

APPENDIX NOTE 11.3 DEVELOPMENT BENEFITS (SAVINGS IN TRAFFIC COST ASSOCIATED WITH THE DEVELOPMENT OF A NEW TRAFFIC PATTERN)

11.3.1 General

It is anticipated that the Project Roads, if completed, will result in a number of impacts on the economy of the adjacent area. Some of the direct benefits were quantified but others were not because of difficulty and shortage in data (an example is traffic accidents) or of the intricate phenomenon of the economic impact which usually comes out with the other investments.

In the economic evaluation of the project, the savings in traffic cost were only used as a measure of the benefit of the project. It is considered that the estimated savings in traffic cost as stated in 11.3-1 of Chapter 11 represent the most part of the benefits pertinent to the project.

However, it should be noted that the impacts of the construction of the loop road (Route C) have different features from that of the improvements of Routes A and B. Aside from the traffic cost savings of Route C for the diverted traffic and decongestion of existing major roads in the DIZ, it has a developmental impact on the traversed area due to better accessibility.

11.3.2 Development Benefit of the New Road Construction

In the case of Route C, it is practically impossible to quantify the magnitude of investment in other infrastructures and on private sectors which will result in the increase in the regional output. The net value added approach is not applicable because of shortage of the statistical data of the regional output. Accordingly, the following estimate was conducted to measure the net economic gain in terms of savings in traffic cost resulted from a new pattern of traffic distribution associated with the construction of Route C.

1) Adjacent Municipalities (Zones)

The zones directly influenced by the construction of Route C were determined as No. 3, 8, 12, 13, 17, 11, 21 in Paranaque, Las Pinas, Muntinlupa and Bacoor. Zone 25 (Dasmarinas) was deleted because the influence was considered modest since Route C would pass through the farthest eastern part of the zone. (See Fig. 4.3-1). The seven zones are named as the zones in the analysis.

2) New Location of Employment Opportunity

The increasing difficulty to locate and operate in the crowded MMA would initiate enterprises to move in these

zones and adjacent municipalities.

The new location of enterprises and/or factories is determined when the entrepreneur recognizes that the production at the new location can compete well in the market against those who have already been operating elsewhere.

3) Employment and Residents

A newly established factory generates employment opportunities for those living in the municipalities as well as those living in other areas. Assuming that the wage rates for workers are equal among the factories regardless of the distance from their residences, the new opportunity will be more attractive to those in adjacent zones.

It is reasonable to expect that the employee living far from the new enterprise will move in the zones or adjacent municipalities because of the development of new housing areas.

If they leave the job, they will be replaced most probably by those living in adjacent areas. It is quite likely that the majority of the employees in the new enterprise are those living in the zones and/or in the adjacent municipalities. Their travel pattern will be different from those who have employment opportunity in MMA.

4) New Travel Pattern

Even if the wage rate of those who are employed in the newly located enterprise is equal to those working in MMA, the travelling cost within the area of the zones and adjacent municipalities is quite less than that to and from MMA. The difference can be a saving in transport cost which would eventually augment the real disposable income of the employees and their family in the zones. The difference is measured as stated in the following section 11.3.3.

11.3.3 Savings in Traffic Cost as Part of the Development Benefit

1) Assumptions

a. The zones along Route C

The zones along Route C were established in 11.3.2 above. They are zones Nos. 3, 8, 13, 17, 11, 12 and 21.

b. Population

Population in the zones along Route C is divided into two components, one which grows at a normal rate with

traffic pattern the same as at present regardless of the road construction and the other with which people immigrate in the zones after the road is constructed having a different pattern of traffic distribution from the former.

It is assumed that the population in the zones will grow at 4% p.a. in the former case. It is an estimated overall growth in the DIZ (4.64% p.a. in 1980-90 and 3.37% in 1990-00) under a condition that Route C will not be constructed.

While in the latter case, the additional population growth over this normal trend of increase (net increase of 200,000 inhabitants in 2000) can be credited as a result of the construction of Route C. The population with and without Route C is shown in Appendix Table 11.3-1.

c. Traffic Flows

Using the trips in the O-D Table of 1981, the trips to and from the zones can be summarized as in Appendix Table 11.3-2. It is found that out of the total trips in the zones, 45% was to/from the north including Manila, 35% was to/from the other zones in the DIZ and only 3% was within the zones.

Under the normal growth of population as 4% p.a. without Route C, the trips associated with the zones in 2000 are obtained. The difference of the trips with and without Route C associated with the zones in 2000 are shown in Appendix Table 11.3-3. The percent distribution among the groups in 2000 has changed slightly from 1981; 49% is to/from the other zones in the DIZ and 34% to/from the north including Manila.

d. New Traffic Pattern and Savings

From the trips in Appendix Table 11.3-3 the new pattern of trip distribution can be presented by a proximity of workplace and residence as assumed in Subsection 3.2 of this Note. It is assumed that the change is in such a way that the trips within the zones (Group 2) will increase the share up to 34% while those to/from the northern area (Group 1) will reduce to 5%.

This change will result in the reduced vehicle miles and subsequent savings in traffic cost. Using the unit costs in Table 11.1, the average distance of Groups 1 and 2 at 20 Km., (30 Km. including dls) and 5 Km. (8 Km. including dls), respectively, and the normal running speed of 40 KPH for all types of vehicles, the savings are estimated at ₱265,761 per day in year 2000.

Since the construction of the first stage will be completed in 1986, the savings are assumed to increase at an equal amount from zero in 1986 to ₱265,761 in 2000, or an average increase of ₱18,983 per day p.a. These benefits are reduced by half by applying the principle of the triangle area under the demand curve. This benefit stream is incorporated in the cost benefit analysis of Section 11.5 in Chapter 11.

APPENDIX TABLE 11.3-1 POPULATION WITH AND WITHOUT THE PROJECT ROUTE C (In thousand)

Zones	Population		Growth p.a.		Population Growth without Project 1)		p.a. 90-00		p.a. 90-00		Population by R.C.	
	1980	1990	80-90	90-00	1980	1990	2000	80-90	90-00	1990	2000	
3.8												
12.13	142	289	7.36 %	3.33 %	142	223	312	4.64 %	3.37 %		66	97
17.11 21	142	288	7.33 %	3.89 %	142	223	311	"	"		64	113
Total in: 7 zones	284	577	7.35 %	3.37 %	284	447	623	"	4.0%		130	200
Total in: DIZ	1582	2490	4.64 %	3.37 %	1582	2360	3268	"	4.0%		130	200

- Notes: 1) It is assumed that if the Route C is not constructed, the population in these 7 zones will increase at an annual rate of 4.64% for the years 1980-90 and 3.37% for the years 1990-2000. The annual growth rates used are those for the total of the DIZ.
- 2) The balance of the population in the seven zones with and without the project is assumed not to be influenced by other projects.

APPENDIX TABLE 11.3-2 TRIPS TO/FROM THE ZONES IN 1981

GRCUP	Sm	J	B	T	TOTAL
1	17131 (0.37)	6329 (0.65)	1123 (0.46)	4808 (0.66)	29391 (0.45)
2	1344 (0.03)	538 (0.05)	2 (0.00)	110 (0.02)	1994 (0.03)
3	20063 (0.43)	845 (0.09)	819 (0.33)	1271 (0.17)	22998 (0.35)
4	7835 (0.17)	11991 (0.21)	518 (0.21)	1087 (0.15)	11431 (0.17)
Total	46373 (1.00)	9703 (1.00)	2462 (1.00)	7276 (1.00)	65814 (1.00)

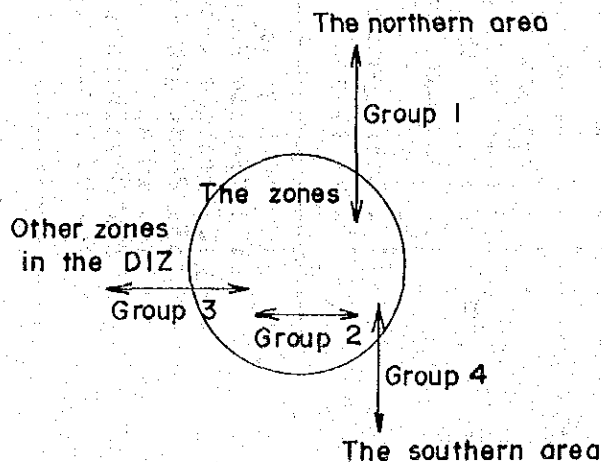
Remarks: Figures in () indicate the ratio in the total of the group.

APPENDIX TABLE 11.3-3 BALANCES OF THE TRIPS IN 2000 ASSOCIATED WITH THE ZONES; WITH AND WITHOUT ROUTE C

Group	Sm Vehs.	Jeepneys	Buses	Trucks	Total
1	15136 (0.39)	308 (0.07)	309 (0.26)	886 (0.17)	16632 (0.34)
2	1855 (0.05)	502 (0.12)	107 (0.09)	200 (0.04)	2664 (0.05)
3	16810 (0.44)	2956 (0.68)	577 (0.50)	3392 (0.66)	23735 (0.49)
4	4629 (0.12)	583 (0.13)	172 (0.15)	648 (0.13)	6032 (0.12)
Total	38430 (1.00)	4349 (1.00)	1158 (1.00)	5126 (1.00)	49063 (1.00)

Remarks: Figures in () indicate the ratio in the total of the group.

Groups are classified as follows:



APPENDIX TABLE 11.3-4 NORMAL ECONOMIC SAVINGS OF THE ALTERNATIVES IN DIZ¹⁾
(Pesos in million per year)

	Plan 1	Plan 2	Plan 3
Savings in			
1987			
1. Vehicle Running Cost	132.03 (78.30)	178.99 (76.32)	191.24 (79.19)
2. Vehicle Time Cost	17.48 (10.17)	27.44 (11.70)	25.67 (10.63)
3. Passenger Time Value	15.65 (9.28)	24.63 (10.33)	21.13 (8.75)
4. Total	165.16 (97.75)	231.06 (98.34)	238.03 (98.57)
5. Development Benefits	3.46 (2.25)	3.46 (0.17)	3.46 (1.43)
6. G. Total	168.62 (100.00)	234.52 (100.00)	241.49 (100.00)
1991			
Savings in			
1. Vehicle Running Cost	726.56 (77.09)	174.76 (71.08)	222.53 (75.72)
2. Vehicle Time Cost	101.59 (10.79)	26.59 (10.99)	29.62 (10.08)
3. Passenger Time Value	96.05 (10.20)	23.27 (9.62)	24.42 (8.31)
4. Total	924.20 (98.08)	224.61 (91.59)	276.57 (94.11)
5. Development Benefits	17.30 (1.92)	17.30 (8.41)	17.30 (5.89)
6. G. Total	941.50 (100.00)	241.91 (100.00)	293.87 (100.00)
1995			
Savings in			
1. Vehicle Running Cost	871.44 (76.83)	492.44 (72.79)	492.50 (73.16)
2. Vehicle Time Cost	113.43 (10.00)	81.87 (12.16)	81.87 (12.16)
3. Passenger Time Value	118.24 (10.30)	67.80 (10.07)	67.80 (10.07)
4. Total	1103.11 (97.13)	642.11 (95.02)	642.16 (95.38)
5. Development Benefits	31.14 (2.87)	31.14 (4.98)	31.14 (4.62)
6. G. Total	1134.25 (100.00)	673.25 (100.00)	673.30 (100.00)

Notes: 1) Savings are estimated on the road networks of DIZ.

2) No staged construction was assumed for this year in these alternatives.

APPENDIX TABLE 11:4-5 CONSTRUCTION COST OF THE ASSOCIATED
ROADS WITH THE PROJECT IN DIZ

ROADS	LENGTH IN KM	LANES	COST IN ₱ MILLIONS
1. Metro Manila Expressway Bicutan-Taguig (R-4 Ext)	5.8	4	169.7
2. C-5 Bicutan-Pateros	7.2	4	230.6
3. Imelda Ave. Ext. 1 Route A - Route B	4.1	4	93.9
4. Imelda Ave. Ext. 2 Bacoor-Rosario	14.4	4	329.8
5. South Feeder Road Route C- Carmona - 1	5.2	2	63.1
- 2	5.2	+ 2	+ 56.1

Remarks: All items such as in Table 10.5-1 are included in the cost. Taxes is assumed at 10% of the cost.

: Plan 1 incorporates the completion of 1, 2, 4 and 5-1 above in 1990 and 5-2 in 1994. Imelda Ave. Ext. 1 is assumed to be completed by 1986.

: Plans 2 and 3 incorporates the completion of 1, 3, and 5-1 in 1994.

APPENDIX TABLE 11.5-1 PLAN 1 : BENEFITS & COST STREAMS

In million pesos

YEAR	Benefits			Cost			Total
	Normal	Development	Total	Project	Associated Roads	Maintenance	
1983				9.79			9.79
1984				78.22			78.22
1985				173.23			173.23
1986				225.63			225.63
1987	165.16	3.46	168.62	68.43	16.89	0.33	85.65
1988	184.96	6.92	191.88		209.10	0.33	209.43
1989	207.14	10.38	217.52	85.03	278.80	0.33	364.16
1990	231.97	13.84	245.81	85.03	209.10	0.33	294.46
1991	924.20	17.30	941.50			0.82	0.82
1992	937.53	20.76	958.29			0.82	0.82
1993	970.42	24.22	994.64	45.91	25.25	0.82	71.98
1994	994.38	27.68	1022.06	45.91	25.24	0.82	71.97
1995	1103.11	31.14	1134.25			1.11	1.11
1996	1140.98	34.60	1174.58			1.11	1.11
1997	1180.15	38.06	1218.21			1.11	1.11
1998	1220.66	41.52	1262.18			1.11	1.11
1999	1262.56	44.98	1307.54			1.11	1.11
2000	1305.90	48.50	1354.40			1.11	1.11
2001	1350.73	48.50	1399.23			1.11	1.11
2002	1397.09	48.50	1445.59			1.11	1.11
2003	1445.05	48.50	1493.55			1.11	1.11
2004	1494.66	48.50	1543.16			1.11	1.11
2005	1545.97	48.50	1594.47			1.11	1.11
2006	1599.04	48.50	1647.54	-273.71	-235.73	1.11	-508.33
Total	20,661.66	654.36	21,316.02	543.47	528.64	17.92	1090.03

Benefits = 21,315.0

Cost = 1,090.0

B-C = 20,225.0

B/C = 3.7

IRR = 39%

PW = 2,154.5

(i = 15%)

(i = 15%)

APPENDIX TABLE 11.5-2 PLAN 2 : BENEFITS & COST STREAMS

YEAR	Benefits			Cost			Total
	Normal	Develop- ment	Total	Project	Associated Road	Mainte- nance	
1983				9.79			9.79
1984				78.22			78.22
1985				148.68			148.68
1986				188.81			188.81
1987	231.06	3.46	234.52	68.43		0.68	69.11
1988	229.43	6.92	236.35			0.68	0.68
1989	227.81	10.38	238.19			0.68	0.68
1990	226.20	13.84	240.04			0.68	0.68
1991	224.61	17.30	241.91		7.86	0.68	8.54
1992	223.03	20.76	243.79		85.85	0.68	86.53
1993	221.45	24.22	245.67	119.46	114.47	0.68	234.61
1994	219.90	27.68	247.58	119.46	85.85	0.68	205.99
1995	642.11	31.14	673.25			0.82	0.82
1996	647.24	34.60	681.84			0.82	0.82
1997	652.42	38.06	690.48			0.82	0.82
1998	657.64	41.52	699.16			0.82	0.82
1999	662.90	44.98	707.88			0.82	0.82
2000	668.20	48.50	716.70			0.82	0.82
2001	673.55	48.55	722.05			0.82	0.82
2002	678.94	48.50	727.44			0.82	0.82
2003	684.37	48.50	732.87			0.82	0.82
2004	689.84	48.50	738.34			0.82	0.82
2005	695.36	48.50	743.86			0.82	0.82
2006	700.81	48.50	749.21	-273.71	-109.82	0.82	-382.71
Total	9,856.77	654.36	10,511.10	459.14	184.21	15.28	658.63

Benefits = 10,511.1

Cost = 658.6

B-C = 9,852.5

B/C = 3.3

IRR = 40%

PW = 1,057.5

(i = 15%)

(i = 15%)

APPENDIX TABLE 11.5-3 : BENEFITS & COST STREAMS

In million pesos							
YEAR	Benefits			Cost			
	Normal	Develop- ment	Total	Project	Associated Roads	Mainte- nance	Total
1983			0	9.79			9.72
1984			0	78.22			78.22
1985			0	200.39			200.39
1986			0	266.36			266.36
1987	238.03	3.46	241.49	68.43		0.50	68.93
1988	247.13	6.92	254.05			0.50	0.50
1989	256.59	10.38	266.97			0.50	0.50
1990	266.39	13.84	280.23			0.50	0.50
1991	276.57	17.30	293.87		7.86	0.50	8.36
1992	287.16	20.76	307.92		85.85	0.50	86.35
1993	298.13	24.22	322.35	54.83	114.47	0.50	169.80
1994	309.53	27.68	337.21	54.83	85.85	0.50	141.18
1995	642.16	31.14	673.30			0.82	0.82
1996	647.28	34.60	681.88			0.82	0.82
1997	652.45	38.06	690.51			0.82	0.82
1998	657.65	41.52	699.17			0.82	0.82
1999	662.90	44.98	707.88			0.82	0.82
2000	668.18	48.50	716.68			0.82	0.82
2001	673.51	48.50	722.01			0.82	0.82
2002	678.89	48.50	727.39			0.82	0.82
2003	684.30	48.50	732.80			0.82	0.82
2004	689.76	48.50	738.26			0.82	0.82
2005	695.26	48.50	743.76			0.82	0.82
2006	700.81	48.50	754.31	-273.71	-109.82	0.82	-382.71
Total	10,237.60	654.36	10,892.00	459.14	184.21	13.84	657.19

Benefits = 10,892.00

Cost = 657.2

B-C = 10,234.0

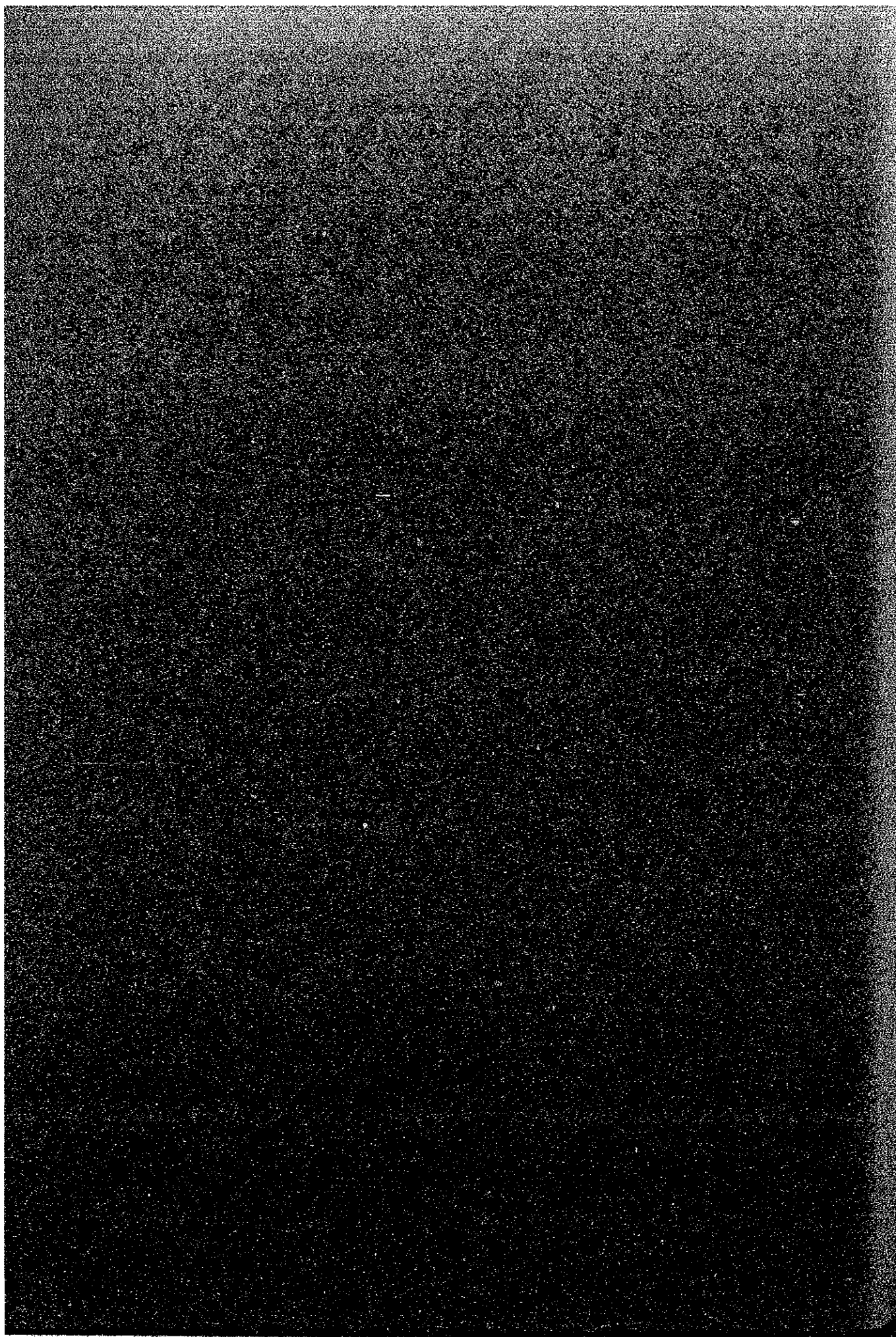
B/C = 3.1

IRR = 37%

PW = 1,111.8
(i = 15%)

(i = 15%)

APPENDIXES FOR CHAPTER 13



APPENDIX NOTE 13.1 FUNDING AND DISBURSEMENT FOR HIGHWAYS IN NATIONAL CAPITAL REGION AND REGION IV-A

Budgetary allowance of the disbursement was studied in the area of NCR and Region IV-A. Capital outlays for highways in the area in 1981 and 1982 are shown in Appendix Table 13.3-1. It is found that the obligation program is invested over the subsequent several years. The capital obligation and the cash disbursement increased approximately by 10% in those years. Assuming that both of the obligation and the disbursement increase at 10% p.a., their magnitudes in future years are estimated as shown in Appendix Table 13.3-2.

Cash disbursement program for the Project and the associated roads can be prepared as in Appendix Table 13.3-3. Its percent share in the disbursement for the area of NCR and Region IV-A is calculated as follows for selected years. (percent share in 1985 is $190.1/385 = 0.49$, $0.49 \times 100 = 49$ percent. Percentage in other year is calculated likewise.)

Disbursement Year	1985	1986	...	1989	1990	...	1993	1994
Plan 1 %	49	59		72	53		1	1
Plan 2 %	42	49		-	-		32	26
Plan 3 %	57	70			-		23	18

Plan 2 will result in less budgetary burden than the others. Since Plan 2 proposes less investment for the first stage and much for the latter stage the percent share is the smallest among the three plans under the increasing tendency of the budget. Plan 1 has the largest share in the second stage because of the extensive construction of the associated roads. Plan 3 also has the large investment in the first on the Project Roads.

Besides the Project and the associated roads, there are a number of other road projects in NCR, which have urgent necessity for implementation in 1980's such as the grade separation on EDSA (C-4) road, and the construction of C-3 circumferential road, R-4 extension, R-10 extension together with the north-western section of C-5, the southern half of Metro Manila Expressway in the first stage, etc. Their viability was already confirmed by feasibility studies.

It is an urgent requirement that the Government should review these plans and determine an overall implementation program of these major road projects by taking into account certain restraint of capital outlays for the coming 5 to 10 years.

APPENDIX TABLE 133-1 BUDGETS FOR CAPITAL OUTLAYS FOR HIGHWAYS: MPWH

(In million pesos and million dollars)

	Obligation Program 1981		Obligation Program 1982		Cash Disbursement by the 1981 Budget 1981		Cash Disbursement by the 1981 Budget 1982		Cash Disbursement by the 1981 Budget 1983		Cash Disbursement by the 1981 Budget 1984	
					Obligation							
National Capital Region	519.3	\$4.0	598.3	\$4.0	519.3	\$4.0	160.3	330.1	28.1			0.8
Region IV-A	67.7	\$ -	59.7	\$ -	67.7	\$ -	35.6	32.1				
Total	587.0	\$4.0	658.0	\$4.0	587.0	\$4.0	195.9	362.2	28.1			0.8

Source: MPWH, CY 1981 Integrated National Infrastructure Program, 1982 MPWH Program NCR, and 1982 MPWH Program Region IV-A.

Note: 1) Obligation Program is the total of the revalidation and new issues.

APPENDIX TABLE 133-2 ASSUMED CAPITAL OUTLAYS IN FUTURE FOR NCR AND REGION IV-A

(In million pesos)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Obligation Program	587	658	710	859	945	1256	1384	1842	2026					
Cash Disbursement in the 1981 Budget														
Low	196	215	237	287	315	420	462	615	676					
High	-	362	398	482	530	705	776	1033	1136					
Average	196	289	318	385	423	563	619	824	906					

Source: From Appendix Table 13.3-1 Cash Disbursement is assumed to increase by 10% p.a.

APPENDIX TABLE 13.3-3 CASH DISBURSEMENT BY THE PROJECT AND ASSOCIATED ROADS

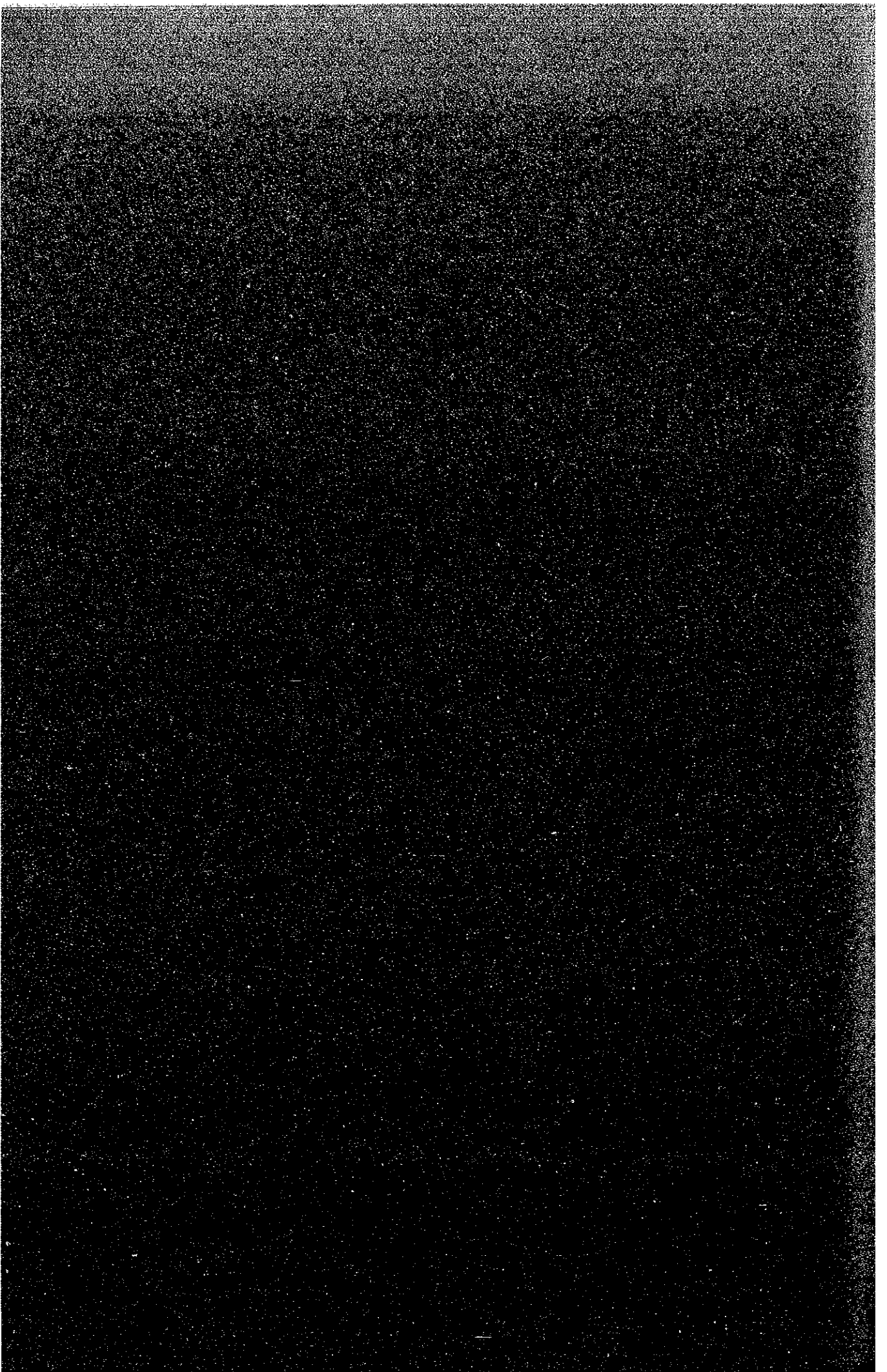
(In million Pesos of financial cost)

Plan	Roads	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total
1	Project Roads	11.3	79.8	190.1	250.9	68.4		98.2	98.2			53.1	53.1		903.1
	Associated Roads					19.0	232.2	309.7	232.3			28.0	28.1		849.3
	Total	11.3	79.8	190.1	250.9	87.4	232.2	407.9	330.5			81.1	81.2		1752.4
2	Project Roads	11.3	79.8	161.2	207.6	68.4						138.1	138.2		804.6
	Associated Roads									8.7	95.4	127.2	95.4		326.7
	Total	11.3	79.8	161.2	207.6	68.4				8.7	95.4	265.3	233.6		1131.3
3	Project Roads	11.3	79.8	221.0	297.3	68.4						63.4	63.4		804.6
	Associated Roads									8.7	95.4	127.2	95.4		326.7
	Total	11.3	79.8	221.0	297.3	68.4				8.7	95.4	190.6	158.8		1131.3

Remarks: In the case of Plan 1, if the project and the associated roads are implemented simultaneously, the cash disbursement of 232.2 million in 1988 will have a share of 45% (232.2/512= 0.45), of the total cash disbursement in these two regions (refer to Appendix Table 13.3-1). The amount of 407.9 million in 1989 will have a share of 72% (407.9/563 = 0.72). The capital outlay requirement for other projects in these regions will be so extensive as it has been in the past, specific larger budgetary allocation becomes necessary. In the case of Plan 2, the largest outlay is programmed around 1993 in which the share will be 34% (265.3/824 = 0.32) under the same assumption.

It is likely that if the timing of the implementation is postponed to the latter years, the percent share in the budgetary outlay will be less under the extrapolation of this increasing tendency. However, it should be emphasized that the outlay depends on the specific policy and program of the Government which is virtually impossible to forecast by means of extrapolation.

OTHER APPENDIXES



APPENDIX TABLE 14--1 1981 VEHICLE TRIP OD TABLE (ALL-VEHICLES) 1/3

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1)	0	848	2446	70	144	0	160	176	276	239	86	0	0	25	0
(2)	0	0	3526	76	148	0	156	214	554	11	13	0	0	0	0
(3)	0	0	0	164	352	0	358	346	874	0	14	0	0	21	0
(4)	0	0	0	0	2418	0	928	444	202	11	0	0	0	0	0
(5)	0	0	0	0	0	0	5498	536	366	689	0	0	118	399	0
(6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	462	314	40	0	0	58	152	0
(8)	0	0	0	0	0	0	0	0	686	370	84	0	21	76	0
(9)	0	0	0	0	0	0	0	0	0	796	194	0	30	30	0
(10)	0	0	0	0	0	0	0	0	0	0	1084	1786	974	522	0
(11)	0	0	0	0	0	0	0	0	0	0	0	56	60	59	0
(12)	0	0	0	0	0	0	0	0	0	0	0	0	1528	256	0
(13)	0	0	0	0	0	0	0	0	0	0	0	0	0	1342	0
(14)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
(1)	0	0	0	0	0	14	0	11	61	4	0	0	786	613	86
(2)	0	0	0	0	0	12	0	0	3	0	0	0	1264	515	0
(3)	0	0	0	0	0	0	0	0	0	0	0	0	410	700	0
(4)	0	0	0	0	0	0	0	0	0	17	0	0	566	283	36
(5)	318	0	23	136	0	59	0	136	91	32	31	20	1262	143	60
(6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(7)	121	0	14	43	0	57	0	0	0	12	0	11	71	79	0
(8)	76	0	0	0	0	36	0	0	36	0	0	0	722	32	4
(9)	0	0	0	0	0	83	0	7	309	0	0	0	354	248	0
(10)	462	48	138	90	30	326	58	310	1920	0	0	0	1055	339	0
(11)	19	0	0	0	0	61	0	39	2637	84	6	2	112	131	0
(12)	198	18	48	34	12	17	22	120	96	17	2	4	8	24	0
(13)	532	42	110	70	26	63	44	262	182	33	7	4	152	42	0
(14)	1070	38	114	60	26	48	34	220	110	118	32	16	286	32	5
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16)	0	258	1866	1016	105	72	373	1300	81	198	122	52	238	23	0
(17)	0	0	101	417	66	17	43	154	131	545	12	2	0	10	0
(18)	0	0	0	1111	210	24	671	2396	26	197	215	28	59	13	0
(19)	0	0	0	0	373	38	201	709	26	582	64	26	102	12	0
(20)	0	0	0	0	0	10	21	76	27	802	10	4	10	5	0
(21)	0	0	0	0	0	0	8	24	4143	94	2	2	35	88	0
(22)	0	0	0	0	0	0	0	1358	6	17	595	348	0	18	0
(23)	0	0	0	0	0	0	0	0	18	52	652	117	191	12	0
(24)	0	0	0	0	0	0	0	0	0	150	0	0	1312	96	0
(25)	0	0	0	0	0	0	0	0	0	0	0	16	18	22	0
(26)	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0
(27)	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0
(28)	0	0	0	0	0	0	0	0	0	0	0	0	0	1820	436
(29)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134
(30)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX TABLE 14-1 1981 VEHICLE TRIP OD TABLE (ALL-VEHICLES) 2/3

	(31)	(32)	(33)	(11111)	(134)	(135)	(136)	(137)	(138)	(139)	(140)	(141)	(142)	(143)	(144)
(1)	736	0	39	6820	2123	139	57	409	289	855	1232	328	177	65	12
(2)	19	0	0	7359	3434	0	0	71	0	1465	5529	357	7525	26	0
(3)	12	0	0	9223	1109	0	0	121	0	322	1549	152	2061	65	0
(4)	314	0	19	5369	996	112	25	236	309	472	495	226	86	34	13
(5)	2074	0	145	15217	3406	231	68	374	1983	2253	3985	1931	773	99	117
(6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(7)	203	0	0	8737	192	7	0	0	21	21	188	21	94	0	30
(8)	286	0	0	4607	1951	7	0	273	0	456	2504	220	3695	140	0
(9)	153	0	0	5476	960	0	0	119	0	221	1546	120	1740	65	0
(10)	4106	0	0	15404	2845	7	0	349	0	530	2587	2022	2671	148	0
(11)	53	0	0	4824	306	0	0	115	0	226	403	600	567	46	0
(12)	194	0	0	4220	22	0	21	0	0	14	99	0	20	0	0
(13)	1101	0	0	6601	415	0	14	32	0	105	601	45	348	14	0
(14)	3285	0	14	8375	771	12	40	0	0	137	843	122	242	55	12
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16)	2703	0	0	10923	646	7	38	47	14	102	328	111	66	44	0
(17)	0	0	0	1902	0	0	0	0	0	0	0	0	0	0	0
(18)	283	0	0	7427	160	0	0	0	0	27	124	27	72	0	0
(19)	683	0	0	5793	278	0	19	0	0	59	452	150	48	76	0
(20)	0	0	0	1813	27	0	0	0	0	0	51	0	0	0	0
(21)	0	0	0	5353	148	0	0	54	0	43	372	0	385	55	0
(22)	0	0	0	3817	0	0	0	0	0	0	0	0	0	0	0
(23)	1011	0	0	9175	516	0	14	114	26	141	1224	315	283	52	0
(24)	27	0	0	11459	3542	0	0	366	0	434	3461	391	1844	148	0
(25)	132	0	0	3106	51	0	0	0	0	12	249	16	38	0	0
(26)	177	0	0	1973	81	0	0	15	0	14	71	18	17	3	0
(27)	320	0	0	845	58	0	0	17	0	9	58	10	19	0	0
(28)	4839	0	404	16377	39324	2005	835	2533	10494	17172	26290	9246	4028	640	233
(29)	873	0	83	6420	4918	1894	1018	5831	4199	4794	2259	908	1277	322	45
(30)	280	0	20	1059	1178	134	62	190	563	601	536	247	158	29	18
(31)	0	0	389	24053	13083	931	242	1069	3572	6515	10075	4205	1990	276	319
(32)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(33)	0	0	0	1113	1092	111	248	141	776	972	695	881	351	124	130
(11111)	0	0	0	107410	83588	5597	2231	12476	21448	37952	68237	22667	30333	2438	1429
(134)	0	0	0	0	0	5416	2226	6847	28366	46422	71088	24997	10892	1756	1973
(135)	0	0	0	0	0	0	570	1890	3195	4272	3642	1248	1362	297	61
(136)	0	0	0	0	0	0	0	5212	6256	5218	1566	1037	2384	655	87
(137)	0	0	0	0	0	0	0	0	16134	11903	4537	3882	8960	2543	283
(138)	0	0	0	0	0	0	0	0	0	54290	36203	19186	33743	5134	1465
(139)	0	0	0	0	0	0	0	0	0	89295	45791	28894	28894	4036	3571
(140)	0	0	0	0	0	0	0	0	0	0	0	115570	18547	1991	4386
(141)	0	0	0	0	0	0	0	0	0	0	0	0	18408	1640	4655
(142)	0	0	0	0	0	0	0	0	0	0	0	0	0	7523	6621
(143)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(144)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX TABLE 14-1 1981 VEHICLE TRIP OD TABLE (ALL-VEHICLES) 3/3

	(145)	(146)	(22222)	(247)	(248)	(249)	(33333)	(.....)
(1)	122	301	6019	83	10	0	93	12932
(2)	465	0	18862	22	0	0	22	26243
(3)	207	0	5386	0	0	0	0	14809
(4)	115	121	3218	10	13	0	23	8590
(5)	993	209	15562	149	78	111	338	31117
(6)	0	0	0	0	0	0	0	0
(7)	89	0	663	0	31	0	31	9431
(8)	279	16	9239	54	4	0	58	14204
(9)	132	0	4903	98	41	0	139	10518
(10)	463	0	11622	179	265	0	444	27470
(11)	19	0	2082	3858	363	28	4249	11155
(12)	0	0	176	132	34	19	185	4581
(13)	49	0	1619	238	58	30	326	8546
(14)	263	9	2306	171	142	122	435	11316
(15)	0	0	0	0	0	0	0	0
(16)	334	0	2057	115	284	454	853	13835
(17)	0	0	0	202	457	48	707	2609
(18)	41	0	451	38	354	797	1189	9067
(19)	48	0	1080	36	527	237	800	7673
(20)	0	0	78	23	665	35	723	2614
(21)	32	0	1069	5354	550	8	5912	12354
(22)	0	0	0	8	772	2209	2989	6806
(23)	206	0	2873	14	331	2414	2759	14807
(24)	571	2	10759	2244	5002	2	27248	49466
(25)	77	0	443	858	7828	0	8786	12335
(26)	16	0	235	2	319	15334	15655	17863
(27)	15	0	166	0	3720	66	3836	4847
(28)	4278	1527	119095	1365	199	112	1676	137148
(29)	493	472	28440	151	27	6	184	35044
(30)	112	226	4054	4	0	0	4	5117
(31)	2449	985	45734	16	370	652	1038	70825
(32)	0	0	0	0	0	0	0	0
(33)	938	68	6507	0	0	0	0	7620
(11111)	12586	3936	305418	35424	22594	22684	80702	600940
(134)	11565	4128	215636	3691	549	302	6542	303766
(135)	708	473	23134	0	0	0	0	28731
(136)	625	227	25863	0	0	0	0	28594
(137)	2508	674	65373	541	78	57	676	78525
(138)	13304	1967	219246	0	0	0	0	240694
(139)	24656	2111	320459	623	76	49	748	359159
(140)	65212	1877	411684	3532	741	259	4532	684453
(141)	86532	858	321794	773	68	68	909	345370
(142)	17174	545	155058	2071	284	65	2420	187811
(143)	1650	102	27432	267	15	11	293	30165
(144)	15622	62	38919	0	0	0	0	40348
(145)	0	397	239943	1002	154	62	1218	253747
(166)	0	0	13421	14	0	0	14	17371
(22222)	0	1038961	12514	1965	873	15352	2398732	0
(247)	0	0	0	2063	9	2072	50010	0
(248)	0	0	0	0	1182	3245	27804	0
(249)	0	0	0	0	0	1191	24748	0
(33333)	0	0	0	0	0	3254	102562	0
(.....)	0	0	0	0	0	151117	0	0

APPENDIX TABLE 14-2 1990 VEHICLE TRIP OD TABLE (ALL-VEHICLES) 1/3

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1)	0	1265	5032	88	176	9	219	429	517	245	65	0	0	41	0
(2)	0	0	4632	104	128	11	234	570	1115	16	17	0	0	0	0
(3)	0	0	0	192	319	3	459	770	1492	0	16	0	0	0	0
(4)	0	0	0	0	2672	9	1220	913	552	12	0	0	0	0	0
(5)	415	0	24	164	0	4	6779	1103	593	663	0	0	124	656	0
(6)	11	8	2	11	1	0	9	15	12	8	7	21	0	11	0
(7)	167	0	16	43	0	0	0	59	51	51	0	0	75	217	0
(8)	191	0	0	0	0	0	0	1060	2083	676	175	2	50	177	0
(9)	0	0	0	0	0	0	0	0	0	961	262	0	33	60	0
(10)	654	66	150	129	5	276	65	393	3050	0	1026	4712	1162	700	0
(11)	26	0	0	0	0	0	0	14	721	0	0	158	72	93	0
(12)	696	60	130	120	5	43	60	372	521	68	5	18	107	73	0
(13)	818	62	130	109	4	67	53	357	410	54	7	8	180	54	0
(14)	1574	63	143	100	5	56	44	323	276	218	34	28	339	44	0
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16)	0	401	1943	1651	21	33	478	1890	211	382	138	110	314	33	0
(17)	0	0	121	653	12	13	53	216	331	1001	12	4	0	13	0
(18)	0	0	0	1390	32	21	656	2666	51	291	193	162	61	14	0
(19)	0	0	0	0	74	44	259	1039	62	1124	72	54	140	16	0
(20)	0	0	0	0	0	0	0	0	0	30	0	0	206	13	0
(21)	0	0	0	0	0	0	6	24	7439	127	2	3	50	22	0
(22)	0	0	0	0	0	0	0	1523	10	24	507	563	0	21	0
(23)	0	0	0	1390	0	0	0	0	41	90	615	217	225	13	0
(24)	0	0	0	0	0	0	0	0	0	393	0	0	2721	203	0
(25)	0	0	0	0	0	0	0	0	0	0	0	0	27	39	0
(26)	0	0	0	0	0	0	0	0	0	0	0	23	27	0	0
(27)	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0
(28)	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0
(29)	0	0	0	0	0	0	0	0	0	0	0	0	2070	678	0
(30)	0	0	0	0	0	0	0	0	0	0	0	0	0	238	0

	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
(1)	0	0	0	0	0	10	0	15	115	8	0	0	905	804	132
(2)	0	0	0	0	0	14	0	0	9	0	0	0	1642	749	0
(3)	0	0	0	0	0	0	0	0	0	0	0	0	459	841	0
(4)	0	0	0	0	0	0	0	0	2	27	0	0	358	318	54
(5)	415	0	24	164	0	52	0	157	164	50	25	26	1232	182	91
(6)	11	8	2	11	1	7	8	10	17	12	7	13	8	10	12
(7)	167	0	16	43	0	35	0	0	0	20	0	14	0	97	13
(8)	191	0	0	0	0	61	0	0	153	0	0	0	1512	72	13
(9)	0	0	0	0	0	106	0	14	721	0	0	0	550	413	0
(10)	654	66	150	129	5	276	65	393	3050	0	0	0	1064	603	0
(11)	26	0	0	0	0	0	0	49	5314	125	5	3	107	173	0
(12)	696	60	130	120	5	43	60	372	521	68	5	18	122	73	0
(13)	818	62	130	109	4	67	53	357	410	54	7	8	180	54	0
(14)	1574	63	143	100	5	56	44	323	276	218	34	28	339	44	0
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16)	0	401	1943	1651	21	33	478	1890	211	382	138	110	314	33	0
(17)	0	0	121	653	12	13	53	216	331	1001	12	4	0	13	0
(18)	0	0	0	1390	32	21	656	2666	51	291	193	162	61	14	0
(19)	0	0	0	0	74	44	259	1039	62	1124	72	54	140	16	0
(20)	0	0	0	0	0	0	0	0	0	30	0	0	206	13	0
(21)	0	0	0	0	0	0	6	24	7439	127	2	3	50	22	0
(22)	0	0	0	0	0	0	0	1523	10	24	507	563	0	21	0
(23)	0	0	0	1390	0	0	0	0	41	90	615	217	225	13	0
(24)	0	0	0	0	0	0	0	0	0	393	0	0	2721	203	0
(25)	0	0	0	0	0	0	0	0	0	0	0	0	27	39	0
(26)	0	0	0	0	0	0	0	0	0	0	0	23	27	0	0
(27)	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0
(28)	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0
(29)	0	0	0	0	0	0	0	0	0	0	0	0	2070	678	0
(30)	0	0	0	0	0	0	0	0	0	0	0	0	0	238	0

APPENDIX TABLE 14-2 1990 VEHICLE TRIP-OD TABLE (ALL-VEHICLES) 2/3

	(31)	(32)	(33)	(1111)	(134)	(155)	(136)	(157)	(158)	(159)	(140)	(141)	(142)	(143)	(144)
(1)	1057	631	142	793	573	173	100	584	395	1365	1606	480	187	64	31
(2)	27	708	0	1131	690	0	0	119	0	2581	8507	565	12879	63	0
(3)	17	575	0	12511	1932	0	0	170	0	499	2027	169	2963	70	0
(4)	384	531	57	7298	1508	117	37	287	560	643	536	282	108	17	29
(5)	2518	540	445	19276	5152	242	133	455	1361	3025	4426	2364	962	119	268
(6)	11	4837	25	5152	13	0	12	11	10	12	10	11	11	11	19
(7)	227	542	0	12201	293	9	0	0	28	34	254	30	142	0	51
(8)	661	1082	2	11803	6541	16	0	721	0	1348	6119	573	9914	363	1
(9)	249	780	1	10923	2317	0	0	236	0	446	2335	232	3465	128	0
(10)	4009	550	0	21073	4464	9	0	490	0	817	5178	2856	3817	194	0
(11)	56	510	0	8337	459	0	0	152	0	289	438	646	402	60	0
(12)	626	1438	4	15523	94	0	89	0	0	54	274	0	70	0	4
(13)	1231	568	0	11106	762	0	24	48	0	176	734	66	535	21	0
(14)	4120	657	57	12566	1424	17	81	0	0	249	1244	202	405	89	58
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16)	3564	797	0	16518	1324	10	98	63	23	173	1276	192	115	74	0
(17)	0	579	0	3220	0	0	0	0	0	0	0	0	0	0	0
(18)	307	545	0	9046	257	0	0	0	0	39	142	56	46	0	0
(19)	945	718	0	8923	534	0	40	0	0	113	657	246	84	42	0
(20)	5	85	0	300	466	0	0	74	0	97	548	60	378	30	0
(21)	0	467	0	9123	211	0	0	64	0	57	376	0	464	67	0
(22)	0	548	0	4878	0	0	0	0	0	0	0	0	0	0	0
(23)	1216	631	0	12114	947	0	26	158	40	236	1524	460	414	48	0
(24)	61	1110	3	23384	11429	0	0	957	0	1261	7635	1047	4953	386	1
(25)	225	470	0	5125	120	0	0	0	0	27	412	11	77	0	0
(26)	174	476	0	234	112	0	0	15	0	18	71	17	20	3	0
(27)	198	976	2	2353	84	0	0	32	0	22	105	22	42	0	0
(28)	6037	547	1271	22405	63507	2150	1278	3173	12348	23858	30366	11712	5144	742	1717
(29)	1730	612	299	9203	4747	2325	1726	8270	5670	7623	3018	1321	1871	457	321
(30)	542	828	98	2712	2841	285	151	370	1035	1299	765	486	313	56	65
(31)	0	693	1522	31512	25302	1249	468	1670	5257	11302	14573	6647	3172	439	933
(32)	0	0	1676	26013	874	590	666	690	647	774	544	707	705	677	1307
(33)	0	0	0	5604	5326	372	1200	553	2871	4238	2542	3690	1322	478	953
(1111)	0	0	0	181557	154773	7515	6381	19367	30044	62716	97303	34234	55106	4768	5569
(134)	0	0	0	0	0	0	5349	13291	51766	99854	127424	49054	21556	3325	2164
(135)	0	0	0	0	0	0	941	2527	4060	6370	4516	1701	1368	374	153
(136)	0	0	0	0	0	0	0	10005	11326	11231	2455	2036	14214	3215	313
(137)	0	0	0	0	0	0	0	0	23632	20654	6521	6150	16214	3215	313
(138)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(139)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(140)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(141)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(142)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(143)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(144)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX TABLE 14-2 1990 VEHICLE TRIP OD TABLE (ALL-VEHICLES) 3/3

(145) (146) (22222) (247) (248) (249) (33533) (*****)

(1)	161	459	9580	134	10	0	144	19475
(2)	640	0	32344	49	0	0	49	43704
(3)	204	0	8134	0	0	0	0	21065
(4)	150	158	4236	18	15	0	33	11507
(5)	1115	272	19915	248	70	177	495	39684
(6)	10	11	149	13	8	15	36	5337
(7)	122	0	993	0	27	0	27	13221
(8)	677	46	26117	182	9	0	191	38113
(9)	241	0	9940	261	45	0	306	21219
(10)	595	0	15620	236	203	0	499	37192
(11)	20	0	2596	6582	386	68	7016	17949
(12)	0	0	602	602	95	95	785	14968
(13)	68	0	2460	456	69	56	581	14347
(14)	364	16	4127	362	189	258	509	17502
(15)	0	0	0	0	0	0	0	0
(16)	212	0	3582	299	394	997	1641	21741
(17)	0	0	430	430	670	101	1331	4851
(18)	50	0	620	63	377	1343	1783	11429
(19)	76	0	1852	80	729	572	1331	12106
(20)	108	0	2221	1961	825	0	2786	5507
(21)	35	0	1274	8171	523	11	6705	19102
(22)	0	0	0	13	824	3746	4583	9461
(23)	259	0	4132	26	406	4662	5094	21344
(24)	1397	6	27074	25407	10708	6	36121	88549
(25)	140	0	807	2195	12563	0	14758	20740
(26)	17	0	275	2	271	22255	22548	25157
(27)	26	0	333	0	6522	133	6705	9391
(28)	4933	2024	160005	2304	220	191	2715	185285
(29)	651	720	42591	301	33	10	344	52158
(30)	203	661	8470	11	0	0	11	31393
(31)	3519	1631	76182	29	438	1043	1506	109600
(32)	632	726	2817	261	571	933	2535	38345
(33)	3578	283	27006	2	0	2	4	32614
(11111)	20083	6817	504870	51405	37173	30094	125272	994056
(134)	20669	4507	410948	9470	941	301	11412	583333
(135)	877	677	35093	0	0	0	0	40608
(136)	1115	467	51154	0	0	0	0	57235
(137)	3611	1121	106345	1191	101	109	1401	127308
(138)	18006	3071	339897	0	0	0	0	369941
(139)	39474	3439	563195	1561	112	122	1802	627711
(140)	86987	2890	631066	2777	969	464	8110	736479
(141)	125747	1443	507324	1761	98	145	2004	543562
(142)	25227	327	258714	4757	412	148	5317	319137
(143)	2345	168	43553	569	21	25	615	48716
(144)	42115	124	112555	0	0	0	0	117903
(145)	0	610	566763	2032	174	152	2358	389224
(146)	0	0	23999	54	0	0	34	30850
(22222)	0	1127192	20352	2755	1946	1946	33053	892307
(247)	0	0	0	3766	21	21	3797	83344
(248)	0	0	0	2149	2149	0	5915	45643
(249)	0	0	0	0	0	0	2170	40810
(33333)	0	0	0	5936	5936	0	170197	2578280
(*****)	0	0	0	0	0	0	0	0

APPENDIX TABLE 14-3 2000 VEHICLE TRIP OD TABLE (ALL-VEHICLES) 1/3

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1)	0	1467	3365	104	200	20	283	588	681	230	72	2	0	52	0
(2)	0	0	5963	146	263	28	336	922	1711	21	24	3	0	0	0
(3)	0	0	0	255	449	22	673	1187	2216	0	21	2	0	43	0
(4)	0	0	0	0	3319	20	1833	1432	541	16	0	2	0	0	0
(5)	0	0	0	0	0	21	9530	1467	850	753	0	2	186	670	0
(6)	0	0	0	0	0	0	26	50	34	18	19	84	25	28	0
(7)	0	0	0	0	0	0	0	1842	1013	89	0	2	134	356	0
(8)	0	0	0	0	0	0	0	0	3600	909	277	4	96	344	0
(9)	0	0	0	0	0	0	0	0	0	1168	609	4	0	100	0
(10)	0	0	0	0	0	0	0	0	0	0	1186	1607	1718	931	0
(11)	0	0	0	0	0	0	0	0	0	0	0	532	118	158	0
(12)	0	0	0	0	0	0	0	0	0	0	0	0	8258	1759	0
(13)	0	0	0	0	0	0	0	0	0	0	0	0	0	3170	0
(14)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

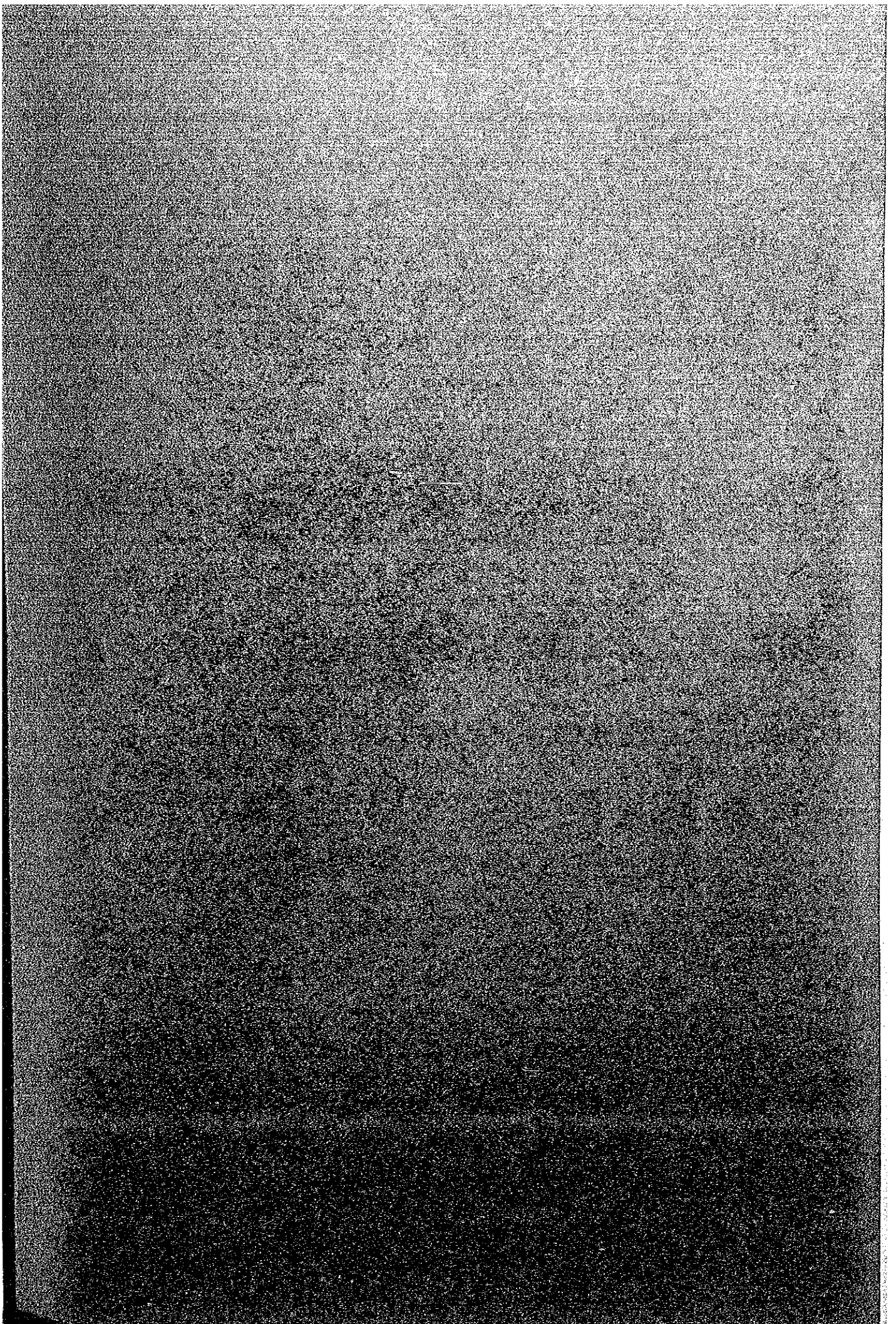
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
(1)	0	0	0	0	0	8	0	17	138	12	0	0	0	1422	160
(2)	0	0	0	0	0	19	0	0	15	0	0	1	2035	1533	0
(3)	0	0	0	0	0	0	0	0	0	0	0	0	555	1695	0
(4)	0	0	0	0	0	0	0	0	4	51	0	0	422	633	65
(5)	380	0	31	232	0	60	0	191	255	70	57	50	1804	562	105
(6)	29	33	22	31	5	15	29	23	58	46	22	60	20	39	30
(7)	259	0	25	42	0	36	0	0	1	45	0	30	87	219	0
(8)	318	2	0	0	0	85	0	0	318	2	0	3	2172	372	20
(9)	0	0	0	0	0	141	0	20	1157	0	0	2	752	240	0
(10)	877	115	198	185	11	300	112	471	428	0	0	0	1155	772	0
(11)	38	0	0	0	0	38	0	62	922	231	8	8	125	563	0
(12)	1544	178	286	298	17	98	174	731	1391	195	13	63	47	231	4
(13)	1431	141	226	204	13	104	119	554	851	119	15	21	267	131	0
(14)	2446	125	229	171	13	81	91	460	534	448	61	72	445	102	9
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16)	0	778	2936	2686	48	111	937	2552	397	763	235	266	412	74	0
(17)	0	0	236	1374	37	30	135	377	812	2600	29	15	0	36	0
(18)	0	0	0	2204	24	28	1266	3524	93	571	310	339	80	30	0
(19)	0	0	0	0	183	63	539	1487	132	2381	131	138	200	40	0
(20)	0	0	0	0	0	0	0	0	0	94	0	0	416	54	0
(21)	0	0	0	0	0	0	11	29	12203	223	3	7	58	181	0
(22)	0	0	0	0	0	0	0	2620	25	63	1101	1761	0	58	0
(23)	0	0	0	0	0	0	0	0	65	157	949	469	263	29	0
(24)	0	0	0	0	0	0	0	0	0	967	0	4	4387	557	2
(25)	0	0	0	0	0	0	0	0	0	0	0	3	46	108	0
(26)	0	0	0	0	0	0	0	0	0	0	0	64	37	0	1
(27)	0	0	0	0	0	0	0	0	0	0	0	0	39	3	0
(28)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	750
(29)	0	0	0	0	0	0	0	0	0	0	0	0	0	3932	0
(30)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	463

APPENDIX TABLE 14-3 2000 VEHICLE TRIP OD TABLE (ALL-VEHICLES) 2/3

	(1)	(2)	(3)	(33)	(111111)	(174)	(135)	(136)	(137)	(138)	(140)	(141)	(142)	(143)	(144)
(1)	1134	650	162	11497	4710	221	125	665	494	1664	1997	605	231	79	35
(2)	27	871	2	15459	10465	0	0	172	0	3754	13515	834	19690	56	0
(3)	21	678	0	17189	2858	0	0	231	0	716	3009	256	6328	132	0
(4)	476	636	75	10140	2171	173	54	380	522	906	804	408	153	23	33
(5)	3025	628	570	25680	7195	345	186	586	1898	4132	6190	3353	1322	144	333
(6)	27	9911	66	10861	38	26	36	27	29	37	29	31	30	29	52
(7)	275	781	2	17979	448	15	0	0	67	54	624	51	231	0	120
(8)	908	1531	4	18453	11158	29	2	1171	0	2338	10816	1007	17250	632	2
(9)	309	1031	2	16777	3878	0	0	365	0	802	4794	388	214	214	2
(10)	3537	597	0	27504	5952	12	0	630	0	1126	4578	2234	5335	262	0
(11)	54	593	0	11345	648	0	0	214	0	377	740	785	710	88	0
(12)	1033	2590	6	27755	220	2	210	0	3	124	559	4	162	6	4
(13)	1506	785	2	20310	1386	0	47	81	0	316	1311	121	957	38	0
(14)	4937	872	88	13954	2281	28	136	0	0	410	2061	342	667	167	35
(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(16)	4134	911	2	24784	2191	17	141	83	37	312	2050	317	186	121	0
(17)	0	1037	2	8105	0	0	0	0	0	0	0	0	0	0	0
(18)	355	690	0	15755	412	0	0	0	0	63	222	57	134	0	2
(19)	1133	977	2	14843	1038	0	71	0	0	194	1081	417	145	63	0
(20)	8	168	0	1141	2140	0	0	167	0	233	1361	200	723	72	0
(21)	0	491	0	14413	292	0	0	85	0	81	310	0	658	23	0
(22)	0	904	2	9947	0	0	0	0	0	0	0	0	0	0	0
(23)	1243	713	0	17006	1353	0	38	199	56	334	2039	701	575	67	0
(24)	84	1771	4	39575	22574	0	2	1726	1	2431	14031	2113	2679	763	3
(25)	369	1408	3	10923	250	0	1	0	0	36	823	65	163	0	2
(26)	214	654	1	3914	194	0	0	23	0	32	117	31	35	6	0
(27)	363	1861	4	5647	191	0	2	71	1	33	253	58	108	1	0
(28)	6837	596	1342	30015	79440	2890	1793	3854	16280	30768	40129	15377	6472	1040	3
(29)	2484	1203	627	18565	20178	5455	4168	17435	13053	17180	6788	3777	4256	1044	230
(30)	614	924	122	3289	3358	311	207	663	1407	1727	1314	667	420	73	31
(31)	0	794	1950	37905	35206	1776	640	2145	7336	15413	20317	9345	4537	636	1170
(32)	0	0	2048	39329	1171	796	1130	834	860	1013	848	741	925	374	1528
(33)	0	0	0	7287	7912	561	1795	753	4261	6133	3793	5216	1832	701	1271
(1111)				276455	231771	12657	10716	37373	46285	157891	206151	79976	34357	7461	7066
(134)				0	0	14842	8750	19797	63594	157891	146463	49273	88036	7461	7066
(135)						0	1361	3815	6711	10270	7443	2933	3037	646	229
(136)						0	0	14945	18409	12891	6024	3363	7355	2014	465
(137)						0	0	0	54987	30042	9841	2234	20335	5780	1123
(138)						0	0	0	0	0	9841	2234	20335	5780	1123
(139)						0	0	0	0	0	79259	46606	79259	11942	5967
(140)						0	0	0	0	0	226159	126380	72792	10901	16630
(141)						0	0	0	0	0	0	270473	43324	4578	17472
(142)						0	0	0	0	0	0	0	47807	6173	20302
(143)						0	0	0	0	0	0	0	0	18602	28324
(144)						0	0	0	0	0	0	0	0	0	354

APPENDIX TABLE 14-3 2000 VEHICLE TRIP OD TABLE (ALL-VEHICLES) 3/3

	(145) (146) (22222) (247) (248) (249) (33333) (*****)									
(1)	168	554	31548	122	8	0	150	23375		
(2)	868	0	49168	62	0	0	69	66696		
(3)	323	0	11853	0	0	0	0	29042		
(4)	156	221	6009	25	18	0	43	16192		
(5)	1299	370	27375	315	68	222	605	53660		
(6)	22	39	411	57	19	38	94	11366		
(7)	168	0	1558	0	30	0	30	19567		
(8)	894	79	45479	291	13	1	305	64237		
(9)	339	0	16524	405	41	0	446	33747		
(10)	697	0	20882	347	158	0	505	43071		
(11)	72	0	3584	8735	441	65	9241	26170		
(12)	2	4	1401	1229	172	171	1572	30726		
(13)	103	0	4367	753	92	90	915	25587		
(14)	488	26	6641	538	243	384	1165	26665		
(15)	0	0	0	0	0	0	0	0		
(16)	288	0	5683	559	423	1446	2294	32765		
(17)	0	0	2	816	969	190	1975	10082		
(18)	67	0	977	90	665	1914	2469	17199		
(19)	111	0	3326	123	966	801	1890	19859		
(20)	221	1	5318	4265	1555	1	5821	13280		
(21)	42	0	1761	10234	564	13	10811	26985		
(22)	0	0	0	22	1315	6706	8243	18190		
(23)	289	0	5641	33	447	5911	6397	29038		
(24)	2312	12	35759	44247	16200	11	60458	153772		
(25)	246	0	1606	4113	20273	1	24387	36976		
(26)	26	0	466	3	400	35330	35733	60113		
(27)	49	1	793	2	12850	421	13273	19711		
(28)	5433	2608	208476	2767	236	238	3241	241732		
(29)	1232	1615	95451	644	59	19	722	115238		
(30)	230	607	11367	15	0	0	15	14671		
(31)	4038	2211	104660	26	428	1144	1598	144163		
(32)	702	944	12696	3144	521	1185	2920	54945		
(33)	4169	409	38930	2	0	2	4	46222		
(1111)	25174	9692	759787	81751	52114	56504	197369	1510046		
(134)	27490	13424	662431	14256	1260	1222	16596	910898		
(135)	1206	1099	53683	0	0	0	0	66340		
(136)	1519	744	81247	0	0	0	0	91962		
(137)	4477	1626	356406	1691	113	135	1939	190718		
(138)	24236	4882	535912	0	0	0	0	582197		
(139)	52111	6014	875474	2374	158	184	2716	970920		
(140)	117509	4363	290771	9851	1066	679	11596	1148830		
(141)	170612	2306	786063	2759	135	207	3101	838459		
(142)	33513	1442	398694	7270	545	224	8048	494779		
(143)	3145	263	67949	848	29	39	916	76326		
(144)	51152	275	152754	2	0	1	3	159823		
(145)	0	804	488154	2594	210	172	2076	516304		
(146)	0	0	37412	52	0	0	52	47156		
(22222)	0	0	2065476	41684	3496	2963	48943	6094782		
(247)	0	0	0	4394	0	21	4415	132850		
(248)	0	0	0	0	2588	6902	2529	61896		
(249)	0	0	0	0	0	6828	259258	3932043		
(33333)										
(*****)										



JICA