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16. Abstract

This report describes the existing system for obtaining historical roadway data in Texas, the problems with attempting to use the automated road life data, and the need for access to these data for the pavement management activities of the Department. The report addresses the manual processing and flow of road life data from the initial request for a construction job to the automated historical data files and makes recommendations for improving the flow of data to provide a more complete and current profile of the roadway for pavement management.

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USE OF ROAD LIFE DATA IN TEXAS

RESEARCH REPORT NUMBER 391-1F

Incorporation of Road Life Data
into the Pavement Evaluation System

Research Project 2-18-84-391

Conducted in Cooperation with
U.S. Department of Transportation
Federal Highway Administration

by the

Transportation Planning Division
Texas State Department of Highways and Public Transportation

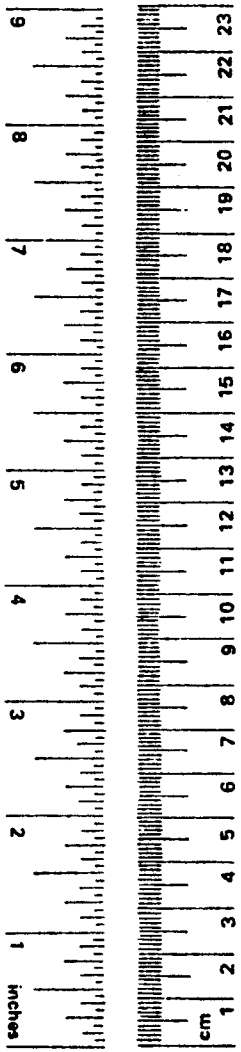
Texas Transportation Institute
The Texas A&M University System

August 1984

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

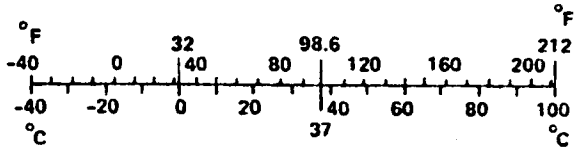
Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C



*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



SUMMARY

This report describes the existing system for obtaining historical roadway data in Texas, the problems with attempting to use the automated road life data, and the need for access to these data for the pavement management activities of the Department. The report addresses the manual processing and flow of road life data from the initial request for a construction job to the automated historical data files and makes recommendations for improving the flow of data to provide a more complete and current profile of the roadway for pavement management.

IMPLEMENTATION STATEMENT

This study outlines the problems that occur with the existing method for automating historical roadway data in Texas. Recommendations are made for additional research in the following areas:

- Design new manual and automated procedures for processing construction and maintenance data in a more comprehensive and timely manner.
- Design a file structure for incorporating historical roadway profile and cost data into the current design efforts for a transportation network database.

DISCLAIMER

The contents of this report reflect the views of the authors who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

ACKNOWLEDGEMENTS

The authors wish to express their appreciation to the Texas State Department of Highways and Public Transportation personnel from Divisions 3, 4, 6, 8, 10, 18, and 19 for their time and efforts expended in defining the flow of road life data through their respective Divisions. Special thanks are due personnel in Districts 11, 19, and 21 who gave generously of their time to describe how they use road life data and how they obtain the required information.

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CHAPTER 1. INTRODUCTION

As part of continuing efforts to develop a comprehensive pavement management system for the State of Texas, a pavement condition survey was completed under Research Study 2-18-79-239 for use in prioritizing pavement rehabilitation projects and funding requirements on the network level (1). Following an evaluation of pavement condition on the network level is the need to select specific rehabilitation strategies. The Flexible Pavement System (FPS) developed under Research Study 1-8-69-123 is one method used by the Department for project-level design decisions (2).

Much of the information required by FPS can be produced by the network-level Pavement Evaluation System (PES) (3). However, additional data are needed that could be obtained from other automated sources. The automated Road Life File, described in the Roadway Information System documentation (4) contains, for example, pavement thickness, pavement type, and construction/maintenance costs.

BACKGROUND

Pavement management occurs basically at two levels:

- Network - the management decisions required to determine the feasibility and timing of a project.
- Project - the requirement to achieve the maximum economy within the project.

Network-level decision-making tools have been developed under Research Study 2-8-75-207 "Flexible Pavement Evaluation and Re-

habilitation" (5) and in Research Study 2-18-79-239, "Pavement Rehabilitation Fund Allocation", among other studies. The Department's Pavement Evaluation System has incorporated these tools, known as the Rehabilitation and Maintenance System (RAMS). An integral part of RAMS is the state and district cost-estimating and fund allocation programs; however, all cost data used by these programs must be input manually instead of obtained from automated sources.

On the project-level, Research Study 1-8-69-123, "A Systems Analysis of Pavement Design and Research Implementation" resulted in the development of the Flexible Pavement System. The FPS program requires, among other categories of variables, cost data and material properties. Again, these data entered into FPS must be obtained and input manually instead of from previously automated sources. In fact, Report 123-12 published in 1972 recognized the manual Road Life File as "probably the most relevant, comprehensive, and consolidated source of information that the THD pavement engineer can find anywhere in the Department" (6). At the time of that study, it was also felt that the automated version of the Road Life File adequately reflected the manual data files.

OBJECTIVE

The primary purpose of this study was to determine whether or not existing automated information is available for input into automated programs such as the Flexible Pavement System and the Pavement Evaluation System. An additional objective was to trace and document the existing manual flow of road life data through

the Department and recommend techniques for most effectively obtaining these required data for pavement management activities.

CHAPTER 2. SOURCES OF ROAD LIFE DATA

The initial generation of data that will become historical road life data begins with recommendations by the district offices for funds for construction or maintenance projects (Figure 1). Recommendations for new construction are forwarded to the Design Division (D-8); recommendations for maintenance projects are forwarded to the Safety and Maintenance Division (D-18). D-8 and D-18 review and prioritize the project recommendations from all districts based on available funding. New construction projects that have a sufficiently high priority and available funding are then forwarded to the Highway Commission for approval.

Guidelines for categorizing maintenance projects as major or routine maintenance work, as shown in Table 1, are outlined in the Procedural portion of the Safety and Maintenance Manual for D-18 (7). D-18 offers technical support to the district offices for any maintenance project; however, only major maintenance work is considered for future addition to the road life files. Administrative policy does not require in all circumstances that major maintenance projects be tracked through the road life procedures.

Major maintenance projects that will require the use of outside contractors and new construction projects that have been approved by the Commission are assigned a project designator (PD) number by the Finance Division (D-3) and a control/section and job number by D-8. All district and preliminary engineering costs, as well as all construction and/or maintenance costs, are accrued under both the PD number and the control/section job

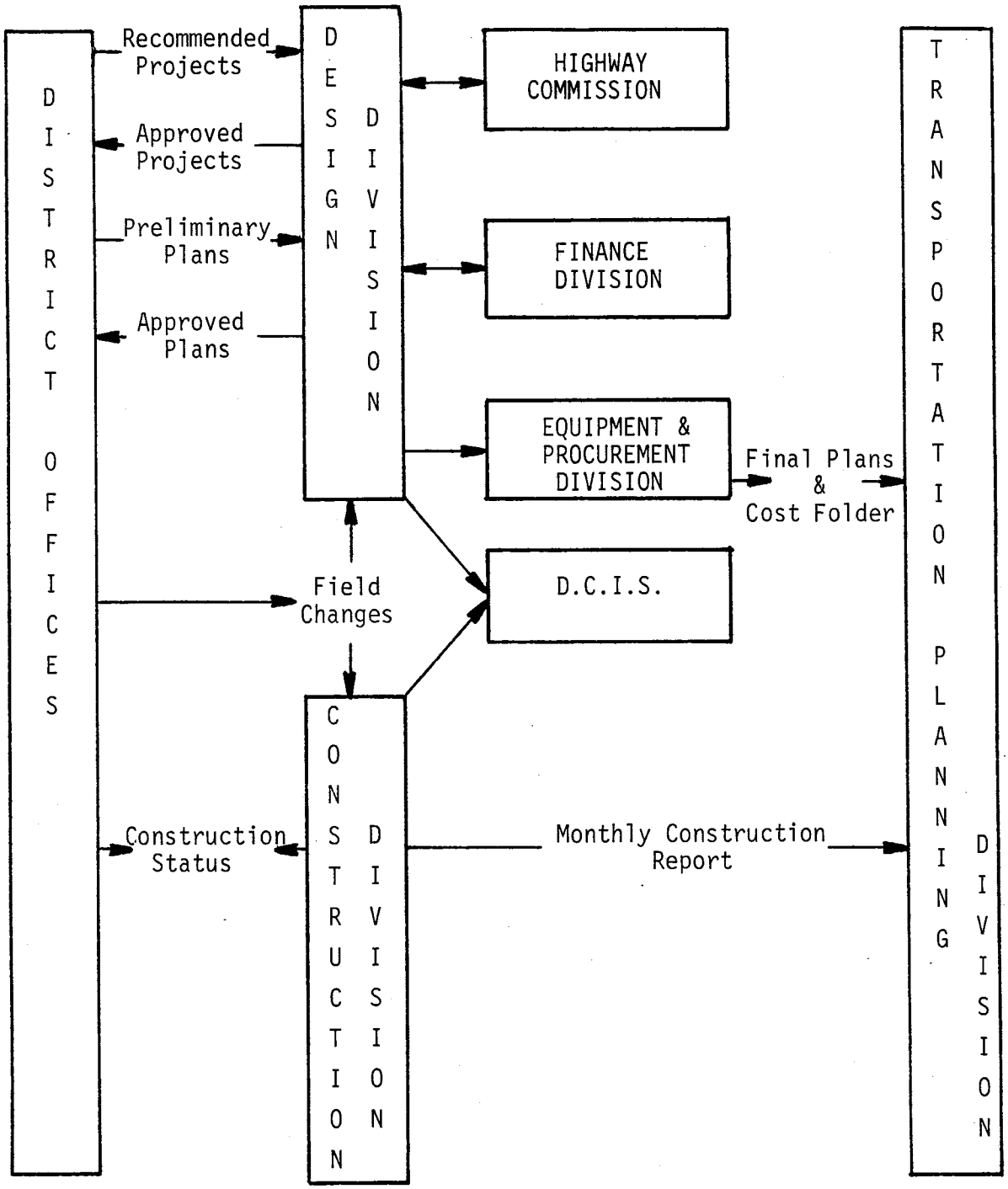


Figure 1. Construction Data Flow

Table 1
GUIDELINES FOR CATEGORIZING MAINTENANCE PROJECTS

	MAJOR MAINTENANCE	ROUTINE MAINTENANCE
Travel Way	All work extending for distance of 500 continuous feet or more and at least a full lane width which restores serviceability of pavement structure. This includes restoration, bit. level-ups, bit. overlays and a nominal thickness of less than 3/4", and surface treatments. This does not include improvement of surface to higher type.	Scarifying, reshaping, restoring, patching, mudjacking, joint filling, concrete pavement repairs, etc. Replacement and/or restoration of traveled ways in kind for less than 500 continuous feet. Resurfacing to include surface treatments, bit. overlays with a nominal thickness of less than 3/4", and bit. level-ups all of which extend for less than 500 continuous feet.
Shoulders & Side Approaches	Reconditioning, resurfacing in kind, surface treatments and rebuilding all of which extend for continuous length of 500' or more. All shoulder work on side road approaches incidental to above work.	All work incidental to above. Restoring material losses. Replacement of shoulder in kind. Reseeding and sodding. Installation and maintenance of access drives.
Roadside	Slope flattening or landscape treatment. Also removal or treatment of roadside hazards.	Restoration of erosion controls. Removing slides, reshaping drainage channels and side slopes, mowing and tree trimming. Replacing topsoil, sod, shrubs, etc.
Drainage	Complete replacement of culverts in kind. Installation of small culverts.	Replacement (approximately same design) of curb, gutter, riprap, underdrain. Cleaning and repairing culverts.
Structures	Major replacement in kind of bridge elements such as railing, deck and wearing surface; superstructure main and floor system members bearing, substructure members, fender system, channel alignment and protective devices.	Cleaning, painting, repairing and minor replacements of components in kind. Repair and operation of drawbridges and ferries.

Table 1 (continued)

	MAIN MAINTENANCE	ROUTINE MAINTENANCE
Traffic Control & Service Facilities	First installation of signs, stripping, pavement markers, direction and route markers and delineators. Replacement of all major signs w/ superior set. Extension or new installation of guardrail. Nominal channelization. Installation or complete replacement of facilities for roadside rest areas.	Painting, repairing and replacing in kind of signs, delineators, guardrail, signals, lighting standards, etc. Addition of small numbers of traffic control devices. Installation of one or a group of signs at one location. Maintenance and replacement in kind of rest areas. Servicing of and furnishing power and light bulbs for lighting and traffic control devices. Policing, roadside cleaning.

number. Since the PD number is not required by current departmental policy, it will not be used after September 1984. At that time, the accrued costs will be maintained solely by control/section and job number for consistency throughout the Department.

Once projects have been approved by the Highway Commission and accounting files have been set up in D-3, the district office prepares preliminary plans for the project and sends these plans to D-8 for approval. Once approved, D-8 will enter pre-construction information into the Design and Construction Information System (DCIS). Data entered into DCIS include project length, station numbers, and type of work to be performed (8). While D-8 retains no cost figures, the division does review all estimates to determine if they are reasonable for the work to be performed. Preliminary plans are returned to the district, with copies kept at D-8, copies forwarded to the Equipment and Procurement Division (D-4) for the master files, and copies forwarded to the Construction Division (D-6). D-6 initiates and monitors the project process and is responsible for pre-qualification of bidders, letting of the contract, and generation of the award minutes. The DCIS is used extensively to track the progress of the project, including the milestone schedule. While D-8 must approve any field changes, D-6 is responsible during the construction phase for the project administration through the district construction engineer.

During the construction phase of a project, D-6 provides other divisions with a monthly construction status report showing all current projects. When a project has been completed, D-6 receives the final plans from the district and approves the final

cost estimates for payment to the contractor. When all settlements and exceptions with the contractor are settled, D-6 releases the final plans to D-4 for archiving and indicates on the monthly status report that the project is complete.

CHAPTER 3. AUTOMATION OF ROAD LIFE DATA

Throughout a construction project, the Transportation Planning and Research Division (D-10) monitors the progress of the project from the monthly construction status report provided by D-6. In addition, D-10 obtains from DCIS the preliminary information that will eventually be moved to the automated Road Life File when a project is completed. Once notification is received from the D-6 status report that a project is completed, copies of the final plans and cost vouchers for major maintenance and new construction are obtained from the master files in D-4 for processing into Road Life records.

The road life strip map and code sheet, known as RL-1, is manually coded and drawn by drafters hired and trained specifically for that purpose by D-10. Figure 2 illustrates a completed strip map. Training of the drafting personnel for the RL-1s is done on-the-job, and the training is estimated to take approximately three to six months. Coding of road life data from the final plans can take from one hour to three days, depending on the type of work performed and the expertise of the coder/-drafter. Figure 3 illustrates a Road Life code chart.

Four or five drafters work full time to update the road life data; this is half the number who were formerly used. Approximately 3,000 new projects are completed each year. Assuming an average of one day to code each project for each of five coders, less than half of the new projects can be coded each year. However, even with the shortage of coder/drafters and the constant backlog of new projects, the road life strip maps and code sheets

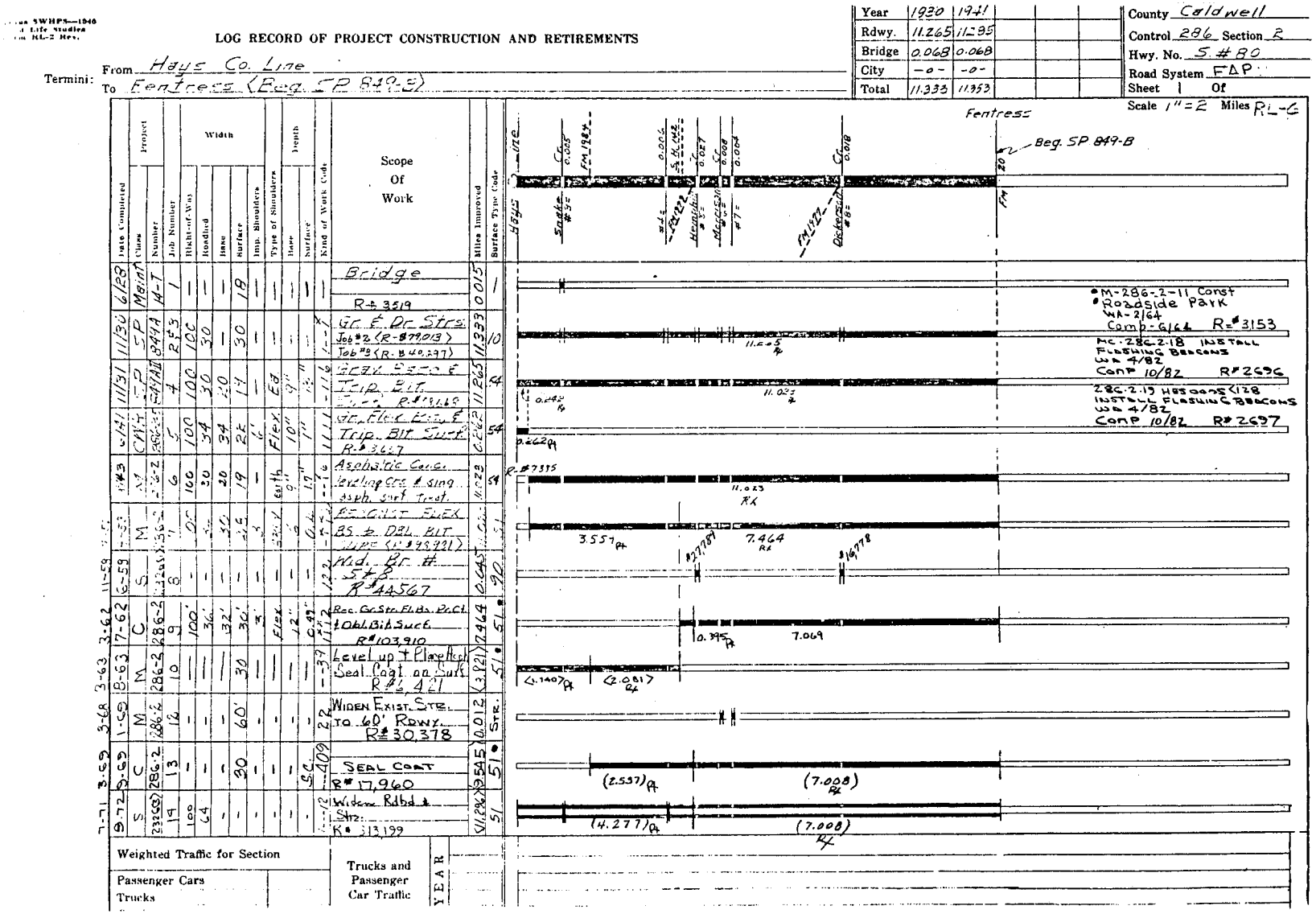


Figure 2. Log Record of Project Construction and Retirements

Texas RWP#11—1040
Road Life Studies
Form RL-3-Rev.

LOG RECORD OF PROJECT CONSTRUCTION AND RETIREMENTS

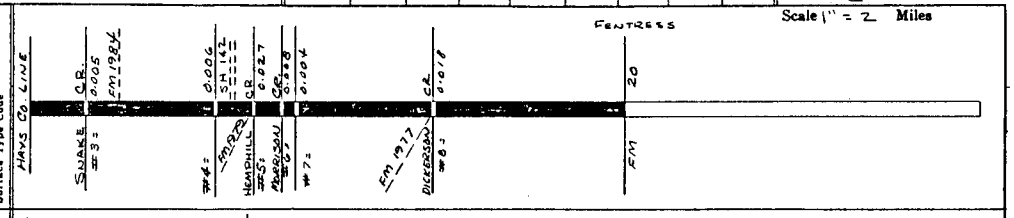
Termini: From HAYS COUNTY LINE
To FENTRESS (BEG. SP 899-B)

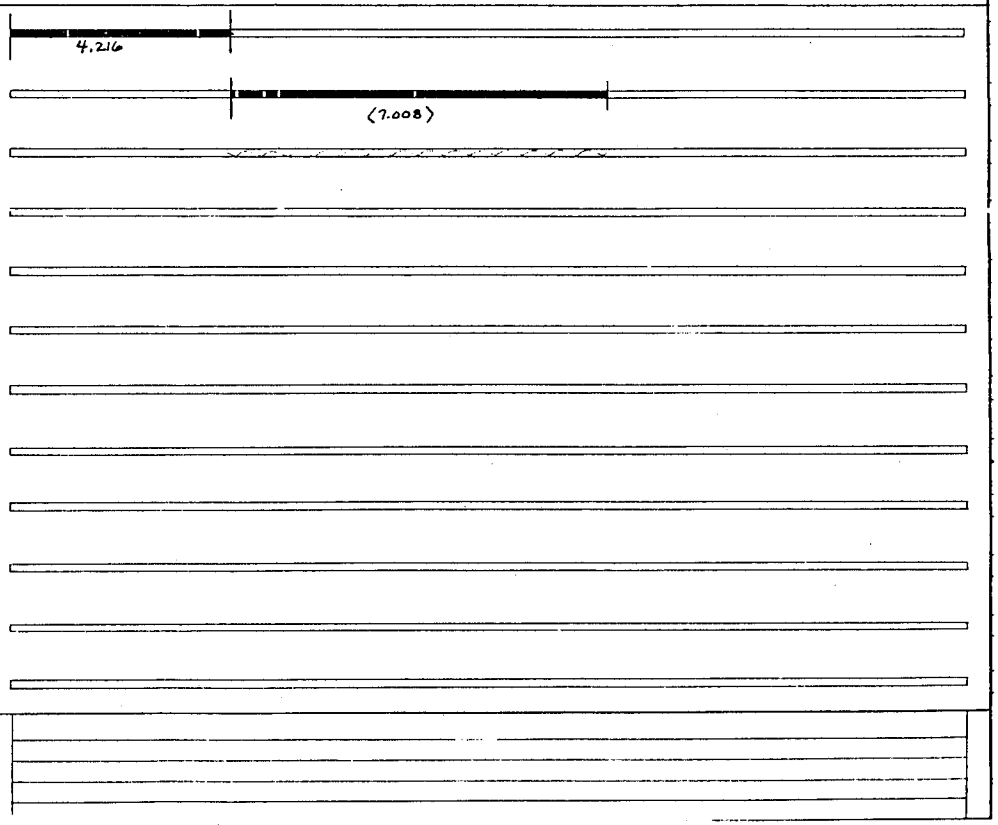
	Year							
Rdwy.								
Bridge								
City								
Total								

County CALDWELL
Control 296 Section 4
Hwy. No. SH 80
Road System FAP
Sheet 2 Of
Scale 1" = 2 Miles

Date Completed	Class	Project Number	Job Number	Width: Right-of-Way	Width: Roadbed	Width: Base	Width: Surface	Width: Imp. Shoulders	Type of Shoulders	Depth: Base	Depth: Surface	Kind of Work Code	Scope Of Work	Miles Improved	Surface Type Code
6-79	C	286-2	15	100'	64'	48'	24'	10'	BIT	6"	0.4	111202	RECONST. GRADE STGS. FL. X BS, DBL. BIT SURF + SHDRS. R#205,292	4.216	51
7-79	C	286-2	15	–	–	–	30	–	–	–	SC	..409	SEAL COST R#36,298	(7.008)	51
8-81	CEP	286-2	17										RECOND & WIDEN FL. BS & DBL. BIT. SURF. R#1,241,232	7.081	

1-73
3-79
2-82





Weighted Traffic for Section		Trucks and Passenger Car Traffic	YEAR
Passenger Cars			
Trucks			
Total			

Figure 2. (continued)

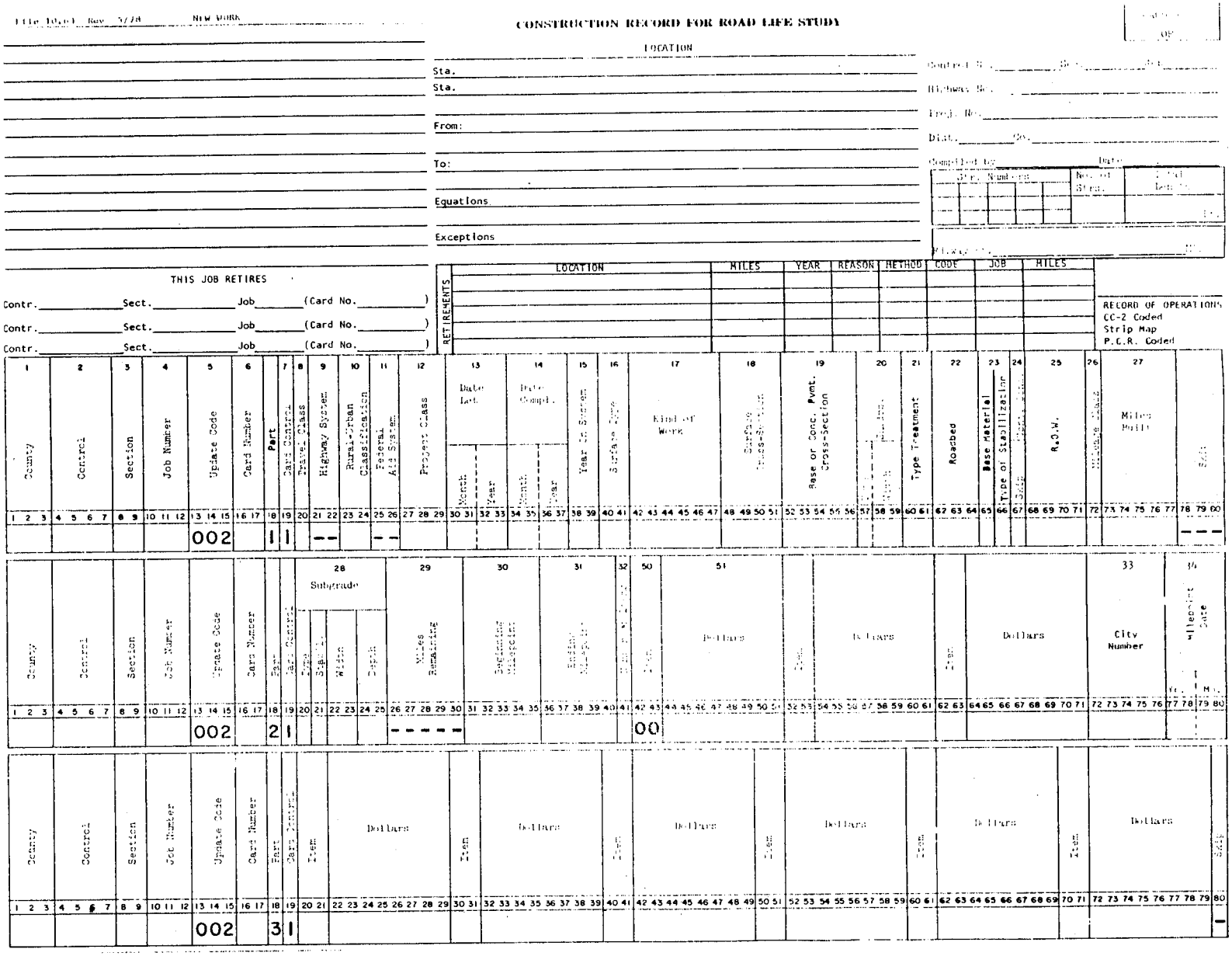


Figure 3. Construction Record For Road Life Study

are generally available within a year of the project completion date.

The completed RL-1 strip maps were at one time automatically forwarded to the appropriate district; however, due to the perceived low usage of the RL-1, the strip maps are now available only on request from the districts.

Once the RL-1 strip maps are complete, these data are added to the automated Road Life File, known as RL-2, by keypunching the coded data and updating the RL-2 once a month. Appendix A, taken from the Roadway Information System documentation lists the data items that are automated. The most recent annual road life file, at the time of this study, is 1979. Plans currently exist to convert the keypunch entry of data to a direct data entry system.

Major structures, bridges over twenty feet, are not included in the automated Road Life File; these records are added to the Bridge Log File, also described in the Roadway Information System documentation. The bridge log records are coded in essentially the same format as the road life records and, in fact, the two files were at one time together. A structure record card is shown in Figure 4. The Automation Division (D-19) has a program for merging the two files together, as needed, but this program is rarely used.

File 10.20

CONSTRUCTION RECORD FOR ROAD LIFE STUDY

EXISTING WORK :

NEW WORK :

THIS JOB RETIRES BRIDGE NUMBER ______

CONTROL ______ SECTION ______ JOB NO. ______

CARD NO. ______ OF ______ BRIDGE NO. ______ LOCATION ______

DISTRICT ______ COUNTY ______

CONTROL ______ SECTION ______ JOB NO. ______

HIGHWAY NO. - STATE ______ U.S. ______

PROJECT NUMBER ______

COMPILED BY ______ DATE ______

STATIONS - FROM ______ TO ______

LINEAR FEET BUILT ______ LENGTH IN MILES ______

STRUCTURE RECORD CARD

Part 1

Field No.	Heading	Card Columns
1	County	1-3
2	Control	4-7
3	Section	8-9
4	Job Number	10-12
5	Bridge Number	13-15
6	Card Number	16-17
7	Part	18
8	Card Control	19
9	Travel Class	20
10	Highway System	21-22
11	Rural—Urban Classification	23-24
12	Federal Aid System	25-26
13	Project Class	27-29
14	Date Let: Month	30-31
	Date Let: Year	32-33
15	Date Compl.: Month	34-35
	Date Compl.: Year	36-37
16	Year On System	38-39
17	Crossing	40-41
18	Kind Of Work	42-43
19	Clearance: Clear Roadway	44-46
20	Clearance: Vertical Clearance	47-49
21	Sidewalks: Right	50-51
	Sidewalks: Left	52-53
60	Culvert / Skip	54-55
61	Skip / Other	56
25	Skip / Main Span Type	57-60
59	Skip / Substructure	61
26	No Of Boxes / No Of Main Spans	62-64
28	Barrel Length / Major Approach Span Type	65-68
62	Skip / Substructure	69
29	Skip / No Of Major Apprs.	70-72
63	Skip / Minor Approach Span Type	73-76
64	Skip / Substructure	77
51	Skip / No. Of Minor Apprs.	78-80

Part 2

Field No.	Heading	Card Columns
1	County	1-3
2	Control	4-7
3	Section	8-9
4	Job Number	10-12
5	Bridge Number	13-15
6	Card Number	16-17
7	Part	18
32	Total Length (Feet)	19-23
33	Amount Dollars	24-30
34	Mile Point	31-36
35	City Number	37-41
36	Design Loading	42-43
37	Posted Load Limit: Type	44
	Posted Load Limit: Nearest Hundreds	45-47
38	Retirement Data: Year	48-49
	Retirement Data: Reason	50-51
	Retirement Data: Method	52-53
39	Replacement Bridge Number	54-56
40	Widening	57
41	Year Orig. Constructed	58-59
42	Bridge Defense Study Data: Road Section Number	60-64
43	Bridge Defense Study Data: Miles From Beg. Of Section	65-69
44	Direction	70
45	Maximum Span Length	71-73
46	Milepoint Date	74-77
65	Functional Classification	78-80

Part 3

Field No.	Heading	Card Columns
1	County	1-3
2	Control	4-7
3	Section	8-9
4	Job Number	10-12
5	Bridge Number	13-15
6	Card Number	16-17
7	Part	18
47	Annual Average Daily Traffic	19-22
48	Name of Feature Crossed	23-42
49	Latitude	43-47
50	Longitude	48-53
51	At Bridge: Highway System	54-55
	At Bridge: F A System	56-57
	At Bridge: Highway Number	58-61
52	Structure Identification	62-63
53	Bypass	64
54	Estimated Rated Capacity	65-67
55	Number Of Lanes	68-69
56	Deck Slab Thickness	70-72
57	Approach Slabs	73
22	Rail Type	74-75
23	Skew	76-77
24	Lights	78
58	Principal	79
	Critical	80

Figure 4. Structure Record Card

CHAPTER 4. USE OF ROAD LIFE DATA

All district personnel involved in this study use historical road life data on a routine basis. Since the automated road life file is five years out-of-date, however, there is no consistency among districts in the way these road life data are obtained.

One district office has not received a RL-1 strip map update since 1973 and is unaware of procedures for requesting these updates. This district relies on what information can be obtained from the current road inventory and traffic log data, both manual and automated, as well as personal knowledge of previous work performed on the roadway.

The second district office uses the maintenance management system (MMS), developed under study 2-18-71-151 (9), to which data are manually input as needed. MMS contains skid data, dynaflect data, and pavement evaluation scores, in addition to data that are available from the Road Life File.

The third district requests control/section and job numbers for all projects over one-half mile or $5,000 to ensure that the information is added to the Road Life File. This district routinely requests updates of the RL-1 strip maps and automates this information as part of a skid file, which the district maintains for their own use.

The three districts are compensating as best they can for lack of consistent and timely data provided through D-10. All three districts indicate that access to RL-1 strip maps is essential for the work they do; and, all three districts indicate that direct access through remote terminals to the automated Road Life

File would be even more beneficial. Direct access to the automated Road Life File is needed for ad hoc reports, verification of pavement data for a particular section, and correction of errors detected in the data entered by D-10 coders.

Several suggestions were made for additional data not currently available as part of the Road Life File. These data include annual average daily traffic trends, lane differentiation, serviceability indices, dynaflect data, and skid data. In addition, the districts suggested an interface between the road life data and the Pavement Evaluation System, as well as accident data, railroad-crossing data, and other automated information currently available through the Roadway Information System.

CHAPTER 5. CONCLUSIONS

The Road Life File in its manual and automated form has information vital to the successful functioning of the districts. However, the delay time of encoding the information into the automated file, and of creating and updating the RL-1 strip maps, has resulted in the districts essentially ignoring the centralized Road Life File. Some districts feel administrative directives would better aid them in defining how to use the Road Life File. While the districts need the information, the lack of accuracy and availability greatly inhibit its usefulness. The districts feel the Road Life File can be updated and maintained at the district level, as shown in Figure 5, in a more timely and accurate manner using automated methods. This decentralization of information processing would lend itself well to current developments of the Department related to its installation of regional computing centers and implementation of a transportation network database (10). Since the information on the automated file could produce the RL-1 strip maps (instead of the reverse), consideration should be given to producing the RL-1 strip maps locally on graphics equipment.

The Roadway Information and Traffic Log File (RI-FILE) is used quite often by the districts in conjunction with the Road Life File. It was suggested that a general roadway file containing current and historical data be developed by combining the RI-FILE and the Road Life File, shown in Figure 6, and including supplemental data such as skid information. The maintenance management program being used from Study 2-18-71-151 can be a

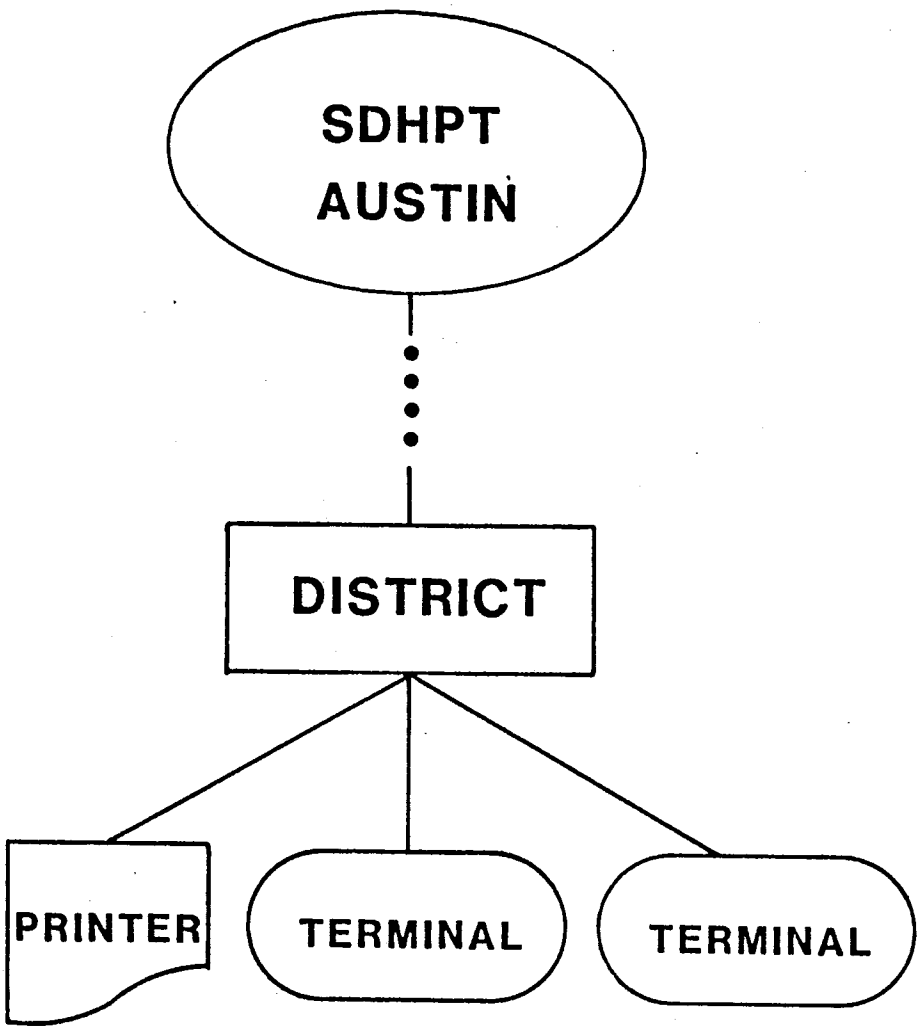


Figure 5. District Update of Road Life Data

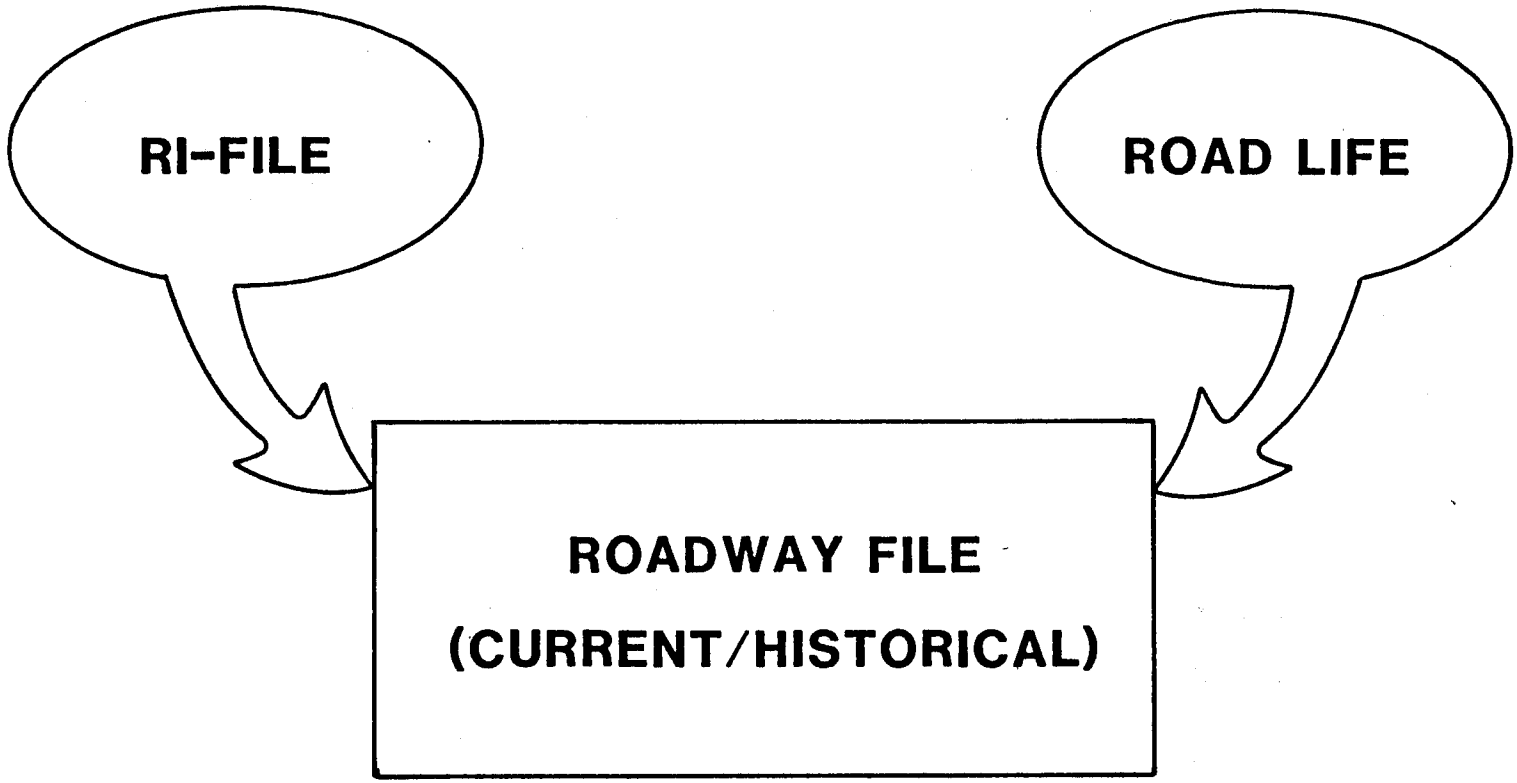


Figure 6. Example Roadway File

model for determining supplemental data needed on the Road Life File. Even though the districts are using the RI-1 and RI-2 in place of RL-1 and RL-2 data, the road inventory file also has problems; e.g., format changes and lack of roadway curvature data.

As of September 1, 1984, the PD number is no longer in use since the control/section and job number designation is used by the remainder of the Department for project identification. This allows departmental consistency; however, there seem to be no consistent procedures which the district follow to have a control/section and job number assigned to a maintenance project. For example, a job number is not required for even "major maintenance" as defined in the D-18 Manual. Additional administrational direction is required in this area to ensure accurate pavement history is retained across the spectrum of maintenance projects.

Some concern was shown that structures were not included in the Road Life File; however, structures (bridges of less than 20 feet in length) are, in fact, included. Major structures (bridges 20 feet or greater in length) are maintained by D-10 in a separate automated file called the Bridge Log File. Even though the Automation Division maintains a program to merge the two files together, the program has not been used in some time because no one knows it can be requested.

Cost figures available on the Road Life File are only the costs involving the actual construction. All district and preliminary engineering costs before construction are kept by D-3, but are never entered as part of the Road Life File. This causes

difficulty in attempting to verify manual cost records to the automated records and to determine the full cost of projects.

In conclusion, the automated Road Life File is being maintained; however, its use is almost nonexistent by the districts. Districts are turning to other manual and automated files for information that can be available on the Road Life File and are developing internal methods of logging pavement history. A more effective use of the Department's resources can be achieved if data needed by the district offices from the Road Life File are incorporated into the proposed design for a transportation network database recommended under Research Study 2-18-82-329.

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APPENDIX A
USER DOCUMENTATION
ROADLIFE FILE

Description and Data Characteristics

First 24 characters of record

THD district number

THD county number

THD control number on the highway

THD section number on the highway

THD job number on the highway

THD number to describe a project

Card control

THD beginning milepoint to 1/1000 mile

THD ending milepoint to 1/1000 mile

Travel class of roadway

Highway system

Administrative system

Federal aid system

Month and year let

Year let

Month let

Year and month job complete

Year job complete

Month job completed

Year taken on system

Project Class

*NOTE: Milepoints are coded only on records with a completion date of 1976 or later.

Description and Data Characteristics

Surface Type

Kind of work (Column 1)

Kind of work (Column 2 and 3)

Kind of work (Column 4)

Kind of work (Column 5 and 6)

Surface width (If surface type is 51, 52, 53, 54, 55, or 62)

Surface cross section

Depth of surface (If surface type is 51, 52, 53, 54, 55, and 62)

Cross section of base

Width of base (If surface type is 20, 30, 51, 52, 53, 54, 55, or 62)

Width of surface (If surface type is 61, 71, or 81)

Depth of base (inches and tenths) (If surface type is 20, 30, 51, 52, 53, 54, 55, or 62)

Depth of surface (If surface type is 61 and edge and center thickness are different)

Depth of surface (If surface type is 71, 81, and surface type 61 where edge and center thickness are the same

Type of shoulders

Type of shoulders

Shoulder width

Surface

Type of treatment

Roadbed Width

Base Material

Type of stabilization (of base)

USER DOCUMENTATION
ROADLIFE FILE

Description and Data Characteristics

Continuous or jointed concrete

Right of Way Width

Mileage Class

Mileage built coded to 1/1000 mile

Subgrade Material

Subgrade

Method of subgrade stabilization

Width of subgrade to nearest foot

Depth of subgrade to nearest inch

Miles remaining to nearest 1/1000 mile

Highway number (majority highway number for control-section)

Blank

City Number

Number of items

Item Number

Dollars (Amount of dollars of total cost)

Item Number 04 (traffic services)

Amount of dollars on traffic services

Item Number 05 (roadside improvement)

Amount of dollars on roadside improvement

Item Number 06 (Improved shoulders & approaches)

Amount of dollars on improved shoulders & approaches

Item Number 10 (grading & small structures)

Amount of dollars on grading & small structures

USER DOCUMENTATION
ROADLIFE FILE

Description and Data Characteristics

Item Number 20 (surface)

Amount of dollars on surface

Item Number 30 (base)

Amount of dollars on base

Item Number 88 (maintenance)

Amount of dollars on maintenance

Item Number 89 (Right of Way)

Amount of dollars on right of way

Source: Roadway Information System User Manual
Texas State Department of Highways and Public Transportation
Transportation Planning Division and Automation Division
Revised September 1981