

**CHAPTER 18**  
**RELOCATION PLAN**

## CHAPTER 18 RELOCATION PLAN

### 18.1 Action Measures by Steps

The implementation of land acquisition and resettlement mainly consists of the following 10 steps.

- 1) Establishment of Steering Committees for Implementation and Supervision
- 2) Socio-Economic Survey
- 3) Valuation for Lost Assets
- 4) Cost Estimation for the Relocation Programs
- 5) Preparation of Alternatives for Compensation and Relocation Site Selection
- 6) Negotiations about Compensation
- 7) Relocation Site Preparation with Re-Creation of Social Environment
- 8) Land Transfer and Relocation
- 9) Monitoring of Execution
- 10) Coping with Environmental Consequences during Construction Works

The details of these steps are described in the following together with the conceiving problems and recommendation of the Study Team.

#### (1) Establishment of Steering Committees for Implementation and Supervision

One of the most critical problems for administration is the provision of compensation budget and financial resources showing an item (A) in the below (see Table 18.1.1). The budget for relocation programs will be allocated by MOT through the evaluation by Hanoi People's Committee (HPC) after submission of the amount of compensation costs evaluation by the steering committees. However there is a tendency of budget shortage to cause difficulty of negotiation progress with affected people.

Regarding institutional aspect (D), the steering committees have meeting with affected people quite often to promote and encourage people's participation into the relocation programs.

**Table 18.1.1 Summary of Action Measures (1)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Lack of these sources, budgetary flexibility of administrative departments</li> <li>• Shortage of financial resources appropriated for resettlement</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of adequate financing</li> </ul>	<ul style="list-style-type: none"> <li>• Full cost estimation for the relocation plan and programs</li> <li>• Provision of additional financial resources</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Technical staffs often are used to cover resettlement during supervision (consequently incurring often tardy implementation)</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance the steering committee's ability</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of social specialists for supervision</li> </ul>
(C)	<ul style="list-style-type: none"> <li>• Lack of the planning flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement of relocation plan</li> </ul>	<ul style="list-style-type: none"> <li>• Reassessing the impact of resettlement</li> <li>• Provision of remedial action plans</li> <li>• Adjusting schedule</li> </ul>
(D)	<ul style="list-style-type: none"> <li>• Lack of reliable information</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion and stimulation of people's participation</li> </ul>	<ul style="list-style-type: none"> <li>• Regular meeting between committees and affected people</li> </ul>

(2) Socio-Economic Survey

The steering committees should take charge of socio-economic survey to estimate the adequate and accurate population and income. Besides, names of affected families need to be recorded immediately in accordance with results of the survey to prevent to inflow of peoples ineligible for compensation (see Table 18.1.2).

**Table 18.1.2 Summary of Action Measures (2)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Tendency of under estimation for the affected people and inaccurate information</li> <li>• (It causes inadequate cost estimation, resource shortages, declination of managerial ability to prepare adequate solutions, inadequate compensation)</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of accurate socio-economic data</li> </ul>	<ul style="list-style-type: none"> <li>• Enforcement of adequate and accurate population and income surveys</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Inflow of ineligible peoples hoping for compensation without survey</li> </ul>	<ul style="list-style-type: none"> <li>• Prevention to inflow of peoples ineligible for compensation</li> </ul>	<ul style="list-style-type: none"> <li>• Immediate recording the names of affected families in accordance with results of the survey</li> </ul>

(3) Valuation for Lost Assets

The adequate evaluation for lost assets is significant task of steering committees to maintain the living environment of affected people. An item (B) have to be taken care by subsidy for repairing and retaining the partial lost assets or entitlement to full compensation, because it has been proven to occur that partial loss of assets leaves economically unproductive assets (see Table 18.1.3).

**Table 18.1.3 Summary of Action Measures (3)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Incomprehension about the regulation of valuation for affected people</li> </ul>	<ul style="list-style-type: none"> <li>• Need for better understandings about the regulations for valuation</li> </ul>	<ul style="list-style-type: none"> <li>• Announcement of the regulations for valuation and compensation</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Leaving economically unproductive assets by partial loss</li> </ul>	<ul style="list-style-type: none"> <li>• Consideration for partially lost assets</li> </ul>	<ul style="list-style-type: none"> <li>• Entitlement to full compensation of resettlement</li> </ul>

(4) Cost Estimation for the Relocation Programs

The costs for compensation will be estimated by steering committees in accordance with the regulation of Hanoi People's Committee. However accurate full cost estimation for relocation plan and programs has to be estimated, not only the amount of compensation costs but also resettlement costs and administrative costs are needed to avoid financial shortage (see Table 18.1.4).

**Table 18.1.4 Summary of Action Measures (4)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Inadequate calculations of all the costs accruing to affected people (It will occur to delay in payment of compensation, consequently force relocated families to maintain themselves)</li> </ul>	<ul style="list-style-type: none"> <li>• Avoidance to cost over and financial shortage</li> </ul>	<ul style="list-style-type: none"> <li>• Accurate full cost estimation for relocation plan and programs</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Inadequate budgets preparations for resettlement activities (It will be able to cause cost over and financial shortage)</li> </ul>	<ul style="list-style-type: none"> <li>• Consideration for partially lost assets</li> </ul>	<ul style="list-style-type: none"> <li>• Entitlement to full compensation of resettlement</li> </ul>

(5) Preparation of Alternatives for Compensation and Relocation Site Selection

The steering committees have a basic policy that the living environment has to be restored at least as same as former living standards. The resettlement sites should be provided with infrastructures by steering committees, and reclamation may also reconsidered if it is needed. Affected people have the right to live on the resettlement sites, however some may prefer to sell the right and move to somewhere by themselves (see Table 18.1.5).

**Table 18.1.5 Summary of Action Measures (5)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"><li>• Loss of assets</li></ul>	<ul style="list-style-type: none"><li>• Restoration and enhancement of the former living standards</li></ul>	<ul style="list-style-type: none"><li>• Improvement more durable housing, more floor space, better access to sanitary service</li><li>• Reconstruction of habitat by higher standards with better infrastructure services</li></ul>

These matters summarized in the table below tend to arise in the preparation of alternatives for compensation. The crops will be compensated for agriculture oriented families and there is a public system that farming land will be subdivided by the host commune. However items (B) and (C) are more critical problems, especially in the case of loss of small businesses along the streets, creation of commercial opportunities will be considered. This matter could be solved to relocate around the newly constructed road. Regarding demand for changing current jobs from the affected people, it is difficult to meet the demand because the systems are not found in the regulation. Co-ordinations with other ministries or HPC may need in these cases as particular considerations(see Table 18.1.6).

**Table 18.1.6 Summary of Action Measures (6)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Disruption of production systems</li> </ul>	<ul style="list-style-type: none"> <li>• Restoration and improvement of incomes</li> <li>• Enabling of share in the immediate benefits from the development project</li> </ul>	<ul style="list-style-type: none"> <li>• Land preparation; land readjustment (together small plots), land leveling and terracing</li> <li>• Making available adequate land with clear title to the members from displaced communities</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Loss of jobs</li> </ul>	<ul style="list-style-type: none"> <li>• Restoration and improvement of incomes</li> </ul>	<ul style="list-style-type: none"> <li>• Vocational training</li> <li>• Employment counseling</li> <li>• Employment in the main investment project</li> <li>• Establishment of new industries</li> <li>• Incentives for firms to locate in the area</li> <li>• Credit and extension for small businesses</li> <li>• Preference in public sector employment</li> </ul>
(C)	<ul style="list-style-type: none"> <li>• Loss of small businesses and workshops, access to employment for urban families</li> <li>• Severance of relations between producers and customers</li> </ul>		<ul style="list-style-type: none"> <li>• Access to employment, infrastructures, social services, production opportunities</li> <li>• Access to alternative jobs and business opportunities for urban areas</li> <li>• Creation of commercial opportunities around the newly constructed road</li> </ul>
(D)	<ul style="list-style-type: none"> <li>• Loss of import income generating assets for farm families (even partial loss leaves an economically nonviable land)</li> </ul>	<ul style="list-style-type: none"> <li>• New location's advantages should be at least equivalent to those of the former sites</li> </ul>	<ul style="list-style-type: none"> <li>• Development of newly irrigated areas, land reclamation, tree and crop development, intensification of production, aqua culture and fisheries areas</li> <li>• Provision of farm land of approximately equal capability</li> <li>• Provision of alternatives to be able to get off-farm income sources such as fishing to complement farm income.</li> </ul>

The following problems will arise from road construction projects. Especially relocation sites selection should be careful to take minimum distance from former residential areas. Setback policy from the planning road for preparation of resettlement sites is one of the most effective measure to sustain the existing patterns of group organization. And design of access ways to be able to under pass through the planning road should be considered as one of public works (see Table 18.1.7).

**Table 18.1.7 Summary of Action Measures (7)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Scatter of kinship groups</li> <li>• Disappearance of traditional communities and systems</li> <li>• Disorganization of communities or residential settlements</li> <li>• Dissolution of daily sustenance system such as mutual help, aids and efforts</li> </ul>	<ul style="list-style-type: none"> <li>• Sustenance of existing patterns of group organization</li> </ul>	<ul style="list-style-type: none"> <li>• Relocation sites selection by minimum distance from former location</li> <li>• Setback from the planning road</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Loss of access to community assets</li> <li>• Severance of linkages with cultural properties</li> </ul>	<ul style="list-style-type: none"> <li>• Determination of access to cultural properties</li> </ul>	<ul style="list-style-type: none"> <li>• Design of access ways to be able to under pass through the planning road</li> </ul>

(6) Negotiations about Compensation

According to the interview to PMU Thang Long, meetings between the steering committees include host communities for resettlement and affected peoples are provided quite often. The steering committees make effort at the maximum by negotiations about compensation terms, counseling and for the resolution of grievances in this meetings(see Table 18.1.8).

**Table 18.1.8 Summary of Action Measures (8)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Miscommunication between steering committees and affected people</li> <li>• Not adequately participation in the resettlement process of the affected and host communities</li> </ul>	<ul style="list-style-type: none"> <li>• Need for information and consultation for affected people</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of regular meetings between steering committees or host communities and affected people</li> <li>• Providing social experts for counseling</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Lack of usage of local knowledge in resettlement programs</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of effective systems for resolving grievances</li> </ul>	
(C)	<ul style="list-style-type: none"> <li>• Tendency to lack of information for land tenure and acquisition</li> </ul>	<ul style="list-style-type: none"> <li>• Need for entitlement of land</li> </ul>	<ul style="list-style-type: none"> <li>• Legal procedures for land tenure and acquisition</li> <li>• Provision of staffs for guidance in the procedures</li> </ul>

(7) Relocation Site Preparation with Re-creation of Social Environment

Restoration and improvement of the social environment is one of the most important policy for resettlement of the steering committees. Infrastructures and social services should be provided on the resettlement sites at least same levels of former dwelling. Moreover it should be considered that neighboring people or communities also are able to obtain the provided social services for their integration (see Table 18.1.9).

**Table 18.1.9 Summary of Action Measures (9)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Loss of social services</li> </ul>	<ul style="list-style-type: none"> <li>• Restoration and improvement of the social environment</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of infrastructures and social services for at least same levels of former dwelling</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Conflicts between resettled people and the members of host communities about newly provided services or housing superior to that of the hosts</li> </ul>	<ul style="list-style-type: none"> <li>• Revision of gaps to standards for social services</li> </ul>	<ul style="list-style-type: none"> <li>• Enabling to obtain the provided social services also for neighboring people or communities for their integration</li> </ul>

(8) Land Transfer and Relocation

The steering committees tend to relocate from the families who accept the compensation terms. However this fragmentary transfer may increase risks for relocated people on the



rehabilitation of living environment. Then timely transfer coordinated with time tables of civil works should be carried out (see Table 18.1.10).

**Table 18.1.10 Summary of Action Measures (10)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Tendency of delays for payment</li> </ul>	<ul style="list-style-type: none"> <li>• Immediate payment for compensation to resettled people</li> </ul>	<ul style="list-style-type: none"> <li>• Securing budgets</li> <li>• Simplifying the procedure of payment after evaluation</li> </ul>
(B)	<ul style="list-style-type: none"> <li>• Increase risks for relocated people by fragmentary transfer</li> </ul>	<ul style="list-style-type: none"> <li>• Risks avoidance to affected people</li> </ul>	<ul style="list-style-type: none"> <li>• Local leadership for environmental management and infrastructure maintenance</li> <li>• Timely transfer coordinated with schedules of civil works</li> </ul>

(9) Monitoring of Execution

It may occur that relocated people are neglected during the moving and rehabilitating of their living environment. Monitoring and communication by steering committees should be continued during implementation stage of relocation programs to avoid negligence toward the relocated people (see Table 18.1.11).

**Table 18.1.11 Summary of Action Measures (11)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>• Tendency of negligence for relocated people</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation of the resettlement execution and post-relocation economic and social activities</li> <li>• Co-ordinations between project managers and relocated people</li> </ul>	<ul style="list-style-type: none"> <li>• Providing regular staff to be in charged for monitoring</li> <li>• Supplementation by independent monitors if needed</li> </ul>

(10) Coping with Environmental Consequences during Construction Works

In the stage of civil works, consequent troubles (noise, dust, vibration, cracks in the wall and etc.) and unexpected troubles occur. The steering committees have to take care of each situation, and submit and provide beforehand budgets for extra compensation (see Table 18.1.12).

**Table 18.1.12 Summary of Action Measures (12)**

	EXPECTED PROBLEMS	REQUIRED ACTIONS	ACTION MEASURES
(A)	<ul style="list-style-type: none"> <li>Consequent troubles by construction works (noise, dust, vibration, cracks in the wall and etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Technical mitigation measures or compensation for troubles</li> </ul>	<ul style="list-style-type: none"> <li>Usage of machinery to be able to reduce environmental effects</li> <li>Providing preliminary budgets for compensation</li> </ul>
(B)	<ul style="list-style-type: none"> <li>Unexpected problems and troubles</li> </ul>	<ul style="list-style-type: none"> <li>Immediate actions to cope with troubles</li> </ul>	<ul style="list-style-type: none"> <li>Earmarking extra budgets</li> <li>Provision of counseling staffs</li> </ul>

## 18.2 Affected Sites and Relocation Policy

The alignment of SHTRR has been carefully designed to avoid reallocations of residents and buildings. However some areas are unavoidable on the current designed alignment, therefore the design has to be adjusted and arranged in detail design stage. After discussion made even greater efforts, unavoidable sites should be compensated and relocated in accordance with the regulation of Hanoi People's Committee (see Table 18.2.1 and Figure 18.2.1).

**Table 18.2.1 Major Affected Sites on the SHTRR**

No.	Sites	Quantity	Note
1	<ul style="list-style-type: none"> <li>Housing sites (dense)</li> </ul>	115 houses	along the NH1
2	<ul style="list-style-type: none"> <li>Underground water exploitation company</li> <li>Transport company</li> </ul>	several buildings would be partially affected	along the NH1
3	<ul style="list-style-type: none"> <li>Office buildings</li> <li>Housing sites (lined)</li> </ul>	70 houses	along the Phap Van street
4	<ul style="list-style-type: none"> <li>Housing sites (scattered)</li> </ul>	100 houses	along the Phap Van street
5	<ul style="list-style-type: none"> <li>Truck garage</li> </ul>		along the Phap Van street
6	<ul style="list-style-type: none"> <li>Concrete factory</li> </ul>		along the Phap Van street
7	<ul style="list-style-type: none"> <li>Treasury</li> </ul>	2 storey building	along the Phap Van street
8	<ul style="list-style-type: none"> <li>Housing sites (dense)</li> </ul>	60 houses	along the Phap Van street
9	<ul style="list-style-type: none"> <li>Housing sites (scattered)</li> </ul>	55 houses	
10	<ul style="list-style-type: none"> <li>Housing sites (denser)</li> </ul>	40 houses	a part of quarter
11	<ul style="list-style-type: none"> <li>Church</li> </ul>	1 church	very close to the alignment
12	<ul style="list-style-type: none"> <li>Warehouses</li> </ul>	3 small houses 2 larger houses	partially affected
13	<ul style="list-style-type: none"> <li>Housing sites (denser)</li> </ul>	140 houses	a part of quarter
14	<ul style="list-style-type: none"> <li>Housing sites (dense)</li> </ul>	20 houses	along the Mai Dong street
15	<ul style="list-style-type: none"> <li>Housing sites (scattered)</li> </ul>	20 houses	close to Gia Lam dike
16	<ul style="list-style-type: none"> <li>Graveyard</li> </ul>	3 graves	
17	<ul style="list-style-type: none"> <li>Housing sites (scattered)</li> </ul>	10 houses	surrounded by rice paddy
18	<ul style="list-style-type: none"> <li>Housing sites (lined)</li> </ul>	10 houses	along the NH5
19	<ul style="list-style-type: none"> <li>Beverage factory</li> </ul>	2 workshops	partially affected

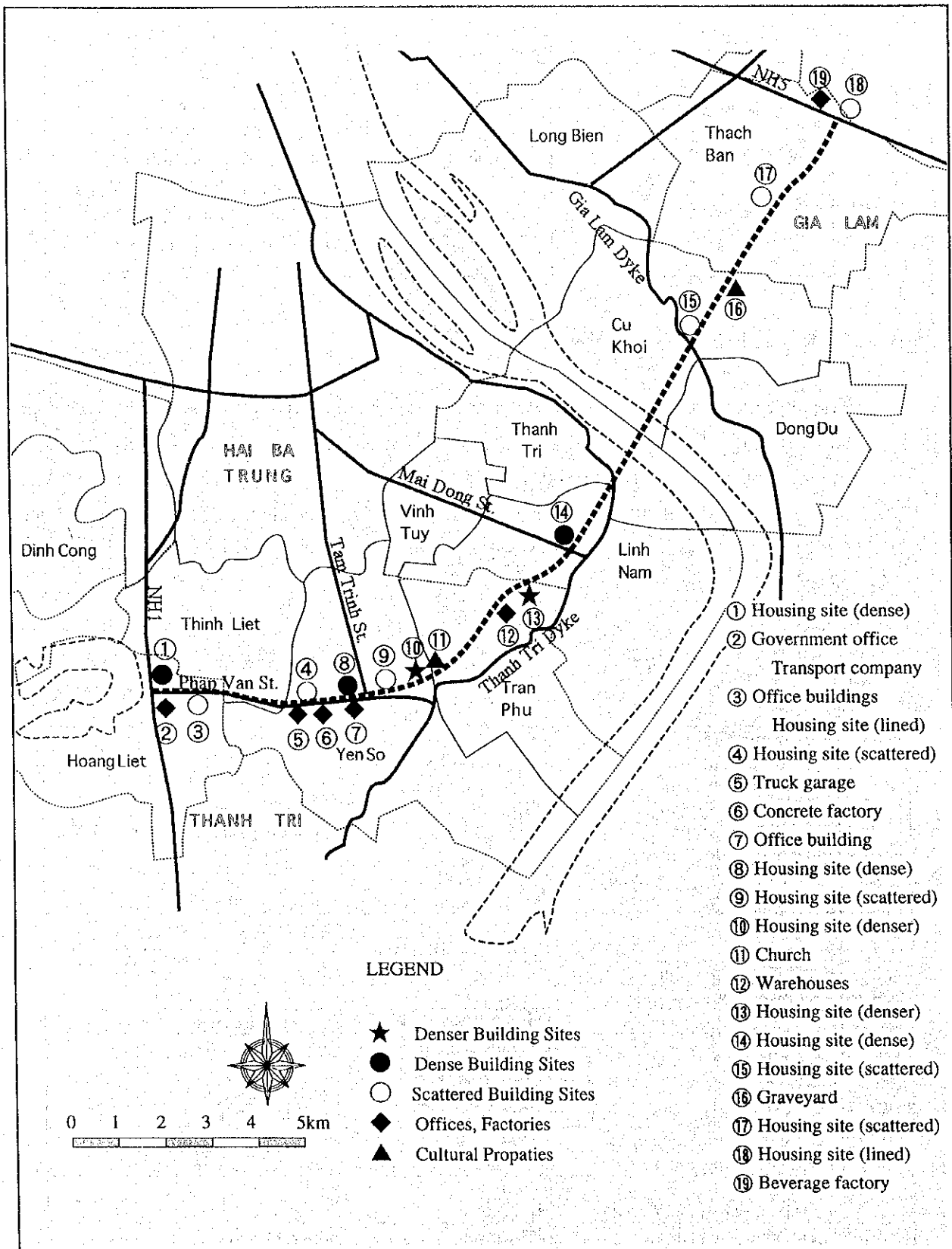


Figure 18.2.1 Major Affected Sites on the SHTRR

## 18.2.1 Residential Areas

### (1) Thanh Tri District

#### 1) Around the intersection of the NH1 and Phap Van street

Typical houses with small shops or workshops locate on around 200 meters in width from NH1. These houses have one storey to three storeys at the most. Around 115 houses on the ramp of half cloverleaf type interchange and 70 houses along the Phap Van street would be affected.

These houses should be relocated along the frontage road of SHTRR, in order to sustain the existing patterns of communities, and maintain the access, be given commercial business opportunities. However reclamation of pond or rice paddy will be needed for providing the relocation sites along the frontage road of SHTRR.

#### 2) Xa Yen So

##### So Thuong-West

100 houses are sparsely situated especially on a section of around one kilometer from the Tam Trinh street along the Phap Van street. Almost all buildings have one storey and three or four storeys buildings appear in several areas. There are more repair shops among the houses rather than the other areas. These houses should also be relocated along the frontage road of SHTRR for the same purposes mentioned above.

##### So Thuong-East

There are 60 houses on the Phap Van street close to the T-intersection of Tam Trinh street. There are no tall buildings but denser than the other housing site along the Phap Van street.

These houses should be also relocated along the frontage road of SHTRR for the same purposes mentioned above. However the western side or southern side across the Phap Van street would be better for the relocation site because several houses are located on eastern side across the Tam Trinh street.

### Yen Duyen-West

There are about 55 houses in low density that would be affected between the T-intersection of the Tam Trinh street and Yen Duyen. Almost all houses have two storeys and well plotted vegetable gardens on edge of ponds.

These houses should be relocated along the frontage roads of SHTRR same as existing side, which are used as ponds at present.

### Yen Duyen

The SHTRR's alignment is designed to pass at the edge of the quarter on the side of Thanh Tri dike, however about 40 houses would be affected on the alignment. There appear to be one or two storeys houses made of brick, and brick paved streets, water supply, electricity supply and drain in the site. Well plotted vegetable gardens appear on edge of ponds.

It may be inevitable to split the community, therefore the houses left on the dike side are possibly relocated together with affected houses according to negotiation with the community. Relocation site will be proposed on the northern side of the SHTRR for being close to the former community.

### 3) Nam Du Ha (Xa Tran Phu)

This is the most affective site because SHTRR's alignment is designed to pass at the south-east corner of the quarter. Around 140 houses of high density would be affected. There are one or two storeys houses mainly made of brick, and brick paved streets, water supply, electricity supply and drain in the site.

It may be inevitable to split the community similar to the method used in Yen Duyen, however more houses would be left on the south-east corner. Therefore the houses left on south-east corner are possibly relocated together with affected houses according to negotiation with the community. Relocation site will be proposed on the western side or eastern side of the former community, which are used as rice paddy or vegetable field at present.

4) Xa Linh Nam

Around 20 houses along the northern side of Mai Dong street in 50 meters wide from the road side would be affected. There mainly appear to be one or two storey houses and few three storey buildings with water supply, electricity supply and drain in the site.

Relocation site will be proposed along the western side of the frontage road on the northern side or southern side, which are used as rice paddy or vegetable field at present.

(2) Gia Lam District

1) Xa Cu Khoi

Around 20 houses located near Gia Lam dike would be affected under the edge of the Thanh Tri bridge. These might be one storey farmer's houses, and could be moved on the northern side of the frontage road, which is used as rice paddy or pond at present.

2) Thuong Hoi (Xa Thach Ban)

Around 10 farmer's houses (barns attached to the houses might be included) with vegetable gardens surrounded by rice paddy would be affected. They could be moved on the western side of the frontage road, which is used as rice paddy at present.

3) Along the NH5

There are houses along the NH5 similar to the NH1 but only one row of house' s backed by rice paddy. The SHTRR comes over the NH5 at where these houses are separated, and about 10 houses would be affected on the ramp of half clover leaf type's interchange. Affected houses have mainly 2 storeys with infrastructures.

It will be difficult to find the alternative relocation sites for them except along the Third Ring Road away from the intersection, because they are fully lined with houses in the front row along the NH5, and the ramp does not have frontage road in the plan.

## 18.2.2 Office Buildings, Factories and Warehouses

### (1) Thanh Tri

#### 1) Offices

##### Along the NH1

The underground water exploitation company belonging to Ministry of Agriculture and Rural Department is on the corner of intersection of NH1 and Phap Van street. And transport company belonging to Vietnam Road Bureau is located next to the exploitation company mentioned above. Some buildings would be partially affected on the ramp of half cloverleaf type interchange especially those of the transportation company.

However the suitable relocation site can not be easily found around existing site because the area is fully occupied along the NH1 by factories. Therefore they could rebuild as taller buildings within their existing area to effectively use the space left narrower.

##### Office Buildings

Several office buildings which belong to private companies, and petrol station are located on the southern side of Phap Van street for 600 meters away from the intersection of NH 1. Almost all buildings have three storeys, and some building is under construction.

They had better to be setback along the frontage road on the same side in order to retain the access after reclamation of pond or rice paddy for providing relocation site.

#### 2) Truck Garage and Concrete Factory (Xa Yen So)

Truck garage, two storey office building and petrol station are located on the Phap Van street. A concrete factory is located next to truck garage. These had better be setback along the frontage road of the same side for the same reason mentioned above.

3) Treasury (So Thuong: Xa Yen So-Thanh Tri)

Along the Phap Van street, a two storey treasury building will be affected in So Thuong of Xa Yen So: Thanh Tri. This also had better be setback along the frontage road of the same side in order to retain the access after reclamation of pond or rice paddy for providing relocation site.

4) Warehouses and Brickyard (Xa Tran Phu)

A brickyard and two slender warehouses would be affected, and two larger warehouses would be partially affected on the alignment. These warehouses should be moved to western side along the frontage road, where is used as vegetable field at present in order to maintain or improve their access.

5) Beverage Workshops (along the NH5)

Two private beverage workshops would be partially affected on the western ramp of half clover leaf type's interchange. These workshops located behind of houses along the NH5. They could be moved to the western side of the ramp because a local road access to the NH5 on this side.

### 18.2.3 Cultural Properties and Others

(1) Pumping Facility (Xa Hoang Liet-Thanh Tri)

A small scale pumping facility for irrigation is located along the Phap Van street. This could be easily setback along the frontage road of the SHTRR.

(2) Church (Yen Duyen: Xa Tran Phu-Thanh Tri)

According to the latest SHTRR's alignment, a church would be affected in Yen Duyen commune of Xa Tran Phu: Thanh Tri district. There would be the case to relocate the church according to the detail design, because the alignment is designed very close to the church. However it is usually very difficult to relocate religious properties. Building of the church itself, the location and history are deeply rooted in adherent's mind not only for relocated people but also member of the commune. The alignment should be redesigned or adjusted in detail design to avoid affecting the church by shifting it toward the Thanh Tri dike.



Otherwise it must be taken long term to discuss and negotiate with the commune, consequently project delay will be expected. If relocation of church is avoided, the alignment must pass very close to the church, therefore some noise mitigation measures would be needed to avoid the expected noise from future traffic.

(3) Graveyards (Xuan Do Ha: Xa Cu Khoi-Gia Lam)

Graveyard will be inevitably affected in Xuan Do Ha commune of Xa Cu Khoi: Gia Lam, because the SHTRR's alignment had to be planned between this graveyard and housing area. This alignment has been designed for avoiding the impact to the resident of Xuan Do Ha.

However the scale to be affected would not be so large. Graveyards to be relocated are compensated in accordance with the regulation of Hanoi People's Committee. Graveyards have to be rehabilitated on new site as close as possible, and with the same conditions.

### **18.3 Preliminary Cost Estimation for Relocation Programs**

#### **18.3.1 Cost Estimation Components**

The components to estimate adequate amount of costs for relocation programs mainly consist of following three items. Moreover rebuilding costs for public assets which would be affected by the alignment and rehabilitation costs in the newly provided resettlement sites, would be needed in addition.

(1) Compensation Costs

These costs covers of two items, compensation for assets and valuation study. Compensation costs should include lost land, houses, other assets acquired and subsidiary payments for lost incomes.

(2) Resettlement Costs

Resettlement costs will be mainly estimated for land compensation (acquisition) in the resettlement area, and new housing and local infrastructure.

In addition it would be better to consider that the items for resettlement will be needed, transportation of people and their belongs, transitional income payments, investment to compensate of people and their belongs, investment to compensate the host communities affected by the resettlement and effort to protect the environment in the resettlement area.

### (3) Administrative Costs

Administrative costs include especially for management costs of steering committees, operated costs of staff, offices, technical assistance, community participation activities and communication, and valuation study. Valuation study include censuses, survey for counting population and recording the names of relocated people, and valuations for assets.

### (4) Other Costs

#### 1) Rebuilding Costs for Public Assets

Any public facilities and infrastructure affected by the project have to be rebuilt. Electric cables along Phap Van street and some irrigation canals across the SHTRR, a pumping facility for underground water , should be rebuilt in this project.

#### 2) Rehabilitation Cost

It would be better consideration for costs of activities to support income restoration and improved living conditions of the affected population beyond compensation. This may include additional local development projects, new services, agricultural extension, training, employment creation and loans.

The cost of above mentioned three major compensation items are summarized in the table below, however land class of agricultural land, a yield, current prices, subsidy for income and costs for moving equipment or plants of offices, workshops and factories are still uncertain. Besides the cost for rebuilt of public facilities and infrastructure affected by the project, such as electric cables, some irrigation canals, a pumping facility for underground water and etc. are excluded. The Table 18.3.1 summarized the cost estimation for compensation.

### 18.3.1 Summary of the Estimated Cost for Land Acquisition and Resettlement

Compensation Items		Costs (Million VND)	Notes
Compensation	1) Land compensation	20,890	
	2) Houses compensation	35,705	level II or III
	3) Other building compensation	8,205	Graveyard included
	4) Crops compensation	5,376	
	Compensation total	70,176	
Subsidy	5) Personal subsidy	2,304	
	6) Business or trade subsidy	202	
	7) Assistance for recovering	8,794	
	8) Assistance for moving	281	
	Subsidy total	11,581	
Compensation and subsidy total		81,757	
Infrastructure cost for the resettlement sites		20,145	
Administration costs		4,087	5% of the compensation and subsidy costs
Allowance		11,878	
Grand Total		117,867	

Note: Refer to Table 14.2.6 in Chapter 14 for estimated cost by each package.

### 18.3.2 Compensation Costs

According to the regulation and the other ongoing projects, compensation items mainly consist of following three items.

- i) Land compensation
- ii) Assets compensation
  - Houses and buildings
  - Crops
  - Graveyard
- iii) Subsidy

#### (1) Land Compensation

Around 73 hectares (without river) land will be needed for bridge and road constructions. Almost 40 percent of total land are agricultural land (rice paddy: 26 percents, vegetable farm: 14 percents), pond accounts for 28 percent and residential land accounts for 16 percent.

According to the land price stimulated by HPC, the prices of agricultural land are stipulated in accordance with the locations (urban and suburban or other communes) and

land level which would depend on accessibility (locations) or productivity (nutrient). On the other hand, the land prices of residential land mainly consist of three types, urban area, suburban area (suburb communes, towns, traffic importance points and etc.) and rural area. Almost all communes in the study areas are designated as rural delta communes, and more higher land prices will be applied along the NH1 and NH5 as a traffic importance points.

#### (2) Assets Compensation

Compensation for assets are mostly applied to houses and buildings, crops, graveyard. Houses and buildings are compensated depending on remaining value, however the costs are estimated by basic values.

Crops as an asset of farmer are compensated in accordance with yield and market prices, and graves are also compensated by types with current existing conditions of materials and decorations of tombs.

#### (3) Subsidy

Subsidy should support the affected families especially during a term when they can not earn cause of moving dwelling and rehabilitation of their lives in the resettlement sites. It can be said that business offices, factories and workshops will also be subsidized. Therefore subsidy should be based on income levels, but it can not be found in the regulation corresponding to income levels without subsidy for moving, although farmer are subsidized by crops in accordance with 60 tons of paddy prices for support recovering and job changing. Subsidy costs are estimated in accordance with the regulation, however the other subsidy policy corresponding to income levels will be proposed for the projects.

### **18.4 Relocation Schedule**

According to the past highway projects with relocation, it took around one year for the duration of compensation even on a relatively smaller scale projects. Therefore it may take around 12 -18 months for implementation of relocation programs in Thanh Tri and Gia Lam highway sections, and the plans, budgets and staffs have to be prepared according to particular situations.

Besides it may be taken a time to move although after accepted the compensation terms, because Vietnamese will be deeply attached to their land and tend to prefer to choose an auspicious day for moving.

## **CHAPTER 19**

# **CONCLUSION AND RECOMMENDATIONS**

## CHAPTER 19 CONCLUSION AND RECOMMENDATIONS

### 19.1 Necessity of the Project

The Project, which is to construct Thanh Tri Bridge and Southern Section of Hanoi Third Ring Road (SHTRR) is of great importance for the development of Hanoi capital region and is expected to play the following important roles:

- To improve and strengthen the road network in Hanoi capital region to cope with the future increase in vehicle traffic demand and rapid development in the region;
- To provide a by-pass road of national highway No. 1, since the existing roads in Hanoi central business district is seriously congested, especially in national highway No. 1 corridor; and
- To encourage increase in the traffic handling capacity of bridges crossing the Red River as a whole.

### 19.2 Future Traffic

The analysis of the socio-economic framework predicts that in the direct influence area of Hanoi city, the estimated total urbanized area in 2020 will become about 3.1 times that of 1997 and Gross Regional Product in 2000 is projected about 2.5 times that of 1990 at 1998 constant prices.

Under such a situation future traffic volume on Thanh Tri Bridge was forecast 73,100 PCU/day in 2010 and 111,700 PCU/day in 2020.

### 19.3 Conclusion in Technical Aspects

#### (1) Route

Three route alternatives were studied (Alternatives 1, 2b and 3). As a result of the comparison, it was concluded that Alternative-3 (least land acquisition effort scheme) is superior to other alternatives and selected as the optimum route.

## (2) Type of Thanh Tri Main Bridge

Continuous PC box girder bridge scheme and PC cable stayed bridge scheme were examined in detail based on the comparative bridge design and economic analysis. PC cable stayed bridge scheme was not selected as an optimum scheme because of higher cost compared with continuous PC box girder bridge scheme and economic analysis revealed that PC cable stayed bridge scheme is not economically feasible.

## (3) Major Design Features

- 1) A 100 km/hr design speed will be applied as a urban expressway in flat terrain.
- 2) Lane width of the expressway (traveled way) is 3.75 m with 3.0 m outer shoulder width and 1.0 m inner shoulder width.
- 3) Number of lanes in each construction package segment is shown in the following table.

Package No.	Section	Number of Lane
1	Thanh Tri Bridge	6
2	Thanh Tri Section of SHTRR	4
3	Gia Lam Section of SHTRR	4

- 4) Five interchanges, NH-1 IC (half cloverleaf), New NH-1 IC (Y-type), two dyke road IC (half diamond) and NH-5 IC (half cloverleaf) will be provided.
- 5) A barrier type toll gate will be provided in Package-3 section.
- 6) Flexible pavement was designed with a view to lower initial investment cost, better adoptability in embankment section and more comfortable riding condition than rigid pavement.

## 19.4 Project Cost

The Project cost is 4,586,589 million Dong in January 1998 prices as shown below:

Unit : Million Dong

Package No.	Section	Project Cost
1	Thanh Tri Bridge	2,928,955
2	Thanh Tri Section of SHTRR	1,067,111
3	Gia Lam Section of SHTRR	590,523
Total		4,586,589

### 19.5 Results of Economic Analysis

The analysis followed the conventional discounted cash flow methodology in determining the EIRR, NPV and B/C ratio. The economic benefits quantified were the savings in vehicle operating and time costs. These results indicated that the Project is feasible.

Benefit cost ratio discounted at 12%	1.12
Net present value discounted at 12 %	329,449 million Dong
Economic internal rate of return	13.14 %

### 19.6 Results of Financial Analysis

Financial analysis is carried out for i) Project implementation by the Government and ii) Project implementation by private sector.

Two cases of toll levels are used for the estimation of revenue calculation as follows:

Case 1: To keep the same toll/users' benefit ratio of 45.2 % (present average of Thang Long bridge) until year 2020.

Case 2: To gradually increase toll/users' benefit ratio from 45.2 % (year 1998) to 70 % (year 2020).

The result of financial study revealed the following conclusions:

#### i) Project Implementation by the Government

Case 1: Obtained FIRR of 2.83 % is lower than the average interest rate of 4.61 % and judged to be financially not feasible.

Case 2: FIRR shows 5.64 % which is higher than the average interest rate of 4.61 % and the Project is judged to be financially feasible.



ii) Project Implementation by Private Sector

Cases 1 and 2: Calculated FIRR are 2.80 % and 5.63 % for Case 1 and Case 2 respectively. These FIRRs are far lower than the average interest rate of 8.50 % and judged to be financially not feasible.

## 19.7 Recommendations

(1) Implementation of the Project

The results of the Study indicate that the Project is technically sound (no serious technical difficulty is anticipated for the construction) and economically feasible. Taking into account the direct and enormous indirect benefits towards regional development other than the quantified savings in travel costs, the Project should be implemented at the earliest opportunity.

(2) Land Acquisition and Resettlement

Delay of implementation would entail increasingly difficult land acquisition and resettlement due to the rapid development of the region, especially in Thanh Tri area. Arrangement of land acquisition and resettlement should commence immediately.

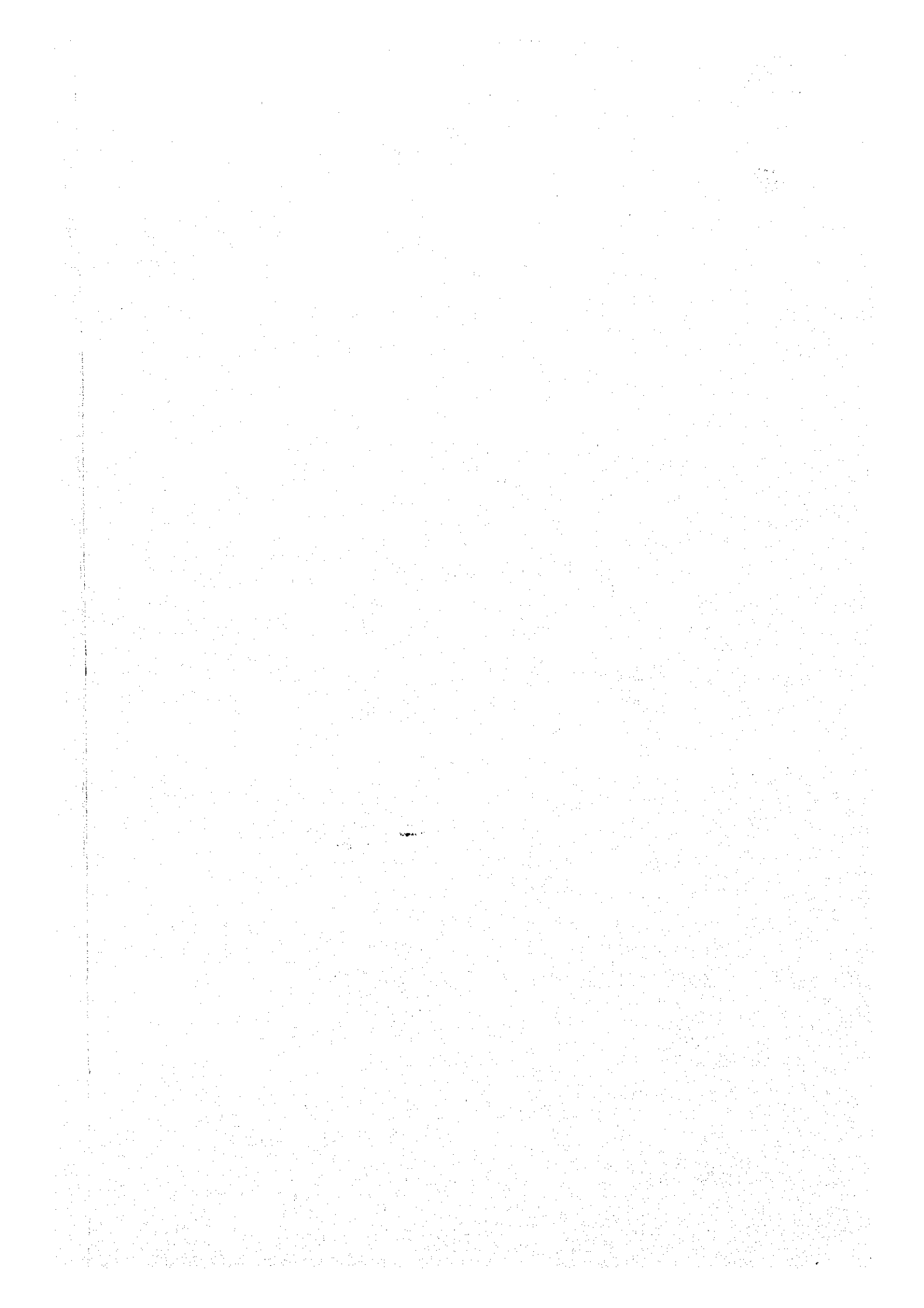
(3) Project Implementation Schedule

Proposed implementation schedule is to emphasize simultaneous commencement of services in all three construction sections, subject to due consideration on inevitable lead-time for land acquisition and resettlement, to optimize investment schedule.

(4) Construction Scheme for Thanh Tri Bridge

Such a stage construction scheme as widening from four lanes to six lanes in due time will entail diverse technical difficulties when applied to Thanh Tri Bridge. Thus it is recommendable to provide whole six lanes in the initial and single construction stage.







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