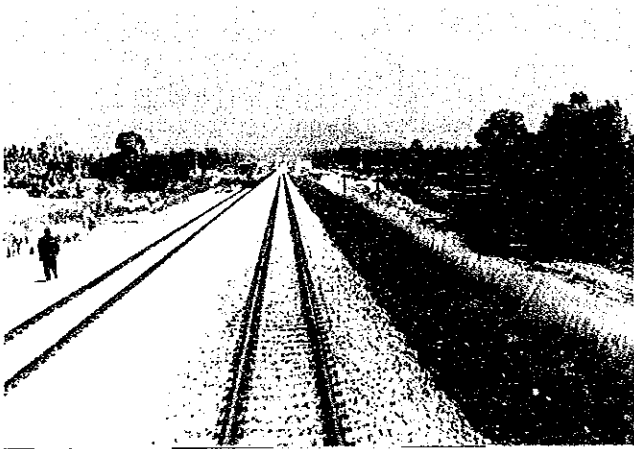
南線 バンコクから50kmを越すと、乗客も大幅に減る。



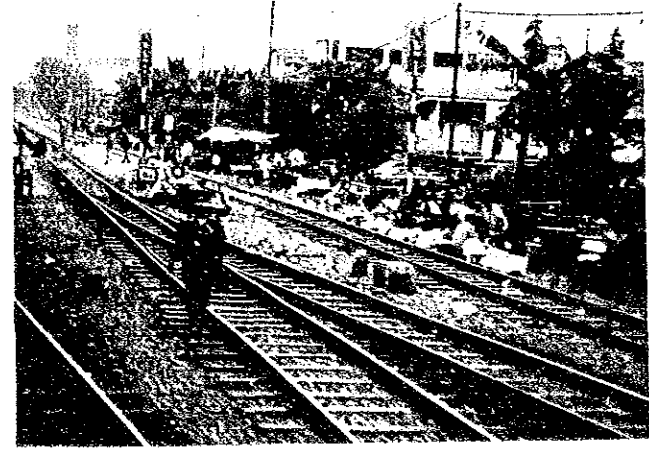
北線 KAENKHOI JUNCTION 駅周辺の田態依然たる商店街



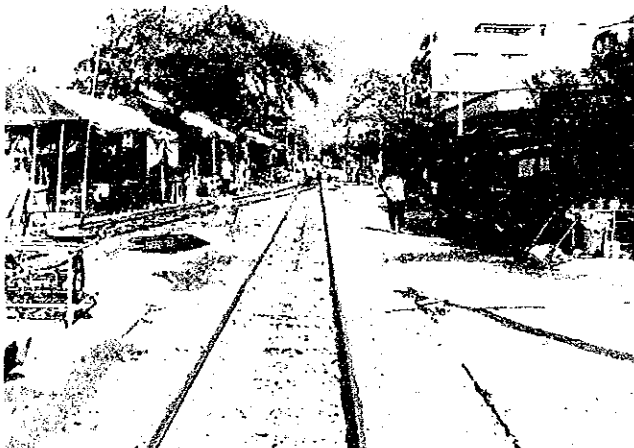
HUA LAMPHONG 駅操車場



バンコク市内では40km, 市街では80mの鉄道敷 (right of way) が全線にわたって確保されている。



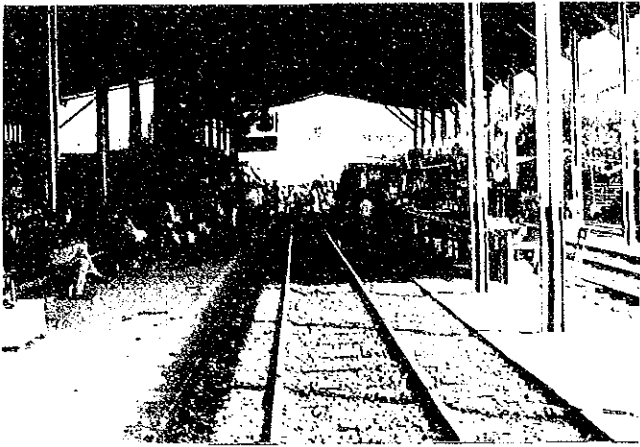
南線 鉄道用地への露店商の不法立地



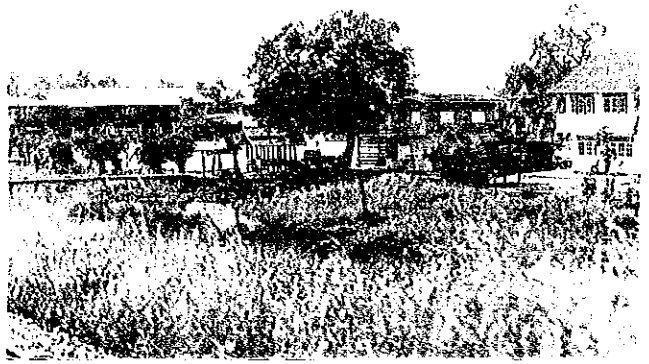
40m幅の鉄道敷地も住宅の不法立地により狭められている。



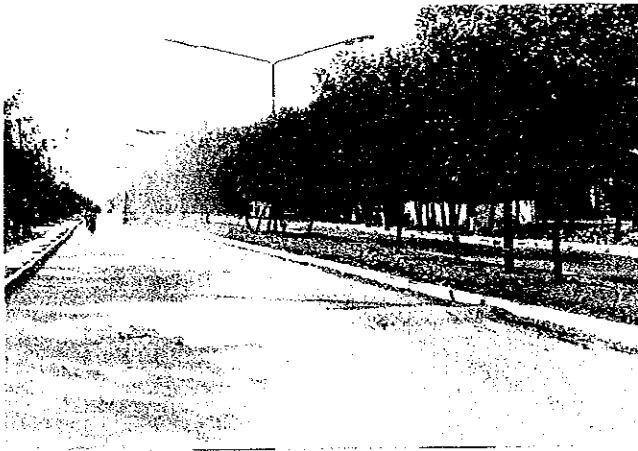
メクロン線 MAEKLONG 駅周辺の鉄道用地内露店商は、列車が近づくと列車建築限界内の商品のみを移動させる。



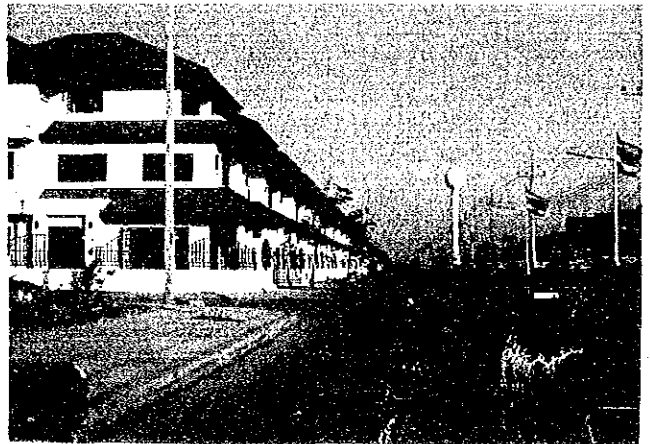
メクロン線 MAEKLONG 駅は、市場としても利用されている。



北線 鉄道沿線の学校



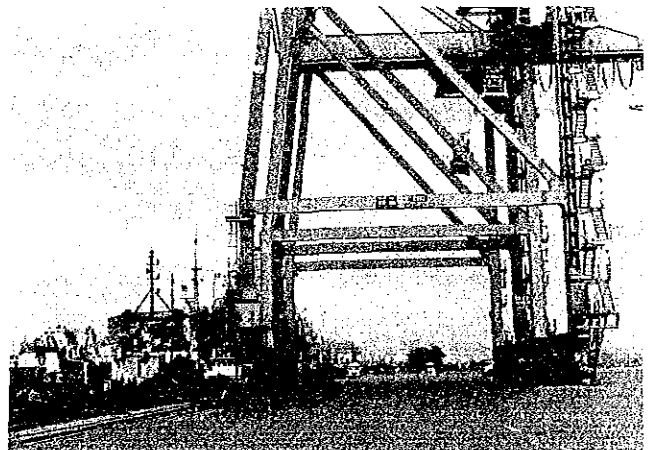
北線 鉄道沿線に工業団地の立地もある。



北線 鉄道近くに高級団地が建設されているが、駅が設置されていない。



南線 鉄道沿線の住宅用地であるが、アクセスは全て背後の幹線道路側



東線 コンテナ基地など近代化設備を備えた大型工業港レムチャンバ港

JICA