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PHASE I REPORT

STUDY OF OPTIONS FOR FINANCING INFRASTRUCTURE EXPANSION

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PREFACE

Planning and Development Collaborative International and the Land Institute Foundation(PADCO/LIF) are pleased to present this report concluding our work under Phase I of the Study of Options for Financing Infrastructure Expansion(SOFIE) in Thailand. The report summarizes the key findings and conclusions drawn from the following project activities:

1. Review international planning, management, financing and implementation mechanisms which can be utilized by national and local government agencies in Thailand to increase the private sector share of the capital and operating costs of basic infrastructure;

2. Assess Thailand's current law and practice with respect to a) subdivision control requirements regarding infrastructure, b) mobilization of revenue from real estate taxes, and c) expropriation and compensation for government acquisition of private property;

3. Review and assess the legal and institutional capacity of national and local agencies to implement planning, land management and development strategies which incorporate "new-to Thailand", but proven methods of infrastructure financing and cost recovery;

4. Test recommended cost recovery mechanisms in both a built-up and fringe area in Bangkok. A more comprehensive test of the viability of these options, scheduled for Phase II of SOFIE has been deferred; and,

5. Identify strategies and "tools" to facilitate the application of financing and cost recovery mechanisms by national and local institutions. Action research to determine the training and technical assistance requirements associated with implementation of the recommended options has been deferred.

The above referenced work was carried out in Bangkok by a team of expatriate advisors from PADCO supported by local professional and technical specialists of LIF. The principal PADCO representatives were John Dalton, Principal-in-Charge, Edward Lehan, Project Director, Ray Archer, Deputy Project

Director and Duane Kissick. LIF, under the leadership of Pratak Simapichaicheth, provided contributions by a number of permanent staff and consultants including Kraiyudht Dhiratayakinant, Prasit Kivilaikool, Sopon Pornchokchai, Nopanant Tapananont, Pepop Rotpai and Vichai Viratkapan.

Due to recent, non-project-related events in Thailand, Phase II - the proposed action research phase of the SOFIE project - has been deferred. Consequently, the actual testing of financing options and transfer of skills to relevant local and national institutions will not take place as originally planned. However, the consultants strongly recommend that NESDB identify and secure alternative external resources in order to continue this project and build upon the foundation which Phase I of SOFIE has established

To provide NESDB with the time needed to obtain alternative resources and to maintain the momentum of SOFIE, we have provided guidance on the immediate steps needed to implement the recommended development strategies and the associated tools for mobilizing land, infrastructure and fiances. We hope that this will enable NESDB to sustain progress on the critically important issue of beneficiary financing of urban infrastructure.

The findings, conclusions and recommendations expressed in this document are entirely those of the consultants and do not represent the official position of either the Office of the National Economic and Social Development Board(NESDB) - the Royal Thai Government agency which supervised the consultancy - or the United States Agency for International Development(USAID) which, through its Regional Housing and Development Office(RHUDO/Asia), financed Phase I of the project.

SECTION ONE

INTRODUCTION AND OVERVIEW

This document contains the principal findings and conclusions reached during the course of Phase I of the Study of Options for Financing Infrastructure Expansion(SOFIE) in Thailand. The technical recommendations and operational guidelines contained in the report are preliminary in nature, subject to further analysis and assessment.

This report is based on extensive research by PADCO/LIF on the topic of infrastructure financing and cost recovery. The substance of our consultancy is reflected in the following reports submitted to the Urban Development Coordination Division of the National Economic and Social Development Board:

1. Archer, Ray W.. Provision of Urban Infrastructure Through Land Subdivision Controls in Thailand

2. PADCO, Inc., International Experience on the Use of Tax and Regulatory Mechanisms to Guide Growth and Promote Development

3. Kraiyudht Dhiratayakinant, Current Infrastructure Financing and Cost Recovery Practices in Thailand

4. Prasit Kivilaikool, Land Expropriation and Compensation in Thailand

5. Dalton, John C. and David E.Dowall, Infrastructure Financing and Cost Recovery Options, International Experiences Applicable to Thailand

6. Lehan, Edward A., Financing Urban Network Infrastructure Expansion: Cost Recovery Options for Thailand

7. Dalton, John C. and Edward A. Lehan, Interim Report Study of Options for Financing Infrastructure Expansion in Thailand

In addition, two case study reports of our on-site assessment of special assessment financing options in the Bangkapi and Rangsit research sites were presented to the SOFIE Steering Committee in January and April, 1991. The case study reports are titled:

1. Ray W. Archer, with S. Pornchokchai, N. Tapananont and P. Rotpai, "Report on the Bangkapi Research Site for a Pilot Infrastructure/Special Assessment Project"

2. Ray W. Archer, with N. Tapananont, P. Rotpai and V. Viratkapan, "Report on the Rangsit Research Site for a Pilot Infrastructure/Special Assessment Project"

A summary of these two case studies and the preliminary lessons learned from our analysis of the potential application of special assessment techniques to large undeveloped land parcels in the Bangkok Metropolitan Region is included in Section 5.

1.1 SOFIE BACKGROUND AND OBJECTIVES

The Study of Options for Financing Infrastructure Expansion (SOFIE) was commissioned by the NESDB in order to determine: a)how the national policies of the Sixth Plan relative to private sector participation in the financing of infrastructure could be operationalized and b)to develop infrastructure financing and beneficiary payment policy alternatives for the Seventh Plan period.

The PADCO/LIF contract with NESDB lists the following five major objectives:

1. To formulate model development strategies which address the following key issues: (a) the identification of local secondary road related improvements which are consistent with broader BMR planning and plan implementation goals, (b) the identification of means to raise capital at the local level to fund these improvements, and (c) the identification of appropriate cost recovery and cost sharing devices for these instruments.

2. To elaborate on and test model development strategies in "built-up" and "fringe" areas (including methods and criteria for selecting appropriate capital financing/cost recovery options).

3. To examine the feasibility of using these strategies in special development/assessment districts. These may correspond to areas defined by "superblocks" and/or jurisdictional district or sub-district levels.

4. To gain local community and political support for appropriate development financing options.

5. To apply "lessons learned" from other countries to the BMR and to select the most appropriate tools for use in Thailand.

Progress has been achieved on each of these objectives. However, the accomplishment of Objective Four, which was expected to occur during Phase II of SOFIE, is incomplete.

1.2 DEVELOPMENT STRATEGIES

The most important PADCO/LIF conclusion of Phase I is that national, regional and local government agencies in Thailand could apply a variety of infrastructure financing options as aspects of specific, formally-endorsed, spatial planning and land development strategies. The five broad development strategies are termed:

- Growth Management
- Development Coordination
- Strategic Sites
- Development Opportunities
- Criteria-based Allocation

Each of these was described in the Interim Report. Further elaboration of each of these strategies and guidance as to their institutionalization is contained in this report. A test of the applicability of some of the strategies was expected to occur during Phase II of the SOFIE project. While actual testing will be delayed, recommendations concerning the implementation of each of these options has been included in this report. This will provide the foundation needed for NESDB to continue its essential role as policy facilitator over the next several months.

Some of the agencies, especially those at local levels, which might be expected to implement one or more of these strategies will need to be strengthened as a pre-condition to implementation of the recommended approach. Although we have not had the opportunity to work with the concerned agencies on this aspect of SOFIE, we believe there has been enough evidence of interest in alternative methods of infrastructure financing by Steering Committee members to assume that on-site technical assistance and training would motivate adoption by concerned agencies.

1.3 FINANCING METHODS

By first considering the range of infrastructure financing and cost recovery options which have been successfully implemented by other countries(see Dalton/Dowall,1991)and then assessing the legal and institutional framework for infrastructure financing in Thailand, we have determined that the most appropriate near-term financing options are:

- Local Taxes, especially local property-based taxes, but only after a structural change in the coverage of the tax has been legislatively approved. The existing "owner-occupied" exemption constitutes a de facto tax collection ceiling which cannot be overcome by merely improving the efficiency of tax administration. We also believe that this fundamental change will improve the accuracy of property value estimates associated with title transfers. Only such a policy shift will enable the property tax to generate sufficient revenue to cover local operating costs, its first priority, and then provide revenues for infrastructure financing.

- User charges for basic services, especially utility operations, is an established practice in Thailand, although "full-cost-recovery", the test of a commercially viable enterprise has not been universally achieved, especially among local enterprises. Road user charges, except for limited access toll roads, are not widely used in other countries. However, in those countries where some method of revenue sharing is used to finance road maintenance and construction, a portion of the national tax on petroleum products is often allocated to local governments on the

basis of kilometers of surfaced roads(e.g. United States), point of sale(e.g. Philippines) and/or on the basis of vehicle registrations(e.g. Sri Lanka). Singapore has introduced a restricted zone approach to alleviate traffic congestion. Stickers are currently purchased by eligible "users", although electronic sensors are being considered as a more efficient mechanism to assure compliance. A comprehensive study of these alternatives was beyond the scope of this study, but we believe that it might be a fruitful area of future inquiry for NESDB.

• Subdivision Regulation has been very successfully used to achieve private sector financing of basic infrastructure within approved development sites (see Archer,1991). There are areas for improvement, however, which could be considered for additional resource mobilization, such as:

a) requiring subdividers/developers to actually construct on-site facilities - or provide funds for their future development - rather than merely allocating vacant land for their eventual construction;

b) evaluating, and probably increasing, the fees for the issuance of permits and other approvals required as a precondition to development. Currently fees are reported to barely cover the administrative cost of issuance. Since "impacts" on other facilities should also be a consideration at the time of subdivision approval the components of the fee structure should be re-examined and made to reflect the full social cost of the development; and,

c) determining whether the "principles" of the subdivision control regulations could be applied to individual buildings whose floor area was equivalent to the average aggregate area of ten detached housing units. Since the private provision of infrastructure is an accepted principle for a certain "size" of land subdivision, there may be adequate precedent to extend the regulatory coverage to comparably sized, albeit vertical, developments.

- Special assessments could be a prime source of infrastructure financing for secondary roads, drains, water distribution facilities, sewerage and other local infrastructure in Thailand. The special assessment rationale is based on the proven relationship between the provision of services and the increases in urban land value. The direct beneficiaries of service provision pay the assessed charge, usually under an agreed "public-private" joint venture arrangement.

- Land readjustment, a process of pooling the land of several owners, redrawing boundaries to subdivide the land into a layout of roads and plots plus the provision of infrastructure, and then selling some of the plots to provide the funds needed for its construction, is a process which has worked well in Japan South Korea and Taiwan - nations with unambiguous expropriation and redevelopment laws. In certain situations, land readjustment could be used by voluntary associations of land owners to provide infrastructure, either independently or with the cooperation of the government.

- Development fees, including impact fees calculated on the basis of the estimated value of existing fixed assets, could be a very useful fiscal tool to guide growth and development. If the necessary data base were provided - a significant but not insurmountable hurdle - all new developments in Bangkok could be assessed an impact fee. Fees for building permits and other service charges (e.g., inspections) could also contribute part of the expense of new infrastructure.

- Excess expropriation, the process of acquiring land in excess of that required for the public works so as to recover the land value increment created by the publicly financed development, was considered as a possible source of revenue but only under unique circumstances. Its inclusion on the list of "candidate" revenue sources is meant to encourage further evaluation of all forms of expropriation in Thailand, a potentially valuable mechanism to motivate cooperation and prevent land speculation.

These seven infrastructure financing methods are further described in the body of this report. Comparisons are made to the way that local governments in developed countries typically finance infrastructure (see Dalton/Lehan, 1991).

1.4 ORIENTATION TO SPATIAL PLANNING

Infrastructure is one of the fundamental tools for spatial planning and community development. The provision or denial of infrastructure will determine the spatial pattern and economic potential of a region or locality. Under conditions of dynamic growth, especially when private "market" forces and investment opportunities are generating that growth, masterplans for the future of a community and/or long range capital budgets and infrastructure investment programs are often overwhelmed by present realities. The opportunity costs of delayed development and production due to the absence of infrastructure may be too high for an international investor to sustain. In a competitive global market the absence of infrastructure (or, as in the case of Bangkok's road systems, the additional costs which dysfunctional infrastructure may require), could make Thailand a less attractive location for investment.

Therefore, the timely provision of infrastructure in response to economic development opportunities and the flexible interpretation and adjustment of relevant land use plans, capital budgets and infrastructure investment programs is an important consideration in any study of the means of financing infrastructure expansion. This flexibility is required not merely to satisfy large investors, but also to serve individual landowners, residents, businesses and government agencies at both national and local levels.

Dynamic spatial planning is the basis for each of the five Development Strategies which PADCO/LIF have suggested as a means of linking infrastructure financing options to government agencies responsible for planning/programming/managing one of the three interrelated resources of spatial planning: land, infrastructure and finances. This report identifies the tools which local and national agencies might employ to create incentives and disincentives to achieve spatial planning objectives.

1.5 IMPLEMENTATION

The recommendations of this report are directed at numerous government agencies at both national and local levels. Principal among these are the following:

- National Economic and Social Development Board
  - Urban Development Coordination Division

- Ministry of Interior
  - Department of Town and Country Planning
  - Department of Local Administration
- Ministry of Finance
- Bangkok Metropolitan Region Committee
- National Housing Authority
- National Infrastructure Agencies
- Bangkok Metropolitan Administration
- Metropolitan Waterworks Authority
- Provincial Waterworks Authority
- Special Regions or Development Areas
- Provinces
- Cities and Sanitary Districts

We recommend an implementation approach based upon a PADCO institutional development process which is termed the "Eight-S Approach". It consists of the following eight factors:

1. Strategies
2. Statutory Authority
3. Structure
4. Staff Capacity
5. Standards
6. Systems Design
7. Service Delivery
8. Supporting Resources

A summary application of this methodology has been developed for the primary agencies responsible for implementing the recommended Development Strategies. Briefly, these eight areas are described below:

STRATEGIES - the five Development strategies which have been recommended as the vehicle for institutionalizing infrastructure financing tools as aspects of on-going agency operations;

STATUTORY AUTHORITY - the legal foundation needed for linking land use plans, infrastructure requirements and capital financing methods;

STRUCTURES - the national and local institutions, and the specific divisions within each, which will be involved in planning and managing the three interrelated components of an infrastructure development strategy - 1) capital, both investment and credit, 2) infrastructure and 3) land;

STAFF CAPACITY- the personnel, identified according to skills, experience and institution, which will be needed to implement the recommended strategies at national and local levels;

STANDARDS - guidelines and principles for planning, as well as the equitable enforcement of requirements for private sector financing and cost recovery.

SYSTEMS DESIGN - methods and procedures used by the staff to carry out the work associated with the recommended options. These may include capital budgeting, regulatory controls, permitting and similar approaches;

SERVICE DELIVERY - the outputs of the activity undertaken by the staff under identified systems so as to achieve the standard established for that activity; and

SUPPORTING RESOURCES - the tools and support methods such as training, technical assistance and technology which will enable these institutions to accomplish their mission and implement the Development Strategy.

This structured approach will, hopefully, translate the broad policies and strategies for private sector participation in infrastructure financing into operational terms and promote the type of public-private joint venture which will be needed to achieve development financing objectives.

SECTION TWO

THE DEVELOPMENT STRATEGIES APPROACH

The consultants believe that the future provision of infrastructure in Thailand will depend on a planning and management approach which coordinates land development, capital financing and infrastructure programming into a single "resource delivery package". The current planning and management systems upon which this delivery of resources depends is administered by a number of agencies at national and local levels of government. The NESDB has identified development policies which would logically appear to motivate coordination among and between these agencies, but there is no real mechanism to institutionalize this type of joint action.

To provide this foundation for intergovernmental and inter-agency coordination we have recommended five planning and management strategies which could establish a common purpose for those agencies which control the three fundamental development resources: land, capital and infrastructure.

Each "development strategy" could increase private sector infrastructure financing and improve cost recovery from direct beneficiaries of public services. In that way the RTG can pursue its policy objectives along several paths simultaneously. The development strategies are intended to capitalize upon situations and opportunities which are well-known by the professional staff of government agencies in Thailand. The consultants believe that this will improve the prospects for implementation. The five proposed development strategies are:

Table 1: Development Strategies

STRATEGY	PRIMARY FOCUS
1. Growth Management	Regional(BMR/Eastern Seaboard/Chaing Mai);National (NESDB)
2. Development Coordination	National-Urban Local
3. Strategic Sites	Urban Local-District
4. Development Opportunities	Regional-Urban Local
5. Criteria-Based Allocation	National-Urban Local

Dalton/sofie/1991

Each of these strategies could increase private sector participation in infrastructure financing and also lead to greater cost recovery from direct beneficiaries of infrastructure services, including secondary roads. It is important to emphasize that these strategies are not mutually exclusive, They also can be pursued by many different local governments simultaneously as opportunities or conditions warrant.

We believe that these development strategies help to link the policy of private sector participation to the actual infrastructure financing methods or "tools" which will be used by various government agencies. Development strategies are the means of translating policies into implementable and officially adopted plans and programs of national and local agencies. Until this type of institutional "ownership" is established within the bureaucracy there will be probably be very little incentive for agencies to employ new infrastructure financing methods.

Strategies operationalize policy in the same way that methods(tools) operationalize planning and financing systems. This resource management sequence is the foundation for our infrastructure financing recommendations:

Policy--▶Strategy--▶Institution--▶System--▶Method

The output of the consultants' work under Phase I of the SOFIE Project are the **Strategies** and **Methods** which will operationalize planning and management **Systems** of government **Institutions** and enable them to implement national **Policies** related to infrastructure financing and cost recovery. The work is not yet complete, but at least all of the pieces now have been brought together for follow-up by NESDB and implementation by various agencies.

We believe that each of the five development strategies could be adopted in Thailand. Several of them, in fact, could be linked together and implemented as part of a comprehensive urban and regional development program related to private sector financing of basic infrastructure, especially secondary roads. An explanation of each, derived from our Interim Report, follows:

2.1 Growth Management

This development strategy will enable urbanizing regions and/or areas affected by unplanned and inefficient development (especially "ribbon development" along major highways) to get out "ahead" of development. As the Bangkok Land and Housing Market Assessment (PADCO/LIF,1990) indicates, urban development in Bangkok and its environs is market-driven, while public infrastructure is provided on an "ad-hoc" basis. usually after development has occurred and its positive effect on land values has been captured by the developer. Under that set of contradictory conditions the public sector has none of the leverage needed to promote private sector financing of infrastructure or to recover costs from beneficiaries.

Under a Growth Management strategy, however, a regional entity such as the BMR Committee, by using available planning and resource management tools such as demographic data on population and land use, aerial photographs, remote sensing or geographical information systems, would identify growth trends and then forecast where development was likely to occur over the next five years. Then, land and/or development rights might be acquired - either through expropriation or purchase. Relevant public agencies then would be in a position to negotiate with landowners and potential developers about the type of infrastructure needed for land development. Development fees and special assessments are expected to be the principal means of securing private sector financing under this strategy. The Rangsit research site in Pathum Thani Province is a very good case study of the potential of a Growth Management strategy to guide development and recover the cost of infrastructure while promoting improved land management.

The Growth Management development strategy has the following characteristics:

1. Identification of specific areas within a regional setting which are projected to experience development within a defined period, probably not more than 5 years;

2. Action by appropriate local and national agencies to either: a)establish general and/or specific plans for this area under the authority of the Town Planning Act of 1975, or b)acquire land or development options for key parcels within the area in order to have the "right" to negotiate with future developers;

3. Positive intervention by local and national agencies, acting to guide development through the application of the specific "tools" considered appropriate for the area. This could encourage land owners to form special assessment districts and/or voluntarily participate in land pooling arrangements, for example; and,

4. Development and maintenance of a streamlined data base to measure the impact of growth on the existing regional network of infrastructure. The financial impact of growth can be used as either an incentives or a disincentives to development, depending on how the recommended tools are applied.

Implementing the Growth Management strategy should also facilitate the use of voluntary infrastructure financing methods such as land readjustment. Since land included in the growth management area would not have yet realized a value increment from either speculation or development, these cost recovery methods could be utilized. Since the value increment attributable to infrastructure on the periphery of Bangkok is over 200,000 baht/25 square wah plot(PADCO/LIF,1990), a Growth Management strategy, coupled with selective public investments, might be able to tap into this pool of capital to recover some of the capital cost of infrastructure.

The principal implementors of this strategy would be the BMR, with the NESDB, its Secretariat, providing technical support, and then other regional entities in areas like the Eastern Seaboard and Chaing Mai. The BMA should also be provided with the technical tools to implement a Growth Management strategy, especially on the urban fringe and in that wide band of underdeveloped land between the city center and the periphery due to "leap-frog" development within Bangkok.

In time, many other cities should be able to use the tools associated with a Growth Management strategy, initially with the support of the Department of Town and Country Planning, and then through their own staff.

2.2 Development Coordination

The Development Coordination strategy is based on the principle that knowledge of the type, location and probable impact of future public investment will enable national and local planners to identify areas which will be subject to private sector development pressure and land speculation. This knowledge will enable them to prepare plans (ideally as "general" or "specific" plans under the Town Planning Act of 1975) to assure that adequate infrastructure is not only programmed by developers, but that the costs are recovered from beneficiaries. The Development Coordination strategy, therefore, attempts to capitalize on the documented effects of public investment and to channel some of the resulting benefits of those investments toward the public benefit.

Recent research results in the United States (Aschauer, 1989) indicates that public investments in basic infrastructure may "leverage" four to seven times that amount in private investment. Accordingly, if the Seventh Plan were to allocate 5% of GDP to investment in basic infrastructure, it might be expected to leverage between 20 percent and 35 percent in supplemental private investment. Not all of the leveraged investment would be in the form of infrastructure, of course. But, nevertheless, the national investment program would itself represent an opportunity for a coordinated national-local approach to infrastructure provision.

The characteristics of the Development Coordination strategy are the following:

1. Analysis of the Seventh Plan investment programs of key national agencies and enterprises, especially those responsible for roads and other transport facilities, water and wastewater facilities, industrial estates, etc.;

2. Developing "linkage" mechanisms to promote complementary development, including intergovernmental coordination within the BMR.

3. Calculating the anticipated land value increment from planned investments and establishing criteria to channel a portion of these profits into public control.

Using the knowledge of public investment programs as a means of obtaining greater levels of overall efficiency will also enable the public planners and managers to adopt a proactive rather than reactive posture. It will be possible for the public sector to approach potential developers and investors with indicative plans for public improvements. This will allow developers to factor these costs into their pricing decisions at an early stage. The development fees which would be required as the cost recovery mechanism can be documented and applied at the permitting stage. The public sector could also advance land readjustment and special assessments as infrastructure financing and cost recovery methods under this strategy.

2.3 Strategic Sites

The Strategic Sites approach is designed for application within the BMR, especially in Bangkok itself, and in other urban areas, especially those like Chiang Mai, with the need to (a)preserve and protect land from inappropriate development and/or (b)to assure that infrastructure networks are established. The term "missing links" has been used to describe local public investments which are needed to assure that networks are coherent (Coopers & Lybrand, 1986). This is a very useful description of the criterion which establishes the public interest in a specific location within urban areas.

For example, the open land in the Bangkapi District which has been the subject of analysis under SOFIE, is a strategic site since even the incomplete development schemes already proposed there will place added strain on existing infrastructure. Lacking a comprehensive data base, the BMA cannot accurately estimate the actual impacts in quantitative or financial terms. Developing the capability to do so would enable the development impact fee approach to infrastructure financing and cost recovery to be used.

The characteristics of the Strategic Sites development strategy are:

1. Identification of key, under-developed land parcels for which infrastructure plans could be prepared and used as the basis for "negotiating" with landowners and developers about the provision of infrastructure and its financing;

2. Coordination and consensus among a local government, sectoral infrastructure agencies, utility enterprises and other concerned parties about the type of infrastructure needed for site development; and,

3. Developing in the BMA a district-level data base of the value/replacement cost of existing infrastructure so that the impact of new development can be calculated and the cost apportioned to prospective developers as a precondition to approval.

It has been estimated that there are "hundreds" of undeveloped pockets within Bangkok which could be defined as strategic sites. If the land is suitable for development but has inadequate road access, for example, it might be possible to negotiate with the road frontage landowners to permit a vehicular right of way into the landlocked parcels. The public sector facilitation of this benefit to private landowners should come after a special assessment agreement has been negotiated between them and the City.

The Strategic Sites strategy could be initiated at once. After developing criteria for designating a site as "strategic", the City Planning Division of the BMA, in consultation with the appropriate Deputy Governor, could request each of the 36 Districts to identify strategic sites. The objective of this inventory is both to define areas which warrant special attention(e.g., environmentally sensitive areas, linking points for trunk infrastructure) and also to focus attention on sites within Bangkok where the principles of private sector financing and cost recovery can be used. It is important to establish that the Strategic Sites strategy is not a conservation/preservation approach except to the extent that development controls or infrastructure requirements mandate special consideration.

2.4 Development Opportunities

Linkage is one of the "experimental" tools for obtaining private sector financing of public facilities in developed countries(see Dalton/Dowall,1990). In Thailand the Land Subdivision Control Law provides a similar mechanism for development exactions, but the method of payment for the exaction has typically been in-kind (i.e., donated land for public

facilities) rather than as cash to finance development of complementary infrastructure either on-site or off-site. Since the public sector often is unable to obtain the investment capital needed for construction financing, there is no actual value-added from the application of the regulatory control.

The Development Opportunities strategy is designed to fit the following situations:

1) Private developers require supporting infrastructure from the public sector to carry out their plans;

2) Private development creates land value increments in nearby areas which the public sector can capitalize upon;

3) Request for a "special" permit enables the public sector to negotiate a cooperation agreement(public-private partnership) which will enable a project to be executed in tandem by both parties;

4) Local development opportunity, in an area capable of supporting growth and maximizing economic benefits, depends on the availability of start-up capital/initial infrastructure.

This strategy seems especially suited to support national objectives such as decentralization/local capacity building. It recognizes that there are some regions of the country which are more "ready" than others to implement an economic development program. While other strategies can be used to differentiate on the basis of fiscal indicators, the Development Opportunities approach is motivated by considerations of efficiency and economic benefits.

One of the ways to assure that private sector production and financing of infrastructure actually occurs is to provide a source of stand-by capital which can be accessed when the opportunity for investment presents itself. There are three possible capitalization approaches which should be tested by the NESDB over the next several months. First, it will be necessary to study means to "monetize" the existing development exactions and achieve even greater economic benefit from the development approval/permitting process. Second, it should be determined if a central government administered Development Opportunities Fund, capitalized by a marginal increase in the amount of shared revenue from the land transfer tax could be established. The proceeds from this source of revenue increased by 70% in the last

fiscal year to 25 billion Baht. By setting aside a reserve fund for strategic investments at Provincial or City levels, the national government will greatly improve the negotiating position of those places with the greatest development potential. Third, it should be determined if it is possible for cities to earmark fees and other discretionary funds to a designated development account, the restricted purpose of which would be to fund infrastructure.

2.5 Criteria-based Allocations

The fifth strategy is based on a single principle: if the stated national objective is increased private sector financial participation, then that factor should be used as a criterion in all discretionary funding programs. For example, a requirement that local government annual capital budgets should provide for a 15 percent financing share by the private sector will change the perspective, value-system and behavior of proponent agencies. A similar requirement that certain projects (e.g., those of a "utility" or trading character) should provide for cost recovery as a condition of funds approval will concentrate the attention of the engineering staff on the most appropriate construction standard as well as on the ability of consumers to pay for the service.

This type of strategy seems especially timely in light of infrastructure development grants which the national government may suggest in the Seventh Plan. The allocation criteria will probably include some of the traditional quantitative measures - population, revenue collections - but could be adjusted to include beneficiary payments as a criterion. Some projects, especially those targeted to underdeveloped areas or lower income regions, could not be expected to meet the standard. But overall, within each Province or on a national basis, it should be possible to establish a 20% match as a basis for encouraging private sector participation in the financing and cost recovery of basic infrastructure projects.

The loan approval criteria for the Municipal Development Fund also could be adjusted to require more private sector investment in projects financed by borrowed capital. For example, economic feasibility could include special assessment payments by private citizens as collateral for loans. Loans for markets and

other commercial ventures(including pawn shops) could require a special fee schedule as a condition to approval. These criteria-based allocations would establish a strategic context for the application of the policy objective of increasing private sector participation.

The use of private sector financial participation as a specific criterion for project funding approval is especially relevant to the annual investment program of the BMA. Under current operations each infrastructure project is apparently subject to review on the basis of the following general criteria:

* "financial evaluation of the ...sources of funds;
* benefit to land and people;
* directly responds to priorities of the RTG;
* directly responds to priorities of the BMA;
* benefit cost evaluation;
* institutional feasibility; and
* technical feasibility" (RTI,1987)

Within this framework it should be possible to introduce both financing and cost recovery criteria for infrastructure expansion.

These five strategies provide the context within which the recommended financing options and plan implementation tools can be applied in Thailand. For the NESDB they are especially important as the means of translating the broad policy objectives into programmatic terms. National and local institutions will understand how proposed financing mechanisms will contribute to institutional goals. Without that link there may be no real incentive for them to move away from nearly full public funding of the cost of basic infrastructure in favor of broader participation by the private sector in financing infrastructure.

SECTION THREE

METHODS OF IMPLEMENTING DEVELOPMENT STRATEGIES

The five recommended Development Strategies provide the basis for national and local agencies to mobilize and then coordinate the delivery of three fundamental development resources: land, capital and infrastructure. By linking these three resources into a single package, agencies will be able to choose the most appropriate mix of implementation methods and then determine which among them will be the primary tool to achieve land development and infrastructure financing objectives. This section describes the methods or "tools" which can be used as incentives or disincentives to achieve development objectives.

3.1 Land Planning and Management Tools

The planning, development and management of land resources is an essential aspect of any infrastructure financing option. Unless the underlying asset - land - can be controlled, in some way, by the public sector, it will be difficult for financing policies to be implemented. Land will always be a key factor in planning and development strategies, but <u>when</u> it is mobilized and brought into the overall equation (and by whom) will vary according to the objectives to be served.

Both the Growth Management and Strategic Sites strategies are based on the principle that public agencies will need to mobilize land as the principal means of obtaining a stake in the development process. Once land has been mobilized and brought under public control, infrastructure and financial resources (including those from the private sector) can be added to the overall development resource package. But the first priority for each of these strategies is to gain a foothold through land acquisition.

Table 2, <u>Land Planning and Development Tools for Urban Land Management</u> identifies twenty-one tools which could be used as either incentives or disincentives to regulate the supply/demand balance of urban land. What tools to employ, in combination with other tools for infrastructure and finance, will depend on the physical characteristics of the area and the specific development objectives which are being pursued. Each situation will need to be decided in its own context, there is no fixed formula for when to use the a specific land planning and development tool.

Table 2: Land Planning and Development Tools for Urban Land Management in Thailand

	Incentives		Disincentives
Supply	•Land Disposition •Grant Land Rights •Land Exchange with Private Sector(PPP) •Linkage •Land Sharing •Subdivision Regulations •Facilitate Land Registration	Supply	•Land Reservation/ Parks/Open Space •Environmental Zones •Large Lot Zoning •Floor-Area-Ratio Limit •Density Ceilings •Carrying Capacity Standards
Demand	•Land Consolidation •Land Pooling •Reduce Standards to Allow Small Lot Sizes •Development Bonus	Demand	•Increase Land Registration Fee •Create Satellite Centers Outside the City •Promote Industrial De- Concentration •Control Aggregate Land Holdings
	Incentives		Disincentives

dalton.sofie/1991

Not all of these tools are available to either local or national agencies, at this time. But, as indicated, there seem to be several options capable of achieving the same objective. If the available tools prove to be inadequate, it will be necessary to strengthen the land planning and development "tool box" by new laws or regulations.

3.2 Infrastructure Planning and Management Tools

The consultants' report, Infrastructure, Property Tax Mechanisms and Regulatory Instruments for Growth Management (PADCO,1990) describes how infrastructure can be a guiding tool for deve pment and land management, provided that it properly reflects development trends and market conditions. There are many

glaring examples of expensive, improperly placed infrastructure in both developed and developing countries. Nearly vacant industrial estates, with full provision of on-site infrastructure but poor or non-existent access to transport systems are obvious examples of the inability of infrastructure to overcome other, more powerful forces. In addition, specific types of infrastructure are required by some industries but not by others. Water, roads and sewerage may be appropriate as guiding tools for processing industries but have no particular attraction for high technology industries which depend on power and telecommunications services.

Table 3: Infrastructure Planning and Development Tools for Urban Land Management in Thailand

	Incentives		Disincentives
Provide	•Locate "Anchor"-type Facility (e.g. Bus Terminal or Transit Stop) •Siting of Interchanges •Subdivision Control •Land Readjustment	Provide	•Sewage Treatment Plant •Infrastructure Design Standard: Capacity "Sizing" •Predefine ROWs to Achieve Large Plot Size and Low Density
Deny	•Prohibit "Leap-frog" Development; Maximize Users in Built-up Areas •Unit Cost Ceilings for Infrastructure •Site Standards;Permits Tied to Density or Land Use	Deny	•Areas of Critical Concern: Industry Controls •High Development Standards •Restrict "Hookups"
	Incentives		Disincentives

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It is useful to note that the denial of infrastructure can also be a "guiding" tool, especially when its intent is to foster higher levels of density within a utility service area(e.g., a water district). Not only will this produce a more cost effective service but it will also encourage phased urbanization from the center to the periphery, rather than the common "leap-frog" pattern as developers seek cheaper land for residential use on the urban fringe outside Bangkok.

The provision of some forms of infrastructure may also serve as a disincentive to certain types of development. Neither a sewage treatment plant nor a waste disposal site makes a very good neighbor for residential areas. Rationing infrastructure as a means of slowing the rate of growth from development is also a tool which could be used, but only in the most critical situations.

Infrastructure planning and management tools are especially relevant as the primary means of initiating the implementation of the Development Coordination strategy. Although both land and finance will be added to the package of resources as agencies coordinate their implementation efforts, it will be the provision or denial of infrastructure by national agencies, sectoral authorities and local governments that will allow this strategy to be used effectively. There are thirteen infrastructure tools from which agencies could select those most appropriate to the varying District-level conditions in Bangkok. Seven of the tools are designed to provide infrastructure (e.g.,land readjustment), while six others may be more appropriate in situations where the existing density or rate of growth warrants the denial of infrastructure.

3.3 Financial Planning and Management Tools

Since the SOFIE project was designed to identify infrastructure "financing" options as its first priority, these tools are perhaps more well-defined than those for land and infrastructure. In Section Five the seven most promising tools for infrastructure financing are discussed more fully. Private sector participation in the financing of infrastructure and cost recovery from beneficiaries of infrastructure services are emphasized.

The eighteen financial tools included in Table 4, Financial Planning and Development Tools for Urban Land Management are both revenue-oriented (the primary focus of SOFIE) as well as expenditure-based. A "spending" tool may be appropriate in

combination with land and infrastructure tools since, when used together, they will produce revenue and/or reduce costs in the long run. Sometimes it is necessary to spend money to make money.

Table 4: Financial Planning and Development Tools for Urban Land Management in Thailand

	Incentives		Disincentives
Revenue: Tax & Fee	•Special Assessments •Permit Fees •Current Property Values/Assessments •Full Cost Recovery by User Charges •Vacant Land Taxes •Improved Tax Administration: Collection Focus	Revenue: Tax & Fee	•Impact Fees •Differential Tax Rates/Assessments Based on Use •Industrial Cost Recovery Fees •"Un-subsidized" Rental Charges for City Buildings •Special Taxing District
Spending	•Long-term Debt for Public Infrastructure; Non-Revenue Generating Facilities •Stand-by Fund to Capitalize on Development Opportunities •Cash Reserve Ceilings for Public Enterprise:Reinvestment Standards. •Short-term Loans for Special Assessments •Excess Expropriate	Spending	•Ration Development Funds •Reduce Investment in Favor of Maintenance
	Incentives		Disincentives

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The financial tools will probably be the primary method of responding to private sector initiatives under the Development Opportunities strategy. In addition, the use of financial criteria under the Criteria-based Allocation strategy could have a direct influence on the type of projects selected and the means of financing them.

It should be pointed out that special assessments, one of the most promising of the infrastructure financing options, involves both revenue and expenditure "incentives". Creating a loan fund and then spending all its resources may seem like a contradiction. But, in fact, the loans to individuals to pay for the special assessments will generate a supplementary revenue stream which "balances" the financial effects of the loan expenditure itself. Revolving funds have been used with great success in the United States, especially for housing rehabilitation.

3.4 Integrating and Applying the Tools

We have identified and categorized fifty-two(52) individual tools which can be used to control the three major development resources - land, infrastructure and capital - and thereby encourage the private sector to contribute a larger share of the funds needed to provide urban infrastructure. However, these tools are only useful if effectively applied to specific situations where the dynamics of urban growth and investment are manifesting themselves. It is essential, therefore, that government agencies responsible for planning and development acquire a solid understanding of the physical characteristics of areas in which these tools are to be applied.

In addition, of course, if land, finance and infrastructure tools work best as an integrated package, then the institutions which have authority for each of them must be prepared to work together in a coordinated and cooperative manner. For BMA and other urban administrations, which control all three development resources, this may be possible through an inter-departmental process. When more than one agency is involved, however, there may be delays. These implementation problems will require more study as a follow-up to SOFIE.

SECTION FOUR

INFRASTRUCTURE FINANCING OPTIONS

Thailand's total infrastructure requirements probably cannot be satisfied by the Government's existing capital investment financing system which is heavily dependent on public funds for its implementation. Consequently, private sector capital resources, including cost recovery through user charges on consumer-beneficiaries of infrastructure services, must be a significant component of future infrastructure financing schemes.

From an initial list of nineteen internationally-recognized options for infrastructure financing(Dalton/Dowall,1990) seven beneficiary payment mechanisms were determined to be appropriate for use in Thailand during the Seventh Plan period. These are:

1. Property Taxes
2. User Charges
3. Subdivision Regulations
4. Special Assessments
5. Land Readjustment
6. Development Fees
7. Excess Expropriation

As all seven have been proven by practice in diverse parts of the world, no technical reason could be found by the consultants to deny the feasibility of their application in Thailand. In fact, with various degrees of proficiency, the first three mechanisms listed above are currently practiced in Thailand. It can be assumed, therefore, that under the right set of circumstances and with effective leadership, these seven financing mechanisms could be implemented in Thailand. Each of them is considered a "tool" which could assist local or national agencies implement the five Development Strategies.

This relationship is important because each of the seven financing options will need to be institutionalized through a Development Strategy before it can be effectively applied to specific situations in Thailand. Table 5,(next page) matches the seven options to the five strategies.

TABLE 5 : FINANCING METHODS FOR DEVELOPMENT STRATEGIES

DEVELOPMENT STRATEGY	TAX	USER	REGS	FEES	SPAS	READ	EXEX
1. Growth Management	x		x	x	x	x	
2. Development Coordination	x	x		x	x		x
3. Strategic Sites	x	x	x	x	x	x	x
4. Development Opportunities	x			x	x		
5. Criteria-based Allocation	x	x		x	x		

Dalton/sofie/1991

To place this in context, a description about how Thailand currently generates revenue for infrastructure financing follows:

4.1 Current Practice

Historically, Thailand has favored the public funding - free access - approach for much of the construction, operation and maintenance costs of infrastructure. In the Sixth Plan(1987-91), however, a significant policy shift occurred. The RTG endorsed the beneficiary payment principle for infrastructure cost recovery. However, this policy shift toward the beneficiary payment principle, although generally accepted by both public and private sector representatives, has not resulted in any significant change in the means of financing basic infrastructure at the local level. In our view this lack of progress can be attributed to the absence of a rationale for national or local government agencies to adopt new, un-tested methods for cost recovery.

Therefore, the SOFIE project has been examining the incentives and disincentives which might facilitate the implementation of the beneficiary payment principle. We believe that the five Development Strategies and the fifty-two optional tools for mobilizing land, infrastructure and finance could motivate real progress toward this objective.

TABLE 6: INFRASTRUCTURE FINANCING IN THAILAND(1991)

TYPE OF INFRASTRUCTURE	TAX	USER	REGS	EXEX	COMMENTS
1. ROADS					"Toll" roads finance operations through user fees. Excess expropriation limited.
a) Primary	b	o		c	
b) Secondary	b			c	
c) Local	b		b	c	
2. WATER					Consumers pay MWA for usage but not debt service/depreciation
a) Supply	b			c	
b) Distribution	c	o	b		
3. SEWERAGE(proposed)					Very limited sewer systems. Waste treatment is provided by subdividers
a) Collection	c	o	b		
b) Treatment	b		b		
c) Disposal	b				
4. DRAINAGE					Drains are provided with roads. Discharge to klongs/waterways
a) Collection	b		c		
5. ELECTRICITY(local)	c	o			MEA provides most service
6. SOLID WASTE					User charges do not recover the full cost of service. Disposal sites are inadequate
a) Collection	b	o	b		
b) Disposal	b				
7. OPEN SPACE/PARKS	b		c		Subdividers provide
8. FACILITIES					Private sector cost recovery is limited. Most services are subsidized.
a) Administrative	b				
b) Educational	b	o	c		
c) Recreation	c	o	c		
d) Health Clinics	c	o			

Dalton/sofie/1991 (See Exhibit 1 for key to abbreviations)

Local property taxes and user charges, two common methods of financing infrastructure in much of the world, are not even major sources of local revenue in Thailand. In fact, property taxes for the BMA in 1988, represented less than 20% of its total revenue. Nationwide, municipalities obtained only 7.88% of their revenue from property taxes; sanitary districts rely on property taxes

for 10.90% and Changwat achieved 14.14% property tax resource mobilization. Most of the "taxes" used for financing infrastructure in Thailand are national broad-based taxes which are allocated in the form of development aid. User charges are used by national enterprises for most utility services, but are not a prime source of local non-tax revenue. Less than 4% of local government revenues are derived from "fees".

In contrast to taxes and user charges, subdivision regulation is one of the mainstays of the current system of infrastructure provision and has produced a significant amount of privately financed urban infrastructure. We believe that this financing source could be made even more effective if it were linked to a regional or local development strategy and incorporated within a locally approved plan. The Growth Management and Strategic Sites strategies should assist the BMR and BMA determine how to extend the principle of subdivision regulation to comparable situations (e.g., buildings with more than 10 residential units).

Special assessment procedures have been successfully used in Thailand for land consolidation in rural irrigation projects since 1974, but up to mid-1991 have not been applied in urban environments. Its first such use is currently under serious consideration by the BMA and the National Government to fund flood protection in a large area of Bangkok. Special assessments, as described below, are one of the primary sources of private sector funding of infrastructure.

Excess expropriation, the concept of funding projects by selling off some of the land initially acquired by expropriation but subsequently made more valuable by public sector servicing - a potentially valuable infrastructure planning and financial tool - is in limited use by the Industrial Estates and National Housing Authorities. Local governments in Thailand do not currently have the power to act in this sort of "redevelopment" mode.

The remaining two mechanisms which have been recommended by the consultants - land readjustment and development fees - are not now utilized at all in Thailand, but are widely practiced in the United States and other developed countries. Given this application record (see Dalton/Dowall,1990) it should be possible to find a distinctly "Thai" way of adapting and utilizing these mechanisms to finance infrastructure. With respect to each of these, we believe that the technologies and skills required for

successful application can be demonstrated and transferred to responsive local and national organizations.

4.2 Recommendations

Those mechanisms not now practiced in Thailand should be tested, evaluated and, if necessary, authorized by law. This would permit all seven mechanisms to be available, at least, for use by local and/or national agencies either as part of a Development Strategy, or as targeted, "stand-alone" solution to an immediate situation demanding government action.

Each of the seven financing options are described below. TABLE 7, following, indicates how local and national agencies in other countries use these methods to finance the construction and/or operations of basic infrastructure.

4.2.1 LOCAL TAXES

■ Definition/Description: Tax revenues are the typical means of financing public infrastructure. The primary sources of local tax revenue are property taxes, business taxes and excise taxes. The annual collections may be used to either a) finance the total cost of the infrastructure("pay as you go"), b) make annual debt service payments on outstanding bonds or loans("pay as you use") or c) contribute to a reserve account for future investment.

■ Purpose: Public financing of infrastructure through tax revenues is used whenever the facility is assumed to benefit the entire community.

In some cases, such as with "Tax Increment Financing" tax revenues are dedicated to retire debt incurred on behalf of a specific geographic area. Over the past several years some business taxes at local levels in the United States have been specifically earmarked for commercial revitalization.

■ Requirements: For taxes to be used as a primary source of infrastructure financing, an effective system of tax administration (e.g., mapping, valuation, record keeping, billing and collection) is essential. Tax revenues must be sufficient to cover both operating and development expenses. Past trends and future projections of tax yield must be sufficient to retire any debt incurred for infrastructure financing purposes.

■ Discussion: Local taxes are the usual sources of revenue which local governments rely upon to finance basic infrastructure. In many developed countries, especially those which employ the capital value method of assessment, the aggregate value of local property is a significant financial resource which can be taxed for development purposes. Other local "own-source" revenues in other countries include business taxes, service charges and a variety of other fees and charges which the taxing entities rely upon for financing both recurrent and development expenses.

As Table 7 indicates, taxes - usually allocated to debt service payments - cover the capital costs of all infrastructure in most developed countries. In addition, tax revenues usually pay the annual operating costs of most road systems. Operations and maintenance expenses for water supply - i.e., the development of reservoirs, dams and other trunk infrastructure- sewage treatment, solid waste services(including final disposal sites) and other infrastructure also depend on local tax revenues, although some of these costs are recovered through user charges by local utility enterprises.

The structural reform and improved administrative efficiency of this fundamental form of beneficiary payment could provide a similar, reliable source of infrastructure financing in Thailand. It is important to emphasize, however, that net revenues from property tax collections can only generate a surplus for development expenses if the current exemption from taxes of owner-occupied dwellings is eliminated from the law.

Making the actual property tax rate a discretionary decision of the local legislature derived from their own budgetary and service cost decisions, will also tighten the connection between service and tax payment. Additionally, a reformed property tax, on the ad valorem principle, would provide a needed management and information base for the conduct of special assessment and land readjustment projects.

Thailand, like many other developing countries, has relied upon national taxes(income, corporate, transactions), rather than local property tax revenues, to finance the development of local infrastructure. This reflects both the strong "central" orientation of past National Governments as well as the

structural weakness of the system of local property taxation. Due to the statutory exclusion of owner-occupied dwelling units from the application of the tax, local property taxes have not produced the revenue yields necessary for infrastructure development. For example, in FY 1988 the total of local property tax collections(combined revenue from building tax and land development tax) was only 13.44% of total local revenues. The largest local revenue sources are "Subsidies" from the National Government (21.52%), "Shared Taxes" (17.68%) and "Business Tax Surcharges" (16.09%). Business Tax Surcharges, rather than property taxes, are the largest single source of revenue for the BMA (35.92%).

Realistically, therefore, property taxes are unlikely to be a source of infrastructure financing during the Seventh Plan. In addition, given the extraordinary level of recurrent personnel expenses(i.e. salaries and wages) relative to local tax revenues, it is questionable whether property taxes could cover even these costs over the next decade. The FY 1988 local authorities' total of property tax revenue was approximately 2.3 billion baht; expenditures for salaries, wages and remunerations was nearly 2.9 billion baht. Accordingly, only a structural change in the local revenue system, including property taxes, will provide any prospect for direct local financing of infrastructure from taxes.

4.2.1 USER CHARGES

■ Definition/Description: User charges are fees paid by consumers for infrastructure related services, typically for utility operations such as water, sewerage and electricity. The user charge consists of the following four cost elements:

a. operating expenses
b. maintenance
c. depreciation
d. debt service

The debt service portion of the annual user charge is allocated to cover the long term financing cost of infrastructure. Depreciation, a real cost, reflects the diminished value of the capital assets and is the amount which should be set aside for its replacement.

■ Purpose: User charge financing is a "private sector"/commercial approach to cost recovery. The total cost of service is passed through to the consumers as part of a monthly or quarterly bill for services issued by the local government or

local enterprise in accord with the approved rate. The operating cost portion of the rate is generally based on use, with higher levels of consumption reflected in higher charges. The debt service portion may be allocated on the basis of use or apportioned equally among all consumers, each of which pays an equal share. The latter approach assures the availability of sufficient capital to retire outstanding debt since it is not affected by fluctuations in consumption.

■ Requirements: User charges for utility operations operate most effectively when combined with a cost accounting system to identify and allocate expenses. Without such a system it is difficult to determine the factors which contribute to operating or capital cost increases. User charges to recover costs of debt service require the authority to assume long-term obligations such as bonds or loans. Consequently, local governments without this authority do not often employ user charges to pay for debt service, but rather only cover operating and maintenance expenses. As a result physical deficits may increase in service areas which do not provide user charge financing for regular replacement of infrastructure.

■ Discussion:

Based on national statistical summaries of local government operations for FY 1987 and FY 1988, local governments must subsidize local utility enterprises. In FY 1986 the amount of the subsidy was approximately 100 million baht; in the previous fiscal year the amount of the local government sudsidy to local enterprises was about 180 million baht. The year-to-year decline was probably attributable to a transfer of responsibility of some water services to the Metropolitan Waterworks Authority rather than to an increase in the extent of commercial operations for local enterprises.

Few special purpose agencies are fully committed to the "full-cost-recovery" principle. Expanding the coverage of user charges is economically sound and is strongly recommended for every appropriate service. By expanding the coverage of user charges, governments also establish an essential financial frame of reference for privatization through performance contracting, concessions and franchises for service delivery.

Except for toll roads there are very few instances of road user charges in the world. Singapore has successfully introduced a sticker system to regulate congestion in the central city. The TRIP toll proposed for Bangkok would be based on the same

principle. The difficulty and cost of enforcement is a major impediment to a "pricing" approach to cost recovery based on congestion. In theory, however, the Singapore approach is really an example of a development impact fee applied to roads and with the appropriate data base it could be implemented in Bangkok.

TABLE 7: TYPICAL PATTERNS OF INFRASTRUCTURE FINANCING

TYPE OF INFRASTRUCTURE	TAX	USER	REGS	FEES	SPAS	READ	EXEX
1. ROADS							
a) Primary	b	o					c
b) Secondary	b			c	c	c	c
c) Local	b		b	b	b	c	c
2. WATER							
a) Supply	b						c
b) Distribution	c	o	b	c	b	c	
3. SEWERAGE							
a) Collection	c	o	b	c	b	c	
b) Treatment	b	o	b	o	b	c	
c) Disposal(e.g. sludge)	c	o		b			
4. DRAINAGE							
a) Collection	c	o	b	c	b	c	
5. ELECTRICITY(local systems)	b	o	c		c		
6. SOLID WASTE							
a) Collection	b	o	b	o	o		
b) Disposal	b	o		b		c	
7. OPEN SPACE/RECREATION	b	o	c	b	o	c	c
8. FACILITIES							
a) Administrative	b						c
b) Educational	b	o	c	b	b		c
c) Youth and Sports	c	o	c	b	b		c
d) Health Clinics	c	o			o		c

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4.2.3 SUBDIVISION REGULATIONS

■ Definition/Description: Subdivision regulations, or development exactions as they are sometimes referred to, require a developer to provide on-site infrastructure as a pre-condition to development approval by a public agency. The costs are passed through to homebuyers who, some suggest, bear a disproportionate share of the cost of public infrastructure. Through subdivision regulation and/or responsiveness to market demands, developers provide most on-site infrastructure in the BMA.

■ Purpose: Development exactions through subdivision regulations are defined in the law, although there is flexibility to arrive at a negotiated agreement with the developer on the specific infrastructure to be provided. On-site infrastructure such as roads and drains, water and sewerage pipes, lighting and open space for passive recreation are common exactions.

■ Requirements: The existing subdivision regulations require certain developers(i.e, those with more than 10 plots) to contribute on-site infrastructure, including roads, drains, water and on-site waste disposal facilities and to provide land for schools, open space, etc., as a condition precedent to a permit. However, one of the weaknesses of this approach to subdivision regulation is the developer's option to set aside undeveloped land which can not be readily capitalized upon by resource-constrained local governments.

■ Discussion: Even under existing procedures, subdivision regulations could provide even greater levels of infrastructure if linked to a development strategy such as Growth Management or Development Coordination. With sufficient lead-time to prepare local plans, local governments could use the subdivision review and approval process to negotiate with developers about the type and level of infrastructure which must be provided by them, including segments of secondary roads. This would be accomplished either by the national Land Subdivision Control Committee or, ideally, through delegation of authority by them to the BMA and other responsible urban governments. Technical Paper No.1 provides a very useful reference to subdivision regulation in Thailand.

4.2.4 SPECIAL ASSESSMENTS

■ Definition/Description: Special assessments are public charges to recover the capital cost of infrastructure. They are

levied directly upon the immediate beneficiaries - based upon either a "frontage", land area or land value basis. Special assessments are frequently used for secondary and tertiary roads, as well as for water and sewer extensions. Special assessments are assessed, levied and, usually, paid in advance of infrastructure construction.

■ Purpose: Special assessments are a means of forcing property owners who will benefit from the provision of public infrastructure to bear the burden of its cost. In most cases the portion borne by individual property owners is based on an engineering cost estimate of the cost of installation, rather than the long term running costs of the infrastructure or its cost implications on the total system. The "betterment" principle can be applied to either existing or planned developments; levies may be made against individual owners or to a single developer of an approved subdivision.

■ Requirements: Capital cost recovery through special assessment requires the assessing agency to be able to prepare accurate estimates of infrastructure construction costs so that each beneficiary can be properly charged a fair share of the expense. Special assessments usually depend upon "consensus" among all those being assessed. Private dedication of property (rather than expropriation) to achieve the public purpose may often be required. Delays in the payment of special assessments can affect the capital cost estimate, forcing the public sector to assume a larger than anticipated share of the capital cost.

■ Discussion: As property values usually increase with infrastructure provision, special assessments often can be used to tap this value increment to recover the cost of infrastructure construction. According to estimates in the Bangkok Land and Housing Market Assessment, land value increments can be quite substantial as the following indicates.

TABLE 8: Land Value Increments Due To Infrastructure

KM FROM CENTER	BAHT/UNSERVICED PLOT(25 SQ. WAH)	BAHT/SERVICED PLOT (25 SQ. WAH)
10 km	341,605	905,936
20 km	207,992	551,595
30 km	121,450	322,085

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2.1.5 LAND READJUSTMENT

■ Definition/Description: Land readjustment is a method of financing infrastructure within a defined, typically undeveloped area, by redrawing parcel boundaries, aligning on-site infrastructure, donating certain valuable parcels for public sale and using the proceeds thereof to finance the up-front costs of infrastructure construction. The value added to each remaining parcel as a result of the placement of infrastructure compensates existing landowners for loss of land area. Increased value for reduced size is the essential motivation for land readjustment. Land readjustment has been used successfully in Taiwan, Japan and Korea. In those countries the maximization of open land for housing purposes justified the involvement of the public sector in a basically private economic transaction. Land readjustment negotiations can be time-consuming.

■ Purpose: The purpose of land readjustment is to motivate the rational development of open land and provide serviced plots for housing development. In theory, land readjustment could also be used for commercial development but there are no descriptions of that approach in current development literature. Financing infrastructure through the sale of land parcels donated to the government is a creative approach to financing.

■ Requirements: Land readjustment facilitated by local government would require strategic planning and management skills to: a)identify areas susceptible to readjustment, b)negotiate with land owners and arrive at a consensus agreement, c)"re-parcel" the area(including the placement and costing of infrastructure) so that land owners will accept the overall approach and agree to the dedication of valuable land for sale, and d)facilitate and/or supervise the sale of land and the installation of infrastructure. This may not be possible for most local governments in Thailand.

■ Discussion: Land readjustment is a voluntary "partnership" between a sponsoring government agency and a group of landowners who agree to pool their holdings, allocate a portion of it for roads and other infrastructure and then take possession of redesigned, more valuable plots. Some of the plots are sold to cover the costs of infrastructure. This beneficiary payment mechanism would be particularly useful to local governments seeking to expand the housing supply on the fringe of urban development or in any area with fragmented ownership where the

owners wish development without relocation. Local planning and administrative capability may be a requirement for an effective land readjustment scheme, although these skills can be independently obtained without use of public resources. Land readjustment would be an appropriate method for infrastructure financing under the following three development strategies: Growth Management, Development Coordination and Strategic Sites.

4.2.6 DEVELOPMENT FEES

■ Definition/Description: Development fees, especially development impact fees, are paid by a developer to compensate local governments for the financial burden which new development places on existing, off-site infrastructure (e.g., sewage treatment plants, transport systems, reservoirs). Impact fees are usually assessed when the building permits are issued by the local government, although some jurisdictions have made them a condition of occupancy.

■ Purpose: Development fees are intended to recover the imputed cost of new development on the current/planned physical infrastructure of a community. Typically the charges are assessed for each individual component of the total system based on either plot size, density of development or size and type of building construction. Multiple bedrooms in detached dwellings are assumed to place higher demands on schools, for example, than one bedroom condominiums. Residences with garage space for two automobiles will have a greater impact on transportation systems than other forms of housing. Each impact is isolated and monetized so that the beneficiaries bear the cost burden of development.

■ Requirements: Development fees are usually authorized by statute or regulation, but the actual charges are calculated when a specific development is approved. To arrive at a fair allocation of the anticipated capital and operating costs, the local government must establish a mathematical model which can be regularly updated to reflect replacement costs of physical infrastructure while also calculating the effects of depreciation on the unit value of each facility which the new development will impact. The development impact fees are deposited to a special account reserved for future expansion or replacement of existing facilities. Where existing excess capacity is being allocated to the new development the fees are used to retire existing debt.

■ Discussion: This method of infrastructure financing includes fees for permits, development impact fees and other payments made by developers to compensate for the effects of development on existing capital assets. Local governments in Thailand are already collecting a substantial amount of revenue from "Fees, fines and permits". While we were unable to obtain a breakdown of the individual revenue items within this account, the total in FY 1989 was 227 billion baht. The rate of increase was greater than for property taxes.

The current low permit fee for subdivision approval bears no relationship to its value. That cost could be increased substantially with the proceeds dedicated to a fund for infrastructure financing. The precise fee for the permit could include costs to protect the environment and/or to finance infrastructure for low income persons. This would make the permit a form of "linkage".

The development impact fee has the greatest potential in Bangkok, provided that some value can be devised for the marginal cost of various kinds of development on the existing base of capital assets. There is no question that the existing standard of service for any infrastructure will decline with more intensive use. Congestion, especially, has a price which can be calculated and assessed. The requirement to develop a useful data base may be seen as a formidable obstacle to the implementation of such a financing method. However, under the Strategic Sites development strategy a District-level data base could be established and utilized on a selective basis throughout Bangkok.

Growing in usage and sophistication in many developed countries, development fees are regarded as one of the best way to maintain off-site community infrastructure and maintain service standards under the impact of new development. As various pricing policies can be applied - establishing development incentives and disincentives - the development fee approach is increasingly seen as a prime planning tool, as well as a funding mechanism.

4.2.7 EXCESS EXPROPRIATION

■ Definition/Description: Excess expropriation is an indirect infrastructure financing method which involves the taking of land for infrastructure purposes(e.g., roads, railways. sewer lines, water lines) as well as an excess margin of land which will be conveyed to a private developer for private, typically

commercial, development. The developer agrees to install the required infrastructure as a condition of the acquisition of development rights to the excess land obtained by public authority. The land-taking satisfies the public purpose criterion while providing a means for the provision of infrastructure at no cost to the public.

■ Purpose: Excess expropriation has been utilized as a redevelopment tool, primarily for slum upgrading. The conveyance of development rights as a capital financing vehicle for infrastructure has been used for more than a century, especially for North America's railroads. There has been a subtle shift in the basic purpose in recent years with the private development objective serving as the primary motivation for the public taking, in many instances.

■ Requirements: Excess expropriation requires clear statutory authority to use public powers for private purposes. Some laws limit the exercise of eminent domain/expropriation to specific public purposes, while many USA jurisdictions have very broad powers to take land for development purposes. In addition, it is essential that the systems associated with land management and finance are well designed so that the risk of financial loss is controlled. The financial condition of the private developer must be well documented and adequate performance bonds should be obtained.

■ Discussion: This mechanism provides project funding by acquiring land for resale after it has increased in value due to the project's primary activity. Although a valuable financing mechanism, Thailand's experience with expropriation for public purposes may preclude the authorization of excess expropriation and property resale.

EXHIBIT 1

LEGEND OF ABBREVIATIONS USED IN TABLES

TAX = Property and Other General Purpose Taxes
USER = User Charges for Utility Consumers
REGS = Development Exactions through Subdivision Regulations
FEES = Payments for Permits, Compensation(Impacts), Services
SPAS = Special Assessments
READ = Land Readjustment/Land Pooling
EXEX = Excess Expropriation
c = Capital Costs
o = Operating Expenses
b = Both

SECTION FIVE

APPLYING THE FINANCING OPTIONS TO SPECIFIC SITES

One of the primary objectives of SOFIF was to test the applicability of recommended infrastructure financing options, through a participatory "action-research" approach involving professional staff from interested agencies. This approach was considered essential to the subsequent adoption and operationalization of new financing mechanisms at both national and local levels. Two sites were to be used for this action research: one in the built-up areas of Bangkok and another on the urban fringe which was experiencing development pressure. The assumption was that sites with dissimilar characteristics would require distinctly different infrastructure financing options.

As the results of our work on the selected sites will demonstrate, the same infrastructure financing options can be used in both the built-up portions of Bangkok as well as on the urban fringe, if the land characteristics and development objectives are similar. However, given the variety of development strategies suggested(see Section 3) and the wide selection of tools which may be applied, the results of the preliminary research on the two selected sites suggests the possibility that a number of planning and land development tools might be used together to reinforce the main financing option itself. This concept of packaging a number of tools into a single development approach will require further analysis and testing, hopefully in the very near future under alternative funding arrangements. The potential of this approach to support Seventh Plan implementation is so promising that further in-depth assessment of the legal, institutional and operational requirements should be a high priority for the NESDB.

TABLE 9 : Research Site Characteristics

SITE	LOCATION	BOUNDARIES	AREA
Bangkapi	Bangkok Bangkapi Dist.	S- Pracha Uthid Road W- Lad Prao Canal N- Chokchai Panjasub Hsng E- Ekamai/Ramintra X-Way	798 rai
Rangsit	Pathum Thani Klong Luang S.D.	S- Nakorn Nayok Road W- Paholyothin Highway N- Bang Khan Road E- Klong No.2 Road	1560 rai

It is also important to point out that the selection and field research on the sites themselves occurred in parallel with the development of financing options. It is possible that sites with very different characteristics would be chosen at this time. A description of the two sites follows:

5.1 Bangkapi Research Site

The SOFIE Terms of Reference called for the selection of a research site within the "built-up" area of Bangkok in order to test the application of financing and cost recovery options in situations where additional infrastructure, especially distributor roads, might be "inserted" in an urbanized environment. The site selection was guided by the following criteria:

- Located within a block bounded by main roads;
- An area requiring new infrastructure (distributor roads) to support existing and/or new development;.
- An area under strong development pressure;
- Existence of current government plans/proposals for infrastructure improvement;
- An area of mixed land use;
- Distributed private ownership of land parcels;
- General representativeness of area conditions; and
- Easy access for field research.

Several discussions were held with government officials at local and national levels and several candidate locations were proposed. Map studies and site surveys led to the selection of a large(128 hectares), under-developed site in a "block" where public and private investment was occurring. The block/site combination satisfied each of the criteria for selection. The SOFIE Steering Committee endorsed the site and PADCO/LIF consultants undertook the following major tasks:

1. Updated the cadastral map and prepared a list of land parcel owners;
2. Designed and prepared cost estimates for a prototype layout for the designated site, including roads, drains, bridges and other infrastructure;
3. Valued each land parcel on a "before and after" basis assuming the implementation of the project as designed;
4. Estimated the special assessment charges needed to recover the cost of infrastructure from landowners;and,
5. Prepared a detailed report of these and other relevant factors

The proposed project of infrastructure development and cost recovery through the sequential application of special assessments and land readjustment would cost Baht 200.63 million, broken down as follows:

Item	Description	Amount
20m Roads	2400 meters	B 50,100,000
16m Roads	2000 meters	B 29,219,000
14m Roads	2800 meters	B 33,078,000
Bridges	2@ 18x40 meters	B 36,000,000
Margin	30%:B 148,397,000	B 44,519,000
Design	4%:B 192,916,000	B 7,717,000
Total		B 200,633,000

In addition, the cost of land acquisition for roadway widening (B 217,920,000) brought the total project cost to nearly B 420 million. It was assumed that the BMA would pay for most of the cost of road and bridge work on Pracha Uthid road - about 180 million Baht - with the landowners remaining share of B 240 million being increased by the amount of interest on funds borrowed by the BMA to pay the up-front costs of construction(B 76.6 million in interest only). The total project cost to the landowners would be B 319,921,000 with a five year payback. Annual assessments would be B 64,652,000, the equivalent of B 270/sq.m.of affected land, only 4.3% of the total estimated increase in land value attributable to the provision of infrastructure. The economic assumptions underlying this equation is the determination that the market value/rai will increase from B 4 million to B 14.5 million as a result of the project.

Under those financial conditions it might even be possible for the BMA to make a larger portion of the infrastructure cost subject to special assessment, including Pracha Uthid Road. This would need to be determined through negotiation with landowners as well as at the policy level. Since <u>some</u> of the benefits of <u>some</u> of the infrastructure would clearly accrue to individuals which had not assumed any of the financial burden, the

beneficiary payment principle would not be strictly applied. This could represent a bad precedent for implementing optional financing techniques in Thailand and a decision on this matter should be made at an early date.

■ Summary of Project Objectives

The next phase of the Bangkapi Project would be carried out under the leadership of the BMA, using a development team approach similar to the manner in which a private developer might deploy resources at the outset of a comparable project.

The primary objectives of the Bangkapi Infrastructure Financing project are:

1. To gain landowner support for the construction of the planned infrastructure and the acceptance of a special assessment, and associated lien on their land, for the full and equitably apportioned recovery of the costs of designated infrastructure;

2. To construct the planned network of bridges and distributor roads and drains so as to facilitate and guide the development of the site in accordance with plan objectives;

3. To reconstruct the Pracha Uthid Road as a distributor road as shown in the draft Bangkok Metropolis General Plan and to construct the proposed BMA distributor road;

4. To facilitate and assist the adoption of the land readjustment technique for the unified planning, servicing and subdivision of some of the new blocks created within the site; and

5. To demonstrate the use of special assessment and land readjustment options to finance the construction of distributor roads(and perhaps other infrastructure) and to identify the appropriate procedures for their adoption and operationalization as standard tools of the BMA and other local governments in Thailand.

A Work Program and Schedule to achieve these objectives is provided(see Table 10).

TABLE 10: Bangkapi Research Site Work Program & Schedule: July-December,1991

NO.	TASKS	J	A	S	O	N	D	COMMENTS
I	LEGAL/INSTITUTIONAL ASSESSMENT -Team Composition and Method of Operation -Administrative Costs -Scope of Town & Country Planning Law of 1975 -BMA Special Assessment Authority -BMA Authority for "On-Lending" e.g, interest rate, collateral, collections, penalties, liens.							There are many issues which will need to be examined before the special assessment approach can be attempted. If the Town & Country Planning Act, B.E. 2518 can be efficiently mobilized on behalf of the BMA many of these can be resolved at one time.
II	TECHNICAL DATA ASSEMBLY -Inventory/status of other projects in the area(public and private, including the developer) -Determine "best" infrastructure approach/mix -Prepare maps for road layout and other infrastructure -Update cadastre/confirm boundary							One of the critical issues will be the authority of the BMA to incur debt which is subject to repayment through assessments against property. The Ministry of Finance will need to be consulted at the outset if a loan from the national government is to be the basis for covering the construction costs.
III	COST ANALYSIS -Review cost sharing assumptions -Review cost computations -Prepare budgets for BMA share -Establish current land values and forecast land value increase -Allocate cost to each parcel -Arrange for financing							Both the developer and many of the landowners may have other ideas about the scope and timing of site development. Meetings will need to be held to determine how the optimal plan can be reconciled with their ideas. This process will need to be documented.
IV	NEGOTIATIONS -Agree on layouts with developer -Meetings with landowners -Revise layout and allocation, as needed							
V	REPORTS -Development plan for Bangkapi -Process Documentation/Lessons							The research should produce a report with clear policy guidance.

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beneficiary payment principle would not be strictly applied. This could represent a bad precedent for implementing optional financing techniques in Thailand and a decision on this matter should be made at an early date.

■ Summary of Project Objectives

The next phase of the Bangkapi Project would be carried out under the leadership of the BMA, using a development team approach similar to the manner in which a private developer might deploy resources at the outset of a comparable project.

The primary objectives of the Bangkapi Infrastructure Financing project are:

1. To gain landowner support for the construction of the planned infrastructure and the acceptance of a special assessment, and associated lien on their land, for the full and equitably apportioned recovery of the costs of designated infrastructure;

2. To construct the planned network of bridges and distributor roads and drains so as to facilitate and guide the development of the site in accordance with plan objectives;

3. To reconstruct the Pracha Uthid Road as a distributor road as shown in the draft Bangkok Metropolis General Plan and to construct the proposed BMA distributor road;

4. To facilitate and assist the adoption of the land readjustment technique for the unified planning, servicing and subdivision of some of the new blocks created within the site; and

5. To demonstrate the use of special assessment and land readjustment options to finance the construction of distributor roads(and perhaps other infrastructure) and to identify the appropriate procedures for their adoption and operationalization as standard tools of the BMA and other local governments in Thailand.

A Work Program and Schedule to achieve these objectives is provided(see Table 10).

TABLE 10: Bangkapi Research Site Work Program & Schedule: July-December,1991

NO.	TASKS	J	A	S	O	N	D	COMMENTS
I	LEGAL/INSTITUTIONAL ASSESSMENT -Team Composition and Method of Operation -Administrative Costs -Scope of Town & Country Planning Law of 1975 -BMA Special Assessment Authority -BMA Authority for "On-Lending" e.g, interest rate, collateral, collections, penalties, liens.							There are many issues which will need to be examined before the special assessment approach can be attempted. If the Town & Country Planning Act, B.E. 2518 can be efficiently mobilized on behalf of the BMA many of these can be resolved at one time.
II	TECHNICAL DATA ASSEMBLY -Inventory/status of other projects in the area(public and private, including the developer) -Determine "best" infrastructure approach/mix -Prepare maps for road layout and other infrastructure -Update cadastre/confirm boundary							One of the critical issues will be the authority of the BMA to incur debt which is subject to repayment through assessments against property. The Ministry of Finance will need to be consulted at the outset if a loan from the national government is to be the basis for covering the construction costs.
III	COST ANALYSIS -Review cost sharing assumptions -Review cost computations -Prepare budgets for BMA share -Establish current land values and forecast land value increase -Allocate cost to each parcel -Arrange for financing							Both the developer and many of the landowners may have other ideas about the scope and timing of site development. Meetings will need to be held to determine how the optimal plan can be reconciled with their ideas. This process will need to be documented.
IV	NEGOTIATIONS -Agree on layouts with developer -Meetings with landowners -Revise layout and allocation, as needed							
V	REPORTS -Development plan for Bangkapi -Process Documentation/Lessons							The research should produce a report with clear policy guidance.

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5.2 Rangsit Research Site

The "urban fringe" research site is a 250 hectare portion of a 540 hectare area located 35 km. north of Bangkok in Pathum Thani Province. Located in the northern development corridor, the site is appropriate for consideration under either the Growth Management or Development Coordination strategies. Major public and private investments are occurring in the area. The absence of access to the designated site is believed to be one of the reasons why the land has not already been subdivided, although "cultural" reasons may also need to be taken into account.

The Pracha Thipat/Klong Luang draft General Plan - six years in preparation - is expected to be officially adopted this year(1991), followed by the issuance of Ministerial regulations for the enforcement of the Plan. This is an important feature of the application of infrastructure financing options. The availability of a approved plan and the authority to enforce it are often sufficient to "motivate" the participation of landowners in voluntary schemes for infrastructure financing and cost recovery.

The cost factors associated with the provision of distributor roads and the full cost recovery from benefitting landowners is presented below:

Item	Description	Amount
Roads	3350 m. on-site and 450 m. access	B 81,533,000
Bridge	15m x 40m	B 12,000,000
Margin	30%:B 93,533,000	B 28,060,000
Design	4%:B 121,592,900	B 4,864,000
Total		B 126,457,000

To this amount is added the cost of land acquisition - 102 million Baht and the amount of loan interest that the implementing agency would incur in order to finance the up-front portion of the project costs. The total estimated project cost would be B 301.8 million. The annual special assessment charge would be B 61,572,300 for five years. The land value increment has not yet been calculated on a "before and after" basis.

The primary infrastructure financing option to be applied on the Rangsit site would be special assessment, with land readjustment a possible later option to facilitate land consolidation of the typically-Thai "noodle" shape of land parcels designed for irrigated agriculture. Implementation would be shared among a number of agencies at the national, Provincial and local levels. Since this form of intergovernmental coordination will be required in most areas outside Bangkok, it will be an important area of research leading to implementation of optional methods of financing.

■ Summary of Project Objectives

The objectives of the Rangsit Project are similar to those proposed for Bangkapi because of the similarity in the method of financing infrastructure and recovering its cost. They are:

1. To gain landowner support for the construction of the planned infrastructure and the acceptance of a special assessment, and associated liens on their land, for the full and equitably apportioned recovery of the costs of designated infrastructure;

2. To construct the planned network of bridges and distributor roads and drains so as to facilitate and guide the development of the site in accordance with plan objectives;

3. To implement the proposed bridge and distributor road system shown in Pracha Thipat/Klong Luang draft General Plan;

4. To facilitate and assist the adoption of the land readjustment technique for land consolidation and subdivision within the site; and,

5. To demonstrate the use of special assessment and land readjustment options to finance the construction of distributor roads(and perhaps other infrastructure) and to identify the appropriate procedures for their adoption and operationalization as standard tools to be implemented through a coordinated approach involving national, Provincial and local agencies in Thailand.

Table 11 provides a Work Program and Schedule for this effort.

TABLE 11: Rangsit Research Site Work Program & Schedule: July-December,1991

NO.	TASKS	J	A	S	O	N	D	COMMENTS
I	LEGAL/INSTITUTIONAL ASSESSMENT -Team Composition and Method of Operation -Administrative Costs -Scope of Town & Country Planning Law of 1975 -Special Assessment Authority -Authority for "On-Lending" e.g, interest rate, collateral, collections, penalties, liens.							The institutional issues associated with the application of infrastructure financing options in Rangsit are very complex. Pathum Thani Province and Klong Luang Sanitary District will probably have no familiarity with these concepts. Leadership will be needed from the Dept. of Town and Country Planning for this research effort to move ahead.
II	TECHNICAL DATA ASSEMBLY -Inventory/status of other projects in the area(public and private) -Determine "best" infrastructure approach/mix -Prepare maps for road layout and other infrastructure -Update cadastre/confirm boundary							Borrowing funds to finance the up-front costs of construction and relying upon annual special asessment collections to amortize the debt will require the approval of the Ministry of Interior and Ministry of Finance.
III	COST ANALYSIS -Review cost sharing assumptions -Review cost computations -Prepare budgets for local share -Establish current land values and forecast land value increase -Allocate cost to each parcel -Arrange for financing							One of the issues to consider is the extent to which the ministerial regulations for the General Plan can be expanded to include financing arrangements for the infrastructure.
IV	NEGOTIATIONS -Agree on layouts by agencies -Meetings with landowners -Revise layout and allocation, as needed							The "cultural" issues on the site should be documented.
V	REPORTS -Development plan for Rangsit -Process Documentation/Lessons							

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SECTION SIX

IMPLEMENTING THE DEVELOPMENT STRATEGIES

In addition to the immediate follow-on work which should be undertaken by the BMA for the Bangkapi site and by the Department of Town and Country Planning for the Rangsit site, there is a necessity for guidance to NESDB and other local and national agencies, including the BMR Development Committee, on implementing each of the Development Strategies which have been recommended as the "delivery system" for land, infrastructure and finance based planning tools to promote private sector financing of infrastructure. Our objective is to enable interested agencies to develop and apply the recommended tools in pursuit of Seventh Plan goals.

As requested, we have reviewed sections of the un-dated Draft Final Report of the National Urban Development Policy Framework. Although it is difficult to determine the recommended timeframe for some of their proposals, we believe that the Development Strategies which we identified in March, 1991 are still valid and can be implemented either in conjunction with, or as more focused near-term alternatives to, some of the long range recommendations which the Draft contains.

We believe that immediate benefit can be obtained by NESDB and other national and local government agencies by moving ahead now with implementation of SOFIE recommendations. As the "macro" policies are adopted the SOFIE Development Strategies and infrastructure financing options can be brought under the ambit of new structures and strategies with no reduction in their effect. For example the Growth Management strategy which we recommended is valid whether the BMRDC or the EBMRDC is in place. The issue to be addressed is not the composition of the Committee but the treatment of the condition - persistent, inexorable and costly growth on the urban fringe of Bangkok.

We were also pleased to note that our Development Opportunities concept found its way into the policy framework for the Seventh Plan, albeit with diminished potential. Stand-by capital to respond to private sector initiatives at the Provincial level will enable the public sector to secure much more private sector financial participation than would be possible through traditional capital planning and budgeting systems. Since our proposal accepted as reality the fact that Provinces are at different stages of readiness to undertake

development programs, we were not concerned with redressing infrastructure deficits throughout the country. Rather we were assuming that the national goal of increased job opportunities and higher export earnings would justify a strategic response in those Provinces which were attractive to investors and poised for economic development. If it is deemed preferable to try to direct investment rather than capitalize upon it there will still be an "opportunity" to apply the tools which we have recommended.

The Development Coordination strategy appears to have the most immediate potential for direct implementation within the Policy Framework. The inclusion of a preliminary investment program in the draft document will be a useful staring point for determining where the greatest potential might exist for assisting Provinces and cities to take maximum advantage of national investments in their area. This is exactly what we had hoped for, although it is important to move quickly with the approach which we have suggested so that land speculators do not take advantage of the same information and stake their "claim" to prime land in proximity to the planned Government investment.

Of course, the Strategic Sites approach is consistent not only with the Seventh Plan but with the Sixth Plan, as well. Since it is assumed that BMA and the Regional Cities will initiate this land development strategy as a means of securing funds for infrastructure, there is no conflict with the nationally oriented strategies discussed above. Although the draft Policy Framework seems to suggest that the primary purpose of filling the "missing links" would be infrastructure cohesiveness, per se - leaving the cost in the hands of the public sector - we believe that by technical assistance and training, local officials can achieve interconnected infrastructure for less cost than if approached on technical terms alone.

PADCO/LIF has defined the basic requirements for implementing each of the strategies by utilizing an institutional assessment approach consisting of the following key factors:

1. Strategy

2. Statutory Authority

3. Structure

4. Staff Capacity

5. Standards

6. Systems Design

7. Service Delivery

8. Supporting Resources

In this Section of the Phase I Report we have provided information which will enable national and local agencies to move ahead toward implementation of the Development Strategies. We consider this an essential element for Seventh Plan policy implementation.

However, it must be emphasized that there is a manifest need for technical assistance and training, perhaps over a 12-18 month time period to firmly establish the Development Strategies and infrastructure financing options in NESDB, BMA and other national agencies or local governments. In the meantime we have provided this capsule view (see Tables 12-16) of the factors which will need to considered for developing the institutional capacity needed for effective utilization of the concepts developed for the SOFIE project.

TABLE 12: Factors Affecting the Implementation of a Growth Management Strategy

NO.	FACTOR	DISCUSSION
1	Strategy	Growth Management
2	Statutory Authority	
3	Structure	Bangkok Metropolitan Region Development Committee NESDB as Secretariat Bangkok Metropolitan Administration City Planning Division
4	Staff Capacity	GIS/LIS specialists to analyze spatial/demographic data Physical planners & engineers Environmental analysts/assessors Financial analysts with skills in debt management
5	Standards	Policies will be required in several areas, including the following:1)joint provision of infrastructure by City and Provincial governments; 2)land acquisition(i.e., land banking) and disposition authority for non-project-specific objectives; 3)cost recovery mechanisms and "revenue sharing" by BMA of developments in extra-territorial areas on the urban fringe; 4)standards for impact fee assessments and types/levels of special assessments; 5)regional fiscal and tax policies.
6	Systems Design	Geographic Information System(GIS) to identify areas on the urban fringe with strong growth trends. The mapping capacity of computerized systems will enable the BMA to define the areas of overlap between the City itself and "frontline" Provinces and also enable NESDB to act as catalyst/facilitator of intergovernmental solutions to regional growth issues.
7	Service Delivery	Computer-generated maps indicating the trends of development and programmed investment in infrastructure under the Seventh Plan will demonstrate areas where future growth can be anticipated. Options for the provision or denial of infrastructure to support or restrict this situation then can be devised. Training and technical assistance will be required for both local and national agencies.
8	Supporting Resources	Funds for staff and equipment by both BMA and NESDB Training to develop interpretive skills of staff.

TABLE 13: Factors Affecting the Implementation of the Development Coordination Strategy

NO.	FACTOR	DISCUSSION
1	Strategy	Development Coordination
2	Statutory Authority	
3	Structure	Ministry of Interior • Department of Local Administration • Department of Town and Country Planning Ministry of Finance National Economic and Social Development Board • Urban Development Coordination Division
4	Staff Capacity	Financial analysts Civil engineers Physical planners
5	Standards	Unit cost data re: service extensions Pricing alternatives for infrastructure(see Lehan/1991) Cost recovery methods Special assessments
6	Systems Design	Capital investment budgeting and programming Project management and monitoring General and Specific Plans for local governments "Structure" plans, or comparable, for major infrastructure Cost accounting/rate setting Revolving loans/establishment and administration
7	Service Delivery	Memoranda of understanding for joint development/coordination
8	Supporting Resources	Project management training Geographic Information System

TABLE 14: Factors Affecting the Implementation of the Strategic Sites Startegy

NO.	FACTOR	DISCUSSION
1	Strategy	Strategic Sites
2	Statutory Authority	Town and Country Planning Act of 1975(B.E.2518)
3	Structure	Bangkok Metropolitan Administration Regional Cities Provinces(also as part of Development Opportunities) Bangkok Metropolitan Region Development Committee •NESDB/UDCC
4	Staff Capacity	Planners/Developers Engineers Financial Analysts Valuers Lawyers(especially to verify land titles)
5	Standards	Systems Analysis Feasibility Assessment Pricing of Services/Tariffs Compensation for Land in Strategic Locations "Redevelopment" authority of local governments
6	Systems Design	Economic Analysis Project Appraisal/Component Costing Construction Management and Monitoring Cost Accounting Communication/Public Relations
7	Service Delivery	Improved infrastructure operations, including distributor roads, at reduced unit costs. Land mobilization
8	Supporting Resources	Training in use of special assessments and other financing tools GIS/LIS Criteria for designation of Strategic Sites

TABLE 15: Factors Affecting the Implementation of a Development Opportunities Strategy

NO.	FACTOR	DISCUSSION
1	Strategy	Development Opportunities
2	Statutory Authority	
3	Structure	Bangkok Metropolitan Region Development Committee •NESDB -Infrastructure Division -Urban Development Coordination Division Provinces Regional Cities
4	Staff Capacity	Financial Analysts,(esp.of private sector development proposals) Engineers Regional Planners/Economists Physical Planners Environmental Assessors Investment Bankers(Private, via contract)
5	Standards	Provincial Resource Allocation Policies Investment Types and Targets Spatial Distribution of Investment Financial/Economic/Social Feasibility Project Selection Criteria
6	Systems Design	Project Selection Risk Assessment Environmental Assessment
7	Service Delivery	Project Financing Agreements Debt Finacing/Cost Recovery Provisions
8	Supporting Resources	Policy Analysis Tools Regional/Provincial Data Base Training and Technical Assistance

TABLE 16: Factors Affecting the Implementation of a Criteria-Based Allocation Strategy

NO.	FACTOR	DISCUSSION
1	Strategy	Criteria-based Allocation
2	Statutory Authority	
3	Structure	Ministry of Finance • Fiscal Policy Office Ministry of Interior • Municipal Development Fund Bangkok Metropolitan Administration Regional Cities Provinces
4	Staff Capacity	Financial Analysts/Data Analysts Engineers Administrators
5	Standards	Matching Funds Requirements Fee/Tariff Structures for local markets and other revenue-projects Project Selection Cost Recovery/Enforcement Community Participation
6	Systems Design	Planning,Programming,Budgeting Project Appraisal Project Feasibility Cost Accounting/Service Monitoring Performance Monitoring
7	Service Delivery	More infrastructure for less public investment Cost-conscious design
8	Supporting Resources	Policy analysis Systems analysis/design/implementation Training

SOFIE

ANNEX 1

SUMMARIES OF INTERNATIONAL AND TECHNICAL PAPERS

International Paper 1

INFRASTRUCTURE FINANCING AND COST RECOVERY OPTIONS: INTERNATIONAL EXPERIENCES APPLICABLE TO THAILAND

John C. Dalton and Dr. David E. Dowall
December, 1990.

This paper describes the policy foundation which supports public infrastructure financing and cost recovery mechanisms in developed countries, with special attention to the United States where many new infrastructure financing alternatives have been developed and tested. The paper then describes some of the mechanisms which are being used in the developing world. Typically, the national government is the principal source of investment capital in developing countries. Consequently, most financing options, including the establishment of national investment financing facilities (e.g., a Municipal Development Fund), are an integral part of broad public policy restructuring efforts including decentralization, private and public-private financing mechanisms (including privatization of local services), resource mobilization/cost recovery, local government capacity building and environmental protection.

The international research paper lists, describes and evaluates the applicability for Thailand of nineteen financing options used by governments throughout the world. Particular attention was devoted to those options that could yield results during the Seventh Plan implementation period. The nineteen options are:

1. Taxes
2. User Charges
3. Betterments
4. Bonds
5. Loans
6. Special Districts
7. Tax Increments
8. Impact Fees
9. Connection Fees
11. Exactions
12. Assessment Districts
13. Land Readjustment
14. Valorization
15. Excess Condemnation
16. Linkage
17. Concessions
18. Joint Use Agreements
19. Tax Credits

International Paper 2

INFRASTRUCTURE, PROPERTY TAX MECHANISMS AND REGULATORY INSTRUMENTS FOR GROWTH MANAGEMENT

PADCO/Planning and Development Collaborative International
January, 1991.

This paper concentrates on regulatory mechanisms which have proven to be most effective in developed and developing countries in producing infrastructure investment, especially by the private sector. The paper incorporates the advice and input of several recognized experts on land management and infrastructure financing, including William A. Doebele, Duane Kissick, Jerold Kayden and John Dalton.

The paper discusses the evolution of spatial planning from a static, control oriented, "document"-based approach to land management to a strategic and dynamic process to guide growth and investment. New directions in infrastructure policy, especially the use of infrastructure as the leading tool for growth management are discussed. Regulatory controls to inhibit and redirect growth are also listed.

Using the findings, conclusions and recommendations of the recent report, Bangkok Land and Housing Market Assessment as a foundation, the paper identifies and evaluates the following tools for promoting infrastructure investment in policy and operational terms:

- Abatements and Exemptions
- Use Value Assessments
- Site Value Assessments
- Valorization
- Land Readjustment

Planning and regulatory instruments are discussed and two potential tools, incentive zoning and enterprise zones are discussed in detail. The paper concludes with a brief description of twenty three international experiences with the use of regulatory mechanisms to guide growth.

Technical Paper 1

PROVISION OF URBAN INFRASTRUCTURE THROUGH LAND SUBDIVISION CONTROLS IN THAILAND

Ray. W. Archer
January, 1991.

This paper discusses subdivision law and administration, and describes how these regulations encouraged and regulated the construction of a large quantity of network infrastructure with in private land subdivision projects. These projects include land and house, shophouse and industrial estate/ park projects. The limitations of the land subdivision control system are noted, accompanied by recommendations for system improvement.

Introduced in 1972, subdivision regulations apply to private land subdivision projects involving ten or more plots. A Subdivision Control Committee administers the regulations through the Department of Lands. A generally effective control system was established in 1981 by providing that title certificates for the plots produced in subdivision projects without a subdivision permit be denied. This step, together with the formation of a national administrative structure, and the moderation of the regulatory minimum standards, brought most urban land subdivision under regulatory control. This government intervention coincided with and assisted the growth and expansion of the land and house development industry producing ready-made houses for sale. As the ready made house-buyers also wanted (and could pay for) paved roads, drainage, piped water and electricity supply, this network infrastructure was constructed project by project.

A large and increasing number of urban houses were built during the 1980's and most of them were in properly laid-out estates and serviced by privately constructed network infrastructure that in many projects included "headworks" such as a waste-water treatment plant. It can be said that in general the following four objectives of the 1972 land subdivision law were being achieved:

- protecting plot buyers from unsound and under-capitalised land subdivision projects;
- achieving a reasonable minimum standard of layout, land allocation and infrastructure works for each project;
- ensuring that the land subdivider paid the cost of the infrastructure works constructed in each project; and
- ensuring that the land subdivider (or an assignee) maintained the infrastructure works constructed in each project.

The fourth objective indicates that much of the network infrastructure remains privately-owned instead of being transferred free of cost ("dedicated") to the relevant government agency. Often, the relevant government agency is not operating in that locality, or is unwilling or unable to take it over. With or without dedication to government, private developers have constructed infrastructure where and when it was needed, and at no cost to government. The principle of private payment of the cost of on-site network infrastructure has become accepted and established.

Concerning land subdivision for industrial activities, the Industrial Estate Authority of Thailand Act of 1979 empowers the Authority to authorize private industrial estates. The Authority requires the installation of additional infrastructure and the dedication of completed infrastructure to it together with a 17% cash payment to provide a "sinking fund" to maintain and repair the infrastructure. There are 11 large private industrial estates in development under the land subdivision regulations and the Authority.

This paper raises a number of issues and offers recommendations towards improving and extending the land subdivision control system. These include:

- The need to create a planned framework of main road and distributor road right of way reservations to guide the location and development of future land subdivision projects;

- The need to assist private land assembly so as achieve better located and better shaped land subdivision projects.

- The desirability of strengthening the Land Subdivision Regulations, by adding sections for the dedication of infrastructure, for contribution to the cost of necessary off-site infrastructure, and for the regulation of "agricultural" subdivisions.

Technical Paper 2

CURRENT INFRASTRUCTURE FINANCING AND COST RECOVERY PRACTICES AND EXPERIENCE IN THAILAND

Dr. Kraiyudht Dhiratayakinant,
January, 1991.

This paper describes the legal authority and financing methods used by local governments in Thailand to provide basic infrastructure. Although the paper points out that while all local governments derive their authority from the same law, the exercise of that authority is quite different in each jurisdiction. For example in Bangkok, the "public" services are often delivered and financed by independent national or regional enterprises such as the Metropolitan Water Works Authority. Dr. Kraiyudht points out that private infrastructure investment for the combined services of water, transportation and public utilities is approximately 13%, and increasing, consistent with national policy objectives. The major source of private investment capital is in the transport sector (33%).

The paper discusses the current experience with cost recovery and privatization of municipal services. Private participation has been uneven, with most of the recovery restricted to expressway tolls. The planned flood protection fee, a major cost recovery mechanism now under consideration by the Government, would be a pioneering effort in Thailand. The recapture of part of the land value increases has been accomplished through the land transfer tax. However, the allocation of the proceeds of that tax has not been reserved for infrastructure investment. Capital gains and income taxes are also referenced as potential, but currently unused, mechanisms to recover some land value increments.

Technical Paper 3

Land Expropriation and Compensation in Thailand

Prasit Kivilaikool, Land Institute Foundation
March, 1991

This paper describes the current law and practice of land expropriation and compensation in Thailand, with special emphasis on the experience of the two major national Authorities: the National Housing Authority and the National Expressway Authority. The problems of land valuation in the process of assessing benefits and damages is discussed in the context of the emerging national policy framework of the Seventh Plan.

Problems encountered in past land expropriation efforts, especially those related to displacement of informal, typically poor, residents are described. The cultural restrictions against forced displacement are reviewed and alternative strategies are discussed.

Recent changes in the application of the expropriation law and regulation are compared to current practice. These emergency regulations were promulgated by the National Peacekeeping Force, the interim military government in Thailand in early 1991. Whether they remain in effect after a new government is elected is unknowable at this time. Any changes in the law would have a major impact on the capacity of national and local agencies to expeditiosly implemnt infrastructure financing alternatives which rely upon voluntary participation (e.g. land readjustmnt and special assessments).

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Technical Paper 4

FINANCING URBAN NETWORK INFRASTRUCTURE EXPANSION

Edward A. Lehan,
January, 1991.

Focused on seven cost recovery mechanisms, this paper examines the problems and prospects of these beneficiary payment mechanisms in contemporary Thailand. The seven cost recovery options are:

- Property Taxes
- Subdivision Regulations
- Service Charges
- Special Assessments
- Land Readjustment
- Excess Expropriation
- Development Fees

The paper points out that all seven are proven in practice in diverse parts of the world and, thus, found no technical reasons why all seven can not be proficiently practiced in Thailand. In no case are the required procedures unduly complicated. In every case, requisite skills can be taught. In fact three mechanisms: property taxation, subdivision regulation and service charges are practiced in Thailand, albeit with various degrees of coverage and effectiveness. One of the remaining mechanisms, excess expropriation, is in partial usage. Tne remaining three mechanisms discussed in this paper (i.e., special assessments, land readjustment and development fees) have not been used for urban development in Thailand. (Special assessment procedures have been successfully used in Thailand in rural areas for irrigation projects since 1974.) The discussion centers on these three, pointing out that infrastructure projects carried out by these mechanisms in connection with urban development have this outstanding advantage: they fund themselves. Of course, "up-front" project financing is usually required, but almost invariably, loans charges would be repaid by the beneficiaries, eliminating the need to use general revenues and the appropriation process to secure common forms of urban infrastructure, including distributor roads, drainage, water supply and waste disposal.

The paper discusses the institutional conditions required for the application of these new-to-Thailand beneficiary payment mechanisms, pointing out the centrality of local government management and planning capabilities if Thailand were to use them throughout the Kingdom. Local plans, locally adopted, are

identified as a condition precedent for the general application of the new-to-Thailand benefit payment mechanisms. The dependence of special assessment procedures on a reformed, ad valorem property tax system is also noted.

The paper endorses the financial emancipation of local government through property tax reform and expanded use of service charges and/or concessionaires. As a transition measure, the paper recommends that national grants to local government be tied to local revenue production by ratios tailored to circumstances.

The paper closes with a discussion of the implementation issue, suggesting that the twelve regional cities, plus Bangkok and Pattaya, be designated as "demonstration cities" for the full application of the seven beneficiary payment mechanisms.

As noted by these summaries, the Technical Papers developed an inventory of options for the consideration of the Thai Government. The key mechanisms which produce infrastructure funded in part, or in full, by "direct" beneficiary payments are displayed below:

<u>Funding Options</u>

Service Charges/Concessions
Betterment Levies (Special Assessment, Valorization)
Real Property Taxation
Real Property Value Increment Taxation (Capital Gains)
Development Fees
Excess Expropriation
Land Readjustment

<u>Project Financing Options</u>

General Revenue Allocation With Beneficiary Repayment
Loans With Beneficiary Repayment

<u>Regulatory Option</u>

Subdivision Regulations

The Technical Papers also developed an inventory of policy options for attaining planning goals, as follows:

Policy Options For Attaining Planning Goals

Building Codes
Infrastructure Provision/Non-Provision
Land Use Controls/Variances
Abatements
Exemptions
Credit Provision/Non-Provision
Vacant Land Taxes

According to international Paper 2, infrastructure provision, or its reverse, denial of provision, is widely regarded as the most effective tool for attaining planning objectives, whether funded by beneficiaries or general revenues. Thailand currently is in weak position to take advantage of the power of infrastructure to shape urban environments. In Bangkok, particularly, infrastructure deficits are so great that infrastructure follows development instead of guiding it. The inter-linked financial, managerial and planning weakness of local governments across the Kingdom must be overcome if infrastructure is to be used to guide and encourage desired development.

Thailand's weakness in employing infrastructure to guide and encourage desired development is also traceable to its failure to foster large scale piped water supply and sewer systems which would, in connection with a hierarchy of roads, exert a determining influence on development.

Significantly, both Technical Papers 1 and 2, reporting on world-wide trends, indicate that controls and general plans are not proving effective unless complemented with planning and financial tools which encourage government officials to engage with owners and developers in a dynamic process with the public interest clearly advanced by negotiation and infrastructure emplacements.