

FINAL REPORT  
SYSTEMATIZING PAVEMENT SURFACE INFORMATION  
FOR THE HIGHWAYS OF VIRGINIA

by

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Virginia Highway Research Council  
(A Cooperative Organization Sponsored Jointly by the Virginia  
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## SUMMARY

Pavement information consisting of type of pavement, date of construction, methods used in construction, and types and sources of materials have been recorded in Virginia since the 1930's. Because there has been no effective system for filing the information and no one has been assigned the overall responsibility for supervising the collection, storage, and updating of the information, the data have become so fragmented that compiling it for use has become very difficult, and indications are that in recent years at least some of the pertinent data have gone unrecorded. In an attempt to remedy this situation, the study reported here was undertaken.

The objective of the study was to collect and compile current pavement data on the interstate and arterial systems in Virginia to serve as core data and to design and implement a computerized storage and retrieval system for all future data of this type. The computerized system that has been developed is designed in a manner to ensure its compatibility with other systems in use by the Virginia Department of Highways. Because of the uniformity in codes and common locational method (mile-post) used in all the systems, pavement descriptive data can be readily compared with other data such as pavement skid numbers, traffic volumes, and accident figures.

The system developed in the study incorporates several checks to assure full and complete data collection and storage.



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INTRODUCTION

For the past several years, the Research Council has had a need for accurate pavement information, in a usable form, for its skid testing and pavement performance studies. The needed information has included data on pavement type, composition, and age, and the locations of newly constructed or resurfaced sections. However, in instances it has been found that the compilation of such data has required an inordinate amount of time. In considering solutions to this problem, it was decided that attention should be given to the data needs of the Highway Department. Through inquiry, it has been determined that the Department, too, has a need for a system that can make accurate pavement information readily accessible. The stated needs of the Department's divisions are given later in this report under the section on USES OF THE SYSTEM.

BACKGROUND

Roadway information consisting of surface type, date of application, and types and sources of materials have been recorded in Virginia since the 1930's. However, because there has been no effective system for filing the data and no assignment of overall responsibility for their collection, storage, and updating, the information gathered has become so fragmented that compiling it for further use has become very difficult. Moreover, it became apparent early in the data collection phase of the study that in many cases of resurfacing no information at all was being recorded, and in other cases the information was incorrect. In some instances research produced as many as five completed data forms on the same section of road that had accumulated over the years. These had to be sifted until the latest one was located and then there was no certainty of its correctness until the information was verified in the field. It is obvious from this brief discussion that the system is not functioning properly, with one of the major problems being that personnel involved in it could not see a need for the information it was supposed to supply.

## PURPOSE

This study was undertaken to meet the current and statewide projected needs for pavement surface information on Virginia highways. More specifically the objective was to compile data on the interstate and arterial system to serve as core data and to design and implement a storage and retrieval system for all data of this type.

## METHODOLOGY FOR COLLECTING CORE DATA

The collection of the core data needed as original input for the computerized system turned out to be a formidable task. Beginning with no information, a cursory investigation revealed that there were several sources in the state containing the information desired in the study. This information was stored in the highway residencies, in the construction districts offices, in the Research Council, and in the central highway office among several divisions. The methodology selected for collecting the core data was to compile into logs the information obtained from the M-15 maintenance plant mix forms, and the C-22 record of construction, materials and methods. The collection and compilation began at the Highway Research Council and continued in the district offices and then into the residencies. This route was followed purely as a convenience. The records at the Research Council were incomplete, although the Pavement Section supposedly had been furnished the records over several years for use in its pavement performance and design studies. Some of the districts' records of surface mixes were excellent, others were very poor.

After the Research Council's and the districts' records were examined, the residencies were visited. An advantage of going to the residencies was that when records were missing there was usually someone (an engineering clerk, inspector, etc.) with knowledge of when the road was surfaced. With information so obtained it was possible to go back to the district materials office and obtain the Materials Division's TL 127 form for that section of highway. This form contains a statement of the source of materials and the job mix formula for bituminous concrete.

After all sources were exhausted, there was considerable road mileage left on which no information was available. The information on the remaining mileage was completed by the author using knowledge previously gained in the study. Even if some errors exist in this last gained information, they will correct themselves in a number of years since about 12% of Virginia's primary roads are resurfaced each year and the likelihood of missing any information on this system in the future is small.

When all of the information available for a district had been collected the data were put in order by milepost using the traffic and safety graphic logs as an aid. A special work form was designed for this purpose, with the idea of being able to take the completed work form and a car equipped with a special Stewart Warner Survey Speedometer and driving the highway to check exact end point locations of the surfaces and the authenticity of the recorded information. In field verifying the data, approximately one stop per mile was made and one at every change of pavement. The need for stopping so often was that on certain jobs the aggregates would change two or three times. Since the aggregates give the plant mixes many of their properties, the exact locations of aggregate changes were necessary. At each stop, the mileposts were checked for accuracy, and the type of surface mix and the types of aggregates and sources were verified. The surface mixes that the Virginia Department of Highways uses are easily recognizable by anyone with experience and the aggregates will show through a bituminous mix that has been down at least three months. It may seem unusual that the source of material can be verified from the road but the familiarity gained during the study, plus the somewhat limited number of non-polishing sources of aggregate in the state and the fact that the author is a geologist, all combined to make this possible.

## SYSTEM DESIGN

### Review of Previous System

The pavement information was previously recorded on the C-22 form supplied by the Construction Division and the M-15 used by the Maintenance Division. The type of operation (new construction or maintenance) determined which form was used. Sometimes the data forms were completed several months after completion of construction. This lag in time contributed to errors in the recorded data and caused many sections to go unrecorded.

The distribution of the construction form originated with the district engineer, with the original going to the director of research and copies to the construction engineer, the resident engineer, and the district materials engineer. The distribution of the maintenance form originated with the resident engineer, with the original going to the maintenance engineer and copies to the testing engineer, research engineer, and district engineer. No attempts were made to design a comprehensive system of road surface data that could be easily recalled. There were several weaknesses

in this system of record keeping. Some of these were:

1. There was no central division charged with the responsibility of assuring that all information was submitted and stored in a manner so that it could be easily retrieved in a usable form. (This situation has been changed by the establishment of the Data Processing Division.)
2. The construction form had station numbers as location points. These numbers were necessary for construction purposes but for road logs, mileposts or some other system was needed. On the form, in the section on pavement data, no space was provided for recording the mix designs and the materials comprising the mixes. It was therefore virtually impossible to determine from the construction form anything about the mix other than the type.
3. The maintenance form "Report of Plant Mix" which was to be filled out with each resurfacing had several weaknesses. The last revision of the form was in 1956, which was before extensive dual laning took place; therefore, the form did not take this upgrading of a facility into account. When one direction was resurfaced on a dual lane divided highway and the direction was not specified, confusion and error resulted. Errors resulted in keying the resurfacing to wrong legs of intersections, to wrong branches of streams, etc. A common omission was milepost locations, although spaces were allowed for them. The information on aggregates in many cases was incomplete or incorrect.

#### Computerized Storage and Retrieval System

In first contemplating means for meeting the Department's data needs, the author believed that there were two methods that might be employed. The first method entailed revising the data forms, fashioning a set of checks, and assigning responsibilities to see that the information needed was collected, stored, and kept up-to-date. The second method, and the one ultimately chosen, was to eliminate the old system and design a new one that would contain the most pertinent information (decided upon by committees of involved personnel) and use computerized storage and retrieval for fast, accurate service. Several factors led to the choice of the second method:

1. The formation of the Data Processing Division with its capabilities of implementing and maintaining such a system,

2. the development of a highway data bank and a computer program that can recall all or part of the information stored by the Data Processing Division,
3. the opportunity to make the information more meaningful by including it in the computer bank as a data file along with files for skid data, accident data, traffic volume data, etc.,
4. the chance to eliminate forms and reduce the demand for record keeping and record storage in the districts and residencies,
5. the increased efficiency of central storage of data as opposed to storage in various locations and the practicality of a computer printout for data distribution,
6. the ease with which data can be updated, and
7. a reduction in the confusion as to what information to record.

The computerized storage and retrieval system has been designed in a manner to ensure its compatibility with other systems. It was researched and designed in a joint effort by the Data Processing Division in Richmond and the Data Systems and Analysis Section of the Research Council. Special attention was given to compatibility of the codes among the systems in use by the Department so that the information may be recalled separately or in conjunction with other data. From this effort stemmed a code manual and code forms, copies of which are attached.

The information to be collected was determined by several committees from the Highway Department with the final judgement being made by the Maintenance Advisory Task Group on Selecting Types of Pavement Surface Information for Systematization. The types of data decided upon were reviewed by the Traffic and Safety and Data Processing Divisions and no changes were made. A further decision was that the data would contain locational information to the extent that any section of highway in the system could be located as to route, county, district, and exact milepost with descriptive locations attached for convenience.

Essentially, the system includes three subdivisions: descriptive and locational information, surface information, and subsurface information. The descriptive and locational information is designed to permit correct location on any section of roadway in the state with a minimum chance of error. The basic locational method employed is the milepost. This is supplemented by descriptive beginnings and endings of sections. These descriptions are in turn referenced to county lines, corporate limits, or nearest intersections.

1887

Provision is made for the following information in the descriptive and locational section\*:

1. District
2. Residency
3. County
4. Route
5. City/Town
6. Beginning Milepost
7. Ending Milepost
8. Direction
9. Lane
10. Descriptive Beginning of Section
11. Descriptive Ending of Section
12. System -- Interstate, Arterial, or Primary
13. Highway Type -- 2 Lane Undivided, 4 Lane Divided, etc.
14. New Construction/Maintenance
15. Completion Date -- Month and Year
16. Specification Year
17. Surface Mix Type
18. Special Feature
19. Project Number
20. Schedule Number

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\* Refer to the attached code manual and code forms for explanations of the listings.

The surface information section will contain three types of surface designation: bituminous concrete, portland cement concrete, and bituminous surface treatment. Only one of these will be completed for each section, however, aggregate information will always be completed. The surface information section will include:

1. Bituminous Concrete
  - a. Asphalt Type
  - b. Application Bituminous Concrete, pounds per square yard
  - c. Average Design Asphalt Content, percent
  - d. Change in Design Asphalt Content, percent
  
2. Portland Cement Concrete
  - a. Curing Method
  - b. Texturing Method
  - c. Cement Content, bags/cubic yard
  - d. Cement Source
  - e. Construction Method
  - f. Thickness
  - g. Joint Spacing
  - h. Joint Sealent
  
3. Surface Treatment
  - a. Asphalt Type
  - b. Asphalt — gallons per square yard
  - c. Stone — pounds per square yard
  
4. Aggregate Information — Several aggregates from different sources may be used during a paving project. Although this may be the exception, in most cases three aggregates sizes are used with two often being from one quarry and the third (usually sand) from a different quarry. During the fieldwork for the study, instances occurred where as many as four aggregates had been used in pavement surfaces; therefore, allowance has been made for four in the system design. The aggregate information will include:
  - a. Size — From Table V, Sizes of Coarse Aggregates - Open Graded, Page 94, Virginia Department of Highways Road and Bridge Specifications, July 1, 1970.

- b. Type — Geologic, with the exception of the synthetic aggregates.
- c. Source — Name and location of quarry.
- d. Percent — The percent each aggregate contributes to the whole of the aggregates.

The subsurface information, originally not scheduled for this study, was included because of several requests. The information will begin with the course nearest the surface and will work down through the subgrade. It will be recorded only for new construction and will contain all of the following information that is applicable for each course.

- a. Mix Type
- b. Depth — in inches
- c. Cement/Lime — percent
- d. Asphalt — percent

The subsurface information will be coded on a separate form that has locational information. Allowance has been made for five subsurface courses.

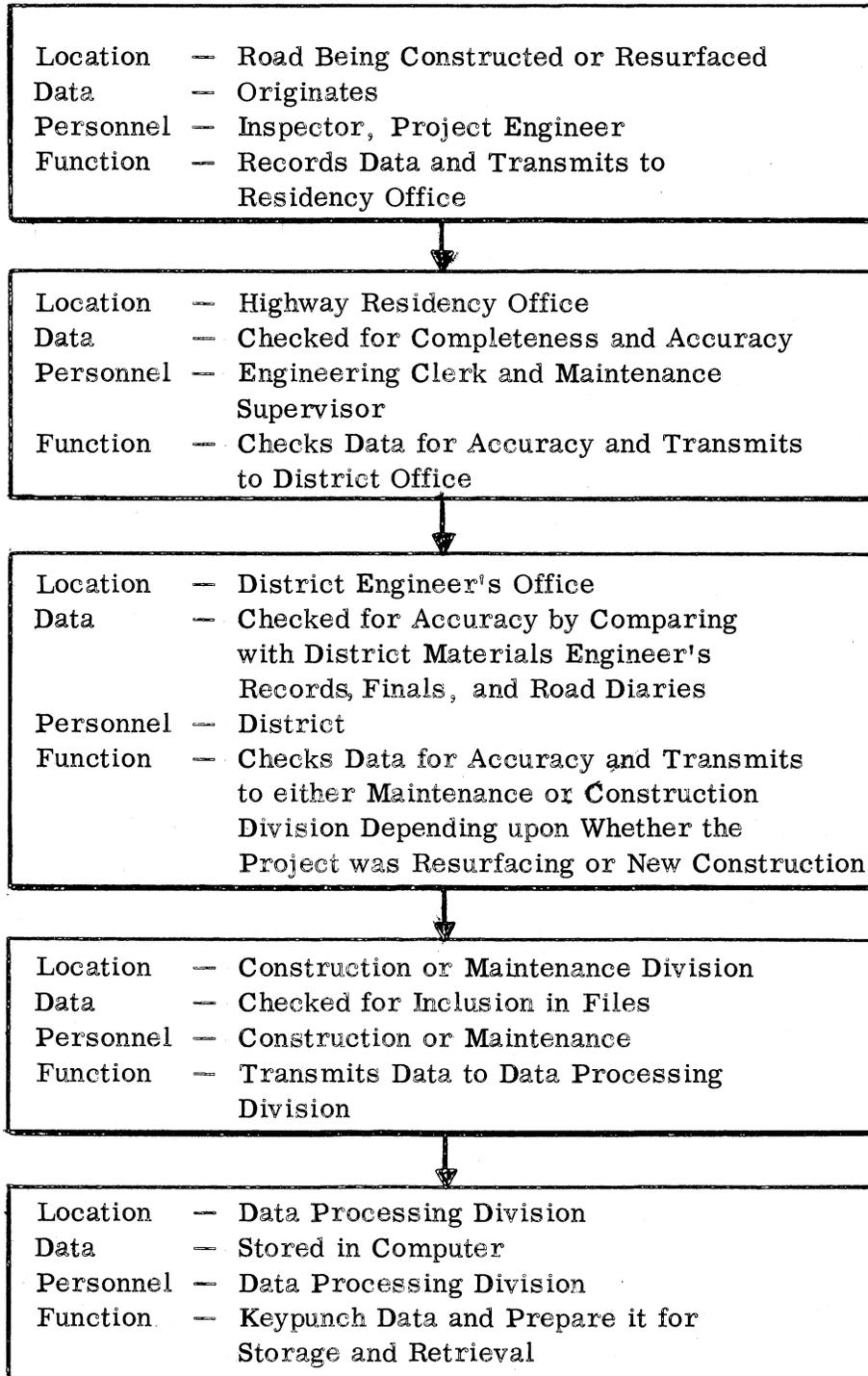
The pavement data will be recorded on a form by the construction inspector in the field. He is the Department of Highways' on site representative and should be the individual with the broadest knowledge of the particular job. The form will be handwritten but is designed eventually to be optically read. Eventually milepost locations will be included on the form. Until that time, and afterwards as a check, the inspector will familiarize himself with the route to the extent that the milepost location placed on the form is keyed to the correct leg of the intersection. This will be obtained from the graphic logs that will be furnished to each residency by the Traffic and Safety Division. Should an overrun, shortage, or unscheduled maintenance occur, the inspector will consult the graphic log, determine the zero milepost, and with his vehicle actually measure the distance from the zero point. When all of the information required on the form is completed, the engineering clerk or maintenance supervisor in the residency will check the form for coding errors. He will then recheck the descriptive and locational section for accuracy. It is not anticipated that he will have the necessary information to check the remaining sections of the completed data form. The completed form will then be transmitted to the district engineer's office with the project books, where the job mixes will be checked against the district materials engineer's job mix design for accuracy while the project books are being checked.

When the project books and data forms (finals) from the project are complete, they will be transmitted to the Construction Division or the Maintenance Division. A final summary check will be performed in the Construction or Maintenance Division and if the information proves to be correct it will then be transmitted to the Data Processing Division for keypunching and computer storage. The data flow is illustrated in the figure on the following page.

At each stop the code form will be signed and dated by the personnel checking the data. As a final check the district materials engineer will designate a capable individual in his organization to take the computer printout and verify the previous seasons' resurfacing and the authenticity of the data by driving the roads.

One of the prime functions of the system is to distribute data to organizations that have need of it and in a form that is readily usable. The data will be distributed annually by the Data Processing Division in the form of a computer printout, which will be a complete record of the up-to-date information in non-coded form. Though the statewide data distribution will be made but once a year, the data will be fed into the computer as they come into the Data Processing Division and may be obtained at any time upon request. The computer printout will include all information for each route and a summary sheet containing the information shown in the example on page 11.

The summary sheet will serve as a quick reference and in many cases make reference to the detailed listing unnecessary.



Data flow from point of origin to storage.

ROUTE: 220 COUNTY: Franklin RESIDENCY: Rocky Mount DISTRICT: Salem DIRECTION: Southbound

BEGINNING MILEPOST	ENDING MILEPOST	LANE	MIX TYPE	COMP. DATE	%	SIZE	GEOLOGIC		SOURCE
							TYPE	TYPE	
0.00	Roanoke County Line	1.85	Intersection Rt. 878	All	S-5	11/69	25	8	Rockydale Quarries Corp., Roanoke, Va.
							70	10	Rockydale Quarries Corp., Roanoke, Va.
							5		Martin's Property, Roanoke, Va.
1.85	Intersection Rt. 878	2.55	.11 Mile N. Rt. 874	All	S-5	6/70	25	8	Rockydale Quarries Corp., Roanoke, Va.
							70	10	Rockydale Quarries Corp., Roanoke, Va.
							5		Martin's Property, Roanoke, Va.
2.55	.11 Mile N. Int. Rt. 874	11.16	.44 Mile S. 220 Bus.	All	S-5	11/69	25	8	Rockydale Quarries Corp., Roanoke, Va.
							70	10	Rockydale Quarries Corp., Roanoke, Va.
							5		Martin's Property, Roanoke, Va.
11.16	.44 Mile S. 220 Bus.	15.02	Underpass 220 Bus.	All	S-5	12/70	50	8	Rockydale Quarries Corp., Roanoke, Va.
							50		Rockydale Quarries Corp., Roanoke, Va.
15.02	Underpass 220 Bus.	22.17	.38 Mile S. Rt. 718	All	S-5	5/69	50	8	Martinsville Stone Corp., Martinsville, Va.
							25	10	Martinsville Stone Corp., Martinsville, Va.
							25		Kendall Sand Works, Danville, Virginia
22.17	.38 Mile S. Rt. 718	23.24	.25 Mile N. Rt. 618	All	S-5	9/69	50	8	Martinsville Stone Corp., Martinsville, Va.
							25	10	Martinsville Stone Corp., Martinsville, Va.
							25		Kendall Sand Works, Danville, Virginia
23.24	.25 Mile N. Rt. 618	27.65	Henry County Line	All	S-5	6/68	50	8	Martinsville Stone Quarry, Martinsville, Va.
							25	10	Martinsville Stone Quarry, Martinsville, Va.
							25		Kendall Sand Works, Danville, Virginia

## IMPLEMENTATION

Implementation of the computerized storage and retrieval system and the procedure for feeding new information into the system was accomplished in three phases.

- Phase I — The core data (current information on the interstate and arterial systems) were assembled, prepared, and coded by the Research Council, and transferred to the Data Processing Division for keypunching.
- Phase II — A code form was developed by the Data Processing Division in Richmond and a code manual was developed at the Research Council. The form and manual were designed for simplicity and ease of coding as well as compatibility with other systems.
- Phase III — Field implementation was accomplished by conducting coding schools in the eight construction districts. Phase III was extremely important to the proper functioning of the system. It was desired that these schools be attended by all personnel who have a part in collecting, coding, or checking the data. A look at the construction and maintenance functions indicated that at the very least the following field personnel should attend:
1. Project engineers or assistant resident engineers
  2. Maintenance supervisors and plant mix schedule road inspectors
  3. Head project inspectors
  4. Residency engineering clerks
  5. District computer
  6. District road design engineer
  7. District materials engineer.

Cooperation at the field level was good. Many of the resident engineers attended and in several districts the district engineer and his assistants were present. The sessions were lively and resulted in much discussion over various items and several good suggestions were incorporated in the final version of the code form and manual. All personnel were pleased that several forms would be eliminated by this system and that they no longer would be responsible for the distribution of completed forms.

In addition to coding techniques, data flow was emphasized with the checks and transmittals being thoroughly discussed.

## USES OF THE SYSTEM

Several statewide programs under way or soon to be initiated will utilize the data system. Some of these are discussed below.

1. Pavement skid resistance program — In the statewide skid testing program, resurfacing is recommended if the pavement friction level drops below a coefficient of friction of 0.40. Correct pavement composition data are a necessity because the components give the pavement its friction properties. The following quote is from "Slipperiness of Highway Pavements, Phase I", Virginia Highway Research Council, VHRC 70-R47, June 1971, page 3.

The greatest limitation of the study was the inability to rapidly collect, in a usable form, the amount of roadway geometric and pavement surface descriptive data needed to determine what wet friction levels are needed for various traffic conditions. Of all the data needed, the skid data might be the easiest to collect; the real difficulty is locating and reducing the supporting data into a form compatible with the skid data.

Had the data been available for the slipperiness study, much time and expense would have been saved.

The slipperiness study was conducted at selected sites, however, plans are now being made to purchase another skid vehicle for statewide testing and base it in one of the operating divisions. Current pavement information will be required for that program. Eventually it will be possible to predict skid values for pavements when volumes, past experience, and pavement composition are analyzed.

2. Pavement durability studies — Certain pavements wear longer than others under similar traffic conditions. With this system of record keeping, analyzation and comparison will indicate the most durable materials combinations in the pavements.
3. Maintenance — The Maintenance Division has reported usage of the data will be for:
  - a. Current and long-range planning,

- b. project budget figures from such information as pavement age and skid numbers, and
- c. evaluation of benefits derived from various types of resurfacing as well as various types of plant mixes.

The Division also has reported that in cooperative studies with the Traffic and Safety Division, information relating to the accident history of various sections of road will be utilized.

- 4. Materials — The Materials Division has indicated it will use the data system:
  - a. To determine the serviceability of the various aggregates, and the control and usage of the aggregates,
  - b. to obtain information on surface types and textures and aggregate types for use in its statewide skid testing program,
  - c. to correlate the total pavement structure and its serviceability in a specific area with other parameters in evaluating and improving pavement designs, and
  - d. to develop maintenance overlay requirements from pavement deflection data and other information.
- 5. Accident investigations — In any accident investigation the roadway should be considered a potential contributor to the accident. Little attention is given to the roadway at present on the standard accident form, and the information requested is too subjective. All indications are that accident investigations will become more thorough and the road surface data will be essential.

## INNOVATIONS AND RECOMMENDATIONS

### Innovations

- 1. A computerized data storage and retrieval system was designed and implemented. The new system features: computer storage, ease of updating and distributing data, data printouts in usable form, a reduction in the number of forms field personnel have to submit, and a guarantee of accurate data because of checks built into the system.

2. Pavement data storage has been centralized in the Data Processing Division in Richmond.
3. Pavement information to be recorded has been evaluated and changes made to make it applicable to present and future usage.

#### Recommendations

1. The new system should be maintained by the Data Processing Division of the Central Highway Office.
2. The Research Council should monitor and troubleshoot the system for one year.
3. An annual data distribution should be made in the form of a computer printout. The data should be distributed to the Districts, Residencies, and Divisions, and should include a memorandum indicating that the once a year distribution is routine but a current data printout may be obtained at any time upon request.
4. After each annual distribution, all pavement surfacing on the printout should be field verified and certified to the Data Processing Division within one month by the District Materials Engineers' offices.



## ACKNOWLEDGEMENTS

The author expresses gratitude to Stephen N. Runkle, head of the Research Council's Data Systems and Analysis Section, for his efforts in preparing the code manual and code forms for the study; and to the Maintenance Advisory Task Group for selecting the types of pavement surface information for systematization. The members of that group are:

H. L. Chryssikos, Chairman  
C. O. Leigh  
R. V. Fielding  
E. D. Slate  
D. C. Mahone  
S. N. Runkle

Appreciation is extended to personnel from all eight districts and the Data Processing, Maintenance, Materials, and Construction Divisions who contributed their time and effort. Without their help, completion of the study would not have been possible.



## REFERENCE

1. Mahone, David C., and Stephen N. Runkle, "Slipperiness of Highway Pavements — Phase I," VHRC 70-R47, Virginia Highway Research Council, June 1971.
2. Virginia Department of Highways — Road and Bridge Specifications, Spencer Printing Company, Richmond, Virginia, 1970.

## SELECTED BIBLIOGRAPHY

1. Baerwald, John E., Traffic Engineering Handbook, Institute of Traffic Engineers, Washington, D. C., 1965.
2. Mahone, David C., and W. Cullen Sherwood, "Predetermining the Polish Resistance of Limestone Aggregates," Reprint No. 79, Virginia Highway Research Council, August 1971.



**VIRGINIA DEPARTMENT OF HIGHWAYS**  
**PAVEMENT DESCRIPTIVE INFORMATION**  
**INPUT FORM NO. 1**

1998  
1999

CARD NUMBER ONE	DIST.	RESIDENCY	COUNTY	ROUTE	CITY/TOWN	BEGINNING MILEPOST	ENDING MILEPOST	DIRECTION	LANE	
	1	2-3	4-5	6-9	10-12	13-16	17-20	21	22	
	DESCRIPTIVE BEGINNING OF SECTION									
	23-41									
	DESCRIPTIVE ENDING OF SECTION						SYSTEM	HIGHWAY TYPE	NEW CONSTRUCTION MAINTENANCE	
	42-60						61	62-63	64	
	COMPLETION DATE		SPECIFICATION YEAR		SURFACE MIX TYPE	SPECIAL FEATURE	SEQUENCE NO.		CARD NO.	
	MONTH	YEAR	YEAR		MIX TYPE	FEATURE	NO.		NO.	
	65-68	69-70	71-72	73-74	75-78		79-80		0	1

CARD NUMBER TWO	PROJECT NUMBER				PROJECT NUMBER				
	SECTION	JOB	JOB	JOB	SECTION	JOB	JOB	JOB	
	1-3	4-7	8-11	12-15	16-18	19-22	23-26	27-30	
	PROJECT NUMBER				PROJECT NUMBER				
	SECTION	JOB	JOB	JOB	SECTION	JOB	JOB	JOB	
	31-33	34-37	38-41	42-45	46-48	49-52	53-56	57-60	
					SCHEDULE NUMBER	SEQUENCE NO.		CARD NO.	
					61-63	75-78		79-80	
					0	2			

1900

VIRGINIA DEPARTMENT OF HIGHWAYS  
PAVEMENT DESCRIPTIVE INFORMATION

CARD NUMBER THREE

COMPLETE THIS LINE ONLY IF THE MIX TYPE IS BITUMINOUS CONCRETE

ASPHALT TYPE 1-2	APPLICATION, PSY 3-5	AVERAGE DESIGN A.C. 6-9	A. C. 10	CHANGE IN DESIGN A. C.
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COMPLETE THIS LINE ONLY IF THE MIX TYPE IS PORTLAND CEMENT CONCRETE

CURING METHOD 11	TEXTURING METHOD 12-13	BAGS/CUBIC YD. 14-16	CEMENT SOURCE 17-18	CONST. METHOD 19	THICKNESS 20-22	JOINT SPACING 23-24	JOINT MATERIAL 25-26
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COMPLETE THIS LINE ONLY IF THE MIX TYPE IS BITUMINOUS SURFACE TREATMENT

ASPHALT TYPE 27-28	ASPHALT, GSY 29-30	STONE, PSY 31-32
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AGGREGATE ONE

SIZE 33-34	TYPE 35-36	SOURCE 37-39	PERCENT 40-42
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AGGREGATE TWO

SIZE 43-44	TYPE 45-46	SOURCE 47-49	PERCENT 50-52
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AGGREGATE THREE

SIZE 53-54	TYPE 55-56	SOURCE 57-59	PERCENT 60-62
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AGGREGATE FOUR

SIZE 63-64	TYPE 65-66	SOURCE 67-69	PERCENT 70-72
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SEQUENCE NO. CARD NO.

75-78	0 3 79-80
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INSPECTOR \_\_\_\_\_  
RESIDENCY \_\_\_\_\_  
DISTRICT \_\_\_\_\_  
CONSTRUCTION/MAINTENANCE DIV. \_\_\_\_\_  
DATA PROCESSING DIV. \_\_\_\_\_

DATE

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**VIRGINIA DEPARTMENT OF HIGHWAYS  
PAVEMENT DESCRIPTIVE INFORMATION  
SUBSURFACE LAYERS  
INPUT FORM NO. 2**

1901

DIST.	RESIDENCY	COUNTY	ROUTE	CITY/TOWN	BEGINNING MILEPOST	ENDING MILEPOST	DIRECTION	LANE
1	2-3	4-5	6-9	10-12	13-16	17-20	21	22
BEGIN WITH THE LAYER IMMEDIATELY UNDER THE SURFACE AND WORK DOWN THROUGH SUBGRADE								
MIX TYPE		DEPTH		PERCENT CEMENT/ LIME/ASPHALT				
23-24		25-27		28-31				
MIX TYPE		DEPTH		PERCENT CEMENT/ LIME/ASPHALT				
32-33		34-36		37-40				
MIX TYPE		DEPTH		PERCENT CEMENT/ LIME/ASPHALT				
41-42		43-45		46-49				
MIX TYPE		DEPTH		PERCENT CEMENT/ LIME/ASPHALT				
50-51		52-54		55-58				
MIX TYPE		DEPTH		PERCENT CEMENT/ LIME/ASPHALT		SEQUENCE NO.		CARD NO.
59-60		61-63		64-67		75-78		0 4 79-80

CARD NUMBER FOUR

DATE \_\_\_\_\_

INSPECTOR \_\_\_\_\_

RESIDENCY \_\_\_\_\_

DISTRICT \_\_\_\_\_

CONSTRUCTION/MAINTENANCE DIV. \_\_\_\_\_

DATA PROCESSING DIV. \_\_\_\_\_

