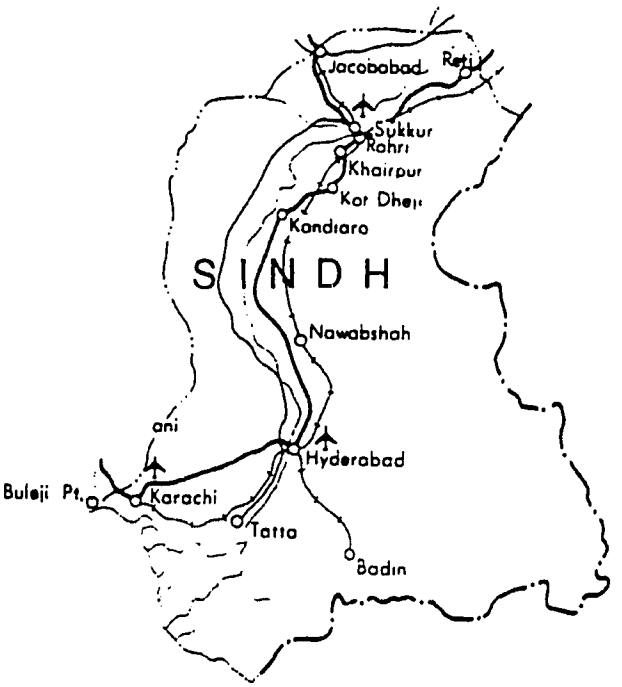
PD-ABH-891

85233

FINAL REPORT
Mid-Term Evaluation



for

Government of Sindh
Road Resources Management (RRM) Project
Project No. 391-0480

Prepared for the

United States Agency for International Development
Islamabad, Pakistan

IQC PDC-0249-I-00-0019-00 • Delivery Order No. 23

prepared by

DE LEUW, CATHER INTERNATIONAL LIMITED

May 26, 1993

Table of Contents

Appendices (cont'd.):

TABLES AND FIGURES

TABLES AND FIGURES (cont'd.)

LIST OF ABBREVIATIONS, ACRONYMS, ETC.

AD	-	Assistant Director
ACE	-	Associated Consultants Engineers (Karachi, Pakistan)
ADB	-	Asian Development Bank
ADP	-	Annual Development Plan
AID	-	See USAID
APAC	-	Asia Project Advisory Committee
Beldar	-	Laborer
C&W	-	Provincial Department of Communications and Works (GOS)
CCSC	-	Construction Control Services Corporation (U.S.A.)
Chowkidar	-	Guard
DC	-	District Council
DCO	-	District Council Office(s)
DEO	-	District Engineering Office
DSSL	-	Deficit in Sustainable Service Level
Darogha	-	Supervisor of beldars (Work crew supervisor)
ESF	-	Economic Support Fund
ESSL	-	Existing Sustainable Service Level
FAR	-	Fixed Amount Reimbursement
FRDEC	-	Federal Rural Development Engineering Cell. The technical organization of the Ministry of Local Government and Rural Roads (MLGRD) responsible for rural roads, water supply and allied matters.
GOP	-	Government of Pakistan
GOS	-	Government of Sindh Province (Pakistan)

Hari	-	Landless agricultural laborer in the Sind (tenants)
IRDP	-	Integrated Rural Development Program
Katcha Road	-	An unpaved (earth) road
LAF	-	Local Audit Fund (GOS)
MLGRD	-	Ministry of Local Government and Rural Development (Pakistan). A ministry of the federal government; a department in each provincial government except Balochistan.
MMS	-	Maintenance Management System
MSSL	-	Maximum Sustainable Service Level
MTRI	-	Municipal Training Research Institute (under MLGRD)
NHA	-	National Highway Authority (Pakistan)
NHB	-	National Highways Board
NIPA	-	National Institute of Public Administration
NTRC	-	National Transport Research Center (Islamabad)
NWFP	-	Northwest Frontier Province
O&M	-	Operation and maintenance
P&D	-	Planning and Development Departments in the provincial governments.
PC-1	-	A GOP document defining the requirements for a development project equivalent to USAID's Project Paper
PDM	-	Project Development and Monitoring (USAID-Pakistan)
PIL	-	Project Implementation Letter (USAID)
PLA	-	Personal Ledger Account
RDD	-	Rural Development Department (GOS)
RDP	-	Rural Development Program

RMU	-	Road Maintenance Unit
RRM	-	The Road Resources Management Project
RoMMS	-	Road Maintenance Management System (sub-component of RRM)
RoMP	-	Road Maintenance Programming (sub-component of RRM)
Rupees (Rs.)	-	The Pakistani monetary unit. Currently (5/93); Rs.26.70 = US$1.00 Previously (7/85); Rs.16.00 = US$1.00
SCUG	-	Sind Council Unified Grades - Provincial Civil Service Class
SLGRDA	-	Sindh Local Government & Rural Development Academy (GOS)
TSC or TST	-	Technical Services Contractor/Team
USAID	-	United States Agency for International Development
USG	-	United States Government

BASIC PROJECT IDENTIFICATION DATA

1. Country: PAKISTAN

2. Project Title: ROAD RESOURCES MANAGEMENT (RRM) PROJECT, 391-0480; MID-TERM EVALUATION

3. Project Number: 391-0480 (Grant)

4. Project Dates:

   a. First Project Agreement: June 18, 1987
   b. Final Obligation: FY 89 (Planned); FY 95 (Revised)
   c. Project Assistance Completion Date (PACD):
      December 31, 1992 (Planned); December 31, 1994 (Revised)

5. Project Funding:

   a. A.I.D. Bilateral Funding:
      * Initially a Grant of US$43,000,000 over a six (6) year period, from February 1987 through December 1992.
      * Revised by the Pressler Amendment (March 1991) to a Grant of US$14,100,000 through December 1994.
   b. Other Major Donors: -None-
   c. Host Country Counterpart Funds:
      TOTAL: US$43,000,000.(Planned FY 87)
      US$14,100,000 (Revised FY 91)

6. Mode of Implementation:

7. Project Design:

8. Responsible Mission Officials:
   (For the full life of the project)

   a. Mission Director(s): Eugene Staples (1987 - 1988)
      James Norris (1988 - 1992)
      John Blackton (1992 - present)

   b. Project Officer(s): Hasan Masood (1987 - present)

9. Previous Evaluation(s): None

10. Cost of Present Evaluation:

	Person Days	Dollar Costs
a. Direct Hire:		
(1) AID/W TDY:	-0-	-0-
(2) USAID staff:	..	..
b. Contract: (IQC DO No. 23)	32	$47,332
c. Other:	..	..

PIO/T No. 391-0480-3-90251

Annex - 3

A.I.D. EVALUATION SUMMARY PART I

(READ INSTRUCTIONS BEFORE FILLING OUT THIS FORM. READ THE ATTACHED INSTRUCTIONS)

MANDATORY INFORMATION

A. Reporting A.I.D. Unit (Mission or AID/W Office)

(ES #)

B. Was Evaluation Scheduled in Current FY Annual Evaluation Plan?

yes ☐ slipped ☐ ad hoc ☐

C. Evaluation Timing

interim ☐ final ☐ ex post ☐ other ☐

D. Activity or Activities Evaluated (List the following information for project(s) or program (s) evaluated; if not applicable, list title and date of the evaluation report)

Project #	Project/Program Title (or title & date of evaluation report)	First PROAG or equivalent (FY)	Most recent PACD (mo/yr)	Planned LOP Cost ($)	Amount Obligated to Date ($)

ACTION

E. Action Decisions Approved by Mission or AID/W Office Director

Action(s) Required	Name of officer responsible for Action	Date Action to be Completed

APPROVALS

F. Date of Mission or AID/W Office Review of Evaluation: mo ___ day ___ year ___ Report Da mo ___ day ___ year ___

G. Approvals of Evaluation Summary and Action Decisions:

	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID Director	Loa
Signature					
Typed Name					
Date					

D-4

H. EVALUATION ABSTRACT (do not exceed the space provided.

ATTACH

I. EVALUATION COSTS

1. Evaluation Team

Name	Affiliation	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (US$)	Source of Funds

2. Mission/Office Professional Staff Person Days (estimate) _____

3. Borrower/Grantee Professional Staff Person-Days (estimate) _____

ATTACH

PIO/T No. 391-0480-3-90251

D-7

A.I.D. EVALUATION SUMMARY PART II

J. SUMMARY OF EVALUATION FINDINGS, CONCLUSIONS AND RECOMMENDATIONS (Do not to exceed the 3 pages provided)
Address the following items:

- o Name of mission or office
- o Purpose of activity (ies) evaluated
- o Purpose of the Evaluation and Methodology Used
- o Findings and Conclusions
- o Recommendations
- o Lessons learned

Date this summary prepared:

Chapter 1

INTRODUCTION

1.1 GEOGRAPHIC BACKGROUND

The Islamic Republic of Pakistan covers a land area of approximately 310,527 square miles (803,943 square kilometers). It has a varied topography, consisting of the Indus River basin in the central part of the country with the Hindu Kush and Himalayas to the north, arid mountains and plateaus to the southwest and the Thar desert to the southeast (Figure 1-1).

Figure 1-2 shows the low rainfall (less than five inches) in the hot deserts of Balochistan, increasing to the north with the wet zone (over 30 inches annually) where the first ranges of mountains occur. The headwaters of the major rivers of Pakistan lie in this mountainous area.

The country is a federation of four provinces (Punjab, Sindh, North West Frontier Province, and Balochistan), Azad Jamu and Kashmir, the Northern Areas, seven Federally Administered Tribal Areas (FATA) and the Federal Territory of Islamabad.

The basic political unit is the Union Council, there being 3,416 in the four provinces. Members of these councils are elected by the population of the country's 45,000 villages. The next larger unit is the District which, for many purposes, is the basic administrative unit. There are a total of 87 districts and agencies, of which 72 are in the four provinces:

- Punjab 27 districts, 2,241 union councils
- Sindh 15 districts, 561 union councils
- NWFP 13 districts, 438 union councils
- Balochistan 17 districts, 176 union councils

There are about 117 million people in the country, with some 70% residing in the rural areas. Table 1.1 shows the 1981 population figures (latest available) for the four provinces:

Table 1.1

POPULATION AND AREA BY PROVINCE

	Area (km2)	Population (000's)	Pop. Density (Persons/km2)
Punjab	205,344	47,292	230
Sindh	140,914	19,029	135
NWFP	74,521	11,061	148
Balochistan	347,190	4,332	12

Source: 1981 census figures, Pakistan Statistical Yearbook, 1991

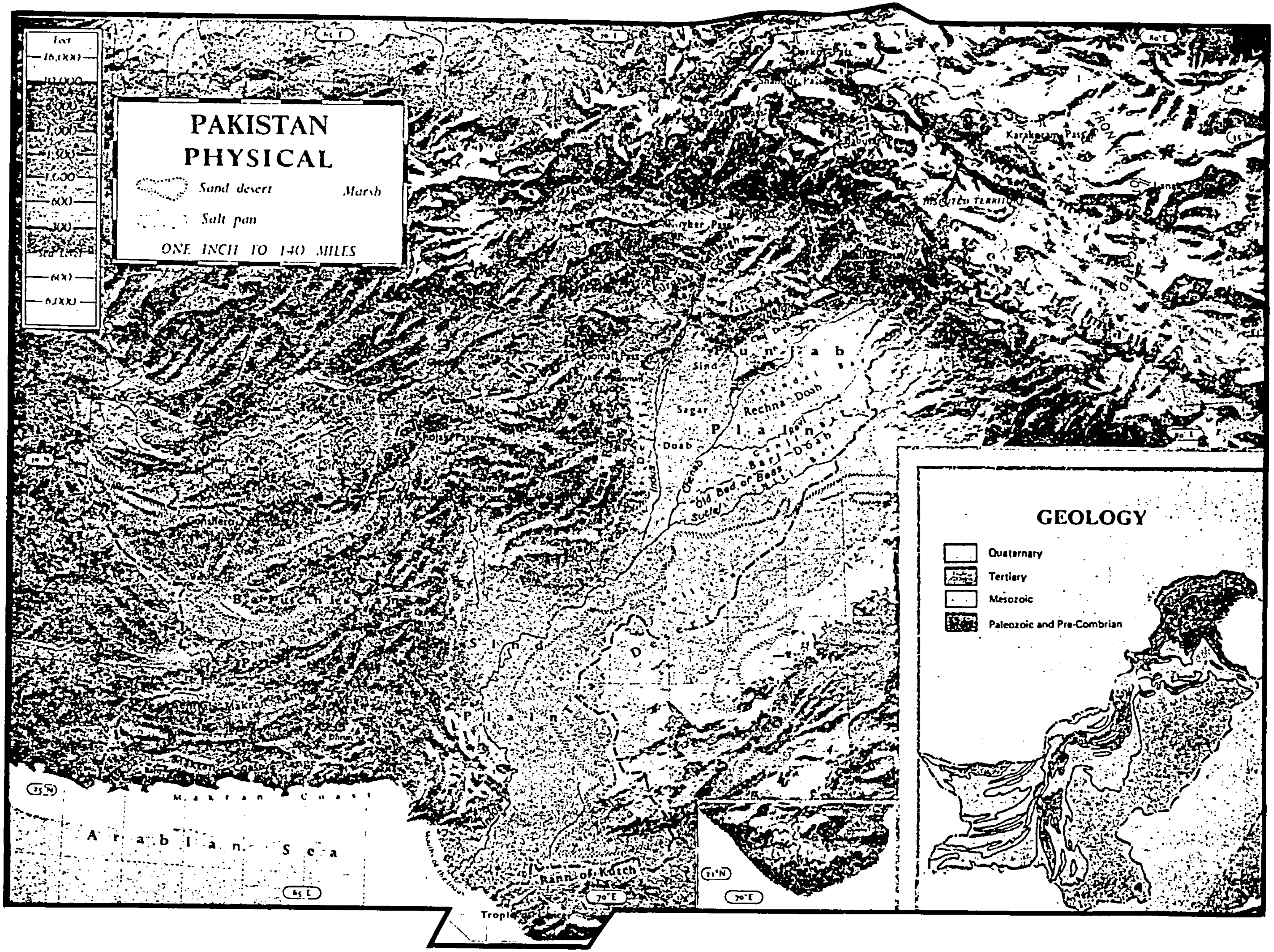

PAKISTAN
PHYSICAL
Sand desert
Marsh
Salt pan
ONE INCH TO 140 MILES
Feet
Sea Level
Khyber Pass
Gomal Pass
Karakoram Pass
Punjab
Rechna Doab
Bari Doab
Sind Sagar Doab
Plain
Old Bed of the Beas
Sutlej
Chenab
Makran Coast
Arabian Sea
Rann of Kutch
Tropic of Cancer
GEOLOGY
Quaternary
Tertiary
Mesozoic
Paleozoic and Pre-Cambrian

Figure 1-1

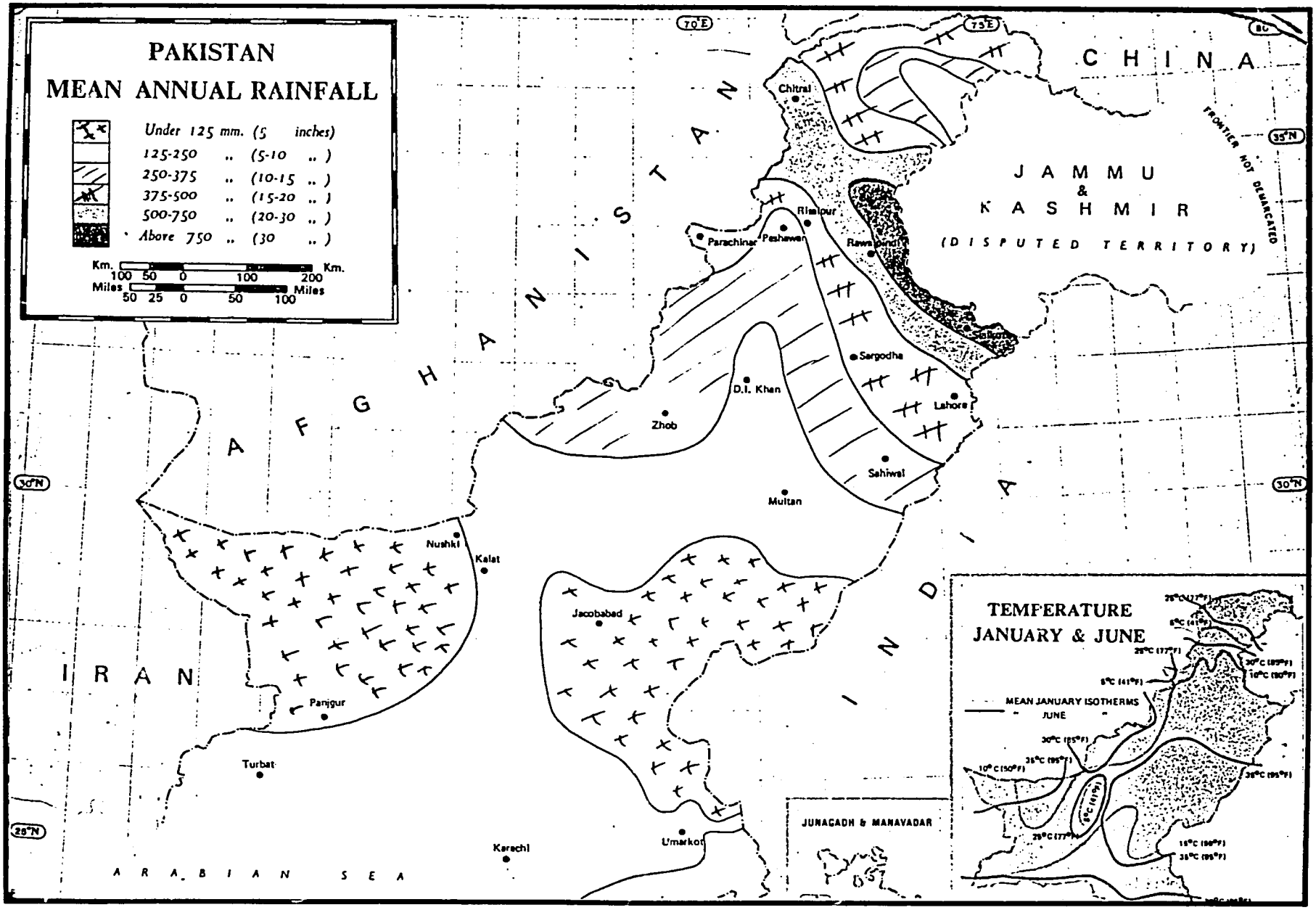

PAKISTAN
MEAN ANNUAL RAINFALL
Under 125 mm. (5 inches)
125-250 .. (5-10 ..)
250-375 .. (10-15 ..)
375-500 .. (15-20 ..)
500-750 .. (20-30 ..)
Above 750 .. (30 ..)
Km. 100 50 0 100 200 Km.
Miles 50 25 0 50 100 Miles
AFGHANISTAN
IRAN
INDIA
CHINA
JAMMU & KASHMIR
(DISPUTED TERRITORY)
FRONTIER NOT DEMARCATED
ARABIAN SEA
Chitral
Parachinar
Peshawar
Rawalpindi
Rawalpindi
Sargodha
D.I. Khan
Zhob
Lahore
Sahiwal
Multan
Nushki
Kalat
Jacobabad
Panjgur
Turbat
Karachi
Umarkot
JUNAGADH & MANAVADAR
TEMPERATURE
JANUARY & JUNE
MEAN JANUARY ISOTHERMS
JUNE
70°E
75°E
80
35°N
30°N
25°N

Figure 1-2

1.2 THE AGREEMENT

This report was prepared under an agreement between the United States Agency for International Development (USAID) and DeLeuw, Cather International (DCIL) (the Consultant). The basic contract was IQC No. PDC-0249-I-00-0019-00, Delivery Order No. 23. The title of the task to be performed under this Delivery Order was Road Resources Management (RRM) Project, 391-0480 Mid-Term Evaluation.

1.3 ORGANIZATION OF THE REPORT

The report is organized on the decimal system of chapter headings and sub-headings.

After the letter of transmittal and table of contents, the glossary explains the abbreviations and terms used in the report.

Executive Summary. A brief overview of the tasks performed, project sites visited, analyses, conclusions, and recommendations.

Chapter 1. A brief description of Pakistan, and Introduction.
Chapter 2. Project background information.
Chapter 3. Review of accomplishments for the road maintenance program.
Chapter 4. Review of accomplishments for the road re- habilitation program.
Chapter 5. Review of accomplishments for the training program.
Chapter 6. Review of District Revenue Sources

1.4 PROCEDURES ADOPTED

Civil Engineer R. Bernero, PE, arrived in Karachi on April 28, 1993. Office space was provided in the building occupied by the USAID Liaison Mission in Karachi. The Project Officer for USAID was Hasan Masood of the Road Resources Management Project.

Economist Shaheen Khan of the USAID Mission - Islamabad provided assistance for the economic and budget summaries developed during this program review period.

The Consultants's proposed schedule of visits was discussed with USAID on April 28, and a draft work plan agreed to (see Appendix A).

During May 1993, the consultant visited the Sindh provincial headquarters, and the districts of Hyderbad, Sanghar, Mirpur Khas, Sukkur, Shikarpur, and Larkana.

1.5 METHODOLOGY USED FOR EVALUATION OF DISTRICTS

The districts visited were the result of an assessment, made with the assistance of the USAID RRM project engineers for maintenance and rehabilitation works. The responsiveness of all Districts to the accomplishment of the program goals in the road maintenance and road rehabilitation areas was ranked separately from best to least, and a composite/overall ranking made.

Based on the assessment a cross sampling of Districts was made to obtain as accurate a review of local field conditions and financial situations affecting the Districts participating in the RRM project.

In each of the districts visited, efforts were made to visit as much of the existing road network as possible within the time constraints of the evaluation period. On these trips the consultant was accompanied by either the district engineer or his designated representative.

Field observations were made of the typical road characteristics of road width, surface type and condition, drainage availability and effectiveness, availability of local material sources for aggregates, etc. Data on the amount of recent routine and periodic maintenance efforts was noted in an effort to evaluate the effectiveness of the RRM project efforts.

A summary of the District roads visited during the field review are shown in Figure 1-3.

Principal officers and others interviewed during the course of the mid-term project evaluation are noted in Appendix B. Principal project documents reviewed are noted in Appendix C.

1.6 PROJECT BACKGROUND

The Road Resources Management Project was originally conceived (est. 1985) of as a National Program, but was reduced to a local province level program based on the initial support received from the Government of Sindh Province for its implementation.

Although the RRM project is on-going only in Sindh Province at this time, it is important to recognize that the infrastructure maintenance and expansion problem is nation-wide in scope.

Statistics of the National Transport Research Center indicate that, at the national level only 125,000 kms. of roads are available as against a requirement of 500,000 kms., which the Planning Commission considers appropriate for adequate national economic and social development and communications. Of the construction shortage of 375,000 kms. the vast bulk of new infrastructure requirements is in the expansion of the rural road network

FIGURE 1-3; DISTRICT ROADS VISITED DURING EVALUATION

ROAD NO.	ROAD LENGTH KM.	ROAD RESOURCES MANAGEMENT PROGRAM AREA - REHABILITATION (KMS.) 89/90	90/91	91/92	92/93	MAINTENANCE PROGRAM (KMS)
** HYDERABAD DISTRICT - 9 MAY 1993 **		*		*		
HY-HY-14	2.5	--	--	--	2.5	--
HY-HY-49	1.7	--	--	--	--	1.7
HY-HY-15	4.2	--	--	4.2	--	4.2
HY-HY-13	2.8	--	--	--	--	2.8 (P)
HY-HL-22	1.8	--	--	--	1.8*	--
** SANGHAR DISTRICT - 10 MAY 1993 **		*		*		
SA-SH-24M	6.41	1.05	--	3.5	1.86	4.55
SA-SJ-04	0.4	--	--	--	--	91/92(P);0.4
SA-SA-16	3.5	--	--	--	--	3.5 (P)
** MIRPUR KHAS DISTRICT - 10 MAY 1993 **				*		
THR-MP-21	4.75	--	--	4.75	--	4.75
MK-MK-29	1.6	--	--	--	--	1.6
** SUKKUR DISTRICT - 12 MAY 1993 **		*		*		
SU-38	2.2	--	--	2.2	--	2.2
SU-GT-03	2.2	--	--	--	--	2.2
SU-163	2.2	2.2	--	--	--	2.2
SU-BA-02	1.0	--	--	--	--	1.0
** SHIKARPUR DISTRICT - 13 MAY 1993 **		*		*		
SH-LK-08	0.6	--	--	--	--	0.6
SH-08	0.6	--	--	--	0.6*	--
SH-LK-10	0.4	--	--	--	--	0.4

NOTE: (P) = PERIODIC MAINTENANCE, BY CONTRACT;
* = ROAD INCLUDED IN 1992/93 REHAB. PROGRAM, IN DESIGN.

Chapter 2

BACKGROUND

The RRM project agreement was signed on June 18, 1987. The purpose of the project is to establish a maintainable rural road system in Sindh, Pakistan and to further identify the policy, management and financial reforms needed to achieve a sustainable road system nation wide. Originally planed for six years (1987-1992), the project efforts were extended to seven years, i.e., December 31, 1994, for programmatic reasons. The RRM projects aims at improving the rural road network, which in turn will promote a more rapid and equitable growth in income nd standard of living for the people of rural Sindh. The project consists of two main components: (1) Rural Roads Program which involves a comprehensive approach to improve planning and investments for rural roads among the districts of Sindh; and (2) Highway Policy and Finance Program under which the project efforts will investigate ways of overcoming the policy and financial constraints to effective management of road resources.

The Rural Roads Program being the major component consists of the following three sub-components:

i Roads Maintenance Programming (RoMP): Provision of training and/or technical assistance for district and provincial personnel to increase a) awareness of the role of maintenance in maximizing road service capacity, b) understanding of basic maintenance principles applicable in their respective positions, and c) knowledge and use of techniques for planning, programming, and monitoring rural roads maintenance and expansion activities.

ii Road Maintenance Management System (RoMMS): A package of assistance including intensive technical assistance, training and road maintenance equipment for District Councils in Sindh to enable them to establish a Maintenance Management System (MMS) capable of maintaining their paved road network.

iii Road System Improvement (RoSI): Upgrading of the rural road system in participating districts to a technical standard that will permit district personnel to apply efficient maintenance practices on the paved road network and priority sections on the remaining all-weather system. Expansion of the katcha (unpaved) access road network in some districts to serve villages now without a road.

The Highway Policy and Finance program consists of policy analysis and training for national and provincial personnel to help the Government of Pakistan (GOP) to develop and appropriate provincial and federal roads strategy. The analysis includes identifying the set of policies and related financial and institutional reforms needed to implement a development strategy for the road system consistent with Pakistan's needs and resources.

The Rural Road Program was planned for implementation in two phases. The two-year preparatory period of Phase I included data collection and planning activities in all Districts of Sindh. The Phase II, extended from three to five years, deals with the implementation of road maintenance and construction program. The long-term technical assistance team started arriving in January 1988 and was fully mobilized by October 1988. The completion of Phase I at the end of 1989 was an important milestone which forms the foundation for the Phase II implementation and therefore requires a detailed review to ensure that the project objectives can be met.

Phase II commenced in January 1990 with the start of the road rehabilitation program whereby it was planned to use project funds to bring the deteriorated paved roads in each district to a maintainable level over a four-year period. Simultaneously, the districts agreed to abide by the road maintenance program under which the district is given a target length of paved roads to maintain during a GOP fiscal year utilizing their own resources. The target for FY 89/90 was set at 10% with a plan to increase the target to 100% by the end of the project.

However, Phase II implementation received a setback in FY 90/91 as a result of both the evacuation of the TA team due to the Gulf war and enactment of the Pressler Amendment. The level of project funding was drastically reduced from $43 million to $14.1. A number of cost saving measures had to be taken including a reduction in road rehabilitation and construction targets, termination of the TA contract, canceling equipment procurement, and minimizing the training program. A summary of the initial funding and reduced funding levels is shown in Figure 2-1. The idea was to continue striving for the main project objective of establishing a maintainable rural road network in Sindh even with the $14.1 million funding level. Key dates during the program history are shown in Figure 2-2.

Figure 2-1

PROJECT FUNDING
($ 000's)

	ORIGINAL 1987	REVISED 1991
Technical Services	$ 8,250	$ 5,623
Training	3,070	500
Commodities/Equipment	5,580	767
Road Construction	22,280	6,265
Other Costs	2,210	830
Evaluation	150	50
Sub-Total	$41,540	$14,035
Contingency	1,460	65
TOTAL	$43,000	$14,100

CONSTRUCTION TARGETS
(in Km.)

REHABILITATION of existing paved roads to bring them to a maintainable condition	226 km.	203 km.
UPGRADING of katcha roads to a paved level	104	-0-
EXPERIMENTAL roads construction	16	-0-
KATCHA access roads construction	960	15
TOTAL	1,306 km.	218 km.

Source: USAID-Pakistan-4/93

Figure 2-2

Road Resources Management (RRM) Project, 391-0480

PROJECT HISTORY - KEY DATES

-	Project Grant Agreement (ProAg) signed	Jun.'87
-	Technical Assistance (TA) contract awarded	Jan.'88
-	Project PC-1 approved by ECNEC (GOP)	Feb.'88
-	TA team mobilized	Mar.'88
-	GOS Rural Road Policy Statement issued	Jun.'89
-	District road maintenance program initiated	Jul.'89
-	CP for disbursement for construction met	Oct.'89
-	Project implementation Phase I completed	Dec.'89
-	Road rehabilitation/construction program started	Jan.'90
-	Gulf war evacuation of expat TA team members	Jan.'91
-	Pressler Amendment budget cuts	Mar.'91
-	Re-negotiation of project with GOP	Jun.'91
-	Road equipment procurement abandoned	Jul.'91
-	TA contract terminated	Oct.'91
-	New project implementation approach launched (which involves supervision of road rehabilitation by local A/E firm, and management of district road maintenance program by USAID engineering staff).	Jan.'92

NOTE:

* ECNEC = Executive Committee of the National Economic Council
* GOP = Government of Pakistan
* GOS = Government of Sindh (Province)
* CP = Condition Precedent (for USAID)

Source: USAID-Pakistan-4/93

Chapter 3

PAVED ROAD MAINTENANCE

3.1 As part of the initial technical assistance effort the CCSC consultant's (1988 - 1990) prepared two manuals:

* ROAD MAINTENANCE MANUAL FOR DISTRICT ROADS (Dec. 1989)

* DISTRICT COUNCIL - ROAD MAINTENANCE BUDGETS FOR CONTRACT MAINTENANCE (April 1990)

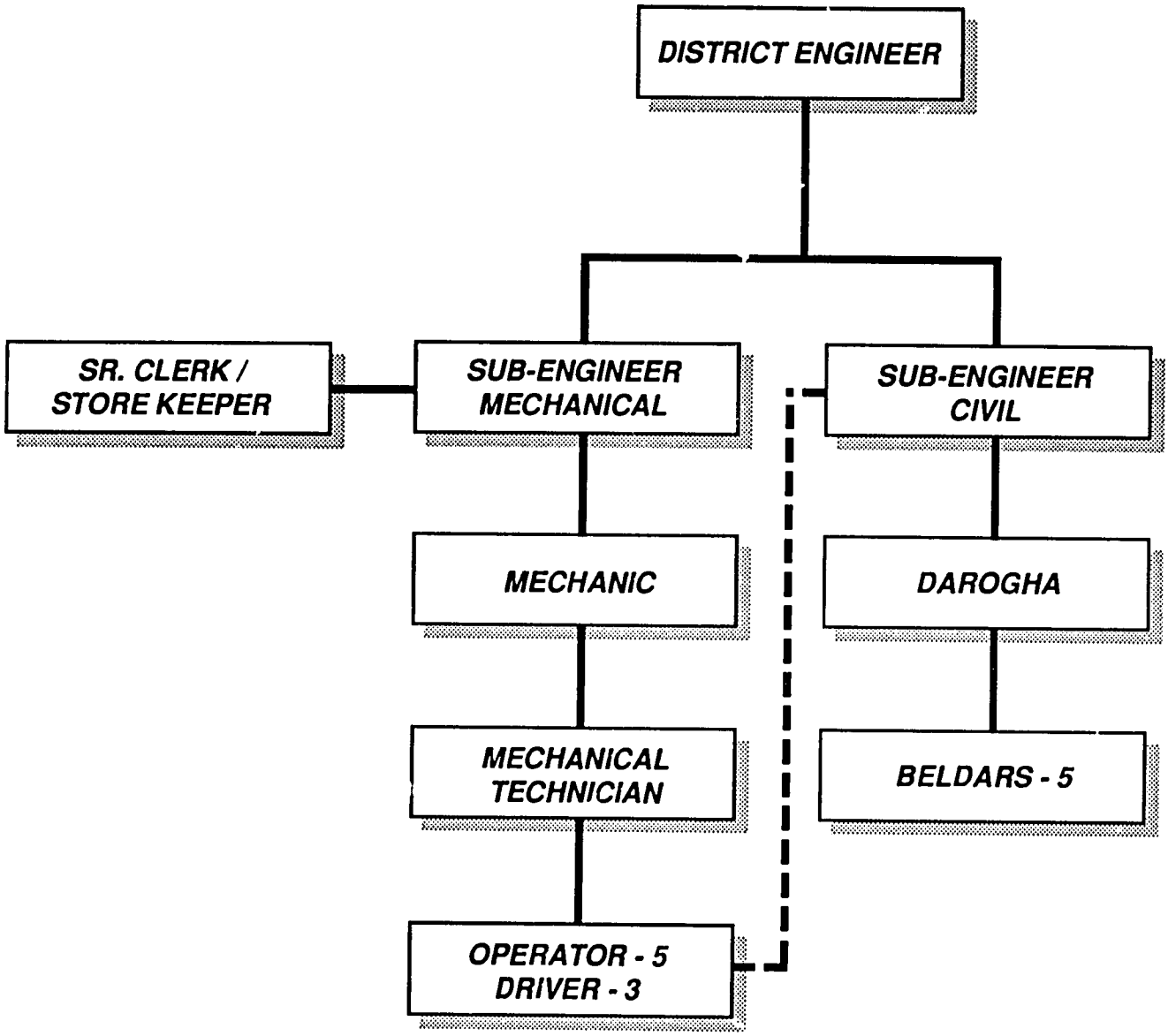
The ROAD MAINTENANCE MANUAL provided each district road unit engineer with a summary of the Proposed Organization Chart of Road Maintenance Units (RMU's) for each district, resource requirements (labor, equipment, materials) for the maintenance of 40 km. of district paved roads, works to be undertaken and matters to be reported, principles of control of maintenance works, maintenance standards to be followed, work procedures to be followed in the field, and maintenance records to be maintained.

This material was distributed by CCSC (during 1989-1990) to each of the district road units in Sindh province:

*	Badin	(one RMU recommended)
*	Dadu	(one RMU recommended)
*	Hyderabad	(three RMU's recommended)
*	Karachi East	(one RMU recommended)
*	Khairpur	(one RMU recommended)
*	Jacobabad	(one RMU recommended)
*	Larkana	(one RMU recommended)
*	Nawabshah	(two RMU's recommended)
*	Sanghar	(one RMU recommended)
*	Shikarpur	(one RMU recommended)
*	Sukkur	(one RMU recommended)
*	Tharparkar	(one RMU recommended)
*	Thatta	(one RMU recommended)

Typical proposed organization charts (by CCSC) for districts with one, two or three RMU's are shown in Figures 3-1, 3-2, and 3-3. The recommended equipment and manpower for each Road Maintenance Unit (RMU), capable of maintaining 40 km. of road, were as shown in Figure 3-4.

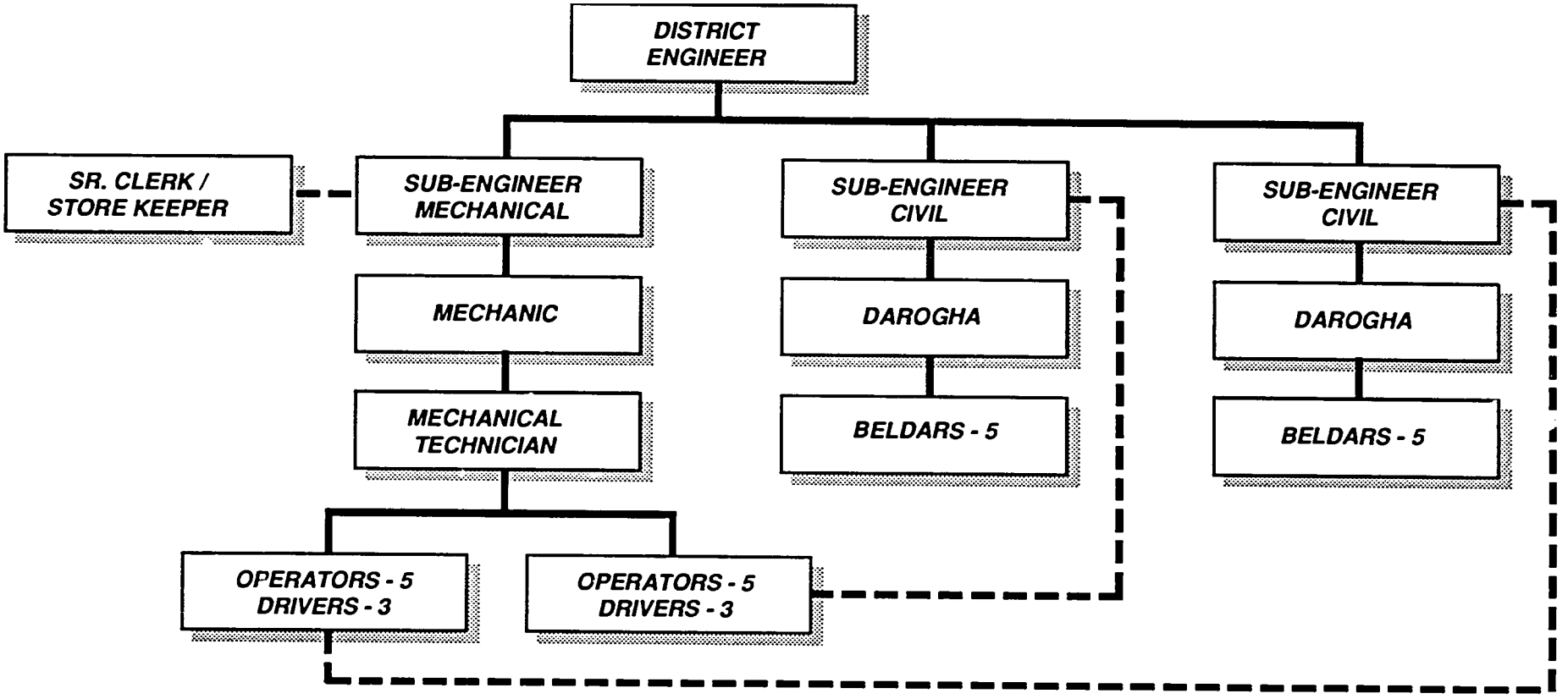
Since the districts did not have the recommended equipment for the RMU's, the initial work was to be undertaken by manual means, utilizing hand tools - picks, shovels, and wheelbarrows, until the recommended equipment could be purchased by the RRM project. Due to the impact of the Pressler Amendment (3/91), funding for the RRM project was severely reduced (see Figure 2-1), resulting in the abandonment of the procurement of the previously recommended equipment, the termination of the TA contract, and re-structuring of the approach to be used for implementation of the RRM project.



N.B. : EACH RMU WILL TAKE CARE OF 40KM OF ROAD FOR MAINTENANCE PURPOSE (DETAIL ATTACHED)

FIGURE 3-1

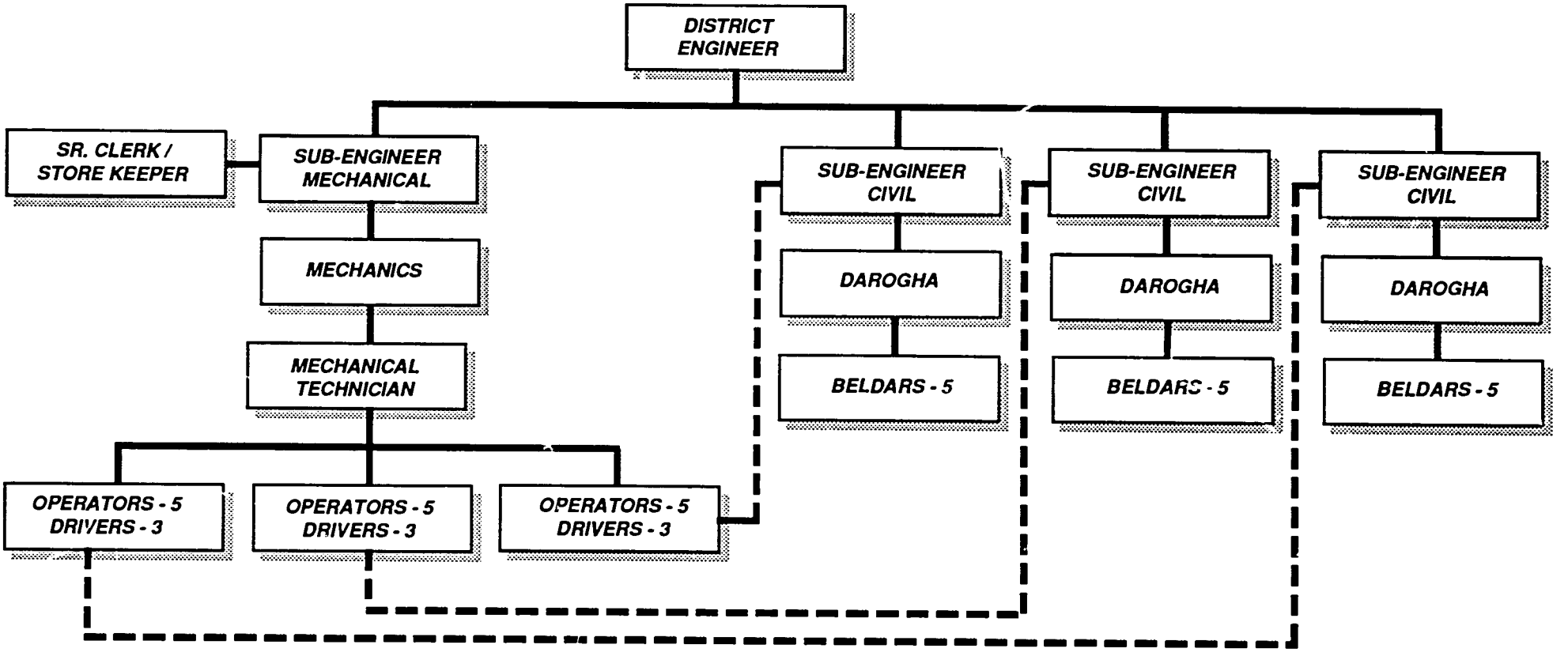
PROPOSED ORGANISATION CHART OF ROAD MAINTENANCE UNIT (RMU) FOR DISTRICT THATTA



N.B. : EACH RMU WILL TAKE CARE OF 40KM OF ROAD FOR MAINTENANCE PURPOSE (DETAIL ATTACHED)

FIGURE 3-2

PROPOSED ORGANISATION CHART OF ROAD MAINTENANCE UNITS (RMU s) FOR DISTRICT NAWABSHAH



N.B. : EACH RMU WILL TAKE CARE OF 40KM OF ROAD FOR MAINTENANCE PURPOSE (DETAIL ATTACHED)

FIGURE 3-3

PROPOSED ORGANISATION CHART OF ROAD MAINTENANCE UNITS (RMU s) FOR DISTRICT HYDERABAD

Figure 3-4

EQUIPMENT FOR ONE PAVED ROAD MAINTENANCE UNIT (RMU)
(Ref.: December 1989 - CCSC - Performance Standards)

	UNIT	QUANTITY
1.	2.5 ton Pickup - double cab	1
2.	1.5 ton Pickup - single cab	1
3.	1 ton Vibro Roller (hand operated)	1
4.	Flat Bed Truck - 5 ton	1
5.	1000 gallon Water Tanker Trailer	1
6.	Farm Tractor, along with Bucket, Trolley and Blade	1
7.	Vibro Plate Compactor (hand operated)	1
8.	Asphalt Sprayer - 100 gallon (hand operated)	1
9.	Asphalt Mixing Plant with 5 ton/hr. mixing capacity	1
10.	1/3 cu. yd. Concrete Mixer	1

- -

MANPOWER OF ONE PAVED ROAD MAINTENANCE UNIT (RMU)

	SKILL		NUMBER	
1.	Sub-Engineer		1	
2.	Darogha		1	
3.	Drivers		3	
4.	Operators		2	One operator can handle the asphalt mixing plant, asphalt sprayer, concrete mixer, and one ton Vibro roller, with the help of 3 laborers.
5.	Beldars	5 + 3 =	8	Three (3) will assist the operator in operating of asphalt sprayer, concrete mixer, and one ton Vibro roller.

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3.2 Following the required program budget reductions resulting from the Pressler Amendment (3/91), the revised MAINTENANCE MANUAL FOR DISTRICT ROADS was issued in August 1992. This revised Manual incorporated the use of manually executed activities using the crews of beldars available at the district level, with the option for the execution of work by road maintenance contracts. At this time the Performance Standards for the road maintenance Work Activities were also updated to reflect the performance of the maintenance activities by manual means, using hand tools, with little to no use of support equipment. A comparative listing of the Work Activity Performance Standards included in the original "Road Maintenance Manual for District Roads (December 1989)", and the "Maintenance Manual for District Roads in Sindh (revised August 1992)" is shown in Figure 3-5.

As shown in Figure 3-5, the number of maintenance activities has been reduced, and some entirely eliminated

As a result of the revision in the Performance Standards to incorporate a larger amount of manually executed activities, a resulting decrease in the estimated average crew day accomplishment was also made. A more detailed comparison of the labor, equipment, tools requirements, and crew day accomplishments for the two versions of maintenance Performance Standards (equipment supported vs. manually executed) is shown in Appendix D.

To compensate for this in-District lack of equipment to handle the performance of periodic maintenance activities, such as the Resealing of Paved Surfaces, or application of a new Paved Surface Treatment, the Districts contract this work out with local contractors. During the field visits made as part of this evaluation, it was not possible to see one of these contractors actually working. In some locations, material was being stockpiled along the road, but no crews were present or working.

Figure 3-5

WORK ACTIVITY PERFORMANCE STANDARDS

	ROAD MAINTENANCE MANUAL FOR DISTRICT ROADS (DEC.'89)	MAINTENANCE MANUAL FOR DISTRICT ROADS IN SINDH (August 1992)
STANDARD WITH FULL MAINTENANCE EQUIP.		
P-1	Patching Pothole (Paved Surface) (cubic meter)	- -
P-1-A	Patching Pothole (Paved Surface) with D.B.S.T. application (cu.m.)	P-1 Skin Patching (Paved Surface) w/D.B.S.T. application (sq.m.)
P-2	Patching Potholes/Base Repair (Paved Surface) (cubic meter)	P-2 Patching Potholes/Base Repair (cubic meter)
P-2-A	Patching Potholes/Base Repair (Paved Surf.) with D.B.S.T.(cu.m.)	- -
P-3	Shoulder Reconditioning (km.)	P-3 Shoulder Reconditioning (sq.m.)
P-4	Shoulder Restoration (cu.m.)	P-4 Shoulder Restoration (cu.m.)
P-5	Drainage Ditch Cleaning (meter)	P-5-A Drainage Ditch Cleaning and Shaping (man days)
P-6	Drainage Ditch Restoration (-)	
P-7	Culvert Cleaning (per culvert)	P-5-B Drainage Structure Cleaning (man days)
P-8	Repair/Replace Culvert Sections (per culvert)	P-6 Major Structure Repair (per culvert)
P-9	Vegetation Control (kilometer)	- -
P-10	Minor Structure Repair (Bridge) (meter)	- -
P-11	Repair of Guard Rails and Guard Posts (other than on Bridges) (linear meters)	- -
P-12	Traffic Signs Repair/Replacement (number of traffic signs)	- -
P-15	Resealing Surfaces (Periodic Maintenance (square meter)	P-7 Resealing Surfaces (Periodic Maintenance (square meter)
P-16	Emergency Activity: Removal of Land Slide and Flood Debris (man day)	- -
P-13	Field Supervision (man-day)	- -
P-14	Field Inspections (kilometers)	- -

3.3 With the program financial reductions and equipment purchase revisions required by the Pressler Amendment, efforts have been continued to achieve the program goals of increasing the kilometers of maintainable roads in each district, with a slight modification in the original program maintenance targets as shown in Figure 3-6.

Figure 3-6

Summary of Maintenance Targets

Year	ORIGINAL 1987	REVISED 1991	Maintenance Target
1989-90	10%	10%	of maintainable paved road network
1990/91	35%	35%	of maintainable paved road network
1991/92	65%	65%	of maintainable paved road network
1992/93	100%	80%	of maintainable paved road network
1993/94	100%	100%	of maintainable paved road network

A maintainable paved surface road segment is considered to be that length with a surface condition rating of good to fair. Paved surface road segments considered to be in poor condition, are not included in the "maintainable paved road network" and are scheduled for rehabilitation work when funds become available.

3.4 Based on a review of the program accomplishments to date (reference Figure 3-7), only three (3) of the districts have been able to achieve or exceed the initial target kilometers (based on the 1989 inventory) of paved roads under maintenance by the last program year (1991/92), due to the constrained program support efforts possible by the USAID staff, working with each local District Engineer, and the limited management ability of the District staff.

During this same period the number of kilometers of paved roads in nine (64%) of the fourteen districts has increased due to the construction of new paved roads with the special grants funds received from the Government of Sindh over the last few years. This situation of an increasing road system to maintain with the same District staff, requires that the Districts will have to become more effective and efficient in maintaining their road system if they are not to have increasing maintenance problems in the next few years.

Figure 3-7

District	1989-90 1990-91 Paved Kms. Inventory ---(1)---	Kilometers Maintained 1991-92 ---(2)-----	% of Initial Target --(3)--	Updated 1991-92 Inventory --(4)----	Maintenance Target - Kms. 1991-92 (65%) ---(5)------	% of REV. 1991-92 Target Kms. --(6)--
1. Dadu	11.30	17.50	154.9%*	59.02	7.35 **	238%
2. Khairpur	38.64	16.07	41.6%	31.85	15.37	105%
3. Larkana	54.70	23.80	43.5%	99.01	15.47 **	154%
4. Shikarpur	19.60	17.56	89.6%*	25.43	14.27	123%
5. Sukkur	19.10	8.30	43.4%	33.50	13.79	60%
6. Jacobabad	12.75	6.43	50.4%	11.43	5.67	113%
7. Nawabshah	65.80	26.00	39.5%	78.56	26.00	100%
8. Naushero Feroz	49.3	30.00	60.8%	77.50	24.39	123%
9. Hyderabad	179.00	127.00	70.9%*	376.17	78.91 **	161%
10. Karachi	96.70	39.76	41.1%	123.07	42.17	94%
11. Thatta	42.31	--		--	--	--
12. Badin	19.90	9.23	46.4%	27.08	8.26	112%
13. Tharparkar - Mirpurkhas	64.60	26.05	40.3%	56.74	20.47	127%
14. Sanghar	65.40	26.50	40.5%	80.40	26.51	100%
TOTAL	739.1	374.2	50.6%	1122.87 (151.9% of 1989-90 inventory)	298.63	125%

NOTE: Column (3) = Column (2) divided by Column (1); % of paved system maintained vs. 1989 inventory paved kms.
Column (6) = Column (2) divided by Column (5); % of paved system maintained vs. 1991/92 maintenance target.

* = Districts able to meet or exceed target of 65% of paved road system maintained by the 1991-92 program.
** = Maintenance target for FY 91-92 is based on initial inventory of 1988-89.

Source: USAID-Pakistan, 5/93

3.5 Based on the visit of a sample of six (6) Districts during this evaluation it is important that the District engineer and his sub-engineers become more proficient in road maintenance planning methods/skills, and the ability to supervise road maintenance contracts so that the increasing road maintenance work load can be handled more efficiently.

During the program, training sessions/workshops have been planned (see Chapter 5 - Training), but only a limited number have actually been able to be held due to the severe reduction in program funding for training (reference Figure 2-1). Without an increased training effort to increase the maintenance management understanding and capabilities of the District engineers, and their sub-engineers over the remaining life of the project, their ability to carry on the application of maintenance management principals achieved to date will be limited.

3.6 Based on information from the six (6) Districts visited, and partially summarized in Figure 3-8, most District engineers and sub-engineers are Diploma holders with limited to no formal training in the areas/skills of road system planning and maintenance management techniques. Such additional training was identified, and planned to be conducted as part of the technical assistance services of CCSC, but was not realized due to the reductions in program funding resulting from the Pressler Amendment in March 1991, and the resultant early termination of the CCSC contract in October 1991.

3.7 As indicated in Figure 3-8, for most Districts the only piece of road maintenance support equipment available to the District crews is a roller. This severely limits the ability of the Districts to haul needed materials (aggregates, asphalt, stone, bricks) for even minor maintenance/repair activities. This lack of basic equipment was intended to be corrected under the original program targets (as shown in Figure 3-4), but was likewise eliminated as a result of the impact of funding reductions due to the Pressler Amendment in March 1991.

Since the start of the RRM project, equipment procurement has been limited to the seventeen (17) vehicles, nine (9) computers, and nine (9) printers acquired by the CCSC technical assistance contractor (shown in Figure 3-9) during the initial implementation phase of their contract (1988-91).

3.8 In addition, the resultant reduced funding level has limited the training and supervision efforts able to be accomplished by the in-country staff of the USAID-Pakistan Mission (since January 1992) following the early termination of the CCSC technical assistance contract in October 1991.

Figure 3-8

District Data	Hyderabad	Sangh/r	Mirpur Khas	Sukkur	Shikarpur	Larkana
Technical Staff:						
- Dist. Engineer	1	1	1	1	1	1
- Sub-Dist. Officers	-	-	-	2	-	-
- Sub-engineers	4	3	5	6	2	4
Education Level:						
- Dist. Engineer	Diploma	B-Tech.	Diploma	Diploma	Diploma	Diploma
- Sub-Dist. Officers	--	--	--	2 Diploma	--	--
- Sub-engineers	3 Diploma 1 B-Tech.	3 Diploma	5 Diploma	6 Diploma	2 Diploma	4 Diploma
No. of Talukas:	4	6	5	6	4	7
Road Network - kms.:						
- Metal/Paved Roads=	269	85	62	32.5	28.7	76
- Brick Paved Roads=	45	50	--	1250	--	36
- Khatcha Roads =	45	185	700	3396	390	89
	---	---	---	------	-----	---
- TOTAL KMS. =	359	320	762	4678	419	211
Work staff:						
- Daroghas	--	5	1	11	4	7
- Beldars	39	80	20	200	40	64
Equipment:						
- Motorgrader	2	--	--	--	--	--
- Roller (12 ton)	2	1	1	1	1	1
- Tractor w/trolley	-	-	-	--	1	--
District Budget (million Rs):						
- Gen. Salaries	15	*	*	*	7.7	*
- To Union Councils	12	*	*	*	*	*
- Other	3	*	*	*	*	*
- Development-Roads and Buildings	20	6	4.5	15.6	0.40	7.5
- Road Maintenance	5	1	1.5	1.2	0.25	0.5
	--	--	---	----	----	----
TOTAL =	60	22.5	20	*	8.1	29.9

NOTE: * = Data not noted during field visit.

Figure 3-9

RRM PROJECT EQUIPMENT PURCHASED BY CCSC DURING IMPLEMENTATION PHASE (1988-90)

COMPUTERS AND PRINTERS POSITION

OFFICE	COMPUTERS	PRINTERS
Karachi	7	7
Hyderabad	1	1
Sukkur	1	1

TABLE 2-2

VEHICLE POSITION

OFFICE	DESCRIPTION	REGISTRATION NO.
Karachi	Isuzu Troopers	AD 64-484
	Isuzu Troopers	AD 64-538
	Isuzu Troopers	AD 64-539
	Suzuki Jeep	AD 64-577
	Suzuki Jeep	AD 64-578
Hydrabad	Toyota Pickup	AD 64-344
	Toyota Pickup	AD 64-529
	Toyota Pickup	AD 64-530
	Toyota Pickup	AD 64-534
	Suzuki Jeep	AD 64-571
	Suzuki Jeep	AD 64-580
Sukkur	Toyota Pickup	AD 64-345
	Toyota Pickup	AD 64-531
	Toyota Pickup	AD 64-535
	Toyota Pickup	AD 64-536
	Isuzu Trooper	AD 64-537
	Suzuki Jeep	AD 64-579

Source: "RRM Project Termination Report", CCSC, October 1991

3.10 At the start of the RRM program in January 1988 (with the award of the Technical Assistance contract) the Districts in Sindh Province had a estimated 764 km. of paved (metalled) roads. Of those an est. 489 km. (64%) were identified to be in maintainable condition, in 11 of the 13 districts surveyed.

3.11 Despite local security problems (1990-92), major fluctuations of road inventory status in several Districts, and the early termination of the Technical Assistance contract in October 1991, the local USAID staff has been able to carry on maintenance planning and evaluation assistance to the Districts and basically achieve or exceed their updated 1991-92 maintained km. goals in all but one (1) of the Districts (Ref. Figure 3-7).

When compared to the revised base (1989-90) inventory length (km.) of paved roads however, as of November 30, 1992 the Districts had maintained over 374 km. of their current paved road system - or 50.6% of their 1989-90 inventory length.

3.12 Taken in comparison with their updated 1991-92 inventory of paved road of 1122.87 km., it initially appears that the Districts have not progressed, but have declined in ability to maintain their road system. This is not the case. When placed in perspective with the constant change situation occurring on the actual road system, with the number of kms. of District paved roads taken over by the Provincial C&W authority each year, and the number of kms. of District paved roads added as a result of rehabilitation/new construction projects funded by special GOS grants or matching funds, (Ref. Figure 3-10) the Districts assisted by the RRM program have actually been doing a good job in meeting the desired RRM road maintenance program targets for the following reasons:

a. The Provincial C&W authority is generally taking over part of the better District paved road sections - 140 kms. since 1989.

b. The kms. of paved District roads added by the GOS funds (est. 500 kms. since 1989) for rehabilitation/new construction projects are generally built to a lower construction standard. Poorer quality, local on-site materials are generally used.

   According to some of the engineers interviewed, less or no compaction of base, sub-base, surfacing or shoulder materials is performed. Compaction by gravity and vehicle use is commonly relied upon. As a result they do not always hold up under the traffic types and volumes they are expected to carry. The resulting service life of these additional paved roads kms. is severely reduced, and they require additional periodic maintenance, or complete rehabilitation in just a few years following their construction.

Details of these fluctuations in the paved road system between June 1989 (CCSC data) and April 1993 (USAID data), for each of the District, are shown in Appendix E and summarized in Figure 3-10.

3.13 As shown in Figure 3-10, since 1989 over 140 kms. of paved roads have been taken over by the C&W organization, and in the same period Districts have added an additional 500 kms., increasing their paved road system from 739 kms. to 1113 kms (+50.6%) in 1993.

Figure 3-10

CHANGES IN DISTRICT PAVED ROAD SYSTEM (1989 TO 1993)

DISTRICT NAME	INVENTORY JUNE 1989 (KM.)	1989-90 1990-91 PAVED KMS. INVENTORY	1991-92 PAVED KMS. INVENTORY	DIST. KM. TO C&W, OTHERS	CHANGES FROM 6/89 TO 4/93 NEW PAVED KM. BY DISTRICT	KM. CHANGES 6/89 SYSTEM	DISTRICT PAVED KM. APRIL 1993
1. Dadu	Not Done	11.30	59.02	**	(+) 47.72	**	59.02
2. Khairpur	38.64	38.54	31.85	(-) 15.81	(+) 18.45	(+) 1.24	42.52
3. Larkana	Not Done	54.70	99.81	**	(+) 45.11	**	99.81
4. Shikarpur	19.10	19.60	25.43	-0-	(+) 9.18	(-) 0.34	27.94
5. Sukkur	35.35	19.10	33.50	(-) 23.85	(+) 17.43	(+) 3.52	32.45
6. Jacobabad	12.75	12.75	11.43	(-) 3.50	(+) 3.56	(-) 0.05	12.76
7. Nawabshah	94.30 (a)	65.80	78.56	(-) 20.80 (a)	(+) 42.29	**	77.66
8. Naushero Feroz	(b)	49.3	77.50	(b)	(+) 31.80	**	71.50
9. Hyderabad	179.49	179.00	376.17	(-) 5.30	(+) 185.09	(-) 3.49	355.79
10. Karachi	109.90	96.70	123.07	(-) 36.46	(+) 46.82	(+) 2.41	122.67
11. Thatta	42.71	42.31	**	**	**	**	42.31
12. Badin	18.20	19.90	27.08	(-) 2.90	(+) 13.66	(+) 1.15	30.11
13. Tharparkar - Mirpurkhas	64.00	64.60	56.74	(-) 31.51	(+) 23.28	(+) 0.98	56.75
14. Sanghar	65.38	65.40	80.40	(-) 0.34	(+) 15.90	(+) 0.93	81.87
TOTAL		739.1	1122.87	140.47	500.29		1113.16
		|<------- 19% of 1989 system -----> |			|<----- 45% of current system -----> |		

NOTE: ** = Data not available.; (a) = Kilometers for Nawabshah and Naushero Feroz.; (b) = Included above

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3.14 The impact of these fluctuations on the maintainable paved road system for each District are shown in Figure 3-11. With the targets established for FY 92-93 several Districts (Dadu, Larkana, Hyderabad) will need to more than double or triple their in-District maintenance capabilities. The ability of these Districts to handle this dramatic increase will depend on the maintenance management capabilities that their staff have acquired to date.

Figure 3-11

SUMMARY OF MAINTAINABLE PAVED ROADS JUNE 1989 vs. APRIL 1993 STATUS

DISTRICT	1989 INVENTORY DATA			89-90 INV.	91-92 INVENTORY DATA		MAINT. TARGET FOR FY 92-93	MAINT. TARGET FOR FY 91-92
	PAVED KM.	MAINTABLE	REHAB.	PAVED KM.	PAVED KM.	MAINTABLE	80% OF (6)	65% OF (6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Dadu	31.50	**	**	11.30	59.02	52.82	42.26	7.35 ***
2. Khairpur	38.64	36.42	2.22	38.64	31.85	23.65	18.92	15.37
3. Larkana	52.95	**	**	54.70	99.81	94.11	75.29	15.47 ***
4. Shikarpur	19.10	16.30	2.80	19.60	25.43	21.96	17.57	14.27
5. Sukkur	35.35	28.05	7.30	19.10	33.50	21.22	16.98	13.79
6. Jacobabad	12.75	7.40	5.35	12.75	11.43	8.73	6.98	5.67
7. Nawabshah	94.30	72.40	21.90	65.80	78.56	40.00	32.00	26.00
8. Naushero Feroz	(a)	(a)	(a)	(a)	77.50	37.52	30.02	24.39
9. Hyderabad	179.49	131.49	48.00	179.00	376.17	325.57	260.46	78.91 ***
10. Karachi	109.80	65.78	44.02	96.70	123.07	64.87	51.90	42.17
11. Thatta	42.71	33.18	9.53	42.31	42.31	**	**	**
12. Badin	18.20	7.90	10.30	19.90	27.06	12.71	10.17	8.26
13. Tharparkar - Mirpurkhas	64.00	48.57	15.43	64.60	56.74	31.49	25.19	20.47
14. Sanghar	65.18	41.48	23.70	65.40	80.40	40.78	32.62	26.51
TOTAL =	763.97	488.97	190.55	689.80	1122.85	775.43	620.34	298.63

NOTE: ** = Data not available;
*** = Maintenance target for FY 91-92 is based on initial inventory of 1988-89;
(a) = Data included in Nawabshah. Nawabshah and Naushero Feroz were one district in June 1989.

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3.15 Considering the tremendous increase in productivity (two to three times) which could be achieved in the execution of road maintenance or rehabilitation activities with the support of even modest equipment (reference Appendix D), means need to be explored whereby funds from a single source, or more likely several sources could be combined by the District Councils each year or two, which would allow them to start acquiring the equipment they need. Based on the equipment recommended by CCSC in December 1989 (see Figure 3-4), and the financial constraints faced by the Districts and the USAID RRM program, this consultant recommends that as funds can be acquired the District Councils purchase new equipment (preferred) or good quality used/rehabilitated equipment (generally cheaper) in the order shown (see Figure 3-12).

Figure 3-12

EQUIPMENT FOR ONE ROAD MAINTENANCE UNIT (RMU)

	UNIT	QUANTITY
1.	Farm Tractor, along with Bucket, Trailer (Trolley) and Blade	1
2.	Vibro Plate Compactor (hand operated)	1
3.	Asphalt Sprayer - 100 gallon (hand operated)	1
4.	1000 gallon Water Tanker Trailer	1
5.	1 ton Vibro Roller (hand operated)	1
6.	2.5 ton Pickup - double cab	1
7.	1/3 cu. yd. Concrete Mixer	1
8.	1.5 ton Pickup - single cab	1
9.	Flat Bed Truck - 5 ton (short-term needs can be contracted on a daily/weekly basis)	1
10.	Asphalt Mixing Plant with 5 ton/hr. mixing capacity (not required for road maintenance - this can be contracted)	1

- - - - - - - - - - - - - - - - - - - -

3.16 Representative photos of the on-going road maintenance work being performed in the Districts visited during May 1993 are shown at the end of this chapter.

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REVIEW OF CURRENT DISTRICT MAINTENANCE FUNDING

3.17 During the evaluation period, information was assembled on the current maintenance funding available for each District engineer and his staff to carry out the road maintenance needs along their entire existing system - both paved and unpaved roads. Information summarized in Figure 3-13 shows the Districts Revenues and Income for Budget Years 1988-89 through 1992-93. Figure 3-14 summarizes available information on the Districts Expenditures for Road Construction and Maintenance for the same Budget Years of 1988-89 through 1992-93.

For most Districts, their total revenues have been increasing over this period, and with the efforts of the RRM program, Districts have started to allocate an increased amount of their District Budget for road maintenance work in budget Year 1991-92 (Ref. Figure 3-14).

3.18 However, when compared with the currently estimated amount of funding considered necessary by USAID engineers to properly maintain each Districts paved road system (Ref. Figure 3-15), the Districts are under-funding the road maintenance sector by substantial amounts. In all but three districts (Badin, Nawabshah, and Sukkur), the 1991-92 budget amounts do not even cover the amount estimated necessary to accomplish their routine maintenance program on the paved road system. In all districts but one (Sukkur), the proposed 1992-93 budget for road maintenance will not cover the anticipated needs for doing both the routine maintenance and periodic maintenance needs on their paved road system. When the kilometers of unpaved (katcha) roads are included, all Districts are under-funded in their road maintenance budgets.

3.19 Unless this funding deficiency situation can be corrected by their 1993-94 Budget year, all Districts will be unable to dedicate the resources necessary (manpower, materials, equipment) to carry on an adequate road maintenance program on even their existing paved road system. Since under the RRM program, USAID funds are provided to rehabilitate a number of district roads each year, the shortfall in District funding of the road rehabilitation area has been reduced over the past several years.

3.20 Clearly, major efforts need to be taken by each District during this year (1993) to allocate a larger amount of their budget to road maintenance. Without the needed budget authorization, the District engineer and his staff will be unable to dedicate the necessary resources of in-District work crews, and local contractors to continue the necessary maintenance of their road system (paved and unpaved). This shortage of resources - both financial and logistical - will result in a further deterioration of each District's road system, and increase substantially the funds needed to be spent in future years.

September, 1992

SINDH RESOURCES MANAGEMENT (RRM PROJECT)
INFORMATION ON DISTRICTS' REVENUES AND INCOME
EXTRACTS FROM DISTRICT COUNCILS' BUDGETS 1988-89 THRU 1992-93

DISTRICTS	BUDGET FOR 1988-89		BUDGET FOR 1989-90		BUDGET FOR 1990-91		BUDGET FOR 1991-92		BUDGET FOR 1992-93	
	REVENUE INCOME	TOTAL INCOME	REVENUE INCOME	TOTAL INCOME	REVENUE INCOME	TOTAL INCOME	REVENUE INCOME	TOTAL INCOME	REVENUE INCOME	TOTAL INCOME
	P-DPOSED 88/89	PROPOSED 88/89	REVISED 88/89	PROPOSED 88/89	REVISED 89/90	PROPOSED 89/90	REVISED 90/91	PROPOSED 90/91	REVISED 91/92	PROPOSED 91/92
			PROPOSED 89/90	REVISED 89/90	PROPOSED 89/90	REVISED 90/91	PROPOSED 90/91	REVISED 91/92	PROPOSED 91/92	REVISED 92/93
BADIN	13.316	15.366	13.372	15.455	16.410	17.844	13.896	16.299	15.979	18.397	14.538	16.200	16.734	17,640	15,404	18.577	19.162	22.617
DADU	29.661	35.425	28.708	34.493	30.999	44.185	33.781	39.724	36.257	48.371	37.866	45.472	41.466	52.472	41.296	45.184	45.381	52.540
HYDERABAD	37.503	38.708	42.812	45.752	45.960	46.802	51.347	56.170	55.089	56.120	60.881	62.400	61.581	62.400	78.401	70.800	81,001	71.600
JACOBABAD	7.371	10.143	5.910	7.738	6.310	9.293	6.788	8.758	6.824	11.237	7.336	11.599	9.074	12,844	8.998	10,795	12,144	22.944
KARACHI	53.402	83.575	49.147	62.943	51.189	79.443	63.269	74.493	65.674	77.293	66.504	80.330	69.259	91.330	69.609	94.485	72,486	105.385
KHAIRPUR	14.102	19.358	13.523	16.455	17.855	21,172	15.350	18.355	18.037	24.820	16.125	17.758	20.771	23.528	19.958	19.921	23.373	20.997
LARKANA	10.264	11.183	9.831	10.286	11.206	10.483	10.632	12.429	12,354	14.083	11.969	13,440	13.692	15.142	16.294	16.421	25,034	18.923
MIRPURKHAS	19.149	22.925	17.518	19.169	21.668	24.145	18.896	20.111	25.551	24.865	19.180	21.420	26.316	23.478	20,577	22.138	25.498	28.554
NAUSHEROFEROZE											8.168	14.063	9.309	18.318	13,917	15.422	13,917	16.759
NAWABSHAH	21.325	23.341	19.348	21.680	23.320	24.660	24.125	13.868	27.473	18.207	15.127	15.013	17.389	20.091	17.868	17.242	22.311	20.336
SANGHAR	17.575	17.625	17.048	17.836	17.520	18.090	20.858	21.336	21.243	21.521	15.435	20.800	18.987	22.999	21.350	21.619	24.615	25.798
SHIKARPUR	6.022	9.062	4.077	5.798	5.247	8.341	4.899	6.485	6.077	8.751	5.261	7.384	7.652	10.000	5.479	8.104	15.596	10,839
SUKKUR	19.464	24.856	21.009	30.337	25.214	33.855	27.105	33.107	27.694	35.225	23.226	30.204	26.045	32.105	33.194	38.027	33.525	40,728
THATTA	25.645	30.154	24.798	29.954	26.283	31.554	29.789	33.975	30.480	36.080	36.290	34.224	36,945	35.929	30.201	30.983	32.206	36.088
TOTAL	274.799	341,721	266.101	317.876	299.181	369.867	320.645	355.060	348.842	394.970	337.926	390.287	375.220	438.276	392.546	429.718	446.239	494.108

NOTES: REVENUE INCOME INCLUDES: TAX ON TRANSFER OF IMMOVABLE PROPERTY. PROFESSIONAL TAX. TAX ON CATTLE POUNDS.TENDER FEE. FEE FROM MEDICAL INSTITUTIONS. FEE FROM VETERINARY HOSPITALS. BOARDING HOUSE RENT. PANWANI MAHSOOL. LOCAL CESS ETC.

TOTAL INCOME INCLUDES: REVENUE INCOME PLUS INCOME FROM SALE OF IMMOVABLE PROPERTY. SALES OF STORE ARTICLES/VEHICLES. GOVT. GRANT IN AID. PROFIT ON INVESTMENT ETC.
NAUSHEROFEROZE DISTRICT WAS CREATED IN FY 1990-91 BY BIFURCATING NAWABSHAH DISTRICT.

DISTBUD

Figure 3-13

September, 1992

ROAD RESOURCES MANAGEMENT (RRM PROJECT)
INFORMATION ON DISTRICTS' EXPENDITURES ON ROAD CONSTRUCTION/MAINTENANCE
EXTRACTS FROM DISTRICT COUNCILS' BUDGETS 1988-89 THRU 1992-93

DISTRICTS	BUDGET FOR 1988-89		BUDGET FOR 1989-90				BUDGET FOR 1990-91				BUDGET FOR 1991-92				BUDGET FOR 1992-93			
	ROAD CONSTRUCTION	ROAD MAINTENANCE	ROAD CONSTRUCTION		ROAD MAINTENANCE		ROAD CONSTRUCTION		ROAD MAINTENANCE		ROAD CONSTRUCTION		ROAD MAINTENANCE		ROAD CONSTRUCTION		ROAD MAINTENANCE	
	PROPOSED 88/89	PROPOSED 88/89	REVISED 88/89	PROPOSED 89/90	REVISED 88/89	PROPOSED 89/90	REVISED 89/90	PROPOSED 90/91	REVISED 89/90	PROPOSED 90/91	REVISED 90/91	PROPOSED 91/92	REVISED 90/91	PROPOSED 91/92	REVISED 91/92	PROPOSED 92/93	REVISED 91/92	PROPOSED 92/93
BADIN	0	0	0	2,422	2,000	2,196	1,742	1,957	2,260	322	2,357	1,356	322	1,325	937	1,100	1,452	800
DADU	0	0	588	528	0	0	0	0	972	0	400	438	0	0	0	0	0	3,300
HYDERABAD	0	0	20,250	16,900	0	900	24,220	21,000	340	1,000	26,460	26,800	0	4,800	26,490	24,000	4,800	5,000
JACOBABAD	250	200	0	0	0	0	0	0	0	200	100	300	0	300	1,000	1,000	60	300
KARACHI	5,400	1,500	4,500	2,500	200	1,000	2,500	2,500	1,000	2,000	1,800	750	276	1,000	507	2,000	0	0
KHAIRPUR	2,437	500	1,670	2,800	0	500	3,373	2,668	0	1,113	1,520	2,892	700	200	1,852	2,200	75	200
LARKANA	650	0	0	0	0	0	0	0	0	0	2,100	500	0	0	2,625	3,750	600	500
MIRPURKHAS	0	0	40	1,000	0	0	3,705	4,000	200	1,000	2,900	3,704	350	1,000	1,700	2,750	600	1,500
NAUSHEROFEROZE											1,509	2,700	480	600	1,350	1,900	245	500
NAWABSHAH	3,200	1,000	2,400	3,600	0	0	4,400	2,400	0	1,000	3,160	2,400	0	2,000	2,560	2,400	1,000	1,000
SANGHAR	2,470	500	4,568	2,916	385	500	4,789	3,153	357	628	3,206	1,333	457	530	1,932	1,140	155	900
SHIKARPUR	39	0	60	100	0	0	140	130	0	0	204	205	0	0	200	175	0	250
SUKKUR	8,000	0	0	0	0	0	0	0	0	0	2,300	1,500	1,800	1,000	1,500	6,000	1,000	1,500
THATTA	0	0	5,400	4,700	0	0	4,600	1,300	4,500	1,000	1,600	1,700	600	1,000	5,400	3,900	0	500
TOTAL	22,496	3,700	39,476	37,466	2,585	5,096	49,469	39,108	9,649	7,263	49,624	46,578	4,985	13,755	48,053	52,315	9,987	16,250

COMABUD

Figure 3-14

Figure 3-15

ROAD RESOURCES MANAGEMENT (RRM) PROJECT (391-0480)
DISTRICT ROAD MAINTENANCE PROGRAM

ESTIMATED MAINTENANCE COST

DISTRICT	* UPDATED PAVED ROAD LENGTH (km)	* MAINTAINABLE PAVED ROAD LENGTH (km)	* LENGTH REQUIRING ROUTINE MAINTENANCE (km)	* LENGTH REQUIRING PERIODIC MAINTENANCE (km)	** ESTIMATED COST PER km FOR ROUTINE MAINTENANCE (Rs.)	*** ESTIMATED COST PER km FOR PERIODIC MAINTENANCE (Rs.)	ESTIMATED COST FOR ROUTINE MAINTENANCE (Rs.)	**** ESTIMATED COST FOR PERIODIC MAINTENANCE (Rs.)	TOTAL ESTIMATED MAINTENANCE COST (Rs.)
BADIN	30.11	20.41	12.25	8.16	25,000	250,000	306,150	2,041,000	2,347,150
DADU	60.58	50.32	30.19	20.13	25,000	250,000	754,800	5,032,000	5,786,800
HYDERABAD	357.19	306.74	214.72	92.02	25,000	250,000	5,367,950	23,005,500	28,373,450
JACOBABAD	12.76	8.25	5.78	2.48	25,000	250,000	144,375	618,750	763,125
KARACHI	122.57	60.27	30.14	30.14	25,000	250,000	753,375	7,533,750	8,287,125
KHAIRPUR	42.52	34.38	20.63	13.75	25,000	250,000	515,700	3,438,000	3,953,700
LARKANA	87.80	81.07	48.64	32.43	25,000	250,000	1,216,050	8,107,000	9,323,050
MIRPURKHAS	56.75	36.93	25.85	11.08	25,000	250,000	646,275	2,769,750	3,416,025
NAWABSHAH	78.36	42.69	25.61	17.08	25,000	250,000	640,350	4,269,000	4,909,350
NAUSHEHRO FEROZE	71.60	37.52	26.26	11.26	25,000	250,000	656,600	2,814,000	3,470,600
SANGHAR	82.87	48.97	34.28	14.69	25,000	250,000	856,975	3,672,750	4,529,725
SHIKARPUR	28.71	22.56	11.28	11.28	25,000	250,000	282,000	2,820,000	3,102,000
SUKKUR	32.45	14.70	8.82	5.88	25,000	250,000	220,500	1,470,000	1,690,500
THATTA	46.70	39.70	19.85	19.85	25,000	250,000	496,250	4,962,500	5,458,750
TOTAL	1110.97	804.51	514.29	290.22	25,000	250,000	12,857,350	72,554,000	85,411,350

* All information regarding condition of roads has been provided by the districts and partially varified by the RRM project staff.

** Estimated routine maintenance cost per kilometer has been determined with reference to fair condition of roads.

*** Estimated periodic maintenance cost per kilometer includes: entire resurfacing, laying of base course in 20% length and restoration of shoulders in 30% length.

**** Periodic maintenance is required every 4 to 6 or 7 years. Depending upon the availability of resources, it can be deferred or brought forward within this period.

Proper maintenance (routine and periodic) performed now and in future years will be far cheaper, and greatly reduce the potential (and premature) costs that each District needs to spend in the future for the rehabilitation of major portions of their road system.

3.21 With routine maintenance estimated at Rs. 25,000 per km.; periodic maintenance at Rs. 250,000 per km., and road rehabilitation estimated at Rs 700,00 per km. or greater, it is far cheaper to do routine maintenance on time each year, with some periodic maintenance on parts of the road system each year, then to be required to consider doing close to a major rehabilitation of the District's entire road system every few years.

3.22 In addition to the higher rehabilitation costs to the District Council for not properly maintaining their existing road system now, the Districts can suffer losses in revenue due to fewer crops or livestock being able to be shipped to market (due to poor access roads). This situation can be further compounded by the additional costs to district residents due to increased transportation costs along poorly maintained roads, or difficulty of getting any transportation, and the resulting decrease in money they may have available to purchase anything other than basic necessities. Resulting in additional lost revenue to the District Councils from decreased sales in local shops and commercial establishments.

COST BENEFIT EVALUATIONS

3.23 Considering the potential that some of the Districts could become lack in their maintenance operations following the completion of the RRM project in December 1994, a number of cost benefit scenarios were evaluated utilizing current cost information for routine maintenance, periodic maintenance, rehabilitation work per kilometer of road (from USAID), and average traffic conditions per District based on the traffic count and classification data obtained during the RRM program (1988 to present). Alternatives in possible maintenance policies that could be taken by the Districts were also considered, ranging from the continuation of a full (100%) maintenance policy, to various levels of reduced/lesser attention to proper (full-100%) maintenance. For this evaluation, reduced levels of maintenance considered were those of:

* 80% level of maintenance effort;
* 50% level of maintenance effort; and zero
* 0% level of maintenance effort, or only road rehabilitation work at a greater frequency.

3.24 For those districts evaluated, the results are summarized in Figure 3-16. Benefit-Cost calculations are included in Appendix F for information. In all cases, as maintenance efforts are reduced, vehicle operating cost savings possible when operating on a good road surface are reduced, causing the vehicle operating costs incurred in the movement of passengers and commodities (rice, wheat, cotton, etc.) to increase. Increases of this type are always passed on to the user (passengers) or consumer (commodities) in the form of higher transportation costs.

As transportation costs rise, the consumer is forced to make more decisions on what he/she can use less of (not purchase). Resulting declines in purchases cause businesses to fall behind in their local tax payments, or go out of business (cease to operate) entirely. All such actions reduce the sources of revenue available to each of the Districts, as well as the Government of Sindh. ALL parties lose in the process.

3.25 With a proper (full-100%) road maintenance program operating in each District, the reverse takes place. Vehicle operating costs are kept low, transportation costs to the consumer are less, commodities are less expensive, so the individual consumer can purchase more. District wide, this means greater sales by business and greater tax revenues able to be collected by the District itself. Greater revenues, mean the District can provide more local services, maintain their road system properly, and expand it as required a lot easier. ALL parties benefit in the process.

3.26 As can be seen in Figure 3-16, when a District becomes lack in their maintenance operations, they actually wind up spending more of their limited funds due to the result of their road system deteriorating faster. This in turn results in the need for the Districts to do more costly rehabilitation works sooner than if they had properly maintained the same roads each year.

Figure 3-16

COMPARISON OF DOING MAINTENANCE - TO DOING NO MAINTENANCE
(Costs in Thousand Rupees per Kilometer)

District Name	Maint. Level	Present Value of Total Mtc. Costs		Vehicle Operating Cost Benefits High Trf.		Medium Trf.	Low Trf.	BENEFITS TO COST RATIO	TRAFFIC VOLUME USED; % COMMERCIAL TRAFFIC
Dadu	100%	576.39	--	794.46	--			1.38	100 vehicles per day with 73% commercial vehicles (bus, trucks)
	80%	626.57	--	756.06	--			1.21	
	50%	760.17	--	735.12	--			0.97	
	0%	943.99	--	735.12 *	--			0.73	
Khairpur	-- Not available --								
Larkana	100%	576.39	--	358.78	--			0.62	50 vehicles per day with 62% commercial vehicles (bus, trucks)
	80%	626.57	--	341.64	--			0.55	
	50%	760.17	--	330.16	--			0.43	
	0%	943.99	--	330.16 *	--			0.35	
Shikarpur	100%	576.39	--	494.56	--			0.86	59 vehicles per day with 81% commercial vehicles (bus, trucks)
	80%	626.57	--	484.37	--			0.79	
	50%	760.17	--	457.17	--			0.60	
	0%	943.99	--	457.17 *	--			0.48	
Sukkur	-- Not available --								
Jacobabad	100%	576.39	--	609.08	--			1.06	81 vehicles per day with 65% commercial vehicles (bus, trucks)
	80%	626.57	--	579.65	--			0.93	
	50%	760.17	--	562.86	--			0.74	
	0%	943.99	--	562.86 *	--			0.60	
Nawabshah	100%	576.39	--	1854.46	--			3.22	109 vehicles per day with 59% commercial vehicles (bus, trucks)
	80%	626.57	--	1764.36	--			2.82	
	50%	760.17	--	1714.52	--			2.26	
	0%	943.99	--	1714.52 *	--			1.82	

NOTE: * Due to road condition ratings used, traffic volumes, and unit costs, no difference in operating cost benefits is noted.

Figure 3-16 (cont'd.)

COMPARISON OF DOING MAINTENANCE - TO DOING NO MAINTENANCE
(Costs in Thousand Rupees per Kilometer)

District Name	Maint. Level	Present Value of Total Mtc. Costs	Vehicle Operating Cost Benefits High Trf.	Medium Trf.	Low Trf.	BENEFITS TO COST RATIO	TRAFFIC VOLUME USED; % COMMERCIAL TRAFFIC
Naushero Feroz	100%	576.39	--	920.28	--	1.60	104 vehicles per day with 100% commercial vehicles (bus, trucks)
	80%	626.57	--	876.19	--	1.40	
	50%	760.17	--	849.21	--	1.12	
	0%	943.99	--	849.21 *	--	0.90	
Hyderabad	100%	576.39	2787.86	862.54	395.54	4.84;1.50;0.69	399;129;61 vehicles per day, with 38%; 43%; 26% commercial vehicles (bus, trucks)
	80%	626.57	2657.50	821.17	376.07	4.24;1.31;0.60	
	50%	760.17	2568.27	796.08	365.93	3.38;1.05;0.48	
	0%	943.99	2568.27 *	796.08 *	365.93*	2.72;0.84;0.39	
Karachi	100%	576.39	--	1854.46	--	3.22	290 vehicles per day with 51% commercial vehicles (bus, trucks)
	80%	626.57	--	1764.36	--	2.82	
	50%	760.17	--	1714.52	--	2.26	
	0%	943.99	--	1714.52 *	--	1.82	
Thatta	100%	576.39	--	786.36	--	1.36	137 vehicles per day with 54% commercial vehicles (bus, trucks)
	80%	626.57	--	770.51	--	1.23	
	50%	760.17	--	725.37	--	0.95	
	0%	943.99	--	725.37 *	--	0.77	
Badin	100%	576.39	--	471.08	--	0.82	87 vehicles per day with 24% commercial vehicles (bus, trucks)
	80%	626.57	--	448.36	--	0.72	
	50%	760.17	--	435.56	--	0.57	
	0%	943.99	--	431.96	--	0.46	
Tharparkar - Mirpurkhas	-- Not available --						
Sanghar	-- Not available --						

NOTE: * Due to road condition ratings used, traffic volumes, and unit costs, no difference in operating cost benefits is noted.

FINDINGS AND RECOMMENDATIONS

**Finding: - ORIGINAL PROJECT TARGETS OF MAINTAINED PAVED ROAD KMS. HAVE BEEN ABLE TO BE SUBSTANTIALLY ACHIEVED DESPITE CHANGING LOCAL CONDITIONS, AND SEVERE PROGRAM ADJUSTMENTS REQUIRED BY PRESSLER AMENDMENT FUNDING CUTS.

Despite local security problems (1990-92), major fluctuations of road inventory status in several Districts, and the early termination of the Technical Assistance contract in October 1991, the local USAID staff has been able to carry on maintenance planning and evaluation assistance to the Districts and achieve or exceed their 1991-92 maintained km. goals in all but two (2) of the Districts (Ref. Figure 3-7).

*Recommendation: - CONTINUED SUPPORT AND REINFORCEMENT OF ROAD MAINTENANCE PRINCIPALS IS NEEDED TO BETTER ASSURE THE SUSTAINABILITY OF THESE ACHIEVEMENTS AFTER THE RRM PROGRAM.

Continued support and reinforcement of road maintenance principals (planning, execution, and evaluation) by USAID staff should be continued and expanded as possible during the remaining program life (through Dec. 1994) to follow-up and reinforce the training received, and better prepare the District engineers and their staff to manage the roads systems under their responsibility.

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**Finding: - DISTRICT ENGINEERS AND THEIR STAFF HAVE LIMITED OR NO SUPPORT EQUIPMENT AVAILABLE FOR MATERIAL HAULING, PROPER MATERIAL PLACEMENT, AND PROPER MATERIAL COMPACTION.

Most District engineers and their staff have limited or no equipment to assist their work crews in the hauling of materials to the work sites. For routine maintenance activities, material placement and compaction is limited to what each work crew can do manually with hand-hoes, and hand tampers (where available).

*Recommendation: - AS FUNDING PERMITS, OR CAN BE MADE AVAILABLE, DISTRICTS SHOULD ACQUIRE, OR BE SUPPLIED WITH ADDITIONAL SUPPORT EQUIPMENT FOR ROAD MAINTENANCE ACTIVITIES.

Funding from all possible sources - District revenues, Government of Sindh grants/funds, other donors, and any available USAID funds, should be considered alone or in combination by the Districts to acquire additional support equipment. Due to limited funding availability, means need to be explored whereby funds from a single source, or more likely several sources could be combined by the District Councils each year or two, which would allow them to start acquiring the equipment they need to increase the productivity of their existing work crews.

**Finding: - DISTRICT ENGINEERS NEED TO RELY ON CONTRACTORS TO SUPPLY THE EQUIPMENT AND SKILLED MANPOWER FOR THE PERFORMANCE OF PERIODIC MAINTENANCE ACTIVITIES.

Since most of the Districts lack the equipment to transport and place the required/specified materials for periodic maintenance activities such as the resealing of paved road surfaces, or the placement of new double bituminous surface treatments, and lack the skilled manpower for this work, they rely on contractors to do this works for them. Since local contractors are generally available, this is not a problem. This approach also helps to involve the private sector in the District's road maintenance program where it can be most effective - skilled work crews, and access to support equipment, permitting a better quality job for less cost.

*Recommendation: - CONTINUED USE OF LOCAL CONTRACTORS FOR THE PERFORMANCE OF PERIODIC MAINTENANCE ACTIVITIES, OR OTHER SPECIALIZED TASKS IS ENCOURAGED.

Since the contractors generally have more skilled work crews, and easier access to specialized support equipment, they are generally able to accomplish the work more efficiently, permitting a better quality job for less cost. The continued use of local contractors for such work is encouraged where it remains to be cost effective. All contracted work should be performed to construction or reconstruction standards/specifications of the same or better standard than currently being employed by the USAID funded road maintenance and rehabilitation program.

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**Finding: - EVEN THOUGH DISTRICT COUNCILS HAVE STARTED TO INCLUDE A LINE ITEM IN THEIR ANNUAL BUDGETS FOR ROAD MAINTENANCE, A GREATER ALLOCATION IS NEEDED TO MADE TO COVER CURRENT FUNDING NEEDS.

Districts have started to allocate an increased amount of their District Budget for road maintenance work in budget Year 1991-92 (Ref. Figure 3-14). However, when compared with the currently estimated amount of funding considered necessary by USAID engineers to properly maintain each Districts paved road system (Ref. Figure 3-15), the Districts are under-funding the road maintenance sector by substantial amounts. In all but three districts (Badin, Nawabshah, and Sukkur), the 1991-92 budget amounts do not even cover the amount estimated necessary to accomplish their routine maintenance program on the paved road system.

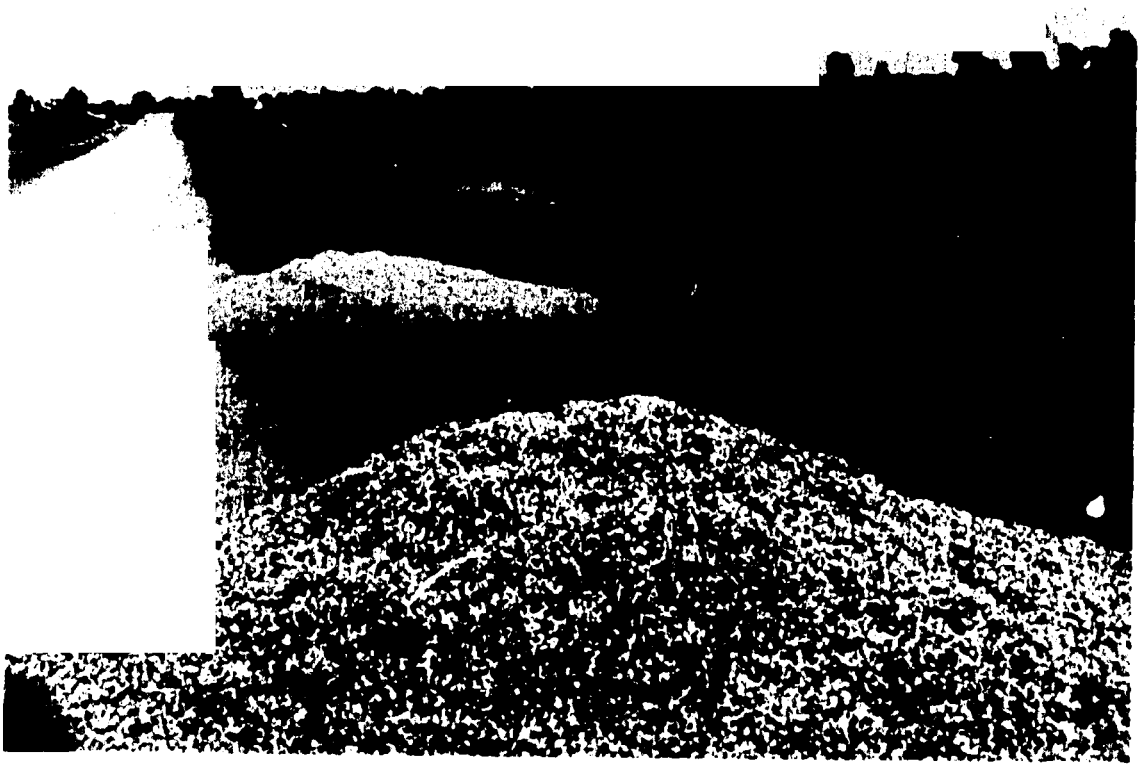
*Recommendation: - DISTRICTS NEED TO BE ENCOURAGED TO ALLOCATE A LARGER AMOUNT OF THEIR BUDGET TO ROAD MAINTENANCE.

During the remaining time of the RRM program, USAID engineers should work with the District Councils and District Engineers to educate them in the benefits of allocating a larger amount of their budget to road maintenance. Without the needed budget authorization, the District engineer and his staff will be unable to dedicate the necessary resources of in-District work crews, and local contractors to continue the necessary maintenance of their road system (paved and unpaved). This shortage of resources - both financial and logistical - will result in a further deterioration of each District's road system, and increase substantially the funds needed to be spent in future years.

SA-SH-24M; PHASE 1 - REHABILITATED FY 89/90; MAINTENANCE FY 92/93

SA-SH-24M; PHASE 2 - REHABILITATED FY 91/92; MAINTENANCE FY 92/93

SA-SA-16; PERIODIC SURFACE MAINTENANCE - FY 92/93



SA-SA-16; PERIODIC SURFACE MAINTENANCE - FY 92/93

THR-MP-21; REHABILITATED FY 91/92; MAINTENANCE FY 92/93

THR-MP-21; REHABILITATED FY 91/92; MAINTENANCE FY 92/93

THR-MP-21; REHABILITATED FY 91/92; MAINTENANCE FY 92/93

THR-MP-21; REHABILITATED FY 91/92; MAINTENANCE FY 92/93

SU-163; REHABILITATED FY 89/90; MAINTENANCE FY 92/93

SU-163; REHABILITATED FY 89/90; MAINTENANCE FY 92/93

REPRESENTATIVE PHOTOS - ON-GOING ROAD MAINTENANCE WORK

SU-BA-02; MAINTENANCE BY BELDARS - FY 92/93

SU-BA-02; MAINTENANCE BY BELDARS - FY 92/93

Chapter 4

PAVED ROAD REHABILITATION

4.1 Another component of the RRM project was the improvement of the rural road system in the Districts. Assistance under this component of the RRM project was linked to the ability of each District to improve on the maintenance of their existing paved road system in accordance with the targets identified in Figure 3-7.

4.2 Progress in the rehabilitation area is shown in Figure 4-1.

Figure 4-1

District	1989-90 Projects		1990-91 Projects		1991-92 Projects		1992-93 Projects	
	No.	Km.	No.	Km.	No.	Km.	No.	Km.
1. Dadu	1	2.64	-	-	1	2.40	2	3.16
2. Khairpur	1	2.30	-	-	1	1.30	4	3.44
3. Larkana	1	2.10	-	-	1	2.20	1	3.43
4. Shikarpur	1	1.80	-	-	1	1.40	4	3.27
5. Sukkur	1	2.62	-	-	2	2.72	1	3.73
6. Jacobabad	3	1.08	-	-	2	2.66	1	2.50
7. Naushero Feroz	1	3.70	-	-	1	3.25	1	5.00
8. Hyderabad	3	6.50	-	-	5	14.18	5	16.80
9. Karachi	2	2.20	-	-	1	0.90	2	4.50
10. Thatta	1	2.15	-	-	--	--	2	5.50
11. Badin	1	1.05	-	-	1	2.30	1	4.20
12. Tharparkar - Mirpurkhas	3	3.19	-	-	1	4.60	2	7.89
13. Sanghar	2	2.10	-	-	1	3.50	3	5.71
14. Nawabshah	--	--	-	-	1	3.00	2	6.00
TOTAL	21	33.43	--	--	19	44.41	31	75.13

Source: USAID-Pakistan, Status as of April 1993

4.3 As shown in Figure 4-2, of all components of the RRM project rehabilitation and construction program goals, the rehabilitation program for paved roads has suffered the least impact, with about a 10% reduction from the initial target. However, due to reductions in project funding resulting from the Pressler Amendment, the EXPERIMENTAL and KATCHA roads construction programs were reduced to a negligible amount or completely eliminated. District maps with the general location of road rehabilitation projects are included in Appendix G.

Figure 4-2

CONSTRUCTION TARGETS
(in Km.)

	ORIGINAL 1987	REVISED 1991
REHABILITATION of existing paved roads to bring them to a maintainable condition	226	203
UPGRADING of katcha roads to a paved level	104	-0-
EXPERIMENTAL roads construction	16	-0-
KATCHA access roads construction	960	15
TOTAL	1,306	218

Source: USAID-Pakistan-4/93

4.4 Due to the ability of USAID to maintain the assistance of the local consulting engineering firm Associated Consulting Engineers (ACE) on this project to do the rehabilitation road traffic surveys, design preparation, tender evaluation, pre-work contractor performance orientation, and oversee contract supervision, USAID has been able to assist the District engineers in achieving the majority of the program targets in this area.

Without the assistance provided by the technical staff of ACE, neither the existing local staff of USAID-Pakistan, or the District engineers staff alone would have been able to achieve the results noted to date.

4.5 Due to the program reductions mandated by the Pressler Amendment, the RRM program was not able to implement the planned components of:

- UPGRADING of katcha roads;
- EXPERIMENTAL roads construction; and
- KATCHA access roads construction.

Efforts had been initiated by CCSC in the first phase of this program to initiate action in these areas, but the early termination of their contract (due to Pressler reductions) stopped activities from being carried forward.

4.6 The re-activation of these components is currently not possible with the reduced funding available to the RRM program, but they are still worthwhile if USAID or other entities are able to assist the Districts.

Preliminary work completed by the CCSC, and summarized in their reports (Figure 4-3) can serve as a basis for follow-up efforts.

Figure 4-3

CCSC Project Reports on Experimental Roads and Road Construction/Rehabilitation

* "Technical Specifications for Rehabilitation and Construction of District Roads", August 1989

* "Experimental Roads Status - March 1991"

* "Soil Investigation Report", by Geotech Consultants for USAID and CCSC, February 1990

* "Report on Soil Testing for Experimental Roads Construction Activity", by Geotech Consultants for USAID and CCSC, May 1990

* "Field Construction Manual - July 1991"

* Pavement Rehabilitation Design - Rural Roads", October 1991

4.7 Although outside the scope of this program evaluation, it is important to note that several Districts have expanded the number of kms. of their paved road system as a result of Government of Sindh (GOS) special grants or matching funds. Some of these funds are given by GOS for specific construction works (buildings, water systems, roads, etc.), but others are not work specific. The Districts have used some of these funds to construct more kms. of paved roads, but have generally built some of them to a lower construction standard in an effort to achieve a greater length of completed project. Poorer quality, local on-site materials are generally used to reduce the initial construction costs per kilometer, since the Districts consider that these GOS funds are not part of their regular District budget and therefore not subject to the same quality or standard of construction as the RRM program has been requiring.

According to some engineers interviewed, less or no compaction of base, sub-base, surfacing or shoulder materials is performed. Compaction by gravity and vehicle use is commonly relied upon. As a result, these new roads do not always hold up under the traffic types and volumes they are expected to carry. The resulting service life of these additional paved roads kms. is severely reduced, and they require additional periodic maintenance, or complete rehabilitation in just a few years following their construction. The needed funds to cover these premature maintenance/rehabilitation costs THEN become a problem for the District Their regular budget is generally not able to take care of doing the required correction work, so another sub-standard repair is done, or no repair is done at the time. This approach wastes the use of extremely limited District budget funds, generally contributes nothing to solving the problem, and only expands the number of kilometers of problem roads to an ever larger part of the District.

4.8 As part of the additional training recommended for District engineers and their staff during the remaining 1993-1994 period, it is recommended that topics and courses be included on the importance of doing all maintenance, all rehabilitation, and all construction work to the same or better standard than currently being employed by the USAID funded road rehabilitation program.

4.9 It is further recommended that the GOS adopt the same or better road construction standards than currently being employed by the USAID funded road rehabilitation program, and make the compliance of these road construction standards a requirement for the Districts when they actually construct the road. Where any District can not comply with the requirements using their own resources, it should be required by GOS that the work be done by a qualified contractor, and the construction standards fully enforced.

4.10 Where funds are not sufficient to do a proper standard of construction of the entire road length, the projects should be reduced in length, and reprogrammed to be accomplished by sections over a longer period of time. Without the establishment and just enforcement of proper standards (by the Districts or GOS) for road rehabilitation, construction or maintenance work, sub-standard work will continue to be performed, and the limited District (or GOS) funds will continue to be wasted. Once spent for sub-standard work, the funds can not be recovered. The eventual premature failure of the sub-standard will require even more funds in the future to correct the same work that could easily have been done properly the first time, through the just enforcement of proper standards.

4.11 Representative photos of the on-going road rehabilitation/ reconstruction work being performed in the Districts visited during May 1993 are shown at the end of this chapter.

FINDINGS AND RECOMMENDATIONS

**Finding: - ORIGINAL PROJECT TARGETS OF REHABILITATED PAVED ROAD KMS. HAVE HAD TO BE REDUCED BY 10% AND ARE ABLE TO BE SUBSTANTIALLY ACHIEVED DESPITE CHANGING LOCAL CONDITIONS, AND SEVERE PROGRAM ADJUSTMENTS REQUIRED BY PRESSLER AMENDMENT FUNDING CUTS.

Despite local security problems (1990-92), major fluctuations of road inventory status in several Districts, and the early termination of the Technical Assistance contract in October 1991, the local USAID staff has been able to carry on the road rehabilitation planning and construction assistance to the Districts and achieve their 1991-92 km. goals in the Districts (Ref. Figure 4-1).

*Recommendation: - CONTINUED SUPPORT AND REINFORCEMENT OF ROAD REHABILITATION STANDARDS AND PRINCIPALS IS NEEDED TO BETTER ASSURE THE SUSTAINABILITY OF THESE ACHIEVEMENTS AFTER THE RRM PROGRAM.

a. Continued support and reinforcement of road rehabilitation principals (planning, execution, and evaluation) by USAID staff should be continued and expanded as possible during the remaining program life (through Dec. 1994) to follow-up and reinforce the training received, and better prepare the District engineers and their staff to manage the roads systems under their responsibility.

b. Contacts with Government of Sindh (GOS) officials should be continued, and encouragement for the GOSs establishment of construction/reconstruction standards to the same or better standard than currently being employed by the USAID funded road rehabilitation program.

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**Finding: - DISTRICT COUNCILS, DISTRICT ENGINEERS AND THEIR STAFF CONSIDER "GOS" SPECIAL GRANTS AND MATCHING FUNDS TO BE OUTSIDE OF, NOT PART OF THEIR REGULAR BUDGET AND THEREFORE NOT SUBJECT TO THE SAME QUALITY OR STANDARD OF CONSTRUCTION AS THE "RRM" PROGRAM HAS REQUIRED

Most District Councils, District engineers and their staff consider GOS special grants and matching funds to be "extra" money, to be used without adherence to any specific project or construction standard, unless so specified by the GOS at the time of allotment. As a result such funds are generally used to do as much work as possible - kilometers of road, meters of water line, etc., and that any previously established standards of work quality on similar work are not required to be adhered to or followed.

As a result, much sub-standard work is being performed in a effort to spend the "extra" funds as quickly as possible, and cover as large a project as possible. Such sub-standard work fails prematurely and then results in greater repair costs, sooner to the District than work properly designed and constructed

*Recommendation: - CONTACTS WITH THE DISTRICTS AND GOS SHOULD BE EXPANDED TO ENCOURAGE THE ESTABLISHMENT AND CONSISTENT USE OF ROAD CONSTRUCTION STANDARDS ON ALL DISTRICT ROAD PROJECTS.

Contacts with District Councils and Government of Sindh (GOS) officials should be continued, and encouragement for the Districts and GOSs establishment of road construction/reconstruction standards to the same or better standard than currently being employed by the USAID funded road rehabilitation program. Such standards should be required to be used as a <u>minimum</u> on all roads constructed or rehabilitated in the Province of Sindh.

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HY-21; REHABILITATION IN PROGRESS - FY 92/93
Preparation of old road surface in progress

HY-21; REHABILITATION IN PROGRESS - FY 92/93
Placement/compaction of base in progress

HY-21; REHABILITATION IN PROGRESS - FY 92/93;
Near: Compacted base; - Background: Completed Surface

HY-21; REHABILITATION IN PROGRESS - FY 92/93; Completed surface;
Shoulder work in progress

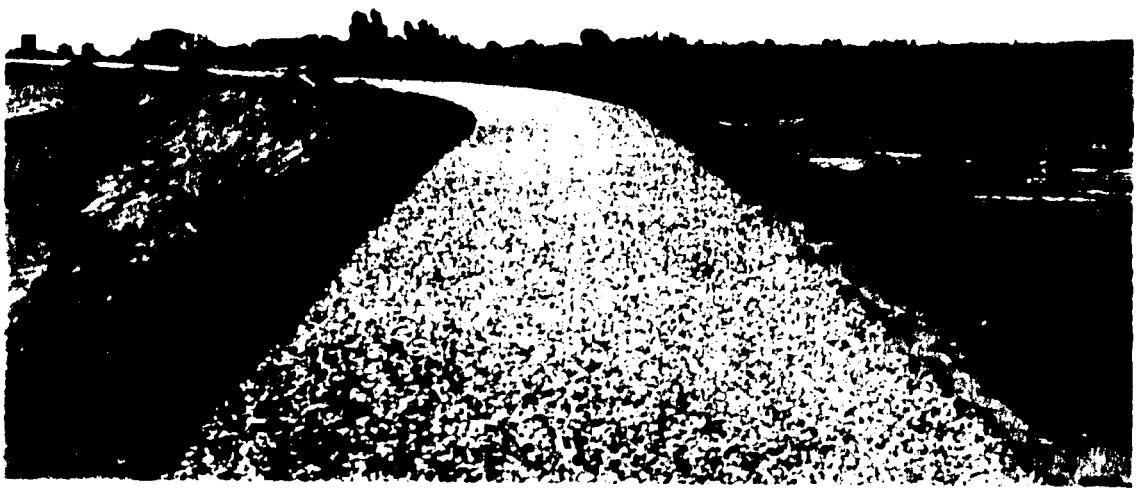
HY-HL-22; REHABILITATION PLANNED - FY 92/93; Pre-rehab. condition

HY-HL-22; REHABILITATION PLANNED - FY 92/93; Pre-rehab. condition

SA-SH-24M; RECONSTRUCTION - FY 92/93; Base compaction

SA-SH-24M; RECONSTRUCTION - FY 92/93; Base compaction

SA-SH-24M; RECONSTRUCTION - FY 92/93; Base Placement



SA-SH-24M; RECONSTRUCTION - FY 92/93; Compacted Base

CONTRACTOR'S EQUIPMENT -

ASPHALT SPRAYER WITH HAND PUMP

STEEL TEMPLATE FOR CONTROLLING CROWN OF ROAD SURFACE

Chapter 5

TRAINING PROGRAMS

5.1 As part of the original project targets, training was to be conducted with the assistance of the technical assistance contractors - Construction Control Services Corporation (CCSC).

During the initial phase of the CCSC contract, a detailed training program with seventeen (17) course topics, course specifications (syllabi), and tentative course schedule during CY's 1989, 1990 and 1991 was developed (see Appendix H). However, only a few of the initial courses/workshops were able to be held (see Figure 5-1) prior to January 1991 when the CCSC expat staff had to be evacuated due to the Gulf Crisis. Shortly upon their return in February to April 1991 the Road Resources Management (RRM) Project was to undergo a re-evaluation due to the Pressler Amendment, and the eventual decision to reduce project funding in March 1991 resulted in the decision to terminate the CCSC technical assistance contract effective October 1991.

5.2 Since January 1992, the USAID Mission in Pakistan has continued to coordinate the RRM project activities with its own staff under the limitations of the reduced project budget. During this period training courses/workshops have been held on the following topics, and locations:

- Maintenance Management System:

  * 28 October 1992 in Hyderabad for District Engineers, and Sub-Divisional Officers (SDOs); (Nine participants)

  * 20 October 1992 in Sukkur for District Engineers, and Sub-Divisional Officers (SDOs); (Nine participants)

  * 27 October 1992 in Hyderabad for District sub-engineers; (Twenty-six participants)

  * 19 October 1992 in Sukkur for District sub-engineers. (Nine participants)

- Coordination Workshop:

  * 9 February 1993 in Hyderabad for District Engineers, and Senior District Officers (thirty-one participants);

  * 16 February 1993 in Sukkur for District Engineers, and Senior District Officers (nineteen participants).

- Road Condition Surveys:

  * 26 April 1993 in Hyderabad for District Sub-Engineers; (twenty-one participants)

  * 28 April 1993 in Sukkur for District Sub-Engineers. (twenty-four participants)

- Follow-up on Coordination Workshop:

  * 31 March 1993 in Hyderabad for District Engineers, and Senior District Officers (twenty participants);

  * 5 April 1993 in Sukkur for District Engineers, and Senior District Officers (twelve participants).

5.3 Copies of the updated training material of the "Maintenance Manual for District Roads in Sindh - Revised August 1992", and "Model Maintenance Contract for District Roads in Sindh - August 1992" are shown in Appendix I and J respectfully.

5.4 Discussions with the District Engineers have shown an enthusiastic appreciation and support for the training received to date, and a uniform request that additional training sessions/ workshops be held to better train their staff to accomplish the tasks they are responsible for in each District.

Support was expressed for the work performed by the CCSC consultants, and the preparation of the training booklets on the Model Maintenance Contract in English, and translated into the local languages (Sindhi, and Urdu) in early 1991.

These booklets were distributed to all districts as part of the first phase of this RRM project.

It was requested that additional training booklets be prepared, and translated into the local Sindhi and Urdu languages, to help the districts better train their local employees in proper road maintenance methods and techniques.

5.5 Suggestions for additional training for the District Engineers, and their Sub-Engineers were in the areas of:

- General Survey methods;
- Quality Control/Materials Testing;
- Road Construction Techniques/Use of Materials.

These same areas were part of the CCSC courses which were not able to offered prior to the early termination of their contract

Figure 5-1

IN COUNTRY TRAINING SEMINAR/WORKSHOPS

TYPE/TOPIC OF ACTIVITY	ACTIVITY CATEGORY	ACTIVITY PERIOD		HOUR OF CONTACT	TOTAL NO. TRAINED		NO. OF INSTRUCTORS	
		BEGIN	END	(TOTAL)	FEMALE	MALE	PAKISTANI	EXPAT
1. SEMINAR: District Road Maintenance	Engineering	July 11 (1990)	July 11 (1990)	8		28	3	2
2. SEMINAR: Financial Management Training	Finance	Nov. 7 (1990)	Nov. 7 (1990)	8		39	3	
3. WORKSHOP: Road Construction Inspection	Engineering	Feb. 20 (1991)	Feb.21 (1991)	16		10	5	
4. SEMINAR: (Sukkur) Bugetary Procedure Improvement	Finance	May. 30 (1991)	May. 30 (1991)	8		24	2	
5. SEMINAR: (Hyderabad) Bugetary Procedure Improvement	Finance	June. 6 (1991)	June. 6 (1991)	8		21	2	1
TOTAL				48	0	122	15	3

PLN.WS1
BH/1991

Source: Project Termination Report - CCSC, October 1991

5.5 Since District Engineers and Sub-Engineers are almost all Diploma holders from local universities/colleges in Pakistan, it appears that these subject areas were not covered in much detail, or not included in the academic studies they received.

As shown in Figure 5-2, comparing Diploma Holders and Degree Engineers, the Diploma Holders receive a more limited vocational training type of education, whereas the Degree Engineers receive a more detailed technical education.

Time constraints during the evaluation period did not allow the consultant to visit a Diploma and a Degree college in the Karachi area, for a better assessment of the education programs offered.

Figure 5-2

Course Work: Diploma and Degree Engineers
(fields of Civil, Electrical, Mechanical Engineering)

Diploma Engineers	Degree Engineers
* 10 years basic education	* 10 years basic education
plus	plus
* 3 year technical/vocational training	* 2 years advanced studies
	plus
	* 4 year technical education
- survey techniques	- mathematics
- construction supervision	- sciences (chemistry/physics)
- limited design studies	- materials engineering
	- engineering design courses

NOTE: Availability of Engineering Universities/Colleges in the Province of Sindh is indicated to be limited. Access to Diploma Colleges is more readily available, since more seats are available. Access to Degree University/Colleges is more limited, since only those scoring highest on entrance exams are admitted (estimated only 1,000 seats in Sindh).

7 to 8 Diploma Colleges, - 3 in Karachi - 4 to 5 in other parts of Sindh Province	2 Universities in Karachi, and 1 Degree College.

5.6 Discussions with GOS, District and USAID contacts during the evaluation period indicate that little, if any, organized training related to road construction, rehabilitation,or maintenance principles is on-going outside of the RRM program.

5.7 Visits to the Sindh Local Government and Rural Development Academy - SLGRDA (at Tandojam), and the Municipal Training and Research Institute - MTRI (in Karachi) indicate that both facilities could be utilized to hold training courses or workshops to improve the technical and administrative capabilities of the District staff - engineers, administrators, accountants, etc.. More detailed information on each facility, and listings of recent courses held or scheduled are included in Appendix K (SLGRDA) and Appendix L (MTRI).

Other possible training locations are in Hyderabad and Sukkur, which have been used previously for courses/workshops in the areas of Maintenance Management System, Maintenance Coordination, and Road Condition Surveys.

5.8 Within the remaining RRM program, 1993-94 period, it is recommended that USAID work with principally with SLGRDA (at Tandojam) and MTRI (in Karachi), as needed, to schedule additional and follow-up courses for District staff at all levels, if possible - engineers, administrators, accountants, etc.. A partial list of the areas to be covered in these courses and workshops would be:

- District Road Maintenance Management;
- Road Condition Surveys;
- General Survey Methods;
- Road Construction/Rehabilitation Standards;
- Quality Control of Road Construction/Maintenance Materials;
- Road Construction Inspection;
- Financial Management;
- Budgetary Procedure Improvement

Since SLGRDA (at Tandojam) is the training center established by the Sindh Department of Local Government and Rural Development, priority should be encouraged in the use of the facility, if the support services - classrooms, lodging, meals for students, can be adequately arranged for.

5.9 Additional support of this facility can also be provided by the Government of Sindh, through the annual nomination of candidates from each District and additional funding by the GOS Department of Local Government and Rural Development (DLGRD) for these courses. These would help to make SLGRDA an active and key part of the improvement of District staff capabilities, in all areas, now and in the future.

FINDINGS AND RECOMMENDATIONS

**Finding: - ORIGINAL PROJECT TARGETS FOR TRAINING IN THE AREAS OF ROAD MAINTENANCE MANAGEMENT, ROAD REHABILITATED, AND FINANCIAL MANAGEMENT HAVE NOT BEEN ABLE TO BE COMPLETED TO DATE DUE TO SEVERE FUNDING REDUCTIONS RESULTING FROM THE PRESSLER AMENDMENT

Original project targets were to prepare and implement a series of training courses/workshops on around seventeen (17) topics in various areas of road maintenance management, road rehabilitation, and financial management. Due to the severe funding reductions resulting from the Pressler Amendment, the technical assistance contract with CCSC was terminated early (in 1991), and before they were able to prepare the initial course materials in only a very few areas. That work effort has not been able to be carried on by the current (smaller) USAID staff due to staffing limitations, and limitations on program funding available to contract these course development services with local organizations.

*Recommendation: - DURING THE REMAINING PROGRAM TIME (1993-94), EFFORTS SHOULD BE INCREASED IN THE TRAINING AREA. WORKING WITH THE DEPT. OF LOCAL GOVERNMENT AND RURAL DEVELOPMENT (DLGRD), EXPLORE THE POSSIBILITY OF CO-FINANCING THIS EFFORT - PART USAID, PART DLGRD (GOS) FUNDING, USING THE RURAL DEVELOPMENT ACADEMY AT TANDOJAM.

Additional training efforts during the remaining program time (1993-94) will help to reinforce the training work completed to date, and help to better prepare the local district staff to perform their respective functions more effectively, and contribute to a greater chance that the RRM program principles will be carried on following its completion. Without such training, the chances of program sustainability are considered poor to fair due to the limited number of individuals trained to date, and the limited number of training courses/workshops able to be held to date.

Within the remaining RRM program, 1993-94 period, it is recommended that USAID work with principally with SLGRDA (at Tandojam) and MTRI (in Karachi), as needed, to schedule additional and follow-up courses for District staff at all levels, if possible - engineers, administrators, accountants, etc.. The recommended areas to be covered in these courses and workshops would be:

- District Road Maintenance Management;
- Road Condition Surveys;
- General Survey Methods;
- Road Construction/Rehabilitation Standards;
- Quality Control of Road Construction/Maintenance Materials;
- Road Construction Inspection;
- Financial Management;
- Budgetary Procedure Improvement

The possibility of co-financing this effort should be explored with the DLGRD. DLGRD could assist by completing the installation of the pending upgrade of the main electrical service required to the Rural Development Academy at Tandojam, fund the repainting of the classrooms and hallways, and encourage the attendance of district staff at the training sessions able to be offered. USAID could assist by employing a local training services contractor to complete the preparation of training course materials, and coordinate the participation of outside lecturers, as required to present the training in the topics able to be offered. The training materials developed by CCSC prior to the early termination of their contract can serve as a base on the number and type of training sessions recommended. Based on actual funding, or resources available to DLGRD and USAID, the updated list of courses/workshops able to be held can be determined.

Chapter 6

DISTRICT REVENUE SOURCES

6.1 Districts are able to collect fees and therefore are better able to finance their local programs (roads, health centers, schools, market centers, etc.) than some other local government entities in Pakistan.

6.2 The main source of revenue is currently from the collection of the Export Tax at established district boundary collection posts on the rural commodities (rice, wheat, cattle, etc.) exported/shipped out of the district. Summaries of the annual receipts and expenditures for the Districts able to be developed during this mid-term evaluation are shown in Appendix M.

6.3 Other sources of revenue exist (reference Figure 6-1), but are indicated by the District staff to be of lesser amounts. Efforts were begun during the CCSC contract to identify ways to increase the revenue amounts from these existing sources, but with the early termination of their contract, potential efforts in this area were only able to be initially identified and follow-up efforts need to be taken in confirming or modifying the initial observations.

The CCSC project reports in this area (Figure 6-2) can serve as a basis for follow-up efforts in this area by USAID or other entities able to assist the Districts.

6.4 During this program evaluation it was indicated by several District representatives that they are prohibited from collecting any Export Tax on commodities/items produced within the urban/municipal areas of their District. Any taxes on these urban/municipal products are collected by the urban/municipal council and used for their purposes. No percentage of that revenue is available to the District Councils.

6.5 Based on the information obtained from discussions with the officials in the six (6) Districts visited during this evaluation, it was universally stated that (a.) the Export Tax is the major source of District revenue; (b.) when the District has attempted to collect the tax on their own, their revenue receipts were less than what the contractor paid them; (c.) the District did not have enough qualified staff to collect the tax revenue as well as the contractor; and (d.) the contractor was better able to collect the taxes, had armed personnel who could enforce the collection, and vehicles to go after truckers not stopping at the collection post.

Figure 6-1

SIND
DISTRICT COUNCIL TAXES

1. Tax on the annual value of buildings and lands.
2. Tax on lands not subject to local rate.
3. Tax on hearths.
4. Tax on the transfer of immovable property.
5. Tax on the import of goods for consumption, use or sale in the local areas (by union council only).
6. Tax on the export of goods from the local area.
7. Tax on professions trades and callings.
8. Tax on births, marriages and feasts.
9. Tax on advertisements.
10. Tax on cinemas, dramatic and theatrical shows, and other entertainments and amusements.
11. Tax on animals.
12. Tax on vehicles (other than motor vehicles but including carts, bicycles and all kinds of boats).
13. Tolls on roads, bridges and ferries.
14. Lighting rate.
15. Drainage rate.
16. Rate for the execution of any works of public utility.
17. Conservancy rate.
18. Rate for the provision of water works or the supply of water.
19. Fees on application for the erection and re-erection of building.
20. Schools fees in respect of schools established or maintained by the council.
21. Fee for the use of benefits derived from any works of public utility maintained by the council.
22. Fees at fairs, agricultural shows, industrial exhibitions, tournaments and other public gatherings.
23. Fees for markets.
24. Fees for licences, sanctions and permits granted by the council.
25. Fees for specific services rendered by the council.
26. Fees for the slaughtering of animals.
27. Any other tax which is levied by Government.
28. Community tax on the adult males for the construction of any public work of general utility for the inhabitants of the local areas concerned unless the council exempts any person in lieu of doing voluntary labor or having it done on its behalf.

Source: "Pakistan Rural Roads Project - Report on Recurrent Maintenance Costs", Louis Berger Int. for USAID and MLGRD, March 1985.

Figure 6-2

CCSC Project Reports on District Revenues

* "Volume 1 of The Preliminary Financial Assessment - Final Report", November 1989

* "District Council Road Maintenance Budgets - Contract Maintenance", April 1990

* "Financing District Roads Through User Charges", May 1990

* "Local Cess Taxation", June 12, 1990

* "District Council Taxation of Exports", June 27, 1990

* "Sindh District Council Revenue Enhancement Analysis", August 1990

* Final Report - Budgetary Procedure Improvements Seminars - May 30, 1991, Sukkur and June 6, 1991, Hyderbad"

* "District Council Budgeting", October 1991

6.6 As an outsider reviewing this revenue collection process for the first time, this consultant has to question why the District Council would not attempt to collect this established tax revenue itself if it really wanted to optimize its revenue, since the majority of the staff at each collection point are supposedly tax clerks, and tax inspectors from the Districts own staff (and paid for by the tax collection contractor).

Due to time constraints it is not possible to do other than a general review of the procedures in place, and make some general recommendations.

6.7 Based on a review of the documentation prepared by CCSC on this topic, it appears that their findings and observations made in 1990/1991 are still valid today:

* The contractor who agrees to give the greatest amount of tax revenue to the District Council is awarded the contract.

* Since the contract is not based on the value of export, the contractor collects much more than he remits to the District Council.

* Tens of millions of rupees of Export Tax collected annually by the contractors are not transferred to District Council coffers but remain with the tax collector.

* The District Councils (DCs) should diversify their revenue base and reduce their dependence on this source of revenues.

* The DCs should begin to collect the tax with their own personnel after a three year period (of preparing their own staff to do the entire collection and control process.

6.8 Local politics, and politically influential individuals appear to control what happens in each district. Established procedures by the Government of Sindh Province are not always followed, or enforced. In other instances, the rules are not followed because those responsible lack proper training to perform their duties.

To overcome these procedural infractions additional training of all District employees is needed in correct procedures, along with the enactment of an effective and just system of procedural enforcement. Without both elements in operation, district employees will continue to be more dependent for their positions on the decision of the local political leader than Government of Sindh procedures or regulations.

REVENUE ENHANCEMENT

6.9 A number of studies have been carried out under the project, aimed at exploring options for enhancing district tax revenues. The recommended proposals included; tax base diversification, better data collection, rate increases, tax base enhancement, improved tax compliance, alternative collection arrangements etc. There is a need to evaluate these recommendations with respect to their political and administrative feasibility, transactions cost and, last but not least, to their inherent worth. We have essentially tried to prioritize our recommendations, guided by three factors. These are: a) political economy considerations which are more prevalent in some tax measures relative to others; b) the Pressler curtailed time-frame for the project and; c) provincial versus local level mandates for tax reform and implementation.

EXPORT TAXES (Rawangi Mahsool)

6.10 In 1987/88, local taxes constituted 72% of the districts' total income from revenue and non-revenue sources. Of this, 99% was accounted by just three taxes; the export tax, cess and the transfer tax on immovable property (TTIP). The export tax alone generated 90% of the total tax revenues.

6.11 The districts therefore rely heavily on the export tax as a source of financing for both recurring and development expenditure. This dependance is potentially unstable, but mirrors the national and provincial tax revenue systems, which are also characterized by the lack of diversity in their tax bases. Howevar, in and of itself, the export tax also suffers from certain deficiencies.

6.12 Essentially a tax on agricultural commodities, it is both inefficient and inequitable. Inefficiency stems from the diversion of resources to other uses which would not have occurred in the absence of this tax. This is because -- post-export tax -- relative price differentials change. Inequity is rooted in two aspects. Either the tax is passed on in the form of higher prices which imposes a burden on the rural poor, given their inelastic demand for essential food commodities. Or, if the tax cannot be passed on, it works back in the form of downward pressure on wages and/or rural unemployment.

On the other hand, the export tax is highly buoyant with respect to income. At the cross-province level, AERC has calculated that a 1% increase in income/output results in a 4.61% increase in the export tax. While this may be an exaggeration for the province of Sindh, it does indicate the revenue potential for this tax.

This potential, unfortunately, is not fully realized. The reasons for this are rooted in:

- a contracting system for export taxes that is widely perceived to be defective; but currently more efficient than the Districts doing the tax collection on their own.
- non-compliance with existing SLGO regulations;
- failure to index these taxes with inflation and;
- failure to bring more commodities within the tax net.

Each of these concerns is dealt with separately. The weaknesses are identified and proposed corrective measures are evaluated and prioritized.

The Existing Contracting System

6.13 Under the existing system, export tax tenders are advertized at the beginning of each fiscal year and auctioned off through a verbal bidding process. There is a mandated 15% escalation in the minimum contract value each year which contractors may not go below. However, should bids not be forthcoming, the provincial government can authorize contract awards below the reference price. Octroi (collection) posts are located on major inter-district connecting roads. Contractors are assisted and monitored by district tax inspectors, whose job is to ensure compliance with the SLGO rate regulations, monitor tax performance and maintain accurate tax collection records in the 'Ginswar' register. Their salaries are paid by the contractors. The contractors are also required to deposit 10% of their contract in advance with the district councils as well as pay income tax to them. In case of payment defaults, contracts can be canceled.

6.14 **Defects in the System:** The common criticisms against the system are that export tax contracts awarded are consistently undervalued and that contractors rake off the excess profits, the mandatory 15% annual increase non-withstanding. There are no systematic efforts to collect export tax data and to determine the tax value of exports from the district council limits, as a basis for awarding contracts. Documentation of tax proceeds is infrequently and inadequately done. Also, contractors are observed to levy more than the prescribed rate, as well as charging for items not on the tax schedule.

6.15 An important recommendation is to replace the contracting system with in-house collection, where possible. On consulting with various district council tax officials we discovered that quite a few of them had experimented with this alternative.

6.16 However, their tax performance had not been able to match that of the contractors. One could attribute this to seasonal variations in commodity flows and to the lack of experience of the district council staff. More importantly, paid officials basically lacked the incentive to generate surplus revenues that contractors enjoyed.

6.17 Another recommendation is to increase the mandatory limit above 15%, so as to prevent surplus revenues from being siphoned off. However, on the assumption that bidding is competitive, contract amounts would already be at levels that the market can bear. In fact, we discovered many instances where -- after securing the approval of the provincial government -- contracts were auctioned off with increments well below the mandatory 15% limit. This could also have reflected a bad crop year and/or the presence of collusion among contractors. Before acting on such a recommendation, however, it is necessary to carry out more detailed surveys that track historical trends in export tax collection by district, examine future revenue potential, as well as investigate the contracting system in depth.

6.18 A third recommendation is that districts systematically collect detailed tax data, enabling them to carry out detailed tax analysis in order to determine the tax value of exports. As mentioned, districts are already required to maintain a tax collection register. However, we feel this recommendation would be difficult to implement, absent any changes in the contracting system as a whole. This is borne out by the experiences of a previous consultant who was repeatedly unsuccessful in his efforts to obtain tax information from the districts. They, subsequently, ended up calculating revenue potential on the basis of a presumptive methodology. Data collection and analysis efforts also have high training and transaction costs which many districts may not be able to afford.

6.19 It is recommended that these recommendations be implemented in a step by step manner starting with a single district, and including all other districts on a one by one basis as soon as training of the respective district staffs can be trained in the methods and benefits of adopting the new procedures. Experience indicates these changes are desireable, but local support is needed if they are to be effective.

6.20 **Non-compliance with SLG0 Rules and Regulations**: A major problem identified in the system is the build-up of arrears emanating from non-compliance with the SLGO rules and regulations. Contractors are frequently laggard in depositing earnest moneys, in paying contracted amounts, income tax and salaries of tax inspectors, while defaults are common. District councils use these arrears as a budget manipulation device, frequently writing them off as well. It is estimated that through both coercion and collusion district council tax staff are accessories to the repeated violation of rules and regulations, but documentation of this waste, and abuse were not able to be obtained during the limited time available for this review.

6.21 Clearly, these rules and regulations governing the taxation functions of the district councils are necessary. There is little dispute with the fact that they should be enforced. We did tentatively propose that the district councils be given more autonomy in taxation matters. However, the council officials remonstrated in no uncertain terms that this would be a recipe for anarchy. While we can only conjecture at the level of political interference and leverage that gives rise to the flagrant infraction of rules, our perception is that the problem can only be resolved at the political level. Unfortunately, this takes the matter outside the realm of fiscal policy and into the domain of governance. Our only substantive recommendation in this area is that regular training be provided to increase the professional competence of the district tax officials. The project has already made a contribution to this through its province wide budget improvement seminars. They were reported to be well received by the District staffs, and should be continued.

6.22 **Failure to Index Export Taxes with Inflation**: Export tax rates are determined on the basis of weight or volume rather than value. The rates are adjusted on a discretionary basis, on average every 3 - 4 years, and hence are unable to keep pace with inflation. This represents significant revenue losses. We concur with the recommendation that the SLGO be amended to introduce automaticity in rates. The project should take up this question with the Executive Finance Committee of the provincial government. However, before doing so, it should investigate the economic and legal implications of introducing such as measure.

6.23 **Failure to Bring More Commodities Within the Tax Net**: It is within the jurisdiction of the district councils to include more items in the 'model schedule' of taxable commodities. We feel that there is some scope for doing this. The two main categories of commodities that could be considered are agricultural items presently excluded because they are procured by the government (wheat, rice, cotton) and industrial, electrical and electronic goods that have arrived in the market at a relatively late stage. While the scope for including the former may be limited because of federal subsidy implications, a tax on the latter would be possible because of the recent influx of industrial goods, as well the less regressive tax incidence compared to agricultural goods. However, legal and definition complications may be expected before any results are achieved.

6.25 Our recommendations, while less ambitious than previous ones are hopefully more focussed:

- Initiate a program for in-house collection of revenue in one district as a pilot effort. As an essential prerequisite, the district chosen should have a good revenue collection record as well as an adequate number of and capable staff. This program should be carried out in collaboration with the project, which will provide intensive training to the district tax officials as well as consultancy assistance for surveys data collection and analysis.

- Organize regular training programs to improve the fiscal management skills of district council tax officials.

- Investigate the economic and legal feasibility of introducing automaticity in export tax rate increases, prior to taking up the matter with the Executive Finance Committee of the provincial government.

- Examine the scope and the legal and administrative implications for including more items in the list of taxable items.

ROAD USER CHARGES

6.26 Federal, provincial and local governments have a long history of raising revenue from road related transportation. Some of the more important taxes are vehicle import duties, sales tax on parts, vehicle registration and license fees, and toll taxes. Local governments generate revenue from roads in the form of tolls, non-motor vehicle taxes, license fees, vehicle fines, rent of bus stands and 'road cutting' fees.

General Principles

6.27 However, user charges are traditionally seen as revenue raising instruments rather than as a means of offsetting road related expenditures. In 1985, against user charges totalling Rs.8.2 million at the district level, only Rs.4.2 million was spent on road improvement and maintenance. Clearly, ways and means need to be explored to establish a linkage between the two.

A major consideration in imposing user charges is that they should be directly linked to the service provided. For instance, a vehicle tax or a sales tax on spare parts affects the decision to buy a vehicle, rather than the choice to travel on a particular length of a road. A fuel tax is more closely related to actual travel conditions but does not take social consequences into account. More important, it falls outside the local government's remit.

A toll tax best meets this criterion as it charges for the benefits of lower VOCs and reduced travel time. In c der to be efficient the burden of toll taxes should fall on the beneficiaries. Beneficiary identification should be comprehensive or free-rider problems can occur, resulting in inefficient resource allocation as well as inequitable taxation. Spill-over effects are large as road rehabilitation or construction can affect industrial location decisions, generate employment and inflate property values. In general, the impacts are easier to identify on existing roads than new ones.

Feasibility of Charging Toll Taxes

6.28 Toll taxes are currently charged on the major national highways. On provincial roads there is no evidence of tolls being charged. On district roads in 1985-86, tolls accounted for only 1/10th of 1.0% of total district revenues. These were collected from three roads in the districts of Dadu and Sukkur. Two of them served quarries and one, in Dadu, accessed a religious shrine. Our impression, based on conversations with district officials, was that the scope for large-scale replication was limited. The main reason cited was anticipated reluctance by beneficiaries to pay the toll tax.

On the other hand there is no legal restriction on the imposition of tolls, provided that the roads on which they are charged fall within the district's jurisdiction. Also, it is conceivable that road users would be willing to pay tolls, provided that the revenues collected are clearly seen to be spent on the maintenance and improvement of the road.

A Possible Approach

6.29 However, we would recommend that a phased approach be followed in introducing the toll system, and that such an attempt be extensively back-stopped by the project. The following suggested steps are illustrative:

- Select 6 - 8 district roads on which a heavy traffic count has been determined.
- Ascertain that there is no alternative route available to the traffic.
- Carry out a diagnostic survey in the surrounding areas to apprise the beneficiaries of the intention to introduce toll taxes, assure them that the revenues generated will be used expressly for road maintenance and improvement, and elicit their willingness to participate in the scheme.

- Contract out toll collection to private sector contractors. This should be done on the basis of competitive, verbal bidding. Certain prerequisites will have to be met before this is done, such as determining rates, estimating potential revenue collections and calculating contractors' administrative/collection costs in order to set a minimum reference price.

- Establish a dedicated fund for toll roads to ensure the linkage between toll tax collection and roads improvement and maintenance. The procedure for setting up a dedicated fund is spelled out in the SLGO.

The possibility of charging a license fee for animal carts could also be examined. Operation of such a system would preferably be decentralized to the union council level.

TRANSFER TAX ON IMMOVABLE PROPERTY (TTIP)

6.30 The TTIP is assessed and collected by the provincial government on behalf of the district councils. It is the third most important tax, accounting for approximately 2% of district council revenues. Essentially a sales tax, it is levied on the value of immovable property when the transfer is officially recorded.

There are four factors that can generate an increase in TTIP revenues. The first two; an increase in the volume of land transactions and in the value of property, are automatic. The latter two; rate increases and a change in assessment/collection procedures are discretionary. The AERC's national estimate of tax buoyancy with respect to the TTIP is 2.25. Of this the tax yield to tax base ratio is 2.25, indicating that rate or procedural (discretionary) changes would have a magnified effect on revenues.

Efficiency and Equity:

6.31 The sale of land is normally associated with a change in its use and a consequent increase in productivity. Theoretically, a tax on land would affect the decision to buy and, hence, lead to a less than optimum use of resources. In particular, as the TTIP is combined with the provincial stamp duty and the registration fee, increases at the margin would impact adversely on allocative efficiency. This argues against rate increases. On the other hand, there exists a chronic tendency towards tax evasion (under-reporting) which correlates directly with the tax rate. Thus, in reality, rate increases would probably impact minimally on resource allocation decisions. With respect to equity, the burden of the tax is borne more by the affluent buyer than the indigent seller, so rate increases would tend to be progressive.

Assessment and Collection:

6.32 TTIP is collected on the reported value of the transfer, which traditionally has been much less than the actual value. Immovable property is legally transferred in two ways. In the first case, the transfer of this property is recorded by the Registrar/sub-registrar, located in the deputy commissioner's office. When the deed or bill of sale is legally registered, the BOR collects provincial taxes (stamp duty and registration fees) and the TTIP.

In the second case, the transfer occurs orally. This method simply registers the transfer of the land with the mukhtiarkar/tapedar in the record of rights. These revenue functionaries negotiate with the parties for the payment of stamp duty and registration fees -- these are often collected as arrears. No TTIP is paid. In the first case the transaction is legally recorded, in the second it is not. Needless to say, use of the oral transfer method is widespread.

RECOMMENDATIONS:

Rate Increases: Project tax consultants have shown that rate increases have considerable revenue potential. Rate reductions, on the other hand, have no impact on the decision to invest or relocate industry. Since an increase in rates would not demonstrably affect the decision to buy or sell, being absorbed in the reported price, such increases are recommended. In addition, with the rapid rate of urbanization, the possibility of including non-agricultural land in the tax net should be investigated.

System Changes: The long-term objective should be to abolish the collusive oral transfer method, since it leads to revenue losses and excludes TTIP payments. In the short-term, such an attempt will face political resistance by the landed class and the tax collectors for whose convenience it was designed. However, this should not preclude an effort to incorporate the TTIP in oral transfers.

APPENDIX A

DRAFT WORK PLAN FOR MID-TERM EVALUATION

APPENDIX A

ROAD RESOURCES MANAGEMENT PROJECT
EVALUATION

DRAFT WORK PLAN

April 28, 1993	-	Arrival Karachi, Pakistan.
April 28 - 29	-	Initial meeting with the project officer.
	-	Introduction with the project staff.
	-	Briefing by the project officer and handing over of project documents.
May 1 - 3	-	Meetings with GOS Officials and ACE staff.
	-	Review of project documents and discussions with project staff.
	-	Travel to Islamabad (May 3 evening).
May 4 - 5	-	Meet with relevant officials of PDM, PRO, ENG and other related offices in the Mission.
	-	Meet with MLGRD officials.
	-	Travel to Karachi (May 5 evening).
May 6	-	Meet with remaining GOS officials and visit MTRI. Also deatiled meetings with ACE staff, if needed.
May 8 - 13	-	Visit to Sindh Districts/ACE field offices, both in Hyderabad and Sukkur divisions.
	-	Visit Rural Development Training Academy at Tandojam.
May 15 - 18	-	Complete first draft of report and submit to USAID.
	-	Travel to Islamabad (May 18 evening).
May 19 - 20	-	Discuss first draft with USAID.
May 22 - 25	-	Prepare revised draft final report.
May 26	-	Depart Pakistan.

a:itin: 4/27/93

APPENDIX B

PRINCIPAL OFFICERS INTERVIEWED DURING FIELD VISITS

APPENDIX B

PRINCIPAL OFFICERS INTERVIEWED DURING FIELD VISITS

Sunday - 9 May 1993:

1. Meeting with Associated Consultant Engineers (ACE) - Hyderabad Division Office

   - Resident Engineer: Mohammed Baber Khan
   - Project Manager: Nisar M. Khan

2. Hyderabad District Office:

   - District Engineer (not available due to illness)
   - Senior Sub-Engineer: Zain-ul-Abdin Abasi
   - Chief Officer: Jawid Junejo
   - Accounts Officer: Syed Igbal Hussain Shah

3. Sindh Local Government and Rural Development Academy - Tandojam

   - Chief Instructor: Muhammad Maroof Lakho
   - Chief Instructor: Bashir Ahmed Kazi
   - Instructor: Azra Balouch
   - Instructor: Naveed Saher Pirzada
   - Instructor: Abdul Rehman Abbassi

Monday - 10 May 1993:

4. Sanghar District Office:

   - District Engineer: (since 1987)

5. Mirpur Khas District Office:
   (Bifurcated/Separated from Tharparkar District in 1991)

   - District Engineer: (since 1990)
   - Taxation Officer/Acting Chief Officer:

Tuesday - 11 May 1993:

6. Associated Consultant Engineers (ACE) -
Sukkur Division Office

- Resident Engineer: S. Maqbool Ahmad Shah (since 1989)
- Project Manager: Nisar M. Khan

Wednesday - 12 May 1993:

7. Sukkur District Office:
(District to be bifurcated/separated in July 1993 to new Sukkur and Ghotki Districts, by Govt. of Sindh)

- District Engineer: Bashir Ahmed Channa (since Aug. 1990)
- Accounts Officer:

Thursday - 13 May 1993:

8. Shikarpur District Office:

- District Engineer: Abdul Qayum Qureshi (eff. April 26, 1993)
- Office Superintendent: Dewan Bhagwandas
- Accountant: Moizudain Shaikh

9. Larkana District Office:

- District Engineer: Khazil-Ur-Rehman Soomro (since 1990)
- Accounts Officer:

GOP/GOS OFFICERS

	TELEPHONE
KARACHI	
Mr. Aijaz Ali Pirzada, Director General (DG) Rural Development Department (RDD), GOS	5887814
Mr. Shah Mohammad Syed, Additional Secretary, Local Government (LG), GOS	2632725 2631788
Mr. Rafiq Laghari, Chief (Transport and Communication), Planning and Development (P&D), GOS	2630413
Mr. Khan Badshah Fayyaz, Director/MTRI, MLGRD	
Mr. K. A. Ansari, Associated Consultants Engineers (ACE)	443317 432177
Mr. Ilyas Qureshi, Director, Local Audit Fund (LAF) GOS	5686194 5683086
TANDO JAM	
Mr. Agha Shahabuddin, Director, Sindh Local Government and Rural Development Academy (SLGRDA) GOS	29274 (Hyd) (02233) 250 274, 274
HYDERABAD	
Mr. Abdul Hameed Rajput, Director (Tech), RDD, GOS M. KARIM SHEIKH, ASST. DIRECTOR, RDD, GOS ~~Mr. Talpur, Director, (Dev), RDD, GOS~~	
SUKKUR:	
Mr. Aslam Pathan, Director (LG), GOS	
ISLAMABAD:	
Mr. Farouk Khan, Joint Secretary, (LG) Ministry of Local Government and Rural Development (MLGRD)	821354
Brig. Shahid Hameed Khan, Project Director FRDEC, MLGRD (FEDERAL RURAL DEVELOPMENT ENGINEERING CELL)	811741
Mr. Ijaz Khan, Secretary, National Highway Authority (NHA)	

C:GOPSOFF

PEOPLE INTERVIEWED

- USAID-Karachi:

  * Hasan Masood - Project Officer, RRM Project
  * Munawar Hussain - Maintenance Engineer, RRM Project
  * Safdar Hussain - Maintenance Engineer, RRM Project
  * Waseem Jilani - Rehabilitation Engineer, RRM Project

- USAID-Islamabad:

  * Harry G. Proctor - Chief, Office of Engineering
  * Raja Rehan Arshad - Manager Engineering Projects

APPENDIX C

BIBLIOGRAPHY OF DOCUMENTS

APPENDIX C

Date: April 27, 1993

ROAD RESOURCES MANAGEMENT PROJECT

LIST OF PROJECT DOCUMENTS

No.	Document Title	Date	Prepared By
	GENERAL		
1.	Project Paper	Feb 87	USAID
2.	PC-I		GOP
3.	Louis Berger Report on Maintenance	Mar 85	LBII
4.	Louis Berger Report on Road Inventory	Jun 85	LBII
5.	Project Grant Agreement (PROAG) and amendments		
6.	GOS Rural Road Policy Statement	Jun 89	GOS
7.	Highway Policy Analysis (Final Report)	Jun 89	CCSC
8.	Gene George/Hasan Masood Memo on RRM Project Methodology for AID Resources Allocation	Mar 90	RRM Staff
9.	Road Inventory for 13 District in Sindh (Maps and Inventory Data Sheets)	May 88	Techno-Consult
10.	Final Reports on Road Construction and Maintenance Equipment for 13 Districts		CCSC
11.	Monthly Status Reports on Rehabilitation and Maintenance Program		RRM Staff
12.	Organization and Management of National Highway Board	Jan 90	FHWA
13.	Typical District Council Organizational Chart		RRM Staff
14.	List of Project Files		

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No.	Document Title	Date	Prepared By
	TRAINING		
1.	Training Program	May 89	CCSC
2.	Budgetary Procedure Improvements Seminars	May/Jun 91	CCSC
3.	Seminar on District Roads Maintenance	Jul 90	CCSC
4.	Maintenance Management Seminar	Oct 92	RRM Staff
5.	District Councils Coordination Workshops	Feb 93	RRM Staff
	FINANCIAL MANAGEMENT PROGRAM:		
1.	Preliminary Financial Assessment (Final Report)	Nov 89	CCSC
2.	Revenue Enhancement Analysis	Aug 90	CCSC
3.	Financing District Roads	May 90	CCSC
4.	District Council Budgetary	Oct 91	CCSC
5.	District Councils Taxation of Exports	Jun 90	CCSC
6.	Local Cess Taxation	Jun 90	CCSC
7.	Finance District Roads Through User Charges	May 90	CCSC
8.	District Councils Budget and Revenue Status, 1989-90 thru 1992-93		RRM Staff
9.	District Council budgets	Jun 90	CCSC
	MAINTENANCE PROGRAM:		
1.	Road Maintenance Manual for District Roads	Dec 89	CCSC
2.	District Council Road Maintenance Budgets - Contract Maintenance	Apr 90	CCSC

APPENDIX C

No.	Document Title	Date	Prepared By
3.	Road Maintenance Program - Current Status	Jul 92	US-PSC (Bob Katz)
4.	Maintenance Manual for District Roads in Sindh (Revised)	Aug 92	US-PSC (Bob Katz)
5.	Model Maintenance Contract for District Roads in Sindh	Aug 92	US-PSC (Bob Katz)
6.	Work Plan	92	US-PSC (Bob Katz)
7.	Evaluation of District's Performance	Nov 92	RRM Staff
8.	Maintenance Status Report	Jul 92	RRM Staff
9.	Maintenance Status Report	Nov 92	RRM Staff
10.	Road Inventory of All Districts (Updated in 1992-93)		
	REHAB/CONSTRUCTION PROGRAM:		
1.	Field Construction Manual	Jul 91	CCSC
2.	Economic Appraisal	Dec 92	ACE
3.	Experimental Roads	Mar 91	CCSC
4.	Soil Investigation Report (2 Vol.)	Feb/May 90	Geo-Tech Consultants
5.	Pavement Rehabilitation Design	Oct 91	CCSC
	TA CONTRACT:		
1.	Scope of Work (SOW)		
2.	Quarterly/Annual Reports		
3.	Project Termination Report	Oct 91	CCSC

APPENDIX C

No.	Document Title	Date	Prepared By
	PILS:		
1.	Project Implementation Letters		
	EVALUATION:		
1.	Inception Report	Jun 89	CCSC
2.	Mission Portfolio Review Reports		USAID

C:LRPD

APPENDIX D

COMPARISON OF RESOURCES AND OUTPUTS

FOR

MAINTENANCE OF DISTRICT ROADS

IN SINDH

MAINTENANCE STANDARDS (MECHANICAL) - December 1989

AND

MAINTENANCE STANDARDS (MANUALLY) - August 1992

APPENDIX D

WORK ACTIVITY RESOURCE STANDARDS

RESOURCE	P-1 '89	- - '92	P-1-A '89	P-1 '92	P-2 '89	P-2 '92	P-2-A '89	- - '92	P-3 '89	P-3 '92
LABOR:										
*Foreman	1		1	-	1	-	1		.25	-
*Darogha	-		-	1	-	1	-		-	1
*Drivers	2		2	1	2	1	2		.25	-
*Operators	2		1	-	1	-	1		2	-
*Skilled Laborers	-		-	-	-	-	-		-	-
*Beldars	-		-	8	2	10	2		-	8
*Laborers	4		8	-	6	-	8		2	-
EQUIPMENT:										
*Pickup	1		1	1	1	?	1		.25	-
*Flatbed	1		1	-	1	-	1		-	-
*Water Truck /Tanker	-		-	-	-	-	-		-	-
									1	-
*Farm Tractor with blade	-		-	-	-	-	-		1	-
*Roller (1 tn.)	1		1	-	1	-	-		1	-
*Plate Compactor	-		-	-	-	-	-		-	-
*Asphalt Mixer	x		-	-	x	-	-		-	-
*Wheel Barrow	1		1	2	1	4	-		-	4
*Shovels	-		-	6	-	8	-		-	8
*Rakes	-		-	-	-	-	-		-	-
*Picks	-		-	6	-	8	-		-	4
*Hand Tampers	-		-	6	-	8	-		-	8
*Brooms	-		-	8	-	10	-		-	-
*Asphalt Sprayer	1		-	1	1	-	-		-	-
*Hand Tools	x		x	x	x	-	x		x	-
Avg. Crew Day Accomplishment	4 cu.m.		4 cu.m.	60 sq.m.	6 cu.m.	2.5 cu.m.	6 cu.m.		2 sh. 400 km.	sh.m.

APPENDIX D (cont'd.)

WORK ACTIVITY RESOURCE STANDARDS

RESOURCE	ACTIVITIES									
	P-4 '89	P-4 '92	P-5 '89	P-5-A '92	P-6 '89	- - '92	P-7 '89	P-5-B '92	P-8 '89	P-6 '92
LABOR:										
*Foreman	.25	-	.25	-	N/A		.25	-	.5	.5
*Darogha	1	1	1	1			1	-	1	1
*Drivers	1.25	-	.25	-			.25	-	.5	.5
*Operators	2	-	-	-			-	-	-	-
*Skilled Laborers	-	-	-	-			-	-	1	1
*Beldars	1	12	-	-			-	-	3	3
*Laborers	5	-	5	8			4	2	3	3
EQUIPMENT:										
*Pickup	.25	-	.25	-	N/A		.25	-	.5	.5
*Flatbed	1	-	-	-			-	-	-	-
*Water Truck /Tanker	- 1	-	- -	-			- -	-	- 1	- 1
*Farm Tractor with trolley	1	-	-	-			-	-	-	-
*Roller (1 tn.)	1	-	-	-			-	-	-	-
*Plate Compactor	-	-	-	-			-	-	1	1
*Asphalt Mixer	-	-	-	-			-	-	-	-
*Wheel Barrow	-	8	-	2			-	3	1	1
*Shovels	-	16	-	8			-	2	-	-
*Rakes	-	-	-	-			-	2	-	-
*Picks	-	8	-	-			-	-	-	-
*Hand Tampers	-	16	-	-			-	-	-	-
*Brooms	-	-	-	-			-	-	-	-
*Asphalt Sprayer	-	-	-	-			-	-	-	-
*Hand Tools	x	-	x	-			x	-	x	x
Avg. Crew Day Accomplishment	8 cu.m.	3.75 cu.m.	400 meters	250 mts.	N/A	omit	4 cu.m.	500 culverts	1 mts.	1 culv. culv.

APPENDIX D (cont'd.)

WORK ACTIVITY RESOURCE STANDARDS

RESOURCE	ACTIVITIES									
	P-9 '89	P-10 '89	P-11 '89	P-12 '89	- - '92	P-15 '89	P-7 '92	P-16 '89	P-13 '89	P-14 '89
LABOR:										
*Engineer/Insp.	-	-	-	-				-	1	1
*Foreman	-	1	1	1		By	By	1	-	-
*Darogha	1	-	-	-				-	-	-
*Drivers	1	2	1	1		cont-	cont-	4	1	1
*Operators	-	-	-	-		ract.	ract.	-	-	-
*Skilled Laborers	-	3	2	2		**	**	-	-	-
*Beldars	-	3	-	-				-	-	-
*Laborers	5	6	3	3				5	-	-
EQUIPMENT:										
*Pickup	-	1	1	1				1	1	1
*Flatbed	-	1	-	-				2		
*Water Truck /Tanker	-	-	-	-				-		
*Farm Tractor with trailer	-	1								
*Roller (1 tn.)	1	-	-	-				1		
*Plate Compactor	-	-	-	-				-		
*Asphalt Mixer	-	-	-	-				-		
*Concrete Mixer	-	1	-	-				-		
*Wheel Barrow	-	1	-	-				-		
*Shovels	-	-	-	-				-		
*Rakes	-	-	-	-				-		
*Picks	-	-	-	-				-		
*Hand Tampers	-	-	-	-				-		
*Brooms	-	-	-	-				-		
*Asphalt Sprayer	-	-	-	-				-		
*Hand Tools	x	x	x	x				x		
Avg. Crew Day Accomplishment	2 sh. km.	7 mtr.	As reqd.	As reqd.		By cont.	By cont	As reqd.	As reqd.	As reqd.

APPENDIX E

ROADS IN
PAVED ROAD SYSTEM INVENTORIES:

JUNE 1989, AND APRIL 1993

DISTRICTS OF :

1. Dadu
2. Khairpur
3. Larkana
4. Shikarpur
5. Sukkur
6. Jacobabad
7. Nawabshah
8. Naushero Feroz
9. Hyderabad
10. Karachi
11. Thatta
12. Badin
13. Tharparkar - Mirpurkhas
14. Sanghar

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Dadu

Page No. 1
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
		TALUKA: Dadu					
DA-D6	DA-DA-01	Dadu Mounder Naka Road to Dadu Canal	3.60	0.00	0.00	—	ACC
	DA-DA-02	Makhdoom Saheb to Bahawalpur	2.50	0.00	0.00		
DA-D1	DA-DA-03	Dadu to Daro Road	4.80	0.00	0.00		
	DA-DA-04	Daro to Pir to Guino Road	1.60	0.00	0.00		
	DA-DA-05	Jamali Mohallah to Rab Rakhio Pannwar	1.50	0.00	0.00		
	DA-DA-06	Village Rustamani to Goliwar Road	3.20	0.00	0.00		
	DA-DA-07	Piaro Goth Phulji to Dareshani Panhwar	1.50	0.00	0.00		
	DA-DA-08	Phulji PiaroGoth Road to Vil. Allahabad	1.60	0.00	0.00		
	DA-DA-09	I.H'Way to Dadu Daro Road via Goliwar	1.60	0.00	0.00		
	DA-DA-10	Ghan Johi to Abbas Panhwar	1.00	0.00	0.00		
	DA-DA-11	Muradabad Road to Sadhago Panhwar	1.00	0.00	0.00		
	DA-DA-12	Indus Highway to Mena	1.50	0.00	0.00		
	DA-DA-13	Indus Highway to Dargah Pir Mohammad	0.30	2.26	0.00		
		SUB-TOTAL:	25.40	2.26	0.00		
		TALUKA: Johi					
	DA-JI-01	Johi to Bachal Rind Road	1.00	0.00	0.00		
		SUB-TOTAL:	1.00	0.00	0.00		
		TALUKA: Khairpur N.Shah					
	DA-KN-01	Khanpur Road to Chowkandi	2.40	0.00	0.00		
		SUB-TOTAL:	2.40	0.00	0.00		
		TALUKA: Kotri					
	DA-KI-01	Laki to Hot Springs	0.00	2.40	0.80		
DA-D4	DA-KI-02	Indus Highway to Manjhand	0.70	0.50	0.00		
DA-D3	DA-KI-03	Indus Highway to Aari	0.00	1.50	0.00		
DA-D7	DA-KI-04	Indus Highway to Lakha	1.60	0.00	0.00		
	DA-KI-05	Indus H'Way to Theba Mohalla Mansoorabad	1.60	0.00	0.00		
	DA-KI-06	Indus Highway to Garwari	1.60	0.00	0.00		
	DA-KI-07	Indus Highway to Rest House Aari	0.00	0.00	3.00		
		SUB-TOTAL:	5.50	4.20	3.80		
		TALUKA: Mehar					
	DA-MR-01	Thariri Munabat Road to Kanciwar	2.32	0.00	0.00		
	DA-MR-02	Menar to Ghari Village	4.80	0.00	0.00		
		SUB-TOTAL:	7.12	0.00	0.00		
		TALUKA: Sehwan Sharif					
	DA-SS-01	Indus Highway to Bakhtiarpur	1.00	0.00	0.00		
	DA-SS-02	Jhangara to Naing Sharif Road	4.80	0.00	0.00		
	DA-SS-03	Indus Highway to Imam Ali Dai	0.50	0.00	0.00		
	DA-SS-04	Taiti to Bazdha Village	1.00	0.00	0.00		
		SUB-TOTAL:	7.30	0.00	0.00	—	ACC

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Dadu

Page No. 2
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
		TALUKA: Thana Bula Khan					
DA-D1	DA-TB-01	f.B. Khan Road to Syed Baqir Shah	1.60	0.00	0.00	—	ALL ↓ ALL
		SUB-TOTAL:	1.60	0.00	0.00		
		TOTAL LENGTH IN KMS:	50.32	6.46	3.80	—	60.58 Km.

KHAIRPUR – STATUS June 1989

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13
Road Number	Location From	Location To	CCSC Lengths Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks
K-4	National Highway	Shahal dhani	1.70	48	76	24	3	3	12	1	167	
K-1	National Highway	Pir Mangio	0.20	62	51	1	0	1	4	3	122	
K-55	Pirjo Goth Rd.	Sajjan Mahasser	5.60	80	42	26	13	6	10	1	178	
K-19	National Highway	Wari Jo Goth	0.70	116	143	18	0	1	31	6	315	
K-2	Sukkur-Pirjo Goth	Memon Garden	0.86	4	7	4	0	0	9	0	24	
K-74	Manger Ji Rd	Mouzam Ali Shah	0.85	36	11	5	1	2	2	0	57	
G-3	Ranipur-Sobhodero	Shafi Mohd.Bheelar	2.50	49	26	4	0	0	9	0	88	
G-4	Hingorja-Sagyoon	Nau Goth	1.90	37	47	22	0	3	12	0	121	
G-5	Ranipur-Gambat Rd	Gambat Town	0.30	39	55	59	4	0	21	12	190	
G-6	Ripri Vill	Ripri	0.65	42	17	4	0	0	1	0	64	
G-7	Ripri Road	Ali Bux Sorahi	0.00	40	24	1	0	5	5	0	75	
G-8	Agra Rd	Narejo Via Faqir Mohd Vil	1.00								0	UnderCons
KD-108	National Highway	Hussain Abad	3.50	138	102	47	2	2	44	2	337	
KD-9	National Highway	Muhbat Wah	0.28	102	64	38	0	0	27	0	231	
KH-10	National Highway	Haji Imam Bux Palh	0.80	3	24	9	0	0	3	0	39	
KD-11	National Highway	Ali Mohd Solangi	0.40	13	24	14	0	6	18	0	75	
M-12	Setharja	Wali Dad Lund	3.10	127	90	21	0	4	20	0	262	
M-13	Wagah	Kharrah	3.00	27	65	4	0	0	19	0	115	
M-14	Sui Gas	Khairi	3.80	25	36	21	0	0	17	0	99	
N-15	Choundiko	Bagh Pattan	7.50	16	35	32	7	15	14	0	119	
Total			38.64									

ROADS IN INVENTORY 4/29/93

YES	NO
1.70	—
—	0.20
—	5.60
0.70	—
—	0.86
—	0.85
2.50	—
1.90	—
0.30	—
0.65	—
—	NO
1.00	—
3.50	—
0.28	—
—	0.80
0.40	—
3.10	—
3.00	—
3.80	—
—	7.50
22.83	15.81

TOTAL = 38.64 KM

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Khairpur

APPENDIX E

Page No. 1
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
		TALUKA: Gambat					
G-3	KH-GM-01	Ranipur Sothodero to Shafi Mond. Sheelar	2.50	0.00	0.00	2.50	—
G-4	KH-GM-02	Hingorjo-Sagycon to Nau Goth	2.00	0.00	0.00	2.00	—
G-5	KH-GM-03	Ranipur Gambat to Gambat Town	0.30	0.00	0.00	0.30	—
G-6	KH-GM-04	Ripri Village to Ripri	0.70	0.00	0.00	0.70	—
G-8	KH-GM-05	Agra Road-Nareja via Fakir M. village	1.00	0.00	0.00	1.00	—
KD-11	KH-GM-06	National Highway to Ali Mohd. Solangi	1.00	0.00	0.00	1.00	—
	KH-GM-07	National Highway to Malherain Machi	1.80	0.00	0.00	—	1.80
	KH-GM-08	Ripri to Ali Bux Sarohi	0.70	0.00	0.00	—	0.90
	KH-GM-09	Satherja Bala Road to Hingorja Minor	0.00	0.88	0.00	—	0.88
	KH-GM-10	Vil Sag Kori-D.Nareja-Fakir Mohd Machi	0.00	0.61	0.00	—	0.61
	KH-GM-11	Road to Gambat	0.30	0.00	0.00	—	0.30
		SUB-TOTAL:	10.50	1.49	0.00		
		TALUKA: Khairpur					
K-4	KH-KH-01	National Highway to Shanal Dani	0.00	0.00	1.70	1.70	—
K-19	KH-KH-02	National Highway to Wari Jo Goth	0.00	1.12	0.00	1.12	—
		SUB-TOTAL:	0.00	1.12	1.70		
		TALUKA: Kingri					
	KH-KI-01	Ameenpur Road to Vill. Soci Mangani Jo	1.40	0.00	0.00	—	1.40
	KH-KI-02	Pir Jo Goth Hadal Shah to Bhatycon	2.00	0.00	0.00	—	2.00
	KH-KI-03	Road leading to Hadal Shah	0.50	0.00	0.00	—	0.50
	KH-KI-04	Sanar Larik to Burdi Village	1.50	0.00	0.00	—	1.50
	KH-KI-05	Kingri Machoon Rd to Dost Mono Para	0.00	0.83	0.00	—	0.83
	KH-KI-06	Hassu Kanher to Lal Bux Kanehro Village	5.00	0.00	0.00	—	5.00
		SUB-TOTAL:	10.40	0.83	0.00		
		TALUKA: Kot Diji					
KD-102	KH-KD-01	National Highhway to Hussainabad	1.30	0.00	0.00	1.30	—
KD-9	KH-KD-02	National Highway to Muhebat Wah	0.30	0.00	0.00	0.30	—
	KH-KD-03	N. Highway to Ali Mohd. Solangi Village	1.00	0.00	0.00	—	1.00
	KH-KD-04	N. Highway to Isaa Bux Palh	1.00	0.00	0.00	—	1.00
	KH-KD-05	N. Highway to Dan Sohu	0.15	0.00	0.00	—	0.15
		SUB-TOTAL:	3.75	0.00	0.00		
		TALUKA: Nara					
	KH-NA-01	Inspection Path of Nara Canal	0.20	0.00	0.00	—	0.20
	KH-NA-02	Khawand Dino Mircher to Vil. Rab Nawaz	0.38	0.00	0.00	—	0.38
		SUB-TOTAL:	0.58	0.00	0.00		
		TALUKA: Theri Mir Wah					
M-12	KH-TM-01	Satherja to Wali Dad Lund	4.15	0.00	0.00	4.15	—
M-13	KH-TM-02	Pir Wasan to Kharrah	0.00	0.00	3.00	3.00	—
M-14	KH-TM-03	Bui Das to Khairi	5.00	0.00	0.00	5.00	—
		SUB-TOTAL:	9.15	0.00	3.00		
		TOTAL LENGTH IN KMS:	34.38	3.44	4.70	24.07	18.45

TOTALE

42.52 Km

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Larkana

DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
		TALUKA: Dokri					
LA-1	LA-DI-01	Hatti to Mud Bahu	4.10	0.00	1.30	—	ALL
LA-2	LA-DI-02	Bakrani to Mud Bahu	0.00	3.43	0.00		
LA-14	LA-DI-03	Pucca Rd. Moenjodaro to Baradi Sario	0.90	0.00	0.00		
LA-16	LA-DI-04	Pucca Rd. Arthur Minor to Umar Bhayo	0.00	0.00	2.00		
LA-17	LA-DI-05	Hatti Mud Bahu to Maki Bhutto	2.00	0.00	0.00		
	LA-DI-06	Bakrani Baublow to Dokri via Sonhari	3.00	0.00	0.00		
	LA-DI-07	Baden to Brohi-ja-bman via Benar Station	2.00	0.00	0.00		
	LA-DI-08	Bindi to Barandi Sarvo	0.46	0.00	0.00		
	LA-DI-09	Gujbar to Village Abdul Karim Unar	1.00	0.00	0.00		
	LA-DI-10	Moulvi Shaikh to Village Kajalour	0.45	0.00	0.00		
	LA-DI-11	Road to Koonar Masari	0.30	0.00	0.00		
	LA-DI-12	Balharji to Karani Village	1.35	0.00	0.00		
	LA-DI-13	Mac Bahu to Allabad	1.15	0.00	0.00		
	LA-DI-14	Allah Yar Sario to Dokri	0.75	0.00	0.00		
	LA-DI-15	Radhan to Village Beehar	0.30	0.00	0.00		
	LA-DI-16	Mossa Metio to Hakim s. Sandelo	0.35	0.00	0.00		
	LA-DI-17	Road to Abdul Qadir Jakhro	1.00	0.00	0.00		
	LA-DI-18	Bagi Pul to Noori-ja-Wanch via R.A. Abro	0.25	0.00	0.00		
	LA-DI-19	Mud Bahu to Abad via Bolt Khoknar	0.35	0.00	0.00		
	LA-DI-20	Aumopur to Bagsa	0.30	0.00	0.00		
	LA-DI-21	Road to Sahib Khan Malano	0.60	0.00	0.00		
	LA-DI-22	Baden-Junar-Jund via Otaq M.Hasnim Saryo	0.40	0.00	0.00		
	LA-DI-23	Mangria Bund to Hussainabad	0.20	0.00	0.00		
	LA-DI-24	Mehrabpur road to Metaila	1.25	0.00	0.00		
	LA-DI-25	Road to Shabuddin Malano	0.20	0.00	0.00		
	LA-DI-26	Haroon Tunio to Gul Mohammad Tunio	1.50	0.00	0.00		
	LA-DI-27	Mad Bahu to Nauabad	2.00	0.00	0.00		
	LA-DI-28	Karani to Gujhar	2.32	0.00	0.00		
	LA-DI-29	Bakrani to Dokri via Sonhri Regulator	0.95	0.00	0.00		
		SUB-TOTAL:	29.95	3.43	3.30		
		TALUKA: Kambar					
	LA-KM-01	Jian Abro Rd to Vil Murad Khan Gajrani	0.37	0.00	0.00		
	LA-KM-02	Kambar Miro Khan Road to Pir Bari Shah	0.35	0.00	0.00		
	LA-KM-03	Kambar Dost Ali Rd-Ali Husain Khan Chndi	0.37	0.00	0.00		
	LA-KM-04	Berr Shariff-M.A.Dino & Fadir M. Tunio	0.35	0.00	0.00		
	LA-KM-05	Shaibi Dero to Protection Bund	0.65	0.00	0.00		
	LA-KM-06	Larkana-Waggan Rd to Khairpur Juso	0.37	0.00	0.00		
	LA-KM-07	Larkana-Waggan Rd to Bhoia Kalhora	0.37	0.00	0.00		
	LA-KM-08	Lalu Runk to Thoriojar to Vil. Bhoonar	0.37	0.00	0.00		
	LA-KM-09	Kambar-K'pur Juso Rd to Md Nawaz Rahujo	0.12	0.00	0.00	—	ALL

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Larkana

Page No. 2
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
	LA-KM-10	Mian Shahal Mond to Bakio Khuhawar	0.40	0.00	0.00	—	Acc
		SUB-TOTAL:	3.72	0.00	0.00		
		TALUKA: Larkana					
	LA-LA-01	Larkana-Nau Dero Road to Village Dodai	0.40	0.00	0.00		
	LA-LA-02	Larkana-Wagan Rd to Vil Ghulam Md Isran	0.48	0.00	0.00		
	LA-LA-03	L'kana Bakrani Bhans to Pir Bachal Shah	0.48	0.00	0.00		
	LA-LA-04	Mahar Bridge to Abdul Rehman Jatoi	0.48	0.00	0.00		
	LA-LA-05	Larkana-Kambar Road to Village Tharodero	0.65	0.00	0.00		
	LA-LA-06	Larkana-Bukrani Road Fazal Mohammad Abro	0.45	0.00	0.00		
	LA-LA-07	Vikia Sangni to Village Khuhra	0.37	0.00	0.00		
	LA-LA-08	Sultan Samtio to Gahi Samtio	0.37	0.00	0.00		
	LA-LA-09	Lkn-Wagan Rd-House M.Alam & Faza M.Brohi	0.35	0.00	0.00		
	LA-LA-10	Arija to Baghat	0.75	0.00	0.00		
		SUB-TOTAL:	4.68	0.00	0.00		
		TALUKA: Miro Khan					
LA-15	LA-MK-01	Behram to Mubarak Kalhoro	3.90	0.00	0.00		
LA-22	LA-MK-02	Kambar Shahdadkot Rd to Ghulam Ali Magsi	1.20	0.00	0.00		
LA-24	LA-MK-03	Reto Dero Shahdadkot to Haider Chandio	3.30	0.00	0.00		
LA-26	LA-MK-04	Kambar Shahdadkot Road to Mehboob Tunio	0.60	0.00	0.00		
	LA-MK-05	Garni Khairo Road to Faiz Mohammad Jatoi	0.65	0.00	0.00		
	LA-MK-06	Sijawal-Rato Dero to Vil Ghulam Mohammad	0.65	0.00	0.00		
	LA-MK-07	Sh kot-Sijawal Rd to Vil Engineer	0.60	0.00	0.00		
	LA-MK-08	Rato Dero-Kambar Rd to Village Bhand	0.60	0.00	0.00		
	LA-MK-09	R'Dero Rd to Sh'kot Rd-Bakhshal Maheesar	0.60	0.00	0.00		
	LA-MK-10	Kambar-Shahdadkot Road to Vil Ayo Mangsi	0.48	0.00	0.00		
	LA-MK-11	R'Dero-Sh'kot Rd to Ghulam Mond Maheesar	0.45	0.00	0.00		
	LA-MK-12	R'Dero-Sh'kot Rd to Sh Murad Magsi House	0.35	0.00	0.00		
	LA-MK-13	Kambar-Sh'kot Rd to Dargah Hakia Ali Sha	0.30	0.00	0.00		
	LA-MK-14	Kambar-Sh'kot Rd to Banrni Village	0.15	0.00	0.00		
	LA-MK-15	Shamono Kh Chandio Rd to Sadullah Chandi	0.35	0.00	0.00		
	LA-MK-16	Allah Bux Leghari to Waso ji Wandh	0.40	0.00	0.00		
	LA-MK-17	Jlan Mangsi to Sia Shaikh Langno	0.30	0.00	0.00		
	LA-MK-18	Kambar-Sh'kot Rd to Badalabad to Miro Kh	0.45	0.00	0.00		
	LA-MK-19	Larkana-Miro Khan Rd to Ali Sher Hapang	0.25	0.00	0.00		
	LA-MK-20	Larkana-Miro Khan Rd to M.Amin Bhatti Hs	0.45	0.00	0.00		
	LA-MK-21	M.Amin Bhatti House to Sasoo Depoo	0.50	0.00	0.00		
	LA-MK-22	Road to Bano Magsi	0.10	0.00	0.00		
	LA-MK-23	Road to Ayo Mangsi	1.00	0.00	0.00		
		SUB-TOTAL:	17.63	0.00	0.00		
		TALUKA: Rato Dero					
	LA-RD-01	Kachi Unar to Bano Dero	0.50	0.00	0.00		
	LA-RD-02	Larkana Naudero Road To Hassan Wahan	0.33	0.00	0.00		Acc

ROAD RESOURCES MANAGEMENT PROJECT (391-0460)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Larkana

Page No. 3
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
	LA-RD-03	Ratodero Rd Md. tur Rd to Pir Bux Brohi	0.37	0.00	0.00	—	Acc
	LA-RD-04	Rato Dero-J'abad Rd to Vil Maqbool Shah	0.37	0.00	0.00		
	LA-RD-05	Lashari Eid Gah to Village Mamoo	0.37	0.00	0.00		
	LA-RD-06	Katchi Unar to Bangledero	0.12	0.00	0.00		
	LA-RD-07	Naudero-Rato Dero Rd to Vil Jumo Khan Sh	0.25	0.00	0.00		
	LA-RD-08	Bungldero-Khairodero Rd to B'dero G.Yaro	0.12	0.00	0.00		
		SUB-TOTAL:	2.43	0.00	0.00		
		TALUKA: Shahdadkot					
LA-13	LA-SK-01	Mir Karam Khan to Qubo Saeed Khan	1.70	0.00	0.00		
LA-18	LA-SK-02	Katchigul to Soofi Mohammad Khoso	0.70	0.00	0.00		
LA-23	LA-SK-03	Shahdadkot R'way Crossing to Ghulam Nabi	0.80	0.00	0.00		
LA-25	LA-SK-04	Qubo R.D. 97 to Mir Ali Hasan Brohi	0.90	0.00	0.00		
	LA-SK-05	Hamid Ali to Rahman Ali Khoso	0.75	0.00	0.00		
	LA-SK-06	Md. K.Bhutto-Imam Bux Jamali-Sawan Brohi	0.50	0.00	0.00		
	LA-SK-07	Sh. Kot-Md.K.Bhutto to Noorpur Regulator	0.85	0.00	0.00		
	LA-SK-08	Garhi Khairo-Sh'kot Rd to Shahbur Jamali	0.65	0.00	0.00		
	LA-SK-09	Qubo Saeed Khan to Saifullah Shaikh	0.50	0.00	0.00		
	LA-SK-10	Dost Ali to Mir-ji-Nari	0.35	0.00	0.00		
	LA-SK-11	Qubo 97.000 to Mir Qaim Khan Brohi	0.35	0.00	0.00		
	LA-SK-12	Qubbo Shahdadkot to Village Achar Brohi	0.25	0.00	0.00		
	LA-SK-13	Md. K.Bhutto Road to Md. Hashim Bhatti	0.35	0.00	0.00		
	LA-SK-14	Qubo Mir Ali Jan Mangsi Rd to Burdi Wah	0.35	0.00	0.00		
	LA-SK-15	Dhori to Khan Wan	0.35	0.00	0.00		
	LA-SK-16	Qubo Road to Abdul Qadir Khoso	0.37	0.00	0.00		
	LA-SK-17	Mohammad Khan Bhutto to Akbar Brohi	0.45	0.00	0.00		
	LA-SK-18	Mond Khan Bhutto Rd to Mian ji Md. Murad	1.07	0.00	0.00		
	LA-SK-18	Soofi Mond Bux Khoso to Abdul Latif	0.25	0.00	0.00		
	LA-SK-19	Mir Ali Jan Khan Mangsi Rd. to Burdi Wah	0.35	0.00	0.00		
	LA-SK-20	Allah Bux Leghari to Faral Siyal	0.12	0.00	0.00		
	LA-SK-21	Ext. Link Rd M.K. Bhutto to Noorpur Regu	0.65	0.00	0.00		
	LA-SK-22	Link Rd R'Dero-Sh'kot to Rahim Kh Jamali	0.65	0.00	0.00		
	LA-SK-23	Link Rd Sh'kot to Imam Bux S. Jamali	0.65	0.00	0.00		
		SUB-TOTAL:	13.91	0.00	0.00		
		TALUKA: Warah					
LA-9	LA-WA-01	Wagan Waran to Noorabad	3.30	0.00	0.00		
	LA-WA-02	Noorabad to Village Nihal Tunio	0.37	0.00	0.00		
	LA-WA-03	Syed Bachal Shah to GHwarkhan Isran	0.40	0.00	0.00		
	LA-WA-04	Lalu Rounk-Garhi Kartyo- Khair Md. Wako	0.35	0.00	0.00		
	LA-WA-05	Lalu Waran Rd-Faten Md Machi-M.Khn Brohi	0.35	0.00	0.00		
	LA-WA-06	Waran Waggan Rd to Pir Goth near Waggan	0.40	0.00	0.00		
	LA-WA-07	Faryo Babar Khan to Rasc Bunc	0.40	0.00	0.00		
	LA-WA-08	Village Abad to Village Tingni	0.40	0.00	0.00		Acc

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Larkana

Page No. 4
DATE. 04/30/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
	LA-WA-09	Road to Mustufa Abad	0.45	0.00	0.00	—	ACL
	LA-WA-10	Allan Rakhio Jalbani to Hakim Depar	0.45	0.00	0.00		
	LA-WA-11	Larkana-Waggan Road to House Dr.A.Gaffar	0.37	0.00	0.00		
	LA-WA-12	Chowndero to Pichi	0.37	0.00	0.00		
	LA-WA-13	Warah-Waggan Rd to Ali Hassan Broni	0.15	0.00	0.00		
	LA-WA-14	Gaji Khuhawar Junani Rd - Sultan K.Jatoi	0.12	0.00	0.00		
	LA-WA-15	Warah-Waggan Road to Pir Kot	0.37	0.00	0.00		ACL
		SUB-TOTAL:	8.75	0.00	0.00		
		TOTAL LENGTH IN KMS:	81.07	3.43	3.30	—	

87.80 Km.

SHIKARPUR - STATUS JUNE 1989

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 4/29/93 INVENTORY	
Road Number	Location From	Location To	CCSC Lengths Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks	YES	NO
SH-69	Shikarpur	Booja Napar Via Jano	5.00	441	98	48	0	0	25	12	614		5.00	—
SH-1	Lakhi	Wazirabad	1.80	400	78	29	0	13	31	0	551		1.80	—
SH-2	Chak Cagerji Rd	Tamachani	1.00	45	35	21	0	0	11	0	112		1.00	—
SH-3	Chak Bagerji Rd	Bhirkan	0.30	49	21	29	1	1	4	0	105		0.30	—
SH-4	Chak Bagerji Rd	Khahi	0.50	152	26	21	1	0	1	0	201		0.50	—
SH-5	Chak Bagerji Rd	Hothi	0.40	194	60	15	3	3	13	11	299		0.40	—
SH-6	Chak-Bagerji Rd	Geserji	0.40	30	12	6	0	4	1	0	53		0.40	—
SH-7	Sukkur Shikarpur Rd	Soomar Goth	0.50	65	12	7	0	0	2	0	86		0.50	—
SH-71	Sukkur Shikarpur Rd	Mangrani	0.60	14	5	2	0	0	7	0	28		0.60	—
SH-8	Sukkur Shikarpur Rd	Dodo Goth	0.80	44	19	17	0	6	8	0	94		0.80	—
SH-9	Sukkur Shikarpur Rd	Chand Goth	0.40	16	4	3	0	0	3	0	26		0.40	—
SH-70	Ratodero Rd	Sheranpur-Satrampur	0.80	10	4	1	0	0	2	0	17		0.80	—
SH-72	RatoderoSheranpur Rd.	Fatehpur	1.70	16	9	7	4	4	7	0	47		1.70	—
SH-37	Dakhan Madeji Rd	Tarai	2.00	180	64	67	0	2	39	0	352		2.00	—
SH-10	Sukkur Larkana Rd	Jindodero	0.80	63	19	16	0	2	3	0	103		0.80	—
SH-11	Shp:Larkana Rd	Garhi Sahib Khan	0.20	23	1	1	0	0	0	0	25		0.20	—
SH-12	Ratodero Shernapur Rd	Chutti Drib	0.70	39	10	18	0	2	0	0	69		0.70	—
SH-13	Garhiyasin Rut Rd	Amrote	0.70	49	23	26	6	0	5	0	109		0.70	—
SH-35	Sukkur Larkana Rd	Tour Bund	0.50	22	6	4	0	2	4	0	38		0.50	—
Total			19.10											

TOTAL = 19.1 —

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Shikarpur

APPENDIX E

Page No. 1
DATE: 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
		TALUKA: Garhi Yasin					
SH-70	SH-GY-01	Ratodero Sherangur Road to Satrangur	0.00	0.00	0.80	0.80	—
SH-72	SH-GY-02	Ratodero Sherangur Road to Fatehpur	1.70	0.00	0.00	1.70	—
SH-37	SH-GY-03	Dhakan Madeji Road to Tarai	2.00	0.00	0.00	2.00	—
SH-10	SH-GY-04	Sukkur-Larkana Road to Jinnodero	0.80	0.00	0.00	0.80	—
SH-11	SH-GY-05	Sukkur-Larkana Road to Garhi Saheb Khan	0.20	0.00	0.00	0.20	—
SH-12	SH-GY-06	Ratodero Sherangur Road to Chutti Drib	0.70	0.00	0.00	0.70	—
SH-13	SH-GY-07	Garhi Yasin Ruk. Road to Amrote Sharif	0.70	0.00	0.00	0.70	—
SH-35	SH-GY-08	Sukkur Larkana Road to Tour Bund	0.50	0.00	0.00	0.50	—
	SH-GY-09	Shikarpur G. Yasin Rd. to Misiri Wanan	0.48	0.00	0.00	—	0.48
	SH-GY-10	Garhi Yasin Amrote Rd. to Habib Mungrani	0.91	0.00	0.00	—	0.91
		SUB-TOTAL:	7.99	0.00	0.80		
		TALUKA: Khanpur					
	SH-KP-01	Khanpur Shahiraba Rd. to Sher Ali Jatoi	0.36	0.00	0.00	—	0.36
	SH-KP-02	Shikarpur Kandhkot Rd. to Bharo Makan	0.46	0.00	0.00	—	0.46
	SH-KP-03	Garhi Buohai to Budu Bhan Munallah	0.47	0.00	0.00	—	0.47
	SH-KP-04	Shikarpur Jerkhail Rd. to Nawab Khan	0.27	0.00	0.00	—	0.27
		SUB-TOTAL:	1.56	0.00	0.00		
		TALUKA: Lakhi					
SH-1	SH-LK-01	Lakhi to Wazirabad	1.80	0.00	0.00	1.80	—
SH-2	SH-LK-02	Chak Bagarji to Tamchiani	0.00	0.89	0.00	0.89	—
SH-3	SH-LK-03	Chak Bagarji Road to Bhikran	0.30	0.00	0.00	0.30	—
SH-4	SH-LK-04	Chak Bagarji Road to Khani	0.50	0.00	0.00	0.50	—
SH-5	SH-LK-05	Chak Bagarji Road to Hoti	0.40	0.00	0.00	0.40	—
SH-6	SH-LK-06	Chak Bagarji Road to Gaserje	0.40	0.00	0.00	0.40	—
SH-7	SH-LK-07	Sukkur-Shikarpur Road to Boomer Goth	0.50	0.00	0.00	0.50	—
SH-8	SH-LK-08	Sukkur-Shikarpur Road to Mangrani	0.60	0.00	0.00	0.60	—
SH-9	SH-LK-09	Sukkur-Shikarpur Road to Doda Goth	0.00	0.57	0.00	0.57	—
SH-9	SH-LK-10	Sukkur-Shikarpur Road to Chand Goth	0.40	0.00	0.00	0.40	—
	SH-LK-11	Chak Town to Hambak	1.00	0.00	0.00	—	1.00
	SH-LK-12	Sukkur-Shikarpur to Jain Khan Labano Rd.	0.95	0.00	0.00	—	0.95
	SH-LK-13	Doda Goth to Noora Goth	0.00	0.00	2.07	—	2.07
	SH-LK-14	Lakhi Wazirabad Road to Grave Yard	0.36	0.00	0.00	—	0.36
	SH-LK-15	Ghulam Mahmooda Jagn to Dubo Jaai	0.33	0.00	0.00	—	0.33
		SUB-TOTAL:	7.54	1.46	2.07		
		TALUKA: Shikarpur					
SH-69	SH-SH-01	Shikarpur to Dooja Nabar	5.00	0.77	0.00	5.00	—
	SH-SH-02	Shikarpur Khanpur Rd. to Yasin Brohi	0.26	0.00	0.00	—	0.26
	SH-SH-03	Shikarpur Larkana Road to Karan	0.21	0.00	0.00	—	0.21
	SH-SH-04	Sultan Goth Mian ja Goth to A. M. Brohi	0.00	1.05	0.00	—	1.05
		SUB-TOTAL:	5.47	1.82	0.00		
		TOTAL LENGTH IN KMS:	22.56	3.28	2.87	18.76	9.18

TOTAL = 27.94

SUKKUR – STATUS JUNE 1989

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13
Road Number	Location From	Location To	CCSC Lengths Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks
[illegible]	National Hihghway	Sardar Mohd. Khan Goth	5.40	44	54	24	14	23	34	0	193	
SU-1	National Highway	Dad Loi	0.50	52	40	42	2	0	[illegible]	[illegible]	[illegible]	
SU-2	National Highway	Kot Bulla	1.00	32	32	27	0	0	17	0	108	
SU-3	Guddo Road	Vill.Kashmor	1.20	5	27	36	2	1	12	0	83	
SU-4	Bago Bhutto N.Highway	Raharki	0.00								0	UnderCons
SU-38	Kandhra Vill	Beg Maji Station	3.00	209	123	137	0	0	120	0	589	
SU-193	Mirpurmathelo-Jarwar	Rd. Hayat Pitafi	4.85	88	97	14	11	2	11	0	223	
SU-5	Arore Rd	Kal Khan Devi Temple	1.60	0	3	1	0	31	18	0	53	
SU-43	Rohri	Arore	6.80	311	331	289	29	339	225	99	1623	
SU-46	Rohri	Kandhra	11.00	242	334	205	12	5	60	24	882	
Total			35.35									

ROADS IN 4/29/93 INVENTORY

YES	NO
5.40	—
0.50	—
1.00	—
—	1.20
YES	—
3.00	—
—	4.85
1.60	—
—	6.80
—	11.00
TOTAL 11.50	23.85

35.35 Km.

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Sukkur

Page No. 1
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
		TALUKA: Ghotki					
SU-183	SU-GT-01	National Hwy. to Sardar M. Khan Goth	2.70	0.00	0.00	2.70	—
	SU-GT-02	Gothki Khanpur to Adilpur Saleh Nehar	0.80	0.00	0.00	—	0.80
	SU-GT-03	Nat'l Hwy. to Gothki Adilpur via G. Fact	2.20	0.00	0.00	—	2.20
	SU-GT-04	Beriri Khanpur Rd to Jiwangarn via PB Pt	0.00	3.73	0.00	—	3.73
	SU-GT-05	Bilhni to Ghanpur	0.00	1.50	0.00	—	1.50
		SUB-TOTAL:	5.70	5.23	0.00		
		TALUKA: Mirpur Mathelo					
	SU-MM-01	Jarwar Yaro Lund to Sanio Khan Lund	0.80	0.00	0.00	—	0.80
		SUB-TOTAL:	0.80	0.00	0.00		
		TALUKA: Pano Akil					
SU-1	SU-PA-01	National Highway to Dac Loi	0.00	0.52	0.00	0.52	—
SU-2	SU-PA-02	National Highway to Kot Bulla	1.00	0.00	0.00	1.00	—
	SU-PA-03	N. Hwy. to Sardar Haji Khan Chachhar Vil	4.00	0.00	0.00	—	4.00
	SU-PA-04	National Highway to Hingoro	0.00	0.00	0.80	—	0.80
		SUB-TOTAL:	5.00	0.52	0.80		
		TALUKA: Rohri					
SU-5	SU-RI-01	Arora Road to Devi Temple	1.60	0.00	0.00	1.60	—
SU-5B	SU-RI-02	Khandra Village - Beg Haji Station	0.00	2.20	2.00	4.20	—
		SUB-TOTAL:	1.60	2.20	2.00		
		TALUKA: Ubauro					
	SU-UB-01	Road to Khambra Village	1.80	0.00	2.00	—	3.80
	SU-UB-02	Bago Shutto to Raharki	0.00	0.00	5.00	5.00	—
		SUB-TOTAL:	1.80	0.00	7.00		
		TOTAL LENGTH IN KMS:	14.70	7.95	9.80		

TOTAL = 15.02 | 17.43

32.45 Km.

10/3

JACOBABAD

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 4/29/93 INVENTORY	
Road Number	Location From	Location To	CCSC Lengths Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks	YES	NO
JA-1	Garhi Khairo Jacobabad Rd	Vill.Kadirpur	0.70	52	28	23	0	8	12	0	123		0.70	—
JA-2	Jacobabad Shikarpur Rd	Vill.Adam Khan Panhawar	1.30	81	29	12	6	2	2	0	132		1.30	—
JA-3	Thul Hamayoon Rd	Vill Ranjhapur	0.20	114	3	4	0	0	5	0	126		0.20	—
JA-4	Shikarpur Kandhkot Rd	Dari Mir Sunder Khan Sund	0.80	29	75	72	0	1	8	0	185		—	0.80
JA-5	Buxapur Octroi Post	Dembki Rice Mill	0.50	155	95	92	0	15	47	0	404		0.50	—
JA-6	Kandhkot Kashmore Rd	Vill Rano	0.35	51	36	19	0	0	7	0	113		0.35	—
JA-7	Shikarpur Kandhkot Rd	Vill Baharabad	2.10	16	4	14	0	0	5	0	39		—	2.10
JA-8	Thul Hamayoon Rd	Vill Chandan	0.20	37	23	10	0	0	13	0	83		0.20	—
JA-9	Shikarpur Kandhkot Rd	Vill Mir Wahid Bux	0.60	58	51	54	0	0	23	0	186		—	0.60
JA-10	Thul Saifal.Rd	Vill.Mubarakpur	0.30	135	31	25	4	0	14	0	209		0.30	—
JA-11	Thul Saifal Rd	Suhilyani	2.20	30	11	18	0	0	10	0	69		2.20	—
JA-12	Thul Jacobabad Rd	Vill. Sikanderabad	1.40	13	4	11	0	0	4	0	32		1.40	—
JA-13	Vill. Badani	Gandher	1.40	60	5	16	2	1	21	0	105		1.40	—
JA-14	Vill.Jafferabad	Taluka Garhi Khairo	0.00								0	8	—	NO
JA-15	Jac Garhi Khairo Main Rd	Vill.Haji Lakhmir Khan Br	0.40	21	6	8	0	4	0	0	39		0.40	—
JA-16	Rd Chok Haji Lukhmer	Vill Pathan	0.30	39	10	10	0	5	0	0	64		0.30	—
Total			12.75										9.25	3.50

12.75 KM.

8 Could not do counting due to security reasons.

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Jacobabad

J1/1

Page No. 1
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1988 Inventory YES	NO
		TALUKA: Garhi Khairo					
	JA-GK-01	Mohammadpur UC to Larkana at Ghulam Shan	0.00	2.50	0.00	Katcha Road	2.50
	JA-GK-02	G'Khairo-G'Kot Rd. to Vil Hasul Jamali	0.00	0.00	0.56	Katcha Road being metalled by DC funds	0.56
		SUB-TOTAL:	0.00	2.50	0.56	—	
		TALUKA: Jacobabad					
JA(N)1	JA-JA-01	Ghari Khairo J'abac Rd. to Vil. Kadirpur	1.50	0.00	0.00	1.50	—
JA(N)2	JA-JA-02	J'abad Shikarpur Rd. Vil. Adam Khan Pan	0.00	0.00	0.00	YES	—
JA(N)15	JA-JA-05	J'abad Garhi Khairo Rd. to Vil. Lakhmir	0.40	0.00	0.00	0.40	—
JA(N)14	JA-JA-06	J'abad G. Khairo Rd. to Vil. Pathan Khan	0.30	0.00	0.00	0.30	—
	JA-JA-07	Fakharuddin Khoso to Vil. Seth Nisharam	0.50	0.00	0.00	—	0.50
		SUB-TOTAL:	2.70	0.00	0.00		
		TALUKA: Kandh Kot					
JA(N)11	JA-KK-01	Thul Saiful Road to Suhilyani	2.20	0.00	0.00	2.20	—
		SUB-TOTAL:	2.20	0.00	0.00		
		TALUKA: Kashmore					
JA(N)13	JA-KM-02	Village Badani to Bhander	0.00	1.45	0.00	1.45	—
JA(N)6	JA-KM-03	Kandhkot Kashmore Road to Vil. Rano	0.35	0.00	0.00	0.35	—
JA(N)5	JA-TL-01	Buxapur Octroi Post to Deroki Rice Mill	1.00	0.00	0.00	1.00	—
		SUB-TOTAL:	1.35	1.45	0.00		
		TALUKA: Thul					
JA(N)3	JA-TL-01	Thul Hamyoon Rd. to Village Ranjhapur	0.10	0.00	0.00	0.10	—
JA(N)9	JA-TL-02	Thul Humayoon Rd. to Vil. Chandan	0.20	0.00	0.00	0.20	—
JA(N)10	JA-TL-03	Thul Saiful Road to Vil. Mubarakpur	0.30	0.00	0.00	0.30	—
JA(N)12	JA-TL-04	Thal J'abad Road to Vil. Sikanderabad	1.40	0.00	0.00	1.40	—
		SUB-TOTAL:	2.00	0.00	0.00		
		TOTAL LENGTH IN KMS:	8.25	3.95	0.56	9.20	3.56

12.76 Km.

NAWABSHAH AND NAUSHERO FEROZE — STATUS JUNE 1989

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 9/29/93 INVENTORY	
Road Number	Location From		CCSC Lengths Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks	YES	NO
NA-1	Landhi	Kazi Ahmad Nawabshah Rd	2.30	39	29	12	0	0	8	0	88		2.30	—
NA-2BR	Nawabshah	Lal Mohammad Mari	1.15	6	4	3	0	0	0	0	13		1.15	—
NA-2	Bucheri Vill	Rasool Bux Kalhoro	2.60	23	12	10	0	0	6	0	51		2.60	—
NA-4M	Daur Bandhi Rd	Ghulam Rasul Jamali	0.65	3	9	2	0	0	13	0	27		0.65	—
NA-5M	NWS Buchero Rd	Kanghari Farm	1.40	25	13	1	0	0	0	0	39		1.40	—
NA-6M	Jam Sohib	Dorgah Jamsahi	0.90	53	145	91	57	6	36	0	388		0.90	—
NA-7M	Link Road	Allah Dita Garchani	0.50	6	57	48	0	0	3	0	114		0.50	—
NA-8M	Dour Jamal Shah Rd	Asgharabad	0.70	45	24	7	2	0	2	0	80		0.70	—
NA-9M	NWS-Kazi Ahmed Rd	Hassan Ali Bazdar	1.90	14	11	6	0	1	0	0	32		1.90	—
NA-10M	Daur-Bandhi Rd	Abdul Haseed Dahri	0.50	0	10	7	0	0	2	0	19		0.50	—
NA-11M	Bandhi Railway Station	Bandhi Moro Rd.	1.00	57	223	81	6	7	18	0	392		—	1.00
NA-3	NWS-Daur Rd	Vill Kot Latif	0.20	94	7	4	0	4	7	0	116		—	0.20
NA-4	Bucheri Rd	Bhoral	2.30	19	16	55	0	3	0	0	93		2.30	—
NA-14M	Dalda Mills Rd	Din Mohd Zardari	1.30	16	11	4	0	0	8	0	39		—	1.30
NA-5	Sanghar Rd	Lukman Kerio	0.20	25	16	6	0	0	6	0	53		—	0.20
NA-6	NWS-Sakrand Rd	Vill.Imam Bux Mari	0.10	8	8	7	0	0	9	0	32		—	0.10
NA-17M	NWS- Daur Rd	Vill. Karam Lashari	0.60	9	16	3	2	0	1	0	31		—	0.60
SA-23K	National Highway	Nawab Pirano	1.10	3	25	6	0	10	0	0	44		—	1.10
NA-7	Link Road	Sher Mohd Chandio	0.30	5	21	66	0	0	16	0	108		—	0.30
NA-8	Sarkand-Mehrabpur	Jamal Kario	0.30	23	20	5	0	0	0	0	48		—	0.30
NA-9	Sakrand -Mahrabpur Rd	Karam Jamali	0.40	17	10	6	0	0	1	0	34		—	0.40
NA-10	Natinal Highway	Khur	3.80	37	39	34	0	0	13	0	123		—	3.80
NA-11	Dooro Behan	Kandero Depar	3.50	18	69	32	4	19	21	0	163		3.50	~~3.50~~ NF
NA-12	Phull Sadhuja Rd	Qalandar Bux Mubejo	1.40	6	14	10	0	0	9	0	39		1.40	~~1.40~~ NF
NA-13	New Jatoi Mithiani	Shera Via Old Jatio	6.30	41	71	19	4	4	3	0	142		6.30	~~6.30~~ NF
Total			35.40										SUB = 26.1	9.30

NAWABSHAH AND NAUSHERO FEROZE – STATUS JUNE 1989

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13
Road Number	Location From - To		CCSC Lengths Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks
NA-14	National Highway	Dheran	0.40	2	14	11	0	4	2	0	33	
NA-15	National Highway 60th Mil	Sher Khan Brohi	1.00	19	8	0	0	0	1	0	28	
NA-16	National Highway	Vill Nibahoo Bhora	1.30	5	18	12	0	0	7	0	42	
K-13K	Merabpur	Kotri Kabir	7.10	108	92	76	0	2	18	0	296	
NA-17	Mehrabpur-Halani Rd	Mukhtiarabad	1.20	26	43	18	0	0	4	0	91	
NA-18	Khanwahan Rd	Kauro Khan Khushik	2.70	2	63	20	4	0	15	0	104	
NA-19	Halani	Trimore	3.00	90	171	24	0	5	30	0	320	
NA-20	Kazi Ahmad Rd	Buchari Via KK Oil Mill	14.40	68	80	83	0	58	15	0	304	
SA-11K	NWS -Sakrand Rd	Allah Bux Magsi	1.30	12	22	18	0	0	0	0	52	
NA-21	Bucheri	Syed Abdullah Shah	0.90	24	16	13	0	0	2	0	55	
NA-22	NWS.Kazi AHmed Rd	Syed Khair Shah	0.80	46	45	52	0	0	10	0	153	
NA-23	Kandiaro	Kamal Mehassan via Kamald	8.80	289	511	241	34	23	38	0	1136	
NA-24	Kotri Kabir	Khanwhan	8.30	79	213	65	0	2	38	0	397	
NA-25	New Jotoi Chowdagi-Deparj	Deparja	5.40	13	73	9	4	5	12	0	116	
NA-26	68th Mile Nawabshah Rd	Qabool Shah	2.30	41	41	6	0	8	9	0	105	
Total			58.90									
Sub Total			94.30									

ROADS IN 4/29/93 INVENTORY

YES	NO	
0.40	~~0.40~~	NF
1.00	—	
1.30	—	
—	7.10	
1.20	~~1.20~~	NF
2.70	~~2.70~~	NF
3.00	~~3.00~~	NF
14.40	—	
—	1.30	
0.90	—	
—	0.80	
8.80	~~8.80~~	NF
8.30	~~8.30~~	NF
5.40	~~5.40~~	NF
—	2.30	
SUB = 47.9	11.5	
TOTAL = 73.50	20.80	

94.30 Km

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Nawabshah

APPENDIX E

DATE: 04/29/93

NOTE: NAWABSHAH AND NAUSHERO FEROZE ONE DISTRICT IN JUNE 1989.

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
		TALUKA: Nawabshah					
NA-1	NA-NA-01	N Shah-Sakrand Rd. to Landhi Bus Stop	3.40	0.00	0.00	3.40	—
NA-2BR	NA-NA-02	Nawabshah to Lal Mono. Mari Road	1.25	0.00	0.00	1.25	—
NA-2	NA-NA-03	Bucheri Village to Rasul Bux Kalhoro	2.00	0.00	0.70	2.00	—
NA-4M	NA-NA-04	Daur Banchi Road to Ghulam Rasul Jamali	0.00	0.00	0.70	0.70	—
NA-5M	NA-NA-05	Nawabshah Bucheri Road to Kajri Farm	1.48	0.00	0.00	1.48	—
NA-6M	NA-NA-06	Jam Sahib to Dargah Jaashani	1.14	0.00	0.00	1.14	—
NA-7M	NA-NA-07	Link Road to Allah Ditta Soronani	0.50	0.00	0.00	0.50	—
NA-8M	NA-NA-08	Daur Jamal Shah Road Asgharabad	0.70	0.00	0.00	0.70	—
NA-9M	NA-NA-09	Nawabshah Kazi Ahmed to Hasan Ali Bazdar	1.90	0.00	0.00	1.90	—
NA-10M	NA-NA-10	Daur Banchi Rd. to Abdul Hamid Danri	0.50	0.00	0.00	0.50	—
NA-4	NA-NA-11	Bucheri Road to Bhoral Shah Village	0.00	0.00	2.30	2.30	—
NA-13	NA-NA-13	National H'way 60th Mile to Sher K. Sron	1.00	0.00	9.00	10.00	~~1.00~~
NA-20	NA-NA-14	Kazi Ahmed to Bucheri via Cake & Oil Mil	3.00	2.00	9.40	14.40	~~14.40~~
NA-21	NA-NA-15	Bucheri Rly Station to Syed Abdullah Sha	0.00	0.00	1.10	1.10	~~1.10~~
		SUB-TOTAL:	16.87	2.00	14.20		
		TALUKA: Sakrand					
NA-1a	NA-SA-01	National Highway to Nibanda Shora	0.00	0.00	3.00	3.00	~~3.00~~
	NA-SA-02	Sakrand-Mehrabpur to Bajhi Khan Chandio	1.00	0.00	0.00	—	1.00
	NA-SA-03	Sakrand-Sarmari to Pundoh Soon village	0.25	0.00	0.00	—	0.25
	NA-SA-04	Nawabshah-sakrand Rd. to Saeedi Sher vil	0.00	0.00	4.03	—	4.03
	NA-SA-05	Mir-Hassan Ali Jamali to Sanic M. Jamali	1.23	0.00	0.00	—	1.23
	NA-SA-06	N.H. Mashak Bus Stop to Chattan Shah	0.00	0.00	8.04	—	8.04
	NA-SA-07	N. Highway to Dil Baba Rano (Bus Stop)	1.00	0.00	0.00	—	1.00
	NA-SA-08	Sakrand-Sarmari to Shahabad village	0.28	0.00	0.00	—	0.28
	NA-SA-09	Highway to Village Khan Hond Ring	1.64	0.00	0.00	—	1.64
	NA-SA-10	Sakrand Saranari Road to Vil. Rashidabad	0.70	0.00	0.00	—	0.70
	NA-SA-11	G.H School Majeed Kerio to Panjmo Kerio	0.53	0.00	0.00	—	0.53
	NA-SA-12	Road Leading to Village Dhabbar Khoso	0.70	0.00	0.00	—	0.70
	NA-SA-13	Mehrabpur Suno to Murad Ali Chandio Vill	1.10	0.00	0.00	—	1.10
	NA-SA-14	Sakrand-Mehrabpur to Vil. Khan M. Chohan	1.00	0.00	0.00	—	1.00
	NA-SA-15	Darveesh Mari Rd. to Village Kachai	1.42	0.00	0.00	—	1.42
	NA-SA-16	N.H Mile 199 to Vil. Amin Umar Vil. Daca	3.72	0.00	0.00	—	3.72
	NA-SA-17	Fareed Kerio Park Rd. to G.H.S. Sakrand	4.00	0.00	0.00	—	4.00
	NA-SA-18	Sakrand Mehrabpur Rd. to Village Mue	0.00	4.00	6.40	—	10.40
	NA-SA-19	Sakrand Sarmari Rd. to Mehar Ali Jamali	1.25	0.00	0.00	—	1.25
		SUB-TOTAL:	25.82	4.00	15.47		
		TOTAL LENGTH IN KMS:	42.69	6.00	29.67		

TOTAL = 35.39 42.29

77.66 KM.

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Naushero Feroze

APPENDIX E

Page No. 1
DATE: 04/29/93

NOTE: NAWABSHAH AND NAUSHERO FEROZE ONE DISTRICT IN JUNE 1989.

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
		TALUKA: Bhria					
	NF-BH-01	National Highway to Gul Mond Dullar	0.64	0.00	0.00	—	0.64
	NF-BH-02	Mehrabpur Pir Wassan to Vil Yousuf Mojai	1.50	0.00	0.00	—	1.50
		SUB-TOTAL:	2.14	0.00	0.00		
		TALUKA: Kandiaro					
NF-17	NF-KN-01	Mehrabpur-Halani Road to Mukhtiarabad	1.20	0.00	0.00	1.20	—
NF-18	NF-KN-02	Khanwanan Road to Mauro Khan Khushik	2.70	0.00	0.00	2.70	—
NF-19	NF-KN-03	Halani Road to Trimore	0.00	0.00	3.00	3.00	—
NF-23	NF-KN-04	Kandiaro to Kamal Menassar via Kamaldero	8.80	0.00	0.00	8.80	—
NF-24	NF-KN-05	Kotri Kabir to Khanwnan Road	0.00	0.00	8.30	8.30	—
	NF-KN-06	Kandiaro Regulator to Shaheedanji Mori	4.00	0.00	0.00	—	4.00
	NF-KN-07	Kabiri Khan Wanan to Vill. Hayat Sahito	1.00	0.00	0.00	—	1.00
	NF-KN-08	Tharushah Mithani to Mohd. Jurial Baat	0.50	0.00	0.00	—	0.50
	NF-KN-09	Kandiaro Kamal Dero to Vil. Charhani	0.00	0.00	0.62	—	0.62
	NF-KN-10	Mehrabpur Halani to Village Arbab Samtio	0.73	0.00	0.00	—	0.73
	NF-KN-11	National Highway to Pir Waxtio	0.00	0.00	2.51	—	2.51
	NF-KN-12	Mohabat Dero Jatoi to Shonar	4.00	0.00	0.00	—	4.00
	NF-KN-13	Road to Mola Dino Nangore	1.61	0.00	0.00	—	1.61
	NF-KN-14	Mehrabpur to Kotri Kabir Road	0.00	0.00	7.10	—	9.10
	NF-KN-15	Kotri Kabir Khan Wahan to Bharo Mullan	2.00	0.00	0.00	—	2.00
		SUB-TOTAL:	26.54	0.00	21.53		
		TALUKA: Moro					
P-11	NF-MO-01	Dooro Benan to Kandero Depar	3.50	0.00	0.00	3.50	—
P-13	NF-MO-02	New Jatoi Mithiani to Shera (Old Jatoi)	0.00	5.00	0.00	5.00	—
P-14	NF-MO-03	National Highway to Dheran	0.40	0.00	0.00	0.40	—
P-25	NF-MO-04	New Jatoi Chowaqi to Deparja	0.00	0.00	5.40	5.40	—
		SUB-TOTAL:	3.90	5.00	5.40		
		TALUKA: Naushero Feroze					
P-12	NF-NF-01	Phul Sachuja Road to Qalandar Bux Mubeja	1.40	0.00	0.00	1.40	—
	NF-NF-02	Maraehi Mori to Village Chutto Wagan	2.00	0.00	0.00	—	2.00
	NF-NF-03	Padidun Station Road to BHU at Padidun	1.00	0.00	0.00	—	1.00
	NF-NF-04	Faiz Mohd. Ara Machine to City	1.62	0.00	0.00	—	1.62
	NF-NF-05	National Highway to Vil. Gul Mohd Mooro	0.50	0.00	0.00	—	0.50
	NF-NF-06	Town Committee to Village Lal Bux Lund	0.30	0.00	0.00	—	0.30
	NF-NF-07	National Highway to Mir Mumtaz Bunglow	0.27	0.00	0.00	—	0.27
		SUB-TOTAL:	7.09	0.00	0.00		
		TOTAL LENGTH IN KMS:	39.67	5.00	26.93		

TOTAL 39.70 | 31.80

71.50 Kms.

HYDERABAD - STATUS JUNE 1989

ATTACHMENT NO: 2

1 Road Number	2 Location From	4 Location To	CCSC Length Km	5 Animal Drawn Cart	6 Motor Cycle	7 Motor Car/ Jeep	8 Bus Minibus	9 Trucks	10 Tractor Trailor	11 Others	12 Total	13 Remarks	ROADS IN 4/29/93 INVENTORY YES	NO
HY-HL-1	[illegible] Rd.	Sher Mohd Thora	1.60	91	22	87	0	0	8	0	208		1.60	—
HY-H[illegible]	[illegible]pir Road	Zairpir Burrira	0.80	62	20	31	26	15	15	0	171		0.80	—
[illegible]	Zairpir Village	Dargah Fath M.Shah	0.40								0	8	0.40	—
-HL-4	Mutal Mori	Mundhoo Kaka	0.20								0	8	0.20	—
HY-HL-6	Zairpir Mori	ZairPir Village	0.80	64	67	75	0	9	36	0	251		0.80	—
HY-HI-7	Hala,SHD Rd Chowdagi	Karam Khan Nazamani	3.50	98	117	53	6	11	41	41	367		3.50	—
HY-HL-8	Saeedabad Bakhar Jamali	Akro Rahu	3.20	82	85	13	0	10	11	0	201		3.20	—
HY-HL-9	Masu Baugari	Jandel Kot Village	4.40	16	22	18	14	2	11	0	83		4.40	—
HY-HL-11	N.Highway Panjooro	Seeranr /Choon	2.40	146	64	56	0	7	57	0	330		2.40	—
HY-HL-12	Jandal Kot	Shaikh Teer Village	1.60	56	21	40	0	13	28	0	158		1.60	—
HY-HL-13	Pucca Road	Ajan Shah Vill	0.60	22	34	32	0	6	10	0	104		0.60	—
HY-HL-14	Underolal	Underolal Dargah	1.00	36	31	42	0	12	19	0	140		1.00	—
HY-HL-15	Wahab Shah Station	Tahir Hingoro Vill.	3.00	67	53	55	44	12	43	0	274		3.00	—
HY-HL-16	Tando Jam	Datoo Lorar [illegible]ll.	2.20	41	53	43	0	22	23	0	182		2.20	—
HY-HL-18	Bakhar-Jamali	Nabi Bux Jamali	1.70	58	83	79	0	0	37	0	257		1.70	—
HY-HL-19	Nasarpur	Palijani	1.20	46	65	133	5	48	40	0	337		1.20	—
HY-HL-20	Khando Rd N.Highway	Thoro Litryon	1.60	111	34	32	0	0	41	0	218		1.60	—
HY-HL-21	K.K.Nizamani	Ghul.Mohd Laghari	0.50	83	59	39	5	0	6	0	192		0.50	—
HY-HL-22	National Highway	Noohathiani	1.80	79	32	37	0	6	26	0	180		1.80	—
HY-HL-24	National Highway	Ilyas Abrejo	1.40	59	53	32	7	12	18	0	181		1.40	—
HY-HL-25	N.Highway Panjooro	Hoot Sayal	2.40	57	28	26	0	1	13	0	125		2.40	—
HY-HL-26	Pull Kaka	Siranchoon	2.80	40	67	38	0	0	45	0	190		2.80	—
HY-HL-27	Nasarpur-Rahari	Ali Mohd Detho	3.20	8	22	15	0	17	24	0	86		3.20	—
HY-HL-30	Tayab Dahri	Karo Dahri LinkRd	0.00								0	UnderCons	—	No
HY-HY-7	Hyd-T.Fazal Rd	Shaikh Rehan	3.60	80	47	26	0	10	20	0	183		3.60	—
HY-HY-8	Tando Mohamad Khan Road	Morai Sharif	4.40	51	35	21	0	13	21	0	141		4.40	—
HY-HY-9	Railway Station.	Taj Md.Junejo	2.50	105	63	38	0	2	45	0	253		2.50	—
HY-HY-10	Khesano Mori	Vill-Abri	2.15	62	93	73	0	46	35	0	309		2.15	—
HY-HY-11	National Highway	Hatri Village	0.50	67	119	135	0	4	48	0	373		0.50	—
HY-HY-12	T.Qaisar Bazar	Tando Jam Rd	0.70	23	138	211	0	20	41	0	433		0.70	—
HY-HY-[illegible]	Nosu Bhurgri	Nosoo Khatian	2.80	57	69	48	0	18	63	0	255		2.80	—
HY-HY-14	Hyd Hala N.Highway	Darya Baig Moghal	2.50	51	78	248	0	199	89	0	665		2.50	—
HY-HY-15	Husri	Lined Channel Arab Shoro	2.50	87	54	74	0	14	5	0	234		2.50	—
HY-HY-16	Husri Lined Channel	Rd Musa Shoro	2.70	37	36	30	0	0	7	0	110		2.70	—
HY-HY-17	Hyd.N.Highway M/1368	Village Karir Khan	0.50	18	4	12	0	0	7	0	41		0.50	—
HY-HY-19	Seri.T.Fazal Rd L.Channel	Loung.Machhi	2.20	35	36	100	0	46	19	0	236		2.20	—
HY-HY-20	Hyd.T.M.K.Rd	BachalShoro/Ghulam Md.Shoro	0.70	39	77	95	7	87	6	0	311		0.70	—
HY-HY-21	Lined Channel	Village Noor Khan Chang	2.10	445	327	108	0	18	71	0	969		2.10	—
			72.15										SUM = 72.15	

HYDERABAD – STATUS JUNE 1989

ATTACHMENT NO: 2

H2/3

1 Road Number	2 Location From	3 Location To	4 CCSC Length Km	5 Animal Drawn Cart	6 Motor Cycle	7 Motor Car/ Jeep	8 Bus Minibus	9 Trucks	10 Tractor Trailor	11 Others	12 Total	13 Remarks	ROADS IN 4/29/83 INVENTORY YES	NO
HY-HY-22	Moosc Khatian	Vil. Mureed Supio	1.00	32	78	76	0	51	46	0	283		1.0	—
HY-HY-24	Hyd-Shaik Rehan	T.Hyder Prim School	0.00								0	Brick	—	No
HY-HY-27	Seri-Tando-Fazal Rd	Vill Darhoon Panhwar	2.30	81	43	50	22	24	18	0	238		2.30	—
HY-HY-34	Gaja Mori	Abdullah Panhwar	0.90	9	35	44	6	10	11	0	115		0.90	—
HY-HY-42	Tando.Qaisar	Rawal Pahor	0.20								0	?	0.20	—
HY-HY-43	Hyd.T.Jam Pucca Road	Hussein Khan Thora	11.80	72	92	110	0	26	55	0	355		11.80	—
HY-TA-1	Kamoro Railway Station	Kamoro Sharif	5.00	119	87	66	0	16	23	0	311		5.00	—
HY-TA-3	Hyd Mirpur Khas Road	Noor Md Shah	0.30	17	21	27	0	5	8	0	78		0.30	—
HY-TA-4	Jamrao Mori	Mahr Floor Mill via Chandi Kan	3.00	22	28	34	9	5	31	0	129		3.00	—
HY-TA-5	Sultanabad Rly Stop	Hassan Wadi	3.85	158	123	171	0	66	87	0	605		3.85	—
HY-TA-6	Bukera Rd	Dargah Bukira Sharif	0.40	7	2	6	0	0	2	0	17		0.40	—
HY-TA-7	Lalpir Chamber	Nazir Fare	5.20	280	110	105	5	54	51	0	605		5.20	—
HY-TA-10	Rawat Lighari	Mevo Kurkuli	3.80	117	74	76	7	4	4	0	282		3.80	—
HY-TA-12	Khosano Mori	Vill.Masarpur/Tajpur	8.59	145	98	76	0	19	76	0	414		8.59	—
HY-TA-13	Sultanabad Road	Sultanabad-Medical Dispensary	2.60	419	156	249	0	22	47	0	893		2.60	—
HY-TA-15	Jhando Mori	New Mirabad	2.55	43	54	68	26	55	22	0	268		2.55	—
HY-TA-17	Miskeen Shah	Moulvi A.Latif	3.70	13	0	4	0	16	4	0	37		3.70	—
HY-TA-22	Tajpur	Hyd-Mps Rd	3.65	110	36	135	0	21	2	0	304		3.65	—
HY-TM-2	Jinhan Soomro Road	A.Rahim Katir	0.70	47	35	36	4	8	41	0	171		0.70	—
HY-TM-3	T.M.Khan Mullan Katiar Rd	Saeedpur Road	0.50	15	35	17	0	0	1	0	68		0.50	—
HY-TM-4	Hyd.T.M.Khan Rd	Palio Chumrani Vill	0.25								0	?	0.25	—
HY-TM-5	T.M.Khan Matli Road	Allahda Goho Village	0.30								0	?	0.30	—
HY-TM-6	Sh.Bhirko	Baqar Mizaaani	0.20								0	?	0.20	—
HY-TM-20	Multan Katian Rd	Manthar Samoo vill.	1.60	30	29	11	0	5	7	0	82		1.60	—
HY-TM-21	Tando Saindad	Mohsin Shah	0.50	70	47	0	0	3	5	0	125		0.50	—
HY-TM-22	Khathar Tikhar Rd	Muqboroa Sharif Vill	0.20								0	?	0.20	—
HY-TM-23	Link Rd	Ghulam Mustafa Shah	0.20								0	?	0.20	—
HY-TM-24	Vill. Moya	School at Moya	0.20								0	?	0.20	—
HY-TM-25	9thMile-DesUrioSathioBilal	Haji uris Sathio	0.60	59	27	14	0	0	8	0	108		0.60	—
HY-TM-26	Hyd.Mati.Badin Rd.Vill	Vill Wahidano Jagsi	2.00	70	62	12	2	17	18	0	181		2.00	—
HY-TM-27	Hyd.Badin Rd	Mir Md.Marar Village	6.00	92	123	94	21	85	52	0	467		6.00	—
HY-TM-29	Saedpur-Multan Khatir Khan	Husain Khan Lighari	1.30	74	63	39	0	7	30	0	213		—	1.30
			73.39										Sub= 72.09	

E-21

APPENDIX E

H3/3

HYDERABAD — STATUS JUNE 1993

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13
Road Number	Location From	Location To	CCSC Length Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks
HY-TM-30	T.Fazal Linned Channel	L.Channel Rd137	3.10	101	83	99	79	89	68	0	519	
HY-TM-32	Mulakatiar	Wasi Malook Shah	0.10								0	*
HY-TM-33	Tando Fazal Rd	Hydayatullah Shah	0.10								0	*
HY-1	Mulakitiar Rd	Vill.Barchani	1.50	31	60	22	0	22	36	0	171	
HY-2	Sono Almani	Vill.Jamali	1.80	62	77	85	75	79	68	0	446	
HY-3	Shaikh Birkio	Hussain Khan Thora vill	2.35	36	27	36	0	7	4	0	110	
HY-4	MosooBhurgri-Musa Khatian	Qasim Sand Vill	0.50	7	12	7	0	0	0	0	26	
HY-5	Mosoo Bhurgri Rd	Mir Mohd Kario	1.00	25	24	38	0	5	19	0	111	
HY-6	Bhanoth	Miranpur	0.90	45	34	42	0	3	19	0	143	
HY-7	Zair Pir	Dargah Ahmed Sadai	0.60	21	0	23	0	3	6	0	53	
HY-8	Moosa Khatian	Suleman Khatian Vill	0.60	36	33	36	0	0	31	0	136	
HY-9	Usman Shah Ji Huri	Fazlani	2.50	75	57	42	0	18	13	0	205	
HY-10	Tando Mohd Khan	Pat Bhari	8.50	121	102	115	87	101	78	0	604	
HY-11	Janhan Soomro	Illyas Khodio Vill	1.60	73	40	45	0	21	26	0	205	
HY-13	Mullan Katiar Road	Khokhar Vill.Rd	3.00	111	96	110	80	55	77	0	529	
HY-14	Hyd-Hala National Highway	Fazal Bhogal	1.70	52	57	90	0	4	47	0	250	
HY-15	Hyd-Hala National Highway	Musoo Bhurgari	4.10	63	116	137	118	47	83	0	564	
Total			33.95									
Sub total			179.49								TOTAL =	

Roads IN 4/29/93 INVENTORY

YES	NO
3.10	—
0.10	—
0.10	—
—	1.50
1.80	
2.35	—
0.50	—
1.00	—
0.90	
0.60	—
0.60	—
—	2.50
8.50	—
1.60	—
3.00	
1.70	—
4.10	—
174.19	5.30

179.49 Km.

29.5

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Hyderabad

APPENDIX E

Page No. 1
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
		TALUKA: Hala					
HY-HL-2	HY-HA-01	Zair Pir Road - Village Zair Pir Surrira	0.80	0.00	0.00	0.80	—
HY-HL-3	HY-HA-02	Zair Pir Village - Dargah Fateh M. Shah	0.40	0.00	0.00	0.90	—
HY-HL-4	HY-HA-03	Mutal Mori - Munoo Kaka	0.20	0.00	0.00	0.20	—
HY-HL-5	HY-HA-04	Zair Pir Mori - Zair Pir Village	0.80	0.00	0.00	0.80	—
HY-HL-7	HY-HA-05	Hala-SHD Rd Chowdagi-Karam Khan Nazamani	3.55	0.00	0.00	3.55	—
HY-HL-8	HY-HA-06	Saeedabad-Bakhar Jamali Road - Agro Rahu	3.20	0.00	0.00	3.20	—
HY-HL-11	HY-HA-07	National Highway Panjaoro - Seeran Choon	2.80	0.00	0.00	2.80	—
HY-HL-12	HY-HA-08	Janchal Kot - Shiekh Tees Village	0.00	0.00	1.60	1.60	—
HY-HL-13	HY-HA-09	Pucca Road - Ajan Shah Village	0.60	0.00	0.00	0.60	—
HY-HL-18	HY-HA-10	Bakhar Jamali - Village Nabi Bux Jamali	1.70	0.00	0.00	1.70	—
HY-HL-20	HY-HA-11	Khand Road National H'Way-Thoro Litryon	1.60	0.00	0.00	1.60	—
HY-HL-21	HY-HA-12	Karam Khan Nizamani - Gul Mohd Lashari	0.50	0.00	0.00	0.50	—
HY-HL-22	HY-HA-13	National Highway - Noonathiani Village	0.00	1.00	0.00	1.00	—
HY-HL-24	HY-HA-14	National Highway - Ilyas Abreja	1.40	0.00	0.00	1.40	—
HY-HL-25	HY-HA-15	National Highway - Panjaoro - Hoot Sayal	2.40	0.00	0.00	2.40	—
HY-HL-26	HY-HA-16	Phul Kaka - Seerancnon	2.80	0.00	0.00	2.80	—
HY-6N	HY-HA-17	Bhanoth - Miranpur	0.90	0.00	0.00	0.90	—
HY-7N	HY-HA-18	Zair Pir - Dargah Ahmad Sagai	0.60	0.00	0.00	0.60	—
	HY-HA-19	Road to Village Datoo Lorar	1.60	0.00	0.00	—	1.60
	HY-HA-20	Hala New - Shafi Mohammad Danri	1.90	0.00	0.00	—	1.90
	HY-HA-21	Zair Pir Bridge - Village Zair Pir	0.50	0.00	0.00	—	0.50
	HY-HA-22	Arzi makra - Ghulam Shah Maree	1.60	0.00	0.00	—	1.60
	HY-HA-23	Road to Village Pota Sahoti	0.30	0.00	0.00	—	0.30
	HY-HA-24	Village Sekhat - Meyoon Machi	2.40	0.00	0.00	—	2.40
	HY-HA-25	Karam Khan Nizamani - Lunco Bungalow	1.90	0.00	0.00	—	1.90
	HY-HA-26	Shaledino Kaka - Shahdino Shah Lakiari	0.30	0.00	0.00	—	0.30
	HY-HA-27	Road to Khando Salaro	0.30	0.00	0.00	—	0.30
	HY-HA-28	Khando Chowk T.Hase Rd-Vil Salamat Kirio	0.80	0.00	0.00	—	0.80
	HY-HA-29	Stadium Hala Cty - Sukhio Mirjat	3.90	0.00	0.00	—	3.90
	HY-HA-30	Road to Sughio Village Jadim	0.30	0.00	0.00	—	0.30
	HY-HA-31	Road to Village Sangrasi	0.65	0.00	0.00	—	0.65
	HY-HA-32	Bhakkar Jamali Shamair Rahu-Kot Bhanojo	2.60	0.00	0.00	—	2.60
	HY-HA-33	Shamair Rahu - Nazir Rahu	1.60	0.00	0.00	—	1.60
	HY-HA-34	Road to Village Mohammad Ali Hoan	0.15	0.00	0.00	—	0.15
	HY-HA-35	Darya Khan Talpur - Ghulam Hussain Otaq	0.50	0.00	0.00	—	0.50
	HY-HA-36	Road to Jamal Nizamani	0.65	0.00	0.00	—	0.65
	HY-HA-37	Bhanoth - Saeed Khan Legnari	0.65	0.00	0.00	—	0.65
	HY-HA-38	Road to Village Bhakar Jamali	0.30	0.00	0.00	—	0.30
	HY-HA-39	Road to Village Darya Khan Talpur	0.30	0.00	0.00	—	0.30
	HY-HA-40	Road to Village Saeed Khan Legnari	0.30	0.00	0.00	—	0.30
					SUB =	26.85	23.50

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
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APPENDIX E

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OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
	HY-HA-41	T. Adam Road - Village Mahmood Thaeem	1.13	0.00	0.00	—	1.13
	HY-HA-42	Shit Shah - Wasi Murad Shah	0.50	0.00	0.00	—	0.50
	HY-HA-43	Sukhio Mirjat - Kunjhani	0.30	0.00	0.00	—	0.30
	HY-HA-44	Road to Salamat Kerio	0.25	0.00	0.00	—	0.25
	HY-HA-45	Zair Pir - Wadal Danri	0.50	0.00	0.00	—	0.50
	HY-HA-46	N.H'way Hala Rd-Sukio Mirjat-Masan Road	1.70	0.00	0.00	—	1.70
	HY-HA-47	Road to Dodo Kunjhani	0.80	0.00	0.00	—	0.80
	HY-HA-48	Road to Abdul Wahid Burira	0.65	0.00	0.00	—	0.65
	HY-HA-49	National Highway - Mullan Farash	0.50	0.00	0.00	—	0.50
	HY-HA-50	Shanoth - Mirangur	0.50	0.00	0.00	—	0.50
	HY-HA-51	Road to Kamal Leghari	0.50	0.00	0.00	—	0.50
	HY-HA-52	Hot Sial - Main Lakho	0.30	0.00	0.00	—	0.30
	HY-HA-53	Road at Culverts in Vil Khair Mohd Kaka	1.00	0.00	0.00	—	1.00
	HY-HA-54	Road to Village Darya Khan Talpur	0.50	0.00	0.00	—	0.50
	HY-HA-55	National Highway - Saleh Pangrio	0.80	0.00	0.00	—	0.80
	HY-HA-56	Hala Old - Khando Union Council Hala	0.40	0.00	0.00	—	0.40
	HY-HA-57	N. H'way-Vikio Khaskheli U.C. Noorthani	0.81	0.00	0.00	—	0.80
	HY-HA-58	Road to Village Pahuja	0.65	0.00	0.00	—	0.65
	HY-HA-59	T.Adam Rd.-Vil Ghulam Haider Malookani	0.65	0.00	0.00	—	0.65
	HY-HA-60	Hala Shandadpur Rd.-Vil Shah Mohd Dhari	0.15	0.00	0.00	—	0.15
	HY-HA-61	Khando Hala Road - Khando Shahar	0.30	0.00	0.00	—	0.30
	HY-HA-62	Sakhar Jamali Rd.-Vil Ghulam Manerajo	1.60	0.00	0.00	—	1.60
	HY-HA-63	National Highway Decar-Pavab Danri	2.00	0.00	0.00	—	2.00
	HY-HA-64	Karam Khan Nizamani-Lunda Bungalow	2.20	0.00	0.00	—	2.20
	HY-HA-65	K. K Nizamani-Lunda Bungalow-Rano Sughio	1.70	0.00	0.00	—	1.70
	HY-HA-66	Sandhan Road	1.10	0.00	0.00	—	1.10
	HY-HA-67	Road to Jamal Nizamani	1.60	0.00	0.00	—	1.60
	HY-HA-68	Road to Malook Danri	1.00	0.00	0.00	—	1.00
		SUB-TOTAL:	71.83	1.00	1.60		
		TALUKA: Hyderabad					
	HY-HY-01	Seri to Vil. Mohammad Ali Nizamani Road	1.60	0.00	0.00	—	1.60
	HY-HY-02	Rd to Vil Sh.Shirvio Ghanver Khan Talpur	0.65	0.00	0.00	—	0.65
	HY-HY-03	Road to Village Rawal Panore	0.15	0.00	0.00	—	0.15
	HY-HY-04	Hyd-Tando Mono Khan Road-Village Chalgri	0.15	0.00	0.00	—	0.15
	HY-HY-05	Link Road to Jalal Khan Vigio	0.60	0.00	0.00	—	0.60
	HY-HY-06	Road to Haenim Colony	1.00	0.00	0.00	—	1.00
Y-HY-7	HY-HY-07	Hyd.-Tando Fazal Road - Shaikh Rehan	3.60	0.00	0.00	3.60	—
Y-HY-8	HY-HY-08	Tando Mohammad Khan Road - Koral Sharif	3.00	1.35	0.00	1.35	—
Y-HY-9	HY-HY-09	R'way Station Khatian-Village Taj Mono.	2.40	0.00	0.00	2.40	—
Y-HY-10	HY-HY-10	Kheseno Mori - Village Mori	2.20	0.00	0.00	2.20	—
Y-HY-11	HY-HY-11	National Highway - Village Mori	0.50	0.00	0.00	0.50	—
Y-HY-12	HY-HY-12	Saiar Nal Bazar - Tando Jam Road	0.70	0.00	0.00	0.70	—
					Sub-	13.75	28.23

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OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
HY-HY-13	HY-HY-13	Moosa Bhurgri - Moosa Khatian	2.80	0.00	0.00	2.80	—
HY-HY-14	HY-HY-14	Hyd-Hala National H'way-Barya Saiq Togh	0.00	2.50	0.00	2.50	—
HY-HY-15	HY-HY-15	Husri - Lined Channel - Arab Shoro	0.00	0.00	0.00	YES	—
HY-HY-16	HY-HY-16	Husri Lined Channel-Mohammad Moosa Shoro	2.70	0.00	0.00	2.70	—
HY-HY-17	HY-HY-17	Hyd-N. H'way M/1368 - Vil. Karir Solangi	0.50	0.00	0.00	0.50	—
	HY-HY-18	Road to Ismail Lakho to Abri	0.65	0.00	0.00	—	0.65
HY-HY-19	HY-HY-19	Seri T.Fazal Rd L. Channel-Loung Machhi	2.20	0.00	0.00	2.20	—
HY-HY-20	HY-HY-20	Hyd T.M.Khan Rd - Bachal Shoro/Ghulam Mo	0.70	0.00	0.00	0.70	—
HY-HY-21	HY-HY-21	Lined Channel - Village Noor Khan Chang	0.00	2.00	0.00	2.00	—
HY-HY-22	HY-HY-22	Moosa Khatian - Village Mund Supyo	2.00	0.00	0.00	2.00	—
	HY-HY-23	Tando Saeed Khan to Wanki Wasi	1.60	0.00	0.00	—	1.60
	HY-HY-24	Tando Fazal to Sattar Dino Panhwar	1.15	0.00	0.00	—	1.15
	HY-HY-25	Rd. to Village Haji Mohammad Moosa Shoro	0.30	0.00	0.00	—	0.30
	HY-HY-26	Mirpurkhas road to Village Noorani	1.90	0.00	0.00	—	1.90
HY-HY-27	HY-HY-27	Seri Tando Fazal Road - Darmoon Panhwar	2.30	0.00	0.00	2.30	—
	HY-HY-28	Road from Ghan Burgiow to Gelo Noorani	1.00	0.00	0.00	—	1.00
	HY-HY-29	Road at Latif Ghan Colony	1.60	0.00	0.00	—	1.60
	HY-HY-30	Road at Village Isaa Eux Lund	1.75	0.00	0.00	—	1.75
	HY-HY-31	Rd. from Chanoan Mori to Shamir ji Wari	1.60	0.00	0.00	—	1.60
	HY-HY-32	Road to Jhando Halepoto	0.30	0.00	0.00	—	0.30
	HY-HY-33	Abri to Darya Khan Nanycon Road	3.00	0.00	0.00	—	3.00
HY-HY-34	HY-HY-34	Gaja Mori - Ibcullan Panhwar	0.90	0.00	0.00	0.90	—
	HY-HY-35	Road to Lal Khan Chang	1.60	0.00	0.00	—	1.60
	HY-HY-36	Road to Village Ismail Nagai	1.60	0.00	0.00	—	1.60
	HY-HY-37	Road at village Gair Shangnro	0.30	0.00	0.00	—	0.30
	HY-HY-38	Road at Wanki Wasi Village	1.00	0.00	0.00	—	1.00
	HY-HY-39	Road at Village Sukhour Aachar Shoro	1.00	0.00	0.00	—	1.00
	HY-HY-40	Road at Tando Qasir	0.30	0.00	0.00	—	0.30
	HY-HY-41	Yar Mohammad Mangwano to Den Lakhi Kati	2.50	0.00	0.00	—	2.50
HY-HY-42	HY-HY-42	Tando Qaisar - Rawal Pahor	0.20	0.00	0.00	0.20	—
HY-HY-43	HY-HY-43	Hyd-T.Jam Pucca Road-Hussain Khan Thora	11.80	0.00	0.00	11.80	—
HY-2N	HY-HY-44	Bono Almani Village to Village Jamali	0.00	0.00	1.80	1.80	—
HY-3N	HY-HY-45	Shaikh Birkio to Hussain Khan Thora Vil.	2.35	0.00	0.00	2.35	—
HY-4N	HY-HY-46	Moosa Bhurgri-Moosa Khatian-Vil Qasim San	0.50	0.00	0.00	0.50	—
HY-5N	HY-HY-47	Moosa Bhurgri Road to Mir Moha. Karia	1.00	0.00	0.00	1.00	—
HY-6N	HY-HY-48	Moosa Khatian to Suleman Khatian Village	0.60	0.00	0.00	0.60	—
HY-14N	HY-HY-49	Hyd.-Hala National H'way to Fazal Bhogai	1.70	0.00	0.00	1.70	—
HY-15N	HY-HY-50	Hyd-Hala National H'way to Moosa Bhurgri	0.00	4.20	0.00	4.20	—
	HY-HY-51	Road at Village Khatnar	2.50	0.00	0.00	—	2.50
	HY-HY-52	Road to Village Ibbal Shah Colony	0.40	0.00	0.00	—	0.40
	HY-HY-53	Road to Village Abdullah Khoso	0.85	0.00	0.00	—	0.85
	HY-HY-54	Road to Village Abri	0.80	0.00	0.00	—	0.80
						Sub = 41.75	27.7

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APPENDIX E

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OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
	HY-HY-55	Road to Village Gelo Noorani	0.30	0.00	0.00	—	0.30
	HY-HY-56	Road from Husri to Asnraf Brohi	0.30	0.00	0.00	—	0.30
	HY-HY-57	Road to Darya Khan Solangi	0.50	0.00	0.00	—	0.50
	HY-HY-58	Road to Village Imam Bux Lund	0.80	0.00	0.00	—	0.80
	HY-HY-59	Road from Mirpurkhas to Vil. Sobho Magsi	0.30	0.00	0.00	—	0.30
	HY-HY-60	Road to Village Dasio Saho	0.65	0.00	0.00	—	0.65
	HY-HY-61	Road to Village Mohammad Ali Nizamani	1.60	0.00	0.00	—	1.60
	HY-HY-62	Road to Noor Khan Lashari	0.30	0.00	0.00	—	0.30
	HY-HY-63	Road to Sahib Khan Mirani	0.50	0.00	0.00	—	0.50
	HY-HY-64	Road to Village Lakni Kati	0.65	0.00	0.00	—	0.65
	HY-HY-65	Moosa Khatian to Bahadur Chandio Road	0.65	0.00	0.00	—	0.65
	HY-HY-66	Road to Village Ranjho Zour	0.30	0.00	0.00	—	0.30
	HY-HY-67	Shaikh Bhirkio to Usman Lakho Road	1.10	0.00	0.00	—	1.10
	HY-HY-68	Fateh Dhamach to Hussain Khan Thora Road	0.65	0.00	0.00	—	0.65
	HY-HY-69	Seri to Pir Hasnia Shah Road	0.65	0.00	0.00	—	0.65
	HY-HY-70	Road to Tando Jam Surfat via Mohistan	1.10	0.00	0.00	—	1.10
	HY-HY-71	Village Latif Shah Colony to Hanooota Rd	0.65	0.00	0.00	—	0.65
	HY-HY-72	Tando Jam-Moosa Khatian-Imam Bux Sidio	0.80	0.00	0.00	—	0.80
	HY-HY-73	Sui Gas to Shah Bukhari Road	1.10	0.00	0.00	—	1.10
	HY-HY-74	Khaca Dino Panhwar to Misri Shore Road	0.50	0.00	0.00	—	0.50
	HY-HY-75	Agricultural Colony to God Mohallah Road	0.30	0.00	0.00	—	0.30
	HY-HY-76	Village Rano Mal Bheel to Tando Fazal Rd	0.80	0.00	0.00	—	0.80
	HY-HY-77	Tando Fazal to Rajo Nizamani Road	0.80	0.00	0.00	—	0.80
		SUB-TOTAL:	91.80	10.05	1.80		
		TALUKA: Matiari					
HY-HL-1	HY-MT-01	Tando Adam Road - Sher Mohammad Thora	1.55	0.00	0.00	1.55	—
HY-HL-9	HY-MT-02	Masoo Bhurgari - Jandal Kot Village	0.00	0.00	4.40	4.40	—
HY-HL-14	HY-MT-03	Underolai - Underolai Dargah	1.00	0.00	0.00	1.00	—
HY-HL-15	HY-MT-04	Nahao Shah Station-Tanir Hingoro Village	0.00	3.00	0.00	3.00	—
HY-HL-16	HY-MT-05	Tando Jam-Shahpur-Datoo Lorar Village	2.20	0.00	0.00	2.20	—
HY-HL-19	HY-MT-06	Nasarpur - Palijani	1.20	0.00	0.00	1.20	—
HY-HL-27	HY-MT-07	Nasarpur-Mahari Road - Ali Mohd. Detho	3.20	0.00	0.00	3.20	—
	HY-MT-08	Road to Village Khuda Bux Juneja	2.00	0.00	0.00	—	2.00
	HY-MT-09	Bachal Ali Mohd Detho-Vil Haji Qasim Sth	0.65	0.00	0.00	—	0.65
	HY-MT-10	Matiari Allah Dino Sand - Pinar Halepota	0.70	0.00	0.00	—	0.70
	HY-MT-11	Road to Village Murid Soho	0.50	0.00	0.00	—	0.50
	HY-MT-12	Jaer Saidar - Bahryoon	0.65	0.00	0.00	—	0.65
	HY-MT-13	Jatoi via Kaka	0.80	0.00	0.00	—	0.80
	HY-MT-14	Road to Nasir Khan Khoso	0.50	0.00	0.00	—	0.50
	HY-MT-15	Road to Noor Khan Vighio	0.80	0.00	0.00	—	0.80
	HY-MT-16	Road to Sher Mohammad Shakhho	0.40	0.00	0.00	—	0.40
	HY-MT-17	Jamia Mosque Health Ctr-Bau Khan Patman	0.40	0.00	0.00	—	0.40
						Sub = 16.15	22.70

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APPENDIX E

LD ROAD O.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
	HY-MT-18	Nasarpur - Yousuf Khaskheli Village	0.80	0.00	0.00	—	0.80
	HY-MT-19	Piyaro Mangwano - Chandan Lalo Mangwano	0.40	0.00	0.00	—	0.40
	HY-MT-20	Allah Dino Sand Road - Sanar Mangwano	0.80	0.00	0.00	—	0.80
	HY-MT-21	Old Nasarpur-Sakni Hashim Shah-Old N'way	1.80	0.00	0.00	—	1.80
	HY-MT-22	N'way Sta.-Mukhtiarkar Matiari Town	0.80	0.00	0.00	—	0.80
	HY-MT-23	Road to Village Abdul Karim Bhaeonro	0.08	0.00	0.00	—	0.08
	HY-MT-24	Road to Village Anwar Shah Kot	0.08	0.00	0.00	—	0.08
	HY-MT-25	Road to Vil.Memon ki Wasi Den Sahib Samo	0.15	0.00	0.00	—	0.15
		SUB-TOTAL:	21.46	3.00	4.40		
		TALUKA: Tando Allah Yar					
/-TA-1	HY-TA-01	Kamaro Railway Station to Kamaro Sharif	0.00	0.00	5.00	5.00	—
	HY-TA-02	Chamber Ibrahim Shah-Vil Ahmed via RD-25	3.20	0.00	0.00	—	3.20
/-TA-3	HY-TA-03	Hyd.-M'Khas Road to Pir Nur Mohd. Shah	0.30	0.00	0.00	0.30	—
/-TA-4	HY-TA-04	Jaerad Mori to M.F. Mill via Chanci Ram	3.00	0.00	0.00	3.00	—
/-TA-5	HY-TA-05	Sultanabad Railway Stop to Hassan Wadi	3.90	0.00	0.00	3.90	—
/-TA-6	HY-TA-06	Bukira Road to Dargah Bukira Sharif	0.40	0.00	0.00	0.40	—
/-TA-7	HY-TA-07	Lasir Chamber to Nazir Para	5.20	0.00	0.00	5.20	—
	HY-TA-08	Tando Soomro to Allah Bux Arbab	0.30	0.00	0.00	—	0.30
	HY-TA-09	T.A. Yar Lal Pir to Mir Mohd Mandhwani	1.90	0.00	0.00	—	1.90
/-TA-10	HY-TA-10	Rawat Lighari to Mhyo Kurkuli	3.80	0.00	0.00	3.80	—
	HY-TA-11	Road to village Chanci Ram	1.60	0.00	0.00	—	1.60
-TA-12	HY-TA-12	Khesano Mori to Village Nasarpur/Tajpur	0.00	8.30	0.00	8.30	—
-TA-13	HY-TA-13	Sultanabad Rd to B'asao Med. Dispensary	2.60	0.00	0.00	2.60	—
	HY-TA-14	Daleelabad Bus Stop to Village Motkani	2.10	0.00	0.00	—	2.10
-TA-15	HY-TA-15	Jhando Mori to New Miranabad	2.60	0.00	0.00	2.60	—
	HY-TA-16	Road to Village Haider Shah	1.90	0.00	0.00	—	1.90
-TA-17	HY-TA-17	Miskeen Shah to Moulvi A. Latif	3.70	0.00	0.00	3.70	—
	HY-TA-18	Road to Village Tando Soomro	1.60	0.00	0.00	—	1.60
	HY-TA-19	Thando Muree to Miranabad	1.60	0.00	0.00	—	1.60
	HY-TA-20	Road to Village Bachal Nagor	1.60	0.00	0.00	—	1.60
	HY-TA-21	Village Taj Mohd Shah to Makan Sharif	1.60	0.00	0.00	—	1.60
-TA-22	HY-TA-22	Tajpur to Hyderabad-MPS Road	0.00	0.00	3.70	3.70	—
	HY-TA-23	Road to Village Mubarak Jarwar	1.00	0.00	0.00	—	1.00
	HY-TA-24	Road to village Hassan Dai	0.90	0.00	0.00	—	0.90
	HY-TA-25	Road to Village Began Jarwar	0.15	0.00	0.00	—	0.15
	HY-TA-26	Shaleqino Mahyoon to Dhingano Bozdar	0.30	0.00	0.00	—	0.30
	HY-TA-27	Road to Soomro Colony	0.15	0.00	0.00	—	0.15
	HY-TA-28	Street at Sanjar Chang	0.15	0.00	0.00	—	0.15
	HY-TA-29	Bahadur Jalbani to Jaffar Jalbani	1.80	0.00	0.00	—	1.80
	HY-TA-30	Road to Village Haji Khan Pitafi	1.00	0.00	0.00	—	1.00
	HY-TA-31	Road to Village Lal Mohd Yousfani	1.80	0.00	0.00	—	1.80
	HY-TA-32	T.Asan-Mevo Lund H.S.D.Theba via Deedori	1.60	0.00	0.00	—	1.60
						SUB = 42.50	31.16

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Hyderabad

APPENDIX E

Page No. 6
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
	HY-TA-33	Road to Mitho Jarwar	0.25	0.00	0.00	—	0.25
	HY-TA-34	Road to Nazeer Fara	1.60	0.00	0.00	—	1.60
	HY-TA-35	Road to Village Jumo Katiar	0.15	0.00	0.00	—	0.15
	HY-TA-36	Jhano Muree to Shah Beg Lund	0.80	0.00	0.00	—	0.80
	HY-TA-37	Road to Arab Hassan	0.50	0.00	0.00	—	0.50
	HY-TA-38	Gulab Leghari to Hassan Shah	0.65	0.00	0.00	—	0.65
	HY-TA-39	Jhando Muree to New Miranabad	1.10	0.00	0.00	—	1.10
	HY-TA-40	M. Parkash to Muric Hotel	1.00	0.00	0.00	—	1.00
	HY-TA-41	Road to Village Haji Ahmad Hakro	0.80	0.00	0.00	—	0.80
	HY-TA-42	Allah W. Mirjat-T.A.Road to U.C. Shahour	0.60	0.00	0.00	—	0.60
	HY-TA-43	Tando Soomro to Bahar Mirjat	1.80	0.00	0.00	—	1.80
		SUB-TOTAL:	61.00	8.30	8.70		
		TALUKA: Tando Mohd Khan					
	HY-TM-01	Nawab Otao to Village Kakreji	1.90	0.00	0.00	—	1.90
HY-TM-2	HY-TM-02	Jinnnan Soomro Rd. to Abdul Rahim Katiar	0.70	0.00	0.00	0.70	—
HY-TM-3	HY-TM-03	T.M.Khan Mullan Katiar Rd to Saedour Vil	0.50	0.00	0.00	0.50	—
HY-TM-4	HY-TM-04	Hyd-T.M.Khan Rd to Palio Chumrani Villag	0.30	0.00	0.00	0.30	—
HY-TM-5	HY-TM-05	T.M.Khan-Matli Rd to Allanbad Gcno Vil	0.30	0.00	0.00	0.30	—
HY-TM-6	HY-TM-06	Shaikh Bhirkio to Bacar Nizamani	0.20	0.00	0.00	0.20	—
	HY-TM-07	Approach Rd. to T.Fazal Linea Ch. RD-137	0.60	0.00	0.00	—	0.60
	HY-TM-08	Dlo T. Fazal Road to Linea Channel	0.20	0.00	0.00	—	0.20
	HY-TM-09	Road to Vil. Mir Mohammad Nerar Phase-II	2.60	0.00	0.00	—	2.60
	HY-TM-10	Road to Village Barechani	1.60	0.00	0.00	—	1.60
	HY-TM-11	Village Jennan Soomro to Ilyas Khodio	1.60	0.00	0.00	—	1.60
	HY-TM-12	Village Thaneem to Mir Mohammad Tangri	1.60	0.00	0.00	—	1.60
	HY-TM-13	Road to Village Murtaza Ali Shaikh	0.50	0.00	0.00	—	0.50
	HY-TM-14	Village Mullan Katiar to Khokar	3.20	0.00	0.00	—	3.20
	HY-TM-15	Rajo Nizamani to Dig Mori	0.50	0.00	0.00	—	0.50
HY-1N	HY-TM-16	Mulakitiar Road To Village Barchani	1.50	0.00	0.00	—	1.50
HY-10N	HY-TM-17	Tando Mohammad Khan to Pat Shari	0.00	0.00	8.50	8.50	—
HY-11N	HY-TM-18	Jannan Soomro to Ilyas Khodio Village	1.60	0.00	0.00	1.60	—
HY-13N	HY-TM-19	Mullan Katiar Road to Khokhar Village	3.00	0.00	0.00	3.00	—
HY-TM-20	HY-TM-20	Multan Katiar to Village Manthar Samoo	1.60	0.00	0.00	1.60	—
HY-TM-21	HY-TM-21	Tando Sainoad to Monsin Shah	0.50	0.00	0.00	0.50	—
HY-TM-22	HY-TM-22	Khathar Tikhar Rd to Muoborca Sharif Vil	0.20	0.00	0.00	0.20	—
HY-TM-23	HY-TM-23	Link Road to Ghulam Mustafa Shah	0.20	0.00	0.00	0.20	—
HY-TM-24	HY-TM-24	Village Moya to Moya School at Moya	0.20	0.00	0.00	0.20	—
HY-TM-25	HY-TM-25	9th mile from Bilal Rd to H. Urus Bathio	0.60	0.00	0.00	0.60	—
HY-TM-26	HY-TM-26	Hyd-Matri Road to Village Wahidano Jugai	2.00	0.00	0.00	2.00	—
HY-TM-27	HY-TM-27	Hyd-Badin Road to Mir Mohd Nerear Villag	6.00	0.00	0.00	6.00	—
	HY-TM-28	Dig Mori to Khuda Bux Nizamani	0.50	0.00	0.00	—	0.50
	HY-TM-29	Road to Village Kamal Nizamani	0.30	0.00	0.00	—	0.30
						SUB= 26.40	25.85

ROAD RESOURCES MANAGEMENT PROJECT (391-0460)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Hyderabad

APPENDIX E

Page No. 7
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
HY-TM-30	HY-TM-30	T.Fazal Lined Rd to Lined Channel RD-137	0.00	0.00	3.10	3.10	—
	HY-TM-31	Road to Village Mohd Khan Talpur	0.30	0.00	0.00	—	0.30
HY-TM-32	HY-TM-32	Mulkatiar to Wasi Malook Shah	0.10	0.00	0.00	0.10	—
HY-TM-33	HY-TM-33	Tando Fazal Road to Hydayatullah Shah	0.10	0.00	0.00	0.10	—
	HY-TM-34	Tando Fazal to Rajo Nizamani	1.00	0.00	0.00	—	1.00
	HY-TM-35	Pinyari to Gul Mohammad Makro	0.65	0.00	0.00	—	0.65
	HY-TM-36	Phalkara to Ari Machi	1.00	0.00	0.00	—	1.00
	HY-TM-37	Road to Village Muzafar Talpur	0.30	0.00	0.00	—	0.30
	HY-TM-38	Road to Mohammad Khan Talpur Phase-II	0.30	0.00	0.00	—	0.30
	HY-TM-39	Shaikh Bhirkio Phalkara to Usman Morai	0.30	0.00	0.00	—	0.30
	HY-TM-40	Road to Taj Mohammad Shah Phase-II	1.00	0.00	0.00	—	1.00
	HY-TM-41	Road to Karim Dino Sial Village	0.65	0.00	0.00	—	0.65
	HY-TM-42	Road to Noor Mohammad Gopang Village	0.40	0.00	0.00	—	0.40
	HY-TM-43	Road to Village Abri Phase-I	1.60	0.00	0.00	—	1.60
	HY-TM-44	Lakhat to Haji Anwar	2.30	0.00	0.00	—	2.30
	HY-TM-45	Road to Village Haji Umer Shoro	0.80	0.00	0.00	—	0.80
	HY-TM-46	Rd to Vil Talib-ul-Moula Colony(Sahrani)	4.80	0.00	0.00	—	4.80
	HY-TM-47	Bulri to Abri Phase-II	1.60	0.00	0.00	—	1.60
	HY-TM-48	Road to Juso Lashari	0.30	0.00	0.00	—	0.30
	HY-TM-49	Road to Village Zulficarabad	0.80	0.00	0.00	—	0.80
	HY-TM-50	Road to Nar Mohammad Solangi	0.30	0.00	0.00	—	0.30
	HY-TM-51	Anwar Ali Sim Wali to Ali Mohammad Jour	0.50	0.00	0.00	—	0.50
	HY-TM-52	Sono Bhatti to Gazi Khan Talpur	0.30	0.00	0.00	—	0.30
	HY-TM-53	Village Shaikh Ispal to Anwar	2.25	0.00	0.00	—	2.25
	HY-TM-54	Road to Mir Mohammad Warar Phase-III	2.25	0.00	0.00	—	2.25
	HY-TM-55	Road to Bijar Talpur Village	1.60	0.00	0.00	—	1.60
	HY-TM-56	Road to Ali Mohammad Sahito	0.15	0.00	0.00	—	0.15
	HY-TM-57	T.M. Khan Road to Village Bachoo Shaikh	0.50	0.00	0.00	—	0.50
		SUB-TOTAL:	60.65	0.00	11.60		
		TOTAL LENGTH IN KMS:	306.74	22.35	28.10		
						Sub = 3.80	25.95

Total = 170.70 185.09

355.79 Km.

KARACHI EAST - STATUS JUNE 1989

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 4/29/93 INVENTORY	
Road Number	Location From	Location To	CCSC Length Ke	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks	YES	NO
KA-1	Pakistan Hotel	Samo Goth	0.90	23	30	29	0	5	9	0	96		0.90	—
KA-2	Beru Goth	Haji Shaabay Goth	0.20	27	52	26	0	1	2	0	108		0.20	—
KA-3	Internal Rd (Main Bazar)	Memon Goth (vill.Area)	0.20	8	70	83	0	0	0	0	161		0.20	—
KA-4	Kohi Goth	Haji Suleman Goth	0.40	130	206	745	53	82	5	0	1221		0.40	—
KA-6	Internal Rd	Ibrahim Hyderi	0.70	61	57	72.	0	41	0	0	231		0.70	—
KA-7	Fish Bunder Rd	Ibrahim Hyderi	0.90	270	191	250	0	165	0	0	876		0.90	—
KA-8	Community Centre	Ibrahim Hyderi	0.20								0	1	0.20	—
KA-9	Thaddo Nallah	Darsanno Channo	8.80	30	256	454	20	120	4	0	884		8.80	—
KA-11	Memon Goth	Peer Sarhandi	4.30	128	231	292	17	136	33	0	837		4.30	—
KA-12	Peer Sarhandi	Jam Khado Rd	4.20	2	57	135	39	59	0	0	292		4.20	—
KA-13	Landi	Darsanochanno ViaSheedi	13.25	173	249	445	58	84	14	110	1133		13.25	—
KA-14	Dualotee	Memon Goth	1.50	135	198	272	10	66	1	0	682		1.50	—
KA-16	Internal Rd	Memon Goth	0.20								0	1	0.20	—
KA-17	Khoi Village	Dargah Haji Pir	0.20								0	1	0.20	—
KA-20	Mathani Para	Ibrahim Hyderi	0.30	148	55	99	10	4	5	3	324		0.30	—
KA-21	Abani Para	Ibrahim Hyderi	0.30								0	1	0.30	—
KA-22	Moulvi Para Rd	Ibrahim Hyderi	0.10								0	1	0.10	—
KA-23	Baloch Para Rd	Ibrahim Hyderi	0.20								0	1	0.20	—
KA-24	Jam Khando Shedi Vill	Jam Kasthely Rd	0.21	65	110	238	31	95	0	0	539		0.21	—
KA-26	Baloch Para	Ibrahim Hyderi	0.64	30	11	9	0	0	5	0	55		0.64	—
KA-1E	Amilano	Abdul Rehman	2.00	36	93	65	36	69	22	0	321		—	2.00
KA-3E	Gadap	Shah Mureed	2.00								0	Not Trace	2.00	—
KA-7N	Rehri Miani Vill	Landhi Road	2.50	12	58	257	15	3	0	0	345		2.50	—
KA-8N	Razzakabad	Lashari Vill.	1.70	23	129	279	16	191	0	0	638		1.70	—
KA-9N	Peer Sarhandi	Shidi Goth Rd	2.10	22	122	179	22	135	9	0	489		2.10	—
KA-10N	Shidi Goth	Memon Goth Rd	3.24	73	97	231	28	118	8	0	555		3.24	—
KA-11N	Memon Goth	Soomar Ismail (KhoKrapar)	2.00	37	283	398	9	73	0	0	800		2.00	—
KA-13N	Memon Goth Rd	Shafi Mohammad Vill	1.10	46	40	34	0	0	1	0	121		1.10	—
KA-14N	Bhains Colony	Lal Basti	1.60	180	71	98	0	26	0	0	375		1.60	—
KA-15N	Link Rd.Moula Bux Brohi	Lal Bathar (Hawksbay)	1.70	5	3	30	0	6	0	0	44		1.70	—
KA-16N	National Highway	Jhando Para	0.80	52	30	37	0	18	3	0	140		0.80	—
KA-17N	Memon Goth Rd	Haji Main Dad Goth	0.60	13	15	15	4	2	2	0	51		0.60	—
KA-18N	Memon Goth Rd	Haji Gad Mohammad Goth	0.30	8	12	21	0	0	0	0	41		0.30	—
KA-B1	Fish Jelly	Mul Para	0.50	468	193	64	0	48	0	2	775		0.50	—
KA-B3	Ice Factory	Pumping St.Via Baloch Par	1.90	602	290	843	0	60	0	2	1797		1.90	—
KA-B4	Jamia Mosque via Mughal E	Thermal Power ST.	0.80	136	85	102	0	8	0	0	333		0.80	—
KA-B6	Baloch Para	KatchiPara(last end)inc.3	0.50	141	33	198	0	0	0	0	372		0.50	—
Totals			63.04										SUB = 61.19	2.00

KARACHI EAST — STATUS JUNE 1989

ATTACHMENT NO: 2

KBZ 2/2

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 4/29/93 INVENTORY	
Road Number	Location From	Location To	CCSC Length Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks	YES	NO
KA-B7	Main Rd-Jakwani Para	Jabal Para connt KDA Rd.	0.60	184	148	230	41	6	1	0	610		0.60	—
KA-B8	KDA Rd near Mosque	SUPARCO wire Border	0.00								0	Katcha Rd	—	NO
KA-B10	KDA Main Road	Eidgah via Union C. Offic	0.60	294	218	612	27	49	5	0	1205		0.60	—
KA-B12	Main Road	Mohsin Shah Para via Jamo	0.10								0	"	0.10	—
KA-B13	Main Bazar	Khosthely Para & Lara Jam	0.60	154	75	227	0	0	0	0	456		0.60	—
KA-B14	Lara Jamot Para	Upto KDA Rd	0.70	295	56	75	0	6	0	0	432		0.70	—
KA-B15	Bibiyani Para	Main Rd.via Darul Uloom M	0.50	111	13	66	0	0	0	0	190		0.50	—
KA-B16	Link Rd.Connecting Chasma	KDA Rd.(Ali AkbarShah Rd)	0.00								0	UnderCons	—	NO
KA-B17	Chasma	Landhi Rd	2.46	15	62	215	0	9	0	0	301		—	2.46
KA-B18	Rehri	By Pass Road	0.80	12	31	38	0	2	0	0	83		0.80	—
KA-B19	Rehri Vill	Soda Factory	0.00								0	Katcha Rd	—	No
KA-B20	Shidi Goth	Darsanna Channa via Mazaa	5.60	69	64	167	5	23	6	0	334		5.60	—
KA-(N)19	Hawksbay	Arab Goth (near KANUPP)	1.10	7	6	18	8	6	0	0	45		1.10	—
KA-B26	Memon Goth Rd	Jam Goth viaMullah Essa G	0.70	31	45	74	0	6	0	0	156		0.70	—
KA-B27	Monghopir Rd	Baloch Goth	1.00	4	16	17	0	12	0	0	49		1.00	—
KA-B28	Monghopir	Ramzan Goth(Deh.Halkani)	0.00								0	Katcha Rd	—	No
KA-B29	Monghopir	Hub Dam	32.00	67	186	138	161	41	6	0	599		—	32.00
Totals			46.76									Sub=	12.30	34.46
Sub Total			109.80										72.94	36.46

TOTAL =

109.40 Km.

E-31

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Karachi East

APPENDIX E

KE1/2

Page No. 1
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
		TALUKA: Sub-div.1: West					
KA-3	KA-WT-01	Internal Road Main Bazar to Memon Goth	0.00	0.00	0.20	0.20	—
KA-14	KA-WT-02	Dualotee to Memon Goth	0.00	1.00	0.00	1.00	—
KA-16	KA-WT-03	Internal Road - Memon Goth	0.20	0.00	0.00	0.20	—
KA-3X	KA-WT-04	Badao to Shah Muree	0.00	0.00	2.00	2.00	—
KA-15N	KA-WT-05	Maula Bux vill. to Lal Bharar Mankebay	0.00	0.00	1.70	1.70	—
KA-11N	KA-WT-06	Memon Goth to Goomar Isaail Khokharar	2.00	0.00	0.00	2.00	—
KA-19N	KA-WT-07	Mankebay to Arab Goth (near KAMNUP)	0.00	0.00	1.10	1.10	—
KA-B27	KA-WT-08	Mangopir to Baloch Goth	0.00	0.00	1.00	1.00	—
	KA-WT-09	Hussain Baloch Goth to Rustam Bagh	1.30	0.00	0.00	—	1.30
	KA-WT-10	Union Council Konkar to Memon Goth	0.70	0.00	0.00	—	0.70
	KA-WT-11	UBL to Govt. Hospital to Memon Goth	0.70	0.00	0.00	—	0.70
	KA-WT-12	Road at Memon Goth	1.75	0.00	0.00	—	1.75
	KA-WT-13	Road at Abbas Town	1.20	0.00	0.00	—	1.20
	KA-WT-14	Internal Roads in Abbas Town	1.65	0.00	0.00	—	1.65
	KA-WT-15	Road in Bakhar Goth	1.20	0.00	0.00	—	1.20
	KA-WT-16	Pathan Mohallah to Jam Goth	0.40	0.00	0.00	—	0.40
	KA-WT-17	Siddique Goth to Suryani	0.15	0.00	0.00	—	0.15
	KA-WT-18	Road at Baloch Goth	0.60	0.00	0.00	—	0.60
	KA-WT-19	Road in Khan Faisal Mohallah Baloch Goth	0.70	0.00	0.00	—	0.70
	KA-WT-20	Road in Lasi Mohallah Baloch Goth	0.40	0.00	0.00	—	0.40
	KA-WT-21	Naseemabad to Main Road Baloch Goth	0.50	0.00	0.00	—	0.50
	KA-WT-22	Makrani Para to Baloch Goth	0.60	0.00	0.00	—	0.60
	KA-WT-23	Naseemabad to Main Manghopir Road	1.00	0.00	0.00	—	1.00
	KA-WT-24	Mashki Para to Manghopir	1.10	0.00	0.00	—	1.10
	KA-WT-25	Councillor Off. to Hospital Goomar Goth	1.10	0.00	0.00	—	1.10
	KA-WT-26	Sulaiay to Hasnia Goth Mankebay	1.00	0.00	0.00	—	1.00
	KA-WT-27	Super H'way to Gul Hassan Goth Kathore	0.80	0.00	0.00	—	0.80
		SUB-TOTAL:	19.05	1.00	6.00		
		TALUKA: Sub-div.2: East					
KA-1	KA-ET-01	Pakistan Hotel to Samoo Hotel	0.00	0.90	0.00	0.90	—
KA-2	KA-ET-02	Peru Goth to Haji Shamay Goth	0.00	0.00	0.20	0.20	—
KA-4	KA-ET-03	Kori Goth to Haji Suleman Goth	0.40	0.00	0.00	0.40	—
KA-5	KA-ET-04	Internal Road to Ibrahim Haideri	0.70	0.00	0.00	0.70	—
KA-7	KA-ET-05	Pipa Banger Road to Ibrania Hyderi	0.00	0.00	0.30	0.30	—
KA-8	KA-ET-06	Community Centre to Ibrania Hyderi	0.00	0.00	0.20	0.20	—
KA-9	KA-ET-07	Thadda Mohallah to Darsanno Channo	0.00	0.00	8.80	8.80	—
KA-11	KA-ET-08	Memon Goth to Pir Sarmandi	0.00	0.00	4.30	4.30	—
KA-12	KA-ET-09	Pir Sarmandi to Lashari Goth	4.20	0.00	0.00	4.20	—
KA-13	KA-ET-10	Landhi to Darsanno Channo via Sheri Goth	0.00	0.00	13.30	13.30	—
KA-17	KA-ET-11	Kori Village to Dargah Haji Pir	2.00	0.00	0.00	2.00	—
						SUB= 44.60	16.85

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Karachi East

APPENDIX E

KE2/2

Page No. 2
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
KA-20	KA-ET-12	Nathani Para to Ibrania Hyderi	0.00	0.00	0.30	0.30	—
KA-21	KA-ET-13	Abani Para to Ibrania Hyderi	0.00	0.00	0.30	0.30	—
KA-22	KA-ET-15	Moulvi Para to Ibrania Hyderi	0.00	0.00	0.10	0.10	—
KA-23	KA-ET-16	Baloch Para to Ibrania Hyderi	0.00	0.00	0.80	0.80	—
KA-24	KA-ET-17	Jam Khanco ShiciVil. to Jam Khaskheli	0.20	0.00	0.00	0.20	—
KA-7N	KA-ET-18	Reehri Miani Vill. to Landhi road	2.85	0.00	0.00	2.85	—
KA-8N	KA-ET-19	Razakabad To Lasnari Village	1.70	0.00	0.00	1.70	—
KA-9N	KA-ET-20	Pir Sarhandi to Shedi Goth Village	2.10	0.00	0.00	2.10	—
KA-10N	KA-ET-21	Shedi Goth to Memon Goth Road	3.20	0.00	0.00	3.20	—
KA-12N	KA-ET-23	Memon Goth to Shafi Mond. Villageabar	1.10	0.00	0.00	1.10	—
KA-14N	KA-ET-24	Shaine colony to Lal Basnti	0.80	0.00	0.00	0.80	—
KA-16N	KA-ET-25	National Highway to Jhando Para	0.00	0.00	3.00	3.00	—
KA-17N	KA-ET-26	Memon Goth to Haji Mian Dad Goth	0.60	0.00	0.00	0.60	—
KA-18N	KA-ET-27	Memon Goth to Haji Dad Mond. Goth	0.00	0.00	0.30	0.30	—
KA-31	KA-ET-28	Fish Jetty to Mul Para	0.00	0.00	0.50	0.50	—
KA-33	KA-ET-29	Ice Factory to Pucca Station Baloch Para	0.00	0.00	1.90	1.90	—
KA-34	KA-ET-30	Jamia Moscue via Moghul Rd.-Thermal stat	0.00	0.00	0.80	0.80	—
KA-36	KA-ET-31	Baloch Para to Kachi Para (last end)	0.50	0.00	0.00	0.50	—
KA-37	KA-ET-32	Jakhani Para to Jadal Para KDA Road 1	0.60	0.00	0.00	0.60	—
KA-310	KA-ET-33	KDA Main Rd. to Bingah via Union C. Off.	0.00	0.00	0.60	0.60	—
KA-312	KA-ET-34	Main Rd. to Monsin Shah Para via Jamote	0.10	0.00	0.00	0.10	—
KA-313	KA-ET-35	Main Bazar to Khaskhely Para & Lara Jamo	0.00	0.00	0.60	0.60	—
KA-314	KA-ET-36	Lara Jamote Para to KIA Road	0.00	0.00	0.70	0.70	—
KA-315	KA-ET-37	Bibyani Para to M. Road via Darul Moscue	0.00	0.00	0.50	0.50	—
KA-320	KA-ET-38	Shedi Goth To Darsanna Channa via Bazar	1.00	0.00	4.60	5.60	—
KA-313	KA-ET-39	Reehri to Bypass Road	0.00	0.00	0.80	0.80	—
KA-326	KA-ET-40	Memon Goth to Jam Goth via Mullah Essa	0.00	0.00	0.70	0.70	—
	KA-ET-41	Jumma Haaiely Goth Internal Roads	2.63	0.00	0.00	—	2.63
	KA-ET-42	Yousuf Goth Internal Roads (Landhi)	2.62	0.00	0.00	—	2.62
KA-31	KA-ET-43	Super H'Way to Kamal K. Jhokio - Katnore	0.00	3.00	7.00	—	10.00
	KA-ET-44	Jan Mando to Lasnari Goth	1.60	0.00	0.00	—	1.60
	KA-ET-45	Ali Mond. Khaskheli to Angara Goth Road	4.32	0.00	0.00	—	4.32
	KA-ET-46	Internal Roads at Reehri Miani Village	2.50	0.00	0.00	—	2.50
	KA-ET-47	National H'Way to Shafi Goth Landhi	2.00	0.00	0.00	—	2.00
	KA-ET-48	N. H'Way to Railway Crossing-Kohar saiar	3.50	0.00	0.00	—	3.50
	KA-ET-49	Memon Goth to Girls School Peru Goth	0.00	0.00	0.80	—	0.80
		SUB-TOTAL:	41.22	3.90	51.40		
		TOTAL LENGTH IN KMS:	60.27	4.90	57.40		
						SUB = 31.25	29.97
						TOTAL = 75.85	46.82

122.67 Km.

THATTA – STATUS JUNE 1989

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13
Road Number	Location From	Location To	CCSC Length Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks
TH-8	Thatta-Sujawal Road	Fakir Jo Goth	4.40	89	53	74	0	12	3	0	231	
TH-12	N.Highway Mile 66/4	Vill. Omaid Ali Magsi	1.40	19	6	10	0	3	12	0	50	
TH-13	N. Highway Mile 67	Vill.Husain Daphrani	1.10	9	1	6	0	0	0	0	16	
TH-14	N. Highway	Haji Ramzan Hijab	3.50	57	37	42	0	7	3	0	146	
TH-15	Khan Gharo Drain	Lal Pir Shah Dargah	0.60	13	10	20	5	6	0	0	54	
TH-27	Thatta-Jungshahi N.Hw	Gul Monda	3.80	2	48	17	36	0	7	0	110	
TH-40	N.H.W.Truck Stand	Jherruck Town	1.00	1	45	75	40	13	0	0	174	
SU-1	Saeedpur	Village Peero Prai	0.70	23	35	47	0	18	12	0	135	
SU-2	Bello Darro Road	Gahi Khan Shaikh	0.50	12	24	10	0	2	4	0	52	
SU-12	Sajawal By Pass Road	Vill.Bhatti	2.30	72	26	27	0	28	16	4	173	
J-425	Jati	Mamoo Malkani	6.53	14	8	17	0	2	6	0	47	
J-13	Choohar Ladiyoon Road	Vill. Yousif Chandio	0.40								0	8
KB-3	Garho Bagan Road	Vill.Ali Akbar Kalhoro	0.80	0	4	11	0	0	2	2	19	
S-5	Mullan Junaid	Dar ul Uloom	0.80	72	23	22	0	27	8	0	152	
S-9	Sakro Road	Haji Md.Sodho	2.90	38	24	13	0	2	15	0	92	
S-14	Sakro Gharo Road	Vill. Ali Md. Hadaio	1.30	32	11	21	0	5	4	0	73	
TH-1N	National Highway.M-63	Sonda Town	0.40	30	23	32	0	7	0	0	92	
TH-2N	Sim Nali	Khohi Gharo Drain	0.60	39	36	21	0	2	2	6	100	
TH-3N	Sim Nali	Nai Hejib	2.90	57	37	42	0	7	3	0	146	
TH-4N	N. Highway M-63	Deh Makli	0.40	24	0	18	0	0	6	0	48	
TH-5N	Culvert Partition or Link Rd	Butti Village	2.30	67	32	46	0	9	10	0	164	
TH-6N	Ch. Jamali Iodion Village	Khair Mohd Chandio	0.43	25	4	5	0	0	5	0	39	
TH-7N	N. Highway M-81	Haji Khamise Khan Khaskel	0.70	8	13	21	0	2	2	0	46	
TH-1	Eidgah Makli M/63	Naka Thatta	2.95	17	44	32	9	0	1	0	103	
Total			42.71									

ROADS IN 4/29/93 INVENTORY

YES	NO
DATA NOT AVAILABLE!	DATA NOT AVAILABLE!

8 Indicates that its length is less than 0.5 Km therefore not included in Traffic Count

BADIN - STATUS JUNE 1989

ATTACHMENT NO: 2

81/1

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 4/29/93 INVENTORY YES	NO
Road Number	Location From	Location To	CCSC Lengths Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks		
BA-M-3	Matli TG Ali Rd	Malhan Village	0.30	56.00	37.00	41.00	0.00	16.00	10.00	0.00	160		—	0.30
BA-M-4	Matli TG. Ali Rd	Mir Md.Nazamani	1.60	21.00	25.00	48.00	7.00	3.00	1.00	0.00	105		—	1.60
BA-M-5	Haji Sawan Bus Stand	Sami Ji Kabar via Lal Bux	14.00	81.00	31.00	30.00	0.00	16.00	9.00	0.00	167		14.0	—
BA-1	Shaik Birkio Phalkara Rd	Talo Farm	0.00								0	UnderCons	YES	—
BA-TE-13	Rajo Khanani Dando Rd	Yousif Burriro	1.30	34.00	10.00	4.00	0.00	0.00	0.00	0.00	48		1.30	—
BA-TE-17	Talhar Rajo Khanani	Rajo Khanani Shahar	1.00	53.00	161.00	95.00	64.00	2.00	47.00	0.00	422		—	1.0
Total			18.20										15.30	2.90

18.20 Km.

RKB 20 MAY 1993

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Badin

Page No. 1
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
		TALUKA: Badin					
BA-B-37	BA-BA-01	Badin Khadan Road to Vil. Haji M. Sonar	2.11	0.00	0.00	Included in FY 92-93 maintenance program	2.11
	BA-BA-02	Sho. Fazil Rahu Road to Civil Hospital	4.00	0.00	0.00	Included in FY 92-93 maintenance program	4.00
		SUB-TOTAL:	6.11	0.00	0.00		
		TALUKA: Matli					
BA-M-1	BA-MT-01	Haji Sawan Bus Stop to Saaiji Kabar	3.35	4.20	3.50	11.05	—
BA-M-19	BA-MT-02	Phulkara Sheikh Shirkio to Talo Farm	4.00	0.00	0.00	Included in FY 92-93 maintenance program	4.00
BA-M-20	BA-MT-03	Saleh Soomro to Vill. Shario Jdhejo	2.00	0.00	0.00	Included in FY 92-93 maintenance program	2.00
BA-M-22	BA-MT-04	Phulkara Sheikh to Vill. Dost M. Panhwar	1.25	0.00	0.00	Included in FY 92-93 maintenance program	1.25
BA-M-23	BA-MT-05	Matli Phulkara Road to Saleh Halepoto	0.28	0.00	0.00	Included in FY 92-93 maintenance program	0.28
BA-M-24	BA-MT-06	Matli Phulkara Road to Village Mova	2.02	0.00	0.00	Included in FY 92-93 maintenance program	2.02
		SUB-TOTAL:	12.90	4.20	5.50		
		TALUKA: Tando Bago					
BA-TB-13	BA-TB-01	Rajo Khanani Road to Vil. Yousuf Shariro	1.40	0.00	0.00	1.40	—
		SUB-TOTAL:	1.40	0.00	0.00		
		TOTAL LENGTH IN KMS:	20.41	4.20	5.50	16.45	13.66

30.11 Km.

RHB 20 MAY 93

THARPARKAR (MIRPUR KHAS) – STATUS JUNE 1989

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 4/29/93 INVENTORY	
d Number	Location From	Location To	CCSC Length Ka	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks	YES	NO
THR-MP-21	Mirpurkhas	Patayun	20.40	46	40	33	23	21	17	0	180		11.00	9.40
THR-MP-35	5th Mile Mirewah	Daulat Laghari	2.40	47	77	99	8	36	52	0	319		2.40	—
THR-2	Mirpurkhas	Mir.Sher Mohd.Village	0.80	106	36	69	3	28	16	0	258		0.80	—
THR-3	Sattelite Town	Mir.Sher Mohd village	0.60	57	44	135	3	2	5	0	246		0.60	—
THR-4	4th Mile Mirwah	Lakho Shah	2.10	40	42	56	2	21	32	0	193		—	2.10
THR-6	Khan	Mohd.Hassan Mori	6.80	90	90	79	35	56	40	0	390		—	6.80
THR-7	Kerao Bridge	Chituri Via Haji Sajan Ra	0.75	40	20	35	0	13	38	0	146		0.75	—
THR-8	Kathri Kutcha Rd.	Udhadas	1.30	24	1	22	2	0	2	0	51		1.30	—
THR-9	Kak Bungalow	Jarwari Canal	2.00	98	148	44	0	25	20	0	335		2.00	—
THR-10	Sindhri Rd	Haji Bishan Brohi	3.30	33	39	26	0	4	12	0	114		3.30	—
THR-11	MPS-Hydrabad Rd	Raj Kumar Farm	1.30	8	6	4	0	0	1	0	19		1.30	—
THR-12	MPS-Jhuluri Rd	Mir Khalid Londthi	0.70	16	8	16	0	2	7	1	50		0.70	—
THR-13	Mirwah Kot Ghulam Md	Mohd. Hashim Bhurgri	1.60	69	11	49	0	4	18	0	151		1.60	—
THR-14	Kot Mirs	Kutab Leghari	1.60	64	56	96	0	16	8	0	240		1.60	—
THR-15	Umerkot Chhore Rd	Dargah Kharoro Syed	0.84	43	18	59	0	0	5	0	125		0.84	—
THR-16	Umerkot Rd.	Anwar Palli	1.00	66	67	83	0	55	69	0	340		1.00	—
THR-17	Tando Jan Mohd	Khudadad Road	0.70	39	40	29	4	6	10		128		0.70	—
THR-18	Tando Ghulam Ali	Deh 164	0.90	42	24	17	6	15	11	0	115		0.90	—
THR-19	MPS-Mirwah Link	Dodo Mohani	0.00								0	underCons	—	No
THR-20	Shokhimal Mori	Abdullah Khan Kapri	0.93	23	21	21	0	4	9	0	78		—	0.93
THR-21	Mingo Patan	Kamali Farm	3.13	34	49	71	27	59	46	0	286		—	3.13
THR-22	Kamali Farm	Kaloi	5.95	47	39	65	37	56	37	0	281		—	5.95
THR-24	MPS Sindhri Rd	Abu Bakar Junejo	1.70	42	36	52	2	26	13	0	171		1.70	—
THR-25	MPS Sindhri Rd	Shah Bux Lashari	2.10	23	40	47	6	11	10	0	137		—	2.10
THR-26	MPS Sindhri Rd	Anwar Gondal	1.10	14	4	2	0	0	5	0	25		—	1.10
Total			64.00										TOTAL = 32.49	31.51

64.00 OK

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Mirpurkhas

APPENDIX E

Page No. 1
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 inventory YES	NO
		TALUKA: Digri					
	MK-DI-01	Ghulam Nabi Juneja to Noor Hussain Chandi	0.70	0.00	0.00	—	0.70
	MK-DI-02	Jhudo Naukot to Ahsed Khan Khoso Village	0.60	0.00	0.00	—	0.60
	MK-DI-03	Jhudo Nabisher To Mazhar Khan Legnari	0.40	0.00	0.00	—	0.40
THR-17	MK-DI-04	Tando Jan Mohd to Khudad road	0.00	0.00	0.70	0.70	—
THR-18	MK-DI-05	Tando Ghulam Ali Deh-164	0.00	0.00	0.90	0.90	—
	MK-DI-06	Roshanabad to Mir Anwar Talpur	0.00	0.00	0.80	—	0.80
		SUB-TOTAL:	1.70	0.00	2.40		
		TALUKA: Kot Ghulam Mohd					
THR-12	MK-GM-01	MPK Jhuluri to Mir Khalid Landni	0.00	0.00	0.75	0.75	—
THR-13	MK-GM-02	KOt Ghulam Mohd to Mohd Hashim Bhurgari	1.55	0.00	0.00	1.55	—
	MK-GM-03	KOt Ghulam Mohd Bikriyari Road Den 294	0.88	0.00	0.00	—	0.88
THR-14	MK-GM-04	Main Road to Dodo Khan Legnari	0.92	0.00	0.00	0.92	—
		SUB-TOTAL:	3.35	0.00	0.75		
		TALUKA: Mirpurkhas					
THR-2	MK-MK-01	Mirpurkhas to Mir Sher Mohd. village	0.80	0.00	0.00	0.80	—
THR-3	MK-MK-02	Satteiite Town to Mir Sher Mohd. village	0.00	0.88	0.00	0.88	—
	MK-MK-03	Haji Khan Bux Lashari to Hameer Dars vil	0.60	0.00	0.00	—	0.60
THR-7	MK-MK-04	Khirao Kutcha to Chituri via Sajjan Rajr	0.00	0.00	0.75	0.75	—
THR-8	MK-MK-05	Kathri Kutcha to Jokedas Farm	1.30	0.00	0.00	1.30	—
THR-9	MK-MK-06	Ask Bunglow to Jarwari Canal	2.40	0.00	0.00	2.40	—
THR-10	MK-MK-07	Sindhri road to Haji Bushaa Broni	0.00	3.39	0.00	3.39	—
THR-11	MK-MK-08	Mirpurkhas-Hyderabad to Raj Kusar Farm	1.28	0.00	0.00	1.28	—
	MK-MK-09	Sugar Mill to Mirpur Dlo	1.61	0.00	0.00	—	1.61
	MK-MK-10	Ratanabad to Village Shittare	1.61	0.00	0.00	—	1.61
	MK-MK-11	Zamindar Cotton Fact. to Rasool Bux Dal	0.00	0.00	2.50	—	2.50
	MK-MK-12	Meer Wali Seemari to Ottaque Sathi Mohd	0.28	0.00	0.00	—	0.28
	MK-MK-13	Tando Adam Road to Allan Bux Mari Villag	0.60	0.00	0.00	—	0.60
THR-MP21	MK-MK-14	Mirpurkhas to Khan Village	10.00	0.00	1.00	11.00	—
	MK-MK-15	Tehlaram s/o Dhanraj Mal to Mirwah Road	1.25	0.00	0.00	—	1.25
	MK-MK-16	Monan Das to Mirwah Road Deh Chellaro	0.00	0.00	1.25	—	1.25
THR-MP35	MK-MK-17	5Th Mile Mirwah To Daulat Leghari Road	1.00	0.00	1.40	2.40	—
	MK-MK-18	MPK Sindhri Road to Hassan Ali Jarwar	0.23	0.00	0.00	—	0.23
	MK-MK-19	Haji Khan Bux Lashari to O-Photo	0.16	0.00	0.00	—	0.16
	MK-MK-20	MPK sindhri Road to Darya Khan Jarwar	0.25	0.00	0.00	—	0.25
	MK-MK-21	MPK Sindhri Road to Mohd Usman Juneja	0.11	0.00	0.00	—	0.11
THR-24	MK-MK-22	MPK Sindhri Road to Haji Abubakar Juneja	2.61	0.00	0.00	2.61	—
	MK-MK-23	Chittori Gravevard to Fazir Abdullah Kan	1.00	0.00	0.00	—	1.00
	MK-MK-24	Makrani Mosque To Mohallah Gharibabad	0.10	0.00	0.00	—	0.10
	MK-MK-25	Khipro Bus Stand to Jamrot Ring Road	0.47	0.00	0.00	—	0.47
	MK-MK-26	MPK Digri Main Rd. to Mir Khan Legnari	0.35	0.00	0.00	—	0.35
						SUB = 31.63	15.75

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Mirpurkhas

Page No. 2
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINTAINABL	RRMP REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
	MK-MK-27	MPK Digri Main Rd. to Wali Mcho Jaskani	0.48	0.00	0.00	—	0.48
	MK-MK-28	Mirpurkhas Rd to Wahid Khan Malkani Vill	0.66	0.00	0.00	—	0.66
	MK-MK-29	Juman Shah to Sugar Mill Road	0.14	0.00	0.00	—	0.14
	MK-MK-30	Altaf Hussain Shah to MPK Digri Road	0.11	0.00	0.00	—	0.11
	MK-MK-31	Seed Farm to Monajir Colony Mirpurkhas	0.44	0.00	0.00	—	0.44
		SUB-TOTAL:	29.84	4.27	6.90		
		TALUKA: Samaro					
THR-S-02	MK-SO-01	Mirpurkhas Umerkot Rd to Shadi Pali Town	0.00	4.50	0.00	—	4.50
		SUB-TOTAL:	0.00	4.50	0.00		
		TALUKA: Umerkot					
THR-15	MK-UK-01	Umerkot Dhhora Road to Khararo Syed	0.84	0.00	0.00	0.84	—
THR-16	MK-UK-02	Umerkot Road to Anwar Pali Village	0.00	0.00	1.00	1.00	—
	MK-UK-03	Tali Station to Sher Wah Bridge	0.30	0.00	1.00	—	0.50
	MK-UK-04	Naoisher City to Main Rd Kunri Naoisher	0.70	0.00	0.00	—	0.70
		SUB-TOTAL:	2.04	0.00	1.00		
		TOTAL LENGTH IN KMS:	36.93	8.77	11.05		
						1.84	7.53

SUB =

TOTAL = 33.47 23.28

56.75 KM. ✓

SANGHAR

ATTACHMENT NO: 4

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 4/28/93 INVENTORY	
Number	Location From	Location To	CCSC Length Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	Remarks	YES	NO
KM-16M	Sanghar MPS Road	Din Mohd.Junejo	1.00	34	44	103	0	0	0	0	181		1.00	—
SA-1	Khipro Mathungo Road	Guro Gopal	0.00								0	Brick	—	NO
KM-24K	Loon Khan	Kh[illegible] Road	1.30	16	12	12	0	6	11	0	57		1.30	—
SA-1M	Sanghar Perunal Road	Mureed Akbar Village	0.30								0	8	0.30	—
SA-2M	Jaaro Head Road	Chak No.8	0.66	44	59	30	0	2	18	0	153		0.66	—
SA-3M	Tando Mitha Khan Road	Bagar	5.00	10	15	18	0	4	8	0	55		5.00	—
SA-4M	Sanghar Perunal Road	Essa Khan Rind	0.70	24	40	39	0	1	11	0	115		0.70	—
SA-5M	Sanghar Khipro Rd.	Talib Junejo	0.60	46	26	31	0	4	13	0	120		0.60	—
SA-6M	Chak No.3	Chak NO.6	2.10	27	52	64	0	3	8	0	154		2.10	—
SA-7M	Jaarao Head Road	Chak No.4	0.80	31	36	33	0	5	9	0	114		0.80	—
SA-9BR	Sanghar Chotiyoon Road	M. Rahim Janoori	0.40								0	8	0.40	—
SA-10BR	Sanghar MPS Road L.Side	Umar Kashkali	0.00								0	Brick	—	NO
SA-11BR	Chak 59/66	Chak 60/65	0.00								0	Brick	—	NO
SJ-8M	Sanghar Shahdadpur Rd	Gul Hasan Sirewal	1.00	44	83	10	0	16	27	0	130		1.00	—
SJ-10M	Rawtiani Sinjhoro Road	Chak No.30	0.60	59	57	37	0	7	23	0	183		0.60	—
SJ-12M	Sanghar N Shah Rd	Ch. Farzand Ali Village	0.20	11	26	4	0	0	6	0	47		0.20	—
SJ-13M	Sanghar MPS Rd	Pir Jo Bunglow	0.21								0	8	0.21	—
SJ-14M	Sanghar SHD Road	Ahmad Khan Mori	0.40	24	37	14	0	0	6	0	81		0.40	—
SJ-15M	Khadro Railway Crossing	Jam Mitha Khan	7.00	120	70	65	0	14	19	0	288		7.00	—
SJ-27BR	Sanghar SHD Road	Abdul Karim Sirewal	0.00								0	Brick	—	NO
SJ-28BR	Sanghar N,Shah Rd	Vill. Sher Khan	0.00								0	Brick	—	NO
SJ-1K	Khadro	Khadro Railway Station	0.90	157	191	97	35	10	18	0	508		0.90	—
SJ-22K	Khadro	Jaarao	0.00								0	Brick	—	NO
SH-18M	Sanghar-N Shah Rd	Majno Chang	0.30								0	8	0.30	—
SH-19M	Sanghar.N.Shah Rd	Din Mohd Halepota	0.40	34	12	15	0	4	6	0	71		0.40	—
SH-20M	SHD T.Adam Road	Sutiari	0.20	21	15	9	0	3	12	0	60		0.20	—
SH-21M	shahpur-Chakar SHD Road	Haji Abdul Haneed Unar	0.00								0	Brick	—	NO
SH-22M	Shahdadpur-Lundo Rd	Soomar Fakir Hingoro	8.00	238	158	92	0	20	19	0	527		8.00	—
SH-22AM	Sanghar-SHD Road	Qadir Bux Chanyo	4.30	21	24	29	6	2	10	0	92		4.30	—
SH-23AM	San-SHD.Reen part of Land	Mubeen Wassan	0.80	49	27	18	0	0	0	0	94		0.80	—
SH-24M	Sanghar-Shahdadpur Rd	Khairo Kaloi Bridge	5.30	7	17	18	5	2	8	0	57		5.30	—
SH-24AM	Sarhari Railway Station c	Vill.Kamil Kario	3.50	123	75	88	0	12	31	0	329		3.50	—
SH-17K	Tando Adam	Mir Hasan Mori	3.30	22	14	27	2	4	5	0	74		3.50	—
TA-18M	Tando Adam-Tando Allahyar	Mir Hasan Mori	1.10	22	14	27	2	4	5	0	74		1.10	—
TA-33BR	T.Adam -Tando Allahyar Rd	Sultan Chang Manzoor Ali	0.00									Brick	—	NO
SA-2	Pucca Road	Hussain Bux Rajar	0.80	1	9	17	0	2	0	0	29		0.80	—
TOTAL			51.17										SUB = 51.37	—

SANGHAR – STATUS JUNE 1989

ATTACHMENT NO: 2

1	2	3	4	5	6	7	8	9	10	11	12	13	ROADS IN 4/29/93 INVENTORY	
Road Number	Location From	Location To	CCSC Length Km	Animal Drawn Cart	Motor Cycle	Motor Car/ Jeep	Bus Minibus	Trucks	Tractor Trailor	Others	Total	REMARKS	YES	NO
SA-3	Bakar Road	Mohd.Rahim Janvari	0.34								0 *		—	0.34
SA-4	Sinjhoro Road	Allah Warayo Wassan	0.50	30	32	16	0	4	13	0	95		0.50	
SA-5	Sanghar-Sinjhoro Rd	Nooro Wassan	1.60	12	15	6	0	2	5	0	40		1.60	—
SA-7	Shahdadpur Road	Otaq Mir Mohd. Wassan	2.10	40	18	3	3	0	1	0	65		2.10	—
SA-8	Bhola Shah	Khun Sanjarani	1.31	25	37	22	0	5	10	0	99		1.31	—
SA-9	Sada Wah Mori	Yaqub Sanjrani	1.36	25	25	23	0	3	9	0	85		1.36	—
SA-10	Fatasul T.M Khan Rd	Vill. Chanan Das	6.00	32	16	16	0	2	15	0	81		6.00	—
SA-11	Tando Mitha Khan	Vill.Dhar Fakir	0.00								0	Un-Paved	YES	—
SA-12	Vill.H.G. Qadar Rd-64	Vill. Hussain Bux Rajar	0.80	20	18	16	0	1	20	0	75		0.80	—
Total			14.01											
Sub Total			65.18									Sub =	13.67	0.34

* Indicates that its length is less than 0.5 KM

therefore not included in Traffic Count.

Total = 65.09 | 0.34

65.38 ~~64.08~~ Km

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Sanghar

APPENDIX E

Page No. .
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS Roads in June 1989 Inventory YES	NO
		TALUKA: Khipro					
SA-1AM	SA-KH-01	Sanghar MPK to Din Mohd Junejo	1.00	0.00	0.00	1.00	—
SA-2AM	SA-KH-02	Loon Khan to Khalif Dost Mohd	3.50	0.00	0.00	3.50	—
SA-2	SA-KH-03	Pucca Road to Hussain Bux Rajar	0.00	0.85	0.00	0.85	—
	SA-KP-04	Hingoro to Ali Mohammad Rajar	1.50	0.00	0.00	—	1.50
	SA-KP-05	Qutab Hingoro to Ismail Sajjo	1.50	0.00	0.00	—	1.50
	SA-KP-06	Tando M. Khan-Khipro to Rasool Bux Rajar	0.50	0.00	0.00	—	0.50
	SA-KP-07	Khipro Road to Ibhrahim Hingorjo	0.30	0.00	0.00	—	0.30
		SUB-TOTAL:	8.30	0.85	0.00		
		TALUKA: Sanghar					
SA-1M	SA-SA-01	Sanghar Perumal to Mureed Akbar	0.30	0.00	0.00	0.30	—
SA-2M	SA-SA-02	Jamrao Road to Chak No. 8	0.70	0.00	0.00	0.70	—
SA-3M	SA-SA-03	Tando Mitha Khan to Village Sakar	0.00	0.00	5.00	5.00	—
SA-4M	SA-SA-04	Sanghar Perumal To Qazi Essa Rind	0.00	0.00	0.70	0.70	—
SA-5M	SA-SA-05	Sanghar Khipro to Talib Junejo	0.00	0.00	0.60	0.60	—
SA-6M	SA-SA-06	Chak No. 3 to Chak No. 6	2.10	0.00	0.00	2.10	—
SA-7M	SA-SA-07	Jamrao Road to Chak No. 4	0.80	0.00	0.00	0.80	—
SA-8M	SA-SA-08	Sanghar Shahdadpur to Gul Hasan Barewal	1.00	0.00	0.00	1.00	—
SA-9SR	SA-SA-09	Sanghar Chotiyoon to M. Ramin Jamoosi	0.40	0.00	0.00	0.40	—
SA-9	SA-SA-10	Sanghar Sinjhoro to Noore Wassan	1.60	0.00	0.00	1.60	—
SA-8	SA-SA-11	Sheik Khan to Khan Sanjrani	1.30	0.00	0.00	1.30	—
SA-9	SA-SA-12	Saga Wan Mari Yakoob Sanjrani	1.36	0.00	0.00	1.36	—
SA-10	SA-SA-13	Perumal-Tando Mitha Khan to V. Chamandas	0.00	0.00	3.50	3.50	—
SA-11	SA-SA-14	Tando Mitha Khan to Dahir Fakir	1.50	0.00	0.00	1.50	—
SA-12	SA-SA-15	H.S. Dadu Rd-84 to Hussain Bux Rajar	0.80	0.00	0.00	0.80	—
	SA-SA-16	Sanghar Nirpurkhas to Najnoon Wachao	3.50	0.00	0.00	—	3.50
	SA-SA-17	Tando Mitha Khan to Burman Rajar	2.00	0.00	0.00	—	2.00
	SA-SA-18	Nooru Wassan to Village Bachal Wassan	1.00	0.00	0.00	—	1.00
		SUB-TOTAL:	18.36	0.00	9.80		
		TALUKA: Shahdadpur					
SA-11M	SA-SH-01	Sanghar Nawabshah to Najnoon Chang	0.00	0.00	0.00	0.30	—
SA-19M	SA-SH-02	Sanghar Nawabshah to Din Mohd Haleepoto	0.40	0.00	0.00	0.40	—
SA-20M	SA-SH-03	Shahdadpur-Tando Adam to Sutiari	0.40	0.00	0.00	0.40	—
SA-22M	SA-SH-04	ShD. to Lund Rd Via Sanghar Fakir Hingoro	0.00	0.00	9.00	9.00	—
SA-22AM	SA-SH-05	Sanghar Shahdadpur to Qadir Bux Chango	4.30	0.00	0.00	1.30	—
SA-22BM	SA-SH-06	Sanghar Sha. To L. Mansoor-Mubeen Wassan	0.00	0.00	0.80	0.80	—
SA-24M	SA-SH-07	Sanghar Shahdadpur to Khairo Pelci Price	0.00	1.85	0.00	1.85	—
SA-24AM	SA-SH-08	Barhari Riwy. Crossing to Kamil Meric	3.50	0.00	0.00	3.50	—
SA-7	SA-SH-09	Shahdadpur Road to Qutab Mir Mohd Wassan	2.10	0.00	0.00	2.10	—
	SA-SH-10	Shahpur Chakkar Barhoon to Inamabad	1.50	0.00	0.00	—	2.00
	SA-SH-11	Shahdadpur-Barwari Rd to Ali Asgar Fakir	1.00	0.00	0.00	—	1.00
						Sub = 49.66	13.30

APPENDIX E

ROAD RESOURCES MANAGEMENT PROJECT (391-0480)
SINDH DISTRICT PAVED ROAD INVENTORY
DISTRICT: Sanghar

Page No. 2
DATE. 04/29/93

OLD ROAD NO.	NEW CODE NO.	ROAD NAME AND LOCATION	ROAD CONDITION TYPE AND LENGTH IN KMS MAINT-AINABL	RRMP REHB.	NON M'ABLE	REMARKS ROADS IN JUNE 1989 INVENTORY YES	NO
	SA-SH-12	Shahdadpur-Hala Rd to Sahit Khan Jamali	1.00	0.00	0.00	—	1.00
	SA-SH-13	Shahdadpur Hala To Bollo Khan Rind	0.60	0.00	0.00	—	0.60
		SUB-TOTAL:	15.10	4.85	7.30		
		TALUKA: Sinjhoro					
	SA-SH-14	Sanghar Nawabshah Road to Village Dhaara	1.00	0.00	0.00		
SJ-10M	SA-SJ-01	Rawtiani-Sinjhoro to Char No. 30	0.60	0.00	0.00	0.60	—
SJ-12M	SA-SJ-02	Sanghar Nawabshah to Ch. Farzand Ali	0.20	0.00	0.00	0.20	—
SJ-13M	SA-SJ-03	Sanghar Mirtukhas to Pir Jo Bunglow	0.21	0.00	0.00	0.21	—
SJ-14M	SA-SJ-04	Sanghar Shahdadpur to Ahmad Khan Mari	0.40	0.00	0.00	0.40	—
SJ-15M	SA-SJ-05	Kaabo Railway crossing to Jam Mitha Khar	0.00	0.00	7.00	7.00	—
SJ-1J	SA-SJ-06	Khaabo to Khaabo Railway Station	0.00	0.00	3.00	3.00	—
SA--	SA-SJ-07	Sinjhoro Road to Allah Warayo Hassan	0.50	0.00	0.00	0.50	—
		SUB-TOTAL:	2.91	0.00	10.00		
		TALUKA: Tando Adam					
SH-17K	SA-TA-01	Tando Adam to Mir Hassan Mari	3.30	0.00	0.00	3.30	—
TA-18M	SA-TA-02	Tando Adam-T. Allahyar To Mir Hasan Mari	0.00	0.00	1.10	1.10	—
	SA-TA-03	Tando Adam Bhit Shah To Vi. Mulan Mahnan	1.00	0.00	0.00	—	1.00
		SUB-TOTAL:	4.30	0.00	1.10		
		TOTAL LENGTH IN KMS:	48.97	5.70	28.20		
						SUB = 16.31	2.60
						TOTAL = 65.97	15.90
							81.87 KM.

APPENDIX F

COST BENEFIT EVALUATIONS FOR:

DISTRICTS OF :

1. Dadu
2. Khairpur
3. Larkana
4. Shikarpur
5. Sukkur **
6. Jacobabad
7. Nawabshah
8. Naushero Feroz
9. Hyderabad
10. Karachi
11. Thatta
12. Badin
13. Tharparkar - Mirpurkhas
14. Sanghar **

** Cost Benefit Evaluations not available, not included.

APPENDIX F

DADU (Road Length = 60.58 Km)

Routine = 30.19 Km
Periodic = 20.13 Km
Rehabilitation = 10.26 Km

Daily VOC Benefits Km (in Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	5.00	4.30	3.85	2.55
Car	2.18	1.55	1.29	22.00	47.96	34.10	28.38
Ford Minibus/Bus	3.06	2.74	1.71	0.00	0.00	0.00	0.00
Trucks/Tractor/ Trolley	3.26	2.92	1.93	43.00	140.18	125.56	82.99
Others	2.18	1.55	1.29	30.00	65.40	46.50	38.70
			Total:	100.00	257.84	210.01	152.62

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	94.11	76.65	55.71

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	94.11
1	5		25.00	25.00		94.11
2	5		25.00	25.00		94.11
3	4		25.00	25.00		76.65
4	4		25.00	25.00		76.65
5	3	300.00	0.00	300.00		55.71
6	5		25.00	25.00		94.11
7	5		25.00	25.00		94.11
8	4		25.00	25.00		76.65
9	4		25.00	25.00		76.65
10	3	700.00	0.00	700.00		55.71
	Total:	1000.00	200.00	1200.00	576.39	794.46

* DADU *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	94.11
1	5		25.00	25.00		94.11
2	4		25.00	25.00		76.65
3	4		25.00	25.00		76.65
4	3	300.00	0.00	300.00		55.71
5	5		25.00	25.00		94.11
6	4		25.00	25.00		76.65
7	4		25.00	25.00		76.65
8	3		25.00	25.00		55.71
9	3	700.00	0.00	700.00		55.71
10	5		25.00	25.00		94.11
	Total:	1000.00	200.00	1200.00	626.57	756.06

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	94.11
1	5		25.00	25.00		94.11
2	4		25.00	25.00		76.65
3	3	300.00	0.00	300.00		55.71
4	5		25.00	25.00		94.11
5	4		25.00	25.00		76.65
6	3		25.00	25.00		55.71
7	5	300.00	0.00	300.00		94.11
8	4		25.00	25.00		76.65
9	3		25.00	25.00		55.71
10	3	700.00	0.00	700.00		55.71
	Total:	1300.00	175.00	1475.00	760.17	735.12

* DADU *

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	94.11
1	5		25.00	25.00		94.11
2	4		25.00	25.00		76.65
3	3		25.00	25.00		55.71
4	3	700.00	0.00	700.00		55.71
5	5		25.00	25.00		94.11
6	4		25.00	25.00		76.65
7	3		25.00	25.00		55.71
8	3	700.00	0.00	700.00		55.71
9	5		25.00	25.00		94.11
10	4		25.00	25.00		76.65
	Total:	1400.00	200.00	1600.00	943.99	735.12

KHAIRPUR (Road Length = 42.52 Km)

Routine = 20.63 Km
Periodic = 13.75 Km
Rehabilitation = 8.14 Km

Daily VOC Benefits Km (in Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	20.00	17.20	15.40	10.20
Car	2.18	1.55	1.29	14.00	30.52	21.70	18.06
Ford Minibus/Bus	3.06	2.74	1.71	4.00	12.24	10.96	6.84
Trucks/Tractor/ Trolley	3.26	2.92	1.93	42.00	136.92	122.64	81.06
Others	2.18	1.55	1.29	23.00	50.14	35.65	29.67
			Total:	103.00	247.02	206.35	145.83

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	90.16	75.32	53.23

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	90.16
1	5		25.00	25.00		90.16
2	5		25.00	25.00		90.16
3	4		25.00	25.00		75.32
4	4		25.00	25.00		75.32
5	3	300.00	0.00	300.00		53.23
6	5		25.00	25.00		90.16
7	5		25.00	25.00		90.16
8	4		25.00	25.00		75.32
9	4		25.00	25.00		75.32
10	3	700.00	0.00	700.00		53.23
	Total:	1000.00	200.00	1200.00	576.39	768.38

* KHAIRPUR *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	90.16
1	5		25.00	25.00		90.16
2	4		25.00	25.00		75.32
3	4		25.00	25.00		75.32
4	3	300.00	0.00	300.00		53.23
5	5		25.00	25.00		90.16
6	4		25.00	25.00		75.32
7	4		25.00	25.00		75.32
8	3		25.00	25.00		53.23
9	3	700.00	0.00	700.00		53.23
10	5		25.00	25.00		90.16
	Total:	1000.00	200.00	1200.00	626.57	731.45

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	90.16
1	5		25.00	25.00		90.16
2	4		25.00	25.00		75.32
3	3	300.00	0.00	300.00		53.23
4	5		25.00	25.00		90.16
5	4		25.00	25.00		75.32
6	3		25.00	25.00		53.23
7	5	300.00	0.00	300.00		90.16
8	4		25.00	25.00		75.32
9	3		25.00	25.00		53.23
10	3	700.00	0.00	700.00		53.23
	Total:	1300.00	175.00	1475.00	760.17	709.36

* KHAIRPUR *

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	90.16
1	5		25.00	25.00		90.16
2	4		25.00	25.00		75.32
3	3		25.00	25.00		53.23
4	3	700.00	0.00	700.00		53.23
5	5		25.00	25.00		90.16
6	4		25.00	25.00		75.32
7	3		25.00	25.00		53.23
8	3	700.00	0.00	700.00		53.23
9	5		25.00	25.00		90.16
10	4		25.00	25.00		75.32
	Total:	1400.00	200.00	1600.00	943.99	709.36

APPENDIX F

LARKANA (Road Length = 87.90 Km)

Routine = 48.64 Km
Periodic = 32.43 Km
Rehabilitation = 6.73 Km

Daily VOC Benefits Km (In Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	16.00	13.76	12.32	8.16
Car	2.18	1.55	1.29	3.00	6.54	4.65	3.87
Ford Minibus/Bus	3.06	2.74	1.71	5.00	15.30	13.70	8.55
Trucks/Tractor/ Trolley	3.26	2.92	1.93	20.00	65.20	58.40	38.60
Others	2.18	1.55	1.29	6.00	13.08	9.30	7.74
			Total:	50.00	113.88	98.37	66.92

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	41.57	35.91	24.43

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	41.57
1	5		25.00	25.00		41.57
2	5		25.00	25.00		41.57
3	4		25.00	25.00		35.91
4	4		25.00	25.00		35.91
5	3	300.00	0.00	300.00		24.43
6	5		25.00	25.00		41.57
7	5		25.00	25.00		41.57
8	4		25.00	25.00		35.91
9	4		25.00	25.00		35.91
10	3	700.00	0.00	700.00		24.43
	Total:	1000.00	200.00	1200.00	576.39	358.78

* LARKANA *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	41.57
1	5		25.00	25.00		41.57
2	4		25.00	25.00		35.91
3	4		25.00	25.00		35.91
4	3	300.00	0.00	300.00		24.43
5	5		25.00	25.00		41.57
6	4		25.00	25.00		35.91
7	4		25.00	25.00		35.91
8	3		25.00	25.00		24.43
9	3	700.00	0.00	700.00		24.43
10	5		25.00	25.00		41.57
	Total:	1000.00	200.00	1200.00	626.57	341.64

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	41.57
1	5		25.00	25.00		41.57
2	4		25.00	25.00		35.91
3	3	300.00	0.00	300.00		24.43
4	5		25.00	25.00		41.57
5	4		25.00	25.00		35.91
6	3		25.00	25.00		24.43
7	5	300.00	0.00	300.00		41.57
8	4		25.00	25.00		35.91
9	3		25.00	25.00		24.43
10	3	700.00	0.00	700.00		24.43
	Total:	1300.00	175.00	1475.00	760.17	330.16

* LARKANA *

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	41.57
1	5		25.00	25.00		41.57
2	4		25.00	25.00		35.91
3	3		25.00	25.00		24.43
4	3	700.00	0.00	700.00		24.43
5	5		25.00	25.00		41.57
6	4		25.00	25.00		35.91
7	3		25.00	25.00		24.43
8	3	700.00	0.00	700.00		24.43
9	5		25.00	25.00		41.57
10	4		25.00	25.00		35.91
	Total:	1400.00	200.00	1600.00	943.99	330.16

SHIKARPUR (Road Length = 28.71 Km)

Routine = 11.28 Km
Periodic = 11.28 Km
Rehabilitation = 6.15 Km

Daily VOC Benefits Km (In Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	1.00	0.86	0.77	0.51
Car	2.18	1.55	1.29	10.00	21.80	15.50	12.90
Ford Minibus/Bus	3.06	2.74	1.71	0.00	0.00	0.00	0.00
Trucks/Tractor/ Trolley	3.26	2.92	1.93	30.00	97.80	87.60	57.90
Others	2.18	1.55	1.29	18.00	39.24	27.90	23.22
			Total:	59.00	159.70	131.77	94.53

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	58.29	48.10	34.50

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	58.29
1	5		25.00	25.00		58.29
2	5		25.00	25.00		58.29
3	4		25.00	25.00		48.10
4	4		25.00	25.00		48.10
5	3	300.00	0.00	300.00		34.50
6	5		25.00	25.00		58.29
7	5		25.00	25.00		58.29
8	4		25.00	25.00		48.10
9	4		25.00	25.00		48.10
10	3	700.00	0.00	700.00		34.50
	Total:	1000.00	200.00	1200.00	576.39	494.56

* SHIKARPUR *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	58.29
1	5		25.00	25.00		58.29
2	4		25.00	25.00		48.10
3	4		25.00	25.00		48.10
4	3	300.00	0.00	300.00		34.50
5	5		25.00	25.00		58.29
6	4		25.00	25.00		48.10
7	4		25.00	25.00		48.10
8	3		25.00	25.00		34.50
9	3	700.00	0.00	700.00		58.29
10	5		25.00	25.00		48.10
	Total:	1000.00	200.00	1200.00	626.57	484.37

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	58.29
1	5		25.00	25.00		58.29
2	4		25.00	25.00		48.10
3	3	300.00	0.00	300.00		34.50
4	5		25.00	25.00		58.29
5	4		25.00	25.00		48.10
6	3		25.00	25.00		34.50
7	5	300.00	0.00	300.00		58.29
8	4		25.00	25.00		48.10
9	3		25.00	25.00		34.50
10	3	700.00	0.00	700.00		34.50
	Total:	1300.00	175.00	1475.00	760.17	457.17

* SHIKARPUR *

0% Maintenance

Years	Cond. Rat.		Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5		1000.00	25.00	1025.00	0.12	58.29
1	5			25.00	25.00		58.29
2	4			25.00	25.00		48.10
3	3			25.00	25.00		34.50
4	3		700.00	0.00	700.00		34.50
5	5			25.00	25.00		58.29
6	4			25.00	25.00		48.10
7	3			25.00	25.00		34.50
8	3		700.00	0.00	700.00		34.50
9	5			25.00	25.00		58.29
10	4			25.00	25.00		48.10
		Total:	1400.00	200.00	1600.00	943.99	457.17

JACOBABAD (Road Length = 12.76 Km)

Routine = 5.78 Km
Periodic = 2.47 Km
Rehabilitation = 4.51 Km

Daily VOC Benefits Km (In Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	12.00	10.32	9.24	6.12
Car	2.18	1.55	1.29	16.00	34.88	24.80	20.64
Ford Minibus/Bus	3.06	2.74	1.71	3.00	9.18	8.22	5.13
Trucks/Tractor/ Trolley	3.26	2.92	1.93	31.00	101.06	90.52	59.83
Others	2.18	1.55	1.29	19.00	41.42	29.45	24.51
			Total:	81.00	196.86	162.23	116.23

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	71.85	59.21	42.42

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	71.85
1	5		25.00	25.00		71.85
2	5		25.00	25.00		71.85
3	4		25.00	25.00		59.21
4	4		25.00	25.00		59.21
5	3	300.00	0.00	300.00		42.42
6	5		25.00	25.00		71.85
7	5		25.00	25.00		71.85
8	4		25.00	25.00		59.21
9	4		25.00	25.00		59.21
10	3	700.00	0.00	700.00		42.42
	Total:	1000.00	200.00	1200.00	576.39	609.08

* JACOBABAD *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	71.85
1	5		25.00	25.00		71.85
2	4		25.00	25.00		59.21
3	4		25.00	25.00		59.21
4	3	300.00	0.00	300.00		42.42
5	5		25.00	25.00		71.85
6	4		25.00	25.00		59.21
7	4		25.00	25.00		59.21
8	3		25.00	25.00		42.42
9	3	700.00	0.00	700.00		42.42
10	5		25.00	25.00		71.85
	Total:	1000.00	200.00	1200.00	626.57	579.65

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	71.85
1	5		25.00	25.00		71.85
2	4		25.00	25.00		59.21
3	3	300.00	0.00	300.00		42.42
4	5		25.00	25.00		71.85
5	4		25.00	25.00		59.21
6	3		25.00	25.00		42.42
7	5	300.00	0.00	300.00		71.85
8	4		25.00	25.00		59.21
9	3		25.00	25.00		42.42
10	3	700.00	0.00	700.00		42.42
	Total:	1300.00	175.00	1475.00	760.17	562.86

* JACOBABAD *

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	71.85
1	5		25.00	25.00		71.85
2	4		25.00	25.00		59.21
3	3		25.00	25.00		42.42
4	3	700.00	0.00	700.00		42.42
5	5		25.00	25.00		71.85
6	4		25.00	25.00		59.21
7	3		25.00	25.00		42.42
8	3	700.00	0.00	700.00		42.42
9	5		25.00	25.00		71.85
10	4		25.00	25.00		59.21
	Total:	1400.00	200.00	1600.00	943.99	562.86

NAWABSHAH (Road Length = 78.36 Km)

Routine = 25.61 Km
Periodic = 17.08 Km
Rehabilitation = 35.67 Km

Daily VOC Benefits Km (In Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	43.00	36.98	33.11	21.93
Car	2.18	1.55	1.29	26.00	56.68	40.30	33.54
Ford Minibus/Bus	3.06	2.74	1.71	6.00	18.36	16.44	10.26
Trucks/Tractor/ Trolley	3.26	2.92	1.93	28.00	91.28	81.76	54.04
Others	2.18	1.55	1.29	67.00	146.06	103.85	68.43
			Total:	170.00	349.36	275.46	206.20

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	127.52	100.54	75.26

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	219.57
1	5		25.00	25.00		219.57
2	5		25.00	25.00		219.57
3	4		25.00	25.00		179.31
4	4		25.00	25.00		179.31
5	3	300.00	0.00	300.00		129.47
6	5		25.00	25.00		219.57
7	5		25.00	25.00		219.57
8	4		25.00	25.00		179.31
9	4		25.00	25.00		179.31
10	3	700.00	0.00	700.00		129.47
	Total:	1000.00	200.00	1200.00	576.39	1854.46

* NAWABSHAH *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	219.57
1	5		25.00	25.00		219.57
2	4		25.00	25.00		179.31
3	4		25.00	25.00		179.31
4	3	300.00	0.00	300.00		129.47
5	5		25.00	25.00		219.57
6	4		25.00	25.00		179.31
7	4		25.00	25.00		179.31
8	3		25.00	25.00		129.47
9	3	700.00	0.00	700.00		129.47
10	5		25.00	25.00		219.57
	Total:	1000.00	200.00	1200.00	626.57	1764.36

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	219.57
1	5		25.00	25.00		219.57
2	4		25.00	25.00		179.31
3	3	300.00	0.00	300.00		129.47
4	5		25.00	25.00		219.57
5	4		25.00	25.00		179.31
6	3		25.00	25.00		129.47
7	5	300.00	0.00	300.00		219.57
8	4		25.00	25.00		179.31
9	3		25.00	25.00		129.47
10	3	700.00	0.00	700.00		129.47
	Total:	1300.00	175.00	1475.00	760.17	1714.52

* NAWABSHAH *

0% Maintenance

Years	Cond. Rat.		Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5		1000.00	25.00	1025.00	0.12	219.57
1	5			25.00	25.00		219.57
2	4			25.00	25.00		179.31
3	3			25.00	25.00		129.47
4	3		700.00	0.00	700.00		129.47
5	5			25.00	25.00		219.57
6	4			25.00	25.00		179.31
7	3			25.00	25.00		129.47
8	3		700.00	0.00	700.00		129.47
9	5			25.00	25.00		219.57
10	4			25.00	25.00		179.31
		Total:	1400.00	200.00	1600.00	943.99	1714.52

NAUSHERO FEROZE (Road Length = 71.60 Km)

Routine = 26.26 Km
Periodic = 11.26 Km
Rehabilitation = 34.08 Km

Daily VOC Benefits Km (In Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hlg (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	0.00	0.00	0.00	0.00
Car	2.18	1.55	1.29	0.00	0.00	0.00	0.00
Ford Minibus/Bus	3.06	2.74	1.71	4.00	12.24	10.96	6.84
Trucks/Tractor/ Trolley	3.26	2.92	1.93	60.00	195.60	175.20	115.80
Others	2.18	1.55	1.29	40.00	87.20	62.00	51.60
			Total:	104.00	295.04	248.16	174.24

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	107.69	90.58	63.60

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	107.69
1	5		25.00	25.00		107.69
2	5		25.00	25.00		107.69
3	4		25.00	25.00		90.58
4	4		25.00	25.00		90.58
5	3	300.00	0.00	300.00		63.60
6	5		25.00	25.00		107.69
7	5		25.00	25.00		107.69
8	4		25.00	25.00		90.58
9	4		25.00	25.00		90.58
10	3	700.00	0.00	700.00		63.60
	Total:	1000.00	200.00	1200.00	576.39	920.28

* NAUSHERO FEROZE *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	107.69
1	5		25.00	25.00		107.69
2	4		25.00	25.00		90.58
3	4		25.00	25.00		90.58
4	3	300.00	0.00	300.00		63.60
5	5		25.00	25.00		107.69
6	4		25.00	25.00		90.58
7	4		25.00	25.00		90.58
8	3		25.00	25.00		63.60
9	3	700.00	0.00	700.00		63.60
10	5		25.00	25.00		107.69
	Total:	1000.00	200.00	1200.00	626.57	876.19

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	107.69
1	5		25.00	25.00		107.69
2	4		25.00	25.00		90.58
3	3	300.00	0.00	300.00		63.60
4	5		25.00	25.00		107.69
5	4		25.00	25.00		90.58
6	3		25.00	25.00		63.60
7	5	300.00	0.00	300.00		107.69
8	4		25.00	25.00		90.58
9	3		25.00	25.00		63.60
10	3	700.00	0.00	700.00		63.60
	Total:	1300.00	175.00	1475.00	760.17	849.21

* NAUSHERO FEROZE *

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	107.69
1	5		25.00	25.00		107.69
2	4		25.00	25.00		90.58
3	3		25.00	25.00		63.60
4	3	700.00	0.00	700.00		63.60
5	5		25.00	25.00		107.69
6	4		25.00	25.00		90.58
7	3		25.00	25.00		63.60
8	3	700.00	0.00	700.00		63.60
9	5		25.00	25.00		107.69
10	4		25.00	25.00		90.58
	Total:	1400.00	200.00	1600.00	943.99	849.21

HYDERABAD (Road Length = 357.19 Km)

Routine = 214.72 Km
Periodic = 92.02 Km
Rehabilitation = 50.45 Km

Daily VOC Benefits Km (In Rupees)

High Traffic	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traffic High (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	90.00	77.40	69.30	45.90
Car	2.18	1.55	1.29	156.00	340.08	241.80	201.24
Ford Minibus/Bus	3.06	2.74	1.71	12.00	36.72	32.88	20.52
Trucks/Tractor/ Trolley	3.26	2.92	1.93	115.00	374.90	335.80	221.95
Others	2.18	1.55	1.29	26.00	56.68	87.85	33.54
			Total:	399.00	885.78	767.63	523.15

Medium Traffic	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traffic High (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	42.00	36.12	32.34	21.42
Car	2.18	1.55	1.29	31.00	67.58	48.05	39.99
Ford Minibus/Bus	3.06	2.74	1.71	4.00	12.24	10.96	6.84
Trucks/Tractor/ Trolley	3.26	2.92	1.93	44.00	143.44	128.48	84.92
Others	2.18	1.55	1.29	8.00	17.44	12.40	10.32
			Total:	129.00	276.82	232.23	163.49

Low Traffic	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traffic High (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	15.00	12.90	11.55	7.65
Car	2.18	1.55	1.29	30.00	65.40	46.50	38.70
Ford Minibus/Bus	3.06	2.74	1.71	6.00	18.36	16.44	10.26
Trucks/Tractor/ Trolley	3.26	2.92	1.93	10.00	32.60	29.20	19.30
Others	2.18	1.55	1.29	0.00	0.00	0.00	0.00
			Total:	61.00	129.26	103.69	75.91

Annual Expected Benefits In Base Year (In Thousand Rupees)

* HYDERABAD *

Traffic Load	Cond.5	Cond.4	Cond.3
High Traffic	321.31	280.18	190.95
Medium Traffic	101.04	84.76	59.67
Low Traffic	47.18	37.85	27.71

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefit High Traffic (Disc)	VOC Benefit Med. Traffic (Disc)	VOC Benefit Low. Traffic (Disc)
0	5	1000.00	25.00	1025.00	0.12	321.31	101.04	47.18
1	5		25.00	25.00		321.31	101.04	47.18
2	5		25.00	25.00		321.31	101.04	47.18
3	4		25.00	25.00		280.18	84.76	37.85
4	4		25.00	25.00		280.18	84.76	37.85
5	3	300.00	0.00	300.00		190.95	59.67	27.71
6	5		25.00	25.00		321.31	101.04	47.18
7	5		25.00	25.00		321.31	101.04	47.18
8	4		25.00	25.00		280.18	84.76	37.85
9	4		25.00	25.00		280.18	84.76	37.85
10	3	700.00	0.00	700.00		190.95	59.67	27.71
	Total:	1000.00	200.00	1200.00	576.39	2787.86	862.54	395.54

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefit High Traffic (Disc)	VOC Benefit Med. Traffic (Disc)	VOC Benefit Low. Traffic (Disc)
0	5	1000.00	25.00	1025.00	0.12	321.31	101.04	47.18
1	5		25.00	25.00		321.31	101.04	47.18
2	4		25.00	25.00		280.18	84.76	37.85
3	4		25.00	25.00		280.18	84.76	37.85
4	3	300.00	0.00	300.00		190.95	59.67	27.71
5	5		25.00	25.00		321.31	101.04	47.18
6	4		25.00	25.00		280.18	84.76	37.85
7	4		25.00	25.00		280.18	84.76	37.85
8	3		25.00	25.00		190.95	59.67	27.71
9	3	700.00	0.00	700.00		190.95	59.67	27.71
10	5		25.00	25.00		321.31	101.04	47.18
	Total:	1000.00	200.00	1200.00	626.57	2657.50	821.17	376.07

APPENDIX F

* HYDERABAD *

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefit High Traffic (Disc)	VOC Benefit Med. Traffic (Disc)	VOC Benefit Low. Traffic (Disc)
0	5	1000.00	25.00	1025.00	0.12	321.31	101.04	47.18
1	5		25.00	25.00		321.31	101.04	47.18
2	4		25.00	25.00		280.18	84.76	37.85
3	3	300.00	0.00	300.00		190.95	59.67	27.71
4	5		25.00	25.00		321.31	101.04	47.18
5	4		25.00	25.00		280.18	84.76	37.85
6	3		25.00	25.00		190.95	59.67	27.71
7	5	300.00	0.00	300.00		321.31	101.04	47.18
8	4		25.00	25.00		280.18	84.76	37.85
9	3		25.00	25.00		190.95	59.67	27.71
10	3	700.00	0.00	700.00		190.95	59.67	27.71
	Total:	1300.00	175.00	1475.00	760.17	2568.27	796.08	365.93

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefit High Traffic (Disc)	VOC Benefit Med. Traffic (Disc)	VOC Benefit Low. Traffic (Disc)
0	5	1000.00	25.00	1025.00	0.12	321.31	101.04	47.18
1	5		25.00	25.00		321.31	101.04	47.18
2	4		25.00	25.00		280.18	84.76	37.85
3	3		25.00	25.00		190.95	59.67	27.71
4	3	700.00	0.00	700.00		190.95	59.67	27.71
5	5		25.00	25.00		321.31	101.04	47.18
6	4		25.00	25.00		280.18	84.76	37.85
7	3		25.00	25.00		190.95	59.67	27.71
8	3	700.00	0.00	700.00		190.95	59.67	27.71
9	5		25.00	25.00		321.31	101.04	47.18
10	4		25.00	25.00		280.18	84.76	37.85
	Total:	1400.00	200.00	1600.00	943.99	2568.27	796.08	365.93

KARACHI (Road Length = 122.57 Km)

Routine = 30.14 Km
Periodic = 30.13 Km
Rehabilitation = 62.30 Km

Daily VOC Benefits Km (in Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	89.00	76.54	68.53	45.39
Car	2.18	1.55	1.29	54.00	117.72	83.70	69.66
Ford Minibus/Bus	3.06	2.74	1.71	14.00	42.84	38.36	23.94
Trucks/Tractor/ Trolley	3.26	2.92	1.93	69.00	224.94	201.48	133.17
Others	2.18	1.55	1.29	64.00	139.52	99.20	82.56
			Total:	290.00	601.56	491.27	354.72

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	219.57	179.31	129.47

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	219.57
1	5		25.00	25.00		219.57
2	5		25.00	25.00		219.57
3	4		25.00	25.00		179.31
4	4		25.00	25.00		179.31
5	3	300.00	0.00	300.00		129.47
6	5		25.00	25.00		219.57
7	5		25.00	25.00		219.57
8	4		25.00	25.00		179.31
9	4		25.00	25.00		179.31
10	3	700.00	0.00	700.00		129.47
	Total:	1000.00	200.00	1200.00	576.39	1854.46

* KARACHI *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	219.57
1	5		25.00	25.00		219.57
2	4		25.00	25.00		179.31
3	4		25.00	25.00		179.31
4	3	300.00	0.00	300.00		129.47
5	5		25.00	25.00		219.57
6	4		25.00	25.00		179.31
7	4		25.00	25.00		179.31
8	3		25.00	25.00		129.47
9	3	700.00	0.00	700.00		129.47
10	5		25.00	25.00		219.57
	Total:	1000.00	200.00	1200.00	626.57	1764.36

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	219.57
1	5		25.00	25.00		219.57
2	4		25.00	25.00		179.31
3	3	300.00	0.00	300.00		129.47
4	5		25.00	25.00		219.57
5	4		25.00	25.00		179.31
6	3		25.00	25.00		129.47
7	5	300.00	0.00	300.00		219.57
8	4		25.00	25.00		179.31
9	3		25.00	25.00		129.47
10	3	700.00	0.00	700.00		129.47
	Total:	1300.00	175.00	1475.00	760.17	1714.52

* KARACHI *

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	219.57
1	5		25.00	25.00		219.57
2	4		25.00	25.00		179.31
3	3		25.00	25.00		129.47
4	3	700.00	0.00	700.00		129.47
5	5		25.00	25.00		219.57
6	4		25.00	25.00		179.31
7	3		25.00	25.00		129.47
8	3	700.00	0.00	700.00		129.47
9	5		25.00	25.00		219.57
10	4		25.00	25.00		179.31
	Total:	1400.00	200.00	1600.00	943.99	1714.52

THATTA (Road Length = 46.70 Km)

Routine = 19.85 Km
Periodic = 19.85 Km
Rehabilitation = 7.00 Km

Daily VOC Benefits Km (in Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hlg (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	60.00	51.60	46.20	30.60
Car	2.18	1.55	1.29	3.00	6.54	4.65	3.87
Ford Minibus/Bus	3.06	2.74	1.71	17.00	52.02	46.58	29.07
Trucks/Tractor/ Trolley	3.26	2.92	1.93	18.00	58.68	52.56	34.74
Others	2.18	1.55	1.29	39.00	85.02	60.45	50.31
			Total:	137.00	253.86	210.44	148.59

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	92.66	76.81	54.24

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	92.66
1	5		25.00	25.00		92.66
2	5		25.00	25.00		92.66
3	4		25.00	25.00		76.81
4	4		25.00	25.00		76.81
5	3	300.00	0.00	300.00		54.24
6	5		25.00	25.00		92.66
7	5		25.00	25.00		92.66
8	4		25.00	25.00		76.81
9	4		25.00	25.00		76.81
10	3	700.00	0.00	700.00		54.24
	Total:	1000.00	200.00	1200.00	576.39	786.36

* THATTA *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	92.66
1	5		25.00	25.00		92.66
2	4		25.00	25.00		76.81
3	4		25.00	25.00		76.81
4	3	300.00	0.00	300.00		54.24
5	5		25.00	25.00		92.66
6	4		25.00	25.00		76.81
7	4		25.00	25.00		76.81
8	3		25.00	25.00		54.24
9	3	700.00	0.00	700.00		92.66
10	5		25.00	25.00		76.81
	Total:	1000.00	200.00	1200.00	626.57	770.51

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	92.66
1	5		25.00	25.00		92.66
2	4		25.00	25.00		76.81
3	3	300.00	0.00	300.00		54.24
4	5		25.00	25.00		92.66
5	4		25.00	25.00		76.81
6	3		25.00	25.00		54.24
7	5	300.00	0.00	300.00		92.66
8	4		25.00	25.00		76.81
9	3		25.00	25.00		54.24
10	3	700.00	0.00	700.00		54.24
	Total:	1300.00	175.00	1475.00	760.17	725.37

* THATTA *

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	92.66
1	5		25.00	25.00		92.66
2	4		25.00	25.00		76.81
3	3		25.00	25.00		54.24
4	3	700.00	0.00	700.00		54.24
5	5		25.00	25.00		92.66
6	4		25.00	25.00		76.81
7	3		25.00	25.00		54.24
8	3	700.00	0.00	700.00		54.24
9	5		25.00	25.00		92.66
10	4		25.00	25.00		76.81
	Total:	1400.00	200.00	1600.00	943.99	725.37

BADIN (Road Length = 30.11 Km)

Routine = 12.25 Km
Periodic = 8.16 Km
Rehabilitation = 9.70 Km

Daily VOC Benefits Km (In Rupees)

Benefits	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	42.00	36.12	32.34	21.42
Car	2.18	1.55	1.29	24.00	52.32	37.20	30.96
Ford Minibus/Bus	3.06	2.74	1.71	1.00	3.06	2.74	1.71
Trucks/Tractor/ Trolley	3.26	2.92	1.93	16.00	52.16	46.72	30.88
Others	2.18	1.55	1.29	4.00	8.72	6.20	5.16
			Total:	87.00	152.38	125.20	90.13

Annual Expected Benefits In Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
Benefits	55.62	45.70	32.90

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	55.62
1	5		25.00	25.00		55.62
2	5		25.00	25.00		55.62
3	4		25.00	25.00		45.70
4	4		25.00	25.00		45.70
5	3	300.00	0.00	300.00		32.90
6	5		25.00	25.00		55.62
7	5		25.00	25.00		55.62
8	4		25.00	25.00		45.70
9	4		25.00	25.00		45.70
10	3	700.00	0.00	700.00		32.90
	Total:	1000.00	200.00	1200.00	576.39	471.08

* BADIN *

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	55.62
1	5		25.00	25.00		55.62
2	4		25.00	25.00		45.70
3	4		25.00	25.00		45.70
4	3	300.00	0.00	300.00		32.90
5	5		25.00	25.00		55.62
6	4		25.00	25.00		45.70
7	4		25.00	25.00		45.70
8	3		25.00	25.00		32.90
9	3	700.00	0.00	700.00		32.90
10	5		25.00	25.00		55.62
	Total:	1000.00	200.00	1200.00	626.57	448.36

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	55.62
1	5		25.00	25.00		55.62
2	4		25.00	25.00		45.70
3	3	300.00	0.00	300.00		32.90
4	5		25.00	25.00		55.62
5	4		25.00	25.00		45.70
6	3		25.00	25.00		32.90
7	5	300.00	0.00	300.00		55.62
8	4		25.00	25.00		45.70
9	3		25.00	25.00		32.90
10	3	700.00	0.00	700.00		32.90
	Total:	1300.00	175.00	1475.00	760.17	435.56

* BADIN *

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefits (Disc)
0	5	1000.00	25.00	1025.00	0.12	55.62
1	5		25.00	25.00		55.62
2	4		25.00	25.00		45.70
3	3		25.00	25.00		32.00
4	3	700.00	0.00	700.00		32.00
5	5		25.00	25.00		55.62
6	4		25.00	25.00		45.70
7	3		25.00	25.00		32.00
8	3	700.00	0.00	700.00		32.00
9	5		25.00	25.00		55.62
10	4		25.00	25.00		45.70
	Total:	1400.00	200.00	1600.00	943.99	431.96

MIRPURKHAS (Road Length = 56.75 Km)

Routine = 25.85 Km
Periodic = 11.08 Km
Rehabilitation = 19.82 Km

Daily VOC Benefits Km (In Rupees)

High Traffic	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	105.00	90.30	80.85	53.55
Car	2.18	1.55	1.29	115.00	250.70	178.25	148.35
Ford Minibus/Bus	3.06	2.74	1.71	28.00	85.68	76.72	47.88
Trucks/Tractor/ Trolley	3.26	2.92	1.93	91.00	296.66	265.72	175.63
Others	2.18	1.55	1.29	62.00	135.16	96.10	79.98
			Total:	401.00	858.50	697.64	505.39

Medium Traffic	Cond.5 (1)	Cond.4 (1')	Cond.3 (1")	Daily Traf. Hig (2)	(1*2)	(1'*2)	(1"*2)
Motor Cycle	0.86	0.77	0.51	40.00	34.40	30.80	20.40
Car	2.18	1.55	1.29	47.00	102.46	72.85	60.63
Ford Minibus/Bus	3.06	2.74	1.71	8.00	24.48	21.92	13.68
Trucks/Tractor/ Trolley	3.26	2.92	1.93	41.00	133.66	119.72	79.13
Others	2.18	1.55	1.29	57.00	124.26	88.35	73.53
			Total:	193.00	419.26	333.64	247.37

Annual Expected Benefits in Base Year (In Thousand Rupees)

	Cond.5	Cond.4	Cond.3
High Traffic	313.35	254.64	184.47
Medium Traffic	153.03	121.78	90.29

* MIRPURHAS *

100% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefit High Traffic (Disc)	VOC Benefits Med. Traffic (Disc)
0	5	1000.00	25.00	1025.00	0.12	313.35	153.03
1	5		25.00	25.00		313.35	153.03
2	5		25.00	25.00		313.35	153.03
3	4		25.00	25.00		254.64	121.78
4	4		25.00	25.00		254.64	121.78
5	3	300.00	0.00	300.00		184.47	90.29
6	5		25.00	25.00		313.35	153.03
7	5		25.00	25.00		313.35	153.03
8	4		25.00	25.00		254.64	121.78
9	4		25.00	25.00		254.64	121.78
10	3	700.00	0.00	700.00		184.47	90.29
	Total:	1000.00	200.00	1200.00	576.39	2640.90	1279.82

80% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefit High Traffic (Disc)	VOC Benefits Med. Traffic (Disc)
0	5	1000.00	25.00	1025.00	0.12	313.35	153.03
1	5		25.00	25.00		313.35	153.03
2	4		25.00	25.00		254.64	121.78
3	4		25.00	25.00		254.64	121.78
4	3	300.00	0.00	300.00		184.47	90.29
5	5		25.00	25.00		313.35	153.03
6	4		25.00	25.00		254.64	121.78
7	4		25.00	25.00		254.64	121.78
8	3		25.00	25.00		184.47	90.29
9	3	700.00	0.00	700.00		184.47	90.29
10	5		25.00	25.00		313.35	153.03
	Total:	1000.00	200.00	1200.00	626.57	2512.02	1217.08

* MIRPURHAS *

50% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefit High Traffic (Disc)	VOC Benefits Med. Traffic (Disc)
0	5	1000.00	25.00	1025.00	0.12	313.35	153.03
1	5		25.00	25.00		313.35	153.03
2	4		25.00	25.00		254.64	121.78
3	3	300.00	0.00	300.00		184.47	90.29
4	5		25.00	25.00		313.35	153.03
5	4		25.00	25.00		254.64	121.78
6	3		25.00	25.00		184.47	90.29
7	5	300.00	0.00	300.00		313.35	153.03
8	4		25.00	25.00		254.64	121.78
9	3		25.00	25.00		184.47	90.29
10	3	700.00	0.00	700.00		184.47	90.29
	Total:	1300.00	175.00	1475.00	760.17	2441.85	1185.59

0% Maintenance

Years	Cond. Rat.	Rehab & Period. Cost	Maint. Cost	Total Costs	P.V. of Total Costs	VOC Benefit High Traffic (Disc)	VOC Benefits Med. Traffic (Disc)
0	5	1000.00	25.00	1025.00	0.12	313.35	153.03
1	5		25.00	25.00		313.35	153.03
2	4		25.00	25.00		254.64	121.78
3	3		25.00	25.00		184.47	90.29
4	3	700.00	0.00	700.00		184.47	90.29
5	5		25.00	25.00		313.35	153.03
6	4		25.00	25.00		254.64	121.78
7	3		25.00	25.00		184.47	90.29
8	3	700.00	0.00	700.00		184.47	90.29
9	5		25.00	25.00		313.35	153.03
10	4		25.00	25.00		254.64	121.78
	Total:	1400.00	200.00	1600.00	943.99	2441.85	1185.59

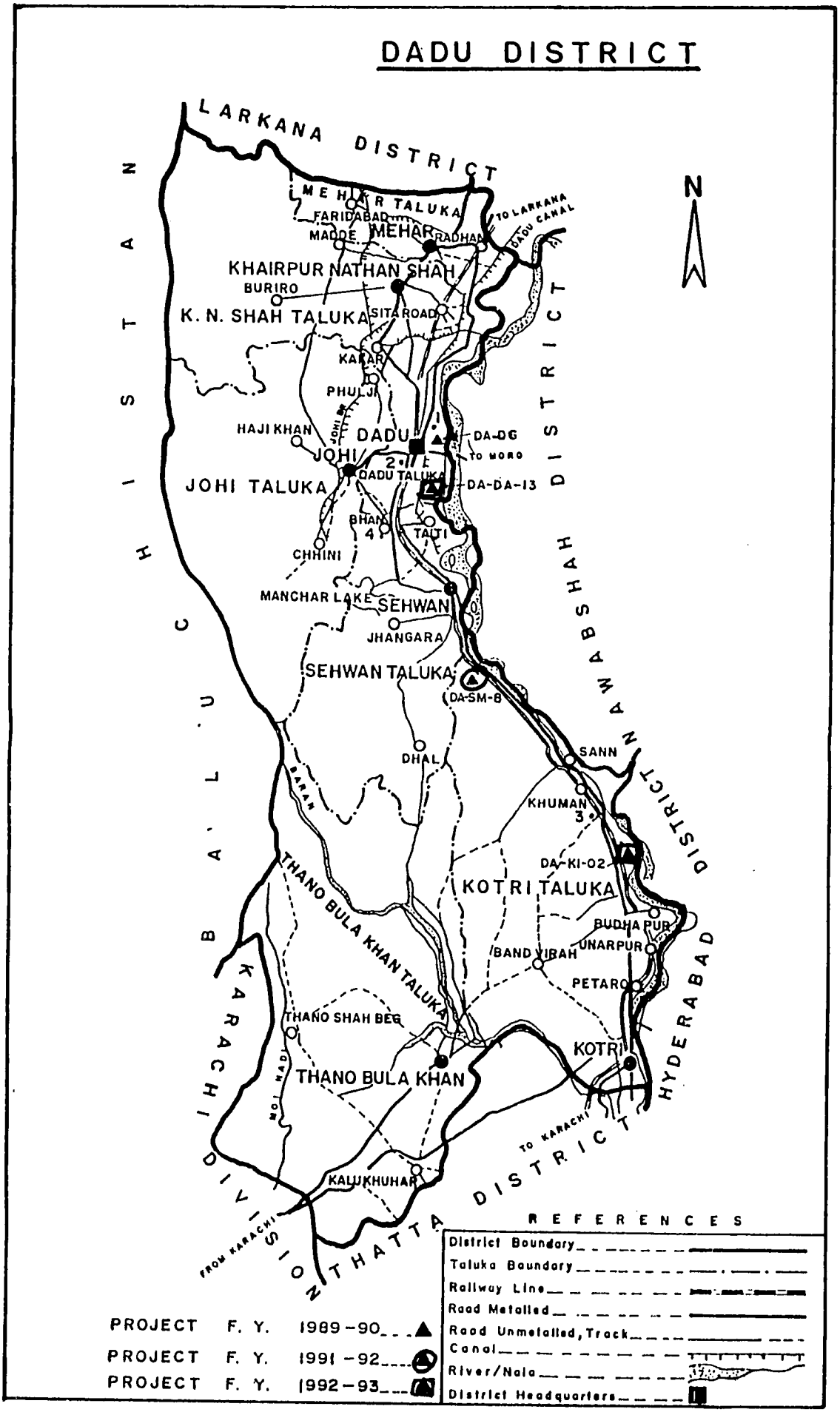
APPENDIX G

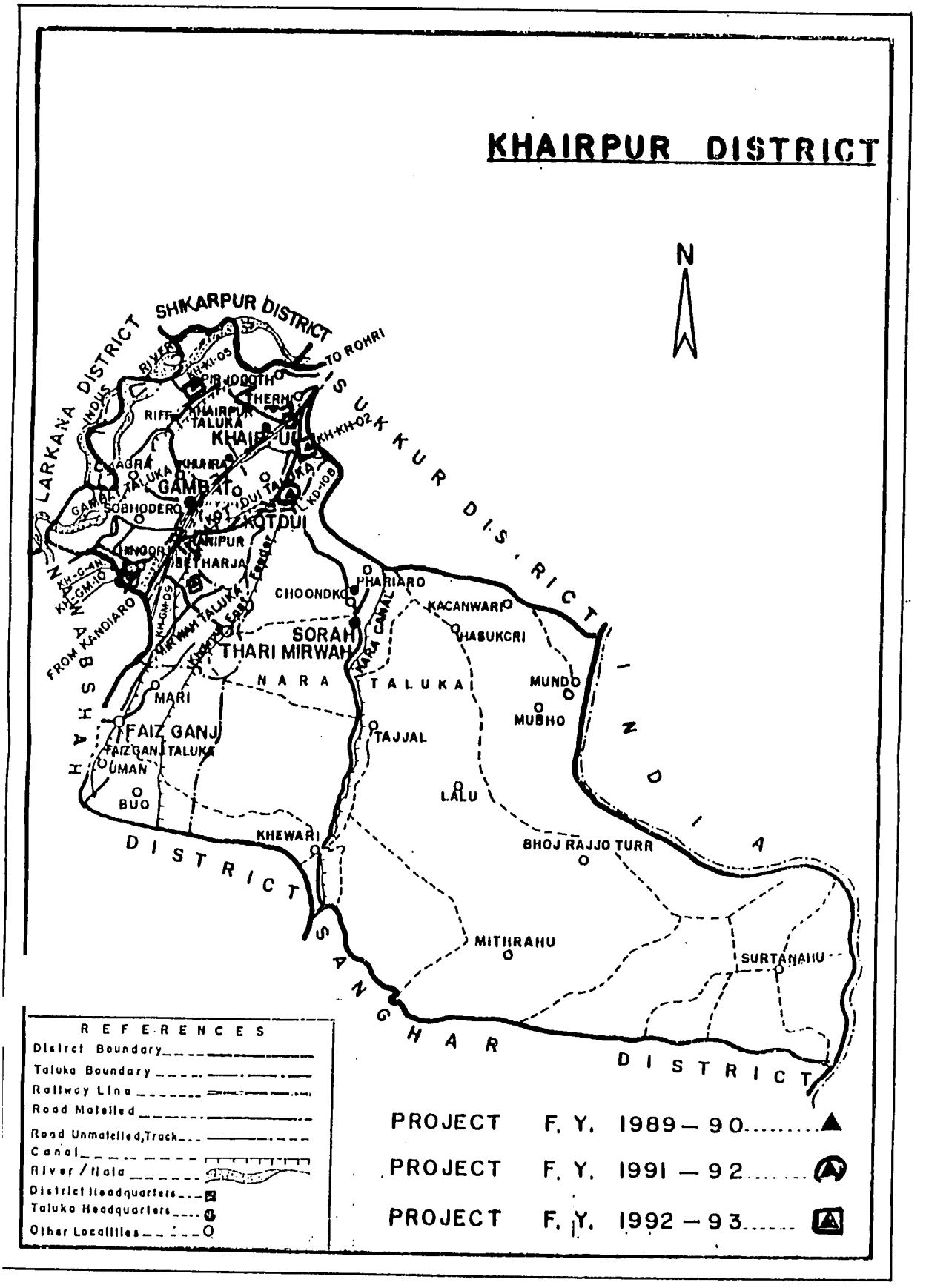
"RRM"
ROAD REHABILITATION PROJECTS IN
SINDH PROVINCE:

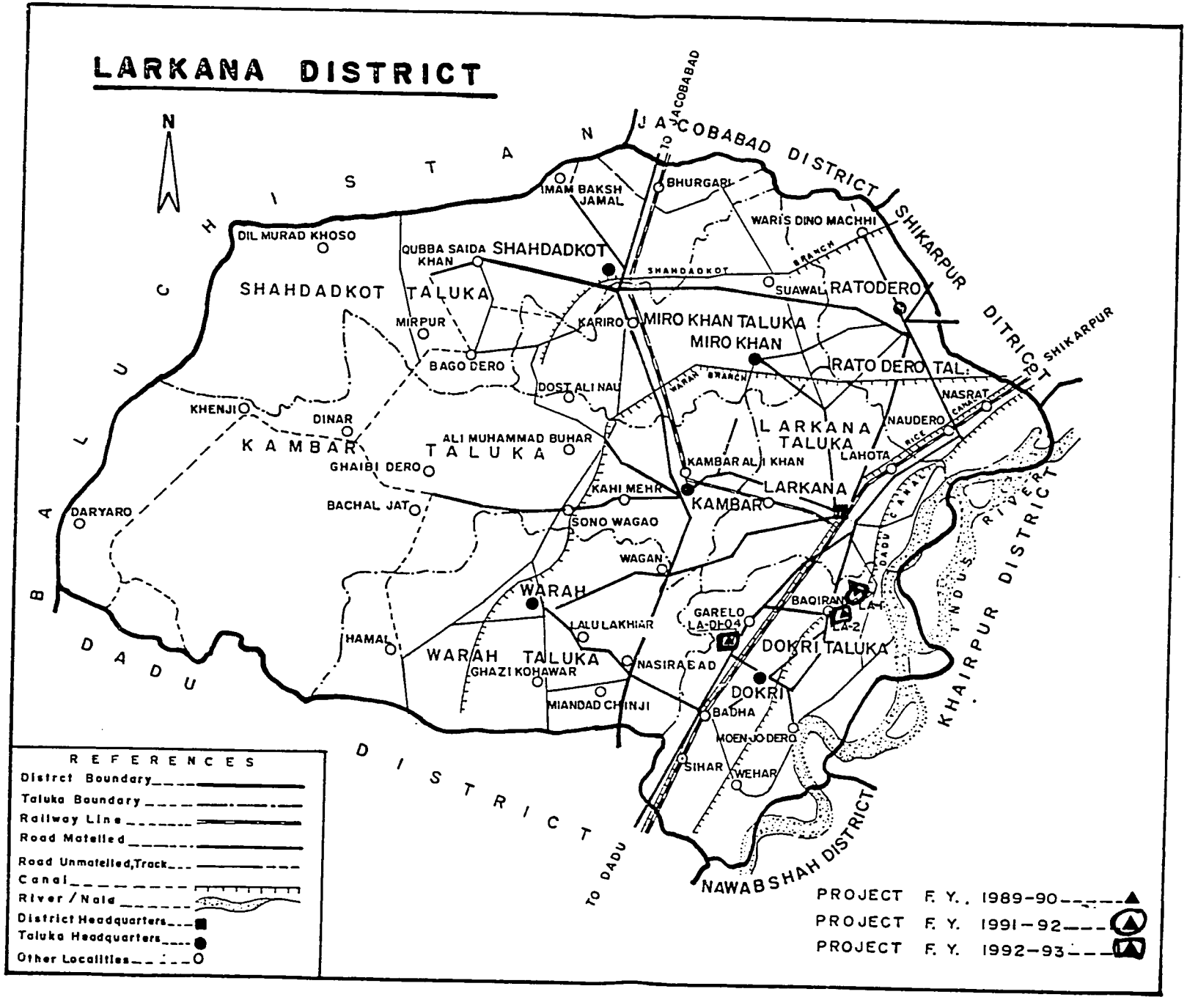
F.Y.'s 1989-90; 1991-92; 1992-93

DISTRICTS OF :

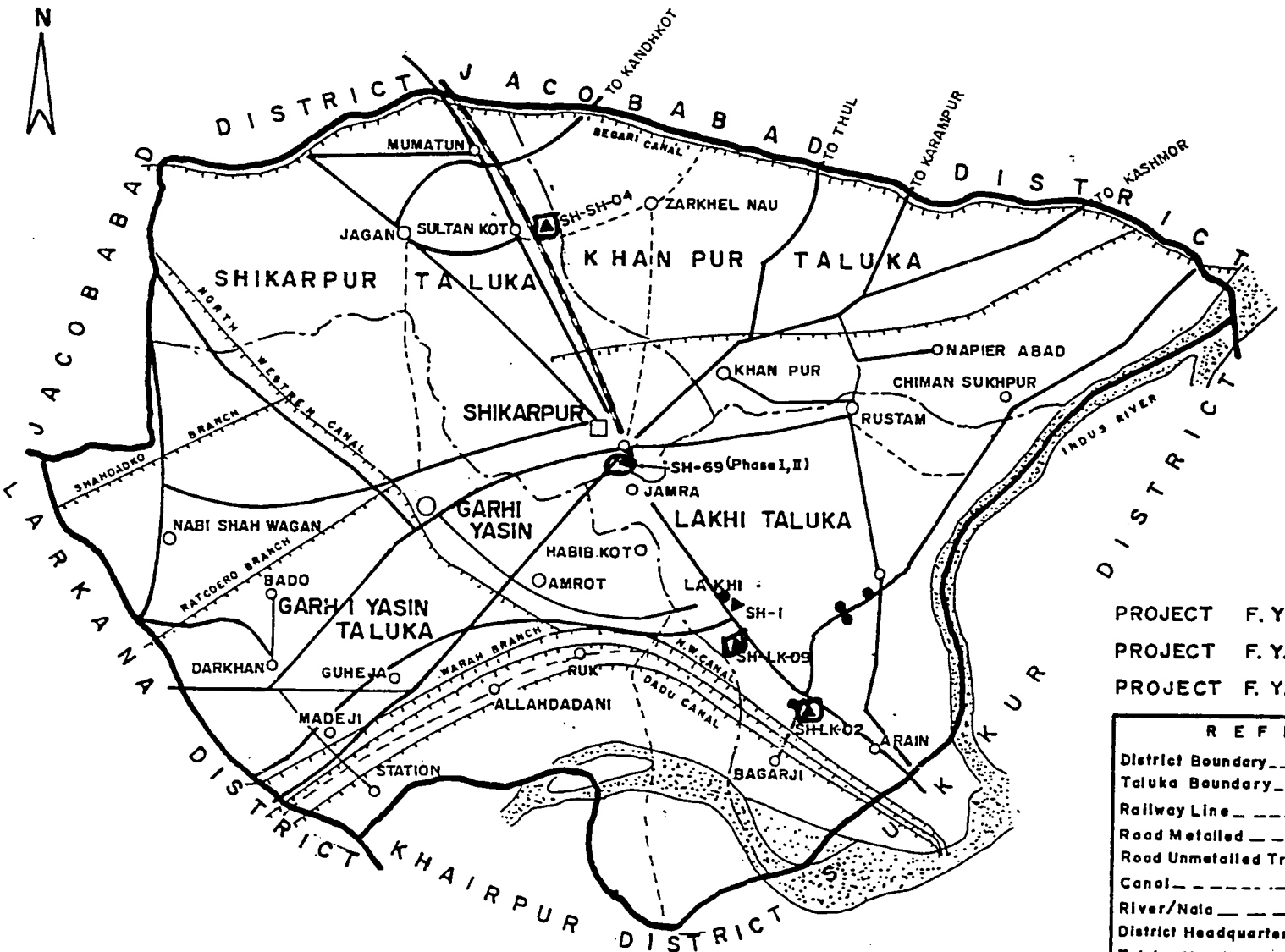
1. Dadu
2. Khairpur
3. Larkana
4. Shikarpur
5. Sukkur
6. Jacobabad
7. Nawabshah
8. Naushero Feroz
9. Hyderabad
10. Karachi
11. Thatta
12. Badin
13. Tharparkar - Mirpurkhas
14. Sanghar

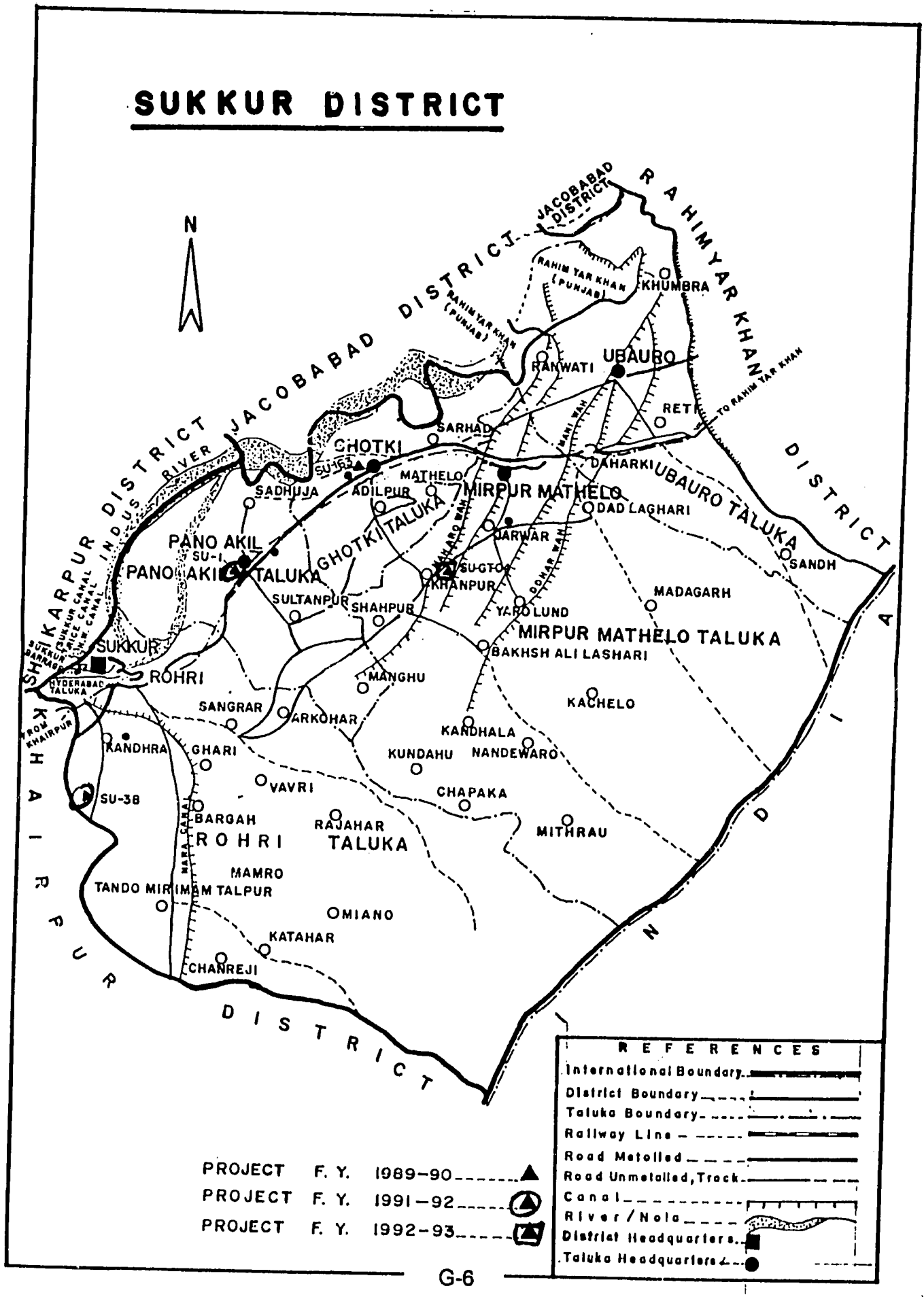

DADU DISTRICT
LARKANA DISTRICT
HISTAN
CHIALU
KARACHI DIVISION
NAWABSHAH DISTRICT
HYDERABAD DISTRICT
THATTA DISTRICT
N
MEHAR TALUKA
FARIDABAD
MADDE
MEHAR
RADHAN
TO LARKANA
DADU CANAL
KHAIRPUR NATHAN SHAH
BURIRO
K. N. SHAH TALUKA
SITA ROAD
KARAR
PHULJI
HAJI KHAN
DADU
DA-DG
TO MORO
JOHI
DADU TALUKA
DA-DA-13
JOHI TALUKA
BHAN
TALTI
CHHINI
MANCHAR LAKE
SEHWAN
JHANGARA
SEHWAN TALUKA
DA-SM-8
DHAL
SANN
KHUMAN
DA-KI-02
KOTRI TALUKA
BUDHA PUR
UNARPUR
BAND VIRAH
PETARO
KOTRI
THANO BULA KHAN TALUKA
THANO SHAH BEG
THANO BULA KHAN
KALUKHUHAR
TO KARACHI
FROM KARACHI
REFERENCES
District Boundary
Taluka Boundary
Railway Line
Road Metalled
Road Unmetalled, Track
Canal
River/Nala
District Headquarters
PROJECT F. Y. 1989-90
PROJECT F. Y. 1991-92
PROJECT F. Y. 1992-93

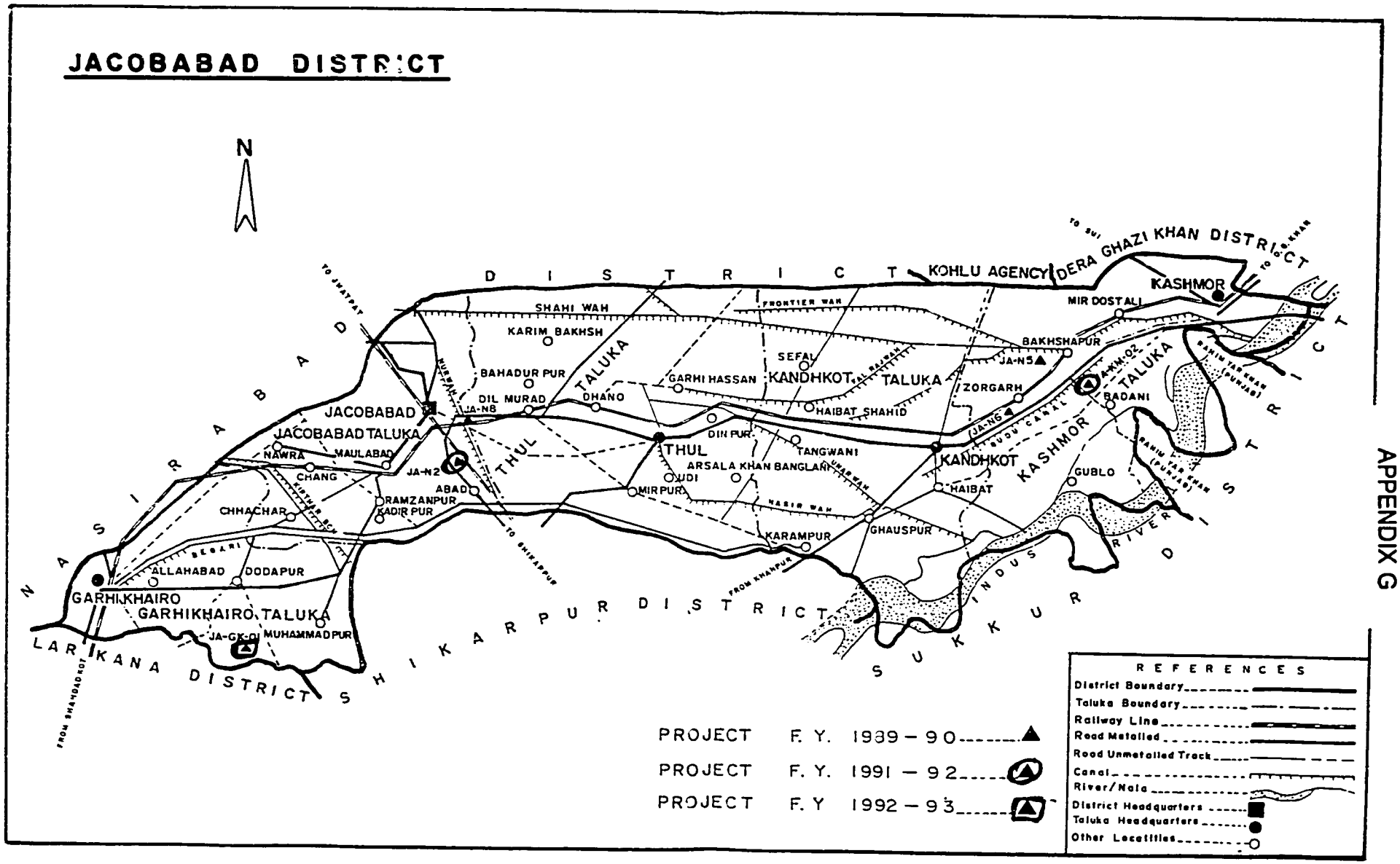

KHAIRPUR DISTRICT
N
SHIKARPUR DISTRICT
TO ROHRI
RIVER INDUS
KH-KI-05
PIR JOTH
THERHO
RIFF
KHAIRPUR TALUKA
KHAIRPUR
KH-KH-02
LARKANA DISTRICT
SUKKUR DISTRICT
INDIA
NAGRA
KHAIRA
GAMBAT
GAMBAT TALUKA
SOBHODERO
KOTDUI
KOTDUI TALUKA
KD-105
KANIPUR
MINOOR
BETHARJA
KH-G-04
KH-GM-10
KH-GM-05
KHAIRPUR TALUKA
FROM KANDIARO
NARA CANAL
CHOONDKO
PHARIARO
KACANWARI
HABUKCRI
SORAH
THARI MIRWAH
NARA TALUKA
MUNDO
MUBHO
MARI
FAIZ GANJ
FAIZ GANJ TALUKA
TAJJAL
UMAN
BUO
LALU
KHEWARI
BHOJ RAJJO TURR
SHAHDADPUR
DISTRICT
MITHRAHU
SURTANAHU
SANGHAR
DISTRICT
REFERENCES
District Boundary
Taluka Boundary
Railway Line
Road Metalled
Road Unmetalled, Track
Canal
River / Nala
District Headquarters
Taluka Headquarters
Other Localities
PROJECT F. Y. 1989 – 90
PROJECT F. Y. 1991 – 92
PROJECT F. Y. 1992 – 93

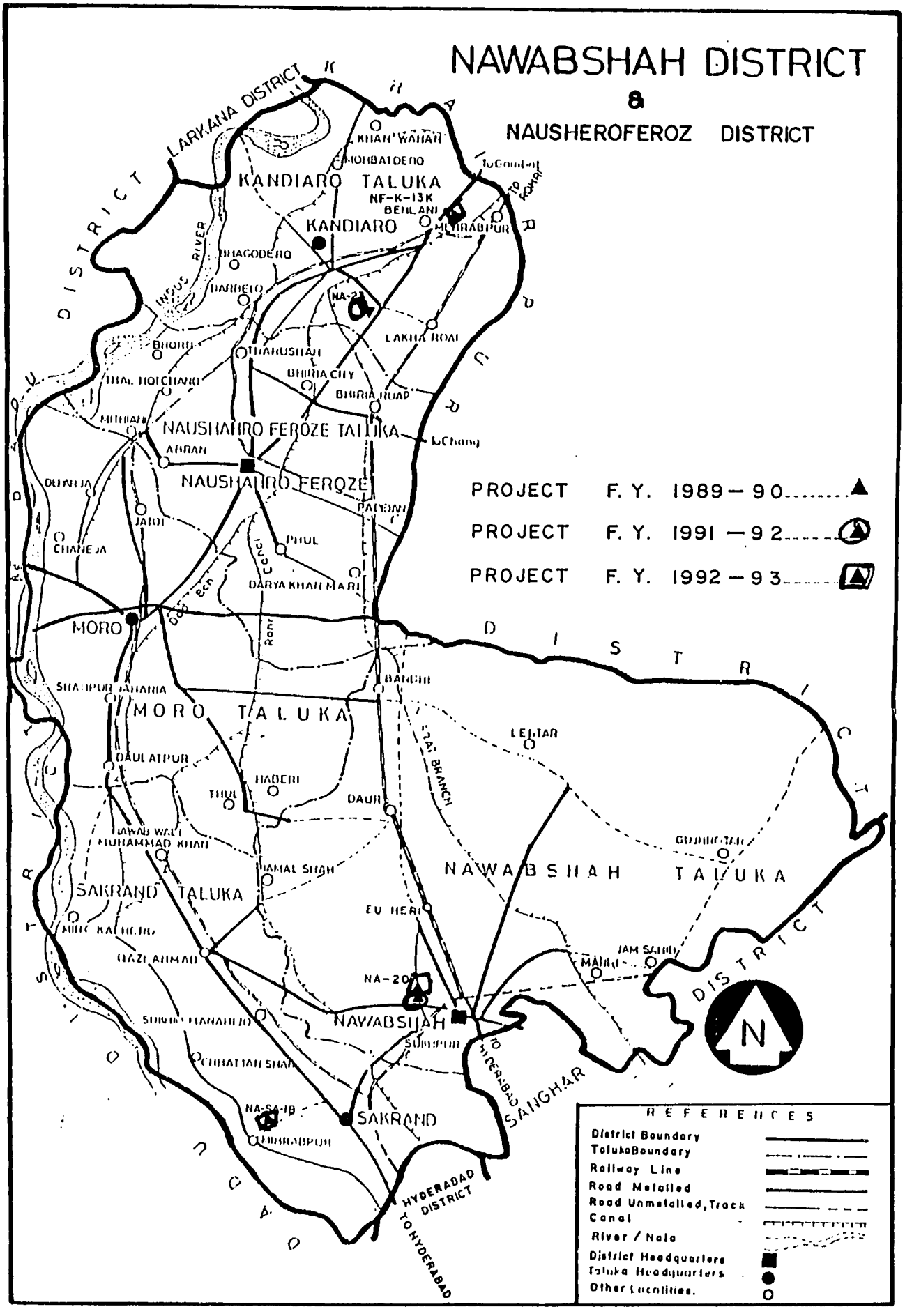

LARKANA DISTRICT
N
BALUCHISTAN
TO JACOBABAD
JACOBABAD DISTRICT
SHIKARPUR DITRICT
KHAIRPUR DISTRICT
DADU DISTRICT
NAWABSHAH DISTRICT
TO DADU
IMAM BAKSH JAMAL
BHURGARI
WARIS DINO MACHHI
DIL MURAD KHOSO
QUBBA SAIDA KHAN
SHAHDADKOT
SHAHDADKOT TALUKA
SHAHDADKOT BRANCH
SUAWAL
RATODERO
MIRPUR
KARIRO
MIRO KHAN TALUKA
MIRO KHAN
RATO DERO TAL:
BAGO DERO
DOST ALI NAU
WARAN BRANCH
NASRAT CANAL
KHENJI
DINAR
KAMBAR TALUKA
ALI MUHAMMAD BUHAR
NAUDERO
LARKANA TALUKA
RICE CANAL
LAHOTA
GHAIBI DERO
KAMBAR ALI KHAN
LARKANA
KAHI MEHR
KAMBAR
DARYARO
BACHAL JAT
SONO WAGAO
WAGAN
DADU CANAL
INDUS RIVER
WARAH
BAQIRANI
LA-1
LA-2
GARELO
LA-DI-04
LALU LAKHIAR
HAMAL
WARAH TALUKA
DOKRI TALUKA
NASIRABAD
GHAZI KOHAWAR
DOKRI
MIANDAD CHINJI
BADHA
MOENJODERO
SIHAR
WEHAR
REFERENCES
District Boundary
Taluka Boundary
Railway Line
Road Metelled
Road Unmetelled,Track
Canal
River / Nala
District Headquarters
Taluka Headquarters
Other Localities
PROJECT F. Y. 1989-90
PROJECT F. Y. 1991-92
PROJECT F. Y. 1992-93

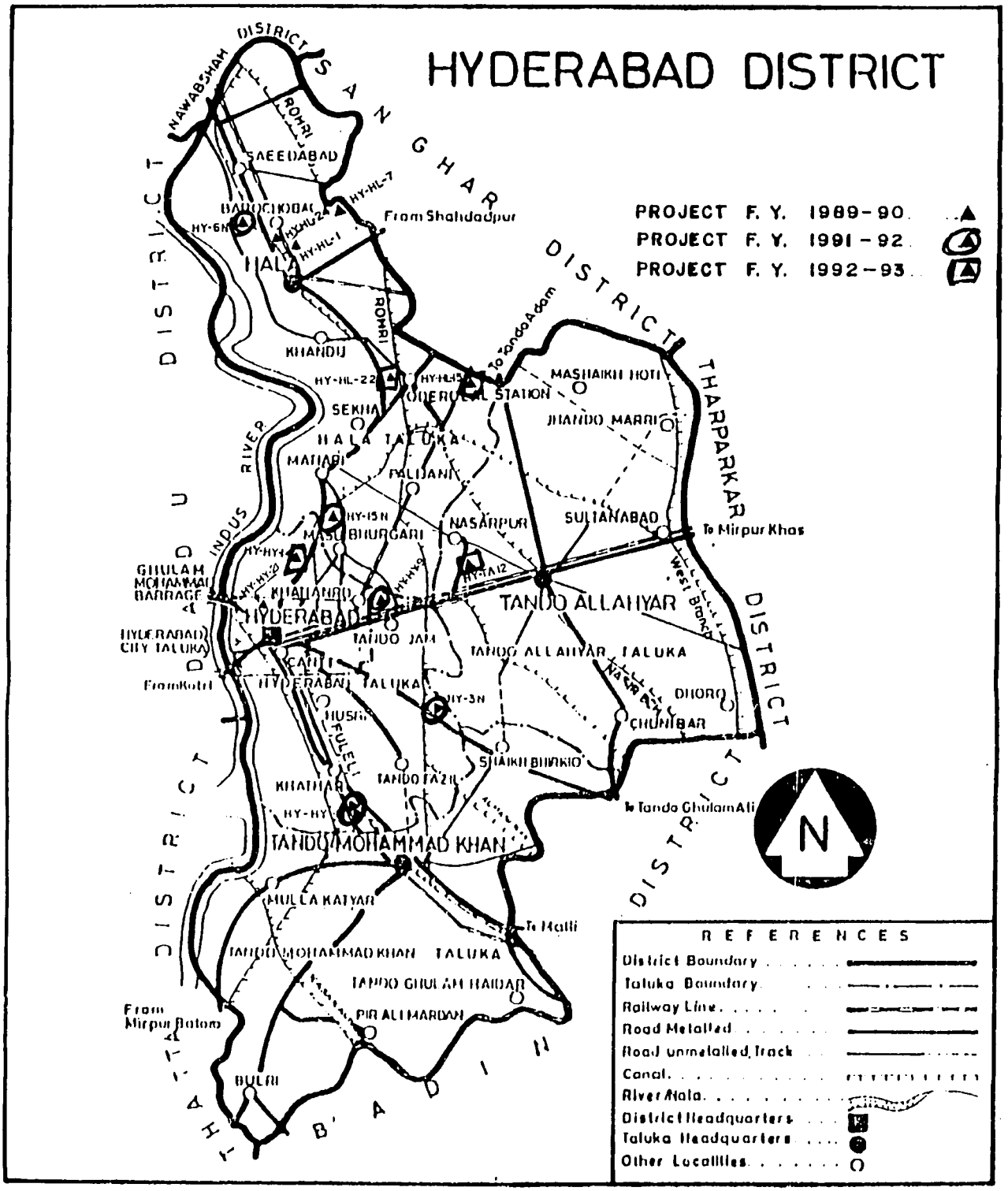
SHIKARPUR DISTRICT

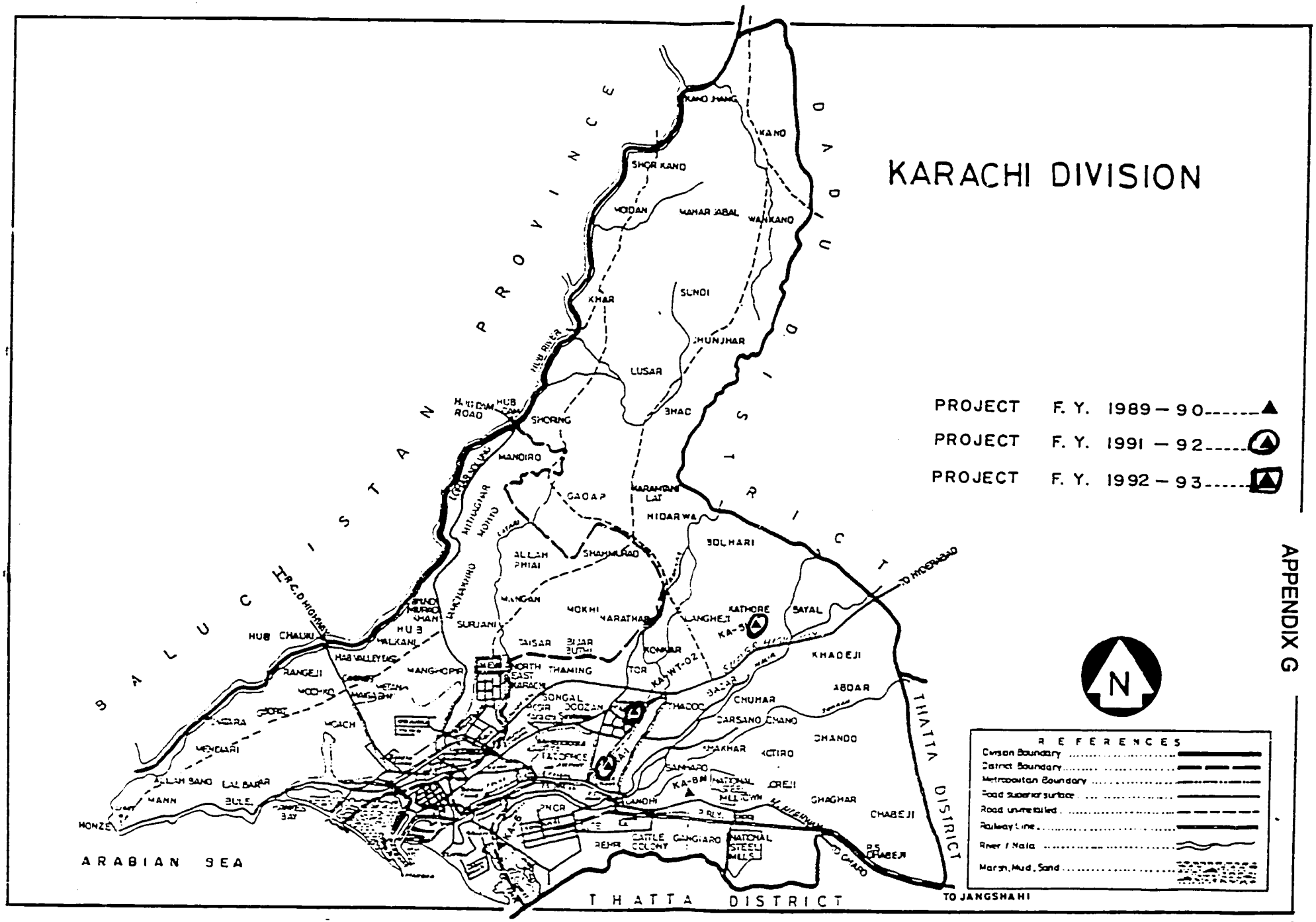


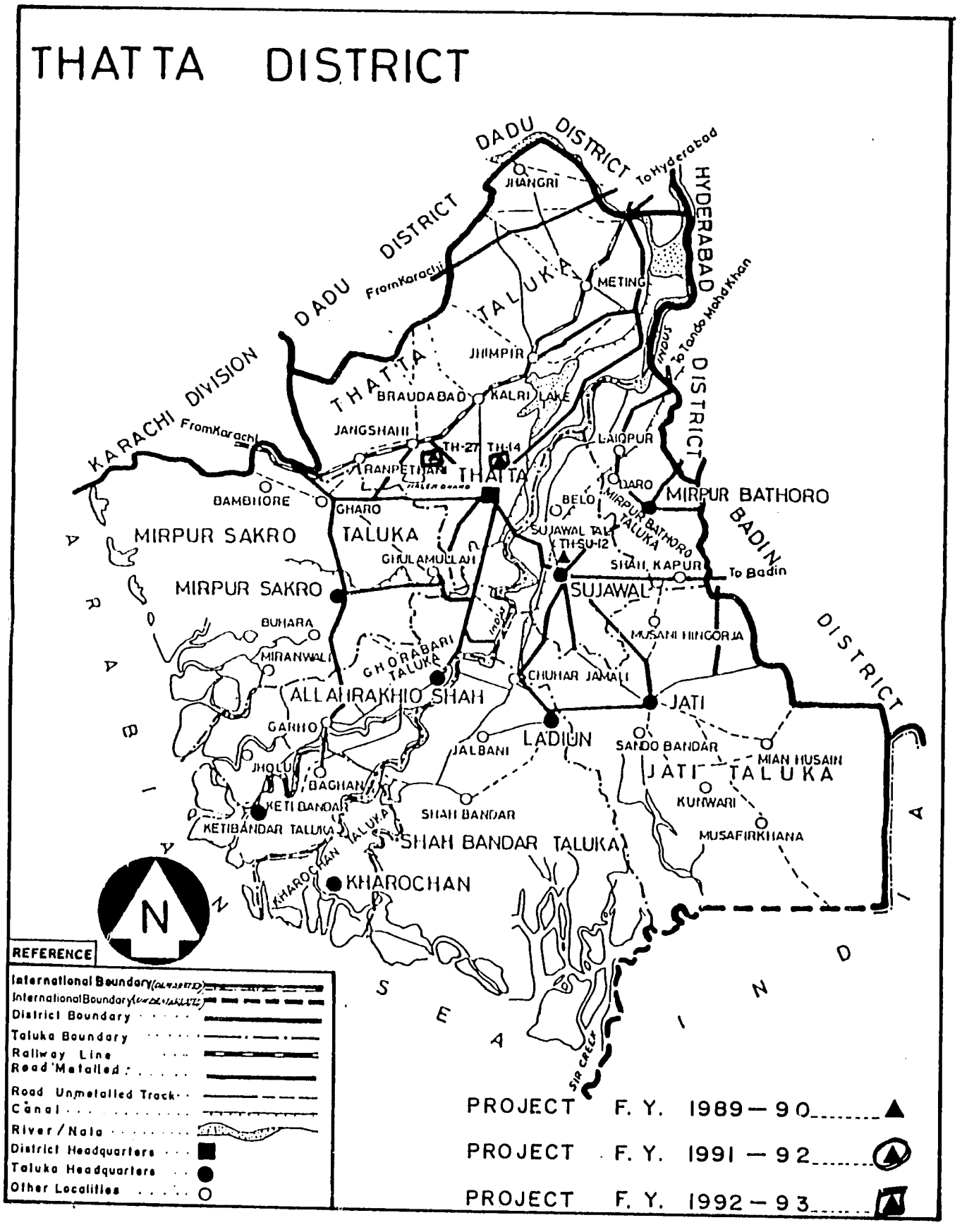

SUKKUR DISTRICT
N
JACOBABAD DISTRICT
RAHIMYAR KHAN DISTRICT
KHAIRPUR DISTRICT
SHIKARPUR DISTRICT
JACOBABAD DISTRICT
RAHIM YAR KHAN (PUNJAB)
KHUMBRA
RANWATI
UBAURO
TO RAHIM YAR KHAN
SARHAD
GHOTKI
SU-63
MATHELO
MIRPUR MATHELO
DAHARKI
UBAURO TALUKA
SADHUJA
ADILPUR
DAD LASHARI
JARWAR
SANDH
PANO AKIL
SU-1
PANO AKIL TALUKA
GHOTKI TALUKA
SU-GTO
KHANPUR
SULTANPUR
SHAHPUR
YARO LUND
MADAGARH
MIRPUR MATHELO TALUKA
BAKHSH ALI LASHARI
SUKKUR
SUKKUR BARRAGE
SUKKUR CANAL
RICE CANAL
N.W. CANAL
ROHRI
HYDERABAD TALUKA
MANGHU
KACHELO
SANGRAR
ARKOHAR
KANDHALA
FROM KHAIRPUR
KANDHRA
GHARI
KUNDAHU
NANDEWARO
VAVRI
CHAPAKA
SU-38
BARGAH
RAJAHAR
MITHRAU
ROHRI
TALUKA
NARA CANAL
MAMRO
TANDO MIRIMAM TALPUR
OMIANO
KATAHAR
CHANREJI
PROJECT F. Y. 1989-90
PROJECT F. Y. 1991-92
PROJECT F. Y. 1992-93
REFERENCES
International Boundary
District Boundary
Taluka Boundary
Railway Line
Road Metalled
Road Unmetalled, Track
Canal
River / Nala
District Headquarters
Taluka Headquarters

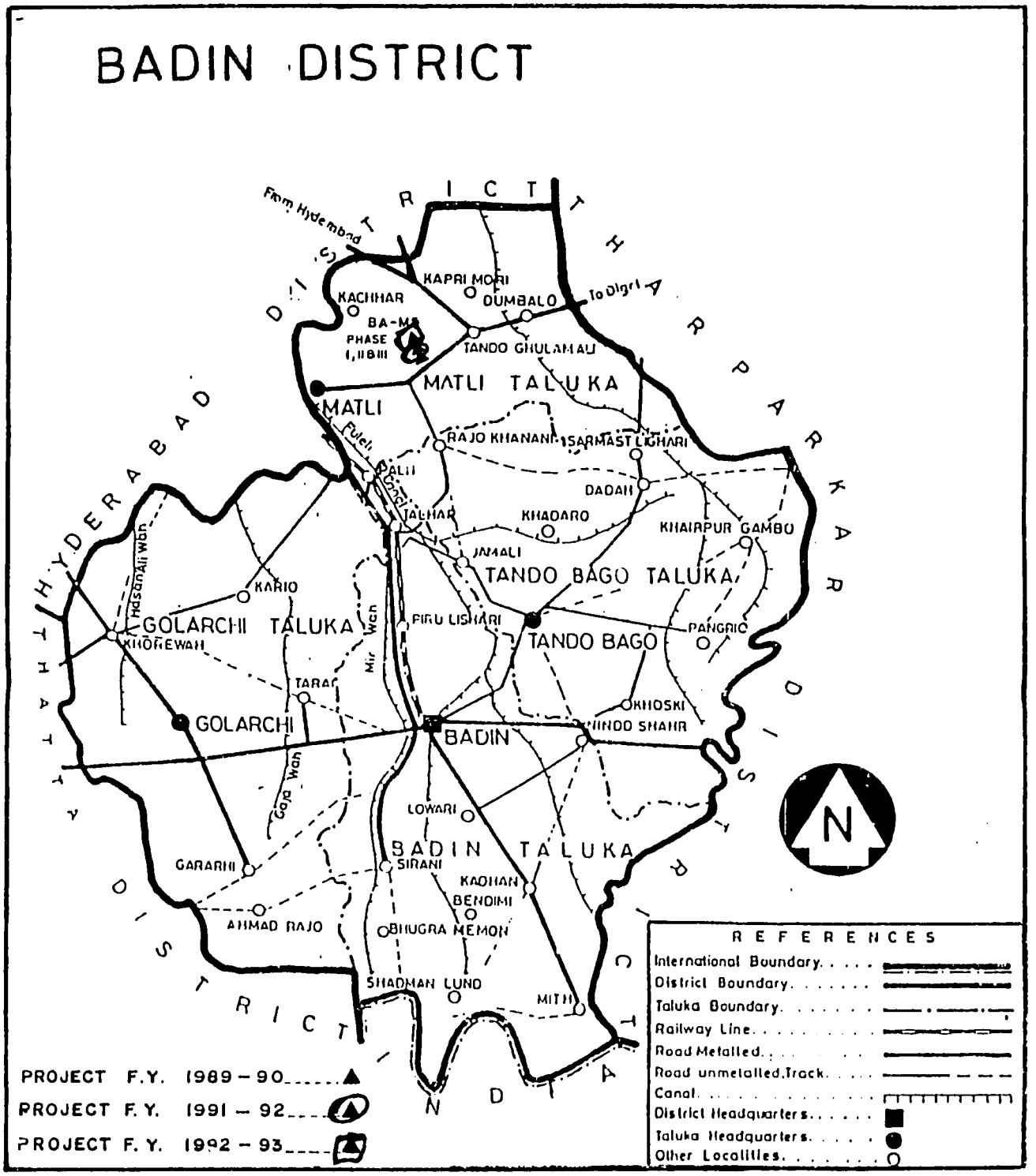

JACOBABAD DISTRICT
N
D I S T R I C T
KOHLU AGENCY
DERA GHAZI KHAN DISTRICT
KASHMOR
MIR DOST ALI
SHAHI WAH
FRONTIER WAH
KARIM BAKHSH
BAKHSHAPUR
SEFAL
BAHADUR PUR
GARHI HASSAN
KANDHKOT
TALUKA
JA-N5
ZORGARH
BADANI
DHANO
DIL MURAD
JA-N8
HAIBAT SHAHID
JACOBABAD
JACOBABAD TALUKA
THUL
DIN PUR
TANGWANI
NAWRA
MAULABAD
JA-N2
CHANG
ARSALA KHAN BANGLANI
UDI
ABAD
MIR PUR
HAIBAT
GUBLO
RAMZANPUR
KADIR PUR
CHHACHAR
KARAMPUR
GHAUSPUR
BEGARI
ALLAHABAD
DODAPUR
GARHI KHAIRO
GARHIKHAIRO TALUKA
JA-GK-01 MUHAMMADPUR
TO JHATPAT
TO SUI
TO SHIKARPUR
FROM KHANPUR
FROM SHAHDADKOT
N A S I R A B A D
L A R K A N A D I S T R I C T
S H I K A R P U R D I S T R I C T
S U K K U R
INDUS RIVER
PROJECT F. Y. 1989 – 90
PROJECT F. Y. 1991 – 92
PROJECT F. Y 1992 – 93
REFERENCES
District Boundary
Taluka Boundary
Railway Line
Road Metalled
Road Unmetalled Track
Canal
River/Nala
District Headquarters
Taluka Headquarters
Other Localities


NAWABSHAH DISTRICT
&
NAUSHEROFEROZ DISTRICT
LARKANA DISTRICT
KANDIARO TALUKA
NF-K-13K
BEHLANI
KANDIARO
KHAN WAHAN
MOHBATDERO
MEHRABPUR
BHAGODERO
INDUS RIVER
DARBELO
NA-21
LAKHA ROAD
BHORO
SHAHUSHAH
BHIRIA CITY
BHIRIA ROAD
NAUSHAHRO FEROZE TALUKA
NAUSHAHRO FEROZE
ABRAN
DUNIJA
JAROI
CHANEJA
PHUL
DARYA KHAN MARI
PROJECT F. Y. 1989 – 90
PROJECT F. Y. 1991 – 92
PROJECT F. Y. 1992 – 93
MORO
MORO TALUKA
SHAHPUR JAHANIA
BANGHI
DAULATPUR
HABERI
THUL
DAUR
LEHTAR
JAM SHORO
GUNDRO TAR
NAWABSHAH TALUKA
SAKRAND TALUKA
JAMAL SHAH
GAZI AHMAD
NA-20
NAWABSHAH
SUMERPUR
SAKRAND
NA-SA-18
HYDERABAD DISTRICT
TO HYDERABAD
SANGHAR DISTRICT
N
REFERENCES
District Boundary
Taluka Boundary
Railway Line
Road Metalled
Road Unmetalled, Track
Canal
River / Nala
District Headquarters
Taluka Headquarters
Other Localities.

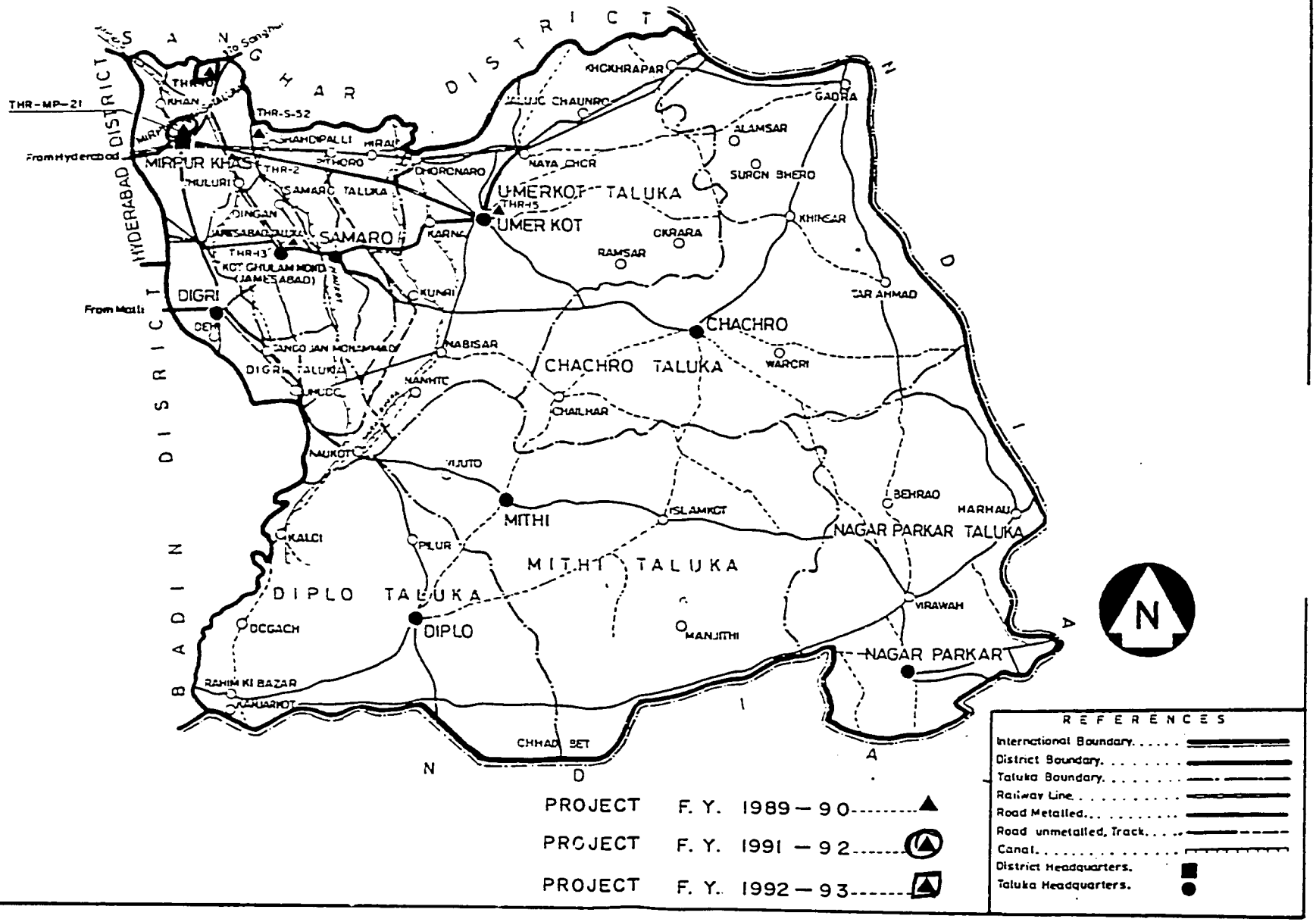

HYDERABAD DISTRICT
PROJECT F. Y. 1989-90
PROJECT F. Y. 1991-92
PROJECT F. Y. 1992-93
NAWABSHAH DISTRICT
SANGHAR DISTRICT
THARPARKAR DISTRICT
DISTRICT
SAEEDABAD
ROHRI
From Shahdadpur
HALA
KHANDU
To Tando Adam
MASHAIKH HOTI
OTHER RURAL STATION
JHANDO MARRI
SEKHA
HALA TALUKA
MATIARI
PALIJANI
INDUS RIVER
NASARPUR
SULTANABAD
To Mirpur Khas
MASU BHURGARI
GHULAM MOHAMMAD BARRAGE
KHAIRPUR
HYDERABAD
TANDO ALLAHYAR
West Bank
HYDERABAD CITY TALUKA
TANDO JAM
TANDO ALLAHYAR TALUKA
From Kotri
CANTT
HYDERABAD TALUKA
DHORO
NARA CANAL
CHUNIBAR
HUSRI
SHAIKH BHIKIO
KHATIAR
TANDO FAZIL
To Tando GhulamAli
TANDO MOHAMMAD KHAN
N
HULLA KATYAR
To Matli
TANDO MOHAMMAD KHAN TALUKA
TANDO GHULAM HAIDAR
From Mirpur Batoro
PIR ALI MARDAN
BULRI
REFERENCES
District Boundary
Taluka Boundary
Railway Line
Road Metalled
Road unmetalled Track
Canal
River/Nala
District Headquarters
Taluka Headquarters
Other Localities


KARACHI DIVISION
PROJECT F. Y. 1989 – 90
PROJECT F. Y. 1991 – 92
PROJECT F. Y. 1992 – 93
BALUCHISTAN PROVINCE
SINDH PROVINCE
KARACHI DISTRICT
THATTA DISTRICT
ARABIAN SEA
TO HYDERABAD
TO JANGSHAHI
KANO JHANG
WANO
SHOR KANO
MODAN
MAHAR ABAL
WANKANO
KHAR
SUNDI
LUSAR
JHUNJHAR
BHAC
SHORING
MANDIRO
GADAP
MARANGANI LAT
HIDARWA
BOLHARI
SHAHMURAD
MOKHI
NARATHAR
KATHORE
SATAL
KHADEJI
ABOAR
CHUMAR
CHANDO
CHAGHAR
CHABEJI
HUB CHAUKI
HUB
RANGEJI
MANGHOPIR
SURJANI
TAISAR
BIJAR BUTHI
THAMING
TOR
KAHTOZ
THADOO
DARSANO CHANO
THAKHAR
KOTIRO
SANWARO
JOREJI
MANOHR
GANGARO
NATIONAL STEEL MILLS
REHRI COLONY
PNCR
KA-6
KA-8M
KA-5
N
REFERENCES
Division Boundary
District Boundary
Metropolitan Boundary
Road superior surface
Road unmetalled
Railway Line
River / Nala
Marsh, Mud, Sand


THATTA DISTRICT
DADU DISTRICT
DADU DISTRICT
HYDERABAD DISTRICT
BADIN DISTRICT
KARACHI DIVISION
From Karachi
From Karachi
To Hyderabad
To Tando Mohd Khan
To Badin
JHANGRI
METING
JHIMPIR
BRAUDABAD
KALRI LAKE
JANGSHAHI
TH-27
TH-14
RANPETHAN
THATTA
LAIQPUR
DARO
BELO
BAMBHORE
GHARO
MIRPUR BATHORO
MIRPUR BATHORO TALUKA
SUJAWAL TALUKA
TH-SU-12
SHAH KAPUR
SUJAWAL
MIRPUR SAKRO
MIRPUR SAKRO TALUKA
GHULAMULLAH
BUHARA
MIRANWALI
GHORABARI TALUKA
MUSANI HINGORJA
CHUHAR JAMALI
ALLAHRAKHIO SHAH
JATI
GARHO
JALBANI
LADIUN
SANDO BANDAR
MIAN HUSAIN
JHOLU
BAGHAN
JATI TALUKA
KETI BANDAR
KUNWARI
SHAH BANDAR
KETIBANDAR TALUKA
MUSAFIRKHANA
SHAH BANDAR TALUKA
KHAROCHAN
KHAROCHAN TALUKA
SIR CREEK
ARABIAN SEA
INDUS
N
REFERENCE
International Boundary (ALIGNMENT)
International Boundary (DEMARCATED)
District Boundary
Taluka Boundary
Railway Line
Road Metalled
Road Unmetalled Track
Canal
River / Nala
District Headquarters
Taluka Headquarters
Other Localities
PROJECT F. Y. 1989 – 90
PROJECT F. Y. 1991 – 92
PROJECT F. Y. 1992 – 93


BADIN DISTRICT
From Hyderabad
To Digri
KACHHAR
KAPRI MORI
DUMBALO
BA-M PHASE I, II & III
TANDO GHULAM ALI
MATLI TALUKA
MATLI
RAJO KHANANI
SARMAST LGHARI
DADAH
KHADARO
KHAIRPUR GAMBO
JHALHAR
JHAALI
TANDO BAGO TALUKA
TANDO BAGO
PANGRIO
KARIO
GOLARCHI TALUKA
KHORE WAH
PIRU LISHARI
TARAR
GOLARCHI
BADIN
KHOSKI
SHAHR
LOWARI
BADIN TALUKA
GARARHI
SIRANI
KADHAN
BENDIMI
AHMAD RAJO
BHUGRA MEMON
SHADMAN LUND
MITHI
HYDERABAD DISTRICT
THARPARKAR DISTRICT
KUTCH
N
PROJECT F.Y. 1989 – 90
PROJECT F.Y. 1991 – 92
PROJECT F.Y. 1992 – 93
REFERENCES
International Boundary
District Boundary
Taluka Boundary
Railway Line
Road Metalled
Road unmetalled, Track
Canal
District Headquarters
Taluka Headquarters
Other Localities

THARPARKAR DISTRICT
(MIRPUR KHAS)



PROJECT F. Y. 1989 – 90 ▲

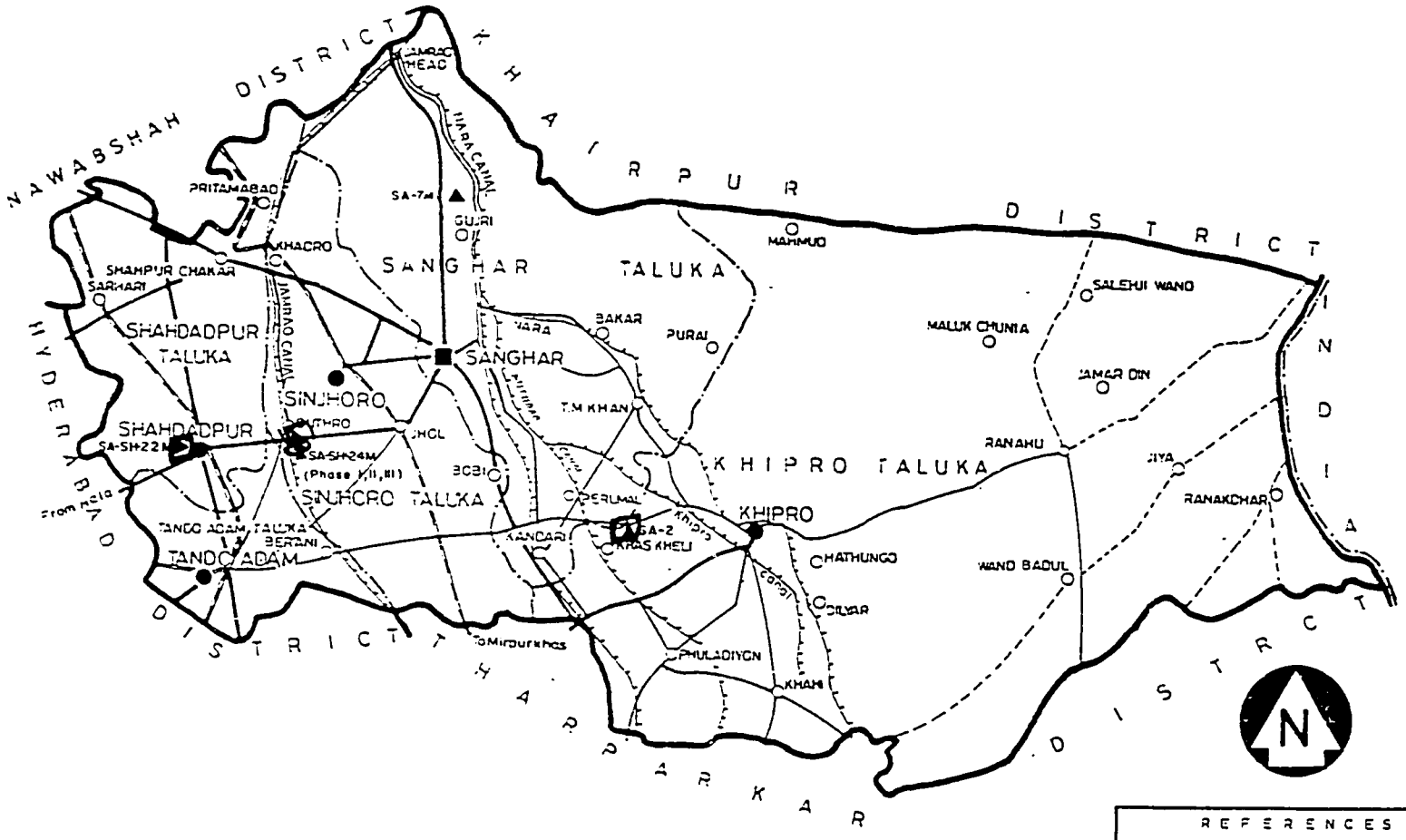
PROJECT F. Y. 1991 – 92

PROJECT F. Y. 1992 – 93

REFERENCES

- International Boundary
- District Boundary
- Taluka Boundary
- Railway Line
- Road Metalled
- Road unmetalled, Track
- Canal
- District Headquarters
- Taluka Headquarters

SANGHAR DISTRICT



APPENDIX H

PROPOSED TRAINING SCHEDULE

FOR

INITIAL PHASE OF CCSC CONTRACT

(1989 - 1991)

* TRAINING COURSES - 17 TOPICS
* SAMPLE COURSE SPECIFICATION (SYLLABI)
* PROPOSED COURSE SCHEDULE

APPENDIX H ; TRAINING COURSES

TABLE 1 (1 of 2)

SUMMARY OF TRAINING SPECIFICATIONS

COURSE NO	TITLE	PARTICIPANTS	NUMBER OF PARTICIPANTS	DURATION	NUMBER OF TRAINEE GROUPS
DL-1	Management Workshop	District Chief Officers and District Engineers	26	Two Weeks	2
DL-2	Road Engineering Workshop	District Engineers	13	Two Weeks	1
DL-3	Road Maintenance Course	District Engineers, Sub-Divisional Officers(Engineers) Sub-Engineers and RMU Sub-Engineers	80	Three Weeks	4
DL-4	Engineering Survey Course	District Engineers Sub-Divisional Officers(Engineers) Sub-Engineers	65	Four Weeks	4
DL-5	Contract Administration and Quality Control Course	District Engineers Sub-Divisional Officers(Engineers) Sub-Engineers	65	One Week	3
DL-6	Road Drainage Structure and Protective Works Course	District Engineers Sub-Divisional Officers(Engineers) Sub-Engineers	65	Two Weeks	3
DL-7	Soil Mechanics Course	District Engineers Sub-Divisional Officers(Engineers) Sub-Engineers	65	One Week	3
DL-8	Preparation of Estimate Documents Course	District Engineers Sub-Divisional Officers(Engineers) Sub-Engineers	65	One Week	3
DL-9	Bridges and Culverts Course	District Engineers Sub-Divisional Officers(Engineers) Sub-Engineers	65	One Week	3
DL-10	District Council Fund Generation Course	District Council Chairmen, Accounts/Taxation Officers, upto 3 selected members of each District Council	70	One Week	4
DL-11	Road Maintenance and Supervision Course	Sub-Divisional Officers (Engineers) Sub-Engineers, RMU Sub-Engineers	70	One Week	3

TABLE 1 (2 of 2)

SUMMARY OF TRAINING SPECIFICATIONS

COURSE NO	TITLE	PARTICIPANTS	NUMBER OF PARTICIPANTS *	DURATION	NUMBER OF TRAINEE GROUPS
DL-12	Road Maintenance Equipment Mechanics Course	Sub-Engineers(Mechanical) Foremen and Mechanics	26	Three Months	4
DL/FP13	Principles of Public Accounting and Budgeting-I Course	District Chief Officers Accounts/Taxation Officers Local Govt.& Rural Dev. Officials of GOS, Members of District Councils Resource Allocation Committee.	60	Three Weeks	3
DL/FP14	Principles of Public Accounting and Budgeting -II Course	Accounts,Auditors,Account Clerks of District Councils and GOS Dept.of Rural Dev. and Local Goverment.	60	Three Weeks	3
DL/FP15	Local Government Financial Management System and its Implementation in RRM	Selected Chairmen,District Chief Officers & Districts Engineers, GOS Officials of Rural Development and Local Goverment Officers, Selected District Council Members	60	Three Weeks	3
FP-16	Management Workshop	GOP Officials of MLGRD, GOS Officials of C&W Local, Government, Rural Development and Planning, Development and Finance Dept.	40	One Week	
FP-17	Financial Policy Making Workshop	Sr. GOP Officials from MLGRD,FRDEC,NTRC, National Highway Board, Joint Economic Affair Cell, Ministry of C&W and GOS Officials from the Dept. of Finance, Local Govt., Rural Dev., Communication and Works.	20	Two Weeks	1

* The numbers shown herein are approximate only and are probably on the high side.

SECTION VI:

TRAINING COURSE SPECIFICATIONS

(SYLLABI)

6.1 MANAGEMENT WORKSHOP

TITLE	Management Workshop
COURSE NO	DL - 1
PARTICIPANTS	District Chief Officers & District Engineers
NUMBER OF PARTICIPANTS	26
DURATION	Two Weeks
NUMBER OF TRAINEE GROUPS	Two Trainee Groups of 13 Participants each

TRAINING OBJECTIVES

Upon completion of this workshop, the participants should be:

- Capable of applying the principles, concepts and techniques of modern management to the performance of their jobs.
- Able to communicate horizontally and vertically with near perfect facility.
- Able to create an organizational culture oriented to efficient utilization of resources in the achievement of organizational objectives, specially with regard to construction and maintenance of rural roads.
- Able to periodically evaluate the performance of their respective organizations and initiate and implement corrective processes.

OUTLINE SYLLABUS

- Determination of Organizational Goals and Objectives, Job and Task Design.
- Planning for the Achievement of Goals, Scheduling and Allotment of Human and Material Resources to Tasks.

- Directing the Organizational Effort to Achievement of Goals, Day to Day Problem Solving, Decir king, and Crises Management.
- Organizational Leadership, Incentives and Motivation.
- Management of Human Resources; Staffing, Training, Performance Evaluation.
- Resource Control, Cost Control, Management Information Systems and and their Role in Control.
- Time Management and Time Control.
- Organizational Performance Analysis and Review Techniques, Corrective Measures, their Determination and Implementation.
- Management of Change, Innovation and Development.

TRAINING METHODOLOGY

Lectures

Class Discussions

Case Studies

TRAINING MANAGEMENT

To be managed by the Training Specialist of CCSC through training contractors. The contractors would prepare detailed course materials, student handouts, precis and the training aids and review them with the Training Specialist before conducting the course.

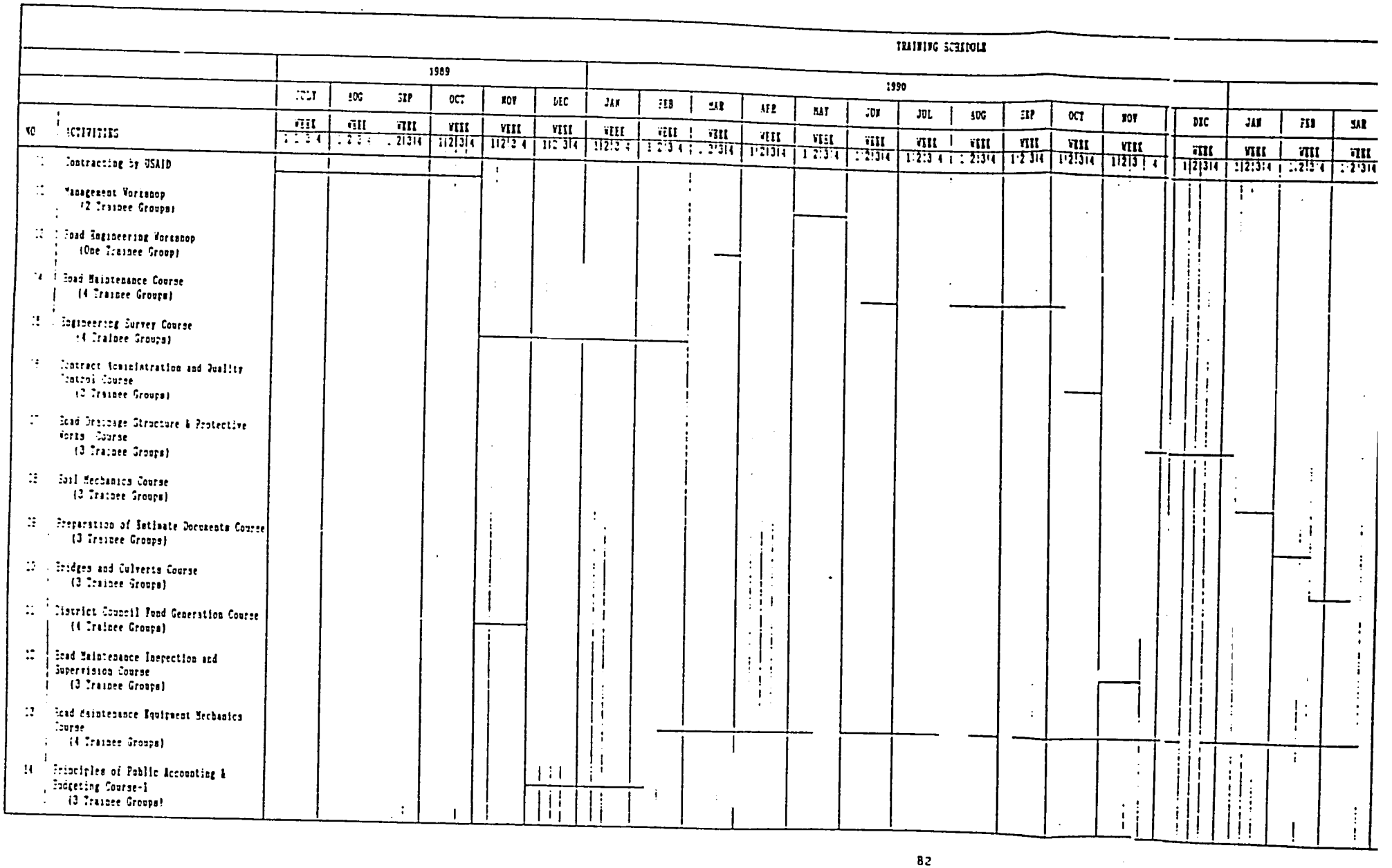
TRAINING FACULTY

Mainly contracted faculty to be used. Some classes may be given by the CCSC Training and other specialists. Where appropriate renowned and eminent experts in their respective disciplines may be used as visiting faculty.

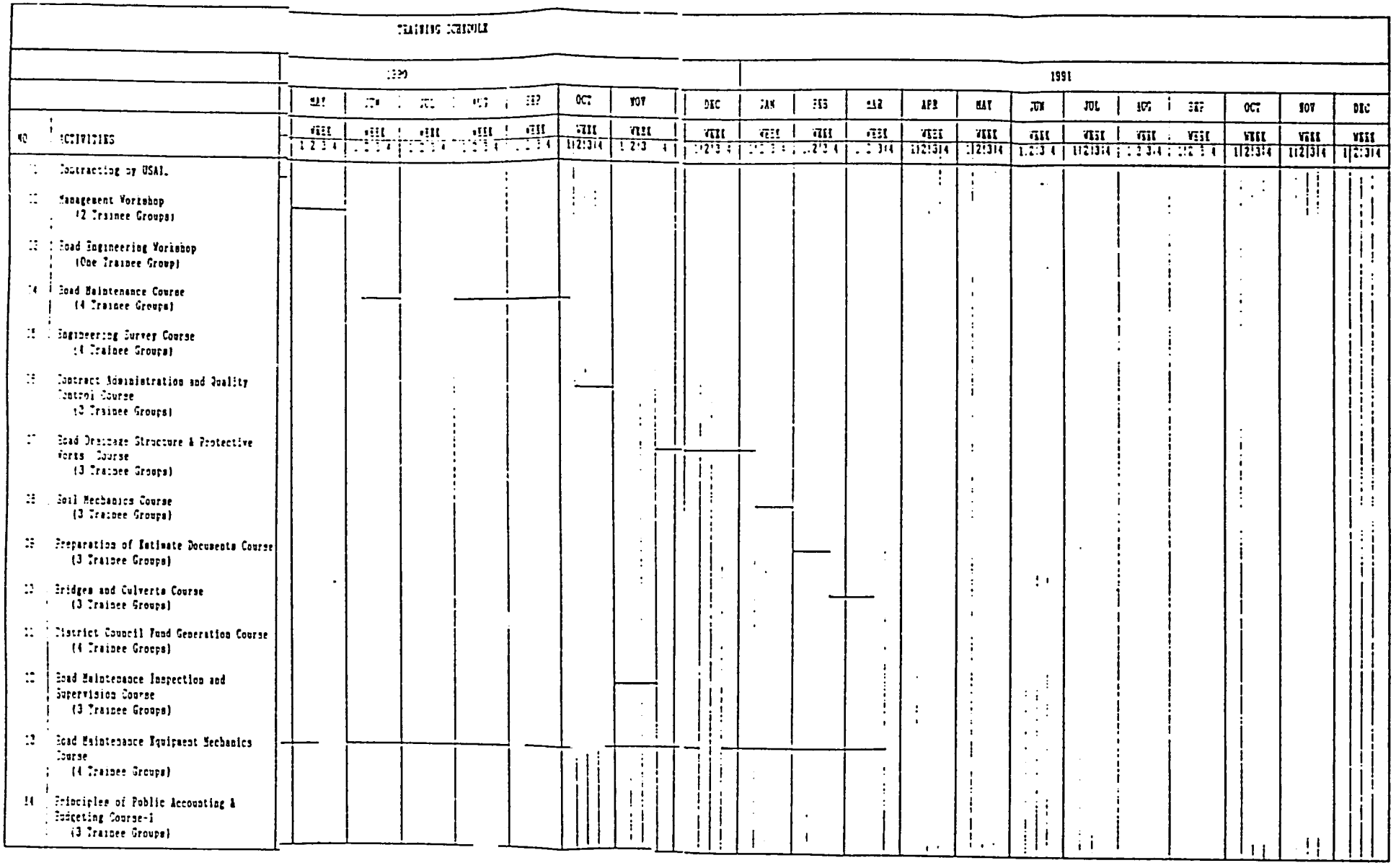
CLOSE SUPERVISION AND MONITORING

Course will be supervised and monitored by the CCSC Training Specialist who will also evaluate the trainees' and faculty

APPENDIX H ; PROPOSED COURSE SCHEDULE



APPENDIX H ; PROPOSED COURSE SCHEDULE (cont'd.)

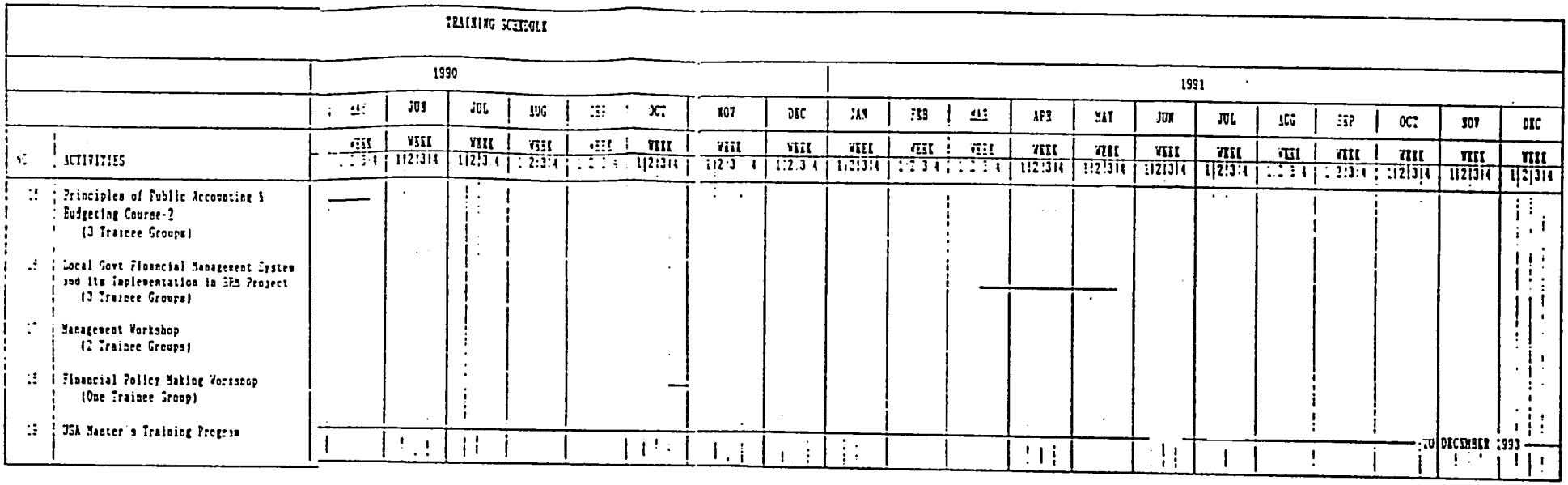


APPENDIX H ; PROPOSED COURSE SCHEDULE (cont'd.)

TRAINING SCHEDULE

	ACTIVITIES	1989						1990															
		JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	A
		WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	WEEK	W
		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2
.6	Principles of Public Accounting & Budgeting Course-2 (3 Trainee Groups)																						
.7	Local Govt Financial Management System and its Implementation in BEM Project (3 Trainee Groups)																						
.8	Management Workshop (2 Trainee Groups)																						
.9	Financial Policy Making Workshop (One Trainee Group)																						
.10	USA Master s Training Program																						

APPENDIX H ; PROPOSED COURSE SCHEDULE (cont'd.)



APPENDIX I

"MAINTENANCE MANUAL FOR DISTRICT ROADS IN SINDH Revised August 1992"

ROAD RESOURCES MANAGEMENT (RRM) PROJECT
(391 - 0480)

MAINTENANCE MANUAL

FOR

DISTRICT ROADS

IN

SINDH

(REVISED)

AUGUST 1992

SPONSORED BY :

GOVERNMENT OF SINDH

AND

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)

TABLE OF CONTENTS

APPENDIX I

SECTION 1

INTRODUCTION

This Road Maintenance Management Manual for Paved District Council Roads has been prepared to assist District Engineers and Sub-engineers to better manage the limited resources available to maintain the existing transportation infrastructure. It encompasses the basic maintenance planning procedures and contract management techniques that will be required to optimize the development and execution of the maintenance program budget.

District Engineers should refer to this manual frequently for planning, scheduling and evaluating maintenance work activities, whether they are to be performed by contractors or by permanent employees of the Road Maintenance Unit. The performance standards contained in this manual will prove particularly useful in communicating work procedures and productivity expectations to others and in estimating unit costs.

1.1 GENERAL

Roads are designed to varying standards to meet the needs of the community they serve. Like all engineered structures, they are subject to deterioration from the day they are built. For this reason the contractors that build them are made responsible for their maintenance for a reasonable time after construction, usually six months, to repair any defects or premature distresses that may appear due to deficiencies in construction procedures, quality of materials or workmanship. At the end of this period, the district council is responsible for the future maintenance of the road.

A road that is properly maintained throughout its service life will provide safer travel and reduced operating costs for its users, while at the same time result in lower life cycle cost, serving its users over an extended period, thereby optimizing the District Council's investment in transportation infrastructure. It is axiomatic that it costs less to properly maintain a road than it does to allow it to deteriorate for lack of maintenance investment, until it is necessary to rehabilitate or reconstruct. The key to maximizing the return on the District Council's investment in transportation infrastructure lies in employing adequate criteria to determine the appropriate level of maintenance intervention and performing this maintenance in a timely manner. For this reason road maintenance must be a permanent part of the operations of the District Council and objective maintenance management criteria and uniform operational procedures must be consistently applied.

Application of appropriate maintenance management criteria at the District Council level includes gathering sufficient information

about the road network, the type and quantity of vehicular traffic on each road, past and present surface condition and scheduling the appropriate response to each superficial distress or structural deficiency. In maintenance planning, due regard must be paid to the very real limitations of manpower and financial resources. At the District Council level, this means that the District Engineer must decide when to assign work to beldars and when it is appropriate to tender contracts for road maintenance. He must anticipate the needs of the network, with a reasonable degree of accuracy, a year in advance and work with the District Chief Officer to see that an adequate budget is prepared to respond to those needs, maximizing the return on the District Council infrastructure investment.

The maintenance management system, the performance criteria, and the contract management guidelines set forth in this manual provide the District Engineer and his staff with the basic tools he will need to make cost-effective maintenance management decisions.

1.2 SCOPE OF THIS MANUAL

Because paved roads represent a major investment of District Council resources, it is of critical importance that this investment be adequately protected, i.e. maintained, to assure that it provides the service for which it was designed at the lowest possible cost. Therefore, this manual explains the work activities, quality control procedures, contract and work management principals and maintenance management practices that the District Engineer should employ in safeguarding the paved road network.

The District Engineer will find that, although the specific work activities and construction materials that are required to maintain bituminous paved roads are different from those that are utilized for brick paved and unpaved road surfaces, the same general principals and many of the same techniques are applicable to the problem of maintaining the brick and katcha network. The serviceability of these roads is also critical to the economic development of the district and the problem of conserving them is also exacerbated by the same labor and funding limitations that apply to the maintenance of the asphalt paved network.

By conscientiously and objectively applying the maintenance management system guidelines and technical criteria to the entire district road system, always giving due priority to the bituminous paved roads, the decisions made by the District Engineer will maximize the return on the District Council investment in transportation infrastructure, assure a higher degree of safety, comfort and convenience to the road users and minimize their vehicle operating costs.

1.3 MAINTENANCE FIRST POLICY

Because of the importance of protecting the investment in the existing transportation infrastructure, and because asphalt paved roads are the most expensive component of this infrastructure, investing in the maintenance of these roads will always result in a higher rate of return than investing in the construction of new roads or the upgrading of katcha roads, except where extraordinary economic growth can be generated by new construction.

In June of 1989 the Government of Sindh approved a Policy Statement promulgated by the Department of Local Government and Rural Development, establishing maintenance of the paved road network as the highest priority activity with respect to the transportation infrastructure of rural Sindh and utilization of local development funds. Each District Council adopted this policy to demonstrate a firm commitment to the economic and policy objectives of the USAID Road Resources Management Project. The salient features of this policy are as follows:

STATEMENT OF DISTRICT COUNCIL POLICY

IT SHALL BE PUBLIC POLICY TO PROVIDE FOR THE USE OF DISTRICT COUNCIL RESOURCES IN THE FOLLOWING DESCENDING ORDER OF PRIORITY:

1) PROVIDE ROUTINE, PERIODIC AND EMERGENCY MAINTENANCE ON EXISTING PAVED ROADS;

2) REHABILITATE EXISTING PAVED ROADS THAT HAVE DETERIORATED DUE TO HEAVY USE AND THE GENERAL LACK OF ADEQUATE MAINTENANCE AND ARE NEAR THE END OF THEIR ECONOMIC LIFE;

3) UPGRADE EXISTING KATCHA ROADS TO A STANDARD WHERE THEY CAN BE MAINTAINED; AND

4) EXPAND THE ROAD NETWORK INTO AREAS NOT YET SERVICED BY THE CURRENT NETWORK WITHIN THE CAPACITY OF THE DISTRICT COUNCIL TO PROVIDE ADEQUATE MAINTENANCE.

In an effort to institutionalize the objectives of this policy, the District Councils further resolved to:

1) Include a separate provision under the heading "Road Maintenance" as a line item in the annual District Council Budget and, under this heading, provide adequate funds for maintenance of paved district council roads.

2) Establish a Road Maintenance Unit to carry out the maintenance program.

3) Generate revenues through local resources to meet the recurrent road maintenance costs.

This maintenance manual is an important tool in implementing the approved policy and institutionalizing its objectives. District Engineers who follow the guidelines and procedures set forth in this manual can be assured of complying with the objectives of this province-wide policy.

1.4 SCOPE OF MAINTENANCE

Road maintenance, as defined for the purpose of this manual, refers to the performance of routine, emergency and periodic road repair and conservation work activities, performed at district level and limited in scope to relatively low-cost activities which will improve the safety, functioning and appearance, and extend the economic life of the road/pavement surface, the shoulders and embankments, and the appurtenant structures, such as culverts and ditches.

Routine maintenance activities are those activities which are performed as often as necessary to respond to isolated pavement and roadside distresses and functional deficiencies or obstructions, which occur randomly throughout the district road system. Performed as part of the annual maintenance program, either by contractors or by beldars assigned permanently to the district council road maintenance units, routine maintenance activities include:

P-1, Skin Patching/Surface Dressing
P-2, Pothole/Base Failure Repair
P-3, Shoulder Levelling and Minor Repairs
P-4, Major Shoulder Repair/Restoration
P-5, Culvert and Drainage Ditch Cleaning
P-6, Major Structure Repair

Emergency maintenance activities are performed as required to respond to urgent conditions which affect the safety of the road user, accessibility of the road or integrity of a road related

structure. Typical emergencies include blockage of the road way due landslide or accident (such as overturn of a loaded truck), collapse or failure of a culvert or small bridge, or washout of an embankment or road section due to heavy rains and flooding. Most emergency maintenance is performed by beldars due to the need for fast action. It is possible however to engage contractors to perform emergency work when the total amount to be contracted falls within the limits legally permitted for direct awarding of contract by inviting quotations. If the district experiences recurring failures or emergencies in a specific area, the maintenance budget should provide sufficient funds to respond to the emergency effort that can be reasonably anticipated.

Periodic maintenance activities, as the name implies, are programmed to follow a cycle. Generally, periodic maintenance follows a four to six year cycle, although specific conditions may warrant exceptions. Each road that has not received periodic maintenance during the previous three years should be carefully inspected to determine whether such maintenance should by scheduled for the following year so that a realistic budget can be prepared, as periodic maintenance is a major investment that must be specifically budgeted. Periodic activities are performed over an extended area, rather than in small, isolated sections. Usually an entire road is programmed for periodic maintenance at district council level, although it is also common to schedule periodic maintenance on significant homogeneous sections of a road, especially if these sections of the road were built in different years, or were built in water-logged areas or difficult soils, resulting in an accelerated rate of deterioration. Periodic maintenance activities include surface sealing or sand seal, single surface treatment to replace a distressed wearing course, and double surface treatment on roads where base material is exposed, but is still structurally sound.

1.5 ORGANIZATION AND MANAGEMENT

To properly manage the preparation and execution of the annual maintenance programs, each District has created a Road Maintenance Unit (RMU) under the direction of the District Engineer. This organizational unit is structured to respond to the road maintenance needs of the district, employing the maintenance management system and administrative procedures documented in this manual. All routine road surface maintenance activities and roadside work requiring motorized equipment, as well as all periodic maintenance, will be tendered to private contractors. Routine roadside work, such as vegetation control, shoulder maintenance and culvert cleaning, which can be done with simple hand tools, like wheel barrows, shovels and hand tampers, may be performed by contractors or district beldars, at the discretion of the District Engineer.

The District Engineer, as head of the Road Maintenance Unit, is assisted by sub-engineers, each assigned to supervise one or two talukas, depending on the magnitude of the road network in each taluka. The sub-engineers are responsible for maintenance management in their respective talukas. The District Engineer may assign daroghas and beldars to work under the sub-engineer on a permanent basis to perform the shoulder and embankment maintenance which does not require mechanized equipment, or he may choose to execute all routine and periodic maintenance by contract, assigning daroghas and beldars to work on the unpaved network, except to respond to emergencies. The size and budget of the RMU, therefore, is a function of the size, composition and condition of the district road network and the number of talukas. Details of RMU organization are explained in Section 3 of this manual.

APPENDIX J

"MODEL MAINTENANCE CONTRACT

DISTRICT ROADS IN SINDH -

August 1992"

MODEL MAINTENANCE CONTRACT

FOR

DISTRICT ROADS

IN

SINDH

AUGUST 1992

SPONSORED BY :

GOVERNMENT OF SINDH

AND

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)

AGREEMENT REGARDING LOCAL FUND ROAD MAINTENANCE CONTRACTS

1. NAME:- (herein referred to as Contractor)	2. NAME:- (herein referred to as District Council)
Name:	Name:
Father's Name:	Father's Name:
Surname:	Surname:
Address:	Address:

We have reached an agreement on this ---------- day of ---------, 19--, as per terms and conditions written hereunder for the maintenance of roads identified in the schedule hereto attached, situated in the Talukas indicated therein, all the roads being within the jurisdiction of the District Council and measuring a total length of _____ kilometers:

I. (a) That the Contractor agrees to undertake the responsibility for the maintenance of the above listed roads as specified in the Schedule hereto and subject nevertheless to the Sindh Councils (Contract) Rules 1980 as amended from time to time (hereinafter referred to as the Rules) insofar as the same is applicable to the Agreement and the Council has accepted the offer of the Contractor to perform maintenance work undertaken as may be ordered from time to time during the term of this contract.

(b) Payment of the work shall be in accordance with the fixed unit price for each maintenance activity set forth in the Bill of Quantities (Schedule B) and the District Council

shall make the payment to the Contractor for each work performed by the Contractor as per Clause No. 24. of this Agreement.

(c) That the Contractor has executed this Agreement with the District Council of his own free will and without any external pressure

1. Action in case of non-compliance on the part of the contractor

The Council reserves the right to demand forfeiture of the earnest money and the accrued retained percentage of payments to the Contractor as well as the right to cancel the balance for the term of this Agreement in case the Contractor does not start work within three weeks' time after the issuance of a valid work order for the maintenance of a road/roads. The Council shall thereupon be entitled to a forfeiture of that portion of the earnest money paid persuant to the requirements of the tender documents and the deduction of security deposits in accordance with article No. 24 of this Agreement, the sum of all amounts subject to forfeiture not to exceed an amount equal to one tenth of the value of this Agreement. In case the Council suffers losses over and above the portion of the earnest money forfeited, the Contractor shall be held responsible for bearing only such losses as shall be recoverable from him under article No. 26 of this Agreement and the Rules.

2. Determination of amount of cash deposit & the mode of refund

Cash deposit in the form of earnest money shall be determined on the total estimated value of this Agreement as set forth in the Bill of Quantities. The Contractor shall deposit 10% of the total estimate value of the contract with the Council as security deposit for the maintenance work (2 % with tender and 8 % to be deducted from running bills). The deposit would be refundable three months after getting the completion certificate for a work order issued in accordance with Condition No. 24 of this Agreement. The amount of deposit or retained percentage for each

maintenance work would be 10 percent. This 10 % would be derived from the 2 % earnest money according to the bid on the total estimate of the value of the contract plus the 8 % retained from the payment of the bill issued on the completion of each work order. Where the contract/tender is accepted, the deposited amount shall be treated as security and shall be refundable as per terms and conditions of the Agreement upon the satisfactory completion of the maintenance work. In case the Contractor abandons the work this Agreement will be rescinded and the 10% security deposit forfeited to the Council.

3. Mode of execution of the work

The contractor shall have to work honestly and follow the instructions of the District Engineer. (The District Engineer or his authorised representative except and in so far as the context otherwise states or implies shall be referred to as the Engineer). The contractor may use any work procedure approved by the Engineer. The quality of the work shall be at least as good as the quality which would have been obtained if the performance standards incorporated in the specifications of the maintenance work had been employed.

Except where the Engineer had authorized an alternative procedure as indicated above, the Contractor shall execute the work in accordance with the specification spelled out in Specifications and Supplemental Specifications attached as Annex B and of the Council. In any event the Contractor shall accomplish each part of the maintenance work as per details agreed upon in the given tender/estimate or as may be issued with each work order.

4. Penalty for failure on the part of contractor to complete the assigned work within stipulated time.

The contractor shall have to start the work within three weeks' time of the work order issued to him by the Engineer. The Contractor shall complete the work within the established time limits. After the completion of each work, the Contractor shall remove the unused material from the site. He shall have to repair any damages to the right of way, if any, which may have been induced as a result of the Contractor's equipment or any other cause during the execution of the work. In case of default, the Contractor shall be liable to pay the penalty of Rs. 0.12 per Rupees hundred of the value of work for delay of each day for each work to the Council or for each day of interruption of the work if such interruption is due to negligence of the contractor. However, the penalty will not exceed 10% of the total value of each work order. Penalty shall be recoverable as per the Rules, 1980.

Extension of time with regard to the completion of a specific work order may be allowed by the Chairman of the Council on the recommendation of the Engineer on the basis of legitimate reasons. Extension in time would be allowed to the Contractor after receiving a written request from him at least one week before the stipulated date of completion indicating the valid reasons for such extension . A separate work order will be issued for each road to be maintained under this contract.

5. Determination or material and its quality

Material required for the works such as stone, bricks, wood, iron, clay, lime stone, etc. which will be used by the Contractor

will be of quality as per specification, plans and designs and of quantity as specified in each work order. No advance shall be paid for stocking such material. In case of loss of material due to any eventuality like theft, fire, rain, accidents or circumstances amounting to force majeure the Contractor shall solely be responsible. The Council will have no responsibility in this regard. Before compensating the Contractor for the material used, the written approval of the quality is to be given by the Engineer. The quantity used shall be as measured in joint measurement by the Contractor and the Engineer or his duly authorized representative. Approved material and other items such as ropes, stairs, wooden planks, etc. would not be moved from the place of the work without the permission of the Engineer. Advance paid by the Contractor to any person or party for stocking/ purchasing the material would be at the risk and cost of the Contractor. The Council will not be held responsible in this regard.

6. Removal of unsatisfactory, sub-standard material from the site

The quality of material shall be determined by the Engineer. If the Engineer determines that the material used on the site does not comply with specifications and is of lower quality, he shall have the right to reject/ discard the material and order its removal within a week's time at the cost and expense of the Contractor as per provision in Clause No. 26 hereto and the Rules.

7. **Kiln arrangement of bricks**

The Contractor shall be solely responsible for making kiln arrangement of bricks, if any are required, at his own cost and expense.

8. **Lay-out of the work**

All expenses such as labor charges and purchase of material like ropes and line markers etc., for the lay-out of the maintenance work shall be borne by the Contractor and he shall not receive any facility or payment in this regard from the Council.

9. **Supply of tools/plants etc.**

The Council shall not be responsible for providing tools, plants or equipment to the Contractor (unless rental of such tools, plants or equipment to the Contractor is authorized as a specified item in this Agreement) and he shall have to arrange the tools, plants and equipment on his own. In case the Council provides this facility to the Contractor, he shall have to pay the agreed rent for the tools, plants for the entire period for which they are hired. In case of any damage to the tools, plants or equipment the Contractor shall be responsible for the repair and/or replacement costs as envisaged in Clause 26 hereto and the Rules.

10. **Payment of municipal toll taxes etc.**

The Council shall not be responsible for the payment of any toll, octroi, cess or other taxes. The Contractor shall have to pay such municipal toll/octroi taxes and all legal impositions as may be applicable for transport of material to the site.

APPENDIX K

SINDH LOCAL GOVERNMENT

AND

RURAL DEVELOPMENT ACADEMY

(SLGRDA)

TANDOJAM

BROCHURE

SINDH LOCAL GOVERNMENT

AND

RURAL DEVELOPMENT ACADEMY

TANDOJAM

1

FOREWORD

The primary functions of Sindh Local Government & Rural Development Academy, Tandojam are to study and analyse the structure, methods and systems of local government institutions which are engaged in planning, organizing and implementation of rural development programmes. These studies are essential to assess the extent of effectiveness of the institutions engaged in rural development and to suggest measures to improve their performance.

This brochure is an attempt to introduce the working of the Academy right from its inception with reference to the field of studies that it proposes to cover alongwith their objectives. I hope this introduction will prove useful and help all those engaged in the task of improving the well-being of the rural population.

SALAHUDDIN QURESHI
Additional Chief Secretary (LG)

3

INTRODUCTION

The very word "TRAINING" refers to the sense of enabling a person for shouldering a responsibility efficiently and as such the concept of training occupies the place of edifice of smooth and effective administration Training is actually the use of scarce financial resources in its wider sense. It therefore deals with the tendency adopted in connection with a strategy, plan, prog-amme, goal and guide etc.

Training is a constant and universally accepted media being the natural urge of a human being. In the present advanced age, it is the device to keep abreast with the latest known-how and constant changes occuring from time to time.

The Housing, Town Planning, Local Government and Rural Development has sprung up from the basic roots of the masses and is closely related with the common man in every sphere of life. Obviously, its scope and functions are manifold which must reach the door steps of the common man in providing and serving for the civic facilities and amenities of life and thus ameliorating the lot and fate of the common man for complete transformation of the society. This job is so delicate and important that it needs use of optimum and maximum abilities and potentialities to come to the expectations of people and to reach the desired goal. For this purpose, this institution is the only agency at Provincial level which functions as the nerve centre for the service as almameter of the Government functionaries and elected representatives within the orbit of the department which assesses, caters and evaluates the training needs in a befitting manner within its available resources and constraints.

Efforts have been made to design training courses

according to the actual requirements of the field and helpful in development of management skills in officials of all level involved in management of Local Government and Rural Development Institutions.

AGHA SHAHABUDDIN
Director

SLG & RDA
Tandojam

TRAINING
CALENDAR
1993

Sindh Local Government & Rural Development Academy Tandojam

Sindh Local Government & Rural Development Academy Tandojam.

INTRODUCTION:

This institution was originally established as VILLAGE-AID Training Institute, in 1953, which was shifted to Tandojam in 1956 in the new Campus at the distance of 19 Kilometers from Hyderabad, on Hyderabad - Mirpurkhas Road, opposite to Sindh Agriculture University, Tandojam.

During its glorious past, it has passed through different phases and has played its positive role being the hub of activities under Village - Aid, Basic Democracies and Local Government areas.The Campus contains academic and administration block, one hostel, one 'D' type Bungalow for Director, five 'B' type quarters for Instructors and eleven 'C' type quarters for ministerial staff.

FIRST PHASE:

The institute used to impart the Pre-service and In-service training to the newly recruited Male and Female Village Workers under Village-Aid Programe in the subjects of Agriculture, Animal Husbandry, Horticulture, Poultry, Carpenting, Smithing, Adult Education to the Male Workers and similarly, Home Economics, Adult Education, Community Development, First-Aid and Child-Care to the Female Workers.

The Eight long Term Courses of One Year duration were conducted at the institute during Village-Aid era :

(a) No. of courses.	Eight Long Term Courses each of One Year duration.
(b) No. of Particlpants.	522
(c) Budget for 1959-60.	Rs: 3,66,330-00

APPENDIX K

SECOND PHASE:

After winding-up of the Village-Aid programe in July-1990, Basic Democracies system was introduced in the Country. The Institute was renamed as " Basic Democracies Training Institute Southern Region, Tandojam". The Institute catered the training needs of officers/officials and the Elected Representatives of various tiers of Basic Democracies system in Hyderabad, Karachi, Kairpur, as well as Multan, Bahawalpur, Quetta and Kalat Divisions of Defunct Province of West Pakistan.

The details of courses, participants and the budget during the period is as under:-

(a) No. of Courses.	93
(b) No. of Participants.	3188
(c) Budget for 1969-70	Rs: 1,67,530-00

The subjects in which training was imparted were Public Administration, Office Procedure, Basic Democracies Order-1959, M.A.O.-1960 and Rules framed there under, Accounts, Budget, Taxation, Conciliation Court Ordinance-1961, Muslim Family Law Ordinance-1961, Development Planning and Community Development.

THIRD PHASE:

After winding -up of Basic Democracies system and abolition of one Unit, the nomenclature of the Institute was changed as "Sindh Local Government & Rural Development Academy, Tandojam" with the object of catering to the training needs of the officers/officials of Local Councils constituted under Sindh Peoples Local Government Ordinance-1973, subsequently, enacted as Sindh Local Councils Ordinance-1979. The number of training courses conducted, personnel trained and budget allocations during the period is as under:-

(a) Number of Training Courses : ,to June-1983.	74
(b) . o. of Participants:	4858
(c) Budget for the year 1975-76.	Rs: 154,000-00

FOURTH PHASE:

The Institute was raised to the status of Academy on Ist July- 1983.

The staff position of the Academy has as under.

(i) Director :	BPS-19
(ii) Chief Instructor :	BPS-18 One
(iii) Instructors :	BPS-17 Six

FIFTH PHASE

The Academy was activated in the year 1989-90, by strengthening the Faculty, and procuring modern equipments from Government and UNICEF, as under:-

1. Director BS-20	One
2. Director/Principal BS-19	One
3. Deputy Director, BS-18	One
4. Chief Instructors BS-18	Four
5. Instructors BS-17	Twelve
6. Administrative Officer BS-17	One
7. Accounts Officer BS-17	One
8. Research Associate BS-17	One
9. Statistical Officer BS-17	One
10. Office Superintendent BS-16	Two
11. Computer Programme Officer Bs-16	One
12. Publication Officer BS-16	One

In addition to available equipments, four sets of Computer (Apple), address sound system, Telephone Exchange of 24 lines, Photo state Machines and fairly a large number of books have been add . l in the Library.

SIXTH PHASE.

The pace of activating the Academy is in Progress. Three PC-1's have since been floated.

Financially sound Union Councils had been approached for raising funds to improve its existing buildings. Similarly, International Agencies are also approaching the Academy to make it as a nucleus of their orientation programmes and their other activities. In addition to the departments of Rural Development, Local Government, Public Administration

and financial Management, Departments of Women Welfare, Cooperative and Social Welfare Community Development and Engineering are also being proposed to make it a training centre of all functionaries including elected functionaries and Provincial Servants of local Govt; Nation Building Departments and non - Governmental Organizations.

FACILITIES:

Tandojam Academy is a residential Institution and spreads over 25 acres. The Campus contains Faculty and Staff Houses, Hostel, Class rooms and Administrative Block and an Agriculture land alongwith two Tube-Wells.

The Academy also maintains a well-equipped Library to meet the training study requirements of its staff and trainees. Its collection exceeds 10,000 Books and Journals.

The Audio-Visual Section has been equipped with latest teaching aids like over-head projector, Slide projectors and Video Recording, T.V. and V.C.R. facilities.

A Computer Unit with 05 sets (01 IBM & 04 Apple) added since 1990, is being developed.

The Academy has 2-line PBX Telephone Exchange with 13 internal lines which extend from offices to residences as well.

During the period 1983 to 1992 following Training Courses & Seminars were held:-

(a)	No. of training courses, July - 1983 to 1992.	85
(b)	No. of participants.	2489
(c)	No. of Seminars.	75
(d)	No. of Participants.	10124
(e)	Budget for 1983-84.	Rs: 966600-00
(f)	Budget for 1988 89	Rs: 1171560-00
(g)	Budget for 1990-91.	Rs: 4855520-00
(h)	Budget for 1991-92.	Rs: 3232000-00
(i)	Budget for 1992-93.	Rs: 4728:00-00

SALIENT FEATURES OF TRAINING PROGRAMMES CONDUCTED BY THE ACADEMY.

The Academy had Improved upon the level of its training courses, supplimented by the following Ingredients:-

a) Nominations are made, keeping inveiw the design of the course.

b) Course Contents while designing the Courses are prepared after thorough exchange of ideas and discussions by the Faculty Members.

c) The Courses Cover Panel Discussions, Group Discussions, Guest-Speakers, Lectrurers of Resource Persons, Study Tours, Home Assignments,First Evaluation to assess the Training needs of the participants according to their expectations and final evaluation.

d) Getting Acquainted by the participants on the Opening Day.

e) Profile of area to which he belongs is brought by the trainees.

SINDH LOCAL GOVERNMENT AND RURAL DEVELOPMENT ACADEMY, TANDOJAM. TRAINING CALENDAR - 1993.

S. NO.	TITLE OF TRAINING COURSE	DATE & DURATION	VENUE.	CLIENTELE.	COORDINATORS.
01.	02.	03.	04.	05.	06.
01.	Orientation Course on "Community Development" in-Collaboration with PARD - Peshawar.	ONE WEEK. 9th - 14th JANUARY, 1993.	TANDOJAM ACADEMY.	* District Officers Of N.B.Ds Of Sindh Province.	Mr. M. Maroof Lakho, Chief Instructor. Mr. A. K. Rajput, Instructor.
02.	Skill Development Course on "Research Methodology" in-Collaboration with PARD-Peshawar.	ONE WEEK. 23rd-28th , January 1993	TANDOJAM ACADEMY.	* Assistant Director, (LG). * Assistant Director, (Dev:), RDD. * Engineer, District Councils. * Planning Officers, RDD, * Statistical Officers, Bureau of Statistics, Planning & Development Department, Government Of SINDH & SRPO. * Instructors, SLG&RDA, Tandojam.	Mr. Bashir Ahmed Kazi, Chief Instructor. Mr. Iqbal Ahmed Shaikh, Instructor.
03.	Training Course for Road Resource Management project, in-collaboration with U.S-AID (Technical).	ONE WEEK. 6th-11th February, 1993.	TANDOJAM ACADEMY.	* Technical Officers Of * District Councils & RDD.	Mr. Bashir Ahmed Kazi, Chief Instructor. Mr. Iqbal Ahmed Shaikh. Instructor.
04.	Training Course on "Management & Organization of Female Youth Groups for Rural Development" in-Collaboration with UNICEF/NCRD, Islamabad.	ONE WEEK. 13th-18th February, 1993.	TANDOJAM ACADEMY.	* Female Youth of Villages. * UNICEF-Community Workers. * Functionaries of public & Private Sector. * Members of N.G.O's.	Mr. Muhammad Maroof Lakho, Chief Instructor. Mrs. Azra Balouch, Instructor

01.	02.	03.	04.	05.	06.
05.	Training Course for Road Resource Management Project, In-collaboration With U.S-AID. (Finances).	ONE WEEK. 20th-25th February, 1993.	TANDOJAM ACADEMY.	* Accounts Officers of District Councils. * Officials Dealing With accounts in RDD and Local Rural Councils.	Mr. Bashir Ahmed Kazi. Chief Instructor. Mrs. Azra Balouch, Instructor.
06.	Workshop on "Training of Trainers"	FIVE DAYS. 28th March to 1st April, 1993.	TANDOJAM ACADEMY.	* Heads of Training Institutions, alongwith Two Faculty Members. * Representatives of International Agencies.	Mr.. M. Maroof Lakho, chief Instructor. Mr. Abdul Rehman Abbassi, Instructor.
07.	Training Course on "Local Government System."	4 WEEKS 3rd April to 13th May, 1993.	TANDOJAM ACADEMY.	* Instructors of SLG & RDA. * Assistant Directors (LG). * Development Officer (LG). * Planning Officer, RDD. * Officers of Local Councils of all categories. (Recruited from 1.1.86).	Mr. M. Maroof Lakho, Chief Instructor. Mr. Muhammad Ibrahim Abro, Instructor.
08.	Training Course for "Identification of Training Needs in Rural Development Programme for Women."	ONE WEEK 22th - 27th MAY, 1993.	TANDOJAM ACADEMY.	* Women NGOs, * Functionaries of S/Welfare education, health, population Planning, & other Government Departments. (Old & New Councillors).	Mr. Bashir Ahmed Kazi, Chief Instructor. Mrs. Azra Balouch, Instructor.
09.	Training Course on "Primary Health Care".	ONE WEEK 5th - 10th June, 1993.	TANDOJAM ACADEMY.	* Sanitary Inspectors of Local Councils. * Office Bearers of NGOs. * Officials of Social - Welfare Department.	Mr. Bashir Ahmed Kazi, Chief Instructor. Mr. Abdul Rehman Abbassi, Instructor.

01.	02.	03.	04.	05.	06.
10.	Training Course for "Road Resource Management Project." in - Collaboration with U.S-AID(TAXATION).	ONE WEEK 19th-24th June, 93.	TANDOJAM ACADEMY.	* Taxation Officers of District Councils.	Mr. Bashir Ahmed Kazi. Chief Instructor. Mr. Iqbal Ahmed Shaikh, Instructor.
11.	Conference on "Agriculture Production & Marketing "Proess" Problems and Prospects.	ONE WEEK. 3rd - 8th July, 93.	TANDOJAM ACADEMY	* Officers of Agri: Deptt; * Progressive Growers. /Peasants. * Councillors, Officials dealing with Seeds, Fertilizer & Pesticides of companies/ Departments/ Corporations.	Mr. M. Maroof Lakho. Chief Instructor. Mr. Naveed Sehar Pirzada, Instructor.
12.	Role of "Professional Women in Rural Development."	ONE WEEK 24th-29th July, 93.	TANDOJAM ACADEMY.	* Women of NGO's. * Professional Women working in various Government Departments & Private Sector.	Mrs. Azra Balouch, Instructor. Mr. Ubedullah Siddiqui, Instructor.
13.	Training Course for "Road Resource Management Project", in-Collaboration With U.S-AID. (Executive Officers.)	ONE WEEK 7th-12th August, 93.	TANDOJAM ACADEMY.	* Chief Executive Officers Of District Councils, Rural Development & Local Govt:	Mr. M. Iqbal Shaikh, Instructor Mr. A.K. Rajput, Instructor.
14.	Training Course for "Rural Female Youth." In-Collaboration With UNICEF./N.C.R.D.	ONE WEEK. 4th-9th September, 1993.	TANDOJAM ACADEMY.	* Rural Famale Youth OF SINDH. * Non-Governmental Organizations.	Mrs. Azra Balouch, Instructor.
15.	Professional Training Course in "Participatory Methods in Community Development."	EIGHT WEEKS. 12th Sept: to 11th Nov: 1993..	TANDOJAM ACADEMY.	* Secretaries of Union Councils appointed after 1988."	Mr. M. Maroof Lakho, Chief Instructor. Mr. Abdul Rehman Abbassi, Instructor.

01.	02.	03.	04.	05.	06.
16.	Training Workshop on Rural Water Supply & Sanitation Project, in-Collaboration With RW & SAN: Project.	ONE WEEK. 4th-9th December, 93	TANDOJAM ACADEMY.		
17.	Workshop on "Annual Evaluation" (Review Session).	THREE DAYS. 18th-20th Dec: 93.	TANDOJAM ACADEMY.		
				* Sub-Engineers of Public Health Engineering Deptt:	Mr. Bashir Ahmed Kazi, Chief Instructor. Mr. Naveed Saher Pirzada, Instructor.
				* Director, Local Govt: (all). * Chief Engineer PHED. * Director (Dev:) RDD. (all). * Director Technical, RDD. * Director General. katchi Abadies. * Director, Town Planning. * Old Faculty of this Academy. * Municipal Commissioner, HMC. * Assistant Director (LG) one per Div:. * Chief Officer. District Council, Hyd. * Town Officer, T.C. Tandojam. * Secretary, U.C. Dhigano Bozdar. * One Group Leader/Trainee, * Per Seminar & training Course. * Representative of UNICEF. * Representative of PCAT. * Representative of RAASTA, BUSTI, SGA. * SIK-PREET, GOTH SUDHAR, Community * Development Cooperative Society.	Mr. Muhammad Maroot Lakho Chief Instructor. Mr. Abdul Khaliq Rajput, Instructor.
18.	Training Course on Role Of Lady Councillors in Community, Development.	ONE WEEK 26th-30th December,93.	TANDOJAM ACADEMY.	* Lady Councillors of Local Councils.	Mr. Bashir Ahmed Kazi, Chief Instructor. Mrs. Azra Balouch, Instructor.

DETAILS OF TRAINING ORGANIZED AND FINALIZED WAT/SAN, WES & WORLD BANK,

PROGRAMMES PROPOSED TO BE IN COLLABORATION WITH DURING THE YEAR 1993

S. NO.	TITLE OF TRAINING COURSE	DATE & DURATION.	VENUE.	CLIENTELE	.COORDINATORS.
01.	Training Courses in WAT/SAN in - collaboration. with UNICEF	ONE WEEK	Academy	• Staff of Rural Development, Government of Sindh.	Mr. Abdul Khaliq Rajput, Instructor.
02.	Human Resource Development in-collaboration with U.N.D.P.	ONE WEEK	Academy	• Officers of Local Government & Rural Development.	Mr. Abdul Rehman Abbassi instructor.
03.	Training Course On Secondary Cities in-collaboration with World Bank	ONE WEEK	Academy	• Officers of Secondary Cities.	Mr. Ubedullah Siddiqui Instructor.

SEMINARS, CONFERENCES AND WORKSHOPS PROPOSED TOBE HELD IN THE YEAR - 1993.

01. Seminar on " Rural Development Strategies" (In-Collaboration with UNICEF).
02. Seminar on " Role of Writers in Community Development"
03. Workshop On "Community Workers" as Catalyst of change.
04. Workshop On " Research/Action of Research" (In - Collaboration with UNICEF)
05. Workshop on "Development Planning for Thar, Kohistan, Nara & Kachho".
06. Seminar on " Process of Community Development" through Primary Education.
07. Seminar on "Community Based Community Management"
08. Seminar on " Tameer-e- Watan Programme"
09. Workshop on "Shelter to Shelter-Less"
10. Seminar on "Role of Ladies in Community Development" (Urban)
11. Seminar on "Role of Ladies in Community Development" (Rural).
12. Workshop On "Sanitation. Water Supply & Hygiene" (In-Collaboration with UNICEF).
13. Workshop on " Environmental Polarization"
14. Seminar on " Rural Development" by way of Agro-based Trade - Commerce Industry.

SEMINAR FOR THE TRAINING OF NEWLY ELECTED COUNCILLORS OF SINDH 1993.

S. No.	Type of Seminar.	Category of Participants.	Venue.
01	Introductory Seminar at Provincial level (at Govenment Level from the funds earmarked by Grant to DGRD	* Councillors of Muncipal * Corporations. * Councillors of Zonal Muncipal Committees. * Councillors of District Head Quarter Muncipal Committees.	K. M. C Sports Complex
02	Seminar on Development Administration at District Level "(at Government Level from the funds earmarked by the grant to DRGD).	* Mayors / Deputy Mayors of Corporations * Chairman/Vice Chairmen of District Cocils, Muncipal Committees, Town Committees, Town Committees and Union Councils	District Council Hall

RESEARCH STUDIES.

01. Research Study of Union Council, Darsana Channa of Karachi District and Union Council, Moosa Khatian of Hyderabad District.

02. Study of Impact of Cooperative Societies in Tando Allahyar, District Hyderabad.

03. Study of Socio-economic conditions of following Villages:

(i) Jhirk, District Thatta.
(ii) Tando Fazal, District Hyderabad.
(iii) Bagarji, District Shikarpur.
(iv) Tando Qaisar, District Hyderabad.
(v) Tando Hyder, District Hyderabad.
(vi) Wanki-Wassi, District Hyderabad.
(vii) Khair Muhammad Jarwar, District Hyderabad.
(viii) Arbab Ahmed Khan Nahyoon, District Hyderabad.
(ix) Moosa Khatian, District Hyderabad.
(x) Detha, District Hyderabad.

04. Research Study on Impact of following Community Development Programmes:

(a) V-AID
(b) Basic Democracies.
(c) I.R.D.P.
(d) Peoples Programme.
(e) Rural Works Programme.
(f) Prime Minister's Five Points Programme.
(g) Tameer-e-Watan Programme.

FACULTY:

Mr. Agha Shahabuddin.	Director.
Mr. Muhammad Maroof Lakho.	Chief Instructor.
Mr. Bashir Ahmed Kazi.	Chief Instructor.
Mrs. Azra Balouch.	Instructor.
Mr. Naveed Saher Pirzada.	Instructor.
Mr. Abdul Rehman Abbassi.	Instructor.
Mr. Ubedullah Siddiqui.	Instructor.
Mr. Iqbal Ahmed Shaikh.	Instructor.
Mr. Abdul Khalique Rajput.	Instructor.
Mr. Muhammad Ibrahim Abro.	Instructor.
Mr. Shujauddin Abbassi.	Instructor.

ADMINISTRATION.

Mr. Syed Akbar Hussain Kazmi.	Administrative Officer.
Mr. Najmuddin.	Office Superintendent.
Mr. Muhammad Arif Memon.	Office Superintendent.

APPENDIX L

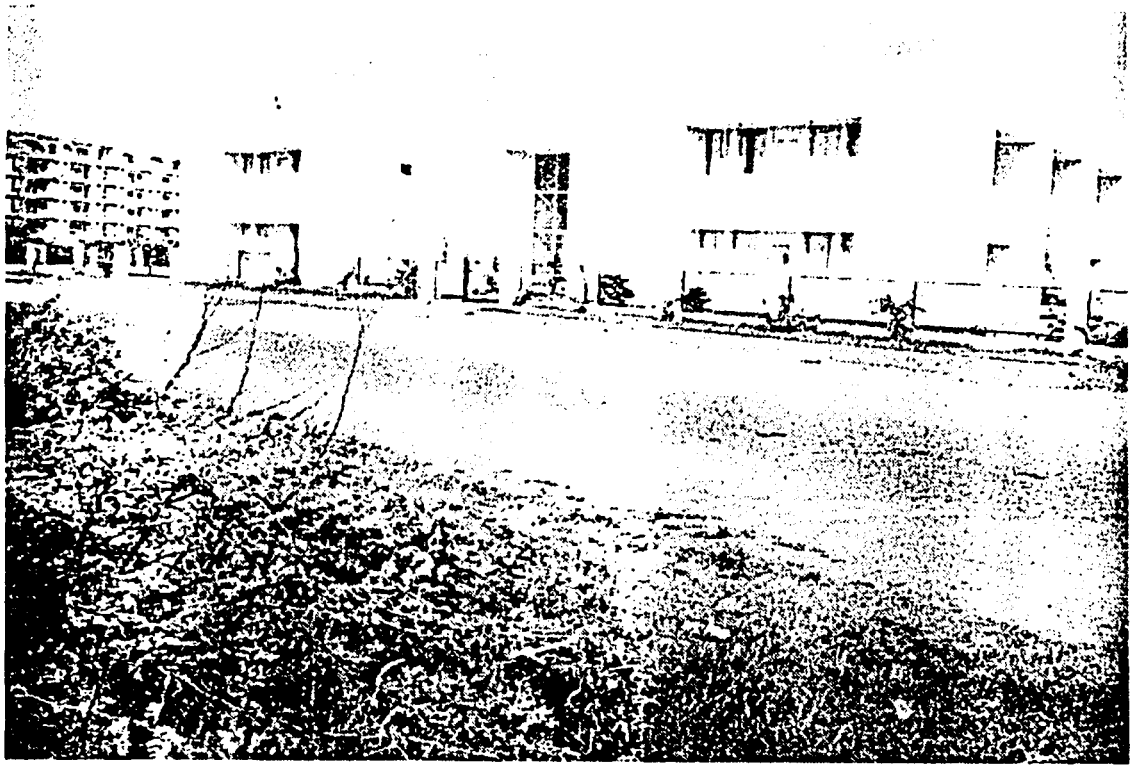
MUNICIPAL TRAINING AND RESEARCH INSTITUTE (MTRI)

- KARACHI -

NEWSLETTER
Municipal Training and Research Institute
VOLUME - I NO. 1 MARCH, 1993

MUNICIPAL TRAINING & RESEARCH INSTITUTE (MTRI)

The Municipal Training & Research Institute (MTRI) was established in 1986 by the Government of Pakistan under the Ministry of Local Government and Rural Development. The Institute after completion of its building started functioning in February, 1989 by organizing training courses on various subjects, subsequently it was declared as an attached Department of the Ministry of Local Government and Rural Development in 1989. The operating head of the Institute is the Principal who is responsible for administrative and academic/research activities. The overall controlling authority is the Secretary, Ministry of Local Govt. & Rural Development, Government of Pakistan. MTRI's approach to training and research aims at strengthening the local Government Institutions and the operative system of local Government. The specific objective of the MTRI is to support and stimulate the pace of urban development through training and research, publications and consultancy services and to collaborate with the National/International Organizations/agencies in the field of urban development. Training courses/workshops/seminars/symposia/conferences on various aspects of local Government, urban development/city management are organized at National and International level.



A view of the building of the Municipal Training & Researsh Institute, Karachi.

The Institute's training & research activities are headed by the faculty members and include the following fields:

a) Local Government;
b) Financial Management;
c) Engineering services;

d) Programme & Extension;
e) Urban planning, development/management;
f) Workshops/seminars/conferences/action research on current issues.

Since the establishment of the MTRI, sixty (60) training courses/workshops/seminars/conferences have been conducted. Fifteen training courses were conducted in collaboration withNIPA during 1983-86 at their campus when he building of the MTRI was under construction ınd forty-five training courses were conducted it MTRI in its own building. Some training courses/workshops/seminars have been conducted in collaboration with UNICEF, US-AID ınd CIRDAP. As many as 1510 participants nvolved in Socio-economic development including elected Mayors, Chairmen, Local Councilors, Functionaries/employees of local councils/ lepartments and representatives of NGOs paricipated in the training courses/workshops so ar.

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TRAINING PROGRAMMES OF THE INSTITUTE

MTRI offers a wide range of training courses ın various subjects. The duration of these courses s normally for 7-10 days. Some selected training course are described below:

) MUNICIPAL ADMINISTRATION

This course is for the senior representatives nd Chief executives of local bodies. The purıose of this programme is to develop skill and nowledge of local government system and ıractice in vogue and the administrative and evelopmental role of local bodies. It also provides forum for exchanging the ideas/views regardng inter-provincial experiences/development ork. The emphasis in this programme is on ocal government administrative practices. Six uch courses have been conducted in the MTRI hich were attended by one hundred and twentyur (124) participants from all over the country.

) FINANCIAL MANAGEMENT

This course is offered for Accounts Officers, Chairmen of Finance Sub-Committees of urban councils. The objective of the course is to refresh the knowledge of participants regarding budget and accounts, fiscal analysis, audit procedures and expose to them the new methods/approaches of financial management. So far five (5) such courses have been conducted.

c) MANAGEMENT OF URBAN GROWTH

A two week special training course on 'Management of Urban Growth' was conducted for the Officers of Nairobi city Commission, Kenya in December, 1990. The Officers were informed about the progress achieved in the field of new settlements in addition to traffic control and Civil Engineering. During the training period the Kenyans were taken to various Municipal Agencies like KDA, KMC, KWSB and Municipal Committee (central). They were briefed about shanties, new settlements, Environmental pollution and traffic control.

d) COMMUNITY BASED URBAN MANAGEMENT WORKSHOP

A four day workshop on 'Community Based Urban Management' was jointly organized by the Ministry of Local Government and Rural Development, UNICEF, UNDP and World Bank at MTRI from 27th May to 30th May, 1991. Mayors, Deputy Mayors, public representatives and members of NGOs participated in the workshop. Various experts read their papers on the subject. Participants finalized their recommendations under the Chairmanship of Cdr. A.A. Naseem, Secretary, Ministry of Local Government and Rural Development, Islamabad. This workshop was attended by some eighty (80) local and foreign delegates.

e) WORKSHOP ON 'COMPREHENSIVE POPULATION & FAMILY PLANNING IN IRD.

A four day workshop on the Subject of Comprehensive Population & Family Planning was held in collaboration with CIRDAP from 7th to 10th October 1991. Twenty-six (26) participants of CIRDAP member countries participated in the workshop. Syeda Abida Hussain, the then advisor for population Planning inaugurated the work

Contd. on page 4

MTRI
NEWSLETTER
Municipal Training & Research Institute

FACULTY MEMBERS OF MTRI

Khan Badshah Fayyaz
Principal

Mohammad Afzal Arain
Senior Instructor
(Financial Management)

Mehdi Hassan Shaheen
Senior Instructor
(Local Government)

Manzoor Hussain
Senior Instructor
(Programmes and Extension)

Masood Kazim Jaffri
Instructor
(Engineering Services)

Editor
Mehdi Hassan Shaheen

Assistants
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Karachi.

Editorial

Municipal Training and Research Institute, an attached department of Ministry of Local Government and Rural Development, publishes quarterly Newsletter to keep interested personnels informed on training and research activities of the Institute, concerning problems, trends, development in urban/local affairs. MTRI, being an academic as well as research organization, emphasizes practical solutions to problems faced by the local bodies and other departments related to Socio Economic development. The four main functions of the MTRI are: Training, Research, Consultancy services and special project implementation. The faculty members of the Institute reflect specializations in various fields: Local Government, Financial Management, Engineering Services, Education and Extension.

This is the first Newsletter of the Municipal Training and Research Institute published aiming at:

(i) To provide up to date information on the activities/programmes of the MTRI.

(ii) To inform about the latest development literature regarding training and research.

(iii) To open the channels of communication with the interested professionals, participants whose suggestions will help to plan the future activities of training and research.

To make this Newsletter more informative, I welcome the letters, News, information on current issues regarding urban development/management. Looking forward to hear from you. Manuscripts and communications should be addressed to the Principal, MTRI, Ministry of local Government & Rural Development, St-6 Block-3, Kehkashan Clifton, Karachi.

Mehdi Hassan Shaheen

Contd. from page 2

shop. The workshop highlighted the necessity of family planning in view of growing birth rate in the CIRDAP member countries.

Mr. Ghulam Dastgir Khan, Federal Minister for local Government and Rural Development presided over the concluding session on 10th October, 1991.

f) OFFICE MANAGEMENT

This training course is organized for the Chief Officers, Administrative Officers, Superintendents, Assistants of Local councils and other departments. The purpose of the programme is to develop skill and knowledge to improve office efficiency and to expose to the technical and conceptual skills including computer-orientated development in the subject. Three training courses have been conducted on the subject so far which were attended by ninety-seven (97) participants from all over the country.

g) MUNICIPAL ENGINEERING

Municipal Engineering course is conducted for the Municipal Engineers and Assistant Engineers of Departments/Organizations. The main objective of the course is to refresh the knowledge and skill of the participants on the new techniques developed in the subject of Municipal Engineering. Five training courses on the subject have been conducted. Eighty-seven (87) Engineers from all over the country attended these courses.

h) PLANNING WITH COMMUNITIES

This course is arranged in collaboration with UNICEF. The participants of the course included social organizers, social welfare officers of local bodies and representatives of NGOs, preferably working in UBS cities. The purpose of the training course is to develop the techniques and knowledge regarding plan formulation, implementation, monitoring and evaluation through community participation. Two training courses and a workshop have been conducted in collaboration with UNICEF on the subject of Planning with Communities. Sixty-two (62) participants attended the training courses while twenty-four (24) participants attended the workshop on the subject from all over the country.

i) SOLID WASTE MANAGEMENT

This course is related to Solid Waste, organized in collaboration with UNICEF. The participants of the course include the Officers of urban local councils, representatives of NGOs and UBS cities. The objective of the course is to identify the problems of storage, collection and disposal of solid waste and overcome the problems which are also health hazard. So far two training courses have been conducted which were attended by forty (40) participants. A workshop on the subject of Solid Waste Management has been conducted in collaboration with UNICEF from December 28-31, 1992 for senior officials of local councils/ departments and representatives of NGOs and UBS cities. This workshop was attended by 26 participants.

MTRI RESEARCH PROGRAMMES

Research into component areas of local Government has the priority so as to analyse the problems of urbanities and provide guidelines for further policy issues. The Institute undertakes research and action research programmes on the subject of local government, local finance, Engineering services and socio-economic development to meet the challenges of rapid urban Growth. Despite the limited faculty members the following research programmes have been undertaken:

An Econometrics study on local finance for the financial years 1979-80 to 1985-86 was completed.

A study on comparative local government system in various countries of the world is in hand and shall be completed shortly.

Study on Engineering services is being processed.

A post training evaluation study on Planning with Communities course was completed recently.

Six comprehensive reports on training courses/workshops regarding Planning with Communities and Solid Waste Management were got prepared by the resource persons and faculty members.

An action research project titled Community participation in IRD through community information and planning system (CIPS), financed by CIRDAP is in progress in four villages of Sindh Province. Regular fortnightly meeting with field level workers are held for supervising and monitoring the project. Director CIRDAP visited the CIPS projects of CIRDAP on 17th May, 1992 and showed satisfaction over the progress. Its periodical reports are being sent to CIRDAP.

An action research programme regarding Solid Waste Management through community participation is being prepared. Prof. Jawed Shah NED University & Mr. Kenney Fernandus Director Resource Centre Karachi shall facilitate the research project.

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MTRI COLLABORATION WITH INTERNATIONAL AGENCIES

UNICEF has played a major role in strengthening the training & research capabilities of the MTRI. Several courses on the subject of Primary Health Care, Planning with Communities and Solid Waste Management have been conducted at the Institute with their collaboration. UNICEF has also donated a 25 seater Coaster as well as a number of audio visual equipments including TV, VCR, Video Camera and photo copiers.

US-AID selected the MTRI as venue for conducting its training courses under its pilot project "US-AID road resource management project".

Besides the training courses at national level, the MTRI has also chalked out training programmes on the subject of local government for other countries i.e. Kenya, Nepal,

PUBLICATIONS

i. Brochure of MTRI

ii. Two reports of Training courses on Planning with communities.

iii. Training evaluation report on Planning with Communities.

iv. Two reports of training courses on Solid waste Management.

v. A report of the workshop on Planning with Communities.

vi. Report of the workshop on Solid Waste Management.

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LIBRARY OF MTRI

During the period 1991-92 more than one thousand books on different subjects have been added to the MTRI library rising the total number to 3500. Most of these books have been either granted by UNICEF or arranged through the donation given by the ex-Minister for Planning and Development, Government of Sindh.

★★★★★

MTRI NEWS

Mr. Khan Badshah Fayyaz, Principal MTRI attended a senior level seminar on 'National Policies for Local Government training in South Asian Countries' held at Colombo, Sri Lanka in November, 1992.

Mr. Manzoor Hussain joined the MTRI as Senior Instructor (P&E) on 12-12-1992. Earlier he was serving the Punjab Seed Corporation as Assistant Manager.

A seminar on 'Role of Media in Development of NGOs' was held at the MTRI on December 28, 1992. More than 200 delegates from Media, Government functionaries and NGOs participated in the seminar. Cdr. A.A. Naseem was the Chief Guest on the occasion.

MTRI hostel for the participants of training courses is under construction and shall be completed soon.

UNICEF representatives were consulted regarding collaboration of training courses for the year 1993.

MTRI training calender for the year 1993 has been decided in a meeting of faculty members under the chairmanship of Principal and at least 18 training courses shall be held during the year.

MTRI TRAINING CALENDER

JANUARY - JUNE 1993

S. No.	TRAINING PROGRAMMES	DATE
1.	Office Management	16-21 Jan: 1993
2.	Fundamentals of Municipal Engineering	6-11 Feb: 1993
3.	Audit & Accounts	03-08 April: 1993
4.	Solid Waste Management	02-06 May: 1993
5.	Local Government (Theory & Practice)	15-20 May: 1993
6.	Municipal Engineering	30th May to 3rd June, 1993
7.	Primary Health Care	12-17 June: 1993

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RESEARCH PROGRAMMES

1. Comparative local government system in selected countries.
2. Action research programme on Solid Waste Management through community participation.
3. Training courses/workshops reports.

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URBAN AND RURAL LOCAL COUNCILS

1991

S. No.	Province/Area	URBAN LOCAL COUNCILS						RURAL LOCAL COUNCILS				Total Members	Cantonment Boards		Grand Total	
		Metro/ Municipal Corporation		Municipal Committees		Town Committees		District/ Agency Councils		Union Councils						
		No.	Members	No.	Members	No.	Members	No.	Members	No.	Members		No.	Members	No.	Members
1.	Punjab	8	651	70	1835	136	2137	32	1807	2471	43772	50202	18	88	2735	50290
2.	Sindh	3	187	33	964	113	1369	15	1007	659	9703	13230	8	39	831	13269
3.	NWFP	1	45	30	435	14	112	18	794	756	4736	6122	11	36	830	6158
4.	Balochistan	1	66	13	260	21	219	20	435	341	3984	4964	3	4	399	4968
5.	AJ&K	2	63	5	72	10	65	5	198	180	1862	2260	—	—	202	2260
6.	Northern Areas	—	—	5	61	—	—	5	62	103	731	854	—	—	113	854
7.	Islamabad Capital Territory	—	—	—	—	—	—	—	—	12	154	154	—	—	12	154
8.	F.A.T.A.	—	—	—	—	2	14	11	320	—	—	334	—	—	13	334
	TOTAL:-	15	1012	156	3627	296	3916	106	4623	4522	64942	78120	40	167	5135	78287

NOTE: The number of Special Interest Seats have been included in above figures.

APPENDIX L

TRAINING COURSES CONDUCTED AT MUNICIPAL TRAINING AND RESEARCH INSTITUTE

S.No.	Name of Course	Category of Participants.	Duration	Number of Participan
01.	Health and Sanitation.	Urban Councillors.	11 days. 18.02.89 to 28.02.89	17
02.	Decentralized Course on Role of Panchayats in Local Government System.	Chairmen & Employees of Panchayats of ZHC (Central)	03 days 04.07.89 to 06.07.89	52
03.	Primary Health Care in Collaboration with UNICEF	i. Elected Councillors (Members of Health Sub-Committees) of Urban Councils. ii. Members of UBS Projects.	10 days 22.07.89 to 31.07.89	?
04.	Financial Management.	i. Accounts Officers of Urban Councils. ii. Chairmen Finance Sub-Committees of Urban Councils.	One week 23.09.89 to 28.09.89	12
05.	Primary Health Care in Collaboration with UNICEF.	i. Elected Councillors of Urban Councils(Members of Sub-Commitees). ii. Members of UBS Project. iii. Staff of Health Deptt:	10 days 07.10.89 to 16.10.89	21
06.	CIRDAP Action Research Project.	Community Volunteers.	02 days 25.10.89 to 26.10.89	10
7.	Municipal Administration.	i. Chairmen/Members of Management Sub-Committee of Urban Councils. ii. Chief Executives of Urban Councils.	One week 16.12.89 to 21.12.89	30
).	Ist Orientation Course on Peoples Programme.	Administrators, Planning Officers and Civil Engineers.	4 days 01.01.90 to 04.01.90	21
	2nd Orientation Course on Peoples Programme.	Accountants and Sub-Engineers.	4 days. 26.02.90 to 01.03.90	15

APPENDIX L

10.	Audit and Accounts.	i. Accountants. ii. Accounts Officers (Sindh Province).	One week 12.05.90 to 17.05.90	32
11.	District Road Maintenance in Collaboration with USAID.	Engineers of District Councils.	One day 11.07.90	21
12.	Financial Management.	i. Chairmen Urban Councils ii. Accounts Officer.	One week 14.07.90 to 19.07.90	15
13.	Project Planning and Implementation.	i. Engineers of Local Govt: ii. Engineers of Local Authorities.	One week 25.08.90 to 30.08.90	21
14.	Primary Health Care for Women.	i. Lady Councillors. ii. Doctors. iii. Social Workers. iv. Teachers.	One week 22.09.90 to 27.09.90	29
15.	Fundamentals of Municipal Engineering.	i. Municipal Engineers ii. Sub-Engineers.	One week 13.10.90 to 18.10.90	17
16.	Financial Management for RRMiP in collaboration with USAID.	Chief Officers and Accounts Officers of District Councils.	One day 07.11.90	43
17.	Municipal Administration.	i. Deputy Mayors. ii. Chairmen. iii. Councillors. iv. Chief Officer.	One week 10.11.90 to 15.11.90	45
18.	Management of Urban Growth.	Officers of Nairobi City Commission.	16 days 07.12.90 to 22.12.90	03
19.	Financial Management.	i. Chairmen. ii. Councillors. iii. Accounts Officers. iv. Accountants.	One week 19.01.91 to 24.01.91	25
20.	Municipal Administration.	i. Chairmen ii. Councillors. iii. Chief Officers. iv. Town Officers.	One week 09.02.91 to 14.02.91	30

Contd.....P/3

21.	Seminar on CIRDAP Action Research Project.	Community Representatives.	One day 02.03.91	35
22.	Fundamentals of Municipal Engineering.	i. Municipal Engineers. ii. Sub-Engineers.	One week 04.05.91 to 09.05.91	20
23.	National Workshop on Community Based Urban Management.	i. Mayors. ii. Chief Officers. iii. Government Officials. iv. International Agencies. v. NGOs.	04 days 27.05.91 to 30.05.91	80
24.	Office Management.	i. Administration Officers. ii. Superintendents. iii. Assistants.	One week 08.06.91 to 13.06.91	29
25.	Municipal Engineering.	i. Municipal Engineers. ii. Assistant Engineers.	One week 03.08.91 to 08.08.91	23
26.	Workshop on Impairment in School Children in collaboration with UNICEF.	Experts from Education, Health Departments and NGOs.	02 days 19.09.91 to 20.09.91	30
27.	Regional Planning Workshop on "Comprehensive Population & Family Planning in IRD" in collaboration with CIRDAP.	i. Project Coordinators (CMCs) ii. Officers of M/o Population Welfare and Sindh Population Welfare Department. iii. Representatives of NGOs. iv. Resource persons/Experts.	04 days 07.10.91 to 10.10.91	26
28.	"Planning with Communities" in collaboration with UNICEF.	Female Social Organizers and Lady Social Welfare Officers.	One week 02.11.91 to 07.11.91	20
29.	"Seminar on "Involvement of Beneficiaries in Rural Water Supply & Sanitation Projects."	i. Government Officers. ii. Public & NGOs Rep:	02 days 27.11.91 to 28.11.91	40
30.	Course on "Low-Cost Mohalla Based Solid Waste Management"	Officers of the Urban Local Councils, NGOs and representatives of UBS cities.	05 days 28.12.91 to 01.01.92	18

Contd.....P/4..

31.	Workshop on "Urban Basic Services for Children and Women in Sindh" in collaboration with UNICEF.	Federal & Provincial Govt. Officers, Officers of Urban Local Councils, representatives of NGOs and International Donor Agencies.	02 days 08.01.92 to 09.01.92	36
32.	Course on "Municipal Administration"	Mayors/Deputy Mayors, Chairmen, Councillors of Urban local Councils	06 days 29.03.92 to 05.04.92	40
33.	Course on "Fundamentals of Municipal Engineering"	Sub-Engineers of Urban Local Councils	06 days 18.04.92 to 23.04.92	10
34.	Course on "Office Management"	Chief Officers, Administrative Officers, Superintendents and Assistants.	06 days 30.05.92 to 04.06.92	41
35.	Course on "Financial Management"	Chairmen, Councilors and Accounts Officers	06 days 01.08.92 to 06.08.92	16
36.	Course on "Planning with Communities"	Social Organizers, Social Welfare Officers and Assistant Engineers.	06 days 15.08.92 to 20.08.92	1
37.	Course on 'Low Cost Mohalla Based Solid Waste Management' in Collaboration with UNICEF.	1. Sanitary Inspectors. 2. Assistant Directors. 3. NGOs representatives.	06 days 12.09.1992 to 17.09.1992	27
38.	Seminar on CIRDAP'S CIPS Project.	Community Representative and Beneficiaries	One day. 30.10.1992.	1
39.	Workshop on "Planning with Communities.	Chairmen, Municipal Officers Chief Officers of urban local councils and Heads of NGOs.	4 days. 21.11.1992 to 24.11.1992.	2
40.	Role of Media in development of NGOs.	Representative of Media NGOs and Government Department.	One day. 26.11.1992.	1

41.	Municipal Administration.	Mayors/Chairmen	6 days 5-12-92 to 10-12-92	1?
42.	Seminar on the "Role of Media in development of NGOs.	Representatives of Media, NGOs and Govt. Departments.	One day 28-12-92	135
43.	Workshop on "Low Cost Mohall Based Solid Waste Management".	Chief Officers, Health Officers, Project Coordinators, Representatives UBS Cities and Heads of NGOs.	4 days 28-12-92 to 31-12-92	28
44.	Office Management	Chief Officers, Town Officers Administrative Officers, Superintendents & Assistants	6-days 16.01.1993 to 21.01.1993	27
45.	Fundamental of Municipal Engineering.	Sub- Engineers.	6 days. 06.02.1993 to 11.02.1993	9
46.	Workshop on CIPS Projects of CIDAP.	- Mid-level workers. - Beneficiaries of CIPS.	One day. 15.04.1993	12
47.	Audit & Accounts.	Accounts Officers Accountants of Local Governments.	6 days. 24.04.1993 to 29.04.1993	17

APPENDIX M

ANNUAL RECEIPTS AND EXPENDITURES

1986/87 through 1992/93 (Est.)

DISTRICTS OF :

1. Dadu
2. Khairpur
3. Larkana
4. Shikarpur **
5. Sukkur **
6. Jacobabad
7. Nawabshah
8. Naushero Feroz **
9. Hyderabad
10. Karachi
11. Thatta
12. Badin
13. Tharparkar - Mirpurkhas **
14. Sanghar

** Receipts and Expenditures not summarized, not included.

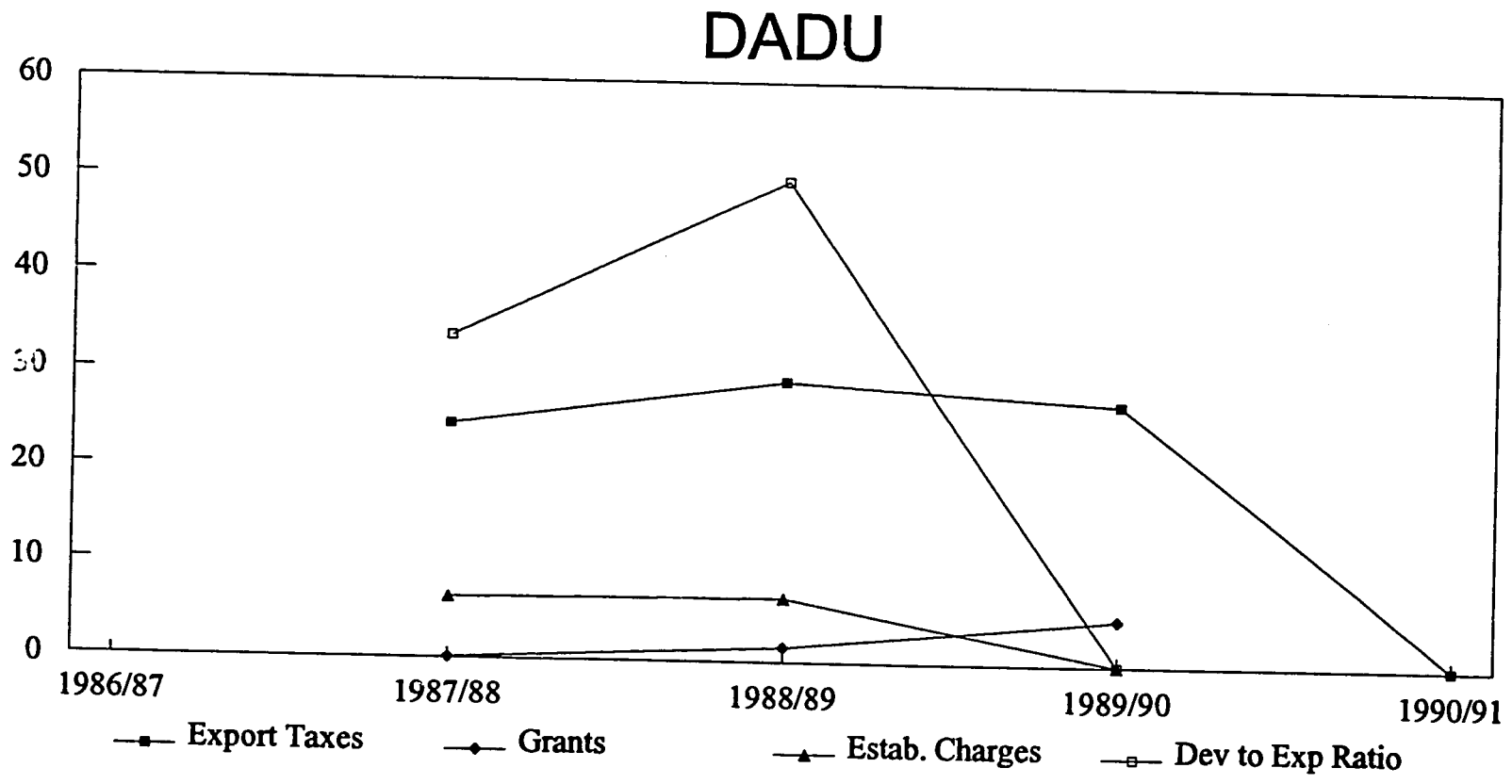
Dadu District Budget: Receipts and Expenditure - Actuals

(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 (Rev.)	1992/93 (Est.)
RECEIPTS							
Taxes		24.50	29.25	27.19			
Export Tax		22.51	24.26	23.86			
Minerals		1.03	3.59	2.07			
Fees		0.19	0.50	0.47			
Rent		0.05	0.42	0.53			
Other Receipts		0.05	0.48	0.77			
Total Revenue Income		25.25	30.67	28.98			
Grants		0.05	1.50	4.68			
Arrears		0.00	1.70	0.04			
Total Capital Income		0.54	3.59	4.72			
Total Receipts		25.79	34.27	33.70			
EXPENDITURES							
Current Expend.		15.62	16.02	14.89			
Estab. Charges		6.33	6.53	N.A.			
Charged Exp.#		5.45	5.99	4.22			
Devel. Expend.		7.94	16.10	N.A.			12.02
Total Expenditures		23.56	32.31	N.A.			
Actual Def./Surpl.		2.23	1.96	N.A.			
Ratio of Development to Total Expend.		33.70	49.83	N.A.			41.77

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ As projected in the revised budget.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Export Taxes
Grants
Estab. Charges
Dev to Exp Ratio

Khairpur District Budget: Receipts and Expenditure - Actuals

APPENDIX M

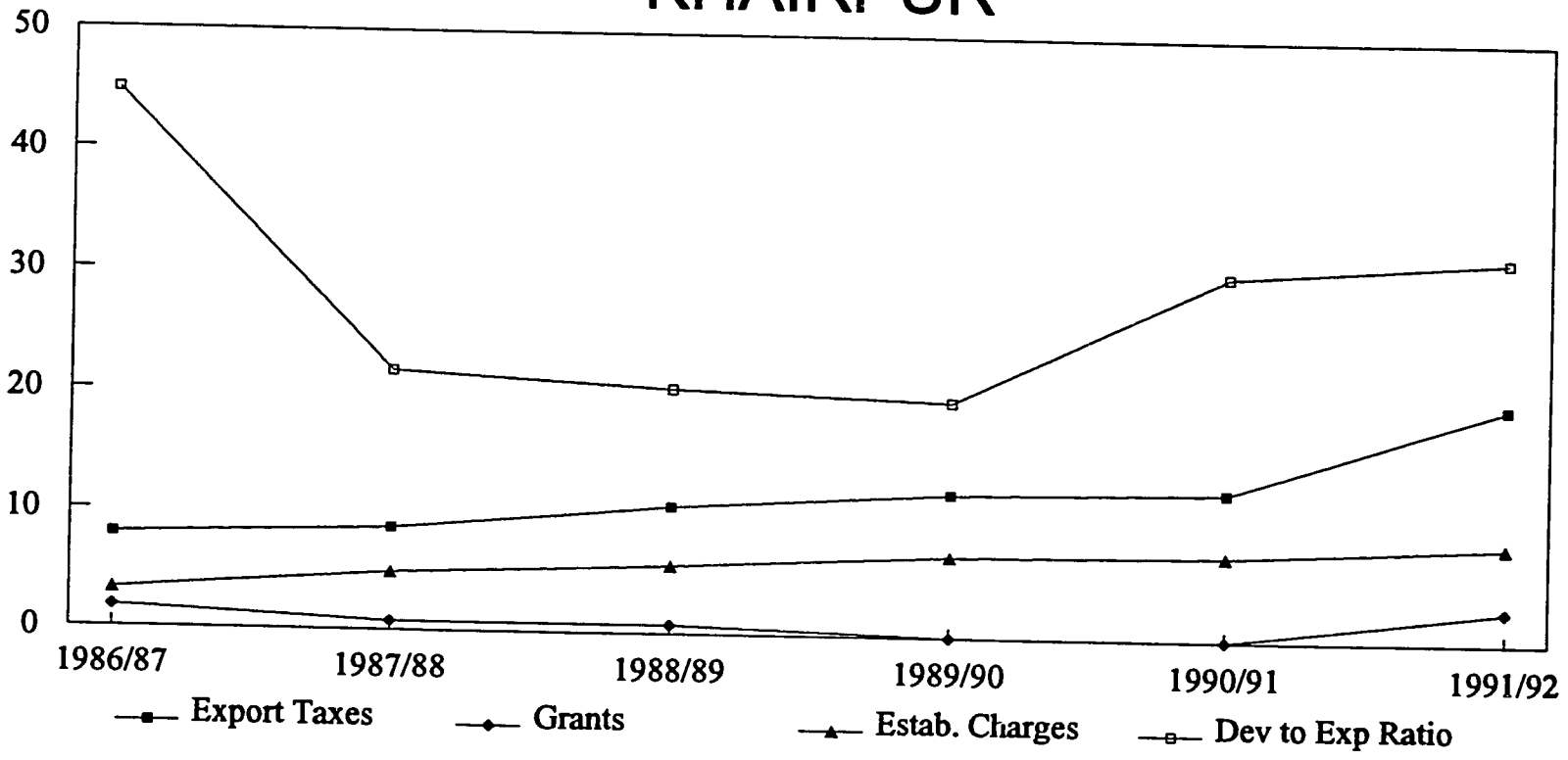
(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 (Rev.)	1992/93 (Est)	
RECEIPTS								
Taxes	7.95	8.59	10.67	12.00	12.39	19.72	19.63	
Export Tax	6.56	7.08	9.01	10.96	10.61	14.20	16.33	
Minerals	0.61	0.37	1.18	0.00	0.57	1.00	1.20	
Local Cess	0.64	0.93	0.37	0.51	0.72	3.50	1.00	
Fees	0.22	0.10	0.08	0.14	0.14	0.15	0.18	
Rent	0.07	0.03	0.03	0.00	0.03	0.08	0.08	
Other Receipts	0.03	0.02	0.00	0.00	0.01	0.03	0.04	
Staff Sal.: By Exp.cont.								
Total Revenue Income	8.27	8.89	11.02	12.17	13.85	19.96	19.92	
Grants	1.79	0.74	0.74	0.00	0.00	2.70	0.00	
Arrears	0.83	0.34	0.03	1.06	1.13	0.60	1.00	
Capital Receipts	0.70	0.22	0.07	0.06	0.57	0.12	0.08	
Total Capital Income	3.38	1.30	0.84	1.12	1.70	3.42	1.08	
Total Receipts	11.65	10.19	11.86	13.29	15.55	23.38	21.00	
EXPENDITURES								
Current Expend.	6.33	8.65	9.86	10.46	11.10	12.80	17.38	
Estab. Charges	3.24	4.83	5.66	6.76	7.03	8.04	9.82	
Charged Exp.#	1.24	2.14	1.46	2.20	2.41	2.10	4.13	
Devel. Expenditure	5.16	2.40	2.54	2.57	4.82	6.20	8.00	4.53
Total Expenditures	11.49	11.05	12.40	13.03	15.92	19.48	25.38	
Actual Def./Surpl.	0.16	-0.86	-0.54	0.26	-0.37	3.90	-4.38	
Ratio of Development to Total Expend.	44.91	21.72	20.48	19.72	30.28	31.83	31.52	28.64

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ Total revenue receipts are overstated by the amount indicated in the suspense account.

KHAIRPUR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1991/92
Export Taxes
Grants
Estab. Charges
Dev to Exp Ratio

Larkana District Budget: Receipts and Expenditure - Actuals

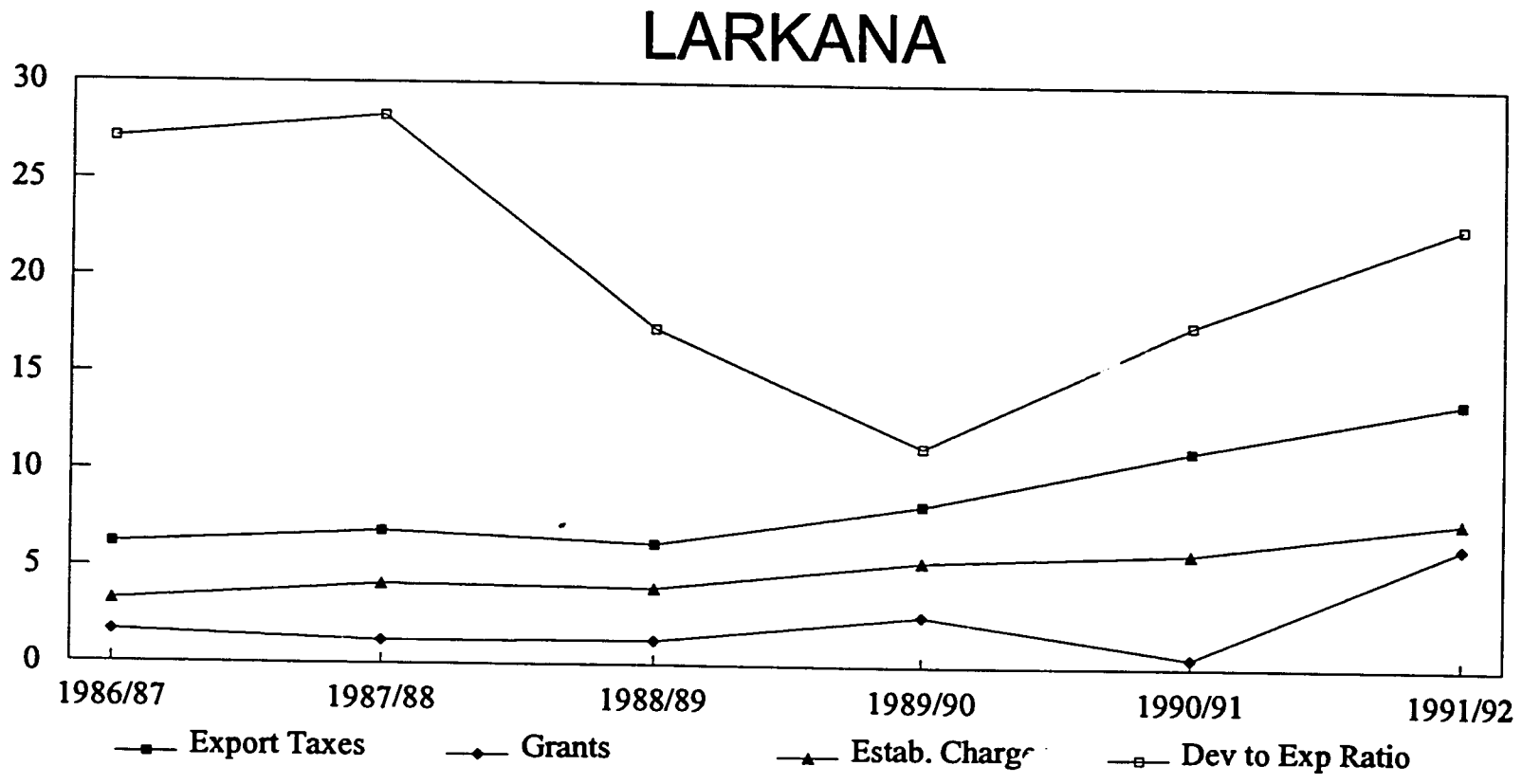
APPENDIX M

(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 (Rev.)	1992/93 (Est)	
RECEIPTS								
Taxes	6.22	6.91	6.24	8.32	11.17	13.76	14.24	
Export Tax	4.73	5.58	5.27	7.37	9.90	10.50	11.03	
TTIP	0.56	0.61	0.64	0.68	0.55	0.55	0.70	
Fees	0.37	0.14	0.08	0.28	0.38	0.44	0.46	
Rent	0.18	0.24	0.14	0.08	0.06	0.18	0.15	
Other Receipts	1.50	0.95	1.14	0.88	0.84	1.92	1.58	
Staff Sal.: By Exp.cont.	1.35	0.00	0.60	0.63	0.48	0.80	1.30	
Total Revenue Income	8.27	8.24	7.60	9.56	12.45	16.30	16.43	
Grants	1.66	1.21	1.24	2.60	0.50	6.30	1.60	
Arrears	0.03	0.03	0.12	0.12	0.03	0.10	0.40	
Capital Receipts	0.05	0.05	1.29	0.26	0.32	2.33	0.50	
Suspense Account	0.96	1.68	0.83	0.53	2.07	2.75	1.80	
Total Capital Income	2.70	2.97	3.48	3.51	2.92	11.48	4.30	
Total Receipts	10.97	11.21	11.08	13.07	15.37	27.78	20.73	
EXPENDITURES								
Current Expend.	6.42	6.41	8.73	9.34	12.91	20.95	21.97	
Estab. Charges	3.29	4.13	3.97	5.41	5.91	7.64	8.38	
Charged Exp.#	0.58	0.23	0.17	0.09	0.54	1.09	2.36	
Payments from Suspense Account	0.85	0.36	0.59	0.87	1.89	2.75	1.80	
Devel. Expenditure	2.39	2.53	1.83	1.19	2.77	6.20	8.00	3.56
Total Expenditures	8.81	8.94	10.56	10.53	15.68	27.15	29.97	
Actual Def./Surpl.	2.16	2.27	0.52	2.54	-0.31	0.63	-9.24	
Ratio of Development to Total Expend.	27.13	28.30	17.33	11.30	17.67	22.84	26.69	21.61

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ Total revenue receipts are overstated by the amount indicated in the suspense account.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1991/92
Export Taxes
Grants
Estab. Charge
Dev to Exp Ratio

Jacobabad District Budget: Receipts and Expenditure - Actuals

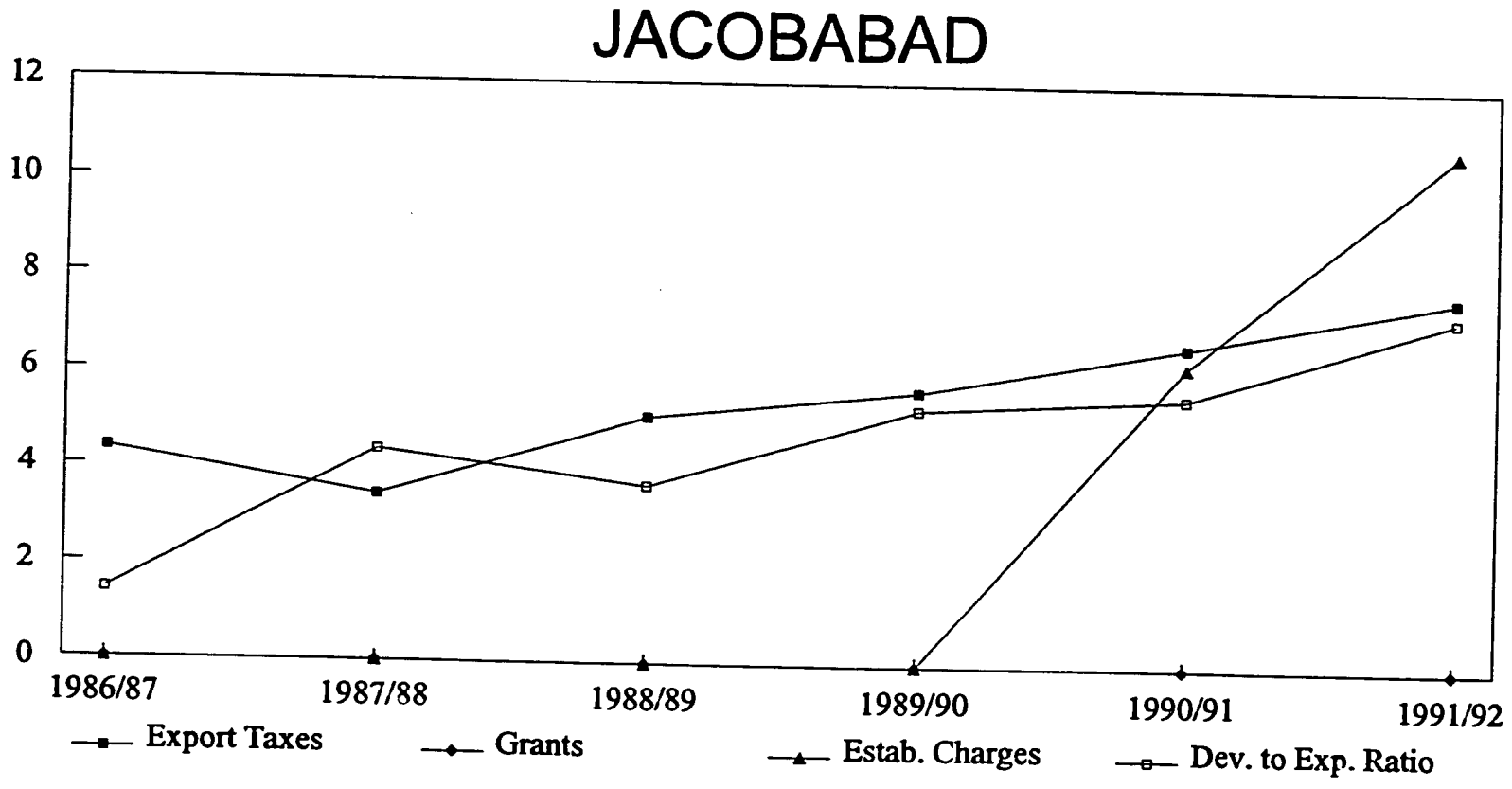
APPENDIX M

(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 (Rev.)	1992/93 (Est.)	
RECEIPTS								
Taxes	4.36	3.44	5.09	5.66	6.64	7.68	8.84	
Export Tax	3.35	1.58	3.47	3.72	4.07	4.35	5.01	
Fisheries	0.46	1.19	1.17	1.40	1.65	2.07	2.50	
Fees	0.05	0.00	0.04	0.06	0.09	0.01	0.09	
Rent	0.04	0.30	0.09	0.06	0.11	0.13	0.20	
Other Receipts	0.44	0.50	0.50	0.75	0.07	0.16	0.19	
Staff Sal.: By Exp.cont.	0.39	0.45	0.42	0.65	0.57	1.24	1.03	
Total Revenue Income	4.89	4.21	5.75	6.53	7.26	9.45	10.79	
Grants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Capital Receipts	0.20	0.05	0.12	0.07	0.30	2.69	12.15	
Suspense Account @	0.03	0.56	0.00	0.07	0.00	0.00	0.00	
Total Capital Income	0.23	0.61	0.12	0.14	0.30	2.69	12.15	
Total Receipts	5.12	4.82	5.87	6.67	7.56	12.14	22.94	
EXPENDITURES								
Current Expend.	3.44	4.63	5.23	6.43	7.28	10.33	15.68	
Estab. Charges					6.24	10.72		
Charged Exp.#	0.80	0.28	0.38	0.47	0.27	0.39	1.36	
Devel. Expend.	0.05	0.21	0.20	0.36	0.43	0.81	7.00	0.34
Suspense Accounts	0.18	0.51	0.04	0.00	0.00	0.00	0.00	
Total Expenditures	3.49	4.81	5.45	6.80	7.71	11.14	22.68	
Actual Def./Surpl.	1.63	0.01	0.42	-0.13	-0.15	1.00		
Ratio of Development to Total Expend.	1.43	4.37	3.67	5.29	5.58	7.27		4.60

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ Total revenue receipts are overstated by the amount indicated in the suspense account.


JACOBABAD
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1991/92
Export Taxes
Grants
Estab. Charges
Dev. to Exp. Ratio

Nawabshah District Budget: Receipts and Expenditure - Actuals

APPENDIX M

(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91 (Rev.)	1991/92 (Rev.)	1992/93 (Est.)	
RECEIPTS								
Taxes	17.98	15.78	15.76	18.17	12.70	16.33	15.50	
Export Tax	13.16	11.88	11.69	14.76	10.35	11.10	11.10	
Local Cess	4.08	3.35	3.47	2.85	2.00	4.80	4.00	
Fees	0.38	0.30	0.22	0.32	0.14	0.11	0.14	
Rent	0.16	0.35	0.50	0.43	0.40	0.45	0.64	
Other Receipts	0.87	1.73	1.05	1.29	1.89	0.98	0.96	
Staff Sal.: By Exp.cont.	0.28	0.43	0.53	0.40	0.13	0.23	0.26	
Total Revenue Income	19.39	18.16	17.53	20.21	15.13	17.87	17.24	
Grants	0.00	0.00	1.30	2.84	1.09	0.00	0.00	
Arrears	1.98	0.01	0.00	0.02	1.09	4.40	2.05	
Capital Receipts	1.12	1.53	0.16	0.09	0.08	0.03	1.04	
Suspense Account	4.99	5.60	3.62	4.31	5.93	4.31	4.46	
Total Capital Income	8.09	7.14	5.08	7.26	8.19	8.74	7.55	
Total Receipts	27.48	25.30	22.61	27.47	23.32	26.61	24.79	
EXPENDITURES								
Current Expend.	15.05	19.74	18.91	17.29	15.80	16.44	17.19	
Estab. Charges	6.68	4.77	4.43	5.44	3.42	4.27	4.81	
Charged Exp.#	2.11	3.10	2.97	3.45	2.00	2.20	2.25	
Payments from Suspense Account	4.36	5.91	6.50	4.33	5.93	4.31	4.46	
Devel. Expenditure	12.53	6.32	4.94	9.84	8.94	10.05	7.55	8.60
Total Expenditures	27.58	26.06	23.85	27.13	24.74	26.49	24.74	
Actual Def./Surpl.	-0.10	-0.76	-1.24	0.34	-1.42	0.12	0.05	
Ratio of Development to Total Expend.	45.43	24.25	20.71	36.27	36.14	37.94	30.52	33.04

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ Total revenue receipts are overstated by the amount indicated in the suspense account.

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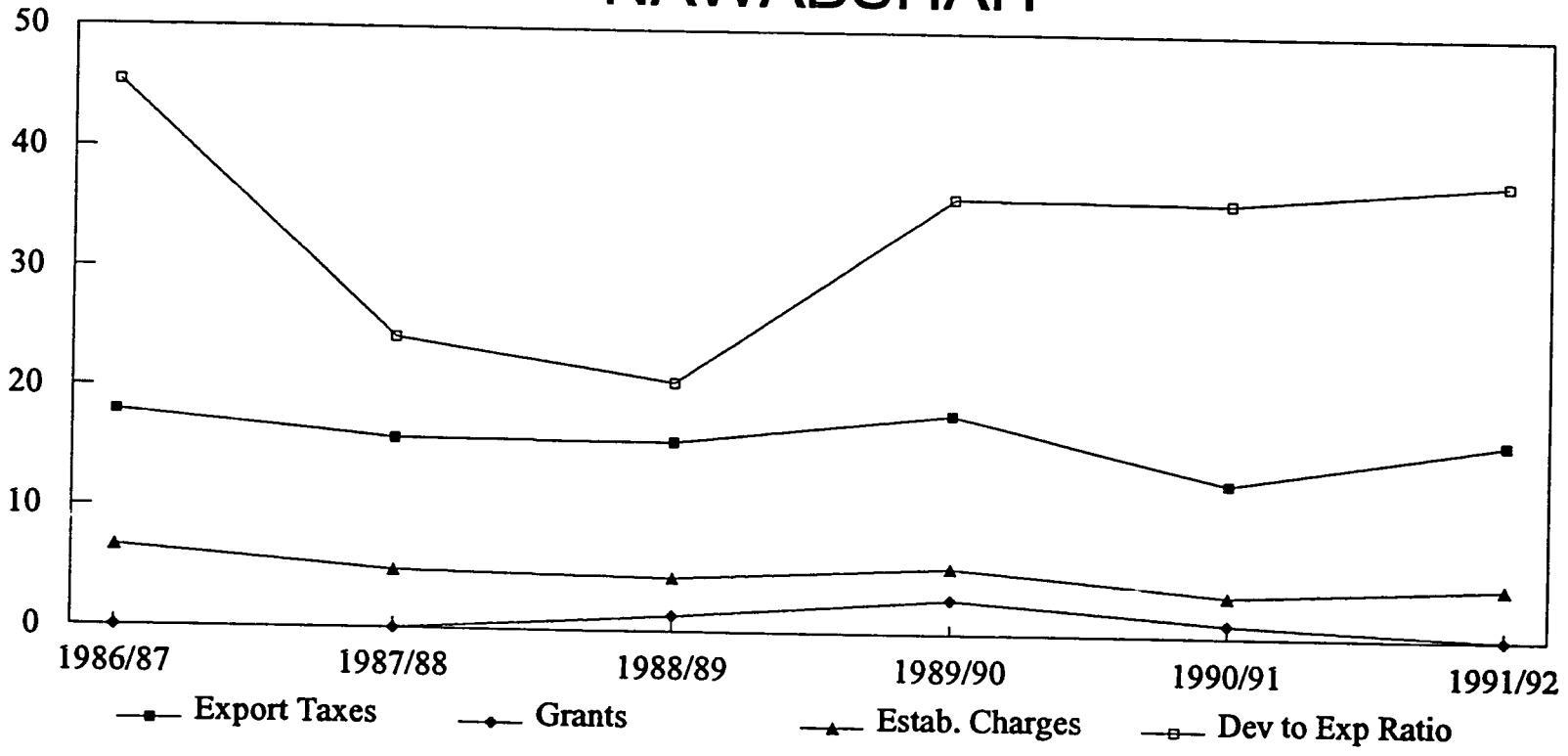
NAWABSHAH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Export Taxes
Grants
Estab. Charges
Dev to Exp Ratio

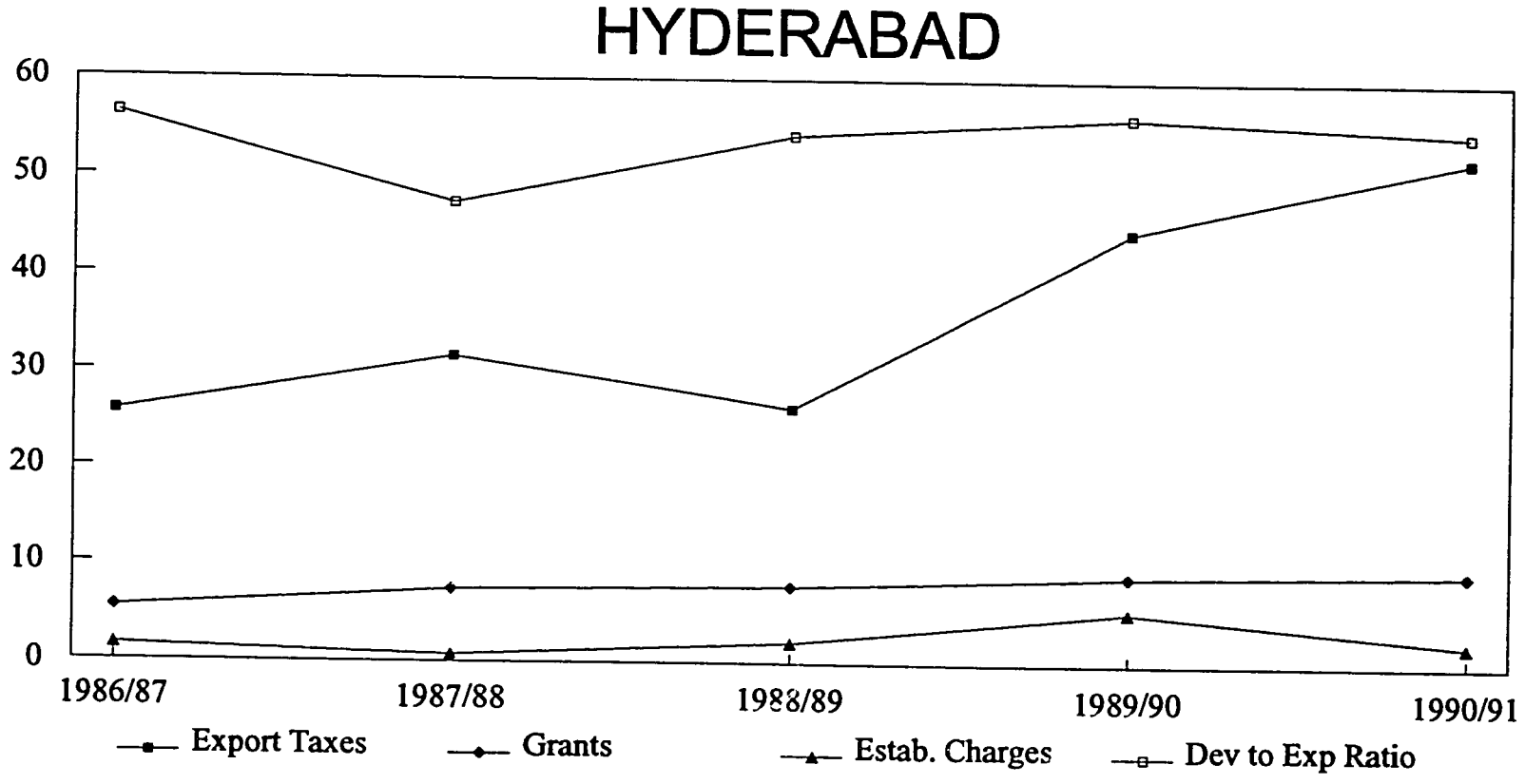
Hyderabad District Budget: Receipts and Expenditure - Actuals

(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91 (Rev.)	1991/92 (Est.)	1992/93
RECEIPTS							
Taxes	25.75	31.60	26.25	44.60	52.10	57.90	
Export Tax	25.05	29.67	22.05	42.00	48.40	55.66	
Local Cess	0.31	1.35	1.37	1.62	1.90	1.20	
Fees	0.20	0.23	0.32	0.32	0.40	0.30	
Rent	0.51	0.59	0.56	0.73	1.15	0.70	
Other Receipts	1.69	1.47	3.26	1.93	2.80	2.20	
Staff Sal.: By Exp.cont.	0.31	0.80	1.16	0.76	1.80	1.90	
Total Revenue Income	28.16	33.89	30.39	47.59	56.45	61.10	
Grants	1.65	0.74	2.10	5.40	2.13	0.00	
Arrears	3.03	1.33	1.88	0.81	3.00	1.30	
ET Sal.Arr.	0.36	0.00	0.26	0.36	0.85	0.00	
Local Cess	0.45	1.33	1.62	0.45	0.40	0.30	
Total Capital Income	4.68	2.07	3.98	6.21	5.13	1.30	
Total Receipts	32.84	35.97	34.37	53.80	61.58	62.40	
EXPENDITURES							
Current Expend.	13.78	18.11	20.37	23.26	27.23	30.10	
Estab. Charges	5.54	7.48	7.82	9.04	9.48	10.72	
Charged Exp.#	4.11	7.24	8.93	10.75	12.39	14.21	
Devel. Expend.	19.12	16.26	24.06	29.96	32.92	32.30	25.77
Total Expenditures	33.93	34.37	44.28	53.22	60.15	62.40	
Actual Def./Surpl.	-1.09	1.60	-9.91	0.58	1.43		
Ratio of Development to Total Expend.	56.35	47.31	54.34	56.29	54.73		53.80

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ As projected in the revised budget.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Export Taxes
Grants
Estab. Charges
Dev to Exp Ratio

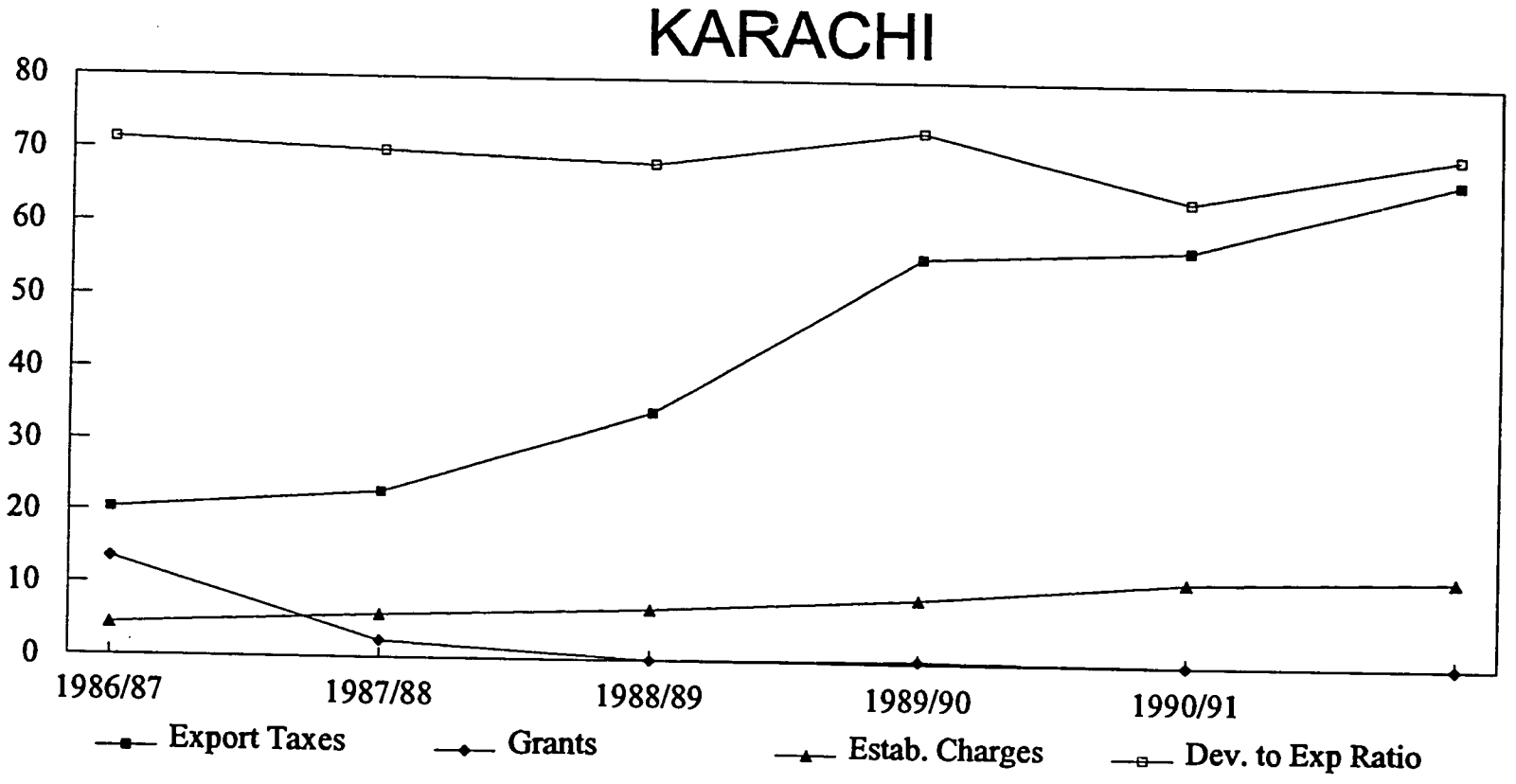
Karachi District Budget: Receipts and Expenditure - Actuals

(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 (Rev.)	1992/93 (Est.)	
RECEIPTS								
Taxes	20.31	22.86	34.28	56.00	57.41	66.81	86.81	
Export Tax	19.68	22.27	33.88	54.58	56.18	65.00	84.70	
Fees	1.81	7.63	6.01	1.98	3.15	2.28	7.49	
Rent	3.20	1.10	0.10	0.23	3.14	0.53	0.19	
Other Receipts								
Staff Sal.: By Exp.cont.								
Total Revenue Income	25.31	31.59	40.40	58.17	63.69	69.61	98.49	
Grants	13.43	2.31	0.00	0.30	0.00	0.00	0.00	
Arrears	0.60	1.50	1.60	5.20	2.30	1.49	0.20	
Capital Receipts	1.00	1.00	0.47	1.59	0.00	1.39	10.70	
Suspense Account	6.02	6.05	10.41	12.57	11.84	15.20	13.80	
Total Capital Income	21.05	10.86	12.48	19.67	14.14	18.08	24.70	
Total Receipts	46.36	42.45	55.11	77.84	77.83	87.69	123.19	
EXPENDITURES								
Current Expend.	9.66	11.98	15.90	20.42	30.34	27.90	55.26	
Estab. Charges	4.40	5.85	6.94	8.70	11.46	12.05	23.06	
Charged Exp.#	0.69	0.66	2.76	2.67	7.89	6.14	15.38	
Devel. Expend.	23.92	27.76	34.51	55.55	53.97	66.03	68.20	47.13
Total Expenditures	33.58	39.74	50.41	75.97	84.31	93.93	123.46	
Actual Def./Surpl.	12.78	2.71	4.70	1.87	-6.48	-6.24	-0.27	
Ratio of Development to Total Expend.	71.23	69.85	68.46	73.12	64.01	70.30	55.24	67.46

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ Total revenue receipts are overstated by the amount indicated in the suspense account.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Export Taxes
Grants
Estab. Charges
Dev. to Exp Ratio

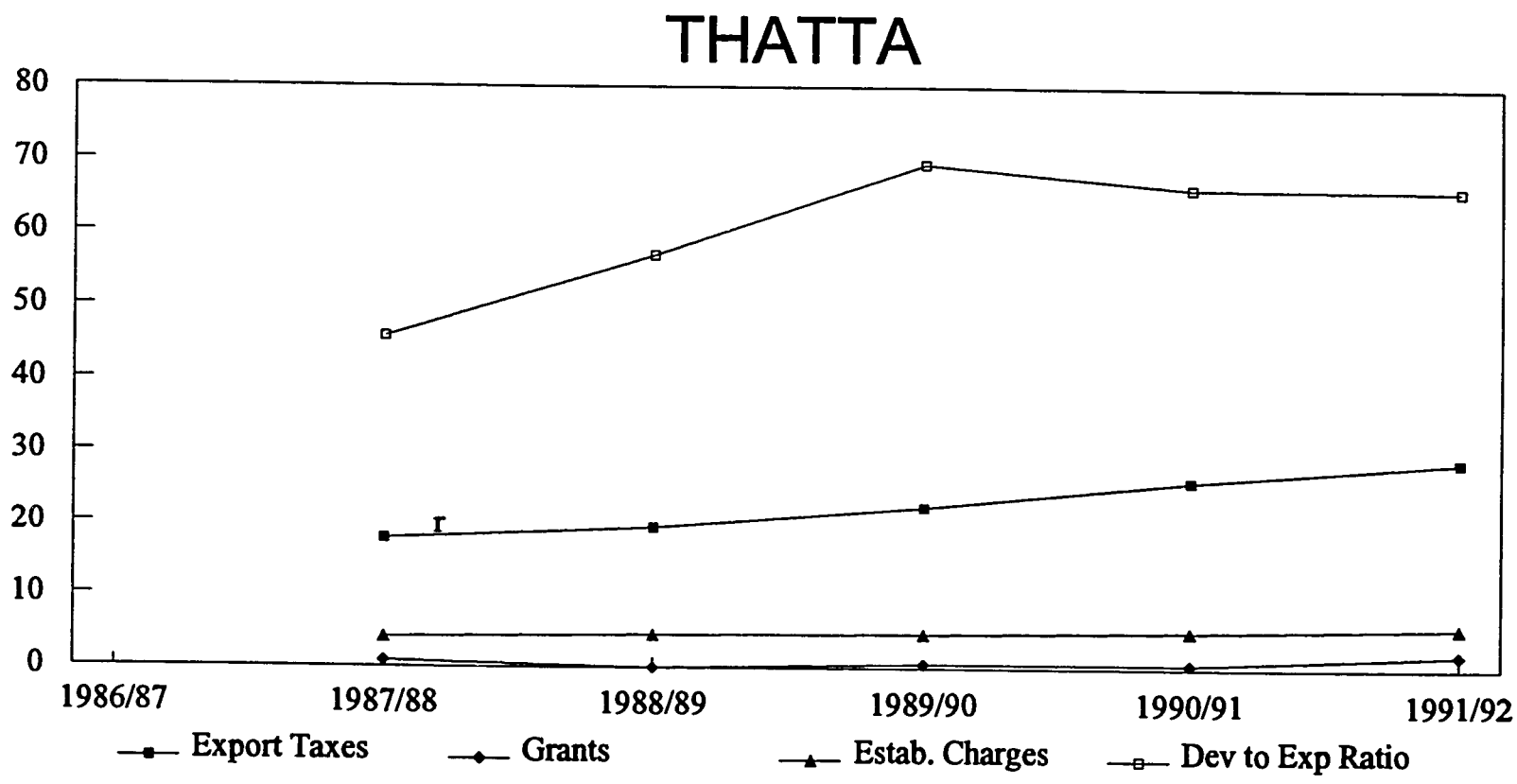
Thatta District Budget: Receipts and Expenditure - Actuals

(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 (Rev.)	1992/93 (Est.)	
RECEIPTS								
Taxes		17.71	19.31	22.25	25.95	28.65	29.20	
Export Tax		14.94	15.81	16.79	21.34	25.00	25.40	
Minerals		1.35	2.19	4.48	3.29	2.50	2.10	
Fisheries		1.14	1.10	0.82	1.20	1.00	1.50	
Fees		0.08	0.05	0.10	0.61	0.14	0.23	
Rent		0.45	1.52	0.62	1.01	1.41	1.55	
Other Receipts								
Staff Sal.: By Exp.cont.								
Total Revenue Income		18.24	20.88	23.18	27.02	30.20	30.93	
Grants		0.78	0.00	0.59	0.55	2.00	3.00	
Arrears		0.02	0.00	0.03	0.04	2.00	2.00	
Capital Receipts		0.02	0.03	0.00	0.00	0.00	0.00	
Suspense Account @		0.15	0.00	0.03	0.26	0.11	0.50	
Total Capital Income		0.97	0.03	0.65	0.85	4.11	5.11	
Total Receipts		19.11	20.91	23.83	27.87	34.31	36.04	
EXPENDITURES								
Current Expend.		10.08	9.50	7.63	8.95	11.02	22.12	
Estab. Charges		4.03	4.43	4.62	5.00	5.60	6.00	
Charged Exp.#		3.63	2.88	0.80	0.35	0.42	0.69	
Devel. Expend.		8.50	12.54	17.30	17.47	21.30	14.25	15.23
Total Expenditures		18.58	22.04	24.93	26.42	32.32	36.37	
Actual Def./Surpl.		0.53	-1.13	-1.10	1.45	1.99	-0.33	
Ratio of Development to Total Expend.		45.75	56.90	69.39	66.12	65.90	39.18	57.21

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ Total revenue receipts are overstated by the amount indicated in the suspense account.


THATTA
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1990/91
1991/92
Export Taxes
Grants
Estab. Charges
Dev to Exp Ratio

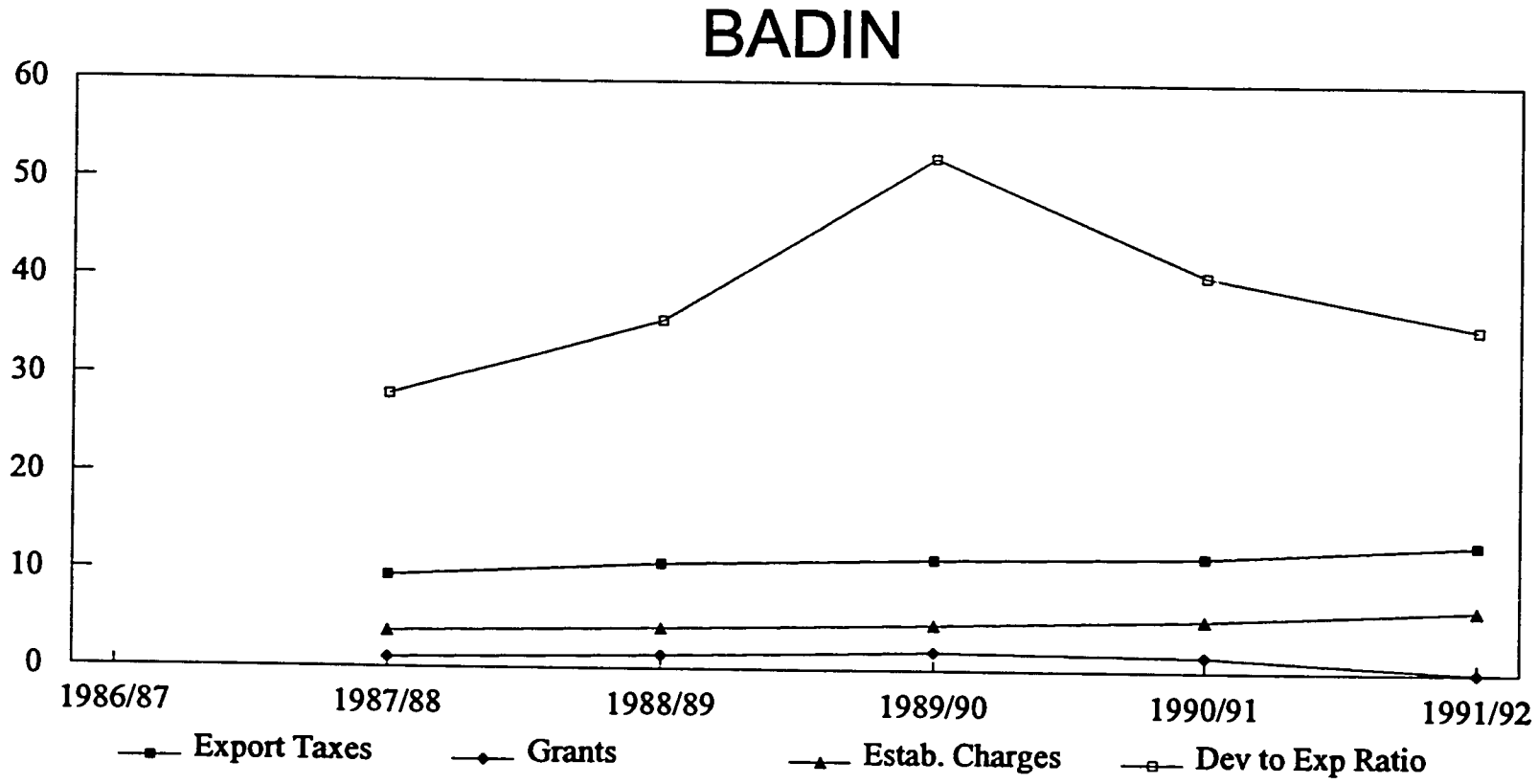
Badin District Budget: Receipts and Expenditure - Actuals

(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 (Rev.)	1992/93 (Est.)	
RECEIPTS								
Taxes		9.46	10.76	11.35	11.71	13.05	14.80	
Export Tax		8.95	10.44	10.69	10.65	12.00	13.80	
TTIP		0.22	0.12	0.21	0.35	0.40	0.40	
Fees		0.12	0.24	0.37	0.15	0.07	0.15	
Rent		0.00	0.02	0.02	0.02	0.02	0.03	
Other Receipts		1.34	1.05	1.91	0.65	1.51	2.84	
Total Revenue Income		11.11	12.40	14.07	14.61	16.92	21.42	
Grants		0.97	1.36	1.84	1.55	0.00	0.00	
Arrears		0.78	3.10	0.25	0.00	0.00	0.00	
Total Capital Income		1.75	4.73	2.09	1.55	0.00	0.00	
Total Receipts		12.86	17.13	16.14	16.16	16.92	21.42	
EXPENDITURES								
Current Expend.		6.75	9.07	9.44	9.86	11.65	16.58	
Estab. Charges		3.72	4.14	4.65	5.24	6.36	9.36	
Charged Exp.#		1.96	2.78	2.65	2.73	3.48	4.05	
Devel. Expend.		2.89	5.00	10.73	6.68	6.31	5.32	6.32
Suspense Account		0.69	0.00	0.35	0.00	0.00	0.00	
Total Expenditures		10.33	14.06	20.52	16.55	17.96	21.90	
Actual Def./Surpl.		2.53	3.07	-4.38	-0.39	-1.04	-0.48	
Ratio of Development to Total Expend.		27.98	35.56	52.29	40.36	35.13	24.29	38.27

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ As projected in the revised budget.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1991/92
Export Taxes
Grants
Estab. Charges
Dev to Exp Ratio

Sanghar District Budget: Receipts and Expenditure - Actuals

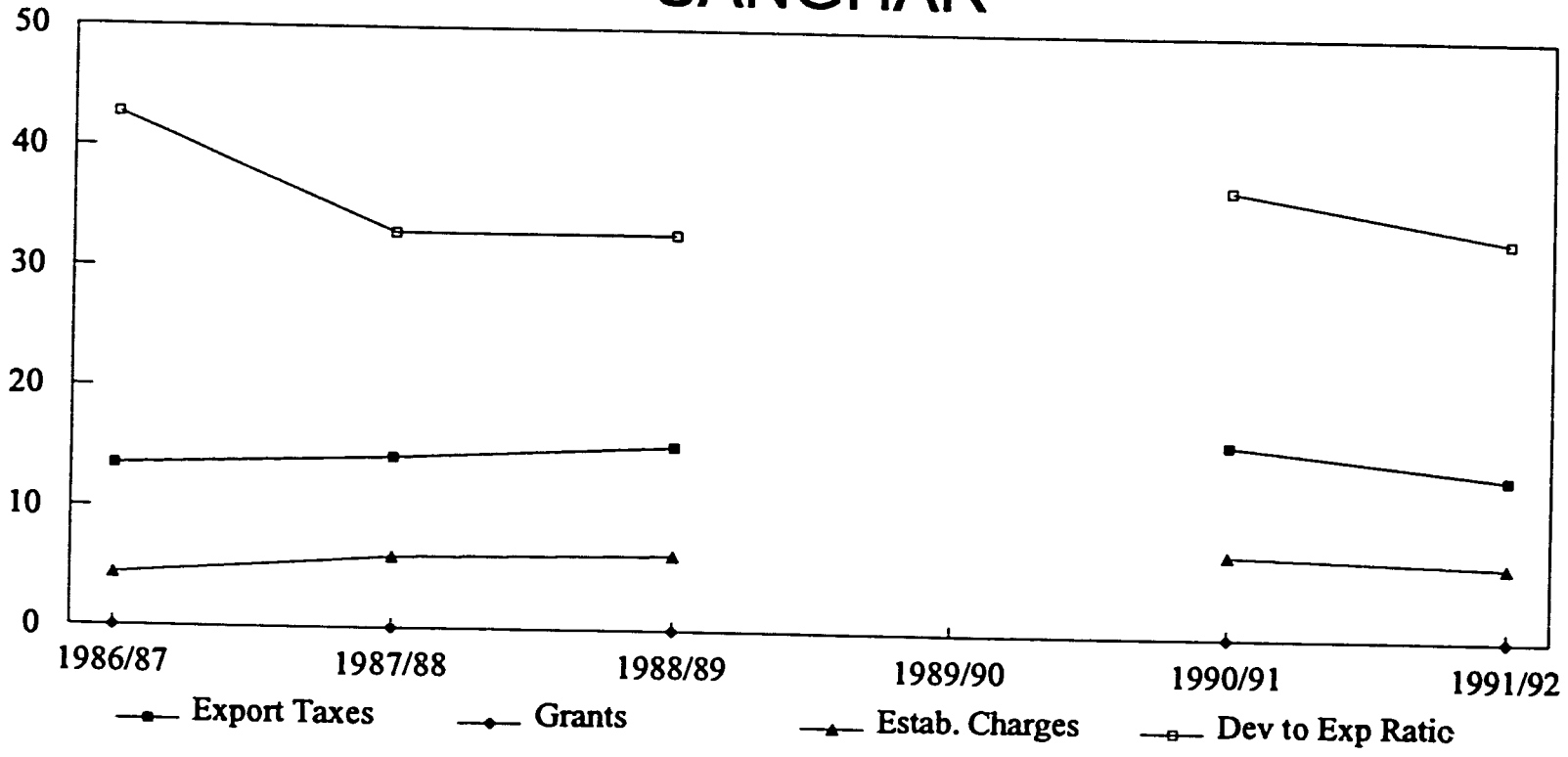
(Million Rs.)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 (Rev.)	1992/93 (Est.)	
RECEIPTS								
Taxes	13.50	14.26	15.35		16.11	13.59	19.50	
Export Tax	10.13	10.65	12.00		13.20	11.27	16.00	
Local Cess	2.84	2.98	2.88		2.62	2.15	3.30	
Fees	0.22	0.40	0.31		0.35	0.24	0.29	
Rent	0.42	0.46	0.48		0.62	0.80	0.85	
Other Receipts	0.65	0.88	0.82		1.15	0.75	0.93	
Staff Sal.: By Exp.cont.	0.23	0.32	0.33		0.40	0.31	0.63	
Total Revenue Income	14.80	16.00	16.96		18.24	15.39	21.62	
Grants	0.00	0.00	0.00		0.00	0.00	0.00	
Arrears	0.00	0.00	0.00		0.00	1.20	0.00	
Capital Receipts	0.18	0.44	0.46		0.44	0.17	0.17	
Total Capital Income	0.18	0.44	0.46		0.44	1.37	0.17	
Total Receipts	14.98	16.44	17.42		18.68	16.76	21.80	
EXPENDITURES								
Current Expend.	8.37	10.32	11.22		13.25	11.68	17.30	
Estab. Charges	4.37	5.96	6.31		6.95	6.19	9.46	
Charged Exp.#	2.60	2.72	3.12		4.10	2.90	4.34	
Devel. Expend.	6.26	4.84	5.53		7.87	5.81	7.58	6.06
Total Expenditures	14.63	14.66	16.75		21.12	17.49	24.88	
Actual Def./Surpl.	0.35	1.78	0.67		-2.44	-0.73	-3.08	
Ratio of Development to Total Expend.	42.79	33.02	33.01		37.26	33.22	30.47	35.86

Note: # The bulk of the charged expenditure represents the 25% transfer of export tax receipts to local councils.

@ As projected in the revised budget.

SANGHAR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