Maintenance Quality Evaluation FY '88

Iowa Department of Transportation

Iowa Department of Transportation
Highway Division
Office of Maintenance

Maintenance Quality Survey Program September to October, 1988

Survey Team
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By
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Introduction

The Maintenance Quality Survey Program is a subjective evaluation of Iowa's Primary and Interstate Highway System. The purpose of this program is to evaluate the quality of the maintenance being performed on these highways.

The survey was conducted from September 12, 1988 through October 28, 1988. The survey team consisted of two people, an Office of Maintenance Representative and a Highway Engineer Trainee. For consistency in the results, the team remained the same throughout the entire survey period.

The 1988 survey consisted of a sample size which included approximately 10% of the state's highways. A computer program was written to query the Primroad data base and select one mile test sections. Three assumptions were used in writing the program. First, each cost center must be represented. Second, each maintenance surface type within each cost center must be represented. Third, no two consecutive randomly selected mileposts should be less than four miles apart. All urban and institutional roads were omitted from the survey.

The information contained in this survey is intended to be used only as a comparison of the quality of highway maintenance between residencies and districts. When comparing results, remember that the majority of our state highways are receiving adequate maintenance and that the percentages in this evaluation are not meant to be read as absolute values, but for use in comparison.

The rating system and evaluation form were the same as the previous year's. The use of the same form as last year allows for comparison between 1987 and 1988. Care should be taken when comparing the two years because the information obtained from this survey is subjective. Any year to year differences may not reflect a change in maintenance level but a change in survey personnel. The survey of each test mile section is broken down into four main areas. Each area is given a weighted value which is then split up into sub-areas which are rated on a 1 to 10 scale with 10 being the highest rating. The areas and sub-areas with their relative weights are as follows:

1.	**Pavement Surface**		**40%**
	a.	Patching	35%
	b.	Joint and Crack Filling or Sealing	35%
	c.	Surface Restoration	30%
2.	**Shoulder Maintenance**		**30%**
	a.	Surface Condition	40%
	b.	Pavement Edge Drop-off and Joint	40%
	c.	Slope	20%
3.	**Traffic Services**		**20%**
	a.	Signs and Guardrail	50%
	b.	Markings	50%
4.	**Roadside**		**10%**
	a.	Median and ROW (Weeds, Trees and Brush Control)	40%
	b.	Roadside Ditch Drainage and Litter Control	30%
	c.	Shoulder, Median and ROW Mowing	30%

With respect to accuracy, it was considered of primary importance to keep the scoring consistent statewide (i.e. what was considered as a bent post in District 3 would also be considered the same in District 6.) All efforts were made to keep scoring consistent throughout the entire state.

The final rating is obtained by taking the rating for each sub-area, which was rated by each team member, and multiplying it by the given weight. These numbers are then added together to give a rating for each area. The area ratings are then multiplied by each areas given weight and added together to obtain a composite maintenance quality level for the test mile section. The two raters' scores are averaged to make the rating as objective as possible.

There were five different surface types evaluated in the survey:

1. Unit 10 - Portland Cement Concrete Pavement
2. Unit 30 - Asphalt Inverted Penetration Surface without Stabilized Base
3. Unit 40 - Asphalt Inverted Penetration Surface with Stabilized Base
4. Unit 80 - Asphalt Mat Surfaced Portland Cement Concrete
5. Unit 90 - Asphalt Pavement (Asphalt surface on flexible base and having a total thickness of eight inches or more.)

Upon completion of the field inspection the data was compiled, tabulated and graphed for ease of comparison between the residencies and the districts. The graphs and tables represent each unit type and the major areas which were considered in the survey. Units 30 and 40 pavements are not graphed because not all residencies have these types of pavements for evaluation. The report also includes cost per lane mile information by district and residency for FY 88.

As previously stated, this survey is not intended to be used as an absolute scale of maintenance levels from year to year. Factors such as rating personnel, service level, age of road, and weather are not taken into account by the rating system. Each factor could effect the outcome of the survey.

In general, the maintenance garages are doing an adequate job of maintaining the state's highways. This survey only shows possible areas of improvement. Any differences in the maintenance rating between 1987 and 1988 could be just as easily attributed to the severity of the weather or the change in evaluating personnel as to a change in maintenance level.

Order of Completion

(From September 12, 1988 to October 28, 1988)

	Residency	Date Completed
1.	Rock Rapids	9/19/88
2.	Sioux City	9/20/88
3.	Storm Lake	9/22/88
4.	Denison	9/22/88
5.	Council Bluffs	9/27/88
6.	Shenandoah	9/29/88
7.	Forest City	10/03/88
8.	Decorah	10/05/88
9.	Mason City	10/08/88
10.	Waterloo	10/11/88
11.	Dubuque	10/11/88
12.	Cedar Rapids	10/13/88
13.	Davenport	10/18/88
14.	Iowa City	10/18/88
15.	Washington	10/25/88
16.	Fairfield	10/25/88
17.	Chariton	10/26/88
18.	Ottumwa	10/27/88
19.	Grinnell	10/27/88
20.	Fort Dodge	10/27/88
21.	Ames	10/28/88
22.	Atlantic	10/28/88
23.	Creston	10/28/88
24.	Des Moines	10/28/88

Maintenance Quality Comparison

Centerline Miles Surveyed
Residency Totals

Residency 11

Surface Type	Area					Residency
	Grundy Center	Iowa Falls	Marshall-town	Ames	Colo	
10	1	--	5	8	1	15
30	--	--	--	--	--	--
40	--	1	--	1	--	2
80	4	5	6	4	4	23
90	--	1	2	1	--	4
Total	5	7	13	14	5	44
%	8.0	9.9	10.9	16.5	9.9	11.3

Residency 12

Surface Type	Area						Residency
	Boone	Jefferson	Fort Dodge	Webster City	Williams	Gowrie	
10	6	6	3	2	6	1	24
30	--	--	--	--	--	--	--
40	--	--	--	--	--	--	--
80	2	1	3	3	2	1	12
90	1	1	1	2	1	4	10
Total	9	8	7	7	9	6	46
%	11.3	9.2	8.8	11.2	9.5	8.5	9.7

Residency 13

Surface Type	Area						Residency
	Newton	Grinnell	Tama	Colfax	Traer	Malcom	
10	4	2	4	--	4	6	20
30	--	--	--	--	--	--	--
40	--	--	--	--	--	--	--
80	--	1	1	2	--	4	8
90	3	4	--	1	1	2	11
Total	7	7	5	3	5	12	39
%	9.8	9.6	9.0	4.9	7.6	14.9	9.6

Residency 14

Surface Type	Area			Residency
	Altoona	Des Moines West	Des Moines North	
10	3	1	5	9
30	--	--	--	--
40	--	--	--	--
80	2	--	6	8
90	--	--	1	1
Total	5	1	12	18
%	7.3	1.1	12.2	6.9

Centerline Miles Surveyed
Residency Totals

Residency 21

Surface Type	Area						Residency
	Mason City	Charles City	Latimer	Osage	Hanlon-town	Hampton	
10	2	--	4	1	6	1	14
30	--	--	--	--	--	--	--
40	--	--	--	--	--	--	--
80	3	6	1	3	3	2	18
90	3	1	1	2	--	--	7
Total	8	7	6	6	9	3	39
%	11.6	11.2	12.5	8.0	9.5	8.7	10.2

Residency 22

Surface Type	Area						Residency
	Esther-ville	Garner	Gerled	Algona	Forest City	Clarion	
10	--	1	1	1	1	1	5
30	--	--	--	--	--	--	--
40	--	--	--	--	--	--	--
80	3	5	4	1	5	8	26
90	2	1	--	4	--	1	8
Total	5	7	5	6	6	10	39
%	8.3	9.5	12.5	6.4	9.5	11.6	9.4

Residency 23

Surface Type	Area					Residency
	Waterloo	Waverly	Allison	New Hampton	Parkersburg	
10	6	1	--	1	--	8
30	--	--	--	--	--	--
40	--	--	--	--	--	--
80	4	7	2	5	2	20
90	2	1	1	1	--	5
Total	12	9	3	7	2	33
%	8.0	10.0	5.8	9.6	6.2	8.2

Residency 24

Surface Type	Area						Residency
	Waukon	Elkader	West Union	Cresco	Decorah	Oelwein	
10	2	4	1	4	4	2	17
30	--	--	--	--	--	--	
40	--	--	--	--	--	--	
80	1	1	2	3	1	5	13
90	4	1	3	1	1	2	12
Total	7	6	6	8	6	9	42
%	7.2	6.2	6.3	11.6	7.2	16.3	8.4

Centerline Miles Surveyed
Residency Totals

Residency 31

Surface Type	Area							Residency
	Cherokee	Le Mars	Akron	SC Hamilton	SC Leeds	Correction-ville	Sloan	
10	1	--	1	1	4	3	4	14
30	--	--	1	--	--	--	--	2
40	--	--	--	--	--	--	--	--
80	3	4	1	--	3	1	3	15
90	1	1	2	--	2	5	--	11
Total	5	5	5	1	9	9	9	41
%	7.1	6.6	8.4	4.3	13.4	12.5	14.6	9.5

Residency 32

Surface Type	Area						Residency
	Denison	Missouri Valley	Ida Grove	Onawa	Mapletown	Soldier	
10	5	1	--	5	3	1	15
30	--	--	--	--	--	--	--
40	--	--	--	--	--	--	--
80	4	8	2	1	1	--	16
90	1	2	--	3	--	2	8
Total	10	11	2	9	4	3	39
%	9.9	10	3.7	13.7	12.4	9.0	9.9

Residency 33

Surface Type	Area						Residency
	Storm Lake	Rockwell City	Carroll	Emmets-burg	Poca-hontas	Sac City	
10	3	1	3	6	5	--	18
30	--	--	--	--	--	--	--
40	--	--	--	--	--	--	--
80	1	1	3	4	7	5	21
90	1	--	2	1	3	1	8
Total	5	2	8	11	15	6	47
%	4.9	2.3	9.7	14.9	14.4	8.7	9.2

Residency 34

Surface Type	Area								Residency
	Spencer	Spirit Lake	Rock Rapids	Sheldon	Sibley	Alton	Paulina	Rock Valley	
10	1	4	--	--	1	3	2	--	11
30	--	1	--	--	--	--	--	--	--
40	--	--	--	--	--	--	--	--	--
80	5	1	5	1	10	2	1	5	28
90	--	1	--	1	--	--	2	--	4
Total	6	7	5	2	11	5	4	5	46
%	8.6	10.9	6.6	7.1	18.1	9.9	7.7	10.1	10.2

Centerline Miles Surveyed
Residency Totals

Residency 61

Surface Type	Area						Residency
	Urbana	Anamosa	Cedar Rapids	Blairstown	Marion	Wyoming	
10	6	1	2	1	3	1	14
30	--	--	--	1	--	--	1
40	--	--	--	--	--	--	--
80	2	7	2	2	3	--	16
90	1	2	1	1	--	4	9
Total	9	10	5	5	6	5	40
%	8.7	13.4	8.4	10.3	10.3	9.1	10.0

Residency 62

Surface Type	Area					Residency
	DeWitt	Davenport	Maquoketa	Clinton	Sabula	
10	8	--	--	1	2	11
30	--	--	--	--	--	--
40	--	--	--	--	--	--
80	4	2	2	5	2	15
90	--	--	6	--	2	8
Total	12	2	8	6	6	34
%	13.6	1.5	9.7	13.5	10.1	8.4

Residency 63

Surface Type	Area				Residency
	Indepen-dence	Manchester	Dubuque	Dyersville	
10	3	3	6	2	14
30	--	--	--	--	--
40	--	1	--	--	1
80	4	4	3	--	11
90	3	4	1	4	12
Total	10	12	10	6	38
%	10.2	12.8	10.1	7.9	10.4

Residency 64

Surface Type	Area				Residency
	Tipton	Williams-burg	Oakdale	Stanwood	
10	4	5	8	1	18
30	--	--	--	--	--
40	--	--	1	--	1
80	1	3	3	1	8
90	4	4	3	1	12
Total	9	12	15	3	39
%	14.6	11.4	9.7	8.3	10.9

Centerline Miles Surveyed
District and State

District 1 Totals

Surface Type	Miles Surveyed
10	68
30	--
40	2
80	51
90	26
Total	147
%	9.6

District 2 Totals

Surface Type	Miles Surveyed
10	44
30	--
40	--
80	77
90	32
Total	153
%	9.0

District 3 Totals

Surface Type	Miles Surveyed
10	58
30	2
40	--
80	82
90	31
Total	173
%	9.7

District 4 Totals

Surface Type	Miles Surveyed
10	56
30	2
40	1
80	56
90	36
Total	151
%	9.5

District 5 Totals

Surface Type	Miles Surveyed
10	66
30	2
40	3
80	67
90	38
Total	176
%	10.3

District 6 Totals

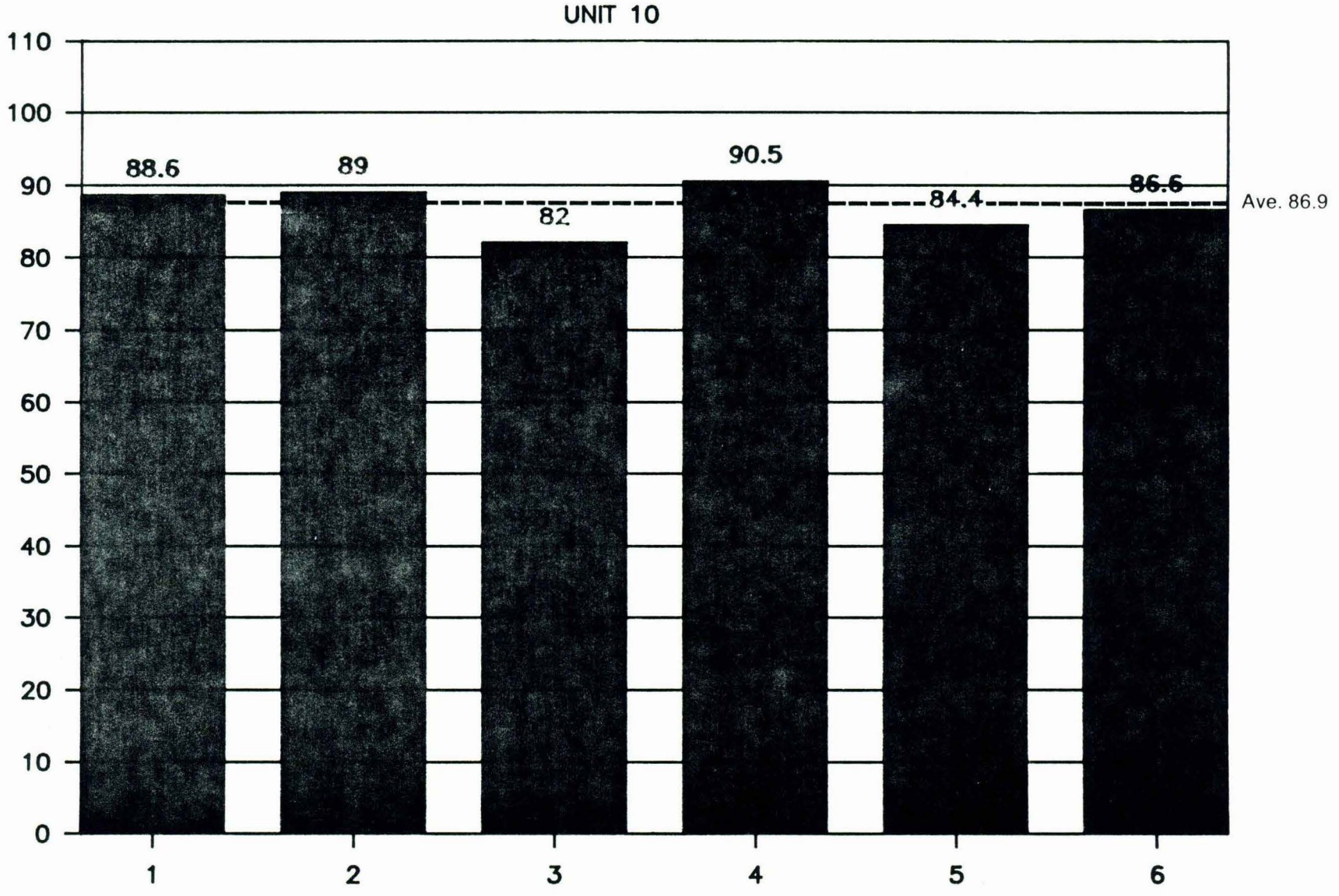
Surface Type	Miles Surveyed
10	57
30	1
40	2
80	50
90	41
Total	151
%	9.9

State Total

District	Miles Surveyed
1	147
2	153
3	173
4	151
5	176
6	151
Total	951
%	9.7

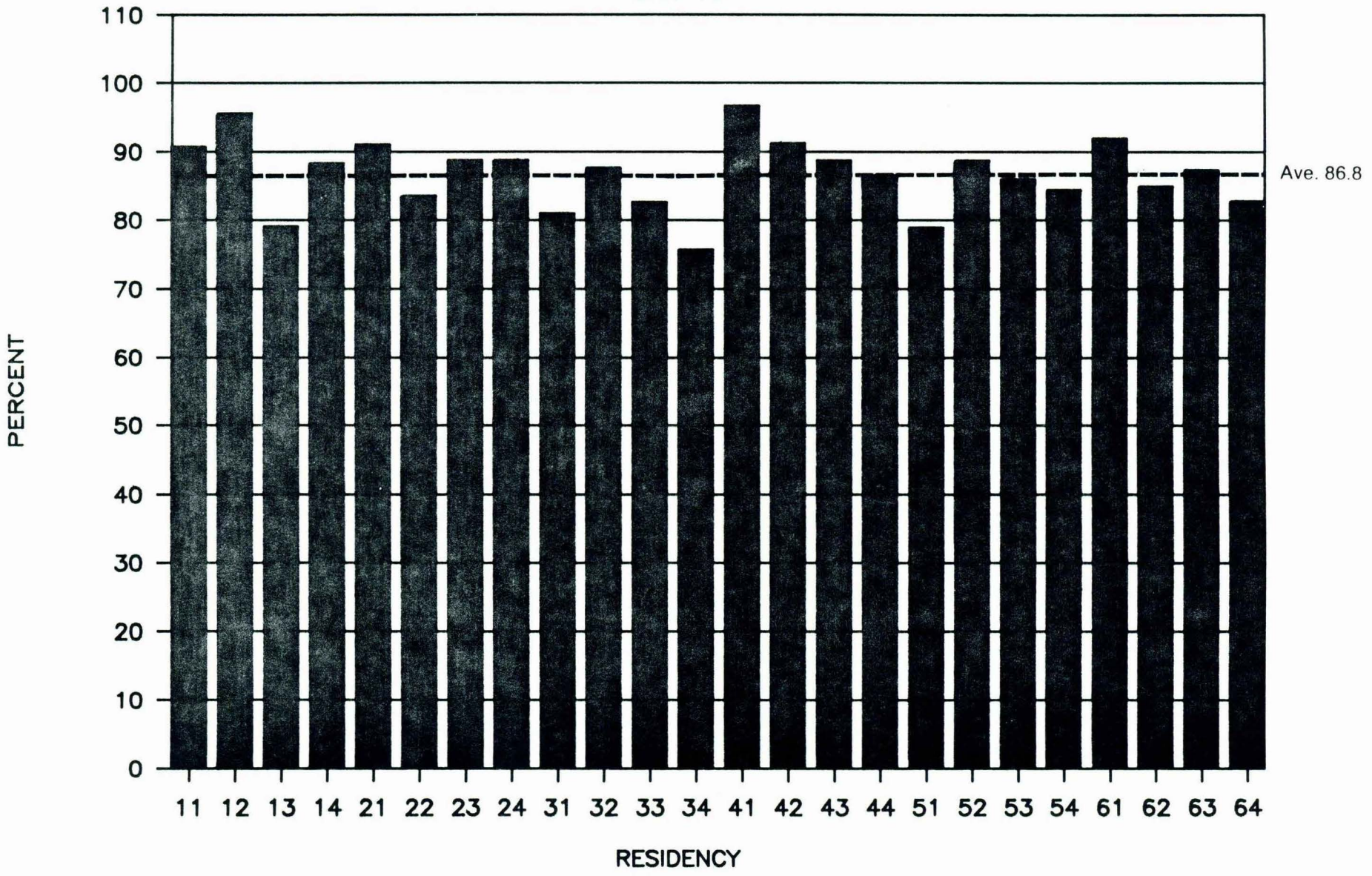
MAINTENANCE QUALITY COMPARISON

UNIT 10



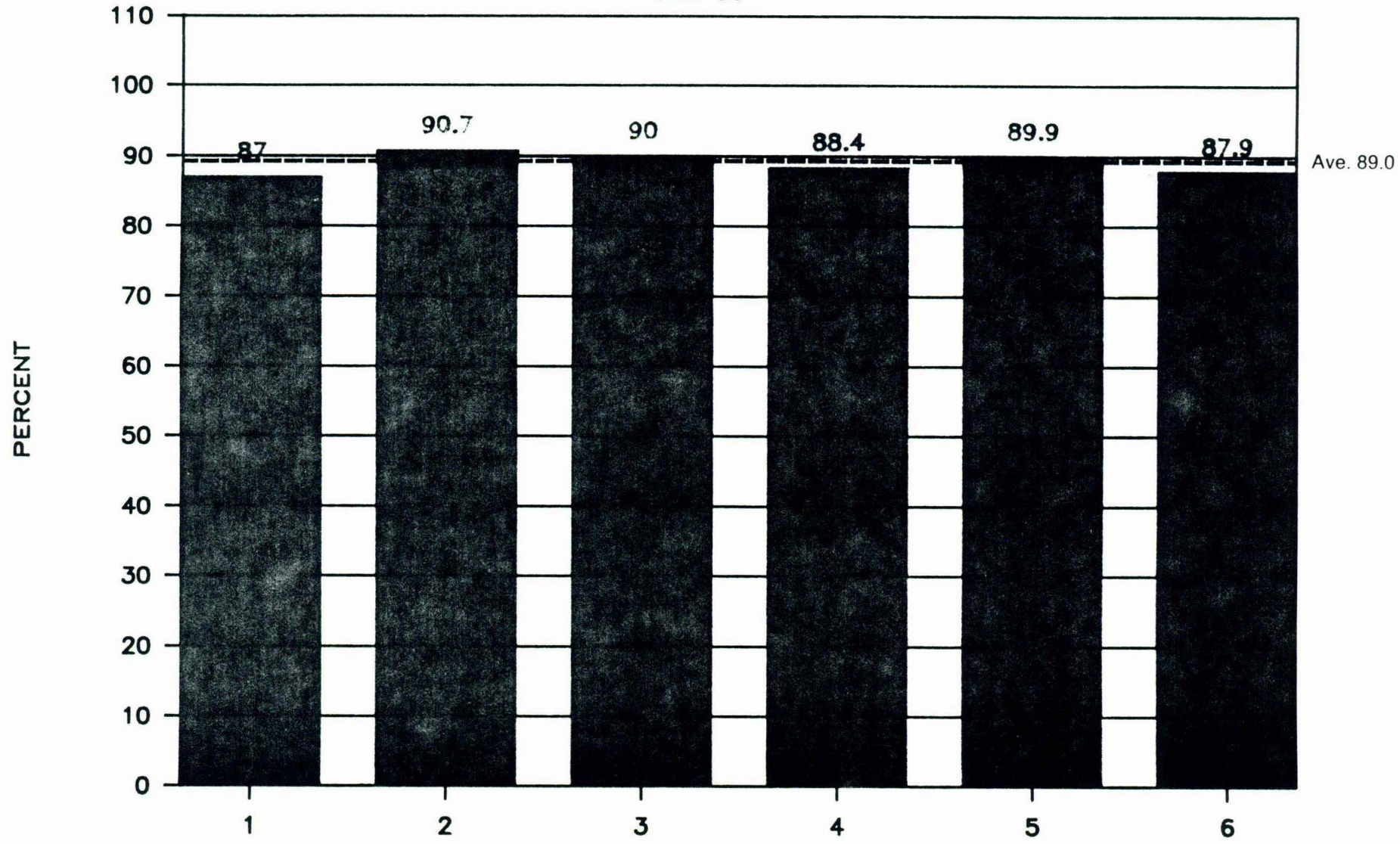
MAINTENANCE QUALITY COMPARISON

UNIT 10



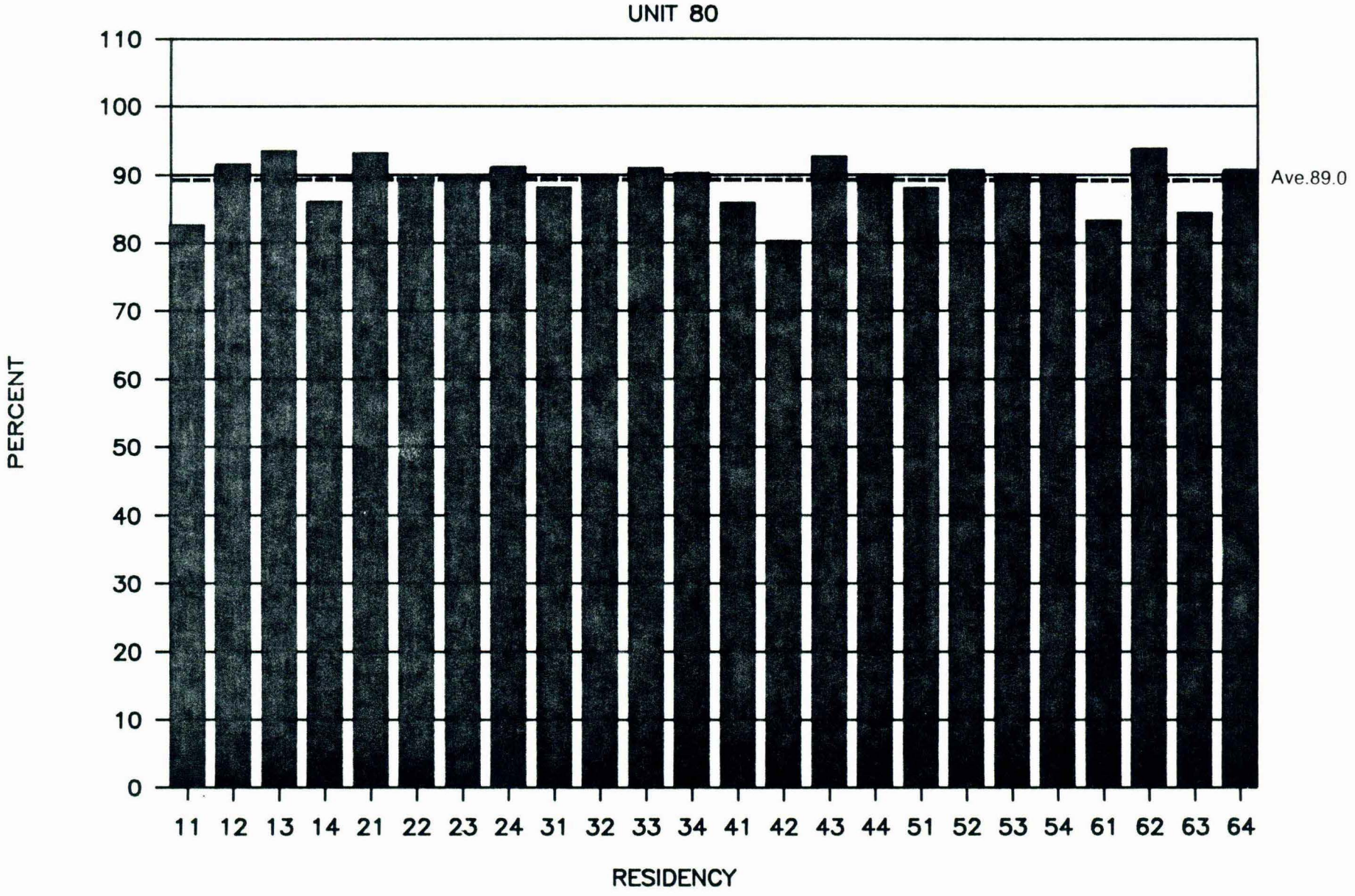
MAINTENANCE QUALITY COMPARISON

UNIT 80



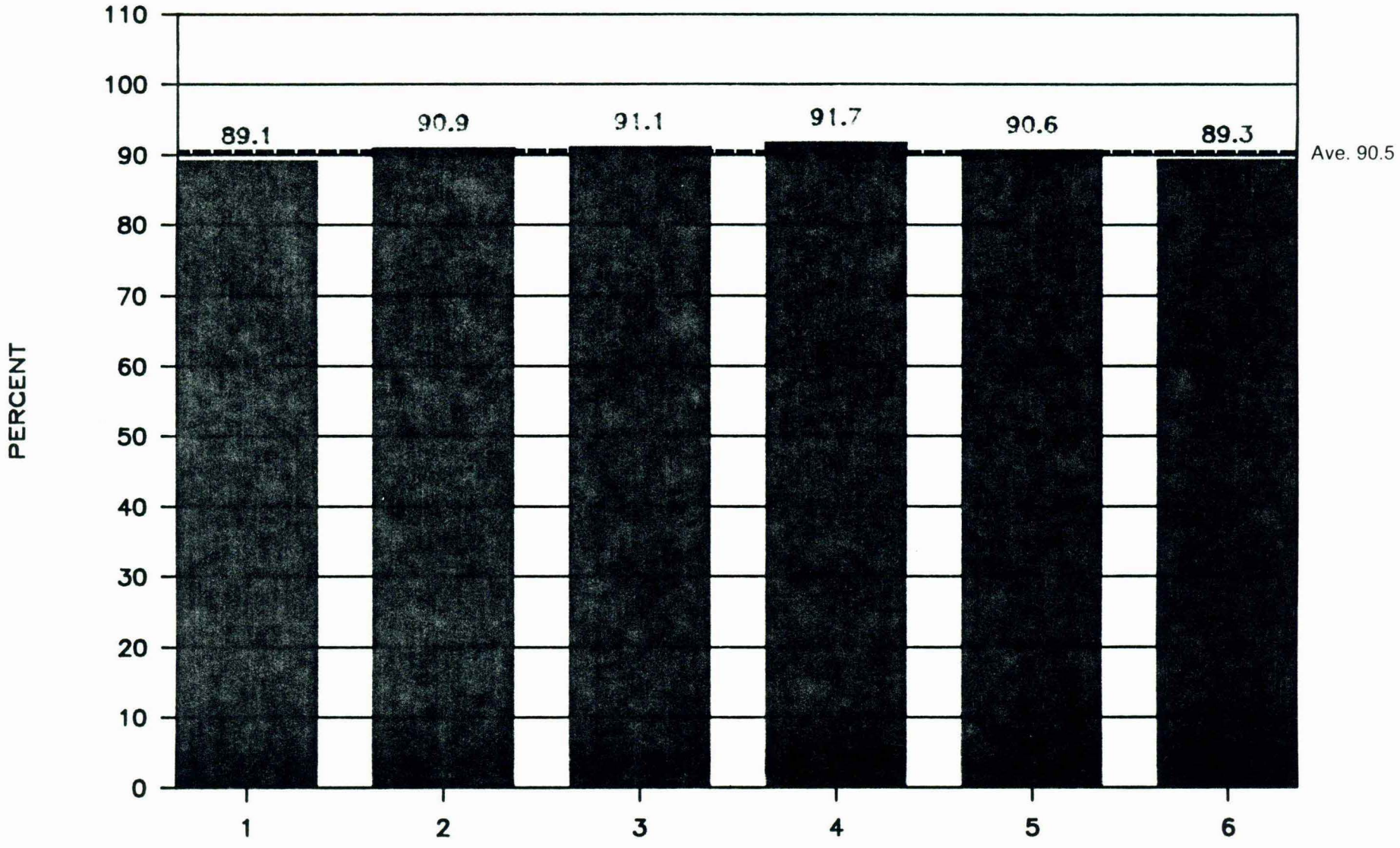
MAINTENANCE QUALITY COMPARISON

UNIT 80



MAINTENANCE QUALITY COMPARISON

UNIT 90



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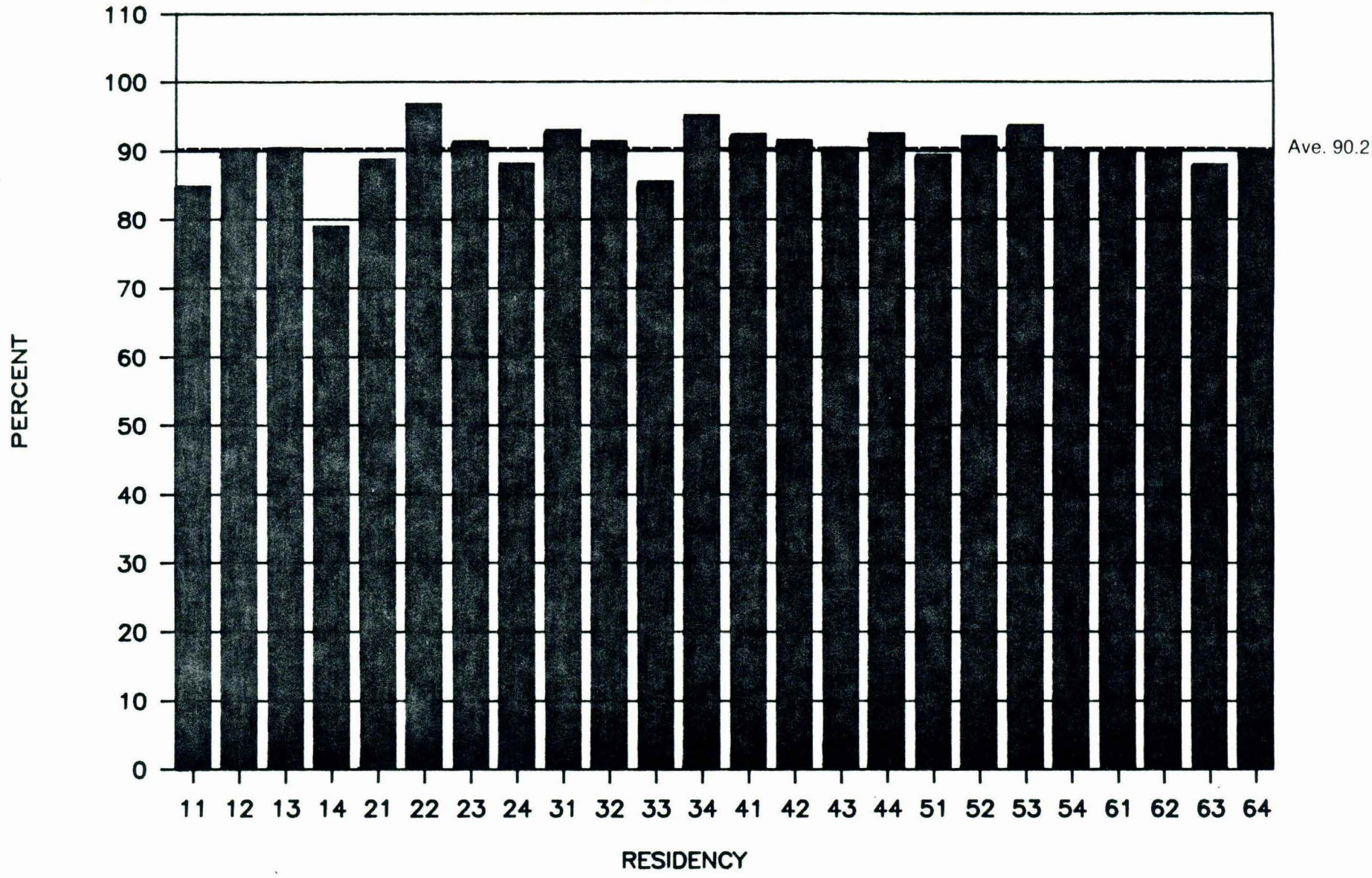
MAINTENANCE QUALITY COMPARISON

UNIT 90



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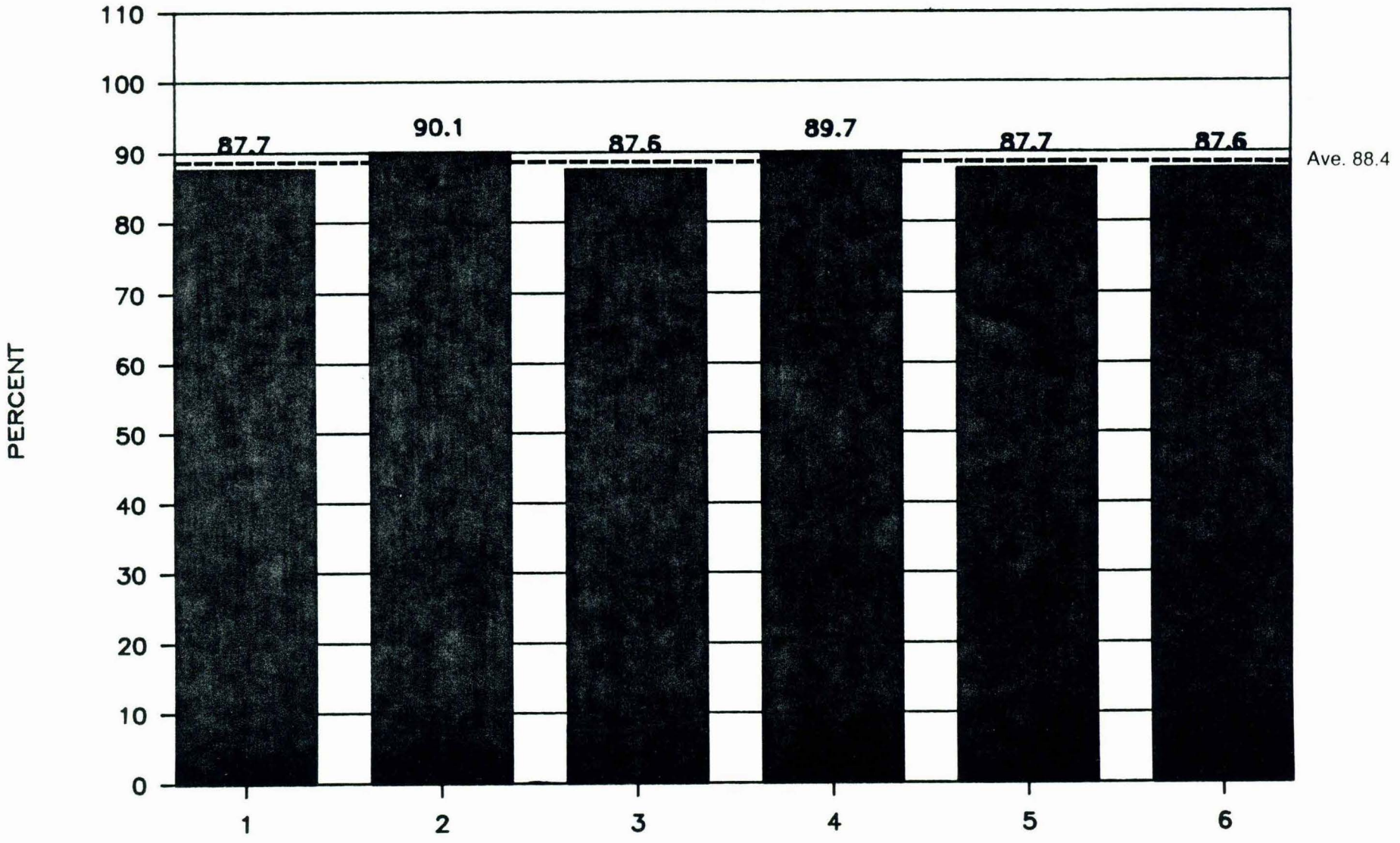
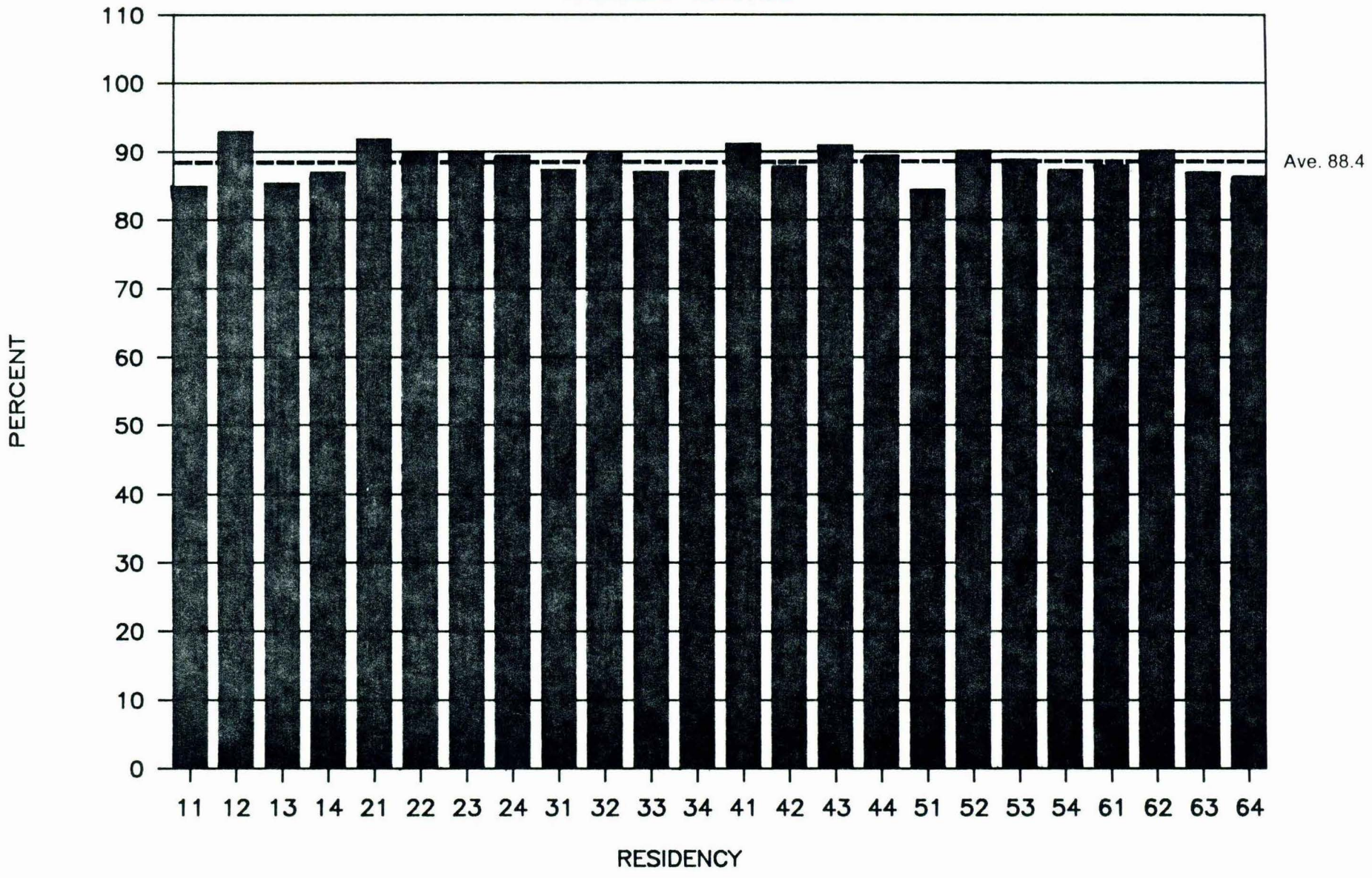
MAINTENANCE QUALITY COMPARISON

PAVEMENT SURFACE



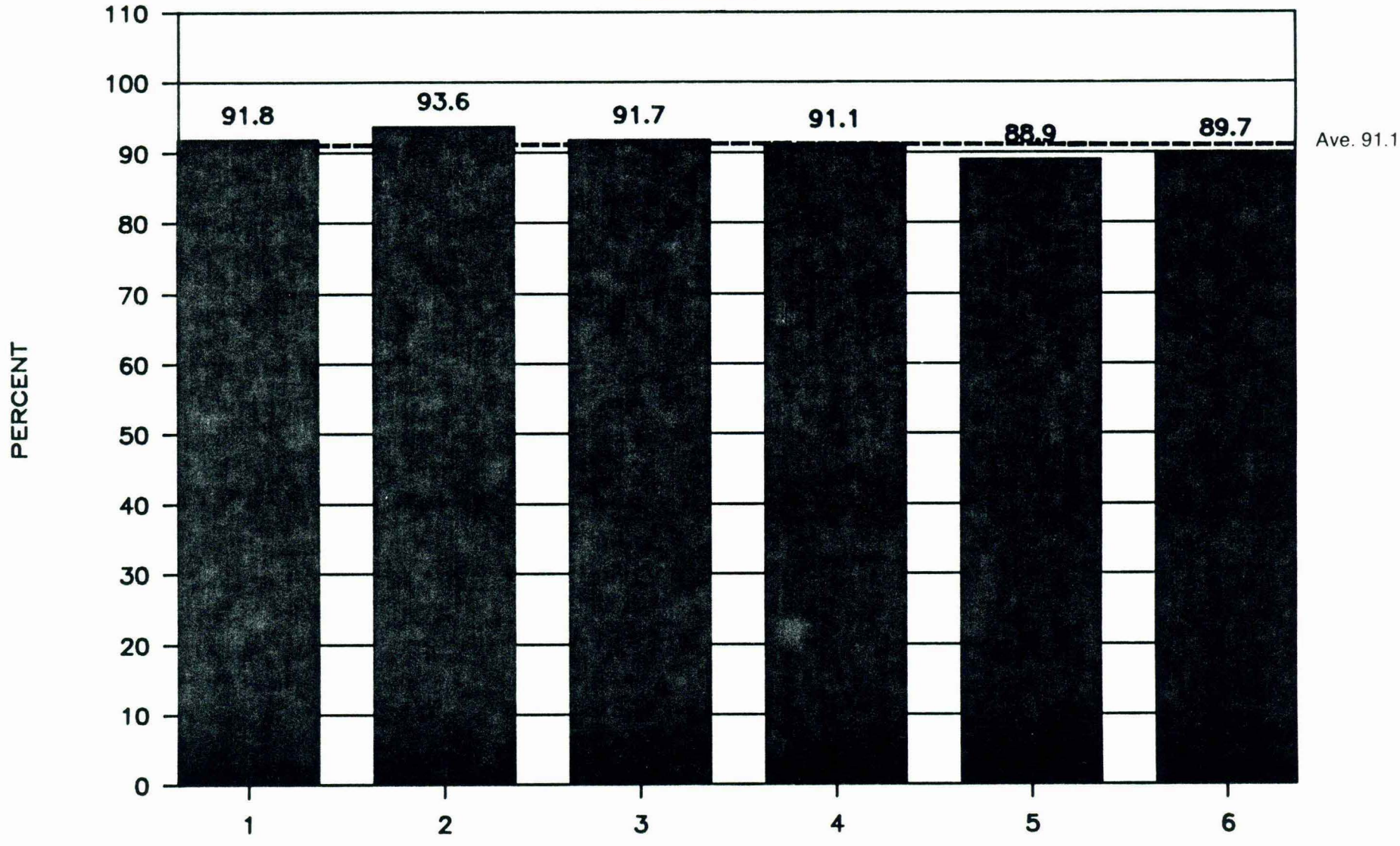
MAINTENANCE QUALITY COMPARISON

PAVEMENT SURFACE



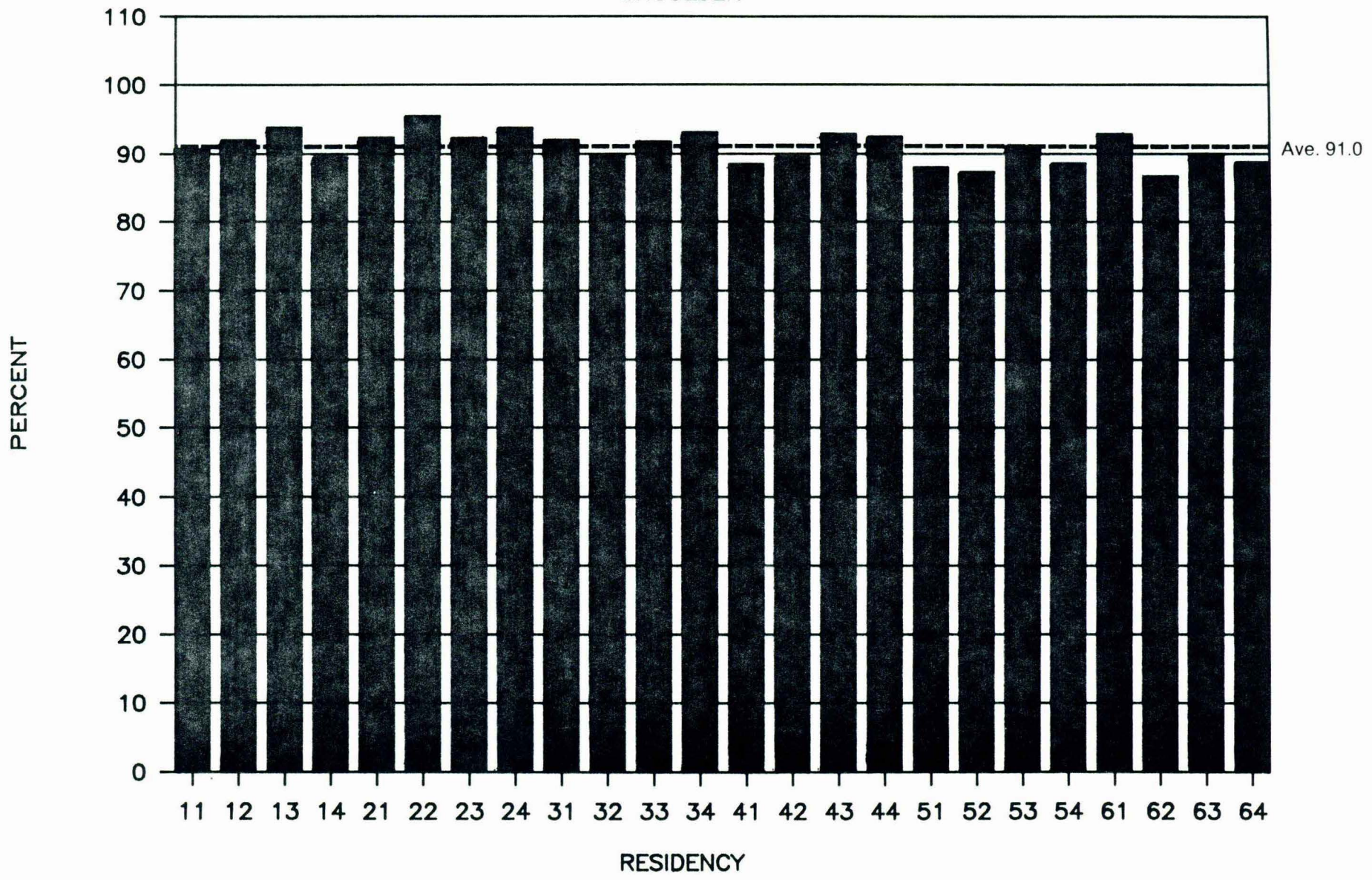
MAINTENANCE QUALITY COMPARISON

SHOULDER



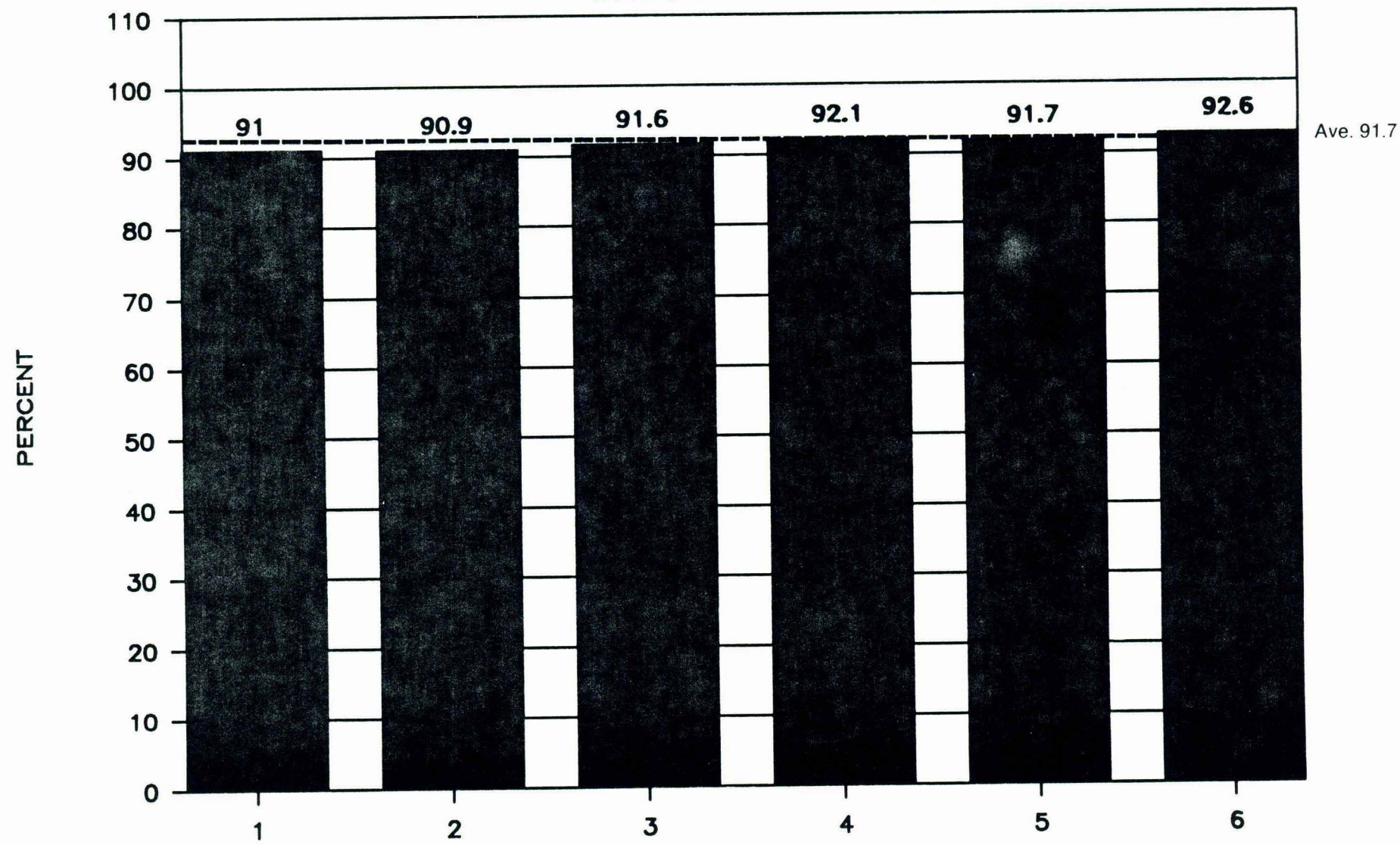
MAINTENANCE QUALITY COMPARISON

SHOULDER



MAINTENANCE QUALITY COMPARISON

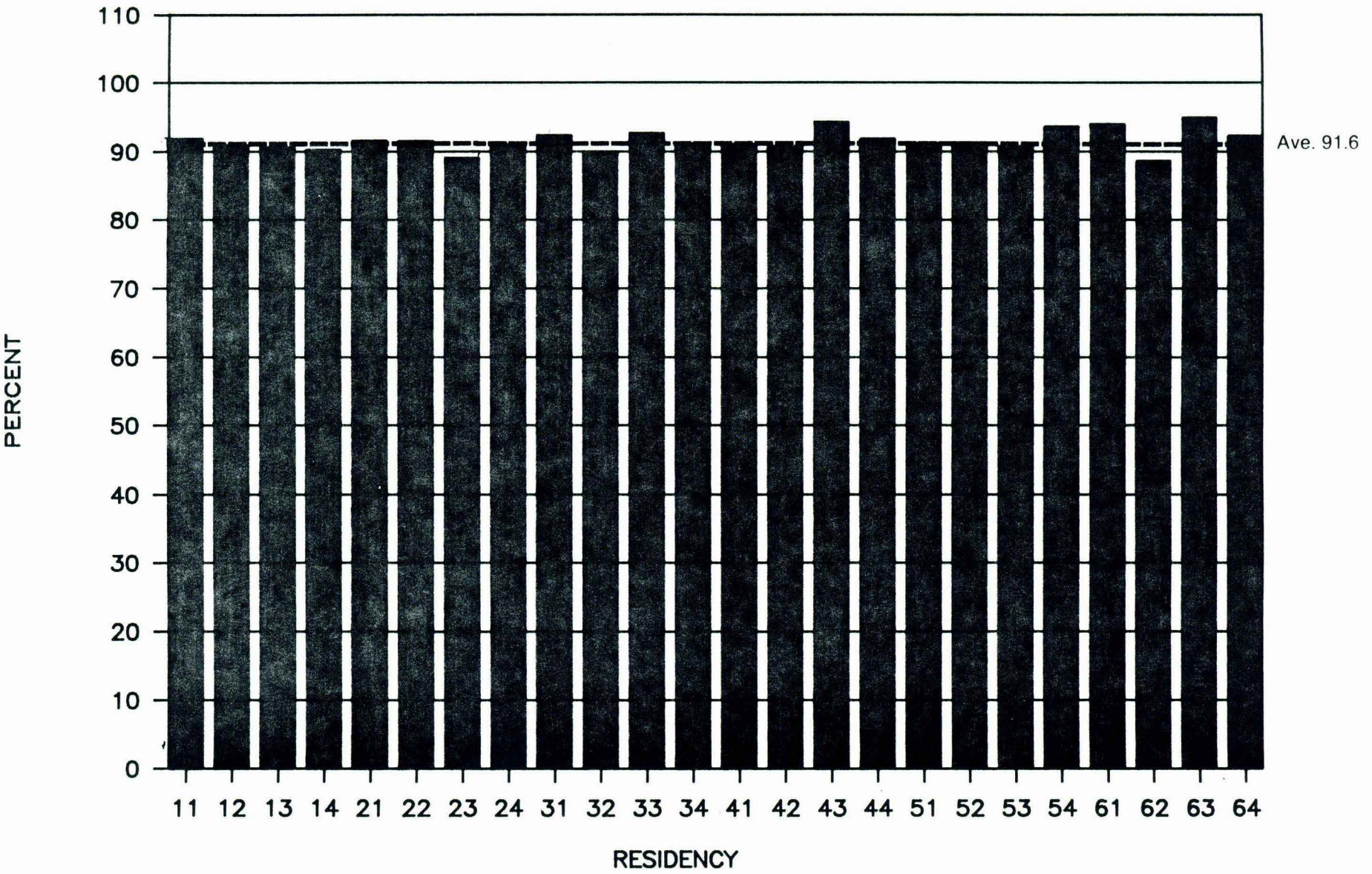
TRAFFIC SERVICES



DISTRICT

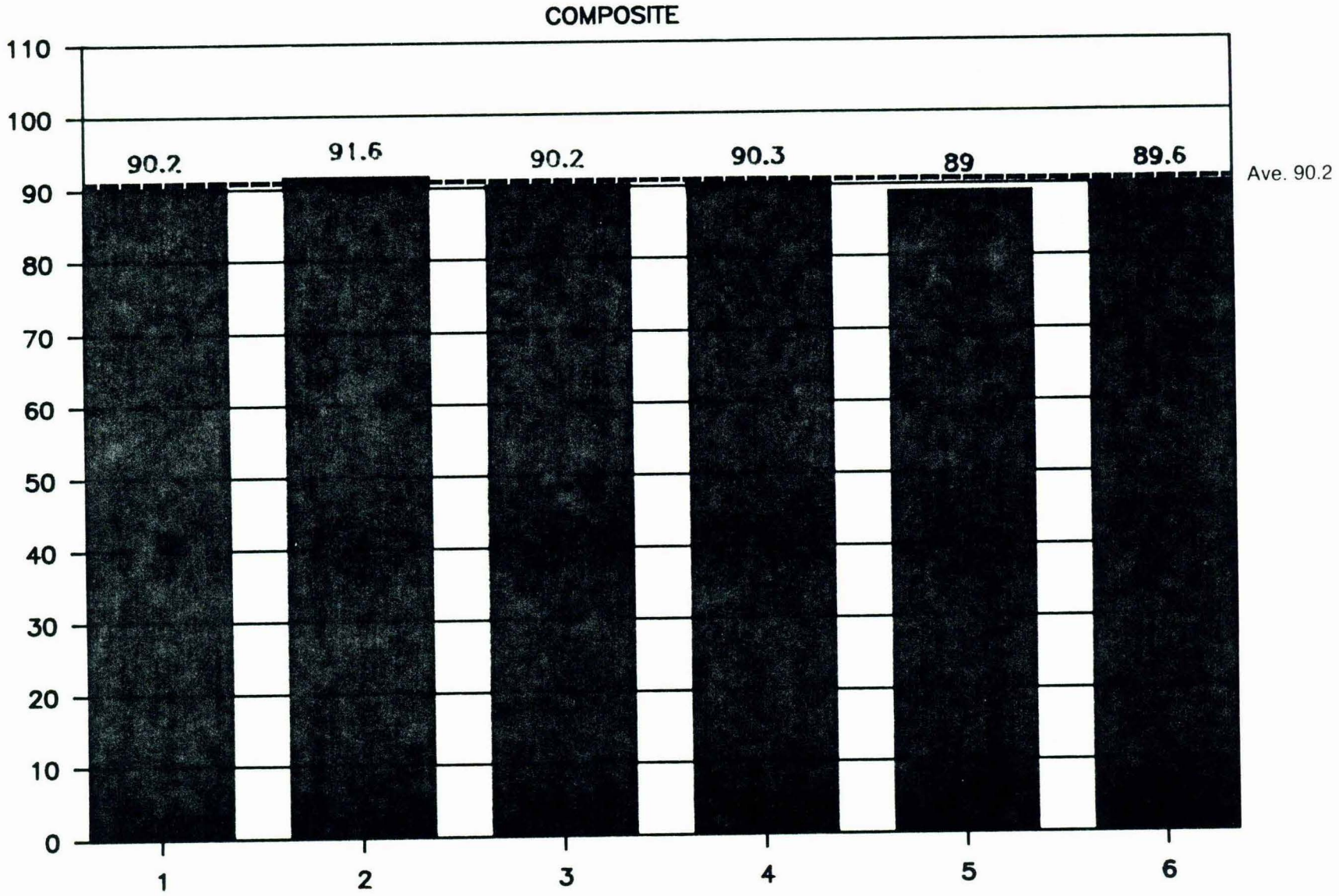
MAINTENANCE QUALITY COMPARISON

TRAFFIC SERVICES



MAINTENANCE QUALITY COMPARISON

COMPOSITE



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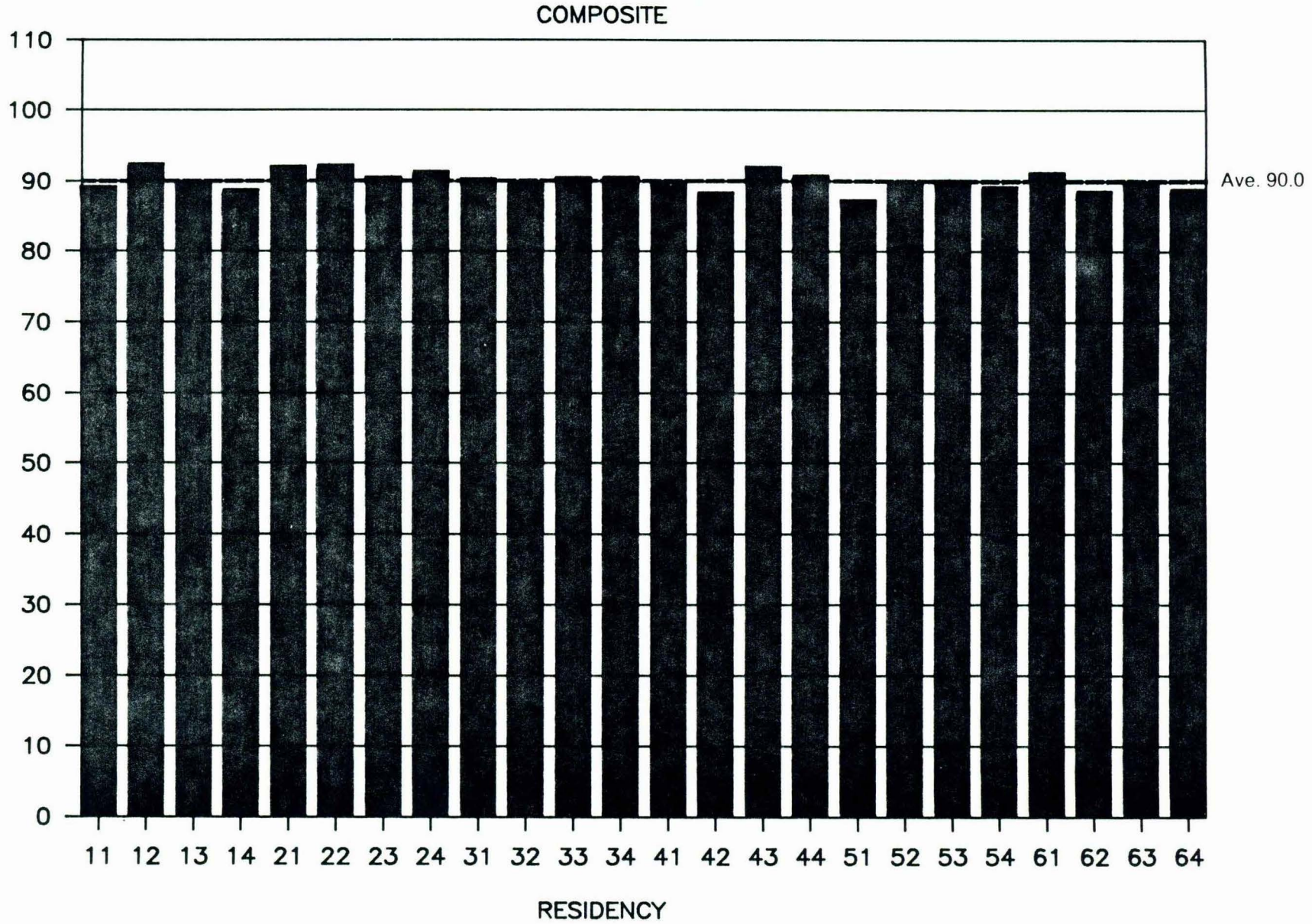
MAINTENANCE QUALITY COMPARISON

COMPOSITE



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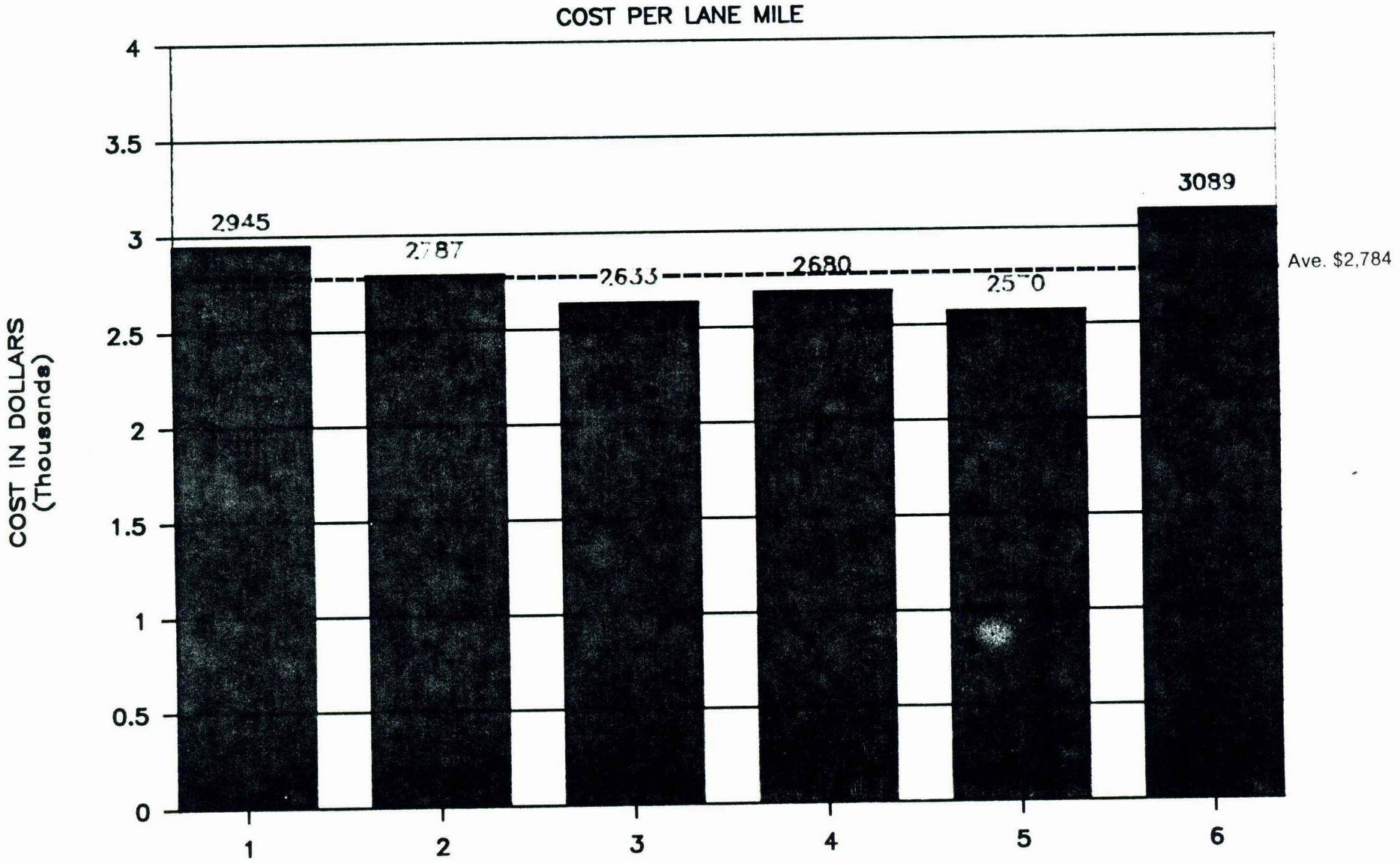
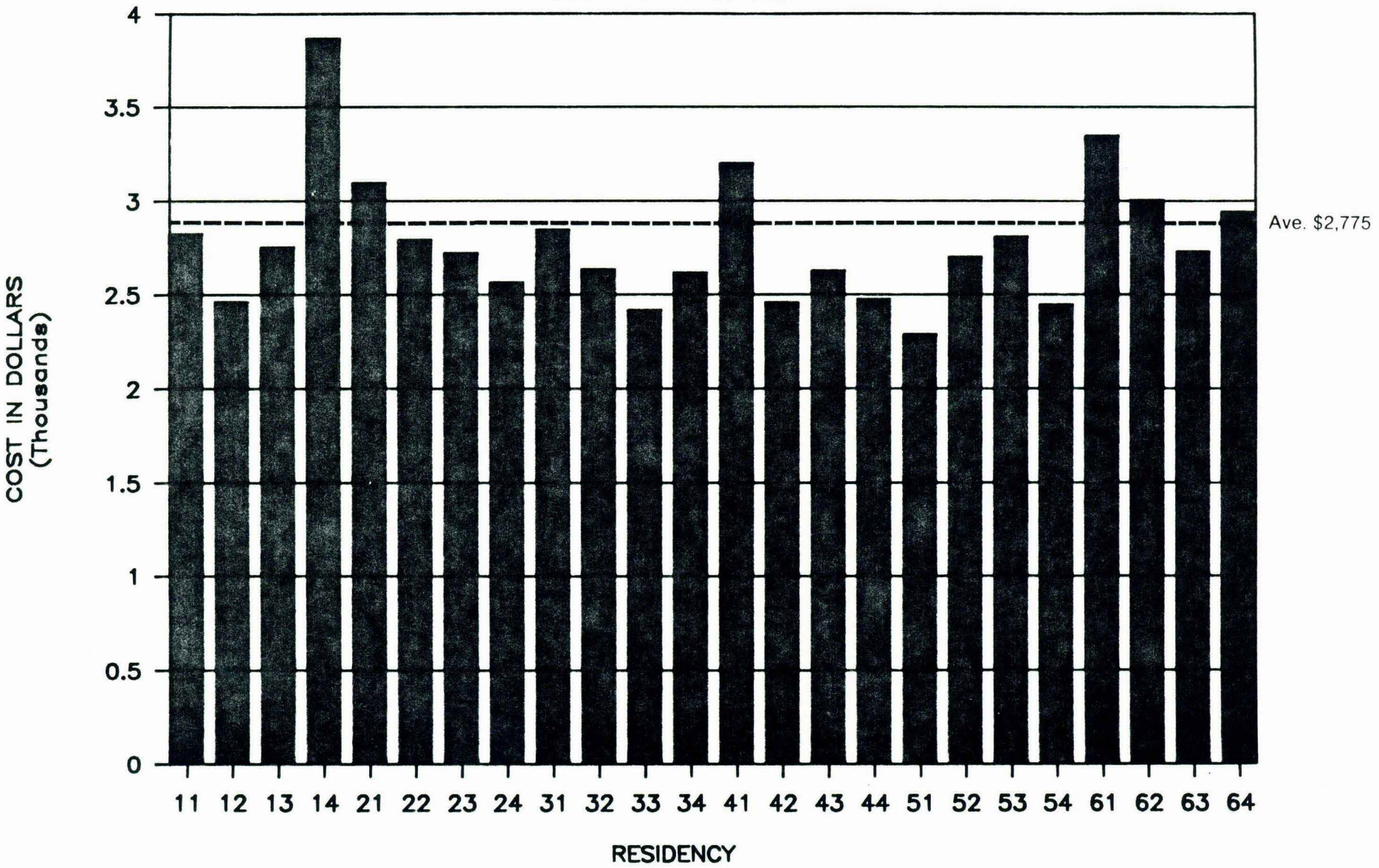
MAINTENANCE QUALITY COMPARISON

COST PER LANE MILE



MAINTENANCE QUALITY COMPARISON

COST PER LANE MILE



Maintenance Quality Comparison
FY 88
State Tabulation

DISTRICT	Unit 10	Unit 80	Unit 90	Pavement Surface	Shoulders	Traffic Services	Roadside	Composite	n*
1	88.6	87.0	89.1	87.7	91.8	91.0	93.8	90.2	147
2	89.0	90.7	90.9	90.1	93.6	90.9	92.5	91.6	153
3	82.0	90.0	91.1	87.6	91.7	91.6	93.1	90.2	173
4	90.5	88.4	91.7	89.7	91.1	92.1	86.6	90.3	151
5	84.4	89.9	90.6	87.7	88.9	91.7	89.5	89.0	176
6	86.6	87.9	89.3	87.6	89.7	92.6	91.0	89.6	151
AVERAGE	86.9	89.0	90.5	88.4	91.1	91.7	91.1	90.2	

**Number of test sections reviewed*

Maintenance Quality Comparison
FY 88
Residency Tabulation

#	Residency	Unit 10	Unit 80	Unit 90	Pavement Surface	Shoulders	Traffic Services	Roadside	Composite	n*
11	Ames	90.8	82.6	84.8	84.8	90.7	91.9	95.3	89.1	44
12	Fort Dodge	95.6	91.6	90.3	92.8	92.0	90.9	94.5	92.4	46
13	Grinnell	79.1	93.5	90.4	85.2	93.9	90.6	92.5	89.6	39
14	Des Moines	88.4	86.1	79.0	86.8	89.5	90.3	90.8	88.7	18
21	Mason City	91.1	93.2	88.8	91.7	92.4	91.6	93.1	92.0	39
22	Forest City	83.6	89.3	96.8	89.7	95.5	91.5	93.7	92.2	39
23	Waterloo	88.8	89.9	91.4	89.8	92.3	89.1	91.1	90.5	33
24	Decorah	88.8	91.2	88.2	89.3	93.8	90.9	91.9	91.3	42
31	Sioux City	81.0	88.2	93.0	87.2	92.0	92.4	92.0	90.2	41
32	Denison	87.7	90.0	91.4	89.4	89.6	89.7	87.9	89.4	39
33	Storm Lake	82.7	91.0	85.5	86.9	91.8	92.7	95.9	90.4	47
34	Rock Rapids	75.7	90.3	95.1	87.0	93.1	91.1	95.7	90.5	46
41	Council Bluffs	96.7	85.9	92.4	91.0	88.5	91.0	86.8	89.8	31
42	Shenandoah	91.3	80.3	91.5	87.7	89.5	90.7	82.1	88.3	35
43	Creston	88.8	92.7	90.4	90.8	92.9	94.3	88.4	91.9	39
44	Atlantic	86.6	89.8	92.5	89.3	92.5	91.9	88.5	90.7	45
51	Fairfield	79.0	88.1	89.4	84.3	88.0	91.2	88.3	87.2	39
52	Ottumwa	88.8	90.7	92.1	90.0	87.3	91.3	89.7	89.5	41
53	Chariton	86.0	90.1	93.7	88.7	91.1	90.7	90.5	90.0	53
54	Washington	84.5	89.6	89.6	87.2	88.6	93.6	89.2	89.1	43
61	Cedar Rapids	92.0	83.3	89.8	87.8	92.9	94.0	93.2	91.1	40
62	Davenport	85.0	93.8	89.8	90.0	86.7	88.7	87.8	88.5	34
63	Dubuque	87.4	84.4	88.0	86.8	90.0	94.9	89.8	89.7	38
64	Iowa City	82.9	90.8	89.9	86.2	88.8	92.3	92.7	88.8	39
	Average	86.8	89.0	90.2	88.4	91.0	91.6	90.9	90.0	

**Number of test sections reviewed*

Maintenance Quality Comparison
FY 87 - FY 88

Increase Or Decrease in Percentile

District	Unit 10	Unit 80	Unit 90	Pavement Surface	Shoulders	Traffic Services	Roadside	Composite
1	- 1.7	- 0.7	- 0.1	- 1.6	- 0.6	+ 9.3	+ 1.9	+ 1.2
2	- 2.7	+ 1.9	+ 2.8	+ 0.5	- 0.7	+ 3.3	+ 2.2	+ 0.9
3	- 0.9	+ 1.6	- 1.2	+ 0.7	+ 0.8	+ 9.8	- 3.3	+ 2.2
4	+ 0.8	- 1.5	- 0.7	- 0.5	- 0.7	+13.8	- 8.4	+ 1.5
5	- 3.7	- 0.6	+ 5.0	- 1.0	- 2.5	+11.8	- 0.8	+ 1.1
6	- 2.6	- 1.2	+ 0.8	- 1.0	- 1.3	+ 6.8	- 1.4	+ 0.4
Average	- 1.8	- 0.1	+ 1.1	- 0.5	- 0.8	+ 9.1	- 1.6	+ 1.2

Maintenance Quality Comparison
FY 87 - FY 88

Increase or Decrease in Percentile

#	Residency	Unit 10	Unit 80	Unit 90	Pavement Surface	Shoulders	Traffic Services	Roadside	Composite
11	Ames	-6.2	-3.4	+0.4	-4.3	-3.9	+ 5.8	+2.6	-1.4
12	Fort Dodge	+3.1	+2.3	+1.8	+1.8	+0.2	+ 8.1	+3.2	+2.8
13	Grinnell	-4.2	+2.5	-0.4	-1.7	+0.6	+10.3	+0.9	+1.6
14	Des Moines	-4.5	+0.5	-15.7	-4.7	+1.9	+16.1	-2.0	+1.7
21	Mason City	-3.0	+3.9	-2.3	-0.2	-2.9	+ 0.1	+3.7	-0.6
22	Forest City	-9.6	+1.0	+9.8	+1.0	+1.6	+ 2.0	+0.2	+1.3
23	Waterloo	+4.3	+1.3	+8.3	+3.4	-2.8	+ 6.5	-1.5	+1.6
24	Decorah	-2.1	+1.8	-2.0	-0.9	+0.4	+ 5.3	+5.2	+1.4
31	Sioux City	-4.7	-0.2	+0.1	-0.2	+0.7	+14.9	-3.1	+2.8
32	Denison	-2.6	+2.5	-2.2	-0.3	+0.1	+10.6	-7.7	+1.3
33	Storm Lake	+7.8	+4.2	-5.6	+3.7	+2.4	+ 6.1	-0.4	+3.3
34	Rock Rapids	-4.7	-0.1	+4.1	-0.7	-0.2	+ 8.3	-2.6	+1.1
41	Council Bluffs	+2.3	-1.4	+2.8	+1.4	-3.6	+13.0	-8.5	+1.2
42	Shenandoah	+0.2	-7.3	+0.5	-1.4	-0.6	+14.7	-14.6	+0.7
43	Creston	+0.3	-1.2	-0.2	-0.1	+0.8	+16.7	-6.9	+2.9
44	Atlantic	+1.1	-1.8	-3.9	-1.9	-0.4	+10.6	-4.2	+0.8
51	Fairfield	-7.4	+3.3	+4.7	-1.1	-3.3	+ 7.0	-1.1	-0.1
52	Ottumwa	+1.3	-2.8	+6.8	+1.0	-3.3	+15.0	+2.4	+2.7
53	Chariton	-2.6	-0.4	+7.0	-1.0	-2.1	+14.8	-1.7	+1.8
54	Washington	-6.4	-2.7	+3.1	-3.2	-1.5	+ 8.3	-2.9	-0.4
61	Cedar Rapids	+5.6	-1.6	+6.9	+3.3	+0.4	+ 6.6	-0.4	+2.7
62	Davenport	-1.8	-2.2	-4.4	-2.3	+1.1	+ 2.1	-3.7	-0.6
63	Dubuque	-6.4	-2.2	+3.4	-1.6	-1.7	+ 9.8	-0.8	+0.7
64	Iowa City	-5.7	-5.4	-4.9	-4.2	-3.8	+ 7.9	-0.8	-1.4
	Average	-1.9	-0.4	+0.8	-0.6	-0.8	+ 9.2	-1.9	+1.2

Maintenance Quality Comparison

Cost/Lane Mile

	Residency	Cost
11	Ames	$2,822.00
12	Fort Dodge	2,464.00
13	Grinnell	2,751.00
14	Des Moines	3,866.00
21	Mason City	3,094.00
22	Forest City	2,792.00
23	Waterloo	2,720.00
24	Decorah	2,563.00
31	Sioux City	2,846.00
32	Denison	2,633.00
33	Storm Lake	2,418.00
34	Rock Rapids	2,616.00
41	Council Bluffs	$3,200.00
42	Shenandoah	2,458.00
43	Creston	2,627.00
44	Atlantic	2,477.00
51	Fairfield	2,291.00
52	Ottumwa	2,699.00
53	Chariton	2,807.00
54	Washington	2,448.00
61	Cedar Rapids	3,346.00
62	Davenport	3,002.00
63	Dubuque	2,726.00
64	Iowa City	2,939.00

Average $2,775.00 (does not include district or state crews)

District	Cost
1	$2,945.00
2	2,787.00
3	2,633.00
4	2,680.00
5	2,570.00
6	3,089.00

Average $2,784.00 (does not include state crews)

Recommendations

Field data entry using a portable computer would be a more efficient method of recording data than the duplicate process of field recording on forms and office data entry currently being used.

A close working relationship with the maintenance services agronomist would help the survey team with noxious weed identification and roadside policies. A few days spent in the field with the agronomist, prior to beginning the survey, would better utilize maintenance office expertise.

A category for service level and surface age may need to be incorporated into the selection process. The fact that some areas have more Class A and B roads than others could account for some difference in scoring. Also, some areas had road surfaces that were new while others did not, possible accounting for some difference in scores.

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Iowa Department of Transportation

Maintenance Quality Survey Evaluation Form

Date _____

Highway Number _____ Maintenance Area _____ Milepost No. From-To _____ Miles Surveyed _____

Surface Type _____ Res. No. _____

Pavement Surface

Item	Criteria For Deductions	Weight (Effect.)	Score (1-10)	Subtotal
Patching	Any spalls, corner breaks, pitting, raveling or other surface defects.	35%	( )	(.35) / 10
Joint & Crack Filling or Sealing	Any area needing to be sealed to correct map cracking, abrasion, raveling, checking, dry surface, weathering and wheel rutting. Also to seal centerline and pavement widening cracks.	35%	( )	(.35) / 10
Surface Restoration	Any surface needing to be leveled or burned/planed to correct uneven surface, bumps, ripples, heaved joints, and eliminate wheel ruts.	30%	( )	(.30) / 10

Total for Pavement Surface _____

Shoulder Maintenance

Item	Criteria For Deductions	Weight (Effect.)	Score (1-10)	Subtotal
Surface Condition	a.) Ruts and distortions b.) cracks and holes needing to be sealed or filled c.) general ability to carry road speed traffic in emergency for short distance	40%	( )	(.40) / 10
Pavement Edge Drop-Off & Joint	Any edgerut 1½" deep or more. Any joint needing to be sealed or sterilized.	40%	( )	(.40) / 10
Slope	When slope is 1" or more plus or minus from standard.	20%	( )	(.20) / 10

Total for Shoulder Maintenance _____

Traffic Services

Item	Criteria For Deductions	Weight (Effect.)	Score (1-10)	Subtotal
Signs & Guardrail	General rating based on condition, readability & plumbness of signs. Check overall condition of guardrail.	50%	( ) (.50) / 10	
Markings	Any high-fill marker, Delineator, R.R. marking, and directional arrow missing or needing paint. Also check for plumbness.	50%	( ) (.50) / 10	

Total for Traffic Services _____

Roadside

Item	Criteria For Deductions	Weight (Effect.)	Score (1-10)	Subtotal
Median & ROW	Weeds needing to be sprayed or mowed to improve appearance or sight distance. Any trees or brush on foreslope or bottom of ditch.	40%	( ) (.40) / 10	
Roadside Ditch Drainage & Litter Control	Look for any slides or blockages in ditches that would inhibit drainage. Cattails are good indication of standing water.	30%	( ) (.30) / 10	
Shoulder, Median & ROW Mowing	Not conforming to Policy.	30% / 10	( ) (.30)	

Roadside Total _____

Condition	Weight (Effectiveness)	Score (1-10)	Subtotal
Pavement Surface	40%	( ) (.40) =	
Shoulder	30%	( ) (.30) =	
Traffic Services	20%	( ) (.20) =	
Roadside	10%	( ) (.10) =	

Maintenance Quality Level _____

Surface Type

Mile Post No. Beg. End

Additional Comments

_____
Signature of Rater