



Khóa Hội Thảo Về Phát Triển Kinh Tế

Economic Development Seminar 6.12-10.12.1971

INFRASTRUCTURE DEVELOPMENT IN VIETNAM

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(ENGLISH ABSTRACT)

6

Four Year (1972-1975) Plan

of

Infrastructures Development

Part 1: Planning Report

SECTION 1.1 SUMMARY AND CONCLUSIONS

FOUR YEAR (1972 - 75) PLAN OF INFRASTRUCTURES DEVELOPMENT

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CHAPTER I - SYNOPSIS OF STUDY

SECTION I.I - SUMMARY AND CONCLUSIONS1.1.1 - General approach

The purpose of this report is to outline the general aspects, approach, implementation, methods for financing, evaluation, and management for an overall Infrastructure development program for the Ministry of Public Works (MPW). The plan is designed to permit flexibility in its application and integration into the National Economic and Social Development Program. The plan outlined classifies and reduces planning and programming activities to a systematic procedure to allow more efficient use of the agencies within the Ministry, and likewise, establishes program objectives in a manner to simplify progress evaluation. When applied to computerized data processing techniques, the planning/programming process outlined will allow immediate response to changes in budgeting or National Program objectives.

The entire report is contained in three parts; part one consisting of the planning report proper in one volume summarizing the development plan; part two consisting of six volumes containing the statistical data and calculation procedures for determining the program requirements; and part three identifying the projects for accomplishment in 1972.

Program requirements for the MPW development plan have first been outlined to comply with National Objectives (Macro Approach). These objectives have then been compared to program requirements defined from statistical data (Micro Approach) to confirm feasibility. An analysis of these two projections has been made with respect to

1.1-2

the current status of the various MPW activities, and has adjusted these projections accordingly to define the proposed 1972 - 1976 MPW development program objectives. The operational and management plan includes a continuing maintenance program in addition to the new construction work to ensure value retention of the added investments. To permit flexibility, evaluation of the various activities has been established in terms of benefit to cost ratios, population served, employment generated, contribution to the gross national product and political efficiency to permit the assignment of priorities and progress evaluation. This flexibility is required to allow effective program management in light of changing economic conditions and socio-political objectives.

1.1-2 - National goals

The National development program for the immediate post-war period is concerned primarily with stabilizing the unemployment rate following the cessation of hostilities and developing the gross national product (GNP) required for economic stability. For labor, the imbalance between supply and demand precludes an immediate solution to the unemployment problem. Therefore the national objective would be to reduce this to an acceptable level. Adopting a 5% unemployment rate comparable to adjacent Asian countries, it is estimated that a total of over 100,000 jobs must be created annually. For the GNP, the maximum probable growth rate of 6% for the 1972-1973 period and 7% for the 1974-1975 period as estimated by the Joint Development Group (JDG) is adopted. This will require an overall national annual domestic capital investment of US\$365 million in which the MPW infrastructures portion is about 37% .

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1.1-3 - Infrastructures plan

Pursuant to these national objectives, the adjusted four year 1972-1975 Infrastructures Development plan is summarized as follows :

<u>Activity and objectives</u>	<u>Fund requirements</u>	
	(US million)	(Percent)
<u>Activity 1.- Highways :</u>	152	18.1
Road upgraded = 4,110 KM		
New bridge = 16,500 M		
<u>Activity 2.- Airports</u>	7	0.9
New terminal & Support		
building = 12,300 SQM		
New pavement = 182,000 SQM		
Pavement upgraded = 118,000 SQM		
<u>Activity 3.- Public Building</u>	132	15.6
New floor Area = 1,389,500 SQM		
<u>Activity 4.- Public Housing</u>	119	14.1
New housing units = 21,830 EA		
New floor area = 1,487,400 SQM		
New building land = 1,035 HA		
<u>Activity 5.- Electric power</u>	348	41.8
Additional capacity = 833,000 KW		
<u>Activity 6.- Water Supply</u>	71	8.4
Additional capacity = 473,400 CMB		
<u>Activity 7.- Sewerage</u>		
New storm drainage pipe - 123,800 LM	9	1.1
Total fund : 838		100 %

The highways plan will concentrate upon improvements of the secondary road system. Current military activities have to date concentrated upon the primary road system creating an imbalance between the two networks. Except for the delta area, the road network system represents the least cost routing and accounts for more than 80% of all passenger and freight transport.

The airports plan will concentrate upon improvements to and addition of terminal buildings and support facilities. The number of airports is adequate, but lack the service facilities for efficient operation. Runway and parking apron additions and rehabilitation are required to accommodate larger aircraft and improve aircraft handling.

The total public building requirement cannot be accurately assessed for lack of an inventory of older public buildings. Therefore, this program will be directed toward support of only those additional requirements generated by population growth. The education new floor area reaches almost 50% of the total and the market facilities amount to over 120,000 Sqm.

The public housing plan will concentrate upon subdivision land development. Costs for housing construction are too high to allow development without an undue burden for rental subsidies. Therefore only a minimum number of housing developments will be undertaken for middle income groups of civil servants and servicemen. Land acquisition appears to be a greater problem than housing construction, lending emphasis to the land development aspect. This might help the private sector to fulfill the remaining 70% of the total

housing needs.

The electric power plan will be directed toward elimination of the existing large pent-up demand only. This will consist primarily of urban residential electrification. Electrification for industrial development will be deferred to a later period, preferably coincident with hydro-electric development projects. The amount of new customers will be over 335,000.

The water supply plan will be directed toward increasing the per capita water consumption above the minimum sanitary standard and to develop distribution systems to minimize the use of existing transport methods detrimental to elementary sanitation requisites. For lack of adequate data, this plan will be limited primarily to major urban areas, with particular emphasis on Saigon and Danang. The number of new customers reaches almost 153,000.

The sewerage plan will be limited to emergency drainage work only due to this lack of adequate planning and design data. This emergency work will generally be limited to Saigon, Hue, Danang, Vung Tau, Can Tho and Bien Hoa.

In addition to the specific objectives outlined, the general comprehensive urban development policy aims at establishing a more integrated system of gradated cities, instead of urban primacy. This general policy shall be to limit the growth of the primate city of Saigon by the promulgation of appropriated public works development projects in a number of outlaying urban areas, and would also embody restrictions for acceptable population densities of the primate city and towns.

1.1-4 - Constraints' aspects.

Investment capital will be a primary restraint affecting mobilization and implementation of the plan. Labor and technology present no restrictions since no new innovations are presented within the plan and skilled labor shall be forthcoming with the decline in military construction.

Emphasis for employment will be placed upon productivity in lieu of employment opportunity to retain the training of skilled workers from the recent military construction. This retention of skills, augmented by a training program for technicians, is required to fulfill the middle management capability now lacking and required for subsequent industrial development. Current unskilled unemployment problems are more readily accommodated through agricultural and irrigation programs. The infrastructures development plan will provide employment for an average of 30,000 unskilled, 18,000 skilled and 3,000 technical workers annually in the construction field only. The total employment demand for the combined construction and operations will amount to almost 70,000 persons per year.

The time span required for design and construction is highly dependent upon the type of the construction and the seasonal monsoons. The vertical construction anticipated is generally less affected by these elements, indicating that program mobilization would be initiated in this area.

The 250 millions US\$ materials requirements present no special problems since the principal materials quantities are rather low compared to the existing consumption level. The maximum an-

1.1-7

nual needs are only a little over 4 million tons for aggregate with almost 250 thousand tons of cement and over 44 thousand tons of steel.

The annual construction volume of US 180 millions during the Plan period will require a special development program for the Construction Industry - with emphasis on the utilization of the excess military properties for the establishment of a government corporation for equipment rental pool to support the private sector.

1.1-5 - Financing method

The total four year 1972-75 plan expenditure for capital outlay and current expenditures for the combined capital improvement, maintenance and operation program will amount to US\$ 1,081 million with the following schedule :

	<u>Capital outlay</u>	<u>Current expenditure</u> (US\$ million)	<u>Total</u>
1972	167	51	218
1973	192	55	247
1974	230	63	293
1975	249	74	323
Total	838	243	1,081
Percent	78%	22%	100%

The average annual capital outlay of US\$ 210 millions is in the range of magnitude of public investments infrastructures during the recent years, which was amounted to US\$ 190 millions for FY 1971.

The foreign currency requirements for the combined investment and operation Plan will be as follows :

	<u>Foreign currency</u>	<u>Local currency</u>	<u>Total</u>
(US\$ millions)			
1972	108	110	218
1973	129	118	247
1974	149	144	293
1975	166	157	323
Total	552	529	1,081
Percent	51%	49%	100%

Within this total amount, the foreign exchange requirement would create an undue balance of payments deficit. Therefore, alternative financing methods, wherein the activities may be selfsupporting, will be utilized. To minimize inequities in levying this additional burden, this additional financing would be limited to water power and highways. The balance consisting of the social institution would be more equitably supported from fiscal revenues since these activities lean toward a social welfare aspect. Possible revenues derived from airport activities are inconsequential and are omitted.

The water and power operations are currently organized into governmentally controlled corporations which operate as commercial enterprises. Trust funds have been established for each of them for development projects. Consideration of a trust fund and a special development fund for the highways program only is required.

The additional revenue required will be derived from surcharge on the water and electrical rates. Trust fund revenues for highway maintenance would be derived from gasoline taxes. Special development funds would be derived from toll charges on newly constructed roads

and bridge, augmented by counterpart funds generated by American aid financing of POL imports.

The high economic feasibility of the water and power plans would allow financing by capital inflow of approximately 300 million US\$ through external soft loans to augment the investment and operation foreign currency requirement of almost US\$ 555 million. However, assuming foreign currency financing of US\$ 120 million for supporting current expenditures through CIP programs of American aid a foreign currency deficit of US\$ 135 million yet remains. This amounts to an annual average deficit of approximately US\$ 34 million which must be solicited in the form of an external grant.

1.1-6 - Impact evaluation

An assessment of the program activity objectives in context with national goals is summarized as follows :

Activity	Population Served x 1,000	Benefit to Cost Ratio	Political Efficiency & Investment/ Capita served	Percent of Plan Investment Expenditure
Highways	3,146	1.63 ave.	48.5	18.1 %
Airports	42	N/A	166.0	0.9 %
Public Building	936	N/A	141.0	15.6 %
Public Housing	318	1.38 ave.	375.0	14.1 %
Electricity	1,553	0.77 to 2.48	227.0	41.8 %
Water supply	1,586	5.8 to 27.1	44.8	8.4 %
Sewerage/ Drainage	409	1.13 *	22.7	1.1 %

N/A- Not applicable due to the variety of services for which these facilities are used;

* Include indirect benefit also.

The variation in the B/C ratio is due to the location of several different isolated projects. The annual average contribution to the GNP is estimated at 1.23 % GNP for the Construction plans and 0.63 % for the utilities plans; although the latter increases to approximately 1.03 % at the end of the 1972 - 75 period.

Evaluation of the summary shown is highly dependent upon the emphasis denoted by varying economic and socio-political conditions. It is paradoxical in that those activities which are most economically feasible contribute more to the foreign currency requirement and absorb less of the unskilled labor force, while those which would contribute most to the GNP and employment problem are least economical and politically inefficient. Hence arises the need for flexibility and an effective management system for continual adjustment of the imbalances encountered.

1.1-7 - Concluding remarks

In conclusion, the program outlined appears consistent with prevailing conditions with feasibility confirmed by this, and previous studies. A sample survey indicates public support centered primarily on the highways and utilities programs which is in general agreement with the summary above. However, many such projects are not altogether feasible at this time. Therefore, an intermediate program as outlined in this report is recommended for the fouryear 1972-1975 development period.

FOUR YEAR (1972-75) PLAN OF INFRASTRUCTURES DEVELOPMENT

TABLE 5.3-1

PUBLIC INVESTMENT SCHEDULE

(US\$1,000)

Code	Items	1972	1973	1974	1975	Total	Percent
<u>Activity 1 : Highways</u>							
1310 :	Total Fund	32,600	36,200	39,800	43,400	152,000	100
1311 :	Foreign currency	12,100	13,440	14,780	16,120	56,440	37
1312 :	Local currency	20,500	22,760	25,020	27,280	95,560	63
<u>Activity 2 : Airports</u>							
2310 :	Total Fund	2,105	1,734	1,753	1,367	6,959	100
2311 :	Foreign currency	822	509	494	382	2,207	32
2312 :	Local currency	1,283	1,225	1,259	985	4,752	68
<u>Transportation Sector</u>							
	Total Fund	34,705	37,934	41,553	44,767	158,959	100
	Foreign currency	12,922	13,949	15,274	16,502	58,647	37
	Local currency	21,783	23,985	26,279	28,265	100,312	63
<u>Activity 3 : Public Buildings</u>							
3310 :	Total Fund	31,000	32,242	33,539	34,875	131,656	100
3311 :	Foreign currency	8,370	8,705	9,055	9,416	35,546	27
3312 :	Local currency	22,630	23,537	24,484	25,459	96,110	73
<u>Activity 4 : Public Housing</u>							
4310 :	Total Fund	27,981	29,174	30,056	31,591	118,802	100
4311 :	Foreign currency	6,992	7,294	7,609	7,896	29,791	25
4312 :	Local currency	20,989	21,880	22,447	23,695	89,011	75
<u>Social Infrastructures Sector</u>							
	Total Fund	58,981	61,416	63,595	66,466	250,458	100
	Foreign currency	15,362	15,999	16,664	17,312	65,337	26
	Local currency	43,619	45,417	46,931	49,154	185,121	74
<u>Activity 5 : Electric Power</u>							
5310 :	Total Fund	64,970	72,609	96,473	114,254	348,306	100
5311 :	Foreign currency	49,382	54,283	71,944	85,183	260,792	75
5312 :	Local currency	15,588	18,326	24,529	29,071	87,514	25

Code	Items	1972	1973	1974	1975	Total	Percent
<u>Activity 6 : Water Supply</u>							
6310:	Total Fund	6,800	18,229	25,593	20,515	71,137	100
6311:	Foreign currency	4,765	13,102	15,265	11,629	44,761	63
6312:	Local currency	2,035	5,127	10,328	8,886	26,376	37
<u>Activity 7 : Sewerage</u>							
7310:	Total Fund	1,672	2,228	2,570	2,806	9,276	100
7311:	Foreign currency	494	708	905	1,091	3,198	34
7312:	Local currency	1,178	1,520	1,665	1,715	6,078	66
<u>Utilities Sector</u>							
	Total Fund	73,442	93,066	124,636	137,575	428,719	100
	Foreign currency	54,641	68,093	88,114	97,904	308,751	72
	Local currency	18,801	24,973	36,522	39,672	119,968	28
<u>Grand Total All activities</u>							
	Total Fund	167,128	192,416	229,784	248,808	838,136	100
	Foreign currency	82,925	98,041	120,052	131,717	432,735	52
	Local currency	84,203	94,375	109,732	117,091	405,401	48

Sectors	Foreign	Local	Total	Percent
Transportation	58,647	100,312	158,959	19
Social Infrastructures	65,337	185,121	250,458	30
Utilities	308,751	119,968	428,719	51
Grand Total	432,735	405,401	838,136	100

FOUR YEAR (1972 - 75) PLAN OF INFRASTRUCTURES DEVELOPMENT

Table 5.4 - 2

EMPLOYMENT REQUIREMENT

Code	Items	1972	1973	1974	1975	Total	percent
<u>Activity I : Highways</u>							
13210:	Total Men-year	6,595	7,328	8,106	8,834	30,863	100.0
13211:	Technician	206	229	251	274	960	3.1
13212:	Skilled	2,336	2,596	2,855	3,115	10,902	35.4
13213:	Unskilled	4,053	4,503	5,000	5,445	19,001	61.5
<u>Activity 2 : Airports</u>							
23210:	Total Men-year	1,187	490	736	674	3,087	100.0
23211:	Technician	81	75	68	54	278	9.0
23212:	Skilled	373	118	211	203	905	29.3
23213:	Unskilled	733	297	457	417	1,904	61.7
<u>Horizontal Constructions</u>							
	Total Men year	7,782	7,818	8,842	9,508	33,950	100.0
	Technician	287	304	319	328	1,238	3.6
	Skilled	2,709	2,714	3,066	3,318	11,807	39.4
	Unskilled	4,786	4,800	5,457	5,862	20,905	67.0
<u>Activity 3 : Public Buildings</u>							
33210:	Total Men year	12,719	13,229	13,761	14,409	54,118	100.0
33211:	Technician	852	886	922	959	3,619	6.7
33212:	Skilled	4,032	4,104	4,362	4,536	17,124	31.7
33213:	Unskilled	7,835	8,149	8,477	8,914	33,375	61.6
<u>Activity 4 : Public Housings</u>							
43210:	Total Men year	16,673	17,385	18,137	18,825	71,020	100.0
43211:	Technician	1,112	1,159	1,209	1,255	4,735	6.6
43212:	Skilled	7,226	7,535	7,859	8,157	30,777	43.3
43213:	Unskilled	8,335	8,691	9,069	9,413	35,508	50.1

Code	Items	1972	1973	1974	1975	Total	Percent
	<u>Vertical Constructions</u>						
	Total Men year	29,392	30,614	31,898	33,234	125,138	100.0
	Technician	1,964	2,045	2,131	2,214	8,354	6.7
	Skilled	11,258	11,729	12,221	12,693	47,901	38.3
	Unskilled	16,170	16,840	17,546	18,327	68,883	55.0
	<u>Activity 5 : Electric Power</u>						
53210	Total Men year	1,575	1,977	2,535	3,038	9,175	100.0
53211	Technician	108	135	180	211	634	6.9
53212	Skilled	516	627	329	679	2,651	28.9
53213	Unskilled	951	1,215	1,576	2,148	5,890	64.2
	<u>Activity 6 : Water Supply</u>						
63210	Total Men year	1,951	6,722	12,861	10,300	31,834	100.0
63211	Technician	312	433	665	534	1,944	5.1
63212	Skilled	693	2,209	4,071	3,799	10,772	33.8
63213	Unskilled	946	4,080	8,125	5,967	19,118	60.1
	<u>Activity 7 : Sewerage</u>						
73210	Total Men year	749	1,018	1,211	1,358	4,336	100.0
73211	Technician	39	52	62	70	223	5.1
73212	Skilled	229	312	373	423	1,337	30.8
73213	Unskilled	481	654	776	865	2,776	64.1
	<u>Industrial Constructions</u>						
	Total Men year	4,275	9,717	16,657	14,696	45,345	100.0
	Technician	459	620	907	815	2,801	6.2
	Skilled	1,438	3,148	5,273	4,901	14,760	32.6
	Unskilled	2,378	5,949	10,477	8,920	27,784	61.2
	<u>Grand Total All Activities</u>						
	Total Men year	41,449	48,149	57,397	57,438	204,433	100.0
	Technician	2,710	2,969	3,357	3,357	12,393	6.0
	Skilled	15,405	17,591	20,560	20,912	74,468	36.5
	Unskilled	23,334	27,589	33,480	33,169	117,572	57.5
	<u>Sectors</u>	<u>Technician</u>	<u>Skilled</u>	<u>Unskilled</u>	<u>Total</u>	<u>%</u>	
	Horizontal Construction	1,238	11,907	20,905	33,950	15.5	
	Vertical Construction	8,354	47,901	58,883	125,138	51.8	
	Industrial Construction	2,801	14,760	27,784	45,345	21.5	

6.3-10

FOUR YEAR (1972-75) PLAN OF INFRASTRUCTURES DEVELOPMENT

Table 6-3-1

CAPITAL AND CURRENT EXPENDITURES - ALL ACTIVITIES

* 1,000 U.S.

ITEMS	1972	1973	1974	1975	Total	%
1. HIGHWAYS						
11. Total	43,916	47,779	51,675	55,604	198,974	100
12. Current Exp.	11,316	11,579	11,875	12,204	46,974	23
13. Capital Exp.	32,600	36,200	39,800	43,400	152,000	77
2. AIRPORTS						
21. Total	2,405	2,065	2,106	1,718	8,324	100
22. Current Exp.	300	331	353	451	1,365	16
23. Capital Exp.	2,105	1,734	1,753	1,367	6,959	84
3. PUBLIC BLDG						
31. Total	38,888	41,371	43,957	46,634	170,850	100
32. Current Exp.	7,888	9,128	10,418	11,759	39,193	23
33. Capital Exp.	31,000	32,243	33,539	34,875	131,657	77
4. PUBLIC HOUSING						
41. Total	28,206	29,450	30,387	31,980	120,023	100
42. Current Exp.	225	276	331	387	1,219	1
43. Capital Exp.	27,981	29,174	30,056	31,593	118,804	99
5. ELECTRIC POWER						
51. Total	91,019	100,476	130,195	156,220	477,910	100
52. Current Exp.	26,049	27,867	33,722	41,966	129,604	27
53. Capital Exp.	64,970	72,609	96,473	114,254	348,306	73
6. WATER SUPPLY						
61. Total	12,148	23,979	31,959	27,436	95,522	100
62. Current Exp.	5,348	5,750	6,366	6,921	24,385	25
63. Capital Exp.	6,800	18,229	25,593	20,515	71,137	75
7. SEWERAGE						
71. Total	1,791	2,396	2,784	3,064	10,040	100
72. Current Exp.	119	168	214	258	764	1
73. Capital Exp.	1,672	2,228	2,570	2,806	9,276	99
8. TOTAL	218,373	247,516	293,063	322,661	1,081,613	100
81. Current Exp.	51,245	55,099	63,279	73,851	243,474	22
82. Capital Exp.	167,128	192,417	229,784	248,810	838,139	78
% Current Expend.	8%	11%	15%	15%	11%	
% Capital Expend.	15%	17%	8%	8%	14%	

6.3-12

FOUR YEAR (1972-75) PLAN OF INFRASTRUCTURES DEVELOPMENT

Table 6-3-3

TOTAL INVESTMENT AND OPERATION BUDGET (US\$1,000)

ITEMS	1972	1973	1974	1975	Total	%
1. HIGHWAYS						
11. Total	43,916	47,779	51,675	55,604	198,974	100
12. Foreign Cy	15,843	17,222	18,690	20,128	71,923	34
13. Local Cy	28,073	30,557	32,985	35,476	127,051	66
2. AIRPORTS						
21. Total	2,405	2,065	2,106	1,718	8,324	100
22. Foreign Cy	873	566	555	448	2,442	29
23. Local Cy	1,532	1,499	1,551	1,300	5,882	71
3. PUBLIC BUILDING						
31. Total	38,888	41,371	43,957	46,634	170,850	100
32. Foreign Cy	9,447	10,531	11,138	11,767	43,383	25
33. Local Cy	28,941	30,840	32,819	34,867	127,467	75
4. PUBLIC HOUSING						
41. Total	28,206	29,450	30,387	31,980	120,023	100
42. Foreign Cy	7,104	7,321	7,642	7,936	29,913	25
43. Local Cy	21,192	22,129	22,745	24,044	90,110	75
5. ELECTRIC POWER						
51. Total	91,019	100,476	130,195	156,220	477,910	100
52. Foreign Cy	63,685	72,953	93,773	111,487	346,902	73
53. Local Cy	22,334	27,523	36,422	44,733	131,008	27
6. WATER SUPPLY						
61. Total	12,148	23,979	31,959	27,436	95,522	100
62. Foreign Cy	5,641	19,980	16,257	12,629	48,507	50
63. Local Cy	6,507	3,999	15,702	14,807	47,015	50
7. SEWERAGE						
71. Total	1,791	2,396	2,784	3,069	10,040	100
72. Foreign Cy	535	769	986	1,192	3,482	35
73. Local Cy	1,156	1,627	1,798	1,877	6,558	65
8. TOTAL	218,373	247,516	293,063	322,661	1,081,643	100
81. Foreign Cy	108,128	129,342	149,041	165,587	552,098	51
82. Local Cy	110,245	118,174	144,022	157,074	529,545	49
Capital Inflow	51,652	64,263	84,374	93,613	293,902	
G.VN. Foreign Cy	56,476	65,079	64,667	71,974	256,196	

6.3-13

FOUR YEAR (1972-75) PLAN OF INFRASTRUCTURE DEVELOPMENT

Table 6-3-4

TOTAL MANPOWER REQUIREMENT - CONSTRUCTION & OPERATION

ITEMS	1972	1973	1974	1975	Total	%
1. HIGHWAYS						
11. Total	12,095	12,930	13,823	14,720	53,568	100
12. Operation	5,500	5,602	5,717	5,886	22,705	42
13. Construction	6,595	7,328	8,106	8,834	30,863	58
2. AIRPORTS						
21. Total	1,364	760	1,036	992	4,152	100
22. Operation	177	270	300	318	1,065	26
23. Construction	1,187	490	736	674	3,087	74
3. PUBLIC BUILDING						
31. Total	15,466	16,466	17,506	18,684	68,122	100
32. Operation	2,747	3,237	3,745	4,275	14,004	20
33. Construction	12,719	13,229	13,761	14,409	54,118	80
4. PUBLIC HOUSING						
41. Total	16,836	17,595	18,395	19,124	71,960	100
42. Operation	163	210	258	309	940	1
43. Construction	16,673	17,385	18,137	18,825	71,020	99
5. ELECTRIC POWER						
51. Total	5,896	6,824	7,755	8,677	29,152	100
52. Operation	4,321	4,847	5,170	5,639	19,977	69
53. Construction	1,575	1,977	2,585	3,038	9,175	31
6. WATER SUPPLY						
61. Total	3,918	9,562	16,427	14,650	44,557	100
62. Operation	1,967	2,840	3,566	4,350	12,723	28
63. Construction	1,951	6,722	12,861	10,300	31,834	72
7. SEWERAGE						
71. Total	789	1,065	1,266	1,420	4,540	100
72. Operation	40	47	55	62	204	5
73. Construction	749	1,018	1,211	1,358	4,336	95
8. Total	56,364	65,202	76,208	78,267	276,051	100
31. Operation	14,915	17,053	18,811	20,669	71,618	26
82. Construction	41,449	48,149	57,397	57,438	204,433	74
GROWTH RATE						
Operation		14%	11%	7%	10%	
Construction		17%	17%	9%	15%	

FOUR YEAR (1972-1975) PLAN OF INFRASTRUCTURES DEVELOPMENT

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