PN-ABD-973
64023

PLANNING AND
DEVELOPMENT
COLLABORATIVE
INTERNATIONAL

URBAN LAND DEVELOPMENT STUDY
SAN PEDRO SULA, HONDURAS

FINAL REPORT, VOLUME II
IDENTIFICATION AND EVALUATION OF ALTERNATIVE LAND DEVELOPMENT STRATEGIES

MAY 1989

UMVIDE
MUNICIPALITY OF SAN PEDRO SULA

PADCO

AN INTERNATIONAL COLLABORATIVE FORMED TO PROVIDE GOVERNMENTS AND PRIVATE CLIENTS IN AFRICA, ASIA, LATIN AMERICA AND THE NEAR EAST WITH INTEGRATED RESEARCH, PLANNING AND MANAGEMENT SERVICES FOR URBAN AND RURAL DEVELOPMENT

URBAN LAND DEVELOPMENT STUDY
SAN PEDRO SULA, HONDURAS
1989-2001

Final Report, Volume II
Identification and Evaluation of
Alternative Land Development Strategies

March 1989

Prepared for:

Regional Housing and Urban Development Office
for Central America (RHUDO/CA)
US Agency for International Development
Tegucigalpa, Honduras

Prepared by:

PADCO
Planning and Development Collaborative
International
Washington, DC

UMVIDE
Unidad Municipal de Vivienda
y Desarrollo
Municipality of San Pedro Sula

TABLE OF CONTENTS

PAGE

PREFACE i

LIST OF PERSONS AND ORGANIZATIONS CONTACTED iii

EXECUTIVE SUMMARY v
Introduction v
Summary of Strategic Land Development Process v
Proposed Action Plan and Timetable for Implementing Strategic Land Development Process ix
Estimated Time Schedule, Strategic Land Development Process Implementation x

REVIEW OF CRITICAL LAND DEVELOPMENT ISSUES, PROJECTED LAND AND HOUSING NEEDS, AND A PROPOSAL FOR A STRATEGIC LAND AND HOUSING DEVELOPMENT PROCESS FOR THE CITY OF SAN PEDRO SULA . . 1
Introduction 1
Major Conclusions of the Phase I Study 2
Dimensions of Future Population and Urban Growth 5
Proposal for a Strategic Land Development Process 15
The Rationale for a Department of Land and Housing Development 30
Proposed Action Plan and Timetable for Implementing Strategic Land Development Process 31
Estimated Time Schedule, Strategic Land Development Process Implementation . . . 35

ANNEX A
METHODOLOGY FOR THE PROJECTION OF NON-RESIDENTIAL LAND REQUIREMENTS 37
A-1 Methodology for projecting industrial land needs 39
A-2 Methodology for projecting retail commercial floor space requirements 41
A-3 Methodology for projecting service-related space requirements 45

ANNEX B
METHODOLOGY FOR THE SPATIAL ALLOCATION OF LAND REQUIREMENTS BETWEEN SECTORS 47
B-1 Comparison of the Population of San Pedro Sula by Sector, 1978 and 1988 . 49
B-2 Qualitative and Quantitative Population Growth Assumptions for San Pedro Sula for the Period 1989-1993 by Sector 51
B-3 Allocation of Population Growth Across Sectors 53
B-4 Allocation of Population Growth by Sector, Part 2 54
B-5 Allocation of Residential Land Needs by Sector 55
B-6 Projected Percent Capture of SPS Non-Residential Development by Type, 1989-1993 56
B-7 Comparison of Developable Land with Residential and Non-Residential Land Needs 57
B-8 Comparison of Developable Land with Residential and Non-Residential Land Needs 58

Table of Contents, continued

PAGE

ANNEX C
IDENTIFICATION AND EVALUATION OF ALTERNATIVE LAND DEVELOPMENT STRATEGIES 59
I. Introduction 61
II. Identification of Alternative Strategies 61
III. Technical Evaluation of Alternatives 103
IV. Policy Evaluation of Alternatives 105

ANNEX D
PROPOSAL FOR THE INTRODUCTION OF A NEW CATEGORY OF RESIDENTIAL ZONING: ZR-VIII WITH A R5 USE CATEGORY 109
I. Introduction 111
II. Objectives 111
III. Description of the New Zoning Category 112

ANNEX E
COST ESTIMATE FOR THE CONSOLIDATION AND EXPANSION OF INFRASTRUCTURE SERVICES ACCORDING TO SHORT-TERM URBANIZED LAND NEEDS, 1989-1993 115
I. Introduction 117
II. Foreign Investment Programmed for San Pedro Sula's Infrastructure Sector 117
III. Short-Term Land Requirements for Urban Development 123
IV. Barrios/Colonias Requiring Infrastructure Services 124
V. Cost Estimates to Implement Preferred Plan 127

TABLES

1 Population Estimate 5
2 Housing Needs Based on Low Population Growth 6
3 Housing Needs Based on High Population Growth 7
4 Residential Land Requirements 8
5 Non-Residential Land Requirements 9
6 Total Land Requirements for Urban Development 11
7 Location of Total Land Needs for Low Population Growth, 1989-93 14
8 Location of Total Land Needs for High Population Growth, 1989-93 14
9 Location of Total Land Needs for Low Population Growth, 1989-93 (Preferred Plan) 18
10 Location of Total Land Needs for High Population Growth, 1989-93 (Preferred Plan) 18
11 Comparison of Total Land Requirements Between Preferred Plan Versus Continuation of Current Policies (Low Growth), 1989-93 20
12 Comparison of Total Land Requirements Between Preferred Plan Versus Continuation of Current Policies (High Growth), 1989-93 20

PREFACE

This report presents the results of the second phase of the San Pedro Sula Urban Land Development Study. The study was carried out under contract to the Regional Housing and Urban Development Office for Central America, US Agency for International Development, Tegucigalpa, Honduras.

The authors wish to thank all the persons who contributed of their time and knowledge in the elaboration of this study. Their names appear on the following list. A special thanks is due Ing. Jeronimo Sandoval, Mayor of San Pedro Sula, and Lic. Mario Pita and Ms. Sarah Wines, Director and Housing Officer, respectively, of RHUDO/CA for their direction and support.

This report was prepared by an integrated team from the consulting firm PADCO of Washington, DC and the Municipality of San Pedro Sula's Unit for Housing and Development (UMVIDE). The study was carried out between October 1988 and March 1989.

LIST OF PERSONS AND ORGANIZATIONS CONTACTED

Ing. Jeronimo Sandoval, Alcalde de San Pedro Sula

Ing. Jaime Rosenthal, Vice Presidente de la Republica

Lic. Raul Martinez, Municipalidad de San Pedro Sula

Lic. Oscar M. Chevez, Municipalidad de San Pedro Sula

Lic. Denis Lagos, Municipalidad de San Pedro Sula

Lic. Rodrigo Montoya, Municipalidad de San Pedro Sula

Lic. Jorge Interiano, Municipalidad de San Pedro Sula

Lic. Rafael Barrientos, Municipalidad de San Pedro Sula

Lic. Roberto Altamirano Altamirano, Camara de Comercio e Industria de Cortes

Sra. Alba de Cepeda, Camara de Comercio e Industria de Cortes

Sr. Edmundo Espinal, Camara de Comercio e Industria de Cortes

Lic. Arturo Euceda, SECPLAN

Lic. Carlos Aguirre, SECPLAN

Lic. Jorge Faraj, Banco Atlantida

Ing. Gabriel Kattan, Gerente General, DIMA

Ing. Alfredo Di Palma, DIMA

Lic. Torres, DIMA

Ing. Eli Pina, DIMA

Ing. Charles Hayer, Gerente General Compania Azucarera

EXECUTIVE SUMMARY

REVIEW OF CRITICAL LAND DEVELOPMENT ISSUES, PROJECTED LAND AND HOUSING NEEDS, AND A PROPOSAL FOR A STRATEGIC LAND AND HOUSING DEVELOPMENT PROCESS FOR THE CITY OF SAN PEDRO SULA

INTRODUCTION

The City of San Pedro Sula faces a major challenge over the next 13 years. Its population is projected to grow by 150,000 persons. This growth in population as well as associated economic activities will require the development of up to 3,500 hectares of land. These pressures of rapid urban development pose major challenges for San Pedro Sula's public officials and professionals.

In order to respond to this challenge, the purpose of this report is to outline a concrete, step-by-step proposal for preparing a land and housing development plan and establishing a Department of Land and Housing Development for the City of San Pedro Sula.

The full report is divided into five sections. The first section reviews the major conclusions of the Phase I study. Section two presents the dimensions of future population and economic growth and associated land use and housing needs. The third section proposes a strategic land development process for managing the future growth of San Pedro Sula including: land and housing development planning, programming and incentives and regulations. Section four outlines organizational and institutional requirements for managing urban growth and housing development as well as presenting the rationale for setting up of a separate land and housing development authority. Finally, in section five, an action plan and timetable for implementing the strategic land and housing development process is outlined. Five annexes which present in-depth supporting documentation accompany the main text.

The Executive Summary summarizes our recommendations for a Strategic Land Development Process and a timetable for its implementation.

SUMMARY OF STRATEGIC LAND DEVELOPMENT PROCESS

The Municipality will require an aggressive and proactive planning and management system to meet the significant land requirements projected for the short-term, 1989-1993, as well as to begin to plan and to guide the urban development envisaged for the City for the period after 1993. To meet this social, economic and physical challenge, the study team recommends a seven-step strategic planning process as follows:

Step 1: Set quantitative land and housing development targets

To effectively manage the projected urban growth of San Pedro Sula, it is essential to prepare quantitative estimates of land and housing requirements to adequately accommodate future urban development. These estimates provide the quantitative basis for preparing capital budgets for infrastructure programming. More importantly, they provide baseline information for setting zoning and land development policies. The process of forecasting land requirements should be repeated every five years, updating the requirements to reflect changes in population, employment and housing needs, and patterns of land consumption.

Step 2: Prepare a development plan for San Pedro Sula's southeast and consolidation areas

The study team proposes the preparation of a detailed short-term (5-10 year) plan for the City's southeast and consolidation areas. The detailed plan should include the following elements:

- Proposed land uses
- Zoning for urban development including a special, non-spatial zoning category for low-cost housing development
- Estimate of infrastructure needs and costs
- Financing plan for funding infrastructure development

The plan should be consistent with the land and housing development targets prepared in step 1, and should be revised every five years.

Step 3: Establish institutional capacity for action

The City of San Pedro Sula must establish a visible and powerful executing unit in order to effectively implement the proposed land and housing development program. The study team proposes that the City establish a Department of Land and Housing with the following key powers and responsibilities:

- Prepare development plans
- Implement and enforce zoning and planning controls
- Develop alternatives to invasions, squatting and illegal subdivision of land
- Negotiate and work with landowners, developers, patronatos, foundations and labor unions to provide low-cost housing

- Develop programs to "regularize" the activities of informal land developers
- Encourage the development of private "inmobiliarias"
- Cut "red tape" associated with residential development by streamlining process for subdivision approval
- Review municipal budgets and programs to determine their impacts on planning objectives
- Coordinate the installation of infrastructure to promote low-cost land and housing development

The Department of Land and Housing would be located within the municipal government at a level equivalent to a superintendencia (i.e., division). It would comprise staff from several existing units of the Municipality: (a) Superintendencia Administrativa; (b) Superintendencia Tecnica; (c) Superintendencia Planificacion; and, (d) DIMA's planning and programming sections for infrastructure.

Step 4: Remove impediments to efficient land and housing market operation

The proposed Department of Land and Housing Development should press for the immediate removal and/or modification of a number of laws, practices and procedures which limit the flexibility of land market operations. Specific reforms and actions needed include:

- Extend urban limit to be coterminous with the municipal boundary
- Obtain necessary administrative and/or legislative changes to allow the City to apply its zoning power to all areas of the City, not just the area inside the urban limit
- Undertake a comprehensive review of existing zoning regulations
- Prepare and adopt a specific, non-spatially based zoning category to authorize the development of low-cost residential plots ranging between 100 and 140 square meters
- Reduce residential subdivision and engineering standards to allow for more cost effective urbanizations
- Consider the inclusion of a "quick taking" mechanism within an expedited land expropriation statute
- Develop administrative authority to negotiate with private landowners

- Introduce legislation at the national level to give San Pedro Sula greater control over its area of influence

- Coordinate future international aid to promote the development of San Pedro Sula at the level of the entire Sula Valley

- Make administrative changes to expand the application of betterment taxes to the proposed residential development of the southeast and consolidation sectors

Step 5: Design and implement financial mechanisms

Based on a total estimated infrastructure cost of Lps. 181.48 million to implement the study team's preferred plan, the Department should develop financing mechanisms which consider the following alternatives and issues:

- Property tax collection could be augmented if the periodically-set assessment base is adjusted each year instead of every five

- Expanding the urban limit to be coterminous with the municipal boundary would be another method of increasing property taxes

- Expand mechanisms for levying charges for infrastructure (by recovering land as compensation or through betterment taxes)

- Investigate the financing of trunk infrastructure requirements of large areas through the use of improvement districts

- Allocate some portion of central government gasoline tax revenues to San Pedro Sula

Step 6: Promote private sector initiatives for low-cost housing

The proposed Department of Land and Housing should institutionalize the Municipality's ongoing role in encouraging informal land developers to provide low-cost shelter. The main objective of step 6 is to create the capacity to work closely with landowners, developers and other private sector entities to increase the production of urbanized land at prices affordable to lower income households.

The Department should also encourage the participation of industry, commerce and labor unions through, for example, the sale of excess industrial or commercial property for residential development, assistance in financing land development, employer assistance for the purchase of lots in lower cost housing projects, and when appropriate, the provision of technical assistance in construction, design and financial matters to informal developers.

A more aggressive option that might be considered is for the Department of Land and Housing Development to establish a non-profit housing development corporation which would acquire land and joint venture with private firms to develop low-cost shelter.

Step 7: Monitor and review land development process and ongoing forward planning

In this final step, the Department should prepare a information base to monitor progress made toward achieving housing and land development goals. It should also institute an ongoing process for developing "rolling" five- to ten-year plans for land and housing development.

PROPOSED ACTION PLAN AND TIMETABLE FOR IMPLEMENTING STRATEGIC LAND DEVELOPMENT PROCESS

The Project's Terms of Reference divide the planning horizon into three discrete phases: 1989-1993, 1994-1997, and 1998-2001. The following outlines a proposed action plan and timetable for implementing the proposed seven-step strategic land and housing development process.

Estimated Time Schedule
Strategic Land Development Process Implementation

Step	Start Date	Completion Date
Step 1:		
1.1 Set targets	November 1, 1988	February 17, 1989
Step 2:		
2.1 Prepare plan	April 1, 1989	June 30, 1989
Step 3:		
3.1 Survey SPS units	April 1, 1989	June 30, 1989
3.2 Survey cities	May 1, 1989	May 31, 1989
3.3 Department paper	June 1, 1989	June 30, 1989
3.4 Implement*	July 1, 1989	Indeterminate
3.5 Staff plan	To be scheduled	
Step 4:		
4.1 Legislative paper	April 1, 1989	June 30, 1989
4.2 Implement*	June 30, 1989	Indeterminate
Step 5:		
5.1 Estimate costs	July 1, 1989	July 31, 1989
5.2 Financing mechanisms	August 1, 1989	August 31, 1989
Step 6:		
6.1 Work program	September 1, 1989	November 30, 1989
Step 7:		
7.1 Monitoring program	To be scheduled	
7.2 Planning programs	To be scheduled	

* It is difficult to accurately predict how much time will be required to establish the Department of Land and Housing Development or to conclude the legislative process for revising central government laws.

REVIEW OF CRITICAL LAND DEVELOPMENT ISSUES, PROJECTED LAND AND HOUSING NEEDS, AND A PROPOSAL FOR A STRATEGIC LAND AND HOUSING DEVELOPING PROCESS FOR THE CITY OF SAN PEDRO SULA

INTRODUCTION

The City of San Pedro Sula faces a major challenge. Over the next 13 years, its population will grow by approximately 150,000 persons–15,000 per year. It is projected that between 62,040 and 83,420 new housing units will be needed. This growth in population and housing as well as associated economic activities will require the development of upwards to 3500 hectares of land, an amount equal to two-thirds of the land urbanized since the beginning of the century. Put another way, the physical development of San Pedro Sula over the next 13 years will equal 66 percent of the level and pace of development that has taken place over the past 90 years. As is the case in countless cities throughout Latin America and Asia, the pressures of breakneck urban development pose major challenges to public officials and professionals.

Since 1985, there are clear signs that the land and housing markets of the City have come under increased pressure resulting from rapid population growth–the price of serviced urban land is now increasing at an average of 15 percent per year in real, inflation-adjusted, terms. Since the late 1970s, the proportion of barrios created through land invasions, squatting and illegal subdivision of land has accounted for about one-third of all new barrios.

These new trends clearly suggest that the land and housing market in San Pedro Sula is becoming overheated. Based on our detailed assessment of the local land and housing market, we conclude that there are substantial constraints limiting the ability of the land and housing markets to respond to San Pedro Sula's growing population. While low-income housing affordability and quality is declining, the situation can be turned around if the City acts quickly and decisively to open up land for housing and urban development. It is the conclusion of the study team that the most effective way for removing the City's urban development constraints is to develop a strategic land development process for promoting housing development and create a powerful line agency for its execution.

The purpose of this report is to outline a concrete, step-by-step proposal for preparing a land and housing development plan and establishing a Department of Land and Housing Development for the City of San Pedro Sula. The proposal is based on the results of an extensive study of the problems and constraints faced by the City of San Pedro Sula in its efforts to promote residential and economic development.

This report is divided into five sections. The next section reviews the major conclusions of the Phase I study. Section two presents the dimensions of future population and economic growth and associated land use and housing needs. The third section proposes a strategic land development process for managing the future growth of San Pedro Sula

including: land and housing development planning, programming and incentives and regulations. Section four outlines organizational and institutional requirements for managing urban growth and housing development as well as presenting the rationale for setting up of a separate land and housing development authority. Finally, in section five, an action plan and timetable for implementing the strategic land and housing development process is outlined. Five annexes which present in-depth supporting documentation accompany the main text.

MAJOR CONCLUSIONS OF THE PHASE I STUDY

Based on a detailed examination of the social, economic and physical conditions of the City over the past decade, the research team has made the following conclusions:

1. San Pedro Sula's population growth over the past 30 years has been substantial, averaging a 6 percent annual compound growth rate.

2. Between 1978 and 1988, its population increased by 107,000, an annual increase of 4.9 percent.

3. During this same period, San Pedro Sula's housing stock increased to 58,383 from 30,254, an annual increase of 6.8 percent.

4. Since the stock of housing increased more rapidly than population between 1978 and 1988, the average number of persons per house declined to 4.8 from 5.73, a 16 percent decrease.

5. The spatial patterns of population growth between 1978 and 1988 indicate that much of San Pedro Sula's development took place on the east side. Slightly over 40 percent of the population growth occurred in zones 8,9,10, and 11. The other significant area for population growth was located farther from the center to the southeast in zones 27, 30, and 33. Together, these zones accounted for 44 percent of San Pedro Sula's growth between 1978 and 1988.

6. Over the period from 1978 and 1987, building permits were issued for 108 workshops and factories, and 481 commercial facilities. In the early part of the period, most of the industrial development was located on the east side of the center, adjacent to the ringroad.

7. Over the past ten years, the densities in San Pedro Sula have increased with urban development. While densities gradually decline with distance from the city, there is evidence that peripheral "growth poles" are emerging to the southeast and northeast.

8. The availability of essential services, such as potable water, electric and sanitary and storm drains varies. Barrios within the first ringroad have full coverage of services. Farther out, the coverage is more limited. Between the first and second

ringroads, most settlements have water and electricity but lack waste disposal systems, although they are under construction. On the periphery, most of the informal areas lack paved roads and proper waste and stormwater drainage systems.

9. The physical growth of the City has accelerated. Between 1950 and 1988, the City's growth consumed approximately 100 hectares per year; however, currently land conversion is now running at 400 hectares per year. The acceleration of land conversion is due to several factors, including:

   a. an increase in illegal subdivisions;
   b. urbanization initiatives of the Municipality;
   c. private sector development; and
   d. layout and installation of new roads and infrastructure by the City and DIMA.

10. Between 1976 and 1988, the total land use of the City increased to 5,317 hectares, 3,398 for residential, 656 for commercial and services, 508 for industrial and 755 of open and institutional spaces. As of 1988, the City had approximately 9,760 hectares of available land for future development.

11. Based on the recent 1988 Census, San Pedro Sula contains 7,122 dwelling units that are of substandard condition and need replacement. An additional 2,265 units are needed to reduce overcrowding. Thus, the city has a current housing deficit of approximately 9,500 units.

12. Economic conditions in terms of the income of San Pedranos has deteriorated over the past ten years, as real, inflation-adjusted, family income declined between 1980 and 1986. (At the present time, the median income in San Pedro Sula is approximately Lps.600 per household.) This flat (at best) income growth suggests that housing affordability is deteriorating since housing and land costs have been increasing over time, especially over the past three years.

13. Due to the declining affordability of housing and the increase in low-income households, the informal segment of San Pedro Sula's residential land market, including invasiones, tugurios and colonias ilegales has been rapidly growing. Between 1978 and 1987, invasiones accounted for 27 of 94 barrios created–nearly 30 percent of all new barrios.

14. As of 1988, 38 percent of the total population of San Pedro Sula lived in these informal settlements (19, 3, and 16 percent in colonias ilegales, tugurios, and invasiones, respectively).

15. A sample of five low-cost housing projects in San Pedro Sula (Villa Florencia, Luisiana, Satellite II, Valle de Sula, Planes de Capules) revealed that lot prices range from Lps.5,573 to Lps.10,401. Based on the financing terms offered and the required downpayments, all five projects require payments of between Lps.82 and Lps.129 per month. Based on a ratio of 20 to 25 percent of income going to lot payments,

these lots are affordable to families earning between Lps.500-600 per month. Thus, the units are affordable to those earning at or slightly below the median household income of San Pedro Sula.

16. However, continuing land price increases will push housing prices beyond available incomes. The real (inflation-adjusted) prices of serviced residential land increased at an annual compound rate of 15.4 percent between 1985 and 1988. On the other hand, before 1985, the real rate of increase for such land was only 2.6 percent. Thus, the increase in land inflation is a relatively recent phenomena. Patterns of price increases for raw undeveloped land suggest that developers, both formal and informal, are bidding up prices in their search for raw land located inside the urban limit–in these areas, raw land prices increased an average of 18 percent per year between 1980 and 1985. Additional raw land values for the 1980-1988 period indicate that prices have increased more rapidly since 1985, suggesting tremendous acceleration in prices of close-in land for housing development.

17. San Pedro Sula's economy, like that of Honduras, is oriented toward agricultural production, consequently it is subject to changes in world commodity prices and climatic conditions. Notwithstanding these conditions, the Banco Central de Honduras projects that between 1988 and 1990, agricultural exports will increase by 4.7 percent in real terms. Income from these exports is estimated to increase by 6.8 percent between 1988 and 1990, and by 7.2 percent between 1990 and 1992. While these projections are regarded as optimistic by other economic experts, if they are realized it is very likely that employment growth and population in-migration to San Pedro Sula will exceed six percent per year.

18. Based on a survey of firms with at least 10 workers, San Pedro Sula had 42,891 workers in 1986. Of these, 21,436 were employed in industrial manufacturing, approximately 50 percent. Trends covering the much broader economically active population, indicate that a total of 153,572 persons were in the labor force in San Pedro Sula in 1987. This is an increase of 102,206 over the 1974 estimate, an annual increase of 8.8 percent per year. The increase of over 100,000 economically active persons reflects the dynamism of the San Pedro Sula economy and explains the rapid growth of the City's population during the 1970s and 1980s.

19. A key element in the management of San Pedro Sula's future development is the fiscal capacity of the City to fund infrastructure. A limitation on the City's ability to generate revenues results from legislation limiting the tax on undeveloped land located outside the urban limit line to one mill; whereas, similar properties located outside the urban limit line are taxed at 3 to 5 mills.

The overall picture for San Pedro Sula is one of substantial demographic and economic growth. To date, the City has done a remarkable job of accommodating urban development. However, there are indications that future growth will create substantial pressure on San Pedro Sula's land and housing markets. Effectively coping with these growth pressures requires that clearly focused policies and action be developed and

implemented. The next section outlines the future growth projections prepared during Phase I.

DIMENSIONS OF FUTURE POPULATION AND URBAN GROWTH

Chapter four of the Phase I report presents projections of population, housing and land requirements for the City of San Pedro Sula between 1989 and the year 2001. The projections form the basis for the proposed land development policies and guidelines for managing urban development outlined in the following sections.

Population Growth

Based on historical growth rates, the City will grow at between 4.93 and 6.34 percent per year. These growth rates translate into population levels approaching 525,000 to 625,000 for the year 2001. The projections per year are outlined in Table 1 below.

TABLE 1

	Population Estimate	
Year	Low Growth	High Growth
1989	294,200	298,200
1990	308,700	317,100
1991	323,900	337,200
1992	339,900	358,600
1993	356,600	381,300
1994	374,200	405,500
1995	392,700	431,200
1996	412,000	458,500
1997	432,400	487,600
1998	453,700	518,500
1999	476,000	551,400
2000	499,500	586,400
2001	524,100	623,500

Housing Needs to 2001

Based on population projections, and estimates of household size, housing stock quality and overcrowding, estimates of annual housing requirements can be made for the next 13 years. The total housing needs for San Pedro Sula reflect three distinct demands or needs: 1) new units required by new households which are established in or migrate to the City; 2) the replacement of units which are deemed to be temporary; and 3) units needed to relieve overcrowding. As a matter of policy, the City decided to replace the temporary and overcrowded units over a four-year period. Based on this four-year replacement policy and the projected growth of population and households, projections

of total housing needs between 1989 and 2000 were estimated. These are presented in the Tables 2 and 3 below for both low- and high-population growth estimates.

TABLE 2

Housing Needs Based on Low Population Growth

Year	New Units	Replace Temporary Units	Replace Overcrowded Units	Annual Required Units
1989	2,980	1,780	570	5,330
1990	3,130	1,780	570	5,480
1991	3,280	1,780	570	5,630
1992	3,460	1,780	570	5,800
1993	3,610			3,610
1994	3,800			3,800
1995	4,000			4,000
1996	4,170			4,170
1997	4,380			4,380
1998	4,620			4,620
1999	4,820			4,820
2000	5,080			5,080
2001	5,320			5,320

In terms of the low-population projection, annual housing needs in the City range between 5,330 and 5,800 units for the next four years. These initial four years include the replacement of housing as well as new households. Starting in 1993, the annual demand for housing, assuming the replacement needs have been met, is 3,600 units. Between 1994 and 2001, this annual amount increases by about five percent per year, reflecting the projected increase in population in San Pedro Sula from then to the next century.

Table 3 outlines the projected housing needs assuming that San Pedro Sula's population increases by 6.34 percent per year over the next 13 years. During the first four years, from 1989 to 1992, when housing replacement would occur, the annual housing need ranges from 6,190 to 6,970 units. Between 1993 and 2001, assuming that the replacements have occurred, the annual housing need ranges from 4,900 in 1993 to 7,950, an annual compound increase of 6.2 percent.

TABLE 3

Housing Needs Based on High Population Growth

Year	New Units	Replace Temporary Units	Replace Overcrowded Units	Annual Required Units
1989	3,840	1,780	570	6,190
1990	4,080	1,780	570	6,430
1991	4,340	1,780	570	6,690
1992	4,620	1,780	570	6,970
1993	4,900			4,900
1994	5,230			5,230
1995	5,550			5,550
1996	5,900			5,900
1997	6,290			6,290
1998	6,670			6,670
1999	7,110			7,110
2000	7,540			7,540
2001	7,950			7,950

Projections of Land for Housing Development

Based on the projections of housing demand, including the required replacement of units, estimates of land for housing development have been made. These estimates are based on the patterns of densities of residential estates for low-, middle-, and upper-income projects apportioned according to the income distribution of San Pedranos. Using these patterns of housing density and plot sizes, the additional demand for housing will generate a demand for land of between 700 and 840 hectares between 1989 and 1993. Over the period between 1994 and 1997, the total demand for residential land will range from 440 to 620 hectares for the low-and high-growth scenarios respectively. During the final period between 1998 and 2001, the demand for residential land will range from 530 and 800 hectares. These land demands are summarized below in Table 4. As the table shows, the total demand for residential land will range between 1,670 and 2,260 over the next 13 years from 1989 to 2001. These projections are gross land requirements and they do not consider whether actual residential development will take place on land that is currently developed. A subsequent section below discussing the spatial patterns of future land development will consider whether residential development takes place on infill or urban expansion lands.

TABLE 4

Residential Land Requirements		
Period	Low Growth ha.	High Growth ha.
1989-1993	700	840
1994-1997	440	620
1998-2001	530	800
Total 1989-2001	1,670	2,260

Economic Growth and Non-Residential Land Needs

Continued economic growth of the San Pedro Sula economy will require additional land for the expansion of commercial, service and industrial uses. This section outlines our projections of urban development requirements for these uses.

Between 1974 and 1987, San Pedro Sula's economically active population increased by 8.7 percent per year. In absolute terms, the increase was 102,206, from 51,366 to 153,572. This rapid rise in the labor force indicates that the labor force participation rate (the ratio of economically active persons to the total population) increased from 34.6 to 54.7 percent. In the future, it is not likely that this rate will increase much more, thus the labor force's gain will closely parallel population growth rates. Thus, the requirements for non-residential activities will grow at the same rate as the residential ones, and the relationship between residential and non-residential land uses will remain about the same.

According to the 1988 land use survey of San Pedro Sula, non-residential land uses accounted for approximately 36 percent of all urban land uses. Commercial, service and institutional uses comprise 75 percent of all non-residential land uses. Based on these land use proportions, estimates of future non-residential land use requirements can be made. These are presented below in Table 5.[1 2]

[1]During the years 1989-1992, a significant portion of additional residential land demands are associated with filling the housing deficit. While it could be argued that this growth should be excluded from the calculation of non-residential land needs, we have included them because there is a similar "catch-up" pattern in the commercial and industrial property markets as well. Commercial and industrial building permits have been well above the historical ten-year average for the past two to three years.

TABLE 5

Non-residential Land Requirements

Period	Low Growth ha.	High Growth ha.
1989-1993		
Comm., Institutional & Services	300	360
Industrial	100	120
TOTAL NON-RESIDENTIAL	400	480
1994-1997		
Comm., Institutional & Services	190	265
Industrial	60	90
TOTAL NON-RESIDENTIAL	250	355
1998-2001		
Comm., Institutional & Services	225	345
Industrial	75	115
TOTAL NON-RESIDENTIAL	300	460
1989-2001		
Comm., Institutional & Services	715	970
Industrial	235	325
TOTAL NON-RESIDENTIAL	950	1,295

As the table illustrates, between 1989 and 1993, the total demand for non-residential land ranges from 400 to 480 hectares. During the 1994-1997 and 1998-2001 periods, the need for non-residential land will range from 250-355 and 300-460 hectares. Overall, between 1989 and the year 2001, the total demand for non-residential land will range from 950 to 1,295 hectares. These projections are gross land requirements and they do not consider

[2]As mentioned in Chapter III.A.3 of the Phase I report, the 1976 Plan significantly underestimates the non-residential land needs projections for the period 1976-1995. As a means of checking the study team's estimates, however, we have applied the 1976 Plan's sectoral coefficients (i.e., industrial, commercial, etc.) to our employment and population projections. Once again, the estimates based on 1976 Plan coefficients are low, from 20 to 25 percent lower than the study team's projections.

whether actual non-residential development will take place on land that is currently developed. A subsequent section below discussing the spatial patterns of future land development will consider whether non-residential development takes place on infill or urban expansion lands.

Total Land Requirements for Urban Development, 1989-2001

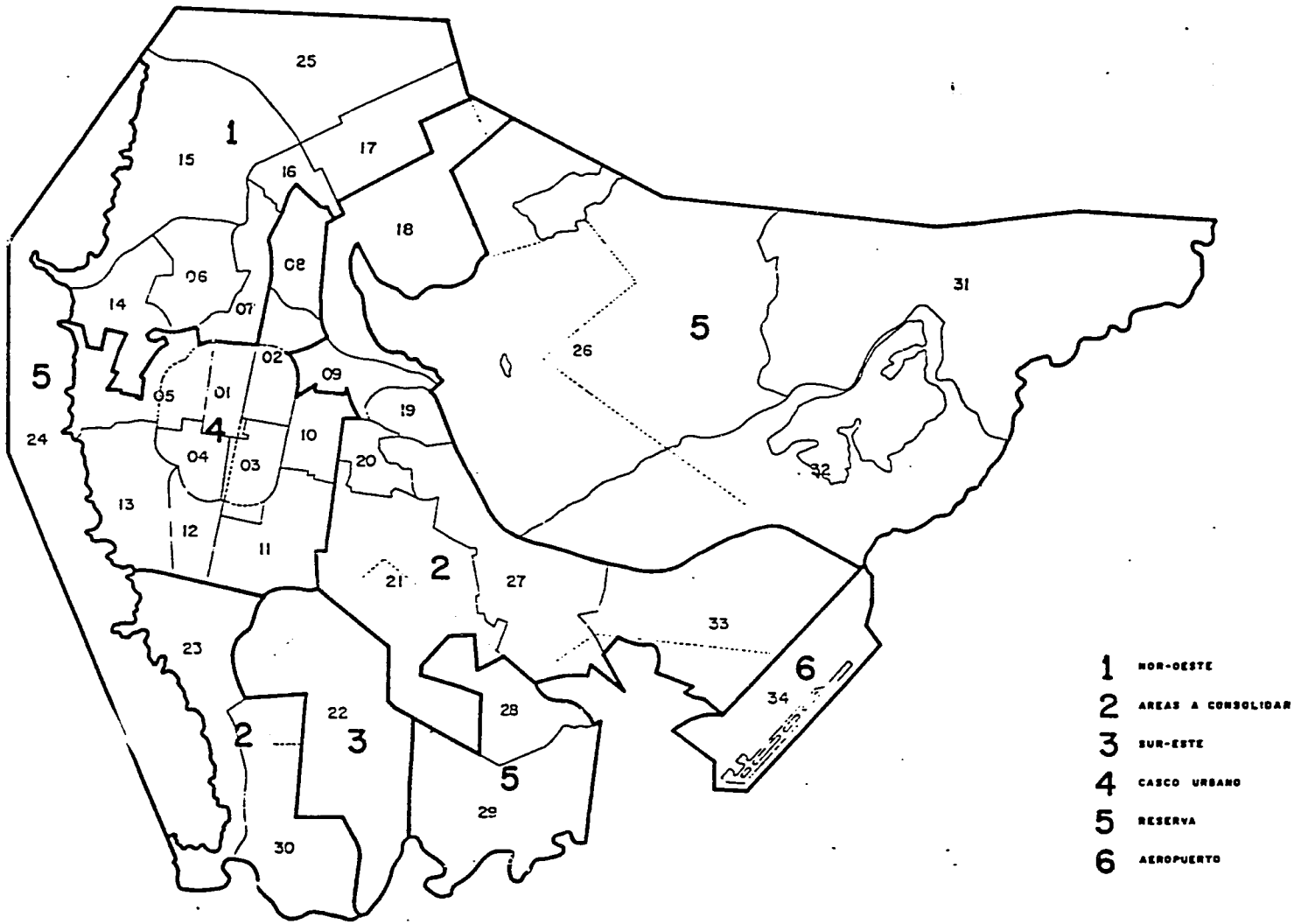
By combining residential and non-residential land requirements, the total land needs to support urban development can be calculated. Table 6 illustrates the total land requirements for the next 13 years. On an annual basis, between 220 and 270 hectares of land will be needed for urban growth between now and the turn of the century. This is below the peak levels of land conversion occurring over the past two to three years, but is likely to be the rate that is clearly sustainable.

Over the next 13 years, a total of 2,620 to 3,550 hectares of urban uses will be developed. Based on the 1988 land use survey, the total urban land area of the City of San Pedro Sula was 5,317 hectares. Thus, in the next 13 years, the urban area of the City will expand by between one-half and two-thirds. This implies that the physical development of San Pedro Sula during the remaining years of the century will be at a rate 3.5 to 4.6 times faster than its historical average growth rate.

These substantial land requirements pose an enormous challenge for planners. Unless the growth is accommodated, high land and housing price inflation will persist and the housing affordability crisis will worsen. To provide the basis for developing a specific action plan for guiding growth over the next five years, the next section provides estimates of the spatial location of urban land development for 1989 to 1993.

Spatial Location of Urban Land Development 1989-1993

This section describes and attempts to quantify the study team's projections for the location of San Pedro Sula's urban development for the period between 1989 and 1993. As a means of comparison with the study team's preferred land development plan (see P. 19 of this report), these projections initially assume the continuation of existing land development policies at the national and municipal levels. In order to simplify this analysis, we have aggregated the 34 zones comprising the study area into six illustrative sectors. The six sectors are categorized as follows (See Map 1):



M U N I C I P A L I D A D D E S A N P E D R O S U L A

UNAVIDE

SEIS SECTORES DE LA CIUDAD

No. 1

1. Northwest (zones 6,7,14-17,25)
2. Consolidation (zones 8,18-21,23,27,30,33)
3. Southeast (zone 22)
4. Urban Core (zones 1-5,8,10-13)
5. Reserve/Resource (zones 24,26,28,29,31,32)
6. Airport (zone 34)

Between 1989 and 1993, our projections indicate that San Pedro Sula will require between 700-840 and 400-480 hectares, respectively, to meet residential and non-residential land requirements. For both the low- and high-growth scenarios, the study team has allocated residential land needs to the six sectors on the basis of the percentage of total population change estimated for each sector for the period 1989-1993. The allocation of non-residential land requirements is based on the 1982-1987 distribution of approved construction permits (by area) for commercial and industrial uses as modified by the study team to reflect anticipated changes for 1989-1993. (Annex A presents alternative, detailed methodologies for the projection of land requirements for industrial, commercial, service, and open spaces uses.) Finally, our projections distribute future land requirements between the infill of vacant plots within the City's already urbanized area and new land development. (Annex B provides the backup tables to this methodology.)

Table 7 summarizes the spatial location of projected land needs for low-population growth assuming a continuation of current land development policies. The table shows that of a total land requirement of 1,100 hectares for 1989-1993, 654 hectares (59 percent) are met through new land development, while the remaining 446 hectares are projected to be absorbed within already urbanized areas.

This spatial allocation based on current policies implies a specific pattern of physical development for the City between 1989 and 1993. It implies that the existing built-up areas of sectors 1,2, and 4 will continue to expand and densify at rates similar to the period 1978-1988. Based on the current development plans of the "Compania Azucarera", this scenario only anticipates minimal expansion of the City's urbanized area into the southeast sector of zone 22. The Azucarera will continue to develop its lands in zone 20 for middle-income families. This scenario also envisages continued spontaneous overflow growth into the northeastern and eastern portions of the City (sector 5). This growth will tend to locate in the vicinity of El Carmen and along the El Carmen-Lopez Arellano corridor. Due to a lack of a sufficient supply of moderately-priced shelter alternatives, the study team also estimates that the core and consolidation sectors will be required to absorb a high percentage of land requirements for 1989-1993 (26 and 12 percent, respectively) through the infill and densification of already urbanized barrios and colonias.

Table 8 estimates the spatial location of land needs for high-population growth. The table indicates that infill will meet 527 hectares of total land need, while the conversion of raw land to urban uses will consume 793 hectares.

TABLE 7
LOCATION OF TOTAL LAND NEEDS FOR LOW POPULATION GROWTH, 1989-93

SECTOR	DEVELOPABLE RAW LAND (Ha.)	RESIDENTIAL NEEDS INFILL (Ha.)	RESIDENTIAL NEEDS EXPANSION (Ha.)	NON-RESIDENTIAL NEEDS INFILL (Ha.)	NON-RESIDENTIAL NEEDS EXPANSION (Ha.)	TOTAL NEEDS INFILL (Ha.)	TOTAL NEEDS EXPANSION (Ha.)
1	2,236	12	69	16	49	28	118
2	2,318	108	324	21	64	129	388
3	972	0	15	0	7	0	22
4	179	108	36	181	60	289	96
5	4,055	0	28	0	2	0	30
6	0	0	0	0	0	0	0
TOTAL	9,760	228	472	218	182	446	654

TABLE 8
LOCATION OF TOTAL LAND NEEDS FOR HIGH POPULATION GROWTH, 1989-93

SECTOR	DEVELOPABLE RAW LAND (ha)	RESIDENTIAL NEEDS (ha) INFILL	RESIDENTIAL NEEDS (ha) EXPANSION	NON-RESIDENTIAL NEEDS (ha) INFILL	NON-RESIDENTIAL NEEDS (ha) EXPANSION	TOTAL NEEDS (ha) INFILL	TOTAL NEEDS (ha) EXPANSION
1	2,236	19	108	19	59	38	167
2	2,318	107	323	26	77	133	400
3	972	0	30	0	8	0	38
4	179	139	46	217	72	356	118
5	4,055	0	68	0	2	0	70
6	0	0	0	0	0	0	0
TOTAL	9,760	265	575	262	218	527	793

Under the assumption of the continuation of existing land development policies, the high-population growth scenario will exert increased demand on the City's existing housing stock and urban services. Poorer households will suffer disproportionately from the lack of sufficient, affordable options to resolve their shelter problems. The high-growth scenario implies growth rates for the built-up portions of sectors 1,2, and 4 higher than those registered during the period 1978 to 1988. Due to the inability of local housing markets to provide sufficient lower-income shelter solutions, the population currently living in center city quarters will tend to stabilize or even increase slightly. On the basis of current plans, the Azucarera will only undertake a minimal amount of lower-income land development. This will be located almost exclusively within the City's existing urban limit. Due to a lack table 7 and 8 of alternative solutions, pressure will mount on the Azucarera's sugar lands. Even though they are easily identifiable as privately owned, there exists the strong possibility that invasions could spill over onto them from the direction of Chamelecon in the south. The uncontrolled growth of the City's eastern sector 5 will also accelerate. The effects of high-population growth constrained by existing land policies will likely lead to a new round of invasions in the sector similar to those that occurred in the vicinity of "Rivera Hernandez" ten years ago.

Under either population growth scenario, the study team's projections indicate that the majority of new urban development over the period 1989-1993 will occur in the core and consolidation sectors (2 and 4). We estimate that these two sectors combined will accommodate 82 and 76 percent, respectively, of the total land requirements for the two growth scenarios. The Municipality will require an aggressive and pro-active planning and management system to meet the significant land requirements projected for 1989-1993, as well as to begin to plan and to facilitate the urban development envisaged for the City for the period after 1993. The next section proposes a step-by-step strategic land development process to meet this challenge.

PROPOSAL FOR A STRATEGIC LAND DEVELOPMENT PROCESS

This section outlines a specific process for land development in San Pedro Sula. The process aims at achieving basic economic and social development goals for the City.

Land Development Goals

There are two basic goals for land planning and development in San Pedro Sula. One is the use of land development planning to support the role of the City as a motor of national economic development. San Pedro Sula is important as a source of productive energy for the Republic–it creates jobs, mobilizes savings for productive investment, and incorporates new rural-to-urban in-migrants into the labor force. It is the place in Honduras where the opportunities of scale and agglomeration economies can most successfully bring Honduran production into competition on the world market.

But high productivity requires a satisfactorily housed labor force. Significant parts of the population live in crowded in-town cuarterias, in riverside turgurios or in other unsatisfactory circumstances. A productive labor force needs to be relieved of the problems of

residential overcrowding, inadequate urban services, unhealthy environments in which they live and raise children. They need the guarantee of secure tenure and reasonable rents. The economic development objective therefore entails providing satisfactory housing development opportunities as part of leveraging the San Pedrano work force into greater productive strength.

The second objective is to advance social and economic integration of low-income families, within the objective of economic development. This means assisting families now excluded from formal markets in their effort to get satisfactory housing. It is built on the belief that the enterprising, in-migrant low-income population of San Pedro Sula would use affordable housing to propel themselves into self-sufficiency.

A Seven-Step Process

To achieve overall land development goals for San Pedro Sula, the study team recommends a seven-step strategic planning process. The process is based on three and one-half months of fieldwork and analysis, and reflects numerous discussions with city officials, housing developers, bankers and businessmen and citizens. The Phase I Report provides full documentation of the findings of the fieldwork. The seven steps are:

1. Set quantitative land and housing development targets.

2. Preparation of San Pedro Sula Development Plan for southeast and consolidation areas.

3. Establish institutional capacity for plan implementation.

4. Remove impediments to efficient land and housing market operation.

5. Design and implement mechanisms for financing development.

6. Promote private sector initiatives for low-cost housing development.

7. Develop a monitoring program for reviewing the progress of the strategic land development process, and conduct on-going forward planning and programming.

In the remainder of this section each step is presented in detail.

Step 1: Set land and housing development targets

To effectively manage the rapid urban development of San Pedro Sula, it is absolutely essential to prepare quantitative estimates of land and housing requirements to accommodate future urban development. These estimates provide the quantitative basis for preparing capital budgets for infrastructure programming and more importantly they provide baseline information for setting zoning and land development policies.

In previous sections of this document, estimates of residential and non-residential land requirements for the next 13 years have been presented, for three discrete periods. Between 1989 and 2001, between 62,040 and 83,420 dwelling units and 2,620 and 3,555 hectares of land for urban development will be needed. If the City is to avoid problems of limited infrastructure and rapid land inflation, it must ensure that at least this amount of land can be easily developed over the next 13 years.

This process of periodic forecasting of future land requirements plays a fundamental role in the strategic planning process. It serves as the basis for determining how much land will be needed for urban development. Armed with estimates of land and housing requirements, planners can prepare urban development plans to coordinate and program urbanization in the southeast and consolidation areas. The process of forecasting land requirements should be repeated every five years, updating the requirements to reflect changes in population, employment and housing needs, and patterns of land consumption.

Step 2: Prepare a San Pedro Sula Development Plan for the southeast and consolidation areas

During the course of the fieldwork, the study team identified three alternative development strategies for guiding urban growth in San Pedro Sula. These alternatives included: 1) southeast corridor development; 2) industrial corridor development; and 3) consolidation of development. Each of these alternatives was evaluated and the relative costs and benefits associated with them was estimated. Based on this evaluation the study team recommends that alternatives 1 and 3 be combined. Alternative 2 was rejected because of its limited ability to support low-income housing development. Based on a preliminary "sketch planning" exercise the study team proposes a preferred land development plan for the 1989-1993 period on a zone-by-zone basis reflected in the "combined southeast and consolidation alternative." (For a complete description of this and other alternatives, as well as their comparative evaluation, see the relevant sections of Annex C to this report.)

The study team's preferred land development plan for the next 5 years focuses principally on new land development and on the consolidation of various dispersed urbanizations in the southeast and consolidation sectors of the City. The preferred plan emphasizes the development of zones 9, 18-21, 23, 27, 30, and 33 in the consolidation area and zone 22 in the southeast. The methodology applied in the previous section to spatially allocate total land requirements is employed in this section to distribute total land needs for the period 1989-93 on the basis of the preferred plan.

Tables 9 and 10 summarize the allocation of total land requirements for the period between 1989 and 1993 for projected low and high population growth. Table 9 indicates that of the total requirement of 1,100 hectares for low growth, 702 hectares (64 percent) will occur in the form of raw land conversion. Of these 702 hectares of land required to meet residential and non-residential uses, the study team estimates that more than 70 percent will be allocated in the consolidation and southeast areas.

TABLE 9
LOCATION OF TOTAL LAND NEEDS FOR LOW POPULATION GROWTH, 1989-93
(PREFERRED PLAN)

SECTOR	DEVELOPABLE RAW LAND (ha)	RESIDENTIAL NEEDS (ha) INFILL	RESIDENTIAL NEEDS (ha) EXPANSION	NON-RESIDENTIAL NEEDS (ha) INFILL	NON-RESIDENTIAL NEEDS (ha) EXPANSION	TOTAL NEEDS (ha) INFILL	TOTAL NEEDS (ha) EXPANSION
1	2,236	12	69	16	49	28	118
2	2,318	108	325	21	64	129	389
3	972	0	100	0	7	0	107
4	179	60	20	181	60	241	80
5	4,055	0	6	0	2	0	8
6	0	0	0	0	0	0	0
TOTAL	9,760	180	520	218	182	398	702

TABLE 10
LOCATION OF TOTAL LAND NEEDS FOR HIGH POPULATION GROWTH, 1989-93
(PREFERRED PLAN)

SECTOR	DEVELOPABLE RAW LAND (ha)	RESIDENTIAL NEEDS (ha) INFILL	RESIDENTIAL NEEDS (ha) EXPANSION	NON-RESIDENTIAL NEEDS (ha) INFILL	NON-RESIDENTIAL NEEDS (ha) EXPANSION	TOTAL NEEDS (ha) INFILL	TOTAL NEEDS (ha) EXPANSION
1	2,236	14	81	19	59	33	140
2	2,318	106	317	26	77	132	394
3	972	0	158	0	8	0	166
4	179	98	32	217	72	315	104
5	4,055	0	34	0	2	0	36
6	0	0	0	0	0	0	0
TOTAL	9,761	218	622	262	218	480	840

The figures of Table 10 show similar results for the high population growth scenario. A total of 1,320 hectares of land is required to meet residential and non-residential demand during the period 1989-93. Of this total, we project that new land development will account for 840 hectares, of which 560 hectares are located in the southeast and consolidation areas.

Tables 11 and 12 highlight the differences between the two cases studied for low and high population growth: 1) the continuation of current land policies; and, 2) the study team's preferred plan. While slight differences in magnitude exist between the low-and high-growth scenarios, the tables clearly point out significant differences between the two growth options with respect to the spatial allocation of total land requirements among the six sectors. These are summarized as follows:

1. Greater reliance of the preferred plan on new land development, rather than infill and densification to meet the City's projected land needs for 1989-93.

2. More aggressive and proactive development by the preferred plan of the Compania Azucarera's lands (southeast sector, zone 22) for residential and, particularly lower-income, uses. (In the study team's sketch plan, the planning and development of the southeast sector, which is initiated during the period 1989-93, takes on added importance as a means to meet future land needs between 1994 and 2001.)

3. The preferred plan's proposal to maintain the City's primarily rural northeast and eastern peripheral zones (sector 5) in reserve as a potential land resource for the City's future development in the next century.

4. Less reliance by the preferred plan, due to its emphasis on increasing the supply of new urbanized land, on the City's core area to absorb a disproportionate amount of the growth projected for 1989-93. (The preferred plan proposes to increase the supply of accessible and affordable shelter for those households currently living in cuarterias, thus relieving some of the pressure on the inner-city's deteriorated, yet costly, housing stock.)

While the study team has developed a sketch plan for the future development of San Pedro Sula, time and resource constraints prohibited the team from preparing a detailed development plan. Therefore, we propose that a detailed short-term (5-10 year) plan for the southeast and consolidation areas be prepared. It is important to stress that the study team is not proposing an overall long-range master plan for the city. We feel that such planning exercises are of limited usefulness for addressing the types of growth and housing development pressures faced by San Pedro Sula.

TABLE 11
COMPARISON OF TOTAL LAND REQUIREMENTS BETWEEN PREFERRED PLAN
VS CONTINUATION OF CURRENT POLICIES (LOW GROWTH), 1989-93

SECTOR	TOTAL LAND NEEDS (ha) CONTINUATION INFILL	CONTINUATION EXPANSION	PREFERRED INFILL	PREFERRED EXPANSION	DIFFERENCES (PREFERRED VS CONTINUATION) (ha) INFILL	EXPANSION
1	28	118	28	118	0	0
2	129	388	129	389	0	1
3	0	22	0	107	0	85
4	289	96	241	80	(48)	(16)
5	0	30	0	8	0	(22)
6	0	0	0	0	0	
TOTAL	446	654	398	702	(48)	48

TABLE 12
COMPARISON OF TOTAL LAND REQUIREMENTS BETWEEN PREFERRED PLAN
VS CONTINUATION OF CURRENT POLICIES (HIGH GROWTH), 1989-93

SECTOR	TOTAL LAND NEEDS (ha) CONTINUATION INFILL	CONTINUATION EXPANSION	PREFERRED INFILL	PREFERRED EXPANSION	DIFFERENCES (PREFERRED VS CONTINUATION) (ha) INFILL	EXPANSION
1	38	167	33	140	(5)	(27)
2	133	400	132	394	(1)	(6)
3	0	38	0	166	0	128
4	356	118	315	104	(41)	(14)
5	0	70	0	36	0	(34)
6	0	0	0	0	0	0
TOTAL	527	793	480	840	(47)	47

The southeast and consolidation plan should promote the following objectives:

1. Minimize residential land costs by promoting the development of small-plot, minimum standard projects on low-cost, buildable land in the southeast.

2. Promote construction of low-cost housing with good access to the city center and major employment centers.

3. Promote the consolidation of development along the highway corridors to La Lima and Chamelecon.

4. Encourage the maximum participation of landowners in providing low-cost housing development.

5. Build on momentum of private landowners to develop housing in the southeast.

6. Encourage the development of vacant parcels located in areas of the city supplied with urban services.

7. Complete expansion of urban services to adjacent, built-up serviced areas.

   The detailed plan should include the following elements:

   a. Proposed land uses;
   b. Zoning for urban developments including special, non-spatial zoning categories for low-cost housing development (see R-8 zoning classification proposal described in Annex D);
   c. Estimation of infrastructure needs and costs; and
   d. Financing plan for funding infrastructure development.

The plan should be consistent with the land and housing development targets prepared in step 1, taking into consideration the residential and non-residential development likely to take place in other areas of the City. This plan should be geared to the short-to--medium-run; that is, it should reflect a level of development likely to be achieved in five to ten years. The plan should be revised every five years and conform with new targets prepared at that time.

Step 3: Establish institutional capacity for action

This is the most critical step in the entire strategic planning process. In order to effectively implement the proposed land and housing development program, the City of San Pedro Sula must establish a visible and powerful executing unit. Therefore the study team proposes that the City establish a Department of Land and Housing Development with broad powers to:

a. Prepare development plans;

b. Implement and enforce zoning and planning controls;

c. Create improvement districts for levying infrastructure taxes and other fees and charges associated with urban development projects;

d. Develop alternatives to invasions, squatting and illegal subdivision of land;

e. Negotiate and work with landowners, patronatos, foundations, labor unions and developers to provide low-cost housing;

f. Relocate squatters from dangerous to safe areas;

g. Develop programs to "regularize" the activities of informal land developers so that the process of negotiation with landowners and municipal officials can proceed in a predictable manner;

h. Encourage the development of private "inmobiliarias" and give them the financial and technical support they need to expand operations;

i. Cut "red tape" associated with residential development by streamlining process for subdivision approval;

j. Advise the mayor and municipal corporation on land and housing development matters;

k. Review municipal budgets and programs to determine their impacts on planning objectives; and

l. Coordinate the installation of infrastructure to promote low-cost land and housing development.

The Department would be comprised of staff from several existing units of the Municipality. The staff would be drawn from the following municipal units:

a) Superintendencia Administrativa
   Analisis Financiero

b) Superintendencia Tecnica-Planeamiento Urbano
   Archivo Plan Urbano
   Urbanismo
   Diseño Urbano
   Desarrollo Urbano
   Permiscs de Construccion

c) Superintendencia Planificacion-Programacion y
   Presupuesto
   Organizacion y Metodos
   Control y Elaboracion de Presupuestos
   Estadística y Analisis
   Control y Evaluacion de Proyectos

d. Sections of DIMA responsible for the planning and programming of infrastructure (not operating sections)

The Department of Land and Housing Development would be situated within the municipal government at a level equivalent to a Superintendencia. Exhibit 1 presents an organizational chart for the new agency. As illustrated in Exhibit 1 the Department is divided into three principal units: advanced planning, development control and private sector initiatives. Each of these units would have the capacity and authority, as delegated by the Department chief to carry out the tasks enumerated in the seven-step strategic land development process.

Step 4: Remove impediments to efficient land and housing market operations

In the course of its fieldwork, the study team uncovered a number of significant laws, practices and procedures which limit the flexibility of the land and market to respond to changes in demand for land and housing, particularly for low-cost housing. One of the first actions of the Department of Land and Housing Development should be to press for the removal of these impediments.

Specific reforms and actions needed include:

1. Expand the urban limit line to be coterminus with the municipal boundary.

2. Obtain necessary legislative and/or administrative changes necessary to allow the City of San Pedro Sula to apply its zoning power to all areas of the City, not just areas inside the urban limit.

3. Undertake a comprehensive review of the zoning regulations contained in the 1976 Plan to ensure compliance and agreement with the preferred development strategy.

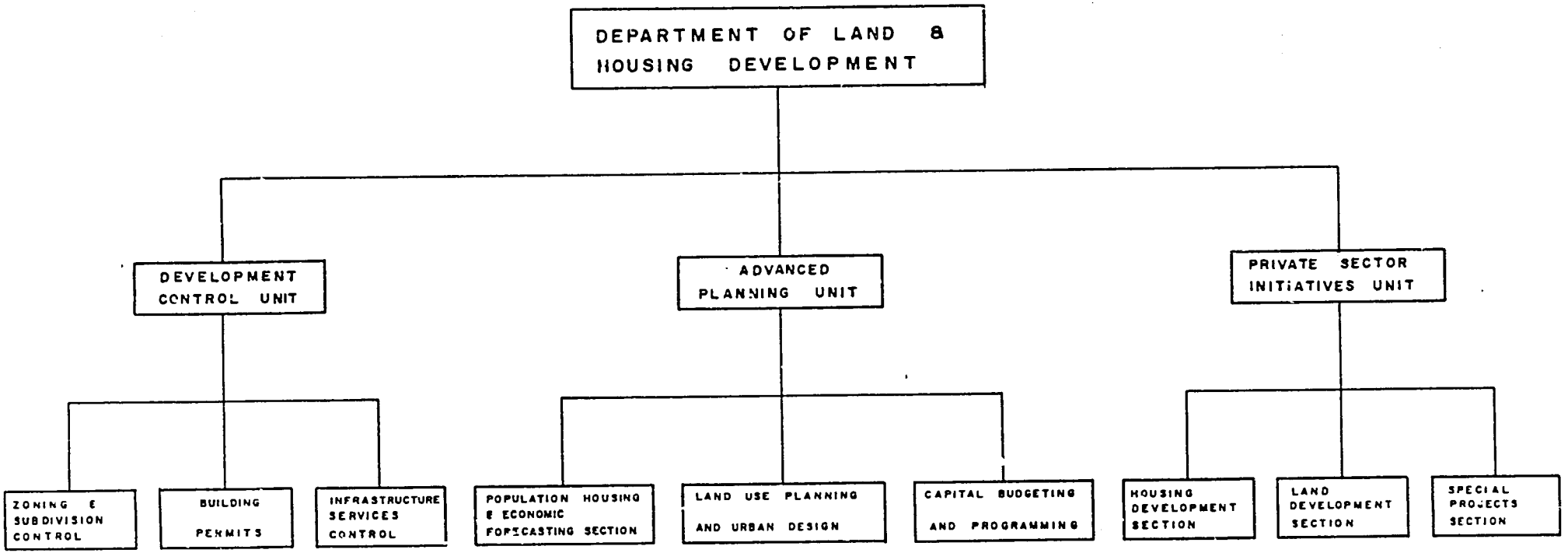
4. Prepare and adopt a specific, non-spatial residential zoning category to provide for an additional category to authorize the development of low-cost residential plots ranging between 100 and 140 square meters. (See Annex D)

5. In a parallel manner, residential subdivision and engineering standards should be reduced to provide for more cost effective urbanizations (i.e., road widths could be reduced to 10 meters for feeders and 12 meters for collectors).

6. Consider the inclusion of a "quick taking" mechanism within an expedited land expropriation statute as an important element of enabling legislation.

EXHIBIT 1

SAN PEDRO SULA
DEPARTMENT OF LAND & HOUSING DEVELOPMENT



7. Develop administrative authority to negotiate with private landowners to obtain their full participation in the development of low-cost housing development. Such authority should include: establishment of improvement districts for the financing of infrastructure, promotion of land exchanges between owners (public or private), land readjustment, land sharing and land dedications to the government for compensation for the provision of infrastructure, and the transfer of development rights to other parcels of land.

8. National level legislation is needed to give San Pedro Sula greater control over its area of influence. Involvement of the central government should be cut back, and efforts attacking regional problems should be handled at the metropolitan level.

9. In the future, all international aid to promote the economic and social development of San Pedro Sula should be coordinated and guided by an integrated economic and urban development program for the entire Sula Valley, extending from Puerto Cortes to Villa Nueva and beyond.

10. Administrative changes should be made to expand the application of betterment taxes (contribuciones por mejoras) to new residential developments in the southeast and consolidation areas. If the application of contribuciones por mejoras adversely affects the affordability of low-cost housing, the city should consider granting an exception to bona fide low-cost housing projects.

To organize these legislative initiatives, the City should prepare a paper outlining specific legislative and administrative changes that need to be secured at the local, provincial and national levels. The paper should include draft text for adoption by legislative and administrative bodies.

Step 5: Design and implement financial mechanisms

Providing trunk infrastructure to support the development of between 62,040-83,420 dwelling units and 2,620-3,555 hectares of land over the next thirteen years will require substantial capital investment. The extent to which the City can finance such development will depend on its ability to plan, budget and generate sufficient revenues. A major obstacle restricting the City's ability to raise revenues are property tax regulations limiting assessment and taxation procedures and the levying of charges. In this step, the Department of Land and Housing Development should prepare estimates of the financial resources it needs to support projected land development prepared in steps 1 and 2.

Based on the sketch plan exercise outlined above, the study team has prepared estimates of total infrastructure costs associated with implementing the preferred plan for the combined southeast and consolidation sectors. This exercise is divided into two parts. The first part identifies the foreign investment planned and programmed for San Pedro Sula for the period 1989-1993. In conjunction with the anticipated foreign investment, the second part provides cost estimates to urbanize the short-term land requirements of the

consolidation and southeast sectors and to fully serve with basic infrastructure the existing lower income, built-up areas of the City.

Current plans and programs indicate that three foreign donors will be the principal financiers of infrastructure in San Pedro Sula over the next several years. A proposed World Bank/Commonwealth Development Corporation loan is for Lps. 82.12 million. Designated the Water Master Plan for San Pedro Sula, it consists of increasing the supply and storage capacity for potable water and upgrading the distribution network. This proposed loan also includes small components for sanitary waste disposal and stormwater drainage. This loan is designed to improve and complement the water supply and drainage networks for the City's existing built-up area within the second ringroad.

The Inter-American Development Bank is considering a loan for the amount of Lps. 132.40 million. The IDB's proposal consists primarily in the extension and upgrading of the City's sewerage and drainage networks and in additions to the circulation network. The proposed construction of new streets and roads will have a dramatic impact on the future development of the new growth areas recommended by the study team for the consolidation and southeast sectors.

The US Agency for International Development is currently financing infrastructure works in the amount of Lps. 13.9 million. USAID's program entails the installation of new water and sewerage service in approximately 40 of the City's lower-income barrios and colonias. This program, implemented in conjunction with DIMA, is located primarily on the eastern side of the City between the first and second ringroads and in the rapidly developing areas of Calpules, Chamelecon and Rivera Hernandez.

The total amount of these three infrastructure loans totals Lps. 228.42 million.

The exercise to estimate the costs of implementing the preferred plan is divided into two parts: (a) cost estimates to serve the new land requirements of the consolidation and southeast sectors; (b) the cost to complete the secondary infrastructure networks in those existing built-up areas which lack all or some of these services. These cost estimates include both on- and off-site infrastructure, as well as required public and private sector investment. For the purposes of this analysis, the study team assumes that all existing barrios/colonias should have access to all urban services with the exception of paved streets.

For the short-term period of 1989-1993 which is of immediate interest to the study team, it is estimated that Lps. 146 million is required to develop the new residential and non-residential land requirements projected for the consolidation and southeast sectors. The following table provides a breakdown of the required investment by principal infrastructure network.

Of the original Lps.228 million investment program of the City's three principal foreign donors, only the proposed Lps.69.52 million IDB financing for streets and roads will have a direct impact on the development of the preferred plan for the consolidation and southeast sectors.

SYSTEM	TOTAL INVESTMENT (Lps. million)
Water supply and sewerage	Lps. 28.46
Stormwater drainage	48.48
Streets/roads (IDB financing)	69.52
TOTAL	Lps. 146.46

The second part of our cost analysis involves an estimate to complete the infrastructure coverage for the City's primarily lower-income built-up areas. These infrastructure works contemplate installing and connecting secondary distribution and collector lines with existing primary trunk networks.

The total short-term cost to serve those barrios/colonias of the study team's preferred southeast quadrant which lack complete water and sewerage coverage is Lps.3.2 million. The principal areas to be served by this program include Calpules, Rivera Hernandez and Chamelecon. It is not known at the present whether USAID's ongoing program will have sufficient financing to include these areas. The total cost to serve the same areas with stormwater drains is Lps.6.3 million. The total cost to complete the coverage of these three urban services is Lps.9.5 million.

The total cost to provide the same level of water, sewerage and stormwater drainage services in the barrios/colonias of the City's urban core (sector 4) which lack this coverage is Lps.25.52 million–Lps.2.14 for water and sewerage and Lps.23.38 for storm drains.

The total cost, therefore, to complete the coverage of urban services in the existing built-up area of the urban core, consolidation and southeast sectors is approximately Lps.35 million.

In summary, the total cost to provide infrastructure services for the period 1989-1993, in accordance with the study team's preferred plan, is as follows:

- Urbanize new land requirements in consolidation and southeast sectors — Lps.146.46 million
- Complete water, sewerage and stormwater networks in built-up areas of urban core, consolidation and southeast — 35.02 million

TOTAL Lps.181.48 million

Based on the estimated costs of trunk infrastructure requirements, the Department should develop financing mechanisms to fund urban growth. Some of the mechanisms and issues that need to be considered are:

1. While the flow of property taxes to the city increased by approximately 28 percent per year between 1985 and 1988, property tax collections could be augmented if the periodically-set assessment base is adjusted each year instead of every five.

2. Another method of increasing property tax revenues would be to expand the urban limit line to be coterminus with the municipal boundary. If this were done, the tax rate on the included properties (totalling nearly 9,700 hectares) would increase from 1 mill to between 3 and 5 mills (depending on parcel size). Such an increase would significantly boost tax revenues.

3. At the project level, the City has already been levying charges for infrastructure (by either receiving land for compensation or through betterment levies; these mechanisms should be expanded in the future.

4. One method for financing the trunk infrastructure requirements of large areas is to create an improvement district. Once a district is created, a specific plan should be created, laying out subdivisions and other urban development projects as well as the necessary trunk infrastructure improvements. Zoning and subdivision regulations would be prepared for the district to ensure that development follows the plan. Based on the plan, necessary infrastructure improvements are costed out and an improvement assessment is calculated that would generate sufficient tax revenues to fund public investments. Such an approach might attract financing from international donor agencies.

5. Some of the additional costs of urban development are generated by users located outside of San Pedro Sula; for these services, such as the main national highways, the central government should allocate some portion of the gasoline tax to San Pedro Sula to defray highway maintenance costs.

Step 6: Promote private sector initiatives for low-cost housing

During the past 18 months, city officials have played an active role encouraging informal land developers to provide low- cost housing. In this step, the Department of Land and Housing Development should institutionalize this process to provide continuity. It should, however, avoid being overly bureaucratic and rigid. Efforts should also be made to broaden the role of the Department in encouraging the full participation of the private sector in facilitating low-cost housing development.

On the basis of the estimates of housing and land development requirements prepared in step 1; the development plan drafted in step 3; and the estimation of public infrastructure costs prepared in step 5; the Department of Land and Housing Development can

proceed to develop a process for working with key land owners in the southeast quadrant and consolidation areas.

Over the past two years, the City has relied on the ambiguity of land titles to negotiate with landowners to allocate land for low-cost housing development. At the same time, the City has also worked with informal land developers to ensure that subdivisions are or will be adequately provided with urban services. The Department might consider designating neighborhood housing facilitators to generate leads for project development.[3]

Facilitating private sector initiatives for low-cost housing development requires that the City work with the informal developers providing them with technical assistance and, if necessary, financial support. It may be possible to also encourage the participation of industry, commerce and labor unions to assist these informal developers to expand their scale of operation. Such participation might include: sale of excess industrial or commercial property for residential development, assistance in financing land development, employee assistance for the purchase of lots in low-cost housing projects and, where appropriate, providing technical assistance on construction, design and financial matters to informal developers.

A more aggressive approach that might be considered is for the Department of Land and Housing Development to establish a non-profit housing development corporation which would acquire land and joint venture with private firms to develop low-cost housing. This separate entity could operate outside the confines of municipal regulations--avoiding burdensome municipal administrative procedures. Generally, non-profit housing corporations are more effective than governmental public housing agencies since they have the flexibility and freedom of action to quickly develop low-cost housing by responding to changing market opportunities. To ensure that the non-profit housing corporation promoted the policies and objectives of the Department of Land and Housing Development, the City could own stock in the corporation and elect members to its board of directors.

The main objective of this step is to create the capacity to work closely with landowners, developers and private sector entities to increase the production of low-cost housing. This will generally require staff technically competent to systematically review and comment on housing projects submitted to it by the private sector. This requires the following skills: gauging housing market conditions and demand, community organization, site selection and land acquisition, subdivision design and construction and marketing. In addition, the staff needs to understand both public sector administrative and private business practices to effectively negotiate with landowners, developers and businessmen.

---

[3]These facilitators would work with neighborhood groups to identify specific opportunities for low-cost housing projects, e.g., vacant land owned by someone willing to use it for low-cost housing construction, or an informal developer who has an idea for a project. The facilitator could also play a key role in organizing support for low-cost housing projects.

Step 6 is an on-going effort. To guide its activities, the Department should prepare a detailed work program outlining the necessary activities for promoting private sector low-cost housing development.

Step 7: Monitor and review land development process and on-going forward planning

In this final step, the Department should prepare an information base to monitor progress made toward achieving housing and land development goals and it should institute an ongoing process for developing "rolling" five- to ten-year plans for land and housing development. The information should be used to assess annual progress of the Department and to identify problem areas as well as opportunities for increasing low-cost housing development. The information base should be used to re-estimate future land and housing demand and supply in the city and to up-date its plans and programs.

THE RATIONALE FOR A DEPARTMENT OF LAND AND HOUSING DEVELOPMENT

The organizational and institutional requirements for managing urban growth and housing development in San Pedro Sula are substantial and complex. At the present time several sections of the municipal government address land use planning and urban development matters:

1. Superintendencia Administrativa
   - Analisis Financiero

2. Superintendencia Tecnica-Planeamiento Urbano
   - Archivo Plan Urbano
   - Urbanismo
   - Diseno Urbano
   - Desarrollo Urbano
   - Permisos de Construccion

3. Superintendencia Planificacion-Programacion y Presupuesto
   - Organizacion y Metodos
   - Control Elaboracion Presupuestal
   - Estadistica y Analisis
   - Control y Evaluacion Proyectos

4. Sections of DIMA responsible for the planning and programming of infrastructure (not operating sections

The Department of Land and Housing Development is proposed to combine the various administrative and technical functions which currently take place in the above four units. As illustrated in Exhibit 1 it is divided into three principal units: advanced planning, development control and private sector initiatives. Each of these units would have the

capacity and authority, as delegated by the Department chief, to carry out the tasks enumerated in the seven step strategic land development process. While the organizational structure of the Department should be viewed as preliminary, and subject to revision, it is proposed because it would achieve four benefits.

First, it would provide for better coordination between land use planning, zoning and development control, and the planning and delivery of urban services.

Second, because of the central coordination of land development, the Department could more accurately and more quickly ascertain actual financial requirements associated with projected land and housing development.

Third, efforts to facilitate development, such as negotiating with developers, landowners and private enterprises would be more effective, since the head of the Department of Land and Housing Development would be in the position to coordinate the public sector's role at the negotiating table.

Fourth, there would be more clear-cut accountability for the performance of the Department since it would have control over resources necessary to promote housing and urban development. The Department's performance could be gauged according to the actual annual production of low-cost housing units in relation to targets set under St3main ep 1 of the strategic land development process.

While it will take some time for the City to consider the possibility of creating the Department, the study team suggests that a specific proposal be drafted as soon as possible on the precise structure of the Department.

PROPOSED ACTION PLAN AND TIMETABLE FOR IMPLEMENTING STRATEGIC LAND DEVELOPMENT PROCESS

As outlined in the terms of reference for this project, the planning horizon is divided into three discrete phases: 1989- 1993, 1994-1997, and 1998-2001. In this final section of the report, we outline a proposed action plan and timetable for implementing the proposed seven step strategic land and housing development process.

Step 1: Set land and housing development targets

This step has been completed. It is now fully documented and available for review.

Recommended action 1.1:

Review and adopt housing and land development targets prepared by the study team.

Step 2: Prepare a San Pedro Sula Development Plan for the southeast and consolidation areas

A detailed San Pedro Sula Development Plan needs to be prepared. This will require about three months of time. The plan needs to focus on the objectives outlined above in step 2. Since the plan will play a critical role in setting the stage for later steps, it should begin immediately.

Recommended action 2.1:
Prepare a development plan for southeast and consolidation areas.

Step 3: Establish institutional capacity for action

The establishment of a permanent department within the City of San Pedro Sula with broad authority over the planning and development of land and housing is critical to the overall success of future activities. Hence, the study team recommends that steps be taken immediately to develop a proposal for organizing a Department of Land and Housing. A municipal survey, review of other city's land development organizations and the preparation of the proposal will require three months. The proposal should consider all of the elements outlined in step 3, and it should consider the professional staff requirements essential for carrying out its mission. As a collateral effort, a manpower needs assessment should be prepared to determine the kinds of training and staff recruitment that will be needed to support the Department. Obviously, it will take a longer time for the Municipality's elected officials and staff to consider the proposal.

Recommended action 3.1:
Survey the roles and responsibilities of staff of existing municipal operating units to determine which units and staff should be considered for assignment to the proposed Department.

Recommended action 3.2:
Survey how other municipal governments in Latin and North America structure their land and housing development activities.

Recommended action 3.3:
Prepare a paper outlining a recommended structure of the Department of Land and Housing Development.

Recommended action 3.4:
Develop political support for creating a Department of Land and Housing Development.

Recommended action 3.5:
Develop a manpower, training and recruitment proposal to properly staff the organization.

Step 4: Remove impediments to efficient land and housing market operation

As has been pointed out, a number of serious constraints limit the City's ability to promote low-cost land and housing development. Several of these impediments will require modification to national laws, regulations and procedures. A legislative program should be prepared by City staff and actions taken to gain support in the National Congress for the proposed changes. It is difficult to estimate now much time these activities will take. But they should begin as soon as possible, starting with building local political support for the legislative initiatives.

Recommended action 4.1:

Prepare a paper outlining the specific legislative and administrative changes and modifications needed to improve the efficiency of San Pedro Sula's land and housing markets.

Recommended action 4.2:

Develop local political support for the legislative initiatives outlined above and develop a strategy for securing needed changes at the provincial and national levels.

Step 5: Design and implement financial mechanisms

As soon as the San Pedro Sula Development Plan has been prepared, the City should estimate the likely public sector costs of providing the necessary infrastructure to the southeast and consolidation areas. Based on these estimates, the City should prepare a financing plan including the types of mechanisms to be used for funding development. Such mechanisms might include the creation of improvement districts, land readjustment, betterment levies, user charges, or private sector provision of services and associated financing. This task will require approximately two months, and it should start at the completion of step 2.

Recommended action 5.1:

Develop estimates of the likely public sector costs associated with the development of the southeast and consolidation areas over the next five years.

Recommended action 5.2:

Develop specific financing proposals for funding infrastructure.

Step 6: Promote private sector initiatives for low-cost housing

This step is essentially an ongoing process. However, it is important to quickly establish a clear program for action. Therefore, the City should begin by preparing a detailed work program.

Recommended action 6.1:

Develop work program which includes the following activities:

1. Identify landowners holding large tracts of land in the southeast and consolidation areas of the City which have been planned for development, or which are appropriate for development.

2. Identify and cultivate relations with developers specializing in low-cost housing developments.

3. Identify commercial and industrial interests likely to support the production of low-cost housing and gauge their possible participation in joint public-private development projects.

4. Determine the extent to which landowners and developers require planning or financial incentives for low-cost housing production.

5. Determine the kinds of technical assistance informal developers require to increase their efficiency and expand their production.

6. Hold informal meetings with developers, business interests and landowners to gauge the possibilities of structuring low-cost housing projects.

Step 7: Monitor and review land development process and on-going forward planning

The development of an overall monitoring program and on-going forward planning process should be developed after the Department of Land and Housing Development is created.

Recommended action 7.1:

Develop a formal procedure and time schedule for conducting periodic evaluations of the Department's planning and development activities.

Recommended action 7.2:

Develop a formal procedure and time schedule for re-estimating population, housing and land projections and revising plans and programs.

Estimated Time Schedule
Strategic Land Development Process Implementation

Step	Start Date	Completion Date
Step 1:		
1.1 Set targets	November 1, 1988	February 17, 1989
Step 2:		
2.1 Prepare plan	April 1, 1989	June 30, 1989
Step 3:		
3.1 Survey SPS units	April 1, 1989	June 30, 1989
3.2 Survey cities	May 1, 1989	May 31, 1989
3.3 Department paper	June 1, 1989	June 30, 1989
3.4 Implement*	July 1, 1989	Indeterminate
3.5 Staff plan	To be scheduled	
Step 4:		
4.1 Legislative paper	April 1, 1989	June 30, 1989
4.2 Implement*	June 30, 1989	Indeterminate
Step 5:		
5.1 Estimate costs	July 1, 1989	July 31, 1989
5.2 Financing mechanisms	August 1, 1989	August 31, 1989
Step 6:		
6.1 Work program	September 1, 1989	November 30, 1989
Step 7:		
7.1 Monitoring program	To be scheduled	
7.2 Planning programs	To be scheduled	

* It is difficult to accurately predict how much time will be required to establish the Department of Land and Housing Development or to conclude the legislative process for revising central government laws.

ANNEX A

METHODOLOGY FOR THE PROJECTION OF NON-RESIDENTIAL LAND REQUIREMENTS

ANNEX A-1

METHODOLOGY FOR PROJECTING INDUSTRIAL LAND NEEDS

1. Determine the type of economic activity or business that should be included in the industrial category. (Does Cortes Chamber of Commerce have such a classification system?)

2. Group selected industries in three categories (compare with description from attached Table A-1):

   - Labor intensive
   - Labor intermediate intensive
   - Labor extensive

3. Determine number of employees in each category for at least two time periods.

4. Project anticipated employment growth by category for San Pedro Sula for study period (or increments of study period). (For an initial estimate, assume similar growth rate as previous time period for which we have employment figures.)

5. Determine the current number of employees per gross area of industrial usage by category. (If time or the lack of information does not permit the determination of this figure, select an estimate for each category or one overall figure which best characterizes land use per employee for the current San Pedro Sula industrial sector.)

6. The amount of additional land that is required to meet projected increases in employment is calculated by dividing increases in employment by the density equivalent of square meters of land per employee for each industrial category.

7. Table A-1 summarizes graphically the methodological steps involved in estimating land needs for a projected growth in industrial employment.

TABLE A-1
METHODOLOGY FOR ESTIMATING INDUSTRIAL LAND NEEDS

Industrial Category	Type of Industrial Category	Employment In Year 19XX	Employment In Year 19YY	Change in Employment Between Years 19XX & 19YY (#)	Percent Change In Employment Between 19XX & 19YY (%)	Projected Employment Increase Between 19YY & 19ZZ	Gross Land Area Per Industrial Employee (M2)	Additional Land Needed for Industrial Use (M2)
1. Labor Intensive								
-								
-								
-								
-								
-								
-								
2. Intermediate Intensive								
-								
-								
-								
-								
-								
3. Extensive								
-								
-								
-								
-								
-								
TOTALS								

SOURCE: ANALYSIS BY PADCO/UMVIDE

ANNEX A-2

METHODOLOGY FOR PROJECTING RETAIL COMMERCIAL FLOOR SPACE REQUIREMENTS

1. Obtain population, average household size and number of households for the study area.

2. Obtain data on average household or per capita income for the study area. (Median household income will suffice.)

3. Estimate total income for the study area by multiplying the number of households by the average or median income.

4. Convert total income into retail expenditures through a series of steps based on percentage expenditure patterns. (See Table A-2.1) (These expenditure patterns are probably not available for San Pedro Sula, and it, therefore, will be necessary to use national averages based on the median household income for San Pedro Sula.)

5. Modify retail expenditures up or down, depending on the impact of retail trade between San Pedro Sula and the surrounding areas. (See Table A-2.2)

6. Estimate the commercial floor space (square meters) supportable in 1989 on the basis of the sales expenditures generated in Point 4. Assume an average sales amount per square meter for retail commercial space and a 100 percent capture rate.

7. Estimate the existing inventory in retail commercial floor space in San Pedro Sula in 1989.

8. Determine the existence of a current surplus or deficit (i.e., compare supportable to existing commercial floor space).

9. Determine future commercial floor space requirements on the basis of the current surplus/deficit and projected increases in retail expenditure levels due to population growth. (Table A-2.3 summarizes the procedure for estimating current and future commercial floor space requirements.)

TABLE A-2
ESTIMATE OF SALES EXPENDITURES FOR AREA RESIDENTS

CATEGORIES	ACTUAL			PROJECTED		
	19XX	19YY	19ZZ	19AA	19BB	19CC
POPULATION						
HOUSEHOLD SIZE						
HOUSEHOLD						
AVERAGE HOUSEHOLD INCOME						
TOTAL HOUSEHOLD INCOME						
PERCENTAGE DISPOSABLE INCOME						
TOTAL DISPOSABLE INCOME						
PERCENTAGE CONSUMPTION EXPENDITURES						
TOTAL CONSUMPTION EXPENDITURES						
PERCENTAGE SALES EXPENDITURES						
TOTAL SALES EXPENDITURES						

SOURCE: ANALYSIS BY PADCO/UMVIDE

TABLE A-2.1
ESTIMATE OF DEMAND FOR COMMERCIAL USE WITHIN STUDY AREA

CATEGORIES	ACTUAL			PROJECTED		
	19XX	19YY	19ZZ	19AA	19BB	19CC
GROSS SALES EXPENDITURES OF AREA RESIDENTS						
MINUS: AREA RESIDENTS EXPENDITURES OUTSIDE THE AREA						
NET EXPENDITURES OF AREA RESIDENTS WITHIN STUDY AREA						
ADD: SALES OF RESIDENTS OUTSIDE STUDY AREA						
TOTAL SALES WITHIN STUDY AREA						

SOURCE: ANALYSIS BY PADCO/UMVIDE

TABLE A-2.2
ESTIMATE OF TOTAL AREA NEEDED FOR COMMERCIAL USE

CATEGORIES	ACTUAL			PROJECTED		
	19XX	19YY	19ZZ	19AA	19BB	19CC
ESTIMATED SALES WITHIN STUDY AREA						
SALES PER SQUARE METER OF COMMERCIAL AREA						
DISPOSABLE BUILT-UP AREA APPROPRIATE FOR COMMERCIAL USE						
EXISTING COMMERCIAL AREA						
COMMERCIAL AREA SURPLUS OR DEFICIT						

SOURCE: ANALYSIS BY PADCO/UMVIDE

ANNEX A-3

METHODOLOGY FOR PROJECTING SERVICE-RELATED SPACE REQUIREMENTS

1. Determine the level of service-related employment as a percentage of total employment.

2. Convert service-related employment into floor space per employee, the "space/employee ratio." This ratio is calculated by dividing the net area occupied by service-related enterprises by the number of service-related employees. (Will this information be available for San Pedro Sula?)

3. Project these ratios into the future, taking into consideration any changes in trends that might be anticipated.

4. Estimate future service-related space requirements by multiplying the number of service-related employees for San Pedro Sula by the space/employee ratio.

5. Convert the figure for net occupied space into net "occupiable" space on the basis of anticipated vacancy experience. Net space or area is the amount of space in a building available for rent or sale to the occupancy. It generally excludes the elevator core, stairs, lobby, corridors and bathrooms.

6. Convert this net figure to gross floor space requirements (total area of the building) on the basis of an efficiency factor (normally in the range of 75-80 percent). (Table A-3 summarizes the steps proposed for in this methodology.)

TABLE A-3
ESTIMATE OF TOTAL AREA NEEDED FOR SERVICES

CATEGORIES	ACTUAL			PROJECTED		
	19XX	19YY	19ZZ	19AA	19BB	19CC
TOTAL EMPLOYMENT						
PERCENTAGE IN SERVICES						
TOTAL EMPLOYMENT IN SERVICES						
AREA RATIO FOR EMPLOYMENT IN SERVICES						
NET OCCUPIED SPACE						
VACANT SPACE						
NET OCCUPIABLE SPACE						
EFFICIENCY INDICATOR						
GROSS BUILDING AREA						

SOURCE: ANALYSIS BY PADCO/UMVIDE

ANNEX B

METHODOLOGY FOR THE SPATIAL ALLOCATION OF LAND REQUIREMENTS BETWEEN SECTORS

ANNEX B-1
COMPARISON OF THE POPULATION OF SAN PEDRO SULA BY SECTOR, 1978 AND 1988

SECTOR	ZONES INCLUDED	POPULATION 1978	POPULATION 1988	ANNUAL PERCENTAGE GROWTH 1978-1988 (%)	PERCENTAGE OF TOTAL POPULATION 1978	PERCENTAGE OF TOTAL POPULATION 1988
1 (Northwest)	6	1,981	3,932			
	7	1,689	2,534			
	14	1,373	3,202			
	15	0	172			
	16	525	4,019			
	17	9,529	11,582			
	25	0	1,286			
	Sub-Total	15,097	26,727	5.88	8.7	9.5
2 (CONSOLIDATION)	9	6,850	11,140			
	18	0	0			
	19	0	1,953			
	20	0	0			
	21	0	8,491			
	23	0	733			
	27	50	12,738			
	30	8,954	28,046			
	33	0	15,841			
	Sub-Total	15,854	78,942	17.41	9.2	28.2
3 (SOUTHEAST)	22	0	126	N/A	0	0
4 (URBAN CORE)	1	10,295	5,777			
	2	19,279	21,728			
	3	37,331	26,433			
	4	10,948	8,940			
	5	8,343	9,274			
	8	4,201	11,119			
	10	10,938	18,525			
	11	31,683	56,969			
	12	2,988	3,023			
	13	5,953	7,449			
	Sub-Total	141,959	169,237	1.77	82.1	60.4

ANNEX B-1 (continued)
COMPARISON OF THE POPULATION OF SAN PEDRO SULA BY SECTOR, 1978 AND 1988

SECTOR	ZONES INCLUDED	POPULATION 1978	POPULATION 1988	ANNUAL PERCENTAGE GROWTH 1978-1988 (%)	PERCENTAGE OF TOTAL POPULATION 1978	PERCENTAGE OF TOTAL POPULATION 1988
5 (RESERVE/ RESOURCE)	24	0	1,735			
	26	0	3,466			
	28	0	0			
	29	0	0			
	31	0	0			
	32	0	143			
	Sub-Total	0	5,344	N/A	0	1.9
6 (AIRPORT)	34	0	0	N/A	0	0
TOTAL		172,910	280,376	4.95	100.0	100.0

ANNEX B-2

QUALITATIVE AND QUANTITATIVE POPULATION GROWTH ASSUMPTIONS FOR SAN PEDRO SULA FOR THE PERIOD 1989-1993 BY SECTOR*

I. LOW GROWTH SCENARIO I (Continuation of current policies)

Sector 1 - will continue to expand and densify at rates similar to 1978-88; 5.88 percent per year.
Sector 2 - will continue to densify and expand, but at reduced rates from 78-88; 9.78 percent per year.
Sector 3 - will expand slightly into Azucarera lands beyond current southeast periphery of built-up area.
Sector 4 - will grow at similar pace to 78-88 period; 1.77 percent per year.
Sector 5 - will experience a certain amount of overflow growth from the built-up area in the vicinity of El Carmen and along El Carmen-Lopez Arellano corridor.
Sector 6 - no population growth anticipated for airport.

II. LOW GROWTH SCENARIO I (Preferred Plan)

Sector 1 - will continue to grow at similar annual rates to 1978-88 and will primarily serve middle and upper income households.
Sector 2 - will continue to densify and expand, but at reduced annual rates from 78-88; 9.82 percent per year.
Sector 3 - the Azucarera will commence plans to develop its lands for lower income households; it will develop approximately 75 hectares over the period 1989-93 at 30 plots per hectares and an average of 5 persons per household.
Sector 4 - inner city zones will continue to lose population from the cuarterias at an increasing rate due to an increase in lower income shelter options on the periphery of the City's built-up area. The peripheral zones will continue to expand and densify at historic rates; overall growth will slow to 1.0 percent per year.
Sector 5 - will experience minimal growth around El Carmen.
Sector 6 - no growth anticipated for airport zone.

III. HIGH GROWTH SCENARIO II (Continuation of current policies)

Sector 1 - will grow at an accelerated rate primarily for middle and upper income households, but will experience expansion of low income pockets of informal development.
Sector 2 - will continue to densify and expand, but at a reduced rate for 1978-88.

Sector 3 - the Azucarera will undertake a minimal amount of urbanization to serve low income households exclusively within the City's urban limit; sporadic invasions of sugar lands will occur from direction of Chamelecon.

Sector 4 - population of zones within "First Ring Road" (currently living within cuarterias) will continue to decrease but at a reduced rate due to the lack of sufficient lower income shelter alternatives; peripheral zones will continue to expand and densify; overall growth increases to 2.5 percent per year.

Sector 5 - will experience increased uncontrolled, overflow growth from the built-up area; this scenario would most likely include a new round of invasions similar to the initial invasion of "Rivera Hernandez."

Sector 6 - no growth anticipated for airport.

IV. HIGH GROWTH SCENARIO II (Preferred Plan)

Sector 1 - will continue to absorb new middle and upper income development, infill industrial and commercial, and certain institutional development at an increased rate over 1978-1988.

Sector 2 - similar growth anticipated as for High Growth Scenario II (Continuation of current policies).

Sector 3 - the Azucarera will urbanize approximately 25 hectares per year for the five-year period 1989-1993.

Sector 4 - will grow at similar pace to 1978-1988 (1.77 percent per year) as zones within the "First Ring Road continue to loose population, while peripheral zones will densify and expand their built-up areas.

Sector 5 - will experience a certain overflow growth from the rest of the built-up area in the vicinity of El Carmen and along the El Carmen-Lopez Arellano corridor.

Sector 6 - airport (no growth anticipated.)

* Due to the fact that it was easier to define the population growth assumptions for the other five sectors, the population change for sector 2 (consolidation) was always taken as the residual of the population changes for the other sectors.

ANNEX B-3
ALLOCATION OF POPULATION GROWTH ACROSS SECTORS, PART I
(1989-1993)

	SCENARIO 1 (Low Growth)				SCENARIO 2 (High Growth)			
	CONTINUATION OF CURRENT POLICIES		PREFERRED		CONTINUATION OF CURRENT POLICIES		PREFERRED	
SECTOR	POPULATION	%	POPULATION	%	POPULATION	%	POPULATION	%
1	35,600	10.0	35,600	10.0	42,000	11.0	38,100	10.0
2	125,900	35.3	126,100	35.3	130,600	34.3	129,700	34.0
3	1,700	0.5	11,000	3.1	3,800	1.0	19,100	5.0
4	184,900	51.0	177,900	49.9	191,500	50.2	184,900	48.5
5	8,500	2.4	6,000	1.7	13,500	3.5	9,500	2.5
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	356,600	100.0	356,600	100.0	381,300	100.0	381,300	100.0

ANNEX B-4
ALLOCATION OF POPULATION GROWTH
BY SECTOR, PART 2 (1989 - 1993)

	SCENARIO 1 (LOW GROWTH)						SCENARIO 2 (HIGH GROWTH)					
	CONTINUATION OF CURRENT POLICIES			PREFERRED			CONTINUATION OF CURRENT POLICIES			PREFERRED		
SECTOR	PROJECTED 1993 POPULATION	POPULATION INCREASE 1989-1993	PERCENTAGE OF TOTAL POPULATION INCREASE	PROJECTED 1993 POPULATION	POPULATION INCREASE 1989-1993	PERCENTAGE OF TOTAL POPULATION INCREASE	PROJECTED 1993 POPULATION	POPULATION INCREASE 1989-1993	PERCENTAGE OF TOTAL POPULATION INCREASE	PROJECTED 1993 POPULATION	POPULATION INCREASE 1989-1993	PERCENTAGE OF TOTAL POPULATION INCREASE
1	35,600	8,873	11.6	35,600	8,873	11.6	42,000	15,273	15.1	38,100	11,373	11.3
2	125,900	46,958	61.6	126,100	47,158	61.8	130,600	51,658	51.2	129,700	50,758	50.3
3	1,700	1,574	2.1	11,000	10,874	14.3	3,800	3,674	3.6	19,100	18,974	18.8
4	184,900	15,663	20.6	177,900	8,663	11.4	191,400	22,163	22.0	184,900	15,663	15.5
5	8,500	3,156	4.1	6,000	656	0.9	13,500	8,156	8.1	9,500	4,156	4.1
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	356,600	76,224	100.0	356,600	76,224	100.0	381,300	100,924	100.0	381,300	100,924	100.0

ANNEX B-5
ALLOCATION OF RESIDENTIAL LAND NEEDS BY SECTOR (1989-1993)*

	SCENARIO 1 (Low Growth)		SCENARIO 2 (High Growth)	
SECTOR	CONTINUATION OF CURRENT POLICIES (Ha)	PREFERRED (Ha)	CONTINUATION OF CURRENT POLICIES (Ha)	PREFERRED (Ha)
1	81.2	81.2	126.9	94.9
2	431.2	432.6	430.1	422.5
3	14.7	100.1	30.2	157.9
4	144.2	79.8	184.8	130.2
5	28.7	6.3	68.0	34.5
6	0.0	0.0	0.0	0.0
TOTAL	700	700	840	840

*Land needs are allocated on basis of the percentage distribution in estimated population changes, 1989-1993 (see Table B-4.)

ANNEX B-5
PROJECTED PERCENT CAPTURE OF SPS NON-RESIDENTIAL DEVELOPMENT BY TYPE, 1989-1993*

SECTOR	COMMERCIAL & SERVICES	INDUSTRIAL
1	17.5%	12.5%
2	15.0	40.0
3	2.0	1.0
4	65.0	46.0
5	0.5	0.5
6	0.0	0.0

*Based on the distribution of permits by approved constructed area for 1982-1987 and PADCO/UMIVDE projections for 1989-1999.

ALLOCATION OF TOTAL LAND NEEDS BETWEEN INFILL OF EXISTING URBANIZED LAND & EXPANSION, 1989-1993

	INFILL (%)		EXPANSION (%)	
SECTOR	RESIDENTIAL	NON-RESIDENTIAL	RESIDENTIAL	NON-RESIDENTIAL
1	15%	25%	85%	75%
2	25%	25%	75%	75%
3	0%	0%	100%	100%
4	75%	75%	25%	25%
5	0%	0%	100%	100%
6	-	-	-	-

ANNEX B-7
COMPARISON OF DEVELOPABLE LAND WITH RESIDENTIAL
AND NON-RESIDENTIAL LAND NEEDS

SECTOR	DEVELOPABLE LAND (Ha)	RESIDENTIAL NEEDS (Ha)				NON-RESIDENTIAL NEEDS (Ha)				TOTAL			
		SCENARIO 1		SCENARIO 2		SCENARIO 1		SCENARIO 2		SCENARIO 1		SCENARIO 2	
		CONTINUATION OF CURRENT POLICIES	PREFERRED	CONTINUATION OF CURRENT POLICIES	PREFERRED	COMMERCIAL AND SERVICES	INDUSTRY	COMMERICAL AND SERVICES	INDUSTRY	CONTINUATION OF CURRENT POLICIES	PREFERRED	CONTINUATION OF CURRENT POLICIES	PREFERRED
1	2,236.3	81.2	81.2	126.9	94.9	52.5	12.5	63	15	146.2	146.2	204.9	172.9
2	2,317.7	431.2	432.6	430.1	422.5	45	40	54	48	516.2	517.6	532.1	524.5
3	972.5	14.7	100.1	30.2	157.9	6.0	1.0	7.2	1.2	21.7	107.1	38.6	166.3
4	178.8	144.2	79.8	184.8	130.2	195.0	46.0	234.0	55.2	385.2	320.8	474.0	419.4
5	4,054.8	28.7	6.3	68.0	34.5	1.5	0.5	1.8	0.6	30.7	8.3	70.4	36.9
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	9,760.1	700.0	700.0	840.0	840.0	300.0	100.0	360.0	120.0	1,100.0	1,100.0	1,320.0	1,320.0

ANNEX B-8

COMPARISON OF DEVELOPABLE LAND WITH RESIDENTIAL AND NON-RESIDENTIAL LAND NEEDS

SECTOR	DEVELOPABLE LAND (Ha)	RESIDENTIAL NEEDS (Ha)							
		SCENARIO 1				SCENARIO 2			
		CONTINUATION OF CURRENT POLICIES		PREFERRED		CONTINUATION OF CURRENT POLICIES		PREFERRED	
		INFILL	EXPANSION	INFILL	EXPANSION	INFILL	EXPANSION	INFILL	EXPANSION
1	2,236.3	12.2	69.0	12.2	69.0	19.0	107.9	14.2	80.7
2	2,317.7	107.8	323.4	108.2	324.4	107.5	322.6	105.6	316.9
3	972.5	0.0	14.7	0.0	100.1	0	30.2	0.0	157.9
4	178.8	108.2	36.1	59.9	19.9	138.6	46.2	97.7	32.5
5	4,054.8	0.0	28.7	0.0	6.3	0	68.0	0.0	34.5
6	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
TOTAL	9760.1	228.2	471.9	180.3	519.7	265.1	574.9	217.5	622.5

ANNEX B-8 (continued)

NON-RESIDENTIAL NEEDS (Ha)				TOTAL							
SCENARIO 1		SCENARIO 2		SCENARIO 1				SCENARIO 2			
				CONTINUATION OF CURRENT POLICIES		PREFERRED		CONTINUATION OF CURRENT POLICIES		PREFERRED	
INFILL	EXPANSION	INFILL	EXPANSION	INFILL	EXPANSION	INFILL	EXPANSION	INFILL	EXPANSION	INFILL	EXPANSION
16.3	48.8	19.5	58.5	28.5	117.8	28.5	117.8	38.5	166.4	33.7	139.2
21.3	63.8	25.5	76.5	129.1	387.2	129.5	388.2	133	399.1	131.1	393.4
0.0	7.0	0.0	8.4	0.0	21.7	0.0	107.1	0.0	38.6	0.0	166.3
180.8	60.2	216.9	72.3	289.0	96.3	240.7	80.1	355.5	118.5	314.6	104.8
0.0	2.0	0.0	2.4	0.0	30.7	0.0	8.3	0.0	70.4	0.0	36.9
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
218.4	181.8	261.9	218.1	446.6	653.7	398.7	701.5	527.0	793.0	479.4	840.6

ANNEX C

IDENTIFICATION AND EVALUATION OF ALTERNATIVE LAND DEVELOPMENT STRATEGIES

ANNEX C

IDENTIFICATION AND EVALUATION OF ALTERNATIVE LAND DEVELOPMENT STRATEGIES

I. INTRODUCTION

This annex serves as a complementary document to the main text. It identifies, describes, and subsequently evaluates three distinct physical land development strategies for the future growth of San Pedro Sula.

The annex is divided into four parts. The first section describes in general terms the three alternative strategies for the future land development of San Pedro Sula. These three alternatives respond to the principal findings and conclusions of the Phase I report. Section two defines, in greater detail, each of the alternatives from the standpoint of a series of physical, legislative, administrative and financial indicators. On the basis of the criteria established in the previous section, section three presents a qualitative/quantitative evaluation of the three alternatives. Finally, section four evaluates the three alternatives from the perspective of policy feasibility.

II. IDENTIFICATION OF ALTERNATIVE STRATEGIES

A. DESCRIPTIONS OF ALTERNATIVE STRATEGIES

In consultation with the Municipality, the study team has established two basic goals for future land development in San Pedro Sula. One is to use land development planning to support the role of the City as a motor of national economic development. San Pedro Sula is important as a source of productive energy for the Republic. It creates jobs, mobilizes savings for productive investment, and incorporates new rural-to-urban inmigrants into the labor force. It is one of the few locations in Honduras where the opportunities of scale and agglomeration economies can most successfully bring Honduran production into successful competition on the world market.

But high productivity requires a satisfactorily housed labor force. Significant parts of the population live in crowded in-town cuarterias, in riverside tugurios, or in other unsatisfactory circumstances. A productive labor force needs to be relieved of the problem of residential overcrowding, inadequate urban services, and unhealthy environments in which to live and raise children. They need the security of tenure and the assurance of reasonable rents. The economic development objective therefore entails providing satisfactory housing opportunities as part of levering the Sampedrano work force into greater productive strength. In more analytic terms, higher housing costs means higher labor cost.

The second goal is to advance social and economic integration of low-income families, within the objective of economic development. This means assisting families to gain

access to formal shelter markets from which they are currently excluded. This goal is built on the belief that the enterprising, inmigrant low-income population of San Pedro Sula would use affordable housing to raise themselves into self-sufficiency.

The study team has identified and evaluated three alternative land development strategies which respond to these two principal goals (See Map 2):

Industrial Corridor Alternative
The first strategy aims to focus development activity in the northwestern part of the City, along the corridor which extends from the junction with the first ring road northward to the City boundary with the Municipality of Choloma. This is an area of incipient industrial development, where housing would be close to jobs.

Consolidation Alternative
The second strategy is to in-fill and consolidate the present urbanized part of the municipality within the existing urban boundary, thus facilitating municipal management of the urbanization process. The land area corresponding to this strategy is contiguous to the City's built-up area and extends in a north-south direction along the City's eastern perimeter. Three spatially disparate segments of this strategy are found in the areas of Rivera Hernandez, Chamelecon and Calpules.

Southeast Alternative
The third strategy proposes to guide and facilitate urban growth in the southeast quadrant of the metropolitan region, an area lying between the corridor extending southward along the road toward Tegucigalpa and the corridor from the City eastward toward the airport and La Lima. This land area is contiguous to prior housing projects and is mostly in the hands of a single owner, a sugar company ("Compania Azucarera").

B. DEFINITION OF ALTERNATE STRATEGIES

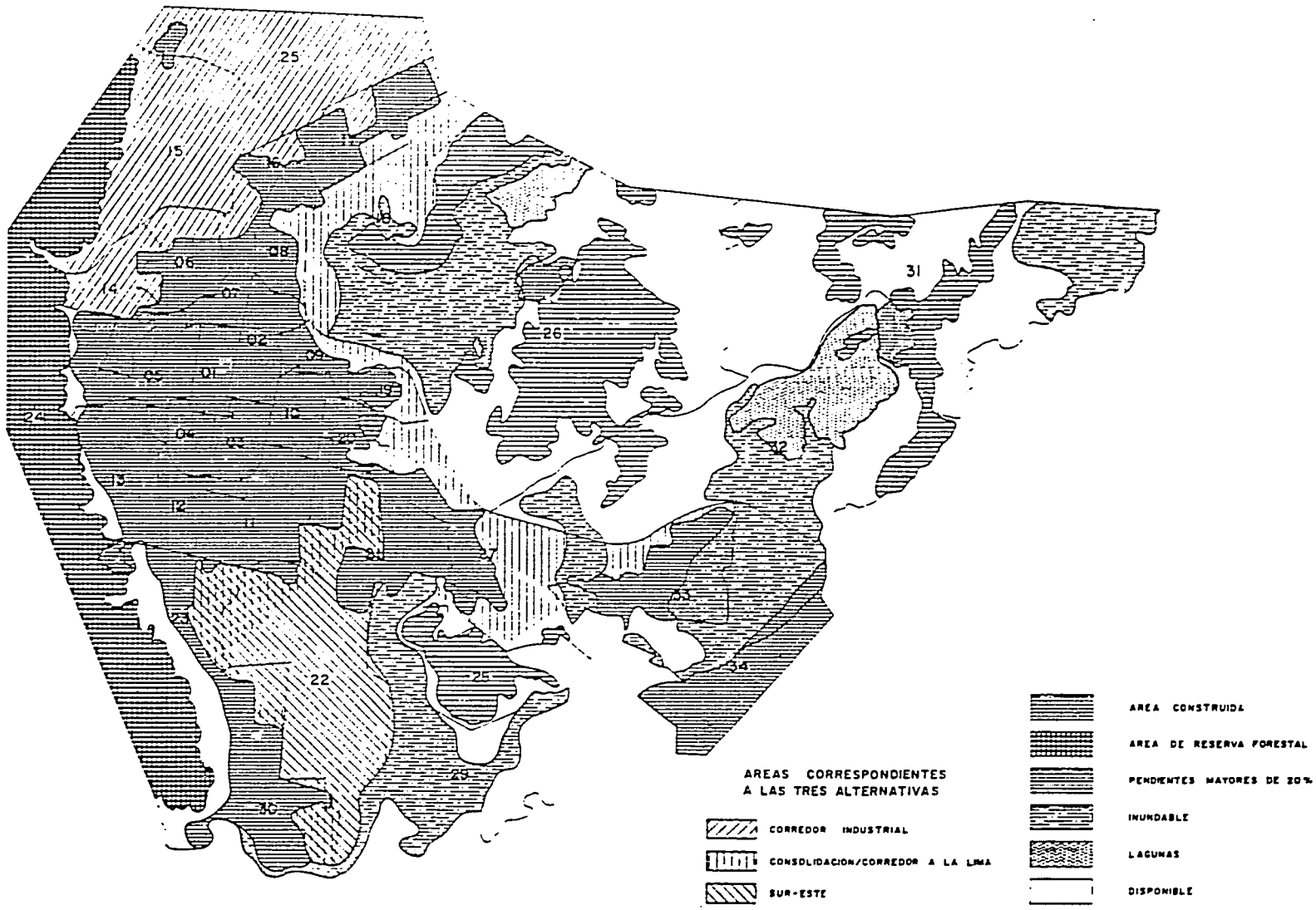
This section defines the specific land development objectives to which the alternate strategies are expected to contribute.

1. Priority Land Development Objectives

a. The Industrial Corridor Alternative, which locates future development along the highway to the north, would contribute to:

i Siting housing close to peripheral industrial work places.

ii Distributing low income families around the metropolitan region, rather than concentrating them in a single locality, which may be useful for their social integration..



M U N I C I P A L I D A D D E S A N P E D R O S U L A

UMVIDE

ESTE TRABAJO ESTA BASADO EN

CONTENIDO

AREA DISPONIBLE
PARA URBANIZAR

PROYECTO

No. 2

iii Taking advantage of infrastructure that would be extended along this corridor for industrial development to support local residential uses.

iv Encouraging employers to take part in the housing process, possibly by sponsoring housing projects in their vicinity or guaranteeing loans for their employees (with adequate protection for the employee).

v Channeling development along one of the major transport spines of the metropolitan area for maximum access and egress.

vi Strengthening formal public-private partnerships by encouraging the employer participation mentioned above.

b. The Consolidation/La Lima Corridor Alternative, which proposes to contain future development within the existing urban limits of the Municipality, would contribute to:

i Consolidating the existing urban area by infilling those areas left vacant by the dispersed, "sprawl" development of the past 10 years.

ii Keeping development within the current urban limits will provide the Municipality with greater power to control land use and zoning, and will allow it to receive greater benefit from the taxing of development.

iii Minimizing the incursion of development into the surrounding agricultural lands and underutilized, grazing lands of the eastern portions of the study area.

iv Take advantage of economies of scale inherent in the formation of a corridor between the City and the airport and a proposed industrial park in La Lima.

c. The Southeast Alternative, which recommends the extension of land development into the southeast quadrant of the metropolitan area, would contribute to:

i Allocating land for affordable housing at the lowest prices for reasonably located land in the metropolitan area.

ii Locating low-income housing relatively close to the city center and major employment areas.

iii Consolidating development that has tended to spread in tentacles in the direction of Calpules and Rivera Hernandez in the southeast and Chamelecon in the south.

iv Minimizing the time required to reach agreement on a new land development strategy, since this is the sector where the key participants expect future investment and development to take place.

v Keeping development areas of the City homogeneous, since the proposed development is similar to urbanizations already completed and/or contemplated in the immediate vicinity.

vi Minimizing the effort required to acquire land because this sector is in the hands of a few owners, which lends itself to employing such techniques as land readjustment, etc.

vii Assuring secure tenure for the future low income residents due to the ejidial character of this land.

2. Anticipated Population Distribution

The Terms of Reference call for a definition of an expected population distribution for each of the alternative development strategies over the study period, 1989-2001. The study team has interpreted this point to require the quantitative analysis of the demographic and socioeconomic characteristics of the population which would be served by the alternative development strategies. In practice, this turns out to be a very difficult and subjective exercise.

To project and allocate population for the period 1989-2001 requires the projection of patterns of population growth for each of the "strategy" areas–northwest, consolidation, southeast and "rest of City"–under the three hypothetical development alternatives. In other words, how would one hypothetically expect the population of the major areas of the City to grow assuming the alternative application of the three development strategies to guide future growth. The study team has tackled this question, admittedly in a very subjective manner, based on its knowledge of past City growth and expansion and on the application of the low and high population projection scenarios for the period 1989-2001.

Tables C-1 and C-2 allocate population to each of the strategy areas (including the combined category for "rest of City") for the three development strategies on the basis of assumed gross annual population growth rates for the period 1989-2001.

It is worth noting that the physical areas represented by the three alternative development strategies are in varying stages of development. For example, lands comprising the northwest area are intensively developed for a mix of industrial, commercial and residential uses along the northern highway to Puerto Cortes, while large areas of vacant, developable land exist in its hinterland to the northwest. On the other hand, the selection of the southeast strategy would entail the installation of major new trunk infrastructure, since land development in this area is in the incipient stage.

TABLE C-1
PROJECTED DISTRIBUTION OF THE POPULATION OF SAN PEDRO SULA, 1989-2001,
ACCORDING TO ALTERNATE DEVELOPMENT STRATEGIES (Low Growth)

STRATEGY[1]	DEVELOPABLE LAND (Ha)	1988 POPULATION	ESTIMATED 2001 POPULATION ACCORDING TO STRATEGY[2] NORTHWEST	CONSOLIDATION	SOUTHEAST
NORTHWEST	2,208	26,727	131,000	42,000	56,000
CONSOLIDATION/ LA LIMA CORRIDOR	1,876	78,942	183,000	272,000	188,100
SOUTHEAST	1,569	126	5,100	5,100	75,000
REST OF CITY	4,107	174,581	205,000	205,000	205,000
TOTAL	9,760	280,376	524,100	524,100	524,100

[1] "Strategy areas" are aggregations of the following zones:
-Northwest (6,7,14-17,25)
-Consolidation (9,18-21,23,27,30,33)
-Southeast (22)
-Rest of City (1-5,8,10-13,24,26,28,29,31,32, ,4)

[2] Estimated Annual Population Growth Rate for each "Strategy Area" by Alternative Strategy in (%).

	NW	Consolidation	SE
NW	13%	3.5%	6%
Consolidation	7	10	7
SE	*	*	**
Rest of City	1.25	1.25	1.25

* 1% of population
**14% of population

TABLE C-2
PROJECTED DISTRIBUTION OF THE POPULATION OF SAN PEDRO SULA, 1989-1993, ACCORDING TO ALTERNATE DEVELOPMENT STRATEGIES (High Growth)

STRATEGY[1]	1988 POPULATION	ESTIMATED 2001 POPULATION ACCORDING TO STRATEGY[2]		
		NORTHWEST	CONSOLIDATION	SOUTHEAST
NORTHWEST	26,727	155,800	49,900	66,600
CONSOLIDATION/ LA LIMA CORRIDOR	78,942	217,700	323,600	223,800
SOUTHEAST	126	6,100	6,100	89,200
REST OF CITY	174,581	243,900	243,900	243,900
TOTAL	280,376	623,500	623,500	623,500

[1] See Table C-1.

[2] The distribution of population estimates for the high growth scenario are based on the same proportions that exist for the low growth scenario from Table C-1.

The varying stages of development, or lack of development, for each of the three strategy areas will have an impact on the level of population growth which can be sustained between 1989 and 2001. No matter which alternative is selected, the other sectors, including the center and to a lesser extent the large expanse of primarily rural land in the eastern portion of the study area, will continue to experience population growth through the year 2001. This is particularly true for the city-center due to its large present population in absolute terms, as well as its location as the commercial and service hub of the City.

The socioeconomic characteristics of the population which would comprise the future development of the City depending on the selection of one of the alternative strategies is only describable in qualitative terms. This is due to the fact that the study team has been unable to identify or collect any city-wide, spatially-oriented information on household income. It has, therefore, been impossible to project, for example, the incomes of the families who would occupy the new development areas under the three alternative strategies. It has been possible, however, for the study team to describe, in general terms, the socioeconomic composition of the households. This description follows.

Northwest Industrial Corridor Alternative

The area contained within this alternative is currently an area of mixed industrial, commercial, residential and institutional uses. The non-residential uses are found primarily along the northern highway to Puerto Cortes. A certain amount of residential development is also found along this highway, although the majority of the residential development has taken place in the interior of the area through formally-planned urbanization.

Most of this urbanization presently serves middle to upper income families. The selection of the northwest alternative would imply the provision of an increased amount of more cost efficient urbanization to serve lower income households. Over time, the increased supply of lower income shelter solutions would create a heterogeneous community with representation of all social and income classes.

Consolidation Alternative

The area represented by the consolidation alternative experienced the City's greatest population growth over the period 1978-1988. This growth was generated initially by invasions and illegal subdivisions and tended to serve primarily below-median income families. Within the last several years, however, growth in the area has been propelled by the development of formal, public and private sector urbanization. The Municipality of San Pedro Sula is currently developing a large urbanization in the area of Calpules for primarily lower income families, while the Compania Azucarera has begun the development of a upper-middle income urbanization on its own land. This pattern of mixed income development, with an increased emphasis on lower income, would most likely continue if this were the alternative selected as the preferred strategy.

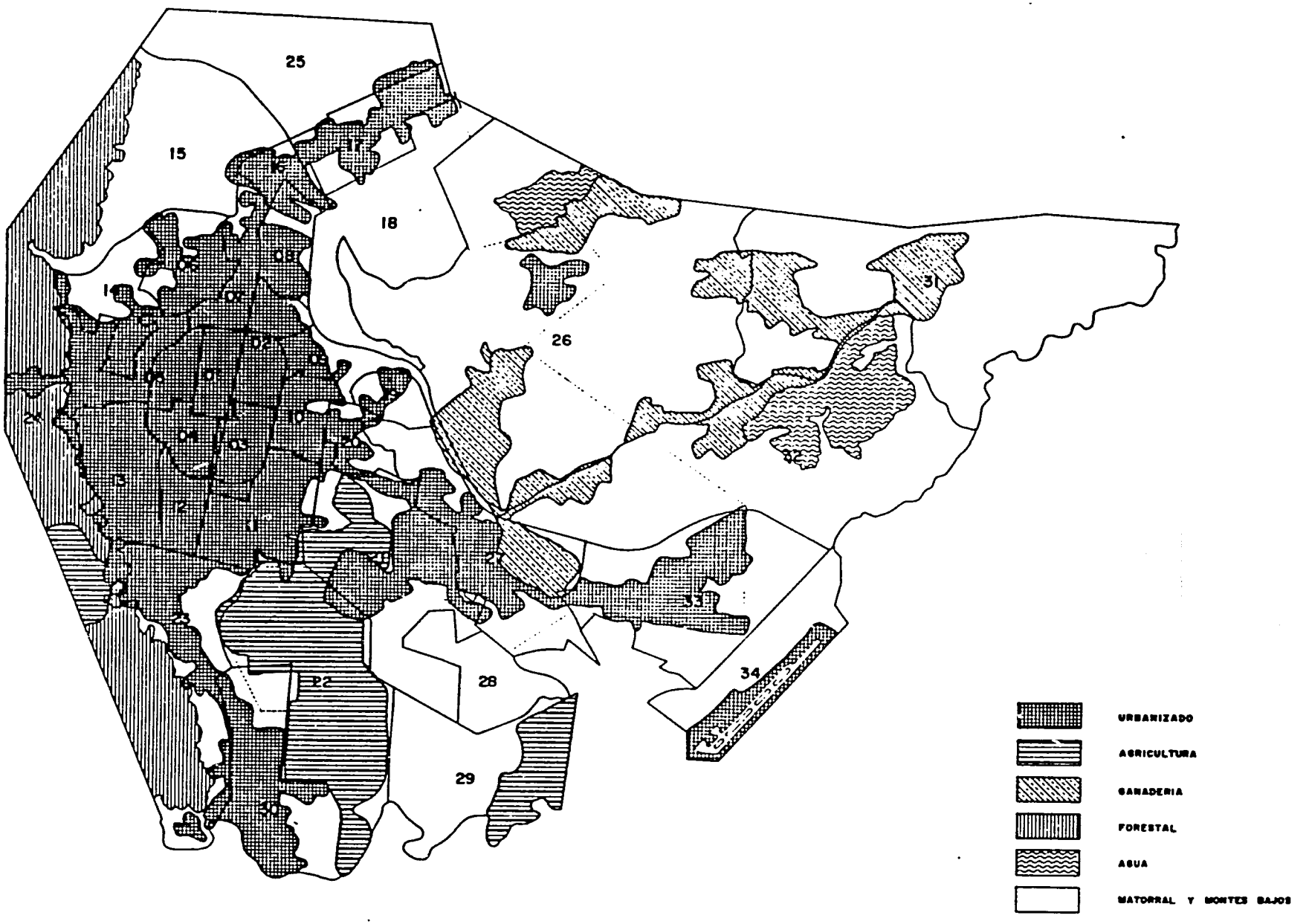
Southeast Strategy
The area included within the southeast strategy was almost unpopulated at the time of this study. It primarily is comprised of the lands currently planted in sugar cane by the Compania Azucarera. Private developers, with the assistance of the Municipality and DIMA, have recently begun to urbanize land for middle and lower income families just to the east of the Azucarera's lands (Villa Luisiana and Islas del Progreso II). These developments, and development of a similar nature which has taken place in the surrounding barrios/colonias of Valle de Sula I and II, Islas del Progreso I, Nueva Jerusalem, etc., will most likely set a preponderantly middle to lower income tone for this area. The lower income orientation of all the alternatives would only strengthen this tendency if the southeast strategy were selected as the future guide for land development in San Pedro Sula.

3. Land Use and Settlement Patterns

The land use and settlement patterns which would result from the alternative strategies follow from the discussion of the previous section. (See Map 3.)

Northwest Industrial Corridor Alternative
As mentioned previously, this area of the City is currently characterized by a mix of industrial and commercial development along the principal circulation arteries and by a number of middle to upper income urbanizations which are situated off of the secondary roads which radiate from the Puerto Cortes highway. This mixed land use pattern would tend to continue under current land development policies and practices. In fact, given the cost of land in center-city, this trend toward the development of upmarket commercial and light industrial activities would likely accelerate.

The selection of the northwest strategy, with its emphasis on the development of shelter affordable to lower income households, would by definition change current land use patterns. The advent of the development of massive middle and lower income urbanizations would tend to attract and stimulate a corresponding number of more informal businesses, workshops and markets. The lower income population would also demand the expansion of the City's extensive bus network into this area. Given the concentration of unskilled labor, labor intensive industries such as the assembly of garments, which are currently located in the center and in the area of Chamelecon, would also be attracted to this area. These informal and more labor intensive formal commercial and industrial activities would tend to locate off the main and secondary road networks in close proximity to the new lower income urbanization.



M U N I C I P A L I D A D D E S A N P E D R O S U L A

UMVIDE

ESTE TRABAJO ESTA BASADO EN:

CONTENIDO

USO DE LA TIERRA

PROYECTO

HOJA Nº

No. 3

Consolidation Alternative
While the growth of this sector was driven primarily by spontaneous residential development over the past 10 years, it has also experienced considerable industrial and commercial development of both a formal and informal nature. Non-residential informal development has spilled out of the city center to beyond the second ring road as land prices have increased and as lower income development has expanded. Formal industrial and commercial activities have also tended to locate along the La Lima road, particularly at the entrance to San Pedro Sula's built-up area. These growth patterns will continue under any development scenario for the City, but would obviously accelerate as the result of a strategy which placed greater emphasis on the development of this physical area.

The land use pattern of the consolidation area is characterized by spillover growth from the City's existing built-up areas, as well as the freestanding, "leap-frog" development which has occurred in the area of Calpules and Satelite I and II and in Rivera Hernandez. The consolidation strategy would emphasize the infill and urbanization of vacant land which has been by-passed during the development of the last 10 years, as well as the densification of land which has already been urbanized, but not fully sold or occupied. It is envisaged, furthermore, that the implementation of the existing development plans of the Azucarera would be accelerated beginning from a north to south direction. The effect of this combined strategy of infill, densification and new development would be to create a mass of primarily lower income development extending from Rivera Hernandez on the east to the current boundary of the City's built-up area along the right-of-way for the second ringroad.

Southeast Alternative
The producing sugar lands belonging to the Compania Azucarera comprise the great majority of the southeast sector. The current population is almost nil. This area, however, will open up shortly for development with the construction of a series of north-south boulevards located in the northwest quadrant of the sugar lands and with the extension of Calle 27 to connect with the La Lima road. These new vehicular access roads will guide and facilitate the sector's development for the next 10 years. This new circulation network will also serve as the framework for the installation of major water, sewerage, and drainage infrastructure.

Given the fact that this land has one owner, there exists the opportunity to undertake an overall mixed-use development plan for the area which would make best advantage of the land for industrial, commercial/service, institutional, open space, as well as residential uses.

4. Legislative and/or Regulations Required for Implementation

In the case of San Pedro Sula, any discussion of the implementation of policies related to legislative and/or administrative modifications starts from a very strong base of existing Municipal programs that have already been established and tested. Likewise, many of these programs have had a considerable measure of success.

Nevertheless, there are, of course, many opportunities for legislative and regulatory improvement in land policies that this section will address.

Unlike the previous three sections of this chapter, almost all of the policies recommended in this section are applicable and useful to the implementation of any of the three alternative strategies.

This section now turns to a discussion of the specific points of land policy, legislation and regulation required for the successful implementation of any of the three alternative strategies. Recommendations are highlighted in each section.

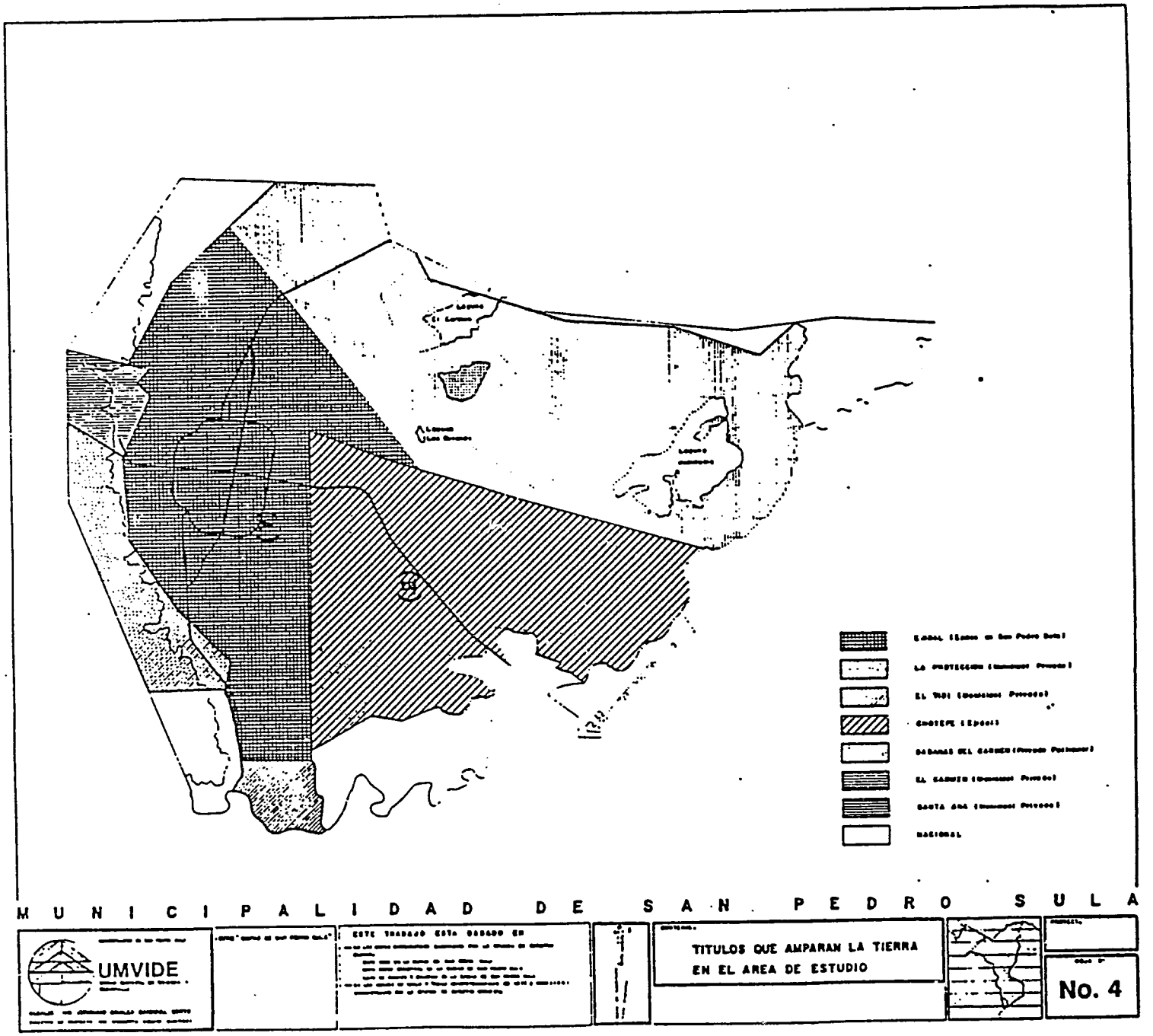
a. Land Policy, Planning and Development Controls

i. Ejido Rights

The issue of how much rights in ejidal lands the municipality controls in the south and southeast areas has been the subject of considerable discussion and disagreement. It therefore warrants a brief discussion here.

San Pedro Sula was originally given two major ejido grants, one in 1852 and one in 1890. See areas A and B on Map No. 4. The first of these, Titulo de San Pedro Sula [(A) on the map] has been carried out according to law. That is, the Municipality has given various concessions to private persons and companies, usually in the form of Dominio Util (the right of use, or usafruct). The basic right of ownership has been retained by the Municipality. This has not posed any problem for obtaining mortgages, The Honduran Constitution guarantees the rights of property, and local banks have been quite willing to lend on the basis of Dominio Util. Thus even major office buildings have been readily financed in the area covered by this edido grant, that is to say, the major part of the existing city. However, San Pedro Sula still retains the basic fee simple (Dominio Pleno) rights in this whole area, subject only to the concessions it has made to others in the form of Dominio Util, the right to use.

This is an important legal right for the Municipality, and it implies stronger powers of implementing its plans with the boundaries of this Titulo. Further research is needed by the UMVIDFE team to collect more details on the exact terms of these concessions in the area of the Titulo de San Pedro Sula.


M U N I C I P A L I D A D D E S A N P E D R O S U L A
UMVIDE
TITULOS QUE AMPARAN LA TIERRA
EN EL AREA DE ESTUDIO
No. 4

With respect to the second ejido grant, called Titulo de Chotepe (1890), the legal situation is much more confused. [See area (B) on Map No. 4.] This was clearly originally part of the edijal lands of San Pedro Sula. Subsequently it was given as concessions by the Municipality to private persons and companies, principally the United Fruit Company and other agricultural users. In theory, at the end of their concessions, the agricultural companies were supposed to return the land to the Municipality. However, over the years the companies sold their rights, sometimes to their workers, instead of returning them to the Municipality. In these, and subsequent re-sales, the term of Dominio Pleno (fee simple) came to be used, and most of the land in this Titulo is now registered in that form. There has thus been created a set of strong vested interests who argue that the passage of time has legitimatized their titles, even though the Honduran Constitution states that "state rights" (which includes ejido rights) are "inprescribles," that is, they cannot be lost by prescription (adverse possession for a prescribed length of time). Therefore, in legal theory, no passage of time would deprive the Municipality of its basic Dominio Pleno based on the ejido grant. The full terms of this grant can be found under the heading: Titulo de Chotepe, Decree de 1890, inscrito bajo No. 125, F. 178-179, Tomo 1, Registro de la Proprietad. Private persons or companies have only rights of possession. However, as a political matter, it will be difficult for the Municipality to assert these rights.

Recently, the City did succeed in recapturing some parcels (about 4,000 hectares) in the eastern part of Zone 33 when the concessions expired. It will, however, be an up-hill battle to re-establish the rights of the Municipality using purely legal arguments. Instead it has been the policy of the City, during the current administration, to use the current uncertainty of title as a negotiating point in working out cooperative arrangements with owners. Colonia Calpules, Colonia Luisiana, Colonia Pradera, and others represent the results of this policy. (See further discussion under the section on Invasions, below.)

Articles 200-204 of the Proposed National Municipal Law will clarify ejdial rights to prevent similar ambiguous situations in the future. Its operation may, however, only be prospective, and it may not affect the existing confused situation in the area of Titulo de Chotepe.

The outcome of the ambiguity in the area of Titulo de Chotepe will, of course, depend on the political power and attitudes of future municipal administrations, vis-a-vis the political power and influence of those who will attempt to defend their private rights in this area.

As a practical matter, the current policy of negotiated settlement, in which both the Municipality and land owners give up something in order to create urbanized land at the lowest possible cost (as in the Colonias mentioned above) seems to be a much more reasonable solution than endless wrangling over abstract legal rights.

It is recommended that the current method of dealing with this problem, just described, is the best solution to the question of ejidal lands in the Titulo de Chotepe area.

ii. The Question of "Urban Limits"

Honduran Law makes a major distinction between municipal boundaries and "urban limits." The basic law of Honduras was established many years ago, when the country was almost entirely agricultural, with only small cities. All land was, and is, basically under the control of the National Institute of Agraria (INA). INA has recognized that certain areas are urbanized, and has designated "urban limits" around the major cities. Within the urban limits, cities have relatively broad powers. However, outside them, the powers of municipalities greatly diminish, even though the urban-rural limit boundaries are well inside the municipal boundaries. For example, the municipality does not have to zone or to control subdivisions outside the urban-rural boundary. It has very limited powers to control construction. It can collect only rural property taxes. It has no obligation to provide services in such areas, but can do so if it wishes (and has done in certain limited areas of San Pedro Sula, as can be seen on Map No. 5).

Under the proposed National Municipal Law, powers to use edijal land for low income housing will be greatly reduced outside the urban limit.

Under current law, the urban limit can only be changed by the Institute of Agrarian Reform (INA). However, the last time this was done was by Decreto #118, in 1985. It took ten years of negotiation. However, today's national political climate is more favorable to urban problems, and it is generally believed that future changes would take much less time. However, it is obviously hard to predict the future decisions of INA with any certainty.

> **Recommendation:** Clearly one of the most urgent needs for effective planning and urban development for San Pedro Sula is to eliminate the urban-rural limit, or to make it coterminus with the municipal boundary. An appropriate application for this purpose should be submitted to INA as soon as possible. See further discussion under the section on the proposed new Law of Municipalities, below.

iii. The Regularization of Invasions and Colonias Illegales

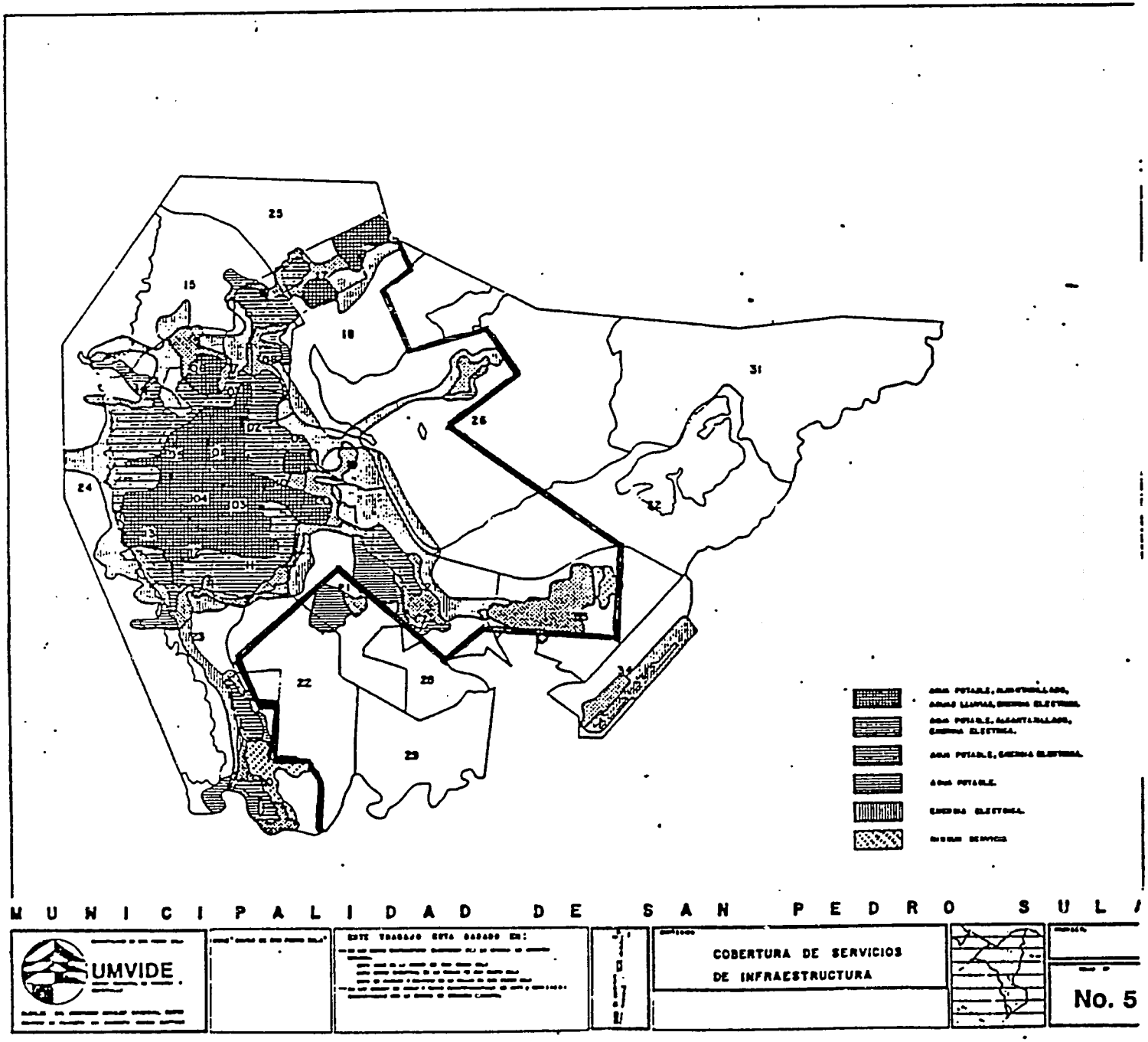
Invasions are still common in San Pedro Sula, and represent 28.7% of all new barrios formed between 1978-1987. (This percentage is as high as 75% in the southern part of the City.) (See Phase I memo on Estructrura del Mercado de Tierras.) Invasions have taken many forms, ranging from complete illegality to those which are done with the consent of the landowner.

There are two ways to prevent invasions:

1. By extremely vigorous police control.

2. By providing such an adequate supply of land at such low prices that invasion is neither attractive nor necessary.

"Urban Limits"



M U N I C I P A L I D A D D E S A N P E D R O S U L A

The former solution is not politically feasible in San Pedro Sula. The focus of policy should therefore be to increase the feasibility of alternative means for the lower income families to obtain access to land. Invasion is not a satisfactory solution to any of the actors concerned: the invader has constant insecurity, the landowner feels cheated, and the municipality is under political pressure to provide services in an unpredictable pattern.

All strategies should therefore aim at keeping invasions to a minimum by positive programs to make it unnecessary.

San Pedro Sula has already actively moved in this direction. But before going further it will be useful to outline how the invasion process works.

There are many types of invasion in San Pedro Sula, and it is only possible here to describe a general, typical model, which does not pretend to cover all the categories which are, in fact, being carried on.

With the passage of time, invasions have become highly sophisticated in this City. Typically, an experienced organizer of invasions will make contact with the residents of a cuarteria (dense complex of rented units). Inhabitants of this type of dwelling, who pay relatively high rents for poor accommodations, are one of the natural "markets" for invasions. The organizer will call a meeting to promote his plan. Those interested will be asked to contribute downpayments immediately. Further sessions follow, in which the invading group is organized in a military fashion, into battalions, brigades, etc. The physical invasion will also be carried out in a military manner, with lots being assigned by lottery, and guards being left to prevent the re-occupation of the parcel by the landowner when the invaders are away at work. If the first group is successfully evicted by the landowners, a second group will immediately invade, and if it is unsuccessful, a third. After several attempts, the landowner will generally be ready to accept the inevitable, and will be willing to bargain rather than to lose everything. A sale (compra-venta) can then be made, usually at a below market price.

In the meantime the organizer has created a patronato, or association, which under current Honduran law can easily be converted into a persona juridica, that is, a corporation with powers to hold, buy, sell, borrow, mortgage, etc. Normally the organizers of the invasion will be the directors of the patronato. This organization can then bargain with the City to open streets, and with DIMA to give other services. (In one case the organizers are said to have had their own bulldozer to open the streets themselves.) The City and DIMA will be forced to negotiate with the fait accompli, even though it was not in their budgetary or other plans. In this connection, it is interesting to note that, when agreements are reached, the organizers are generally prompt in their payments, both to landowners and to the Municipality and DIMA. (Although there are also cases in which the organizers/directors of the invasion/patronato have absconded with the funds collected, or negotiated in their own interests, not that of the invading groups.)

The organizers benefit by withholding some of the best lots for themselves, and selling them when the project is well-established. Over time, some become major operators. One organizer is said to be involved in 15 colonies.

This basic system of invasion is well-known in Latin America. In Bogota, for example, at least 45% of the City has been urbanized by urbanizadoras piratas, who operate in the same fashion, except that in Bogota, the land is almost always purchased before it is occupied. Almost all major Latin American cities have both professional specialists in invasions and illegal colonies. The principal difference is that in San Pedro Sula all of this is a relatively new phenomenon.

One way of dealing with invasions, that has already been attempted in San Pedro Sula, is regularize the process by encouraging the organizer to come to the Municipality and DIMA as soon as possible in the process. At the same time, the Municipality and DIMA can establish which aspects of such activities are negotiable, and which are not.

San Pedro Sula has also taken the wise step of forcing the directors of patronatos to be elected by the group before the City will deal with them.

Better still, San Pedro Sula has been urging the organizers themselves to become legitimate by forming real estate companies (inmobiliarias), so that their skills in producing low cost lots can operate within the law. This, has in fact, occurred in the case of the Inmobiliaria del Pueblo, which has been operating since 1985 (when its first land was purchased). Basic data on its projects follow: (See Chapter III.2, Phase I Report for an indepth analysis.)

Name	No. of Lots	Downpayment	Monthly Payment
Colonia Higueral	294	Lps.300	Lps.40
Valle de Sula I	671	200	40
Valle de Sula II	665	400	55

It will be noted that these prices serve the lower end of family incomes, and thus are very efficient producers of lots for this class. Indeed, they permit the purchase of a lot for approximately the same cost as the rents reported in the cuarterias. In fairness, it must also be noted that about 15-20% of the lots have had problems of late payments, there have been about 80 repossessions.

Colonia Calpules (1830 lots) and Colonia Pradera (about 1500 lots) are individual examples of major subdivisions that were negotiated more or less "within the system." (In these cases, part of the offering was at fixed prices, and the rest on the open market. For further discussion of these projects, see below.)

In some countries in Latin America, politicians have perceived advantages in keeping the delivery of services and of secure tenure as ambiguous as possible. In this way, the inhabitants must vote for the politician concerned to improve their chances of getting the service or more secure tenure they require. As might be expected, this system results in a dampening of autoconstruction and investment in housing, a limit in the possibility of inhabitants using their land and housing as collateral of credit, and an overall situation that does not maximize either the housing or the economic activity that might otherwise occur.

Recommendations: Invasions in San Pedro Sula that are located in rights-of-way, or in dangerous conditions along river banks must be relocated, The Colonia Calpules solution seems to be a promising direction. In this project, approximately 700 families were relocated from dangerous locations in the first phase. If this scale of relocation can be expanded by continuing to apply the Calpules formula, invasions in rights of way and in dangerous terrains could be eliminated within a reasonable time.

Other invasions have occurred on land suitable for permanent settlement. In these cases there are two problems to be solved: (1) installing necessary services, and (2) regularizing tenure. As has already been discussed, there is, every day, an increasing formalization of the processes by which these problems are being resolved.

Recommendations: The system now evolving in San Pedro Sula, in which the activities of invaders are being increasingly channeled into formal and predictable negotiations with property owners, the Municipality and DIMA, has advantages for all parties concerned. It should be continued and encouraged.

Particularly when operations can be completely legitimized, in the form of a private "inmobiliaria," a very valuable new instrument for dealing with the problem of lower income housing will have been created. It is recommended that this type of organization should be given the fullest possible support from all agencies committed to the promotion of adequate reception areas for low-income families in Honduras cities.

iv. Overall Streamlining (Cutting "Red Tape")

Processing an application for a conventional subdivision ("urbanization") currently takes the following length of time in San Pedro Sula:

Application for directrices. In this step the subdivider submits a map of his property and asks the Office of Municipal Planning to issue the regulations that will govern the type of subdivision he/she will be permitted to build. Time: One month. If the subdivision is outside the boundaries of the 1976 Plan (as most are), DIMA will have to draft special standards for water and sewers; the Municipality must draft its standards and designs for streets; special regulations must be written under the Law of Ordenanza (land uses and lot sizes); and other special directives of other departments must be prepared. Time: two months more.

Draft Plan (Anteproyecto) of Project submitted. Time: one and a half months or more.

Review of Plan of Project: Time: two months.

Inclusion into the budget and program of Public Works and DIMA: Time: if not modified, one month for each. If modified by either, go back to first step (Application for directrices).

Approval by "Council of Municipalities." If consent, another month. (Normally this is not a difficult step.)

Thus one is dealing with a process of some six months to two years. It is largely the result of the complicated procedures established by the 1976 Plan, when the urban area of the City was growing much more slowly. It is in marked contract to the "one-stop" service now offered by some US municipalities.

Such a cumbersome, time-consuming, and expensive process obviously encourages invasion and illegal colonies. Even a landowner might prefer a "negotiated" invasion and immediate payment to the loss of time and uncertainties of this process.

> **Recommendation:** Steps should be taken immediately to simplify the approval of subdivisions in San Pedro Sula. The detailed drafting of provisions for a streamlined process for the approval of subdivisions is beyond the scope of the current Terms of Reference. It should, however, be correlated with other planning and administrative measures proposed in other parts of this report. This should be an important task for the UMVIDE team in the future.

v. Master Plans

The 1976 Master Plan for San Pedro Sula is still in effect, even though it is largely outdated and appears to have little impact on either public or private decisions. It is not recommended that another one be prepared. It is, however, recommended that the 1976 Plan be thoroughly reviewed and revised. In place of a new Master Plan, San Pedro Sula should have a permanent and well-staffed Planning Office. The new agency should have real planning powers and closely advise the Mayor, the City Council, DIMA, and all other agencies concerned with urban development, unlike the current office which only administers the zoning and subdivision provisions of Volume VI of the 1976 Plan.

International experience has clearly shown that long-range comprehensive Master Plans are generally useless exercises and not worth their cost. However, in certain specific cases, intermediate-range plans (5-10 years) can be very useful. In urban areas in which there is rapid growth, such plans can be indispensable to facilitate the coordination of public services when a variety of service entities are involved. On the other hand, even intermediate-range plans can promote private land speculation in the areas concerned, especially in situations in which there are many options for directions of urban growth.

Intermediate Plans should be backed by a permanent and professional planning office with clearly defined powers of advising the Mayor and City Council on a regular basis, and of updating the Intermediate Term Plans, reviewing the municipal budget, coordinating the installation of infrastructure in cases in which large projects, or variations from regular norms are involved.

Given their strategic importance, there are three areas in San Pedro Sula in which 5-10 year plans are recommended: (1) the corridor along the airport-La Lima road, including all zones 21, 22, 28, 29, 18, 26 and 32, (2) the corridor along the road leading south to

Villa Nueva and Tegucigalpa, and (3) the corridor going north-northeast toward Choloma and Puerto Cortes.

Obviously, the importance and priority of these plans would be different, depending on which of the three alternative strategies is adopted. However, it is recommended that such plans are important under any of the strategies.

In Strategy III (which includes increasing densities in the existing built-up areas) detailed intermediate-range plans would also undoubtedly be needed for many of the zones to be affected.

vi. Zoning

There are currently three categories of zoning control in San Pedro Sula. (A) The Master Plan of 1976, which constitutes a zoning plan for the area it covers. (B) Ad hoc zoning, which the Municipal Planning Office applies to areas outside the 1976 Plan boundaries, but which are within the "urban limit." (C) Zoning for areas within the "rural limit" in which no zoning applies.

It is understood that, due to the rapid development of San Pedro Sula, even within the areas of the 1976 Plan, which are theoretically covered by defined zoning categories, there is considerable flexibility in its application to specific cases. In part this may be due to the fact that the 1976 Plan and its accompanying zoning regulations have not been revised in 12 years.

It is recommended that San Pedro Sula must be permitted to have the power to zone over all of its municipal territory as soon as possible. The proposed new National Law of Municipalities appears to solve this problem. Art. 7(b) and Art. 21 of the proposed Law appear to give municipalities full zoning powers within their boundaries, and by implication eliminate the existing urban-rural limit system. (See further discussion below.)

Nevertheless, rather than relying on the proposed new Law, it is recommended that a suitable application to the National Institute of Agraria be prepared and submitted as quickly as possible.

In addition, there should be a comprehensive revision of the zoning of San Pedro Sula to conform to whichever of the three strategies is selected. There has not been time to carry out this task within the current Terms of Reference, but it should clearly be a task for the UMVIDE unit in the future.

Specifically, consideration should be given to creating a new residential district which reduces norms in terms of lot sizes, services provided, building coverage and other relevant matters.

With respect to international experience, zoning has had a dramatic affect on the development of the urban areas of the Third World. In fact, most suffer from too much and too complex zoning rather than too little. In general, zoning ordinances have overly high

standards, and fail to consider norms that are relevant to the way lower income families prefer to house themselves. In the example of Bogota, mentioned previously, some 45 percent of the City had been developed in illegal colonies and invasions. In order to facilitate the regularization of these, a new zone (called "R-7" to supplement the other six residential categories) was created. It had minimum lot sizes, required only water taps for each ten lots, sanitation by latrines, and minimal streets and public areas. By using R-7 designations, the City Council was able to make many formerly illegal settlements legal. Once they were legal, officials of the City and the service companies were permitted to deal with them. In this way, the eventual provision of proper water, sewers, and other public services could be facilitated. Moreover, with respect to new colonies, invaders and illegal subdividers had an incentive to meet the new lower standards, and to legitimize their activities from the beginning. In this way, a much greater percent of the development process came under municipal control. In other words, the existence of a low-standard, R-7 zone, removed some of the necessity to be illegal. The exact provisions of the Bogota law would not be applicable directly to San Pedro Sula, but the concept of much lower standards might well be useful here.

For example, it is apparently common for invasions to offer land with average lot sizes of about 8 by 15 meters, or 120 square meters in all. The organizers of invasions are presumably sensitive to their market and to the lot sizes that the people they serve. There is therefore "proof from the marketplace" that 120 square meters is a good compromise between maximum useful size and minimum affordable cost. A field survey could quickly verify whether these numbers are correct and how lower income families actually feel about the question of size, balanced against cost. It is recommended that such a survey be made and be used as an important input in determining suitable new norms.

In this connection, it is worthwhile to note that Art. 153 of the existing law (in the 1976 Plan) already specifically permits the use of lower norms of development, with the only fixed requirements being that the subdivisions permitted have adequate access to transit, light, security, and a point for connection by collective transportation to the major street system of the City.

[Please also refer to the discussion below dealing with the need for a coordinating body to integrate the land use controls of San Pedro Sula with those of adjacent municipalities.]

vii. Property Taxes

The current property tax of San Pedro Sula is set at 2.25 Lempiras per 1000, or about one-fifth of one percent per year. The tax on vacant land is 3.00 per 1000, or about one-third of one percent per year. Under the proposed Law of Municipalities (Anteproyecto de Ley Municipal de Honduras), city councils may set the Property Tax between Lps. 2 and Lps. 10 per Lps. 1000 of assessed value, or between 0.2 and 1.0 percent. The extra tax of Lps. 0.75 per 1000, which applied to vacant land under the current law, is not continued in the proposed Law. In any case all of these taxes would seem to be too low to have much effect on land development. Land prices are increasing at an average of 15 percent per year in real terms in San Pedro Sula (see Cuadro PRE III of the report on Land Values and Prices). In light of such increases, a tax of a maximum of one percent per year would

appear only to have a marginal effect on decisions to sell or not to see, or to develop or not develop, real property.

viii. Betterment Tax (Contribuciones por Mejoras)

The Betterment Tax is an important tool, and is already well-established in San Pedro Sula. Indeed, it is used not only for neighborhood improvements, as is typical in most Latin American countries, but also for the construction of major through highways (carreteras) that would normally be the responsibility of the national, or at least, the departmental, government. If the costs of these expensive works (which really benefit the region and the nation as well as San Pedro Sula), were to be assessed to adjoining owners, the burden would become intolerable, and thus politically unfeasible. However, San Pedro Sula has reached an ingenious solution to this problem: 70 percent of the costs of major highways (such as the Boulevard del Sur and the Boulevard del Norte) are to be financed by means of tolls, and only the remaining 30 percent to adjoining property owners. The study team understands that there has been no major opposition to this arrangement, and local banks have agreed to do the necessary long-term financing necessary to carry the project until the tolls can pay it off.

The proposed Law of Municipalities has specific provisions that will permit this system (tolls to reduce betterment taxes) to be used by all municipalities in the country.

It should be noted, however, that both the existing and proposed laws provide that increased values from betterments also be reflected in increased property valuations, and thus in permanently higher payments of the regular annual property tax.

Another important aspect of the "Contribuciones de Mejoras" (Betterment Tax) is that it acts as a device for the efficient rationing of public services. For example, many of the streets in the City are not paved. The reason given is that if they were paved, the adjoining land owners would be charged for their share of the costs. They have deliberately chosen to deal with inconveniences of no paving rather than pay the costs.

Such a situation can have considerable advantages for the provision of low income housing. If there are known prices for various services, settlements can rationally chose which services they wish and do not wish. This prevents the imposition of unnecessary services, and allows settlements at different income levels to adjust and prioritize their services by choosing them from a "menu" of possibilities.

It is clear from international experience that low income settlements have different needs for services, depending on their income levels and the specific physical conditions of their sites. The most desirable policy, therefore, is one in which each settlement can choose its own set of priorities. For example, some may determine that improved road access is the most important priority. Others may choose to prefer better protection against floods. Others may opt for potable water. If each of these services are provided with their costs being allocated to the inhabitants through "Contribuciones por Mejoras," rational choices can be made, and services provided with a close coordination to perceived needs. (There would, of course, have to be certain limits. If a settlement brought in a water supply, for

example, piped sewage might be also required.) Nevertheless, there are real advantages in giving communities effective control over the delivery of desired services.

Contribuciones por Mejoras also have the obvious advantage of making needed municipal public works self-financing.

> **Recommendations:** The system of betterment taxation in San Pedro Sula has a very high level of flexibility and utility. It would get very high marks if ranked with similar systems in Latin America and other developing countries. Time has not permitted a detailed analysis of its actual administration and collection record, but in concept and apparent application it appears to be excellent, for the reasons outlined above. Every attempt should be made to encourage its continued effectiveness and comprehensiveness.

ix. Land Readjustment

Land Readjustment is a system by which urbanization is made to be self-financing. Subdivisions which are to be provided with services must make two donations to the public agencies involved: (1) a donation of land needed for public uses. In San Pedro Sula this is normally 40 percent: about 25 percent for roads, and 15 percent to the Municipality for public purposes. (2) In addition, the land owner must donate additional lands which will be equal in value to the estimated costs of bringing services to the subdivision. After services are installed, the Municipality sells the "cost equivalent" land, and thus recovers all of the expenses of providing services. At the same time, the land owner, who previously owned rural land, now owns a smaller amount of land, but in the form of a much more valuable serviced lots, suitable for building. In cities where urbanization is rapid and the supply of serviced land lags the demand, the owner is generally in a much more favorable financial position after Land Readjustment than before.

Land Readjustment has been used with great success in Japan (especially prior to 1980), and Korea. Indeed, it was by far the most common and important method of urbanization in those countries between 1945 and about 1980. It also has had wide use in the Republic of China (Taiwan). Experiments with it have been made in Australia, the Philippines, and Indonesia, and legislation is pending to make it possible in several States in the United States.

It works best when there are only one or two landowners involved. When there are many participants in the project, the calculations of the proper donations of each parcel can become quite complicated, especially in urban areas where every square meter of land has a very high value (such as those in Japan and Korea).

Land Readjustment may be useful in San Pedro Sula, but it should not be uncritically accepted. It is better used as a point of reference rather than a mechanism that can simply be translated directly into a different economic, physical and social setting. For example, its success depends on its being applied in a market in which land prices are rising rapidly and where there is a high probability that this will continue to be so in the foreseeable future. It also depends on the ability of the public agency to rapidly sell its

"cost equivalent" land at the prices originally projected for the project. There are some indications that the land market in San Pedro Sula in recent years does not have the level of very high and predictable demand for serviced lots that have characterized the successful application of Land Readjustment in other countries.

It should also be noted that Land Readjustment gives an incentive to the public agency (normally the City) to sell its "cost equivalent" lots at the highest possible prices (to assure that it recovers its costs). It therefore has limitations as a vehicle for producing low-income serviced lots.

In fact, the Calpules project may be called semi-Land Readjustment. In that case the Municipality persuaded the landowner to sell 60 percent of his lots at fixed prices (for lower income buyers) and the remaining 40 percent could be sold on the free market. In exchange, the City opened the roads and provided other services at no cost. In Calpules, the Municipality did not receive money for installing the streets, as in true Land Readjustment, but it did receive 1000 lots at fixed prices in compensation. In other words, it got a lower-income sites and services project as its compensation. (A form of indirect subsidy to the housing of lower-income families.)

Similarly, in the Colonia Pradera, 500 lots were fixed in price in exchange for the opening of streets.

It is also interesting to note that the present land use control legislation for San Pedro Sula, Plan de Desarrollo Urbana, Volumen VI, Capitulo II: De Los Proyectos de Urbanizacion: Su Documentacion y El Proceso de Aprobacion (1976), Art. 106 (IV), provides that when a subdivision is approved, the owner must designate certain lots to be given to the Municipality as guarantee that he/she will complete his/her obligations (in cases where there is no guarantee from a bank). The concept of the City having land in the project to pay for required infrastructure is the heart of the Land Readjustment system. It is found in this ordinance in a conditional form, which presumably is not much used, but does embody the key concept.

Moreover, the Municipality now holds large parcels in many subdivisions, which are the required 15 percent donation. Although there are apparently not yet any examples, it is possible that a part of some of these parcels could be partially or wholly devoted to commercial uses which would return a rental income to the City.

Thus, the Municipality is in fact using some of the basic principles of Land Readjustment, even though it has never followed the model exactly. Possibly future conditions will permit its full use. However, such full use should arise from the logic of a particular situation, not from an arbitrary copying of a mechanism developed for another country.

> **Recommendation:** The government of San Pedro Sula should continue to experiment with land contributions from owners in exchange for municipal service. It should also consider obtaining enough land (that is, beyond the required 15 percent for public uses), to have land of its own that could be either sold or leased to produce income to offset the cost of municipal services provided to the project.

These steps would, in effect, be extensions of the policies it is already pursuing in the negotiations for the projects above-mentioned. Such a "natural evolution" of existing practices is to be preferred to the wholesale copying of the mechanisms of other countries.

x. "Land Sharing"

"Land sharing" is a system developed in Bangkok, Thailand, to resolve the conflict which arises when squatters have invaded and occupied commercially valuable land. (See the article by Sholmo Angel and Somsook Boonyabancha.) Because the police in Bangkok are unwilling to evict large numbers of well-established settlers, the landowner is in the position of losing land of great commercial value. Under land sharing, the occupants agree to give back to the owner the partitions of the parcel that are on major streets, and thus of the greatest commercial value. The landowner, in turn, commits him/herself to giving both secure tenure, services, and basic housing to the same occupants, but on the "back part" of the parcel. Residential densities are, of course, greatly increased. However, in a larger sense, everyone gains: the original owner recovers the most valuable part of his/her land, while the occupants get secure title and housing, at high densities. The city gains because the land is put to an overall more valuable and appropriate use.

It is probable that exact parallels to the Bangkok situation do not yet exist in San Pedro Sula, although they may in the future. However, if land sharing is viewed in a broader way, it may be a useful concept in resolving some of the many conflicting claims that now exist over large and critical parcels, especially in the south and southwest areas that will be developed under Strategy I.

Recommendation: It is recommended that information about land sharing be widely disseminated. Imaginative persons in both the public and private sectors will undoubtedly find methods to apply it when appropriate situations arise. (See also the theses of Alyce Russo, prepared for the Department of Urban Studies and Planning at MIT, 1989. This theses applies the concepts of land sharing to a large barrio in Sao Paulo, Brazil. Organizational and financial aspects are given special attention.)

xi. Expropriation

Expropriation is little used in Honduras. The steps to carry it out offer almost endless opportunities for delays and appeals, and can therefore last for years.

There are no "quick taking" provisions in Honduras law, as in the US and many other countries. "Quick taking" permits the government to occupy needed land, awarding a "fair price" to the owner. The owner may contest the fairness of the compensation, but only in later litigation which does not disturb the government's use in the meantime.

The reason given for the laborious process in Honduras is that Hondurans do not trust expropriation. It is said that it could be too easily used by opposition parties to obtain revenge. Moreover, courts and judges may be subject to political pressures, and could

not be relied upon to give fair compensation to landowners. Therefore, the process continues to be too awkward to be much used.

As discussed above, San Pedro Sula gets most of the land it needs for streets and other public uses at the time of subdivision approvals, or, in the case of invasions, by direct negotiations with the patronato that represents the organizers of the invasion and, allegedly, the new community.

The proposed new Law of Municipalities, Art. 250-253 does not contain a "quick taking" provision. Indeed, it apparently limits the power of City Councils by strictly tying expropriation to the budget and to limits of debt. On the other hand, the proposed Law does make it completely clear that expropriation may be used for programs of low cost and housing. (See Art. 272.)

> **Recommendation:** It is difficult for an outsider to assess the political implications of an expedited expropriation statute, and specifically, the inclusion of "quick taking." The international experience is that "quick taking" is an important element in modern enabling legislation, and that it should therefore be considered in Honduras.

b. Comments on Administrative and Institutional Arrangements and Responsibilities

I. The Central Government

The actions of the Central Government directly affect San Pedro Sula in many ways:

Instituto Nacional de Agraria: As previously pointed out, the INA is an historically important organization that in effect controlled all of the land in Honduras when it was a primarily agricultural country. Thus, even today municipalities must petition INA to extend their "urban limit" to their own municipal boundaries. (See more detailed discussion above.)

There are presumably political and bureaucratic reasons why the INA has been reluctant to give up its jurisdiction. The proposed National Municipal Law, Articles 20-26, particularly 23, seem to eliminate the power of INA to affect lands within municipal boundaries, and to give full powers to municipalities within their own territory. However, the language is somewhat ambiguous, and this interpretation may involve constitutional issues that have not been explored at this time.

> **Recommendation:** As mentioned above, it is recommended that San Pedro Sula not wait for the proposed law, but should immediately take the necessary steps to appeal to the INA for a removal of its urban-rural limit as quickly as possible.

The "Atomization" of Municipalities: Under current Honduras law, it is apparently relatively easy to form new municipalities. In fact La Lima was created only five years ago, thus removing from San Pedro Sula the power to control a potentially important center of employment and economic activity.

In fact, new national legislation to permit (or even require) the coordination of planning policy may be essential to effective future development of San Pedro Sula as a major industrial center. It is already surrounded on all three sides by small municipalities that are encouraging industrial and commercial growth. Indeed, as it develops imaginative and effective programs for housing lower income families, other municipalities will naturally tend to adopt policies to "beggar thy neighbor." That is, they will try to attract profitable industry and commerce to themselves, while shifting to San Pedro Sula the burden of the housing, education, health care, etc., of the resulting population.

It appears that invasions are already occurring in the northeast of San Pedro Sula as a direct result of new industries in Choloma. It seems clear that the Sula Valley in general will become a center for agro-industries, and the processing of seafood. (The latter is already rapidly growing as a source of export and foreign exchange.) In fact, the real motor of industrial development for Honduras is the whole regional corridor from Puerto Cortes to Villa Nueva and beyond. As such, it is almost sure to become a magnet for regional and national migration. Planning for Honduras must walk a narrow line between giving maximum autonomy to municipalities to deal with their own problems, and assuring that regional problems are given regional solutions. Otherwise, the better governed and more socially conscious cities, like San Pedro Sula, will be penalized for their very conscientiousness.

Another effect will be that San Pedro Sula will lose some of its capacity to fight pollution. Recently a leather factory, which pollutes water supplies with chromium, was established in a nearby town. Its activities are likely to pollute aquifers that serve the whole region, yet there are no means of regional control. San Pedro Sula will not be able to protect its own environment/ecology if there is no system of regional responsibility.

The proposed new Law of Municipalities, Art. 13-19, has extensive and somewhat complex provisions regarding the formation of new municipalities and the consolidation of existing ones into metropolitan areas (although this word is not used). Among the interesting requirements are that all municipalities must have at least 250 sq. km. of area, 10,000 inhabitants, and "the potential for economic development." Consolidations can be initiated by a petition with 3000 signatures, or a favorable vote of 51 percent of those in the area to be affected. (See Art. 10)

Decree No. 179-86, adopted on December 17, 1986, creates the basic framework of national, departmental and municipal planning for Honduras. Only the two largest cities (and possibly the third) have the power to do local planning. Chapter III of this Decree provides that the other municipalities will have their planning prepared by a Departmental Planning Unit (defined in Art. 31). The language of this Article is, however, very general, and it is not known how technically effective these units will be, nor how their policies will be in fact integrated into the planning and budgeting of the municipalities under their jurisdiction.

Recommendation: If AID is to carry out its large goals of the maximum and most rapid possible development of the Honduran economy, all divisions of AID should support in all possible ways the effective regional planning institutions, partic-ularly in the Sula Valley.

Relations with the Secretaria de Planificacaion, Coordinacion y Presupuesto:

The relations between the planning powers of San Pedro Sula and the Central Government Office of Planning are a complex matter. The former complains that there is too much detailed control by central officials who do not know local conditions, and the latter complains that the Municipality has been doing planning without due consideration for the regional and national interest. In the limited time available, it has not been possible to explore these allegations in detail. (See also the discussion in the preceding section.)

A specific example of this sort of conflict recently occurred with respect to the Protected Zone just to the west of the main part of the City. This land is owned by San Pedro Sula. However, the national government decided that it should be opened for coffee production and forestry to increase foreign exchange. Municipal water was diverted for these purposes and pesticides were introduced over which the City had no control.

Recommendation: Generally, Honduras institutions have been moving toward greater municipal autonomy. International experience indicates that this is a good thing. If possible, questions of regional integration are best settled by consolidation into larger units, or effective metropolitan coordination rather than Central Government control. There will, of course, always be certain types of coordination of urban affairs that can only be done by a Central Government agency. AID should follow world trends (i.e., decentralization as much as possible), with due regard for local political and other constraints specific to Honduras.

The proposed National Municipal Law, if passed, will provide some clarification, but it does not appear to directly cover all the possible points of conflict between national and local control over physical planning and development. A further study and recommendations for appropriate legislation in this field could well be a matter for the future work of UMVIDE, possibly in coordination with the AID specialists in public administration from other Honduras projects.

Highways: Another sore point in the San Pedro Sula Central Government relation arises from the fact that the gasoline tax is entirely taken by the Central Government, while even major through highways, such as the Boulevard del Sur and the Boulevard del Norte, must be built and maintained with municipal funds. In fact, San Pedro Sula has some 600 km. of streets for which it has no specific tax base and no Central Government subventions.

In the case of the two boulevards just mentioned, San Pedro Sula felt it had to act, simply because traffic conditions had become intolerable. Nevertheless, their construction will in part directly benefit the development of its "competitors," Villa Nueva and Choloma. Similarly, the highway to the airport will benefit La Lima's industrial growth. At the same

time, the industrialization of these nearby towns will put pressure on the secondary street system of San Pedro Sula, particularly if it begins to develop as a dormitory area for them. (See discussion above.)

Another area of transportation problems is that bus services apparently cannot now be controlled by the Municipality. This causes an overconcentration of buses running to the central plaza and a lack of service in less dense areas. On the positive side, the system is extremely sensitive to existing demand. On the negative side, the current system does not permit public transport to be an instrument for the implementation of land use plans, which inherently are concerned with future, as well as current demand.

> **Recommendation:** Consideration should be given, within the general Central Government tax structure, as to whether some part of the gasoline tax could not be used for national highway routes within cities. Alternatively a separate Departmental tax might be made optional for Departments that have a high degree of urbanization.

ii. The Municipality

Most of the comments and recommendations concerning the Municipality of San Pedro Sula are incorporated into earlier sections of this report, dealing with specific legislation, regulations and policies.

There remains, however, the larger question of the way the role of the Municipality is conceived in the future.

> **Recommendation:** Given the vigor of the private sector in the low-and moderate-income sectors in San Pedro Sula, it may be possible for certain assistance and credit programs to deal directly with selected actors (such as certain "inmobiliarias") in the private sector, with the Municipality playing a major coordinating and liaison role. A different scenario would continue a much more active role for the Municipality as a direct provider of low- and moderate-income lots in projects like those in which it has already been a major initiator and promoter (see discussion above).

It may be that this is less of a polarized distinction than it may first appear. It seems clear that the emerging situation in San Pedro Sula is that land development is becoming less and less a confrontational situation, and more and more a cooperative one, in which former invaders will find it advantageous to become more legitimate, as both land owners and the Municipality begin to formalize acceptable norms and streamlined procedures for land development. If this integration continues, any outside programs will, of course, have to deal with the system that includes all of the actors.

iii. DIMA (Division Municipal de Aquas)

DIMA appears to currently enjoy good coordination with the Municipality, and would presumably cooperate with all of the policies outlined in other parts of this report. Time did not permit specific recommendations concerning its modification.

iv. Patronatos (Community Organizations)

Patronatos were created in Honduras after a coup d'etat by the Conservative Party in 1863. Having no political base, especially in Tegucigalpa, it organized patronatos as a means of delivering political favors to specific groups in exchange for their support in elections. The procedures for their legalization (application to the office of the President, through the Ministry of Interior) became (and still are) very informal. All political parties have found them useful. The natural result was that they proliferated greatly, and they now cover a broad range of legitimate and illegitimate activities.

As already described, today it is customary for the organizers of invasions to organize themselves into a patronato as a vehicle to carry on the legal affairs of the invasion, and to negotiate with the landowner, Municipality and DIMA. Since patronatos are corporations (that is, legal entities with their own power to buy, sell, contract, borrow, mortgage, etc.) they are almost ideally suited to clarify the ambiguities inherent in the invasion situation. In some respects it is a positive situation, since it gives landowners, the Municipality, and DIMA an entity with which to deal that does, in a certain sense, represent the interests of the new community. Studies by Alan Gilbert and Peter Ward in Mexico, Colombia and Venezuela, and the author's own field work in Bogota indicate that this does solve a very common problem of illegal settlements.

On the other hand, patronatos can easily be abused, and manipulated to the advantage of their organizers rather than their supposed beneficiaries.

The proposed new National Municipal Law attempts to correct the current situation:

Art. 49 (26) (dealing with the Powers of the Municipal Council), provides (in summary) that City Councils shall approve the creation of patronatos and other associations of neighbors before these can become legal persons (corporations). The Councils may also dissolve patronatos that do not serve the welfare of the community.

In addition, it has a complete new Chapter on them: Art. 158-165. This provides that the directors of patronatos must be democratically elected every two years, and that a report of its activities and work program must be made to the Municipality every three months. Only patronatos that conform to these requirements will be legal.

When and if the new law is passed, patronatos can become a very useful vehicle in lubricating a key junction in public/private partnerships, and in assisting to formalize relationships which are now informal and quasi-legal. They will be useful in:

a. the regularization of invasions
b. the regularization of colonias illegales
c. land readjustment projects
d. land sharing projects

(For further details, see the relevant sections above.)

Recommendation: Full support should be given to the control on patronatos proposed in the new Municipal law.

v. Fundaciones

Fundaciones are legal personalities not organized for profit. Time has not permitted a detailed study of them under Honduras law. Under the proposed Municipal Law, which makes it more difficult for patronatos to become legal entities, fundaciones may be useful vehicles for certain aspects of the organization and integration of low and moderate income settlements that must be done by organizations that have the powers of a legal corporation. For example, there are likely to be a number of types of public/private arrangements in which binding contracts or mortgages will be essential parts of the desired package.

Recommendation: This is another form of organization worth supporting.

vi. Labor Unions (Syndicatos)

The San Pedro Sula Association of Labor Unions has sponsored some land development and housing for its members in the past, although in what appears to be of a rather high standard. Time has not permitted a detailed study of these at this time. It is, however, another possible vehicle for public/private partnership that the UMVIDE team might explore in the future.

vii. Assistant Mayors (Alcades Auxiliares)

The proposed Municipal Law contains a set of interesting provisions (Art. 123-127) for Assistant Mayors, to be appointed by the Mayor for neighborhoods at his/her discretion. Their chief function is to facilitate communications between the Mayor and the neighborhoods, including maintaining public services in good repair. If the Law is passed, these are a mechanism worth keeping in mind in future projects.

c. Changes in Legislation or Regulations–Proposed National Law of Municipalities

Most of the comments on this legislation is contained in relevant sections of the discussion above. There are, however, a few additional points that are worth comment.

Origin of the Proposed Law: The current draft is apparently the result of many meetings of mayors from all over the country, the representatives of many other concerned private

and public persons and organizations, and the technical advice of AID of the United States. It was intended to resolve many problems common to all municipalities. It is felt that the proposed law is a great improvement, but should be seen as only the first step in a much more general program of the updating of all the legislation of the major governmental agencies to make the governmental structure of Honduras appropriate to the needs of a 20th century, highly urban, and increasingly industrialized country. For example, as mentioned, it is recommended that legislation governing the National Institute or Agraria (INA) must also be updated.

Urban Reform: One of the most interesting chapters of the proposed new Law is that called "Urban Reform," Art. 272-275. This term has, of course, been one that has been in wide use in Latin America for several decades, largely as a slogan rather than a program for concrete action. The proposed new Law is also stated in rather general terms, apparently to permit it to be fleshed out to fit local conditions.

In theory it gives a great deal of power to municipalities to deal with urban planning and the designation of areas for programs of urbanized lots and housing "of social interest and low cost in order to avoid the proliferation of marginal areas that do not offer decent conditions for human habitation."

Municipal Urban Reform is also designed to promote contracts between public and private entities which can contribute financially or technically to these problems. (Art. 274.)

However, the whole system is currently tied to the National Plan for Urban Reform, to be prepared by the Executive Power.

> **Recommendation:** Urban Reform clearly contains goals worth supporting. However, AID should press to have this term, and the actual programs contemplated to carry it out, better defined than they are in the proposed legislation.

5. Cost and Benefits of Alternative Strategies

This section summarizes the costs and benefits expected for each affected target group or entity as a result of the alternative strategies. The proposed land development strategies for San Pedro Sula will improve the physical environment for all sectors within existing and expected economic, financial and social conditions. Specifically our strategies will provide improved shelter and living conditions for A.I.D.'s below-median income target group (Lps. 200-700 per month) at a more affordable price. This means:

a. Better access to water and waste disposal, and a resulting healthier environment.

b. Lower cost, acceptable shelter alternatives, with manageable terms of payment.

c. Security of home ownership.

d. Investment in a house that can serve as collateral for an home improvement and/or business loan.

These benefits will be received by all of the Municipality's designated target groups. Some advantages, however, are directed towards specific subgroups as follows:

a. Families who live in cuarterias will receive much better access to water and sanitation services, probably at lower cost than they currently pay and at reduced levels of overcrowding.

b. Families who live in tugurios will receive access to urban services which, in most cases, they lack entirely, less crowding, and a lowered disaster risk (especially a reduced risk of dispossession due to flooding). They, also, get the opportunity to acquire secure tenure of their plots, an important stability factor in the uncertain low income labor market.

c. Inmigrants to the City simply get a better choice. They may thus avoid being forced to occupy either the center-city cuarterias or the peripherally-located tugurios.

The City's industrial sector and the Municipality, itself, also would benefit from the proposed strategies. Industry would profit from the proposed strategies through the increased provision of low-income housing. This would tend to create a more stable and healthy labor force which would not miss as much time on account of illness. It, furthermore, would enjoy a more adequate environment with a complete coverage of services.

The Municipality would receive credit from the City's electorate for commitment to urban issues, while at the same time taking on the implicit obligation to continue pursuing the needs of the low income population. The proposed strategies would, furthermore, generate a residential environment that provides a good context for the public's participation in government. They maximize the prospects for civil peace and for the capability to work together for the development of San Pedro Sula. Of course, the Municipality would raise its tax base through these actions, permitting the further extension of services.

The benefits and disbenefits particular to each of the three alternative land development strategies, and their principal effects on each of the major target groups, are summarized in the following paragraphs. The narrative and accompanying table are developed from the standpoint of whether an individual alternative would provide an appropriate physical underpinning for a program to increase the supply of urban land in San Pedro Sula, particularly for lower income families.

Affected Party: Project Residents or Municipality
The first five items of Table C-3 weigh the feasibility of the alternative strategies on the basis of ease of implementation. They affect either the residents of future development or the municipality, depending on the arrangements chosen for land development.

Alternative 1 (Industrial Corridor) has a comparative disadvantage in almost every respect. Its feasibility is lower due to the socioeconomic character of previous development (i.e., middle and upper income) and the unwillingness of the current land owners to sell. The cost of land is about 33 percent higher than alternative 3. While the extension of infrastructure into the hinterland of this area would present no special problem, there are no plans to extend it at the present time.

Alternative 2 (Consolidation/La Lima Corridor) can be divided into two sections as regards feasibility. The southern part, the locality of previous projects, is likely to be available for development, while the northern part would be more difficult to development because of community objections and reluctance to sell on the part of the current landowners. Infrastructure extensions are currently not planned for that area. This would imply an additional time constraint.

Alternative 3 (Southeast) enjoys the great advantage of being the strategy anticipated by the local development community. Urbanizations to serve middle and lower income households are already under construction, while others are planned, for this area. Extensions of road and infrastructure networks are planned. Landowners are currently urbanizing the northern and eastern parts of the area. Thus, the risk of rejection by the development community is not likely. In addition, this alternative implies the lowest land prices of the three by a considerable margin.

Affected Party: Project Residents
The next two criteria relate directly to the potential beneficiaries of future urbanizations: transportation and the possibility of receiving tenure. Transport access is adequate for all the alternatives, assuming minimal cooperation from the public transit authorities and the private operators.

Alternative 1 (Industrial Corridor) is best for access, since it is located on the major highway corridor to the port of Puerto Cortes; it is not ejidal land, and therefore does not have the tenure disadvantage of Alternative 3.

Alternative 2 (Consolidation/La Lima Corridor) is the poorest for transport connections in its southeastern section (Rivera Hernandez); it is better in the area of Calpules due to access to the La Lima road; transport access will improve significantly in the central portions of this sector with the construction of planned street extensions from the built-up area. The land is ejidal and urban, and therefore has the best prospects for development control and the provision of secure tenure.

TABLE C-3
SUMMARY OF EXPECTED COSTS AND BENEFITS

CRITERIA AND AFFECTED PARTY:	ALTERNATIVE 1 Northwest Indus. Corridor	ALTERNATIVE 2 Consolidation/ La Lima Corridor	ALTERNATIVE 3 Southeast
Affected Party: I. Project Residents or Municipality			
1. Policy Feasibility	Lower, probable local resistance	South high; North low, probable local resistance	High, consistent with expectations, but dependent on decisions of Azucarera
2. Minimize Land Cost	Medium, 1/3 higher than Alt. 1	Highest Cost, 3/5 higher than Alt.1	Lowest, Lps 7.6M/yr
3. Adequate Quantity of Land Available	Adequate	Adequate	Adequate
4. Minimize Infrastructure Cost	Medium; available along Northern Highway	Medium; planning underway to serve	Low; complete infra. coverage required.
5. Land Owners Willing to Sell	Not likely, planning to speculate and subdivide themselves	Yes; various owners	Principally one owner-- Azucarera
Affected Party: II. Project Residents			
6. Transport Access to Workplaces and Urban Activities	Best access to the major thoroughfares	Poor access in outermost colonies	Good because of proposed connecting roads
7. Possibility of Tenure in Fee Simple	Best, urban but not ejidal land	South higher, urban and ejido; North lower, urban but not ejido	Ok; ejidal but not urban land
Affected Party: III. Land Owners			
8. Avoid taking productive agricultural lands	Good, land not used or used only non-intensively for cattle	Good, land not used or used only non-intensively for cattle	Poor; most of zone sugar cane production
Affected Party: IV. Entire Metropolitan Area			
9. Distribution of low Income Families Over Over the Metropolitan Area	Best; puts low income families in a new part of the urban area	Good, spreads low income population out somewhat	Low; tends to concentrate them in single area
10. Consolidation, In-Fill of Metropolitan Development	Poor; spreads population into satellites	Highest, in fill for the consol-development	Good; fills a wedge between two corridors
11. Employer Participation in the Housing Process	Good, proximity encourages employer participation	Poor, area currently long way from employers.	Poor; area currently a long way from employers

Alternative 3 (Southeast) is a good choice for physical access because it is close to center city and will soon be served with new connecting roads. However, the Municipality does not currently have good control over land development and zoning in this area because it does not fall completely within the City's urban limits.

Affected Party: Landowners
Since the agricultural output of the Sula Valley is a valued resource of the nation, one objective of this study is to avoid converting productive agricultural land to urban uses. With the exception of the sugar lands of the southeast sector, the land contained within the study area is generally not intensively used for agricultural purposes. In the case of the southeast sector, the study team strongly believes that the benefits to be derived from the conversion of these sugar lands to urban uses far outweigh the costs associated with loss of agricultural production. (Although sugar prices are falling worldwide, it appears unlikely that this land would be planted in another crop due to depletion of the soil's nutrients from the prior planting in sugar cane.) The other two alternatives occupy either unused land or land used for cattle grazing.

Affected Party: Entire Metropolitan Area
Positive impacts of the individual alternatives on urban structure are difficult to assign to particular groups or institutions in the City. Thus we assume that the distribution of low-income families over the entire metropolitan area is a benefit to their social integration, and also to the society in general. Consolidating the urban form also has benefits that are shared by all interests. Employer participation in the housing process creates a linkage that is widely beneficial.

With respect to these three variables, Alternative 1 (Industrial Corridor) is the best in terms of socioeconomic distribution because it sites low income families in an area where they do not currently live; it receives a medium score on in-filling because it tends to spread population out into new, undeveloped satellite areas, and the best score on employer participation because it places housing in close proximity to large-scale industrial/commercial employment.

Alternative 2 (Consolidation/La Lima Corridor) obtains a good score, especially in its northern section, for distribution because it tends to spread the low income population throughout the City. It has the highest score on infill because that is the strategy's basic premise. It does not perform as well in employer participation because, like alternative 3, it does not locate people close to major employment centers.

Alternative 3 (Southeast) contributes to infilling the available land within the existing limit; receives a low score on distribution since it tends to group low income people in a single part of the metropolitan area, while also rating a low score on employer participation because it is a long way from present employment locations.

The qualitative appraisal of the costs and benefits of each alternative appears to rank the advantages of the Southeast Alternative first, with Consolidation/La Lima Corridor option in second place. The Industrial Corridor alternative appears to be a distant third.

The Southeast Alternative gets very high scores on feasibility and direct cost benefit to the residents/municipality. The other criteria produce mixed results; no alternative is obviously best. The disadvantages of the Southeast Alternative on these subsequent criteria do not appear to lower significantly its primal position among the three. Section III of this annex attempts to quantify this judgment by giving weights and scores to the various advantages and disadvantages of each criteria.

6. Approximate Scheduling of Proposed Development

This section outlines the approximate time required to initiate and complete the political and technical feasibility processes associated with the implementation of the alternative land development strategies. This time-table considers the following five steps for these processes.

a. Political Feasibility - Achieve political acceptance of Municipal officials, landowners, developers and local residents for the alternative land development strategies.

b. Technical Feasibility

- Prepare five-year development plan for specific physical areas of importance to implementation of the alternative strategies
- Establish institutional capacity
- Remove impediments to efficient land and housing market operations
- Design financial mechanisms (prepare cost estimates and financial plans)

The following table (C-4) approximates the time required to implement the political and technical feasibility studies for each alternative. The table highlights several potential bottlenecks and/or issues related to the successful implementation of each strategy. The major issues associated with the successful implementation of the alternative strategies are as follows:

Political Feasibility
Given the middle and upper-middle income character of the land development which has already taken place in the northwest sector plus the current, relatively high cost of raw land, it is very doubtful if the Municipality and the several large landowners
who control this sector would be able to reach agreement on the development of this area as the primary recipient, including the emphasis on low income, of San Pedro Sula's future population growth.

TABLE C-4
APPROXIMATE TIME SCHEDULE FOR IMPLEMENTATION
OF THREE ALTERNATE STRATEGIES

STEP	START DATE	COMPLETION DATE
A. POLITICAL FEASIBILITY		
--Northwest	Feb 1, 1989	Indeterminate
--Consolidation/La Lima	"	June 1, 1989
--Southeast	"	February 1, 1990
B. TECHNICAL FEASIBILITY		
1. Prepare 5-Year Development Plan		
--Northwest	April 1, 1989	June 30, 1989
--Consolidation	"	"
--Southeast	"	"
2. Establish Institutional Capacity		
--Northwest	April 1, 1989	Indeterminate
--Consolidation	"	"
--Southeast	"	"
3. Remove Legal and Administrative Impediments		
--Northwest	April 1, 1989	Indeterminate
--Consolidation/La Lima	"	"
--Southeast	"	"
4. Design and Implement Financial Mechanisms (Costs and Financial Plans)		
--Northwest	July 1, 1989	August 31, 1989
--Consolidation/La Lima	"	"
--Southeast	"	"

Technical Feasibility

- **Establish Institutional Capacity**
  It is a relatively simple matter to develop a proposal for organizing and strengthening the Municipality's land development and shelter capacity and capabilities. The proposal would involve a survey of the Municipality's and DIMA's current functions and responsibilities, as well as a review of the City's land development organizations. At the same time, a manpower needs assessment should be prepared to determine the types of training and staff needed to support the Municipality's land development functions. This process should not take more than three to four months. The completion date in the table is left indeterminate because it is difficult to accurately predict how much time, if at all, will be required to approve the recommended institutionalization of the unit.

- **Remove Legal and Administrative Impediments**
  There are a number of serious impediments limiting the City's ability to promote low cost land and shelter development. Several of these impediments will require modifications to existing national laws, regulations and procedures. The Municipality should prepare a legislative paper and immediately organize itself to gain support in the National Congress for the proposed changes. However, it is difficult to estimate how much time these activities will take to successfully conclude the legislative review and modification of central government laws.

7. Related Issues and Opportunities

Events and conditions that affect the prospects for implementation of the alternative strategies for land development in San Pedro Sula are numerous and difficult to predict. The Municipality's revenue problem is serious and limits the conceivable extent to which the City could self-finance large-scale development programs. The need for outside investment is important.

It is also appropriate to consider the future of Municipal leadership with the mayor leaving office in May. The perspectives and interests of the new administration in urban land development and low income shelter issues will determine the future course of this program.

The time-table of completion of currently programmed public investment is also important. This is particularly true of the pending IBD loan for infrastructure in the southeast area. The completion of these facilities will have their own impact on the area and the future plans for it, perhaps encouraging complementary private sector plans for the area.

The proposed revisions to the Municipal Law might have considerable impact. It has been reviewed in detail in Section II.b.4. In legitimizing the patronatos, the proposed Law would create a convention for dealing with these groups and might give them stronger standing in projects proposed by this study, or projects proposed to be complementary with it. The

clarification of the availability of ejidal land for transfer to low income households might be an important contribution to an understanding of the accessibility of this land in any form for future municipal use. At the present time the Municipality has no means of taking possession of land for this purpose. The additional range permitted in the property tax would enable a stronger municipal financial position. In addition, it makes possible higher tax rates for undeveloped urban land, possibility accelerating the consolidation of urban development. Permission to use tolls to supplement betterment levies is another welcome mechanism to recover project costs that clears the way for more participation of the Municipality in the development of urban services.

III. TECHNICAL EVALUATION OF ALTERNATIVES

Using the criteria from the qualitative evaluation of the costs and benefits of the alternative strategies (Section II.b.5), Table C-5 quantifies this descriptive discussion on the basis of a system of weights and scores for each criterion.

The first step assigns weights to the different criterion. These weights are ratio (cardinal) scale numbers presented as estimates of the importance of each criterion on a scale of 0 to 10. Generally, criteria that address preemptive issues, issues that might stop the policy from being accomplished, have the highest weightings (i.e., policy feasibility and willingness to sell). Criteria concerning the strategy's direct financial viability are also weighted high (such as minimum land cost, and infrastructure cost). Criteria are weighted lower when the level of real benefit from their high attainment is in some doubt (for example, employer participation) or when it is doubtful that high attainment is greatly valued in San Pedro Sula (i.e., distribution of low-income families).

The second step is to assign scores to the criteria with respect to each of the land development strategies. Note that whereas the weighting was assigned on the basis of the significance of the criterion, notwithstanding its level of attainment by any strategy, we now score the criteria for each strategy on the basis of its level of attainment, notwithstanding the importance of the criterion. These again are ratio (cardinal) scale numbers, though it is difficult to assign them without some sense of the relative attainment of different strategies with respect to them. We use a scale of 0 to 5.

Table C-5 shows one application of this evaluation system based solely on the judgment of the study team. It shows the slight advantage of the Southeast strategy over the Consolidation/La Lima Corridor alternative.

The next step would be to put this system in the hands of local participants and decision makers. The steps would be:

1. To consider the proposed criteria and change them in accordance with local judgments and values.

2. To assign the exercise to individual participant and special interest groups in the metropolitan area.

TABLE C-5
SCORING OF BENEFITS AND DISBENEFITS

CRITERION	WEIGHTING	ALTERNATIVES: SOUTHEAST SCORE	SOUTHEAST TOTAL	INDUSTRIAL CORRIDOR SCORE	INDUSTRIAL CORRIDOR TOTAL	CONSOLIDATION/LA LIMA CORRIDOR SCORE	CONSOLIDATION/LA LIMA CORRIDOR TOTAL
1. Policy Feasibility	(10)	4	40	1	10	2	20
2. Minimize Land Cost	(9)	4	36	2	18	3	27
3. Availability of Land	(9)	5	45	5	45	5	45
4. Minimize Infrastructure Cost	(9)	2	18	3	27	3	27
5. Landowners Willing to Sell	(7)	4	28	1	7	5	35
6. Transport Access	(5)	3	15	4	20	2	10
7. Potential for Secure Tenure	(5)	3	15	5	25	3	15
8. Avoid Converting Ag Land	(4)	2	8	4	16	4	16
9. Distribute Low-Income Population	(3)	2	6	5	15	3	9
10. In-fill Potential	(5)	3	15	2	10	4	20
11. Employer Participation	(2)	3	6	4	8	3	6
WEIGHTED TOTALS			232		201		230

SOURCE: ANALYSIS OF PADCO/UMVIDE

3. To vary the weighting for purposes of evaluation.

4. Finally, to score them, discuss the results, then repeat the exercise until it stabilizes.

IV. POLICY EVALUATION OF ALTERNATIVES

Based on direct discussions and on observing actions and decisions related to land development issues, it has been possible to undertake a rapid assessment of the policy acceptance of the three alternatives by San Pedro Sula's principal participant groups.

A. PUBLIC SECTOR

1. Municipality

The Municipality believes that the largest share of the City's residential and non-residential growth over the next 10-15 years should take place in the areas which the study team has designated as the consolidation and southeast sectors.

Its recent decisions related to urban development tend to support this view. In conjunction with a private landowner, the Municipality has developed the Calpules project for lower income families. This project is located in the consolidation sector. It has also recently initiated, with USAID financing, the urbanization of the 6 de Mayo project which is located near the Colonia Rivera Hernandez in the extreme eastern part of the consolidation sector. Finally, it is working with DIMA and a private landowner to develop a large parcel of land adjacent to the Azucarera's property in the southeastern quadrant of the City. In both word and deed, the Municipality is clearly supporting a land development strategy sited in the greater southeastern section of the City.

2. DIMA

In concert with the Municipality, DIMA has developed broad plans for the extension of the City's water and sewerage services. The obvious intent of these plans is to infill and consolidate around previous development which has occurred during the past 5-10 years. DIMA's plans contemplate the extension of new service into the three alternative "strategic areas" identified by the study team.

But it is clear that the limited development envisaged for the northwest sector will continue current middle to upper-middle income socioeconomic patterns, while the bulk of development (and therefore most lower income development) will occur in a band which surrounds the City on its eastern perimeter. DIMA's plans for this area call for the consolidation and infill of prior urbanizations which has occurred in the wedge circumscribed by Rivera Hernandez, Calpules and Satelite I and II, and Chamelecon. This is essentially the area included by the study team in its consolidation and southeastern strategies. At the close of Phase II of this study, DIMA has refused to approve any new

urbanizations which fall outside of the area which has been designated for future development.

B. PRIVATE SECTOR

1. Landowners

There is currently great interest on the part of the region's large landowners to develop their land for residential uses. This fairly recent phenomenon has been fueled by primarily three factors: the Municipality's activities and incentives in the provision of lower income shelter solutions, the landowners' interest to realize greater financial benefits from their land holdings, and to a certain extent, the threat of possible invasion by organized groups. Land sales and transactions have been particularly active lately in the eastern and southeastern sections of the City between the right-of-way of the second ring road and La Lima highway. In addition, however, the study team has learned that landowners in the northwest and mainly rural eastern sections of the City are also actively discussing plans for future development.

The Compania Azucarerea has also begun to develop its land holdings for residential uses. The development of the northern portion of its sugar lands is currently earmarked for middle and upper-middle income families. If permitted and encouraged by the Municipality, the Azucarera will most likely urbanize the great expanse of sugar lands in the southeast sector at a lower standard to be able to serve households with more moderate incomes.

In summary, the City of San Pedro Sula is experiencing a "boom" in land development activities. However, most landowners are not particularly attuned to the implications of their individual "go/no go" development decisions on the preferred future growth of the City. The Municipality and DIMA will have to work closely with the City's large landowners and developers, while at the same time ensuring an adequate supply of lower income shelter solutions, in order to ensure that their plans for San Pedro Sula have a chance for successful implementation.

2. Land Developers

Like their contemporaries worldwide, San Pedro Sula's private land developers are primarily interested in maximizing the return on their financial investment. They do not particularly care where their development activities take place throughout the City, and therefore will be reluctant to "buy into" a specific development strategy for the City. They certainly do not want to be restricted as to where they can or cannot develop. Much of their previous development activity has resulted from favorable arrangements worked out with landowners who wish to sell, or in conjunction with interested groups of potential plot purchasers.

Using the "carrot and stick" mechanisms at its disposal, the Municipality will have to work closely with the City's private developers in order to ensure that future urbanization follow the City's preferred plans and guidelines.

C. LOCAL RESIDENTS

The local residents of San Pedro Sula, and particularly those from the lower income strata who are in the market for a parcel of developed land, will choose from among available shelter options to best maximize their preferences with respect to infrastructure services, access to employment and public facilities, and security of tenure at prices which they can afford.

Currently the most affordable shelter options for lower income households are found in the municipal and private sector urbanizations in the southeast beyond the City's built-up area. Land prices in this area are attractive and access is relatively good. In comparison, the northwest sector is currently not a viable option for lower income households due primarily to the high cost of developed land.

While the prices for developed land are attractive in the City's southeastern section, demand for available plots has not been overwhelming. This is due principally to the fact that many of the newest urbanizations still do have sufficient supplies of water and electricity. Households living in the center-city's overcrowded cuarterias, who pay rents comparable to the monthly charges of the new lower standard urbanizations, prefer not to give up the service levels, albeit limited, and excellent location which they enjoy in their present lodgings. This reluctance will most certainly vanish when these newer urbanizations are able to offer even partially serviced lots. At that time, the close in barrios and colonias of the consolidation and southeastern sectors will be the areas of choice of the City's middle and lower income households.

ANNEX D

PROPOSAL FOR THE INTRODUCTION OF A NEW CATEGORY OF RESIDENTIAL ZONING: ZR-VIII WITH A R5 USE CATEGORY

ANNEX D

PROPOSAL FOR THE INTRODUCTION OF A NEW CATEGORY OF RESIDENTIAL ZONING: ZR-VIII WITH A R5 USE CATEGORY

I. INTRODUCTION

The analyses undertaken in Chapter III of the Phase I report highlight a principal problem with zoning ordinances. It is true, not only in Honduras but worldwide, that zoning ordinances are normally not designed from the perspective of the ultimate end user. This implies that urban planners recommend specific urbanization standards without taking into consideration the costs generated by these standards, nor whether the end user can afford them.

The present section attempts to lay the foundation for the creation of a new category of residential zoning which would permit greater flexibility in the design of urbanization standards. The objective of this increased flexibility is to contribute to the production and supply of affordable shelter for lower income families (i.e., those households earning at or below the median income of Lps. 600-700 per month established for San Pedro Sula).

It is intended that this new zoning category be applicable throughout San Pedro Sula to public, as well as, private sector development. New development would qualify for this new zoning category "depending on its merits", which is understood to mean that it would serve lower income families.

The Municipality's capacity to implement the proposed zoning category requires a sufficiently qualified staff to be able to evaluate the affordability of pre-feasibility shelter projects (anteproyectos) submitted for its consideration. The Municipal staff should also have the professional and technical capacity to assist and facilitate private sector developers and contractors in achieving the objective to serve lower income households.

II. OBJECTIVES

There are three principal objectives which justify the introduction of a new residential zoning category:

- Achieve a greater rationalization of urban land use
- Reduce urbanization costs
- Increase the supply of available shelter which is affordable to a wide range of income groups; this specifically applies to those groups which have historically been excluded from formal sector markets, in part due to the high costs generated by existing subdivision standards.

III. DESCRIPTION OF THE NEW ZONING CATEGORY

It is proposed that the new zoning category follow the conventions established in the existing 1976 Regulation. For the purposes of this discussion, it will be called ZR-VIII, Use Category R5. The recommended changes in this zoning category are based on the analysis undertaken in Chapter III.B of Phase I.

A. Residential Uses

The new zoning category proposes the most cost effective urbanization standards permitted up to the present in San Pedro Sula. This category permits minimum lot sizes of 105 square meters with frontages of seven meters

Residential category ZR-VIII will cater to higher density, but predominantly horizontally developed shelter. The new Use Category, R5, included in the proposed zoning classification ZR-VIII, will allow row housing, structures earmarked for progressive development, duplex units and/or other dwelling types separated by a common party wall.

The new zoning category does not require side nor rear setbacks. The minimum front setback will be 1.5 meters. Maximum lot coverage is not defined. Rather, the new ordinance would leave it to the discretion of the Municipal staff to ensure that sufficient open space is left on each plot to provide for satisfactory health and hygienic conditions.

The permitted uses for the new zoning category ZR-VIII are as follows (see the definitions in Phase I, Chapter III, Section B, Standards and Regulations for Residential Land Use):

R1 - Permitted

R2 - Permitted

R3 - Permitted

R4 - Permitted

R5 - Permitted

C1 - Permitted

C2 - Permitted

C3 - Prohibited

S1 - Permitted

S2 - Permitted

S3 - Prohibited

I1 - Permitted

I2 - Prohibited

I3 - Prohibited

B. Densities

The proposed zoning category establishes allowable new density ranges according to the anticipated characteristics of future shelter development:

- Low – less than 70 persons per hectare
- Medium-low – between 71 and 140 persons per hectare
- Medium – between 141 and 200 persons per hectare
- Medium-high – between 201 and 259 persons per hectare
- High – greater than 250 persons per hectare

C. Circulation Standards

- Sidewalks – minimum width of 1.5 meters; 1.0 meter for the walkway and 0.5 meters reserved for grass or trees
- Collector streets/roads (within an urbanization) – minimum width of 12 meters; sidewalks of 2.0 meters on both sides of the roadway of 8.0 meter width
- Access or local roads/streets – minimum width of 10.0 meters, including sidewalk of 1.5 meters on both sides of a roadway of 7 meters
- Pedestrian walkways – minimum width of 5 meters.

ANNEX E

COST ESTIMATE FOR THE CONSOLIDATION AND EXPANSION OF INFRASTRUCTURE SERVICES ACCORDING TO SHORT-TERM URBANIZED LAND NEEDS, 1989-1993

ANNEX E

COST ESTIMATES FOR THE CONSOLIDATION AND EXPANSION OF INFRASTRUCTURE SERVICES ACCORDING TO SHORT-TERM URBANIZED LAND NEEDS, 1989-1993

I. INTRODUCTION

This annex is divided into four parts. The first part identifies foreign investment planned or programmed for San Pedro Sula's infrastructure sector for the period 1989-1993. Information on these investments was obtained from the Municipality and DIMA. It reflects projects in execution, committed loans and loan requests made by the Municipality to various international donors.

The second part summarizes land requirements and their potential location for the period 1989-1993 on the basis of projected urban growth.

The third part identifies those existing barrios/colonias which require the installation of infrastructure services.

Finally, part four presents cost estimates for the implementation of a combined program to develop the short-term land requirements for the consolidation and southeast sectors and to fully serve with basic infrastructure the existing lower income, built-up areas of the City. This analysis is based principally on the costs associated with the installation of primary and secondary trunk infrastructure.

II. FOREIGN INVESTMENT PROGRAMMED FOR SAN PEDRO SULA'S INFRASTRUCTURE SECTOR

This section identifies all foreign investment in execution or planned for the City's potable water, sanitary waste disposal, stormwater drainage and circulation networks. Planned and/or committed loan programs currently indicate that three foreign donors will be the principal financiers of infrastructure in San Pedro Sula over the next several years: (a) World Bank/Commonwealth Development Corporation; Water Master Plan; (b) Inter-American Development Bank; (c) US Agency for International Development.

A. World Bank/CDC Program: Water Master Plan

Including DIMA's counterpart contribution, the proposed World Bank/CDC loan is for Lps. 82.12 million. Designated the Water Master Plan for San Pedro Sula, the WB/CDC loan calls for increasing the supply and storage capacity of potable water, as well as upgrading the distribution network. This proposed loan also includes a small component for sanitary waste disposal and stormwater drainage. The loan is designed primarily to improve and complement the water supply and drainage networks for the City's existing built-up area

within the second ring road. The small portion of the loan which will actually expand the City's water supply system, for example the construction of the storage tank, El Venado, on Cerro Chotepe, will serve the new land requirements of the southeast and consolidation sectors.

The following table shows the components and loan amounts for the WB/CDC program.

Component	Total Investment (Lps. million)
Water Supply	Lps. 11.30
▪ Construction and rehabilitation of wells ▪ Chlorination ▪ Technical assistance	
Upgrading of Water Transmission, Distribution and Storage	17.50
▪ Rehabilitation of lines ▪ Construction of primary lines and pumping station ▪ Construction of storage tank and distribution lines	
Installation of Secondary Water and Sewerage Lines	4.56
▪ Secondary water lines ▪ Secondary sewer lines ▪ Installation of water meters	
Upgrading of Storm Drainage System	2.00
Purchase of Equipment	1.00
Technical Assistance	10.20
SUB-TOTAL	Lps. 46.56
Contingencies	18.20
Financial Charges	17.36
TOTAL	Lps. 82.12

B. Inter-American Development Bank (IDB)

The IDB is considering a loan to San Pedro Sula in the amount of Lps. 132.40. The IDB's proposal consists primarily in the extension and upgrading of the City's sewerage and

drainage networks and in additions to the road network. This loan program has two additional components, shelter and institutional strengthening. The proposed construction of new streets and roads will have an especially dramatic impact on the future development of the new growth areas recommended by the study team.

The great majority of this new road network will be located in the consolidation and southeast sectors of the City's preferred land development strategy. The study team believes strongly that the construction of the proposed road network will be one of the critical factors in influencing the future development of these sectors. Furthermore, the study team believes that the new roads will be an effective mechanism to guide/facilitate the future, short-term development of the City. The principal streets and avenues within the southeast sector to be constructed or extended as a result of the IDB loan include: Streets 7, 10, 15, 20 and 27, the Boulevard to Chamelecon, and 3rd, 8th and 14th avenues. (See Map 6.)

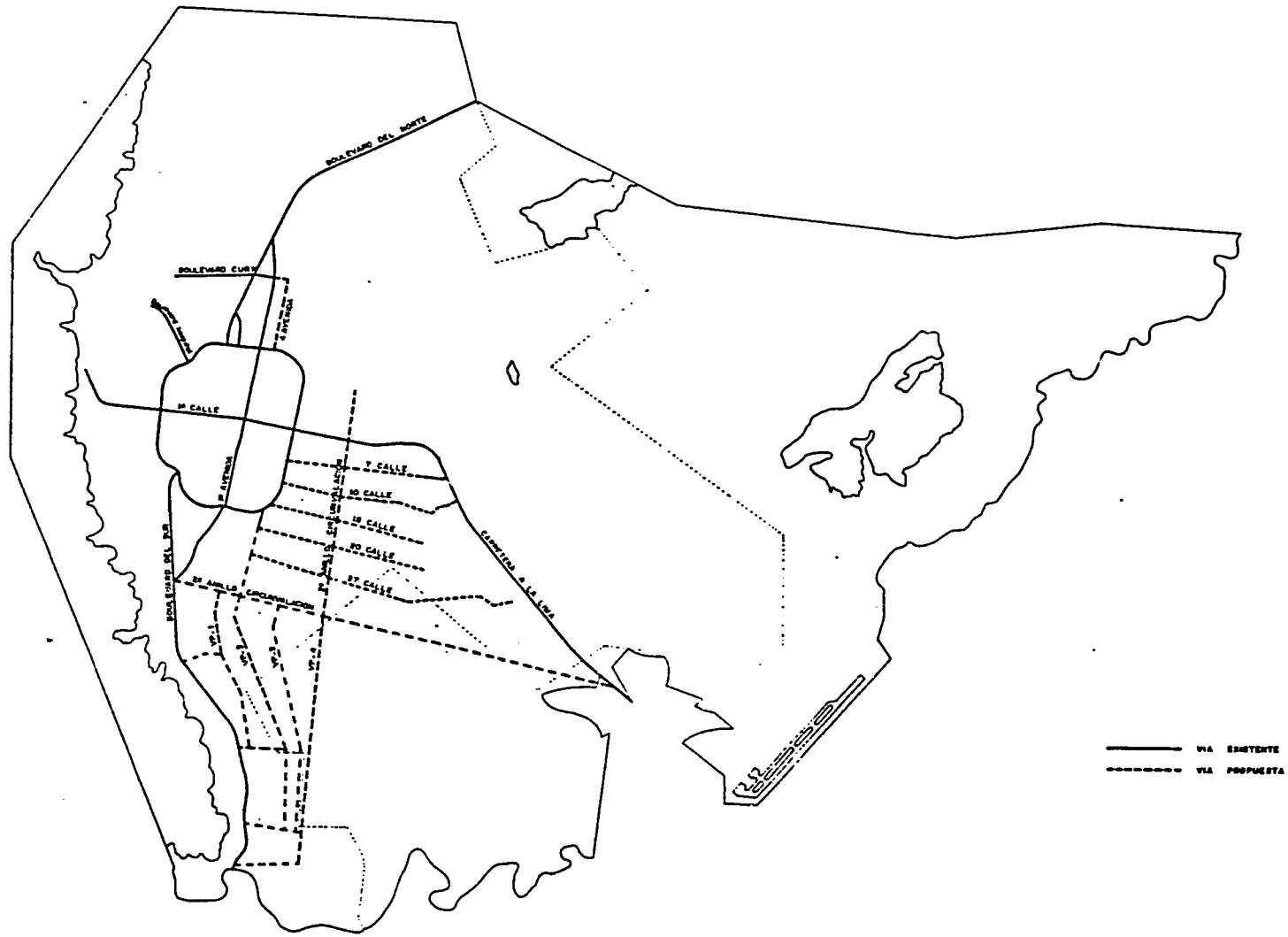
The following table presents the components and investments for this loan amount.

COMPONENT	INVESTMENT AMOUNT (Lps. million)
Sewerage and Stormwater	Lps. 28.00
▪ Eastern collector ▪ Stormwater collectors ▪ Design of Sewage Treatment Plant ▪ Equipment and Maintenance of Sewerage System	
Shelter	16.00
Road Network	84.40
Institutional Strengthening	4.00
TOTAL	Lps. 132.40

C. US Agency for International Development (USAID)

USAID is currently financing infrastructure works in San Pedro Sula in the amount of Lps. 13.9 million. USAID's program entails the installation of new water and sewerage service in approximately 40 of the City's lower income barrios and colonias. The program is scheduled for completion in early 1990, unless new projects are added. As of November 1988, the program had disbursed 32.3 percent of the total allocated investment.

The program will benefit approximately 4,400 families with potable water, 11,500 with sanitary waste disposal and 5,300 with both systems. This totals more than 21,000 families who will benefit from the program.



M U N I C I P A L I D A D D E S A N P E D R O S U L A

UMVIDE

"MAPAS DE SAN PEDRO SULA"

ESTE TRABAJO ESTA BASADO EN:

CONTENIDO

RED VIAL PROPUESTA

ESCALA 1:

PROYECTO:

No. 6

The USAID program, which is implemented in conjunction with DIMA, is located primarily on the eastern side of the City between the first and second ring roads, and in the rapidly developing areas of Calpules, Chamelecon and Rivera Hernandez. The following table highlights the amounts of each loan component.

COMPONENT	INVESTMENT AMOUNT (Lps. million)
Potable Water	Lps. 2.1
Sanitary Waste Disposal	8.0
Both Water and Waste Disposal	3.8
TOTAL	Lps. 13.9

The USAID program is characteristic of the type of infrastructure service that is required to serve the "sprawl" development which has occurred over the past ten years beyond the periphery of the City's built-up area. Future sections of this annex will apply the costs of this ongoing program to estimate the costs to serve those lower income areas which currently lack a full complement of urban services.

III. SHORT-TERM LAND REQUIREMENTS FOR URBAN DEVELOPMENT

Assuming the study team's low growth scenario, total land requirements for the period 1989-1993 are 1,100 hectares. For the high growth scenario, land needs total 1,320 hectares. These figures include residential and non-residential uses.

A. Location and Distribution of Total Land Areas To Be Urbanized

Of the total 1,100 hectares required for new development, the preferred strategy assumes that 702 hectares (64 percent) will require raw land conversion which implies the extension and/or construction of independent systems of new trunk infrastructure. Of these 702 hectares, the study team estimates that more than 70 percent will be located in the consolidation and southeast sectors.

The sectors which the study team has identified to absorb the greatest share of the City's new growth over the next five years comprise the following zones:

Consolidation Sector - Zones 9, 18, 21, 23, 27, 30, and 33

Southeast Sector - Zone 22.

On the basis of the high growth scenario, it is assumed that the urbanization of raw land will absorb approximately 840 hectares (64 percent of total). Of this amount, the study

team estimates that about 67 percent will be located in the consolidation and southeast sectors (537 hectares).

B. Potential Location For The Short-Term Development Of New Areas

Map 7 shows the areas identified by the study team which present the greatest potential to absorb new urban development in the short-term. These areas represent the study team's best approximation of those areas most likely to develop during the period 1989-1993. These areas were identified from information available to the study team on recent land transactions and on ongoing planning for new subdivisions. The study team considers this area to be the minimum amount of new land which can feasibly be developed as a result of the IDB investment in the City's road network to meet 1989-1993 land requirements.

Based on the proposed IDB-financed extension of the City's road network, the study team has identified nine areas in the consolidation and southeast sectors where raw land is available for new development. These nine areas have a land area which meets the requirements of both the low and high growth scenarios for 1989-1993.

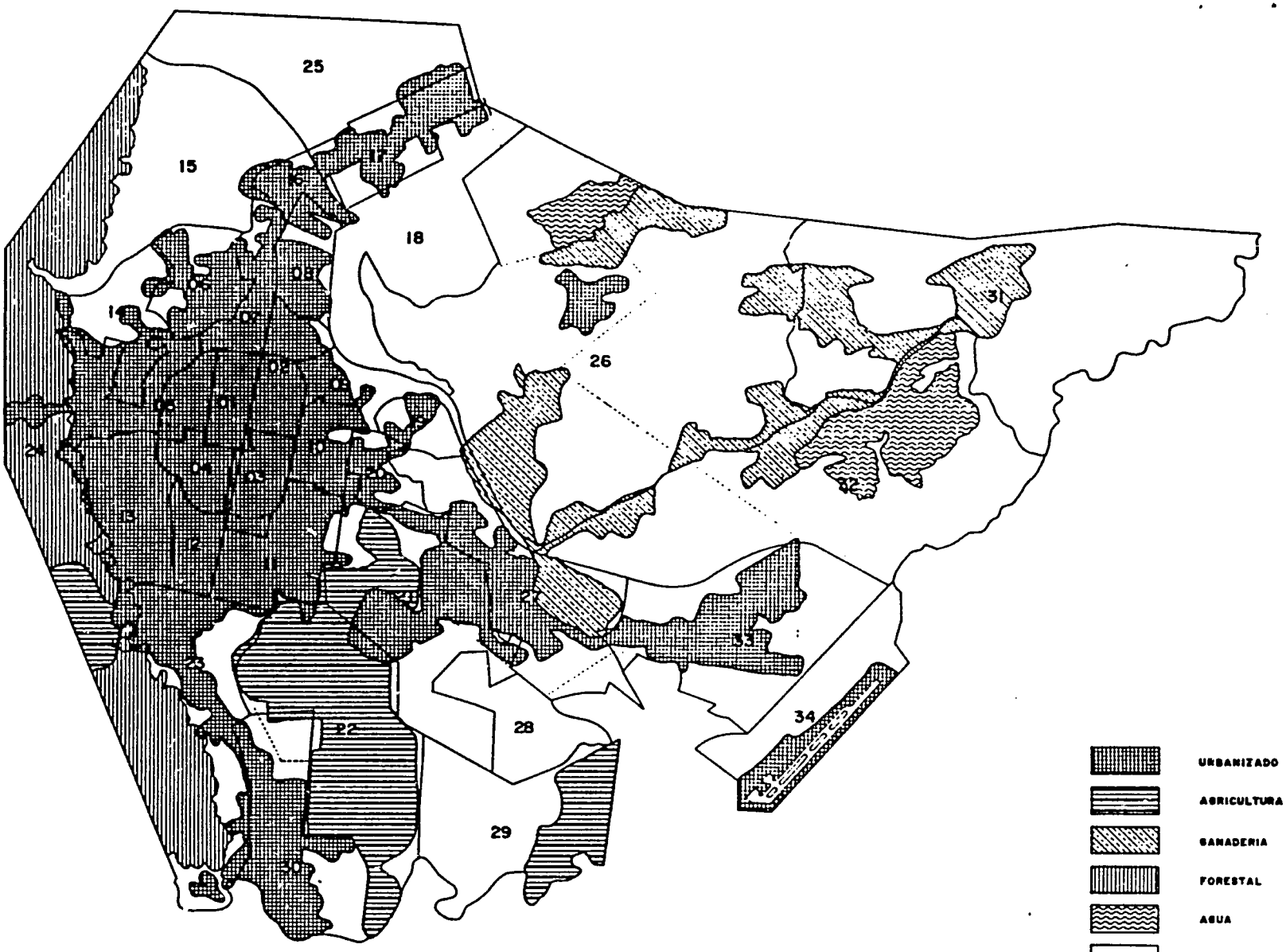
The following table presents the areas and location of the nine areas:

1.	Zone 33	-	105.50 Ha
2.	Zone 33	-	75.50
3.	Zone 30	-	83.75
4.	Zone 30	-	17.50
5.	Zone 30	-	96.25
6.	Zone 23	-	128.75
7.	Zone 22	-	248.75
8.	Zone 21	-	197.50
9.	Zone 27	-	101.25
	TOTAL		1,054.25

The above distribution shows that zone 22 in the southeast sector absorbs the greatest percentage (23.5) of projected new land development over the next five years. Zone 30 in the consolidation sector contributes 198 hectares, or 19 percent, of new land development.

IV. BARRIOS/COLONIAS REQUIRING INFRASTRUCTURE SERVICES

Calpules and Rivera Hernandez to the southeast of the City and Chamelecon to the south are the principal concentrations of population located in the consolidation sector of the preferred plan which lack infrastructure services.



M U N I C I P A L I D A D D E S A N P E D R O S U L A

UMVIDE

ALCALDE: [illegible]

DIRECTOR DE PROYECTO: [illegible]

"MAPAS DE SAN PEDRO SULA"

ESTE TRABAJO ESTA BASADO EN:

— EN LOS MAPAS CARTOGRAFICOS ELABORADOS POR LA OFICINA DE ORDENAMIENTO TERRITORIAL

MAPA BASE DE LA CIUDAD DE SAN PEDRO SULA

MAPA FORMA CARTOGRAFICA DE LA CIUDAD DE SAN PEDRO SULA

MAPA DE CAMINOS Y VIALIDAD DE LA CIUDAD DE SAN PEDRO SULA

— EN LOS MAPAS DE USOS Y TENENCIA AGROPECUARIA DE 1977 Y 1981 ELABORADOS CARTOGRAFICAMENTE POR LA OFICINA DE ORDENAMIENTO TERRITORIAL

CONTENIDO

USO DE LA TIERRA

PROYECTO

HOJA Nº

No. 7

DIMA, with financing from USAID, is currently undertaking the installation of infrastructure in these three strategic areas. DIMA has identified eight barrios/colonias in Rivera Hernandez which do not have a waste disposal system.[1] According to DIMA's timetable, these eight barrios/colonias should be served by late 1990.

In the area of Chamelecon, DIMA estimates that there exist approximately 12 barrios/colonias that do not have a sanitary sewerage system and three barrios/colonias which lack potable water. One of these three barrios is currently served by communal standpipes.

The Colonias Ebenezer (which lacks water) and 15 de Septiembre (with standpipes) are two of the colonias which currently do not have a formal sewerage system and probably will not for the foreseeable future. This problem is due to the inability of the affected parties to reach agreement as to the ownership of the land occupied by these two colonias. According to DIMA's plans, the other barrios/colonias will have a sewerage network by 1990.[2]

V. COST ESTIMATES TO IMPLEMENT PREFERRED PLAN

The exercise to estimate the costs of implementing the preferred plan is divided into two parts: (a) cost estimates to serve the new land requirements of the consolidation and southeast sectors; (b) the cost to complete the primary infrastructure networks in the existing built-up areas which lack all or some of these services. These cost estimates include both on- and off-site infrastructure, as well as required public and private sector investment. For the purposes of this analysis, the study team has assumed that all existing barrios/colonias should have access to all urban services with the exception of paved streets.

It is important to mention that there are many factors which influence the cost of providing urban services. These costs vary, often considerably, among projects. The preliminary cost analyses of this section, which are admittedly limited due to time constraints and the lack of detailed engineering designs, are based primarily on the costs of recent projects undertaken in the above-mentioned areas of Rivera Hernandez, Calpules and Chamelecon.

---

[1] Rivera Hernandez, Los Angeles, Brisas del Sauce, 6 de Mayo, Sinai, Alianza Comunal Obrera, Habitacional 6 de Mayo and Central.

[2] Sabillon Cruz, Fe and Esperanza, San Jose, Los Angeles, Palmira, Los Zarzales and Providencia.

A. Costs of New Development

In order to estimate the costs of new land development, the study team first analyzed DIMA's current costs for the construction of potable water, sanitary sewer and stormwater drainage networks. On the basis of this analysis, estimates are made on an average cost per hectare. These average per hectare costs are then multiplied by total new land requirements to obtain a total cost for new development.

The analysis of current DIMA projects yields an average per hectare cost for the principal infrastructure networks as follows:

Combined potable water and sanitary sewers	Lps. 27,000/ha
Sanitary sewers	23,000/ha
Potable water	10,000/ha
Stormwater drainage	46,000/ha

The total investment required to serve the previously discussed 1,054 hectares of available land to meet short-term requirements is estimated at Lps. 146 million. This amount includes public and private sector investment according to the following breakdown:

Component	Total Investment (Lps. million)
Water supply and sewerage	Lps. 28.46
Stormwater drainage	48.48
Streets/roads	69.52
TOTAL	Lps. 146.46

The amount estimated for the extension of the City's road network does not include the construction of local streets within individual subdivisions. Of the combined Lps. 228 investment program of the three principal donors, only the proposed Lps. 69.52 million in IDB financing for streets and roads will have a direct impact on the implementation of the preferred plan for the consolidation and southeast sectors.

B. Infrastructure Costs For Existing Built-Up Area

The second part of our cost analysis involves an estimate to complete the infrastructure networks for the City's primarily lower income built-up areas. The proposed infrastructure

works primarily entail the installation and connection of secondary distribution and collector lines into existing trunk infrastructure.

The analysis of previous projects shows that, on average, the per hectare and per plot costs to provide the necessary infrastructure services to existing built-up areas are as follows:

Potable water and sanitary sewers	Lps. 21,000/ha 670/plot
Sewerage	14,000/ha 440/plot
Potable water	6,000/ha 270/plot
Stormwater drainage	28,000/ha 875/plot

The total investment necessary to serve the eight colonias in Rivera Hernandez which lack a sanitary sewerage system is approximately Lps. 1.8 million. This investment would benefit approximately 4,000 families. This cost does not include the treatment of raw sewage.

In the case of Chamelecon, DIMA estimates that there are 12 barrios/colonias which lack a system for waste disposal. The total investment needed to rectify this situation is estimated at Lps. 1.4 million. This level of investment will benefit 3,200 families. This estimate does not include the costs to serve this area's most recent invasions.

The total cost, therefore, to provide collector systems for raw sewage in the southeastern colonias of Chamelecon and Rivera Hernandez is Lps. 3.2 million. This estimate does not include indirect costs. It is not known at this time whether USAID's ongoing program will have sufficient funding to include these areas.

The total cost to serve the same areas with stormwater drains is Lps. 6.3 million. The total cost to complete the coverage of these two urban services is Lps. 9.5 million.

Several of the barrios/colonias in the City's urban core (sector four from the study team's grouping of the City's 34 zones) also lack a full complement of urban services. The study team estimates that in this sector (zones 1-5, 8 and 10-13) there are currently 23 hectares

not served with potable water[3], 79 hectares that lack waste disposal and 835 that do not have storm drains.

On the basis of the average per hectare cost estimates presented previously, the study team has estimated the cost to complete the coverage of the three basic services in the City's urban core as follows:

Component	Total Investment (Lps. million)
Potable water and sewerage	Lps. 2.64
Stormwater drainage	23.38
TOTAL	Lps. 25.52

The total cost to provide complete water, sewerage and drainage coverage in the barrios/colonias of the City's urban core which lack these services is Lps. 25.52 million. This figure does not include indirect costs.

The total cost, therefore, to complete the coverage of urban services in the existing built-up area of the urban core, consolidation and southeast sector is approximately Lps. 35 million.

[3] These estimates are based on subtracting the served areas from the total built-up area of each zone. See Table INFRA I of Chapter II, Phase I.

ROAD NETWORK INVESTMENT - IDB

	LENGTH (kms)	CATEGORY	COST ESTIMATE (Lps. million)
Second ring road	11.92	Arterial	Lps. 23.84
Southern extension of second ring road to Chamelecon	4.99	"	9.98
Boulevard to La Lima	8.09	Regional	16.18
Extension Av. Junior	1.88	Collector	1.50
Levee for River Piedras (both sides)	5.91	"	2.36
8th Avenue (SE)	2.76	"	4.97
3rd Avenue (SE)	2.84	"	5.11
Extension 27th Street (SE)	6.84	"	6.84
Proposed road VP7	2.60	"	2.60
SUB-TOTAL	47.83		73.38

In addition to this direct investment, this component includes the purchase of equipment and the strengthening of technical capacity in the Road Maintenance Department of the City's Engineering Office. The total investment is Lps. 76.38 million. This amount does not include institutional support funds.