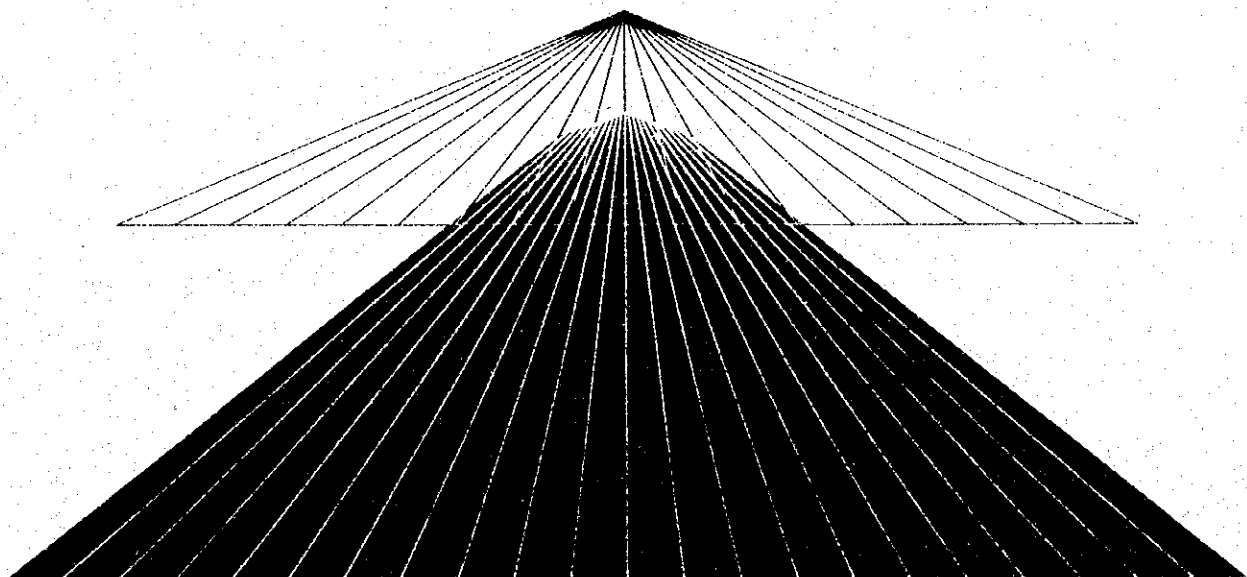




The Study on Road Disaster Prevention Plan in The Kingdom of Thailand

FINAL REPORT APPENDICES

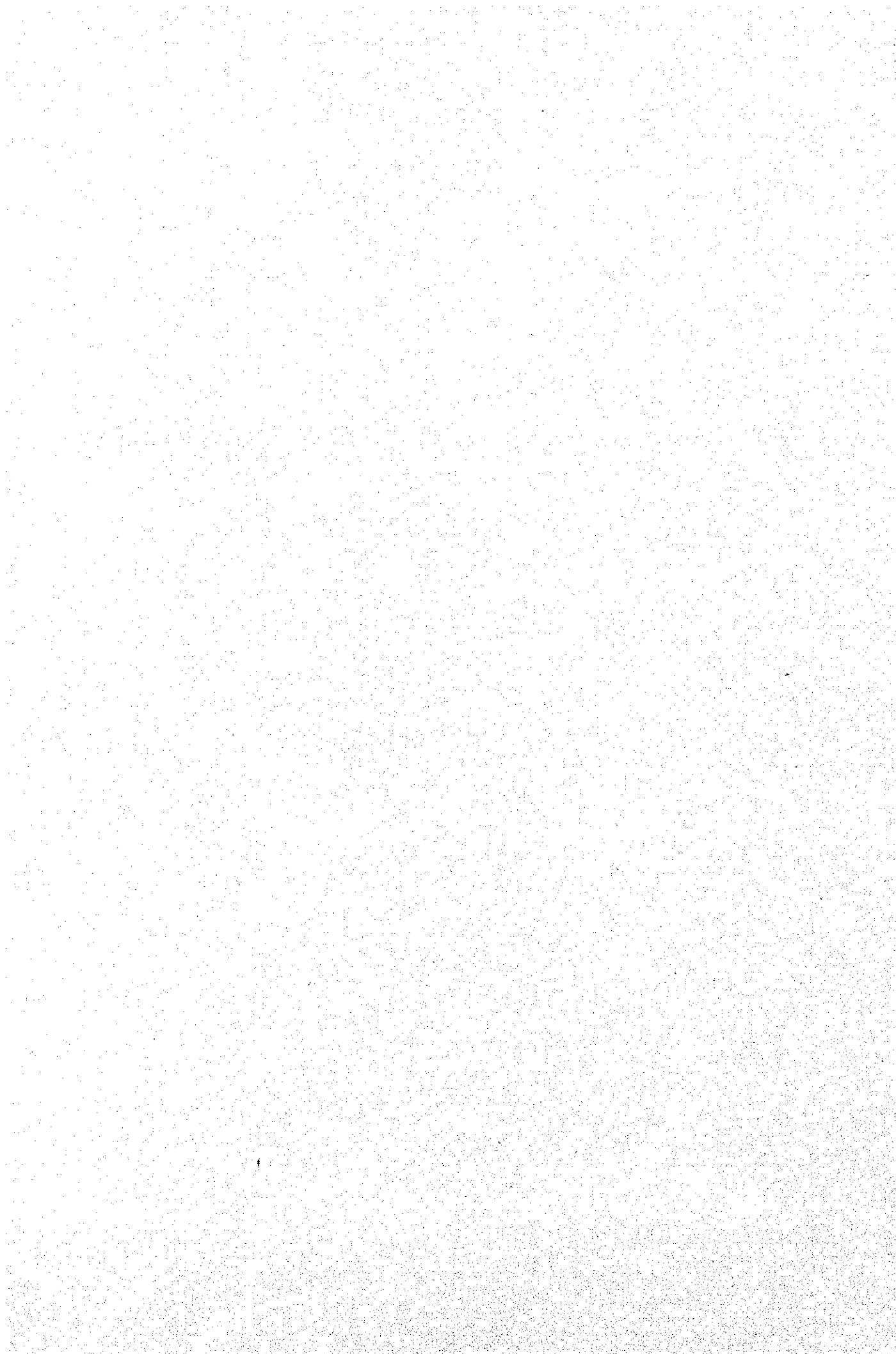
VOLUME 4



JUNE 1995

ORIENTAL CONSULTANTS
KATAHIRA & ENGINEERS INTERNATIONAL

SSF
JR
95-091





Japan International
Cooperation Agency



Kingdom of Thailand
Ministry of Transport and
Communications
Department of Highways

The Study on Road Disaster Prevention Plan in The Kingdom of Thailand

FINAL REPORT APPENDICES

VOLUME 4

JICA LIBRARY



J 1124479 (5)

JUNE 1995

ORIENTAL CONSULTANTS
KATAHIRA & ENGINEERS INTERNATIONAL

The following foreign exchange rate is applied in the study:

US\$1.00 = J¥100

1BART = J¥4.03

(as of November 1994)

THE STUDY ON ROAD DISASTER PREVENTION PLAN

Table of Contents

	page
Appendix 1	
Appendix 1.1 Administrative Boundaries in Thailand..	1 - 1
Appendix 1.2 Changwat Population and Annual Growth rate	1 - 2
Appendix 1.3 GPP at Current Market Price	1 - 4
Appendix 1.4 GPP at 1972 Constant Prices	1 - 6
Appendix 2	
Appendix 2.1 Disaster Prone Routes	2 - 1
Appendix 2.2 Site Reconnaissance Routes	2 - 9
Appendix 2.3 Field Inspection	2 - 13
Appendix 2.4 Distribution of Flooding and Slope Damage Risk	2 - 20
Appendix 3	
Appendix 3.1 Traffic Volume Results	3 - 1
Appendix 3.2 Hourly Traffic Volume	3 - 2
Appendix 3.3 Traffic Composition	3 - 2
Appendix 3.4 Changwat Population Projection	3 - 3
Appendix 3.5 Amphoe Population	3 - 4
Appendix 3.6 Amphoe Population Projection	3 - 6
Appendix 3.7 Projection of GPP at 1988 Constant Prices	3 - 10
Appendix 3.8 Results of Geological Surveys	3 - 11
Appendix 4	
Appendix 4.1 Illustration of Restoration Measures ..	4 - 1
Appendix 4.2 Flowchart of Selection on Restoration Measures	4 - 13
Appendix 4.3 Standard Cross Section for Each Project Roads	4 - 24
Appendix 4.4 Discharge Capacity	4 - 30

Appendix 4.5	Ratio of River Flow Blockade by Pier ..	4 - 30
Appendix 4.6	Factor of Safety on Landslide	4 - 31

Appendix 5

Appendix 5.1	Unit Cost	5 - 1
Appendix 5.2	Project Cost for Preliminary Design ...	5 - 3
Appendix 5.3	Project Cost	5 - 29

Appendix 6

Appendix 6.1	Economic Vehicle Operating Cost	6 - 1
--------------	---------------------------------------	-------

Appendix 7

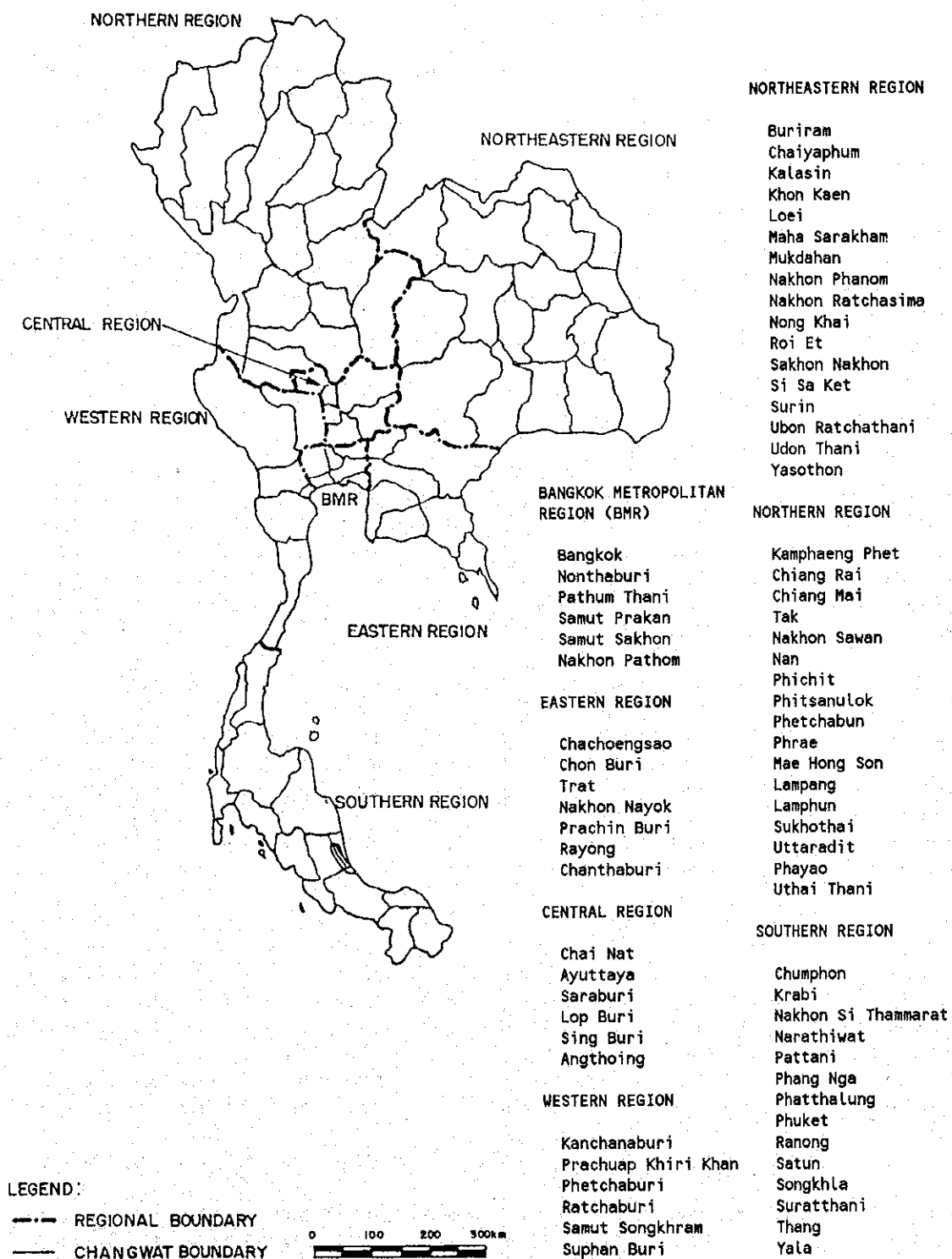
Appendix 7.1	Organizations and Systems of Road Bureau in Japan for Coping with Disasters	7 - 1
Appendix 7.2	Road Information Monitoring System in Japan	7 - 5

Appendix 8	Introduction of Examples of Countermeasure	8 - 1
1.	Coastal Erosion	8 - 1
2.	River Choking	8 - 4
3.	Aesthetic Improvement of Cut and Fill Slope at Seashore	8 - 6

Appendix 9	Introduction of New Technologies	9 - 1
1.	Geotextile	9 - 1
2.	Cement Column by Jet Grouting	9 - 5

Appendix 1





Appendix 1.1 Administrative Boundaries in Thailand

Appendix 1.2 Changwat Population and Annual Growth Rate (1/2)

	Population ('000)						Annual Growth Rate %					
	1975	1980	1985	1990	1991	1992	1975	1980	1985	1990	1991	1992
Thailand	42,390.5	46,961.0	51,777.7	56,303.8	56,907.3	57,789.3	2.6	1.8	2.4	0.7	1.1	1.5
BMR	6,167.5	7,227.3	7,821.8	8,538.7	8,701.5	8,661.2	4.4	3.1	3.5	-2.2	1.9	-0.5
Bangkok	4,349.1	5,153.5	5,345.4	5,546.9	5,620.6	5,562.1	5.3	3.1	3.3	-4.9	1.3	-1.0
Nonthaburi	343.7	386.7	504.4	668.8	703.2	698.7	1.5	3.7	5.5	6.5	5.1	-0.6
Pathum Thani	294.1	324.5	384.7	452.7	466.0	484.6	2.3	2.3	4.9	2.4	2.9	4.0
Samut Prakan	429.8	535.8	662.6	854.9	882.2	871.8	4.1	4.7	3.5	3.1	3.2	-1.2
Samut Sakhon	243.0	265.5	315.4	358.2	365.3	372.6	1.7	2.5	4.6	2.4	2.0	2.0
Nakhon Pathom	507.8	561.3	609.3	657.2	664.2	671.4	1.6	1.5	2.2	1.6	1.1	1.1
EASTERN	2,544.9	2,883.7	3,300.4	3,690.3	3,740.4	3,738.8	2.6	2.0	3.6	1.6	1.4	0.0
Chachoengsao	449.1	498.1	525.7	582.8	589.8	593.2	2.0	2.1	3.0	1.2	1.2	0.6
Chon Buri	644.1	725.4	806.4	910.6	925.0	927.5	2.2	1.8	3.4	1.6	1.6	0.3
Trat	116.1	138.2	168.0	197.2	201.4	201.6	3.8	2.4	4.7	2.2	2.1	0.1
Nakhon Nayok	196.7	201.2	211.4	229.0	230.2	230.3	0.9	0.4	2.0	0.8	0.5	0.0
Prachin Buri	553.3	631.3	779.8	877.5	887.9	893.4	4.1	2.5	4.5	1.5	1.2	0.6
Rayong	312.8	358.9	418.8	453.9	459.8	437.6	3.7	1.7	3.1	1.9	1.3	-4.8
Chanthaburi	272.8	330.6	390.3	439.3	446.3	455.2	1.0	2.8	4.2	1.8	1.6	2.0
CENTRAL	2,428.3	2,537.6	2,663.5	2,834.0	2,854.4	2,822.4	1.7	1.2	3.0	0.8	0.7	-1.1
Chai Nat	317.1	330.4	339.5	356.3	357.7	339.3	1.1	0.7	2.1	0.6	0.4	-5.1
Ayuttaya	608.5	623.2	653.0	685.4	691.1	693.2	1.2	0.5	2.4	0.8	0.8	0.3
Saraburi	445.5	470.7	489.1	535.2	540.0	546.0	2.3	1.8	4.3	0.9	0.9	1.1
Lop Buri	610.3	655.5	696.0	747.2	753.6	738.4	2.3	1.6	3.7	0.9	0.9	-2.0
Sing Buri	201.5	202.6	215.0	230.9	231.4	221.4	1.8	1.8	3.0	0.3	0.2	-4.3
Angthong	245.4	255.2	270.9	279.0	280.6	284.1	1.2	0.8	1.8	0.5	0.6	1.2
WESTERN	2,577.7	2,813.5	3,098.4	3,305.3	3,337.0	3,423.5	2.2	1.8	2.1	1.1	1.0	2.6
Kanchanaburi	425.3	518.9	620.0	697.8	708.5	724.4	4.3	3.2	2.1	1.9	1.5	2.2
Prachuap K. Khan	328.1	377.2	400.7	424.8	430.5	451.2	3.0	2.1	1.2	1.2	1.3	4.8
Phetchaburi	343.6	366.6	410.6	428.0	430.7	438.6	1.3	1.2	1.1	1.0	0.6	1.8
Ratchaburi	583.0	644.7	684.0	720.2	727.4	777.1	2.0	1.9	1.3	0.9	1.0	6.8
Samut Songkhram	194.3	196.7	203.4	206.5	206.2	206.7	0.6	0.5	2.2	-0.2	-0.1	0.2
Suphan Buri	703.4	709.4	779.7	828.0	833.6	825.5	1.6	1.1	3.7	1.0	0.7	-1.0
NORTHEASTERN	14,533.7	16,088.1	18,061.1	19,829.0	20,044.5	20,059.0	2.5	1.9	2.4	1.3	1.1	0.1
Buriram	1,030.2	1,133.0	1,285.1	1,441.5	1,458.9	1,417.3	3.0	2.3	2.8	1.3	1.2	-2.9
Chaiyaphum	755.7	857.7	945.3	1,059.5	1,073.2	1,086.3	2.2	2.2	2.9	1.6	1.3	1.2
Kalasin	699.1	755.3	820.7	895.0	905.8	925.3	2.1	1.8	1.4	1.3	1.2	2.2
Khon Kaen	1,263.2	1,354.9	1,543.0	1,681.5	1,694.5	1,662.5	1.6	2.0	2.7	0.9	0.8	-1.9
Loei	396.3	449.5	511.3	551.9	559.0	595.4	2.0	1.9	1.7	1.4	1.3	6.5
Maha Sarakham	700.6	764.5	845.7	900.9	909.4	869.1	1.7	1.7	1.7	0.6	0.9	-4.4
Mukdahan	-	-	264.5	288.2	293.3	299.3	-	-	1.8	1.4	1.8	2.0

Appendix 1.2 Changwat Population and Annual Growth Rate (2/2)

	Population ('000)						Annual Growth Rate %					
	1975	1980	1985	1990	1991	1992	1975	1980	1985	1990	1991	1992
Nakhon Phanom	694.7	760.3	587.5	635.0	644.0	649.9	2.3	2.0	1.7	1.4	1.4	0.9
N. Ratchasima	1,690.9	1,916.7	2,187.2	2,384.3	2,404.4	2,467.4	2.3	1.6	3.5	1.0	0.8	2.6
Nong Khai	595.2	673.9	764.9	879.2	891.6	836.7	5.8	1.9	2.7	1.1	1.4	-6.2
Roi Et	988.7	1,061.1	1,147.3	1,228.8	1,241.2	1,238.9	1.2	1.6	1.3	1.2	1.0	-0.2
Sakhon Nakhon	689.1	776.5	885.9	974.0	988.2	1,014.3	2.8	1.4	2.0	1.9	1.5	2.6
Si Sa Ket	957.3	1,082.1	1,205.4	1,336.2	1,358.1	1,335.5	2.8	1.5	3.0	1.8	1.6	-1.7
Surin	957.5	1,035.6	1,175.6	1,288.5	1,293.7	1,341.4	1.9	3.4	3.1	1.2	0.4	3.7
U. Ratchathani	1,393.0	1,560.3	1,736.1	1,932.1	1,961.0	1,945.2	4.7	1.9	1.8	1.6	1.5	-0.8
Udon Thani	1,302.2	1,448.2	1,667.8	1,825.3	1,835.2	1,846.2	2.1	1.3	2.3	1.4	0.5	0.6
Yasothon	420.0	458.5	487.8	527.1	533.0	528.3	2.3	1.5	1.4	1.2	1.1	-0.9
NORTHERN	8,912.9	9,587.4	10,391.1	10,993.8	11,021.9	11,682.5	1.6	1.0	1.1	1.1	0.3	6.0
Kamphaeng Phet	497.8	559.2	621.2	668.0	676.9	731.4	3.3	2.5	1.2	1.5	1.3	8.1
Chiang Rai	1,294.2	922.9	981.1	1,039.4	1,048.3	1,229.4	1.7	1.2	0.5	1.1	0.9	17.3
Chiang Mai	1,096.2	1,166.1	1,277.8	1,376.1	1,386.0	1,530.8	0.9	1.4	2.0	1.1	0.7	10.4
Tak	248.4	277.0	318.8	353.8	358.5	425.7	2.0	2.0	2.2	2.1	1.3	18.7
Nakhon Sawan	965.8	976.9	1,042.9	1,088.2	1,091.8	1,094.0	1.4	0.9	1.1	0.6	0.3	0.2
Nan	343.8	379.0	417.3	449.3	455.2	457.6	1.4	1.3	1.7	1.9	1.3	0.5
Phichit	515.8	534.5	553.9	558.8	506.3	587.4	1.5	-5.0	-0.8	0.9	-9.4	16.0
Phitsanulok	655.2	709.1	735.1	786.5	795.2	842.0	0.9	0.9	1.7	1.4	1.1	5.9
Phetchabun	680.1	785.2	905.3	955.5	963.9	996.3	3.5	2.4	1.3	1.4	0.9	3.4
Phrae	417.4	446.4	475.2	493.5	494.1	493.5	1.0	1.1	0.9	0.4	0.1	-0.1
Mae Hong Son	106.5	132.4	155.0	172.8	176.0	206.9	2.2	2.2	4.5	1.8	1.9	17.6
Lampang	643.0	659.4	737.1	772.6	777.8	776.3	1.0	0.5	1.0	1.1	0.7	-0.2
Lamphun	338.5	353.6	398.3	417.6	418.0	397.7	0.5	2.3	1.5	0.7	0.1	-4.9
Sukhothai	497.8	531.6	566.9	592.7	595.9	606.8	2.0	0.8	1.2	0.6	0.5	1.8
Uttaradit	394.7	433.0	441.7	460.5	463.2	475.6	2.2	1.6	0.9	0.9	0.6	2.7
Phayao	-	461.6	480.4	503.7	507.0	512.5	-	0.7	1.3	1.0	0.7	1.1
Uthai Thani	217.7	259.5	283.1	304.8	307.8	318.6	2.5	2.0	1.0	1.2	1.0	3.5
SOUTHERN	5,225.5	5,823.4	6,441.4	7,112.7	7,207.6	7,401.9	2.6	1.8	2.2	1.7	1.3	2.7
Chumphon	290.5	330.5	355.8	397.7	402.6	416.0	2.0	1.8	2.4	1.8	1.2	3.3
Krabi	180.3	218.8	257.6	298.4	303.7	311.3	3.8	3.1	3.0	2.8	1.8	2.5
N. Si Thammarat	1,193.6	1,261.4	1,352.2	1,427.0	1,436.8	1,477.4	2.1	2.0	2.1	1.1	0.7	2.8
Narathiwat	394.1	441.8	493.1	565.5	577.9	576.6	3.9	2.2	1.9	2.1	2.2	-0.2
Pattani	413.3	457.8	483.8	537.5	546.0	541.2	3.4	1.9	2.0	1.7	1.6	-0.9
Phang Nga	153.1	175.0	195.4	212.9	215.0	217.9	2.5	2.6	2.2	1.3	1.0	1.3
Phatthalung	364.1	412.3	430.4	460.6	465.6	474.6	2.1	1.3	1.8	1.2	1.1	1.9
Phuket	118.6	133.7	147.5	168.4	174.7	188.5	3.0	2.6	1.6	3.5	3.7	7.9
Ranong	71.1	83.7	98.2	117.4	120.9	130.8	4.3	2.6	3.3	2.6	3.0	8.2
Satun	137.5	164.7	192.4	222.8	226.7	230.6	4.2	2.3	4.2	2.2	1.8	1.7
Songkhla	748.2	849.6	981.7	1,090.0	1,097.2	1,130.1	2.5	0.9	2.4	1.5	0.7	3.0
Suratthani	543.3	593.1	677.6	738.4	751.2	791.3	2.2	0.9	2.2	1.8	1.7	5.3
Thang	389.3	427.1	469.3	519.2	526.7	540.1	2.7	2.0	1.8	1.3	1.4	2.5
Yala	228.5	273.9	306.4	356.9	362.6	375.5	2.3	2.8	2.9	2.3	1.6	3.6

Source: Registration Division, Department of Local Administration, Ministry of Interior.

Appendix 1.3 GPP at Current Market Prices

(1/2)

Changwat	Million Baht				Average Annual Growth Rate %
	1983	1985	1987	1989	1983-89
BMR	396,923	448,008	584,017	855,080	13.6
Bangkok	309,132	339,609	436,320	628,033	12.5
Nonthaburi	13,078	15,595	20,463	37,210	19.0
Pathum Thani	19,797	24,714	32,034	44,831	14.6
Samut Prakan	37,377	42,724	59,314	99,981	17.8
Samut Sakhon	7,274	12,447	20,204	24,370	22.3
Nakhon Pathom	10,265	12,919	15,682	20,655	12.4
EASTERN	71,422	82,781	100,725	152,626	13.5
Chachoengsao	10,707	15,713	18,120	29,191	18.2
Chon Buri	32,531	36,473	43,928	73,297	14.5
Trat	2,981	3,075	3,875	5,241	9.9
Nakhon Nayok	2,287	2,611	3,185	4,285	11.0
Prachin Buri	7,968	8,741	10,461	14,031	9.9
Rayong	9,574	10,633	14,034	17,142	10.2
Chanthaburi	5,374	5,535	7,122	9,439	9.8
CENTRAL	43,772	48,099	56,429	82,002	11.0
Chai Nat	4,724	5,281	6,152	8,246	9.7
Ayuttaya	7,953	10,710	11,279	15,592	11.9
Saraburi	15,139	15,282	19,585	32,518	13.6
Lop Buri	9,311	9,961	11,271	14,857	8.1
Sing Buri	3,116	3,273	3,767	5,085	8.5
Angthoing	3,529	3,592	4,375	5,704	8.3
WESTERN	51,773	57,398	67,606	92,182	10.1
Kanchanaburi	13,896	16,503	17,807	24,088	9.6
Prachuap K. Khan	7,718	8,076	10,120	14,098	10.6
Phetchaburi	6,444	6,877	7,634	11,218	9.7
Ratchaburi	11,928	13,063	16,419	20,285	9.3
Samut Songkhram	2,120	2,454	3,118	3,739	9.9
Suphan Buri	9,667	10,425	12,508	18,754	11.7
NORTHEASTERN	139,718	150,542	171,186	228,857	8.6
Buriram	8,871	10,077	10,914	14,915	9.0
Chaiyaphum	7,499	7,657	9,131	12,730	9.2
Kalasin	5,565	6,293	6,964	9,298	8.9
Khon Kaen	14,945	15,538	18,771	25,513	9.3
Loei	4,874	5,280	5,836	8,397	9.5
Maha Sarakham	6,515	6,064	6,780	9,572	6.6
Mukdahan	1,535	2,392	2,272	3,122	12.6

Appendix 1.3 GPP at Current Market Prices

(2/2)

Changwat	Million Baht				Average Annual Growth Rate %
	1983	1985	1987	1989	1983-89
Nakhon Phanom	3,927	4,301	5,356	6,724	9.4
N. Ratchasima	22,431	22,622	25,958	34,193	7.3
Nong Khai	7,261	7,236	7,358	10,972	7.1
Roi Et	7,781	8,645	9,572	12,466	8.2
Sakhon Nakhon	5,872	6,824	7,907	9,536	8.4
Si Sa Ket	6,883	8,106	9,228	12,008	9.7
Surin	8,014	8,564	9,592	12,506	7.7
Ubon Ratchathani	11,120	13,209	16,119	20,697	10.9
Udon Thani	13,086	13,939	15,432	20,966	8.2
Yasothon	3,539	3,795	3,996	5,242	6.8
NORTHERN	117,418	129,580	150,620	202,946	9.5
Kamphaeng Phet	7,373	10,966	9,900	14,302	11.7
Chiang Rai	10,347	10,100	13,179	17,185	8.8
Chiang Mai	19,688	19,499	24,288	33,481	9.3
Tak	3,367	4,867	6,550	7,798	15.0
Nakhon Sawan	12,897	13,946	16,008	22,639	9.8
Nan	3,702	3,772	4,447	5,829	7.9
Phichit	5,713	5,896	6,460	8,990	7.8
Phitsanulok	8,402	9,203	10,171	14,203	9.1
Petchabun	8,930	9,447	9,935	14,797	8.8
Phrae	4,294	4,722	5,352	7,014	8.5
Mae Hong Son	1,930	1,895	2,153	2,737	6.0
Lampang	8,388	11,064	12,689	15,905	11.3
Lamphun	3,967	3,968	5,111	6,503	8.6
Sukhothai	5,966	6,731	7,139	9,816	8.7
Uttaradit	4,602	5,523	6,750	9,458	12.8
Phayao	3,871	4,148	5,848	6,952	10.3
Uthai Thani	3,981	3,833	4,640	5,337	5.0
SOUTHERN	89,025	98,234	122,565	156,282	9.8
Chumphon	5,014	6,047	7,627	9,286	10.8
Krabi	4,813	4,377	6,061	7,819	8.4
N. Si Thammarat	13,340	14,995	17,798	20,069	7.0
Narathiwat	5,177	6,058	7,876	9,700	11.0
Pattani	4,638	5,078	6,673	7,721	8.9
Phang Nga	6,363	6,617	6,249	7,393	2.5
Phattalung	4,387	5,245	5,578	7,138	8.5
Phuket	4,665	5,154	6,033	11,350	16.0
Ranong	2,836	2,875	3,966	4,916	9.6
Satun	2,693	3,070	4,100	5,182	11.5
Songkhla	14,957	16,039	21,852	26,447	10.0
Surat Thani	9,352	11,040	14,135	20,804	14.3
Trang	6,169	6,589	8,526	11,042	10.2
Yala	4,621	5,050	6,091	7,415	8.2

Source: Gross Regional and Provincial Products, New Series 1983-1989, NESDB.

Appendix 1.4 GPP at 1972 Constant Prices

(1/2)

Changwat	Million Baht			Average Annual Growth Rate %		Per Capita Baht
	1981	1985	1989	1981-85	1985-89	1989
BMR	137,458	168,338	267,696	5.2	12.3	30,670
Bangkok	107,298	129,194	202,218	4.8	11.9	34,669
Nonthaburi	4,452	5,455	10,659	5.2	18.2	16,981
Pathum Thani	5,924	8,712	11,396	10.1	6.9	25,789
Samut Prakan	12,940	14,934	28,728	3.6	17.8	34,637
Samut Sakhon	2,821	4,613	7721	13.1	13.7	22,079
Nakhon Pathom	4,023	5,430	6,974	7.8	6.5	10,782
EASTERN	22,577	28,763	44,222	6.2	11.4	12,171
Chachoengsao	3,110	4,504	7,755	9.7	14.6	13,471
Chon Buri	10,121	12,423	20,225	5.3	13.0	22,565
Trat	1,001	1,169	1,688	4.0	9.6	8,751
Nakhon Nayok	900	1,076	1,462	4.6	8.0	6,438
Prachin Buri	2,904	3,790	4,951	6.9	6.9	5,726
Rayong	2,633	3,553	4,968	7.8	8.7	11,154
Chanthaburi	1,908	2,248	3,173	4.2	9.0	7,355
CENTRAL	16,921	19,420	26,797	3.5	8.4	9,528
Chai Nat	1,933	2,198	2,719	3.3	5.5	7,681
Ayuttaya	3,466	4,261	5,222	5.3	5.2	7,678
Saraburi	5,098	5,866	10,081	3.6	14.5	19,010
Lop Buri	3,641	4,222	5,123	3.8	5.0	6,920
Sing Buri	1,335	1,387	1,737	1.0	5.8	7,549
Angthoing	1,448	1,486	1,915	0.6	6.5	6,896
WESTERN	18,635	23,287	31,201	5.7	7.6	9,544
Kanchanaburi	4,837	6,411	8,073	7.3	5.9	11,791
Prachuap K. Khan	2,479	3,201	4,776	6.6	10.5	11,374
Phetchaburi	2,230	2,843	3,670	6.3	6.6	8,664
Ratchaburi	4,699	5,467	7,086	3.9	6.7	9,927
Samut Songkhram	759	960	1,256	6.0	6.9	6,071
Suphan Buri	3,631	4,405	6,340	4.9	9.5	7,730
NORTHEASTERN	49,278	64,430	81,190	6.9	6.0	4,147
Buriram	3,030	4,346	5,224	9.4	4.7	3,672
Chaiyaphum	2,350	3,283	4,625	8.7	8.9	4,435
Kalasin	2,171	2,670	3,292	5.3	5.4	3,727
Khon Kaen	5,102	6,461	8,822	6.1	8.1	5,293
Loei	1,885	2,277	2,825	4.8	5.5	5,190
Maha Sarakham	2,069	2,526	3,406	5.1	7.8	3,802
Mukdahan		935	1,102		4.2	3,879

Appendix 1.4 GPP at 1972 Constant Prices

(2/2)

Changwat	Million Baht			Average Annual Growth Rate %		Per Capita Baht
	1981	1985	1989	1981-85	1985-89	1989
Nakhon Phanom	2,022	1,815	2,404	-2.7	7.3	3,839
N. Ratchasima	8,226	10,153	12,496	5.4	5.3	5,293
Nong Khai	1,952	3,430	3,968	15.1	3.7	4,562
Roi Et	2,654	3,606	4,382	8.0	5.0	3,542
Sakhon Nakhon	2,205	2,790	3,675	6.1	7.1	3,843
Si Sa Ket	2,640	3,588	4,323	8.0	4.8	3,292
Surin	2,826	3,534	4,335	5.7	5.2	3,406
Ubon Ratchathani	4,241	5,497	7,153	6.7	6.8	3,760
Udon Thani	4,672	5,946	7,330	6.2	5.4	4,074
Yasothon	1,233	1,573	1,828	6.3	3.8	3,508
NORTHERN	42,744	52,521	68,287	5.3	6.8	6,281
Kamphaeng Phet	2,147	3,264	4,350	11.0	7.4	6,611
Chiang Rai	3,649	4,339	6,073	4.4	8.8	5,910
Chiang Mai	7,194	8,094	11,231	3.0	8.5	8,250
Tak	1,353	2,153	2,604	12.3	4.9	7,524
Nakhon Sawan	4,453	5,801	7,582	6.8	6.9	7,011
Nan	1,359	1,613	2,060	4.4	6.3	4,670
Phichit	2,154	2,472	3,063	3.5	5.5	5,531
Phitsanulok	2,998	3,861	4,849	6.5	5.9	6,251
Petchabun	3,171	4,086	5,205	6.5	6.2	5,523
Phrae	1,640	1,955	2,446	4.5	5.8	4,978
Mae Hong Son	599	772	911	6.5	4.2	5,368
Lampang	3,415	3,840	4,711	3.0	5.2	6,163
Lamphun	1,601	1,777	2,271	2.6	6.3	5,479
Sukhothai	1,848	2,316	3,233	5.8	8.7	5,490
Uttaradit	1,328	1,611	1,836	4.9	3.3	4,025
Phayao	1,490	1,746	2,479	4.0	9.2	4,973
Uthai Thani	2,345	2,821	3,383	4.7	4.6	11,232
SOUTHERN	30,826	37,356	52,804	4.9	9.0	7,547
Chumphon	1,875	2,565	3,510	8.1	8.2	8,982
Krabi	1,040	1,613	2,424	11.6	10.7	8,350
N. Si Thammarat	4,709	5,908	8,656	5.8	10.0	6,130
Narathiwat	1,985	2,355	3,231	4.4	8.2	5,832
Pattani	1,650	1,990	2,591	4.8	6.8	4,904
Phang Nga	2,499	2,066	2,202	-4.6	1.6	10,481
Phattalung	1,581	2,039	2,415	6.6	4.3	5,304
Phuket	1,740	1,824	3,355	1.2	16.5	20,621
Ranong	1,128	955	1,397	-4.1	10.0	12,212
Satun	801	1,153	1,577	9.5	8.1	7,237
Songkhla	5,028	6,182	8,497	5.3	8.3	7,914
Surat Thani	2,982	4,358	7,071	9.9	12.9	9,745
Trang	2,209	2,475	3,466	2.9	8.8	6,764
Yala	1,599	1,873	2,412	4.0	6.5	6,913

Source: Gross Regional and Provincial Products, New Series 1981-1989, NESDB.

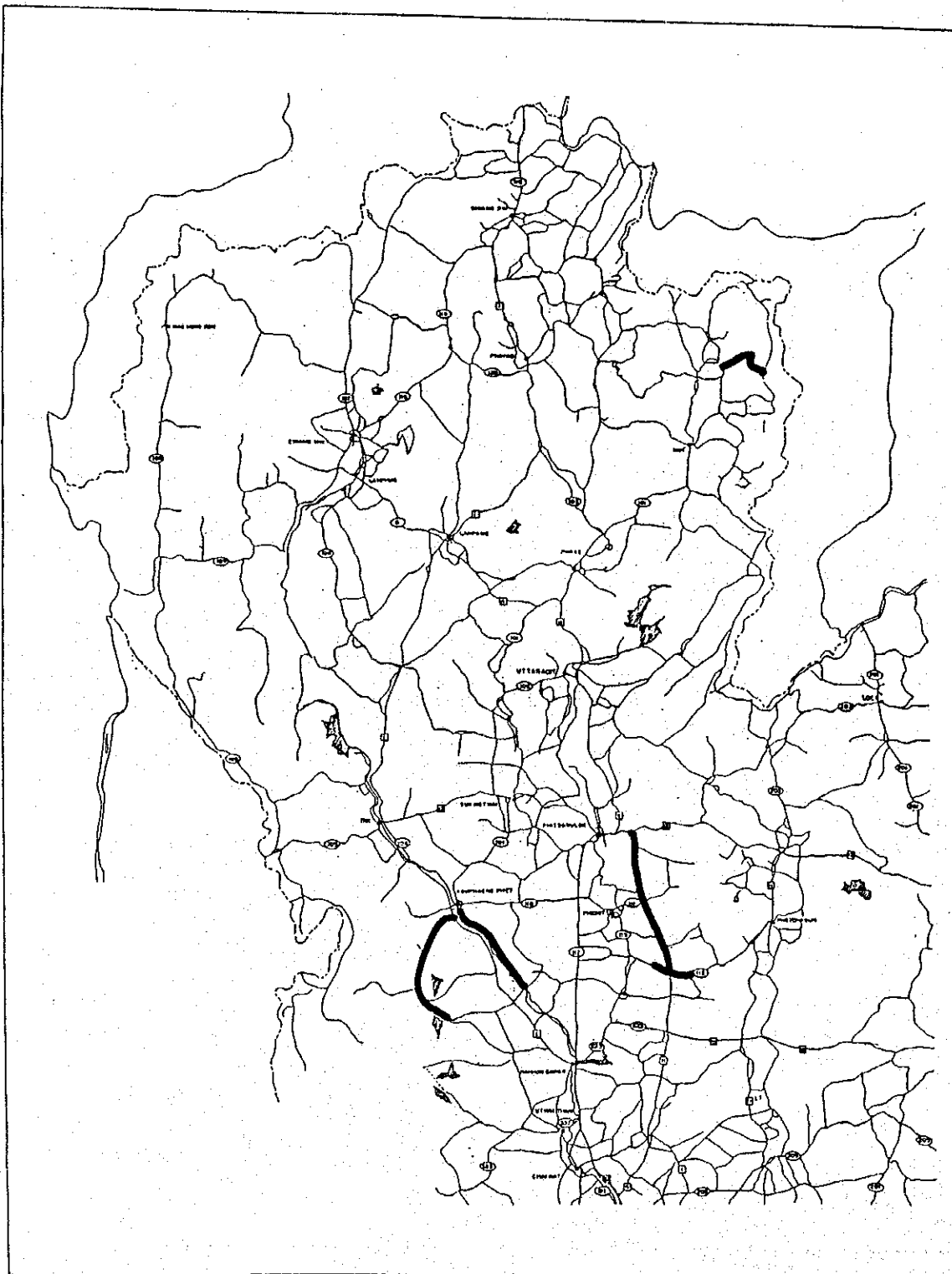


Appendix 2

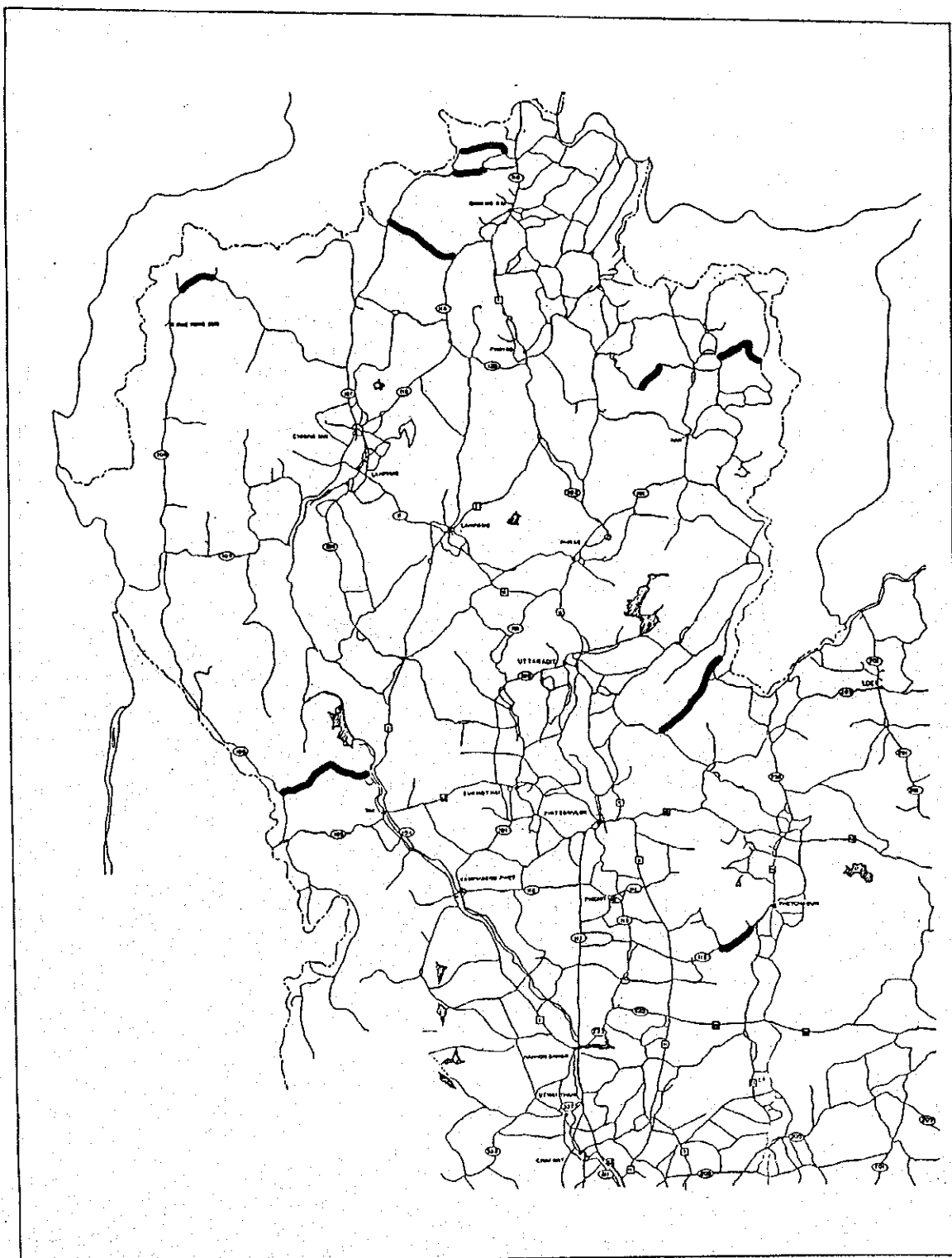


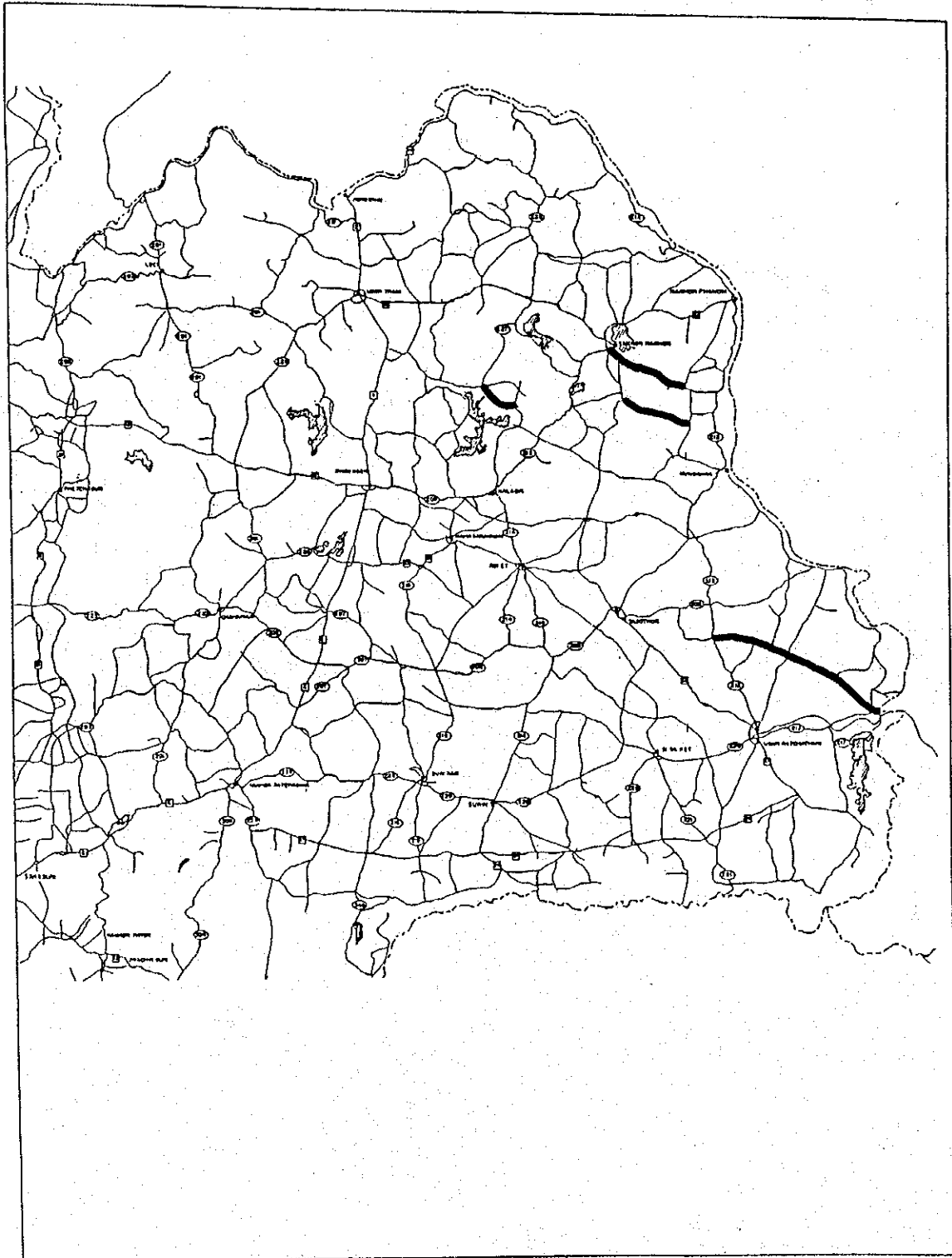
This is a detailed black and white map of the Utterangi region in India. The map shows a complex network of roads, rivers, and administrative boundaries. Key locations labeled include Poonch, Jammu, Kathua, and various districts. The map is oriented with North at the top. A prominent road network is visible, connecting major centers. The map includes labels for various towns and districts, such as Poonch, Jammu, and Kathua. A prominent road network is visible, connecting major centers. The map includes labels for various towns and districts, such as Poonch, Jammu, and Kathua.

2 - 1

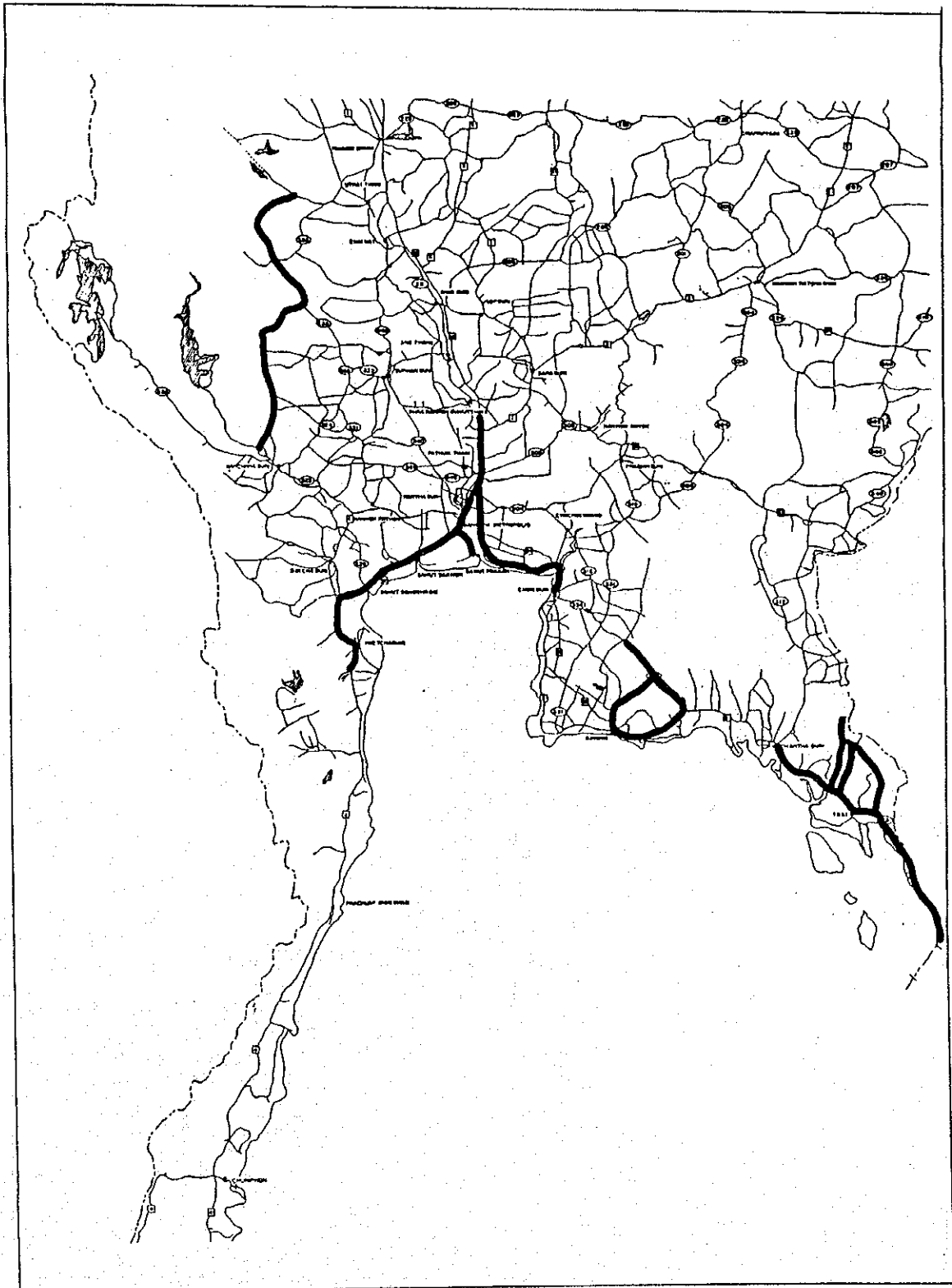


(2) Disaster Prone Routes for Road Flooding
in the North

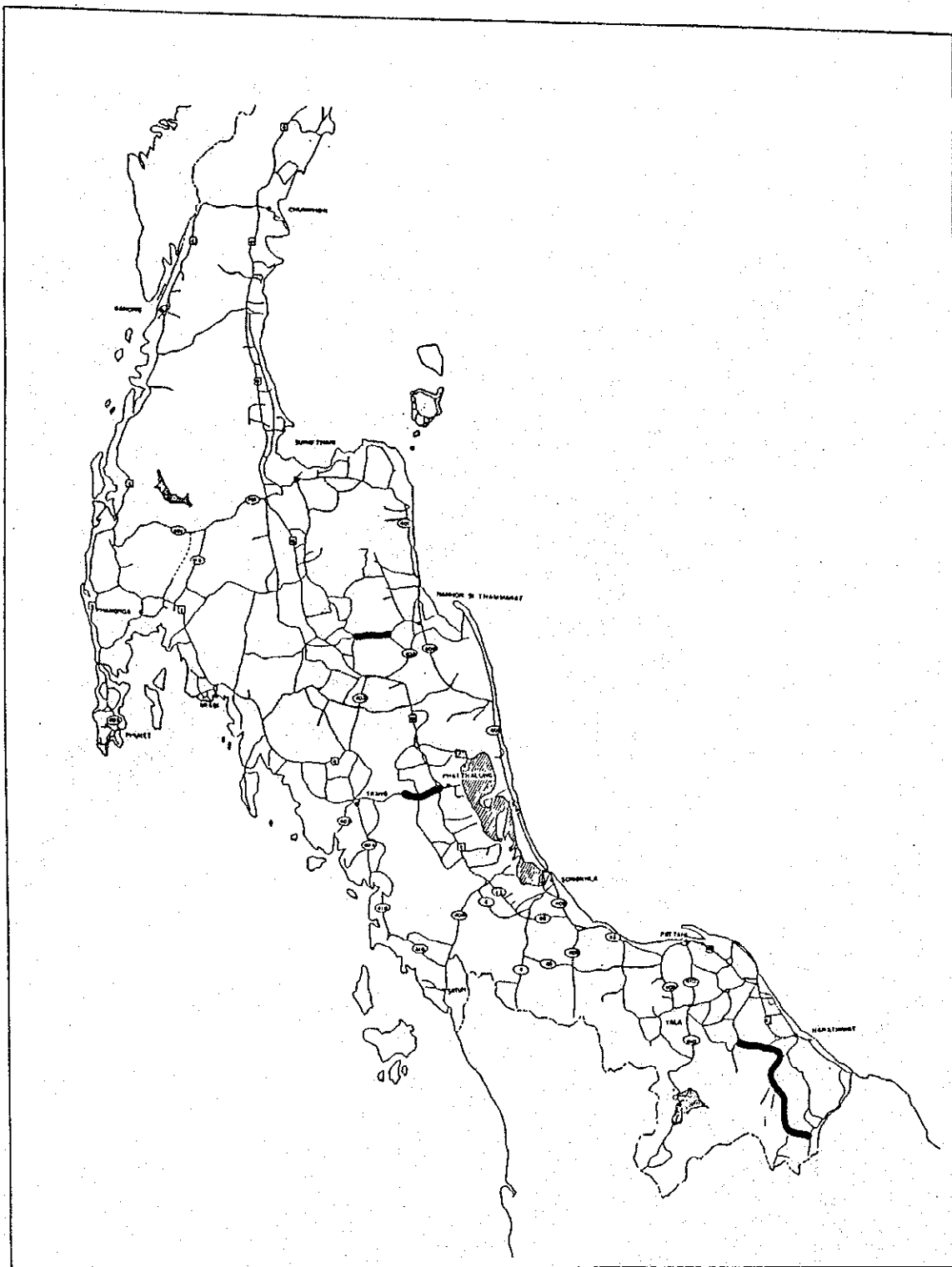




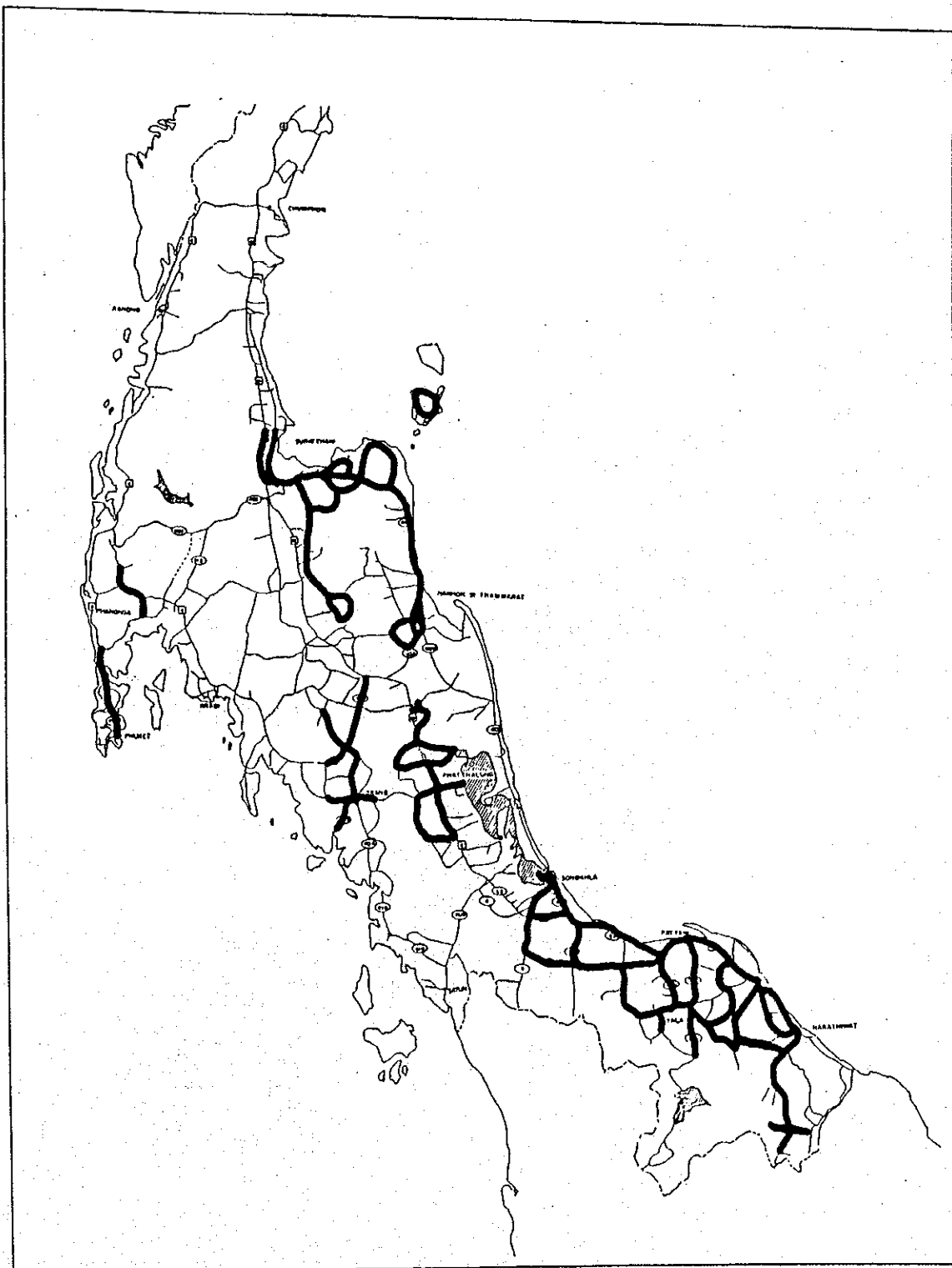
(4) Disaster Prone Routes for Road Collapsing and Road Flooding in the Northeast



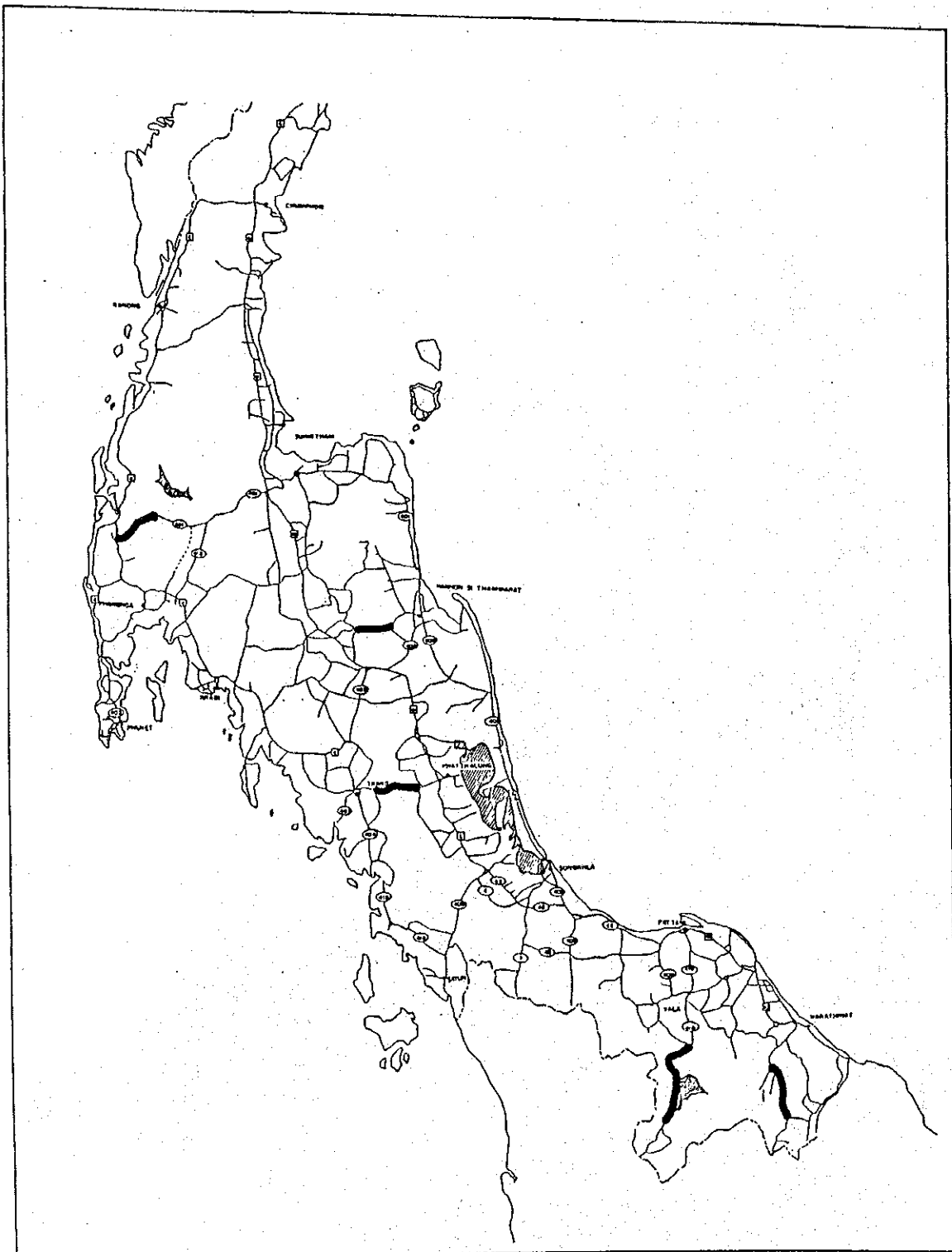
(5) Disaster Prone Routes for Road Collapsing and Road Flooding in the Central



(6) Disaster Prone Routes for Bridge Collapsing in the South

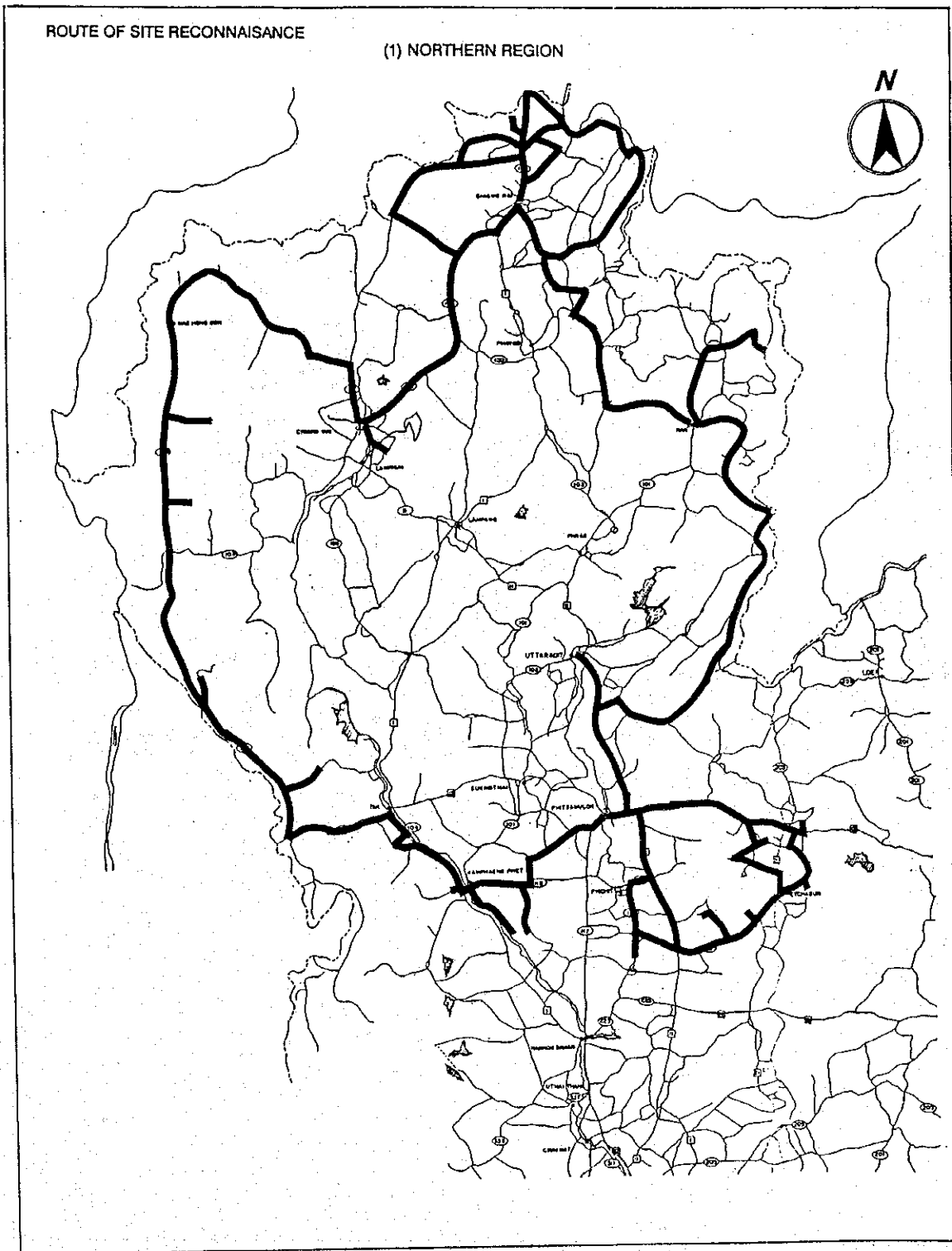


(7) Disaster Prone Routes for Road Collapsing and Road Flooding in the South



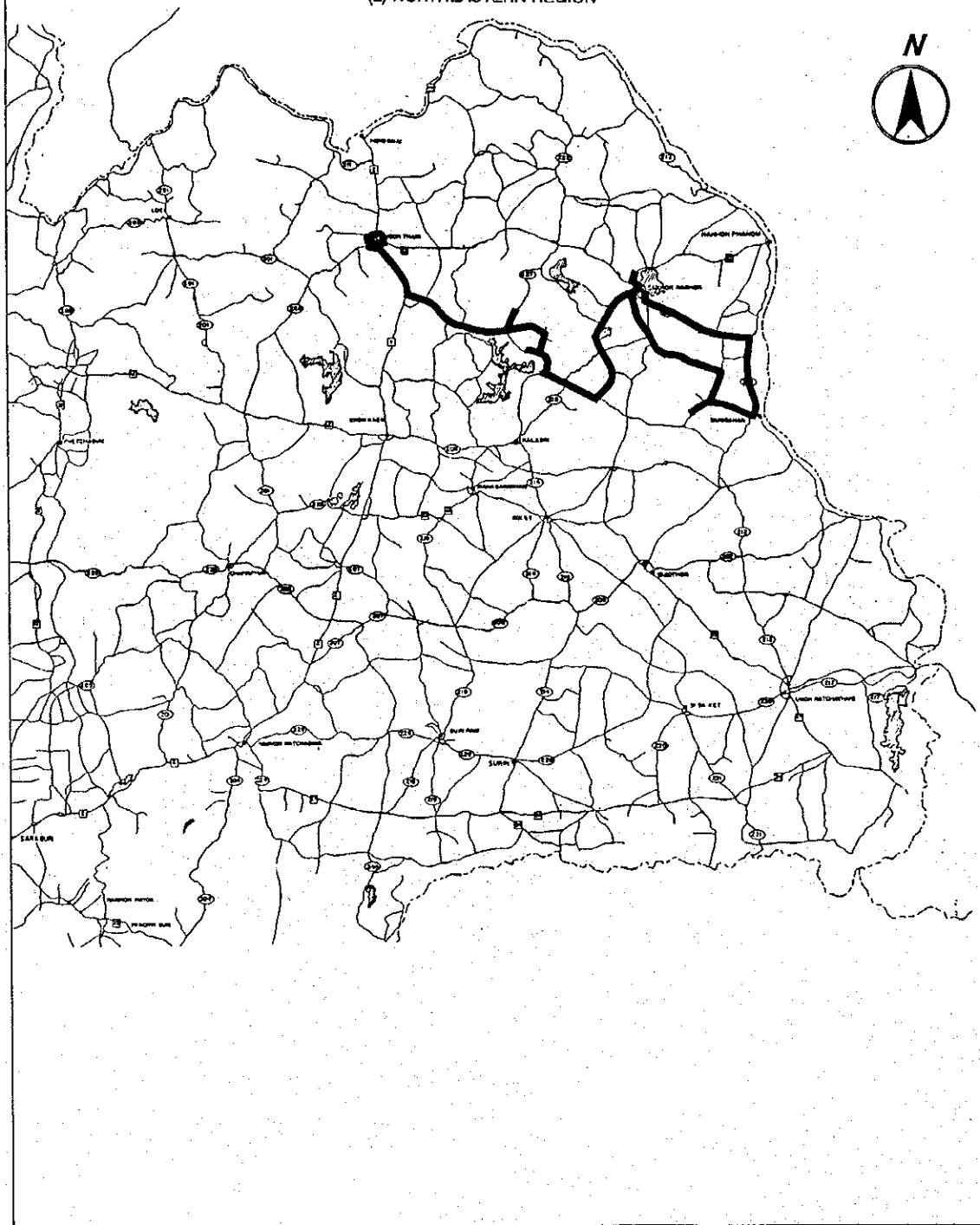
(8) Disaster Prone Routes for Slope Damage
in the South

Appendix 2.2 Site Reconnaissance Routes



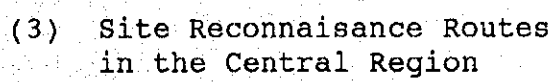
(1) Site Reconnaissance Routes
in the Northern Region

(2) NORTHEASTERN REGION

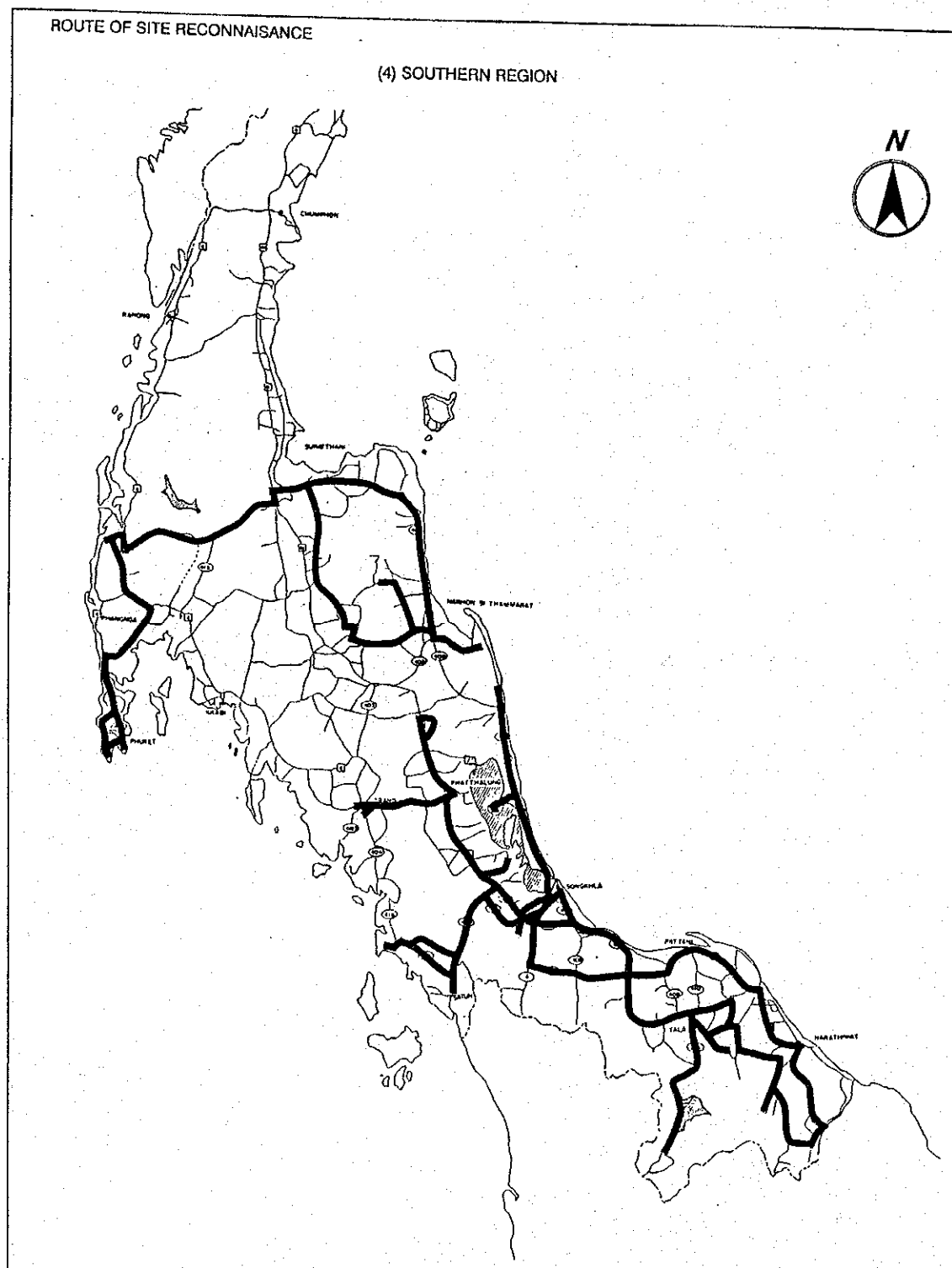


2 - 10

(3) CENTRAL REGION



(4) SOUTHERN REGION



(4) Site Reconnaissance Routes
in the Southern Region

Appendix 2.3 Field Inspection

(1) Damage Observed on the First Northern Field Inspection

ROUTE	KM.	FEATURE	PROBLEM
109	50-70	CUT SLOPE	GULLY EROSION
109	50-70	CUT SLOPE	GULLY EROSION
109	50-70	FILL SLOPE	LANDSLIDE
109	50-70	CUT SLOPE	LANDSLIDE
109	50-70	FILL SLOPE	GULLY EROSION
1089	35.5	FILL SLOPE	LANDSLIDE
1089	--	CUT SLOPE	SMALL ROTATIONAL SLIDE
1089	--	FILL SLOPE	LANDSLIDE
1129	12.0	CUT SLOPE	LANDSLIDE
1149	5-10	CUT SLOPE	SMALL LANDSLIDE
1149	5-10	CUT SLOPE	GULLY EROSION
1149	5-10	CUT SLOPE	LARGE ROTATIONAL SLIDE

(2) Damage Observed on Southern Field Inspection Dec. 8 - Dec. 9 1993

ROUTE	KM.	FEATURE	PROBLEM
4015	---	BRIDGE	GIRDER DISPLACEMENT, SEDIMENT CHOKING
4015	---	PIPES	ERODED EMBANKMENT AND PIPES DESTROYED
4015	---	PIPES	ERODED EMBANKMENT AND PIPES DESTROYED
4016	27.0	BRIDGE	ABUTMENT DESTROYED BY SCOUR
4189	6.0	CULVER	EROSION BY OVERTOPPING
4189	7.0	CULVERT	EMBANKMENT DESTROYED BY SCOUR
4224	---	PIPES	ERODED EMBANKMENT AND PIPES DESTROYED
4224	---	ROAD	DEBRIS FLOW BURYING ROAD

(3) Damage Observed on Northern Field Inspection
Dec. 26- Dec. 30 1993

ROUTE	KM.	FEATURE	PROBLEM
113	65.00	FILL SLOPE	GULLY EROSION
113	65.50	CUT SLOPE	3D ROCK SLIDE
113	68.00	CUT SLOPE	ROTATIONAL SLIDE
113	69.00	FILL SLOPE	EROSION OF PIPES
113	70.00	FILL SLOPE	EROSION OF PIPES
113	70.50	FILL SLOPE	EROSION OF PIPES
1168	21.25	FILL SLOPE	TRANSLATIONAL SLIDE
1234	13.62	FILL SLOPE	ROTATIONAL SLIDE
1234	23.00	FILL SLOPE	ROTATIONAL SLIDE
1234	27.30	CUT SLOPE	2D TRANSLATIONAL SLIDE
1234	27.30	FILL SLOPE	ROTATIONAL SLIDE
1234	36.00	CUT SLOPE	ROTATIONAL SLIDE
1234	37.00	CUT SLOPE	ROTATIONAL SLIDE
1234	38.00	CUT SLOPE	ROTATIONAL SLIDE
1234	39.30	CUT SLOPE	ROTATIONAL SLIDE
1234	40.10	CUT SLOPE	ROTATIONAL SLIDE
1234	48.10	CUT SLOPE	GULLY EROSION
1234	63.00	CUT SLOPE	ROTATIONAL SLIDE
1237	32.70	CUT SLOPE	ROTATIONAL SLIDE
1237	32.90	FILL SLOPE	EROSION OF PIPES
1237	35.90	CUT SLOPE	SLIDE AND DEBRIS FLOW
1237	37.90	FILL SLOPE	EROSION OF PIPES
1237	38.10	CUT SLOPE	3D ROCK SLIDE
1237	38.10	CUT SLOPE	RILL EROSION
1237	40.60	FILL SLOPE	ROTATIONAL SLIDE AND EROSION
1237	48.80	CUT SLOPE	ROTATIONAL SLIDE
1243	78.20	CUT SLOPE	ROTATIONAL SLIDE
1243	82.70	CUT SLOPE	ROCK FALL
1243	92.40	FILL SLOPE	ERODED PIPES
1243	93.30	FILL SLOPE	ERODED PIPES
1243	94.20	FILL SLOPE	ERODED PIPES
1256	1.30	EMBANKMENT	EROSION AND FLOODING
1256	5.95	BRIDGE	ERODED ABUTMENTS
1256	22.70	CUT SLOPE	3D ROCK SLIDE
1256	23.30	CUT SLOPE	ROTATIONAL SLIDE
1256	24.00	FILL SLOPE	ROTATIONAL SLIDE
1256	24.70	CUT SLOPE	RILL EROSION
1256	26.10	CUT SLOPE	EROSION AND ROTATIONAL SLIDE
1256	26.60	CUT SLOPE	ROTATIONAL SLIDE
1256	27.00	CUT SLOPE	2D TRANSLATIONAL SLIDE
1256	29.10	CUT SLOPE	3D ROCK SLIDE
1256	30.20	CUT SLOPE	ROTATIONAL SLIDE
1256	31.30	CUT SLOPE	ROTATIONAL SLIDE
1256	31.80	CUT SLOPE	3D ROCK SLIDE

(3) Damage Observed on Northern Field Inspection
Dec. 26 - Dec. 30 1993(Cont.)

ROUTE	KM.	FEATURE	PROBLEM
1256	31.90	CUT SLOPE	ROTATIONAL SLIDE
1256	32.80	CUT SLOPE	DEBRIS FLOW
1256	35.80	CUT SLOPE	SOIL CREEP
1256	39.70	CUT SLOPE	ROTATIONAL SLIDE
1256	40.15	FILL SLOPE	TRANSLATIONAL SLIDE
1256	40.70	CUT SLOPE	ROTATIONAL SLIDE
1256	41.10	CUT SLOPE	ROTATIONAL SLIDE
1256	41.70	CUT SLOPE	GULLY EROSION
1256	42.20	CUT SLOPE	ROTATIONAL SLIDE
1256	42.60	CUT SLOPE	GULLY EROSION
1256	44.10	CUT SLOPE	ROTATIONAL SLIDE
1256	44.60	CUT SLOPE	ROCK FALL
1256	45.00	CUT SLOPE	ROCK FALL
1256	45.68	FILL SLOPE	TRANSLATIONAL SLIDE AND EROSION
1268	44.30	CUT SLOPE	3D ROCK SLIDE
1290	25.80	CUT SLOPE	RILL EROSION
1290	27.10	CUT SLOPE	GULLY EROSION
1290	27.90	CUT SLOPE	ROTATIONAL SLIDE
2005	1.50	FILL SLOPE	ROTATIONAL SLIDE
2302	1.00	CUT SLOPE	2D ROCK SLIDE

(4) Damage Observed on Southern Field Inspection
Dec.27 - Dec.28,1993

ROUTE	KM.	FEATURE	PROBLEM
4	8.4	ROAD	FLOODING
4	17.0	BRIDGE	SCOURING OF ABUTMENT
4	17.0	BRIDGE	SCOURING OF RIVER BANK
4	37.7	CUT SLOPE	LANDSLIDE
4	44.7	CUT SLOPE	LANDSLIDE
4013	32.0	ROAD	COASTAL EROSION
4018	10.9	EMBANKMENT	WASHOUT OF PAVEMENT
4045	2.3	EMBANKMENT	WASHOUT OF PAVEMENT
4046	--	ROAD	SHEET FLOODING
4196	--	ROAD	SHEET FLOODING
4196	--	ROAD	CHANNEL FLOODING
4196	--	ROAD	CHANNEL FLOODING
4196	--	ROAD	CHANNEL FLOODING

(5) Damage Observed on Northern Field Inspection
Jan. 7 - Jan. 9 1994

ROUTE	KM.	FEATURE	PROBLEM
109	--	CUT SLOPE	EROSION AND ROTATIONAL SLIDE
109	--	FILL SLOPE	EROSION
1089	56.0	FILL SLOPE	LANDSLIDE
1089	56.0	CUT SLOPE	GULLY EROSION AND LANDSLIDE
1149	--	CUT SLOPE	LANDSLIDE
1149	--	CUT SLOPE	GULLY EROSION
1205	13.9	RIVER BANK	SCOUR EROSION
2215	8.0	BRIDGE	APPROACH SCOUR
2215	--	BRIDGE	APPROACH SCOUR
2215	--	BRIDGE	APPROACH SCOUR
2215	--	BRIDGE	APPROACH SCOUR
2215	--	BRIDGE	APPROACH SCOUR
2215	--	BRIDGE	APPROACH SCOUR
2215	--	BRIDGE	APPROACH SCOUR
2215	--	BRIDGE	APPROACH SCOUR
2275	0.6	EMBANKMENT	FLOODING
2275	21.1	BRIDGE	APPROACH SCOURING
2326	45.4	RIVER BANK	LANDSLIDE
2326	49.2	BRIDGE	ABUTMENT COLLAPSE
2326	49.2	BRIDGE	WASHOUT OF PAVEMENT
2347	3.8	EMBANKMENT	WASHOUT

(6) Damage Observed on Southern Field Inspection
Jan. 18 - Jan. 22, 1994

ROUTE	KM.	FEATURE	PROBLEM
410	76.10	CUT SLOPE	3D TRANSLATIONAL SLIDE 15M
410	76.40	CUT SLOPE	2D TRANSLATIONAL SLIDE 10M
410	76.45	CUT SLOPE	3D TRANSLATIONAL SLIDE 25M
410	77.35	CUT SLOPE	ROTATIONAL SLIDE 8M
410	78.30	CUT SLOPE	ROTATIONAL SLIDE 3M
410	78.40	CUT SLOPE	ROTATIONAL SLIDE 3M
410	78.70	CUT SLOPE	2D TRANSLATIONAL SLIDE 10M
410	78.80	CUT SLOPE	ROTATIONAL SLIDE 5M
410	79.10	CUT SLOPE	ROTATIONAL SLIDE 5M
410	81.70	CUT SLOPE	ROTATIONAL SLIDE 10M
410	82.00	CUT SLOPE	ROTATIONAL SLIDE 10M
410	82.70	CUT SLOPE	ROTATIONAL SLIDE 10M
410	83.40	CUT SLOPE	ROTATIONAL SLIDE 15M
410	83.50	CUT SLOPE	ROTATIONAL SLIDE 5M

(6) Damage Observed on Southern Field Inspection
Jan. 18 - Jan. 22, 1994 (Cont.)

ROUTE	KM.	FEATURE	PROBLEM
410	83.80	CUT SLOPE	ROTATIONAL SLIDE 10M
410	84.00	CUT SLOPE	ROTATIONAL SLIDE 15M
410	84.70	CUT SLOPE	ROTATIONAL SLIDE 10M
410	85.10	CUT SLOPE	ROTATIONAL SLIDE 15M
410	85.50	CUT SLOPE	ROTATIONAL SLIDE 20M
410	85.70	NATURAL SLOPE	UNDER CUTTING ROCK FALL 3CM
410	86.10	NATURAL SLOPE	UNDER CUTTING ROCK FALL 5CM
410	87.50	CUT SLOPE	3D TRANSLATIONAL SLIDE 5M
410	89.60	CUT SLOPE	ROTATIONAL SLIDE 5M
410	90.60	CUT SLOPE	2D TRANSLATIONAL SLIDE 10M
410	91.00	CUT SLOPE	ROTATIONAL SLIDE 10M
410	91.90	CUT SLOPE	ROTATIONAL SLIDE 10M
410	92.40	CUT SLOPE	ROTATIONAL SLIDE 7M
410	95.30	CUT SLOPE	ROTATIONAL SLIDE 5M
410	96.50	CUT SLOPE	GULLY EROSION
410	97.40	NATURAL SLOPE	UNDER CUTTING ROCK FALL 2-3CM
410	97.80	CUT SLOPE	3D TRANSLATIONAL SLIDE 80M
410	97.90	CUT SLOPE	3D TRANSLATIONAL SLIDE 40M
4052	5.00	ROAD	SAND FROM BEACH BURYING ROAD
4055	1.30	CUT SLOPE	SMALL ROTATIONAL SLIDE 4M HIGH
4055	5.40	CUT SLOPE	2D TRANSLATIONAL SLIDE
4055	5.80	CUT SLOPE	ROTATIONAL SLIDE IN TOP SECTION
4055	7.40	CUT SLOPE	ROTATIONAL SLIDE
4055	7.50	CUT SLOPE	ROTATIONAL SLIDE
4055	7.70	CUT SLOPE	3D TRANSLATIONAL SLIDE
4055	8.32	FILL SLOPE	2D TRANSLATIONAL SLIDE & EROSION
4067	10.50	EMBANKMENT	SCOUR EROSION
4067	11.50	EMBANKMENT	SCOUR EROSION
4071	13.26	BRIDGE	ERODED ABUTMENT
4092	14.63	BRIDGE	ERODED ABUTMENT SCOUR EROSION
4107	7.59	BRIDGE	BOTH ABUTMENTS ERODED
4115	32.45	NATURAL SLOPE	ROTATIONAL SLIDE 5M
4115	32.50	CUT SLOPE	ROTATIONAL SLIDE 10M
4115	34.10	CUT SLOPE	ROTATIONAL SLIDE 4M
4115	38.00	ROAD	EROSION DUE TO PIPE OVERTOPPING
4115	49.95	FILL SLOPE	ROTATIONAL SLIDE
4115	53.90	ROAD	ERODED SHOULDER
4137	8.18	CULVERT	BOX CULVERT REPLACED WITH BRIDGE
4137	13.20	BRIDGE	ERODED ABUTMENT

(7) Damage Observed on Northwest Field
Inspection Jan. 19 - Jan. 22, 1994

ROUTE	KM.	FEATURE	PROBLEM
105	31.0	CUT SLOPE	GULLY EROSION
105	171.0	FILL SLOPE	SCOUR EROSION
108	12.4	NATURAL SLOPE	EROSION AROUND PIPES
108	19.8	NATURAL SLOPE	EROSION AROUND PIPES
108	253.4	BRIDGE	ERODED APPROACH ROAD
1084	27.0	EMBANKMENT	FLOODING AND EROSION
1095	160.3	NATURAL SLOPE	GULLY EROSION
1095	161.8	CUT SLOPE	ROTATIONAL SLIDE
1095	162.5	CUT SLOPE	ROTATIONAL SLIDE
1095	162.8	CUT SLOPE	RILL EROSION
1095	168.0	CUT SLOPE	ROTATIONAL SLIDE
1095	168.4	CUT SLOPE	ROTATIONAL SLIDE
1095	168.6	CUT SLOPE	ROTATIONAL SLIDE
1095	168.7	CUT SLOPE	ROTATIONAL SLIDE
1110	11.0	BRIDGE	MINOR EROSION ON ABUTMENT
1116	2.0	EMBANKMENT	FLOODING AND EROSION
1189	5.7	BRIDGE	ERODED APPROACH ROAD
1267	1.8	CUT SLOPE	EROSION AND SLIDE
1267	8.0	CUT SLOPE	ROTATIONAL SLIDE
1267	10.6	CUT SLOPE	ROTATIONAL SLIDE
1267	17.2	CUT SLOPE	RILL EROSION
1267	20.0	CUT SLOPE	ROTATIONAL SLIDE
1280	28.1	EMBANKMENT	FLOODING AND EROSION

(8) Damage Observed on Southern Field Inspection
Jan. 28, 1994

ROUTE	KM.	FEATURE	PROBLEM
4	15.7	CULVERT	SCOUR EROSION
4	83.2	BRIDGE	FLOODING DUE TO CHOKED RIVER
4	--	BRIDGE	FLOODING DUE TO CHOKED RIVER
4	--	BRIDGE	FLOODING DUE TO CHOKED RIVER
4	--	BRIDGE	FLOODING DUE TO CHOKED RIVER
4	--	BRIDGE	FLOODING DUE TO CHOKED RIVER
4	--	BRIDGE	FLOODING DUE TO CHOKED RIVER
4	--	BRIDGE	FLOODING DUE TO CHOKED RIVER
401	99.1	FILL SLOPE	LANDSLIDE
4090	49.3	BRIDGE	FLOODING DUE TO CHOKED RIVER
4090	--	BRIDGE	FLOODING DUE TO CHOKED RIVER
4090	--	BRIDGE	FLOODING DUE TO CHOKED RIVER
4233	0-5.6	CUT SLOPE	BAD AESTHETICS
4233	5.6	FILL SLOPE	BAD AESTHETICS

(9) Damage Observed on Central Field Inspection
Jan. 30 - Feb. 1, 1994

ROUTE	KM.	FEATURE	PROBLEM
117	3.0	EMBANKMENT	EROSION AND CRACKING
117	5.4	EMBANKMENT	EROSION AND CRACKING
1072	43.1	EMBANKMENT	SCOURING AND WASHING OUT
1072	43.77	EMBANKMENT	SCOURING
3199	5.5	BRIDGE	PIER SCOURING
3461	3.7	BRIDGE	ERODED APPROACH

(10) Damage Observed on Northeast Field
Inspection Feb. 1 - Feb. 2, 1994

ROUTE	KM.	FEATURE	PROBLEM
223	18.2	BRIDGE	MINOR ABUTMENT DAMAGE
223	23.0	BRIDGE	SCOUR AND UNDERCUTTING OF ABUTMENT
2042	6.2	BRIDGE	BOTH ABUTMENTS DAMAGED BY SCOUR
2042	81.0	BRIDGE	SCOUR AND UNDERCUTTING OF ABUTMENT
2287	10.3	FILL SLOPE	SCOUR BY INCIDENT STREAM
2289	5.0	BRIDGE	PIER COLLAPSE BY ABRASION
2291	7.3	CUT SLOPE	ROCK FALL BY UNDERCUTTING
2292	11.97	BRIDGE	PIER COLLAPSE DUE TO SCOUR

(11) Damage Observed on Central Field Inspection
Feb. 5, 1994




ROUTE	KM.	FEATURE	PROBLEM
323	8.0	EMBANKMENT	FLOODING
323	10.8	EMBANKMENT	SCOUR BY INCIDENT STREAM
323	26.0	EMBANKMENT	FLOODING
3272	0.4	BRIDGE	EROSION OF APPROACH ROAD
3272	27.8	BRIDGE	EROSION OF APPROACH ROAD

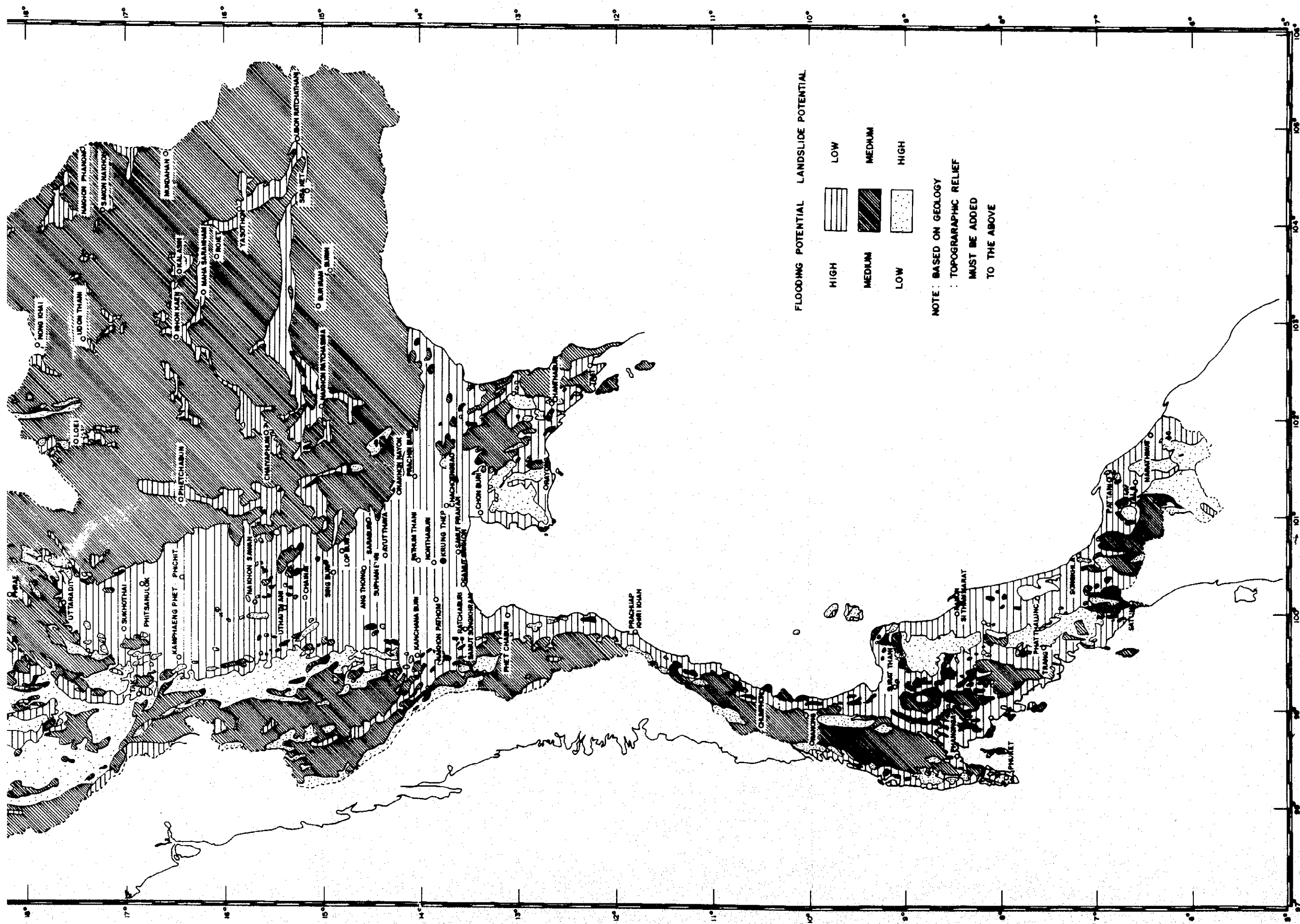
Appendix 2.4 Distribution of Flooding and Slope Damage Risk

Legend:

FLOODING POTENTIAL	LANDSLIDE POTENTIAL
HIGH	LOW
MEDIUM	MEDIUM
LOW	HIGH

NOTE: BASED ON GEOLOGY
TOPOGRAPHIC RELIEF
MUST BE ADDED
TO THE ABOVE

LOW	MEDIUM	HIGH
		
HIGH	MEDIUM	LOW

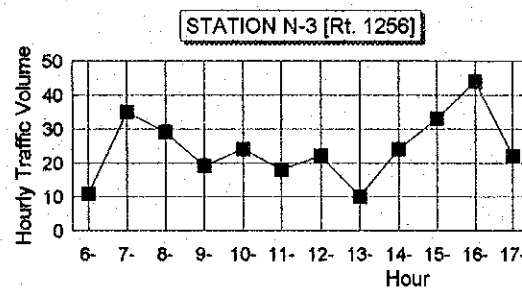
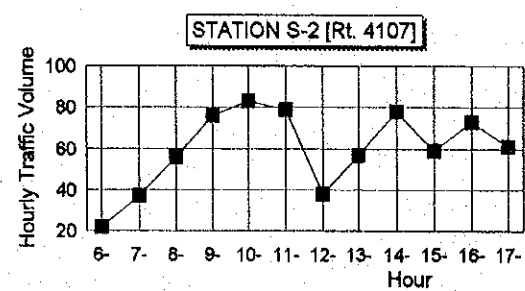
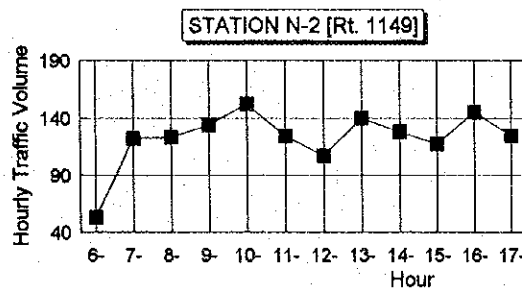
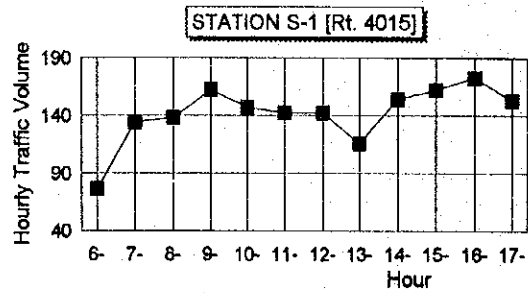
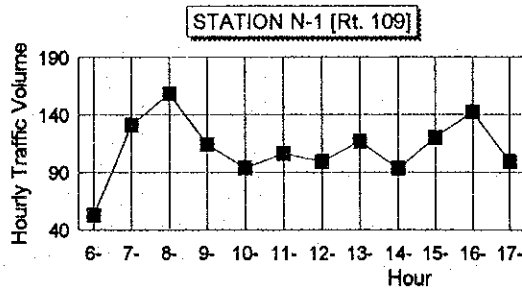


Appendix 3

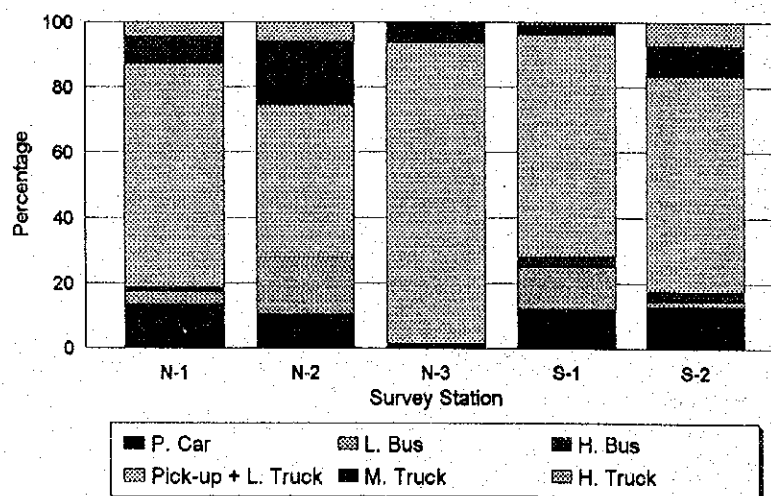
Appendix 3.1 Traffic Volume Results

Vehicle Category	PC	LB	MB	HB	PU	LT	MT	HT	Total	TC	MC
<u>Station Number N-1 (Route 109):</u>											
12-hr Daytime Count - From A. Fang	76	26	-	5	451	1	58	30	647	-	785
12-hr Daytime Count - To A. Fang	84	23	-	6	479	1	53	33	679	-	818
12-hr Count - Total	160	49	-	11	930	2	111	63	1,326	-	1,603
Nighttime Factor									1.265		
Daily Fluctuation Factor									0.950		
Seasonal Variation Factor	1.17	1.17	1.17	1.17	1.03	1.03	1.03	1.03	1.053	1.17	1.17
Average Daily Traffic	223	68	-	15	1,143	2	136	77	1,666	-	2,254
Peak Hour Volume (08:00-09:00hr)									158		
<u>Station Number N-2 (Route 1149):</u>											
12-hr Daytime Count - From A. Mae Chan	72	119	-	-	343	9	144	50	737	-	1,207
12-hr Daytime Count - To A. Mae Chan	67	115	-	-	347	7	153	44	733	-	1,231
12-hr Count - Total	139	234	-	-	690	16	297	94	1,470	-	2,438
Nighttime Factor									1.265		
Daily Fluctuation Factor									0.956		
Seasonal Variation Factor	1.17	1.17	1.17	1.17	1.03	1.03	1.03	1.03	1.066	1.17	1.17
Average Daily Traffic	197	331	-	-	859	20	370	117	1,895	-	3,450
Peak Hour Volume (10:00-11:00hr)									152		
<u>Station Number N-3 (Route 1256):</u>											
12-hr Daytime Count - From A. Pua	3	-	-	-	85	49	11	1	149	-	518
12-hr Daytime Count - To A. Pua	1	-	-	-	90	44	6	1	142	-	425
12-hr Count - Total	4	-	-	-	175	84	17	2	291	-	943
Nighttime Factor									1.265		
Daily Fluctuation Factor									1.001		
Seasonal Variation Factor	1.17	1.17	1.17	1.17	1.03	1.03	1.03	1.03	1.031	1.17	1.17
Average Daily Traffic	6	-	-	-	228	121	22	3	380	-	1,397
Peak Hour Volume (16:00-17:00hr)									44		
<u>Station Number S-1 (Route 4015):</u>											
12-hr Daytime Count - From A. Lan Saka	92	102	-	24	608	9	27	15	877	-	253
12-hr Daytime Count - To A. Lan Saka	92	107	-	21	569	8	24	1	822	-	270
12-hr Count - Total	184	209	-	45	1,177	17	51	16	1,699	-	533
Nighttime Factor									1.258		
Daily Fluctuation Factor									0.953		
Seasonal Variation Factor	1.05	1.05	1.05	1.05	0.94	0.94	0.94	0.94	0.968	1.05	1.05
Average Daily Traffic	232	263	-	57	1,326	19	57	18	1,972	-	671
Peak Hour Volume (16:00-17:00hr)									173		
<u>Station Number S-2 (Route 4107):</u>											
12-hr Daytime Count - From A. Ruso	42	7	-	10	302	-	46	36	443	-	443
12-hr Daytime Count - To A. Ruso	40	6	-	10	180	-	24	16	276	-	428
12-hr Count - Total	82	13	-	20	482	-	70	52	719	-	868
Nighttime Factor									1.200		
Daily Fluctuation Factor									0.964		
Seasonal Variation Factor	1.05	1.05	1.05	1.05	0.94	0.94	0.94	0.94	0.957	1.05	1.05
Average Daily Traffic	100	16	-	24	524	-	76	57	796	-	1,054
Peak Hour Volume (10:00-11:00hr)									83		

Appendix 3.2 Hourly Traffic Volume



Appendix 3.3 Traffic Composition



Appendix 3.4 Changwat Population Projection (1,000 persons)

	1986	1991	1996	2001	2006	2011	2016	2021
NORTHERN REGION	10,490	11,022	11,512	11,914	12,246	12,586	12,893	13,206
KAMPHAENG PHET	628	677	720	756	786	817	846	875
CHIANG RAI	987	1,048	1,100	1,143	1,179	1,215	1,248	1,281
CHIANG MAI	1,296	1,386	1,464	1,528	1,582	1,637	1,686	1,737
TAK	327	359	387	412	433	454	474	494
NAKHON SAWAN	1,053	1,092	1,123	1,147	1,167	1,187	1,205	1,223
NAN	423	455	483	507	526	546	565	583
PHICHIT	543	506	512	515	519	523	527	531
PHITSANULOK	747	795	837	871	900	929	955	982
PHETCHABUN	909	964	1,011	1,049	1,081	1,114	1,143	1,172
PHRAE	479	494	506	516	523	531	538	545
MAE HONG SON	160	176	191	204	215	226	237	248
LAMPANG	745	778	805	827	845	863	879	896
LAMPHUN	402	418	431	441	449	457	465	472
SUKHOTHAI	572	596	615	630	643	655	666	678
UTTARADIT	446	463	477	488	497	507	515	523
PHAYAO	485	507	525	540	551	563	574	585
UTHAI THANI	289	308	324	338	349	361	371	382
SOUTHERN REGION	6,608	7,208	7,781	8,265	8,674	9,103	9,497	9,907
CHUMPHON	366	403	437	467	491	517	541	565
KRABI	266	304	341	374	403	433	462	492
NAKHON SI THAMMARAT	1,367	1,437	1,500	1,551	1,592	1,635	1,672	1,710
NARATHIWAT	512	578	643	699	747	798	846	896
PATTANI	498	546	592	630	662	696	727	759
PHANG NGA	199	215	230	242	253	263	273	283
PHATTHALUNG	436	466	493	516	535	554	572	590
PHUKET	150	175	199	221	240	261	280	301
RANONG	102	121	140	157	172	189	205	222
SATUN	202	227	251	271	289	307	325	343
SONGKHLA	1,024	1,097	1,165	1,221	1,268	1,315	1,358	1,402
SURATTHANI	687	751	812	863	906	951	992	1,035
TRANG	477	527	574	615	649	685	717	752
YALA	322	363	403	437	467	498	527	558

Annual Growth Rate (%):

NORTHERN REGION	0.99	0.87	0.69	0.55	0.55	0.48	0.48
KAMPHAENG PHET	1.51	1.25	0.98	0.78	0.78	0.68	0.68
CHIANG RAI	1.20	0.98	0.77	0.61	0.61	0.53	0.53
CHIANG MAI	1.35	1.10	0.87	0.69	0.68	0.60	0.60
TAK	1.88	1.56	1.23	0.98	0.98	0.85	0.85
NAKHON SAWAN	0.73	0.56	0.44	0.35	0.34	0.30	0.30
NAN	1.47	1.21	0.95	0.76	0.75	0.66	0.65
PHICHIT	-1.38	0.22	0.12	0.15	0.15	0.15	0.15
PHITSANULOK	1.26	1.03	0.81	0.64	0.64	0.56	0.56
PHETCHABUN	1.18	0.96	0.75	0.60	0.59	0.52	0.52
PHRAE	0.64	0.48	0.38	0.30	0.29	0.26	0.25
MAE HONG SON	1.99	1.66	1.31	1.04	1.04	0.91	0.91
LAMPANG	0.88	0.69	0.54	0.43	0.43	0.37	0.37
LAMPHUN	0.77	0.60	0.47	0.37	0.37	0.32	0.32
SUKHOTHAI	0.81	0.63	0.49	0.39	0.39	0.34	0.34
UTTARADIT	0.77	0.60	0.47	0.37	0.37	0.32	0.32
PHAYAO	0.89	0.70	0.55	0.44	0.43	0.38	0.37
UTHAI THANI	1.29	1.05	0.83	0.66	0.65	0.57	0.57
SOUTHERN REGION	1.75	1.54	1.21	0.97	0.97	0.85	0.85
CHUMPHON	1.91	1.67	1.30	1.04	1.03	0.90	0.89
KRABI	2.71	2.37	1.85	1.48	1.47	1.29	1.28
NAKHON SI THAMMARAT	1.00	0.86	0.67	0.53	0.52	0.45	0.45
NARATHIWAT	2.46	2.15	1.68	1.34	1.33	1.17	1.16
PATTANI	1.86	1.62	1.27	1.01	1.00	0.87	0.87
PHANG NGA	1.55	1.35	1.05	0.83	0.83	0.72	0.72
PHATTHALUNG	1.34	1.17	0.91	0.72	0.71	0.62	0.62
PHUKET	3.05	2.67	2.09	1.67	1.66	1.45	1.45
RANONG	3.40	2.97	2.33	1.86	1.85	1.62	1.61
SATUN	2.32	2.03	1.59	1.26	1.26	1.10	1.09
SONGKHLA	1.39	1.21	0.94	0.75	0.74	0.65	0.64
SURATTHANI	1.81	1.58	1.23	0.98	0.97	0.85	0.84
TRANG	2.00	1.75	1.37	1.09	1.08	0.94	0.94
YALA	2.42	2.12	1.66	1.32	1.31	1.15	1.14

Appendix 3.5 Amphoe Population ('000)

(1/2)

CHANGWAT & AMPHOE	1986	1987	1988	1989	1990	1991	1992
CHIANG RAI	987.4	997.7	1,009.6	1,027.6	1,039.4	1,048.2	1,229.4
MUNI. MUANG CHIANGRAI	37.8	37.7	35.7	36.4	36.6	35.2	44.3
MUANG CHIANG RAI	161.2	162.2	164.0	166.6	168.5	177.3	192.8
PHAN	135.9	136.6	136.7	137.5	138.3	138.7	149.7
THOENG	112.4	113.5	114.4	116.0	117.3	118.0	88.8
MAE CHAN	112.4	115.0	119.2	122.3	125.0	126.1	159.4
MAE SAI	65.9	66.3	66.6	67.0	67.1	67.2	79.3
WIANG PAPAO	65.7	66.5	67.4	68.3	68.9	69.3	70.7
CHIANG KHONG	67.1	54.0	54.8	56.3	57.1	57.5	68.3
MAE SUAI	48.1	49.6	51.9	54.0	55.3	56.1	79.7
CHIANG SAEN	43.6	43.8	44.0	44.2	44.3	44.5	53.5
PA DAET	25.9	26.1	26.2	26.3	26.5	26.6	28.1
WIANG CHAI	71.7	72.5	73.4	73.5	73.5	73.4	74.5
PHAYA MENGRAI	39.7	40.0	40.7	41.3	41.9	41.9	44.3
K.A. WIENG KAN		13.9	14.6	17.9	19.1	16.4	39.5
K.A. KHUN TAN							37.8
K.A. LHUANG RIVER							18.7
MAE HONG SON	159.5	162.5	165.8	169.7	172.8	175.9	206.8
MUNI. MUANG MAE HONG SON	6.7	6.8	6.8	6.4	6.4	6.5	6.7
MUANG MAE HONG SON	28.0	22.9	23.4	24.1	24.7	25.1	34.5
MAE SA RIANG	42.7	43.5	44.6	45.8	46.6	47.1	49.1
KHUN YUAM	17.2	17.4	17.6	17.8	18.1	18.3	19.9
PAI	21.0	21.1	21.4	22.1	22.3	22.8	25.0
MAE LA NOI	25.9	26.5	27.0	27.5	28.0	28.6	29.9
K.A. SOP MOEI	18.0	18.1	18.5	18.9	19.2	19.7	29.9
K.A. PANG MA-PHA		6.2	6.5	7.1	7.5	7.8	11.8
CHIANG MAI	1,296.4	1,313.9	1,345.7	1,361.3	1,376.1	1,386.0	1,530.9
MUNI. NAKHON CHIANG MAI	157.8	160.7	164.0	164.4	164.9	161.6	170.3
MUANG CHIANG MAI	49.1	50.9	53.0	55.0	55.0	54.5	72.1
HANG DONG	58.3	59.0	65.8	65.7	66.4	66.9	62.3
SAN PA TONG	105.3	105.9	106.2	108.0	108.3	78.8	81.2
CHOM THONG	86.5	87.1	88.3	89.1	89.8	90.6	93.6
HOD	34.7	35.3	36.1	36.4	37.0	37.4	40.0
SAN KAMPHAENG	87.9	89.0	90.7	91.7	93.1	94.2	93.2
SARAPHI	71.4	72.2	73.3	73.7	74.3	74.8	75.7
SANSAI	75.5	76.7	78.1	79.7	81.4	82.8	81.8
DOI SAKET	61.2	61.7	62.3	62.9	63.5	63.7	62.4
MAE RIM	64.9	65.7	66.9	68.0	69.0	69.6	75.1
MAE TAENG	63.2	63.8	64.4	65.2	65.8	66.1	77.4
CHIANG DAO	48.7	49.4	50.8	51.8	52.1	52.7	72.3
PHRAO	47.8	48.1	48.5	49.1	49.7	50.3	55.3
SA MOENG	20.6	21.0	21.2	21.3	21.4	21.6	22.7
OM KOI	26.4	27.0	27.6	28.0	29.1	30.4	39.5
MAE CHAM	46.5	47.5	48.7	49.8	50.7	51.6	56.4
FANG	110.9	112.2	82.0	82.4	83.1	83.6	102.8
MAE AI	45.7	46.2	50.0	50.4	51.6	52.9	74.3
DOI TAO	25.4	25.7	26.0	26.2	26.5	26.8	27.2
K.A. WEANG HAENG	8.6	8.8	9.1	9.2	9.4	9.6	19.2
K.A. CHAI PRAKARN			32.7	33.3	34.0	34.5	46.0
K.A. MAE WANG						31.0	30.1
NAN	423.2	427.7	432.2	441.1	449.3	455.1	457.6
MUNI. MUANG NAN	23.6	23.7	23.5	24.6	22.9	22.7	24.1
MUANG NAN	84.5	85.7	86.5	87.9	90.6	91.5	90.3
SA (WIANG SA)	64.9	65.5	66.1	67.0	67.7	68.2	69.3
NA NOI	31.9	32.1	32.2	32.6	32.9	33.0	33.3
PUA	72.3	73.0	63.1	65.0	66.1	67.1	63.0
THUNG CHANG	15.3	15.5	15.6	15.8	16.1	16.0	20.7
THA WANG PHA	46.6	47.3	47.9	48.8	49.5	49.8	50.6
CHIANG KHLANG	34.8	35.1	35.5	36.0	36.5	36.8	28.8
MAE CHARIM	11.7	11.9	12.0	12.1	12.2	13.2	14.8
K.A. BAN LUANG	10.9	11.0	11.1	11.2	11.3	11.4	11.7
K.A. NA MUN	14.4	14.5	14.5	14.7	14.8	14.9	15.0
K.A. SANTISUK	12.3	12.4	12.5	12.7	12.8	13.0	14.5
K.A. BO-KLUA			11.7	12.7	15.9	17.5	11.3
K.A. SONG KAEW							10.2

Appendix 3.5 Amphoe Population ('000)

(2/2)

CHANGWAT & AMPHOE	1986	1987	1988	1989	1990	1991	1992
NAKHON SI THAMMARAT	1,367.3	1,376.9	1,396.2	1,412.0	1,427.0	1,436.8	1,477.4
MUNI. MUANG N. SI THAMMARAT	72.6	72.4	72.4	71.7	73.0	74.2	79.4
MUNI. MUANG PAK PHANANG	17.0	16.9	16.3	15.8	16.1	16.0	17.4
MUNI. T. PAK PHANANG	21.3	21.1	20.6	19.9	20.0	21.2	24.4
MUANG NAKHON SI THAMMARAT	209.2	210.4	213.0	216.0	217.3	218.3	217.2
PAK PHANANG	90.1	90.4	91.2	92.6	93.0	93.0	103.7
THUNG SONG	103.0	105.2	107.7	110.7	112.6	113.5	114.3
CHA WANG	113.7	114.2	116.2	117.2	118.2	104.4	101.7
RON PHIBUN	111.4	112.2	113.2	114.0	114.9	115.1	120.6
CHA UAD	80.3	81.1	82.7	83.7	84.7	85.2	86.4
CHIAN YAI	76.2	75.8	75.8	75.7	75.8	75.8	78.9
THA SALA	113.8	115.4	117.8	120.0	121.7	122.6	125.6
SI CHON	70.9	71.2	72.7	73.6	75.1	75.7	77.0
HUA SAI	70.5	70.5	70.7	70.7	71.1	71.2	72.9
LAN SAKA	37.8	38.2	38.6	39.0	39.3	39.3	39.0
THUNG YAI	47.6	48.7	50.2	53.1	54.5	55.6	59.8
KHANOM	24.8	24.4	24.9	25.4	25.7	25.8	26.3
PHIPUN	27.7	27.8	27.9	26.0	25.9	25.8	28.0
PHROM KHIRI	32.2	32.5	33.0	33.4	33.5	33.5	32.7
NA BON	27.1	27.4	27.8	28.0	28.2	28.3	27.3
K.A. BANG KHAN	20.1	21.1	23.5	25.5	26.4	27.3	28.6
K.A. THAM PHANRA						15.0	16.2
PHATTHALUNG	435.6	441.2	448.6	455.3	460.6	465.6	474.5
MUNI. MUANG PHATTHALUNG	33.1	33.4	33.6	34.4	33.4	33.1	33.2
MUANG PHATTHALUNG	96.2	97.1	98.1	99.1	101.1	102.3	104.5
KHUAN KHANUN	108.1	109.2	110.3	111.4	112.3	85.3	84.0
KHAO CHAI SON	63.4	64.1	65.0	65.8	66.6	44.7	43.9
PAK PHAYUN	43.9	44.7	45.5	46.2	46.6	46.9	49.7
KONG RA	25.5	26.0	26.9	27.5	27.9	28.3	30.7
K.A. TA MOD	19.8	20.1	21.0	21.7	22.3	22.7	23.8
K.A. SI BANPHOT	12.9	13.1	13.6	13.9	14.3	14.4	14.9
K.A. PA BON	32.7	33.5	34.6	35.3	36.1	36.9	36.0
K.A. BANGKAEW						22.6	24.0
K.A. PA PAYOM						28.4	29.8
TRANG	477.0	484.1	503.0	512.4	519.2	526.7	540.0
MUNI. MUANG TRANG	47.1	47.4	48.0	49.6	48.4	48.8	54.6
MUNI. T. KANTANG	12.6	12.7	12.7	12.8	12.6	12.4	13.2
MUANG TRANG	108.7	109.8	111.1	112.3	114.4	77.5	78.0
KANTANG	51.9	52.9	54.2	55.6	56.7	57.7	58.7
HUAI YOD	97.7	99.0	100.5	101.7	102.7	79.5	76.6
PA LIAN	62.4	63.5	65.2	66.5	67.7	68.7	70.3
YAN TA KHAO	49.8	50.5	51.6	52.7	53.6	54.3	58.7
SI KAO	21.9	22.7	23.5	24.1	24.6	25.4	27.1
WANG WISET	24.9	25.6	26.7	27.5	28.4	29.0	31.1
MUNI. T. HUAI YOD			9.5	9.6	10.1	10.5	8.9
K.A. NA YONG						38.8	39.8
K.A. RATCHADA						24.1	23.0
YALA	321.7	330.4	339.2	348.9	356.9	362.6	375.4
MUNI. MUANG YALA	65.0	66.3	67.4	68.6	68.8	68.8	73.3
MUNI. T. BE TONG	19.8	20.1	20.7	21.4	21.9	21.9	22.6
MUANG YALA	75.2	77.3	79.4	81.9	84.4	86.3	87.0
BE TONG	20.9	21.4	21.7	21.8	22.3	22.5	23.1
BANNANG STAR	30.3	31.4	32.7	34.0	35.1	36.1	38.1
YA HA	40.2	41.5	42.8	44.4	45.7	38.0	38.3
RA MAN	59.5	60.9	62.5	64.2	65.6	66.6	68.1
THAN TO	10.8	11.5	12.0	12.6	13.1	13.2	15.4
K.A. KABANG						8.8	9.2
NARATHIWAT	511.7	523.2	536.8	554.0	565.5	577.9	576.5
MUNI. MUANG NARATHIWAT	38.1	38.5	38.8	40.0	40.1	40.4	40.1
MUNI. T. SUNGAI KOLOK	27.9	28.6	29.8	31.5	31.9	32.2	33.5
MUANG NARATHIWAT	45.8	47.2	48.3	50.2	50.9	52.2	53.8
SUNGAI KOLOK	18.2	18.6	19.2	19.9	20.5	21.9	19.6
RA NGAE	87.9	89.6	92.0	94.6	97.3	99.3	103.3
YI NGO	30.9	31.4	31.8	32.7	33.3	33.7	34.2
BA CHO	36.8	37.5	38.4	39.6	40.4	41.0	41.2
TAK BAI	50.7	51.6	52.6	54.1	55.2	56.1	53.0
SUNGAI PADI	50.7	51.1	51.9	52.6	53.2	54.0	50.8
WAENG	33.2	33.6	34.5	35.7	36.6	37.8	38.4
RU SO	43.2	44.2	45.2	46.7	47.7	49.4	49.2
SI SAKHON	15.7	16.2	17.8	18.6	19.3	19.8	20.6
SU KHIRIN	14.3	16.0	16.4	16.9	17.5	18.0	16.9
K.A. CHANAE	18.3	19.1	20.1	20.9	21.6	22.1	21.9

Source: Registration Division, Department of Local Administration

Appendix 3.6 Amphoe Population Projection ('000) (1/4)

CHANGWAT & AMPHOE	1986	1991	1996	2001	2006	2011	2016	2021
CHIANG RAI	987.4	1,048.2	1,100.0	1,143.0	1,179.0	1,215.0	1,248.0	1,281.0
MUNI. MUANG CHIANG RAI	37.8	35.2	33.4	33.4	33.4	33.3	33.3	33.2
MUANG CHIANG RAI	161.2	177.3	181.3	192.3	201.5	210.8	219.4	228.0
PHAN	135.9	138.7	133.5	134.9	136.0	137.0	137.9	138.7
THOENG	112.4	118.0	116.2	119.6	122.3	125.0	127.4	129.7
MAE CHAN	112.4	126.1	131.0	140.7	149.0	157.5	165.4	173.4
MAE SAI	65.9	67.2	64.6	65.3	65.8	66.2	66.6	67.0
WIANG PAPAO	65.7	69.3	68.5	70.7	72.5	74.3	75.9	77.4
CHIANG KHONG	67.1	57.5	58.0	60.8	63.2	65.6	67.7	69.9
MAE SUAI	48.1	56.1	60.2	66.3	71.6	77.2	82.5	88.0
CHIANG SAEN	43.6	44.5	42.8	43.3	43.6	44.0	44.2	44.5
PA DAET	25.9	26.6	25.7	26.1	26.4	26.7	26.9	27.2
WIANG CHAI	71.7	73.4	70.8	71.7	72.4	73.1	73.6	74.1
PHAYA MENGRAI	39.7	41.9	41.4	42.8	43.9	45.0	45.9	46.9
K.A. WIENG KAN		16.4	16.3	16.9	17.4	17.9	18.3	18.7
K.A. KHUN TAN			37.6	38.9	40.1	41.2	42.2	43.1
K.A. LHUANG RIVER			18.6	19.3	19.8	20.4	20.9	21.3
MAE HONG SON	159.5	175.9	191.0	204.0	215.0	226.0	237.0	248.0
MUNI. MUANG MAE HONG SON	6.7	6.5	6.5	6.6	6.6	6.6	6.6	6.7
MUANG MAE HONG SON	28.0	25.1	27.9	30.3	32.4	34.6	36.7	38.9
MAE SA RIANG	42.7	47.1	51.4	55.2	58.4	61.5	64.7	67.9
KHUN YUAM	17.2	18.3	19.4	20.3	21.1	21.8	22.5	23.2
PAI	21.0	22.8	24.6	26.1	27.3	28.6	29.8	31.1
MAE LA NOI	25.9	28.6	31.3	33.6	35.5	37.5	39.4	41.4
K.A. SOP MOEI	18.0	19.7	21.4	22.8	24.0	25.2	26.4	27.6
K.A. PANG MA-PHA		7.8	8.5	9.1	9.7	10.2	10.7	11.2
CHIANG MAI	1,296.4	1,386.0	1,464.0	1,528.0	1,582.0	1,637.0	1,686.0	1,737.0
MUNI. NAKHON CHIANG MAI	157.8	161.6	164.9	167.4	169.3	171.2	172.9	174.5
MUANG CHIANG MAI	49.1	54.5	59.4	63.5	67.0	70.6	73.9	77.3
HANG DONG	58.3	66.9	74.9	81.8	87.9	94.2	100.0	106.2
SAN PA TONG	105.3	78.8	81.1	82.9	84.4	85.8	87.1	88.3
CHOM THONG	86.5	90.6	94.1	97.0	99.3	101.5	103.5	105.5
HOD	34.7	37.4	39.8	41.7	43.4	45.0	46.5	48.0
SAN KAMPHAENG	87.9	94.2	99.7	104.2	108.0	111.8	115.1	118.6
SARAPHI	71.4	74.8	77.7	80.1	82.0	83.9	85.5	87.2
SANSAI	75.5	82.8	89.4	94.8	99.4	104.1	108.3	112.7
DOI SAKET	61.2	63.7	65.9	67.5	68.9	70.3	71.5	72.6
MAE RIM	64.9	69.6	73.7	77.1	79.9	82.7	85.2	87.8
MAE TAENG	63.2	66.1	68.6	70.6	72.2	73.8	75.2	76.6
CHIANG DAO	48.7	52.7	56.2	59.2	61.6	64.1	66.3	68.6
PHRAO	47.8	50.3	52.5	54.2	55.6	57.0	58.3	59.5
SA MOENG	20.6	21.6	22.5	23.2	23.7	24.3	24.8	25.3
OM KOI	26.4	30.4	34.1	37.4	40.2	43.2	45.9	48.8
MAE CHAM	46.5	51.6	56.2	60.1	63.4	66.8	69.9	73.1
FANG	110.9	83.6	85.7	87.4	88.7	89.9	91.0	92.1
MAE AI	45.7	52.9	59.7	65.5	70.7	76.1	81.2	86.5
DOI TAO	25.4	26.8	28.0	29.0	29.8	30.6	31.3	32.0
K.A. WEANG HAENG	8.6	9.6	10.5	11.3	11.9	12.6	13.2	13.9
K.A. CHAI PRAKARN		34.5	36.5	38.0	39.4	40.7	41.9	43.1
K.A. MAE WANG		31.0	32.8	34.2	35.4	36.6	37.6	38.7
NAN	423.2	455.1	483.0	507.0	526.0	546.0	565.0	583.0
MUNI. MUANG NAN	23.6	22.7	22.6	22.9	23.2	23.4	23.6	23.8
MUANG NAN	84.5	91.5	96.0	101.7	106.2	111.0	115.5	119.8
SA (WIANG SA)	64.9	68.2	69.9	72.5	74.6	76.7	78.7	80.6
NA NOI	31.9	33.0	33.4	34.3	35.0	35.7	36.3	37.0
PUA	72.3	67.1	71.9	77.4	81.8	86.6	91.2	95.6
THUNG CHANG	15.3	16.0	16.3	16.9	17.3	17.8	18.2	18.6
THA WANG PHA	46.6	49.8	51.7	54.3	56.3	58.4	60.4	62.3
CHIANG KHLANG	34.8	36.8	37.9	39.5	40.7	42.0	43.3	44.4
MAE CHARIM	11.7	13.2	14.3	15.6	16.6	17.7	18.8	19.9
K.A. BAN LUANG	10.9	11.4	11.6	12.0	12.3	12.7	13.0	13.3
K.A. NA MUN	14.4	14.9	15.1	15.5	15.8	16.1	16.4	16.7
K.A. SANTISUK	12.3	13.0	13.4	13.9	14.4	14.8	15.3	15.7
K.A. BO-KLUA		17.5	18.3	19.3	20.0	20.9	21.6	22.4
K.A. SONG KAEH			10.6	11.2	11.7	12.2	12.6	13.0

Appendix 3.6 Amphoe Population Projection ('000) (2/4)

CHANGWAT & AMPHOE	1986	1991	1996	2001	2006	2011	2016	2021
NAKHON SI THAMMARAT	1,367.3	1,436.8	1,500.0	1,551.0	1,592.0	1,635.0	1,672.0	1,710.0
MUNI. MUANG NAKHON SI THAMMARAT	72.6	74.2	75.1	75.7	76.1	76.4	76.6	76.8
MUNI. MUANG PAK PHANANG	17.0	16.0	16.2	16.3	16.3	16.4	16.4	16.4
MUNI. T. PAK PHANANG	21.3	21.2	23.3	25.0	26.4	27.9	29.2	30.5
MUANG NAKHON SI THAMMARAT	209.2	218.3	224.9	229.9	233.6	237.3	240.2	243.0
PAK PHANANG	90.1	93.0	94.9	96.3	97.3	98.3	99.0	99.6
THUNG SONG	103.0	113.5	122.6	130.0	136.0	142.3	147.6	153.1
CHA WANG	113.7	104.4	108.0	110.8	112.9	115.0	116.7	118.4
RON PHIBUN	111.4	115.1	117.6	119.4	120.7	121.9	122.9	123.8
CHA UAD	80.3	85.2	89.1	92.1	94.4	96.7	98.7	100.6
CHIAN YAI	76.2	75.8	77.2	78.2	78.9	79.6	80.1	80.6
THA SALA	113.8	122.6	129.9	135.6	140.2	144.8	148.8	152.7
SI CHON	70.9	75.7	79.6	82.6	85.0	87.4	89.4	91.4
HUA SAI	70.5	71.2	71.3	71.3	71.2	71.1	70.9	70.7
LAN SAKA	37.8	39.3	40.4	41.2	41.7	42.3	42.8	43.2
THUNG YAI	47.6	55.6	63.2	69.7	75.2	81.2	86.5	92.2
KHANOM	24.8	25.8	26.5	27.0	27.4	27.8	28.1	28.4
PHIPUN	27.7	25.8	25.8	25.8	25.8	25.7	25.6	25.5
PHROM KHIRI	32.2	33.5	34.4	35.1	35.6	36.1	36.5	36.9
NA BON	27.1	28.3	29.2	29.8	30.3	30.8	31.2	31.6
K.A. BANG KHAN	20.1	27.3	35.4	43.3	50.6	59.4	67.8	77.5
K.A. THAM PHANRA		15.0	15.5	16.0	16.3	16.6	16.9	17.1
PHATTHALUNG	435.6	465.6	493.0	516.0	535.0	554.0	572.0	590.0
MUNI. MUANG PHATTHALUNG	33.1	33.2	33.2	33.2	33.2	33.2	33.1	33.1
MUANG PHATTHALUNG	96.2	102.3	107.6	112.0	115.6	119.1	122.4	125.6
KHUA KHANUN	108.1	85.3	88.7	91.5	93.7	95.9	97.9	99.9
KHAO CHAI SON	63.4	44.7	47.1	49.0	50.6	52.2	53.7	55.1
PAK PHAYUN	43.9	46.9	49.5	51.7	53.5	55.3	56.9	58.5
KONG RA	25.5	28.3	30.9	33.1	35.0	36.8	38.6	40.5
K.A. TA MOD	19.8	22.7	25.5	27.9	30.0	32.2	34.3	36.5
K.A. SI BANPHOT	12.9	14.4	15.8	17.0	18.0	19.0	20.0	21.0
K.A. PA BON	32.7	36.9	40.8	44.3	47.2	50.2	53.1	56.0
K.A. BANGKAEW		22.6	23.9	24.9	25.8	26.7	27.5	28.3
K.A. PA PAYOM		28.4	30.0	31.3	32.4	33.5	34.5	35.5
TRANG	477.0	526.7	574.0	615.0	649.0	685.0	717.0	752.0
MUNI. MUANG TRANG	47.1	48.8	50.9	52.6	54.0	55.3	56.5	57.8
MUNI. T. KANTANG	12.6	12.4	13.0	13.4	13.8	14.2	14.5	14.9
MUANG TRANG	108.7	77.5	82.9	87.5	91.2	95.1	98.4	102.0
KANTANG	51.9	57.7	64.0	69.4	74.0	78.9	83.2	88.0
HUAI YOD	97.7	79.5	85.0	89.5	93.3	97.1	100.5	104.1
PA LIAN	62.4	68.7	75.5	81.4	86.3	91.5	96.1	101.2
YAN TA KHAO	49.8	54.3	59.2	63.4	66.9	70.5	73.7	77.2
SI KAO	21.9	25.4	29.2	32.7	35.6	38.9	41.8	45.2
WANG WISET	24.9	29.0	33.5	37.5	41.1	44.9	48.4	52.3
MUNI. T. HUAI YOD		10.5	11.6	12.5	13.3	14.1	14.8	15.6
K.A. NA YONG		38.8	42.8	46.2	49.1	52.1	54.8	57.8
K.A. RATCHADA		24.1	26.6	28.7	30.5	32.4	34.0	35.9
YALA	321.7	362.6	403.0	437.0	467.0	498.0	527.0	558.0
MUNI. MUANG YALA	65.0	68.8	72.3	74.9	77.1	79.3	81.2	83.1
MUNI. T. BE TONG	19.8	21.9	23.9	25.5	26.9	28.4	29.6	31.0
MUANG YALA	75.2	86.3	97.4	106.6	114.8	123.2	131.1	139.5
BE TONG	20.9	22.5	24.0	25.2	26.1	27.1	28.0	28.9
BANNANG STAR	30.3	36.1	42.1	47.3	52.0	57.0	61.7	66.9
YA HA	40.2	38.0	44.3	49.7	54.6	59.8	64.7	70.1
RA MAN	59.5	66.6	73.5	79.1	84.0	89.0	93.6	98.4
THAN TO	10.8	13.2	15.7	18.0	20.1	22.3	24.5	26.8
K.A. KABANG		8.8	9.8	10.6	11.3	12.0	12.6	13.3
NARATHIWAT	511.7	577.9	643.0	699.0	747.0	798.0	846.0	896.0
MUNI. MUANG NARATHIWAT	38.1	40.4	42.5	44.1	45.4	46.7	47.9	49.1
MUNI. T. SUNGAI KOLOK	27.9	32.2	36.5	40.1	43.3	46.7	49.8	53.1
MUANG NARATHIWAT	45.8	52.2	58.5	63.8	68.4	73.2	77.6	82.3
SUNGAI KOLOK	18.2	21.9	25.7	29.1	32.2	35.5	38.7	42.0
RA NGAE	87.9	99.3	110.3	119.7	127.6	135.9	143.6	151.6
YI NGO	30.9	33.7	36.3	38.4	40.2	42.0	43.6	45.3
BA CHO	36.8	41.0	45.0	48.4	51.2	54.1	56.8	59.5
TAK BAI	50.7	56.1	61.2	65.5	69.0	72.7	76.0	79.5
SUNGAI PADI	50.7	54.0	57.0	59.4	61.3	63.2	64.9	66.6
WAENG	33.2	37.8	42.3	46.1	49.4	52.8	56.0	59.4
RU SO	43.2	49.4	55.5	60.7	65.1	69.8	74.3	78.8
SI SAKHON	15.7	19.8	24.2	28.4	32.1	36.4	40.5	45.1
SU KHIRIN	14.3	18.0	22.0	25.7	29.1	32.9	36.6	40.7
K.A. CHANAE	18.3	22.1	26.0	29.6	32.7	36.1	39.5	43.0

Appendix 3.6 Amphoe Population Projection ('000)

(3/4)

CHANGWAT & AMPHOE	-1991	-1996	-2001	-2006	-2011	-2016	-2021
<u>Annual Growth Rate %:</u>							
CHIANG RAI	1.20	0.97	0.77	0.62	0.60	0.54	0.52
MUNI. MUANG CHIANGRAI	0.03	0.05	0.04	0.03	0.03	0.03	0.03
MUANG CHIANG RAI	1.92	1.55	1.23	0.99	0.96	0.86	0.84
PHAN	0.41	0.33	0.26	0.21	0.21	0.18	0.18
THOENG	0.98	0.79	0.63	0.51	0.49	0.44	0.43
MAE CHAN	2.33	1.88	1.49	1.20	1.17	1.04	1.01
MAE SAI	0.39	0.32	0.25	0.20	0.20	0.17	0.17
WIANG PAPAO	1.07	0.86	0.69	0.56	0.54	0.48	0.47
CHIANG KHONG	1.58	1.27	1.01	0.82	0.79	0.71	0.69
MAE SUAI	3.12	2.52	2.00	1.62	1.57	1.40	1.36
CHIANG SAEN	0.41	0.33	0.26	0.21	0.21	0.18	0.18
PA DAET	0.53	0.43	0.34	0.28	0.27	0.24	0.23
WIANG CHAI	0.47	0.38	0.30	0.24	0.24	0.21	0.20
PHAYA MENGRAI	1.08	0.87	0.69	0.56	0.54	0.48	0.47
K.A. WIENG KAN		0.97	0.77	0.62	0.60	0.54	0.52
K.A. KHUN TAN		0.97	0.77	0.62	0.60	0.54	0.52
K.A. LHUANG RIVER		0.97	0.77	0.62	0.60	0.54	0.52
MAE HONG SON	1.98	1.66	1.33	1.06	1.00	0.96	0.91
MUNI. MUANG MAE HONG SON	0.02	0.02	0.01	0.01	0.01	0.01	0.01
MUANG MAE HONG SON	2.40	2.02	1.61	1.28	1.22	1.16	1.11
MAE SA RIANG	1.98	1.66	1.33	1.06	1.01	0.96	0.91
KHUN YUAM	1.25	1.05	0.84	0.67	0.63	0.60	0.58
PAI	1.66	1.39	1.11	0.89	0.84	0.80	0.76
MAE LA NOI	2.00	1.68	1.34	1.07	1.02	0.97	0.92
K.A. SOP MOEI	1.82	1.53	1.22	0.97	0.92	0.88	0.84
K.A. PANG MA-PHA		1.66	1.33	1.06	1.00	0.96	0.91
CHIANG MAI	1.35	1.10	0.86	0.70	0.69	0.59	0.60
MUNI. NAKHON CHIANG MAI	0.48	0.39	0.30	0.25	0.24	0.21	0.21
MUANG CHIANG MAI	2.11	1.73	1.35	1.09	1.07	0.93	0.94
HANG DONG	2.79	2.28	1.78	1.45	1.42	1.23	1.24
SAN PA TONG	0.70	0.57	0.45	0.36	0.36	0.31	0.31
CHOM THONG	0.93	0.76	0.59	0.48	0.47	0.41	0.41
HOD	1.51	1.24	0.96	0.78	0.77	0.66	0.67
SAN KAMPHAENG	1.39	1.14	0.89	0.72	0.71	0.61	0.62
SARAPHI	0.93	0.76	0.60	0.48	0.48	0.41	0.42
SANSAI	1.86	1.52	1.19	0.97	0.95	0.82	0.83
DOI SAKET	0.80	0.66	0.51	0.42	0.41	0.35	0.36
MAE RIM	1.41	1.15	0.90	0.73	0.72	0.62	0.63
MAE TAENG	0.90	0.74	0.58	0.47	0.46	0.40	0.40
CHIANG DAO	1.59	1.30	1.02	0.82	0.81	0.70	0.71
PHRAO	1.02	0.84	0.65	0.53	0.52	0.45	0.46
SA MOENG	0.95	0.78	0.61	0.49	0.49	0.42	0.42
OM KOI	2.86	2.34	1.83	1.48	1.46	1.26	1.27
MAE CHAM	2.10	1.72	1.34	1.09	1.07	0.92	0.93
FANG	0.60	0.49	0.38	0.31	0.31	0.26	0.27
MAE AI	2.97	2.43	1.90	1.54	1.51	1.31	1.32
DOI TAO	1.08	0.88	0.69	0.56	0.55	0.47	0.48
K.A. WEANG HAENG	2.22	1.82	1.42	1.15	1.13	0.98	0.99
K.A. CHAI PRAKARN		1.10	0.86	0.70	0.69	0.59	0.60
K.A. MAE WANG		1.10	0.86	0.70	0.69	0.59	0.60
NAN	1.46	1.20	0.97	0.74	0.75	0.69	0.63
MUNI. MUANG NAN	0.30	0.25	0.20	0.15	0.15	0.14	0.13
MUANG NAN	1.60	1.31	1.07	0.81	0.82	0.75	0.69
SA (WIANG SA)	1.00	0.82	0.66	0.50	0.51	0.47	0.43
NA NOI	0.68	0.56	0.45	0.34	0.35	0.32	0.29
PUA	2.11	1.73	1.40	1.06	1.08	0.99	0.91
THUNG CHANG	0.90	0.73	0.60	0.45	0.46	0.42	0.39
THA WANG PHA	1.34	1.09	0.89	0.67	0.68	0.63	0.57
CHIANG KHLANG	1.12	0.92	0.75	0.57	0.58	0.53	0.48
MAE CHARIN	2.44	2.00	1.63	1.23	1.25	1.14	1.05
K.A. BAN LUANG	0.90	0.74	0.60	0.45	0.46	0.42	0.39
K.A. NA MUN	0.68	0.56	0.46	0.35	0.35	0.32	0.29
K.A. SANTISUK	1.11	0.91	0.74	0.56	0.57	0.52	0.48
K.A. BO-KLUA		1.20	0.97	0.74	0.75	0.69	0.63
K.A. SONG KAEW		1.20	0.97	0.74	0.75	0.69	0.63

Appendix 3.6 Amphoe Population Projection ('000) (4/4)

CHANGWAT & AMPHOE	-1991	-1996	-2001	-2006	-2011	-2016	-2021
<u>Annual Growth Rate %:</u>							
NAKHON SI THAMMARAT	1.00	0.86	0.67	0.52	0.53	0.45	0.45
MUNI. MUANG NAKHON SI THAMMARAT	0.44	0.38	0.29	0.23	0.23	0.20	0.20
MUNI. MUANG PAK PHANANG	0.39	0.34	0.26	0.20	0.21	0.18	0.18
MUNI. T. PAK PHANANG	2.34	2.03	1.58	1.23	1.25	1.05	1.06
MUANG NAKHON SI THAMMARAT	0.86	0.74	0.58	0.45	0.46	0.38	0.39
PAK PHANANG	0.64	0.55	0.43	0.33	0.34	0.29	0.29
THUNG SONG	1.96	1.70	1.32	1.03	1.05	0.88	0.89
CHA WANG	0.96	0.83	0.65	0.50	0.51	0.43	0.43
RON PHIBUN	0.66	0.57	0.44	0.34	0.35	0.30	0.30
CHA UAD	1.19	1.03	0.80	0.63	0.64	0.54	0.54
CHIAN YAI	0.59	0.51	0.40	0.31	0.32	0.27	0.27
THA SALA	1.50	1.30	1.01	0.79	0.80	0.68	0.68
SI CHON	1.32	1.14	0.89	0.69	0.71	0.59	0.60
HUA SAI	0.20	0.17	0.13	0.10	0.11	0.09	0.09
LAN SAKA	0.78	0.68	0.53	0.41	0.42	0.35	0.35
THUNG YAI	3.16	2.74	2.12	1.66	1.69	1.42	1.43
KHANOM	0.79	0.69	0.53	0.42	0.43	0.36	0.36
PHIPUN	0.18	0.16	0.12	0.09	0.10	0.08	0.08
PHROM KHIRI	0.79	0.69	0.54	0.42	0.43	0.36	0.36
NA BON	0.87	0.76	0.59	0.46	0.47	0.39	0.39
K.A. BANG KHAN	6.31	5.48	4.25	3.32	3.39	2.84	2.85
K.A. THAM PHANRA		0.86	0.67	0.52	0.53	0.45	0.45
PHATTHALUNG	1.34	1.15	0.92	0.73	0.70	0.64	0.62
MUNI. MUANG PHATTHALUNG	0.06	0.05	0.04	0.03	0.03	0.03	0.03
MUANG PHATTHALUNG	1.24	1.06	0.85	0.67	0.65	0.59	0.57
KHUAN KHANUN	0.97	0.83	0.66	0.53	0.51	0.46	0.45
KHAO CHAI SON	1.26	1.08	0.86	0.68	0.66	0.60	0.58
PAK PHAYUN	1.33	1.14	0.91	0.72	0.70	0.64	0.62
KONG RA	2.11	1.81	1.44	1.14	1.10	1.01	0.98
K.A. TA MOD	2.77	2.38	1.89	1.50	1.45	1.33	1.28
K.A. SI BANPHOT	2.22	1.91	1.52	1.20	1.16	1.06	1.03
K.A. PA BON	2.45	2.10	1.67	1.32	1.28	1.17	1.13
K.A. BANGKAEW		1.15	0.92	0.73	0.70	0.64	0.62
K.A. PA PAYOM		1.15	0.92	0.73	0.70	0.64	0.62
TRANG	2.00	1.73	1.39	1.08	1.09	0.92	0.96
MUNI. MUANG TRANG	0.71	0.62	0.49	0.38	0.39	0.33	0.34
MUNI. T. KANTANG	0.79	0.68	0.55	0.43	0.43	0.36	0.38
MUANG TRANG	1.31	1.14	0.91	0.71	0.71	0.60	0.63
KANTANG	2.14	1.86	1.49	1.16	1.16	0.98	1.02
HUAI YOD	1.28	1.11	0.89	0.69	0.69	0.59	0.61
PA LIAN	1.94	1.68	1.35	1.05	1.05	0.89	0.93
YAN TA KHAO	1.75	1.51	1.21	0.94	0.95	0.80	0.83
SI KAO	3.01	2.61	2.09	1.63	1.63	1.38	1.44
WANG WISET	3.10	2.68	2.15	1.67	1.68	1.42	1.48
MUNI. T. HUAI YOD		1.73	1.39	1.08	1.09	0.92	0.96
K.A. NA YONG		1.73	1.39	1.08	1.09	0.92	0.96
K.A. RATCHADA		1.73	1.39	1.08	1.09	0.92	0.96
YALA	2.42	2.14	1.63	1.34	1.29	1.14	1.15
MUNI. MUANG YALA	1.14	1.01	0.77	0.63	0.61	0.54	0.54
MUNI. T. BE TONG	2.04	1.80	1.37	1.12	1.09	0.96	0.97
MUANG YALA	2.79	2.46	1.88	1.54	1.49	1.31	1.33
BE TONG	1.49	1.31	1.00	0.82	0.79	0.70	0.71
BANNANG STAR	3.56	3.14	2.40	1.97	1.90	1.68	1.69
YA HA	3.54	3.12	2.39	1.95	1.89	1.66	1.68
RA MAN	2.28	2.01	1.54	1.26	1.22	1.07	1.08
THAN TO	4.10	3.61	2.76	2.26	2.19	1.92	1.94
K.A. KABANG		2.14	1.63	1.34	1.29	1.14	1.15
NARATHIWAT	2.46	2.16	1.68	1.34	1.33	1.18	1.16
MUNI. MUANG NARATHIWAT	1.18	1.03	0.81	0.64	0.64	0.56	0.55
MUNI. T. SUNGAI KOLOK	2.91	2.55	1.99	1.58	1.57	1.39	1.36
MUANG NARATHIWAT	2.65	2.32	1.81	1.44	1.43	1.26	1.24
SUNGAI KOLOK	3.77	3.30	2.58	2.05	2.04	1.80	1.77
RA NGAE	2.47	2.16	1.69	1.34	1.33	1.18	1.16
YI NGO	1.75	1.53	1.20	0.95	0.94	0.83	0.82
BA CHO	2.19	1.91	1.49	1.19	1.18	1.04	1.02
TAK BAI	2.04	1.79	1.40	1.11	1.10	0.98	0.96
SUNGAI PADI	1.27	1.11	0.87	0.69	0.69	0.61	0.60
WAENG	2.63	2.30	1.80	1.43	1.42	1.25	1.23
RU SO	2.72	2.38	1.86	1.48	1.47	1.30	1.27
SI SAKHON	4.75	4.16	3.25	2.58	2.56	2.27	2.23
SU KHIRIN	4.71	4.13	3.22	2.56	2.54	2.25	2.21
K.A. CHANAE	3.85	3.37	2.63	2.09	2.08	1.83	1.80

Appendix 3.7 Projection of GPP at 1988 Constant Prices (mil. Baht)

	1991	1996	2001	2006	2011	2016	2021
<u>Gross Provincial Products (GPP):</u>							
NORTHERN REGION	210,856	277,671	370,271	487,008	655,507	872,628	1,161,369
KAMPHAENG PHET	15,416	19,939	26,227	33,954	46,115	59,702	77,245
CHIANG RAI	16,365	20,867	27,319	35,704	48,721	64,893	86,381
CHIANG MAI	40,022	55,030	75,871	102,002	143,857	196,173	267,354
TAK	6,911	9,109	12,210	16,034	21,983	28,867	37,885
NAKHON SAWAN	22,326	29,846	40,385	53,281	57,644	76,416	101,239
NAN	5,897	7,555	9,844	12,745	17,228	22,516	29,410
PHICHIT	9,130	11,921	15,755	20,590	28,097	36,897	48,422
PHITSANULOK	14,219	18,391	24,191	31,765	43,552	57,462	75,770
PHETCHABUN	13,431	16,250	20,287	25,648	34,018	44,040	56,981
PHRAE	6,761	8,828	11,722	15,320	21,004	27,844	36,890
MAE HONG SON	2,523	3,202	4,192	5,427	7,336	9,633	12,642
LAMPANG	18,729	25,632	35,339	47,288	67,005	91,373	124,528
LAMPHUN	7,416	10,486	13,924	18,371	25,306	33,866	45,293
SUKHOTHAI	10,080	13,224	17,476	22,840	31,315	41,122	53,968
UTTARADIT	8,995	11,254	14,456	18,627	25,179	32,908	42,983
PHAYAO	6,739	8,512	11,091	14,426	19,593	25,974	34,412
UTHAI THANI	5,896	7,626	9,983	12,986	17,554	22,942	29,967
SOUTHERN REGION	185,869	254,161	346,989	462,899	628,947	845,206	1,135,535
CHUMPHON	10,545	14,501	19,836	26,189	35,451	46,919	62,070
KRABI	9,580	12,929	17,603	22,913	30,725	40,472	53,289
NAKHON SI THAMMARAT	28,089	41,038	58,003	77,672	107,647	144,501	193,888
NARATHIWAT	11,023	13,922	17,911	23,204	30,968	40,793	53,711
PATTANI	10,500	13,581	17,806	23,509	31,823	42,517	56,781
PHANG NGA	7,938	10,916	15,357	20,372	27,760	38,099	50,099
PHATTHALUNG	7,027	8,918	11,527	15,005	20,025	26,378	34,731
PHUKET	13,368	18,994	26,846	37,150	52,708	72,777	100,443
RANONG	6,496	9,187	12,925	17,389	24,100	32,657	44,232
SATUN	5,111	6,455	8,305	10,759	14,224	18,647	24,437
SONGKHLA	32,521	42,464	56,469	75,975	104,800	142,680	194,167
SURATTHANI	23,485	33,995	47,825	64,345	89,176	120,272	162,141
TRANG	11,229	14,942	19,964	26,483	35,849	48,122	64,569
YALA	8,957	12,317	16,613	21,934	29,691	39,669	52,976
	1986-1991	-1996	-2001	-2006	-2011	-2016	-2021
<u>Annual Growth (%):</u>							
NORTHERN REGION	6.8	5.8	6.0	5.7	6.2	5.9	5.9
KAMPHAENG PHET	7.6	5.6	5.8	5.6	5.7	5.3	5.3
CHIANG RAI	4.4	5.3	5.7	5.8	5.8	5.9	5.9
CHIANG MAI	10.0	6.9	6.8	6.4	6.5	6.4	6.4
TAK	2.6	6.0	6.2	5.9	5.9	5.6	5.6
NAKHON SAWAN	7.6	6.3	6.4	6.0	1.0	5.8	5.8
NAN	5.7	5.4	5.6	5.6	5.6	5.5	5.5
PHICHIT	6.5	5.8	5.9	5.8	5.8	5.6	5.6
PHITSANULOK	7.5	5.6	5.8	5.9	5.9	5.7	5.7
PHETCHABUN	4.5	4.2	4.7	5.1	5.2	5.3	5.3
PHRAE	5.6	5.8	6.0	5.8	5.9	5.8	5.8
MAE HONG SON	1.8	5.2	5.7	5.6	5.6	5.6	5.6
LAMPANG	9.2	6.8	6.8	6.3	6.6	6.4	6.4
LAMPHUN	10.1	7.5	6.0	6.0	6.0	6.0	6.0
SUKHOTHAI	5.2	5.9	5.9	5.8	5.9	5.6	5.6
UTTARADIT	6.7	4.9	5.3	5.5	5.6	5.5	5.5
PHAYAO	4.9	5.1	5.6	5.7	5.7	5.8	5.8
UTHAI THANI	5.3	5.6	5.7	5.7	5.6	5.5	5.5
SOUTHERN REGION	8.3	6.6	6.5	6.0	6.4	6.1	6.1
CHUMPHON	5.9	6.7	6.6	5.9	5.9	5.8	5.8
KRABI	10.5	6.3	6.5	5.6	5.7	5.7	5.7
NAKHON SI THAMMARAT	9.4	8.0	7.3	6.2	6.4	6.1	6.1
NARATHIWAT	6.7	4.9	5.3	5.5	5.6	5.7	5.7
PATTANI	9.8	5.4	5.7	5.9	5.9	6.0	6.0
PHANG NGA	3.7	6.7	7.2	6.0	1.0	5.8	5.8
PHATTHALUNG	4.8	5.0	5.4	5.6	5.6	5.7	5.7
PHUKET	17.6	7.4	7.3	6.9	6.9	6.7	6.7
RANONG	7.8	7.3	7.2	6.3	6.4	6.3	6.3
SATUN	3.4	4.9	5.3	5.5	5.4	5.6	5.6
SONGKHLA	7.5	5.6	6.0	6.3	6.3	6.4	6.4
SURATTHANI	11.2	7.8	7.2	6.3	6.4	6.2	6.2
TRANG	4.8	6.0	6.1	6.0	5.9	6.1	6.1
YALA	9.8	6.7	6.3	5.9	5.9	6.0	6.0