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VOLUME 10 NUMBER 4

Field Notes

Government Liability

A Graphic Display Method For Comparing Alternate Routes

Washington Office News

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GOVERNMENTAL LIABILITY

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R-1

This article discusses some thoughts and facts about responsibilities and liabilities in relation to planned design, construction, and maintenance.

The broad classification of failure to perform such social duties are known to the government as *tort law*. In order to discuss responsibilities, we should define some basic terms of *tort law*.

Tort - a wrong committed to a person or property of another which results in damage or injury.

Liability - the legal obligation or responsibility to pay money damages to the person injured or damaged.

Negligence - the failure to do or the doing of that which an ordinary, reasonably prudent person would do or would not do under the same or similar circumstances. This is the area normally called *unintentional tort*, and the one which will be discussed in this article.

The plaintiff's case must show the four basic elements of a tort:

1. The defendent owed a legal duty to the plaintiff.

2. He breached that duty.

3. Actual injury or damage resulted.

4. The breach of duty was the proximate cause of the plaintiff's damage.

Elements 1 and 2 are the ones we are interested in. Was a legal duty owed, and was that duty breached?

We do have definite obligations to the traveling public--certain duties imposed specifically or generally by operation of law. Our duties fall primarily in the area of public safety. We have the duty to provide a safe driving environment for the highway user. The legal relationship and duty are there.

Years ago, we could exercise "sovereign immunity," but since the *Federal Tort Claims Act of 1946*, the government is liable for its actions.

The central provision of this Act affirms that a suit may be brought against the United States

> ". . . for injury or loss of property, or personal injury or death caused by the negligent or wrongful act or omission of any employee of the Government while acting within the scope of his office or employment, under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred."
>
> (28 U.S.C. 1346(b)

A section of the Act provides that the government will not be liable for damages arising from its agents' "discretionary acts." These are acts involving the determination of policy or exercise of judgment, such as planning or design activities. These are differentiated from ministerial acts which only involve obedience to orders, or the performance of a duty in which the government or officer involved is left no choice of his own.

Even after the passage of the *Federal Tort Claims Act*, we were not subjected to many claims on our road system because the language of the Act establishing Forest roads (23 U.S.C.). Our authority to construct and maintain roads was, and still is, void of any mention of safety or safety obligations.

However, in August of 1973, the Department of Transportation (DOT) issued a regulation which directed each Federal agency to implement the *Highway Safety Program Standards*. In 1975, agreements were reached between the Forest Service and DOT which specifically identified those applicable standards.

The net result was that we lost much of our discretionary immunity, and most of our activities were placed in a ministerial role. There are safety standards and guidelines that we are obligated to adhere to, and no longer can we decide administratively for ourselves.

The erosion of the sovereign immunity principle has had a marked effect on governmental agencies. For example, the State of California in 1961 had one attorney assigned to claims. The records show that as of July 1, 1976, there were $1.2 billion in claims and active suits against the California Department of Transportation. The Department has increased its legal staff for handling claims to 40 full-time attorneys with 18 full-time investigators.

At the present time, claims against the Forest Service exceed $20 million; ten years ago claims were less than $1 million. This supports the findings of a Forest Service study that indicated an annual increase of 58 percent in tort claims.

This brings us to a discussion of our duty, and the avoidance of liability. The logical way to do this is to examine each step in a project.

PLANNING

Planning of a facility is a purely "discretionary" act because it involves evaluation of alternatives, and -- based upon such consideration -- the exercise of independent judgment in arriving at a decision or in choosing a course of action. There are no hard and fast rules for deciding the appropriate course of action. Therefore the planning activity is immune from liability under the *Federal Tort Claims Act*.

DESIGN

The design of a facility has long been considered discretionary and, as such, has been immune from liability. This has been severely challenged in recent years and courts have held that there are exemptions to design immunity. Where there is room for policy judgment and decision, there is discretion. Conversely, where there are official directions (manuals, etc.) that dictate minimum standards or procedures, and we fail to adhere to such directions, we may find that we have shifted from the discretionary to the ministerial function.

The exceptions to design immunity that have been identified in court cases are:

1. Where the approval of a plan or design was arbitrary, unreasonable, or made without adequate consideration.

2. Where a plan or design was prepared without adequate care.

3. Where a plan or design contained in inherent, manifestly dangerous defect, or was defective from the very beginning of actual use.

4. Where changed conditions demonstrate the need for additional or remedial action.

5. Where the design does not follow specific agency standards.

This can be summarized by stating: although road design is normally considered discretionary and sovereign immunity applies, there are exceptions to this rule.

CONSTRUCTION

When a project is constructed in accordance with specific details or specifications, we would be protected by a discretionary function exemption. However, if a project were executed in a manner which deviated from the specifications, we would not have immunity. If the plan or design did not specify a certain detail which, nevertheless, is included and is done negligently, the courts probably will decide the case on the basis of whether or not the decision involved was a planning (discretionary) or an operational (ministerial) decision.

OPERATION AND MAINTENANCE

Operation and maintenance is an area that is least likely to be immune from liability. Once the planning, design, and construction are completed, the courts consider this phase to be routine housekeeping functions necessary in the performance of normal day-to-day administration. Maintenance of roads is at the operational level, and even though discretion to some extent is involved, the discretionary decisions to be made are not policy-oriented, in most cases.

The majority of all tort claims fall into the operational category; this refers to the earlier statement concerning the duty owed to the users of the road. Although we have no duty to make the roads absolutely safe, motorists who use public roads have the right to presume that the road is safe for normal traffic, and they are not required to anticipate extraordinary danger, impediments, or obstructions to which their attention has not been directed. Inherent in our duty of ordinary care is the duty to eliminate hazardous conditions, erect suitable barriers, or adequately warn the traveling public.

With respect to operation and maintenance, the best way to define our liability is to identify where courts have ruled against governments.

Inadequate roadway signs and markings have contributed to many cases. Courts have ruled governments liable for:

1. Missing signs, i.e. stop or curve signs. Once hazards have been identified through signing, we have to maintain recognition of that hazard until it has been eliminated.

2. Failure to install signs or hazard markers. Policies and guidelines have been written on signing, and courts have ruled that failure to follow written direction is considered negligence.

3. The use of nonstandard signs which contribute to or cause an accident.

4. Improper or mislocated striping.

Roadway maintenance has also been the subject of numerous cases. Examples of roadway conditions which have resulted in government liability are as follows:

1. Standing water, mud, rocks, or other debris on roads; especially, if we have knowledge of the condition and do nothing to correct it. For example, if an employee of the government notices these conditions and does nothing to report or correct them, the courts have ruled that knowledge by an individual constitutes knowledge by the government.

2. Slick road surfaces such as ice, road oils, asphalts, or even plain dirt.

3. A road closed by earth barriers that is not posted with other warnings creates a liability. One case involved an earth barrier blocking an old road from which the culverts had been removed. Over a period of time, the barriers had all but disappeared; when an accident occurred on that road, the government was held liable.

The decision as to when to install a guardrail along a road is normally considered discretionary, unless past accidents or other sources have pointed out a hazardous condition. Once a guardrail is installed, we are obligated to maintain it as it was designed to function. Blunt ends on guardrails, when accepted standards are otherwise, are considered hazardous, and we are liable if an accident occurs.

An improper or missing bridge rail which contributed to an accident was the basis for a decision against the government. Here again, is a case in which we have definite standards, and failure to adhere to these standards is strictly ministerial.

In one case, a plugged drainage system which caused damage to private property resulted in government liability.

Bridge inspections and restricted weights, although not the subject of any particular case, could cause a liability on our part. The bridge inspection report normally contains recommendations as to weight limitation or work that is needed. If an accident occurs as a result of failure to follow through on the recommendations, a liability will be created. In addition, we also have a responsibility to warn of hazardous conditions. For example, if there is a restricted bridge 10 miles (16.09 kilometers) from the entrance to a road, this condition should be identified at the entrance.

These cases, and many others that could be cited, clearly show that we have a common-law duty to use care to ensure that our roads are reasonably safe for the traveling public.

One caution for government agencies to observe is that a governmental body cannot discharge its responsibility or duty to maintain roads in a safe condition by doing no more than warning of hazards, because the duty to warn is only part of the duty to maintain. Warning of hazards is feasible only until we have had time to make the road safer. We cannot put up a sign indicating that there is a minor washout along a road or a difference in elevation between the road and shoulder, and feel we have fulfilled our obligation. We need to diligently follow through with corrective action to eliminate the hazardous conditions.

Some specific examples with respect to the above are as follows:
The Forest Service inspected a bridge and posted weight limits. Brush obscured the weight limit sign. An accident occurred when the bridge collapsed.

Forest Service inspection indicated that hazard markers on a bridge were missing. Two months later, a car went into the river.

Following a rain, a Forest Service employee noticed a mud slide on a Forest road. No action was taken to warn of the condition. Two days later, a fatal accident occurred.

The Forest Service sealed an asphalt road. An accident, in which a car slid off the road, resulted in the filing of a claim for $750 thousand. The claimant asserted that the Forest Service knew of the slick surface and did not warn of the condition.

The question always arises as to liability of individuals for their actions or nonactions. General rules of immunity normally bar the personal liability of government officials. The *Federal Tort Claims Act* provides that the government will not be liable for intentional tort on the part of employees; this situation includes things that are normally outside the scope of employment, such as assault, battery, libel, and slander. A landmark case that could change this situation occurred in 1974, in which the Supreme Court ruled that a government employee was personally liable and the court stated that officials are liable when they fail to make decisions when needed, or who do not act to implement decisions that are made. This could have far-reaching effects on us as individuals, if we fail to faithfully perform the duties assigned to us.

This discussion is intended to give you a better realization of our responsibilities as public employees. Everything discussed is a matter of record in the courts, and the courts operate on the principle of the *killy-loo* bird--the bird that insisted on flying backwards because it didn't care where it was going, but was only interested in where it had been. Most court decisions are made in this manner. Past cases form the framework for the decisions they make today, and there are sufficient past cases in tort liability to know where we stand today.

A GRAPHIC DISPLAY METHOD FOR COMPARING ALTERNATE ROUTES

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INTRODUCTION

Frequently, the transportation analyst is faced with the problem of selecting one road or proposed road over another. This usually does not present a difficult problem, since many selections require straight-forward analysis. However, transportation analysts sometimes do a somewhat short-range (or financial) analysis, rather than dig into a detailed economic analysis. The financial analysis ordinarily gives good results. However, it does not fully meet FSM requirements for economic analysis, because it does not portray what is really happening to the investment of construction and operating costs.

What appears to be a simple problem of deciding whether to construct a new road or to reconstruct an old road can become quite complicated. This is especially true if stage construction is used to keep costs to a minimum, when the amount of benefits or costs directly related to the road is not clear.

One approach for evaluating future effects of costs and benefits is to use graphic methods to provide a "picture" of the situation. A person experienced in graphic analysis can create many illustrations that provide information which is easy for the decision-maker to understand and for an analyst to interpret. This article presents a graphic approach for analyzing alternatives in construction scheduling (stage construction). Graphic analysis has also been used by Forest transportation analysts to evaluate the sensitivity of the solution to different rates of interest. We hope this article will encourage creative use of graphics as a means to evaluate such problems.

THE PROBLEM

To demonstrate, let us set up a problem and go through the process. In figure 1, we show the problem of constructing Road I-20, or reconstructing Road N-19, for the Iron King Timber Sale. Road I-20 costs $160

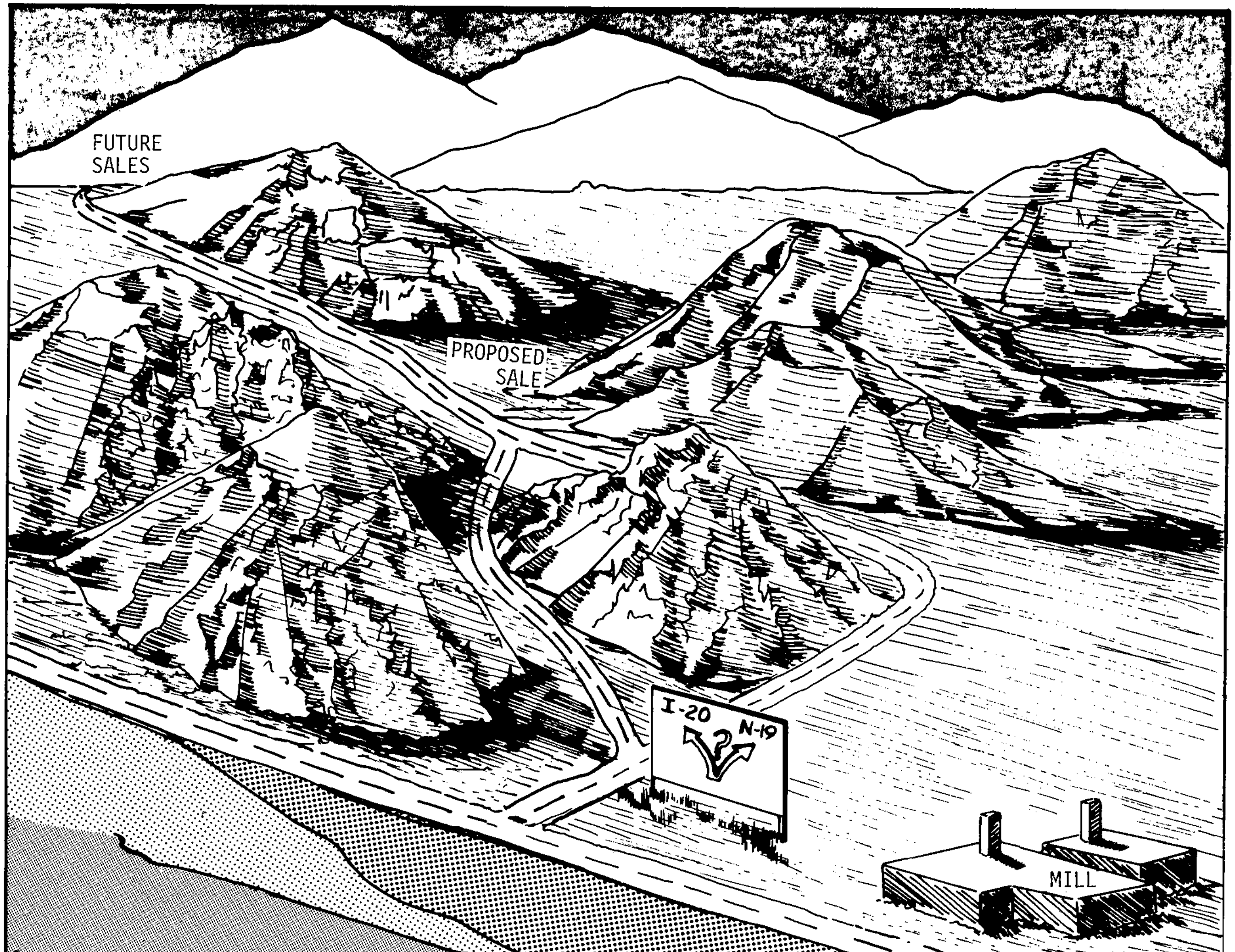

Figure 1. Construction of Road I-20 vs Reconstruction of N-19.

thousand to construct, and operating costs (haul and maintenance) after construction will be \$8.05/MBF. Road N-19 can be reconstructed for \$19 thousand, and operating costs after reconstruction would be \$10.30/MBF.

If we do not reconstruct Road N-19, its operating cost will be \$11.30/MBF. The Iron King Sale is 20 MMBF in size, and immediately behind it is about 100 MMBF of timber which will be hauled over the road during the next 20 years. In a financial analysis, it is apparent that we could not offset the construction cost on Road I-20 through savings of haul and maintenance on the Iron King Timber Sale.

To demonstrate this, below are the results of a simple financial analysis:

Sale Size = 20 MMBF
Route N-19, no reconstruction:
20,000 MBF x \$11.30/MBF = \$226,000

Route N-19, reconstruction
20,000 MBF x \$10.30/MBF
+ \$19,000 reconstruction = \$225,000

Route I-20, construction:
20,000 MBF x \$8.05/MBF
+ \$160,000 construction = \$321,000

This shows that we would probably select the option to reconstruct the N-19 road for the sale, since it demonstrates a savings of at least \$1,000 over the other options considered for the sale.

Although we are unsure of the exact amount of timber remaining beyond the Iron King Timber Sale, it appears that we can amortize the construction cost over an unknown number of years, and that transport of some unknown amount of timber volume will attain a "break-even" point compared against the \$160 thousand construction cost of Road I-20. Also, if there is an overall savings over a long term, it would be beneficial to know the minimum volume required to break-even and the extra expense if we deferred construction of Road I-20 until after the Iron King Sale has been logged.

Until now, we have not decided whether or not to reconstruct Road N-19, although it appears that there would be a savings on the Iron King Timber Sale by doing so. If Road I-20 is built someday, the reconstruction costs and subsequent extra operating costs on N-19 become an extra expense which must be absorbed by additional timber volume. This could be called "an analysis of future project scheduling," in which construction costs are not offset by savings in operating costs.

All costs portrayed within the analysis may also be shown as the result of inflation at the year they are expended, and then discounted back to present worth; inflation rates are optional and may be set equal to zero. Also a variety of interest rates should be studied. An array of costs using different interest rates is useful in deciding between alternatives.

It is not the intent of this article to advocate the use of inflation rates in an economic analysis, since there is controversy among economists on that point. Users of this technique should understand that the Forest Service policy is not to use inflation in economic analysis; we have included inflation to illustrate how it might be used in this process to develop a sensitivity to the effect of inflation on future cost factors.

THE ANALYSIS

Four basic route alternatives are considered for this study, in which each alternative is studied for two different levels of timber harvest over a 20-year period. The two levels of harvest for the 20-year period are 100 MMBF and 50 MMBF.

The four route alternatives are as follows:

Alternate I - Use existing route N-19 throughout the period.

Alternate II - Use existing route I-20 throughout the period.

Alternate III - Use existing route N-19 the first 5 years, then reconstruct and use reconstructed route N-19 during the last three 5-year periods.

Alternate IV - Use existing route N-19 the first 5-year period, then use existing route I-20 during the last three 5-year periods.

The first step is to divide the overall time of the study into study periods; the 20-year time horizon was divided into four 5-year study periods.

The second step is for the analyst to calculate the accumulative cost at various points within the study period for each alternative. To demonstrate how we would determine a cost at a given point, let us solve for the present worth of costs at 20 years for Alternative IV. Let the discount and inflation rates be 10% and 7% respectively, the present worth of an amount "c" expended in year "t" due to the combined effect of these two rates is

$$c \times (1.07/1.10)^t = c \times 0.9727^t$$

In this calculation, operating cost and construction cost are assumed to be incurred at the last and first year of each period respectively. For 100 MMBF total (Alternate I), we assume that 25 MMBF is harvested in each time period as shown in Table 1. The present worth of costs is calculated as:

Present Worth of Costs = discounted - inflated hauling cost for 25 MMBF over existing Road N-19 at year 5.

+ discounted - inflated construction cost for Road I-20 at year 6.

+ discounted - inflated cost for 25 MMBF over Road I-20 at year 10.

+ discounted - inflated hauling cost for 25 MMBF over Road I-20 at year 15.

+ discounted - inflated hauling cost for 25 MMBF over Road I-20 at year 20.

$$= [(25000 \times 11.30) \times 0.9727^{5}] + [(16000 \times 0.9727^{6}]$$

$$+ [(25000 \times 8.05) \times 0.9727^{10}] + [(25000 \times 8.05)]$$

$$\times [0.9727^{15}] + [(25000 \times 8.05) \times 0.9727^{20}] - \$783{,}000$$

The same method is used to obtain the accumulative costs for other route alternatives, and for the 12.5 MMBF logged each period for alternatives.

Table 1.--Cumulative Costs for the Alternatives

Alt.	Timber (MMBF) Each Period	Cumulative Present Worth of Cost[1] at Indicated Year (thousands of dollars)					
		Current	5	6	10	15	20
I	25	0	246	246	460	647	809
	12.5	0	123	123	230	323	405
II	25	156	331	331	484	616	732
	12.5	156	243	243	320	386	444
III	25	0	246	262	457	627	776
	12.5	0	123	139	237	322	396
IV	25	0	246	382	534	667	783
	12.5	0	123	259	335	401	459

[1]discount rate=10%, inflation rate=7%

The next step is to plot the points given in Table 1 on graph papers as shown in Figures 2 and 3. At this time, the analyst can start comparing alternatives directly from the graphs. For illustration, the circled letters A, B, and C in Figure 2 identify certain meaningful situations:

A - shows break-even point in the first period in which construction becomes less expensive than using existing Road N-19.

B - shows that at the end of the design life, both construction and reconstruction costs in the second period become nearly equal, and that both are less expensive than using existing Road N-19.

C - shows that construction in the first period is the least expensive if no less than 100 MMBF is to be logged in the 20-year period. If construction were delayed until the second period, the loss would be the difference in costs for Point B minus Point C.

Figure 3 graphically shows the results of the same alternatives if only 50 MMBF of timber is to be logged over the design life. Letters D and E identify certain meaningful situations:

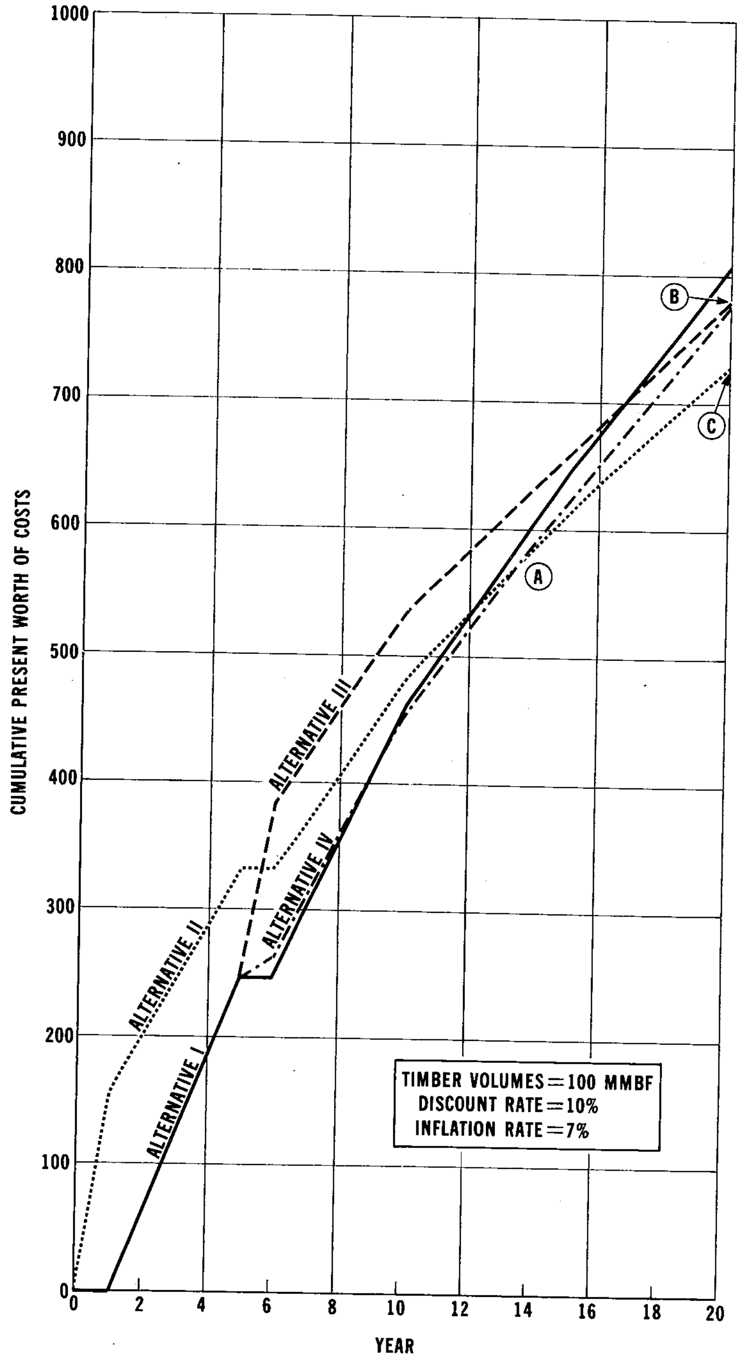

Figure 2. Cost Alternatives with 100 MMBF.

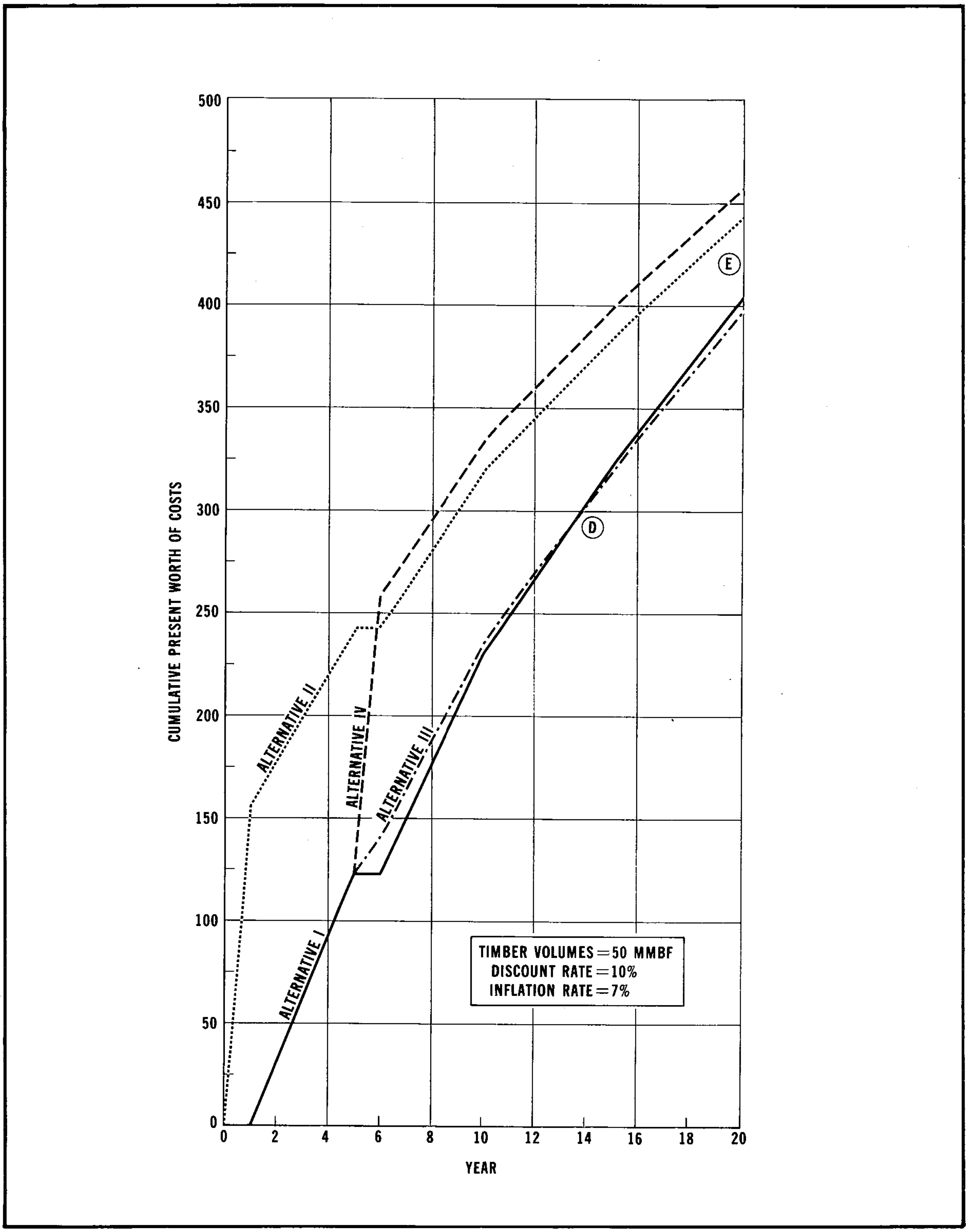

Figure 3. Cost Alternatives with 50 MMBF.

D - shows the break-even point in the second period in which reconstruction becomes less expensive than using existing Road N-19.

E - shows the overall accumulative results of all alternatives considered. The least expensive is reconstruction; next highest in cost is the use of the existing road, followed by construction in period 1; and the most expensive alternative is construction in period 2.

Although we have not developed all reasonable alternatives for this problem, we can make some determinations from these four. The primary conclusion would be that if volumes are as low as 50 MMBF, Road I-20 should not be constructed, and if volumes equal or exceed 100 MMBF, construction of Road I-20 could be delayed until the second period. This situation indicates that approximately 75 MMBF are required to construct Road I-20. It should be noted that if inflation factors are not used, construction of Road I-20 appears more economical in all cases.

An inspection of the graphic plots indicates that a great deal of information can be generated in this sort of analysis. This possibility requires the analyst to organize the information properly to determine the factors that are pertinent to the problem. Some of the more important observations available to the analyst from the graphs are:

1. The higher a plotted line is on the graph in respect to another plotted line, a higher accumulated cost of that alternative is represented.

2. The point at which two plotted lines intersect represents a "break-even" point. Beyond that point, the economic relationship between the alternatives is reversed.

3. A lesser amount of differentiation between inflation and discount rates creates two situations (assuming discount rate exceeds inflation rate):

   (a) a steeper curve, which portrays a greater accumulated expenditure at the end of the design period, and

   (b) break-even points occur earlier in the design period, indicating that decisions to create those break-even points must be made earlier in order to realize the greatest total savings at the end of the design period.

4. A greater amount of differentiation between inflation and discount rates results in break-even points occurring later, and

there is less cost difference if decisions that result in such break-even points are delayed.

5. A greater total timber volume for the entire design period results in earlier occurrence of break-even points, because the greater volume occurs early in the design period.

6. A lesser total timber volume makes early decisions more critical, since few break-even points occur.

7. If there is a greater total timber volume, a late decision may be made and a break-even point may occur; however, delay in making a decision can cause a substantial increase in cost.

8. Break-even points occur earliest if there is a combination of lesser differentiation between inflation rate and discount rates, with a greater amount of timber volume; and the greatest cost differences between alternatives at the end of the design period result from that situation.

9. Break-even points occur late, and are scarce, if there is a combination of greater differentiation between inflation rate and discount rates, with a lesser amount of timber volume; and less cost differences between alternatives are noted in that situation.

CONCLUSION

The graphic analysis of alternatives in developing construction schedules provides the decision-maker with an array of costs and relationships which may occur as a result of changes in scheduling, selection of projects, and timber volumes. By recognizing the array extremes, the decision-maker can establish a range of feasibility and desirability limits as a basis for making a decision.

WASHINGTON OFFICE NEWS

CONSULTATION AND STANDARDS

Walter E. Furen
Assistant Director

CADASTRAL ENGINEERING

As a result of recommendation of the Regional Engineers Meeting held November 1-2, 1977, a work group met in Washington, D.C., January 16-19, to develop an action plan to respond to the increasing cadastral funding. The work group consisted of four Regional Directors of Engineering or their Assistants; three Regional Directors of Lands or their Assistants; two Regional Land Surveyors; and several staff members from Washington Office in Lands and Engineering.

The cadastral program has increased from $4.9 million in FY 1977 to $13.8 million in FY 1978, with further increases expected in the future. The group's findings and recommendations will be out in the form of a Forest Service Cadastral Survey Action Plan very soon.

The major action items will be:

1. Staffing to accomplish the program.
2. Training for short- and long-term needs.
3. Providing a career ladder for personnel in cadastral work.
4. Policy direction to re-emphasize the landline program.
5. Cooperation with adjoiners.
6. Awareness of cadastral engineering needs and education assistance for field personnel at all levels.

The RPA backlog, coupled with a Cadastral Engineering Audit Report (#60315-1-SF, July 20, 1977), has highlighted the need for accelerated action in these areas.

The new Amendment No. 45 of FSM Section 7150 (September 1977) should be helpful in supporting an increased program. A Land Surveying Handbook (FSH 7109.15) has been started, but it will not be available until about the middle of FY 1979.

A joint FS/BLM Survey Equipment Seminar was planned for the weeks of March 13-24, 1978, to acquaint cadastral engineering personnel on how to best involve new equipment and survey systems in the increased program. New survey technology is developing very fast, and it is felt that this factor could become one of our biggest program assets in the next few years. We are continuing to monitor such development, and will publish information as it becomes available.

OPERATIONS

Harold L. Strickland
Assistant Director

RESOURCE INFORMATION DISPLAY SYSTEM (RIDS)

The goals of RIDS Project and its planned development were outlined in the July 1977 issue of *Field Notes*.

A work plan which outlines the complete RIDS Project, has been developed, and on September 26, 1977, was approved by Deputy Chief T.C. Nelson. Copies were sent to all Regional Foresters, Station Directors, Area Directors, and WO Staff Directors.

As outlined in our first report in *Field Notes*, the RIDS "short range" objective consists of analyzing the existing seven grid and three polygon systems, and assemblying a system with an option to use either the GRID or POLYGON method. Both methods are needed because of the different accuracy requirements for various types studied and the difference in cost between the two methods. The GRID method is cheaper to use but is not as accurate as the POLYGON method.

The RIDS team chose to investigate the seven grid systems first, since they are the most widely used. "User needs" criteria, which were defined at a user's workshop in May 1977, was used along with existing user and system documentation to eliminate all but two of the currently used systems. A list of the seven grid systems, and the percent of user needs provided by each, are as follows:

MIADS2	-	53 percent
LIM	-	60 percent
R3MAP	-	38 percent
R10MAP	-	43 percent
MAPIT	-	60 percent
CONGRID	-	79 percent
RAP	-	87 percent

A plan was prepared to test and evaluate CONGRID and RAP, the two systems which met most of the user needs. The plan consisted of test methods and criteria, as well as test evaluation criteria. These were developed by the RIDS team with assistance from the Land Management Planning Staff

Unit of the Washington Office. The two systems were tested at the same time, and the team attempted to produce the same results from the two systems. Time and cost figures were recorded for each run to be used in the system evaluation. A detailer from Region 2, familiar with the "needs" of the land use planning activity, reviewed the team's testing procedures and evaluation criteria to assure that no major items had been overlooked. When all of the tests had been run and evaluations made, the Resource Analysis Procedure (RAP) system was chosen as the best Forest Service grid type system available to meet existing user needs.

An evaluation report, which contains recommendations for the Systems Coordinating Council and for Deputy Chief T.C. Nelson, is in rough draft form. The RIDS team will make the recommendation that RAP be adopted as the Service-wide grid type processing system.

The RAP system is currently being used by S&PF in Region 4 and in the Northeastern Area, but the original user instructions are very difficult to understand. A revised user's manual has been prepared by the RIDS team and is being finalized for distribution. In order to test the revised user's manual, the RIDS team is working with Region 9 on a project; a 200,000-acre planning unit on the Green Mountain National Forest. This project, which consists of six layers of information, will be completely processed at the Forest level, using the new user instruction and monitored by the RIDS team.

The RIDS team has just begun to investigate the three polygon systems (WRIS, PLOT, COMLUP). Only two of these systems, WRIS and PLOT, are currently running on Service-wide equipment, so the selection of the polygon processor will be somewhat simpler.

A projected date for completion of the RIDS short range phase is late August 1978. With the addition of William Ubbens, a Computer Specialist, to the RIDS team, the team should be able to meet this scheduled target completion date. If you are interested in being kept posted on the progress of the RIDS project, or have comments, suggestions, or questions, please contact the Project Leader, Tom George, at FTS 235-2306.

INVITATION TO READERS OF *FIELD NOTES*

Every reader is a potential author of an article for *Field Notes*. If you have a news item or short article you would like to share with Service engineers, we invite you to send it for publication in *Field Notes*.

Material submitted to the Washington Office for publication should be reviewed by the respective Regional Office to see that the information is current, timely, technically accurate, informative, and of interest to engineers Service-wide (FSM 7113). The length of material submitted may vary from several short sentences to several typewritten pages; however, short articles or news items are preferred. All material submitted to the Washington Office should be typed double-spaced; all illustrations should be original drawings or glossy black and white photos.

Field Notes is distributed from the Washington Office directly to all Regional, Station, and Area Headquarters, Forests, and Forest Service retirees. If you are not currently on the mailing list ask your Office Manager or the Regional Information Coordinator to increase the number of copies sent to your office. Copies of back issues are also available from the Washington Office.

Each Region has an Information Coordinator to whom field personnel should submit both questions and material for publication. The Coordinators are:

R-1	Melvin Dittmer	R-4	Ted Wood	R-9	Fred Hintsala
R-2	Royal M. Ryser	R-5	Jim McCoy	R-10	F. W. Baxandall
R-3	Juan Gomez	R-6	Kjell Bakke	WO	Al Colley
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