- text changes -

1998 Annual Pavement Performance Report

itd

PAVEMENT MANAGEMENT SYSTEM

This report was produced by the
Idaho Transportation Department,
Division of Transportation Planning
Planning Services Section
P.O. Box 7129, Boise, ID 83707-1129

If you have questions or would like to request more information on Idaho's Pavement Management System, please call Mark Wheeler at (208) 334-8887.

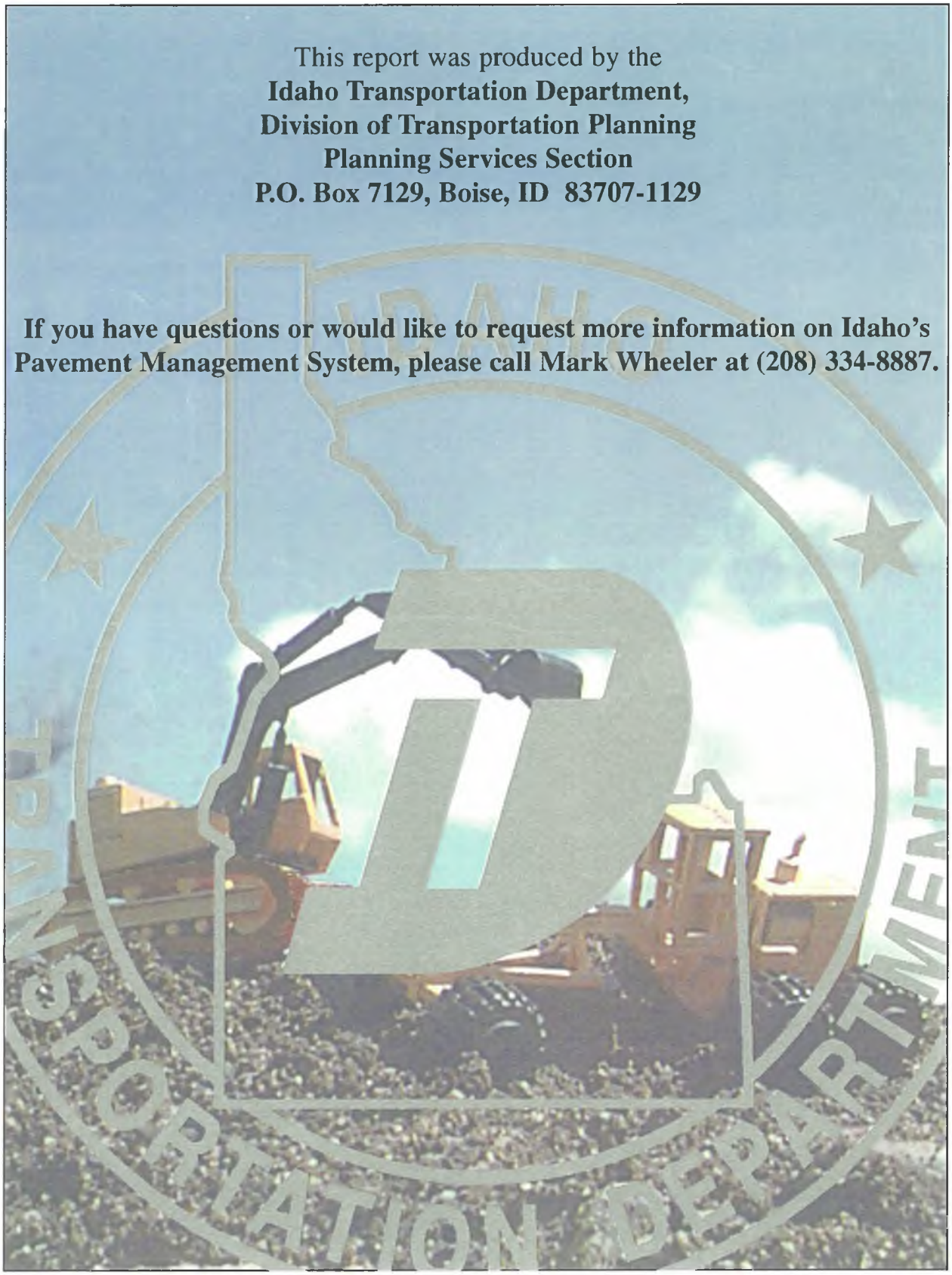


TABLE OF CONTENTS

Page

PURPOSE 1

EXECUTIVE SUMMARY 2

SECTION 1
Pavement Management System Overview 3

SECTION 2
General Information 5

SECTION 3
Pavement Condition 9

SECTION 4
Needs Analysis 24

SECTION 5
Seal Coats 34

SECTION 6
Summary 37

ITD DISTRICT OFFICES
Boundaries, Addresses, and Phone Numbers 39

PURPOSE

Purpose

The purpose of this report is to provide information regarding the status of pavements on the State Highway System. The following pages present the current, past, and projected condition of Idaho's pavements based upon cracking, roughness, and rutting. This information was obtained from Idaho's Pavement Management System (PMS).

This report is comprised of the following sections:

- Executive Summary
- Pavement Management - System Overview
- General Information
- Pavement Condition
- Highway Needs
- Preventive Maintenance / Seal Coats
- Summary

EXECUTIVE SUMMARY

ACHIEVEMENTS

The Idaho Transportation Department has made significant progress toward reducing deficient pavements and giving motorists a safer and smoother ride. Pavement deficiencies on the State Highway System have been reduced from almost 40% in 1993 to an estimated ~~21%~~ 19% by the end of calendar year 199~~8~~9. Reducing Pavement Deficiencies is a high priority for the department and has been accomplished by:

- A commitment from the Transportation Board to put $31 million annually into pavement rehabilitation
- The $15.2 million Restricted Highway Fund to repair and maintain deficient highways
- Department efficiency measures
- Consolidating programs and applying the cost savings to pavement-rehabilitation projects
- Partnerships with the private sector allowing the department to stretch highway dollars
- A successful maintenance / preventative maintenance program which slows the rate of pavement deterioration
- Improvements in collecting, analyzing, and reporting pavement data

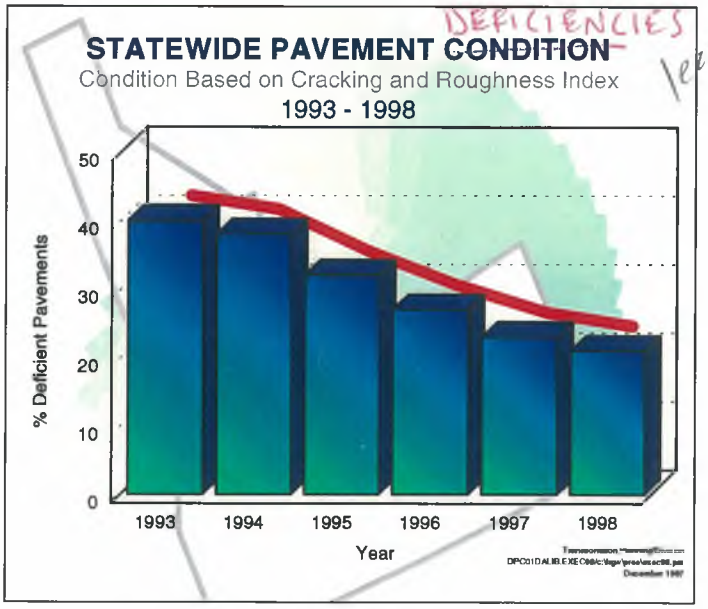


Figure 1. (System Deficiencies)

NEEDS

Pavements on the State Highway System have shown a great deal of improvement in recent years, but there is still much work left to do. Figure 2 below is a summary of current statewide needs by functional class. The estimated repair costs on the state highway system alone total nearly $500 million and this is just one piece of the total transportation pie. Congestion, capacity, safety, and economic development all compete with pavement-improvement needs for limited funding.

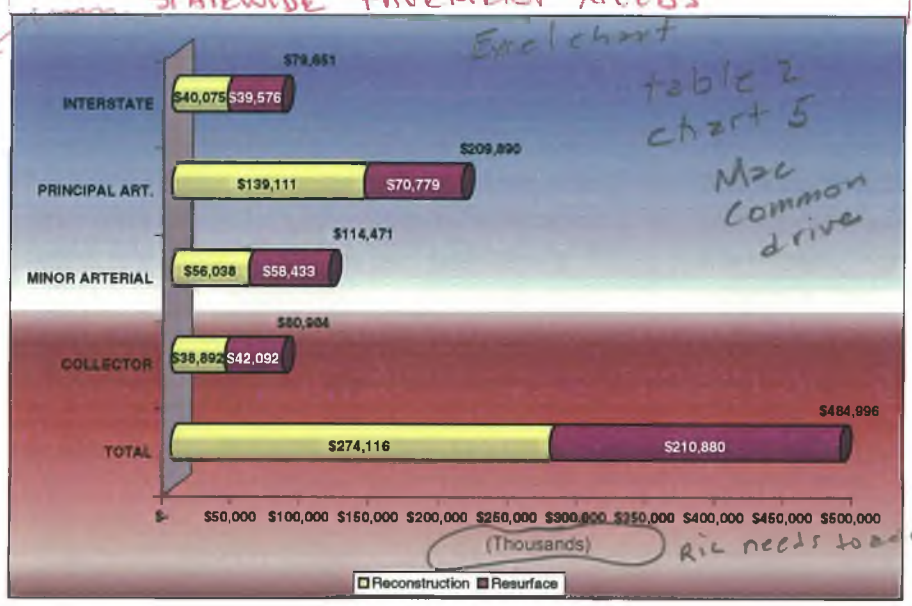
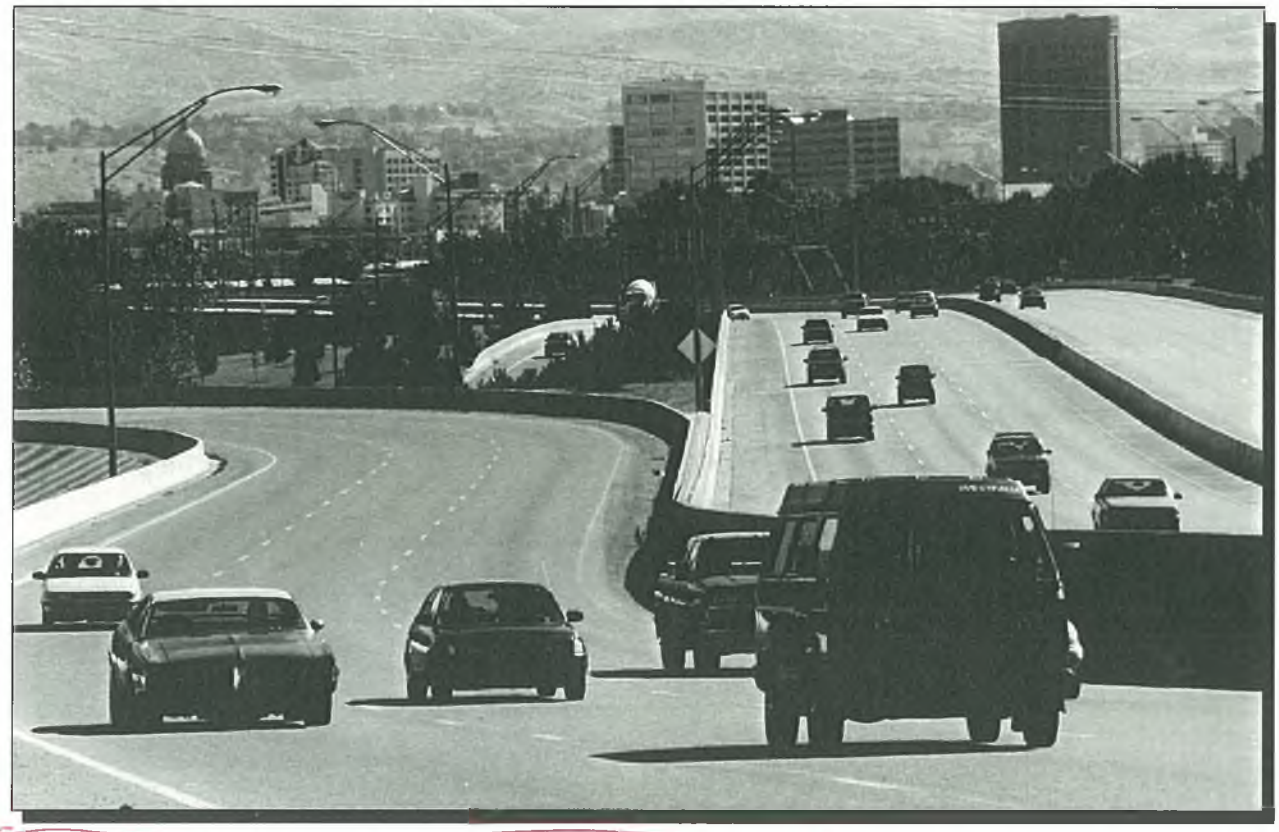


Figure 2. (Pavement Needs)

Because Idaho's growing population and economy are likely to create a demand for more and heavier trucks, the department must continue its commitment to protect and maintain Idaho's investment in pavements on the State Highway System.

Section 1
PAVEMENT MANAGEMENT SYSTEM OVERVIEW



Hasn't changed yet

In 1977, the Idaho Transportation Department (ITD) began a review of existing pavement management programs ~~in order to~~ with the goal of adopting one that fit Idaho's needs. adapt one to Idaho's needs. The following year a Pavement Performance Management Information System (PPMIS) was acquired and made operational on ITD's ~~IBM~~ mainframe computer. Since 1978, the PPMIS has been steadily improved and modified to meet conditions in Idaho. It has been tested and refined primarily by consultant contract, the principal consultant being Pavement Management Systems Ltd., of Ontario, Canada. The last phase, economic analysis and optimization, was completed in July 1986.

The Idaho State Highway System consists of approximately 5,000 centerline miles of paved highway, including 612 centerline miles of Interstate. For network-level pavement management the system has been divided into about 1,800 sections varying in length from less than one mile to approximately ten miles.

Idaho's Pavement Management System (PMS) covers both the network and project level. Network-level pavement management is performed by the Division of Transportation Planning's Planning Services Section, and project-level pavement management is performed by ITD's Headquarters Materials Section. Pavement condition testing conducted at the network level is also split, with Materials overseeing skid testing while Planning Services collects roughness and rutting measurements. Planning Services is also responsible for surveying pavement distress (cracking), analyz-

ing network PMS data, producing reports, and developing and maintaining computer programs needed for pavement management. Deflection data for project-level pavement management is collected, analyzed, and reported by ITD's Materials Section.

PAVEMENT-CONDITION TESTING

Pavement-condition data is an important component of Idaho's PMS. Two-lane roads are tested in one direction while interstates and divided arterials are tested in both ascending and descending directions. Pavement-condition data elements are collected as follows:

- **Road Roughness -** Roughness is a primary indicator of pavement serviceability; or the ability of a pavement to meet the demands and expectations of motorists. In Idaho, the public's perception of the State Highway System is very important. For that reason, a Roughness Index (RI) was adopted that correlates the longitudinal profile of the road surface to an index based upon the public's perception of road roughness. The (RI) ranges from 0.0 to 5.0 (0.0 being extremely rough and 5.0 being perfectly smooth).

  A South-Dakota-type Profilometer is currently used by ITD to obtain pavement roughness. This instrument uses laser sensors and a personal computer to collect and store road-profile information. ~~Profile data is collected by a laser sensor in the left and right wheel paths while the center sensor is used in the calculation of rut depth.~~ The vehicle stores profile and rutting measurements at one-foot intervals traveling at highway speeds, and is mounted in a van operated by the Planning Services Section. Longitudinal profiles of all pavement-management sections statewide are obtained annually.

- **Pavement Distress (Cracking) -** Pavement distress, or cracking, is another important indicator of pavement condition. A video-inspection vehicle ~~is~~ used to record ~~perspective as well as~~ pavement video ~~for~~ on the entire State Highway System each year. The Pavement Management Engineer then uses this video to determine the type, extent, and severity of cracking within each PMS section. Based on this input a Crack Index (CI) is calculated by the computer for each section. The CI is a rating very similar to the RI with 5.0 corresponding to a section with little or no cracking and 0.0 representing a section with severe cracking.

  collect profile information also collects

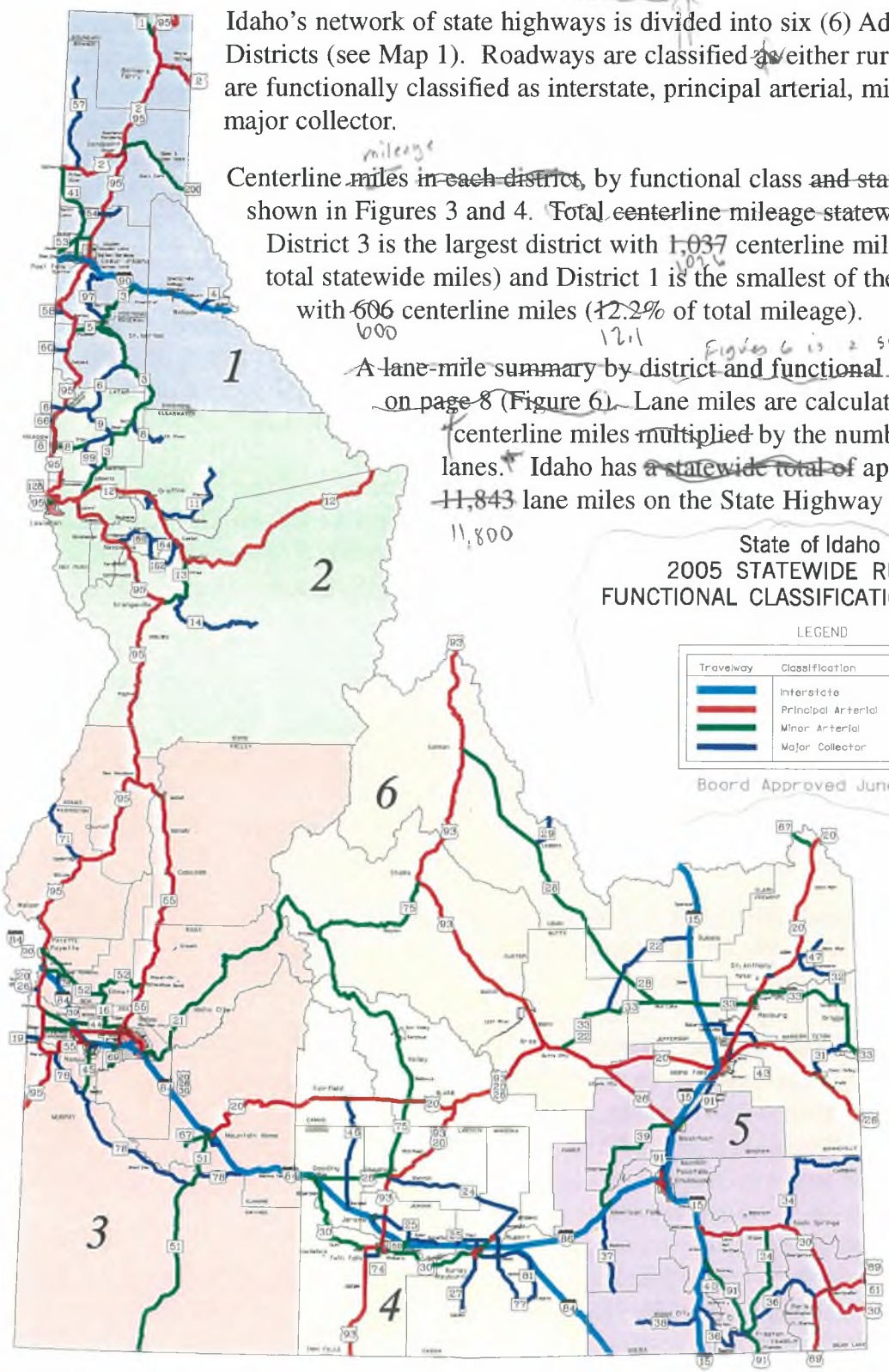
- **Final Index -** A Final Index (FI), which is the average of RI and CI, is used as a single indicator of Pavement Condition in many PMS reports.

Idaho's network of state highways is divided into six (6) Administrative Districts (see Map 1). Roadways are classified ~~as~~ either rural or urban, and are functionally classified as interstate, principal arterial, minor arterial, or major collector.

Centerline ~~miles~~ mileage ~~in each district~~, by functional class ~~and statewide, are~~ is shown in Figures 3 and 4. ~~Total centerline mileage statewide is 4,979~~. There are 4,955 centerline miles on the state highway system by functional class. District 3 is the largest district with ~~1,037~~ 1,026 centerline miles (~~20.8%~~ 20.7% of total statewide miles) and District 1 is the smallest of the six districts with ~~606~~ 600 centerline miles (~~12.2%~~ 12.1% of total mileage).

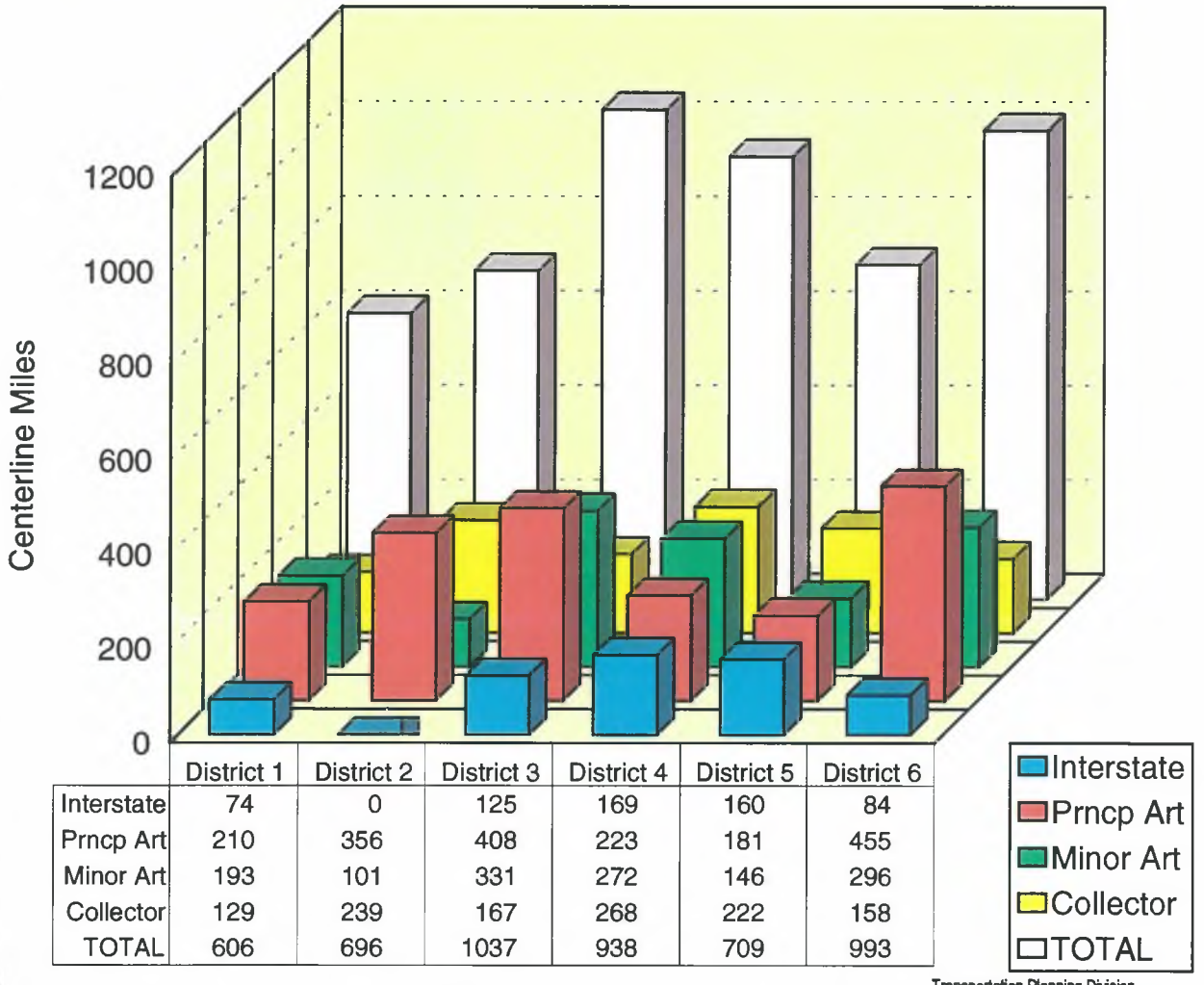
~~A lane-mile summary by district and functional class is shown on page 8 (Figure 6).~~ Figure 6 is a summary of lane-miles by functional class. Lane miles are calculated ~~as follows:~~ by multiplying centerline miles ~~multiplied~~ by the number of through lanes. Idaho has ~~a statewide total of~~ approximately ~~11,843~~ 11,800 lane miles on the State Highway System.

TDP & Central



Map 1

1997 CENTERLINE MILES BY DISTRICT



	District 1	District 2	District 3	District 4	District 5	District 6
Interstate	74	0	125	169	160	84
Prncp Art	210	356	408	223	181	455
Minor Art	193	101	331	272	146	296
Collector	129	239	167	268	222	158
TOTAL	606	696	1037	938	709	993

Figure 3.

Transportation Planning Division
DPC01DALIB.EXEC98 / c:\hgw\pres\exec98.prs
December 1997

1997 STATEWIDE CENTERLINE MILES
By Functional Class

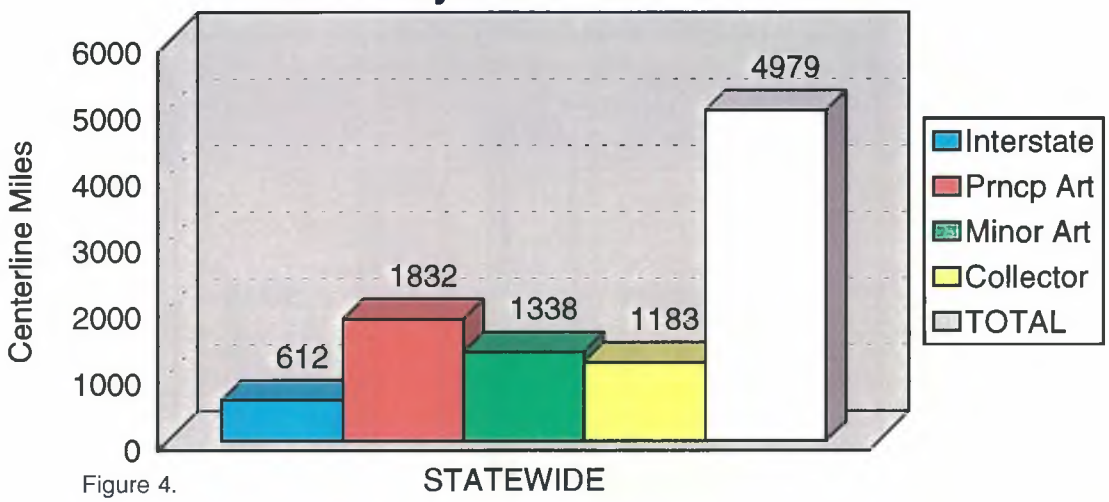
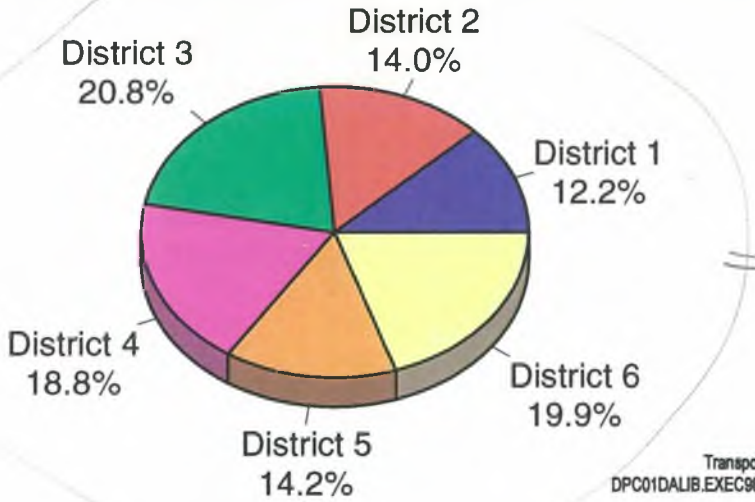


Figure 4.

1997 CENTERLINE MILEAGE BY MAINTENANCE DISTRICT

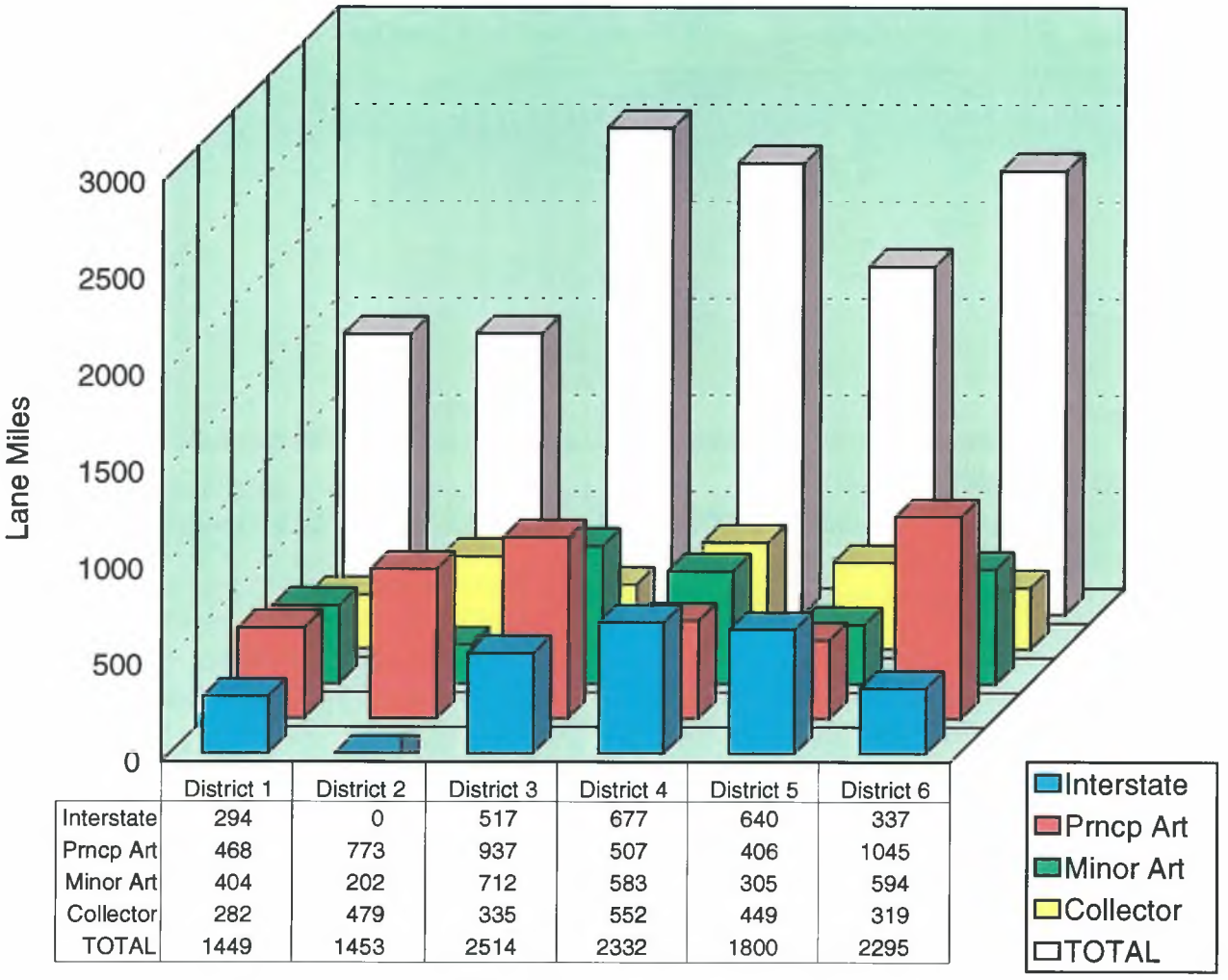


Make bigger to fill the page.

Transportation Planning Division
DPC01DALIB.EXEC98/c:\hgw\pres\exec98.prs
December 1997

Figure 5.

1997 LANE MILES BY DISTRICT



	District 1	District 2	District 3	District 4	District 5	District 6
Interstate	294	0	517	677	640	337
Prncp Art	468	773	937	507	406	1045
Minor Art	404	202	712	583	305	594
Collector	282	479	335	552	449	319
TOTAL	1449	1453	2514	2332	1800	2295

Figure 6.

cont.

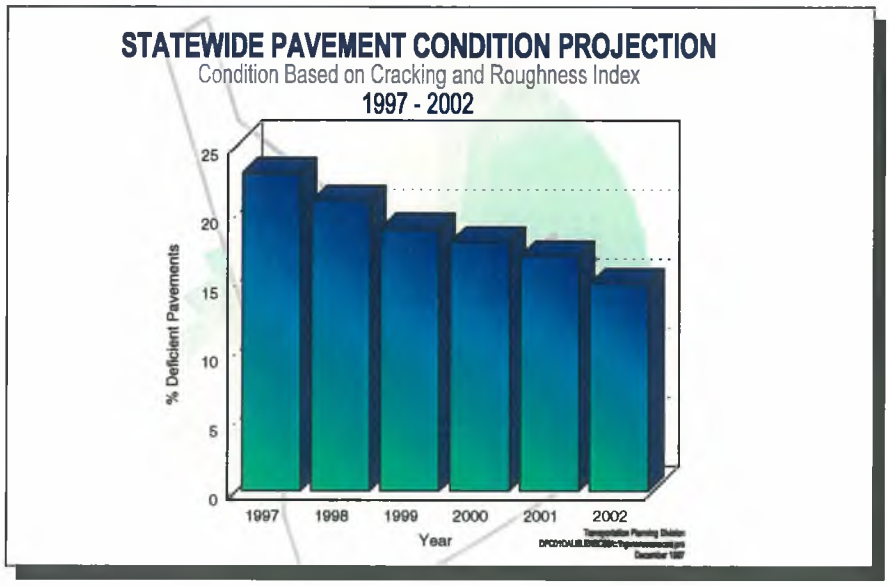


Figure 7.

PAVEMENT CONDITION

"Pavement Condition" is based upon functional classification and is divided into two categories: (1) interstates and arterials, and (2) collectors.

- Pavements on interstates, arterials, and collectors are classified as good if the lowest of the Cracking Index (CI) or Roughness Index (RI) is greater than 3.0;
- Pavements are fair if the lowest of CI or RI is between 2.5 and 3.0 (2.0 to 3.0 for collectors);
- Poor pavements exhibit indices between 2.0 and 2.5 (1.5 to 2.0 on collectors);
- Interstate and arterial pavements considered to be very poor are those with the lowest of the two indices falling below 2.0, or a CI or RI rating below 1.5 for collectors.

The current statewide distribution of good, fair, poor, and very poor pavements, based upon roughness and cracking, is shown on page 10 in Figures 8 and 9. The average statewide RI and CI are 3.48 and 3.44 respectively.

Pavement Condition	Interstates and Arterials	Collectors
	Lowest Index: Cracking (CI) or Roughness (RI)	
Good	CI, RI > 3.0	CI, RI > 3.0
Fair	2.5 ≤ CI, RI ≤ 3.0	2.0 ≤ CI, RI ≤ 3.0
Poor	2.0 ≤ CI, RI < 2.5	1.5 ≤ CI, RI < 2.0
Very Poor	CI, RI < 2.0	CI, RI < 1.5

MacCommon Drive Classtrk Excel worksheet with data.

Distribution of Cracking and Roughness Indices

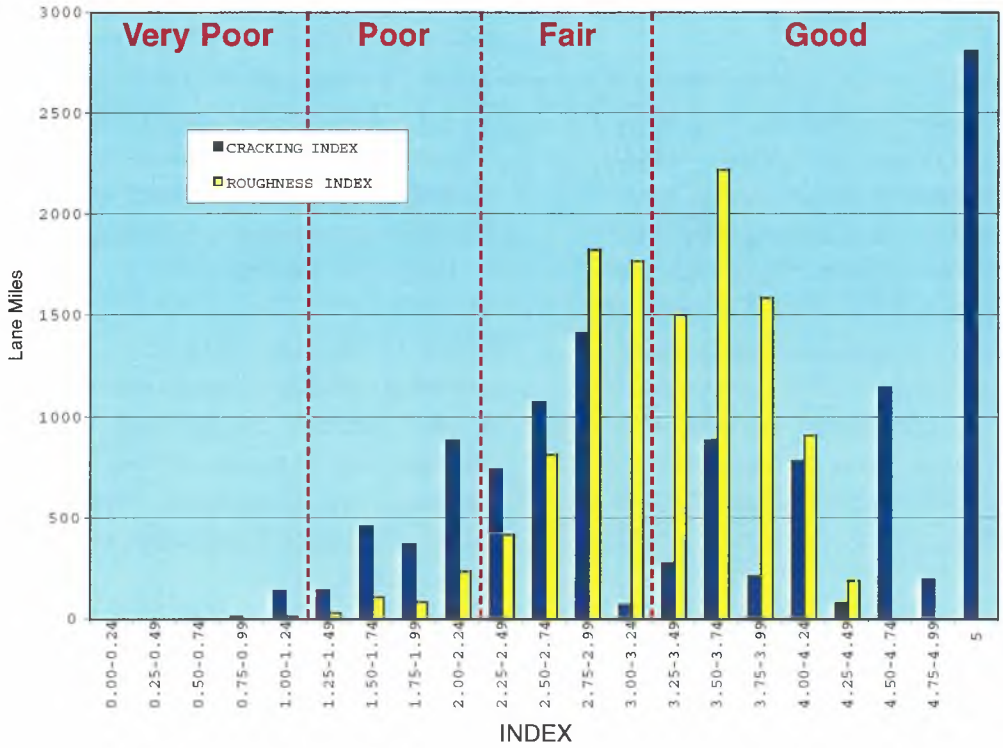


Figure 8.

- Figures need some work.

Some background or something so they match the rest of the report.

Distribution of Lowest Index (Cracking or Roughness)

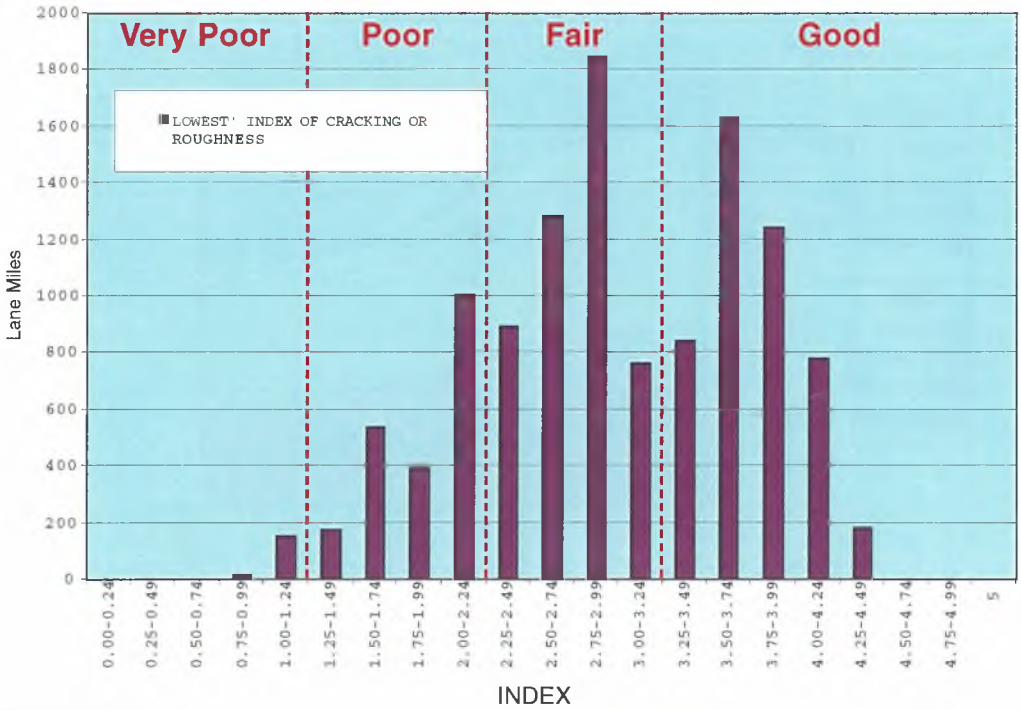


Figure 9.

PAVEMENT CONDITION (continued)

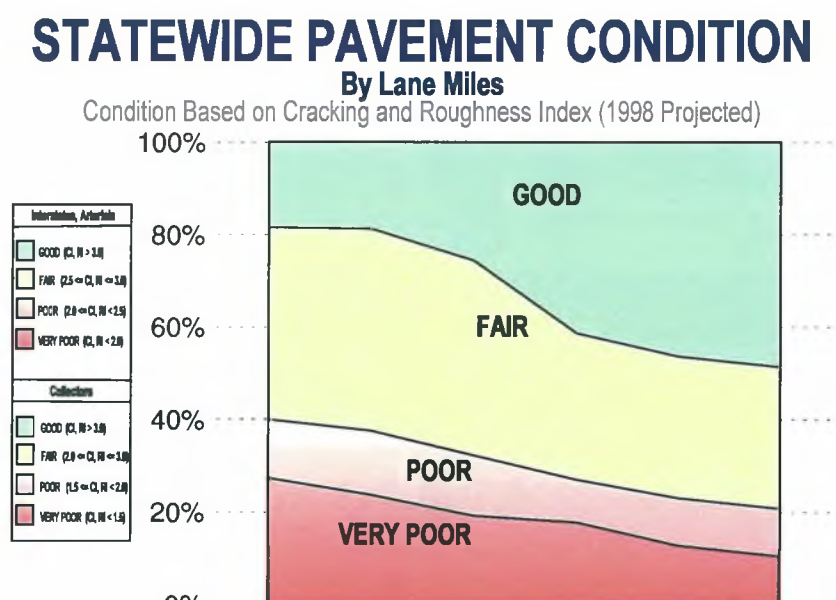
Figures 10 and 11 are pavement-condition summaries ~~of the state system~~ for years 1993 through 1998 (1998 is projected). These ~~trend lines~~ indicate that ~~the percent of~~ pavements considered good statewide ~~has~~ risen from a low of about ~~18%~~ in 1993 to approximately ~~49%~~ projected for 1998. The percent of fair pavements has declined from approximately ~~43%~~ in 1993 to ~~32%~~ projected for 1997. Pavements considered poor or very poor have declined from a maximum of almost ~~40%~~ in 1993 to approximately ~~21%~~ projected for 1998.

Figure 12 is a summary of current pavement condition on the State Highway System in terms of percent "good", "fair," "poor," and "very poor."

Current pavement condition by district is shown in Figure 13. The percentages in Figure 13 are based on statewide lane miles. For example, approximately ~~10.2%~~ of all pavements statewide considered good are located in District 1. ~~Sixteen percent~~ of all ~~statewide~~ pavements considered very poor are located in District 1.

Figure 14 ~~on~~ (page 15) is also a summary of pavement condition based on total lane miles in each district, as opposed to statewide mileage. For example: ~~17.1%~~ of District 1 roadways are considered very poor; and ~~49.4%~~ of District 5 roadways are considered good.

Maps 2 through 8 starting on page 17 show the location, pavement condition, and centerline miles in each category of pavement condition.



	1993	1994	1995	1996	1997	1998
GOOD	2149	2186	2996	4839	5438	5707
FAIR	4851	5108	4931	3707	3595	3595
POOR	1476	1616	1528	1081	1207	1207
VERY POOR	3187	2777	2248	2077	1498	1229

Note: Poor / Very Poor are considered deficient

Transportation Planning Division
DPC01DALIB.EXEC98/c:\hgw\pres\exec98.prs
December 1997

Figure 10.

DISTRICT PAVEMENT CONDITION

Condition Based on Cracking and Roughness Index (1998 Projected)

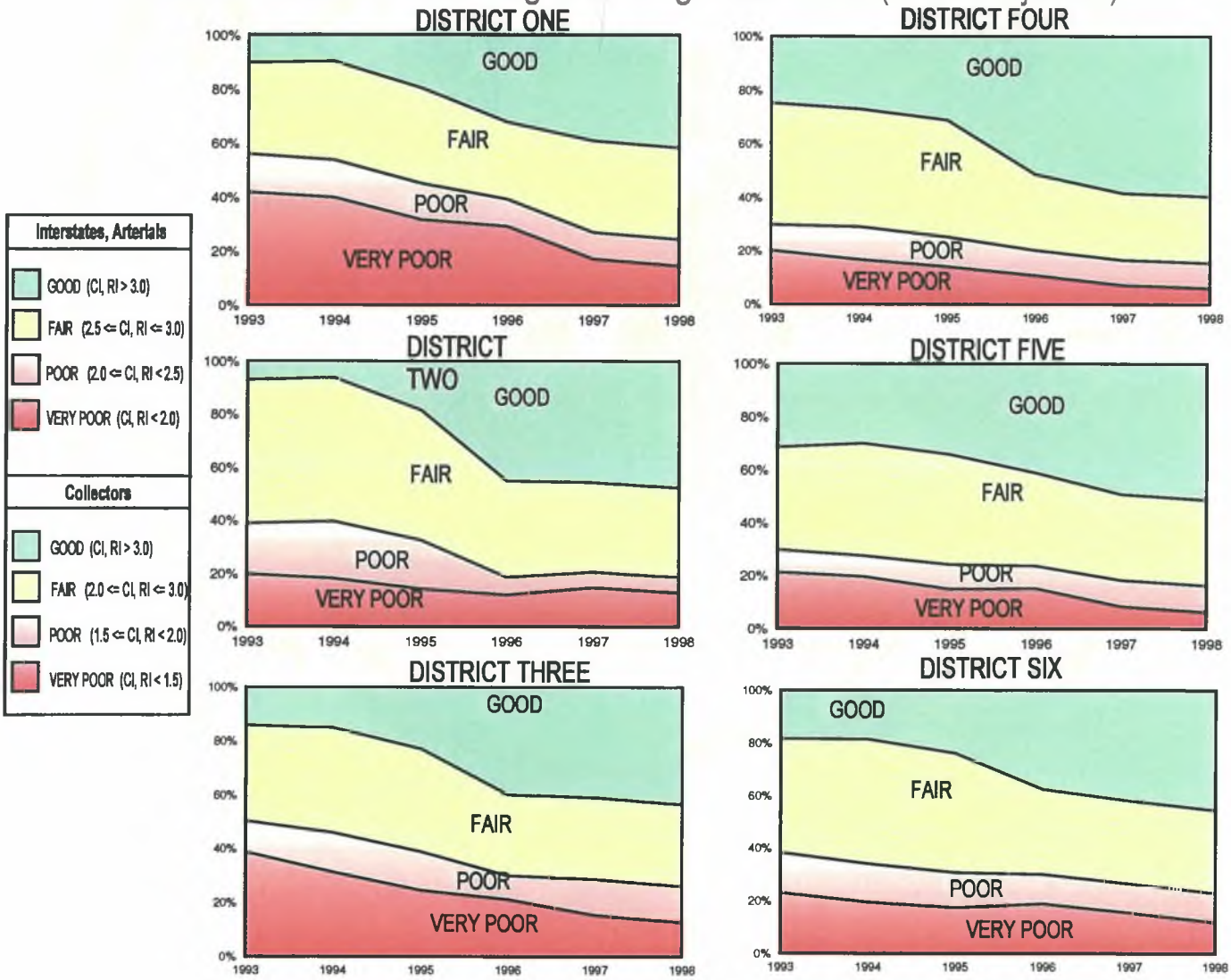


Figure 11.

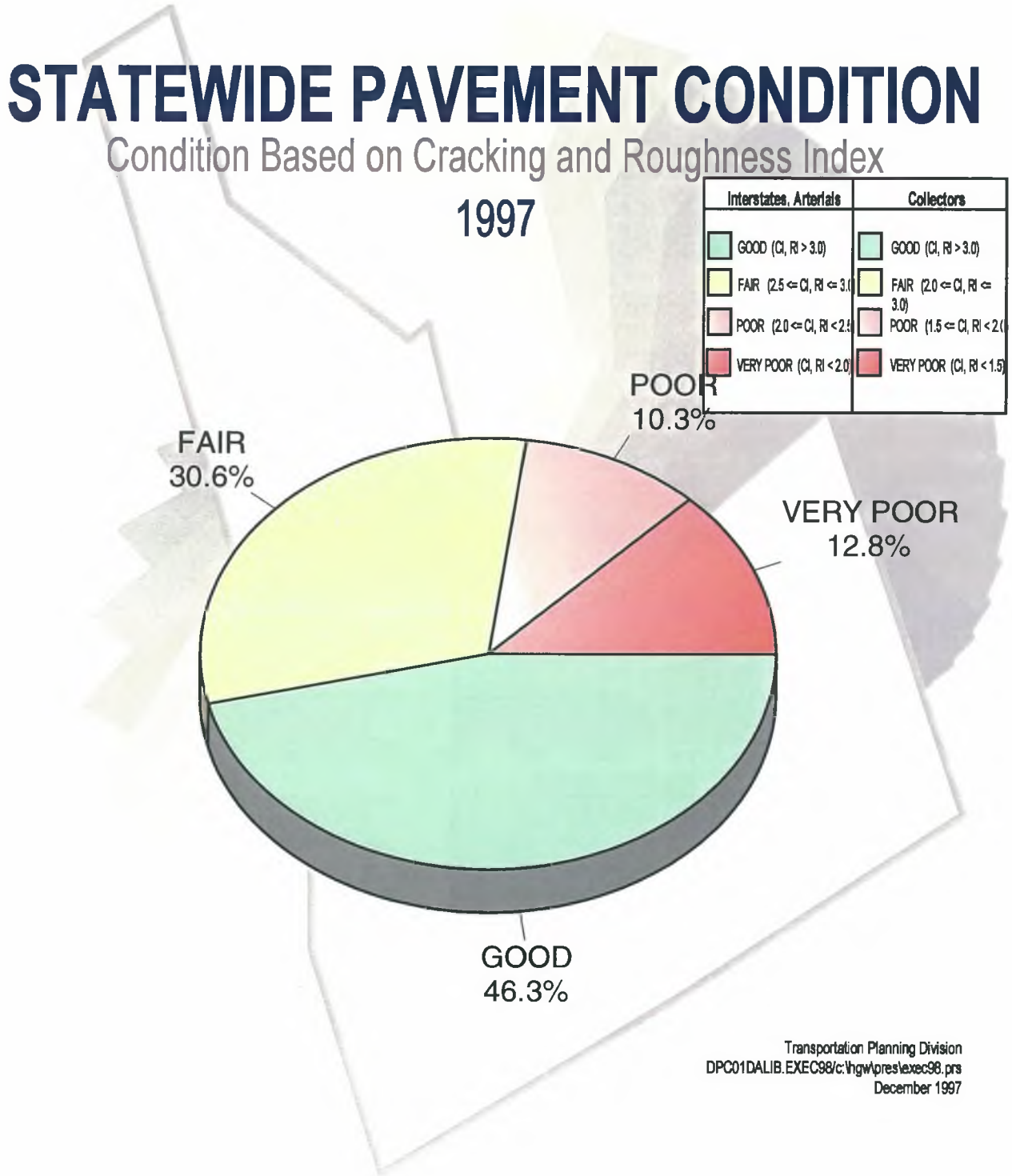

STATEWIDE PAVEMENT CONDITION
Condition Based on Cracking and Roughness Index
1997
Interstates, Arterials
GOOD (CI, RI > 3.0)
FAIR (2.5 <= CI, RI <= 3.0)
POOR (2.0 <= CI, RI < 2.5)
VERY POOR (CI, RI < 2.0)
Collectors
GOOD (CI, RI > 3.0)
FAIR (2.0 <= CI, RI <= 3.0)
POOR (1.5 <= CI, RI < 2.0)
VERY POOR (CI, RI < 1.5)
POOR 10.3%
FAIR 30.6%
VERY POOR 12.8%
GOOD 46.3%
Transportation Planning Division
DPC01DALIB.EXEC98/c:\hgw\pres\exec98.prs
December 1997

Figure 12.

DISTRICT PAVEMENT CONDITION

Based on Statewide Percentages

Condition Based on Cracking and Roughness Index

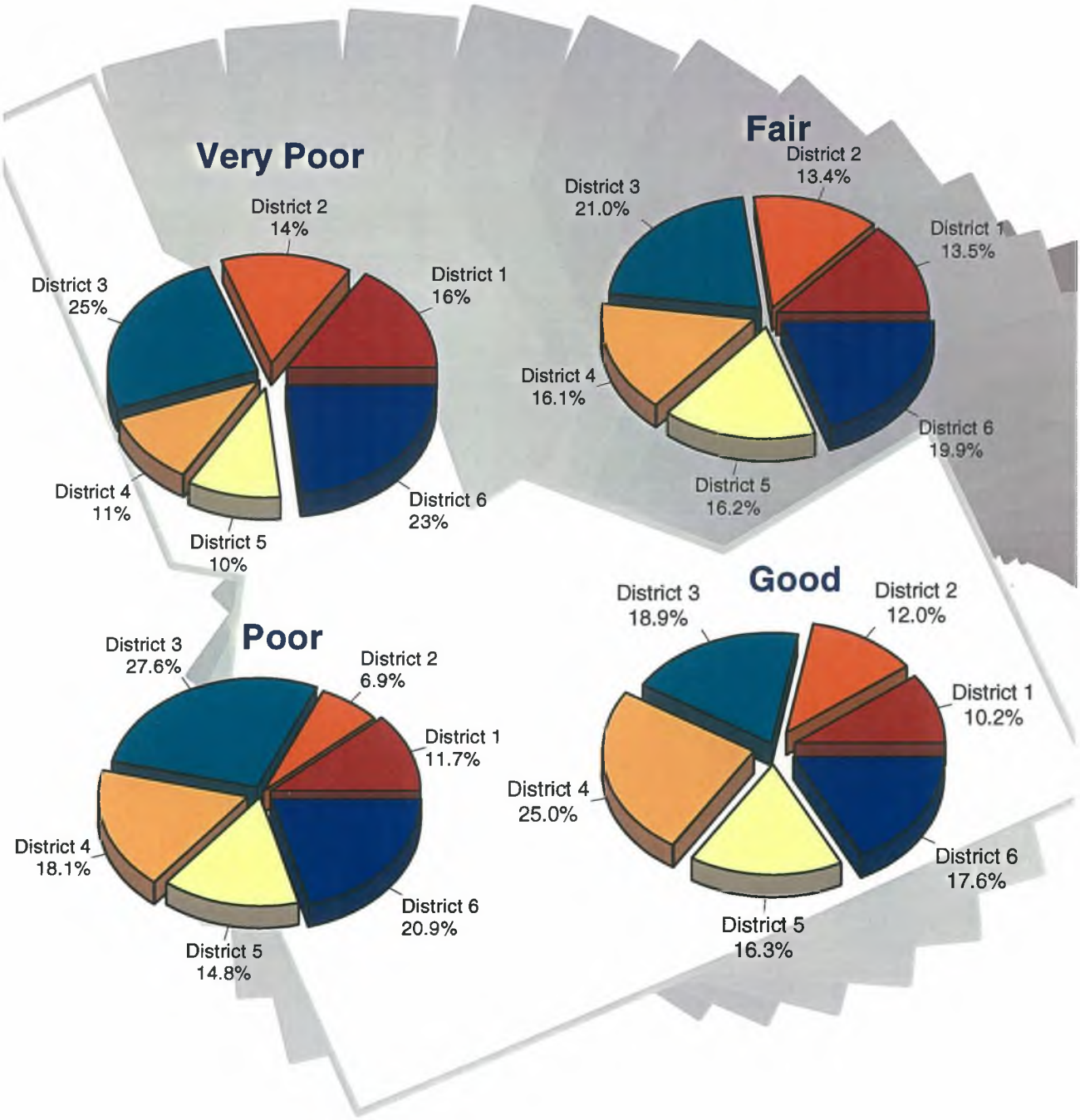


Figure 13.

DISTRICT PAVEMENT CONDITION

Condition Based on Cracking and Roughness Index

1997

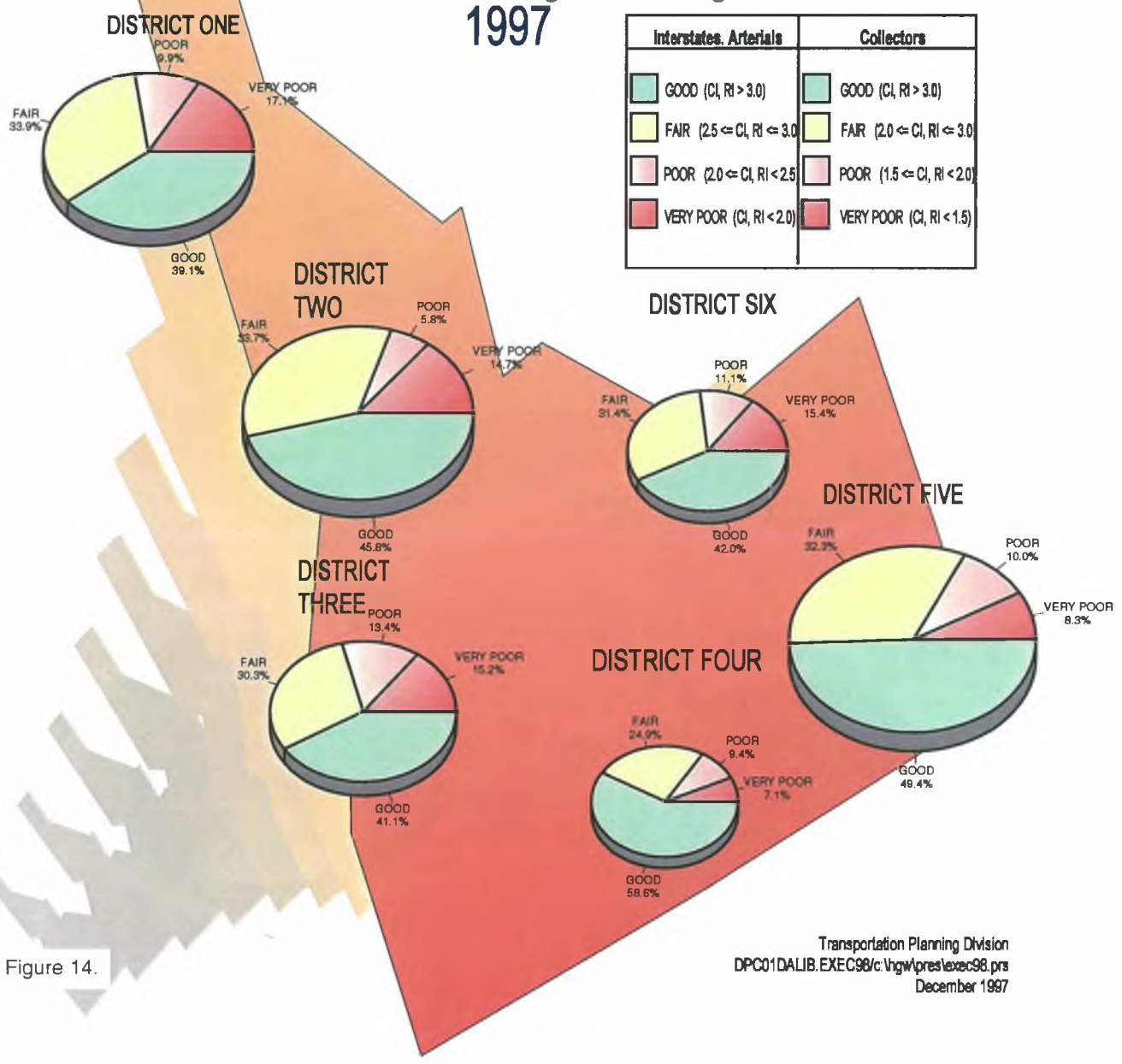


Figure 14.

PAVEMENT DEFICIENCIES BY SYSTEM

The following graphs represent a summary of Idaho's five-year pavemment performance on interestates, remaining National Highway System (NHS), and Non National Highway System (Non-NHS) routes.

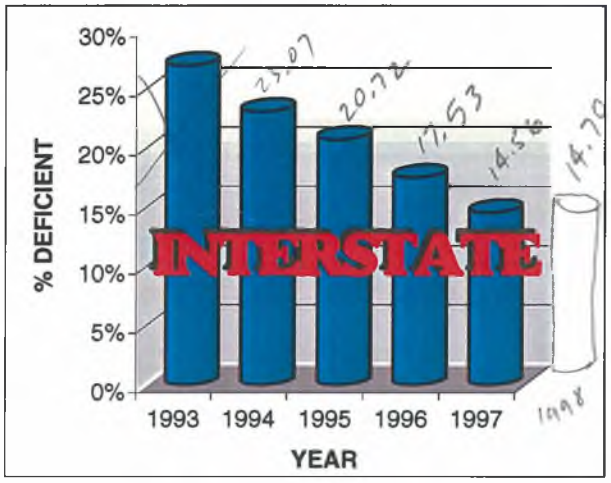


Figure 15.

Interstate highways in Idaho have improved from 27 percent deficient in 1994 to 15 percent deficient in 1997, a reduction of 12% in four years.

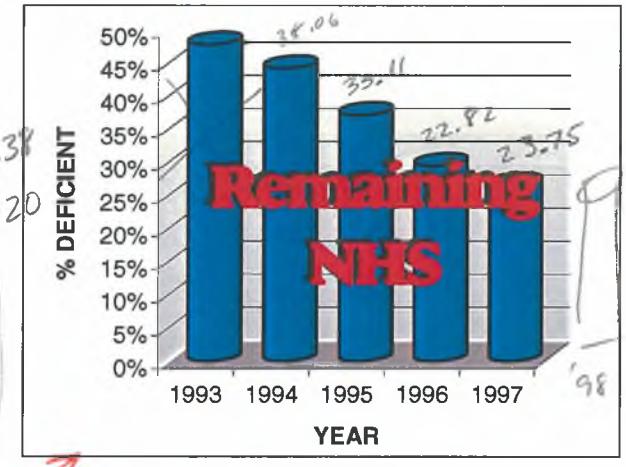


Figure 16.

Remaining (Non-Interstate) NHS routes have seen the most improvement, declining from 48 percent deficient in 1994 to apprroximately 27 percent deficient in 1997, a reduction of 12% in four years.

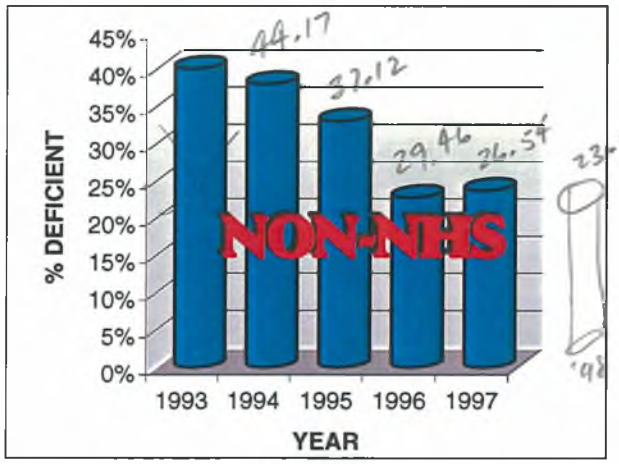
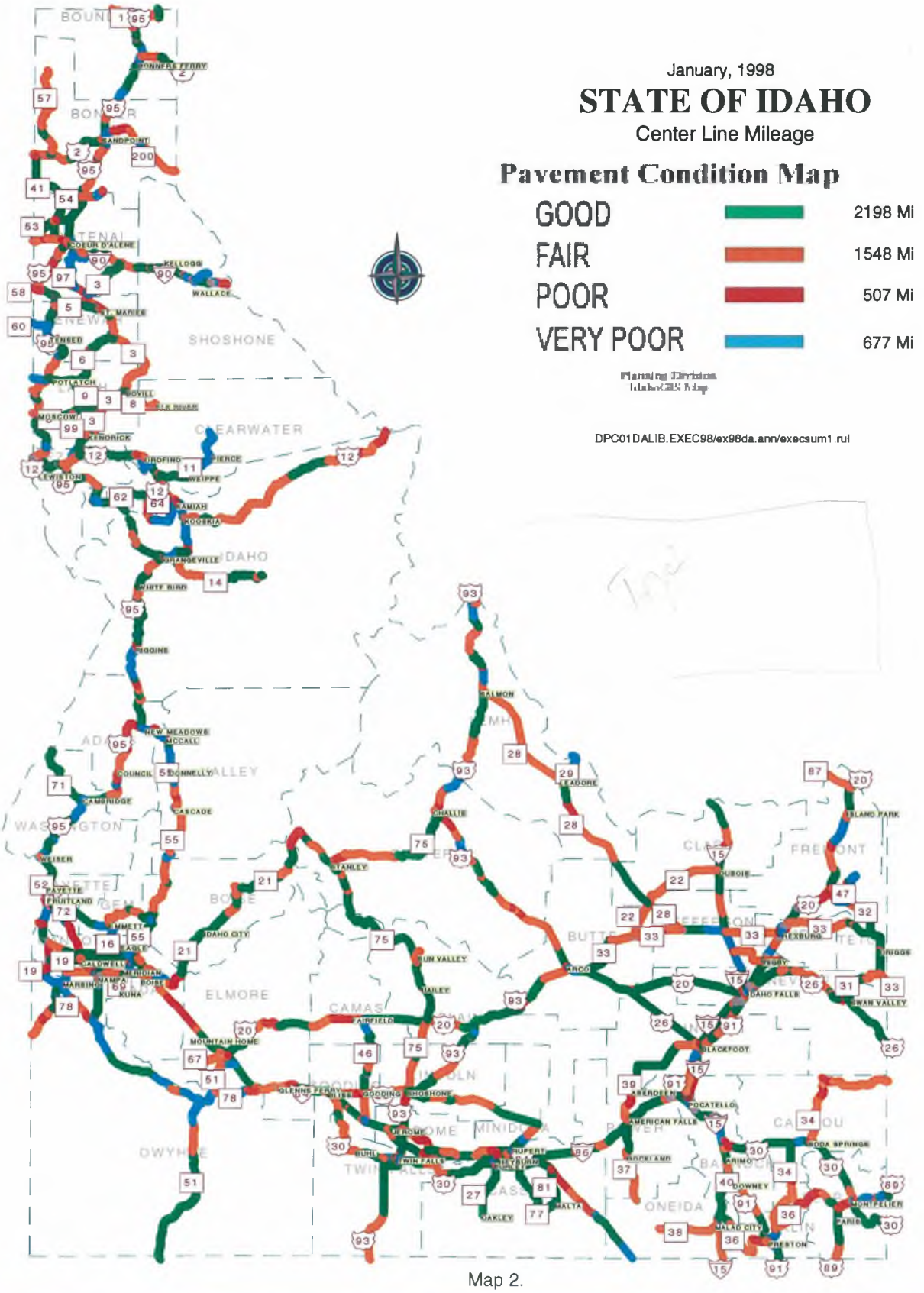


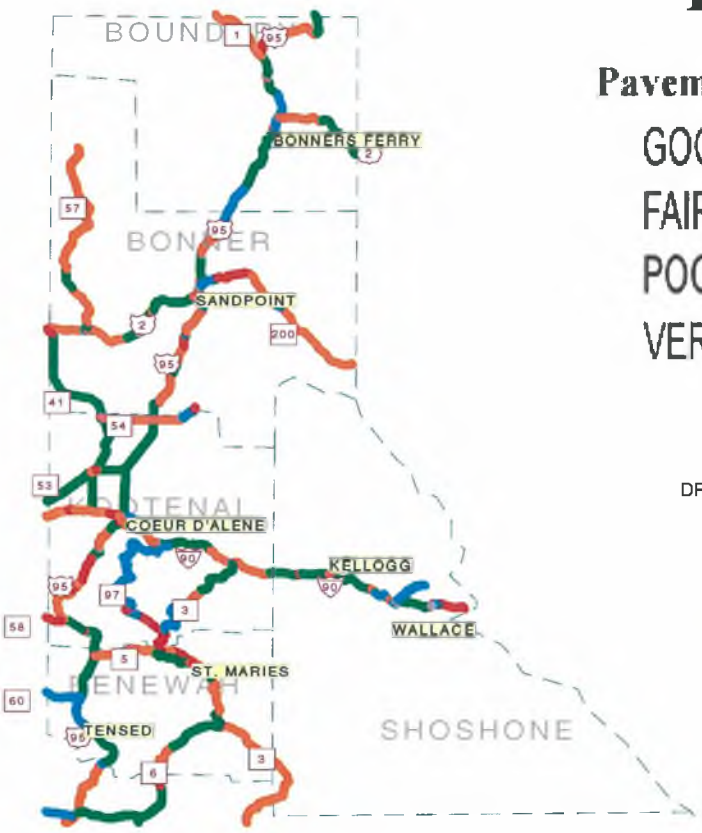
Figure 17.

Non-NHS route deficiencies have also been reduced from a little over 40% in 1994 to 24% in 1997, a reduction of 16% in four years.


January, 1998
STATE OF IDAHO
Center Line Mileage
Pavement Condition Map
GOOD 2198 Mi
FAIR 1548 Mi
POOR 507 Mi
VERY POOR 677 Mi
DPC01DALIB.EXEC98/ex98da.ann/execsum1.rul
SHOSHONE
CLEARWATER
IDAHO
ELMORE
CAMAS
DWYHEE
ONEIDA
BOISE
SUN VALLEY
STANLEY
CHALLIS
SALMON
LEADORE
DUBOIS
ISLAND PARK
REXBURG
IDAHO FALLS
SWAN VALLEY
BLACKFOOT
AMERICAN FALLS
POCATELLO
SODA SPRINGS
MONTPELIER
PARIS
PRESTON
MALAD CITY
DOWNEY
OAKLEY
MALTA
BURLEY
TWIN FALLS
HAILEY
FAIRFIELD
MOUNTAIN HOME
GOODING
SHOSHONE
BUHL
RUPERT
HEYBURN
MINIDOKA
BONNERS FERRY
SANDPOINT
COEUR D'ALENE
KELLOGG
WALLACE
ST. MARIES
PRIEST RIVER
POTLATCH
MOSCOW
KENDRICK
LEWISTON
GRANGEVILLE
WHITE BIRD
GRANGEVILLE
KOOSKIA
NEZ PERCE
WEIPPE
PIERCE
ORO FINO
NEW MEADOWS
MCCALL
COUNCIL
DONNELLY
CASCADE
CAMBRIDGE
WEISER
PAYETTE
FRUITLAND
EMMETT
GARDEN CITY
BOISE
EAGLE
IDAHO CITY
CALDWELL
NAMPA
MERIDIAN
KUNA
MARSING
GLENNS FERRY
HIGGINS
BOUNDARY
BONNER
KOOTENAI
SHOSHONE
CLEARWATER
IDAHO
ADA
VALLEY
WASHINGTON
BOISE
ELMORE
CAMAS
LINCOLN
BUTTE
JEFFERSON
CLARK
FREMONT
MADISON
BANNOCK
CASSIA
ONEIDA
CARIBOU
BINGHAM
BEAR LAKE
OWYHEE
TWIN FALLS
MINIDOKA
POWER

Map 2.

DISTRICT
PAVEMENT CONDITION



January, 1998

DISTRICT ONE

Center Line Mileage

Pavement Condition Map

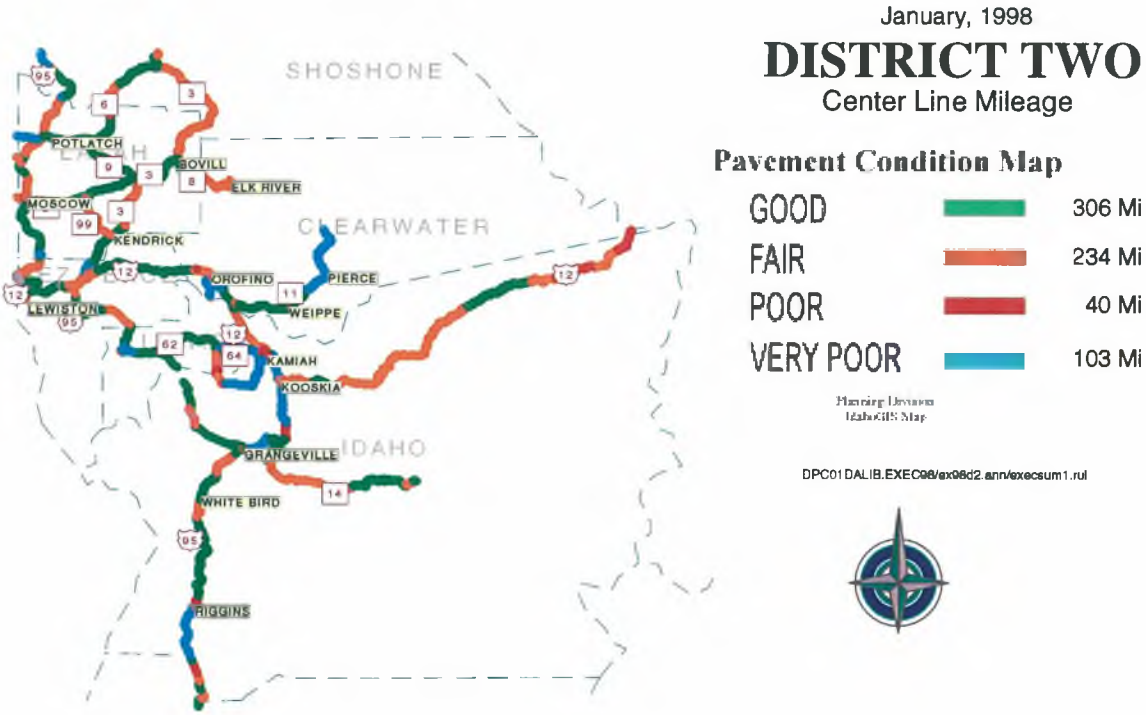
GOOD		225 Mi
FAIR		203 Mi
POOR		58 Mi
VERY POOR		113 Mi

Planning Division
IdahoGIS Map

DPC01DALIB.EXEC98/ex98d1.ann/execsum1.rul

Map 3

DISTRICT
PAVEMENT CONDITION



Map 4

DISTRICT
PAVEMENT CONDITION

January, 1998

DISTRICT THREE

Center Line Mileage

Pavement Condition Map

GOOD		416 Mi
FAIR		299 Mi
POOR		133 Mi
VERY POOR		178 Mi

Planning Division
IdahoGIS Map

DPC01DALIB.EXEC98/ex98d3.ann/execsum1.rul

Map 5

DISTRICT
PAVEMENT CONDITION

January, 1998

DISTRICT FOUR

Center Line Mileage

Pavement Condition Map

GOOD		536 Mi
FAIR		240 Mi
POOR		88 Mi
VERY POOR		67 Mi

Planning Division
IdahoGIS Map

DPC01DALIB.EXEC98/ex98d4.anr/execsum1.rul

Map 6

DISTRICT
PAVEMENT CONDITION

January, 1998

DISTRICT FIVE

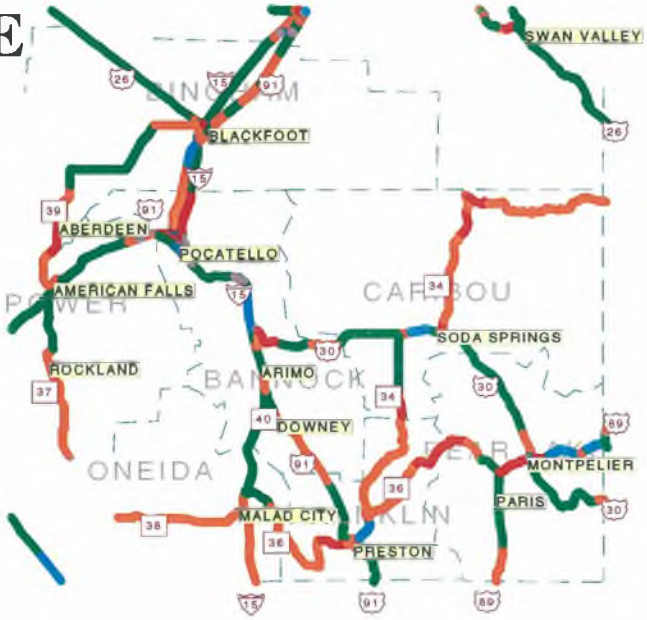
Center Line Mileage

Pavement Condition Map

GOOD		315 Mi
FAIR		251 Mi
POOR		76 Mi
VERY POOR		66 Mi

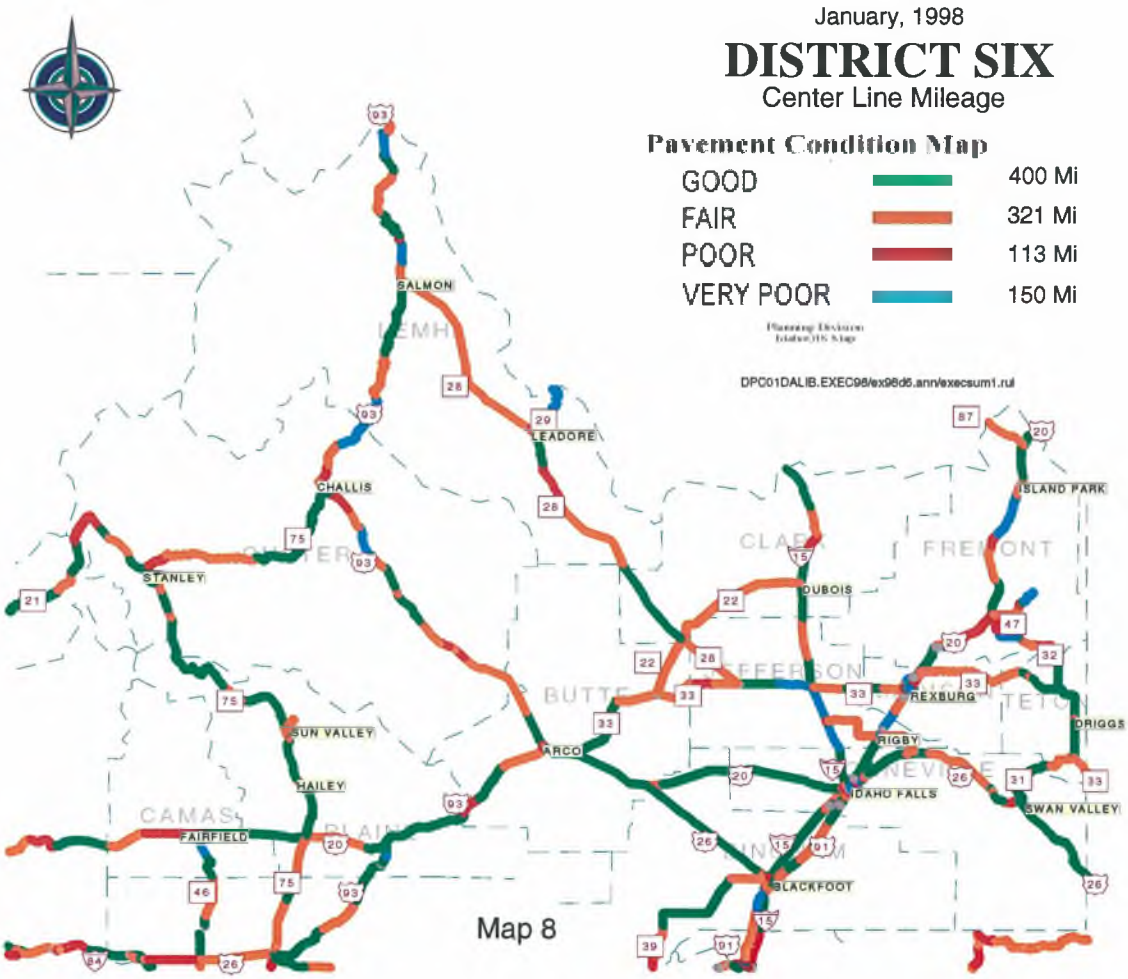
Planning Division
IdahoGIS Map

DPC01DALIB.EXEC98/ex98d5.ann/execsum1.rul



Map 7

DISTRICT
PAVEMENT CONDITION



Section 4
NEEDS ANALYSIS

Removing the top layers of old asphalt on US95 . (Photo courtesy of the Lewiston Morning Tribune.)

PAVEMENT NEEDS

The pavement-condition needs identified on the following pages were obtained through the Highway Performance Monitoring System - Analytical Package (HPMS-A/P).

The HPMS-A/P was developed by the Federal Highway Administration (FHWA) to analyze data furnished to them by the states. The results of the analysis are used by the FHWA in policy development and for their bi-annual reports to Congress on the status and performance of the Nation's Highways.

This model has been adapted in-house and by consultant contract for ITD's use so that we may apply the same types of analysis to Idaho's pavement-management data.

The A/P's function is to analyze highway inventory data and to develop relationships between various levels of capital investment, and the resulting condition of the State Highway System. It is a tool to help management predict the effects of any proposed level of capital investment and the corresponding condition, safety, and service characteristics of the highway system. It responds to a variety of questions regarding the levels of investment necessary to accomplish desired objectives.

The Planning Services Section has enhanced the program by modifying it to reflect:

- Idaho's costs (based on ITD project history files),
- the department's design standards, and
- our minimum tolerable conditions.

(continues on next page)

PAVEMENT NEEDS (continued)
The analytical package analyzes data related to:

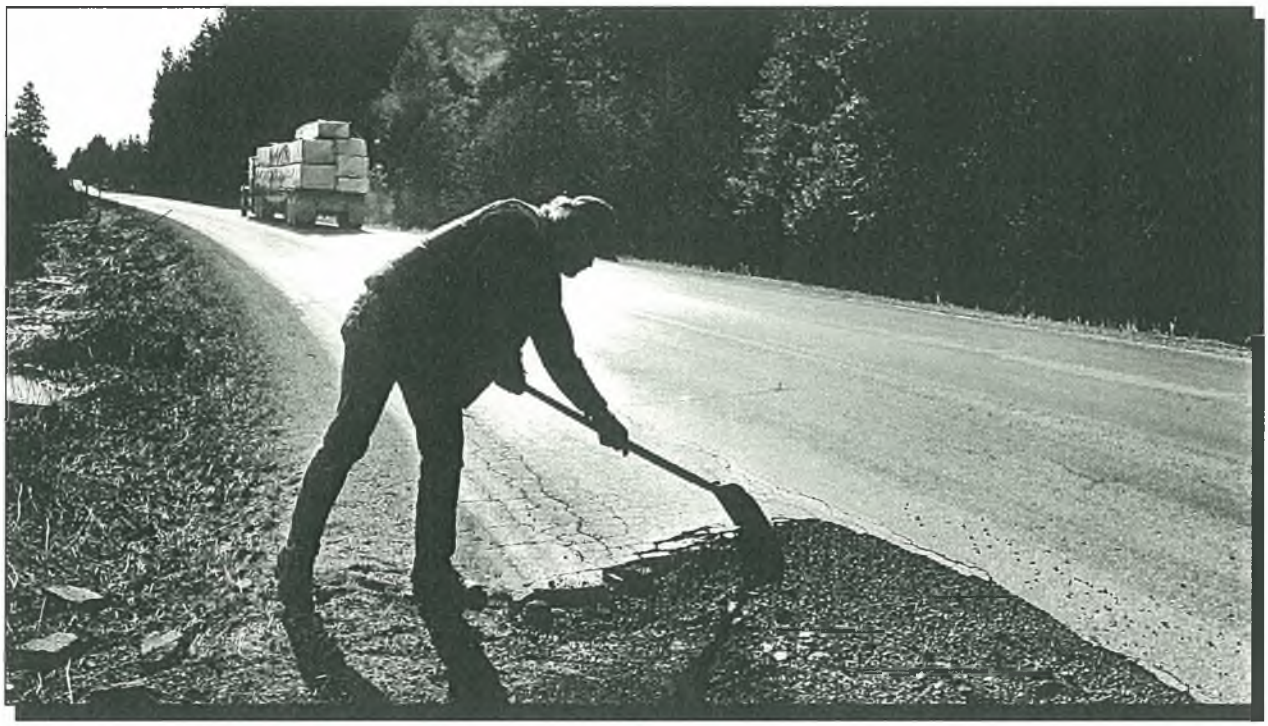
- pavement condition,
- geometrics,
- roadway cross section,
- operation, and
- access control.

Among it's many reports, the program produces a prioritized list of pavement-management sections, year of need, and the type and cost of rehabilitation.

Figure 18 is a graphical representation of needs by district.
The table on page 27 is a summary of current pavement needs by district and functional class. Deficiencies are defined as very poor and poor pavements (based on roughness and cracking).

Pavement needs are further classified as either resurface or reconstruction depending on the level and type of deficiency identified for individual pavement sections. Costs are based on the average project costs for Idaho over the last ten (10) years.

The district maps on pages 28 through 33 identify the specific locations of pavement deficiencies and programmed highway projects in each district.



Pavements on the State Highway System have shown a great deal of improvement in recent years, but there is still much work left to do.,

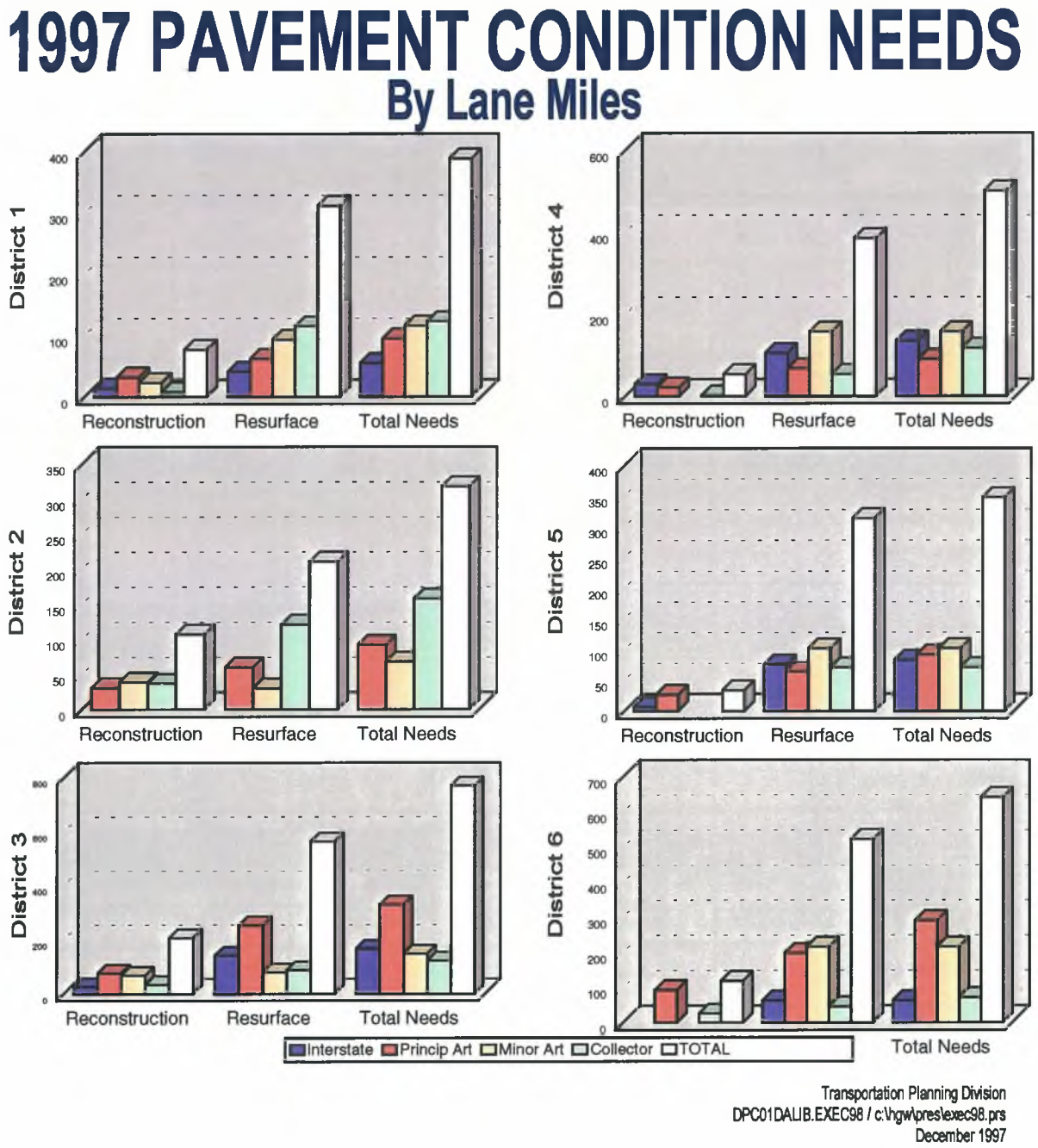

1997 PAVEMENT CONDITION NEEDS
By Lane Miles
District 1
District 2
District 3
District 4
District 5
District 6
Reconstruction
Resurface
Total Needs
Interstate
Princip Art
Minor Art
Collector
TOTAL
Transportation Planning Division
DPC01DALIB.EXEC98 / c:\hgw\pres\exec98.prs
December 1997

Figure 18.

1996 Pavement Condition Needs

(State System)

DISTRICT 1	RECONSTRUCTION		RESURFACE			
	DEFICIENT LANE MILES	COST ($000)	DEFICIENT LANE MILES	COST ($000)	TOTAL LANE MILES	TOTAL COST ($000)
INTERSTATE	20 14	8,022	41	4,709	55	12,731
PRINCIPAL ART.	13 32	15,084	62	5,987	95	21,071
MINOR ARTERIAL	18 23	9,344	93	9,343	116	18,687
COLLECTOR	3 8	3,265	115	11,640	123	14,905
TOTAL	77	35,715	311	31,679	388	67,394

DISTRICT 2	RECONSTRUCTION		RESURFACE			
	DEFICIENT LANE MILES	COST ($000)	DEFICIENT LANE MILES	COST ($000)	TOTAL LANE MILES	TOTAL COST ($000)
INTERSTATE	-	-	-	-	-	-
PRINCIPAL ART.	31	18,203	60	7,680	92	25,883
MINOR ARTERIAL	39	20,097	30	2,707	68	22,804
COLLECTOR	37	14,303	121	10,342	158	24,645
TOTAL	107	52,603	211	20,729	318	73,332

DISTRICT 3	RECONSTRUCTION		RESURFACE			
	DEFICIENT LANE MILES	COST ($000)	DEFICIENT LANE MILES	COST ($000)	TOTAL LANE MILES	TOTAL COST ($000)
INTERSTATE	27	13,816	142	12,715	168	26,531
PRINCIPAL ART.	77	35,169	254	26,018	331	61,187
MINOR ARTERIAL	69	26,597	80	7,940	149	34,537
COLLECTOR	34	10,527	88	6,121	123	16,648
TOTAL	207	86,109	564	52,794	771	138,903

DISTRICT 4	RECONSTRUCTION		RESURFACE			
	DEFICIENT LANE MILES	COST ($000)	DEFICIENT LANE MILES	COST ($000)	TOTAL LANE MILES	TOTAL COST ($000)
INTERSTATE	30	14,120	106	9,570	136	23,690
PRINCIPAL ART.	22	10,259	68	6,780	91	17,039
MINOR ARTERIAL	-	-	158	15,705	158	15,705
COLLECTOR	2	516	54	3,936	118	4,452
TOTAL	54	24,895	386	35,991	502	60,886

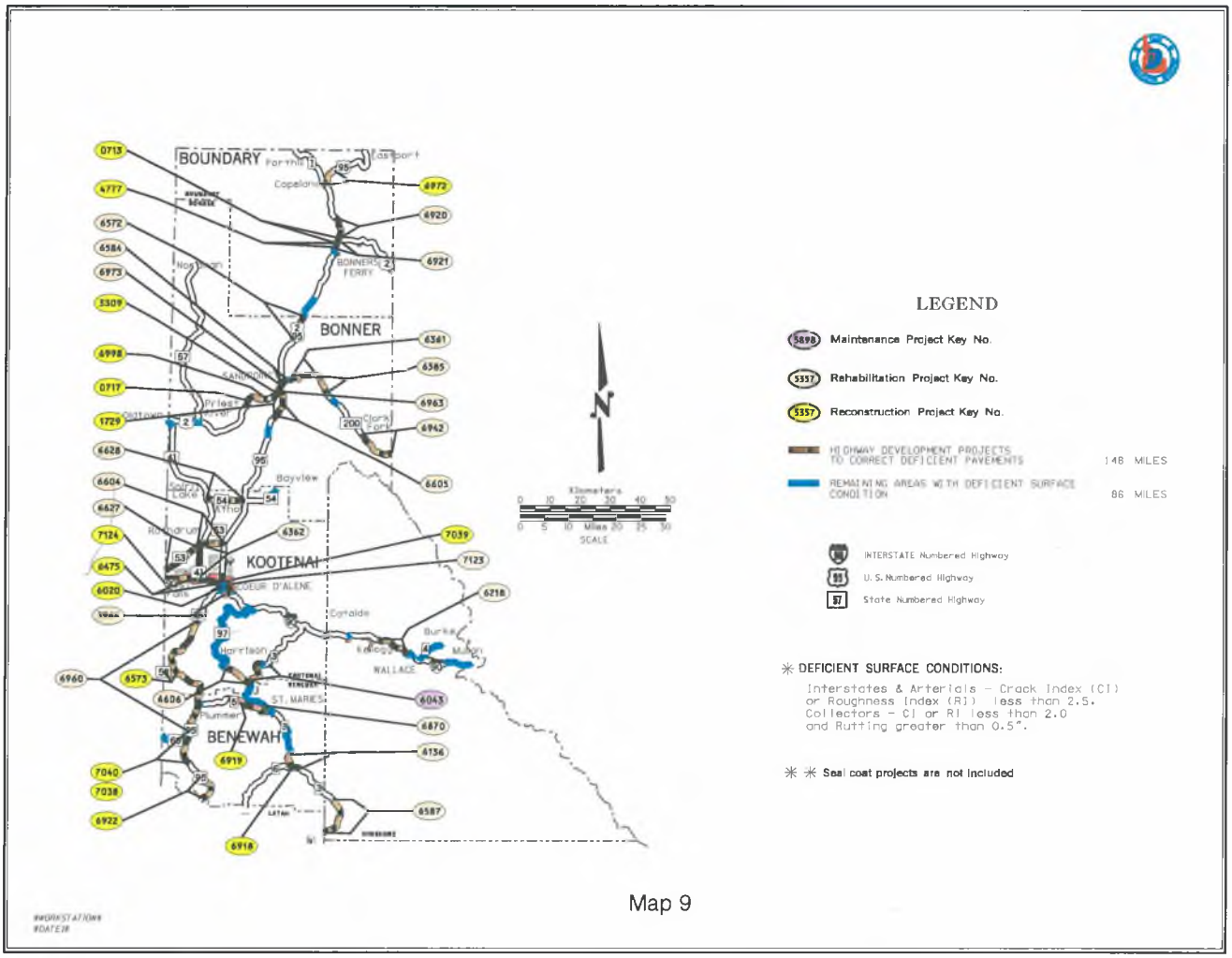
DISTRICT 5	RECONSTRUCTION		RESURFACE			
	DEFICIENT LANE MILES	COST ($000)	DEFICIENT LANE MILES	COST ($000)	TOTAL LANE MILES	TOTAL COST ($000)
INTERSTATE	7	4,117	76	6,987	83	11,104
PRINCIPAL ART.	27	13,769	65	7,303	92	21,072
MINOR ARTERIAL	-	-	102	7,589	102	7,589
COLLECTOR	-	-	71	6,260	71	6,260
TOTAL	34	17,886	314	28,139	348	46,025

DISTRICT 6	RECONSTRUCTION		RESURFACE			
	DEFICIENT LANE MILES	COST ($000)	DEFICIENT LANE MILES	COST ($000)	TOTAL LANE MILES	TOTAL COST ($000)
INTERSTATE	-	-	63	5,595	63	5,595
PRINCIPAL ART.	93	46,627	198	17,011	291	63,638
MINOR ARTERIAL	-	-	216	15,149	216	15,149
COLLECTOR	26	10,281	46	3,793	72	14,074
TOTAL	119	56,908	523	41,548	642	98,456

GRAND TOTAL	598	274,116	2,309	210,880	2,969	484,996

451,740

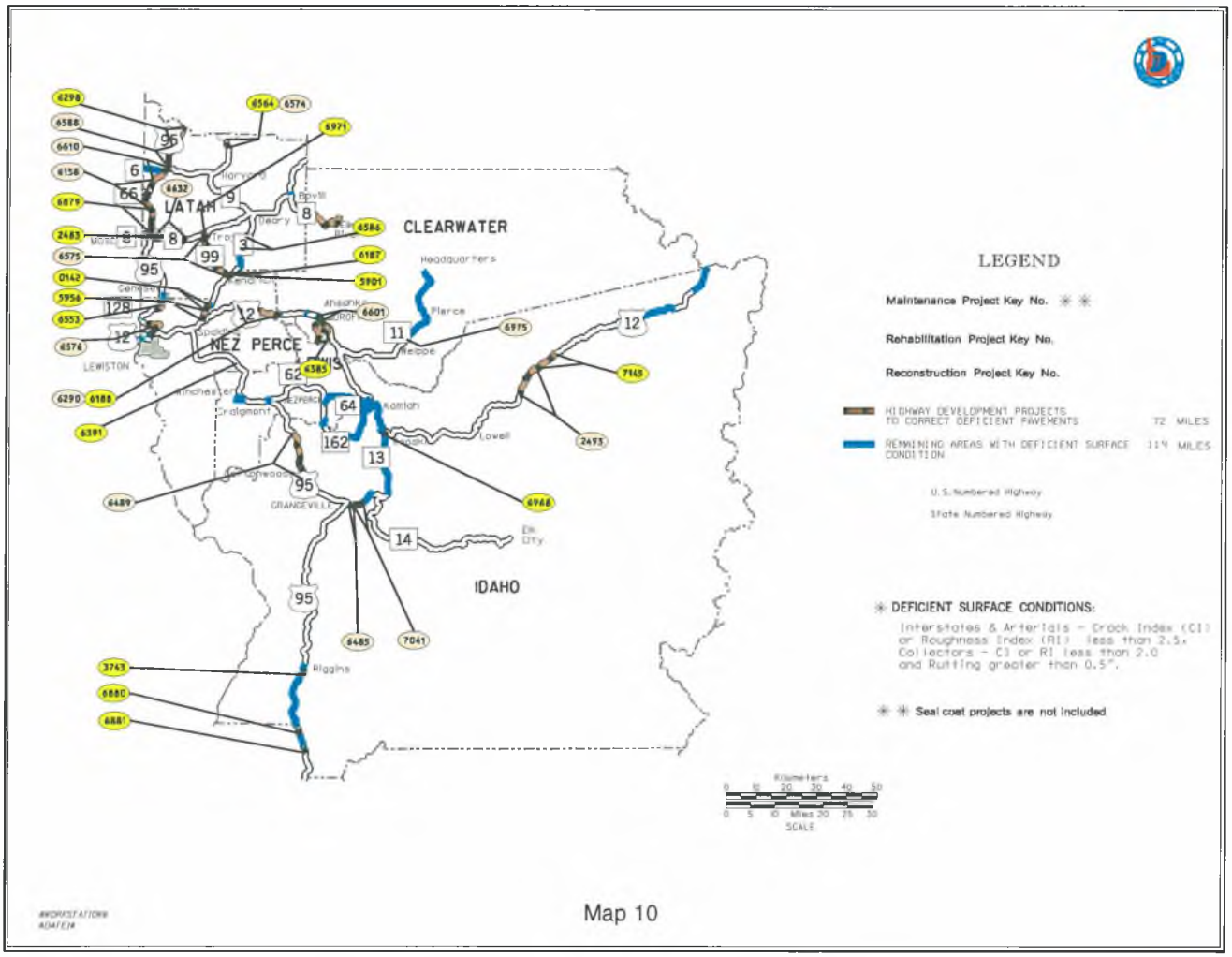
DISTRICT 1
Programmed Projects vs. Pavement Deficiencies
FY 1998 - 2002



Map 9

L. Scott Stokes, District Engineer - Phone (208) 772-1200
600 West Prairie, Coeur d' Alene, Idaho 83815-8764

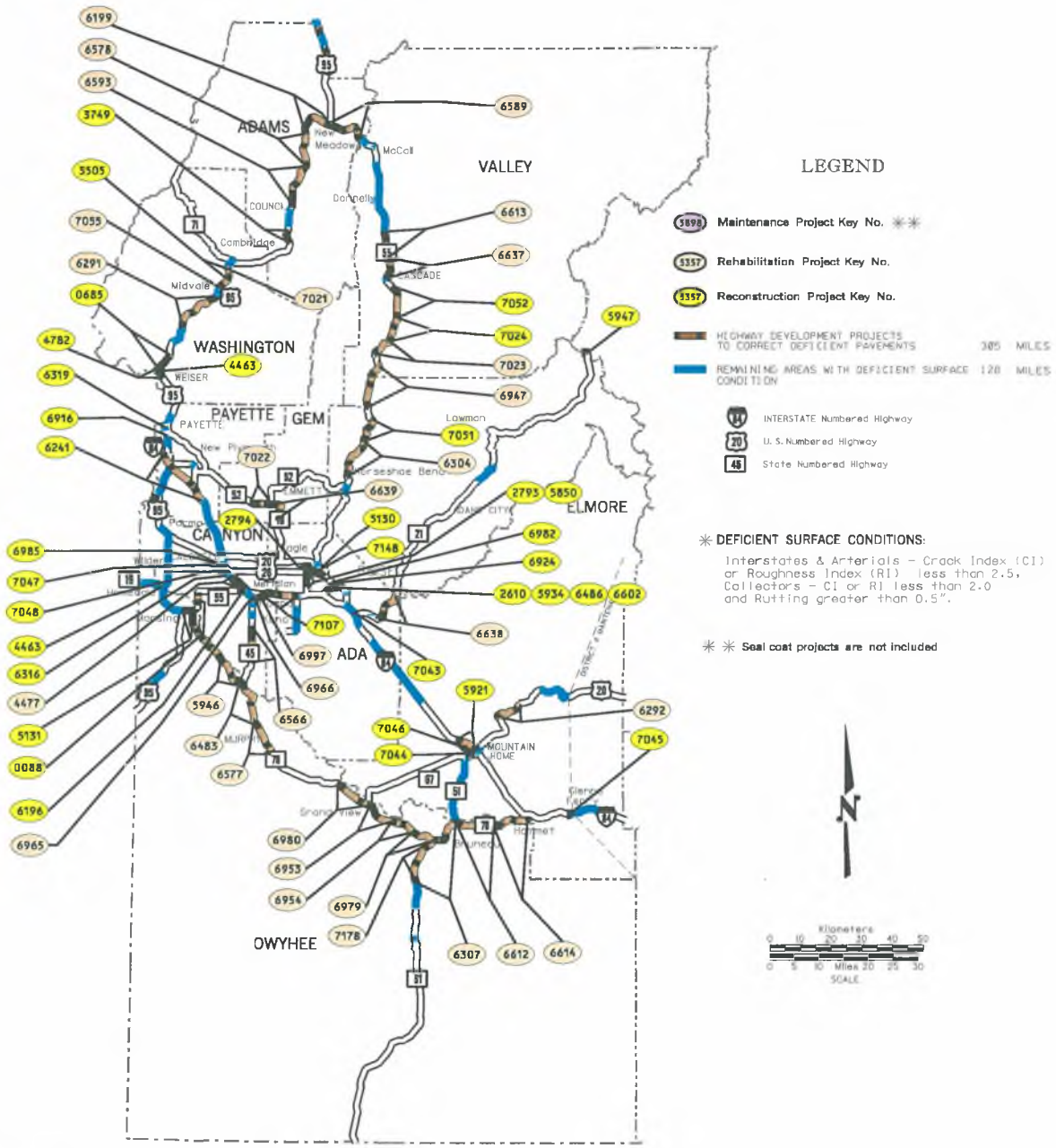
DISTRICT 2
Programmed Projects vs. Pavement Deficiencies
FY 1998 - 2002



Map 10

James F. Carpenter, District Engineer - Phone (208) 799-5090
PO Box 837, Lewiston ID 83501-0837

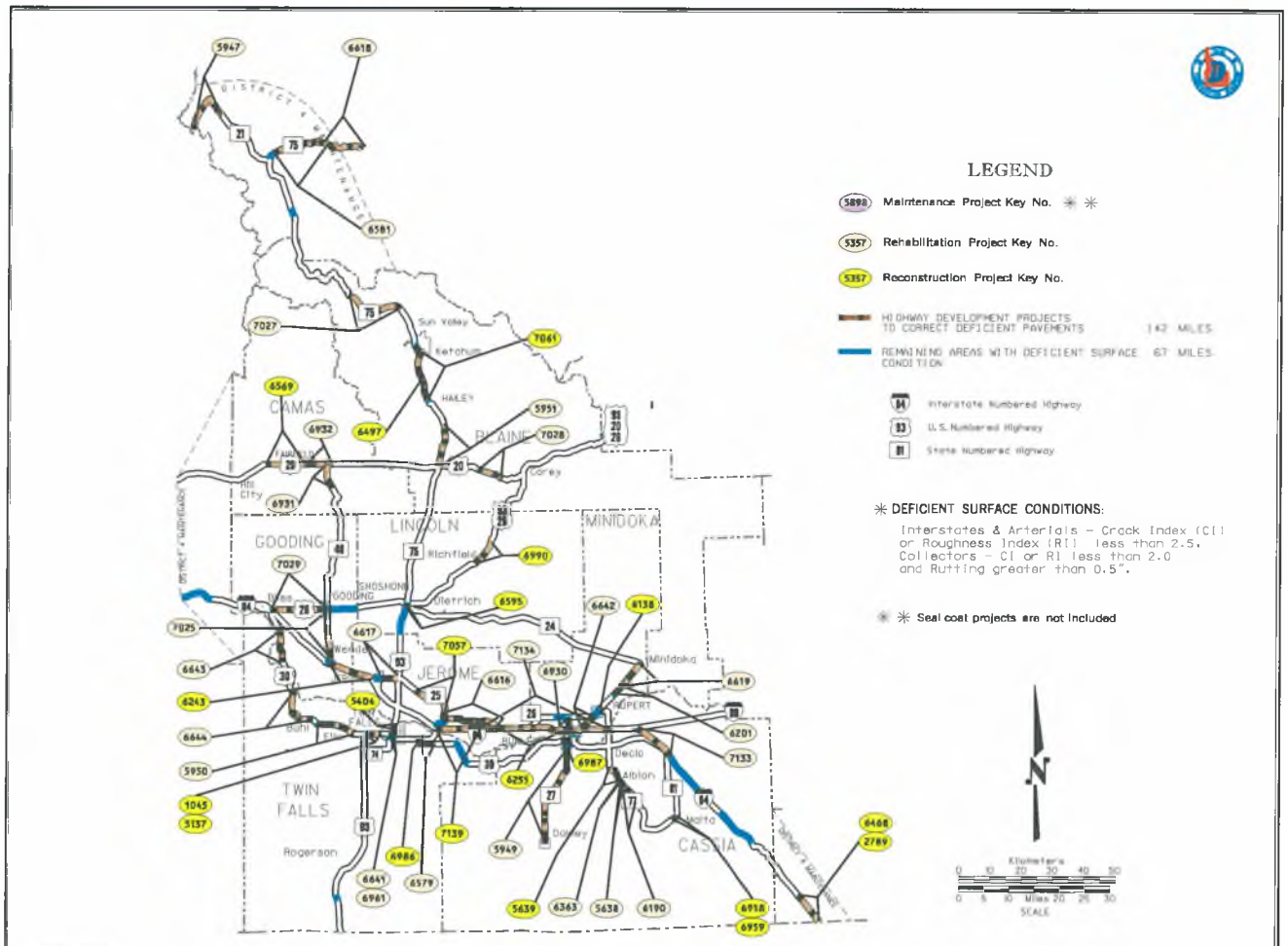
DISTRICT 3
Programmed Projects vs. Pavement Deficiencies



Map 11

Loren Thomas, District Engineer - Phone (208) 334-8300
PO Box 8028, Boise ID 83707-2028

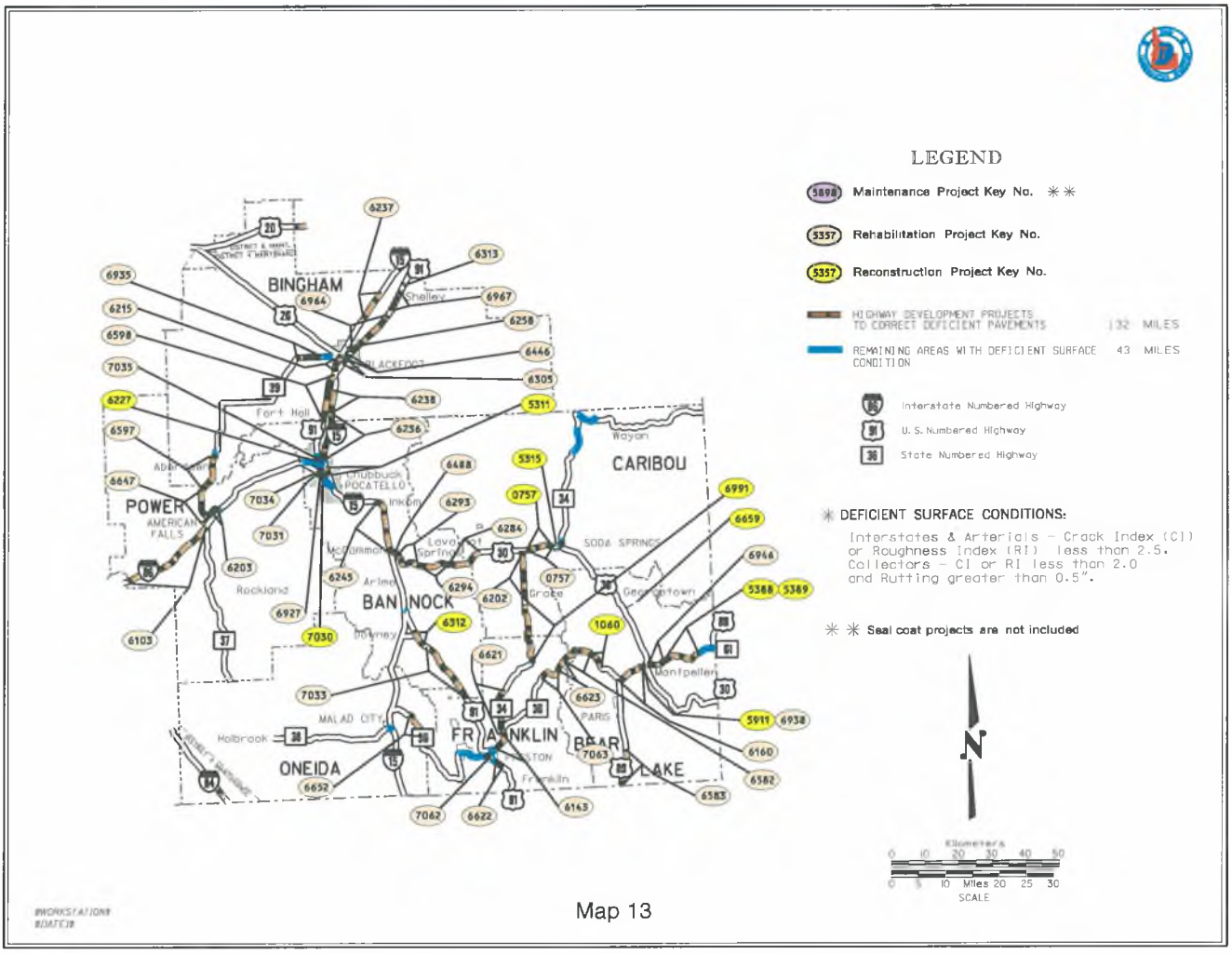
DISTRICT 4
Programmed Projects vs. Pavement Deficiencies
FY 1998 - 2002



Map 12

Devin Rigby, District Engineer - Phone (208) 886-7800
PO Box 2-A, Shoshone ID 83352-0820

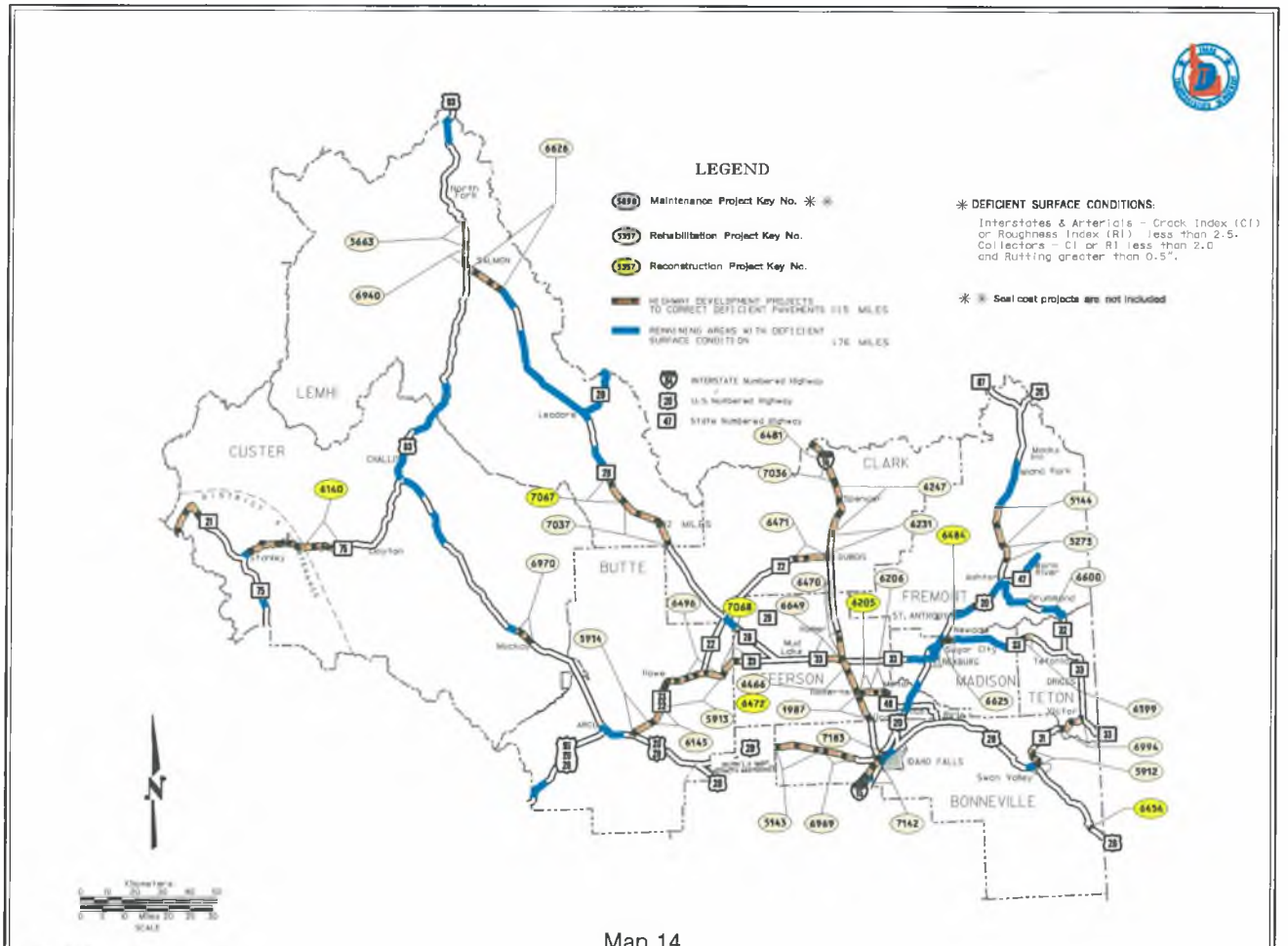
DISTRICT 5
Programmed Projects vs. Pavement Deficiencies
FY 1998 - 2002



Map 13

Brent L. Frank, District Engineer - Phone (208) 239-3300
PO Box 4700, Pocatello ID 83205-4700

DISTRICT 6
Programmed Projects vs. Pavement Deficiencies
FY 1998 - 2002



Map 14

Jim Richard, District Engineer - Phone (208) 745-7781
PO Box 97, Rigby ID 83442-0097

Section 5
SEAL COATS

A typical seal-coat project on a rural Idaho highway.

Seal Coats are an important part of the department's preventative-maintenance program. Preventative maintenance slows the rate of pavement deterioration which increases the service life of our highway system. Seal coats help protect our pavements by reducing damage caused by oxidation and moisture and improve skid resistance.

Figures 19 and 20 provide a five-year look at seal coats from a statewide perspective. Centerline and lane miles of seal-coat projects are tabulated for years 1993 through 1997.

Figure 21 shows the five-year average of lane miles seal coated and the percentage of lane miles seal coated by district.

Figures 22 through 27 on page page 36 contain charts showing the seal-coat work from 1993 to 1997 in each of ITD's six districts.

- District 2 has the highest "percentage" of lane miles seal coated annually (15% or 212 lane miles).
- District 6 seal coats more actual lane miles annually that any other district (an annual average of 322 lane miles or 14.2%).

STATEWIDE FIVE-YEAR SEALCOAT HISTORY

(1993 - 1997)

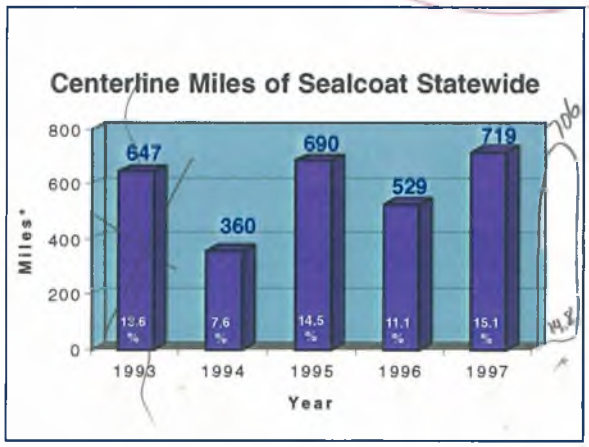


Figure 19.

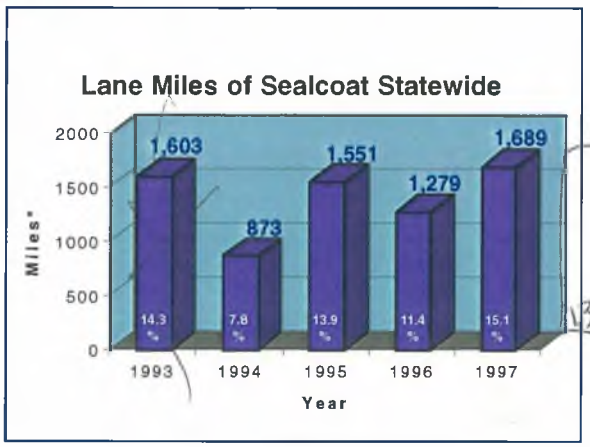


Figure 20.

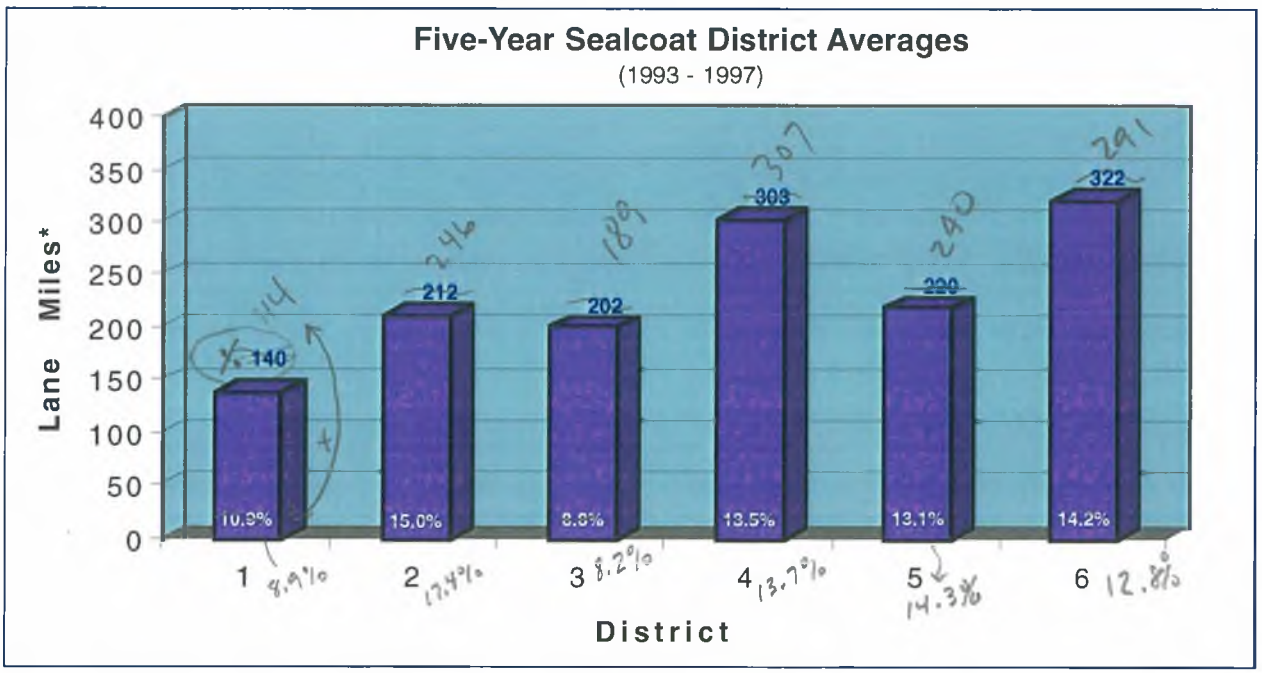
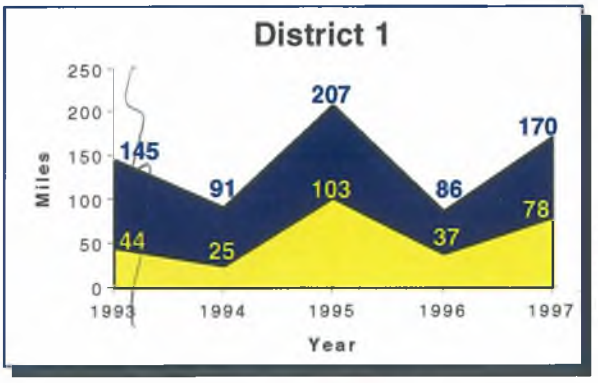


Figure 21.

* Percentages reflect miles of asphalt pavement only, and do not include other surface types.

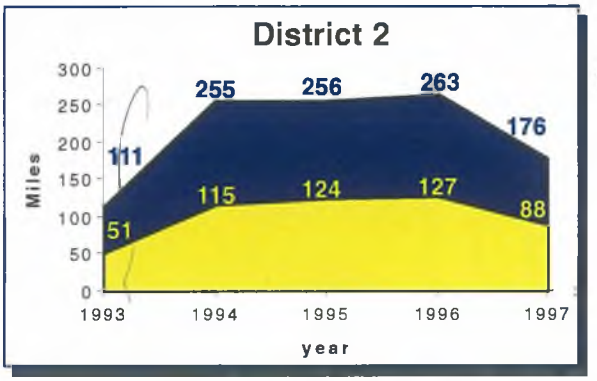
FIVE-YEAR SEALCOAT HISTORY BY DISTRICT

(1993 - 1997)



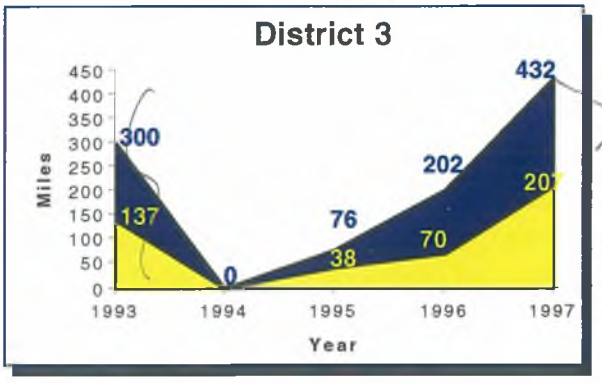
5-Year Lane-Mile Average = 140 (10.9% of district total)

165.2



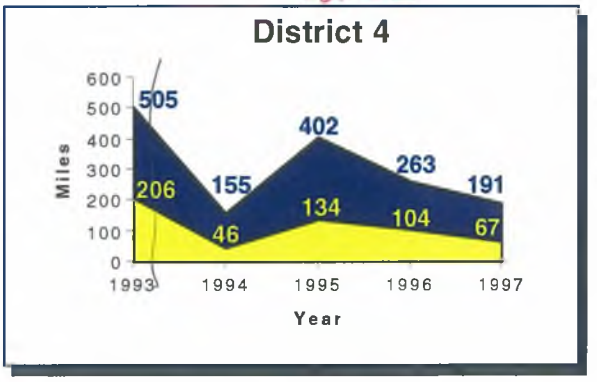
5-Year Lane-Mile Average = 212 (15.0% of district total)

364



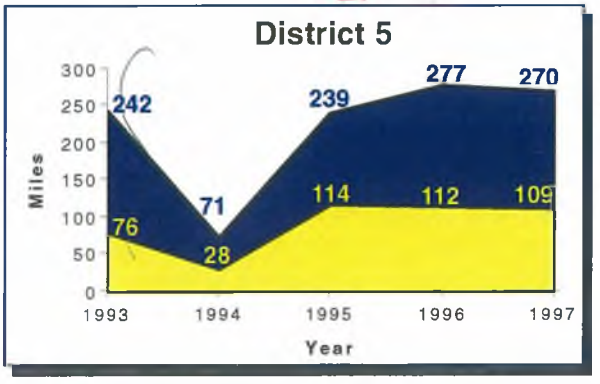
5-Year Lane-Mile Average = 202 (8.8% of district total)

275



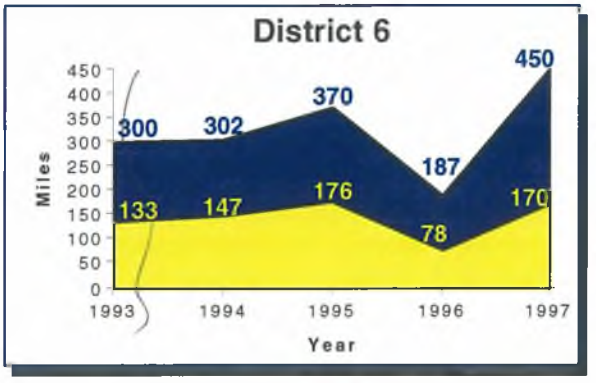
5-Year Lane-Mile Average = 303 (13.5% of district total)

339.2



5-Year Lane-Mile Average = 220 (13.1% of district total)

340.6



5-Year Lane-Mile Average = 322 (14.2% of district total)

419.2

Lane Miles
Centerline Miles

Figures 22 through 27.

Section 6
SUMMARY

MAINTENANCE, REHABILITATION, AND RECONSTRUCTION

Idaho is making significant progress in the reduction of pavement deficiencies on the State Highway System. Pavements that are considered deficient have declined from nearly 40% in 1993 to 21% projected for 1998.

This reduction in deficiencies can be attributed to:

- **Maintenance:** Seal coats and other activities slow the rate of deterioration. The result of a strong maintenance program is that fewer deficiencies come on the system each year.

- **Rehabilitation:** The minor rehabilitation program has reduced pavement deficiencies. Under this program, pavements are resurfaced before they deteriorate to the point that reconstruction is necessary. The program allows us to keep our pavements in good condition.

- **Reconstruction:** When pavements have reached the end of their service life an effective reconstruction program is necessary.

Maintenance, rehabilitation, and reconstruction are all appropriate tools that need to be used at different times in the life of a pavement. It is important to select the proper tool to use at the appropriate time. Wise future project selections will allow Idaho to continue:

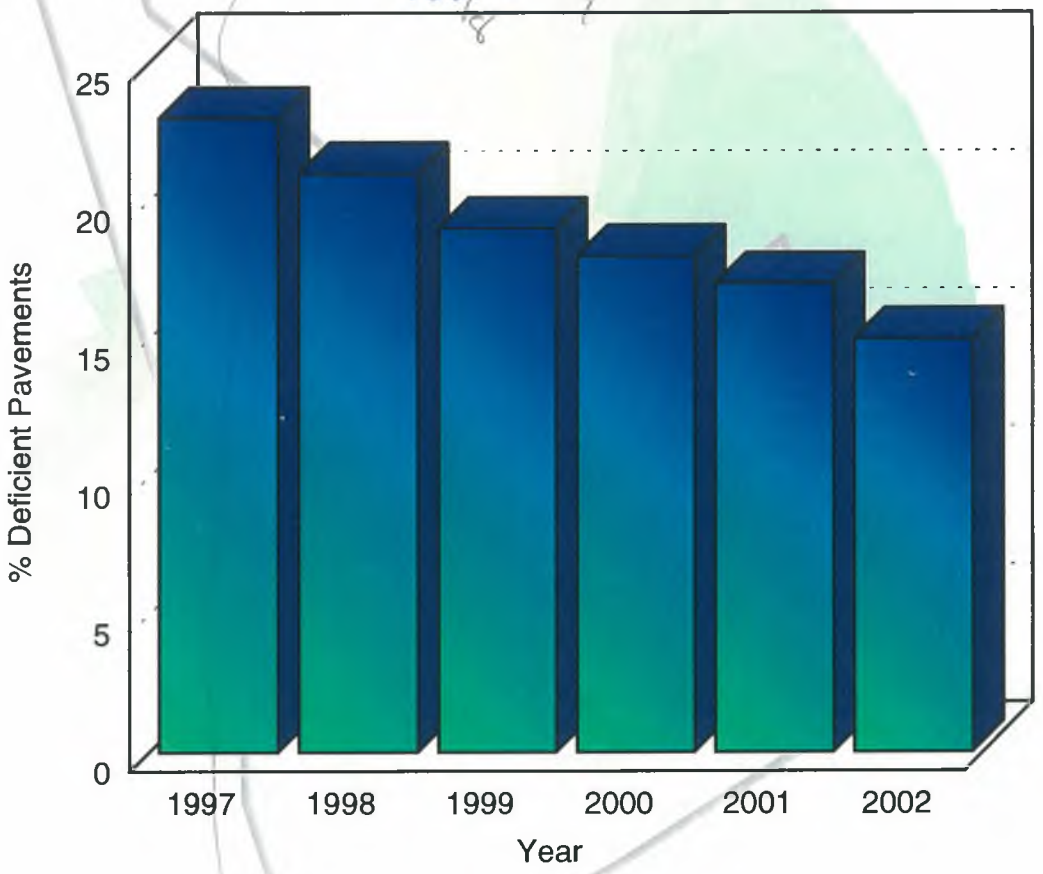
- Spending its limited roadway dollars wisely;

- Reducing roadway deficiencies and the rate at which roadways become deficient.

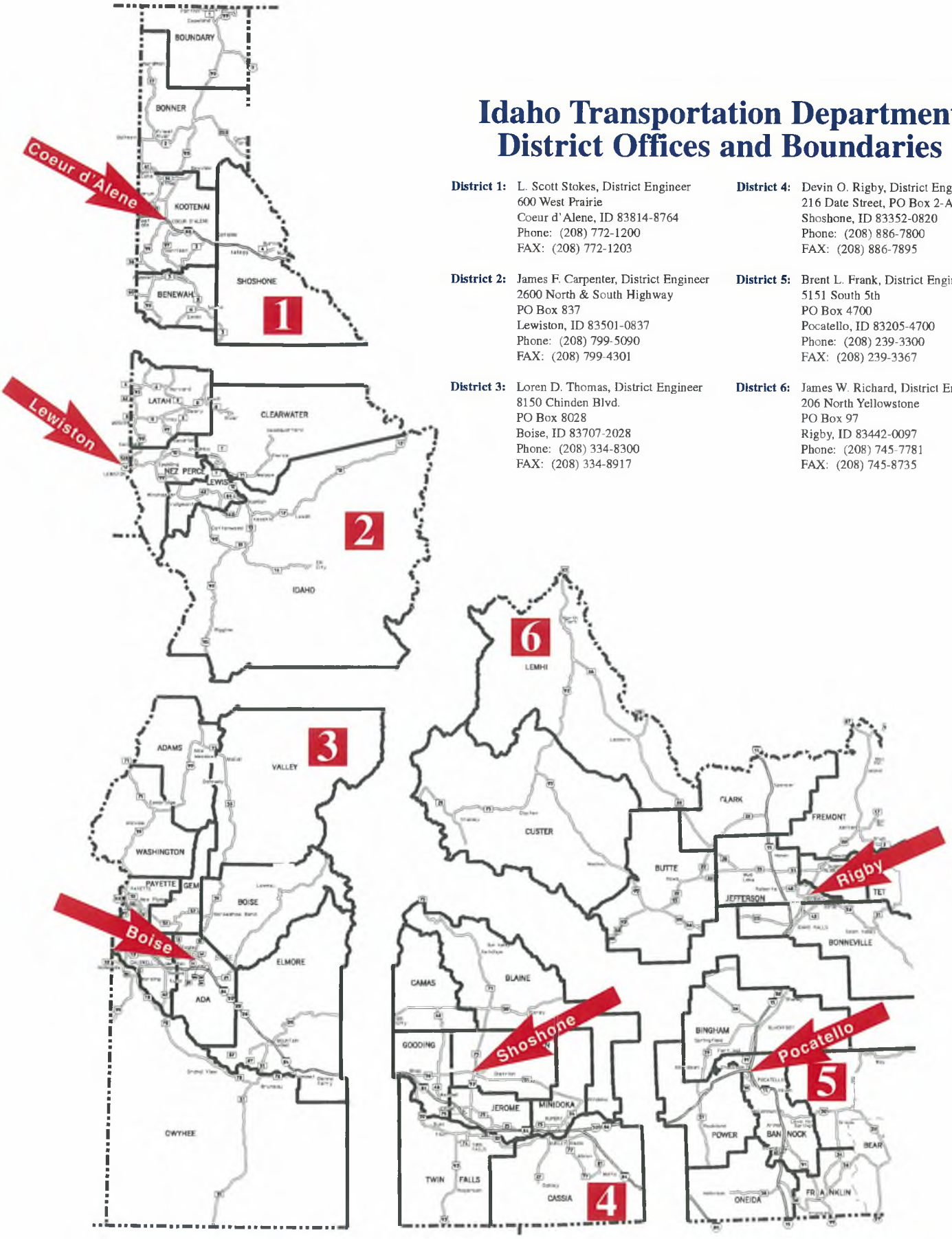
STATEWIDE PAVEMENT CONDITION PROJECTION

Condition Based on Cracking and Roughness Index

1997 - 2002



Idaho Transportation Department District Offices and Boundaries



District 1: L. Scott Stokes, District Engineer
600 West Prairie
Coeur d'Alene, ID 83814-8764
Phone: (208) 772-1200
FAX: (208) 772-1203

District 2: James F. Carpenter, District Engineer
2600 North & South Highway
PO Box 837
Lewiston, ID 83501-0837
Phone: (208) 799-5090
FAX: (208) 799-4301

District 3: Loren D. Thomas, District Engineer
8150 Chinden Blvd.
PO Box 8028
Boise, ID 83707-2028
Phone: (208) 334-8300
FAX: (208) 334-8917

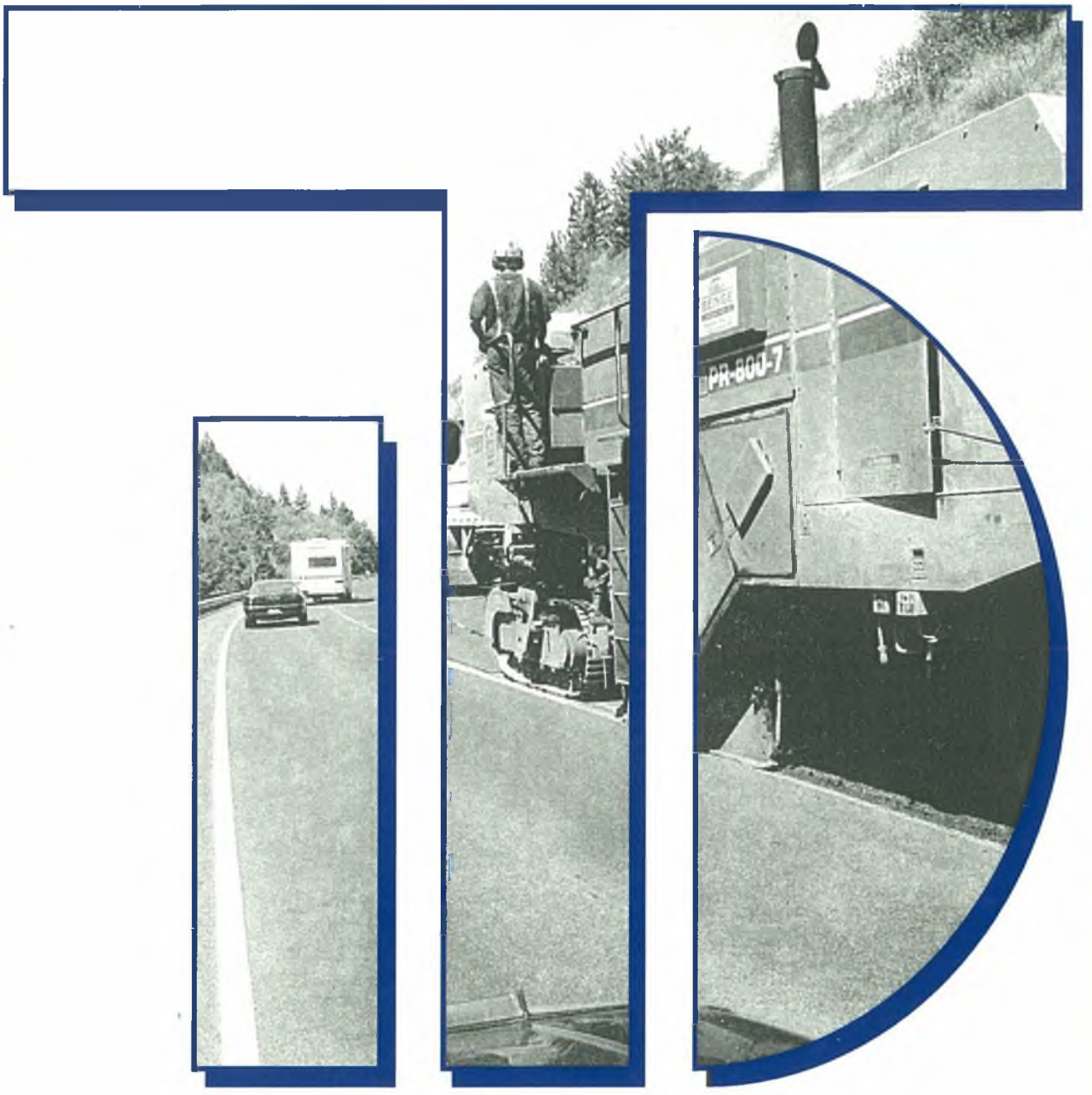
District 4: Devin O. Rigby, District Engineer
216 Date Street, PO Box 2-A
Shoshone, ID 83352-0820
Phone: (208) 886-7800
FAX: (208) 886-7895

District 5: Brent L. Frank, District Engineer
5151 South 5th
PO Box 4700
Pocatello, ID 83205-4700
Phone: (208) 239-3300
FAX: (208) 239-3367

District 6: James W. Richard, District Engineer
206 North Yellowstone
PO Box 97
Rigby, ID 83442-0097
Phone: (208) 745-7781
FAX: (208) 745-8735

NOTES

1 Diane Hodson
2 Ann Lenz
3 Jean Turk
4 Joyce Novak
5. Sue Roberts
6. Chris Atwood



Pavement Management System